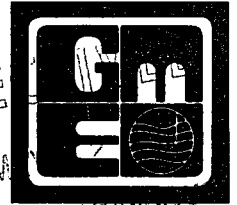


# GME CONSULTANTS, INC.

CONSULTING ENGINEERS

Lake Shore Drive / P.O. Box 250  
Crosby, MN 56441 / (218) 546-6371



May 8, 1995

RECEIVED  
MPCA HAZARDOUS  
WASTE DIVISION

MAY 12 1995  
MPCA, HAZARDOUS  
WASTE DIVISION

Mr. Mark Koplitz  
Minnesota Pollution Control Agency  
Hazardous Waste Division  
Tanks and Spills Section  
520 Lafayette Road North  
St. Paul, Minnesota 55155

GME Project No. C-2373-B

RE: Quarterly Monitoring Report Submittal for the Dittmer Oil  
Company site in Fairfax, Minnesota (Leaksite #00001940)

Dear Mr. Koplitz:

On behalf of Dittmer Oil Company, enclosed is a copy of the completed Site Monitoring Worksheet which summarizes the results of the most recent groundwater sampling round (February 15, 1995) conducted at the site. We recommend that: the existing Co-op well be abandoned and an alternate water supply be provided; the Bommel Residence well be sampled; and, semi-annual monitoring of the on-site wells be completed as recommended in the MPCA's March 17, 1995 letter. We anticipate conducting groundwater sampling rounds in June and December of 1995 and 1996. Please review this submittal as soon as possible.

Please contact us at 218-546-6371, if you have any questions.

Sincerely,

GME CONSULTANTS, INC.

Jay P. Brekke, E.I.T.  
Geological Engineer  
Project Manager

Mark D. Millsop  
Senior Hydrogeologist  
Corporate Environmental Division Manager

c: Mr. Bob Dittmer  
Dittmer Oil Company  
600 East Lincoln Ave.  
Fairfax, Minnesota 55332

WILLIAM C. KWASNY, P.E.  
GREGORY R. REUTER, P.E.  
MARK D. MILLSOP

THOMAS PAUL VENEMA, P.E.  
WYATT A. GUTZKE, P.E.  
SANDRA J. FORREST

WILLIAM E. BLOEMENDAL, P.E.  
MERVYN MINDESS, P.E.  
STEVEN J. RUESINK, P.E.

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

**RECEIVED**  
MAY 12 1995  
MPCA, HAZARDOUS  
WASTE DIVISION

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 the CAD is operational, along with the "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: 1109

**I. Ground Water Monitoring**

Please attach the following:

- X   Cumulative table of ground water monitoring results, including all sample blanks. (Table 2)
- X   Copies of most recent laboratory reports for ground water analyses, including a copy of the Chain of Custody.
- X   Cumulative table of ground water elevation and product thickness results. (Table 1)
- X   Hydrograph for all monitoring and recovery wells. (Figure 3)
- X   Graph(s) showing contaminant concentrations over time for all monitoring and recovery wells. (Figures 4 through 6)
- X   Ground water contour map based on the most recent ground water elevation data. (Figure 2)
- 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.

## III. Recommendations

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

Semi-annual monitoring as requested in the March 27, 1995 MPCA letter.

Upon request, this document can be made available in other formats, including Braille, large print and audio tape. TDD users, call the Minnesota State Relay Service, 612-297-5353 or Greater Minnesota TDD 1-800-627-3529.

**TABLE 1  
GROUNDWATER ELEVATION SUMMARY  
DITTMER OIL COMPANY  
GME PROJECT NO. C-2373-B**

Measurement Date	Groundwater Elevations (Site Datum)								
	Well MW1	Well MW2	Well MW3	Well MW4	Well MW5	Well MW6	Well MW7	Well MW8	Well MW9
12-06-91	91.98	92.87	93.31						
01-21-92	91.41	93.51	92.45						
06-03-93	93.30	94.00	94.41	92.92	93.25	92.33			
06-17-93	93.65	96.00	96.61	93.91	93.95	94.04			
07-15-93	92.84	93.03	94.86	92.53	93.16	92.22			
08-04-93	92.63	94.57	94.61	92.50	93.20	92.21	93.58		
08-17-93	92.60	94.49	94.40	92.52	92.78	92.22	93.14	75.61*	
05-17-94	92.72	93.45	94.76	92.56	92.90	92.27	92.86	89.23	90.54
06-17-94	92.51	93.11	94.38	92.46	92.75	92.15	92.60	81.93*	90.80
02-15-95	89.68	90.99	91.19	89.57	89.92	89.73	90.35	89.10	88.32

Measurement Date	Groundwater Elevations (Site Datum)	
	TCT Well	Co-op Well
07-15-93	93.43	
08-04-93	93.42	
08-17-93	93.48	
05-17-94		53.29

**Note:** Elevations referenced to concrete slab in doorway at northeast entrance to main building (cafe entrance).  
\*Water level likely not stabilized.

**TABLE 2**  
**GROUNDWATER CHEMISTRY RESULTS**  
**DITTMER OIL COMPANY**  
**GME PROJECT NO. C-2373-B**

Sampling Date	Parameter Analyzed							
	GRO (ppb)	DRO (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-Benzene (ppb)	Total Xylenes (ppb)	MTBE (ppb)	Dissolved Lead (ppb)
<b>Well MW1</b>								
12-06-91	29000*	20000**	7300	3700	ND	3000	ND	ND
01-21-92	27000*	8500**	6700	1700	120	2500	68	ND
06-03-93	ND	ND	ND	ND	ND	ND	ND	3
06-17-93	ND	ND	ND	ND	ND	ND	7.8	4
08-03-93	ND	ND	ND	ND	ND	ND	12.0	2.9
08-18-93	NS	NS	NS	NS	NS	NS	NS	NS
05-17-94	ND	ND	ND	1.5	ND	ND	NA	ND
05-18-94	NS	NS	NS	NS	NS	NS	NS	NS
06-17-94	NS	NS	NS	NS	NS	NS	NS	NS
02-15-95	NS	NS	NS	NS	NS	NS	NS	NS
<b>Well MW2</b>								
12-06-91	ND*	ND**	ND	ND	ND	ND	25	ND
01-21-92	ND*	ND**	ND	ND	ND	ND	26	ND
06-03-93	35100	6600	11300	6930	363	2830	2620	3
06-17-93	55400	4900	7890	6180	473	3950	21.6	8
08-03-93	41100	2100	1390	1040	386	1540	794	4.5
08-18-93	NS	NS	NS	NS	NS	NS	NS	NS
05-17-94	38900	1700	15200	6610	710	3510	NA	2
05-18-94	NS	NS	NS	NS	NS	NS	NS	NS
06-17-94	NS	NS	NS	NS	NS	NS	NS	NS
02-15-95	22100	NA	5730	1320	541	2010	ND***	NA

