GW - 55

MONITORING REPORTS

DATE: 1993

BioTech Remediation Inc.

QUARTERLY MONITORING REPORT
THRIFTWAY REFINERY
626 COUNTY ROAD 5500
BLOOMFIELD, NEW MEXICO 87410

PREPARED FOR
THE NEW MEXICO OIL CONSERVATION DIVISION
MR. WILL OLSEN, PROJECT MANAGER

DECEMBER 6, 1993

Thriftway Professional Building ▲ 710 East 20th Street ▲ Suite 400 ▲ Farmington, New Mexico 87401
Corporate Office (505) 326-5571 ▲ Field Office (505) 632-3365 ▲ Fax (505) 632-3365

QUARTERLY MONITORING REPORT
THRIFTWAY REFINERY
626 COUNTY ROAD 5500
BLOOMFIELD, NEW MEXICO, 87410

PREPARED FOR THE
NEW MEXICO OIL CONSERVATION DIVISION
MR. WILL OLSEN, PROJECT MANAGER

December 6, 1993

BY
BIOTECH REMEDIATION INC.
710 EAST 20TH ST., SUITE 400
FARMINGTON, NEW MEXICO, 87401

PREPARED BY

AL CHAHARLANG
PROJECT SCIENTIST

REVIEWED BY

KEN SINKS, CHEM E. P.E.
SENIOR SCIENTIST/ENGINEER

810\QMR12063

TABLE OF CONTENTS

1.0 INTRODUCTION

The purpose of this report is to update the database for the Thriftway Refinery, through December 6, 1993. BioTech Remediation, Inc., submits this monitoring and well update on behalf of the Thriftway Refinery, pursuant to the requirements of the New Mexico Oil Conservation Division. This report will define the ground water condition, size of the plume, and the current activity for the site. It also describes the extent of water contamination based on the NMWQCC specification of .01 mg/L Benzene in water. This work is compiled in compliance with the terms of the Thriftway Refinery Ground Water Discharge Plan GW-55.

2.0 QUARTERLY SUMMARY OF SITE ACTIVITIES

Site monitoring was performed on November 29th and 30th, 1993. During this quarterly site visit the following activities were performed:

- Water level gauging
- Sample of monitoring wells
- Free product measurements

The de-scaling of the air stripper system, instituted by Thriftway, has been on-going. The system was acidized on a monthly basis and after each acidation, the operation of the system was restored to an acceptable level. The injection pump has continued to operate with minimal interruption. The inflow and outflow from the air stripper were also sampled and submitted to the laboratory for BTEX analysis, per EPA method 8020.

3.0 SUMMARY OF GROUND WATER ELEVATION DATA

Table 1 summarizes all ground water elevation data to date, for the refinery. The most recent comprehensive ground water elevation data, collected November 29th and 30th, 1993, is presented in the Ground Water Elevation Map on the attached **Figure 1.** The field data was gathered using an ORS air/water interface probe with a 100' tape.

4.0 SUMMARY OF PHASE SEPARATED PRODUCT CONDITIONS

Free-product was found in monitoring wells MW-12 and 14. The depth to which free-product level existed in these monitor wells was measured with a steel tape. This was then subtracted from the water level which was already measured with a ORS probe, to determine the thickness of the product currently standing in the well. The phase-separated product was also measured in a disposable transparent bailer. The amount of free-product is recorded in feet and presented in **Table 2.** The amounts of free-product collected from the bailing of these monitor wells are shown in **Table 2.** The material recovered during bailing was properly disposed of in a collection tank provided on the site. The collection tank contents are handled as follows: 1) free product is pumped off and stored for later processing, and 2) the contaminated water is stripped of dissolved hydrocarbon in the waste water air stripper tank and then evaporated in the refinery waste water system.

From the earlier hydrogeological investigation and subsequent Quarterly Monitoring Reports, it appears that the plume in monitor wells MW-12 and 14 is affected by the water mound being created from the water injection system. The current phase-separated product plume is presented in **Figure 2.**

5.0 SUMMARY OF GROUND WATER CHEMISTRY DATA

Table 3 summarizes all ground water quality data collected to date for the refinery. The **Appendix** contains the laboratory reports and the quality control studies for the current survey. Ground water samples for analysis were collected November 29th and 30th, 1993, from all monitor wells not containing free hydrocarbon.

