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2003 Annual Response Order by Consent Report

Former Nutting Truck and Caster Company Site Faribault, Minnesota

Prepared for
Prairie Avenue Leasing

March 2003

BARR

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Former Nutting Truck and Caster Company Site Faribault, Minnesota

Prepared for
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2003 Annual Response Order by Consent Report
Former Nutting Truck and Caster Company Site

Table of Contents

Groundwater Monitoring 1

Groundwater Elevations 1

Water Quality Results 2

Data Quality Assurance Review 2

Recommendations 3

List of Tables

Table 1 Groundwater Elevation

Table 2 Groundwater Quality Results

Table 3 Monitoring Parameters and Analytical Methods

List of Figures

Figure 1 Property Location

Figure 2 Groundwater Elevation, May 2002

List of Appendices

Appendix A Field Data Report

Appendix B Laboratory Data Report

2003 Annual Response Order by Consent Report
Former Nutting Truck and Caster Company Site

This report is submitted on behalf of Prairie Avenue Leasing Company (formerly the Nutting Truck and Caster Company) in accordance with Part XI of the September 27, 1987, the January 17, 1992, and the April 7, 1998 modifications to the Response Order by Consent (Order) between Prairie Avenue Leasing Company and the Minnesota Pollution Control Agency (MPCA). This report presents data collected from the pumpout and environmental monitoring systems at the Nutting Truck and Caster Company Site in Faribault, Minnesota in 2002 and compares it to data collected over the previous five years.

Groundwater Monitoring

Samples were collected from wells B4, B5, B8, B12, W13, W14, PW17 and PW18 in May 2002 and analyzed for volatile organic compounds as required. The samples were analyzed for the full range of volatile organic compounds (VOCs) as requested in the MDH Health Consultation, June 2, 2000. Trichloroethylene (TCE) and cis-1,2 dichloroethylene (DCE) continue to be the primary contaminants of concern. No other compounds were detected in the samples collected on May 9, 2002 except for toluene which was detected at a trace concentration in the sample from the bottom of well W13.

The 2002 laboratory and field reports are in Appendices A and B, respectively. Historical groundwater elevations and VOC summaries are provided in Tables 1 and 2, respectively.

In 2002, the system ran continuously with the exception of the glacial drift pumpout well PW18 which has been out of service due to failure of the pump. The pump has not been replaced to date in order to evaluate the effect of not pumping the glacial drift aquifer on the water quality in the vicinity of the pumpout wells. The average pumping rate for the St Peter Sandstone pumpout well (PW17) in 2002 was 24 gallons per minute.

Groundwater Elevations

Groundwater elevations continue to be very consistent and seldom fluctuate more than one foot. The vertical gradient is upward from the Prairie du Chien aquifer to the St. Peter aquifer and the horizontal gradient was 0.003 ft/ft in May 2002. The groundwater flow direction is to the north and

A quality control/quality assurance review was performed to assess the validity of the field procedures and analytical results for the 2002 monitoring period. This review was performed in accordance with the Barr Engineering Standard Operating Procedure for data review, which is derived from "The National Functional Guidelines for Organic and Inorganic Data Review" (EPA 1999). Samples collected in support of the annual monitoring plan were analyzed by Legend Technical Services, Inc. in accordance with the Revised Sampling Plan (Barr 1996) and the modifications made on January 27, 1998.

No anomalies occurred in field or laboratory operations. All technical holding times for analysis were met. All measures of precision and accuracy were acceptable. No field or laboratory contamination issues were observed. All data were validated and determined useable as presented herein.

Recommendations

The pump in PW 17 shall be turned off and the Site wells will be monitored in accordance with the Tier 2 monitoring plan described in the Long Range Monitoring Plan for the Former Nutting Truck and Caster Site that was prepared by Barr Engineering in March 2003. Groundwater samples will be collected from monitoring wells B4, B5, B8, B12, W13, W14, PW17 and PW18 in May 2003, and Legend Technical Services will analyze the samples using Method 8260 for the list of volatile organic compounds for MDH Method 465E. Samples will also be analyzed for natural attenuation indicator parameters. Analytical parameters for samples collected in 2003 are shown in Table 3. A data report will be submitted by July 31, 2003.

Tables

Table 1
Ground Water Elevations
Nutting Truck and Caster Co. Site

(elevations in ft. above MSL)

Location	B4	B5	B7	B8	B9	B11	B12	B15
01/01/1987	--	--	--	--	--	--	--	--
01/02/1987	--	--	--	--	--	--	--	--
11/25/1987	974.44	--	974.15	972.37	971.61	972.64	972.06	972.40
12/03/1987	973.89	--	974.47	972.77	971.97	972.64	970.73	972.07
12/11/1987	974.83	--	974.55	972.66	971.48	973.80	971.86	971.96
12/21/1987	973.82	--	973.55	972.64	970.98	971.02	970.72	971.98
01/13/1988	973.71	--	973.09	972.64	970.91	972.42	970.62	971.95
02/04/1988	973.64	--	973.04	972.62	970.89	972.41	970.59	972.03
03/21/1988	974.16	--	973.33	972.86	971.14	972.67	970.89	972.30
05/18/1988	974.03	--	973.36	972.04	--	972.75	971.79	972.33
07/27/1988	973.58	--	972.88	971.45	970.71	972.27	971.35	971.73
09/01/1988	973.27	--	972.57	971.23	970.43	971.94	970.97	970.98
11/18/1988	973.14	--	972.48	971.15	970.31	971.89	970.93	970.88
04/07/1989	--	--	--	--	--	--	--	971.12
05/15/1989	973.46	--	--	971.51	--	--	971.30	971.23
08/16/1989	972.81	--	--	--	--	--	--	970.66
10/23/1989	972.54	--	--	970.45	--	--	970.50	970.46
01/02/1990	--	--	--	--	--	--	--	970.23
05/08/1990	972.55	--	--	970.66	--	--	970.76	970.52
08/20/1990	--	--	--	--	--	--	--	971.74
12/11/1990	973.15	--	--	971.02	--	--	971.11	971.11
03/11/1991	--	--	--	--	--	--	--	970.83
06/18/1991	974.63	--	--	972.67	--	--	972.47	972.45
09/10/1991	--	--	--	--	--	--	--	971.14
11/21/1991	974.09	--	--	972.11	971.22	--	971.87	971.85
06/11/1992	974.86	--	--	972.75	--	--	972.50	972.52
09/22/1992	--	--	--	--	--	--	--	--
11/24/1992	974.75	--	--	--	--	--	--	972.33
03/29/1993	--	--	--	--	--	--	--	--
07/14/1993	976.74	--	--	974.51	--	--	974.24	974.52
09/08/1993	--	--	--	--	--	--	--	--
11/11/1993	975.68	--	--	--	--	--	--	973.45
05/12/1994	975.41	978.84	--	973.13	--	--	972.86	973.29
10/25/1994	975.60	--	--	--	--	--	--	973.35
05/24/1995	975.03	978.34	--	972.73	--	--	972.50	972.85
09/25/1995	974.63	--	--	--	--	--	--	972.35
08/02/1996	975.30	978.34	974.00	972.58	--	--	972.36	972.88
11/20/1996	974.49	--	--	--	--	--	--	972.04
05/30/1997	974.58	--	--	972.42	--	--	972.16	972.28
11/26/1997	974.94	--	--	--	--	--	--	972.69
06/02/1999	975.51	978.90	--	973.38	--	--	973.12	973.27
05/02/2000	974.16	977.45	--	972.10	--	--	969.82	972.09
03/21/2001	973.75	976.84	--	971.76	--	--	971.52	971.79
05/08/2002	973.84	976.97	--	971.78	--	--	971.56	971.73

Table 2
Volatile Organic Compounds - Historical Summary
Nutting Truck and Caster Co. Site
(concentrations in ug/L)

Location	Date	Dup	Trichloro-ethylene	1,1-Dichloro-ethylene	1,2-Dichloro-ethylene	1,2-Dichloro-ethylene, trans	1,2-Dichloro-ethylene,cis
B3	10/02/1984		4.1	ND	--	ND	ND
B3	10/16/1984		3.9	ND	--	ND	ND
B3	07/18/1985		6.0	ND	--	ND	ND
B4	08/25/1982		580	<1	--	<1	--
B4	03/29/1983		450	<1	--	<1	--
B4	06/29/1983		440	<0.2	--	<1	--
B4	09/27/1983		450	<0.2	--	<1	--
B4	10/03/1984		250	<0.3	--	<0.3	<0.3
B4	10/17/1984		100	<0.20	--	<0.20	1.6
B4	10/18/1984		570	<0.3	--	<0.3	--
B4	07/18/1985		410 b	<0.4	--	<0.3	<0.5
B4	01/27/1986		350	<0.4	--	<0.3	--
B4	06/25/1986		330	<0.3	--	3.9	--
B4	11/27/1986		95 b	5.9	--	2.2	--
B4	05/15/1989		140	<0.20	<0.50	--	--
B4	10/23/1989		47	<0.3	<0.3	--	--
B4	05/08/1990		26	<0.3	--	<0.3	<0.5
B4	12/11/1990		73	<0.3	--	<0.3	1.5
B4	06/18/1991		48	<0.5	--	<0.1	<0.2
B4	06/18/1991		62	<0.3	--	<0.3	0.6
B4	11/21/1991		36	<0.3	--	<0.3	<0.5
B4	06/11/1992		44	<0.5	--	<0.5	<0.5
B4	11/24/1992		37	--	--	--	<1.0
B4	07/14/1993		28	<0.3	--	<0.3	<0.5
B4	11/11/1993		20	<0.3	--	<0.3	<0.5
B4	05/12/1994		31	<0.5	--	<0.5	<0.5
B4	10/25/1994		49	<0.3	--	<0.3	<0.5
B4	05/24/1995		84	<1.5	--	<1.5	<2.5
B4	09/25/1995		77	<1.5	--	<1.5	<2.5
B4	08/02/1996		100	<2.5	--	<5.0	<5.0
B4	11/20/1996		68	<0.5	--	<1.0	<1.0
B4	05/30/1997		73	<0.50	--	<0.50	<0.50
B4	11/26/1997		82	<0.50	--	<0.50	<0.50
B4	05/19/1998		47	0.66	--	<0.50	<0.50
B4	06/02/1999		350	<0.50	--	<0.50	0.57
B4	05/02/2000		130	<0.20	--	<0.30	<0.30
B4	03/21/2001		200	<0.50	--	<0.50	0.52
B4	05/08/2002		150	<5.0	--	<5.0	<5.0
B5	10/02/1984		36	ND	--	ND	ND
B5	10/16/1984		99	ND	--	ND	ND
B5	07/18/1985		23	ND	--	ND	ND
B5	06/11/1992		12	<0.3	--	<0.3	<0.5
B5	05/12/1994		17	<0.5	--	<0.5	<0.5
B5	08/02/1996		4.9	<0.50	--	<1.0	<1.0
B5	05/19/1998		9.1	<0.50	--	<0.50	<0.50
B5	06/02/1999		1.7	<0.50	--	<0.50	<0.50
B5	05/02/2000		2.2	<0.20	--	<0.30	<0.30
B5	03/21/2001		2.4	<0.50	--	<0.50	<0.50
B5	05/08/2002		<5.0	<5.0	--	<5.0	<5.0