**TABLE 2 (Continued)**  
**GROUNDWATER CHEMISTRY RESULTS**  
**DITTMER OIL COMPANY**  
**GME PROJECT NO. C-2373-B**

Sampling Date	Parameter Analyzed							
	GRO (ppb)	DRO (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-Benzene (ppb)	Total Xylenes (ppb)	MTBE (ppb)	Dissolved Lead (ppb)
<b>Well MW3</b>								
12-06-91	ND*	ND**	ND	ND	ND	ND	8.2	ND
01-21-92	ND*	ND**	ND	ND	ND	ND	8.6	ND
06-03-93	ND	ND	1.8	ND	ND	ND	ND	4
06-17-93	ND	ND	ND	ND	ND	ND	10.3	5
08-03-93	ND	ND	ND	ND	ND	ND	6.2	1.5
08-18-93	NS	NS	NS	NS	NS	NS	NS	NS
05-17-94	ND	NA	ND	1.2	ND	5.8	NA	ND
05-18-94	NS	NS	NS	NS	NS	NS	NS	NS
06-17-94	NS	NS	NS	NS	NS	NS	NS	NS
02-15-95	NS	NS	NS	NS	NS	NS	NS	NS
<b>Well MW4</b>								
12-06-91	NI	NI	NI	NI	NI	NI	NI	NI
01-21-92	NI	NI	NI	NI	NI	NI	NI	NI
06-03-93	11900	1100	99.6	182	37.1	309	5.3	7
06-17-93	700	1800	37.8	29.2	8.2	154	5.9	4
08-03-93	16000	1300	78.3	150.2	31.8	425	1281	3.2
08-18-93	NS	NS	NS	NS	NS	NS	NS	NS
05-17-94	8500	600	259	156	37.0	303	NA	ND
05-18-94	6000	400	185	88.9	23.0	203	NA	ND
06-17-94	7000	NA	214	28	26	27	3074	NA
02-15-95	4720	NA	172	18.9	14.1	60.2	11.0	NA



**TABLE 2 (Continued)**  
**GROUNDWATER CHEMISTRY RESULTS**  
**DITTMER OIL COMPANY**  
**GME PROJECT NO. C-2373-B**

Sampling Date	Parameter Analyzed							
	GRO (ppb)	DRO (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-Benzene (ppb)	Total Xylenes (ppb)	MTBE (ppb)	Dissolved Lead (ppb)
<b>Well MW7</b>								
12-06-91	NI	NI	NI	NI	NI	NI	NI	NI
01-21-92	NI	NI	NI	NI	NI	NI	NI	NI
06-03-93	NI	NI	NI	NI	NI	NI	NI	NI
06-17-93	NI	NI	NI	NI	NI	NI	NI	NI
08-03-93	28900	2300	74.9	62.2	556	608	4770	2.4
08-18-93	NS	NS	NS	NS	NS	NS	NS	NS
05-17-94	14500	1300	422	89.3	379	370	NA	1
05-18-94	NS	NS	NS	NS	NS	NS	NS	NS
06-17-94	NS	NS	NS	NS	NS	NS	NS	NS
02-15-95	6560	NA	176	23.1	139	133	ND	NA
<b>Well MW8</b>								
12-06-91	NI	NI	NI	NI	NI	NI	NI	NI
01-21-92	NI	NI	NI	NI	NI	NI	NI	NI
06-03-93	NI	NI	NI	NI	NI	NI	NI	NI
06-17-93	NI	NI	NI	NI	NI	NI	NI	NI
08-03-93	ND	ND	2.9	2.8	ND	ND	9.4	7
08-18-93	ND	ND	ND	ND	ND	ND	ND	11
05-17-94	NS	NS	NS	NS	NS	NS	NS	NS
05-18-94	ND	NA	ND	ND	ND	ND	NA	ND
06-17-94	ND	NA	ND	ND	ND	ND	ND	NA
02-15-95	ND	NA	ND	ND	ND	ND	ND	NA





**TABLE 2 (Continued)**  
**GROUNDWATER CHEMISTRY RESULTS**  
**DITTMER OIL COMPANY**  
**GME PROJECT NO. C-2373-B**



Sampling Date	GRO (ppb)	DRO (ppb)	Benzene (ppb)	Parameter Analyzed			Total Xylenes (ppb)	MTBE (ppb)	Dissolved Lead (ppb)
				Toluene (ppb)	Ethyl-Benzene (ppb)				
<b>TCT Well</b>									
08-03-93	1200	2700	ND	5.5	ND		5.4	ND	2.3
<b>B7-WS (Temporary Well)</b>									
05-20-93	960	ND	Masked	19.0	5.83		18.6	155	2
<b>B12-WS (Temporary Well)</b>									
08-03-93*	ND	ND	ND	ND	ND		ND	ND	ND

**Definitions:**

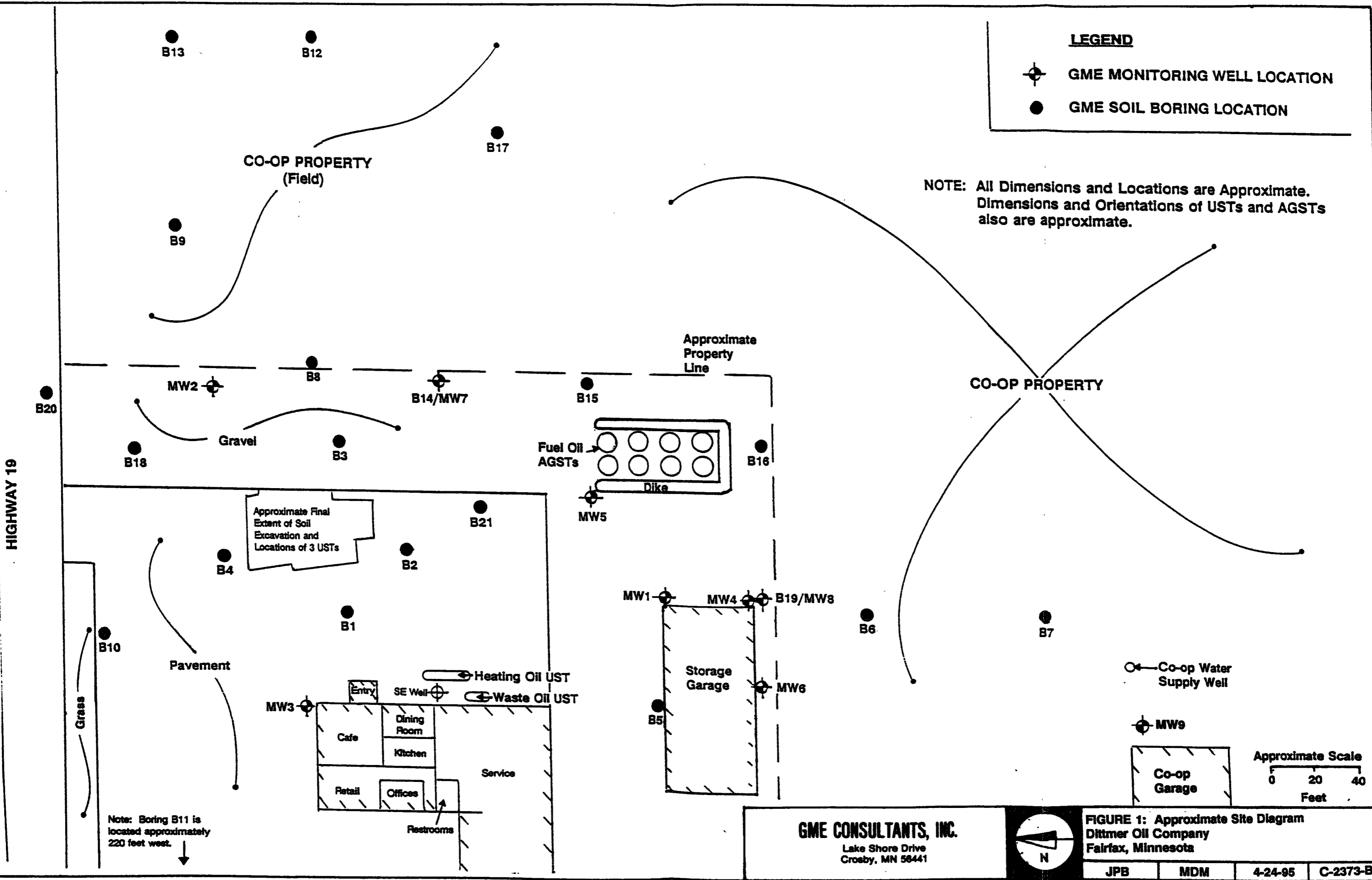
GRO = Gasoline Range Organics                      DRO = Diesel Range Organics  
MTBE = methyl tertiary butyl ether                ND = No Detection  
NI = Not Installed                                      NS = Not Sampled  
\* = Total Petroleum Hydrocarbons as Gasoline  
\*\* = Total Petroleum Hydrocarbons as Fuel Oil  
\*\*\* = Elevated laboratory detection limit due to sample dilution