Ground water from each of the above wells was analyzed for Benzene, Toluene, Ethylbenzene and total Xylenes (BTEX). The extent of the dissolved phase ground water plume at this site (based upon the regulated benzene standard of 0.01 mg/l), is shown in **Figure 3.**

The samples were gathered using disposable bailers. New cord was used on each bailer to further insure no cross-contamination of wells occurred. At least five (5) well volumes were removed whenever possible. If the well recharged slowly, then the water from the last bail was used for analysis. The samples were placed in 40 ml vials previously prepared at the lab with two (2) or three (3) drops of $HgCl_2$ solution. The samples were all marked with their respective location, date, time of sampling and by whom sampled. The samples were then transported, on ice, to the BioTech Water Quality Laboratories. A chain of custody record accompanied the samples and is included with the laboratory analysis reports.

6.0 DISCUSSION / RECOMMENDATIONS

The ground water contour map, provided in **Figure 1,** is calculated from the most recent data collected on November 29th and 30th, 1993. The magnitude of the dissolved phase has changed slightly, over the period of the last quarter. The contamination has migrated slightly downgradient, as noted in Monitor Well MW-20.

A review of the benzene contour map (See figure 3), shows no appreciable increase in the plume size. Monitor well MW-17 still appears to be highly contaminated, and from the data provided in Table 3, it indicates no appreciable change in benzene since the well was sampled on August 28th, 1991. What appears from this recent survey, is that MW-17 had a separate source and has its own plume which is not migrating appreciably. Part of this may be due to the intercept/recovery system that is operating. The contamination from this plume seems to extend to MW-7.

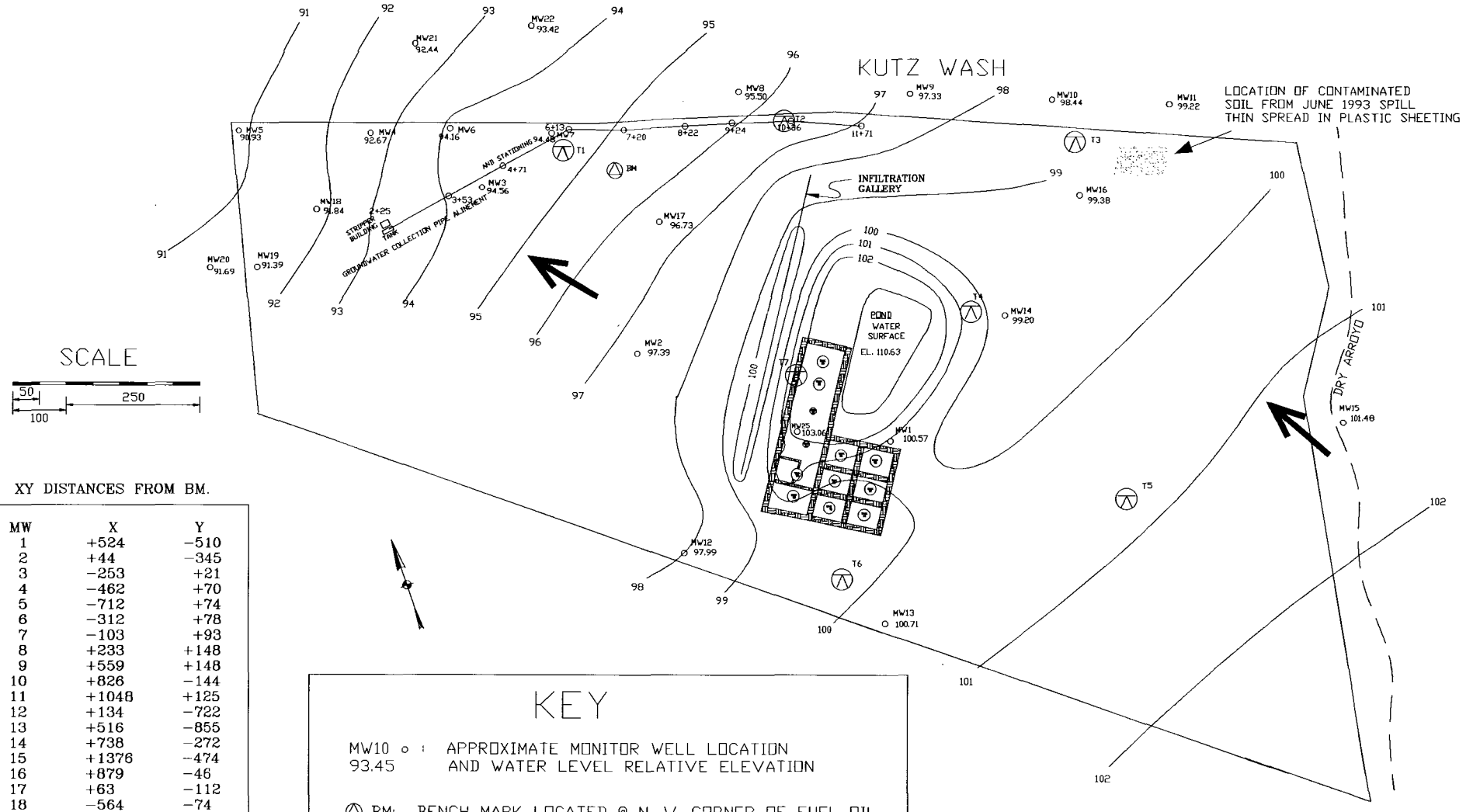
The free product level in MW-12 has had no significant gain or loss, since the level recorded on September 14, 1993. Two (2) feet of free-product remain in this monitor well. BioTech will continue to monitor the activity in this well. Biotech will also investigate the source and extent of this contamination, if so directed by Thriftway Refining.