Table 2
Volatile Organic Compounds - Historical Summary
Nutting Truck and Caster Co. Site
(concentrations in ug/L)

Location	Date	Dup	Trichloro-ethylene	1,1-Dichloro-ethylene	1,2-Dichloro-ethylene	1,2-Dichloro-ethylene, trans	1,2-Dichloro-ethylene,cis
B12	06/18/1991		0.2	<0.5	--	<0.1	<0.2
B12	06/18/1991		<0.5	<0.3	--	<0.3	<0.5
B12	11/21/1991		<0.5	<0.3	--	<0.3	<0.5
B12	06/11/1992		<0.5	<0.3	--	<0.3	<0.5
B12	07/14/1993		<0.5	<0.3	--	<0.3	<0.5
B12	05/12/1994		<0.5	<0.5	--	<0.5	<0.5
B12	05/24/1995		<0.5	<0.3	--	<0.3	<0.5
B12	08/02/1996		<0.50	<0.50	--	<1.0	<1.0
B12	05/30/1997		<0.50	<0.50	--	<0.50	<0.50
B12	05/19/1998		<0.50	<0.50	--	<0.50	<0.50
B12	06/02/1999		<0.50	<0.50	--	<0.50	<0.50
B12	05/02/2000		0.49	<0.20	--	<0.30	<0.30
B12	03/21/2001		<0.50	<0.50	--	<0.50	<0.50
B12	05/08/2002		<5.0	<5.0	--	<5.0	<5.0
B15	12/23/1985		110	ND	--	ND	ND
B15	01/27/1986		170	ND	--	ND	ND
B15	11/25/1987		82	<0.3	--	0.4	--
B15	12/11/1987		80	<0.3	--	0.4	--
B15	02/04/1988		28	<0.3	--	0.3	--
B15	09/01/1988		14	<0.3	--	<0.3	--
B15	04/07/1989		6.7	<0.3	<0.3	--	--
B15	05/15/1989		8.3	<0.20	<0.50	--	--
B15	08/16/1989		3.7	<0.30	<0.30	--	--
B15	10/23/1989		6.8	<0.3	<0.3	--	--
B15	01/02/1990		5.5	<0.3	--	<0.3	<0.5
B15	05/08/1990		5.5	<0.3	--	<0.3	<0.5
B15	08/20/1990		6.7	<0.3	--	<0.3	<0.5
B15	12/11/1990		5.5	<0.3	--	<0.3	<0.5
B15	03/11/1991		4.8	<0.3	--	<0.3	<0.5
B15	06/18/1991		5.3	<0.5	--	<0.1	<0.2
B15	06/18/1991		5.5	<0.3	--	<0.3	<0.5
B15	09/10/1991		4.4	<0.3	<0.2	--	--
B15	11/21/1991		2.9	<0.3	--	<0.3	<0.5
B15	06/11/1992		4.1	<0.3	--	<0.3	<0.5
B15	11/24/1992		5.3	--	--	--	<1.0
B15	07/14/1993		4.0	<0.3	--	<0.3	<0.5
B15	11/11/1993		12	<0.3	--	<0.3	<0.5
B15	05/12/1994		7.6	<0.5	--	<0.5	<0.5
B15	10/25/1994		5.9	<0.3	--	<0.3	<0.5
B15	05/24/1995		4.1	<0.3	--	<0.3	<0.5
B15	09/25/1995		3.6	<0.3	--	<0.3	<0.5
B15	08/02/1996		2.2	<0.50	--	<1.0	<1.0
B15	11/20/1996		2.4	<0.5	--	<1.0	1.2
B15	05/30/1997		2.7	<0.50	--	<0.50	0.44
B15	11/26/1997		2.6	<0.50	--	<0.50	<0.50
B15	05/19/1998		2.3	<0.50	--	<0.50	<0.50
B15	06/02/1999		8.3	<0.50	--	<0.50	<0.50
B15	07/07/2000		3.5	<0.30	--	<0.30	<0.30
B15	03/21/2001		21	<0.50	--	<0.50	5.6
B15	05/08/2002		2.4j	<5.0	--	<5.0	<5.0

Table 2
Volatile Organic Compounds - Historical Summary
Nutting Truck and Caster Co. Site
(concentrations in ug/L)

Location	Date	Dup	Trichloro-ethylene	1,1-Dichloro-ethylene	1,2-Dichloro-ethylene	1,2-Dichloro-ethylene, trans	1,2-Dichloro-ethylene,cis
W14	06/02/1986		ND bj	ND	--	ND	ND
W14	06/24/1986		ND	ND	--	ND	ND
W14	05/15/1989		<0.50	<0.20	<0.50	--	--
W14	10/23/1989		<0.5	<0.3	<0.3	--	--
W14	05/08/1990		<0.5	<0.3	--	<0.3	<0.5
W14	12/11/1990		<0.5	<0.3	--	<0.3	<0.5
W14	06/18/1991		<0.1	<0.5	--	<0.1	<0.2
W14	06/18/1991		<0.5	<0.3	--	<0.3	<0.5
W14	11/21/1991		<0.5	<0.3	--	<0.3	<0.5
W14	06/11/1992		<0.5	<0.3	--	<0.3	<0.5
W14	07/14/1993		<0.5	<0.3	--	<0.3	<0.5
W14	05/12/1994		<0.5	<0.5	--	<0.5	<0.5
W14	05/24/1995		<0.5	<0.3	--	<0.3	<0.5
W14	08/02/1996		<0.50	<0.50	--	<1.0	<1.0
W14	05/30/1997		<0.50	<0.50	--	<0.50	<0.50
W14	05/19/1998		<0.50	<0.50	--	<0.50	<0.50
W14	06/02/1999		<0.50	<0.50	--	<0.50	<0.50
W14	05/02/2000		**0.96**	<0.20	--	<0.30	<0.30
W14	03/21/2001		<0.50	<0.50	--	<0.50	<0.50
W14	05/08/2002		<5.0	<5.0	--	<5.0	<5.0
PW17	11/25/1987		**59**	<0.6	--	<0.6	--
PW17	12/03/1987		**57**	<0.3	--	**0.7**	--
PW17	12/11/1987		**37**	<0.3	--	**0.6**	--
PW17	12/21/1987		**42**	<0.3	--	<0.3	--
PW17	01/13/1988		**50**	<0.6	--	<0.6	--
PW17	02/04/1988		**27**	<0.3	--	**0.4**	--
PW17	03/21/1988		**53**	**0.7**	--	<0.3	--
PW17	05/18/1988		**21**	<0.3	--	**0.7**	--
PW17	07/27/1988		**33**	<0.3	--	**0.6**	--
PW17	09/01/1988		**83**	<0.6	--	**1.7**	--
PW17	11/18/1988		**57**	<0.3	--	**1.0**	--
PW17	04/07/1989		**54**	<0.3	<0.3	--	--
PW17	05/15/1989		**36**	<0.20	**1.0**	--	--
PW17	08/16/1989		**32**	<0.30	**0.4**	--	--
PW17	10/23/1989		**46**	<0.3	**1.6**	--	--
PW17	01/02/1990		**40**	<1.5	--	<1.5	<2.5
PW17	05/08/1990		**29**	<0.3	--	<0.3	**1.2**
PW17	05/08/1990		**30**	<0.3	--	<0.3	**1.2**
PW17	08/20/1990		**27**	<0.3	--	<0.3	**1.4**
PW17	08/20/1990		**30**	<0.3	--	<0.3	**1.6**
PW17	12/11/1990		**28**	<0.3	--	<0.3	**1.6**
PW17	12/11/1990		**27**	<0.3	--	<0.3	**1.6**
PW17	03/11/1991		**20**	**0.3**	--	<0.3	**0.8**
PW17	03/11/1991		**28**	<0.3	--	<0.3	**1.0**
PW17	06/18/1991		**18**	<0.5	--	<0.1	<0.2
PW17	06/18/1991		**19**	<0.3	--	<0.3	**0.6**
PW17	09/10/1991		**31**	<0.3	**1.0**	--	--
PW17	11/21/1991		**16**	<0.3	--	<0.3	**0.7**
PW17	06/11/1992		**29**	<0.5	--	<0.5	<0.5
PW17	09/22/1992		**6.6**	<0.3	--	<0.3	<0.5
PW17	11/24/1992		**8.9**	--	--	--	**0.6**