**Notes:**    Samples collected on 8-3, 8-4 or 8-5-93 are listed as sampling date "08-03-93"; samples collected on 5-18 or 5-19-93 are listed as sampling date "05-18-93".  
Sample results for wells MW1 and MW2 may have been "switched" during 12-06-91 and 01-21-92 sampling rounds.

**LEGEND**

-  GME MONITORING WELL LOCATION
-  GME SOIL BORING LOCATION

NOTE: All Dimensions and Locations are Approximate. Dimensions and Orientations of USTs and AGSTs also are approximate.



Note: Boring B11 is located approximately 220 feet west.

**GME CONSULTANTS, INC.**



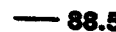

Lake Shore Drive  
Crosby, MN 56441

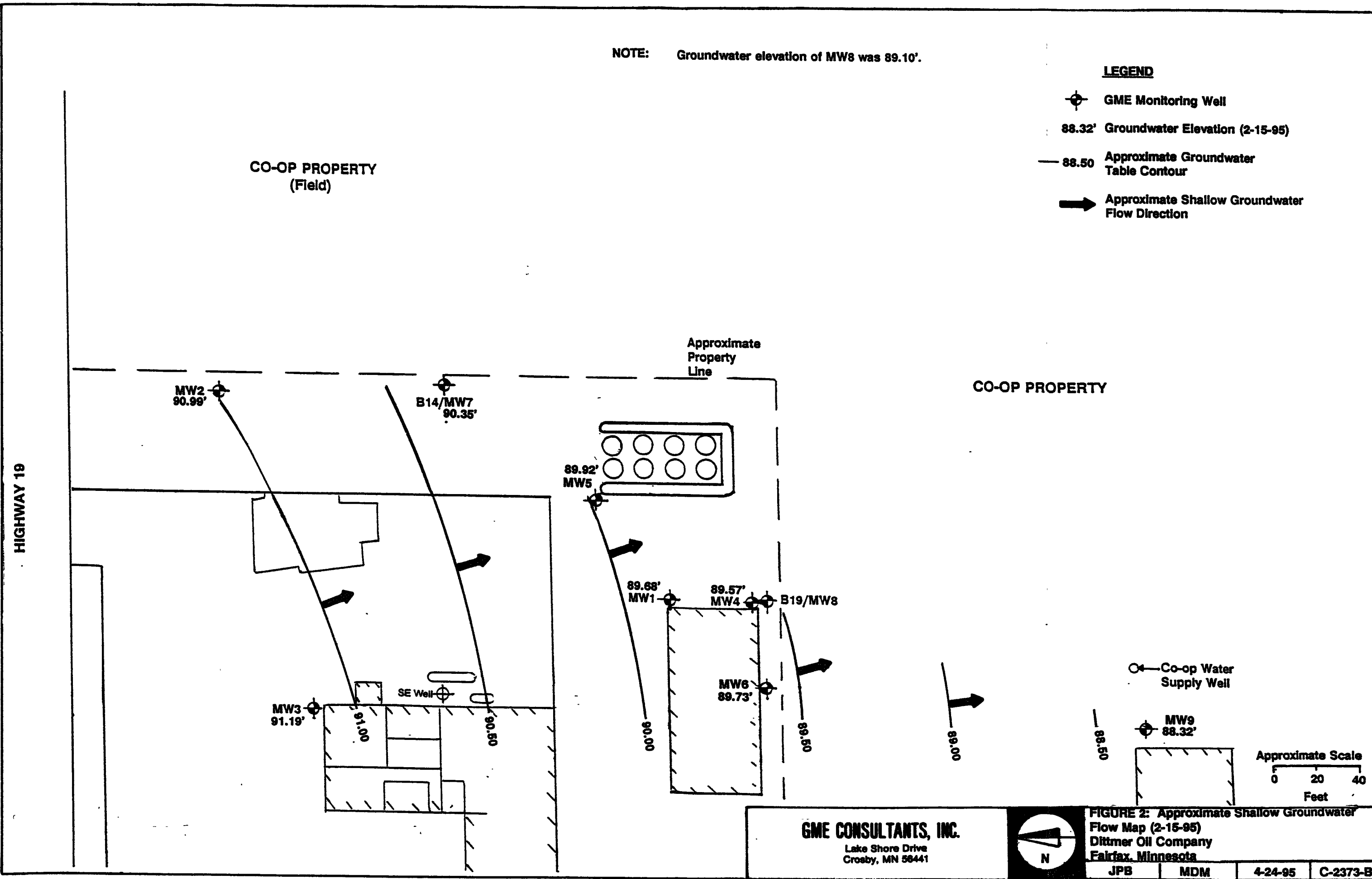


**FIGURE 1: Approximate Site Diagram**  
Dittmer Oil Company  
Fairfax, Minnesota

NOTE: Groundwater elevation of MW8 was 89.10'.

**LEGEND**

-  GME Monitoring Well
-  88.32' Groundwater Elevation (2-15-95)
-  88.50 Approximate Groundwater Table Contour
-  Approximate Shallow Groundwater Flow Direction