Approximately 75 gallons of free-product has been recovered from the recovery wells in the vicinity of the Monitor Well MW-12 and 14. BioTech is keeping a record of the product being recovered from the wells and will continue to report on the recovery progress.

A recent free-product plume investigation has lead BioTech to believe that product in Monitor Well MW-12 is associated with a spill that may have happened many years ago. A separate product plume is represented in the area around MW-14, also many years old (see **Figure 2**). Investigation into the plume size and the method of remediation for this site will continue and be reported. Note: The plume associated with MW -12 is much more accurately defined as a result of recent investigation.

Thriftway Company will continue quarterly sampling and monitoring of the site as well as routine maintenance of the pump and recovery systems. This report of the operation and maintenance of the site remediation systems at the Thriftway Refinery is provided to comply with the Oil Conservation Division requirements and the Site Ground Water Discharge Plan GW-55.

FIGURES



XY DISTANCES FROM BM.

MW	X	Y
1	+524	−510
2	+44	−345
3	−253	+21
4	−462	+70
5	−712	+74
6	−312	+78
7	−103	+93
8	+233	+148
9	+559	+148
10	+826	−144
11	+1048	+125
12	+134	−722
13	+516	−855
14	+738	−272
15	+1376	−474
16	+879	−46
17	+63	−112
18	−564	−74
19	−675	−182
20	−856	−178
21	−474	+162
22	−283	+161

KEY

MW10 o 93.45 : APPROXIMATE MONITOR WELL LOCATION AND WATER LEVEL RELATIVE ELEVATION

BM: BENCH MARK LOCATED @ N. W. CORNER OF FUEL OIL LOADING, CONCRETE SPILL CONTAINMENT SLAB, RELATIVE ELEVATION 100'