Table 2
Volatile Organic Compounds - Historical Summary
Nutting Truck and Caster Co. Site
(concentrations in ug/L)

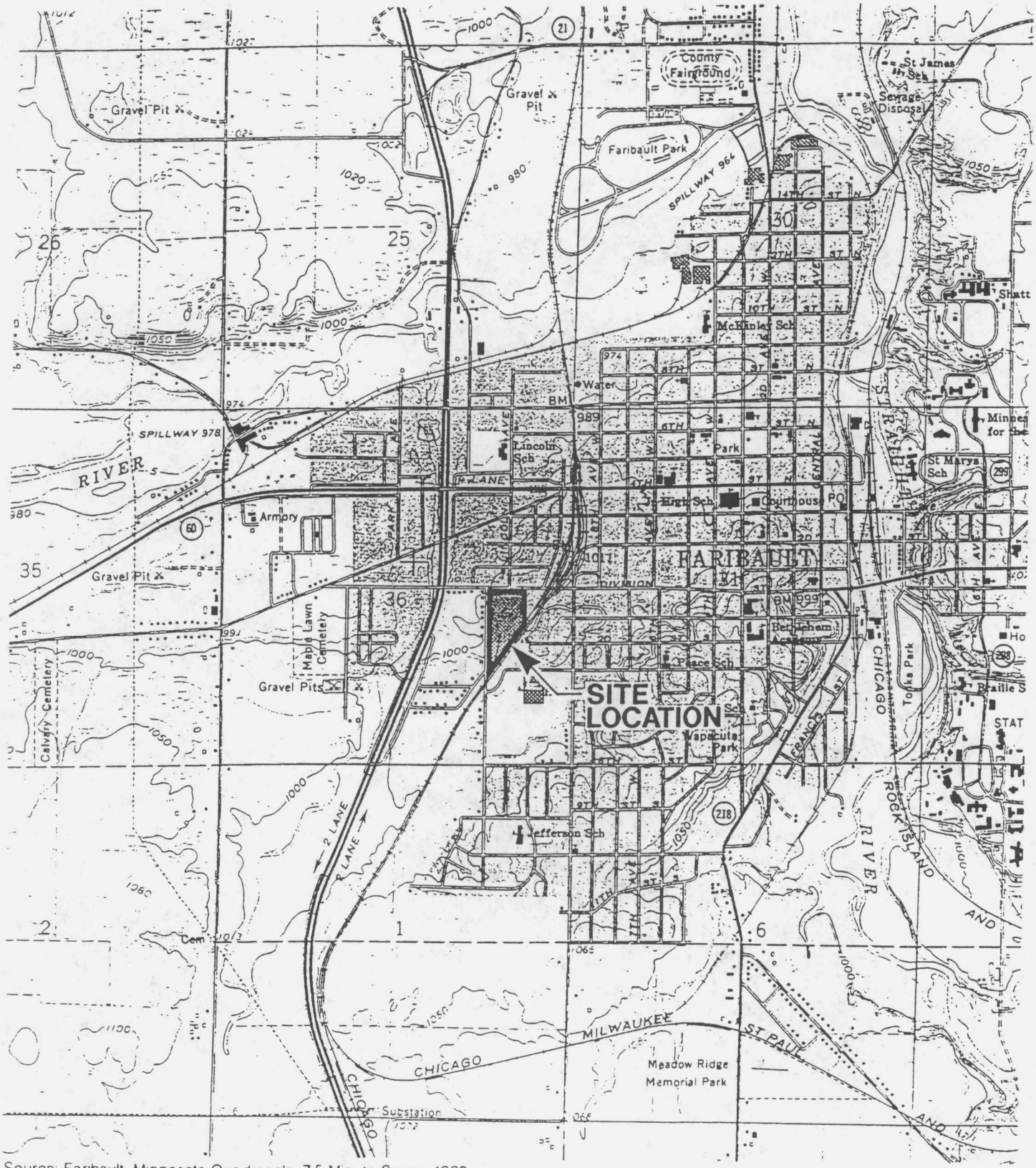
Location	Date	Dup	Trichloro-ethylene	1,1-Dichloro-ethylene	1,2-Dichloro-ethylene	1,2-Dichloro-ethylene, trans	1,2-Dichloro-ethylene,cis
PW18	09/25/1995		16	<0.3	--	<0.3	<0.5
PW18	08/02/1996		9.2	<0.50	--	<1.0	<1.0
PW18	11/20/1996		5.9	<0.5	--	<1.0	<1.0
PW18	05/30/1997		11	<0.50	--	<0.50	0.65
PW18	05/30/1997	DUP	11	<0.50	--	<0.50	0.63
PW18	11/26/1997		11	<0.50	--	<0.50	<0.50
PW18	05/19/1998		9.9	<0.50	--	<0.50	<0.50
PW18	06/02/1999		11	<0.50	--	<0.50	0.59
PW18	05/02/2000		8.2	<0.20	--	<0.30	<0.30
PW18	03/21/2001		8.5	<0.50	--	<0.50	<0.50
PW18	05/08/2002		7.9	<5.0	--	<5.0	<5.0

Table 3
Monitoring Parameters and Analytical Methods

Volatile Organic Compounds—MDH Method 465E

Chloromethane
Bromomethane
Dichlorodifluoromethane
Vinyl chloride
Chloroethane
1,1-Dichloroethylene
Trichlorofluoromethane
Methylene chloride
trans-1,2-Dichloroethylene
1,1-Dichloroethane
2,2-Dichloropropane
cis-1,2-Dichloroethylene
Bromochloromethane
Chloroform
Dibromomethane
1,1,1-Trichloroethane
Carbon tetrachloride
1,2-Dichloroethane
1,1,2-Trichloroethylene
1,1-Dichloropropene
1,2-Dichloropropane
Bromodichloromethane
trans-1,3-Dichloro-1-propene
cis-1,3-Dichloro-1-propene
1,1,2-Trichloroethane
1,3-Dichloropropane
1,1,2,2-Tetrachloroethylene
Dibromochloromethane
1,2-Dibromoethane
1,1,1,2-Tetrachloroethane
Bromoform
1,2,3-Trichloropropane
1,1,2,2-Tetrachloroethane
1,2-Dibromo-3-chloropropane
Hexachlorobutadiene
Methyl tert-butyl ether
Benzene
Toluene
Chlorobenzene
Ethyl benzene
p-Xylene/m-Xylene
o-Xylene/Styrene
Cumene
Bromobenzene
n-Propylbenzene
2-Chlorotoluene
4-Chlorotoluene
1,3,5-Trimethylbenzene
tert-Butyl benzene
1,2,4-Trimethylbenzene
1,3-Dichlorobenzene
sec-Butylbenzene
1,4-Dichlorobenzene
p-Cymene
1,2-Dichlorobenzene
n-Butylbenzene
1,2,4-Trichlorobenzene
Naphthalene
1,2,3-Trichlorobenzene
Acetone
Allyl chloride
Tetrahydrofuran
Ethyl ether
1,1,2-Trichlorotrifluoroethane
Methyl ethyl ketone
Methyl isobutyl ketone
Dichlorofluoromethane

Figures



Source: Faribault, Minnesota Quadrangle, 7.5 Minute Series, 1960

N

0 2000 4000

Scale in Feet

QUADRANGLE LOCATION

Figure 1

SITE LOCATION MAP

Prairie Avenue Leasing
Faribault, Minnesota

Appendices

Appendix A

Field Data Report

FIELD SAMPLING REPORT

Date: May 13, 2002

Project: Prairie Avenue Leasing

Contact: Marta Nelson
Barr Engineering Company
4700 W. 77th Street
Minneapolis, MN 55435-4803

Field Sampling

Annual sampling, at the Faribault site, was completed on May 8, 2002.

Field Report

Attachments:

- Field lot cover sheet
- Water level summary
- Field data summary
- Field log data sheets
- Meter calibration summary
- Chain-of-Custody

Laboratory Analysis Status

Samples were sent to Legend Technologies for analysis. See the chain-of-custody for exact items.

Steve Iverson
Sampling Team Member

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WATER LEVEL REPORT

Project: PRAIRIE AVE. LEASING

Project Number: 23/66-006

Environmental Staff: SDI Date: 5-08-02

Monitoring Location	Measuring point elevation	Water level depth	Total well depth	Static water elevation	Comments
B4	1006.54	32.70	44.0	973.84	
B5	1008.74	31.77	40.0	976.97	
B8	999.28	27.50	67.0	971.78	
B12	998.16	26.60	47.0	971.56	
W13	1006.74	32.47	96.0	974.27	
W14	999.00	27.07	79.0	971.93	
B15	1007.43	35.70	43.0	971.73	Tree roots
PW17	1007.39	51.47		955.92	
PW18	1007.39	45.80		961.59	

BARR

Barr Engineering Company
Field Log Data Sheet

Client: Prairie Air.	Monitoring Point: W14
Location:	Date: 5-8-02
Project #: 2366006	Sample Time: 1135

GENERAL DATA		STABILIZATION TEST						
Barr lock:	4							
Casing diameter:	4	Time/ Volume	Temp. °C	Cond. @ 25	pH	Eh	D.O.	Turbidity Appearance
Total well depth:*	79	1052	11.06	282	8.17	-317.2	.03	–
Static water level:*	27.07	1104	10.83	683	6.92	-91.4	.51	–
Water depth:*	51.9	1116	10.80	690	6.94	-77.2	.55	–
Well volume: (gal)	34	1128	10.30	693	6.95	-72.9	.59	clear
Purge method:	3" SUB.							
Sample method:	DIS. BAILER							
Start time:	1040	Odor: NONE						
Stop time:	1128	Purge Appearance: Cloudy, Brown						
Duration: (minutes)	48	Sample Appearance: CLEAR						
Rate, gpm:	3	Comments:						
Volume, purged:	144 gal							
Duplicate collected?	—							
Sample collection by:	SDI	CO2-	Mn2-	Fe(T)-	Fe2-			
Others present:	—							

WELL INSPECTION (answer for each category, state if lock replaced, detail any repairs needed on back of form)

CASING & CAP: COLLAR: LOCK: OTHER:

(MW): groundwater monitoring well WS: water supply well SW: surface water SE: sediment other:

VOC- 3 semi-volatile- general- nutrient- cyanide- DRO- Sulfide-

oil,grease- bacteria- total metal- filtered metal- methane- filter-

Others:

*Measurements are referenced from top of riser pipe, unless otherwise indicated.

