AP - 001

ANNUAL MONITORING REPORT

YEAR(S):
1998

1998 Annual Groundwater Monitoring Report
Brickland Refinery
Sunland Park, New Mexico

JANUARY 28, 1999

Prepared For:

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1998 Annual Groundwater Monitoring Report
Former Brickland Refinery Site
Sunland Park, New Mexico

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1.0 Executive Summary

This 1998 Annual Groundwater Monitoring Report documents the results of semi-annual groundwater monitoring operations conducted by TRW at the former Brickland Refinery Site in Sunland Park, New Mexico. Semi-annual groundwater monitoring operations were conducted in June 1998 and December 1998. The report also contains the historical groundwater elevation and analytical data since the beginning of the project in July 1993. In addition, the report includes results of the free product recovery system installation, testing and startup that was performed on December 23, 1998. This monitoring and sampling program was conducted in accordance with the Groundwater Monitoring Plan and Stage 2 Abatement Plan as approved by Mr. Bill Olson of the New Mexico Oil Conservation Division (OCD) in his letter dated December 23, 1998.

This annual report includes the following elements required by the approved Groundwater Monitoring Plan and Stage 2 Abatement Plan:

- A description of all monitoring activities that occurred during the year, with corresponding conclusions and recommendations.
- Summary tables of all past and present laboratory analytical results of groundwater and surface water sampling performed for the site monitoring program.
- Plots of concentrations versus time for contaminants of concern for monitoring points MW-6S and MW-9S.
- Copies of laboratory analytical reports for the past year.
- Plots of water table elevation versus time for each groundwater monitoring well where free-phase product is not detected.
- Groundwater surface contour maps for each semi-annual monitoring event based on groundwater elevations from the monitoring wells. Free-phase product thickness measurements are noted on the contour maps.
- Hydrocarbon concentration maps for each semi-annual monitoring event.
- Free-phase recovery system installation

The semi-annual monitoring includes the following items as required by the Groundwater Monitoring Plan and Stage 2 Abatement Plan as approved by the NMOCD:

- Depth to groundwater measurements in fourteen on-site monitoring wells and five off-site monitoring wells. Water levels are not measured in the forty-one well points because they were specifically designed to detect free-phase product at discrete depths and the screen intervals do not correlate with the monitoring well screens.
- Free-phase product thickness measurements in all monitoring wells and well points.
- Laboratory analysis of groundwater samples collected from monitoring wells MW-3S, MW-3D, MW-6S, MW-6D, and MW-9S. In addition, two surface water samples from the Rio Grande River are collected for laboratory analysis: one from the upstream end of the site, and

one from the downstream end of the site near MW-6S. Samples collected in June were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) by Method 8020, polynuclear aromatic hydrocarbons (PAH) by Method 610, and for priority pollutant metals (various methods). As specified in the Site Monitoring Plan, samples collected during the December 1998 monitoring round were analyzed only for BTEX by Method 8020.

Conclusions relevant to groundwater conditions and the remediation performance at the Brickland Refinery are presented below.

- BTEX concentrations in all of the sampled monitoring wells and upstream and downstream river samples remained below the laboratory detection limits with the exception of monitoring wells MW-6S and MW-9S. Trace levels of BTEX constituents were recorded in MW-9S during each sampling event, however concentrations were below NMWQCC standards. A benzene concentration of 130 micrograms per liter (µg/L) in MW-6S during the June 25, 1998 sampling event was the only exceedance of NMWQCC standards. Benzene was not detected in well MW-6S during the December 1998 monitoring round.

- PAH levels in all sampled monitoring points were below laboratory detection limits and below NMWQCC standards during each monitoring event in 1998.

- The metal analytical results for June 1998 indicate no constituents exceeded the NMWQCC standards.

- Measurable thicknesses of free-phase product was detected only in monitoring well MW-10 during the June 1998 monitoring event. Product thickness measurements were detected in MW-10, WP-1, WP-25, WP-26S, and WP-27 during the December 1998 monitoring event and varied from 0.07 feet in WP-27S to 2.50 feet in MW-10.

- As of December 23, 1998, a total of approximately 1½ gallons of free-phase product has been removed from monitoring well MW-10 using the Xitech product recovery system.

The following recommendations are suggested for the remediation system and monitoring operations at the Brickand Refinery.

- Continue free product recovery and groundwater monitoring as called for in the Stage 2 Abatement Plan.

- Though MW-15 is not currently sampled as part of the semi-annual monitoring program, a sample collected at this well (independently of the monitoring plan) and analyzed for BTEX constituents may provide useful additional data pertaining to the recent detect of these compounds in well MW-9S.

- Since construction of the soil cap system has not yet been initiated, details of this operation will be included in the next annual groundwater monitoring report.

2.0 Procedures

Prior to sampling, the eleven on-site monitoring wells and eight off-site monitoring wells were gauged for depth to groundwater using a Heron Model H.01L or comparable oil/water interface probe. Immediately prior to collecting groundwater samples during the June 25, 1998 sampling event, each monitoring well was purged of a minimum of three well casing volumes of water using clean, decontaminated PVC bailers. Only the downgradient off-site monitoring wells (MW-3S, MW-3D, MW-6S, MW-6D, and MW-9S) were sampled as they are being used to monitor the potential exposure pathway for contaminants of concern to reach the Rio Grande River. During the December 21, 1998 sampling event, the monitoring wells were purged using a submersible pump (EnviroLine Super Purger). A total of 205 gallons and 172 gallons of water was purged from the sampled monitoring wells during the June 25, 1998 and December 21-22, 1998 monitoring events, respectively. Groundwater samples were obtained using a new, decontaminated, disposable bailer for each well after purging. Groundwater parameters, including pH, conductivity, and temperature were measured during purging using a Hydac Model 910 pH/conductivity meter.

During each sampling event, the first set of water samples were transferred into air-tight, septum-sealed, 40-ml glass VOA sample vials with zero head space and preserved with hydrochloric acid for analysis of benzene, toluene, ethylbenzene, and xylenes (BTEX) using EPA Method 8020. A duplicate sample of MW-6D and MW-9S were collected during the June and December monitoring events, respectively. During the June 1998 sampling event, a second set of water samples were transferred into appropriately preserved containers for analysis of polynuclear aromatic hydrocarbons (PAH) using EPA Method 602. Also during the June semi-annual sampling event, a third set of water samples were filtered and transferred into appropriately preserved containers for analysis of priority pollutant metals using various EPA Methods. A summary of purging and sampling methods is provided in Table 1 below. Chain-of-custody (COC) forms documenting sample identification numbers, collection times, and delivery times to the laboratories were completed for each set of samples. The water samples were placed in an ice-filled cooler immediately after collection and shipped to Core Laboratories, Inc. in Aurora, Colorado for laboratory analysis.

Table 1
Well Sampling and Purging Methods

Well No.	1998 Sample Date	Purge Method	Sampling Method	Purge Volume	Laboratory Analytes
MW-3S	6/25/98	Hand Bailer	Disposable bailer	25 gallons	BTEX only
	12/21/98	Pump	Disposable bailer	20 gallons	BTEX, PAH, and Metals
MW-3D	6/25/98	Hand Bailer	Disposable bailer	70 gallons	BTEX only
	12/21/98	Pump	Disposable bailer	60 gallons	BTEX, PAH, and Metals
MW-6S	6/25/98	Hand Bailer	Disposable bailer	25 gallons	BTEX only
	12/22/98	Pump	Disposable bailer	7 gallons*	BTEX, PAH, and Metals
MW-6D	6/25/98	Hand Bailer	Disposable bailer	60 gallons	BTEX only
	12/22/98	Pump	Disposable bailer	60 gallons	BTEX, PAH, and Metals
MW-9S	6/25/98	Hand Bailer	Disposable bailer	25 gallons	BTEX only
	12/22/98	Pump	Disposable bailer	25 gallons	BTEX, PAH, and Metals
River Upstream	6/25/98	NA	Disposable bailer	NA	BTEX only
	12/23/98	NA	Disposable bailer	NA	BTEX, PAH, and Metals
River Downstream	6/25/98	NA	Disposable bailer	NA	BTEX only
	12/22/98	NA	Disposable bailer	NA	BTEX, PAH, and Metals
Total volume purged during semi-annual monitoring event in June 1998:				205 gallons	
Total volume purged during annual monitoring event in December 1998:				172 gallons	
Total volume purged during semi-annual and annual monitoring events:				377 gallons	

* Monitoring well MW-6S purged dry during annual sampling event.

3.0 Groundwater Elevations, Hydraulic Gradient and Flow Direction

Historical groundwater elevations for all monitoring wells are listed in Table 2. Water levels are not listed for the well points because the well points were specifically designed to detect free-phase product at discrete depth and the screen intervals do not correlate with the monitoring well screens. Groundwater elevation contour maps for the June 24, 1998 and December 21, 1998 monitoring events, are depicted in Figure 1a and 1b, respectively.

The hydraulic gradient beneath the former Brickland Refinery is generally to the south-southeast, following the direction of flow in the adjacent Rio Grande river. The hydraulic gradient in June 1998 was approximately 0.0015 feet per foot and, in general, groundwater tended to either flow parallel to the Rio Grande River, or from the site towards the river. The hydraulic gradient in December 1998 was approximately 0.0008 feet per foot and, in general, groundwater tended to flow parallel to the Rio Grande River or flowed from the site towards the river.

Hydrographs depicting the groundwater elevations versus time (1993 to present) for each water level monitoring point are presented in Appendix A. Groundwater levels in the monitoring wells typically correspond to the stage of the Rio Grande River bordering the site. Due to seasonal fluctuations in the river, water levels in the monitoring wells vary 2-3 feet over the course of a year. Water level data for June 1998 and December 1998 shows a pronounced decline between these events. Groundwater elevations in June 1998 correlate well with the higher levels measured during the summer months of previous years. Similarly, the groundwater elevations in December 1998 correlate well with the lower levels measured during the winter months of previous years.

Table 2
Brickland Refinery
Monitoring Well Groundwater Elevations

Well ID	Jul. 93	12/8/93	3/25/94	7/12/94	9/28/94	12/13/94	3/28/95	6/21/95	9/25/95	6/28/96	12/22/96	6/27/97	1/8/98	6/24/98	12/21/98
MW-1	3725.78	3724.30	3725.27	3726.54	3725.37	3724.35	NM	3726.66	NM	3725.72	3724.03	3726.31	3724.13	3725.71	3724.18
MW-2	NM	NM	3726.39	3726.54	3725.89	3723.97	NM	3726.81	NM	3726.56	3724.67	3726.72	3724.77	3728.47	3724.80
MW-3S	3725.29	3723.27	3725.20	3725.87	3724.50	3723.44	3725.35	3725.68	3724.98	3725.08	3723.10	3724.54*	3723.20	3724.58	3723.23
MW-3D	3725.22	3723.30	3725.10	3725.78	3724.42	3723.35	3725.26	3725.75	3724.97	3725.00	3723.01	3725.46	3721.05	3725.14	3723.24
MW-4	3725.21	3723.59	3725.36	3725.56	3724.68	3723.64	3725.56	3725.66	3725.40	3725.25	3723.31	3724.68	3723.44	3725.24	3723.47
MW-5	3725.11	3723.59	3725.30	3725.88	3724.70	3723.65	3725.40	3725.86	3725.39	3725.37	3722.93	3724.17	3723.48	3724.38	3723.49
MW-6S	3725.08	3723.78	3724.85	3725.55	3724.20	3723.03	3725.05	3725.53	3724.63	3724.83	3722.80	3725.29	3722.90	3724.97	3722.97
MW-6D	3725.00	3723.75	3724.82	3725.57	3724.22	3723.00	3725.02	3725.48	3724.57	3724.75	3722.72	3725.25	3720.81	3724.9	3722.90
MW-7	3725.16	3723.72	3725.16	3725.89	3724.46	3723.16	3725.36	3725.32	3725.23	NM	3723.16	3725.12	3723.26	3725.31	3723.30
MW-8	3725.10	3723.42	3725.12	3725.77	3724.49	3723.45	3725.42	3725.74	3724.33	3725.29	3723.13	3724.21	3722.31	3725.27	3723.31
MW-9S	3724.84	3723.52	3724.56	3725.29	3723.91	3722.81	3724.81	3725.21	3725.52	3724.49	3722.51	3724.84	3722.62	3725.79	3722.63
MW-10	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
MW-11	3724.91	3722.90	3725.10	3725.75	P	3723.40	3725.35	3725.86	3724.98	3725.20	3723.10	3724.39	3723.15	3725.20	3723.23
MW-12	3726.09	3724.91	3726.45	3727.05	3725.70	3723.65	NM	3727.15	3726.39	NM	3724.37	3726.34	NM	3726.48	3724.59
MW-13	3725.22	NM	NM	3725.82	3724.71	3724.44	NM	3726.05	NM	3725.30	3723.27	3725.56	3723.55	3725.34	3723.58
MW-14	NM	NM	NM	3726.03	3724.61	3723.58	3725.56	3726.01	3725.31	NM	3723.25	3725.07	3723.35	3725.38	3723.40
MW-15	NM	NM	NM	3725.62	3724.28	3723.19	3724.97	3725.58	3724.87	NM	3721.90	3723.52	3722.99	3728.60	3722.87
MW-16	NM	NM	NM	3725.43	3724.06	3722.93	3724.88	3725.44	3724.54	3724.65	3722.63	3723.59	3722.75	3725.02	3722.79
MW-17	NM	NM	NM	3725.90	3724.46	3723.36	3725.38	3726.82	3726.05	NM	3723.07	3724.95	D	3725.09	3723.22

Notes: NM = Not measured.
P = Product observed.
* Remeasured in July.
D = Well Dry.

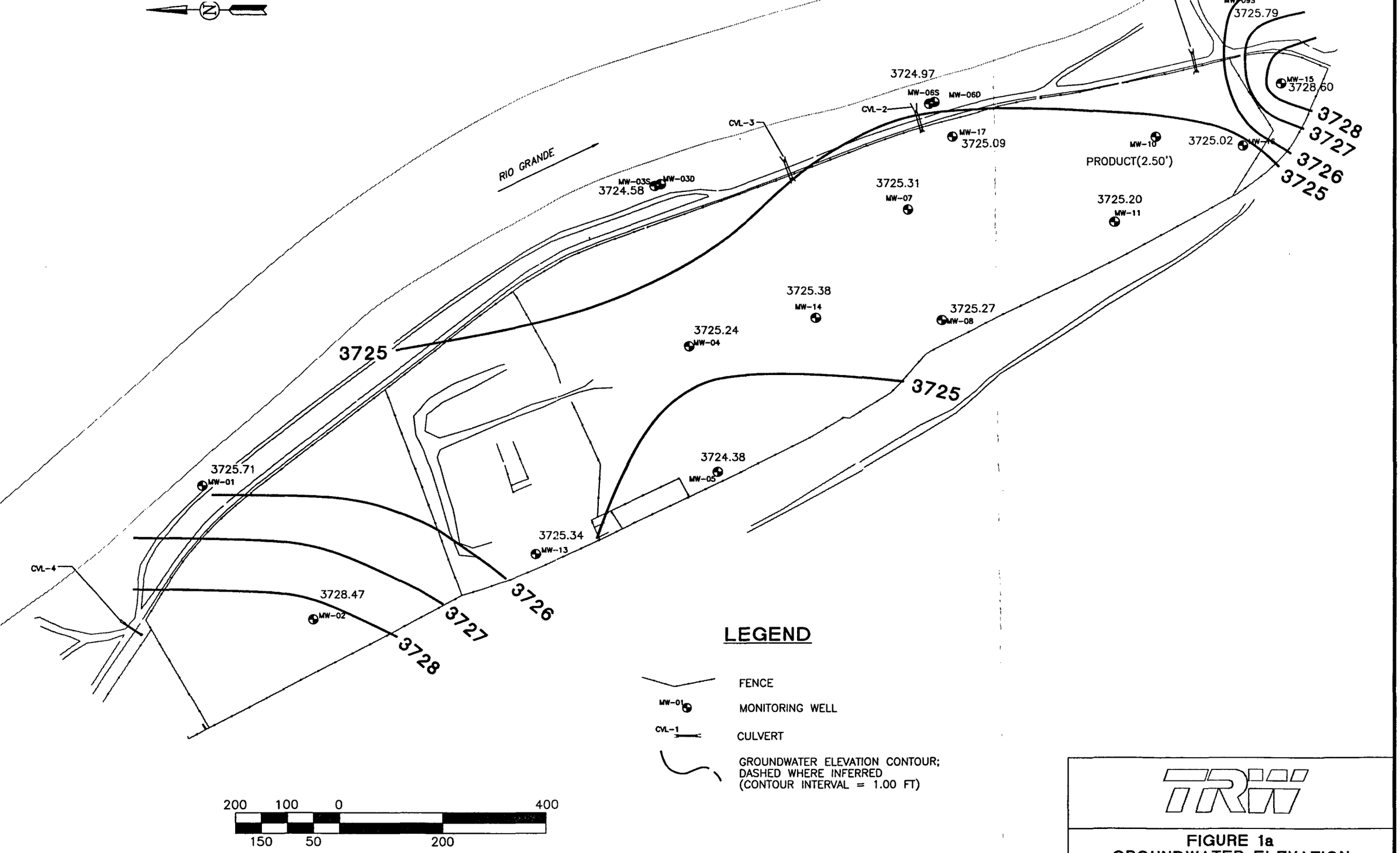

FIGURE 1a
GROUNDWATER ELEVATION

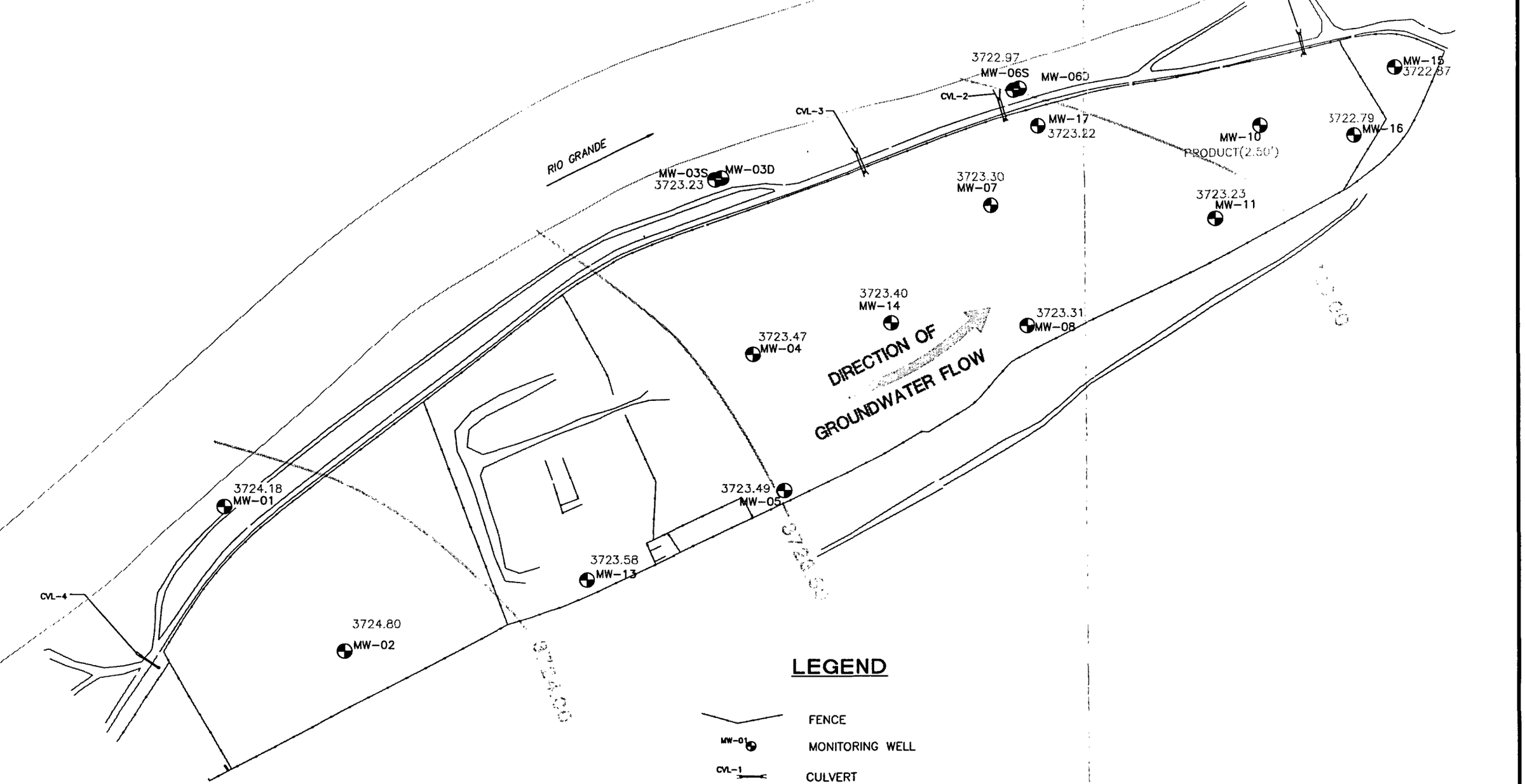

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FIGURE 1b
GROUNDWATER ELEVATION CONTOUR MAP (DECEMBER 1998)
BRICKLAND REFINERY SITE

4.0 Groundwater Quality Conditions

4.1 Distribution of Hydrocarbons in Groundwater

A historical listing of benzene, toluene, ethylbenzene and xylenes (BTEX) concentrations for offsite monitoring wells MW-3S, MW-3D, MW6S, MW-6D, and MW-9S is summarized in Table 3. Historical analytical results for polynuclear aromatic hydrocarbons (PAH) for the same monitoring wells are listed in Table 4. These tables list BTEX and PAH concentrations for the period from December 1993 to December 1998.

Hydrocarbon concentration maps depicting the BTEX concentrations for the two 1998 sampling events are presented in Figure 2a and Figure 2b. PAH concentration maps were not constructed because the PAH levels in all sampled monitoring wells for each monitoring event were below laboratory detection limits and/or well below NMWQCC standards. BTEX concentrations in groundwater versus time for monitoring wells MW-6S and MW-9S, respectively, are depicted in Figures 3a and 3b.

BTEX concentrations in all of the sampled monitoring wells and upstream and downstream river samples remained below the laboratory detection limits with the exception of monitoring wells MW-6S and MW-9S. Trace levels of BTEX constituents were recorded in MW-9S during each sampling event, however concentrations were below NMWQCC standards. A benzene concentration of 130 micrograms per liter (µg/L) in MW-6S during the June 25, 1998 sampling event was the only exceedance of NMWQCC standards. The detection of BTEX constituents may be related to a partial resaturation of the soil in the vicinity of the site. This is evidenced by the fact that BTEX levels in MW-6S have been lower during the winter seasons when water table elevations were lower.

Though groundwater generally flows from north to south over the site, following the direction of the river flow, a local high area in groundwater elevation in the vicinity of MW-15 is affecting the direction of groundwater flow near MW-9S, introducing an easterly and northeasterly component to groundwater flow in this area. However, due to the proximity of monitoring well MW-10 approximately 300 feet northwest of monitoring well MW-9S, where over 2 feet of free-phase product is routinely observed, minor advective transport of BTEX constituents in the direction of MW-9S is a possibility. Given the relatively high concentration gradient between MW-10 and MW-9S, some dispersion of BTEX constituents over time into the vicinity of MW-9S may also occur. A third contributing factor to concentrations detected in MW-9S may be the flow from the west and south, according to the local groundwater gradient between wells MW-15 and MW-9S. Concentrations in MW-9S may be related to flow from the direction of well MW-15, where benzene has been detected as high as 290 µg/L (Dec. 1994).

4.2 Distribution of Priority Pollutant Metals in Groundwater

Historical groundwater sample analytical results for Priority Pollutant metals (antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, thallium, and zinc) are presented in Table 5. The NMWQCC standards are also listed in the tables for comparison. Constituents with concentrations above the NMWQCC standards are highlighted in boldface type. The laboratory reports and COC documentation are included in Appendix C.

The metal analytical results for the 1998 semi-annual and annual monitoring events indicate no constituents exceeded the NMWQCC standards.

Table 3
Brickland Refinery
BTEX Concentrations in Monitoring Wells and River Surface Water Samples, December 1993 through June 1998

MW-3S

Parameter	12/08/93	03/25/94	07/12/94	09/28/94	12/13/94	03/28/95	06/21/95	09/26/95	6/21/96	12/23/96	7/11/97	1/8/98	6/25/98	12/21/98
Benzene	ND	ND	0.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	ND	4.9	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	ND	18	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

MW-3D

Parameter	12/08/93	03/25/94	07/12/94	09/28/94	12/13/94	03/28/95	06/21/95	09/26/95	6/21/96	12/23/96	6/26/97	1/8/98	6/25/98	12/21/98
Benzene	ND	ND	0.6	ND	ND	ND	ND	ND	ND	ND	ND,ND	ND	ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND,ND	ND	ND	ND
Ethyl Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND,ND	ND	ND	ND
Xylenes	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND,ND	ND	ND	ND

MW-6S

Parameter	12/08/93	03/25/94	07/12/94	09/28/94	12/13/94	03/28/95	06/21/95	9/25/95	6/21/96	12/23/96	6/26/97	1/8/98	6/25/98	12/22/98
Benzene	71	74	110	4.8	59	110	NS	180	350	50	130	14	130	ND
Toluene	ND	ND	ND	2.8	ND	7	NS	120	160	ND	ND	ND	ND	ND
Ethyl Benzene	52	12	30	34	ND	32	NS	ND	ND	ND	15	ND	40	ND
Xylenes	ND	7.6	88	16	ND	43	NS	30	90	ND	ND	ND	ND	ND

MW-6D

Parameter	12/08/93	03/25/94	07/12/94	09/28/94	12/13/94	03/28/95	06/21/95	9/25/95	6/21/96	12/23/96	6/26/97	1/8/98	6/25/98	12/22/98
Benzene	ND	ND	ND	ND	ND	ND	ND	ND,ND	ND	ND	ND	ND	ND, ND	ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND,ND	ND	ND	ND	ND	ND, ND	ND
Ethyl Benzene	ND	ND	ND	ND	ND	ND	ND	ND,ND	ND	ND	ND	ND	ND, ND	ND
Xylenes	ND	1.6	ND	ND	ND	ND	ND	ND,ND	ND	ND	ND	ND	ND, ND	ND

MW-9S

Parameter	12/08/93	03/25/94	07/12/94	09/27/94	12/13/94	03/28/95	06/21/95	09/26/95	6/21/96	12/23/96	6/26/97	1/8/98	6/25/98	12/22/98
Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND,ND	1.9	ND, ND
Toluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND,ND	2.7	2.7, ND
Ethyl Benzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND,ND	1.5	4.5, ND
Xylenes	ND	ND	0.6	ND	ND	0.6	ND	ND	ND	ND	ND	ND,ND	6.6	6.7, ND

River - Upstream

Parameter	12/08/93	03/25/94	07/12/94	09/27/94	12/13/94	03/28/95	06/21/95	09/26/95	6/21/96	12/23/96	7/11/97	1/8/98	6/25/98	12/23/98
Benzene	NS	NS	NS	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND
Toluene	NS	NS	NS	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND
Ethyl Benzene	NS	NS	NS	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND
Xylenes	NS	NS	NS	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND

River - Downstream

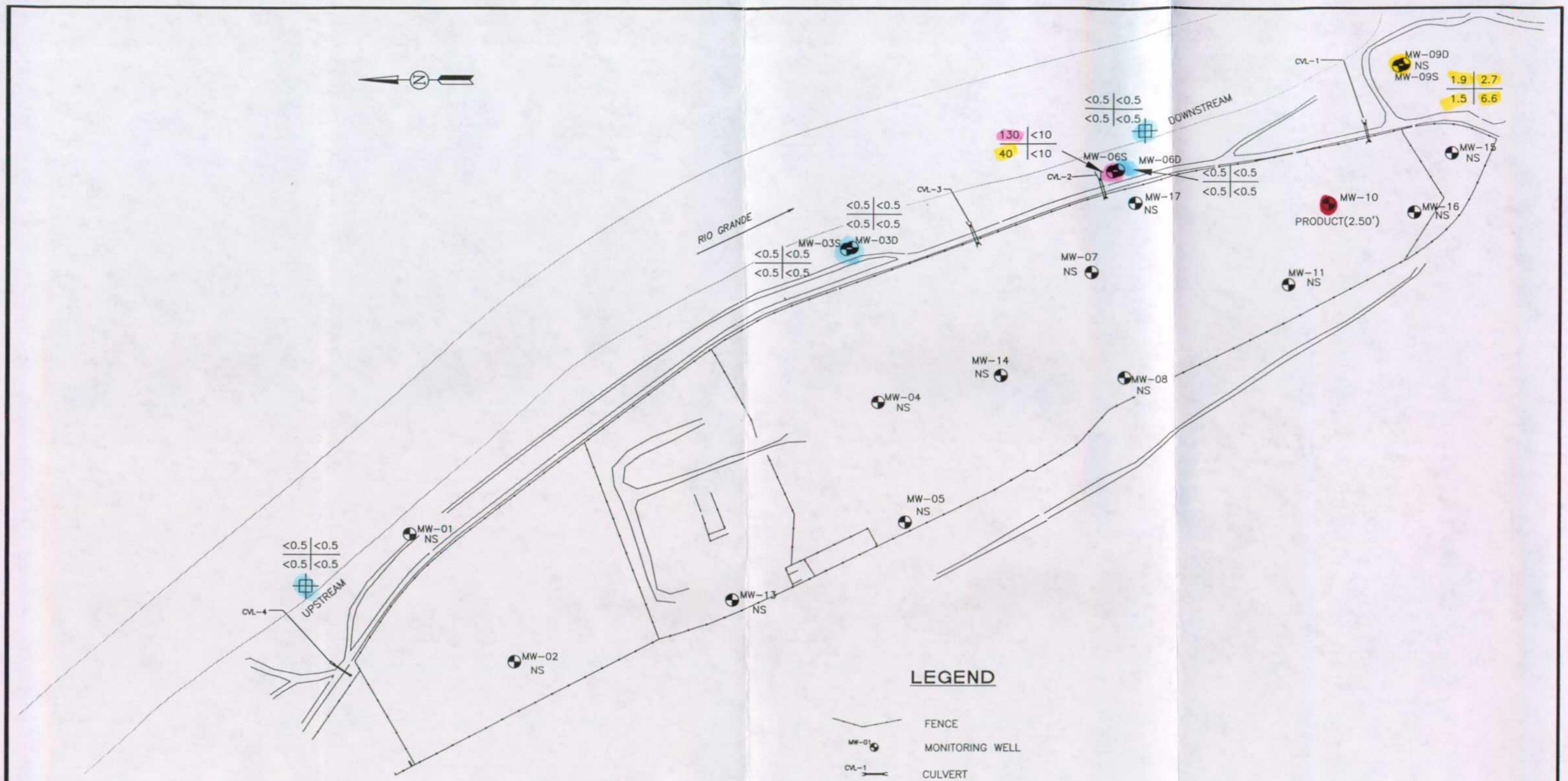
Parameter	12/08/93	03/25/94	07/12/94	09/27/94	12/13/94	03/28/95	06/21/95	09/26/95	6/21/96	12/23/96	6/26/97	1/8/98	6/25/98	12/22/98
Benzene	NS	NS	NS	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND
Toluene	NS	NS	NS	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND
Ethyl Benzene	NS	NS	NS	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND
Xylenes	NS	NS	NS	NS	NS	NS	NS	ND	ND	ND	ND	ND	ND	ND

Parameter	WQCC Std.	Detection Limit
Benzene	10	1.0 µg/L
Toluene	750	1.0 µg/L
Ethyl Benzene	750	1.0 µg/L
Xylenes	620	1.0 µg/L

Notes
NA = Not available
ND = Not detected
NS = Not sampled
µg/L = Micrograms per liter

Parameter	MW-6S 12/22/98	MW-6S 12/22/98
Benzene	ND	ND
Toluene	ND	ND
Ethyl Benzene	ND	11
Xylenes	ND	8

Duplicate samples analyzed by Trace Analysis Inc.



LEGEND

- FENCE
- MW-01 MONITORING WELL
- CVL-1 CULVERT
- RIVER SAMPLING LOCATION
- B | T / E | X = CONCENTRATIONS IN µg/L
  - B = BENZENE
  - T = TOLUENE
  - E = ETHYLBENZENE
  - X = XYLENES
- NS NOT SAMPLED

GROUNDWATER SAMPLES OBTAINED ON JUNE 25, 1998

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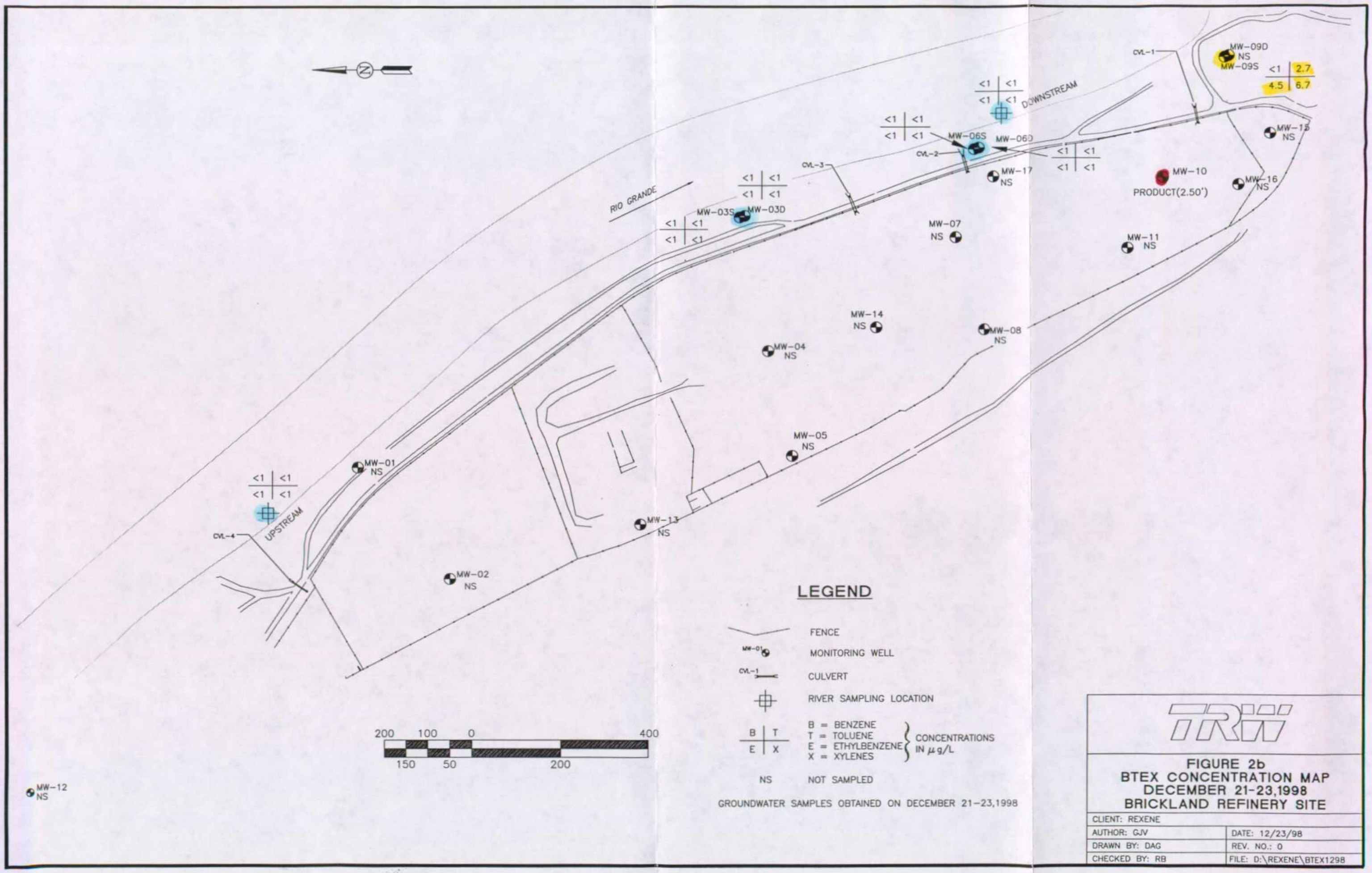
FIGURE 2a
BTEX CONCENTRATION MAP
JUNE 1998
BRICKLAND REFINERY SITE

CLIENT: REXENE	
AUTHOR: GJV	DATE: 06/25/98
DRAWN BY: DAG	REV. NO.: 0
CHECKED BY: RB	FILE: D:\REXENE\BTEX698.DWG



LEGEND

- FENCE
- MW-01 MONITORING WELL
- CVL-1 CULVERT
- RIVER SAMPLING LOCATION
- B | T / E | X — B = BENZENE, T = TOLUENE, E = ETHYLBENZENE, X = XYLENES } CONCENTRATIONS IN µg/L
- NS NOT SAMPLED

GROUNDWATER SAMPLES OBTAINED ON DECEMBER 21–23,1998

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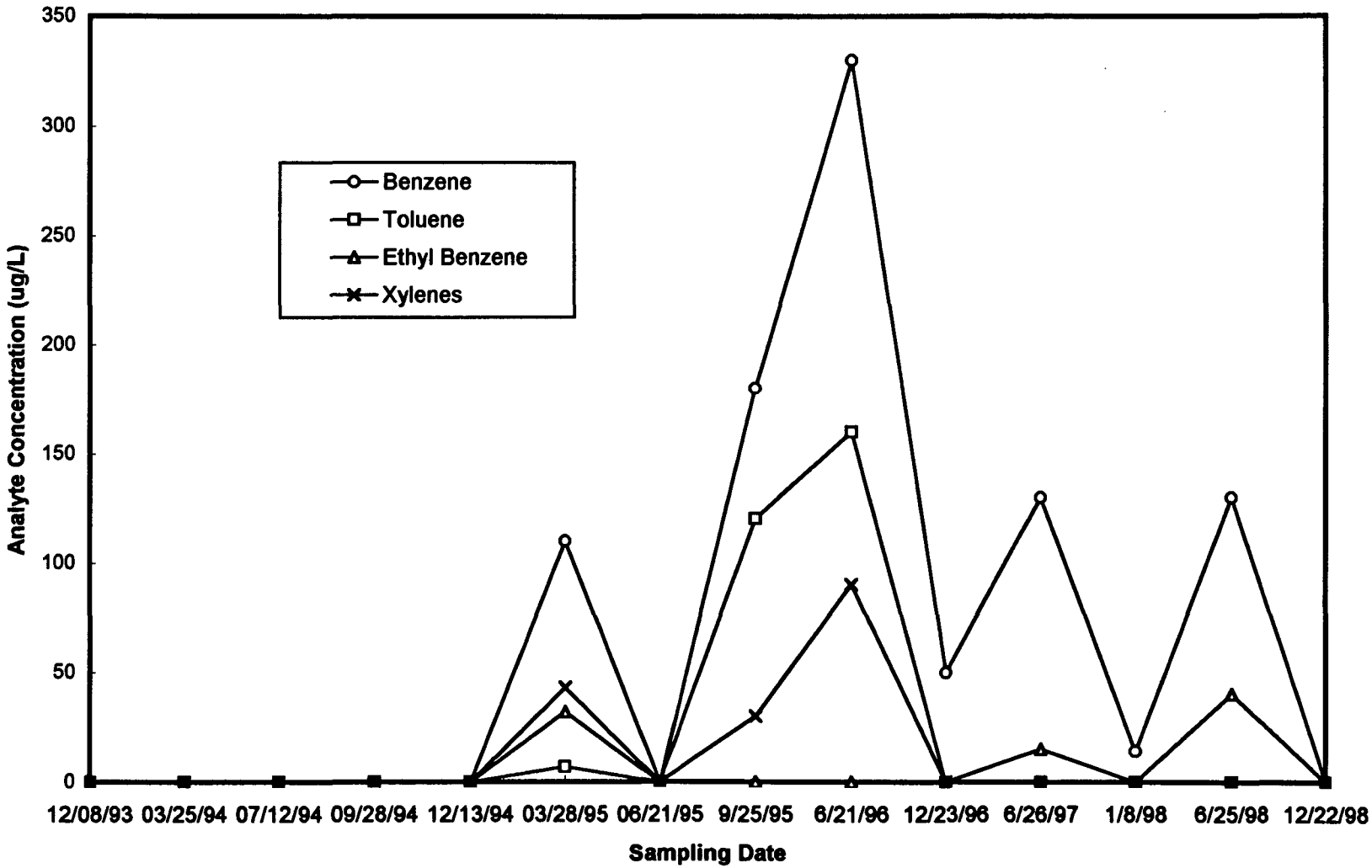
FIGURE 2b
BTEX CONCENTRATION MAP
DECEMBER 21-23,1998
BRICKLAND REFINERY SITE

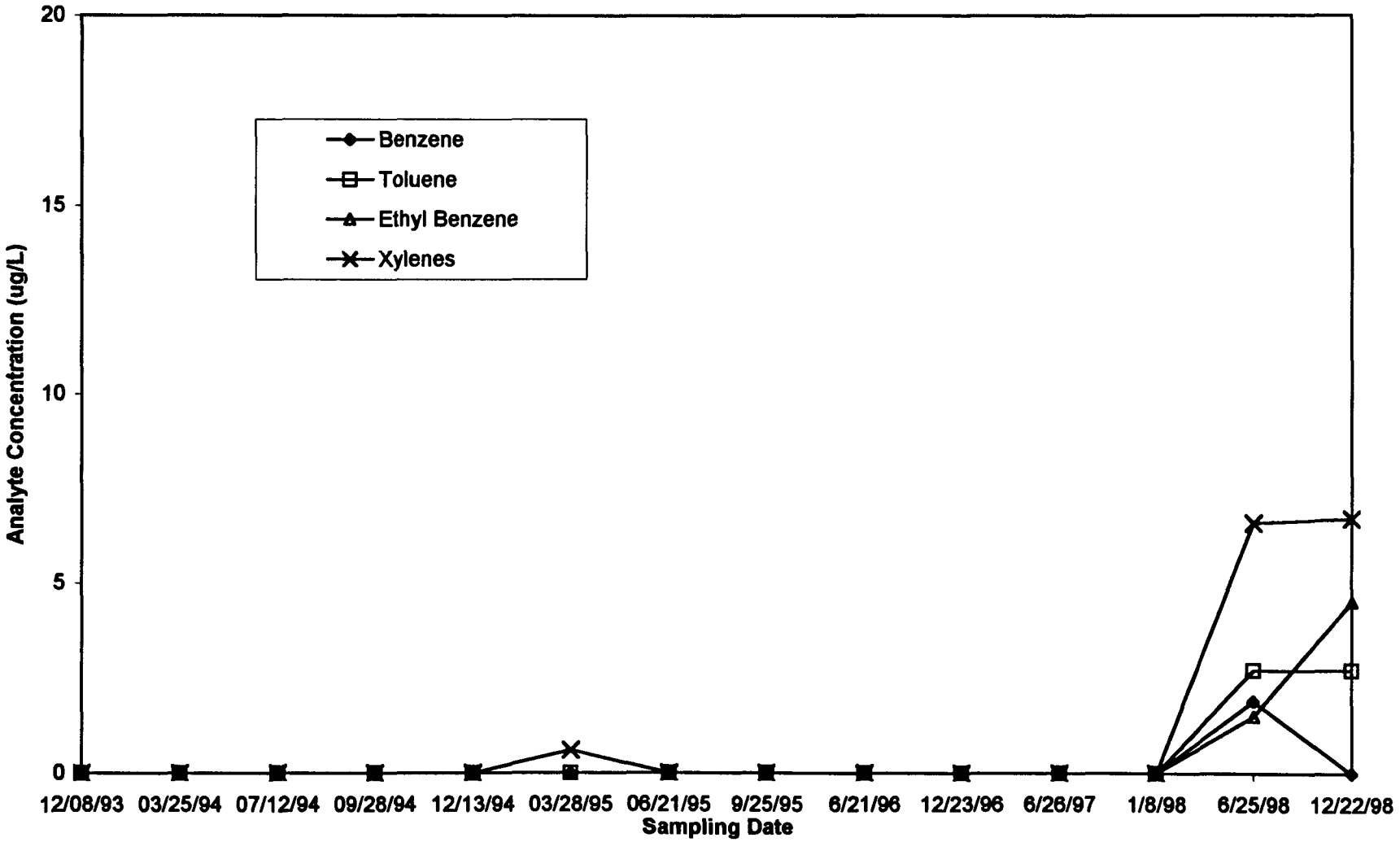
CLIENT: REXENE	
AUTHOR: GJV	DATE: 12/23/98
DRAWN BY: DAG	REV. NO.: 0
CHECKED BY: RB	FILE: D:\REXENE\BTEX1298

Figure 3a
Brickland Refinery
MW-6S BTEX Concentrations Over Time



Annual98.xls (MW-6S BTEX)

FIGURE 3b
BRICKLAND REFINERY
MW-9S BTEX Concentrations Over Time



Annual98.xls (MW-9S BTEX)

Table 4

Brickland Refinery

Total PAH Concentrations in Monitoring Wells and River Surface Water Samples (Dec. 1993 to Dec. 1998)

Well ID	12/8/93	3/25/94	7/12/94	9/28/94	12/13/94	3/28/95	6/21/95	6/21/96	6/26/97	6/25/98
MW-3S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-3D	ND	ND	ND	ND	ND	ND	ND	ND	ND, ND	ND
MW-6S	ND	ND	ND	ND	ND	ND	15, 10	ND	ND	ND
MW-6D	ND	-	ND	ND	ND	ND	ND	ND, ND	ND	ND, ND
MW-9S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Riv-Up	---	---	---	---	---	---	---	ND	ND	ND
Riv-Down	---	---	---	---	---	---	---	ND	ND	ND

Notes: All Results in Micrograms per Liter (µg/L)

ND indicates constituent was not detected

--- Indicates water sample was not analyzed for polynuclear aromatic hydrocarbons (PAH).