APPROXIMATE GROUNDWATER FLOW DIRECTION

THRIFTWAY REFINERY
BLOOMFIELD, NEW MEXICO
THRIFTWAY MARKETING CORP
710 E 20TH ST, FARMINGTON, NM, 87401

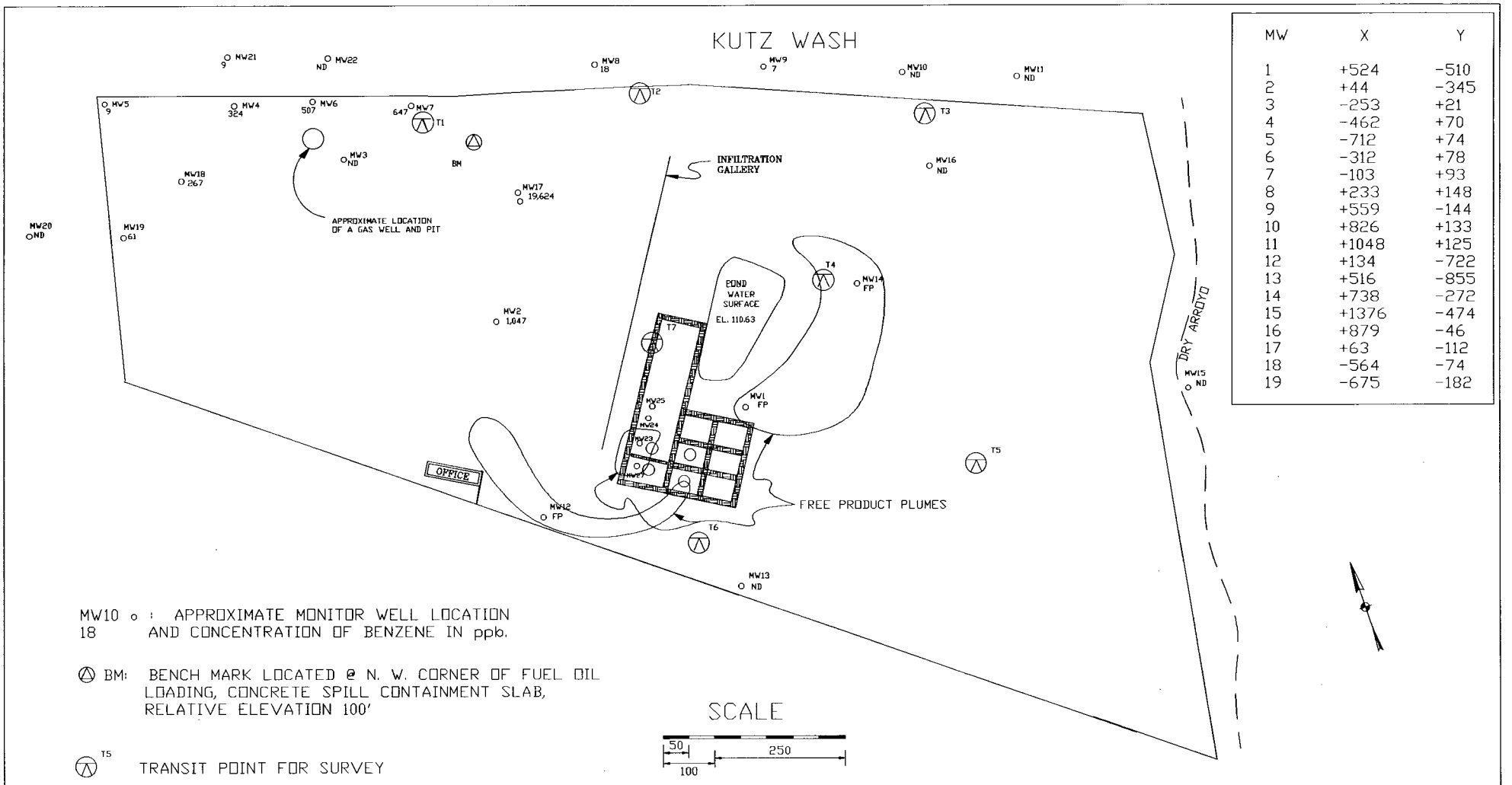
810\93WL

BioTech REMEDIATION
710 EAST 20TH STREET, SUITE 400
FARMINGTON, NEW MEXICO 87401
OFFICE: (505) 632-3365
FAX: (505) 632-0030

ENGINEER: A. CHAHARLANG
DRAFTED BY: J. DEWEY

FIGURE 1 WATER LEVEL CONTOUR MAP

NOVEMBER 29, 1993



MW	X	Y
1	+524	-510
2	+44	-345
3	-253	+21
4	-462	+70
5	-712	+74
6	-312	+78
7	-103	+93
8	+233	+148
9	+559	-144
10	+826	+133
11	+1048	+125
12	+134	-722
13	+516	-855
14	+738	-272
15	+1376	-474
16	+879	-46
17	+63	-112
18	-564	-74
19	-675	-182