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BARR

Barr Engineering Company
Field Log Data Sheet

Client: Prairie Ave.	Monitoring Point: B12
Location:	Date: 5-8-02
Project #: 23616006	Sample Time: 1235

GENERAL DATA		STABILIZATION TEST						
Barr lock:	Y							
Casing diameter:	2	Time/ Volume	Temp. °C	Cond. @ 25	pH	Eh	D.O.	Turbidity Appearance
Total well depth:*	47	1214	10.94	740	7.01	-10.7	.78	–
Static water level:*	26.60	1218	10.95	741	7.01	3.1	.80	–
Water depth:*	20.4	1222	10.96	741	7.02	10.1	.81	–
Well volume: (gal)	3.3	1226	10.96	741	7.02	17.5	.82	clear
Purge method:	1.5 SUB.							
Sample method:	DIS. BAILER							
Start time:	1210	Odor: NONE DETT.						
Stop time:	1226	Purge Appearance: CLOUDY CED → CLEAR						
Duration: (minutes)	16	Sample Appearance: CLEAR						
Rate, gpm:	1	Comments:						
Volume, purged:	16 gal.							
Duplicate collected?	–							
Sample collection by:	SDI	CO2-	Mn2-	Fe(T)-	Fe2-			

Others present: –

WELL INSPECTION (answer for each category, state if lock replaced, detail any repairs needed on back of form)

CASING & CAP: COLLAR: LOCK: OTHER:

(MW): groundwater monitoring well WS: water supply well SW: surface water SE: sediment other:

VOC- 3 semi-volatile- general- nutrient- cyanide- DRO- Sulfide-

oil,grease- bacteria- total metal- filtered metal- methane- filter-

Others:

*Measurements are referenced from top of riser pipe, unless otherwise indicated.

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BARR

Barr Engineering Company
Field Log Data Sheet

Client: Prairie Ave.	Monitoring Point: B4
Location:	Date: 5-8-02
Project #: 2366006	Sample Time: 1350

GENERAL DATA		STABILIZATION TEST						
Barr lock:	4							
Casing diameter:	2	Time/ Volume	Temp. °C	Cond. @ 25	pH	Eh	D.O.	Turbidity Appearance
Total well depth:*	44	2	12.56	1084	6.87	281.7	4.69	–
Static water level:*	32.70	4	12.54	1080	6.81	264.1	4.99	–
Water depth:*	11.3	6 gal.	12.53	1079	6.79	251.9	4.93	–
Well volume: (gal)	1.9	8 gal.	12.52	1079	6.78	254.1	4.97	clear
Purge method:	1.5 SUB.							
Sample method:	DS. BAILER							
Start time:	–	Odor: NONE DET.						
Stop time:	–	Purge Appearance: CLEAR						
Duration: (minutes)	–	Sample Appearance: CLEAR						
Rate, gpm:	.5	Comments:						
Volume, purged:	8 gal.							
Duplicate collected?	–							
Sample collection by:	SDI	CO2-	Mn2-	Fe(T)-	Fe2-			

Others present: –

WELL INSPECTION (answer for each category, state if lock replaced, detail any repairs needed on back of form)

CASING & CAP: COLLAR: LOCK: OTHER:

(MW): groundwater monitoring well WS: water supply well SW: surface water SE: sediment other:

VOC- 3 semi-volatile- general- nutrient- cyanide- DRO- Sulfide-

oil,grease- bacteria- total metal- filtered metal- methane- filter-

Others:

*Measurements are referenced from top of riser pipe, unless otherwise indicated.

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BARR

Barr Engineering Company
Field Log Data Sheet

Client: Prairie Ave.	Monitoring Point: B15
Location:	Date: 5-3-02
Project #: 2366006	Sample Time: 1640

GENERAL DATA		STABILIZATION TEST						
Barr lock:	Y							
Casing diameter:	2	Time/ Volume	Temp. °C	Cond. @ 25	pH	Eh	D.O.	Turbidity Appearance
Total well depth:*	~37	2 gal.	11.59	773	7.38	-149	7.01	
Static water level:*	35.70							
Water depth:*								
Well volume: (gal)								
Purge method:								
Sample method:	Bailer							
Start time:		Odor: Swampy						
Stop time:		Purge Appearance: Tree roots/ muddy						
Duration: (minutes)		Sample Appearance:						
Rate, gpm:		Comments: 37 Feet is all the deep could measure well is packed w/ Tree roots. Could only Purge w/ Bailer						
Volume, purged:	2 gal.							
Duplicate collected?	—							
Sample collection by:	SDI	CO2-		Mn2-		Fe(T)-		Fe2-

Others present:

WELL INSPECTION (answer for each category, state if lock replaced, detail any repairs needed on back of form)

CASING & CAP: COLLAR: LOCK: OTHER:

MW: groundwater monitoring well WS: water supply well SW: surface water SE: sediment other:

VOC- 3 semi-volatile- general- nutrient- cyanide- DRO- Sulfide-

oil,grease- bacteria- total metal- filtered metal- methane- filter-

Others:

*Measurements are referenced from top of riser pipe, unless otherwise indicated.

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BARR

Barr Engineering Company
Field Log Data Sheet

Client: Prairie Ave.	Monitoring Point: DW 17
Location:	Date: 5-8-02
Project #: 2366006	Sample Time: 1700

GENERAL DATA		STABILIZATION TEST						
Barr lock:								
Casing diameter:		Time/ Volume	Temp. °C	Cond. @ 25	pH	Eh	D.O.	Turbidity Appearance
Total well depth:*		1700	11.20	771	7.18	[illegible]	3.13	–
Static water level:*	51.47							
Water depth:*								
Well volume: (gal)								
Purge method:	DED.							
Sample method:	GRAB							
Start time:		Odor:						
Stop time:		Purge Appearance:						
Duration: (minutes)		Sample Appearance: clear						
Rate, gpm:		Comments: meter = 9205100						
Volume, purged:								
Duplicate collected?	–							
Sample collection by:	SDI	CO2-	Mn2-	Fe(T)-	Fe2-			

Others present:

WELL INSPECTION (answer for each category, state if lock replaced, detail any repairs needed on back of form)

CASING & CAP: COLLAR: LOCK: OTHER:

MW: groundwater monitoring well WS: water supply well SW: surface water SE: sediment other: pump-out

VOC- 3 semi-volatile- general- nutrient- cyanide- DRO- Sulfide-

oil,grease- bacteria- total metal- filtered metal- methane- filter-

Others:

*Measurements are referenced from top of riser pipe, unless otherwise indicated.

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BARR ENGINEERING COMPANY
METER CALIBRATION SUMMARY

PROJECT: PRAIRIE AVE.

TECHNICIAN: SDI

Meter type and number	Date	Time	Temperature C	Standard Used	Meter Reading	Slope	Conductivity Redline
556 MPS	5/8/02	1000	18.4	7/10	7.00 - 10.00	—	—
DO. AUTO CAL - OK							
Conductivity	Date	Solution Used	Cell Result				
Cell Check	5-8-02	1000	1017				
ORP Probe	Date	Temp.	ORP Reading	Calculation Result			
Check	5-8-02	18.7	240	- OK			
231+- 10mV @ 25C							

231mV = Display Value + [(Display Temp. - 25 C) x (1.3 mV)]

WEATHER CONDITIONS

Date	Wind Direction	Wind Speed	Temperature F	Cloud Cover	Comments
5-8-02	SW	0-5	40	Cloudy	

Comments:

Appendix B

Laboratory Data Report

LEGEND
Technical Services, Inc.

05/22/02

Revised: 02/25/03

rec'd 2/25/03

Ms. Marta Nelson
Barr Engineering Co.
4700 W 77th St
Minneapolis MN
55435

Subject: 23/66-006DEP200
Legend No: 2002050207

LEGEND TECHNICAL SERVICES, INC. (LEGEND) received the following sample(s).

Matrix	Samples	Date Sampled	Date Received	Comments
Groundwater	12	05/08/02	05/09/02	Received on ice

* The associated batch quality assurance / quality control criteria were met with satisfaction.

* All samples will be retained by LEGEND for 30 days from the date of this report and then discarded unless other instructions are received from the client.

* Minnesota Laboratory Certification # 027-123-295.

* The oil and grease analysis was performed by a Minnesota certified sub contract laboratory.

* This report was revised on February 25, 2003 to include volatile analyte values between the reporting limit and the method detection limit.