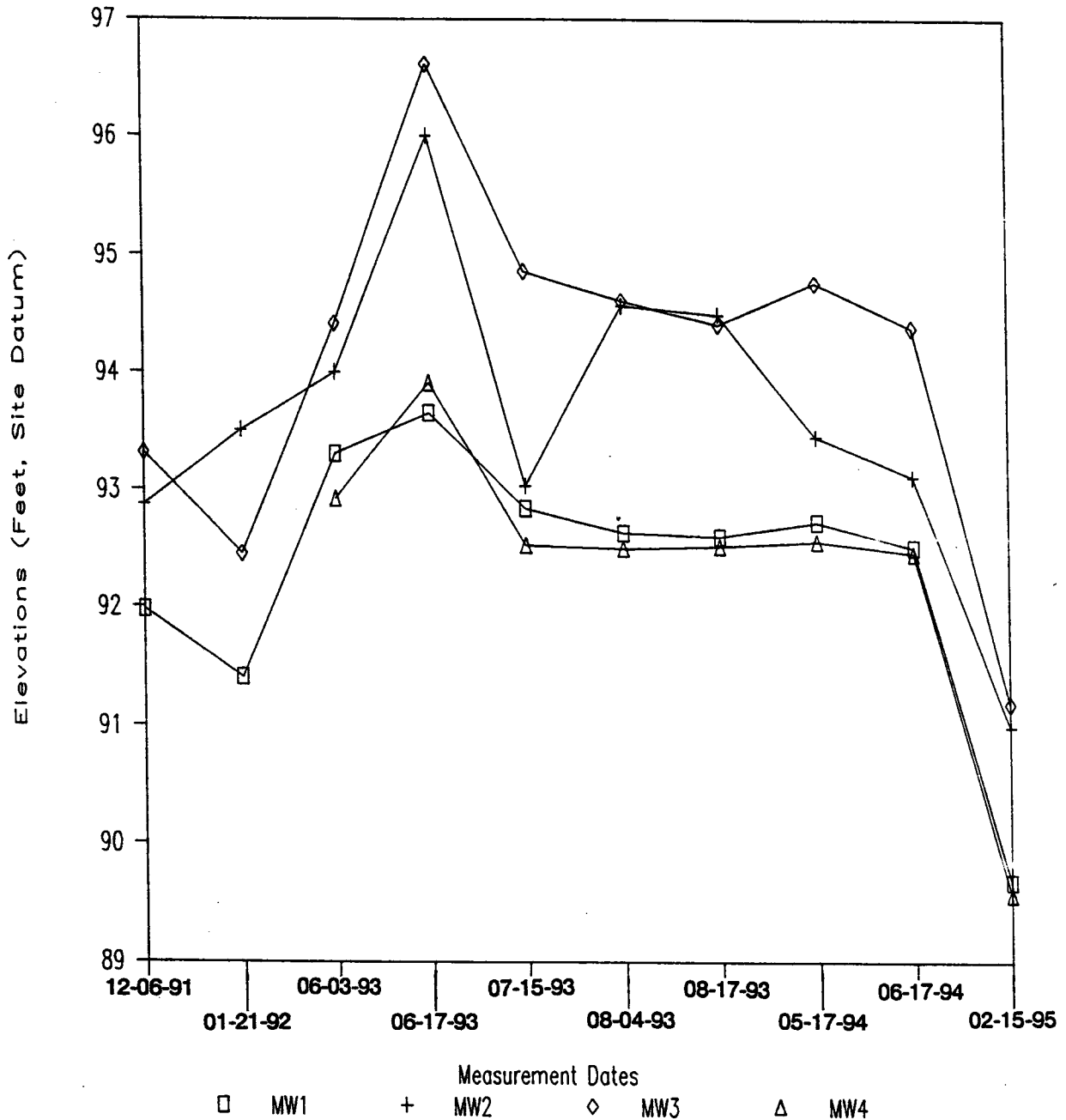


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Lake Shore Drive  
Crosby, MN 56441