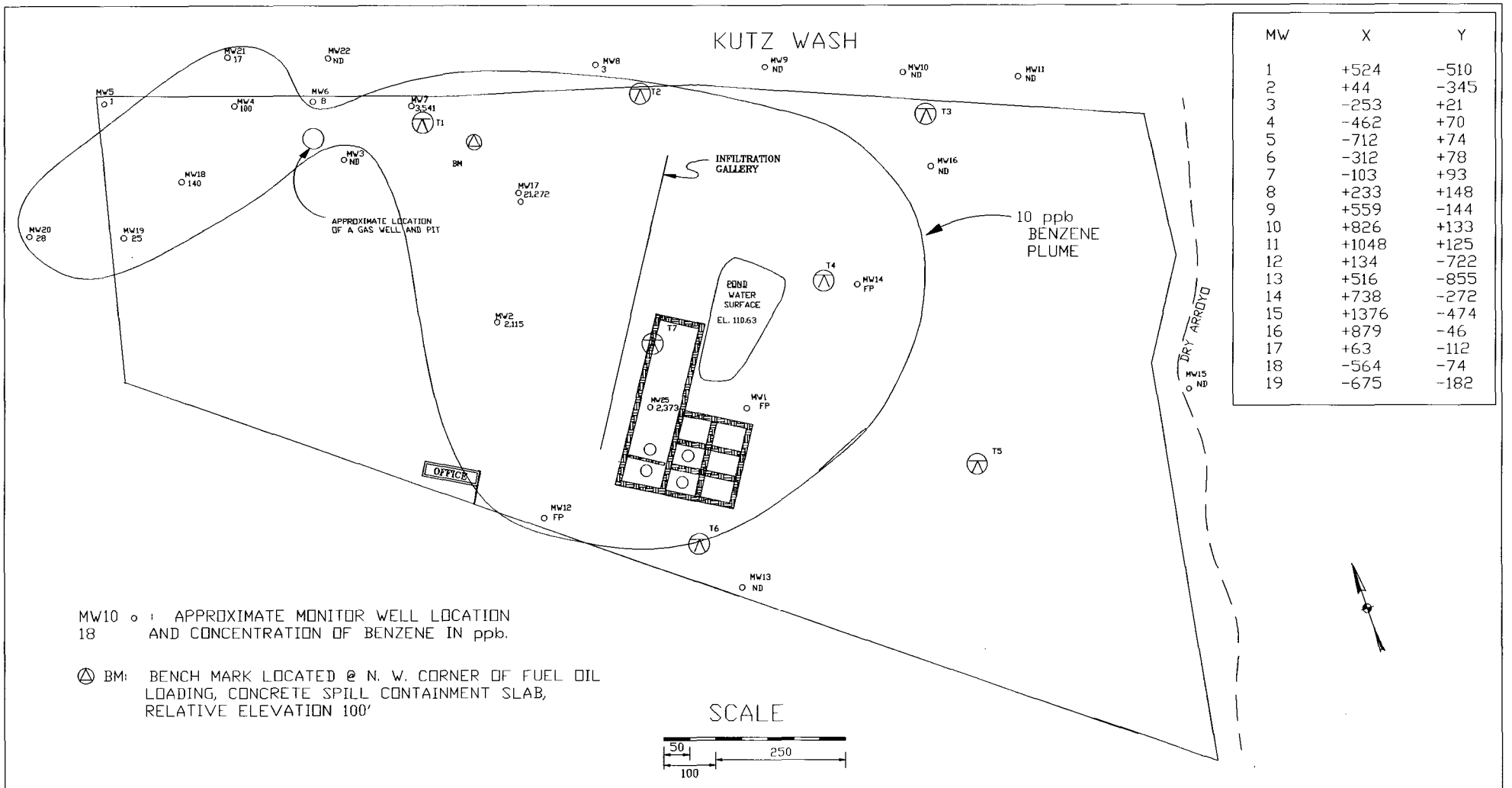
THRIFTWAY REFINERY
BLOOMFIELD, NEW MEXICO
THRIFTWAY MARKETING CORP
710 E 20TH ST, FARMINGTON, NM, 87401

BioTech REMEDIATION
710 EAST 20TH STREET, SUITE 400
FARMINGTON, NEW MEXICO 87401
OFFICE: (505) 632-3365
FAX: (505) 632-0030

ENGINEER: H. CHAHARLANG
DRAFTED BY: J. DEWEY

FIGURE 2 FREE PRODUCT PLUME

NOVEMBER 29, 1993



MW	X	Y
1	+524	-510
2	+44	-345
3	-253	+21
4	-462	+70
5	-712	+74
6	-312	+78
7	-103	+93
8	+233	+148
9	+559	-144
10	+826	+133
11	+1048	+125
12	+134	-722
13	+516	-855
14	+738	-272
15	+1376	-474
16	+879	-46
17	+63	-112
18	-564	-74
19	-675	-182

THRIFTWAY REFINERY
BLOOMFIELD, NEW MEXICO
THRIFTWAY MARKETING CORP
710 E 20TH ST, FARMINGTON, NM, 87401

BioTech REMEDIATION
710 EAST 20TH STREET, SUITE 400
FARMINGTON, NEW MEXICO 87401
OFFICE: (505) 632-3365
FAX: (505) 632-0030