Table 5

Brickland Refinery

Metal Analytical Results for Monitoring Well and River Surface Water Samples

Well ID	Sample Date	Antimony	Arsenic	Beryllium	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Thallium	Zinc
MW-3S	6/21/96	ND	0.020	ND	0.0021	0.023	ND	ND	ND	ND	0.050	ND	ND	ND
	6/26/97	ND	0.010	ND	ND	ND	ND	ND	ND	ND	0.020	ND	ND	0.013
	6/25/98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-3D	6/21/96	ND	0.010	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	6/26/97	ND	0.010	ND	0.0019	ND	ND	ND	ND	0.007	ND	ND	ND	ND
	6/26/97	0.010	0.020	ND	0.0024	ND	ND	ND	ND	0.016	ND	0.009	ND	0.006
	6/25/98	ND	ND	ND	ND	ND	ND	ND	ND	0.006	ND	ND	ND	ND
MW-6S	6/21/96	ND	0.020	ND	ND	ND	ND	0.003	ND	ND	0.020	ND	ND	ND
	6/26/97	0.010	0.070	ND	0.0015	ND	0.008	ND	ND	ND	0.020	ND	ND	0.008
	6/25/98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-6D	6/21/96	ND	ND	0.002	ND	0.031	ND	ND	ND	ND	**0.120**	**0.056**	ND	ND
	6/21/96	0.010	0.020	0.003	0.0044	ND	ND	ND	ND	0.008	ND	0.007	0.014	ND
	6/26/97	0.010	0.010	ND	0.0020	ND	0.006	ND	ND	0.025	ND	ND	ND	ND
	6/25/98	ND	ND	ND	ND	ND	ND	ND	ND	0.015	ND	ND	ND	ND
	6/25/98	ND	ND	ND	ND	ND	ND	ND	ND	0.012	ND	ND	ND	ND
MW-9S	6/21/96	0.020	ND	ND	0.0007	ND	0.044	ND	ND	ND	**0.070**	ND	0.040	ND
	6/26/97	0.020	0.020	ND	ND	ND	ND	ND	ND	ND	0.030	ND	ND	ND
	6/25/98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	10/6/98	ND	NA	NA	0.001	ND	0.006	ND	ND	ND	ND	ND	NA	ND
River Upstream	6/21/96	ND	ND	ND	ND	ND	ND	0.007	ND	ND	ND	ND	ND	0.013
	6/26/97	ND	ND	ND	ND	ND	0.010	ND	ND	ND	0.010	ND	ND	0.009
	6/25/98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
River Downstream	6/21/96	ND	ND	ND	ND	0.008	ND	0.005	ND	ND	ND	ND	ND	0.006
	6/26/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	6/25/98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NMWQCC Std.		5.0	0.1	1.0	0.0100	0.050	1.0	1.0	0.0020	0.2	0.05	0.05	NS	10.0
Laboratory Detection Limit		0.010	0.010	0.001	0.0005	0.005	0.005	0.003	0.0002	0.005	0.010	0.005	0.01	0.005

All concentrations listed in milligrams per liter (mg/L)

Concentrations listed in **boldface** type indicate levels exceed New Mexico Water Quality Control Commission (NMWQCC) standards.

NA indicates sample was not analyzed for this constituent.

ND indicates concentration was below the laboratory detection limit.

NS indicates no NMWQCC standard established for this constituent.

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5.0 Free-Phase Product and Remediation System Performance

Free-phase product thickness was measured in each monitoring well and well point with a Heron Model H0.1L or comparable oil/water interface probe. The historical product thickness measurements for each monitoring point are listed in Table 6. A Free-Phase Hydrocarbon Thickness map for the June 1998 and December 1998 monitoring events are depicted in Figures 4a and 4b, respectively. Monitoring points with measureable thicknesses of free-phase product during the June 1998 and December 1998 monitoring events are summarized below.

Free-Phase Product Thickness

Well ID	6/25/98	12/21/98
MW-10	2.21	2.50
WP-1	0.00	0.74
WP-25	0.00	1.05
WP-26S	0.00	0.39
WP-27S	0.00	0.07

Due to the continued presence of free-phase product, concentrated near the south portion of the site, a product recovery system was installed at monitoring well MW-10 as recommended in the approved Stage 2 Abatement Plan. Installation of the Xitech product recovery system was completed on December 23, 1998. The product recovery system consists of the following components:

- Xitech Model ADJ 1000 Smart Skimmer with polyethylene tubing
- Xitech Model 2500 ES Electronic Timer powered by a 12-volt battery with solar panel
- 80-gallon fiberglass-reinforced plastic (FRP) tank for product recovery containment with automatic shutoff sensor
- One K-size (220 cubic feet) bottle of nitrogen gas with regulator to supply
- The components listed above are mounted on a metal stand
- The components listed above are contained within a 300-gallon capacity corrugated galvanized steel stock tank for secondary containment
- The Xitech recovery system and monitoring well MW-10 are enclosed within a 10-foot long by 10-foot wide by 8-foot tall chainlink fence. The top foot of the fence has 3 strands of barbed-wire. Access is provided through a 5-foot wide locked gate.
- The components listed above are situated on a 6-inch layer of gravel.

A schematic drawing, specifications , and photograph of the installed Xitech product recovery system is provided in Appendix C. The system does not contain any below-grade lines, therefore no pressurized integrity testing is required. Currently, the control box is set to pump for a duration of 10 minutes once per day. As of December 23, 1998, a total of approximately 1 ½ gallons of free-phase product have been removed from monitoring well MW-10. Site visits are conducted at approximately monthly intervals to monitor system performance, replace the bottled nitrogen supply, perform maintenance to system components, and to check for any vandalism activities.

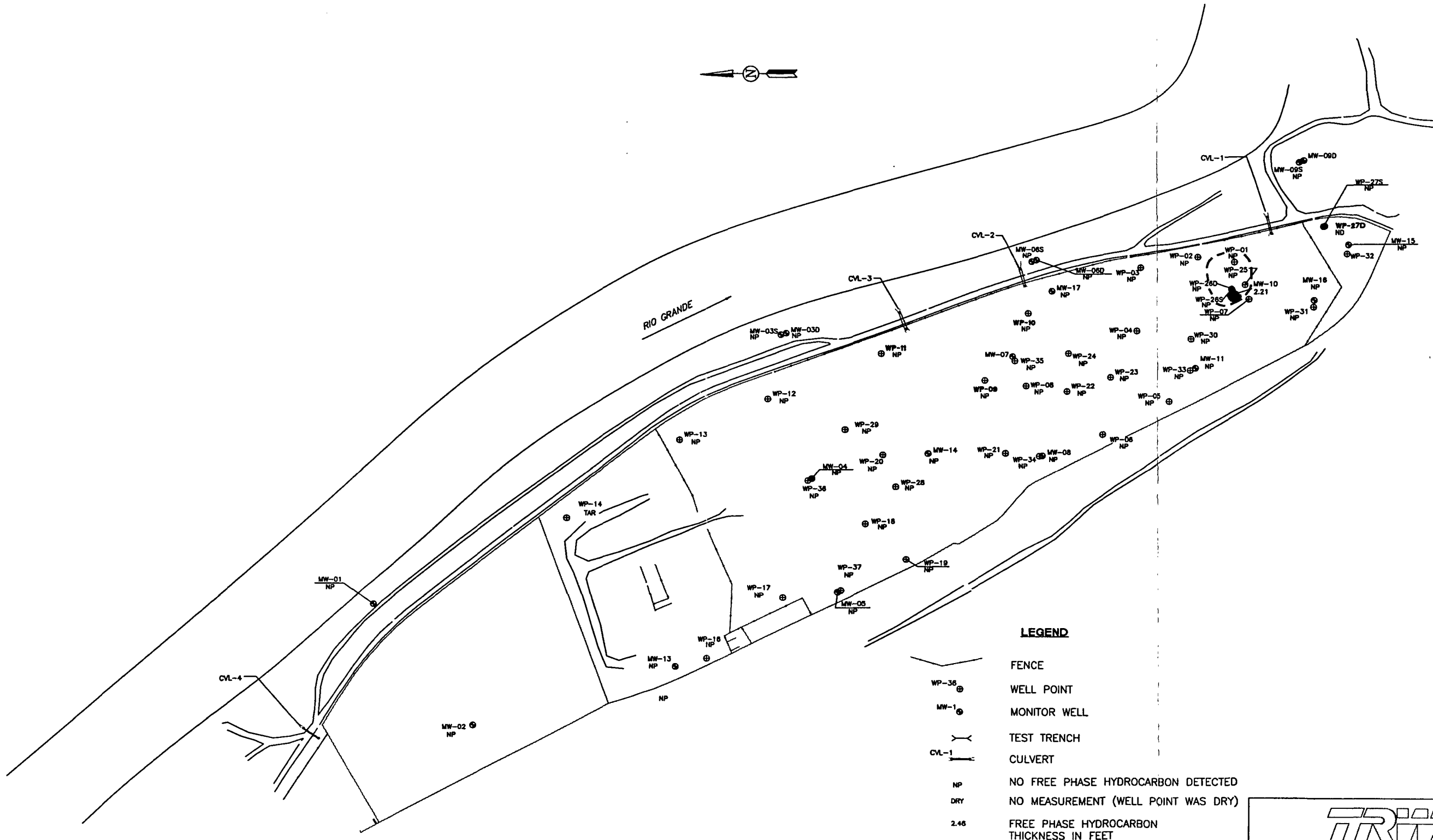
Table 6
Brickland Refinery
Free-Phase Hydrocarbon Thickness Measurements (feet)

Well ID	Sept. 93	Dec. 93	Mar. 94	Jul. 94	Sept. 94	Dec. 94	Mar. 95	Dec. 95	Jun. 96	Dec. 96	Jul. 97	Jan. 98	Jun. 98	Dec. 98
MW-1	NM	NM	0.00	0.00	0.00	0.00	NM	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MW-2	NM	NM	0.00	0.00	0.00	0.00	NM	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MW-3S	NM	NM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NM	0.00	0.00
MW-3D	NM	NM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MW-4	NM	NM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.00	0.00
MW-5	NM	NM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MW-6S	NM	NM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NM	0.00	0.00
MW-6D	NM	NM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NM	0.00	0.00
MW-7	NM	NM	0.00	0.00	0.00	0.00	0.00	0.00	NM	0.00	0.00	0.00	0.00	0.00
MW-8	NM	NM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MW-9S	NM	NM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MW-10	5.42	3.58	NM	3.45	2.40	2.46	NM	2.29	2.3	2.14	2.01	2.26	2.21	2.50
MW-11	NM	NM	0.00	0.00	0.05	NM	NM	0.16	0	<0.01	<0.01	<0.01	0.00	0.00
MW-12	NM	NM	0.00	0.00	0.00	0.00	NM	0.00	NM	0.00	0.00	NM	0.00	0.00
MW-13	NM	NM	NM	0.00	0.00	0.00	NM	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MW-14	NM	NM	NM	0.00	0.00	0.00	0.00	0.00	NM	0.00	0.00	0.00	0.00	0.00
MW-15	NM	NM	NM	0.00	0.00	0.00	0.00	0.00	NM	0.00	0.00	0.00	0.00	0.00
MW-16	NM	NM	NM	0.00	0.00	0.00	0.00	0,00	0.00	0.00	0.00	0.00	0.00	0.00
MW-17	NM	NM	NM	0.00	0.00	0.00	0.00	0.00	NM	0.00	0.00	Dry	0.00	0.00
WP-1	NM	NM	NM	0.00	0.00	0.00	NM	0.16	NM	<0.01	0.00	Dry	0.00	0.74
WP-2	NM	NM	NM	0.00	0.00	0.00	NM	0.00	NM	0.00	0.00	0.00	0.00	0.00
WP-3	NM	NM	NM	0.00	0.00	0.00	NM	0.00	NM	0.00	0.00	0.00	0.00	0.00
WP-4	NM	NM	NM	0.00	0.00	0.00	NM	0.00	NM	0.00	0.00	0.00	0.00	0.00
WP-5	NM	NM	NM	0.00	0.00	0.00	NM	0.00	NM	0.00	0.00	0.00	0.00	0.00
WP-6	NM	NM	NM	0.00	0.00	0.00	NM	0.00	NM	0.00	0.00	<0.01	0.00	0.00
WP-7	NM	NM	NM	0.00	0.00	0.00	NM	NM	NM	0.00	0.00	0.00	0.00	0.00
WP-8	NM	NM	NM	0.00	0.00	0.00	NM	0.00	NM	0.00	0.00	0.00	0.00	0.00
WP-9	0.01	NM	NM	0.00	0.00	0.00	NM	0.00	NM	0.00	0.00	0.00	0.00	0.00
WP-10	NM	NM	NM	0.00	0.20	Dry	NM	0.00	NM	Dry	0.00	Dry	0.00	Dry
WP-11	0.01	NM	NM	0.00	Dry	Dry	NM	NM	NM	Dry	0.00	Dry	0.00	Dry
WP-12	NM	NM	NM	0.00	Dry	NM	NM	0.00	NM	Dry	0.00	Dry	0.00	Dry
WP-13	NM	NM	NM	0.00	0.00	0.00	NM	0.00	NM	Dry	0.00	Dry	0.00	Dry
WP-14	NM	NM	NM	0.00	Tar	NM	NM	0.14	NM	Tar	Tar	Tar	Tar	Tar
WP-15	NM	NM	NM	0.00	0.00	0.00	NM	0.00	NM	0.00	0.20	Dry	0.00	0.00

Table 6
Brickland Refinery
Free-Phase Hydrocarbon Thickness Measurements (feet)

Well ID	Sept. 93	Dec. 93	Mar. 94	Jul. 94	Sept. 94	Dec. 94	Mar. 95	Dec. 95	Jun. 96	Dec. 96	Jul. 97	Jan. 98	Jun. 98	Dec. 98
WP-16	NM	NM	NM	0.00	NM	NM	NM	0.00	NM	Dry	Dry	Dry	0.00	Dry
WP-17	NM	NM	NM	0.00	Dry	Dry	NM	0.00	NM	Dry	0.12	Dry	0.00	Dry
WP-18	NM	NM	NM	0.00	0.00	0.00	NM	0.00	NM	<0.01	<0.01	Dry	0.00	0.00
WP-19	NM	0.01	NM	0.00	0.00	0.00	NM	0.00	NM	0.00	0.00	0.00	0.00	0.00
WP-20	NM	NM	NM	0.00	NM	0.00	NM	0.00	NM	0.00	0.00	0.00	0.00	0.00
WP-21	NM	NM	NM	0.00	0.00	0.00	NM	0.00	NM	Dry	0.06	Dry	0.00	Dry
WP-22	NM	NM	NM	0.00	0.00	0.00	NM	0.00	NM	NM	NM	NM	0.00	NM
WP-23	NM	NM	NM	0.00	0.00	0.00	NM	0.00	NM	NM	NM	NM	0.00	NM
WP-24	NM	NM	NM	0.00	0.00	0.00	NM	0.00	NM	0.00	0.00	0.00	0.00	0.00
WP-25	0.05	0.05	NM	0.22	NM	0.20	NM	1.56	NM	NM	NM	<0.01	0.00	1.05
WP-26S	NM	0.12	NM	2.20	2.59	1.53	NM	0.00	NM	0.00	1.29	Tar	0.00	0.39
WP-26D	NM	NM	NM	0.00	0.00	0.00	NM	0.00	NM	0.00	0.00	0.00	0.00	0.00
WP-27S	NM	NM	NM	0.00	0.00	0.00	NM	NM	NM	0.00	0.00	0.00	0.00	0.07
WP-27D	NM	NM	NM	0.11	0.45	0.49	NM	NM	NM	0.48	0.44	1.18	0.00	0.00
WP-28	NM	NM	NM	0.00	0.00	0.00	NM	0.00	NM	0.00	0.00	Dry	0.00	Dry
WP-29	NM	NM	NM	0.00	0.00	0.00	NM	0.00	NM	0.00	<0.01	0.00	0.00	0.00
WP-30	NM	NM	NM	0.00	0.00	0.00	NM	0.00	NM	0.00	0.00	0.00	0.00	0.00
WP-31	NM	NM	NM	0.00	0.00	0.00	NM	0.00	NM	Dry	Dry	Dry	Dry	Dry
WP-32	NM	NM	NM	Dry	Dry	Dry	NM	Dry	NM	Dry	Dry	Dry	Dry	Dry
WP-33	NM	NM	NM	0.00	0.00	0.00	NM	0.00	NM	<0.01	<0.01	0.00	0.00	0.00
WP-34	NM	NM	NM	0.00	0.00	0.00	NM	0.00	NM	0.00	0.00	0.00	0.00	0.00
WP-35	NM	NM	NM	0.00	0.00	0.00	NM	0.00	NM	0.00	0.00	0.00	0.00	0.00
WP-36	NM	NM	NM	0.00	0.00	0.00	NM	0.00	NM	0.00	0.00	0.00	0.00	Dry
WP-37	NM	NM	NM	0.00	0.00	0.00	NM	0.00	NM	0.04	0.17	0.00	0.00	0.00

Notes:
NM = Monitoring point was not measured
Dry = Monitoring point was dry
Tar = Thickness measurement not obtainable because of presence of thick tar-like substance in well point.



LEGEND

- FENCE
- WP-36 — WELL POINT
- MW-1 — MONITOR WELL
- TEST TRENCH
- CVL-1 — CULVERT
- NP — NO FREE PHASE HYDROCARBON DETECTED
- DRY — NO MEASUREMENT (WELL POINT WAS DRY)
- 2.46 — FREE PHASE HYDROCARBON THICKNESS IN FEET
- (0.2) — FREE PHASE HYDROCARBON THICKNESS IN PARENTHESES FOR WELLS WITH DEEPER SCREENED INTERVAL
- CONTOUR OF ZERO THICKNESS

TRW

FIGURE 4a
FREE PHASE HYDROCARBON THICKNESS MAP
BRICKLAND REFINERY SITE

CLIENT: HUNTSMAN	
AUTHOR: GJV	DATE: 06/24/98
DRAWN BY: DAG	REV. NO.: 0
CHECKED BY: RB	FILE: D:\REXENE\HUNTSMAN\FPHYDRO_4A

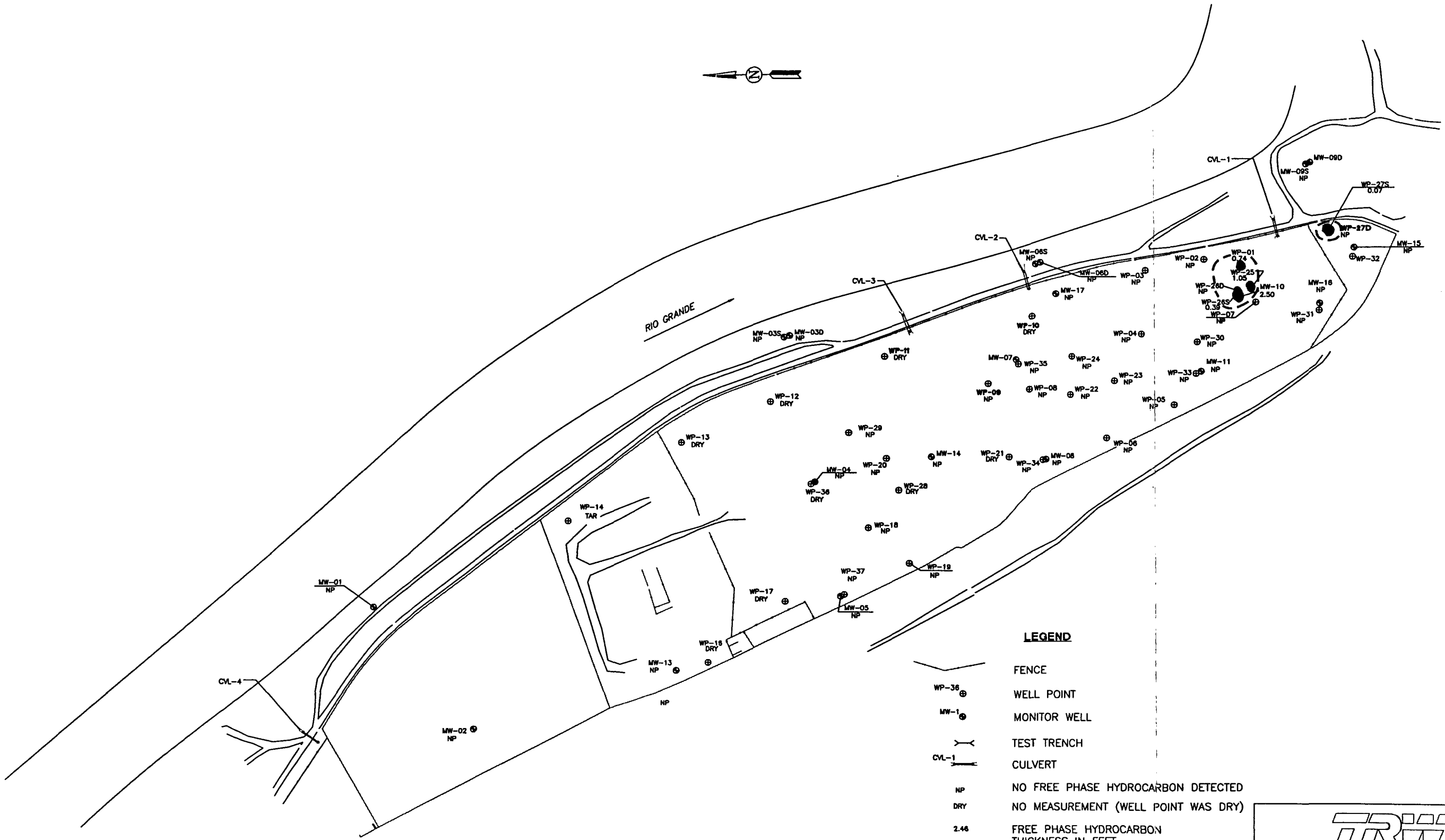


FIGURE 4b
FREE PHASE HYDROCARBON THICKNESS MAP
BRICKLAND REFINERY SITE

CLIENT: HUNTSMAN	
AUTHOR: GJV	DATE: 12/21/98
DRAWN BY: DAG	REV. NO.: 0
CHECKED BY: RB	FILE: D:\REXENE\HUNTSMAN\FPHYDRO_4b

6.0 Conclusions

Conclusions relevant to groundwater conditions and the remediation performance at the Brickand Refinery are presented below.

- BTEX concentrations in all of the sampled monitoring wells and upstream and downstream river samples remained below the laboratory detection limits with the exception of monitoring wells MW-6S and MW-9S. Trace levels of BTEX constituents were recorded in MW-9S during each sampling event, however concentrations were below NMWQCC standards. A benzene concentration of 130 micrograms per liter (µg/L) in MW-6S during the June 25, 1998 sampling event was the only exceedance of NMWQCC standards. Benzene was not dtected in well MW-6S during the December 1998 monitoring round.

- PAH levels in all sampled monitoring points were below laboratory detection limits and below NMWQCC standards during each monitoring event in 1998.

- The metal analytical results for the 1998 semi-annual and annual monitoring events indicate no constituents exceeded the NMWQCC standards.

- Measurable thicknesses of free-phase product was detected only in monitoring well MW-10 during the June 1998 monitoring event. Product thickness measurements were detected in MW-10, WP-1, WP-25, WP-26S, and WP-27 during the December 1998 monitoring event and varied from 0.07 feet in WP-27S to 2.50 feet in MW-10.

- As of December 23, 1998, a total of approximately 1½ gallons of free-phase product has been removed from monitoring well MW-10 using the Xitech product recovery system.

7.0 Recommendations

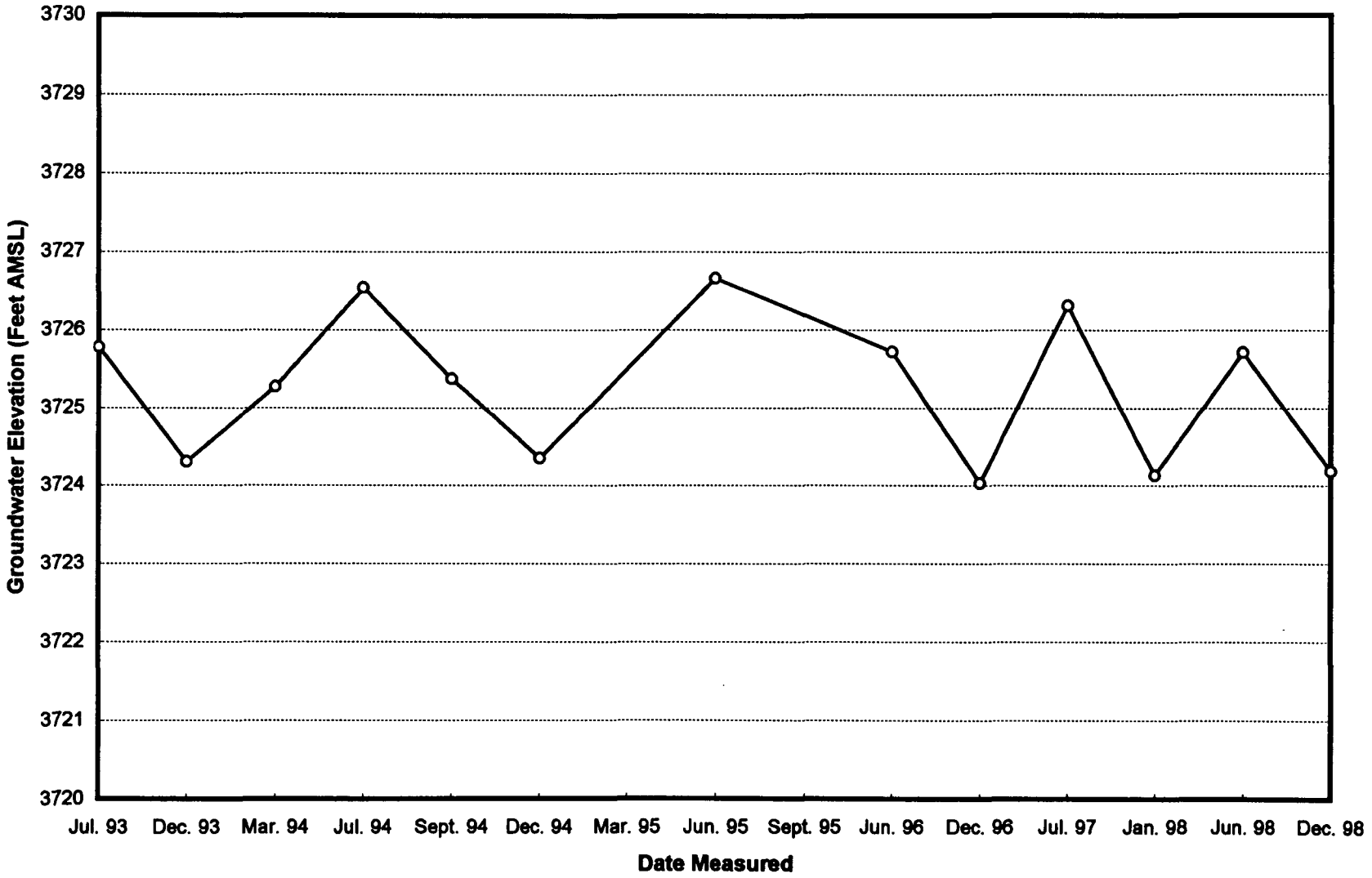
The following recommendations are proposed for the remediation system and monitoring operations at the Brickand Refinery.

- Continue free product recovery and groundwater monitoring as called for in the Stage 2 Abatement Plan.
- Though MW-15 is not currently sampled as part of the semi-annual monitoring program, a sample collected at this well (independently of the monitoring plan) and analyzed for BTEX constituents may provide useful additional data pertaining to the recent detect of these compounds in well MW-9S.
- Since construction of the soil cap system has not yet been initiated, details of this operation will be included in the next annual groundwater monitoring report.

APPENDIX A

GROUNDWATER ELEVATION HYDROGRAPHS

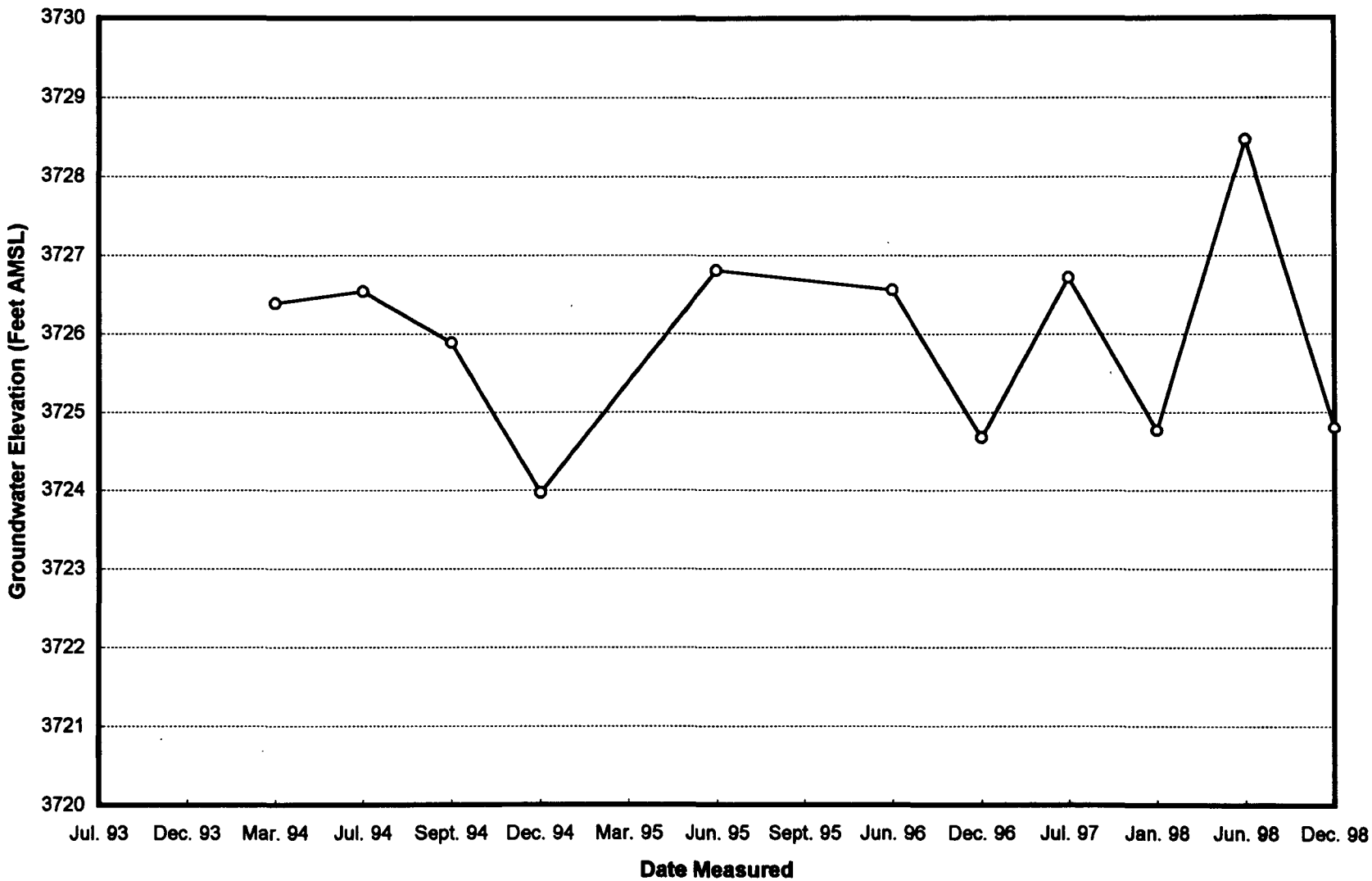
Brickland Refinery
MW-1 Groundwater Elevation Over Time