Prepared by,
LEGEND TECHNICAL SERVICES, INC

Chris Bremer
Laboratory Director

Roberta Provost
Chemist

This report shall not be reproduced, except in full, without the written authorization of LEGEND

Client Name:	Barr Engineering Co.	**Legend Project #:**	2002050207
Client Project Number:	23/66-006DEP200	**Sample #:**	2
Client Project Name:		**Matrix:**	Groundwater
Date Sampled:	05/08/02	**Date Received:**	05/09/02
Client Sample ID:	B8		

VOC GCMS 8260B

Extraction Date: – **Client ID:** B8

Analysis Method: 8260B

Analysis Date: 05/13/02

Compound	Sample Results	Units	RL	MDL	Compound	Sample Results	Units	RL	MDL
1,1,1,2-Tetrachloroethane	<5.0	µg/L	5.0	0.58	cis-1,2-Dichloroethene	<5.0	µg/L	5.0	0.56
1,1,1-Trichloroethane	<5.0	µg/L	5.0	0.45	cis-1,3-Dichloropropene	<5.0	µg/L	5.0	0.37
1,1,2,2-Tetrachloroethane	<5.0	µg/L	5.0	0.32	Dibromochloromethane	<5.0	µg/L	5.0	0.46
1,1,2-Trichloroethane	<5.0	µg/L	5.0	0.50	Dibromomethane	<5.0	µg/L	5.0	0.31
1,1,2-Trichlorotrifluoroethane	<5.0	µg/L	5.0	0.65	Dichlorodifluoromethane	<5.0	µg/L	5.0	0.62
1,1-Dichloroethane	<5.0	µg/L	5.0	0.47	Dichlorofluoromethane	<5.0	µg/L	5.0	0.38
1,1-Dichloroethene	<5.0	µg/L	5.0	0.56	Ethyl benzene	<5.0	µg/L	5.0	0.14
1,1-Dichloropropene	<5.0	µg/L	5.0	0.62	Ethyl ether	<5.0	µg/L	5.0	0.36
1,2,3-Trichlorobenzene	<5.0	µg/L	5.0	0.72	Hexachlorobutadiene	<5.0	µg/L	5.0	0.58
1,2,3-Trichloropropane	<5.0	µg/L	5.0	0.36	Isopropyl benzene	<5.0	µg/L	5.0	0.22
1,2,4-Trichlorobenzene	<5.0	µg/L	5.0	0.24	Methyl isobutyl ketone	<5.0	µg/L	5.0	0.96
1,2,4-Trimethylbenzene	<5.0	µg/L	5.0	0.37	Methyl-tert-butyl ether	<5.0	µg/L	5.0	0.43
1,2-Dibromo-3-chloropropane	<5.0	µg/L	5.0	0.82	Methylene chloride	<10	µg/L	10	2.0
1,2-Dibromoethane	<5.0	µg/L	5.0	0.35	n-Butyl benzene	<5.0	µg/L	5.0	0.46
1,2-Dichlorobenzene	<5.0	µg/L	5.0	0.30	n-Propyl benzene	<5.0	µg/L	5.0	0.24
1,2-Dichloroethane	<5.0	µg/L	5.0	0.32	Naphthalene	<5.0	µg/L	5.0	0.67
1,2-Dichloropropane	<5.0	µg/L	5.0	0.48	o-Xylene	<5.0	µg/L	5.0	0.36
1,3,5-Trimethylbenzene	<5.0	µg/L	5.0	0.38	p,m-Xylene	<10	µg/L	10	0.58
1,3-Dichlorobenzene	<5.0	µg/L	5.0	0.39	sec-Butyl benzene	<5.0	µg/L	5.0	0.37
1,3-Dichloropropane	<5.0	µg/L	5.0	0.19	Styrene	<5.0	µg/L	5.0	0.26
1,4-Dichlorobenzene	<5.0	µg/L	5.0	0.40	tert-Butyl benzene	<5.0	µg/L	5.0	0.33
2,2-Dichloropropane	<6.0	µg/L	6.0	1.6	Tetrachloroethene	<5.0	µg/L	5.0	0.38
2-Butanone	<20	µg/L	20	0.95	Tetrahydrofuran	<20	µg/L	20	1.1
2-Chlorotoluene	<5.0	µg/L	5.0	0.24	Toluene	<5.0	µg/L	5.0	0.30
4-Chlorotoluene	<5.0	µg/L	5.0	0.24	trans-1,2-Dichloroethene	<5.0	µg/L	5.0	0.35
4-Isopropyltoluene	<5.0	µg/L	5.0	0.13	trans-1,3-Dichloropropene	<5.0	µg/L	5.0	0.64
Acetone	<20	µg/L	20	0.63	Trichloroethene	<5.0	µg/L	5.0	0.54
Allyl chloride	<5.0	µg/L	5.0	0.69	Trichlorofluoromethane	<5.0	µg/L	5.0	0.38
Benzene	<5.0	µg/L	5.0	0.25	Vinyl chloride	<5.0	µg/L	5.0	0.48
Bromobenzene	<5.0	µg/L	5.0	0.28	4-Bromofluorobenzene (Surr)	96.9	%	--	--
Bromochloromethane	<5.0	µg/L	5.0	0.70	Dibromofluoromethane (Surr)	101	%	--	--
Bromodichloromethane	<5.0	µg/L	5.0	0.39	Toluene-d8 (Surr)	98.4	%	--	--
Bromoform	<5.0	µg/L	5.0	0.46					
Bromomethane	<5.0	µg/L	5.0	1.3					
Carbon tetrachloride	<5.0	µg/L	5.0	0.52					
Chlorobenzene	<5.0	µg/L	5.0	0.28					
Chloroethane	<5.0	µg/L	5.0	0.49					
Chloroform	<5.0	µg/L	5.0	0.36					
Chloromethane	<5.0	µg/L	5.0	0.23					

Client Name:	Barr Engineering Co.	**Legend Project #:**	2002050207
Client Project Number:	23/66-006DEP200	**Sample #:**	4
Client Project Name:		**Matrix:**	Groundwater
Date Sampled:	05/08/02	**Date Received:**	05/09/02
Client Sample ID:	B5		

VOC GCMS 8260B

Extraction Date: -- **Client ID:** B5

Analysis Method: *8260B*

Analysis Date: 05/13/02

Compound	Sample Results	Units	RL	MDL
1,1,1,2-Tetrachloroethane	<5.0	µg/L	5.0	0.58
1,1,1-Trichloroethane	<5.0	µg/L	5.0	0.45
1,1,2,2-Tetrachloroethane	<5.0	µg/L	5.0	0.32
1,1,2-Trichloroethane	<5.0	µg/L	5.0	0.50
1,1,2-Trichlorotrifluoroethane	<5.0	µg/L	5.0	0.65
1,1-Dichloroethane	<5.0	µg/L	5.0	0.47
1,1-Dichloroethene	<5.0	µg/L	5.0	0.56
1,1-Dichloropropene	<5.0	µg/L	5.0	0.62
1,2,3-Trichlorobenzene	<5.0	µg/L	5.0	0.72
1,2,3-Trichloropropane	<5.0	µg/L	5.0	0.36
1,2,4-Trichlorobenzene	<5.0	µg/L	5.0	0.24
1,2,4-Trimethylbenzene	<5.0	µg/L	5.0	0.37
1,2-Dibromo-3-chloropropane	<5.0	µg/L	5.0	0.82
1,2-Dibromoethane	<5.0	µg/L	5.0	0.35
1,2-Dichlorobenzene	<5.0	µg/L	5.0	0.30
1,2-Dichloroethane	<5.0	µg/L	5.0	0.32
1,2-Dichloropropane	<5.0	µg/L	5.0	0.48
1,3,5-Trimethylbenzene	<5.0	µg/L	5.0	0.38
1,3-Dichlorobenzene	<5.0	µg/L	5.0	0.39
1,3-Dichloropropane	<5.0	µg/L	5.0	0.19
1,4-Dichlorobenzene	<5.0	µg/L	5.0	0.40
2,2-Dichloropropane	<6.0	µg/L	6.0	1.6
2-Butanone	<20	µg/L	20	0.95
2-Chlorotoluene	<5.0	µg/L	5.0	0.24
4-Chlorotoluene	<5.0	µg/L	5.0	0.24
4-Isopropyltoluene	<5.0	µg/L	5.0	0.13
Acetone	<20	µg/L	20	0.63
Allyl chloride	<5.0	µg/L	5.0	0.69
Benzene	<5.0	µg/L	5.0	0.25
Bromobenzene	<5.0	µg/L	5.0	0.28
Bromochloromethane	<5.0	µg/L	5.0	0.70
Bromodichloromethane	<5.0	µg/L	5.0	0.39
Bromoform	<5.0	µg/L	5.0	0.46
Bromomethane	<5.0	µg/L	5.0	1.3
Carbon tetrachloride	<5.0	µg/L	5.0	0.52
Chlorobenzene	<5.0	µg/L	5.0	0.28
Chloroethane	<5.0	µg/L	5.0	0.49
Chloroform	<5.0	µg/L	5.0	0.36
Chloromethane	<5.0	µg/L	5.0	0.23