ENGINEER: A. CHAHARLANG
DRAFTED BY: J. DEWEY

FIGURE 3 10 ppb BENZENE PLUME

NOVEMBER 29, 1993

TABLES

TABLE 1
THRIFTWAY REFINERY, BLOOMFIELD, NM
GROUNDWATER MONITORING DATA

WELL #	TOP OF PIPE ELEVATION	DATE	TIME	WATER LEVEL (feet)	WATER LEVE ELEVATION (feet)
1	114.08	08/28/91		12.67	101.41
		09/02/92	13:15	14.00	100.08
		04/28/93	10:45	12.77	101.31
		09/14/93	-	13.52	100.56
		11/29/93	09:30	13.51	100.57
2	107.62	08/28/91		10.31	97.31
		08/31/92	13:07	10.25	97.37
		04/28/93	10:25	9.24	98.18
		09/14/93		10.27	97.35
		11/29/93	03:33	10.23	97.39
3	96.28	08/28/91		3.67	92.61
		09/01/92	12:45	2.24	94.04
		04/28/93	10:10	2.01	94.27
		09/14/93		1.95	94.33
		11/30/93	10:10	1.72	94.56
4	95.82	08/28/91		4.31	91.51
		09/01/92	12:15	3.78	92.04
		04/28/93	9:50	3.30	92.52
		09/13/93		3.65	92.17
		11/30/93	09:55	3.15	92.67
5	94.66	08/28/91		4.43	90.23
		09/01/92	12:00	4.20	90.46
		04/28/93	9:45	3.64	91.02
		09/13/93		4.26	90.40
		11/30/93	09:38	3.73	90.93
6	96.31	08/28/91		3.68	92.63
		09/01/92	12:30	2.63	93.68
		04/28/93	10:00	2.44	93.87
		09/13/93		2.15	94.16
		11/29/93	04:25	2.03	94.28
7	96.79	08/28/91		3.35	93.44
		09/01/92		WELL NOT FOUND	
		04/28/93		WELL NOT FOUND	
		09/14/93		5.15	91.64
		11/29/93	04:10	4.70	92.09
8	97.04	08/28/91		2.83	94.21
		09/02/92	14:50	2.75	94.29
		04/28/93	11:15	1.95	95.09
		09/14/93		1.97	95.07
		11/29/93	03:00	1.54	95.50

TABLE 1
THRIFTWAY REFINERY, BLOOMFIELD, NM
GROUNDWATER MONITORING DATA

WELL #	TOP OF PIPE ELEVATION	DATE	TIME	WATER LEVEL (feet)	WATER LEVE ELEVATION (feet)
9	100.16	08/28/91		3.42	96.74
		09/02/92	14:45	3.50	96.66
		04/28/93	11:25	2.87	97.29
		09/14/93		2.90	97.26
		11/29/93	03:15	2.83	97.33
10	101.55	08/28/91		3.50	98.05
		09/02/92	15:05	3.50	98.05
		04/28/93	11:35	3.02	98.53
		09/14/93		3.23	98.32
		11/29/93	02:40	3.11	98.44
11	103.63	08/28/91		4.60	99.03
		09/02/92	15:15	4.65	98.98
		04/28/93	11:45	4.22	99.41
		09/14/93		4.63	99.00
		11/29/93	02:30	4.41	99.22
12	111.11	08/28/91		12.51	98.62
		08/31/92	13:30	13.67	97.44
		04/28/93	9:10	11.50	99.61
		09/14/93		15.39	95.72
		11/29/93	08:30	14.12	96.99
13	117.12	08/28/91		16.24	100.88
		09/02/92	13:50	16.25	100.87
		04/28/93	9:00	15.77	101.35
		09/14/93		16.38	100.74
		11/29/93	09:15	16.41	100.71
14	111.94	08/28/91		11.33	100.61
		09/02/92	14:00	13.00	98.94
		04/28/93	10:55	11.34	100.60
		09/14/93		12.83	99.11
		11/29/93	10:15	12.74	99.20
15	114.53	08/28/91		12.58	101.95
		09/03/92	8:00	13.05	101.48
		04/28/93	11:55	12.57	101.96
		09/14/93		13.10	101.43
		11/29/93	02:20	13.05	101.48
16	107.64	08/28/91		8.28	99.36
		09/02/92	14:25	8.45	99.19
		04/28/93	11:05	7.90	99.74
		09/14/93		LEVEL NOT TAKEN	
		11/29/93	02:00	8.26	99.38