Annual98.xls:MW-1 WL

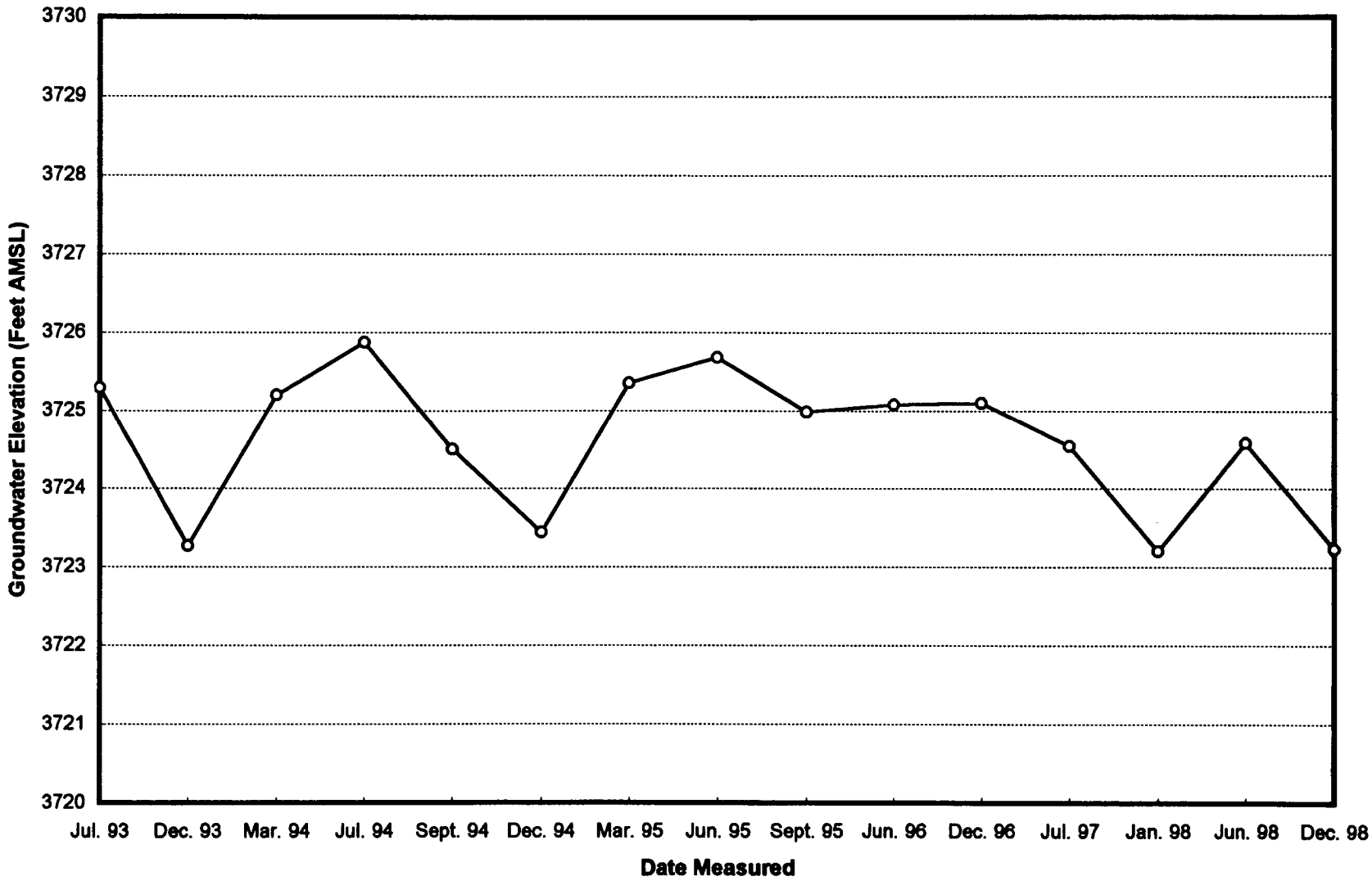
Brickland Refinery

MW-2 Groundwater Elevation Over Time



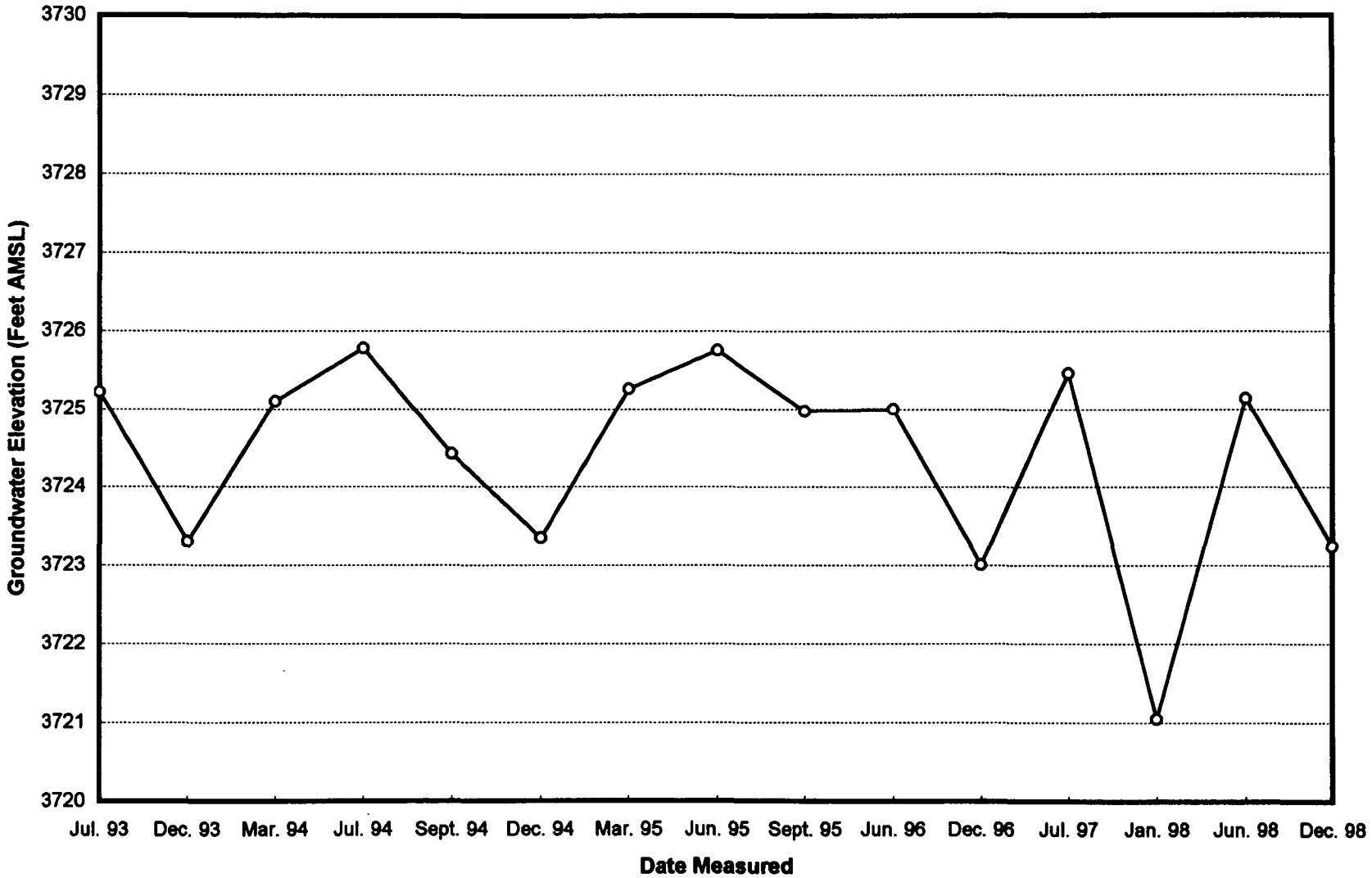
Annual98.xls:MW-2 WL

Brickland Refinery
MW-3S Groundwater Elevation Over Time



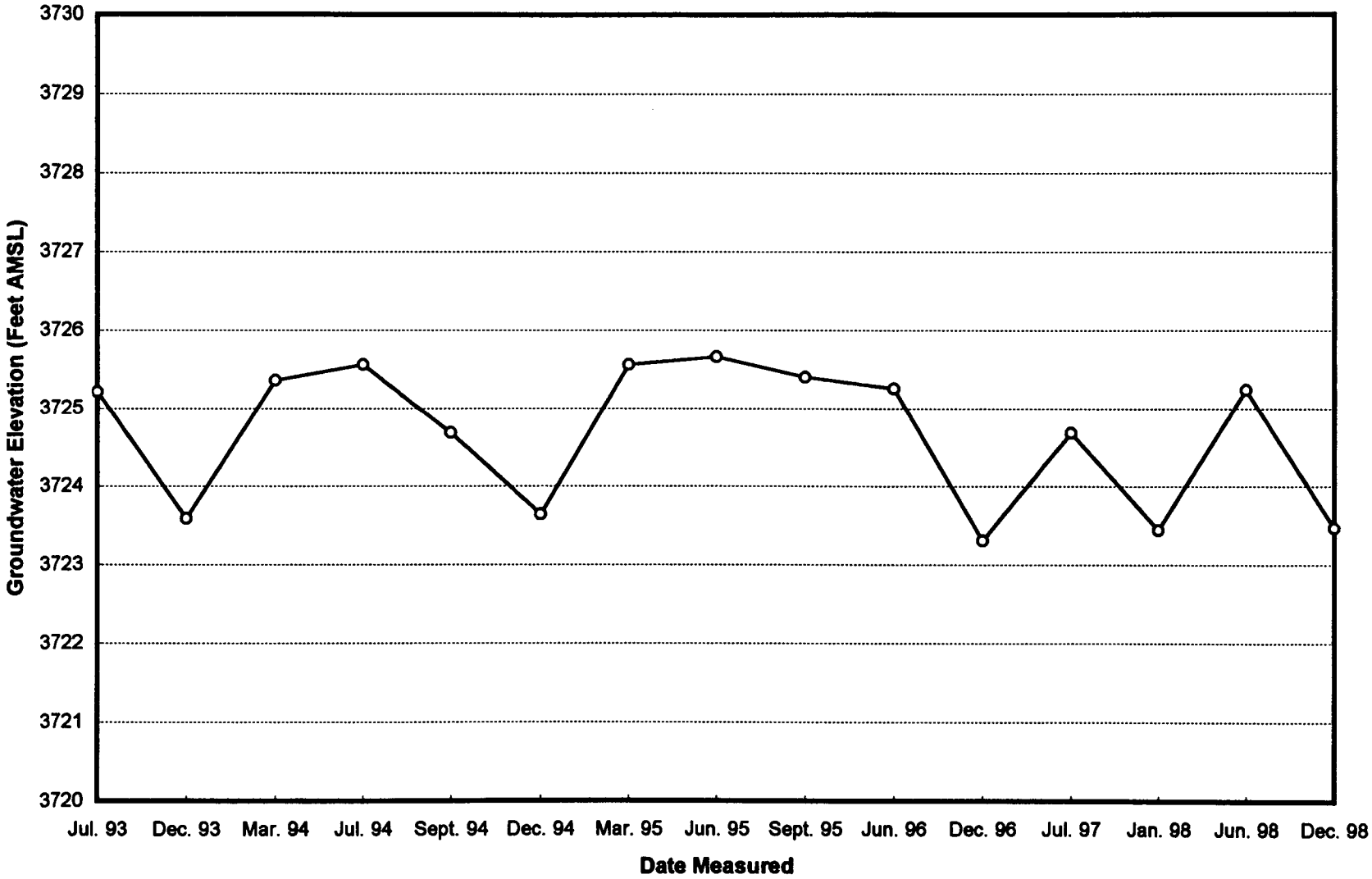
Annual98.xls:MW-3S WL

Brickland Refinery
MW-3D Groundwater Elevation Over Time



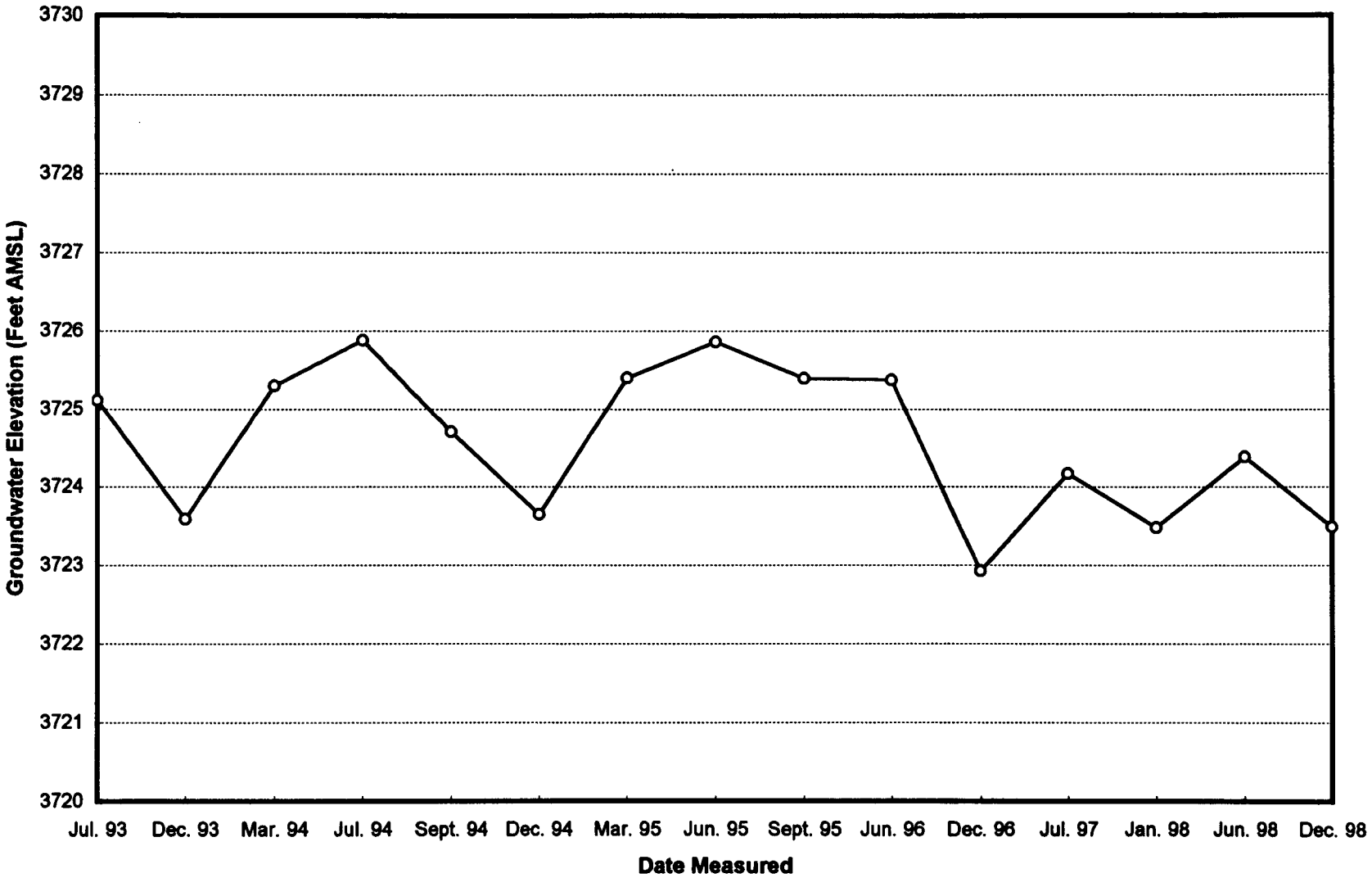
Annual98.xls:MW-3D WL

Brickland Refinery
MW-4 Groundwater Elevation Over Time



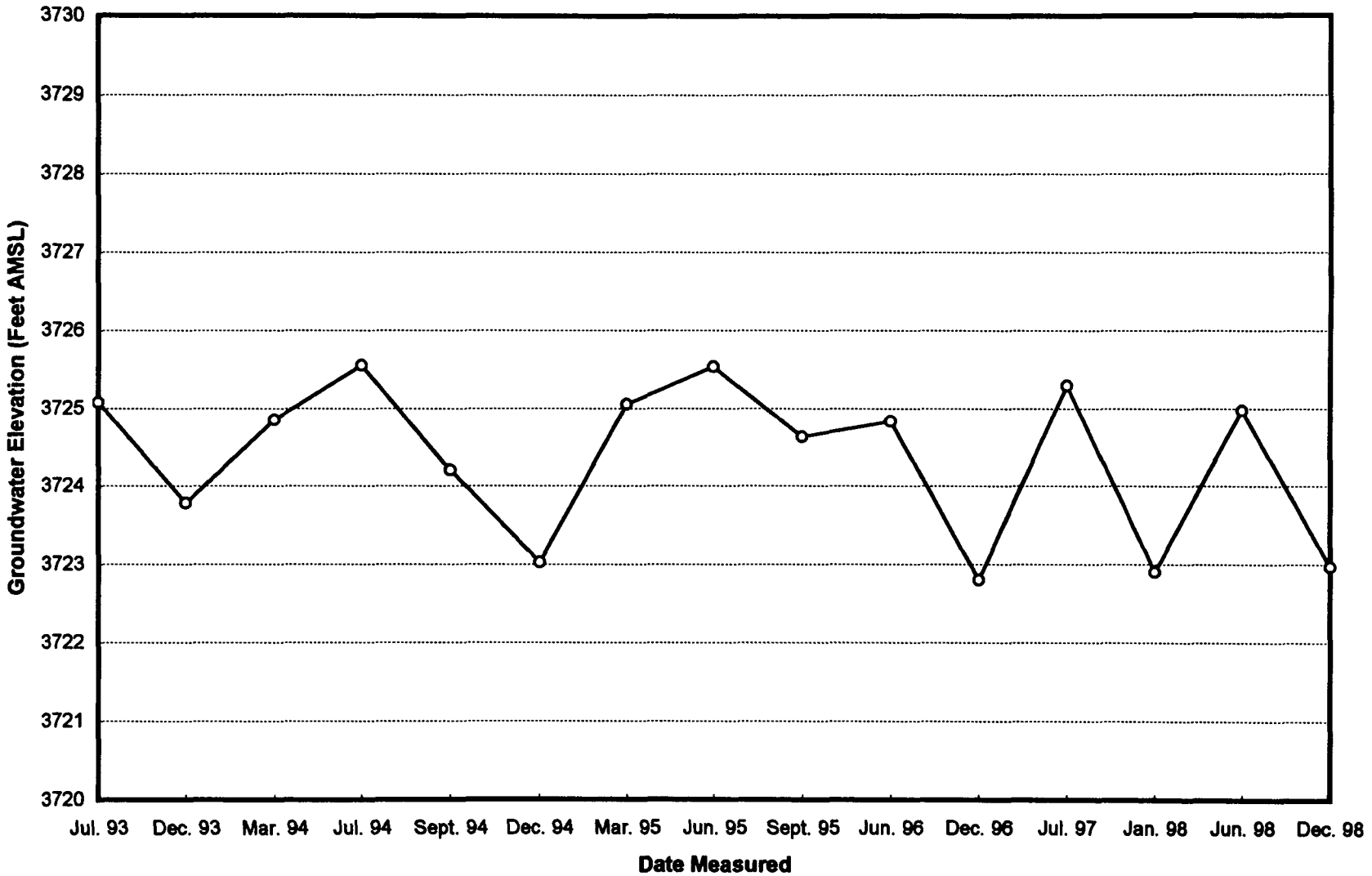
Annual98.xls:MW-4 WL

Brickland Refinery
MW-5 Groundwater Elevation Over Time



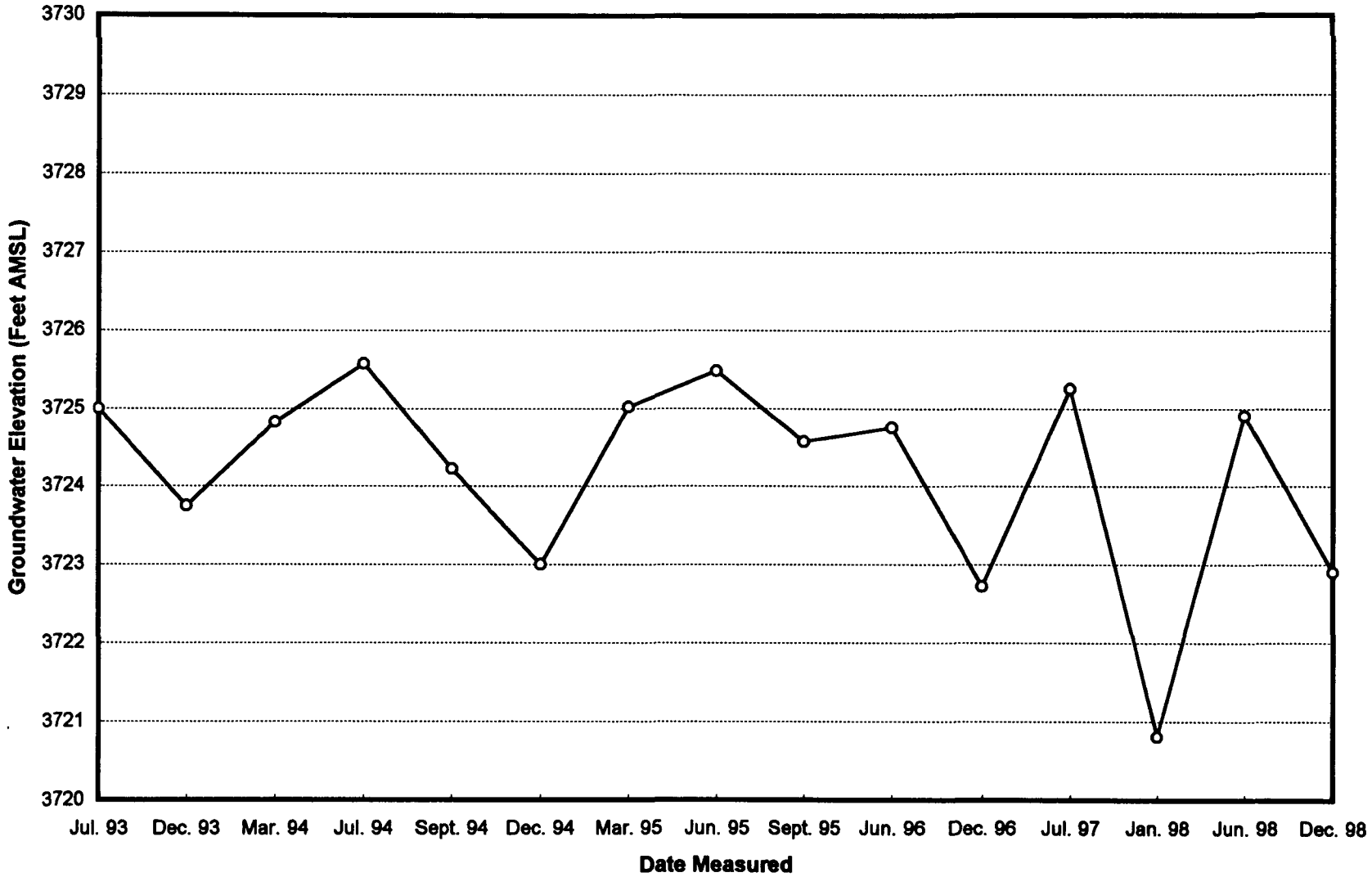
Annual98.xls:MW-5 WL

Brickland Refinery
MW-6S Groundwater Elevation Over Time



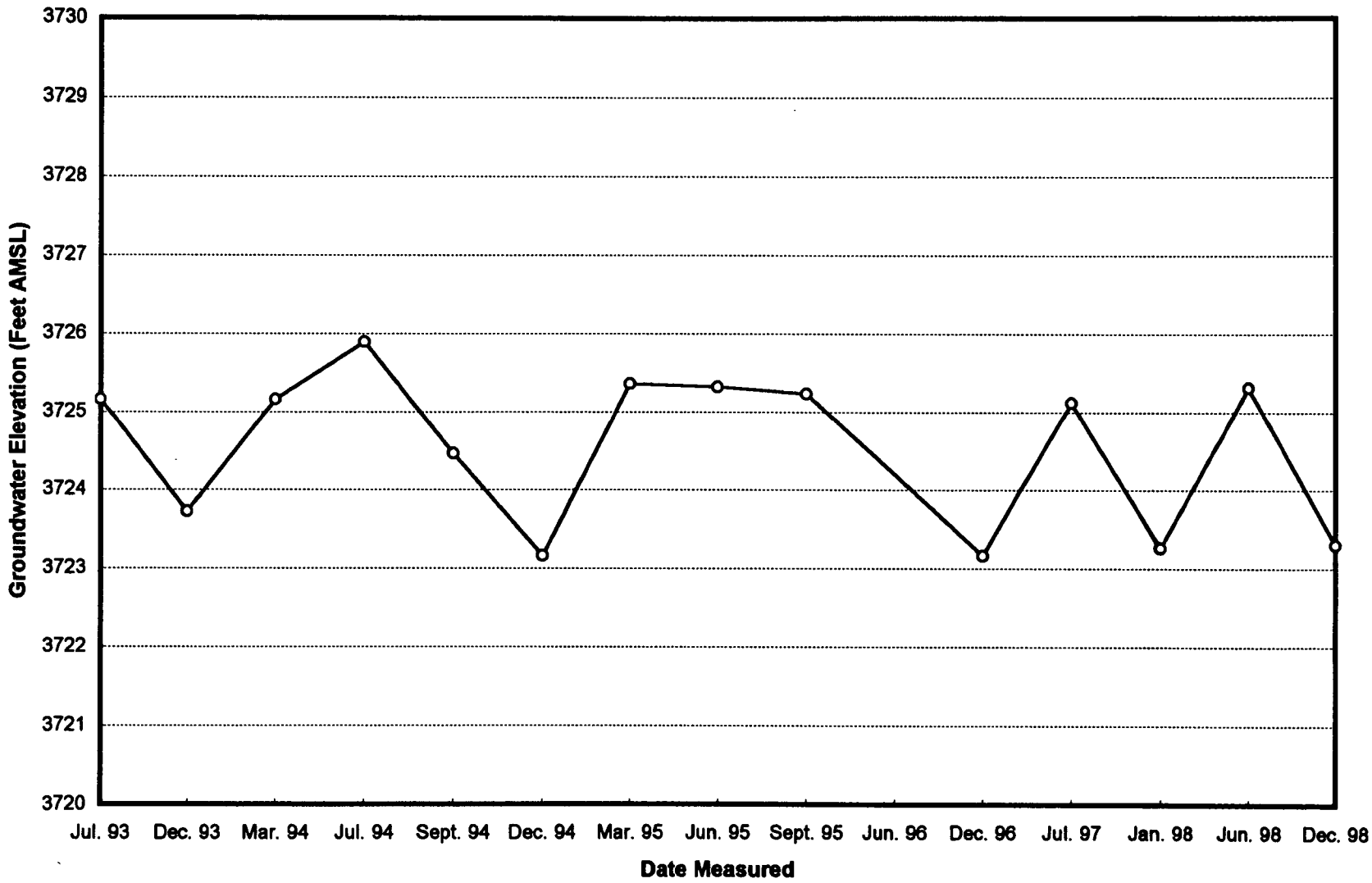
Annual98.xls:MW-6S WL

Brickland Refinery
MW-6D Groundwater Elevation Over Time



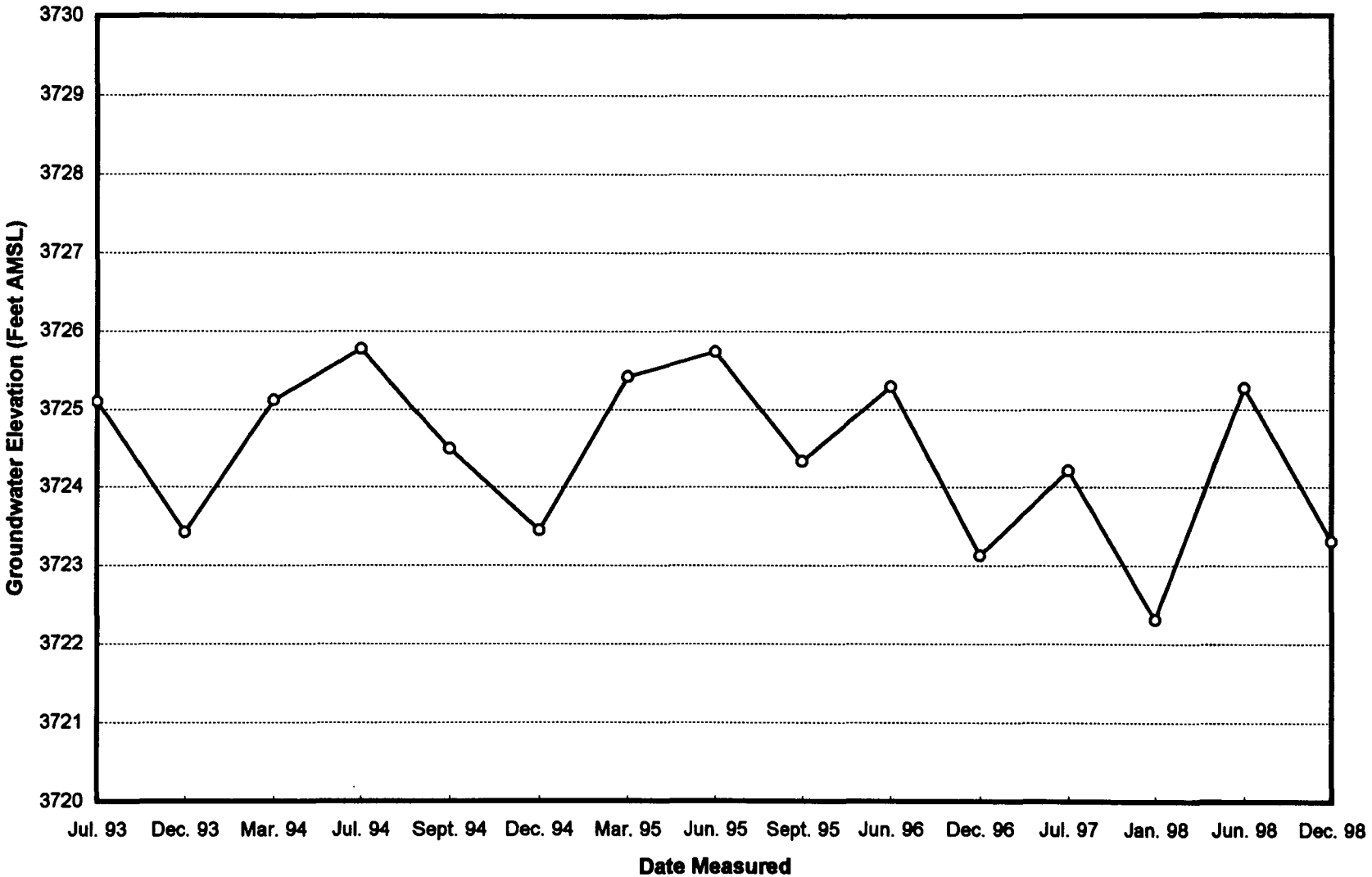
Annual96.xls:MW-6D WL

Brickland Refinery
MW-7 Groundwater Elevation Over Time



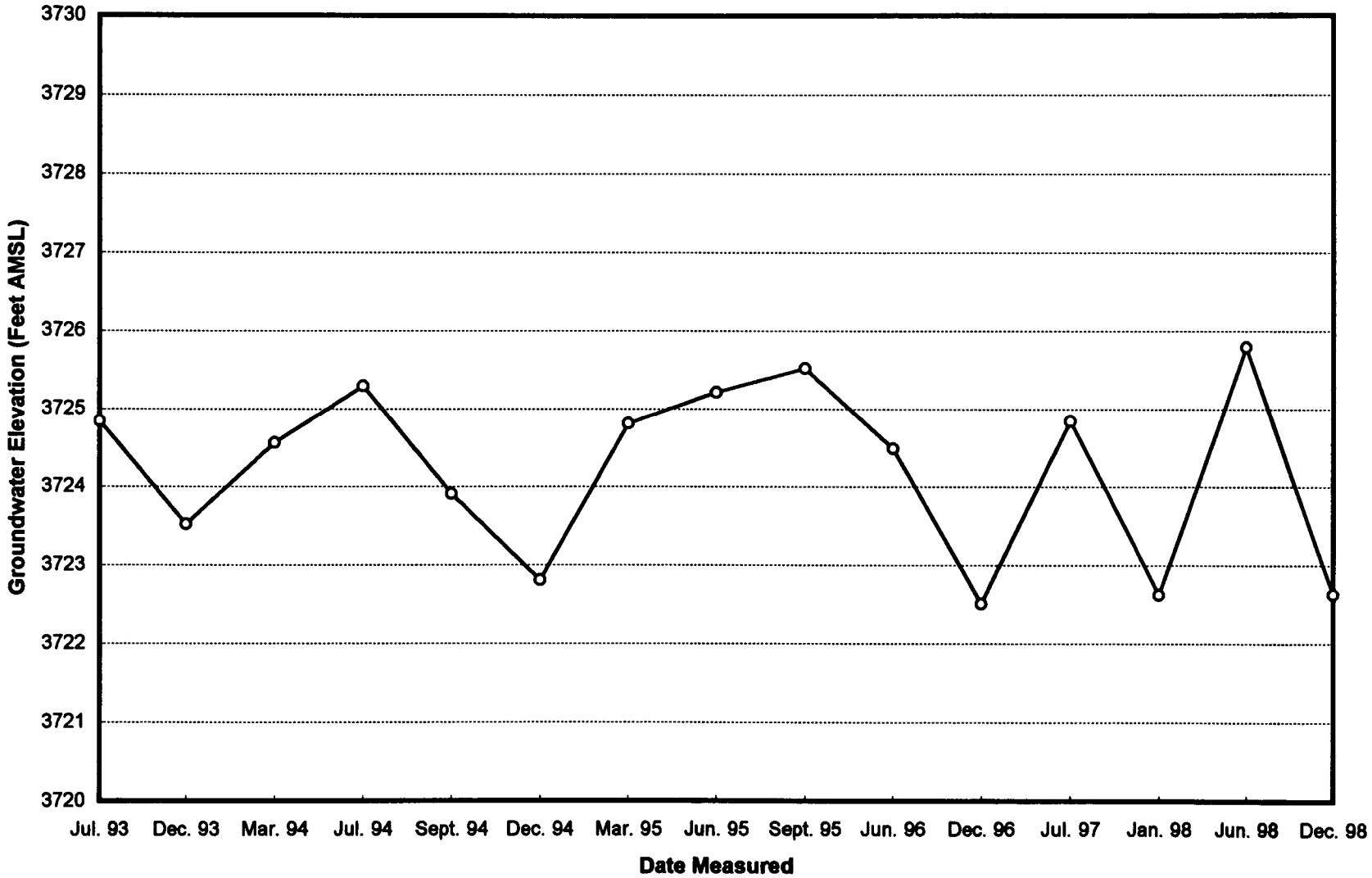
Annual98.xls:MW-7 WL

Brickland Refinery
MW-8 Groundwater Elevation Over Time



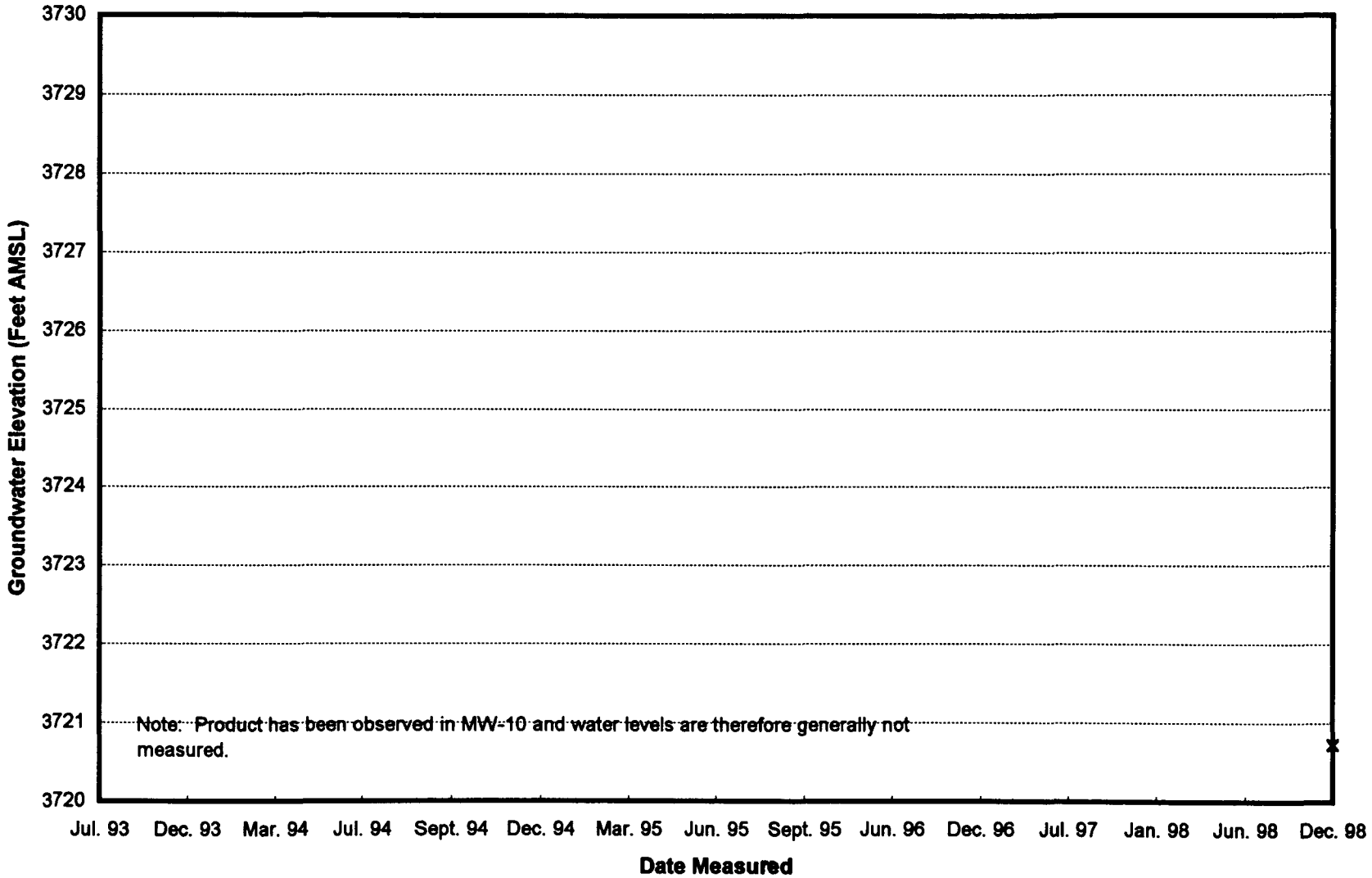
Annual98.xls:MW-8 WL

Brickland Refinery
MW-9S Groundwater Elevation Over Time

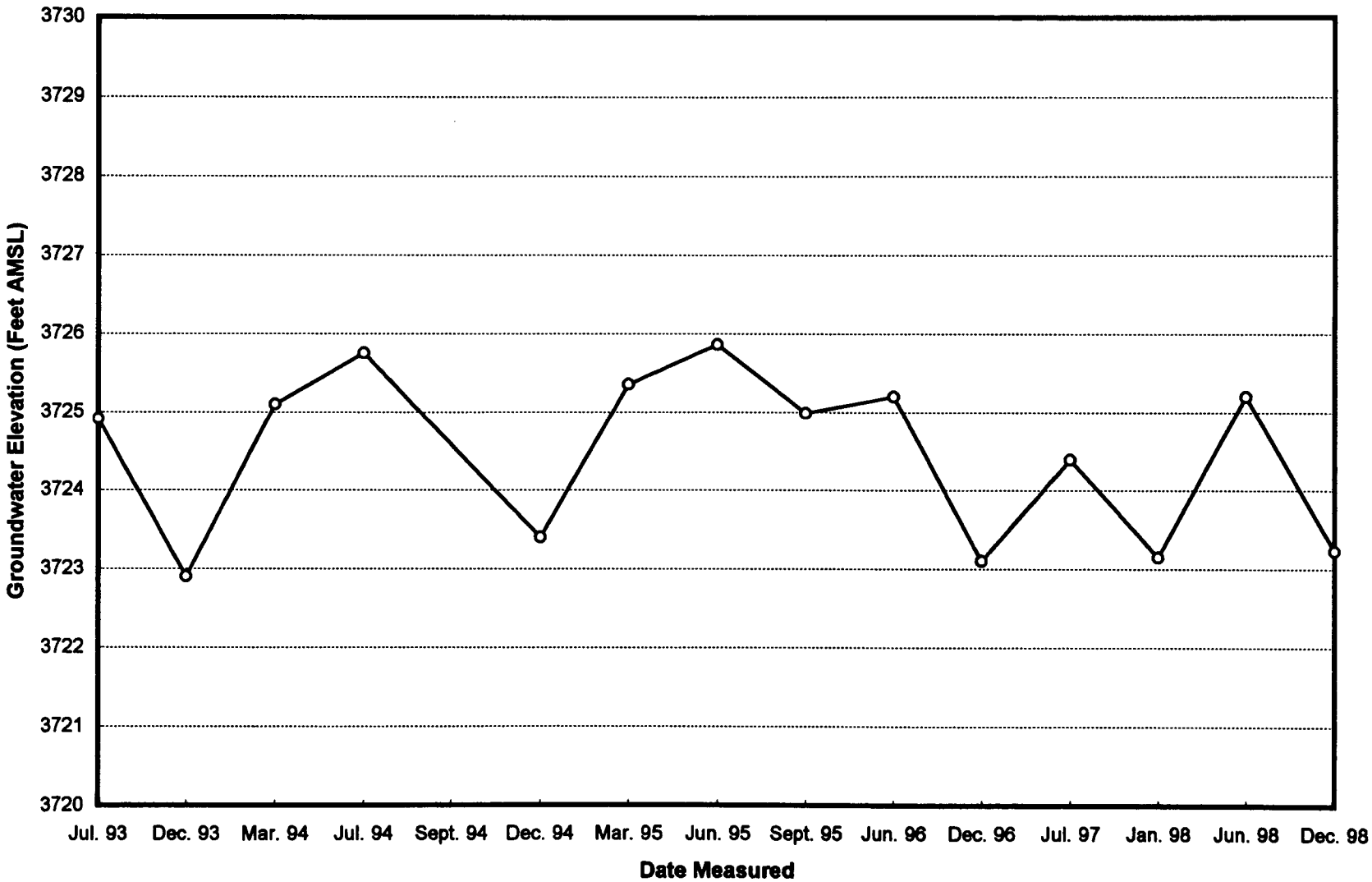


Annual98.xls:MW-9S WL

Brickland Refinery
MW-10 Groundwater Elevation Over Time

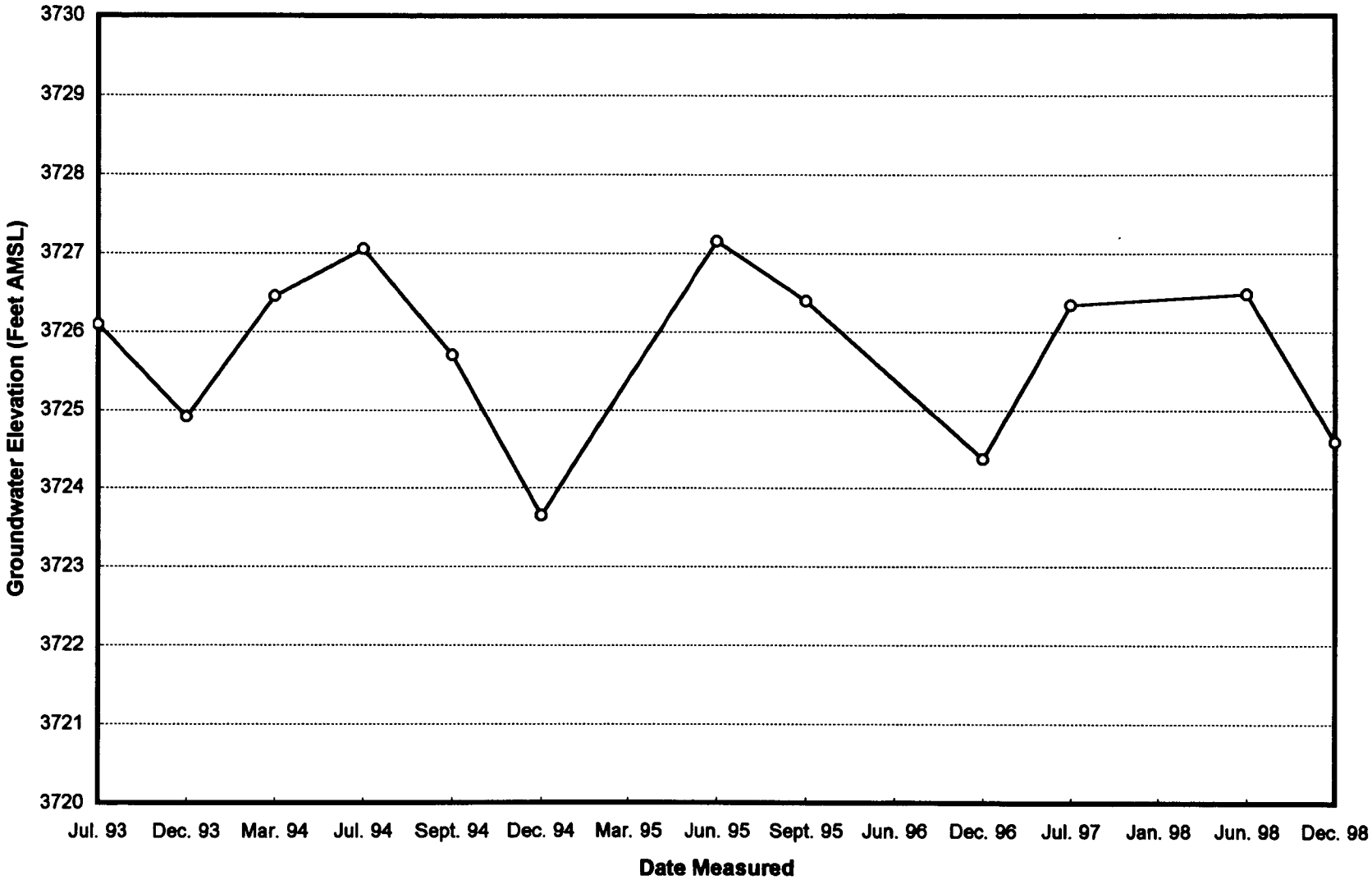


Brickland Refinery
MW-11 Groundwater Elevation Over Time



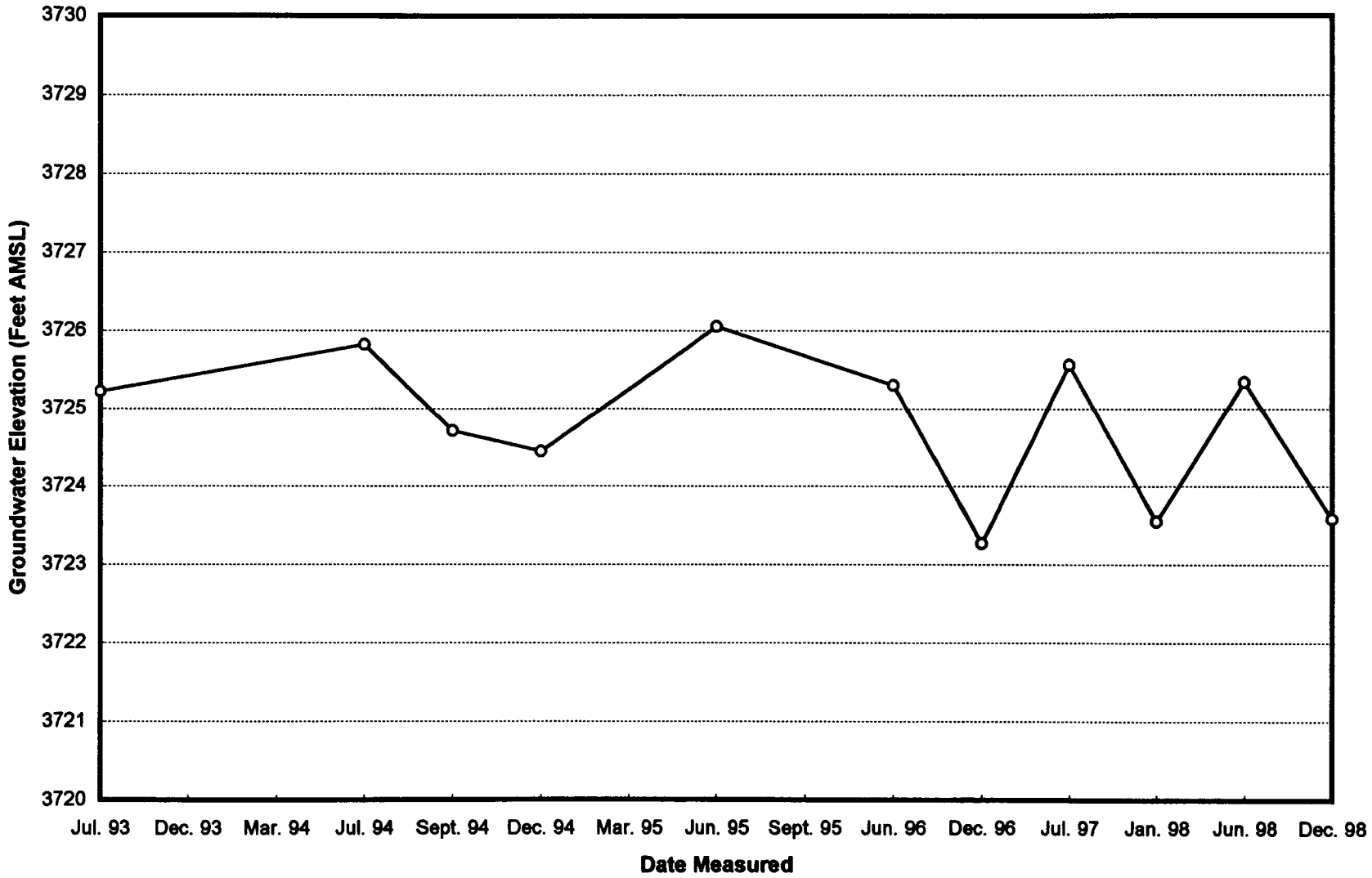
Annual98.xls:MW-11 WL

Brickland Refinery
MW-12 Groundwater Elevation Over Time



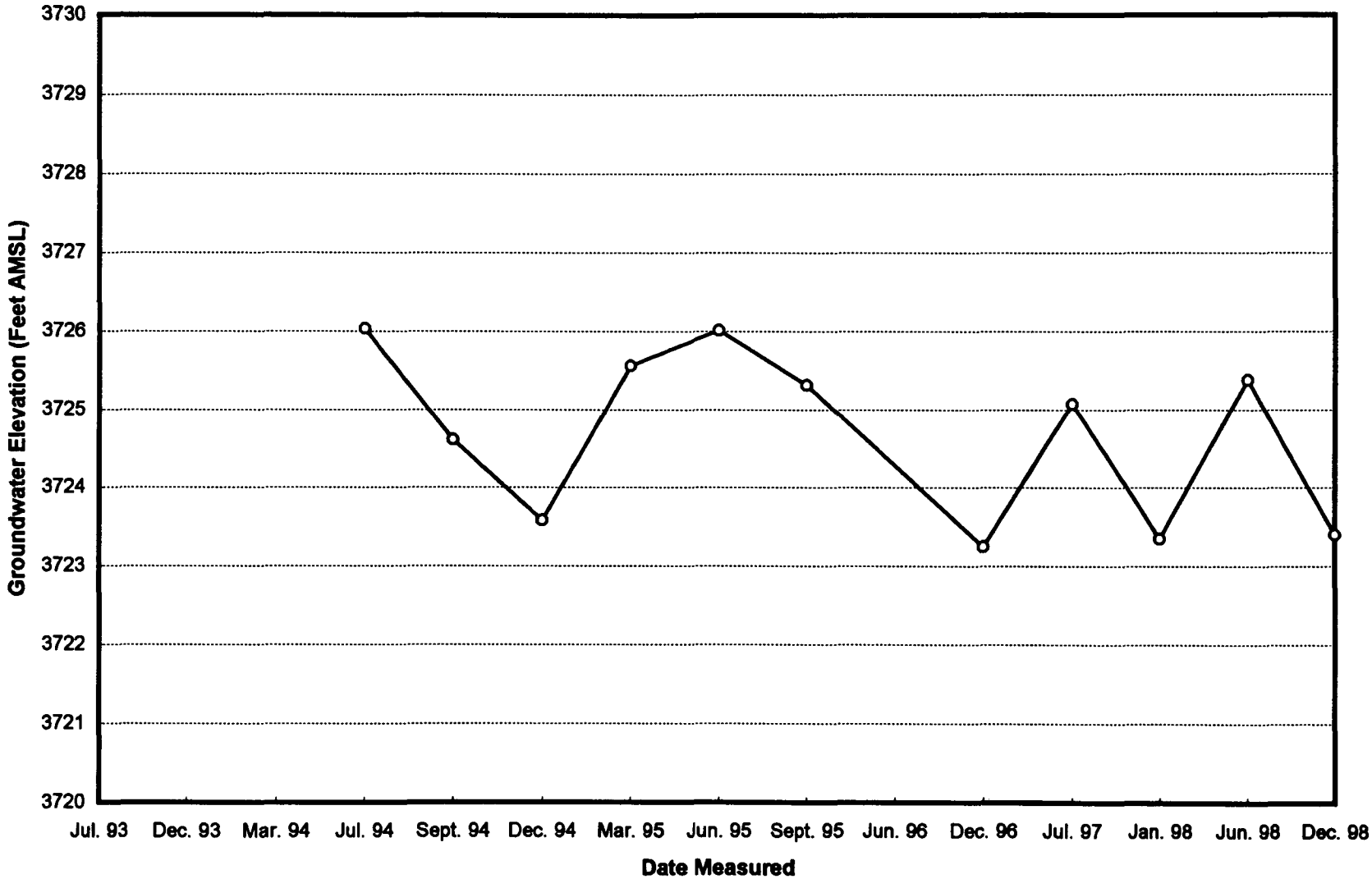
Annual98.xls:MW-12 WL

Brickland Refinery
MW-13 Groundwater Elevation Over Time



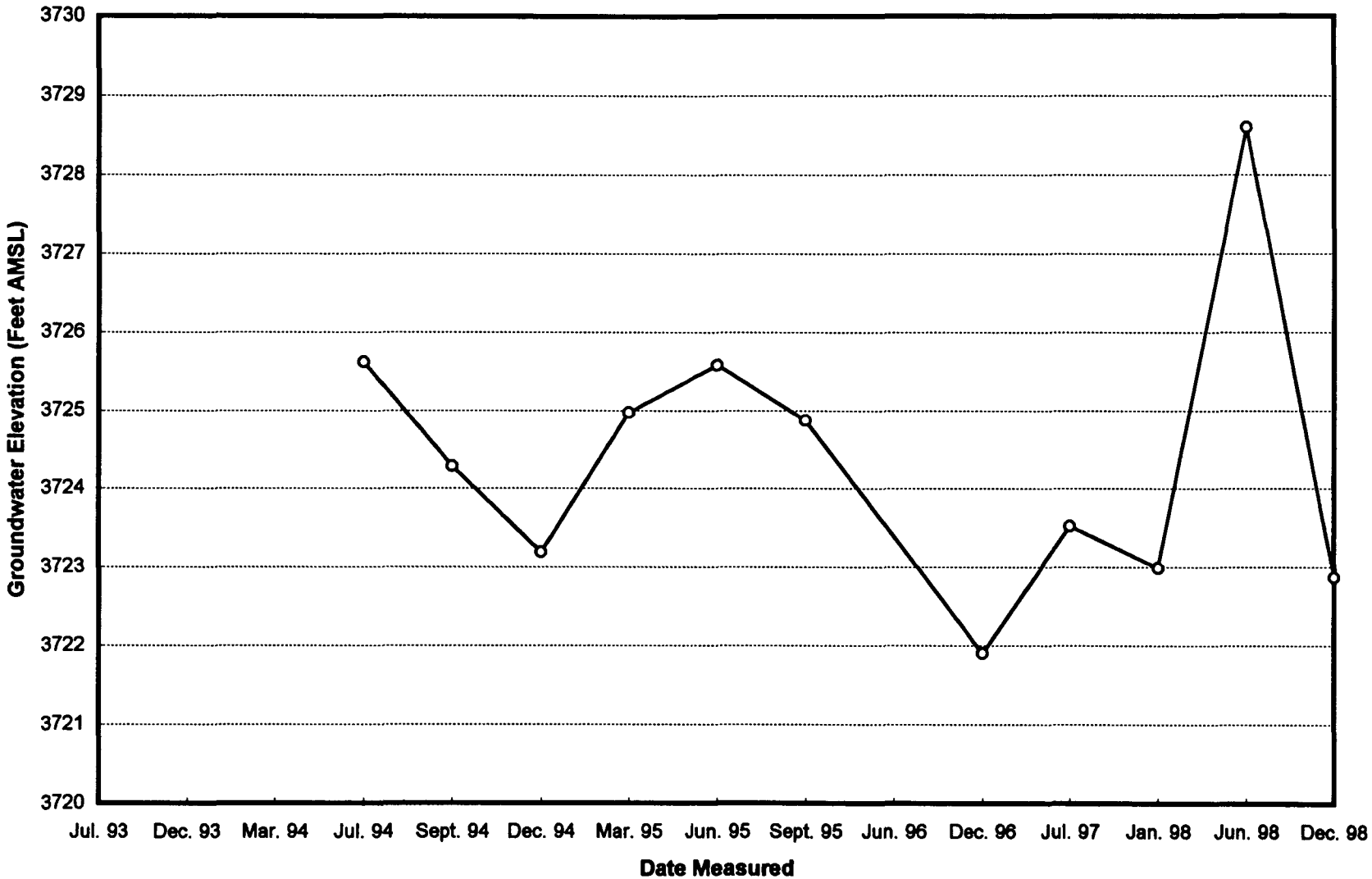
Annual98.xls:MW-13 WL

Brickland Refinery
MW-14 Groundwater Elevation Over Time



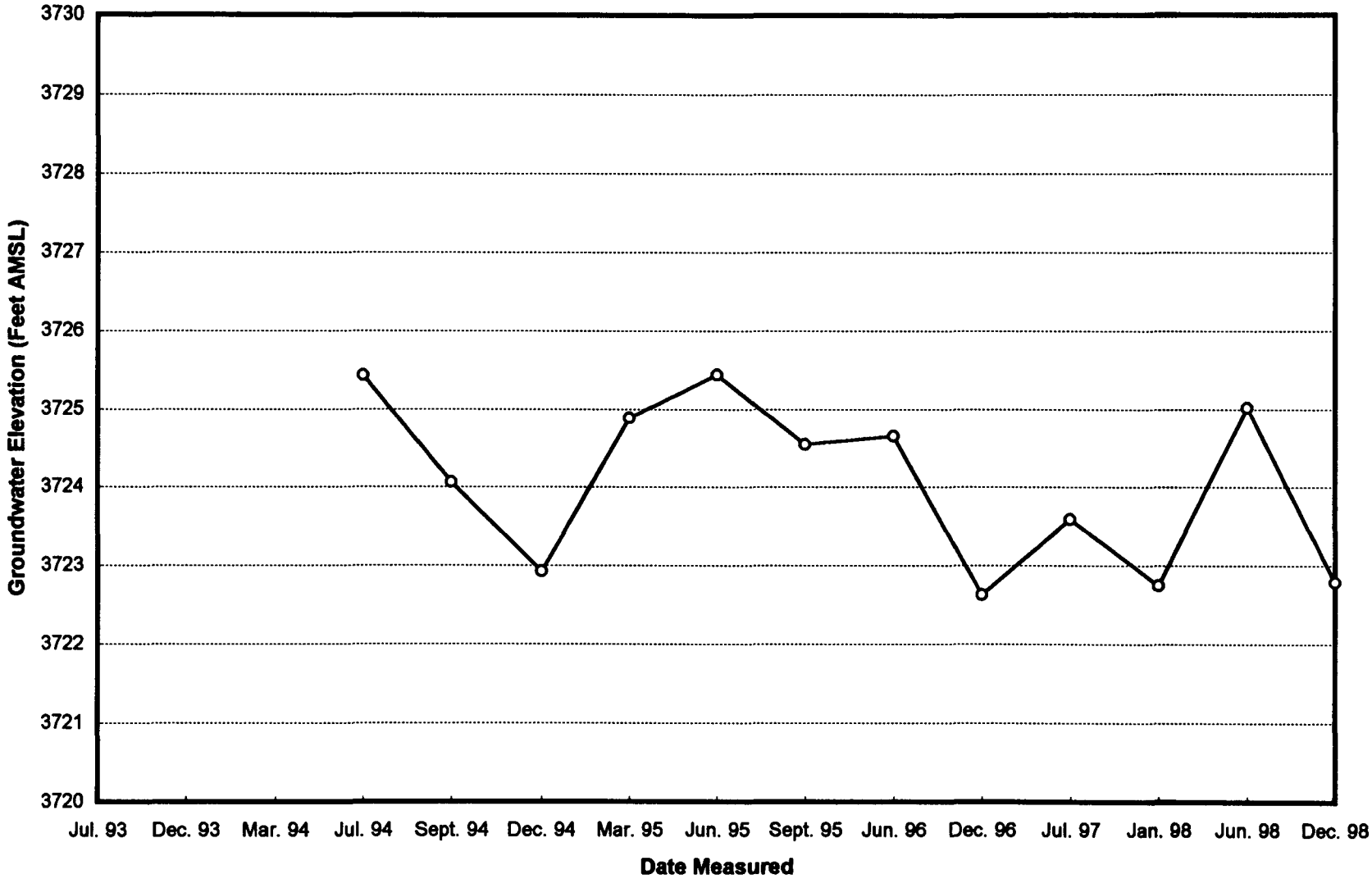
Annual98.xls:MW-14 WL

Brickland Refinery
MW-15 Groundwater Elevation Over Time



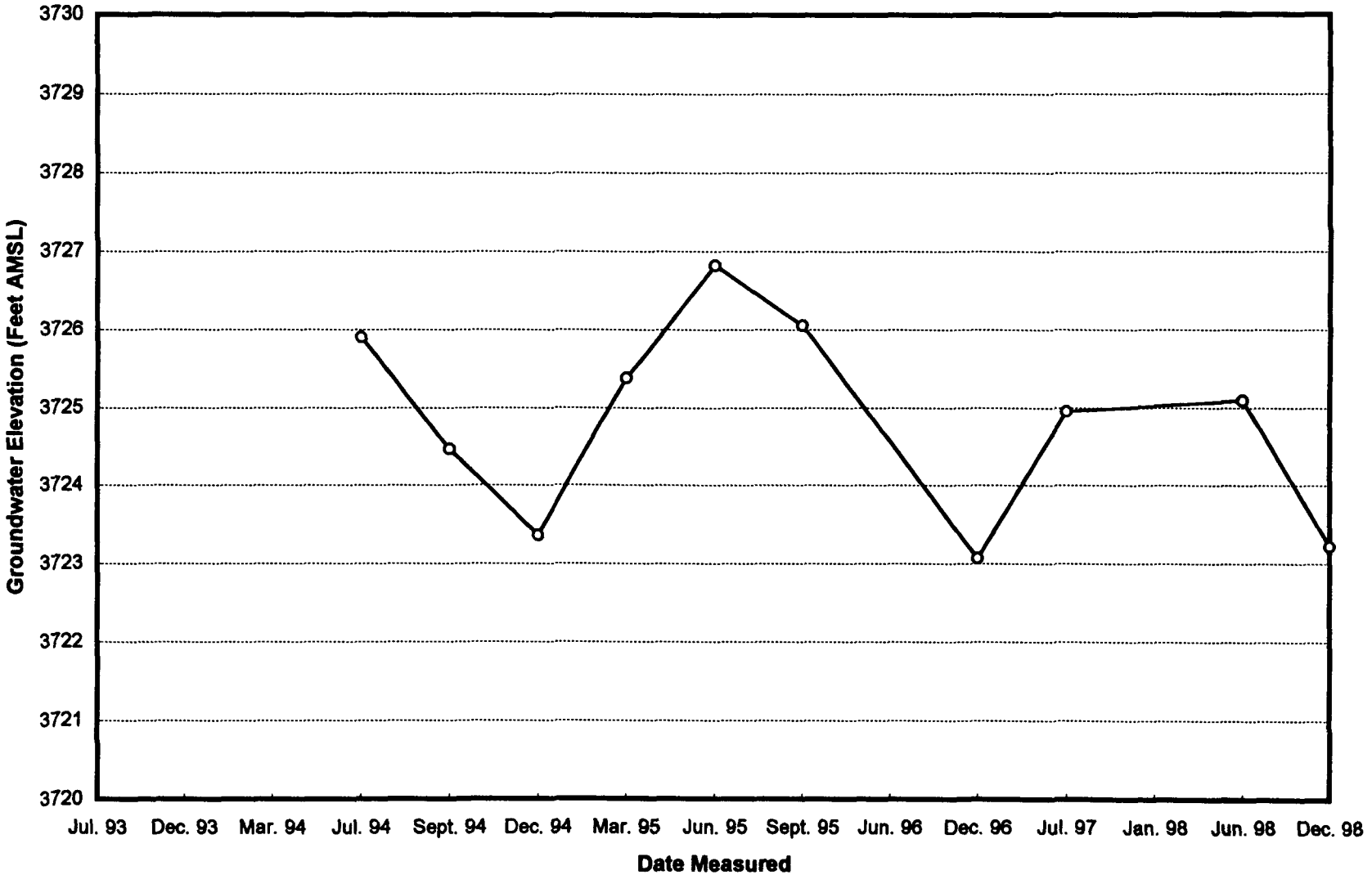
Annual98.xls:MW-15 WL

Brickland Refinery
MW-16 Groundwater Elevation Over Time



Annual98.xls:MW-16 WL

Brickland Refinery
MW-17 Groundwater Elevation Over Time



Annual98.xls:MW-17 WL

APPENDIX B

LABORATORY ANALYTICAL REPORTS

AND

CHAIN OF CUSTODY DOCUMENTATION

CORE LABORATORIES

ANALYTICAL REPORT

JOB NUMBER: 981738

Prepared For:

BDM International, Inc.
6001 Indian School Road N.E.
Albuquerque, NM 87110

Attention: Mike Selke

Date: 07/27/98

Michelle M Weatherford
Signature

7/27/98
Date

Name: Michelle M. Weatherford

Title: Project Coordinator

Core Laboratories, Inc.
10703 East Bethany Drive
Aurora, CO 80014

PHONE: (303) 751-1780
FAX..: (303) 751-1784

CORELAB

CORE LABORATORIES

SAMPLE INFORMATION
Date: 07/27/98

Job Number.: 981738
Customer...: BDM International, Inc.
Attn.....: Mike Selke

Project Number.....: 95000161
Customer Project ID....: REXENE
Project Description....: BDM Rexene Quarterly Waters

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
981738-1	9806251100 MW-3S	Water	06/25/1998	11:00	06/26/1998	09:30
981738-2	9806251215 MW-3D	Water	06/25/1998	11:00	06/26/1998	09:30
981738-3	9806251330 MW-6S	Water	06/25/1998	11:00	06/26/1998	09:30
981738-4	9806251440 MW-6D	Water	06/25/1998	11:00	06/26/1998	09:30
981738-5	9806251525 MW-6M	Water	06/25/1998	11:00	06/26/1998	09:30
981738-6	9806251630 MW-9S	Water	06/25/1998	11:00	06/26/1998	09:30
981738-7	9806251700 TRIPBLANK	Water	06/25/1998	11:00	06/26/1998	09:30
981738-8	9806251710 RINSATE	Water	06/25/1998	11:00	06/26/1998	09:30
981738-9	9806251840 FIELDBLANK	Water	06/25/1998	11:00	06/26/1998	09:30
981738-10	9806251730 UPSTREAM	Water	06/25/1998	11:00	06/26/1998	09:30
981738-11	9806251745 DOWNSTREAM	Water	06/25/1998	11:00	06/26/1998	09:30

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 981738 Date: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: REXENE ATTN: Mike Selke

Customer Sample ID: 9806251100 MW-3S
Date Sampled.....: 06/25/1998
Time Sampled.....: 11:00
Sample Matrix.....: Water

Laboratory Sample ID: 981738-1
Date Received.....: 06/26/1998
Time Received.....: 09:30

TEST METH	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
EPA 200.7	Antimony (Sb), Diss.	<0.01	0.01	mg/L	07/16/98	lmt
EPA 200.7	Arsenic (As), Diss.	<0.01	0.01	mg/L	07/16/98	lmt
EPA 200.7	Beryllium (Be), Diss.	<0.001	0.001	mg/L	07/16/98	lmt
EPA 200.7	Cadmium (Cd), Diss.	<0.0005	0.0005	mg/L	07/16/98	lmt
EPA 200.7	Chromium (Cr), Diss.	<0.005	0.005	mg/L	07/16/98	lmt
EPA 200.7	Copper (Cu), Diss.	<0.005	0.005	mg/L	07/16/98	lmt
EPA 200.7	Iron (Fe), Diss.	0.26	0.03	mg/L	07/16/98	lmt
EPA 200.7	Lead (Pb), Diss.	<0.003	0.003	mg/L	07/16/98	lmt
EPA 245.2	Mercury (Hg), Diss.	<0.0002	0.0002	mg/L	07/01/98	veb
EPA 200.7	Nickel (Ni), Diss.	<0.005	0.005	mg/L	07/16/98	lmt
EPA 200.7	Selenium (Se), Diss.	<0.01	0.01	mg/L	07/16/98	lmt
EPA 200.7	Silver (Ag), Diss.	<0.005	0.005	mg/L	07/16/98	lmt
EPA 200.7	Thallium (Tl), Diss.	<0.01	0.01	mg/L	07/16/98	lmt
EPA 200.7	Zinc (Zn), Diss.	<0.005	0.005	mg/L	07/16/98	lmt
SW-846 3520B	Extraction (Continuous Liq/Liq)					
	Continuous Liquid-Liquid Extraction	Complete			07/02/98	slf
SW-846 8270B	Semivolatile Organics (Client List)					
	Acenaphthene	ND	10	ug/L	07/09/98	dmj
	Acenaphthylene	ND	10	ug/L	07/09/98	dmj
	Anthracene	ND	10	ug/L	07/09/98	dmj
	Benzo(a)anthracene	ND	10	ug/L	07/09/98	dmj
	Benzo(b)fluoranthene	ND	10	ug/L	07/09/98	dmj
	Benzo(k)fluoranthene	ND	10	ug/L	07/09/98	dmj
	Benzo(ghi)perylene	ND	10	ug/L	07/09/98	dmj
	Benzo(a)pyrene	ND	10	ug/L	07/09/98	dmj
	Chrysene	ND	10	ug/L	07/09/98	dmj
	Dibenzo(a,h)anthracene	ND	10	ug/L	07/09/98	dmj
	Fluoranthene	ND	10	ug/L	07/09/98	dmj
	Fluorene	ND	10	ug/L	07/09/98	dmj
	Indeno(1,2,3-cd)pyrene	ND	10	ug/L	07/09/98	dmj
	1-Methylnaphthalene	ND	10	ug/L	07/09/98	dmj
	2-Methylnaphthalene	ND	10	ug/L	07/09/98	dmj
	Naphthalene	ND	10	ug/L	07/09/98	dmj

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 981738 Date: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: REXENE ATTN: Mike Selke

Customer Sample ID: 9806251100 MW-3S
Date Sampled.....: 06/25/1998
Time Sampled.....: 11:00
Sample Matrix.....: Water

Laboratory Sample ID: 981738-1
Date Received.....: 06/26/1998
Time Received.....: 09:30

TEST METH	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
	Phenanthrene	ND	10	ug/L	07/09/98	dmj
	Pyrene	ND	10	ug/L	07/09/98	dmj
	4-Chloro-3-methylphenol	ND	10	ug/L	07/09/98	dmj
	2-Chlorophenol	ND	10	ug/L	07/09/98	dmj
	2,4-Dichlorophenol	ND	10	ug/L	07/09/98	dmj
	2,4-Dimethylphenol	ND	10	ug/L	07/09/98	dmj
	2,4-Dinitrophenol	ND	50	ug/L	07/09/98	dmj
	2-Methyl-4,6-dinitrophenol	ND	50	ug/L	07/09/98	dmj
	2-Nitrophenol	ND	10	ug/L	07/09/98	dmj
	4-Nitrophenol	ND	50	ug/L	07/09/98	dmj
	Pentachlorophenol	ND	50	ug/L	07/09/98	dmj
	Phenol	ND	10	ug/L	07/09/98	dmj
	2,4,6-Trichlorophenol	ND	10	ug/L	07/09/98	dmj
SW-846 8020	Volatile Organics -Aromatics					
	Benzene	ND	0.5	ug/L	06/29/98	maz
	Ethylbenzene	ND	0.5	ug/L	06/29/98	maz
	Toluene	ND	0.5	ug/L	06/29/98	maz
	Xylenes (total)	ND	0.5	ug/L	06/29/98	maz

CORELAB

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 981738 Date: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: REXENE ATTN: Mike Selke

Customer Sample ID: 9806251215 MW-3D
Date Sampled......: 06/25/1998
Time Sampled......: 11:00
Sample Matrix.....: Water

Laboratory Sample ID: 981738-2
Date Received.......: 06/26/1998
Time Received.......: 09:30

TEST METH	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
EPA 200.7	Antimony (Sb), Diss.	<0.01	0.01	mg/L	07/16/98	lmt
EPA 200.7	Arsenic (As), Diss.	<0.01	0.01	mg/L	07/16/98	lmt
EPA 200.7	Beryllium (Be), Diss.	<0.001	0.001	mg/L	07/16/98	lmt
EPA 200.7	Cadmium (Cd), Diss.	<0.0005	0.0005	mg/L	07/16/98	lmt
EPA 200.7	Chromium (Cr), Diss.	<0.005	0.005	mg/L	07/16/98	lmt
EPA 200.7	Copper (Cu), Diss.	<0.005	0.005	mg/L	07/16/98	lmt
EPA 200.7	Iron (Fe), Diss.	<0.03	0.03	mg/L	07/16/98	lmt
EPA 200.7	Lead (Pb), Diss.	<0.003	0.003	mg/L	07/16/98	lmt
EPA 245.2	Mercury (Hg), Diss.	<0.0002	0.0002	mg/L	07/01/98	veb
EPA 200.7	Nickel (Ni), Diss.	0.006	0.005	mg/L	07/16/98	lmt
EPA 200.7	Selenium (Se), Diss.	<0.01	0.01	mg/L	07/16/98	lmt
EPA 200.7	Silver (Ag), Diss.	<0.005	0.005	mg/L	07/16/98	lmt
EPA 200.7	Thallium (Tl), Diss.	<0.01	0.01	mg/L	07/16/98	lmt
EPA 200.7	Zinc (Zn), Diss.	<0.05	0.05	mg/L	07/16/98	lmt
SW-846 3520B	Extraction (Continuous Liq/Liq)					
	Continuous Liquid-Liquid Extraction	Complete			07/02/98	slf
SW-846 8270B	Semivolatile Organics (Client List)					
	Acenaphthene	ND	10	ug/L	07/09/98	dmj
	Acenaphthylene	ND	10	ug/L	07/09/98	dmj
	Anthracene	ND	10	ug/L	07/09/98	dmj
	Benzo(a)anthracene	ND	10	ug/L	07/09/98	dmj
	Benzo(b)fluoranthene	ND	10	ug/L	07/09/98	dmj
	Benzo(k)fluoranthene	ND	10	ug/L	07/09/98	dmj
	Benzo(ghi)perylene	ND	10	ug/L	07/09/98	dmj
	Benzo(a)pyrene	ND	10	ug/L	07/09/98	dmj
	Chrysene	ND	10	ug/L	07/09/98	dmj
	Dibenzo(a,h)anthracene	ND	10	ug/L	07/09/98	dmj
	Fluoranthene	ND	10	ug/L	07/09/98	dmj
	Fluorene	ND	10	ug/L	07/09/98	dmj
	Indeno(1,2,3-cd)pyrene	ND	10	ug/L	07/09/98	dmj
	1-Methylnaphthalene	ND	10	ug/L	07/09/98	dmj
	2-Methylnaphthalene	ND	10	ug/L	07/09/98	dmj
	Naphthalene	ND	10	ug/L	07/09/98	dmj

CORE LAB

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 981738 | Date: 07/27/98

CUSTOMER: BDM International, Inc. | PROJECT: REXENE | ATTN: Mike Selke

Customer Sample ID: 9806251215 MW-3D
Date Sampled......: 06/25/1998
Time Sampled......: 11:00
Sample Matrix.....: Water

Laboratory Sample ID: 981738-2
Date Received.......: 06/26/1998
Time Received.......: 09:30

TEST METH	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
	Phenanthrene	ND	10	ug/L	07/09/98	dmj
	Pyrene	ND	10	ug/L	07/09/98	dmj
	4-Chloro-3-methylphenol	ND	10	ug/L	07/09/98	dmj
	2-Chlorophenol	ND	10	ug/L	07/09/98	dmj
	2,4-Dichlorophenol	ND	10	ug/L	07/09/98	dmj
	2,4-Dimethylphenol	ND	10	ug/L	07/09/98	dmj
	2,4-Dinitrophenol	ND	50	ug/L	07/09/98	dmj
	2-Methyl-4,6-dinitrophenol	ND	50	ug/L	07/09/98	dmj
	2-Nitrophenol	ND	10	ug/L	07/09/98	dmj
	4-Nitrophenol	ND	50	ug/L	07/09/98	dmj
	Pentachlorophenol	ND	50	ug/L	07/09/98	dmj
	Phenol	ND	10	ug/L	07/09/98	dmj