Compound	Sample Results	Units	RL	MDL
cis-1,2-Dichloroethene	<5.0	µg/L	5.0	0.56
cis-1,3-Dichloropropene	<5.0	µg/L	5.0	0.37
Dibromochloromethane	<5.0	µg/L	5.0	0.46
Dibromomethane	<5.0	µg/L	5.0	0.31
Dichlorodifluoromethane	<5.0	µg/L	5.0	0.62
Dichlorofluoromethane	<5.0	µg/L	5.0	0.38
Ethyl benzene	<5.0	µg/L	5.0	0.14
Ethyl ether	<5.0	µg/L	5.0	0.36
Hexachlorobutadiene	<5.0	µg/L	5.0	0.58
Isopropyl benzene	<5.0	µg/L	5.0	0.22
Methyl isobutyl ketone	<5.0	µg/L	5.0	0.96
Methyl-tert-butyl ether	<5.0	µg/L	5.0	0.43
Methylene chloride	<10	µg/L	10	2.0
n-Butyl benzene	<5.0	µg/L	5.0	0.46
n-Propyl benzene	<5.0	µg/L	5.0	0.24
Naphthalene	<5.0	µg/L	5.0	0.67
o-Xylene	<5.0	µg/L	5.0	0.36
p,m-Xylene	<10	µg/L	10	0.58
sec-Butyl benzene	<5.0	µg/L	5.0	0.37
Styrene	<5.0	µg/L	5.0	0.26
tert-Butyl benzene	<5.0	µg/L	5.0	0.33
Tetrachloroethene	<5.0	µg/L	5.0	0.38
Tetrahydrofuran	<20	µg/L	20	1.1
Toluene	<5.0	µg/L	5.0	0.30
trans-1,2-Dichloroethene	<5.0	µg/L	5.0	0.35
trans-1,3-Dichloropropene	<5.0	µg/L	5.0	0.64
Trichloroethene	<5.0	µg/L	5.0	0.54
Trichlorofluoromethane	<5.0	µg/L	5.0	0.38
Vinyl chloride	<5.0	µg/L	5.0	0.48
4-Bromofluorobenzene (Surr)	96.6	%	--	--
Dibromofluoromethane (Surr)	101	%	--	--
Toluene-d8 (Surr)	96.9	%	--	--

Client Name:	Barr Engineering Co.	**Legend Project #:**	2002050207
Client Project Number:	23/66-006DEP200	**Sample #:**	6
Client Project Name:		**Matrix:**	Groundwater
Date Sampled:	05/08/02	**Date Received:**	05/09/02
Client Sample ID:	W13-BTM		

VOC GCMS 8260B

Extraction Date: –
Analysis Method: 8260B
Analysis Date: 05/13/02
Client ID: W13-BTM

Compound	Sample Results	Units	RL	MDL
1,1,1,2-Tetrachloroethane	<5.0	µg/L	5.0	0.58
1,1,1-Trichloroethane	<5.0	µg/L	5.0	0.45
1,1,2,2-Tetrachloroethane	<5.0	µg/L	5.0	0.32
1,1,2-Trichloroethane	<5.0	µg/L	5.0	0.50
1,1,2-Trichlorotrifluoroethane	<5.0	µg/L	5.0	0.65
1,1-Dichloroethane	<5.0	µg/L	5.0	0.47
1,1-Dichloroethene	<5.0	µg/L	5.0	0.56
1,1-Dichloropropene	<5.0	µg/L	5.0	0.62
1,2,3-Trichlorobenzene	<5.0	µg/L	5.0	0.72
1,2,3-Trichloropropane	<5.0	µg/L	5.0	0.36
1,2,4-Trichlorobenzene	<5.0	µg/L	5.0	0.24
1,2,4-Trimethylbenzene	<5.0	µg/L	5.0	0.37
1,2-Dibromo-3-chloropropane	<5.0	µg/L	5.0	0.82
1,2-Dibromoethane	<5.0	µg/L	5.0	0.35
1,2-Dichlorobenzene	<5.0	µg/L	5.0	0.30
1,2-Dichloroethane	<5.0	µg/L	5.0	0.32
1,2-Dichloropropane	<5.0	µg/L	5.0	0.48
1,3,5-Trimethylbenzene	<5.0	µg/L	5.0	0.38
1,3-Dichlorobenzene	<5.0	µg/L	5.0	0.39
1,3-Dichloropropane	<5.0	µg/L	5.0	0.19
1,4-Dichlorobenzene	<5.0	µg/L	5.0	0.40
2,2-Dichloropropane	<6.0	µg/L	6.0	1.6
2-Butanone	<20	µg/L	20	0.95
2-Chlorotoluene	<5.0	µg/L	5.0	0.24
4-Chlorotoluene	<5.0	µg/L	5.0	0.24
4-Isopropyltoluene	<5.0	µg/L	5.0	0.13
Acetone	<20	µg/L	20	0.63
Allyl chloride	<5.0	µg/L	5.0	0.69
Benzene	<5.0	µg/L	5.0	0.25
Bromobenzene	<5.0	µg/L	5.0	0.28
Bromochloromethane	<5.0	µg/L	5.0	0.70
Bromodichloromethane	<5.0	µg/L	5.0	0.39
Bromoform	<5.0	µg/L	5.0	0.46
Bromomethane	<5.0	µg/L	5.0	1.3
Carbon tetrachloride	<5.0	µg/L	5.0	0.52
Chlorobenzene	<5.0	µg/L	5.0	0.28
Chloroethane	<5.0	µg/L	5.0	0.49
Chloroform	<5.0	µg/L	5.0	0.36
Chloromethane	<5.0	µg/L	5.0	0.23

Compound	Sample Results	Units	RL	MDL
cis-1,2-Dichloroethene	<5.0	µg/L	5.0	0.56
cis-1,3-Dichloropropene	<5.0	µg/L	5.0	0.37
Dibromochloromethane	<5.0	µg/L	5.0	0.46
Dibromomethane	<5.0	µg/L	5.0	0.31
Dichlorodifluoromethane	<5.0	µg/L	5.0	0.62
Dichlorofluoromethane	<5.0	µg/L	5.0	0.38
Ethyl benzene	<5.0	µg/L	5.0	0.14
Ethyl ether	<5.0	µg/L	5.0	0.36
Hexachlorobutadiene	<5.0	µg/L	5.0	0.58
Isopropyl benzene	<5.0	µg/L	5.0	0.22
Methyl isobutyl ketone	<5.0	µg/L	5.0	0.96
Methyl-tert-butyl ether	<5.0	µg/L	5.0	0.43
Methylene chloride	<10	µg/L	10	2.0
n-Butyl benzene	<5.0	µg/L	5.0	0.46
n-Propyl benzene	<5.0	µg/L	5.0	0.24
Naphthalene	<5.0	µg/L	5.0	0.67
o-Xylene	<5.0	µg/L	5.0	0.36
p,m-Xylene	<10	µg/L	10	0.58
sec-Butyl benzene	<5.0	µg/L	5.0	0.37
Styrene	<5.0	µg/L	5.0	0.26
tert-Butyl benzene	<5.0	µg/L	5.0	0.33
Tetrachloroethene	<5.0	µg/L	5.0	0.38
Tetrahydrofuran	<20	µg/L	20	1.1
Toluene	**1.1 J**	µg/L	5.0	0.30
trans-1,2-Dichloroethene	<5.0	µg/L	5.0	0.35
trans-1,3-Dichloropropene	<5.0	µg/L	5.0	0.64
Trichloroethene	**18**	µg/L	5.0	0.54
Trichlorofluoromethane	<5.0	µg/L	5.0	0.38
Vinyl chloride	<5.0	µg/L	5.0	0.48
4-Bromofluorobenzene (Surr)	98.4	%	–	–
Dibromofluoromethane (Surr)	100	%	–	–
Toluene-d8 (Surr)	99.5	%	–	–

J= The parameter was detected between the MDL and the RL.

Client Name:	Barr Engineering Co.	**Legend Project #:**	2002050207
Client Project Number:	23/66-006DEP200	**Sample #:**	8
Client Project Name:		**Matrix:**	Groundwater
Date Sampled:	05/08/02	**Date Received:**	05/09/02
Client Sample ID:	B15		

VOC GCMS 8260B

Extraction Date:	--	**Client ID:**	B15
Analysis Method:	8260B		
Analysis Date:	05/13/02		

Compound	Sample Results	Units	RL	MDL
1,1,1,2-Tetrachloroethane	<5.0	µg/L	5.0	0.58
1,1,1-Trichloroethane	<5.0	µg/L	5.0	0.45
1,1,2,2-Tetrachloroethane	<5.0	µg/L	5.0	0.32
1,1,2-Trichloroethane	<5.0	µg/L	5.0	0.50
1,1,2-Trichlorotrifluoroethane	<5.0	µg/L	5.0	0.65
1,1-Dichloroethane	<5.0	µg/L	5.0	0.47
1,1-Dichloroethene	<5.0	µg/L	5.0	0.56
1,1-Dichloropropene	<5.0	µg/L	5.0	0.62
1,2,3-Trichlorobenzene	<5.0	µg/L	5.0	0.72
1,2,3-Trichloropropane	<5.0	µg/L	5.0	0.36
1,2,4-Trichlorobenzene	<5.0	µg/L	5.0	0.24
1,2,4-Trimethylbenzene	<5.0	µg/L	5.0	0.37
1,2-Dibromo-3-chloropropane	<5.0	µg/L	5.0	0.82
1,2-Dibromoethane	<5.0	µg/L	5.0	0.35
1,2-Dichlorobenzene	<5.0	µg/L	5.0	0.30
1,2-Dichloroethane	<5.0	µg/L	5.0	0.32
1,2-Dichloropropane	<5.0	µg/L	5.0	0.48
1,3,5-Trimethylbenzene	<5.0	µg/L	5.0	0.38
1,3-Dichlorobenzene	<5.0	µg/L	5.0	0.39
1,3-Dichloropropane	<5.0	µg/L	5.0	0.19
1,4-Dichlorobenzene	<5.0	µg/L	5.0	0.40
2,2-Dichloropropane	<6.0	µg/L	6.0	1.6
2-Butanone	<20	µg/L	20	0.95
2-Chlorotoluene	<5.0	µg/L	5.0	0.24
4-Chlorotoluene	<5.0	µg/L	5.0	0.24
4-Isopropyltoluene	<5.0	µg/L	5.0	0.13
Acetone	<20	µg/L	20	0.63
Allyl chloride	<5.0	µg/L	5.0	0.69
Benzene	<5.0	µg/L	5.0	0.25
Bromobenzene	<5.0	µg/L	5.0	0.28
Bromochloromethane	<5.0	µg/L	5.0	0.70
Bromodichloromethane	<5.0	µg/L	5.0	0.39
Bromoform	<5.0	µg/L	5.0	0.46
Bromomethane	<5.0	µg/L	5.0	1.3
Carbon tetrachloride	<5.0	µg/L	5.0	0.52
Chlorobenzene	<5.0	µg/L	5.0	0.28
Chloroethane	<5.0	µg/L	5.0	0.49
Chloroform	<5.0	µg/L	5.0	0.36
Chloromethane	<5.0	µg/L	5.0	0.23