**FIGURE 2: Approximate Shallow Groundwater Flow Map (2-15-95)**  
Dittmer Oil Company  
Fairfax, Minnesota

# DITTMER OIL COMPANY GROUNDWATER ELEVATION SUMMARY



**GME CONSULTANTS, INC.**  
Lake Shore Drive  
Crosby, MN 56441

**FIGURE 3: Hydrograph**  
Dittmer Oil Company  
Fairfax, Minnesota

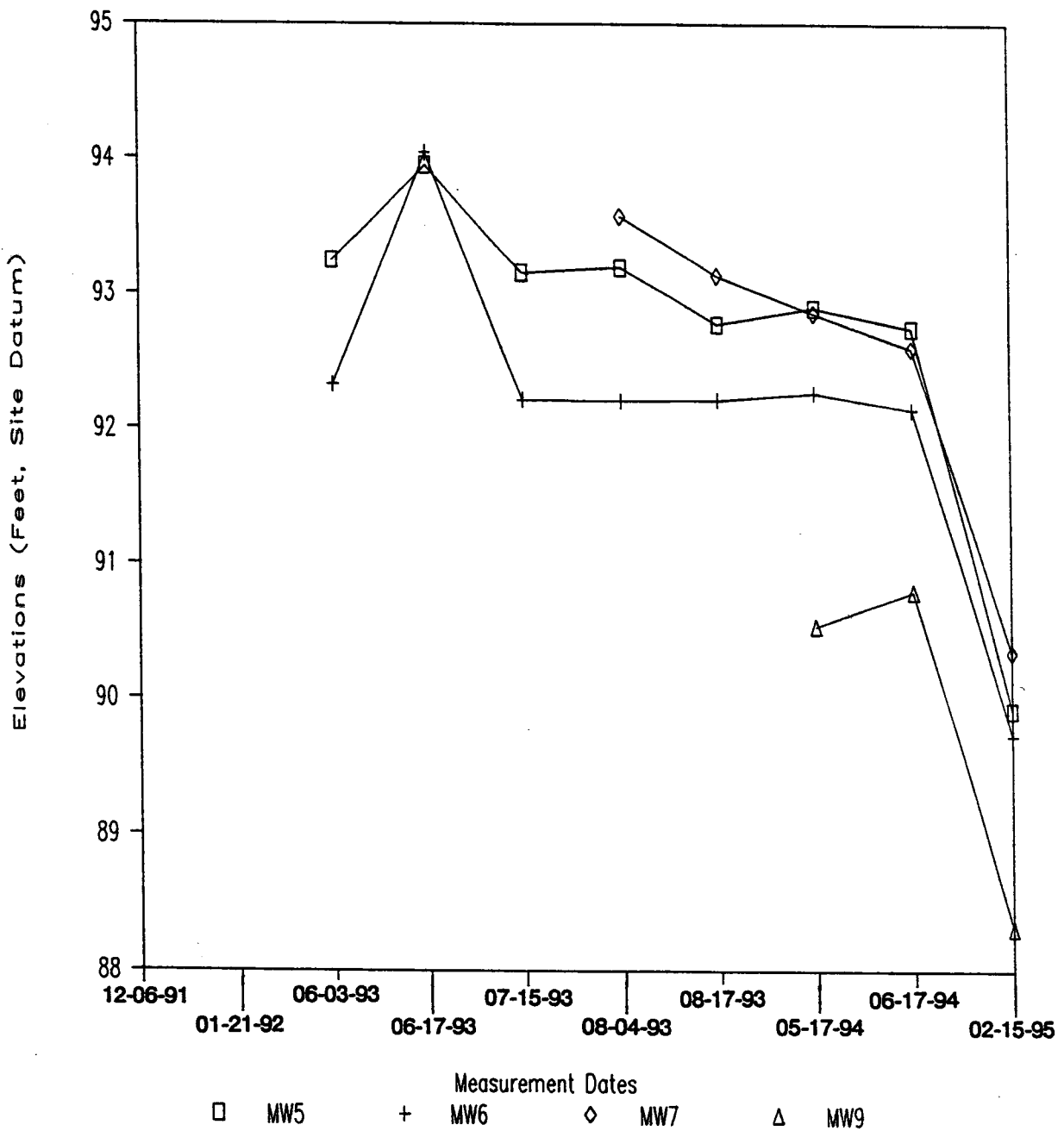
JPB

MDM

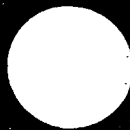
4-24-95

C-2373-B

# DITTMER OIL COMPANY GROUNDWATER ELEVATION SUMMARY



**GME CONSULTANTS, INC.**  
 Lake Shore Drive  
 Crosby, MN 56441



**FIGURE 3: (Continued)**  
 Hydrograph  
 Dittmer Oil Company  
 Fairfax, Minnesota

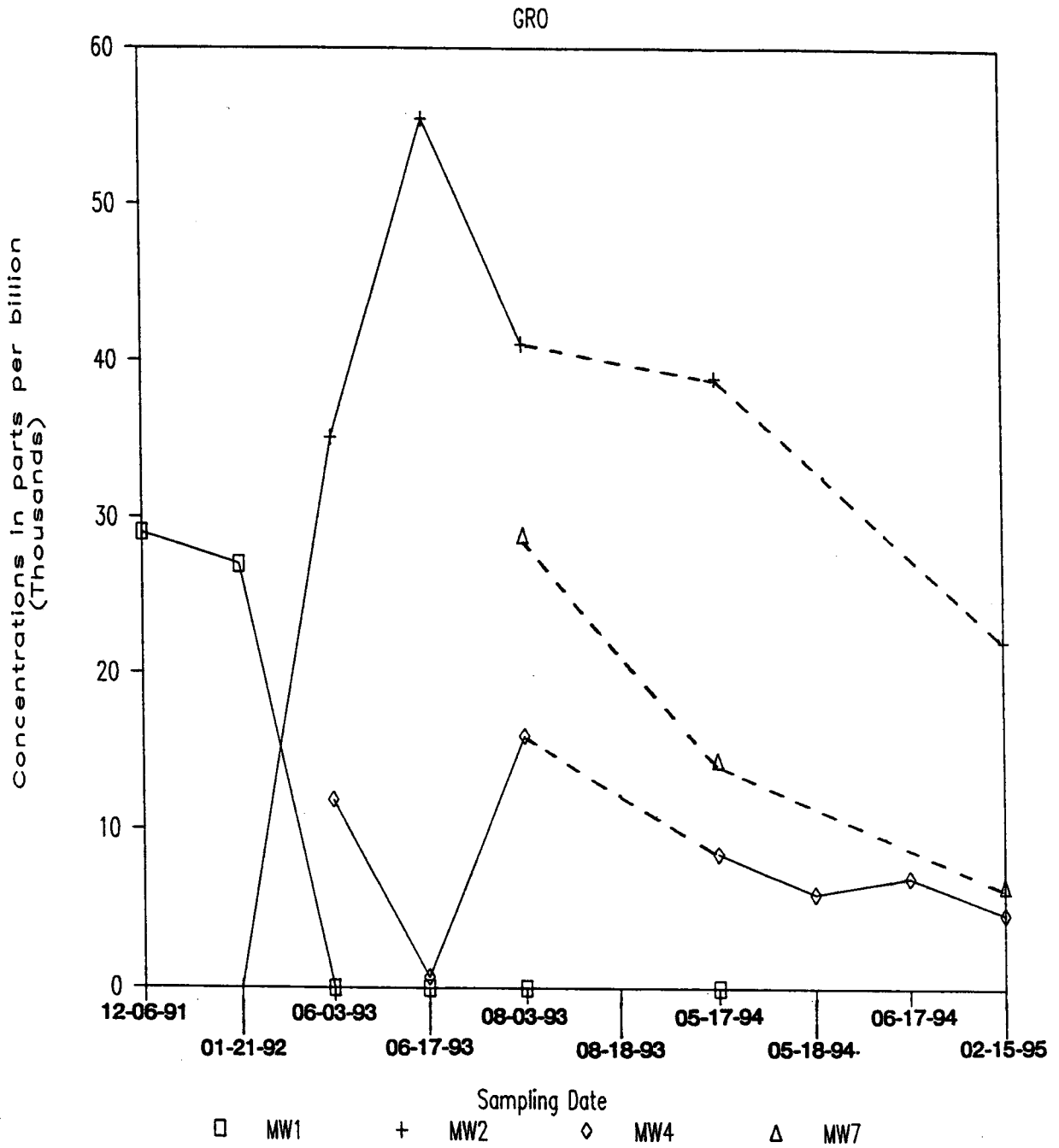
JPB

MDM

4-24-95

C-2373-B

# DITTMER OIL COMPANY GROUNDWATER CHEMISTRY RESULTS



Note: Dashed line indicates "skipped" sampling date.

**GME CONSULTANTS, INC.**  
Lake Shore Drive  
Crosby, MN 56441

**FIGURE 4: Groundwater Chemistry Results (GRO)**  
Dittmer Oil Company  
Fairfax, Minnesota

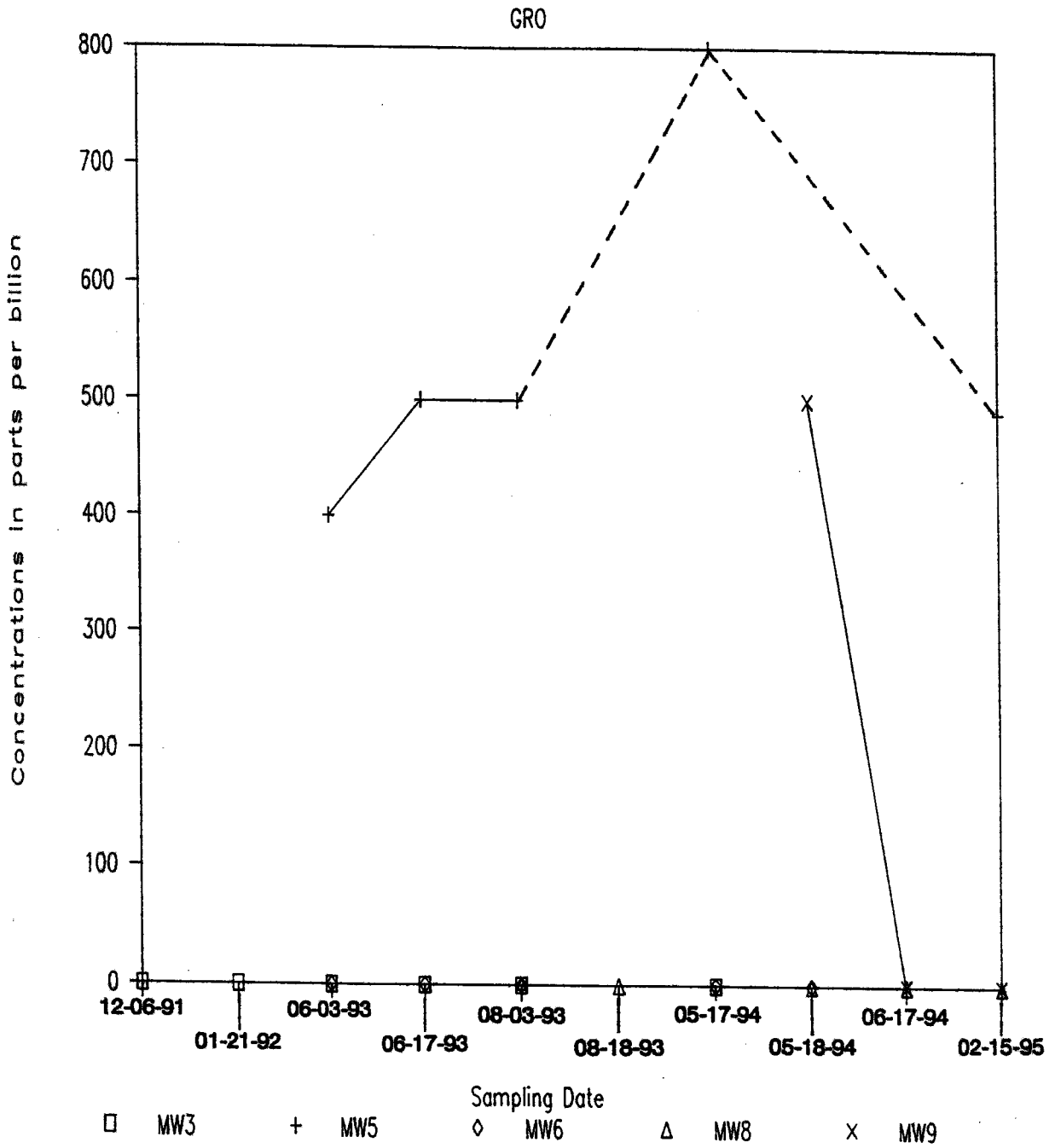
JPB

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4-24-95

C-2373-B

# DITTMER OIL COMPANY GROUNDWATER CHEMISTRY RESULTS



Note: Dashed line indicates "skipped" sampling date.