	2,4,6-Trichlorophenol	ND	10	ug/L	07/09/98	dmj
SW-846 8020	Volatile Organics -Aromatics					
	Benzene	ND	0.5	ug/L	06/29/98	maz
	Ethylbenzene	ND	0.5	ug/L	06/29/98	maz
	Toluene	ND	0.5	ug/L	06/29/98	maz
	Xylenes (total)	ND	0.5	ug/L	06/29/98	maz

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 981738 Date: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: REXENE ATTN: Mike Selke

Customer Sample ID: 9806251330 MW-6S
Date Sampled.....: 06/25/1998
Time Sampled.....: 11:00
Sample Matrix.....: Water

Laboratory Sample ID: 981738-3
Date Received.....: 06/26/1998
Time Received.....: 09:30

TEST METH	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
EPA 200.7	Antimony (Sb), Diss.	<0.01	0.01	mg/L	07/16/98	lmt
EPA 200.7	Arsenic (As), Diss.	<0.01	0.01	mg/L	07/16/98	lmt
EPA 200.7	Beryllium (Be), Diss.	<0.001	0.001	mg/L	07/16/98	lmt
EPA 200.7	Cadmium (Cd), Diss.	<0.0005	0.0005	mg/L	07/16/98	lmt
EPA 200.7	Chromium (Cr), Diss.	<0.005	0.005	mg/L	07/16/98	lmt
EPA 200.7	Copper (Cu), Diss.	<0.005	0.005	mg/L	07/16/98	lmt
EPA 200.7	Iron (Fe), Diss.	0.14	0.03	mg/L	07/16/98	lmt
EPA 200.7	Lead (Pb), Diss.	<0.003	0.003	mg/L	07/16/98	lmt
EPA 245.2	Mercury (Hg), Diss.	<0.0002	0.0002	mg/L	07/01/98	veb
EPA 200.7	Nickel (Ni), Diss.	<0.005	0.005	mg/L	07/16/98	lmt
EPA 200.7	Selenium (Se), Diss.	<0.01	0.01	mg/L	07/16/98	lmt
EPA 200.7	Silver (Ag), Diss.	<0.005	0.005	mg/L	07/16/98	lmt
EPA 200.7	Thallium (Tl), Diss.	<0.01	0.01	mg/L	07/16/98	lmt
EPA 200.7	Zinc (Zn), Diss.	<0.005	0.005	mg/L	07/16/98	lmt
SW-846 3520B	Extraction (Continuous Liq/Liq)					
	Continuous Liquid-Liquid Extraction	Complete			07/02/98	slf
SW-846 8270B	Semivolatile Organics (Client List)					
	Acenaphthene	ND	10	ug/L	07/10/98	dmj
	Acenaphthylene	ND	10	ug/L	07/10/98	dmj
	Anthracene	ND	10	ug/L	07/10/98	dmj
	Benzo(a)anthracene	ND	10	ug/L	07/10/98	dmj
	Benzo(b)fluoranthene	ND	10	ug/L	07/10/98	dmj
	Benzo(k)fluoranthene	ND	10	ug/L	07/10/98	dmj
	Benzo(ghi)perylene	ND	10	ug/L	07/10/98	dmj
	Benzo(a)pyrene	ND	10	ug/L	07/10/98	dmj
	Chrysene	ND	10	ug/L	07/10/98	dmj
	Dibenzo(a,h)anthracene	ND	10	ug/L	07/10/98	dmj
	Fluoranthene	ND	10	ug/L	07/10/98	dmj
	Fluorene	ND	10	ug/L	07/10/98	dmj
	Indeno(1,2,3-cd)pyrene	ND	10	ug/L	07/10/98	dmj
	1-Methylnaphthalene	ND	10	ug/L	07/10/98	dmj
	2-Methylnaphthalene	ND	10	ug/L	07/10/98	dmj
	Naphthalene	ND	10	ug/L	07/10/98	dmj

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 981738 Date: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: REXENE ATTN: Mike Selke

Customer Sample ID: 9806251330 MW-6S
Date Sampled.....: 06/25/1998
Time Sampled.....: 11:00
Sample Matrix.....: Water

Laboratory Sample ID: 981738-3
Date Received.....: 06/26/1998
Time Received.....: 09:30

TEST METH	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
	Phenanthrene	ND	10	ug/L	07/10/98	dmj
	Pyrene	ND	10	ug/L	07/10/98	dmj
	4-Chloro-3-methylphenol	ND	10	ug/L	07/10/98	dmj
	2-Chlorophenol	ND	10	ug/L	07/10/98	dmj
	2,4-Dichlorophenol	ND	10	ug/L	07/10/98	dmj
	2,4-Dimethylphenol	ND	10	ug/L	07/10/98	dmj
	2,4-Dinitrophenol	ND	50	ug/L	07/10/98	dmj
	2-Methyl-4,6-dinitrophenol	ND	50	ug/L	07/10/98	dmj
	2-Nitrophenol	ND	10	ug/L	07/10/98	dmj
	4-Nitrophenol	ND	50	ug/L	07/10/98	dmj
	Pentachlorophenol	ND	50	ug/L	07/10/98	dmj
	Phenol	ND	10	ug/L	07/10/98	dmj
	2,4,6-Trichlorophenol	ND	10	ug/L	07/10/98	dmj
SW-846 8020	Volatile Organics -Aromatics					
	Benzene	130	10	ug/L	06/29/98	maz
	Ethylbenzene	40	10	ug/L	06/29/98	maz
	Toluene	ND	10	ug/L	06/29/98	maz
	Xylenes (total)	ND	10	ug/L	06/29/98	maz

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 981738 Date: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: REXENE ATTN: Mike Selke

Customer Sample ID: 9806251440 MW-6D
Date Sampled.....: 06/25/1998
Time Sampled.....: 11:00
Sample Matrix.....: Water

Laboratory Sample ID: 981738-4
Date Received.....: 06/26/1998
Time Received.....: 09:30

TEST METH	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
EPA 200.7	Antimony (Sb), Diss.	<0.01	0.01	mg/L	07/16/98	lmt
EPA 200.7	Arsenic (As), Diss.	<0.01	0.01	mg/L	07/16/98	lmt
EPA 200.7	Beryllium (Be), Diss.	<0.001	0.001	mg/L	07/16/98	lmt
EPA 200.7	Cadmium (Cd), Diss.	<0.0005	0.0005	mg/L	07/16/98	lmt
EPA 200.7	Chromium (Cr), Diss.	<0.005	0.005	mg/L	07/16/98	lmt
EPA 200.7	Copper (Cu), Diss.	<0.005	0.005	mg/L	07/16/98	lmt
EPA 200.7	Iron (Fe), Diss.	<0.03	0.03	mg/L	07/16/98	lmt
EPA 200.7	Lead (Pb), Diss.	<0.003	0.003	mg/L	07/16/98	lmt
EPA 245.2	Mercury (Hg), Diss.	<0.0002	0.0002	mg/L	07/01/98	veb
EPA 200.7	Nickel (Ni), Diss.	0.015	0.005	mg/L	07/16/98	lmt
EPA 200.7	Selenium (Se), Diss.	<0.01	0.01	mg/L	07/16/98	lmt
EPA 200.7	Silver (Ag), Diss.	<0.005	0.005	mg/L	07/16/98	lmt
EPA 200.7	Thallium (Tl), Diss.	<0.01	0.01	mg/L	07/16/98	lmt
EPA 200.7	Zinc (Zn), Diss.	<0.05	0.05	mg/L	07/16/98	lmt
SW-846 3520B	Extraction (Continuous Liq/Liq)					
	Continuous Liquid-Liquid Extraction	Complete			07/02/98	slf
SW-846 8270B	Semivolatile Organics (Client List)					
	Acenaphthene	ND	10	ug/L	07/09/98	dmj
	Acenaphthylene	ND	10	ug/L	07/09/98	dmj
	Anthracene	ND	10	ug/L	07/09/98	dmj
	Benzo(a)anthracene	ND	10	ug/L	07/09/98	dmj
	Benzo(b)fluoranthene	ND	10	ug/L	07/09/98	dmj
	Benzo(k)fluoranthene	ND	10	ug/L	07/09/98	dmj
	Benzo(ghi)perylene	ND	10	ug/L	07/09/98	dmj
	Benzo(a)pyrene	ND	10	ug/L	07/09/98	dmj
	Chrysene	ND	10	ug/L	07/09/98	dmj
	Dibenzo(a,h)anthracene	ND	10	ug/L	07/09/98	dmj
	Fluoranthene	ND	10	ug/L	07/09/98	dmj
	Fluorene	ND	10	ug/L	07/09/98	dmj
	Indeno(1,2,3-cd)pyrene	ND	10	ug/L	07/09/98	dmj
	1-Methylnaphthalene	ND	10	ug/L	07/09/98	dmj
	2-Methylnaphthalene	ND	10	ug/L	07/09/98	dmj
	Naphthalene	ND	10	ug/L	07/09/98	dmj

CORE LAB

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 981738 Date: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: REXENE ATTN: Mike Selke

Customer Sample ID: 9806251440 MW-6D
Date Sampled.....: 06/25/1998
Time Sampled.....: 11:00
Sample Matrix.....: Water

Laboratory Sample ID: 981738-4
Date Received.....: 06/26/1998
Time Received.....: 09:30

TEST METH	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
	Phenanthrene	ND	10	ug/L	07/09/98	dmj
	Pyrene	ND	10	ug/L	07/09/98	dmj
	4-Chloro-3-methylphenol	ND	10	ug/L	07/09/98	dmj
	2-Chlorophenol	ND	10	ug/L	07/09/98	dmj
	2,4-Dichlorophenol	ND	10	ug/L	07/09/98	dmj
	2,4-Dimethylphenol	ND	10	ug/L	07/09/98	dmj
	2,4-Dinitrophenol	ND	50	ug/L	07/09/98	dmj
	2-Methyl-4,6-dinitrophenol	ND	50	ug/L	07/09/98	dmj
	2-Nitrophenol	ND	10	ug/L	07/09/98	dmj
	4-Nitrophenol	ND	50	ug/L	07/09/98	dmj
	Pentachlorophenol	ND	50	ug/L	07/09/98	dmj
	Phenol	ND	10	ug/L	07/09/98	dmj
	2,4,6-Trichlorophenol	ND	10	ug/L	07/09/98	dmj
SW-846 8020	Volatile Organics -Aromatics					
	Benzene	ND	0.5	ug/L	06/29/98	maz
	Ethylbenzene	ND	0.5	ug/L	06/29/98	maz
	Toluene	ND	0.5	ug/L	06/29/98	maz
	Xylenes (total)	ND	0.5	ug/L	06/29/98	maz

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 981738 Date: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: REXENE ATTN: Mike Selke

Customer Sample ID: 9806251525 MW-6M
Date Sampled.....: 06/25/1998
Time Sampled.....: 11:00
Sample Matrix.....: Water

Laboratory Sample ID: 981738-5
Date Received.....: 06/26/1998
Time Received.....: 09:30

TEST METH	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
EPA 200.7	Antimony (Sb), Diss.	<0.01	0.01	mg/L	07/16/98	lmt
EPA 200.7	Arsenic (As), Diss.	<0.01	0.01	mg/L	07/16/98	lmt
EPA 200.7	Beryllium (Be), Diss.	<0.001	0.001	mg/L	07/16/98	lmt
EPA 200.7	Cadmium (Cd), Diss.	<0.0005	0.0005	mg/L	07/16/98	lmt
EPA 200.7	Chromium (Cr), Diss.	<0.005	0.005	mg/L	07/16/98	lmt
EPA 200.7	Copper (Cu), Diss.	<0.005	0.005	mg/L	07/16/98	lmt
EPA 200.7	Iron (Fe), Diss.	<0.3	0.3	mg/L	07/16/98	lmt
EPA 200.7	Lead (Pb), Diss.	<0.003	0.003	mg/L	07/16/98	lmt
EPA 245.2	Mercury (Hg), Diss.	<0.0002	0.0002	mg/L	07/01/98	veb
EPA 200.7	Nickel (Ni), Diss.	0.012	0.005	mg/L	07/16/98	lmt
EPA 200.7	Selenium (Se), Diss.	<0.01	0.01	mg/L	07/16/98	lmt
EPA 200.7	Silver (Ag), Diss.	<0.005	0.005	mg/L	07/16/98	lmt
EPA 200.7	Thallium (Tl), Diss.	<0.01	0.01	mg/L	07/16/98	lmt
EPA 200.7	Zinc (Zn), Diss.	<0.05	0.05	mg/L	07/16/98	lmt
SW-846 3520B	Extraction (Continuous Liq/Liq)					
	Continuous Liquid-Liquid Extraction	Complete			07/02/98	slf
SW-846 8270B	Semivolatile Organics (Client List)					
	Acenaphthene	ND	10	ug/L	07/09/98	dmj
	Acenaphthylene	ND	10	ug/L	07/09/98	dmj
	Anthracene	ND	10	ug/L	07/09/98	dmj
	Benzo(a)anthracene	ND	10	ug/L	07/09/98	dmj
	Benzo(b)fluoranthene	ND	10	ug/L	07/09/98	dmj
	Benzo(k)fluoranthene	ND	10	ug/L	07/09/98	dmj
	Benzo(ghi)perylene	ND	10	ug/L	07/09/98	dmj
	Benzo(a)pyrene	ND	10	ug/L	07/09/98	dmj
	Chrysene	ND	10	ug/L	07/09/98	dmj
	Dibenzo(a,h)anthracene	ND	10	ug/L	07/09/98	dmj
	Fluoranthene	ND	10	ug/L	07/09/98	dmj
	Fluorene	ND	10	ug/L	07/09/98	dmj
	Indeno(1,2,3-cd)pyrene	ND	10	ug/L	07/09/98	dmj
	1-Methylnaphthalene	ND	10	ug/L	07/09/98	dmj
	2-Methylnaphthalene	ND	10	ug/L	07/09/98	dmj
	Naphthalene	ND	10	ug/L	07/09/98	dmj

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 981738 Date: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: REXENE ATTN: Mike Selke

Customer Sample ID: 9806251525 MW-6M
Date Sampled......: 06/25/1998
Time Sampled......: 11:00
Sample Matrix.....: Water

Laboratory Sample ID: 981738-5
Date Received.......: 06/26/1998
Time Received.......: 09:30

TEST METH	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
	Phenanthrene	ND	10	ug/L	07/09/98	dmj
	Pyrene	ND	10	ug/L	07/09/98	dmj
	4-Chloro-3-methylphenol	ND	10	ug/L	07/09/98	dmj
	2-Chlorophenol	ND	10	ug/L	07/09/98	dmj
	2,4-Dichlorophenol	ND	10	ug/L	07/09/98	dmj
	2,4-Dimethylphenol	ND	10	ug/L	07/09/98	dmj
	2,4-Dinitrophenol	ND	50	ug/L	07/09/98	dmj
	2-Methyl-4,6-dinitrophenol	ND	50	ug/L	07/09/98	dmj
	2-Nitrophenol	ND	10	ug/L	07/09/98	dmj
	4-Nitrophenol	ND	50	ug/L	07/09/98	dmj
	Pentachlorophenol	ND	50	ug/L	07/09/98	dmj
	Phenol	ND	10	ug/L	07/09/98	dmj
	2,4,6-Trichlorophenol	ND	10	ug/L	07/09/98	dmj
SW-846 8020	Volatile Organics -Aromatics					
	Benzene	ND	0.5	ug/L	06/29/98	maz
	Ethylbenzene	ND	0.5	ug/L	06/29/98	maz
	Toluene	ND	0.5	ug/L	06/29/98	maz
	Xylenes (total)	ND	0.5	ug/L	06/29/98	maz