Compound	Sample Results	Units	RL	MDL
cis-1,2-Dichloroethene	<5.0	µg/L	5.0	0.56
cis-1,3-Dichloropropene	<5.0	µg/L	5.0	0.37
Dibromochloromethane	<5.0	µg/L	5.0	0.46
Dibromomethane	<5.0	µg/L	5.0	0.31
Dichlorodifluoromethane	<5.0	µg/L	5.0	0.62
Dichlorofluoromethane	<5.0	µg/L	5.0	0.38
Ethyl benzene	<5.0	µg/L	5.0	0.14
Ethyl ether	<5.0	µg/L	5.0	0.36
Hexachlorobutadiene	<5.0	µg/L	5.0	0.58
Isopropyl benzene	<5.0	µg/L	5.0	0.22
Methyl isobutyl ketone	<5.0	µg/L	5.0	0.96
Methyl-tert-butyl ether	<5.0	µg/L	5.0	0.43
Methylene chloride	<10	µg/L	10	2.0
n-Butyl benzene	<5.0	µg/L	5.0	0.46
n-Propyl benzene	<5.0	µg/L	5.0	0.24
Naphthalene	<5.0	µg/L	5.0	0.67
o-Xylene	<5.0	µg/L	5.0	0.36
p,m-Xylene	<10	µg/L	10	0.58
sec-Butyl benzene	<5.0	µg/L	5.0	0.37
Styrene	<5.0	µg/L	5.0	0.26
tert-Butyl benzene	<5.0	µg/L	5.0	0.33
Tetrachloroethene	<5.0	µg/L	5.0	0.38
Tetrahydrofuran	<20	µg/L	20	1.1
Toluene	<5.0	µg/L	5.0	0.30
trans-1,2-Dichloroethene	<5.0	µg/L	5.0	0.35
trans-1,3-Dichloropropene	<5.0	µg/L	5.0	0.64
Trichloroethene	**2.4 J**	µg/L	5.0	0.54
Trichlorofluoromethane	<5.0	µg/L	5.0	0.38
Vinyl chloride	<5.0	µg/L	5.0	0.48
4-Bromofluorobenzene (Surr)	96.6	%	--	--
Dibromofluoromethane (Surr)	101	%	--	--
Toluene-d8 (Surr)	98.7	%	--	--

J= The parameter was detected between the MDL and the RL.

Client Name:	Barr Engineering Co.	**Legend Project #:**	2002050207
Client Project Number:	23/66-006DEP200	**Sample #:**	10
Client Project Name:		**Matrix:**	Groundwater
Date Sampled:	05/08/02	**Date Received:**	05/09/02
Client Sample ID:	PW17		

VOC GCMS 8260B

Extraction Date: –
Analysis Method: 8260B
Analysis Date: 05/14/02
Client ID: PW17

Compound	Sample Results	Units	RL	MDL
1,1,1,2-Tetrachloroethane	<5.0	µg/L	5.0	0.58
1,1,1-Trichloroethane	<5.0	µg/L	5.0	0.45
1,1,2,2-Tetrachloroethane	<5.0	µg/L	5.0	0.32
1,1,2-Trichloroethane	<5.0	µg/L	5.0	0.50
1,1,2-Trichlorotrifluoroethane	<5.0	µg/L	5.0	0.65
1,1-Dichloroethane	<5.0	µg/L	5.0	0.47
1,1-Dichloroethene	<5.0	µg/L	5.0	0.56
1,1-Dichloropropene	<5.0	µg/L	5.0	0.62
1,2,3-Trichlorobenzene	<5.0	µg/L	5.0	0.72
1,2,3-Trichloropropane	<5.0	µg/L	5.0	0.36
1,2,4-Trichlorobenzene	<5.0	µg/L	5.0	0.24
1,2,4-Trimethylbenzene	<5.0	µg/L	5.0	0.37
1,2-Dibromo-3-chloropropane	<5.0	µg/L	5.0	0.82
1,2-Dibromoethane	<5.0	µg/L	5.0	0.35
1,2-Dichlorobenzene	<5.0	µg/L	5.0	0.30
1,2-Dichloroethane	<5.0	µg/L	5.0	0.32
1,2-Dichloropropane	<5.0	µg/L	5.0	0.48
1,3,5-Trimethylbenzene	<5.0	µg/L	5.0	0.38
1,3-Dichlorobenzene	<5.0	µg/L	5.0	0.39
1,3-Dichloropropane	<5.0	µg/L	5.0	0.19
1,4-Dichlorobenzene	<5.0	µg/L	5.0	0.40
2,2-Dichloropropane	<6.0	µg/L	6.0	1.6
2-Butanone	<20	µg/L	20	0.95
2-Chlorotoluene	<5.0	µg/L	5.0	0.24
4-Chlorotoluene	<5.0	µg/L	5.0	0.24
4-Isopropyltoluene	<5.0	µg/L	5.0	0.13
Acetone	<20	µg/L	20	0.63
Allyl chloride	<5.0	µg/L	5.0	0.69
Benzene	<5.0	µg/L	5.0	0.25
Bromobenzene	<5.0	µg/L	5.0	0.28
Bromochloromethane	<5.0	µg/L	5.0	0.70
Bromodichloromethane	<5.0	µg/L	5.0	0.39
Bromoform	<5.0	µg/L	5.0	0.46
Bromomethane	<5.0	µg/L	5.0	1.3
Carbon tetrachloride	<5.0	µg/L	5.0	0.52
Chlorobenzene	<5.0	µg/L	5.0	0.28
Chloroethane	<5.0	µg/L	5.0	0.49
Chloroform	<5.0	µg/L	5.0	0.36
Chloromethane	<5.0	µg/L	5.0	0.23

Compound	Sample Results	Units	RL	MDL
cis-1,2-Dichloroethene	<5.0	µg/L	5.0	0.56
cis-1,3-Dichloropropene	<5.0	µg/L	5.0	0.37
Dibromochloromethane	<5.0	µg/L	5.0	0.46
Dibromomethane	<5.0	µg/L	5.0	0.31
Dichlorodifluoromethane	<5.0	µg/L	5.0	0.62
Dichlorofluoromethane	<5.0	µg/L	5.0	0.38
Ethyl benzene	<5.0	µg/L	5.0	0.14
Ethyl ether	<5.0	µg/L	5.0	0.36
Hexachlorobutadiene	<5.0	µg/L	5.0	0.58
Isopropyl benzene	<5.0	µg/L	5.0	0.22
Methyl isobutyl ketone	<5.0	µg/L	5.0	0.96
Methyl-tert-butyl ether	<5.0	µg/L	5.0	0.43
Methylene chloride	<10	µg/L	10	2.0
n-Butyl benzene	<5.0	µg/L	5.0	0.46
n-Propyl benzene	<5.0	µg/L	5.0	0.24
Naphthalene	<5.0	µg/L	5.0	0.67
o-Xylene	<5.0	µg/L	5.0	0.36
p,m-Xylene	<10	µg/L	10	0.58
sec-Butyl benzene	<5.0	µg/L	5.0	0.37
Styrene	<5.0	µg/L	5.0	0.26
tert-Butyl benzene	<5.0	µg/L	5.0	0.33
Tetrachloroethene	<5.0	µg/L	5.0	0.38
Tetrahydrofuran	<20	µg/L	20	1.1
Toluene	<5.0	µg/L	5.0	0.30
trans-1,2-Dichloroethene	<5.0	µg/L	5.0	0.35
trans-1,3-Dichloropropene	<5.0	µg/L	5.0	0.64
Trichloroethene	**3.3 J**	µg/L	5.0	0.54
Trichlorofluoromethane	<5.0	µg/L	5.0	0.38
Vinyl chloride	<5.0	µg/L	5.0	0.48
4-Bromofluorobenzene (Surr)	97.5	%	--	--
Dibromofluoromethane (Surr)	95.2	%	--	--
Toluene-d8 (Surr)	100	%	--	--

J= The parameter was detected between the MDL and the RL.