**GME CONSULTANTS, INC.**

Lake Shore Drive  
Crosby, MN 56441

**FIGURE 4: (Continued)**  
Groundwater Chemistry Results (GRO)  
Dittmer Oil Company  
Fairfax, Minnesota

JPB

MDM

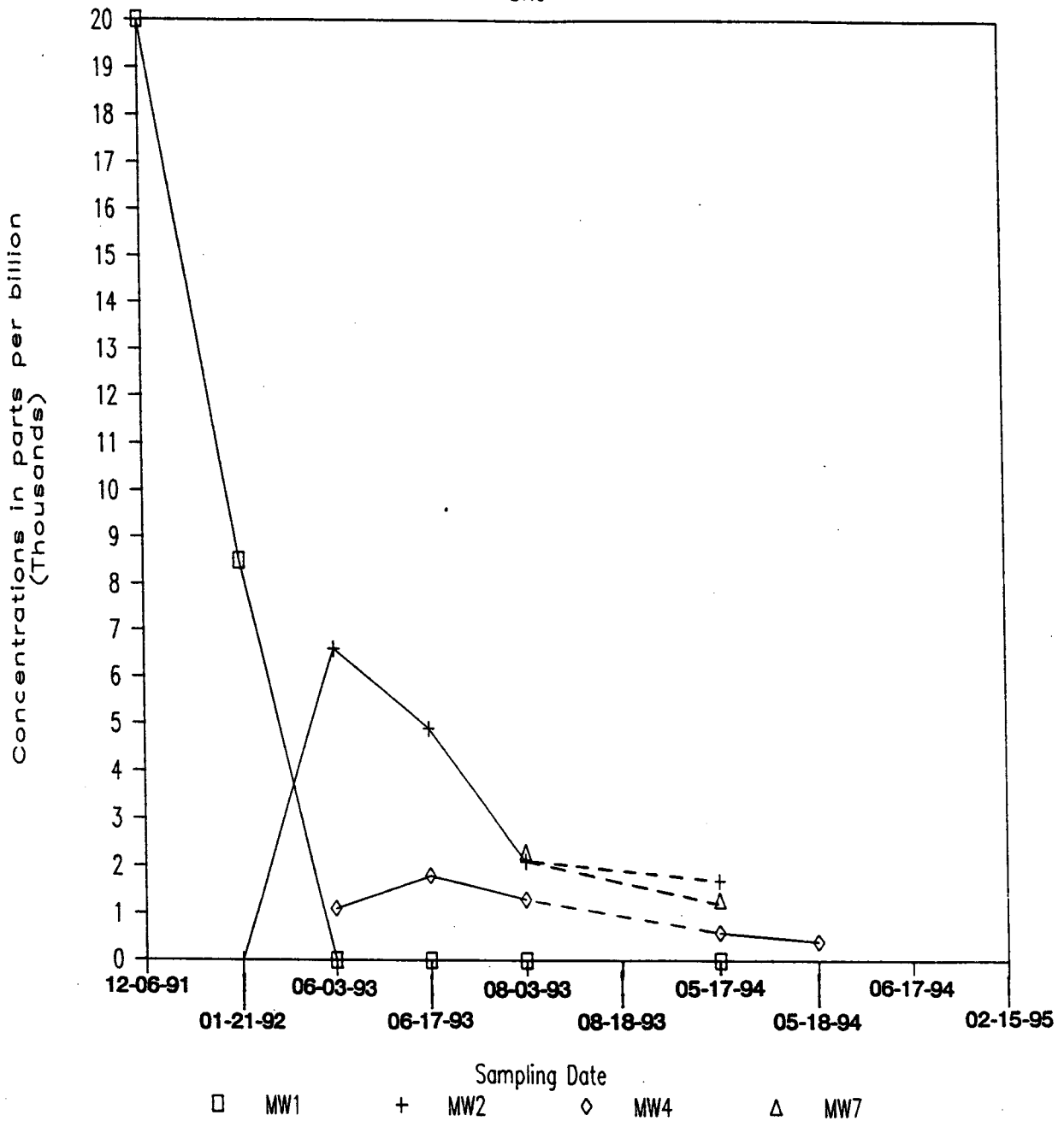
4-24-95

C-2373-B



# DITTMER OIL COMPANY GROUNDWATER CHEMISTRY RESULTS

DRO



Note: Dashed line indicates "skipped" sampling date.