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 981738 Date: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: REXENE ATTN: Mike Selke

Customer Sample ID: 9806251630 MW-9S
Date Sampled.....: 06/25/1998
Time Sampled.....: 11:00
Sample Matrix.....: Water

Laboratory Sample ID: 981738-6
Date Received.....: 06/26/1998
Time Received.....: 09:30

TEST METH	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
EPA 200.7	Antimony (Sb), Diss.	<0.01	0.01	mg/L	07/16/98	lmt
EPA 200.7	Arsenic (As), Diss.	<0.01	0.01	mg/L	07/16/98	lmt
EPA 200.7	Beryllium (Be), Diss.	<0.001	0.001	mg/L	07/16/98	lmt
EPA 200.7	Cadmium (Cd), Diss.	<0.0005	0.0005	mg/L	07/16/98	lmt
EPA 200.7	Chromium (Cr), Diss.	<0.005	0.005	mg/L	07/16/98	lmt
EPA 200.7	Copper (Cu), Diss.	<0.005	0.005	mg/L	07/16/98	lmt
EPA 200.7	Iron (Fe), Diss.	1.05	0.03	mg/L	07/16/98	lmt
EPA 200.7	Lead (Pb), Diss.	<0.003	0.003	mg/L	07/16/98	lmt
EPA 245.2	Mercury (Hg), Diss.	<0.0002	0.0002	mg/L	07/01/98	veb
EPA 200.7	Nickel (Ni), Diss.	<0.005	0.005	mg/L	07/16/98	lmt
EPA 200.7	Selenium (Se), Diss.	<0.01	0.01	mg/L	07/16/98	lmt
EPA 200.7	Silver (Ag), Diss.	<0.005	0.005	mg/L	07/16/98	lmt
EPA 200.7	Thallium (Tl), Diss.	<0.01	0.01	mg/L	07/16/98	lmt
EPA 200.7	Zinc (Zn), Diss.	<0.005	0.005	mg/L	07/16/98	lmt
SW-846 3520B	Extraction (Continuous Liq/Liq)					
	Continuous Liquid-Liquid Extraction	Complete			07/02/98	slf
SW-846 8270B	Semivolatile Organics (Client List)					
	Acenaphthene	ND	10	ug/L	07/10/98	dmj
	Acenaphthylene	ND	10	ug/L	07/10/98	dmj
	Anthracene	ND	10	ug/L	07/10/98	dmj
	Benzo(a)anthracene	ND	10	ug/L	07/10/98	dmj
	Benzo(b)fluoranthene	ND	10	ug/L	07/10/98	dmj
	Benzo(k)fluoranthene	ND	10	ug/L	07/10/98	dmj
	Benzo(ghi)perylene	ND	10	ug/L	07/10/98	dmj
	Benzo(a)pyrene	ND	10	ug/L	07/10/98	dmj
	Chrysene	ND	10	ug/L	07/10/98	dmj
	Dibenzo(a,h)anthracene	ND	10	ug/L	07/10/98	dmj
	Fluoranthene	ND	10	ug/L	07/10/98	dmj
	Fluorene	ND	10	ug/L	07/10/98	dmj
	Indeno(1,2,3-cd)pyrene	ND	10	ug/L	07/10/98	dmj
	1-Methylnaphthalene	ND	10	ug/L	07/10/98	dmj
	2-Methylnaphthalene	ND	10	ug/L	07/10/98	dmj
	Naphthalene	ND	10	ug/L	07/10/98	dmj

CORE LAB

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 981738 Date: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: REXENE ATTN: Mike Selke

Customer Sample ID: 9806251630 MW-9S
Date Sampled.....: 06/25/1998
Time Sampled.....: 11:00
Sample Matrix.....: Water

Laboratory Sample ID: 981738-6
Date Received.....: 06/26/1998
Time Received.....: 09:30

TEST METH	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
	Phenanthrene	ND	10	ug/L	07/10/98	dmj
	Pyrene	ND	10	ug/L	07/10/98	dmj
	4-Chloro-3-methylphenol	ND	10	ug/L	07/10/98	dmj
	2-Chlorophenol	ND	10	ug/L	07/10/98	dmj
	2,4-Dichlorophenol	ND	10	ug/L	07/10/98	dmj
	2,4-Dimethylphenol	ND	10	ug/L	07/10/98	dmj
	2,4-Dinitrophenol	ND	50	ug/L	07/10/98	dmj
	2-Methyl-4,6-dinitrophenol	ND	50	ug/L	07/10/98	dmj
	2-Nitrophenol	ND	10	ug/L	07/10/98	dmj
	4-Nitrophenol	ND	50	ug/L	07/10/98	dmj
	Pentachlorophenol	ND	50	ug/L	07/10/98	dmj
	Phenol	ND	10	ug/L	07/10/98	dmj
	2,4,6-Trichlorophenol	ND	10	ug/L	07/10/98	dmj
SW-846 8020	Volatile Organics -Aromatics					
	Benzene	1.9	0.5	ug/L	06/29/98	maz
	Ethylbenzene	1.5	0.5	ug/L	06/29/98	maz
	Toluene	2.7	0.5	ug/L	06/29/98	maz
	Xylenes (total)	6.6	0.5	ug/L	06/29/98	maz

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 981738 Date: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: REXENE ATTN: Mike Selke

Customer Sample ID: 9806251700 TRIPBLANK
Date Sampled.....: 06/25/1998
Time Sampled.....: 11:00
Sample Matrix.....: Water

Laboratory Sample ID: 981738-7
Date Received.....: 06/26/1998
Time Received.....: 09:30

TEST METH	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 8020	Volatile Organics -Aromatics					
	Benzene	ND	0.5	ug/L	06/29/98	maz
	Ethylbenzene	ND	0.5	ug/L	06/29/98	maz
	Toluene	ND	0.5	ug/L	06/29/98	maz
	Xylenes (total)	ND	0.5	ug/L	06/29/98	maz

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 981738 Date: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: REXENE ATTN: Mike Selke

Customer Sample ID: 9806251710 RINSATE
Date Sampled.....: 06/25/1998
Time Sampled.....: 11:00
Sample Matrix.....: Water

Laboratory Sample ID: 981738-8
Date Received.....: 06/26/1998
Time Received.....: 09:30

TEST METH	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 8020	Volatile Organics -Aromatics					
	Benzene	ND	0.5	ug/L	06/29/98	maz
	Ethylbenzene	ND	0.5	ug/L	06/29/98	maz
	Toluene	ND	0.5	ug/L	06/29/98	maz
	Xylenes (total)	ND	0.5	ug/L	06/29/98	maz

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 981738 Date: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: REXENE ATTN: Mike Selke

Customer Sample ID: 9806251840 FIELDBLANK
Date Sampled.....: 06/25/1998
Time Sampled.....: 11:00
Sample Matrix.....: Water

Laboratory Sample ID: 981738-9
Date Received.....: 06/26/1998
Time Received.....: 09:30

TEST METH	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 8020	Volatile Organics -Aromatics					
	Benzene	ND	0.5	ug/L	06/29/98	maz
	Ethylbenzene	ND	0.5	ug/L	06/29/98	maz
	Toluene	ND	0.5	ug/L	06/29/98	maz
	Xylenes (total)	ND	0.5	ug/L	06/29/98	maz

CORE LAB

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 981738 Date: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: REXENE ATTN: Mike Selke

Customer Sample ID: 9806251730 UPSTREAM
Date Sampled......: 06/25/1998
Time Sampled......: 11:00
Sample Matrix.....: Water

Laboratory Sample ID: 981738-10
Date Received.......: 06/26/1998
Time Received.......: 09:30

TEST METH	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
EPA 200.7	Antimony (Sb), Diss.	<0.01	0.01	mg/L	07/16/98	lmt
EPA 200.7	Arsenic (As), Diss.	<0.01	0.01	mg/L	07/16/98	lmt
EPA 200.7	Beryllium (Be), Diss.	<0.001	0.001	mg/L	07/16/98	lmt
EPA 200.7	Cadmium (Cd), Diss.	<0.0005	0.0005	mg/L	07/16/98	lmt
EPA 200.7	Chromium (Cr), Diss.	<0.005	0.005	mg/L	07/16/98	lmt
EPA 200.7	Copper (Cu), Diss.	<0.005	0.005	mg/L	07/16/98	lmt
EPA 200.7	Iron (Fe), Diss.	<0.03	0.03	mg/L	07/16/98	lmt
EPA 200.7	Lead (Pb), Diss.	<0.003	0.003	mg/L	07/16/98	lmt
EPA 245.2	Mercury (Hg), Diss.	<0.0002	0.0002	mg/L	07/01/98	veb
EPA 200.7	Nickel (Ni), Diss.	<0.005	0.005	mg/L	07/16/98	lmt
EPA 200.7	Selenium (Se), Diss.	<0.01	0.01	mg/L	07/16/98	lmt
EPA 200.7	Silver (Ag), Diss.	<0.005	0.005	mg/L	07/16/98	lmt
EPA 200.7	Thallium (Tl), Diss.	<0.01	0.01	mg/L	07/16/98	lmt
EPA 200.7	Zinc (Zn), Diss.	<0.005	0.005	mg/L	07/16/98	lmt
SW-846 3520B	Extraction (Continuous Liq/Liq)					
	Continuous Liquid-Liquid Extraction	Complete			07/02/98	slf
SW-846 8270B	Semivolatile Organics (Client List)					
	Acenaphthene	ND	10	ug/L	07/09/98	dmj
	Acenaphthylene	ND	10	ug/L	07/09/98	dmj
	Anthracene	ND	10	ug/L	07/09/98	dmj
	Benzo(a)anthracene	ND	10	ug/L	07/09/98	dmj
	Benzo(b)fluoranthene	ND	10	ug/L	07/09/98	dmj
	Benzo(k)fluoranthene	ND	10	ug/L	07/09/98	dmj
	Benzo(ghi)perylene	ND	10	ug/L	07/09/98	dmj
	Benzo(a)pyrene	ND	10	ug/L	07/09/98	dmj
	Chrysene	ND	10	ug/L	07/09/98	dmj
	Dibenzo(a,h)anthracene	ND	10	ug/L	07/09/98	dmj
	Fluoranthene	ND	10	ug/L	07/09/98	dmj
	Fluorene	ND	10	ug/L	07/09/98	dmj
	Indeno(1,2,3-cd)pyrene	ND	10	ug/L	07/09/98	dmj
	1-Methylnaphthalene	ND	10	ug/L	07/09/98	dmj
	2-Methylnaphthalene	ND	10	ug/L	07/09/98	dmj
	Naphthalene	ND	10	ug/L	07/09/98	dmj

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 981738 Date: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: REXENE ATTN: Mike Selke

Customer Sample ID: 9806251730 UPSTREAM
Date Sampled.....: 06/25/1998
Time Sampled.....: 11:00
Sample Matrix.....: Water

Laboratory Sample ID: 981738-10
Date Received.....: 06/26/1998
Time Received.....: 09:30

TEST METH	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
	Phenanthrene	ND	10	ug/L	07/09/98	dmj
	Pyrene	ND	10	ug/L	07/09/98	dmj
	4-Chloro-3-methylphenol	ND	10	ug/L	07/09/98	dmj
	2-Chlorophenol	ND	10	ug/L	07/09/98	dmj
	2,4-Dichlorophenol	ND	10	ug/L	07/09/98	dmj
	2,4-Dimethylphenol	ND	10	ug/L	07/09/98	dmj
	2,4-Dinitrophenol	ND	50	ug/L	07/09/98	dmj
	2-Methyl-4,6-dinitrophenol	ND	50	ug/L	07/09/98	dmj
	2-Nitrophenol	ND	10	ug/L	07/09/98	dmj
	4-Nitrophenol	ND	50	ug/L	07/09/98	dmj
	Pentachlorophenol	ND	50	ug/L	07/09/98	dmj
	Phenol	ND	10	ug/L	07/09/98	dmj
	2,4,6-Trichlorophenol	ND	10	ug/L	07/09/98	dmj
SW-846 8020	Volatile Organics -Aromatics					
	Benzene	ND	0.5	ug/L	06/29/98	maz
	Ethylbenzene	ND	0.5	ug/L	06/29/98	maz
	Toluene	ND	0.5	ug/L	06/29/98	maz
	Xylenes (total)	ND	0.5	ug/L	06/29/98	maz

CORE LAB

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 981738 Date: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: REXENE ATTN: Mike Selke

Customer Sample ID: 9806251745 DOWNSTREAM
Date Sampled.....: 06/25/1998
Time Sampled.....: 11:00
Sample Matrix.....: Water

Laboratory Sample ID: 981738-11
Date Received.....: 06/26/1998
Time Received.....: 09:30

TEST METH	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
EPA 200.7	Antimony (Sb), Diss.	<0.01	0.01	mg/L	07/16/98	lmt
EPA 200.7	Arsenic (As), Diss.	<0.01	0.01	mg/L	07/16/98	lmt
EPA 200.7	Beryllium (Be), Diss.	<0.001	0.001	mg/L	07/16/98	lmt
EPA 200.7	Cadmium (Cd), Diss.	<0.0005	0.0005	mg/L	07/16/98	lmt
EPA 200.7	Chromium (Cr), Diss.	<0.005	0.005	mg/L	07/16/98	lmt
EPA 200.7	Copper (Cu), Diss.	<0.005	0.005	mg/L	07/16/98	lmt
EPA 200.7	Iron (Fe), Diss.	0.04	0.03	mg/L	07/16/98	lmt
EPA 200.7	Lead (Pb), Diss.	<0.003	0.003	mg/L	07/16/98	lmt
EPA 245.2	Mercury (Hg), Diss.	<0.0002	0.0002	mg/L	07/01/98	veb
EPA 200.7	Nickel (Ni), Diss.	<0.005	0.005	mg/L	07/16/98	lmt
EPA 200.7	Selenium (Se), Diss.	<0.01	0.01	mg/L	07/16/98	lmt
EPA 200.7	Silver (Ag), Diss.	<0.005	0.005	mg/L	07/16/98	lmt
EPA 200.7	Thallium (Tl), Diss.	<0.01	0.01	mg/L	07/16/98	lmt
EPA 200.7	Zinc (Zn), Diss.	<0.005	0.005	mg/L	07/16/98	lmt
SW-846 3520B	Extraction (Continuous Liq/Liq)					
	Continuous Liquid-Liquid Extraction	Complete			07/02/98	slf
SW-846 8270B	Semivolatile Organics (Client List)					
	Acenaphthene	ND	10	ug/L	07/09/98	dmj
	Acenaphthylene	ND	10	ug/L	07/09/98	dmj
	Anthracene	ND	10	ug/L	07/09/98	dmj
	Benzo(a)anthracene	ND	10	ug/L	07/09/98	dmj
	Benzo(b)fluoranthene	ND	10	ug/L	07/09/98	dmj
	Benzo(k)fluoranthene	ND	10	ug/L	07/09/98	dmj
	Benzo(ghi)perylene	ND	10	ug/L	07/09/98	dmj
	Benzo(a)pyrene	ND	10	ug/L	07/09/98	dmj
	Chrysene	ND	10	ug/L	07/09/98	dmj
	Dibenzo(a,h)anthracene	ND	10	ug/L	07/09/98	dmj
	Fluoranthene	ND	10	ug/L	07/09/98	dmj
	Fluorene	ND	10	ug/L	07/09/98	dmj
	Indeno(1,2,3-cd)pyrene	ND	10	ug/L	07/09/98	dmj
	1-Methylnaphthalene	ND	10	ug/L	07/09/98	dmj
	2-Methylnaphthalene	ND	10	ug/L	07/09/98	dmj
	Naphthalene	ND	10	ug/L	07/09/98	dmj

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 981738 Date: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: REXENE ATTN: Mike Selke

Customer Sample ID: 9806251745 DOWNSTREAM
Date Sampled.....: 06/25/1998
Time Sampled.....: 11:00
Sample Matrix.....: Water

Laboratory Sample ID: 981738-11
Date Received.....: 06/26/1998
Time Received.....: 09:30

TEST METH	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
	Phenanthrene	ND	10	ug/L	07/09/98	dmj
	Pyrene	ND	10	ug/L	07/09/98	dmj
	4-Chloro-3-methylphenol	ND	10	ug/L	07/09/98	dmj
	2-Chlorophenol	ND	10	ug/L	07/09/98	dmj
	2,4-Dichlorophenol	ND	10	ug/L	07/09/98	dmj
	2,4-Dimethylphenol	ND	10	ug/L	07/09/98	dmj
	2,4-Dinitrophenol	ND	50	ug/L	07/09/98	dmj
	2-Methyl-4,6-dinitrophenol	ND	50	ug/L	07/09/98	dmj
	2-Nitrophenol	ND	10	ug/L	07/09/98	dmj
	4-Nitrophenol	ND	50	ug/L	07/09/98	dmj
	Pentachlorophenol	ND	50	ug/L	07/09/98	dmj
	Phenol	ND	10	ug/L	07/09/98	dmj
	2,4,6-Trichlorophenol	ND	10	ug/L	07/09/98	dmj
SW-846 8020	Volatile Organics -Aromatics					
	Benzene	ND	0.5	ug/L	06/29/98	maz
	Ethylbenzene	ND	0.5	ug/L	06/29/98	maz
	Toluene	ND	0.5	ug/L	06/29/98	maz
	Xylenes (total)	ND	0.5	ug/L	06/29/98	maz

BDM

BDM International, Inc.
1801 Randolph Road, SE
MS 10
Albuquerque, NM 87106
(505) 848-5000
FAX: (505) 848-5299

12478

Chain of Custody

Date 6-25-98 Page 1 Of 1

Lab Name Core labs
Address 10703 East Bethany Dr. Aurora Co 80014
Telephone 800 972-2673

Samplers (SIGNATURES) [signature]

Analysis Request

	Sample Number	Matrix	Location	Halogenated Volatiles 601/8010	Aromatic Volatiles 602/8020	Phenols, Sub Phenols 604/8040	Pesticides/PCB 608/8080	Polynuclear Aromatic Hydrocarbons 610/8310	Volatile Compounds GC/MS 624/8240	Base/Neu/Acid Compounds GC/MS 625/8270	Total Organic Carbon (TOC) 415/9060	Total Organic Halides (TOX) 9020	Petroleum Hydrocarbons 418.1	TPH/BTEX Modified 8015	TCLP- Vol., Semi-Vol. Herbicides, Pesticides	TCLP- Metals	RCRA Metals(8)	Priority Pollutant Metals (13)	CAM Metals (18) TTLC/STLC	Flash Point	Corrosivity	Reactivity	Oil & Grease	Cyanide Total/Amenable	Chemical Oxygen Demand (COD)					Number of Containers
10	9806251730	H2O	UPSTREAM		2			1										1												4
11	9806251745	H2O	down STREAM		2			1										1												4

Project Information

Project REXENE
Project Director SELKE
Charge Code No. P12945/3031/202
Shipping ID. No. 8059915595 80
Via: Fed X

Sample Receipt

Total No. of Containers
Chain of Custody Seals
Rec'd Good Condition/Cold Yes
Conforms to Record
Lab No. 981738

Special Instructions/Comments:

Relinquished By 1.	Relinquished By 2.	Relinquished By 3.
(Signature) [signature] (Time) 1900	(Signature) (Time)	(Signature) (Time)
(Printed Name) DAVID NEE (Date) 6-25-98	(Printed Name) (Date)	(Printed Name) (Date)
(Company) BDM	(Company)	(Company)

Received By 1.	Received By 2.	Received By (Laboratory) 3.
(Signature) [signature] (Time) 0930	(Signature) (Time)	(Signature) (Time)
(Printed Name) Lina Kline (Date) 06-26-98	(Printed Name) (Date)	(Printed Name) (Date)
(Company) CORE LABS	(Company)	(Laboratory)

Distribution: White, Canary-Laboratory • Pink, BDM

CORELAB

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number.: 981738 Report Date.: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: BDM Rexene Quarterly Waters ATTN: Mike Selke

Test Method.....: SW-846 6010A Batch.....: 37018 Analyst...: lmt
Method Description.: Metals Analysis (ICAP Trace) Units.....: mg/L
Parameter.....: Antimony (Sb)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
ICV		980710V	2.43716		2.5		97.5	%	90-110	07/16/1998	0928
ICB		980716B	-0.00209						0.01	07/16/1998	0932
ISB		980707E	0.90252		1.0013		90.1	%	80-120	07/16/1998	0941
MB		0625	0.00092						0.01	07/16/1998	0958
SB		980601S	1.02948		1.00		102.9	%	75-125	07/16/1998	1007
MS	981714-1	980601S	0.95853		1.00	0.00240	95.6	%	80-120	07/16/1998	1016
MSD	981714-1	980601S	0.96345	0.95853	1.00	0.00240	96.1	%	80-120	07/16/1998	1018
							0.5	R	20		
CCV		980710V	2.42526		2.5		97.0	%	90-110	07/16/1998	1026
CCB		980716B	0.00011						0.01	07/16/1998	1030
MB		0629	-0.00008						0.01	07/16/1998	1033
SB		980601S	0.98034		1.00		98.0	%	75-125	07/16/1998	1035
MS	981713-13	980601S	1.01385		1.00	0.00245	101.1	%	80-120	07/16/1998	1039
MSD	981713-13	980601S	0.98340	1.01385	1.00	0.00245	98.1	%	80-120	07/16/1998	1040
							3.0	R	20		
SD	981711-4		-0.00045			0.00024				07/16/1998	1052
CCV		980710V	2.45139		2.5		98.1	%	90-110	07/16/1998	1100
CCB		980716B	-0.00053						0.01	07/16/1998	1104
SB		980601S	0.96179		1.00		96.2	%	75-125	07/16/1998	1106
CCV		980710V	2.48308		2.5		99.3	%	90-110	07/16/1998	1144
CCB		980716B	-0.00138						0.01	07/16/1998	1150
SD	981666-6		0.00064			0.00213				07/16/1998	1202
MB		0709	-0.00118						0.01	07/16/1998	1235
LCS		980490	0.66149		0.650000		101.8	%	80-120	07/16/1998	1238
SB		980703S	0.49392		0.5000		98.8	%	75-125	07/16/1998	1240
SD	981626-3		0.00039			-0.00015				07/16/1998	1245
CCV		980710V	2.50280		2.5		100.1	%	90-110	07/16/1998	1251
CCB		980716B	-0.00240						0.01	07/16/1998	1257
PDS	981725-9	980703S	0.46495		0.5000	-0.00262	93.5	%	75-125	07/16/1998	1306
PSD	981725-9	980703S	0.47321	0.46495	0.5000	-0.00262	95.2	%	75-125	07/16/1998	1307
							1.8	R	20		
MB		0707	0.00177						0.01	07/16/1998	1310
SB		980703S	0.51712		0.5000		103.4	%	75-125	07/16/1998	1312
MS	981705-4	980703S	0.51230		0.5000	-0.00061	102.6	%	80-120	07/16/1998	1317
MSD	981705-4	980703S	0.51435	0.51230	0.5000	-0.00061	103.0	%	80-120	07/16/1998	1319
							0.4	R	20		
CCV		980710V	2.51619		2.5		100.6	%	90-110	07/16/1998	1328
CCB		980716B	-0.00107						0.01	07/16/1998	1333
CCV		980710V	2.48437		2.5		99.4	%	90-110	07/16/1998	1400
CCB		980716B	-0.00108						0.01	07/16/1998	1408
CCV		980710V	2.55305		2.5		102.1	%	90-110	07/16/1998	1435
CCB		980716B	-0.00193						0.01	07/16/1998	1448
PDS	981716-2	980703S	0.47536		0.5000	-0.00093	95.3	%	75-125	07/16/1998	1459
PSD	981716-2	980703S	0.48329	0.47536	0.5000	-0.00093	96.8	%	75-125	07/16/1998	1501
							1.7	R	20		
SB		980601S	1.02570		1.00		102.6	%	75-125	07/16/1998	1507
MS	981752-1	980601S	1.02295		1.00	0.00315	102.0	%	80-120	07/16/1998	1510
MSD	981752-2	980601S	1.02660	1.02295	1.00	0.00315	102.3	%	80-120	07/16/1998	1512
							0.4	R	20		
CCV		980710V	2.40347		2.5		96.1	%	90-110	07/16/1998	1535
CCB		980716B	-0.00029						0.01	07/16/1998	1544
PDS	981725-2	980703S	0.40255		0.5000	-0.00260	81.0	%	75-125	07/16/1998	1549
PSD	981725-2	980703S	0.50644	0.40255	0.5000	-0.00260	101.8	%	75-125	07/16/1998	1550
							22.9	R	20		

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

CORE LAB

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number.: 981738 | Report Date.: 07/27/98

CUSTOMER: BDM International, Inc. | PROJECT: BDM Rexene Quarterly Waters | ATTN: Mike Selke

Test Method........: SW-846 6010A | Batch.............: 37018 | Analyst...: lmt
Method Description.: Metals Analysis (ICAP Trace) | Units.............: mg/L
Parameter..........: Antimony (Sb)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
PDS	981725-3	980703S	0.51890		0.5000	-0.00195	104.2	%	75-125	07/16/1998	1554
PSD	981725-3	980703S	0.54985	0.51890	0.5000	-0.00195	110.4	%	75-125	07/16/1998	1556
							5.8	R	20		
PDS	981725-4	980703S	0.46274		0.5000	0.00655	91.2	%	75-125	07/16/1998	1600
PSD	981725-4	980703S	0.53797	0.46274	0.5000	0.00655	106.3	%	75-125	07/16/1998	1602
							15.0	R	20		
CCV		980710V	2.32686		2.5		93.1	%	90-110	07/16/1998	1610
CCB		980716B	-0.00076						0.01	07/16/1998	1614
CCV		980710V	2.44452		2.5		97.8	%	90-110	07/16/1998	1639
CCB		980716B	-0.00282						0.01	07/16/1998	1642
SD	981739-3		-0.00247			-0.00113				07/16/1998	1647
ISB		980707E	0.91716		1.0013		91.6	%	80-120	07/16/1998	1657
CCV		980710V	2.45770		2.5		98.3	%	90-110	07/16/1998	1701
CCB		980716B	-0.00166						0.01	07/16/1998	1706

Test Method........: SW-846 6010A | Batch.............: 37018 | Analyst...: lmt
Method Description.: Metals Analysis (ICAP Trace) | Units.............: mg/L
Parameter..........: Arsenic (As)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
ICV		980710V	2.47375		2.5		99.0	%	90-110	07/16/1998	0928
ICB		980716B	0.00338						0.01	07/16/1998	0932
ISB		980707E	0.95308		1.0022		95.1	%	80-120	07/16/1998	0941
MB		0625	0.00394						0.01	07/16/1998	0958
SB		980601S	1.04841		1.00		104.8	%	75-125	07/16/1998	1007
MS	981714-1	980601S	1.00447		1.00	0.01001	99.4	%	80-120	07/16/1998	1016
MSD	981714-1	980601S	1.00938	1.00447	1.00	0.01001	99.9	%	80-120	07/16/1998	1018
							0.5	R	20		
CCV		980710V	2.44610		2.5		97.8	%	90-110	07/16/1998	1026
CCB		980716B	0.00290						0.01	07/16/1998	1030
MB		0629	0.00004						0.01	07/16/1998	1033
SB		980601S	0.99653		1.00		99.7	%	75-125	07/16/1998	1035
MS	981713-13	980601S	1.03492		1.00	0.00452	103.0	%	80-120	07/16/1998	1039
MSD	981713-13	980601S	1.00861	1.03492	1.00	0.00452	100.4	%	80-120	07/16/1998	1040
							2.6	R	20		
SD	981711-4		0.00197			0.00140				07/16/1998	1052
CCV		980710V	2.48075		2.5		99.2	%	90-110	07/16/1998	1100
CCB		980716B	0.00193						0.01	07/16/1998	1104
SB		980601S	1.10051		1.00		110.1	%	75-125	07/16/1998	1106
CCV		980710V	2.52405		2.5		101.0	%	90-110	07/16/1998	1144
CCB		980716B	0.00238						0.01	07/16/1998	1150
SD	981666-6		0.00511			0.02837				07/16/1998	1202
LCS		980490	0.77294		0.715000		108.1	%	80-120	07/16/1998	1238
SB		980703S	1.93961		2.000		97.0	%	75-125	07/16/1998	1240
SD	981626-3		0.01242			0.05295				07/16/1998	1245
CCV		980710V	2.53141		2.5		101.3	%	90-110	07/16/1998	1251
CCB		980716B	0.00199						0.01	07/16/1998	1257
PDS	981725-9	980703S	1.87754		2.000	0.00909	93.4	%	75-125	07/16/1998	1306
PSD	981725-9	980703S	1.92494	1.87754	2.000	0.00909	95.8	%	75-125	07/16/1998	1307
							2.5	R	20		
SB		980703S	2.07841		2.000		103.9	%	75-125	07/16/1998	1312

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

CORELAB

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number.: 981738 | Report Date.: 07/27/98

CUSTOMER: BDM International, Inc. | PROJECT: BDM Rexene Quarterly Waters | ATTN: Mike Selke

Test Method........: SW-846 6010A | Batch.............: 37018 | Analyst...: lmt
Method Description.: Metals Analysis (ICAP Trace) | Units.............: mg/L
Parameter..........: Arsenic (As)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
MS	981705-4	980703S	2.06122		2.000	0.00723	102.7	%	80-120	07/16/1998	1317
MSD	981705-4	980703S	2.06513	2.06122	2.000	0.00723	102.9	%	80-120	07/16/1998	1319
							0.2	R	20		
CCV		980710V	2.52778		2.5		101.1	%	90-110	07/16/1998	1328
CCB		980716B	0.00105						0.01	07/16/1998	1333
CCV		980710V	2.50692		2.5		100.3	%	90-110	07/16/1998	1400
CCB		980716B	0.00266						0.01	07/16/1998	1408
CCV		980710V	2.57598		2.5		103.0	%	90-110	07/16/1998	1435
CCB		980716B	-0.00011						0.01	07/16/1998	1448
PDS	981716-2	980703S	1.95018		2.000	0.00152	97.4	%	75-125	07/16/1998	1459
PSD	981716-2	980703S	1.96244	1.95018	2.000	0.00152	98.0	%	75-125	07/16/1998	1501
							0.6	R	20		
SB		980601S	1.03923		1.00		103.9	%	75-125	07/16/1998	1507
MS	981752-1	980601S	1.05545		1.00	0.00560	105.0	%	80-120	07/16/1998	1510
MSD	981752-2	980601S	1.05794	1.05545	1.00	0.00560	105.2	%	80-120	07/16/1998	1512
							0.2	R	20		
CCV		980710V	2.43322		2.5		97.3	%	90-110	07/16/1998	1535
CCB		980716B	0.00217						0.01	07/16/1998	1544
PDS	981725-2	980703S	2.23652		2.000	0.00728	111.5	%	75-125	07/16/1998	1549
PSD	981725-2	980703S	2.26652	2.23652	2.000	0.00728	113.0	%	75-125	07/16/1998	1550
							1.3	R	20		
PDS	981725-3	980703S	2.39064		2.000	0.00732	119.2	%	75-125	07/16/1998	1554
PSD	981725-3	980703S	2.38534	2.39064	2.000	0.00732	118.9	%	75-125	07/16/1998	1556
							0.2	R	20		
PDS	981725-4	980703S	2.39024		2.000	0.00644	119.2	%	75-125	07/16/1998	1600
PSD	981725-4	980703S	2.36672	2.39024	2.000	0.00644	118.0	%	75-125	07/16/1998	1602
							1.0	R	20		
CCV		980710V	2.35615		2.5		94.2	%	90-110	07/16/1998	1610
CCB		980716B	0.00190						0.01	07/16/1998	1614
CCV		980710V	2.47356		2.5		98.9	%	90-110	07/16/1998	1639
CCB		980716B	0.00178						0.01	07/16/1998	1642
SD	981739-3		-0.00045			-0.00106				07/16/1998	1647
ISB		980707E	0.97028		1.0022		96.8	%	80-120	07/16/1998	1657
CCV		980710V	2.49115		2.5		99.6	%	90-110	07/16/1998	1701
CCB		980716B	0.00140						0.01	07/16/1998	1706

Test Method........: SW-846 6010A | Batch.............: 37018 | Analyst...: lmt
Method Description.: Metals Analysis (ICAP Trace) | Units.............: mg/L
Parameter..........: Beryllium (Be)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
MB		0624	0.00023						0.001	06/25/1998	1537
MS	981544-1	980601S	1.03350		1.00	0.00189	103.2	%	80-120	06/25/1998	1545
MSD	981544-1	980601S	1.03282	1.03350	1.00	0.00189	103.1	%	80-120	06/25/1998	1548
							0.1	R	20		
ICV		980710V	2.49282		2.5		99.7	%	90-110	07/16/1998	0928
ICB		980716B	0.00010						0.001	07/16/1998	0932
ISB		980707E	0.46243		0.5006		92.4	%	80-120	07/16/1998	0941
MB		0625	0.00032						0.001	07/16/1998	0958
SB		980601S	1.05177		1.00		105.2	%	75-125	07/16/1998	1007
MS	981714-1	980601S	0.92315		1.00	0.00010	92.3	%	80-120	07/16/1998	1016

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

CORE LAB

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number.: 981738 Report Date.: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: BDM Rexene Quarterly Waters ATTN: Mike Selke

Test Method.....: SW-846 6010A Batch.....: 37018 Analyst...: lmt
Method Description.: Metals Analysis (ICAP Trace) Units.....: mg/L
Parameter.....: Beryllium (Be)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
MSD	981714-1	980601S	0.92574	0.92315	1.00	0.00010	92.6	%	80-120	07/16/1998	1018
							0.3	R	20		
CCV		980710V	2.42331		2.5		96.9	%	90-110	07/16/1998	1026
CCB		980716B	0.00010						0.001	07/16/1998	1030
MB		0629	0.00032						0.001	07/16/1998	1033
SB		980601S	0.98906		1.00		98.9	%	75-125	07/16/1998	1035
MS	981713-13	980601S	1.02780		1.00	0.00064	102.7	%	80-120	07/16/1998	1039
MSD	981713-13	980601S	0.99726	1.02780	1.00	0.00064	99.7	%	80-120	07/16/1998	1040
							3.0	R	20		
SD	981711-4		0.00032			0.00032				07/16/1998	1052
CCV		980710V	2.44057		2.5		97.6	%	90-110	07/16/1998	1100
CCB		980716B	0.00032						0.001	07/16/1998	1104
SB		980601S	1.03655		1.00		103.7	%	75-125	07/16/1998	1106
CCV		980710V	2.50209		2.5		100.1	%	90-110	07/16/1998	1144
CCB		980716B	0.00032						0.001	07/16/1998	1150
SD	981666-6		0.00075			0.00260				07/16/1998	1202
MB		0709	0.00032						0.001	07/16/1998	1235
LCS		980490	1.10649		1.040000		106.4	%	80-120	07/16/1998	1238
SB		980703S	0.04981		0.05000		99.6	%	75-125	07/16/1998	1240
SD	981626-3		0.00078			0.00358				07/16/1998	1245
CCV		980710V	2.49942		2.5		100.0	%	90-110	07/16/1998	1251
CCB		980716B	0.00032						0.001	07/16/1998	1257
PDS	981725-9	980703S	0.04917		0.05000	0.00023	97.9	%	75-125	07/16/1998	1306
PSD	981725-9	980703S	0.04993	0.04917	0.05000	0.00023	99.4	%	75-125	07/16/1998	1307
							1.5	R	20		
MB		0707	0.00032						0.001	07/16/1998	1310
SB		980703S	0.05252		0.05000		105.0	%	75-125	07/16/1998	1312
MS	981705-4	980703S	0.05165		0.05000	0.00011	103.1	%	80-120	07/16/1998	1317
MSD	981705-4	980703S	0.05144	0.05165	0.05000	0.00011	102.7	%	80-120	07/16/1998	1319
							0.4	R	20		
CCV		980710V	2.51797		2.5		100.7	%	90-110	07/16/1998	1328
CCB		980716B	0.00021						0.001	07/16/1998	1333
CCV		980710V	2.46154		2.5		98.5	%	90-110	07/16/1998	1400
CCB		980716B	0.00032						0.001	07/16/1998	1408
CCV		980710V	2.51161		2.5		100.5	%	90-110	07/16/1998	1435
CCB		980716B	0.00010						0.001	07/16/1998	1448
PDS	981716-2	980703S	0.04937		0.05000	0.00010	98.5	%	75-125	07/16/1998	1459
PSD	981716-2	980703S	0.04959	0.04937	0.05000	0.00010	99.0	%	75-125	07/16/1998	1501
							0.4	R	20		
SB		980601S	1.03893		1.00		103.9	%	75-125	07/16/1998	1507
MS	981752-1	980601S	1.04205		1.00	0.00064	104.1	%	80-120	07/16/1998	1510
MSD	981752-2	980601S	1.04961	1.04205	1.00	0.00064	104.9	%	80-120	07/16/1998	1512
							0.7	R	20		
CCV		980710V	2.44779		2.5		97.9	%	90-110	07/16/1998	1535
CCB		980716B	0.00032						0.001	07/16/1998	1544
PDS	981725-2	980703S	0.05004		0.05000	-0.00051	101.1	%	75-125	07/16/1998	1549
PSD	981725-2	980703S	0.05048	0.05004	0.05000	-0.00051	102.0	%	75-125	07/16/1998	1550
							0.9	R	20		
PDS	981725-3	980703S	0.05526		0.05000	-0.00006	110.6	%	75-125	07/16/1998	1554
PSD	981725-3	980703S	0.05526	0.05526	0.05000	-0.00006	110.6	%	75-125	07/16/1998	1556
							0.0	R	20		
PDS	981725-4	980703S	0.05440		0.05000	-0.00017	109.1	%	75-125	07/16/1998	1600
PSD	981725-4	980703S	0.05375	0.05440	0.05000	-0.00017	107.8	%	75-125	07/16/1998	1602
							1.2	R	20		

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

QUALITY CONTROL RESULTS

Job Number.: 981738 Report Date.: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: BDM Rexene Quarterly Waters ATTN: Mike Selke

Test Method.....: SW-846 6010A Batch.....: 37018 Analyst...: lmt
Method Description.: Metals Analysis (ICAP Trace) Units.....: mg/L
Parameter.....: Beryllium (Be)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
CCV		980710V	2.29564		2.5		91.8	%	90-110	07/16/1998	1610
CCB		980716B	0.00032						0.001	07/16/1998	1614
CCV		980710V	2.40141		2.5		96.1	%	90-110	07/16/1998	1639
CCB		980716B	0.00054						0.001	07/16/1998	1642
SD	981739-3		0.00032			0.00011				07/16/1998	1647
ISB		980707E	0.45509		0.5006		90.9	%	80-120	07/16/1998	1657
CCV		980710V	2.42181		2.5		96.9	%	90-110	07/16/1998	1701
CCB		980716B	0.00043						0.001	07/16/1998	1706

Test Method.....: SW-846 6010A Batch.....: 37018 Analyst...: lmt
Method Description.: Metals Analysis (ICAP Trace) Units.....: mg/L
Parameter.....: Cadmium (Cd)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
ICV		980710V	1.03191		1.0		103.2	%	90-110	07/16/1998	0928
ICB		980716B	-0.00003						0.0006	07/16/1998	0932
ISB		980707E	0.89706		0.9974		89.9	%	80-120	07/16/1998	0941
MB		0625	-0.00008						0.0006	07/16/1998	0958
SB		980601S	1.04661		1.00		104.7	%	75-125	07/16/1998	1007
MS	981714-1	980601S	0.88027		1.00	-0.00048	88.1	%	80-120	07/16/1998	1016
MSD	981714-1	980601S	0.88077	0.88027	1.00	-0.00048	88.1	%	80-120	07/16/1998	1018
							0.1	R	20		
CCV		980710V	1.00937		1.0		100.9	%	90-110	07/16/1998	1026
CCB		980716B	-0.00032						0.0006	07/16/1998	1030
MB		0629	-0.00000						0.0006	07/16/1998	1033
SB		980601S	0.98934		1.00		98.9	%	75-125	07/16/1998	1035
MS	981713-13	980601S	1.02397		1.00	0.00086	102.3	%	80-120	07/16/1998	1039
MSD	981713-13	980601S	0.99650	1.02397	1.00	0.00086	99.6	%	80-120	07/16/1998	1040
							2.7	R	20		
SD	981711-4		-0.00009			-0.00032				07/16/1998	1052
CCV		980710V	1.02843		1.0		102.8	%	90-110	07/16/1998	1100
CCB		980716B	0.00001						0.0006	07/16/1998	1104
SB		980601S	1.08476		1.00		108.5	%	75-125	07/16/1998	1106
CCV		980710V	1.05555		1.0		105.6	%	90-110	07/16/1998	1144
CCB		980716B	-0.00017						0.0006	07/16/1998	1150
SD	981666-6		0.00134			0.00779				07/16/1998	1202
MB		0709	-0.00008						0.0006	07/16/1998	1235
LCS		980490	0.66934		0.589000		113.6	%	80-120	07/16/1998	1238
SB		980703S	0.05137		0.05000		102.7	%	75-125	07/16/1998	1240
SD	981626-3		0.00209			0.01363				07/16/1998	1245
CCV		980710V	1.05396		1.0		105.4	%	90-110	07/16/1998	1251
CCB		980716B	-0.00013						0.0006	07/16/1998	1257
PDS	981725-9	980703S	0.05346		0.05000	0.00341	100.1	%	75-125	07/16/1998	1306
PSD	981725-9	980703S	0.05431	0.05346	0.05000	0.00341	101.8	%	75-125	07/16/1998	1307
							1.6	R	20		
MB		0707	-0.00004						0.0006	07/16/1998	1310
SB		980703S	0.05474		0.05000		109.5	%	75-125	07/16/1998	1312
MS	981705-4	980703S	0.05231		0.05000	-0.00024	105.1	%	80-120	07/16/1998	1317
MSD	981705-4	980703S	0.05209	0.05231	0.05000	-0.00024	104.7	%	80-120	07/16/1998	1319
							0.4	R	20		
CCV		980710V	1.06070		1.0		106.1	%	90-110	07/16/1998	1328

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number.: 981738 Report Date.: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: BDM Rexene Quarterly Waters ATTN: Mike Selke