Client Name:	Barr Engineering Co.	**Legend Project #:**	2002050207
Client Project Number:	23/66-006DEP200	**Sample #:**	12
Client Project Name:		**Matrix:**	Groundwater
Date Sampled:	05/08/02	**Date Received:**	05/09/02
Client Sample ID:	OF-1		

VOC GCMS 8260B

Extraction Date:	--	**Client ID:**	OF-1
Analysis Method:	8260B		
Analysis Date:	05/14/02		

Compound	Sample Results	Units	RL	MDL
1,1,1,2-Tetrachloroethane	<5.0	µg/L	5.0	0.58
1,1,1-Trichloroethane	<5.0	µg/L	5.0	0.45
1,1,2,2-Tetrachloroethane	<5.0	µg/L	5.0	0.32
1,1,2-Trichloroethane	<5.0	µg/L	5.0	0.50
1,1,2-Trichlorotrifluoroethane	<5.0	µg/L	5.0	0.65
1,1-Dichloroethane	<5.0	µg/L	5.0	0.47
1,1-Dichloroethene	<5.0	µg/L	5.0	0.56
1,1-Dichloropropene	<5.0	µg/L	5.0	0.62
1,2,3-Trichlorobenzene	<5.0	µg/L	5.0	0.72
1,2,3-Trichloropropane	<5.0	µg/L	5.0	0.36
1,2,4-Trichlorobenzene	<5.0	µg/L	5.0	0.24
1,2,4-Trimethylbenzene	<5.0	µg/L	5.0	0.37
1,2-Dibromo-3-chloropropane	<5.0	µg/L	5.0	0.82
1,2-Dibromoethane	<5.0	µg/L	5.0	0.35
1,2-Dichlorobenzene	<5.0	µg/L	5.0	0.30
1,2-Dichloroethane	<5.0	µg/L	5.0	0.32
1,2-Dichloropropane	<5.0	µg/L	5.0	0.48
1,3,5-Trimethylbenzene	<5.0	µg/L	5.0	0.38
1,3-Dichlorobenzene	<5.0	µg/L	5.0	0.39
1,3-Dichloropropane	<5.0	µg/L	5.0	0.19
1,4-Dichlorobenzene	<5.0	µg/L	5.0	0.40
2,2-Dichloropropane	<6.0	µg/L	6.0	1.6
2-Butanone	<20	µg/L	20	0.95
2-Chlorotoluene	<5.0	µg/L	5.0	0.24
4-Chlorotoluene	<5.0	µg/L	5.0	0.24
4-Isopropyltoluene	<5.0	µg/L	5.0	0.13
Acetone	<20	µg/L	20	0.63
Allyl chloride	<5.0	µg/L	5.0	0.69
Benzene	<5.0	µg/L	5.0	0.25
Bromobenzene	<5.0	µg/L	5.0	0.28
Bromochloromethane	<5.0	µg/L	5.0	0.70
Bromodichloromethane	<5.0	µg/L	5.0	0.39
Bromoform	<5.0	µg/L	5.0	0.46
Bromomethane	<5.0	µg/L	5.0	1.3
Carbon tetrachloride	<5.0	µg/L	5.0	0.52
Chlorobenzene	<5.0	µg/L	5.0	0.28
Chloroethane	<5.0	µg/L	5.0	0.49
Chloroform	<5.0	µg/L	5.0	0.36
Chloromethane	<5.0	µg/L	5.0	0.23

Compound	Sample Results	Units	RL	MDL
cis-1,2-Dichloroethene	<5.0	µg/L	5.0	0.56
cis-1,3-Dichloropropene	<5.0	µg/L	5.0	0.37
Dibromochloromethane	<5.0	µg/L	5.0	0.46
Dibromomethane	<5.0	µg/L	5.0	0.31
Dichlorodifluoromethane	<5.0	µg/L	5.0	0.62
Dichlorofluoromethane	<5.0	µg/L	5.0	0.38
Ethyl benzene	<5.0	µg/L	5.0	0.14
Ethyl ether	<5.0	µg/L	5.0	0.36
Hexachlorobutadiene	<5.0	µg/L	5.0	0.58
Isopropyl benzene	<5.0	µg/L	5.0	0.22
Methyl isobutyl ketone	<5.0	µg/L	5.0	0.96
Methyl-tert-butyl ether	<5.0	µg/L	5.0	0.43
Methylene chloride	<10	µg/L	10	2.0
n-Butyl benzene	<5.0	µg/L	5.0	0.46
n-Propyl benzene	<5.0	µg/L	5.0	0.24
Naphthalene	<5.0	µg/L	5.0	0.67
o-Xylene	<5.0	µg/L	5.0	0.36
p,m-Xylene	<10	µg/L	10	0.58
sec-Butyl benzene	<5.0	µg/L	5.0	0.37
Styrene	<5.0	µg/L	5.0	0.26
tert-Butyl benzene	<5.0	µg/L	5.0	0.33
Tetrachloroethene	<5.0	µg/L	5.0	0.38
Tetrahydrofuran	<20	µg/L	20	1.1
Toluene	<5.0	µg/L	5.0	0.30
trans-1,2-Dichloroethene	<5.0	µg/L	5.0	0.35
trans-1,3-Dichloropropene	<5.0	µg/L	5.0	0.64
Trichloroethene	<5.0	µg/L	5.0	0.54
Trichlorofluoromethane	<5.0	µg/L	5.0	0.38
Vinyl chloride	<5.0	µg/L	5.0	0.48
4-Bromofluorobenzene (Surr)	98.9	%	--	--
Dibromofluoromethane (Surr)	97.8	%	--	--
Toluene-d8 (Surr)	98.5	%	--	--

Client Name:	Barr Engineering Co.	**Legend Project #:**	2002050207
Client Project Number:	23/66-006DEP200	**Sample #:**	14
Client Project Name:		**Matrix:**	Groundwater
Date Sampled:	05/08/02	**Date Received:**	05/09/02
Client Sample ID:	Method Blank		

VOC GCMS 8260B

Extraction Date: –

Client ID: Blank

Analysis Method: 8260B

Analysis Date: 05/13/02

Compound	Sample Results	Units	RL	MDL
1,1,1,2-Tetrachloroethane	<5.0	µg/L	5.0	0.58
1,1,1-Trichloroethane	<5.0	µg/L	5.0	0.45
1,1,2,2-Tetrachloroethane	<5.0	µg/L	5.0	0.32
1,1,2-Trichloroethane	<5.0	µg/L	5.0	0.50
1,1,2-Trichlorotrifluoroethane	<5.0	µg/L	5.0	0.65
1,1-Dichloroethane	<5.0	µg/L	5.0	0.47
1,1-Dichloroethene	<5.0	µg/L	5.0	0.56
1,1-Dichloropropene	<5.0	µg/L	5.0	0.62
1,2,3-Trichlorobenzene	<5.0	µg/L	5.0	0.72
1,2,3-Trichloropropane	<5.0	µg/L	5.0	0.36
1,2,4-Trichlorobenzene	<5.0	µg/L	5.0	0.24
1,2,4-Trimethylbenzene	<5.0	µg/L	5.0	0.37
1,2-Dibromo-3-chloropropane	<5.0	µg/L	5.0	0.82
1,2-Dibromoethane	<5.0	µg/L	5.0	0.35
1,2-Dichlorobenzene	<5.0	µg/L	5.0	0.30
1,2-Dichloroethane	<5.0	µg/L	5.0	0.32
1,2-Dichloropropane	<5.0	µg/L	5.0	0.48
1,3,5-Trimethylbenzene	<5.0	µg/L	5.0	0.38
1,3-Dichlorobenzene	<5.0	µg/L	5.0	0.39
1,3-Dichloropropane	<5.0	µg/L	5.0	0.19
1,4-Dichlorobenzene	<5.0	µg/L	5.0	0.40
2,2-Dichloropropane	<6.0	µg/L	6.0	1.6
2-Butanone	<20	µg/L	20	0.95
2-Chlorotoluene	<5.0	µg/L	5.0	0.24
4-Chlorotoluene	<5.0	µg/L	5.0	0.24
4-Isopropyltoluene	<5.0	µg/L	5.0	0.13
Acetone	<20	µg/L	20	0.63
Allyl chloride	<5.0	µg/L	5.0	0.69
Benzene	<5.0	µg/L	5.0	0.25
Bromobenzene	<5.0	µg/L	5.0	0.28
Bromochloromethane	<5.0	µg/L	5.0	0.70
Bromodichloromethane	<5.0	µg/L	5.0	0.39
Bromoform	<5.0	µg/L	5.0	0.46
Bromomethane	<5.0	µg/L	5.0	1.3
Carbon tetrachloride	<5.0	µg/L	5.0	0.52
Chlorobenzene	<5.0	µg/L	5.0	0.28
Chloroethane	<5.0	µg/L	5.0	0.49
Chloroform	<5.0	µg/L	5.0	0.36
Chloromethane	<5.0	µg/L	5.0	0.23

Compound	Sample Results	Units	RL	MDL
cis-1,2-Dichloroethene	<5.0	µg/L	5.0	0.56
cis-1,3-Dichloropropene	<5.0	µg/L	5.0	0.37
Dibromochloromethane	<5.0	µg/L	5.0	0.46
Dibromomethane	<5.0	µg/L	5.0	0.31
Dichlorodifluoromethane	<5.0	µg/L	5.0	0.62
Dichlorofluoromethane	<5.0	µg/L	5.0	0.38
Ethyl benzene	<5.0	µg/L	5.0	0.14
Ethyl ether	<5.0	µg/L	5.0	0.36
Hexachlorobutadiene	<5.0	µg/L	5.0	0.58
Isopropyl benzene	<5.0	µg/L	5.0	0.22
Methyl isobutyl ketone	<5.0	µg/L	5.0	0.96
Methyl-tert-butyl ether	<5.0	µg/L	5.0	0.43
Methylene chloride	<10	µg/L	10	2.0
n-Butyl benzene	<5.0	µg/L	5.0	0.46
n-Propyl benzene	<5.0	µg/L	5.0	0.24
Naphthalene	<5.0	µg/L	5.0	0.67
o-Xylene	<5.0	µg/L	5.0	0.36
p,m-Xylene	<10	µg/L	10	0.58
sec-Butyl benzene	<5.0	µg/L	5.0	0.37
Styrene	<5.0	µg/L	5.0	0.26
tert-Butyl benzene	<5.0	µg/L	5.0	0.33
Tetrachloroethene	<5.0	µg/L	5.0	0.38
Tetrahydrofuran	<20	µg/L	20	1.1
Toluene	<5.0	µg/L	5.0	0.30
trans-1,2-Dichloroethene	<5.0	µg/L	5.0	0.35
trans-1,3-Dichloropropene	<5.0	µg/L	5.0	0.64
Trichloroethene	<5.0	µg/L	5.0	0.54
Trichlorofluoromethane	<5.0	µg/L	5.0	0.38
Vinyl chloride	<5.0	µg/L	5.0	0.48
4-Bromofluorobenzene (Surr)	104	%	–	–
Dibromofluoromethane (Surr)	105	%	–	–
Toluene-d8 (Surr)	104	%	–	–