**GME CONSULTANTS, INC.**  
Lake Shore Drive  
Crosby, MN 56441

**FIGURE 5: Groundwater Chemistry Results (DRO)**  
Dittmer Oil Company  
Fairfax, Minnesota

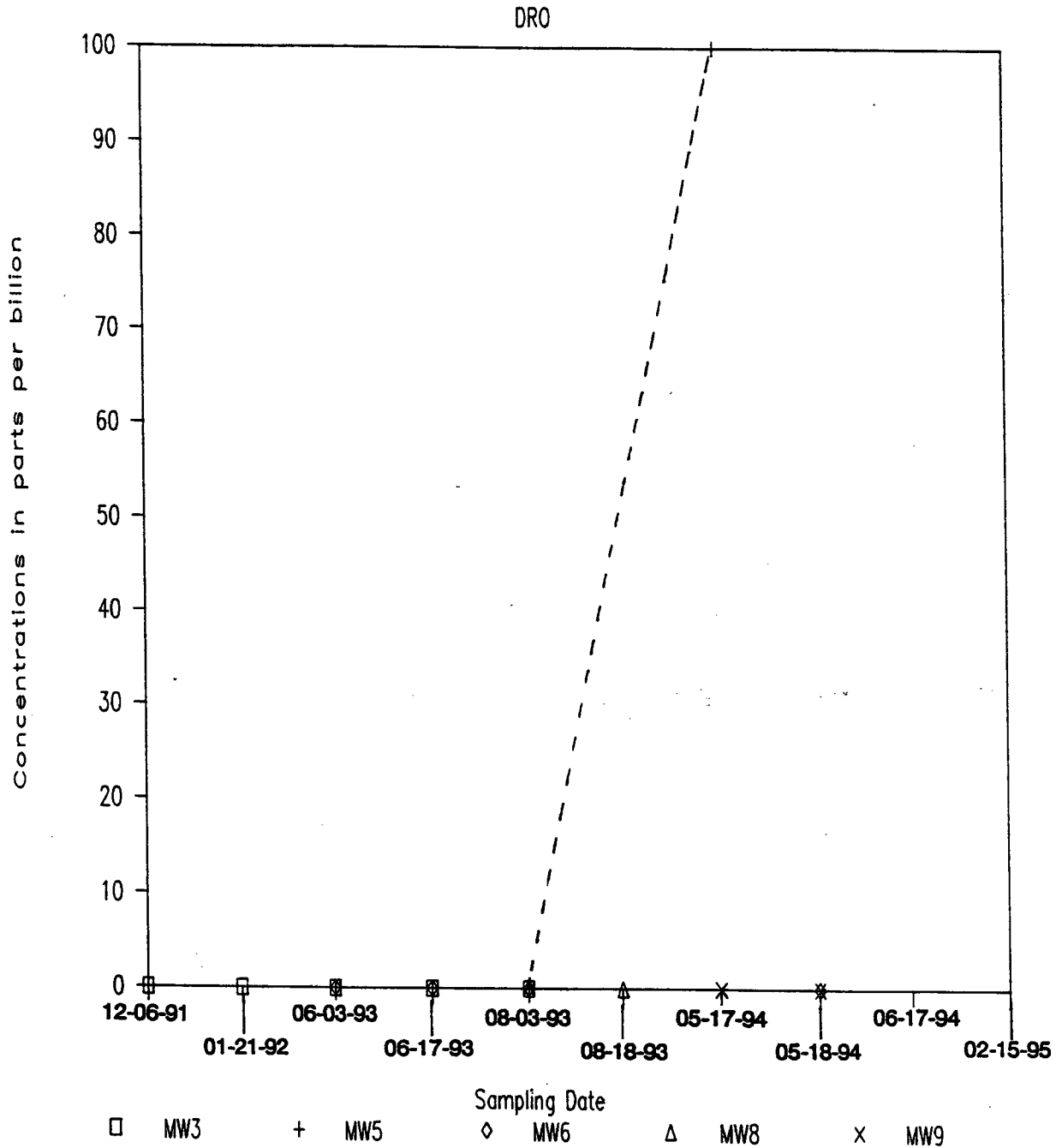
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MDM

4-24-95

C-2373-B

# DITTMER OIL COMPANY GROUNDWATER CHEMISTRY RESULTS



Note: Dashed line indicates "skipped" sampling date.

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Lake Shore Drive  
Crosby, MN 56441



**FIGURE 5: (Continued)**  
**Groundwater Chemistry Results (DRO)**  
**Dittmer Oil Company**  
**Fairfax, Minnesota**

JPB

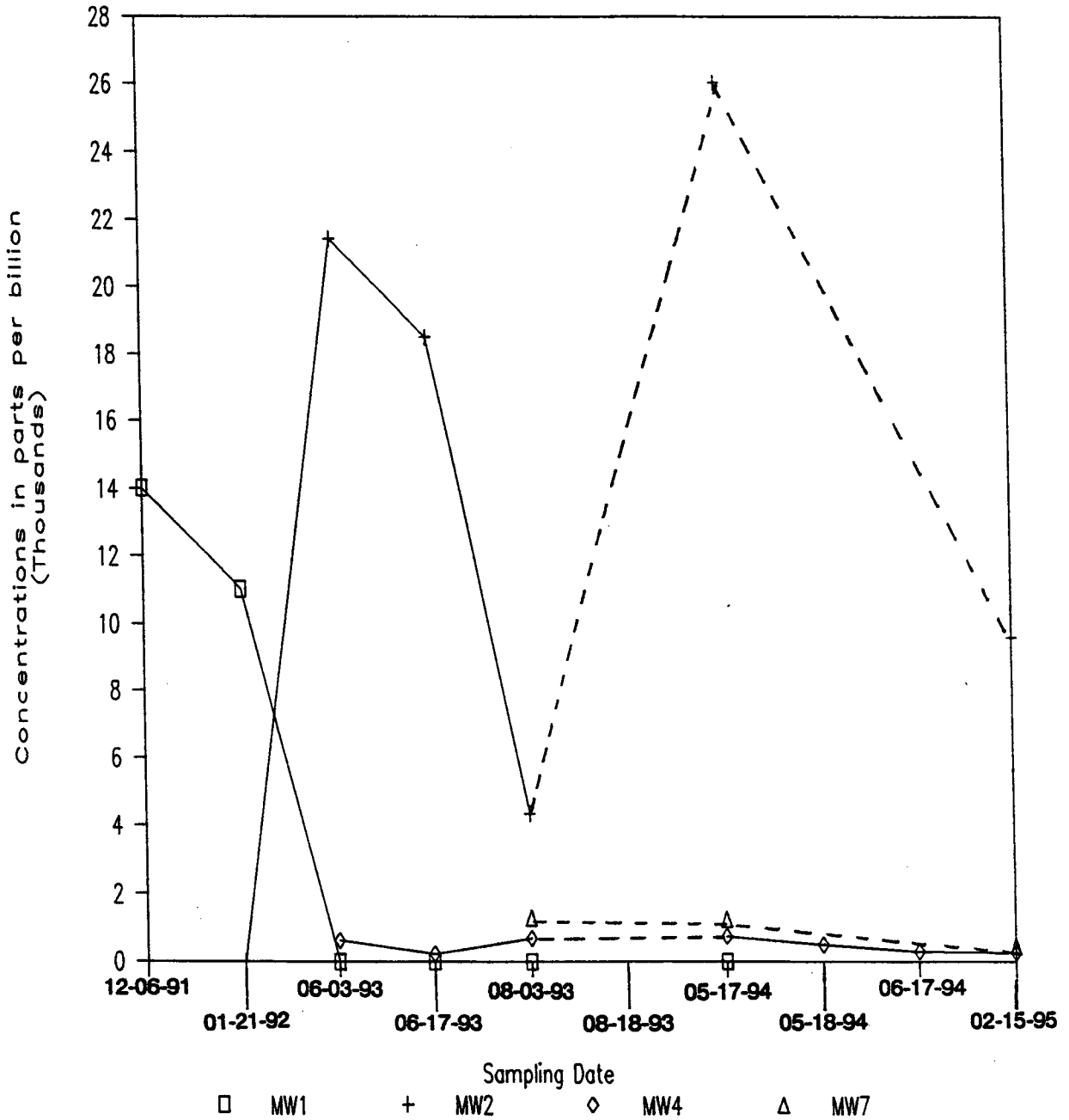
MDM

4-24-95

C-2373-B

# DITTMER OIL COMPANY GROUNDWATER CHEMISTRY RESULTS

BTEX



Note: Dashed line indicates "skipped" sampling date.