Test Method.....: SW-846 6010A Batch.....: 37018 Analyst...: lmt
Method Description.: Metals Analysis (ICAP Trace) Units.....: mg/L
Parameter.....: Cadmium (Cd)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
CCB		980716B	0.00004						0.0006	07/16/1998	1333
CCV		980710V	1.04162		1.0		104.2	%	90-110	07/16/1998	1400
CCB		980716B	-0.00004						0.0006	07/16/1998	1408
CCV		980710V	1.07119		1.0		107.1	%	90-110	07/16/1998	1435
CCB		980716B	-0.00011						0.0006	07/16/1998	1448
PDS	981716-2	980703S	0.05059		0.05000	-0.00007	101.3	%	75-125	07/16/1998	1459
PSD	981716-2	980703S	0.05095	0.05059	0.05000	-0.00007	102.0	%	75-125	07/16/1998	1501
							0.7	R	20		
SB		980601S	1.03506		1.00		103.5	%	75-125	07/16/1998	1507
MS	981752-1	980601S	1.11886		1.00	0.10885	101.0	%	80-120	07/16/1998	1510
MSD	981752-2	980601S	1.12881	1.11886	1.00	0.10885	102.0	%	80-120	07/16/1998	1512
							0.9	R	20		
CCV		980710V	1.01194		1.0		101.2	%	90-110	07/16/1998	1535
CCB		980716B	-0.00014						0.0006	07/16/1998	1544
PDS	981725-2	980703S	0.05105		0.05000	-0.00041	102.9	%	75-125	07/16/1998	1549
PSD	981725-2	980703S	0.05205	0.05105	0.05000	-0.00041	104.9	%	75-125	07/16/1998	1550
							1.9	R	20		
PDS	981725-3	980703S	0.05838		0.05000	-0.00045	117.7	%	75-125	07/16/1998	1554
PSD	981725-3	980703S	0.05841	0.05838	0.05000	-0.00045	117.7	%	75-125	07/16/1998	1556
							0.1	R	20		
PDS	981725-4	980703S	0.05680		0.05000	-0.00047	114.5	%	75-125	07/16/1998	1600
PSD	981725-4	980703S	0.05568	0.05680	0.05000	-0.00047	112.3	%	75-125	07/16/1998	1602
							2.0	R	20		
CCV		980710V	0.96405		1.0		96.4	%	90-110	07/16/1998	1610
CCB		980716B	-0.00050						0.0006	07/16/1998	1614
CCV		980710V	1.00718		1.0		100.7	%	90-110	07/16/1998	1639
CCB		980716B	-0.00032						0.0006	07/16/1998	1642
SD	981739-3		-0.00014			-0.00022				07/16/1998	1647
ISB		980707E	0.89573		0.9974		89.8	%	80-120	07/16/1998	1657
CCV		980710V	1.01465		1.0		101.5	%	90-110	07/16/1998	1701
CCB		980716B	-0.00014						0.0006	07/16/1998	1706

Test Method.....: SW-846 6010A Batch.....: 37018 Analyst...: lmt
Method Description.: Metals Analysis (ICAP Trace) Units.....: mg/L
Parameter.....: Chromium (Cr)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
MB		0624	0.00033						0.005	06/25/1998	1537
MS	981544-1	980601S	1.02220		1.00	0.01961	100.3	%	80-120	06/25/1998	1545
MSD	981544-1	980601S	1.02287	1.02220	1.00	0.01961	100.3	%	80-120	06/25/1998	1548
							0.1	R	20		
ICV		980710V	2.54219		2.5		101.7	%	90-110	07/16/1998	0928
ICB		980716B	0.00074						0.005	07/16/1998	0932
ISB		980707E	0.46223		0.5001		92.4	%	80-120	07/16/1998	0941
MB		0625	-0.00000						0.005	07/16/1998	0958
SB		980601S	1.06137		1.00		106.1	%	75-125	07/16/1998	1007
MS	981714-1	980601S	0.95067		1.00	0.00000	95.1	%	80-120	07/16/1998	1016
MSD	981714-1	980601S	0.94469	0.95067	1.00	0.00000	94.5	%	80-120	07/16/1998	1018
							0.6	R	20		
CCV		980710V	2.45170		2.5		98.1	%	90-110	07/16/1998	1026
CCB		980716B	-0.00149						0.005	07/16/1998	1030

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

CORELAB

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number.: 981738 Report Date.: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: BDM Rexene Quarterly Waters ATTN: Mike Selke

Test Method........: SW-846 6010A Batch.............: 37018 Analyst...: lmt
Method Description.: Metals Analysis (ICAP Trace) Units.............: mg/L
Parameter..........: Chromium (Cr)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
MB		0629	-0.00149						0.005	07/16/1998	1033
SB		980601S	0.99779		1.00		99.8	%	75-125	07/16/1998	1035
MS	981713-13	980601S	1.02856		1.00	0.00084	102.8	%	80-120	07/16/1998	1039
MSD	981713-13	980601S	0.99564	1.02856	1.00	0.00084	99.5	%	80-120	07/16/1998	1040
							3.3	R	20		
SD	981711-4		0.00000			0.00150				07/16/1998	1052
CCV		980710V	2.48162		2.5		99.3	%	90-110	07/16/1998	1100
CCB		980716B	0.00149						0.005	07/16/1998	1104
SB		980601S	1.06138		1.00		106.1	%	75-125	07/16/1998	1106
CCV		980710V	2.55267		2.5		102.1	%	90-110	07/16/1998	1144
CCB		980716B	0.00149						0.005	07/16/1998	1150
SD	981666-6		0.00480			0.03009				07/16/1998	1202
MB		0709	-0.00149						0.005	07/16/1998	1235
LCS		980490	1.00581		0.902000		111.5	%	80-120	07/16/1998	1238
SB		980703S	0.20816		0.20000		104.1	%	75-125	07/16/1998	1240
SD	981626-3		0.02812			0.12474				07/16/1998	1245
CCV		980710V	2.56389		2.5		102.6	%	90-110	07/16/1998	1251
CCB		980716B	0.00000						0.005	07/16/1998	1257
PDS	981725-9	980703S	0.56426		0.20000	0.36883	97.7	%	75-125	07/16/1998	1306
PSD	981725-9	980703S	0.56800	0.56426	0.20000	0.36883	99.6	%	75-125	07/16/1998	1307
							0.7	R	20		
MB		0707	0.00074						0.005	07/16/1998	1310
SB		980703S	0.21340		0.20000		106.7	%	75-125	07/16/1998	1312
MS	981705-4	980703S	0.20823		0.20000	-0.00067	104.5	%	80-120	07/16/1998	1317
MSD	981705-4	980703S	0.21122	0.20823	0.20000	-0.00067	105.9	%	80-120	07/16/1998	1319
							1.4	R	20		
CCV		980710V	2.57735		2.5		103.1	%	90-110	07/16/1998	1328
CCB		980716B	-0.00074						0.005	07/16/1998	1333
CCV		980710V	2.53621		2.5		101.4	%	90-110	07/16/1998	1400
CCB		980716B	0.00149						0.005	07/16/1998	1408
CCV		980710V	2.57884		2.5		103.2	%	90-110	07/16/1998	1435
CCB		980716B	-0.00000						0.005	07/16/1998	1448
PDS	981716-2	980703S	0.19919		0.20000	0.00000	99.6	%	75-125	07/16/1998	1459
PSD	981716-2	980703S	0.20218	0.19919	0.20000	0.00000	101.1	%	75-125	07/16/1998	1501
							1.5	R	20		
SB		980601S	1.04940		1.00		104.9	%	75-125	07/16/1998	1507
MS	981752-1	980601S	1.06811		1.00	0.02543	104.3	%	80-120	07/16/1998	1510
MSD	981752-2	980601S	1.06586	1.06811	1.00	0.02543	104.0	%	80-120	07/16/1998	1512
							0.2	R	20		
CCV		980710V	2.46740		2.5		98.7	%	90-110	07/16/1998	1535
CCB		980716B	-0.00224						0.005	07/16/1998	1544
PDS	981725-2	980703S	0.20596		0.20000	0.00004	103.0	%	75-125	07/16/1998	1549
PSD	981725-2	980703S	0.21046	0.20596	0.20000	0.00004	105.2	%	75-125	07/16/1998	1550
							2.2	R	20		
PDS	981725-3	980703S	0.22317		0.20000	-0.00072	111.9	%	75-125	07/16/1998	1554
PSD	981725-3	980703S	0.22616	0.22317	0.20000	-0.00072	113.4	%	75-125	07/16/1998	1556
							1.3	R	20		
PDS	981725-4	980703S	0.22093		0.20000	0.00153	109.7	%	75-125	07/16/1998	1600
PSD	981725-4	980703S	0.22018	0.22093	0.20000	0.00153	109.3	%	75-125	07/16/1998	1602
							0.3	R	20		
CCV		980710V	2.33278		2.5		93.3	%	90-110	07/16/1998	1610
CCB		980716B	-0.00000						0.005	07/16/1998	1614
CCV		980710V	2.44347		2.5		97.7	%	90-110	07/16/1998	1639

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

CORE LAB

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number.: 981738 Report Date.: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: BDM Rexene Quarterly Waters ATTN: Mike Selke

Test Method.....: SW-846 6010A Batch.....: 37018 Analyst...: lmt
Method Description.: Metals Analysis (ICAP Trace) Units.....: mg/L
Parameter.....: Chromium (Cr)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
CCB		980716B	-0.00000						0.005	07/16/1998	1642
SD	981739-3		0.00075			-0.00072				07/16/1998	1647
ISB		980707E	0.45326		0.5001		90.6	%	80-120	07/16/1998	1657
CCV		980710V	2.48236		2.5		99.3	%	90-110	07/16/1998	1701
CCB		980716B	-0.00074						0.005	07/16/1998	1706

Test Method.....: SW-846 6010A Batch.....: 37018 Analyst...: lmt
Method Description.: Metals Analysis (ICAP Trace) Units.....: mg/L
Parameter.....: Copper (Cu)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
MB		0624	-0.00137						0.005	06/25/1998	1537
MS	981544-1	980601S	1.08493		1.00	0.06043	102.5	%	80-120	06/25/1998	1545
MSD	981544-1	980601S	1.08243	1.08493	1.00	0.06043	102.2	%	80-120	06/25/1998	1548
							0.2	R	20		
ICV		980710V	2.47389		2.5		99.0	%	90-110	07/16/1998	0928
ICB		980716B	0.00008						0.005	07/16/1998	0932
ISB		980707E	0.48333		0.4980		97.1	%	80-120	07/16/1998	0941
MB		0625	-0.00065						0.005	07/16/1998	0958
SB		980601S	1.07503		1.00		107.5	%	75-125	07/16/1998	1007
MS	981714-1	980601S	1.06733		1.00	0.01427	105.3	%	80-120	07/16/1998	1016
MSD	981714-1	980601S	1.07199	1.06733	1.00	0.01427	105.8	%	80-120	07/16/1998	1018
							0.4	R	20		
CCV		980710V	2.47742		2.5		99.1	%	90-110	07/16/1998	1026
CCB		980716B	-0.00074						0.005	07/16/1998	1030
MB		0629	-0.00057						0.005	07/16/1998	1033
SB		980601S	1.04203		1.00		104.2	%	75-125	07/16/1998	1035
SD	981711-4		0.00240			0.01499				07/16/1998	1052
CCV		980710V	2.46106		2.5		98.4	%	90-110	07/16/1998	1100
CCB		980716B	-0.00030						0.005	07/16/1998	1104
SB		980601S	1.05525		1.00		105.5	%	75-125	07/16/1998	1106
CCV		980710V	2.48321		2.5		99.3	%	90-110	07/16/1998	1144
CCB		980716B	-0.00043						0.005	07/16/1998	1150
SD	981666-6		0.00168			0.01009				07/16/1998	1202
MB		0709	0.00000						0.005	07/16/1998	1235
LCS		980490	1.98294		1.780000		111.4	%	80-120	07/16/1998	1238
SB		980703S	0.24921		0.25000		99.7	%	75-125	07/16/1998	1240
SD	981626-3		0.01451			0.07239				07/16/1998	1245
CCV		980710V	2.52240		2.5		100.9	%	90-110	07/16/1998	1251
CCB		980716B	-0.00087						0.005	07/16/1998	1257
PDS	981725-9	980703S	0.38348		0.25000	0.13941	97.6	%	75-125	07/16/1998	1306
PSD	981725-9	980703S	0.38510	0.38348	0.25000	0.13941	98.3	%	75-125	07/16/1998	1307
							0.4	R	20		
MB		0707	-0.00056						0.005	07/16/1998	1310
SB		980703S	0.25515		0.25000		102.1	%	75-125	07/16/1998	1312
MS	981705-4	980703S	0.26354		0.25000	0.00566	103.2	%	80-120	07/16/1998	1317
MSD	981705-4	980703S	0.26346	0.26354	0.25000	0.00566	103.1	%	80-120	07/16/1998	1319
							0.0	R	20		
CCV		980710V	2.52135		2.5		100.9	%	90-110	07/16/1998	1328
CCB		980716B	-0.00052						0.005	07/16/1998	1333
CCV		980710V	2.50167		2.5		100.1	%	90-110	07/16/1998	1400

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

CORE LAB

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number.: 981738 Report Date.: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: BDM Rexene Quarterly Waters ATTN: Mike Selke

Test Method.....: SW-846 6010A Batch.....: 37018 Analyst...: lmt
Method Description.: Metals Analysis (ICAP Trace) Units.....: mg/L
Parameter.....: Iron (Fe)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
SD	981711-4		0.03698			0.00172				07/16/1998	1052
CCV		980710V	4.85002		5.0		97.0	%	90-110	07/16/1998	1100
CCB		980716B	0.00906						0.03	07/16/1998	1104
SB		980601S	0.92108		1.00		92.1	%	75-125	07/16/1998	1106
CCV		980710V	4.99218		5.0		99.8	%	90-110	07/16/1998	1144
CCB		980716B	0.02744						0.03	07/16/1998	1150
SD	981666-6		23.88086			124.66801	4.2	D	-10.-10.0	07/16/1998	1202
MB		0709	0.02752						0.03	07/16/1998	1235
SB		980703S	1.08028		1.0000		108.0	%	75-125	07/16/1998	1240
SD	981626-3		33.73545			154.95603				07/16/1998	1245
CCV		980710V	5.02859		5.0		100.6	%	90-110	07/16/1998	1251
CCB		980716B	0.00911						0.03	07/16/1998	1257
PDS	981725-9	980703S	65.60717		1.0000	65.37937	22.8	%	75-125	07/16/1998	1306
PSD	981725-9	980703S	65.50558	65.60717	1.0000	65.37937	12.6	%	75-125	07/16/1998	1307
							0.2	R	20		
MB		0707	0.02743						0.03	07/16/1998	1310
SB		980703S	1.03291		1.0000		103.3	%	75-125	07/16/1998	1312
MS	981705-4	980703S	1.07744		1.0000	0.04257	103.5	%	80-120	07/16/1998	1317
MSD	981705-4	980703S	1.07710	1.07744	1.0000	0.04257	103.5	%	80-120	07/16/1998	1319
							0.0	R	20		
CCV		980710V	5.03683		5.0		100.7	%	90-110	07/16/1998	1328
CCB		980716B	-0.00923						0.03	07/16/1998	1333
CCV		980710V	4.94895		5.0		99.0	%	90-110	07/16/1998	1400
CCB		980716B	0.02741						0.03	07/16/1998	1408
CCV		980710V	5.09109		5.0		101.8	%	90-110	07/16/1998	1435
CCB		980716B	-0.00004						0.03	07/16/1998	1448
PDS	981716-2	980703S	0.96322		1.0000	0.00064	96.3	%	75-125	07/16/1998	1459
PSD	981716-2	980703S	0.98126	0.96322	1.0000	0.00064	98.1	%	75-125	07/16/1998	1501
							1.9	R	20		
SB		980601S	0.87770		1.00		87.8	%	75-125	07/16/1998	1507
MS	981752-1	980601S	1.52236		1.00	0.67136	85.1	%	80-120	07/16/1998	1510
MSD	981752-2	980601S	1.47618	1.52236	1.00	0.67136	80.5	%	80-120	07/16/1998	1512
							3.1	R	20		
CCV		980710V	4.85272		5.0		97.1	%	90-110	07/16/1998	1535
PDS	981725-2	980703S	1.04083		1.0000	0.00555	103.5	%	75-125	07/16/1998	1549
PSD	981725-2	980703S	1.06764	1.04083	1.0000	0.00555	106.2	%	75-125	07/16/1998	1550
							2.5	R	20		
PDS	981725-3	980703S	1.41729		1.0000	0.28527	113.2	%	75-125	07/16/1998	1554
PSD	981725-3	980703S	1.38959	1.41729	1.0000	0.28527	110.4	%	75-125	07/16/1998	1556
							2.0	R	20		
PDS	981725-4	980703S	1.20034		1.0000	0.11350	108.7	%	75-125	07/16/1998	1600
PSD	981725-4	980703S	1.16387	1.20034	1.0000	0.11350	105.0	%	75-125	07/16/1998	1602
							3.1	R	20		
CCV		980710V	4.59572		5.0		91.9	%	90-110	07/16/1998	1610
CCB		980716B	0.00916						0.03	07/16/1998	1614
CCV		980710V	4.75175		5.0		95.0	%	90-110	07/16/1998	1639
CCB		980716B	0.00906						0.03	07/16/1998	1642
SD	981739-3		0.00954			0.03929				07/16/1998	1647
ISA		980628L	86.71592		100.00		86.7	%	80-120	07/16/1998	1653
ISB		980707E	85.67446		96.100		89.2	%	80-120	07/16/1998	1657
CCV		980710V	4.90585		5.0		98.1	%	90-110	07/16/1998	1701
CCB		980716B	0.01823						0.03	07/16/1998	1706

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

CORE LAB

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number.: 981738 Report Date.: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: BDM Rexene Quarterly Waters ATTN: Mike Selke

Test Method.....: SW-846 6010A Batch.....: 37018 Analyst...: lmt
Method Description.: Metals Analysis (ICAP Trace) Units.....: mg/L
Parameter.....: Lead (Pb)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
ICV		980710V	1.01083		1.0		101.1	%	90-110	07/16/1998	0928
ICB		980716B	-0.00042						0.003	07/16/1998	0932
ISB		980707E	0.90051		0.9958		90.4	%	80-120	07/16/1998	0941
MB		0625	0.00055						0.003	07/16/1998	0958
SB		980601S	1.04408		1.00		104.4	%	75-125	07/16/1998	1007
MS	981714-1	980601S	0.88976		1.00	-0.00734	89.7	%	80-120	07/16/1998	1016
MSD	981714-1	980601S	0.89355	0.88976	1.00	-0.00734	90.1	%	80-120	07/16/1998	1018
							0.4	R	20		
CCV		980710V	0.99643		1.0		99.6	%	90-110	07/16/1998	1026
CCB		980716B	0.00121						0.003	07/16/1998	1030
MB		0629	-0.00178						0.003	07/16/1998	1033
SB		980601S	0.98927		1.00		98.9	%	75-125	07/16/1998	1035
MS	981713-13	980601S	1.02707		1.00	0.00052	102.7	%	80-120	07/16/1998	1039
MSD	981713-13	980601S	1.00028	1.02707	1.00	0.00052	100.0	%	80-120	07/16/1998	1040
							2.6	R	20		
SD	981711-4		0.00189			-0.00113				07/16/1998	1052
CCV		980710V	1.00826		1.0		100.8	%	90-110	07/16/1998	1100
CCB		980716B	0.00069						0.003	07/16/1998	1104
SB		980601S	1.08301		1.00		108.3	%	75-125	07/16/1998	1106
CCV		980710V	1.03377		1.0		103.4	%	90-110	07/16/1998	1144
CCB		980716B	-0.00025						0.003	07/16/1998	1150
SD	981666-6		0.00214			0.01081				07/16/1998	1202
MB		0709	-0.00084						0.003	07/16/1998	1235
LCS		980490	1.60237		1.430000		112.1	%	80-120	07/16/1998	1238
SB		980703S	0.51387		0.5000		102.8	%	75-125	07/16/1998	1240
SD	981626-3		0.00774			0.04310				07/16/1998	1245
CCV		980710V	1.03574		1.0		103.6	%	90-110	07/16/1998	1251
CCB		980716B	0.00115						0.003	07/16/1998	1257
PDS	981725-9	980703S	0.50662		0.5000	0.00927	99.5	%	75-125	07/16/1998	1306
PSD	981725-9	980703S	0.51483	0.50662	0.5000	0.00927	101.1	%	75-125	07/16/1998	1307
							1.6	R	20		
MB		0707	0.00090						0.003	07/16/1998	1310
SB		980703S	0.53963		0.5000		107.9	%	75-125	07/16/1998	1312
MS	981705-4	980703S	0.51968		0.5000	-0.00315	104.6	%	80-120	07/16/1998	1317
MSD	981705-4	980703S	0.52056	0.51968	0.5000	-0.00315	104.7	%	80-120	07/16/1998	1319
							0.2	R	20		
CCV		980710V	1.04293		1.0		104.3	%	90-110	07/16/1998	1328
CCB		980716B	-0.00053						0.003	07/16/1998	1333
CCV		980710V	1.02805		1.0		102.8	%	90-110	07/16/1998	1400
CCB		980716B	0.00196						0.003	07/16/1998	1408
CCV		980710V	1.05502		1.0		105.5	%	90-110	07/16/1998	1435
CCB		980716B	0.00038						0.003	07/16/1998	1448
PDS	981716-2	980703S	0.50375		0.5000	0.00065	100.6	%	75-125	07/16/1998	1459
PSD	981716-2	980703S	0.51011	0.50375	0.5000	0.00065	101.9	%	75-125	07/16/1998	1501
							1.3	R	20		
SB		980601S	1.03817		1.00		103.8	%	75-125	07/16/1998	1507
MS	981752-1	980601S	1.05535		1.00	0.04643	100.9	%	80-120	07/16/1998	1510
MSD	981752-2	980601S	1.06586	1.05535	1.00	0.04643	101.9	%	80-120	07/16/1998	1512
							1.0	R	20		
CCV		980710V	0.99453		1.0		99.5	%	90-110	07/16/1998	1535
CCB		980716B	0.00134						0.003	07/16/1998	1544
PDS	981725-2	980703S	0.49263		0.5000	-0.00395	99.3	%	75-125	07/16/1998	1549
PSD	981725-2	980703S	0.52108	0.49263	0.5000	-0.00395	105.0	%	75-125	07/16/1998	1550
							5.6	R	20		

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

QUALITY CONTROL RESULTS

Job Number.: 981738 Report Date.: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: BDM Rexene Quarterly Waters ATTN: Mike Selke

Test Method.....: SW-846 6010A Batch.....: 37018 Analyst...: lmt
Method Description.: Metals Analysis (ICAP Trace) Units.....: mg/L
Parameter.....: Lead (Pb)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
PDS	981725-3	980703S	0.56501		0.5000	0.00122	112.8	%	75-125	07/16/1998	1554
PSD	981725-3	980703S	0.57488	0.56501	0.5000	0.00122	114.7	%	75-125	07/16/1998	1556
							1.7	R	20		
PDS	981725-4	980703S	0.53548		0.5000	0.00132	106.8	%	75-125	07/16/1998	1600
PSD	981725-4	980703S	0.55316	0.53548	0.5000	0.00132	110.4	%	75-125	07/16/1998	1602
							3.2	R	20		
CCV		980710V	0.94479		1.0		94.5	%	90-110	07/16/1998	1610
CCB		980716B	-0.00073						0.003	07/16/1998	1614
CCV		980710V	0.99788		1.0		99.8	%	90-110	07/16/1998	1639
CCB		980716B	0.00028						0.003	07/16/1998	1642
SD	981739-3		0.00211			-0.00209				07/16/1998	1647
ISB		980707E	0.89802		0.9958		90.2	%	80-120	07/16/1998	1657
CCV		980710V	1.00412		1.0		100.4	%	90-110	07/16/1998	1701
CCB		980716B	0.00076						0.003	07/16/1998	1706

Test Method.....: SW-846 7470 Batch.....: 36529 Analyst...: veb
Method Description.: Mercury (CVAA) Units.....: mg/L
Parameter.....: Mercury (Hg)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
ICV		980428H	0.00374191		0.004000		93.5	%	90-110	07/01/1998	0832
ICB		0701	0.00000002						0.0002	07/01/1998	0834
MB		0630	-0.0000001						0.0002	07/01/1998	0836
SB		980622H	0.00080065		0.001000		80.1	%	80-120	07/01/1998	0838
SBD		980622H	0.00080365	0.00080065	0.001000		80.4	%	80-120	07/01/1998	0840
							0.4	R	20		
CCV		971210N	0.00473346		0.005000		94.7	%	90-110	07/01/1998	0857
CCB		0701	-0.0000011						0.0002	07/01/1998	0859
CCV		971210N	0.00478499		0.005000		95.7	%	90-110	07/01/1998	0922
CCB		0701	-0.0000010						0.0002	07/01/1998	0925
MB		0630	0.00000028						0.0002	07/01/1998	0935
CCV		971210N	0.00493765		0.005000		98.8	%	90-110	07/01/1998	0948
CCB		0701	0.00000119						0.0002	07/01/1998	0950
MS	981716-1	980622H	0.00083941		0.001000	0.00002452	81.5	%	75-125	07/01/1998	1011
CCV		971210N	0.00481935		0.005000		96.4	%	90-110	07/01/1998	1013
CCB		0701	0.00006174						0.0002	07/01/1998	1015
MSD	981716-1	980622H	0.00079441	0.00083941	0.001000	0.00002452	77.0	%	75-125	07/01/1998	1017
							5.5	R	20		
CCV		971210N	0.00479392		0.005000		95.9	%	90-110	07/01/1998	1038
CCB		0701	0.00005698						0.0002	07/01/1998	1040
CCV		971210N	0.00495643		0.005000		99.1	%	90-110	07/01/1998	1103
CCB		0701	0.00000202						0.0002	07/01/1998	1106
CCV		971210N	0.00489174		0.005000		97.8	%	90-110	07/01/1998	1128
CCB		0701	0.00000191						0.0002	07/01/1998	1131
CCV		971210N	0.00486177		0.005000		97.2	%	90-110	07/01/1998	1154
CCB		0701	-0.0000001						0.0002	07/01/1998	1156
CCV		971210N	0.00467973		0.005000		93.6	%	90-110	07/01/1998	1255
PDS	981661-1	980622H	0.00098825		0.001000	0.00003061	95.8	%	85-115	07/01/1998	1503
PSD	981661-1	980622H	0.00098528	0.00098825	0.001000	0.00003061	95.5	%	85-115	07/01/1998	1505
							0.3	R	20		

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

CORE LAB

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number.: 981738 Report Date.: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: BDM Rexene Quarterly Waters ATTN: Mike Selke

Test Method........: SW-846 6010A Batch............: 37018 Analyst...: lmt
Method Description.: Metals Analysis (ICAP Trace) Units............: mg/L
Parameter..........: Nickel (Ni)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
MB		0624	0.00047						0.005	06/25/1998	1537
MS	981544-1	980601S	1.02347		1.00	0.01435	100.9	%	80-120	06/25/1998	1545
MSD	981544-1	980601S	1.02379	1.02347	1.00	0.01435	100.9	%	80-120	06/25/1998	1548
							0.0	R	20		
ICV		980710V	2.55402		2.5		102.2	%	90-110	07/16/1998	0928
ICB		980716B	0.00012						0.005	07/16/1998	0932
ISB		980707E	0.86199		0.9960		86.5	%	80-120	07/16/1998	0941
MB		0625	-0.00069						0.005	07/16/1998	0958
SB		980601S	1.04253		1.00		104.3	%	75-125	07/16/1998	1007
MS	981714-1	980601S	0.88072		1.00	0.00657	87.4	%	80-120	07/16/1998	1016
MSD	981714-1	980601S	0.87439	0.88072	1.00	0.00657	86.8	%	80-120	07/16/1998	1018
							0.7	R	20		
CCV		980710V	2.50805		2.5		100.3	%	90-110	07/16/1998	1026
CCB		980716B	0.00073						0.005	07/16/1998	1030
MB		0629	0.00109						0.005	07/16/1998	1033
SB		980601S	0.98750		1.00		98.8	%	75-125	07/16/1998	1035
MS	981713-13	980601S	1.08723		1.00	0.07226	101.5	%	80-120	07/16/1998	1039
MSD	981713-13	980601S	1.05306	1.08723	1.00	0.07226	98.1	%	80-120	07/16/1998	1040
							3.2	R	20		
SD	981711-4		0.00115			0.00186				07/16/1998	1052
CCV		980710V	2.53602		2.5		101.4	%	90-110	07/16/1998	1100
CCB		980716B	0.00006						0.005	07/16/1998	1104
SB		980601S	1.06510		1.00		106.5	%	75-125	07/16/1998	1106
CCV		980710V	2.59876		2.5		104.0	%	90-110	07/16/1998	1144
CCB		980716B	0.00057						0.005	07/16/1998	1150
SD	981666-6		0.01197			0.06723	11.0	D	-10.-10.0	07/16/1998	1202
MB		0709	-0.00009						0.005	07/16/1998	1235
LCS		980490	0.80139		0.736000		108.9	%	80-120	07/16/1998	1238
SB		980703S	0.51706		0.50000		103.4	%	75-125	07/16/1998	1240
SD	981626-3		0.02868			0.12429				07/16/1998	1245
CCV		980710V	2.60276		2.5		104.1	%	90-110	07/16/1998	1251
CCB		980716B	-0.00012						0.005	07/16/1998	1257
PDS	981725-9	980703S	0.52002		0.50000	0.02174	99.7	%	75-125	07/16/1998	1306
PSD	981725-9	980703S	0.52996	0.52002	0.50000	0.02174	101.6	%	75-125	07/16/1998	1307
							1.9	R	20		
MB		0707	-0.00048						0.005	07/16/1998	1310
SB		980703S	0.54468		0.50000		108.9	%	75-125	07/16/1998	1312
MS	981705-4	980703S	0.52045		0.50000	0.00569	103.0	%	80-120	07/16/1998	1317
MSD	981705-4	980703S	0.51800	0.52045	0.50000	0.00569	102.5	%	80-120	07/16/1998	1319
							0.5	R	20		
CCV		980710V	2.62338		2.5		104.9	%	90-110	07/16/1998	1328
CCB		980716B	-0.00030						0.005	07/16/1998	1333
CCV		980710V	2.57014		2.5		102.8	%	90-110	07/16/1998	1400
CCB		980716B	-0.00087						0.005	07/16/1998	1408
CCV		980710V	2.64112		2.5		105.6	%	90-110	07/16/1998	1435
CCB		980716B	-0.00066						0.005	07/16/1998	1448
PDS	981716-2	980703S	0.49981		0.50000	-0.00058	100.1	%	75-125	07/16/1998	1459
PSD	981716-2	980703S	0.50468	0.49981	0.50000	-0.00058	101.1	%	75-125	07/16/1998	1501
							1.0	R	20		
SB		980601S	1.02693		1.00		102.7	%	75-125	07/16/1998	1507
MS	981752-1	980601S	2.11585		1.00	1.16776	94.8	%	80-120	07/16/1998	1510
MSD	981752-2	980601S	2.13239	2.11585	1.00	1.16776	96.5	%	80-120	07/16/1998	1512
							0.8	R	20		

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number.: 981738 Report Date.: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: BDM Rexene Quarterly Waters ATTN: Mike Selke

Test Method.....: SW-846 6010A Batch.....: 37018 Analyst...: lmt
Method Description.: Metals Analysis (ICAP Trace) Units.....: mg/L
Parameter.....: Nickel (Ni)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
CCV		980710V	2.51271		2.5		100.5	%	90-110	07/16/1998	1535
CCB		980716B	0.00085						0.005	07/16/1998	1544
PDS	981725-2	980703S	0.74120		0.50000	0.24298	99.6	%	75-125	07/16/1998	1549
PSD	981725-2	980703S	0.75539	0.74120	0.50000	0.24298	102.5	%	75-125	07/16/1998	1550
							1.9	R	20		
PDS	981725-3	980703S	0.58445		0.50000	0.00830	115.2	%	75-125	07/16/1998	1554
PSD	981725-3	980703S	0.58070	0.58445	0.50000	0.00830	114.5	%	75-125	07/16/1998	1556
							0.6	R	20		
PDS	981725-4	980703S	0.59282		0.50000	0.04272	110.0	%	75-125	07/16/1998	1600
PSD	981725-4	980703S	0.58899	0.59282	0.50000	0.04272	109.3	%	75-125	07/16/1998	1602
							0.6	R	20		
CCV		980710V	2.38811		2.5		95.5	%	90-110	07/16/1998	1610
CCB		980716B	0.00036						0.005	07/16/1998	1614
CCV		980710V	2.49002		2.5		99.6	%	90-110	07/16/1998	1639
CCB		980716B	0.00024						0.005	07/16/1998	1642
SD	981739-3		0.00224			0.00670				07/16/1998	1647
ISB		980707E	0.85898		0.9960		86.2	%	80-120	07/16/1998	1657
CCV		980710V	2.51561		2.5		100.6	%	90-110	07/16/1998	1701
CCB		980716B	-0.00027						0.005	07/16/1998	1706

Test Method.....: SW-846 6010A Batch.....: 37018 Analyst...: lmt
Method Description.: Metals Analysis (ICAP Trace) Units.....: mg/L
Parameter.....: Selenium (Se)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
ICV		980710V	2.47421		2.5		99.0	%	90-110	07/16/1998	0928
ICB		980716B	0.00493						0.01	07/16/1998	0932
ISB		980707E	0.90624		0.9998		90.6	%	80-120	07/16/1998	0941
MB		0625	0.00286						0.01	07/16/1998	0958
SB		980601S	1.03625		1.00		103.6	%	75-125	07/16/1998	1007
MS	981714-1	980601S	0.99543		1.00	0.00932	98.6	%	80-120	07/16/1998	1016
MSD	981714-1	980601S	0.99120	0.99543	1.00	0.00932	98.2	%	80-120	07/16/1998	1018
							0.4	R	20		
CCV		980710V	2.44561		2.5		97.8	%	90-110	07/16/1998	1026
CCB		980716B	0.00119						0.01	07/16/1998	1030
MB		0629	0.00537						0.01	07/16/1998	1033
SB		980601S	0.97250		1.00		97.2	%	75-125	07/16/1998	1035
MS	981713-13	980601S	0.99792		1.00	0.00788	99.0	%	80-120	07/16/1998	1039
MSD	981713-13	980601S	0.97880	0.99792	1.00	0.00788	97.1	%	80-120	07/16/1998	1040
							1.9	R	20		
SD	981711-4		0.00428			0.00685				07/16/1998	1052
CCV		980710V	2.46593		2.5		98.6	%	90-110	07/16/1998	1100
CCB		980716B	0.00436						0.01	07/16/1998	1104
SB		980601S	1.13505		1.00		113.5	%	75-125	07/16/1998	1106
CCV		980710V	2.50752		2.5		100.3	%	90-110	07/16/1998	1144
CCB		980716B	0.00492						0.01	07/16/1998	1150
SD	981666-6		-0.00015			-0.03293				07/16/1998	1202
MB		0709	0.00013						0.01	07/16/1998	1235
LCS		980490	0.68053		0.675000		100.8	%	80-120	07/16/1998	1238
SB		980703S	1.83704		2.000		91.9	%	75-125	07/16/1998	1240
SD	981626-3		-0.00557			-0.06056				07/16/1998	1245

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

CORE LAB

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number.: 981738 Report Date.: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: BDM Rexene Quarterly Waters ATTN: Mike Selke

Test Method.....: SW-846 6010A Batch.....: 37018 Analyst...: lmt
Method Description.: Metals Analysis (ICAP Trace) Units.....: mg/L
Parameter.....: Selenium (Se)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
CCV		980710V	2.51626		2.5		100.7	%	90-110	07/16/1998	1251
CCB		980716B	0.00219						0.01	07/16/1998	1257
PDS	981725-9	980703S	1.86421		2.000	-0.01026	93.7	%	75-125	07/16/1998	1306
PSD	981725-9	980703S	1.89453	1.86421	2.000	-0.01026	95.2	%	75-125	07/16/1998	1307
							1.6	R	20		
MB		0707	0.00216						0.01	07/16/1998	1310
SB		980703S	2.02451		2.000		101.2	%	75-125	07/16/1998	1312
MS	981705-4	980703S	1.99726		2.000	0.00704	99.5	%	80-120	07/16/1998	1317
MSD	981705-4	980703S	2.00136	1.99726	2.000	0.00704	99.7	%	80-120	07/16/1998	1319
							0.2	R	20		
CCV		980710V	2.52398		2.5		101.0	%	90-110	07/16/1998	1328
CCB		980716B	0.00593						0.01	07/16/1998	1333
CCV		980710V	2.52860		2.5		101.1	%	90-110	07/16/1998	1400
CCB		980716B	0.00226						0.01	07/16/1998	1408
CCV		980710V	2.56339		2.5		102.5	%	90-110	07/16/1998	1435
CCB		980716B	0.00327						0.01	07/16/1998	1448
PDS	981716-2	980703S	1.97710		2.000	0.01088	98.3	%	75-125	07/16/1998	1459
PSD	981716-2	980703S	1.99566	1.97710	2.000	0.01088	99.2	%	75-125	07/16/1998	1501
							0.9	R	20		
MB		0701	0.00456						0.01	07/16/1998	1505
SB		980601S	1.01362		1.00		101.4	%	75-125	07/16/1998	1507
MS	981752-1	980601S	1.04012		1.00	0.01106	102.9	%	80-120	07/16/1998	1510
MSD	981752-2	980601S	1.05700	1.04012	1.00	0.01106	104.6	%	80-120	07/16/1998	1512
							1.6	R	20		
CCV		980710V	2.42065		2.5		96.8	%	90-110	07/16/1998	1535
CCB		980716B	0.00489						0.01	07/16/1998	1544
CCV		980710V	2.31698		2.5		92.7	%	90-110	07/16/1998	1610
CCB		980716B	-0.00001						0.01	07/16/1998	1614
CCV		980710V	2.48147		2.5		99.3	%	90-110	07/16/1998	1639
CCB		980716B	0.00126						0.01	07/16/1998	1642
SD	981739-3		0.00331			0.00028				07/16/1998	1647
ISB		980707E	0.91483		0.9998		91.5	%	80-120	07/16/1998	1657
CCV		980710V	2.48566		2.5		99.4	%	90-110	07/16/1998	1701
CCB		980716B	0.00322						0.01	07/16/1998	1706

Test Method.....: SW-846 6010A Batch.....: 37018 Analyst...: lmt
Method Description.: Metals Analysis (ICAP Trace) Units.....: mg/L
Parameter.....: Silver (Ag)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
ICV		980622P	2.49586		2.500		99.8	%	90-110	07/16/1998	0924
ICB		980716B	0.00028						0.005	07/16/1998	0932
ISB		980707E	0.97671		0.9963		98.0	%	80-120	07/16/1998	0941
MB		0625	0.00008						0.005	07/16/1998	0958
SB		980601S	1.04896		1.00		104.9	%	75-125	07/16/1998	1007
MS	981714-1	980601S	0.99459		1.00	0.00299	99.2	%	80-120	07/16/1998	1016
MSD	981714-1	980601S	1.02017	0.99459	1.00	0.00299	101.7	%	80-120	07/16/1998	1018
							2.5	R	20		
CCV		980622P	2.50386		2.500		100.2	%	90-110	07/16/1998	1023
CCB		980716B	-0.00054						0.005	07/16/1998	1030
MB		0629	-0.00024						0.005	07/16/1998	1033

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

CORELAB

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number.: 981738 Report Date.: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: BDM Rexene Quarterly Waters ATTN: Mike Selke

Test Method........: SW-846 6010A Batch............: 37018 Analyst...: lmt
Method Description.: Metals Analysis (ICAP Trace) Units............: mg/L
Parameter..........: Silver (Ag)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
SB		980601S	0.97483		1.00		97.5	%	75-125	07/16/1998	1035
MS	981713-13	980601S	1.00458		1.00	0.00021	100.4	%	80-120	07/16/1998	1039
MSD	981713-13	980601S	0.97099	1.00458	1.00	0.00021	97.1	%	80-120	07/16/1998	1040
							3.4	R	20		
SD	981711-4		-0.00028			0.00035				07/16/1998	1052
CCV		980622P	2.50117		2.500		100.0	%	90-110	07/16/1998	1055
CCB		980716B	-0.00039						0.005	07/16/1998	1104
CCV		980622P	2.50708		2.500		100.3	%	90-110	07/16/1998	1141
CCB		980716B	0.00028						0.005	07/16/1998	1150
MB		0709	0.00033						0.005	07/16/1998	1235
LCS		980490	0.83132		0.733000		113.4	%	80-120	07/16/1998	1238
SB		980703S	0.05191		0.05000		103.8	%	75-125	07/16/1998	1240
SD	981626-3		0.00103			0.00334				07/16/1998	1245
CCV		980622P	2.52984		2.500		101.2	%	90-110	07/16/1998	1248
CCB		980716B	0.00022						0.005	07/16/1998	1257
PDS	981725-9	980703S	0.03987		0.05000	0.00096	77.8	%	75-125	07/16/1998	1306
PSD	981725-9	980703S	0.04194	0.03987	0.05000	0.00096	82.0	%	75-125	07/16/1998	1307
							5.1	R	20		
MB		0707	0.00020						0.005	07/16/1998	1310
SB		980703S	0.05431		0.05000		108.6	%	75-125	07/16/1998	1312
MS	981705-4	980703S	0.05417		0.05000	0.00137	105.6	%	80-120	07/16/1998	1317
MSD	981705-4	980703S	0.05470	0.05417	0.05000	0.00137	106.7	%	80-120	07/16/1998	1319
							1.0	R	20		
CCV		980622P	2.52326		2.500		100.9	%	90-110	07/16/1998	1325
CCB		980716B	0.00011						0.005	07/16/1998	1333
CCV		980622P	2.54303		2.500		101.7	%	90-110	07/16/1998	1357
CCB		980716B	0.00059						0.005	07/16/1998	1408
CCV		980622P	2.46404		2.500		98.6	%	90-110	07/16/1998	1433
CCB		980716B	-0.00068						0.005	07/16/1998	1448
PDS	981716-2	980703S	0.04999		0.05000	0.00028	99.4	%	75-125	07/16/1998	1459
PSD	981716-2	980703S	0.05083	0.04999	0.05000	0.00028	101.1	%	75-125	07/16/1998	1501
							1.7	R	20		
SB		980601S	1.03666		1.00		103.7	%	75-125	07/16/1998	1507
MS	981752-1	980601S	1.05118		1.00	0.01171	103.9	%	80-120	07/16/1998	1510
MSD	981752-2	980601S	1.05009	1.05118	1.00	0.01171	103.8	%	80-120	07/16/1998	1512
							0.1	R	20		
CCV		980622P	2.55890		2.500		102.4	%	90-110	07/16/1998	1519
CCB		980716B	0.00030						0.005	07/16/1998	1544
PDS	981725-2	980703S	0.04560		0.05000	0.00115	88.9	%	75-125	07/16/1998	1549
PSD	981725-2	980703S	0.04527	0.04560	0.05000	0.00115	88.2	%	75-125	07/16/1998	1550
							0.7	R	20		
PDS	981725-3	980703S	0.05147		0.05000	0.00094	101.1	%	75-125	07/16/1998	1554
PSD	981725-3	980703S	0.05114	0.05147	0.05000	0.00094	100.4	%	75-125	07/16/1998	1556
							0.6	R	20		
PDS	981725-4	980703S	0.04754		0.05000	0.00094	93.2	%	75-125	07/16/1998	1600
PSD	981725-4	980703S	0.04606	0.04754	0.05000	0.00094	90.2	%	75-125	07/16/1998	1602
							3.2	R	20		
CCV		980622P	2.51125		2.500		100.5	%	90-110	07/16/1998	1604
CCB		980716B	0.00006						0.005	07/16/1998	1614
CCV		980622P	2.42234		2.500		96.9	%	90-110	07/16/1998	1636
CCB		980716B	0.00079						0.005	07/16/1998	1642
SD	981739-3		0.00098			0.00017				07/16/1998	1647
ISB		980707E	0.96850		0.9963		97.2	%	80-120	07/16/1998	1657