TABLE 1
THRIFTWAY REFINERY, BLOOMFIELD, NM
GROUNDWATER MONITORING DATA

WELL #	TOP OF PIPE ELEVATION	DATE	TIME	WATER LEVEL (feet)	WATER LEVE ELEVATION (feet)
17	100.84	08/28/91		5.10	95.74
		08/31/93	12:44	4.65	96.19
		04/28/93	10:35	3.35	97.49
		09/14/93		4.40	96.44
		11/29/93	03:50	4.11	96.73
18	94.04	08/28/91		3.21	90.83
		09/01/92	11:51	2.39	91.65
		04/28/93	9:35	2.14	91.90
		09/13/93		2.11	91.93
		11/30/93	10:25	2.20	91.84
19	93.64	08/28/91		2.90	90.23
		09/02/92	11:30	2.41	91.23
		04/28/93	9:25	2.05	91.59
		09/13/93		1.92	91.72
		11/30/93	09:20	2.25	91.39
20	96.01	09/01/92	13:05	3.85	92.16
		04/28/93	8:30	4.18	91.83
		09/13/93		4.56	91.45
	96.11	11/30/93	08:25	4.42	91.69
21	94.34	09/01/92	13:20	3.97	90.37
		04/28/93	8:40	2.27	92.07
		09/13/93		2.19	92.15
		11/30/93	08:45	1.90	92.44
22	97.51	09/01/92	13:30	3.34	94.17
		04/28/93	8:50	4.44	93.07
		09/13/93		4.50	93.01
		11/30/93	08:35	4.09	93.42
25	112.62	11/29/93	10:45	9.56	103.06

810\QMRTABL1

TABLE 2
SUMMARY OF PHASE SEPARATED PRODUCT MEASUREMENTS
THRIFTWAY REFINERY
BLOOMFIELD, NEW MEXICO

WELL	DATE	THICKNESS (in feet)	LITERS OF HYDROCARBON RECLAIMED
1	10/14/92	TRACE	
	04/28/93	0.02	
	09/14/93	0.01	
	11/29/93	ND	
2	10/14/92	TRACE	
	04/28/93	ND	
	09/14/93	ND	
	11/29/93	ND	
6	10/14/92	TRACE	
	04/28/93	TRACE	
	09/13/93	ND	
	11/29/93	ND	
12	10/14/92	TRACE	
	04/28/93	TRACE	
	09/14/93	2.00	
	11/29/93	1.97	*6.5
14	10/14/92	1.58	
	04/28/93	0.12	
	09/14/93	0.50	
	11/29/93	1.49	*4.8
17	10/14/92	TRACE	
	04/28/93	TRACE	
	09/14/93	ND	
	11/29/93	ND	

ND - NON-DETECT (no visible product detected in the bailer)
* - Total volume of product bailed after 15 times bailing of well volume to reach a non-detect status.

810\QMRTABL2

THRIFTWAY REFINERY
TABLE 3
SUMMARY OF LABORATORY ANALYSIS DATA
THRIFTWAY REFINERY
BLOOMFIELD , NEW MEXICO
Concentrations in mg/L

WELL #	DATE	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
1	08/28/91	4.321	2.352	0.635	5.137
	09/02/92		FREE PRODUCT FOUND IN WELL		
	04/28/93		FREE PRODUCT FOUND IN WELL		
	09/14/93		FREE PRODUCT FOUND IN WELL		
	11/29/93		NO FREE PRODUCT BUT A TRACE		
2	08/28/91	3.332	ND	0.536	0.972
	08/31/92		FREE PRODUCT FOUND IN WELL		
	04/28/93	0.974	0.189	0.273	0.843
	09/14/93	1.047	0.245	0.487	0.794
	11/29/93	2.115	0.136	0.395	0.583
3	08/28/91	0.013	0.004	0.002	0.001
	09/01/92	0.018	0.004	0.010	0.108
	04/28/93	ND	ND	ND	ND
	09/14/93	ND	ND	ND	0.004
	11/30/93	ND	ND	0.001	0.001
4	08/28/91	0.006	ND	ND	ND
	09/01/92	0.005	0.007	0.017	0.056
	04/28/93	0.588	0.004	0.039	0.329
	09/13/93	0.324	0.021	0.051	0.287
	11/30/93	0.100	0.005	0.001	0.004
5	08/28/91	ND	0.002	ND	0.001
	09/01/92	ND	ND	ND	ND
	04/28/93	0.014	0.033	0.004	0.026
	09/13/93	0.009	0.021	0.006	0.037
	11/30/93	0.001	ND	ND	ND
6	08/28/91	0.315	0.006	0.082	0.235
	09/01/92		FREE PRODUCT FOUND IN WELL		
	04/28/93	0.427	0.036	0.094	0.230
	09/13/93	0.507	0.078	0.135	0.319
	11/29/93	0.008	0.002	0.002	0.002
7	08/28/91	35.037	6.013	0.375	3.343
	09/01/92		WELL NOT FOUND		
	04/28/93		WELL NOT FOUND		
	09/14/93	0.647	0.197	0.168	0.691
	11/29/93	3.541	0.971	0.419	1.918
8	08/28/91	0.010	0.017	0.002	0.017
	09/02/92	0.014	0.009	0.019	0.068
	04/28/93	ND	ND	ND	ND
	09/14/93	0.018	0.021	0.034	0.051
	11/29/93	0.003	ND	0.0004	0.001