**GME CONSULTANTS, INC.**

Lake Shore Drive  
Crosby, MN 56441



**FIGURE 6: Groundwater Chemistry Results (BTEX)**  
Dittmer Oil Company  
Fairfax, Minnesota

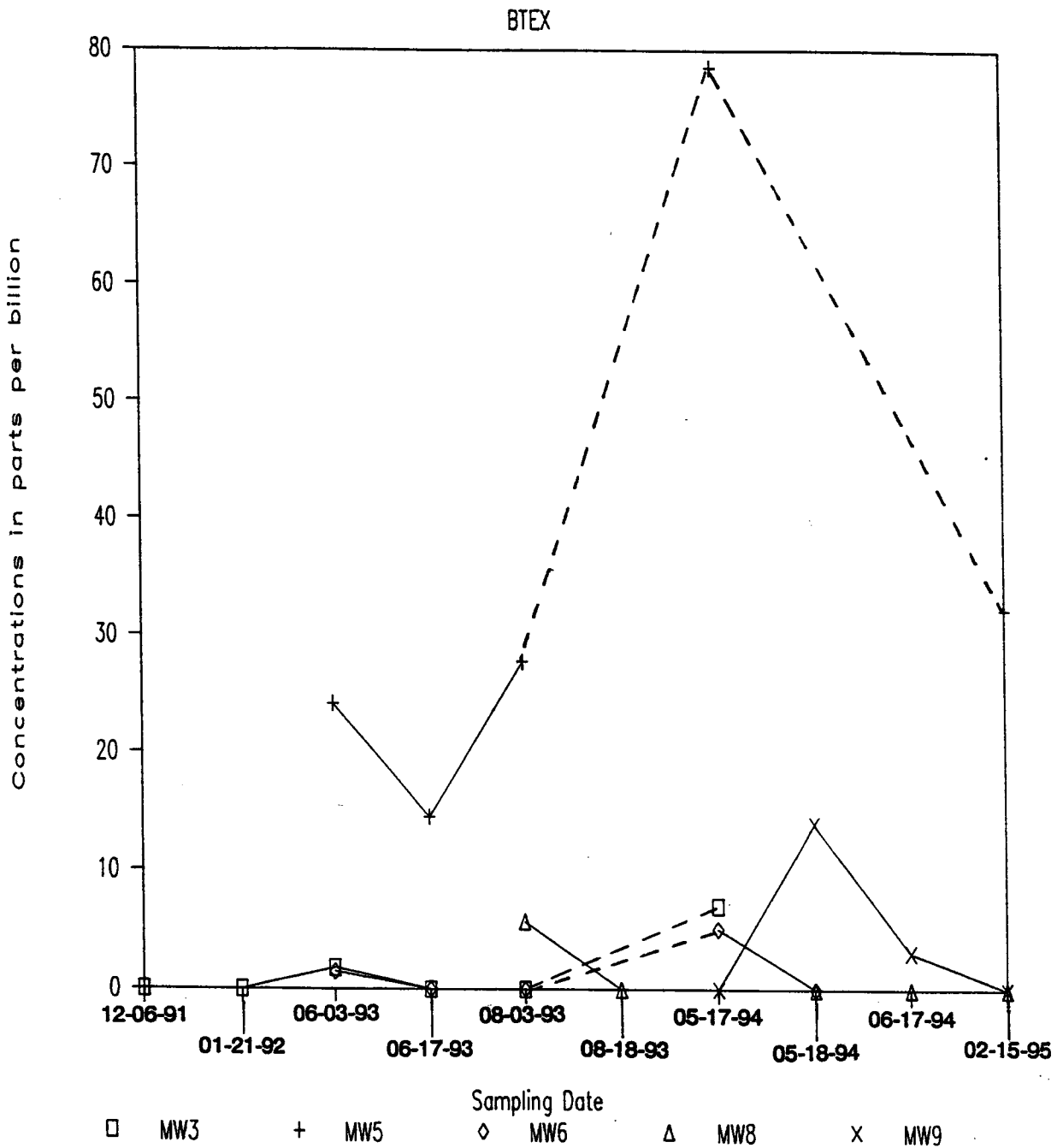
JPB

MDM

4-24-95

C-2373-B

# DITTMER OIL COMPANY GROUNDWATER CHEMISTRY RESULTS



Note: Dashed line indicates "skipped" sampling date.

**GME CONSULTANTS, INC.**  
Lake Shore Drive  
Crosby, MN 56441

**FIGURE 6: (Continued)**  
Groundwater Chemistry Results (BTEX)  
Dittmer Oil Company  
Fairfax, Minnesota

JPB

MDM

4-24-95

C-2373-B

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

**MIDWEST ANALYTICAL SERVICES**

LAB  
METRO  
FAX

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



MINNESOTA CERTIFIED LABORATORY  
NUMBER 027-059-156

March 2, 1995

GME Consultants, Inc.  
P.O. Box 250  
Crosby, MN 56441

Project ID: Dittmer Oil/C2373B  
Chain of Custody: 3663  
Date Sampled: 02-15-95  
Date Received: 02-20-95  
Date Analyzed: 02-23-95  
Matrix: Water  
Sample Identification:  
Lab ID: 95-01150 MW2  
95-01151 MW4  
95-01152 MW5  
95-01153 MW7  
95-01154 MW8  
95-01155 MW9  
95-01156 FD1  
95-01157 FB1

Samples were analyzed according to method GRO. The results are reported on the following pages.

Sincerely,

Chad Holzmagel  
Chemist

MIDWEST ANALYTICAL SERVICES

Page 2  
COC 3663

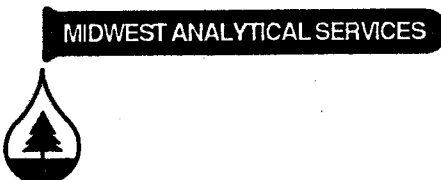
Parameter:	MTBE	Benzene	Toluene	Ethyl Benzene	Xylenes	Total Hydrocarbons as GRO
Units	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(mg/L)
Method						
Detection Limit	10.0	1.0	1.0	1.0	3.0	0.1

Sample Number

95-01150 MW2	<100	5730	1320	541	2010	22.1
95-01151 MW4	11.0	172	18.9	14.1	60.2	4.72
95-01152 MW5	13.0	17.1	5.5	3.3	6.4	0.49
95-01153 MW7	<10.0	176	23.1	139	133	6.56
95-01154 MW8	BDL	BDL	BDL	BDL	BDL	BDL
95-01155 MW9	BDL	BDL	BDL	BDL	BDL	BDL
95-01156 FD1		BDL	BDL	BDL	BDL	BDL
95-01157 FB1		BDL	BDL	BDL	BDL	BDL

BDL - Below Detection Limit

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



MIDWEST ANALYTICAL SERVICES

LAB  
METRO  
FAX

(612) 689-2175  
(612) 338-7266  
(612) 689-3660

0000

CHAIN OF CUSTODY RECORD

PROJ. NO.		PROJECT NAME		NO. OF CONTAINERS	REMARKS					
CA373B		GME: Dittmer Oil								
SAMPLERS: (Signature)				NO. OF CONTAINERS	REMARKS					
Tom Zahar <i>Thomas R. Zahar</i>										
STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION					
1	2-15	PM			3	✓	✓	✓	MONITORING Water Well 95-0 1150	
2	2-15	PM				✓	✓	✓	Sample Round 1151	
3		PM				✓	✓	✓	1152	
4		PM				✓	✓	✓	1153	
5		PM				✓	✓	✓	1154	
6		PM				✓	✓	✓	1155	
7		PM				✓	✓	✓	1156	
8		AM				✓	✓	✓	1157	
Relinquished by: (Signature)			Date/Time	Received by: (Signature)		Relinquished by: (Signature)		Date/Time	Received by: (Signature)	
<i>Thomas R. Zahar</i>			2/16/95 10:00 PM	<i>[Signature]</i>					2/1/95	
Relinquished by: (Signature)			Date/Time	Received by: (Signature)		Relinquished by: (Signature)		Date/Time	Received by: (Signature)	
Relinquished by: (Signature)			Date/Time	Received for Laboratory by: (Signature)		Date/Time		Remarks		
				<i>Chris Holmgren</i>		2/20/95 11:32				