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

CORE LAB

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number.: 981738 Report Date.: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: BDM Rexene Quarterly Waters ATTN: Mike Selke

Test Method.....: SW-846 6010A Batch.....: 37018 Analyst...: lmt
Method Description.: Metals Analysis (ICAP Trace) Units.....: mg/L
Parameter.....: Silver (Ag)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
CCV		980622P	2.47909		2.500		99.2	%	90-110	07/16/1998	1659
CCB		980716B	0.00046						0.005	07/16/1998	1706

Test Method.....: SW-846 6010A Batch.....: 37018 Analyst...: lmt
Method Description.: Metals Analysis (ICAP Trace) Units.....: mg/L
Parameter.....: Thallium (Tl)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
ICV		980710V	0.98949		1.00		98.9	%	90-110	07/16/1998	0928
ICB		980716B	-0.00510						0.01	07/16/1998	0932
ISB		980707E	0.90997		1.0055		90.5	%	80-120	07/16/1998	0941
MB		0625	-0.00814						0.01	07/16/1998	0958
SB		980601S	1.06991		1.00		107.0	%	75-125	07/16/1998	1007
MS	981714-1	980601S	0.88521		1.00	-0.01138	89.7	%	80-120	07/16/1998	1016
MSD	981714-1	980601S	0.90378	0.88521	1.00	-0.01138	91.5	%	80-120	07/16/1998	1018
							2.1	R	20		
CCV		980710V	0.96745		1.00		96.7	%	90-110	07/16/1998	1026
CCB		980716B	-0.00086						0.01	07/16/1998	1030
MB		0629	-0.00618						0.01	07/16/1998	1033
SB		980601S	0.99653		1.00		99.7	%	75-125	07/16/1998	1035
MS	981713-13	980601S	1.02503		1.00	0.00665	101.8	%	80-120	07/16/1998	1039
MSD	981713-13	980601S	1.00453	1.02503	1.00	0.00665	99.8	%	80-120	07/16/1998	1040
							2.0	R	20		
SD	981711-4		-0.00196			-0.00460				07/16/1998	1052
CCV		980710V	0.97522		1.00		97.5	%	90-110	07/16/1998	1100
CCB		980716B	-0.00326						0.01	07/16/1998	1104
SB		980601S	1.10125		1.00		110.1	%	75-125	07/16/1998	1106
CCV		980710V	0.99411		1.00		99.4	%	90-110	07/16/1998	1144
CCB		980716B	-0.00673						0.01	07/16/1998	1150
SD	981666-6		-0.00629			-0.01400				07/16/1998	1202
MB		0709	-0.00586						0.01	07/16/1998	1235
LCS		980490	0.89041		0.812000		109.7	%	80-120	07/16/1998	1238
SB		980703S	1.99698		2.0000		99.8	%	75-125	07/16/1998	1240
SD	981626-3		-0.00581			-0.01224				07/16/1998	1245
CCV		980710V	0.99330		1.00		99.3	%	90-110	07/16/1998	1251
CCB		980716B	-0.00162						0.01	07/16/1998	1257
PDS	981725-9	980703S	1.97380		2.0000	-0.01171	99.3	%	75-125	07/16/1998	1306
PSD	981725-9	980703S	2.00349	1.97380	2.0000	-0.01171	100.8	%	75-125	07/16/1998	1307
							1.5	R	20		
MB		0707	-0.00433						0.01	07/16/1998	1310
SB		980703S	2.13076		2.0000		106.5	%	75-125	07/16/1998	1312
MS	981705-4	980703S	2.08352		2.0000	-0.00044	104.2	%	80-120	07/16/1998	1317
MSD	981705-4	980703S	2.07296	2.08352	2.0000	-0.00044	103.7	%	80-120	07/16/1998	1319
							0.5	R	20		
CCV		980710V	1.00533		1.00		100.5	%	90-110	07/16/1998	1328
CCB		980716B	-0.00422						0.01	07/16/1998	1333
CCV		980710V	0.98662		1.00		98.7	%	90-110	07/16/1998	1400
CCB		980716B	-0.00652						0.01	07/16/1998	1408
CCV		980710V	1.01446		1.00		101.4	%	90-110	07/16/1998	1435
CCB		980716B	-0.00336						0.01	07/16/1998	1448
PDS	981716-2	980703S	2.01626		2.0000	-0.00460	101.0	%	75-125	07/16/1998	1459

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

CORE LAB

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number.: 981738 Report Date.: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: BDM Rexene Quarterly Waters ATTN: Mike Selke

Test Method.....: SW-846 6010A Batch.....: 37018 Analyst...: lmt
Method Description.: Metals Analysis (ICAP Trace) Units.....: mg/L
Parameter.....: Thallium (Tl)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
PSD	981716-2	980703S	2.04017	2.01626	2.0000	-0.00460	102.2	%	75-125	07/16/1998	1501
							1.2	R	20		
SB		980601S	1.04996		1.00		105.0	%	75-125	07/16/1998	1507
MS	981752-1	980601S	1.04111		1.00	0.00352	103.8	%	80-120	07/16/1998	1510
MSD	981752-2	980601S	1.05797	1.04111	1.00	0.00352	105.4	%	80-120	07/16/1998	1512
							1.6	R	20		
CCV		980710V	0.96134		1.00		96.1	%	90-110	07/16/1998	1535
CCB		980716B	-0.00900						0.01	07/16/1998	1544
PDS	981725-2	980703S	2.10537		2.0000	-0.00217	105.4	%	75-125	07/16/1998	1549
PSD	981725-2	980703S	2.15038	2.10537	2.0000	-0.00217	107.6	%	75-125	07/16/1998	1550
							2.1	R	20		
PDS	981725-3	980703S	2.29866		2.0000	-0.00292	115.1	%	75-125	07/16/1998	1554
PSD	981725-3	980703S	2.30829	2.29866	2.0000	-0.00292	115.6	%	75-125	07/16/1998	1556
							0.4	R	20		
PDS	981725-4	980703S	2.26567		2.0000	-0.00304	113.4	%	75-125	07/16/1998	1600
PSD	981725-4	980703S	2.26196	2.26567	2.0000	-0.00304	113.2	%	75-125	07/16/1998	1602
							0.2	R	20		
CCV		980710V	0.92454		1.00		92.5	%	90-110	07/16/1998	1610
CCB		980716B	-0.00650						0.01	07/16/1998	1614
CCV		980710V	0.97510		1.00		97.5	%	90-110	07/16/1998	1639
CCB		980716B	-0.00738						0.01	07/16/1998	1642
SD	981739-3		-0.00381			-0.00409				07/16/1998	1647
ISB		980707E	0.92436		1.0055		91.9	%	80-120	07/16/1998	1657
CCV		980710V	0.96877		1.00		96.9	%	90-110	07/16/1998	1701
CCB		980716B	-0.00672						0.01	07/16/1998	1706

Test Method.....: SW-846 6010A Batch.....: 37018 Analyst...: lmt
Method Description.: Metals Analysis (ICAP Trace) Units.....: mg/L
Parameter.....: Zinc (Zn)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
MB		0624	0.00228						0.005	06/25/1998	1537
MS	981544-1	980601S	1.32167		1.00	0.25242	106.9	%	80-120	06/25/1998	1545
MSD	981544-1	980601S	1.32020	1.32167	1.00	0.25242	106.8	%	80-120	06/25/1998	1548
							0.1	R	20		
ICV		980710V	2.58531		2.5		103.4	%	90-110	07/16/1998	0928
ICB		980716B	-0.00000						0.005	07/16/1998	0932
ISB		980707E	0.97228		0.9973		97.5	%	80-120	07/16/1998	0941
MB		0625	-0.00015						0.005	07/16/1998	0958
SB		980601S	1.08317		1.00		108.3	%	75-125	07/16/1998	1007
MS	981714-1	980601S	1.05352		1.00	0.04927	100.4	%	80-120	07/16/1998	1016
MSD	981714-1	980601S	1.05581	1.05352	1.00	0.04927	100.7	%	80-120	07/16/1998	1018
							0.2	R	20		
CCV		980710V	2.55819		2.5		102.3	%	90-110	07/16/1998	1026
CCB		980716B	-0.00000						0.005	07/16/1998	1030
MB		0629	-0.00016						0.005	07/16/1998	1033
SB		980601S	1.03327		1.00		103.3	%	75-125	07/16/1998	1035
MS	981713-13	980601S	1.09261		1.00	0.03036	106.2	%	80-120	07/16/1998	1039
MSD	981713-13	980601S	1.06370	1.09261	1.00	0.03036	103.3	%	80-120	07/16/1998	1040
							2.7	R	20		
SD	981711-4		0.00176			0.00393				07/16/1998	1052

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

CORE LAB

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number.: 981738 Report Date.: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: BDM Rexene Quarterly Waters ATTN: Mike Selke

Test Method.....: SW-846 6010A Batch.....: 37018 Analyst...: lmt
Method Description.: Metals Analysis (ICAP Trace) Units.....: mg/L
Parameter.....: Zinc (Zn)

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	Date	Time
CCV		980710V	2.59182		2.5		103.7	%	90-110	07/16/1998	1100
CCB		980716B	-0.00000						0.005	07/16/1998	1104
SB		980601S	1.15777		1.00		115.8	%	75-125	07/16/1998	1106
CCV		980710V	2.64035		2.5		105.6	%	90-110	07/16/1998	1144
CCB		980716B	0.00015						0.005	07/16/1998	1150
SD	981666-6		0.03514			0.18321	4.1	D	-10.-10.0	07/16/1998	1202
MB		0709	0.00063						0.005	07/16/1998	1235
LCS		980490	1.07716		0.910000		118.4	%	80-120	07/16/1998	1238
SB		980703S	0.53023		0.5000		106.0	%	75-125	07/16/1998	1240
SD	981626-3		0.13140			0.59274				07/16/1998	1245
CCV		980710V	2.65192		2.5		106.1	%	90-110	07/16/1998	1251
CCB		980716B	0.00015						0.005	07/16/1998	1257
PDS	981725-9	980703S	0.82333		0.5000	0.30228	104.2	%	75-125	07/16/1998	1306
PSD	981725-9	980703S	0.82726	0.82333	0.5000	0.30228	105.0	%	75-125	07/16/1998	1307
							0.5	R	20		
MB		0707	0.00063						0.005	07/16/1998	1310
SB		980703S	0.56367		0.5000		112.7	%	75-125	07/16/1998	1312
MS	981705-4	980703S	0.54900		0.5000	-0.00061	109.9	%	80-120	07/16/1998	1317
MSD	981705-4	980703S	0.54791	0.54900	0.5000	-0.00061	109.7	%	80-120	07/16/1998	1319
							0.2	R	20		
CCV		980710V	2.65149		2.5		106.1	%	90-110	07/16/1998	1328
CCB		980716B	0.00016						0.005	07/16/1998	1333
CCV		980710V	2.61835		2.5		104.7	%	90-110	07/16/1998	1400
CCB		980716B	0.00032						0.005	07/16/1998	1408
CCV		980710V	2.68769		2.5		107.5	%	90-110	07/16/1998	1435
CCB		980716B	0.00048						0.005	07/16/1998	1448
PDS	981716-2	980703S	0.52991		0.5000	0.00130	105.7	%	75-125	07/16/1998	1459
PSD	981716-2	980703S	0.53497	0.52991	0.5000	0.00130	106.7	%	75-125	07/16/1998	1501
							1.0	R	20		
SB		980601S	1.07575		1.00		107.6	%	75-125	07/16/1998	1507
MS	981752-1	980601S	1.98100		1.00	0.96805	101.3	%	80-120	07/16/1998	1510
MSD	981752-2	980601S	1.98488	1.98100	1.00	0.96805	101.7	%	80-120	07/16/1998	1512
							0.2	R	20		
CCV		980710V	2.54229		2.5		101.7	%	90-110	07/16/1998	1535
CCB		980716B	0.00078						0.005	07/16/1998	1544
PDS	981725-2	980703S	0.60045		0.5000	0.01477	117.1	%	75-125	07/16/1998	1549
PSD	981725-2	980703S	0.60843	0.60045	0.5000	0.01477	118.7	%	75-125	07/16/1998	1550
							1.3	R	20		
CCV		980710V	2.44108		2.5		97.6	%	90-110	07/16/1998	1610
CCB		980716B	0.00063						0.005	07/16/1998	1614
CCV		980710V	2.55208		2.5		102.1	%	90-110	07/16/1998	1639
CCB		980716B	0.00031						0.005	07/16/1998	1642
SD	981739-3		0.00200			0.00259				07/16/1998	1647
ISB		980707E	0.96998		0.9973		97.3	%	80-120	07/16/1998	1657
CCV		980710V	2.56913		2.5		102.8	%	90-110	07/16/1998	1701
CCB		980716B	0.00031						0.005	07/16/1998	1706

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number.: 981738 Report Date.: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: BDM Rexene Quarterly Waters ATTN: Mike Selke

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time

Test Method.....: SW-846 8270B Batch.....: 36879 Analyst...: dmj
Method Description.: Semivolatile Organics (Client List) Units.....: ug/L

MB	Method Blank	MB 5112			07/09/1998	1312

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Acenaphthene	ND						10
Acenaphthylene	ND						10
Anthracene	ND						10
Benzo(a)anthracene	ND						10
Benzo(b)fluoranthene	ND						10
Benzo(k)fluoranthene	ND						10
Benzo(ghi)perylene	ND						10
Benzo(a)pyrene	ND						10
Chrysene	ND						10
Dibenzo(a,h)anthracene	ND						10
Fluoranthene	ND						10
Fluorene	ND						10
Indeno(1,2,3-cd)pyrene	ND						10
1-Methylnaphthalene	ND						10
2-Methylnaphthalene	ND						10
Naphthalene	ND						10
Phenanthrene	ND						10
Pyrene	ND						10
4-Chloro-3-methylphenol	ND						10
2-Chlorophenol	ND						10
2,4-Dichlorophenol	ND						10
2,4-Dimethylphenol	ND						10
2,4-Dinitrophenol	ND						50
2-Methyl-4,6-dinitrophenol	ND						50
2-Nitrophenol	ND						10
4-Nitrophenol	ND						50
Pentachlorophenol	ND						50
Phenol	ND						10
2,4,6-Trichlorophenol	ND						10

LCS	Laboratory Control Sample	B980427A			07/09/1998	1413

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Acenaphthene	76.41		100.0		76.4	%	67-112
Pyrene	81.53		100.1		81.4	%	74-116
4-Chloro-3-methylphenol	80.01		100.1		79.9	%	51-127
2-Chlorophenol	73.23		100.0		73.2	%	43-94
4-Nitrophenol	74.29		99.98		74.3	%	10-151
Pentachlorophenol	86.59		99.96		86.6	%	48-133
Phenol	72.76		99.95		72.8	%	12-131

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number.: 981738 Report Date.: 07/27/98

CUSTOMER: 483648 PROJECT: BDM Rexene Quarterly Waters ATTN: Mike Selke

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date Time

Test Method.....: SW-846 8020 Batch.....: 36381 Analyst...: maz
Method Description.: Volatile Organics -Aromatics Units.....: ug/L

MB	Method Blank				06/29/1998 1148

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Benzene	ND						0.5
Ethylbenzene	ND						0.5
Toluene	ND						0.5
Xylenes (total)	ND						0.5

LCS	Laboratory Control Sample	T980629B			06/29/1998 1437

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Benzene	17.687		20.10				
Ethylbenzene	19.252		20.08				
Toluene	18.557		20.08				
Xylenes (total)	54.906		60.26				

LCD	Laboratory Control Sample Duplicate	T980629B			06/29/1998 1512

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Benzene	18.431	17.687	20.10				
Ethylbenzene	19.890	19.252	20.08				
Toluene	19.163	18.557	20.08				
Xylenes (total)	57.448	54.906	60.26				

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

CORELAB

CORE LABORATORIES

SURROGATE RECOVERIES REPORT

Job Number.: 981738 Report Date.: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: BDM Rexene Quarterly Waters ATTN: Mike Selke

Method...........: Volatile Organics -Aromatics Batch............: 36381
Method Code.......: 8020 Analyst...........: maz

Surrogate	Units
BFB (Surrogate)	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
		MB		20.465	20	102.3	89-110		06/29/1998	1148
		LCS		19.989	20	99.9	89-110		06/29/1998	1437
		LCD		19.950	20	99.8	89-110		06/29/1998	1512
981738-1				19.663	20	98.3	89-110		06/29/1998	1622
981738-2				19.791	20	99.0	89-110		06/29/1998	1657
981738-3			25	19.896	20	99.5	89-110		06/29/1998	1732
981738-4				19.003	20	95.0	89-110		06/29/1998	1807
981738-5				19.233	20	96.2	89-110		06/29/1998	1842
981738-6				17.522	20	87.6	89-110	X	06/29/1998	1917
981738-7				20.253	20	101.3	89-110		06/29/1998	1952
981738-8				20.060	20	100.3	89-110		06/29/1998	2101
981738-9				18.867	20	94.3	89-110		06/29/1998	2136
981738-10				19.743	20	98.7	89-110		06/29/1998	2211
981738-11				19.167	20	95.8	89-110		06/29/1998	2245

Method...........: Semivolatile Organics (Client List) Batch............: 36879
Method Code.......: 8270C Analyst...........: dmj

Surrogate	Units
2,4,6-Tribromophenol	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
		MB	1.00	88.07	100.00	88	10-123		07/09/1998	1312
		LCS	1.00	89.35	100.00	89	10-123		07/09/1998	1413
981738-1			1.00	99.30	100.00	99	10-123		07/09/1998	1719
981738-2			1.00	89.39	100.00	89	10-123		07/09/1998	1820
981738-4			1.00	87.27	100.00	87	10-123		07/09/1998	1921
981738-5			1.00	97.01	100.00	97	10-123		07/09/1998	2022
981738-10			1.00	75.87	100.00	76	10-123		07/09/1998	2124
981738-11			1.00	90.14	100.00	90	10-123		07/09/1998	2225
981738-6			1.00	94.57	100.00	95	10-123		07/10/1998	1421
981738-3			1.00	102.65	100.00	103	10-123		07/10/1998	1523

Surrogate	Units
2-Fluorobiphenyl	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
		MB	1.00	38.17	50.00	76	43-116		07/09/1998	1312
		LCS	1.00	40.74	50.00	81	43-116		07/09/1998	1413

CORE LAB

CORE LABORATORIES

SURROGATE RECOVERIES REPORT

Job Number.: 981738 Report Date.: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: BDM Rexene Quarterly Waters ATTN: Mike Selke

Surrogate	Units
2-Fluorobiphenyl	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
981738-1			1.00	44.19	50.00	88	43-116		07/09/1998	1719
981738-2			1.00	43.84	50.00	88	43-116		07/09/1998	1820
981738-4			1.00	40.25	50.00	80	43-116		07/09/1998	1921
981738-5			1.00	38.55	50.00	77	43-116		07/09/1998	2022
981738-10			1.00	38.03	50.00	76	43-116		07/09/1998	2124
981738-11			1.00	35.48	50.00	71	43-116		07/09/1998	2225
981738-6			1.00	42.90	50.00	86	43-116		07/10/1998	1421
981738-3			1.00	42.49	50.00	85	43-116		07/10/1998	1523

Surrogate	Units
2-Fluorophenol	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
		MB	1.00	60.64	100.00	61	21-100		07/09/1998	1312
		LCS	1.00	61.94	100.00	62	21-100		07/09/1998	1413
981738-1			1.00	88.27	100.00	88	21-100		07/09/1998	1719
981738-2			1.00	77.41	100.00	77	21-100		07/09/1998	1820
981738-4			1.00	49.60	100.00	50	21-100		07/09/1998	1921
981738-5			1.00	57.44	100.00	57	21-100		07/09/1998	2022
981738-10			1.00	49.84	100.00	50	21-100		07/09/1998	2124
981738-11			1.00	55.01	100.00	55	21-100		07/09/1998	2225
981738-6			1.00	61.26	100.00	61	21-100		07/10/1998	1421
981738-3			1.00	22.14	100.00	22	21-100		07/10/1998	1523

Surrogate	Units
Nitrobenzene-d5	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
		MB	1.00	34.93	50.00	70	35-114		07/09/1998	1312
		LCS	1.00	38.07	50.00	76	35-114		07/09/1998	1413
981738-1			1.00	37.51	50.00	75	35-114		07/09/1998	1719
981738-2			1.00	38.24	50.00	76	35-114		07/09/1998	1820
981738-4			1.00	34.92	50.00	70	35-114		07/09/1998	1921
981738-5			1.00	34.60	50.00	69	35-114		07/09/1998	2022
981738-10			1.00	32.90	50.00	66	35-114		07/09/1998	2124
981738-11			1.00	31.03	50.00	62	35-114		07/09/1998	2225
981738-6			1.00	38.80	50.00	78	35-114		07/10/1998	1421
981738-3			1.00	38.77	50.00	78	35-114		07/10/1998	1523

CORE LABORATORIES

SURROGATE RECOVERIES REPORT

Job Number.: 981738 Report Date.: 07/27/98

CUSTOMER: BDM International, Inc. PROJECT: BDM Rexene Quarterly Waters ATTN: Mike Selke

Surrogate	Units
Phenol-d6	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
		MB	1.00	72.23	100.00	72	10-94		07/09/1998	1312
		LCS	1.00	75.26	100.00	75	10-94		07/09/1998	1413
981738-1			1.00	78.36	100.00	78	10-94		07/09/1998	1719
981738-2			1.00	74.83	100.00	75	10-94		07/09/1998	1820
981738-4			1.00	60.62	100.00	61	10-94		07/09/1998	1921
981738-5			1.00	67.71	100.00	68	10-94		07/09/1998	2022
981738-10			1.00	64.48	100.00	64	10-94		07/09/1998	2124
981738-11			1.00	65.95	100.00	66	10-94		07/09/1998	2225
981738-6			1.00	82.42	100.00	82	10-94		07/10/1998	1421
981738-3			1.00	16.59	100.00	17	10-94		07/10/1998	1523

Surrogate	Units
Terphenyl-d14	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
		MB	1.00	44.81	50.00	90	33-141		07/09/1998	1312
		LCS	1.00	45.95	50.00	92	33-141		07/09/1998	1413
981738-1			1.00	38.50	50.00	77	33-141		07/09/1998	1719
981738-2			1.00	41.11	50.00	82	33-141		07/09/1998	1820
981738-4			1.00	44.26	50.00	89	33-141		07/09/1998	1921
981738-5			1.00	43.94	50.00	88	33-141		07/09/1998	2022
981738-10			1.00	37.25	50.00	74	33-141		07/09/1998	2124
981738-11			1.00	42.74	50.00	85	33-141		07/09/1998	2225
981738-6			1.00	28.28	50.00	57	33-141		07/10/1998	1421
981738-3			1.00	28.80	50.00	58	33-141		07/10/1998	1523

CORE LABORATORIES

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 07/27/98

	WATER LIMITS Recovery	RPD	SOIL LIMITS Recovery	RPD
VOLATILE ORGANICS				
Methods 602/8020 Surrogate				
Bromofluorobenzene	89-110%		78-123%	
Methods 602/8020 Spike/Spike Duplicate				
Benzene	39-150%	25	75-125%	25
Ethylbenzene	32-160%	25	60-140%	25
Toluene	46-148%	25	70-130%	25
Xylenes	75-125%	25	61-139%	25
Method 8015 Mod. Spike/Spike Duplicate				
TVPH	75-125%	20	48-152%	20
TEPH	54-135%	20	54-135%	20
Methods 624/8240/8260 Surrogates				
Dibromofluoromethane	86-118%		80-120%	
Toluene-(d8)	88-110%		81-117%	
4-Bromofluorobenzene	86-115%		74-121%	
Method 524.2 Surrogates				
4-Bromofluorobenzene	80-120%			
1,4-Dichlorobenzene-d4	80-120%			
Methods 624/8240 Spike/Spike Duplicate				
1,1-Dichloroethene	61-145%	14	59-172%	22
Trichloroethene	71-120%	14	62-137%	24
Benzene	76-127%	11	66-142%	21
Toluene	76-125%	13	59-139%	21
Chlorobenzene	75-130%	13	60-133%	21
Method 8260 Spike/Spike Duplicate				
1,1-Dichloroethene	70-130%	14	70-130%	22
Trichloroethene	71-120%	14	70-130%	24
Benzene	76-127%	11	70-130%	21
Toluene	76-125%	13	70-130%	21
Chlorobenzene	75-130%	13	70-130%	21
Method 524.2 Spike/Spike Duplicate				
1,1-Dichloroethene	80-120%	14		
Trichloroethene	80-120%	14		
Benzene	80-120%	11		
Toluene	80-120%	13		
Chlorobenzene	80-120%	13		
PESTICIDES AND PCB'S				
Methods 608/8080 Surrogates				
Tetrachloro-m-xylene	60-150%		60-150%	
4,4'-Dichlorobiphenyl	60-150%		60-150%	
Decachlorobiphenyl	60-150%		60-150%	
Method 8140 Surrogates				
Tributylphosphate	36-152%		36-152%	
Triphenylphosphate	36-152%		36-152%	

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 07/27/98

	WATER LIMITS Recovery	RPD	SOIL LIMITS Recovery	RPD
SEMIVOLATILE ORGANICS				
Methods 625/8270 Surrogates				
Nitrobenzene-d5	35-114%		23-120%	
2-Fluorobiphenyl	43-116%		30-115%	
4-Terphenyl-d14	33-141%		18-137%	
Phenol-d6	10-94%		24-113%	
2-Fluorophenol	21-100%		25-121%	
2,4,6-Tribromophenol	10-123%		19-122%	
Methods 625/8270 Spike/Spike Duplicate				
Phenol	12-131%	42	53-118%	35
2-Chlorophenol	43-94%	40	49-124%	50
1,4-Dichlorobenzene	41-82%	28	40-116%	27
N-Nitroso-di-n-propylamine	49-111%	38	54-107%	38
1,2,4-Trichlorobenzene	48-100%	28	54-119%	23
4-Chloro-3-methylphenol	51-127%	42	64-122%	33
Acenaphthene	67-112%	31	62-124%	19
4-Nitrophenol	10-151%	50	61-124%	50
2,4-Dintrotoluene	69-119%	38	63-120%	47
Pentachlorophenol	48-133%	50	63-119%	47
Pyrene	74-116%	31	51-133%	36
HERBICIDES				
Method 8150 Surrogate				
2,4-Dichlorophenylacetic acid	50-150%		50-150%	
Method 8150 Spike/Spike Duplicate				
2,4-D	41-126%	25	41-126%	25
2,4,5-T	45-119%	25	45-119%	25

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 07/27/98

(1) EPA 600/4-79-020 Methods for Chemical Analysis of Water and Wastes, March 1983

(2) EPA SW846 Test Methods for Evaluating Solid Waste, Third Edition, September 1986

(3) EPA SW846 Test Methods for Evaluating Solid Waste, Final Update I, July 1992

(4) EPA SW846 Test Methods for Evaluating Solid Waste, Final Update II, September 1994

(5) EPA SW846 Test Methods for Evaluating Solid Waste, Final Update IIA, August 1993

(6) EPA SW846 Test Methods for Evaluating Solid Waste, Final Update IIB, January 1995

(7) Standard Methods for the Examination of Water and Wastewater, 16th Edition, 1985

(8) Standard Methods for the Examination of Water and Wastewater, 17th Edition, 1989

(9) Standard Methods for the Examination of Water and Wastewater, 18th Edition, 1992

(10) EPA 600/4-80-032 Prescribed Procedures For Measurement Of Radioactivity in Drinking Water, August 1980

(11) EPA 600/8-78-017 Microbiological Methods For Monitoring The Environment, December 1978

(12) Federal Register, July 1, 1990 (40 CFR Part 136)

(13) EPA 600/4-88-03 Methods For The Determination of Organics Compounds in Drinking Water, December 1988

(14) U.S.G.S. Methods For Determination of Inorganic Substances In Water And Fluvial Sediments, Book 5, Chapter A1, 1985

(15) Federal Register, June 7, 1991 (40 CFR Parts 141 & 142)

(16) ASTM Section 11 Water and Environmental Technology, Volume 11.01 Water (1), 1991

(17) Methods of Soil Analysis, American Society of Agronomy, Agronomy No. 9, 1965

(18) ASTM Section 5, Petroleum Products, Lubricants, and Fossil Fuels, Volume 05.05, Gaseous Fuels, Coal, and Coke

(19) EPA 600/2-78-054 Field and Laboratory Methods Applicable To Overburdens and Mine Soils, March 1978

(20) ASTM Part 19, Soils and Rocks; Building Stones, 1981

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 07/27/98

COMMENTS

a) ND = Not detected. NC = Not calculable due to value(s) lower than the detection limit.

b) Data in the QA report may differ from final results due to digestion and/or dilution of samples into analytical ranges. Quality control results are reported "as analyzed" within the instruments established calibration range.

c) The "Time Analyzed" in the QA report refers to the start time of the analytical batch which may not reflect the actual time of each analysis. The "Date Analyzed" is the actual date of analysis.

d) Results for soil and sludge samples are reported on a wet weight basis (i.e. not corrected for percent moisture) unless otherwise indicated.

BLANK QC SAMPLE IDENTIFICATION

MB	Method Blank
EB	Extraction Blank
ICB	Initial Calibration Blank
CCB	Continuing Calibration Blank

SPIKE QC SAMPLE IDENTIFICATION

MS	Method (Matrix) Spike
MSD	Method (Matrix) Spike Duplicate
PDS	Post-Digestion Spike
PSD	Post-Digestion Spike Duplicate
SB	Spike Blank
SBD	Spike Blank Duplicate

REFERENCE STANDARD QC SAMPLE IDENTIFICATION

LCS	Laboratory Control Standard
RS	Reference Standard
ICV	Initial Calibration Verification Standard
CCV	Continuing Calibration Verification Standard
ISA/ISB	ICP Interference Check Sample
ICL	Initial Calibration/Laboratory Control Sample
DSC	Distilled Standard Check
CRI	CRDL Low-Level ICP Standard

DUPLICATE QC SAMPLE IDENTIFICATION

MD	Method (Matrix) Duplicate
ED	Extraction Duplicate
SD	Serial Dilution

Analyses performed by a subcontract laboratory are indicated on the analytical and/or quality control reports under "Technician" using the following codes:

SUBCONTRACT LABORATORY	CODE
Core Laboratories - Anaheim, CA	* AN
Core Laboratories - Casper, WY	* CA
Core Laboratories - Corpus Christi, TX	* CC
Core Laboratories - Edison, NJ	* ED

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 07/27/98

Core Laboratories - Gulf States - Houston, TX	* HE
Core Laboratories - Houston, TX	* HP
Core Laboratories - Indianapolis, IN	* IN
Core Laboratories - Lake Charles, LA	* LC
Core Laboratories - Long Beach, CA	* LB
Core Laboratories - Tampa, FL	* TP
Core Laboratories - Valparaiso, IN	* VP
Other Subcontract Laboratories	* XX

EXPLANATION OF DATA QUALIFIERS - ORGANIC PARAMETERS

U - This qualifier indicates that the analyte was analyzed for but not detected.
J - This qualifier indicates that the value is an estimate. It is used when a compound is determined to be present based on the mass spectral data but at a concentration less than the practical quantitation limit of the method.
E - This qualifier indicates that a sample result is an estimate because the concentration exceeded the upper calibration range of the instrument.

EXPLANATION OF DATA QUALIFIERS - METALS & INORGANIC PARAMETERS

U - This qualifier indicates that the analyte was analyzed for but not detected.
B - This qualifier indicates that the analyte was detected at a level below the reporting limit but greater than or equal to the instrument detection limit.

EXPLANATION OF DATA FLAGS - ALL PARAMETERS

B - This flag indicates that an analyte is present in the method blank as well as in the sample. The client should consider this when evaluating the data.
E - This flag indicates the reported value is estimated due to sample matrix interference.
W - This flag indicates that a post-digestion spike for GFAA analysis is outside quality control limits.
X - This flag indicates that a surrogate recovery is outside quality control limits.
Y - This flag indicates a spike or spike duplicate recovery is outside quality control limits.
Z - This flag indicates a relative percent difference for a spike and spike duplicate is outside quality control limits.
* - This flag indicates a relative percent difference for a duplicate analysis is outside quality control limits.
^ - This flag indicates a percent recovery for a standard is outside quality control limits.

CORE LABORATORIES

ANALYTICAL REPORT

JOB NUMBER: 983409

Prepared For:

BDM International, Inc.
415 West Wall
Suite 1818
Midland, TX 79701

Attention: R. Bandean

Date: 01/05/99

Don Morris
Signature

January 5, 1999
Date

Name: Don L. Morris

Title: Project Coordinator

Core Laboratories, Inc.
10703 East Bethany Drive
Aurora, CO 80014

PHONE: (303) 751-1780
FAX..: (303) 751-1784

BDM

BDM International, Inc.
415 West Wall
Suite 1818
Midland, TX 79701
(915) 682-0008
FAX: (915) 682-0028

13144

Chain of Custody

Date Dec. 22, 1998 Page 1 Of 1

Lab Name Core Laboratories Inc
Address 10703 E. Bethany Drive
Aurora, Co 80014
Telephone 303/ 751-1780

Samplers (SIGNATURES)

Date	Sample Number	Time	Matrix	Location ID	Halogenated Volatiles 601/8010	Aromatic Volatiles 602/8020 BTEX 8021B	Phenols, Sub Phenols 604/8040	Pesticides/PCB 608/8080	Polynuclear Aromatic Hydrocarbons 610/8310	Volatile Compounds GC/MS 624/8240	Base/Neu/Acid Compounds GC/MS 625/8270	Total Organic Carbon (TOC) 415/9060	Total Organic Halides (TOX) 9020	Petroleum Hydrocarbons 418.1	TPH/BTEX Modified 8015	TCLP - Vol., Semi-Vol. Herbicides, Pesticides	TCLP - Metals	RCRA Metals(8)	Priority Pollutant Metals (13)	CAM Metals (18) TTLC/STLC	Flash Point	Corrosivity	Reactivity	Oil & Grease	Cyanide Total/Amenable	Chemical Oxygen Demand (COD)					Number of Containers
98 12 21	1520	Water	MW-3s			✓																								2
98 12 21	1600	Water	MW-3d			✓																								2
98 12 22	1240	Water	MW-6d			✓																								2
98 12 22	1310	Water	MW-6s			✓																								2
98 12 22	1345	Water	Duplicate			✓																								2
98 12 22	1400	Water	MW-9s			✓																								2
98 12 22	1420	Water	Rinsate			✓																								2
98 12 22	1430	Water	Field Blank			✓																								2
98 12 22	1300	Water	Downstream			✓																								2
98 12 23	0900	Water	Upstream			✓		1 VOA VIAL BROKE During Shipping.																								2

Project Information		Sample Receipt	
Project	Rexene - Brickland	Total No. of Containers	
Project Director	R. Bandean	Chain of Custody Seals	NO
Charge Code No.	2345/3031-202	Rec'd Good Condition/Cold	3.8°C
Shipping ID. No.	803471435147	Conforms to Record	
Via:	FedEx Priority Overnight	Lab No.	

Special Instructions/Comments: FAX results to: 915/682-0028

Relinquished By	1.	Relinquished By	2.	Relinquished By	3.
(Signature)	(Time) 5:30pm	(Signature)	(Time)	(Signature)	(Time)
(Printed Name)	(Date) 12/28/98	(Printed Name)	(Date)	(Printed Name)	(Date)
Gil Van Deventer					
(Company) TRW Inc		(Company)		(Company)	
Received By	**1.**	**Received By**	**2.**	**Received By (Laboratory)**	**3.**
(Signature)	(Time)	(Signature)	(Time)	(Signature)	(Time)
(Printed Name)	(Date)	(Printed Name)	(Date)	Lina Kline	1035
(Company)		(Company)		(Printed Name) CORE	(Date) 12-29-98
				(Laboratory)	

Distribution: White, Canary-Laboratory • Pink, BDM

CORE LABORATORIES

Sample Delivery Group Narrative

January 4, 1999

Customer: BDM International, Inc.
Project: Miscellaneous Projects
Core Laboratory Project Number: 983409

Method 8020 BTEX Analysis

Sample 983409-4 had the recovery of the surrogate bromofluorobenzene below acceptance criteria. The sample was reanalyzed with similar results. Matrix interference is suspected.

All other quality control analyses were acceptable.

Patrick J. McEntee
Laboratory Manager

CORELAB

CORE LABORATORIES

SAMPLE INFORMATION
Date: 01/05/99

Job Number.: 983409
Customer...: BDM International, Inc.
Attn.....: R. Bandean

Project Number.....: 97000147
Customer Project ID....: REXENE-BRICKLAND
Project Description....: BDM Miscellaneous Projects

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
983409-1	MW-3S	Water	12/21/1998	15:20	12/29/1998	10:35
983409-2	MW-3D	Water	12/21/1998	16:00	12/29/1998	10:35
983409-3	MW-6D	Water	12/22/1998	12:40	12/29/1998	10:35
983409-4	MW-6S	Water	12/22/1998	13:10	12/29/1998	10:35
983409-5	DUPLICATE	Water	12/22/1998	13:45	12/29/1998	10:35
983409-6	MW-9S	Water	12/22/1998	14:00	12/29/1998	10:35
983409-7	RINSATE	Water	12/22/1998	14:20	12/29/1998	10:35
983409-8	FIELD BLANK	Water	12/22/1998	14:30	12/29/1998	10:35
983409-9	DOWNSTREAM	Water	12/22/1998	13:00	12/29/1998	10:35
983409-10	UPSTREAM	Water	12/23/1998	09:00	12/29/1998	10:35

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 983409 Date: 01/05/99

CUSTOMER: BDM International, Inc. PROJECT: REXENE-BRICKLAND ATTN: R. Bandean

Customer Sample ID: MW-3S
Date Sampled.....: 12/21/1998
Time Sampled.....: 15:20
Sample Matrix.....: Water

Laboratory Sample ID: 983409-1
Date Received.....: 12/29/1998
Time Received.....: 10:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 8020A	Volatile Organics -Aromatics					
	Benzene	ND	1.0	ug/L	12/30/98	dmj
	Ethylbenzene	ND	1.0	ug/L	12/30/98	dmj
	Toluene	ND	1.0	ug/L	12/30/98	dmj
	Xylenes (total)	ND	1.0	ug/L	12/30/98	dmj

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 983409 Date: 01/05/99

CUSTOMER: BDM International, Inc. PROJECT: REXENE-BRICKLAND ATTN: R. Bandean

Customer Sample ID: MW-3D
Date Sampled.....: 12/21/1998
Time Sampled.....: 16:00
Sample Matrix.....: Water

Laboratory Sample ID: 983409-2
Date Received.....: 12/29/1998
Time Received.....: 10:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 8020A	Volatile Organics -Aromatics					
	Benzene	ND	1.0	ug/L	12/30/98	dmj
	Ethylbenzene	ND	1.0	ug/L	12/30/98	dmj
	Toluene	ND	1.0	ug/L	12/30/98	dmj
	Xylenes (total)	ND	1.0	ug/L	12/30/98	dmj

CORELAB

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 983409 Date: 01/05/99

CUSTOMER: BDM International, Inc. PROJECT: REXENE-BRICKLAND ATTN: R. Bandean

Customer Sample ID: MW-6D
Date Sampled.....: 12/22/1998
Time Sampled.....: 12:40
Sample Matrix.....: Water

Laboratory Sample ID: 983409-3
Date Received.....: 12/29/1998
Time Received.....: 10:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 8020A	Volatile Organics -Aromatics					
	Benzene	ND	1.0	ug/L	12/30/98	dmj
	Ethylbenzene	ND	1.0	ug/L	12/30/98	dmj
	Toluene	ND	1.0	ug/L	12/30/98	dmj
	Xylenes (total)	ND	1.0	ug/L	12/30/98	dmj

CORELAB

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 983409 Date: 01/05/99

CUSTOMER: BDM International, Inc. PROJECT: REXENE-BRICKLAND ATTN: R. Bandean

Customer Sample ID: MW-6S
Date Sampled.....: 12/22/1998
Time Sampled.....: 13:10
Sample Matrix.....: Water

Laboratory Sample ID: 983409-4
Date Received.....: 12/29/1998
Time Received.....: 10:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 8020A	Volatile Organics -Aromatics					
	Benzene	ND	1.0	ug/L	12/30/98	dmj
	Ethylbenzene	4.5	1.0	ug/L	12/30/98	dmj
	Toluene	2.7	1.0	ug/L	12/30/98	dmj
	Xylenes (total)	6.7	1.0	ug/L	12/30/98	dmj

CORELAB

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 983409 Date: 01/05/99

CUSTOMER: BDM International, Inc. PROJECT: REXENE-BRICKLAND ATTN: R. Bandean

Customer Sample ID: DUPLICATE
Date Sampled.....: 12/22/1998
Time Sampled.....: 13:45
Sample Matrix.....: Water

Laboratory Sample ID: 983409-5
Date Received.....: 12/29/1998
Time Received.....: 10:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 8020A	Volatile Organics -Aromatics					
	Benzene	ND	1.0	ug/L	12/31/98	dmj
	Ethylbenzene	ND	1.0	ug/L	12/31/98	dmj
	Toluene	ND	1.0	ug/L	12/31/98	dmj
	Xylenes (total)	ND	1.0	ug/L	12/31/98	dmj

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 983409 Date: 01/05/99

CUSTOMER: BDM International, Inc. PROJECT: REXENE-BRICKLAND ATTN: R. Bandean

Customer Sample ID: MW-9S
Date Sampled.....: 12/22/1998
Time Sampled.....: 14:00
Sample Matrix.....: Water

Laboratory Sample ID: 983409-6
Date Received.....: 12/29/1998
Time Received.....: 10:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 8020A	Volatile Organics -Aromatics					
	Benzene	ND	1.0	ug/L	12/30/98	dmj
	Ethylbenzene	ND	1.0	ug/L	12/30/98	dmj
	Toluene	ND	1.0	ug/L	12/30/98	dmj
	Xylenes (total)	ND	1.0	ug/L	12/30/98	dmj

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 983409 Date: 01/05/99

CUSTOMER: BDM International, Inc. PROJECT: REXENE-BRICKLAND ATTN: R. Bandean

Customer Sample ID: RINSATE
Date Sampled.....: 12/22/1998
Time Sampled.....: 14:20
Sample Matrix.....: Water

Laboratory Sample ID: 983409-7
Date Received.....: 12/29/1998
Time Received.....: 10:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 8020A	Volatile Organics -Aromatics					
	Benzene	ND	1.0	ug/L	12/30/98	dmj
	Ethylbenzene	ND	1.0	ug/L	12/30/98	dmj
	Toluene	ND	1.0	ug/L	12/30/98	dmj
	Xylenes (total)	ND	1.0	ug/L	12/30/98	dmj

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 983409 Date: 01/05/99

CUSTOMER: BDM International, Inc. PROJECT: REXENE-BRICKLAND ATTN: R. Bandean

Customer Sample ID: FIELD BLANK
Date Sampled.....: 12/22/1998
Time Sampled.....: 14:30
Sample Matrix.....: Water

Laboratory Sample ID: 983409-8
Date Received.....: 12/29/1998
Time Received.....: 10:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 8020A	Volatile Organics -Aromatics					
	Benzene	ND	1.0	ug/L	12/30/98	dmj
	Ethylbenzene	ND	1.0	ug/L	12/30/98	dmj
	Toluene	ND	1.0	ug/L	12/30/98	dmj
	Xylenes (total)	ND	1.0	ug/L	12/30/98	dmj

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 983409 Date: 01/05/99

CUSTOMER: BDM International, Inc. PROJECT: REXENE-BRICKLAND ATTN: R. Bandean

Customer Sample ID: DOWNSTREAM
Date Sampled.....: 12/22/1998
Time Sampled.....: 13:00
Sample Matrix.....: Water

Laboratory Sample ID: 983409-9
Date Received.....: 12/29/1998
Time Received.....: 10:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 8020A	Volatile Organics -Aromatics					
	Benzene	ND	1.0	ug/L	12/30/98	dmj
	Ethylbenzene	ND	1.0	ug/L	12/30/98	dmj
	Toluene	ND	1.0	ug/L	12/30/98	dmj
	Xylenes (total)	ND	1.0	ug/L	12/30/98	dmj

CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 983409 Date: 01/05/99

CUSTOMER: BDM International, Inc. PROJECT: REXENE-BRICKLAND ATTN: R. Bandean

Customer Sample ID: UPSTREAM
Date Sampled.....: 12/23/1998
Time Sampled.....: 09:00
Sample Matrix.....: Water

Laboratory Sample ID: 983409-10
Date Received.....: 12/29/1998
Time Received.....: 10:35

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 8020A	Volatile Organics -Aromatics					
	Benzene	ND	1.0	ug/L	12/30/98	dmj
	Ethylbenzene	ND	1.0	ug/L	12/30/98	dmj
	Toluene	ND	1.0	ug/L	12/30/98	dmj
	Xylenes (total)	ND	1.0	ug/L	12/30/98	dmj

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number.: 983409 Report Date.: 01/05/99

CUSTOMER: BDM International, Inc. PROJECT: BDM Miscellaneous Projects ATTN: R. Bandean

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date Time

Test Method.....: SW-846 8020A Batch.....: 42769 Analyst...: dmj
Method Description.: Volatile Organics -Aromatics Units.....: ug/L

MB	Method Blank				12/29/1998 1608

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Benzene	ND						1.0
Ethylbenzene	ND						1.0
Toluene	0.0259						1.0
Xylenes (total)	ND						1.0

LCS	Laboratory Control Sample	T981229B			12/29/1998 1656

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Benzene	21.489		20.10		106.9	%	39-150
Ethylbenzene	22.786		20.08		113.5	%	32-160
Toluene	22.254		20.08		110.8	%	46-148
Xylenes (total)	71.526		60.20		118.8	%	75-125

LCD	Laboratory Control Sample Duplicate	T981229B			12/29/1998 1744

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Benzene	19.638	21.489	20.10		97.7	%	39-150
					9.0	R	25
Ethylbenzene	20.646	22.786	20.08		102.8	%	32-160
					9.9	R	25
Toluene	20.513	22.254	20.08		102.2	%	46-148
					8.1	R	25
Xylenes (total)	63.042	71.526	60.20		104.7	%	75-125
					12.6	R	25

MS	Matrix Spike	T981229B	983410-1		12/29/1998 2145

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Benzene	55.877		20.10	45.791	50.2	%	39-150
Ethylbenzene	17.175		20.08	0.259	84.2	%	32-160
Toluene	18.249		20.08	ND	90.9	%	46-148
Xylenes (total)	52.353		60.20	0.4998	86.1	%	75-125

MSD	Matrix Spike Duplicate	T981229B	983410-1		12/29/1998 2234

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Benzene	55.650	55.877	20.10	45.791	49.0	%	39-150
					0.4	R	25
Ethylbenzene	17.304	17.175	20.08	0.259	84.9	%	32-160
					0.7	R	25
Toluene	18.124	18.249	20.08	ND	90.3	%	46-148
					0.7	R	25

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number.: 983409 Report Date.: 01/05/99

CUSTOMER: BDM International, Inc. PROJECT: BDM Miscellaneous Projects ATTN: R. Bandean

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
MSD	Matrix Spike Duplicate	T981229B	983410-1		12/29/1998	2234

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Xylenes (total)	52.523	52.353	60.20	0.4998	86.4	%	75-125
					0.3	R	25

Test Method.....: SW-846 8020A Batch.....: 42814 Analyst...: dmj
Method Description.: Volatile Organics -Aromatics Units.....: ug/L

MB	Method Blank				12/30/1998	1820

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Benzene	ND						1.0
Ethylbenzene	ND						1.0
Toluene	ND						1.0
Xylenes (total)	ND						1.0

LCS	Laboratory Control Sample	T981230B			12/31/1998	0053

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Benzene	22.031		20.10		109.6	%	39-150
Ethylbenzene	22.718		20.08		113.1	%	32-160
Toluene	22.285		20.08		111.0	%	46-148
Xylenes (total)	71.142		60.20		118.2	%	75-125

LCD	Laboratory Control Sample Duplicate	T981230B			12/31/1998	0141

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Benzene	21.146	22.031	20.10		105.2	%	39-150
					4.1	R	25
Ethylbenzene	21.982	22.718	20.08		109.5	%	32-160
					3.3	R	25
Toluene	21.053	22.285	20.08		104.8	%	46-148
					5.7	R	25
Xylenes (total)	68.819	71.142	60.20		114.3	%	75-125
					3.3	R	25

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

CORE LABORATORIES

SURROGATE RECOVERIES REPORT

Job Number.: 983409 Report Date.: 01/05/99

CUSTOMER: BDM International, Inc. PROJECT: BDM Miscellaneous Projects ATTN: R. Bandean

Method.....: Volatile Organics -Aromatics Batch.....: 42769
Method Code.....: 8020 Analyst.....: dmj

Surrogate	Units
BFB (Surrogate)	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
		MB		19.737	20	98.7	89-110		12/29/1998	1608
		LCS		19.355	20	96.8	89-110		12/29/1998	1656
		LCD		18.109	20	90.5	89-110		12/29/1998	1744
983410-3				18.534	20	92.7	89-110		12/29/1998	1919
983410-2				18.223	20	91.1	89-110		12/29/1998	2008
983410-1				13.275	20	66.4	89-110	X	12/29/1998	2056
983410-1		MS		15.038	20	75.2	89-110	X	12/29/1998	2145
983410-1		MSD		15.048	20	75.2	89-110	X	12/29/1998	2234
983409-8				18.770	20	93.8	89-110		12/30/1998	0011
983409-7				19.131	20	95.7	89-110		12/30/1998	0059
983409-3				19.406	20	97.0	89-110		12/30/1998	0148
983409-10				19.200	20	96.0	89-110		12/30/1998	0237
983409-9				18.785	20	93.9	89-110		12/30/1998	0414
983409-2				18.290	20	91.5	89-110		12/30/1998	0502
983409-1				18.931	20	94.7	89-110		12/30/1998	0551
983409-6				18.304	20	91.5	89-110		12/30/1998	0728
983409-4				16.700	20	83.5	89-110	X	12/30/1998	0817
983406-3				10.337	20	51.7	89-110	X	12/30/1998	1130

Method.....: Volatile Organics -Aromatics Batch.....: 42814
Method Code.....: 8020 Analyst.....: dmj

Surrogate	Units
BFB (Surrogate)	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
		MB		20.636	20	103.2	89-110		12/30/1998	1820
		LCS		20.420	20	102.1	89-110		12/31/1998	0053
		LCD		19.905	20	99.5	89-110		12/31/1998	0141
983409-5				18.687	20	93.4	89-110		12/31/1998	0319
983406-2				19.534	20	97.7	89-110		12/31/1998	0408
983406-4				19.174	20	95.9	89-110		12/31/1998	0545
983406-1			50	20.523	20	102.6	89-110		12/31/1998	0633
983406-7				19.659	20	98.3	89-110		12/31/1998	0722
983406-9				19.138	20	95.7	89-110		12/31/1998	0810
983406-5				19.599	20	98.0	89-110		12/31/1998	0947
983406-13				18.648	20	93.2	89-110		12/31/1998	1125
983406-15				19.846	20	99.2	89-110		12/31/1998	1214
983406-16				15.063	20	75.3	89-110	X	12/31/1998	1530

CORE LABORATORIES

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 01/05/99

(1) EPA 600/4-79-020 Methods for Chemical Analysis of Water and Wastes, March 1983

(2) EPA SW846 Test Methods for Evaluating Solid Waste, Third Edition, September 1986; Update I, July 1992; Update II, September 1994; Update IIA, August 1993; Update IIB, January 1995; Update III, December 1996

(3) Standard Methods for the Examination of Water and Wastewater, 16th Edition, 1985

(4) Standard Methods for the Examination of Water and Wastewater, 17th Edition, 1989

(5) Standard Methods for the Examination of Water and Wastewater, 18th Edition, 1992

(6) EPA 600/4-80-032 Prescribed Procedures For Measurement Of Radioactivity in Drinking Water, August 1980

(7) EPA 600/8-78-017 Microbiological Methods For Monitoring The Environment, December 1978

(8) Federal Register, July 1, 1990 (40 CFR Part 136)

(9) EPA 600/4-88-03 Methods For The Determination of Organics Compounds in Drinking Water, December 1988

(10) U.S.G.S. Methods For Determination of Inorganic Substances In Water And Fluvial Sediments, Book 5, Chapter A1, 1985

(11) Federal Register, June 7, 1991 (40 CFR Parts 141 & 142)

(12) ASTM Section 11 Water and Environmental Technology, Volume 11.01 Water (1), 1991

(13) Methods of Soil Analysis, American Society of Agronomy, Agronomy No. 9, 1965

(14) ASTM Section 5, Petroleum Products, Lubricants, and Fossil Fuels, Volume 05.05, Gaseous Fuels, Coal, and Coke

(15) EPA 600/2-78-054 Field and Laboratory Methods Applicable To Overburdens and Mine Soils, March 1978

(16) ASTM Part 19, Soils and Rocks; Building Stones, 1981

COMMENTS

a) ND = Not detected. NC = Not calculable due to value(s) lower than the detection limit.

b) Data in the QA report may differ from final results due to digestion and/or dilution of samples into analytical ranges. Quality control results are reported "as analyzed" within the instruments established calibration range.

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 01/05/99

c) The "Time Analyzed" in the QA report refers to the start time of the analytical batch which may not reflect the actual time of each analysis. The "Date Analyzed" is the actual date of analysis.

d) Results for soil and sludge samples are reported on a wet weight basis (i.e. not corrected for percent moisture) unless otherwise indicated.

e) Column confirmation analysis is not performed for GC volatiles parameters unless specified by contract.

BLANK QC SAMPLE IDENTIFICATION

MB	Method Blank
EB	Extraction Blank
ICB	Initial Calibration Blank
CCB	Continuing Calibration Blank

SPIKE QC SAMPLE IDENTIFICATION

MS	Method (Matrix) Spike
MSD	Method (Matrix) Spike Duplicate
PDS	Post-Digestion Spike
PSD	Post-Digestion Spike Duplicate
SB	Spike Blank
SBD	Spike Blank Duplicate

REFERENCE STANDARD QC SAMPLE IDENTIFICATION

LCS	Laboratory Control Standard
RS	Reference Standard
ICV	Initial Calibration Verification Standard
CCV	Continuing Calibration Verification Standard
ISA/ISB	ICP Interference Check Sample
ICL	Initial Calibration/Laboratory Control Sample
DSC	Distilled Standard Check
CRI	CRDL Low-Level ICP Standard

DUPLICATE QC SAMPLE IDENTIFICATION

MD	Method (Matrix) Duplicate
ED	Extraction Duplicate
SD	Serial Dilution

Analyses performed by a subcontract laboratory are indicated on the analytical and/or quality control reports under "Technician" using the following codes:

SUBCONTRACT LABORATORY	CODE
Core Laboratories - Anaheim, CA	* AN
Core Laboratories - Casper, WY	* CA
Core Laboratories - Corpus Christi, TX	* CC
Core Laboratories - Gulf States - Houston, TX	* HE
Core Laboratories - Houston, TX	* HP
Core Laboratories - Lake Charles, LA	* LC
Core Laboratories - Valparaiso, IN	* VP
Other Subcontract Laboratories	* XX

CORE LAB

CORE LABORATORIES

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 01/05/99

EXPLANATION OF DATA QUALIFIERS - ORGANIC PARAMETERS

- U - This qualifier indicates that the analyte was analyzed for but not detected.
- J - Organic GC/MS Methods: This qualifier indicates that the value is an estimate. It is used when a compound is determined to be present based on the mass spectral data but at a concentration below the practical quantitation limit of the method.
- J - Organic GC Methods: This qualifier indicates presumptive evidence of the presence of the compound at an estimated quantity.
- E - This qualifier indicates that a sample result is an estimate because the concentration exceeded the upper calibration range of the instrument.

EXPLANATION OF DATA QUALIFIERS - METALS & INORGANIC PARAMETERS

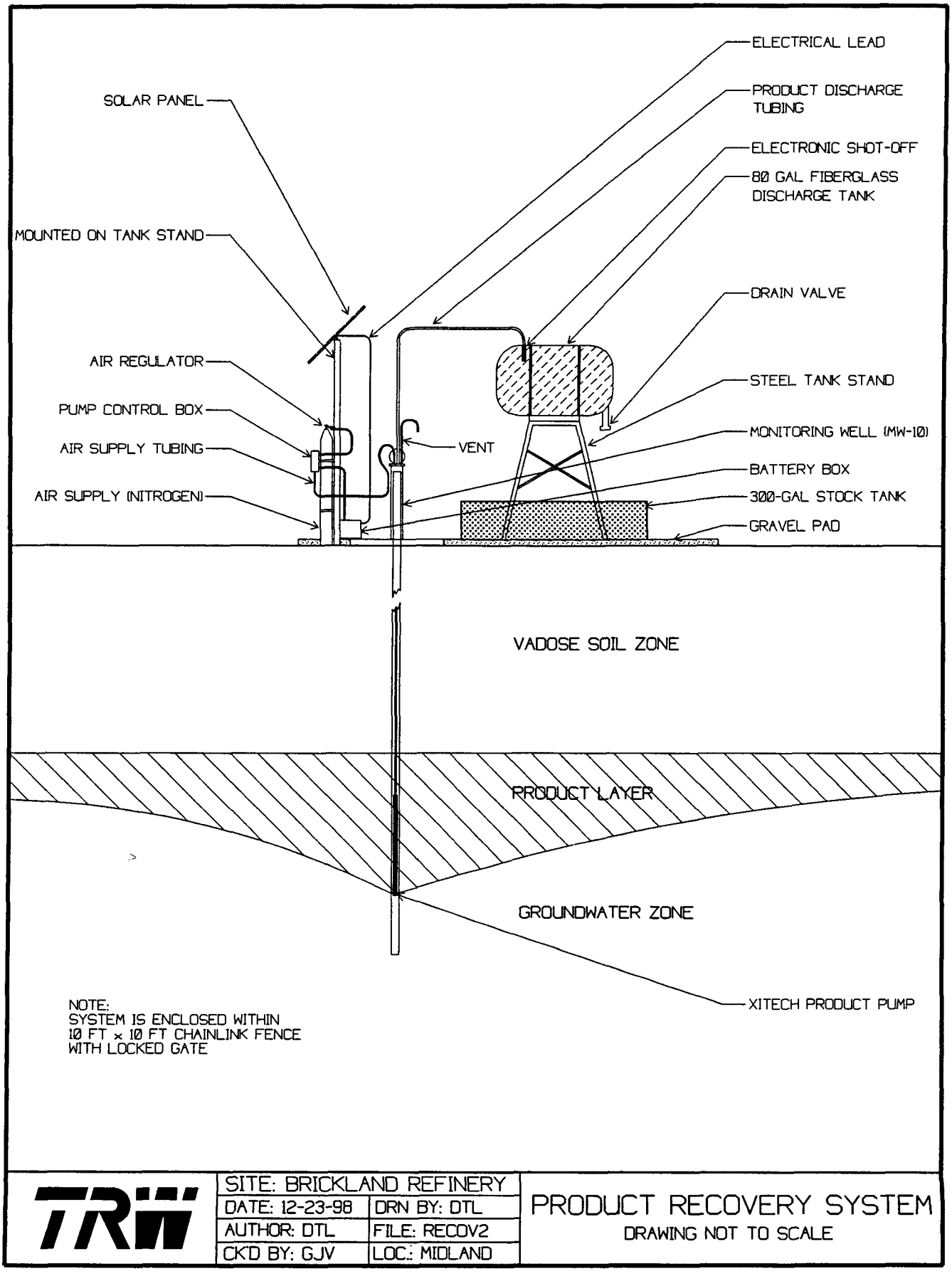
- U - This qualifier indicates that the analyte was analyzed for but not detected.
- B - This qualifier indicates that the analyte was detected at a level below the reporting limit but greater than or equal to the instrument detection limit.

EXPLANATION OF DATA FLAGS - ALL PARAMETERS

- B - This flag indicates that an analyte is present in the method blank as well as in the sample. The client should consider this when evaluating the data.
- E - This flag indicates the reported value is estimated due to sample matrix interference.
- W - This flag indicates that a post-digestion spike for GFAA analysis is outside quality control limits.
- X - This flag indicates that a surrogate recovery is outside quality control limits.
- Y - This flag indicates a spike or spike duplicate recovery is outside quality control limits.
- Z - This flag indicates a relative percent difference for a spike and spike duplicate is outside quality control limits.
- * - This flag indicates a relative percent difference for a duplicate analysis is outside quality control limits.
- ^ - This flag indicates a percent recovery for a standard is outside quality control limits.

APPENDIX C

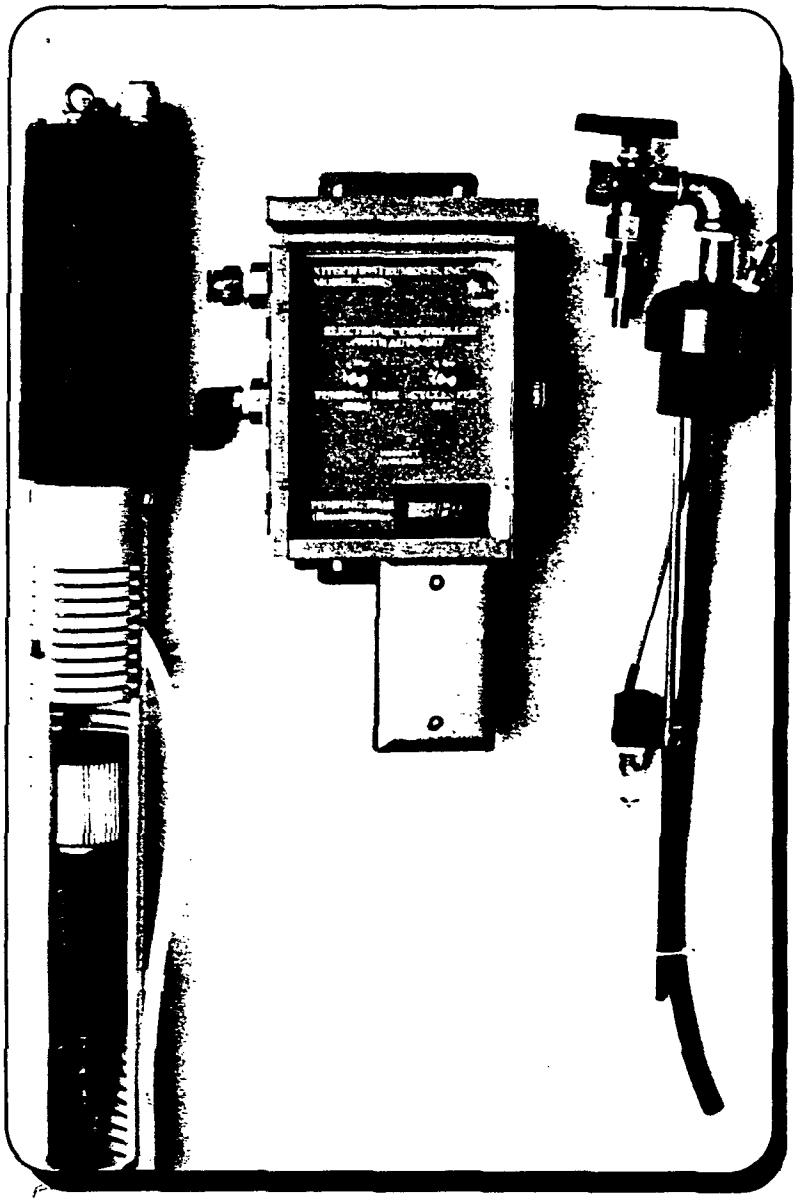
XITECH PRODUCT RECOVERY SYSTEM



TRW	SITE: BRICKLAND REFINERY	PRODUCT RECOVERY SYSTEM
	DATE: 12-23-98 / DRN BY: DTL	DRAWING NOT TO SCALE
	AUTHOR: DTL / FILE: RECOV2	
	CK'D BY: GJV / LOC.: MIDLAND	

XITECH
Instruments, Inc.

Product Recovery System



Our Product Recovery System can operate without the use of AC power, remove product ONLY down to a sheen, operate on bottled gas, and can be installed in less than 2 hours. The Xitech Product Recovery System consists of a pneumatically operated Smart skimmer, electronic timer, and electronic high level product tank shutoff. The Smart skimmer requires no above ground controls to operate, has 30 inches of float travel, uses a high volume hydrophobic filter, pumps over 25GPH, and consumes less than .5CFM of air. The electronic timer provides intermittent pumping control for several Smart skimmers, provides continuous monitoring of the high level tank shutoff sensor, displays total run time of system, and operates on 12DC/120AC/220AC. The electronic high level shutoff assembly has a three way product inlet switching valve, double wall tubing fitting for the product line, and an infrared electronic liquid level sensor that is intrinsically safe.

4" Smart Skimmer
Pumping range from 5-25 GPH
Skimmer float travel: 30 inches
Operating pressure range: 35-125 PSIG
Maximum operating well depth: 200 feet
Maximum air requirements: .5 CFM @ 125 PSIG
Air quality requirements: 5-10 Microns
Weight: 8 LBS
Size: 3-1/2" DIA. X 48" long
Materials : PVC, sst, viton, Buna, Aluminum
Order No. **ADJ 1000**

Electronic Timer with Tank Shutoff
Selectable pumping cycles
Infrared sensor tank over-fill protection
Visual indicator displays tank full condition
Elapsed pumping timer displays in hours and minutes
Power supply choices: 12DC&110AC, or 12DC, 220AC
Size: 8"X6"X4" NEMA 3R locking enclosure
Pumping times (MINS):5,10,20,30,60,CONT.
Pumping cycles per day: 1,3,6,12,24,48
Infrared sensor assembly requires a 2"IPS tank port
Order No. **2500ES**

Xitech Instruments, Inc.
300-C Industrial Park Loop, Rio Rancho, New Mexico 87124 USA
Phone: 505-892-6501 Fax: 505-892-6637

XITECH PRODUCT RECOVERY SYSTEM
Technical Data Sheet

We believe that Air driven pumping systems are the PREFERRED SAFEST METHOD for removing FLAMMABLE FLOATING HYDROCARBONS.

For this reason Xitech has focused its attention on solving THREE MAJOR problems facing current air driven skimming technologies.

They are: excessive air consumption , pumping heavy fuel oils like #6 or bunker sea, and operating under high vapor extraction conditions (High would be 10 inches of Mercury vacuum).

Xitech's new Product Recovery System represents a Quantum leap forward in Pneumatic Skimming technology.

Our system was specially designed to eliminate the need for an AIR COMPRESSOR, be able to PUMP #6 FUEL OIL, and run in the same well that is under HIGH VAPOR EXTRACTION CONDITIONS.

HERE IS HOW WE HAVE ACCOMPLISHED THIS QUANTUM LEAP:

DIAPHRAGM SKIMMER

1 In the top part of our diaphragm pump is an air logic valve that delivers pulses of air against the top side of the diaphragm which pushes the diaphragm downward. As the diaphragm moves downward, product is pushed upward out of the pump.

a. The air logic valve controls the pumping rate of the skimmer. By having this valve built into the pump we have eliminated the traditional above ground control technology.
b. This valve does NOT exhaust the high pressure air line, thereby saving large volumes of compressed air.
c. This valve eliminates the need to optimize our pump. The Time ON and time OFF concept has been replaced by pulses per minute.

2 In the center of our pump is a VITON diaphragm which pulls product into a small pumping chamber when it is pushed upward by a Stainless Steel spring (located on the bottom side of the diaphragm) and pushes product out of the pump towards to surface when the air logic valve delivers a burst of air to the top side of the diaphragm.

a. This small diaphragm pumping chamber was designed to conserve compressed air.
b. This diaphragm also prevents product from ever coming in contact with our compressed air source.

3 Below the diaphragm is a return spring which we deliberately made very large to produce a very high inlet vacuum to the skimmer. We can produce an inlet vacuum sucking force of 10 inches of mercury which will enable the skimmer to retrieve very heavy fuel oils and retrieve product from the same well that is under high vacuum extraction conditions.

4 Below the pump is our PRODUCT SEPARATOR ASSEMBLY which consists of a HYDROPHOBIC FILTER mounted on top of a PVC plastic float. This assembly is designed to position the Hydrophobic filter half in water and half in product. The filter only allows product through its membrane and the float will follow the PRODUCT/WATER INTERFACE up to 30 inches.

SKIMMER FEATURES:

Air requirements: .5 CFM @ 100 PSIG, 5 Micron filtering
Opewrating pressure range: 35-125 PSIG
Pumping rate is: 5-25 GPH (gallons per hour).
Removes product ONLY down to sheen.
Maximum operating depth is 200 feet.
Weight: 8lbs Size: 3-1/2"Dia. X 48" Long
Materials: PVC, Stainless Steel, Viton, and Brass

ELECTRONIC TIMER

1 The ELECTRONIC TIMER will allow the user to control when the skimmer gets air. The purpose for running the skimmer intermittently is to select a pumping time and cycles per day that allow product in the well to fully recover before pumping the product to a sheen again.

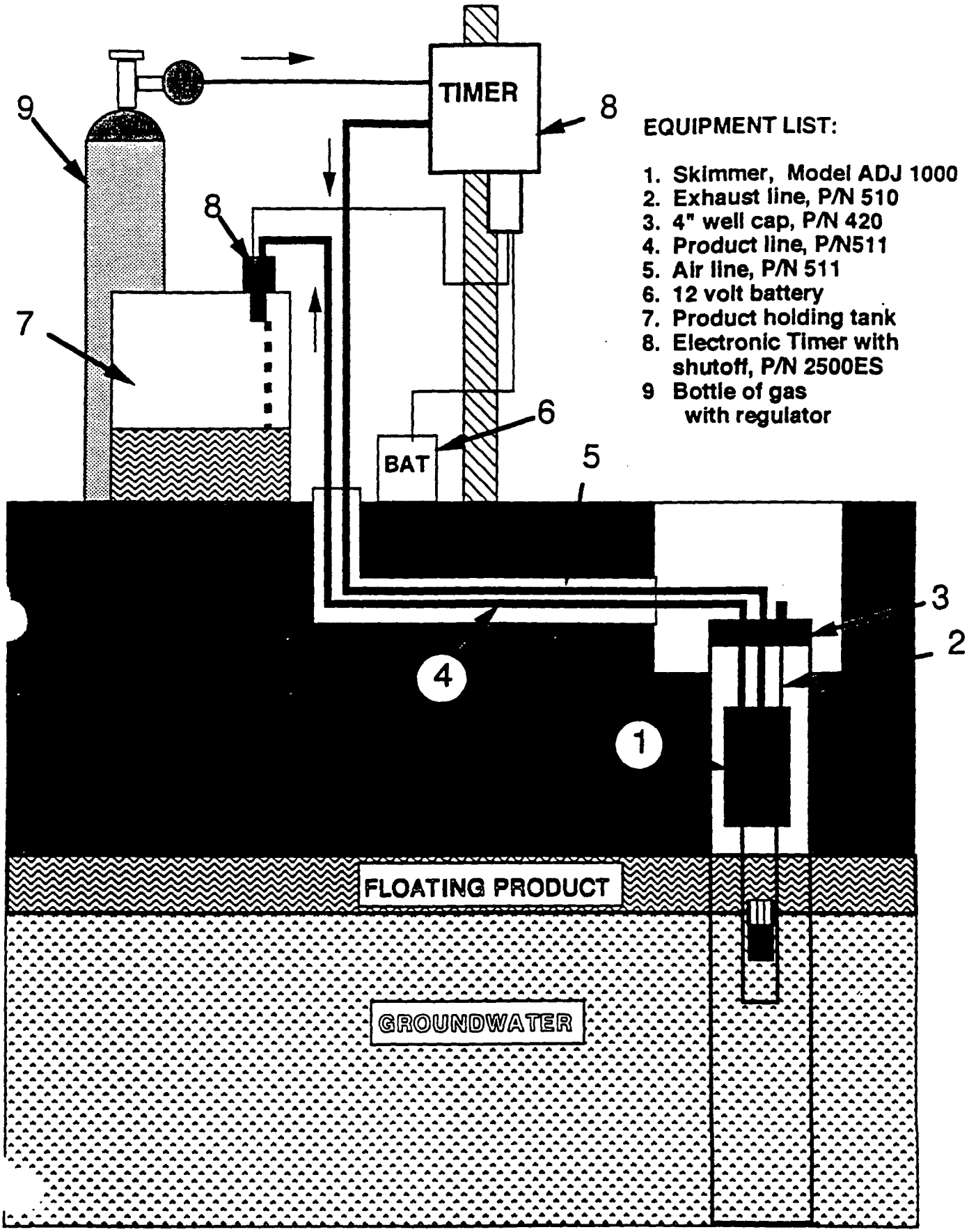
For Example: If the product in a well takes 20 minutes to pump to a sheen and 2 hours for full recovery after being pumped to a sheen. Then you would select 20 for your pumping time and 12 for your cycles per day. These settings would operate the skimmer for 20 minutes every 2 hours.

2 The ELECTRONIC TIMER will also shut off the skimmer automatically when it's remote high level shut-off sensor detects product in the holding tank, or detects an electronic failure in the shut-off sensor, or if power to the Electronic Timer is lost.

3 The ELECTRONIC TIMER has a digital hour timer which displays the total run time of the skimmer. The elapsed hour timer is only activated when the air supply line going to the skimmer sees 35 PSI or greater.

4 The ELECTRONIC TIMER can operate on a 12VDC battery(for long term use a marine battery and 10watt solar panel is recommended) or 110VAC (for Europe: 12VDC or 220VAC). The standard Electronic Timer may NOT be operated in a Class I, Division I, Group BCD environment. There is a special Class I Timer for Class I sites.

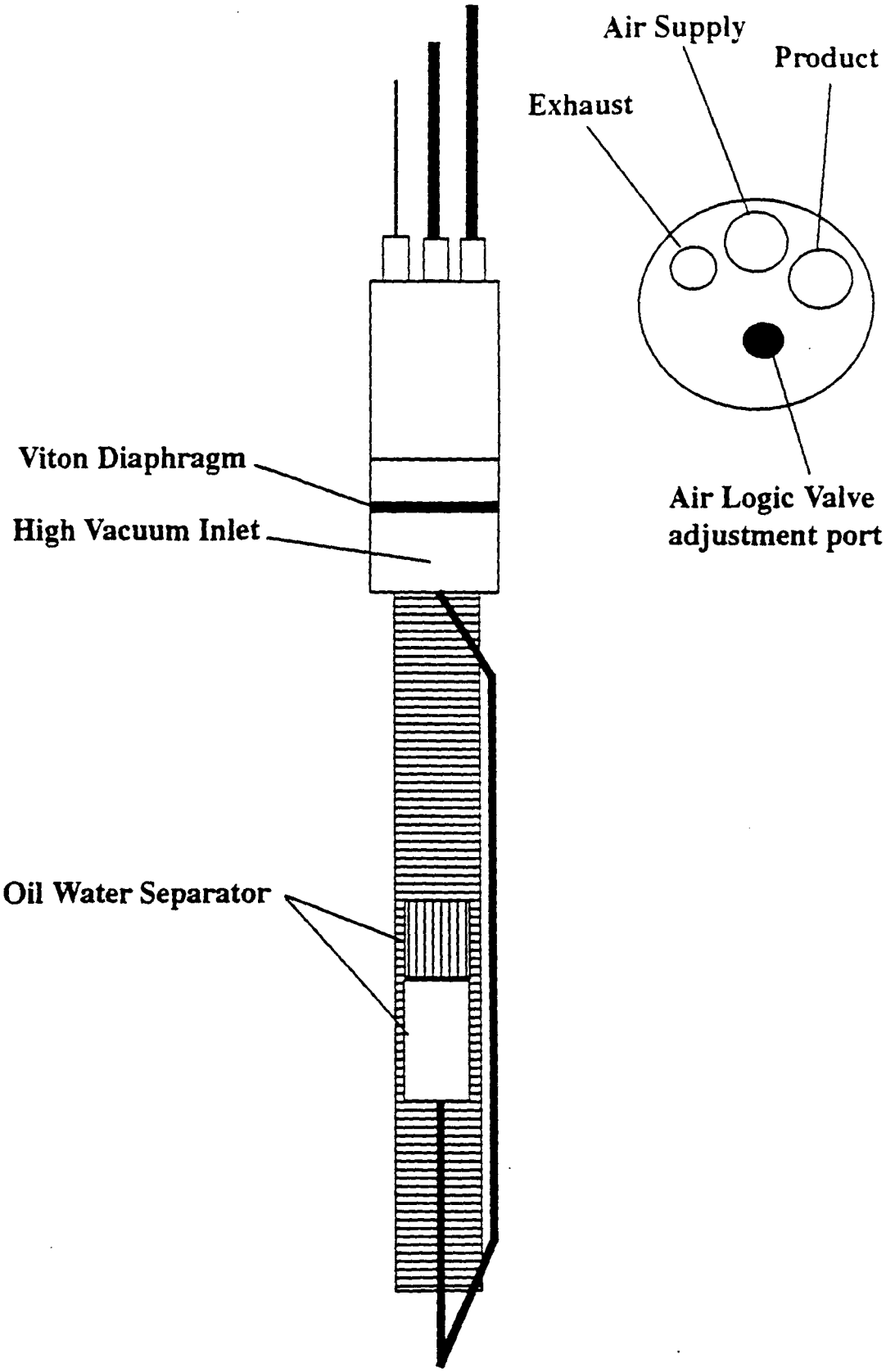
XITECH PRODUCT RECOVERY SYSTEM
Without the use of AC Power



EQUIPMENT LIST:

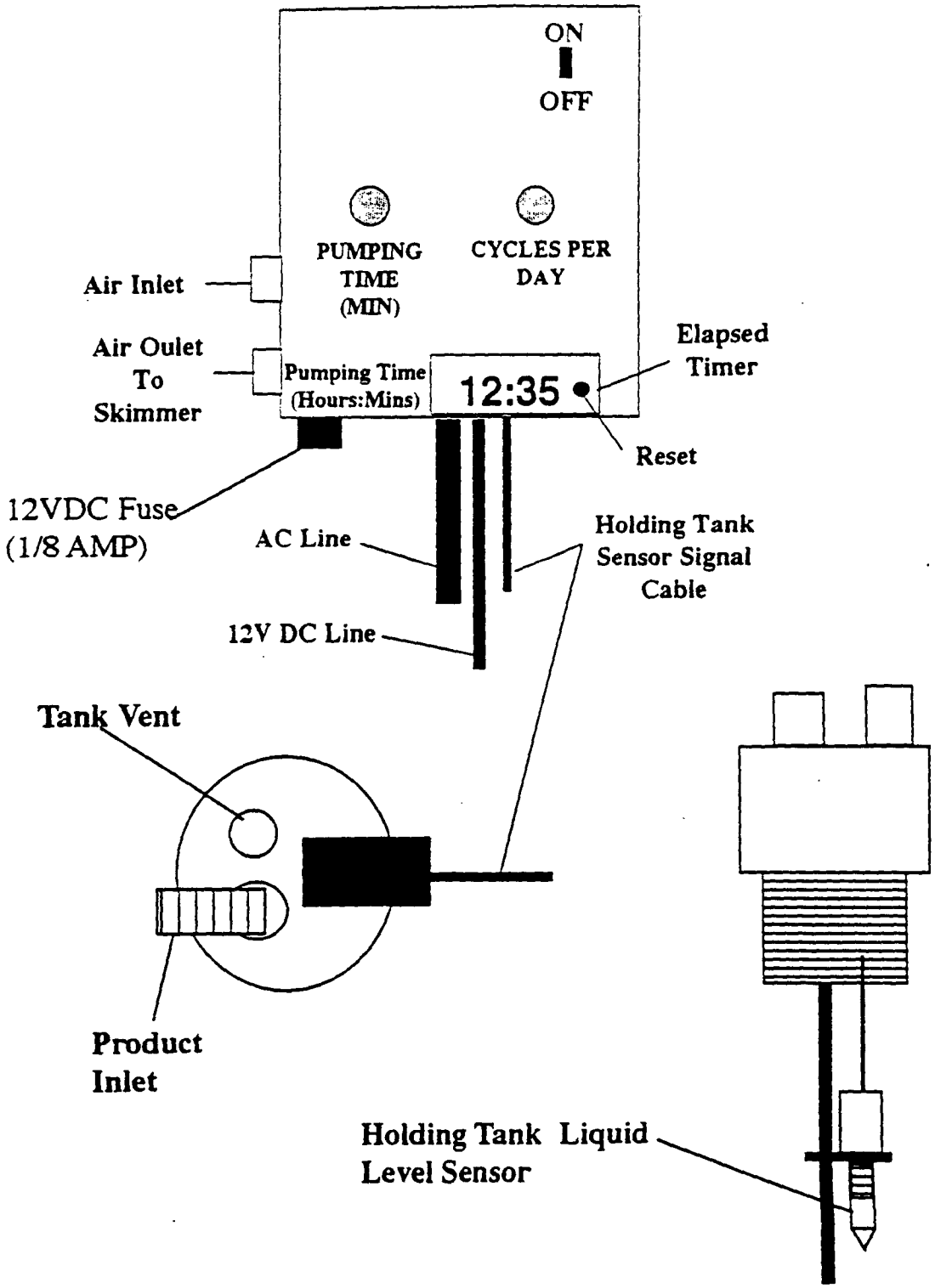
1. Skimmer, Model ADJ 1000
2. Exhaust line, P/N 510
3. 4" well cap, P/N 420
4. Product line, P/N511
5. Air line, P/N 511
6. 12 volt battery
7. Product holding tank
8. Electronic Timer with shutoff, P/N 2500ES
9. Bottle of gas with regulator

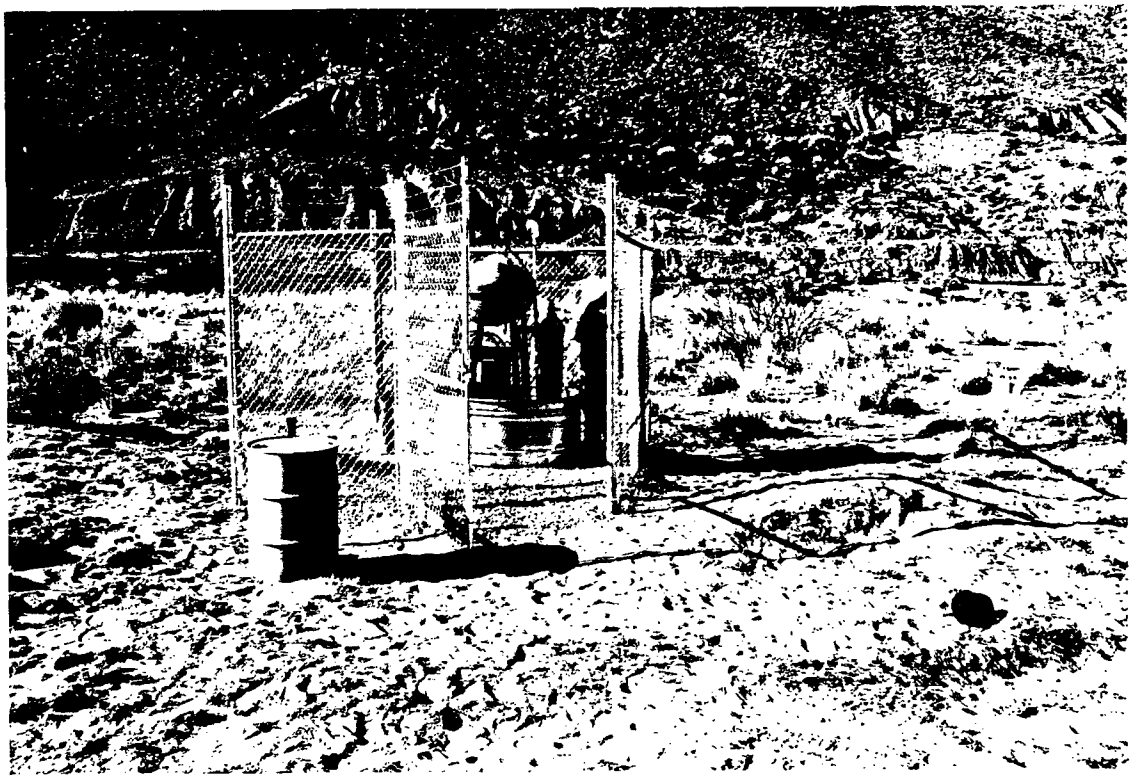
ADJ 1000 PNEUMATIC SKIMMER
Figure 1



2500ES ELECTRONIC TIMER WITH PRODUCT HOLDING TANK HIGH LEVEL SENSOR

Figure 2





View facing west showing the Xitech product recovery system (12/23/98)

View facing west showing the Xitech product recovery system (12/23/98)