THRIFTWAY REFINERY
TABLE 3
SUMMARY OF LABORATORY ANALYSIS DATA
THRIFTWAY REFINERY
BLOOMFIELD , NEW MEXICO
Concentrations in mg/L

WELL #	DATE	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
9	08/28/91	0.005	0.016	0.002	0.020
	09/02/92	0.010	0.021	0.030	0.018
	04/28/93	ND	ND	ND	ND
	09/14/93	0.007	0.015	0.024	0.006
	11/29/93	ND	ND	ND	ND
10	08/28/91	0.003	0.009	0.001	0.013
	09/02/92	0.001	0.005	0.001	0.009
	04/28/93	ND	ND	ND	ND
	09/14/93	ND	ND	ND	ND
	11/29/93	ND	ND	ND	ND
11	08/28/91	ND	ND	<1.0	0.002
	09/02/92	ND	ND	ND	ND
	04/28/93	ND	ND	ND	ND
	09/14/93	ND	ND	ND	ND
	11/29/93	ND	ND	ND	ND
12	08/28/91	ND	ND	ND	ND
	08/31/92	FREE PRODUCT FOUND IN WELL			
	04/28/93	0.482	0.089	0.180	0.517
	09/14/93	FREE PRODUCT FOUND IN WELL			
	11/29/93	FREE PRODUCT FOUND IN WELL			
13	08/28/91	0.001	0.004	<1.0	0.006
	09/02/92	0.002	0.002	ND	0.003
	04/28/93	ND	ND	ND	ND
	09/14/93	ND	ND	ND	ND
	11/30/93	ND	ND	ND	ND
14	08/28/91	ND	ND	<1.0	0.001
	09/02/92	FREE PRODUCT FOUND IN WELL			
	04/28/93	FREE PRODUCT FOUND IN WELL			
	09/14/93	FREE PRODUCT FOUND IN WELL			
	11/29/93	FREE PRODUCT FOUND IN WELL			
15	08/28/91	0.005	0.009	0.001	0.013
	09/03/92	0.002	0.002	ND	0.003
	04/28/93	ND	0.028	ND	ND
	09/14/93	ND	ND	ND	ND
	11/29/93	ND	ND	ND	ND
16	08/28/91	0.006	<1.0	0.043	0.003
	09/02/92	0.012	0.006	0.060	0.013
	04/28/93	ND	ND	0.003	0.005
	09/14/93	ND	ND	0.009	0.006
	11/29/93	ND	ND	0.002	0.0006

THRIFTWAY REFINERY
TABLE 3
SUMMARY OF LABORATORY ANALYSIS DATA
THRIFTWAY REFINERY
BLOOMFIELD , NEW MEXICO
Concentrations in mg/L

WELL #	DATE	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
17	08/28/91	25.660	21.453	1.074	10.372
	08/31/93	28.453	23.682	2.145	13.461
	04/28/93	23.424	22.173	1.967	13.161
	09/14/93	19.624	19.347	2.687	12.481
	11/29/93	21.272	5.285	1.063	8.357
18	08/28/91	0.036	0.003	0.005	0.129
	09/01/92	0.047	0.010	0.014	0.171
	04/28/93	0.223	0.019	0.013	0.503
	09/13/93	0.267	0.135	0.067	0.345
	11/30/93	0.140	0.009	0.015	0.133
19	08/28/91	0.014	0.006	0.578	1.193
	09/02/92	0.022	0.015	0.319	0.894
	04/28/93	0.045	0.005	0.118	0.623
	09/13/93	0.061	0.024	0.165	0.719
	11/30/93	0.025	0.012	0.258	0.658
20	09/01/92	ND	ND	ND	ND
	04/28/93	0.003	0.003	0.032	0.325
	09/13/93	ND	ND	ND	0.034
	11/30/93	0.028	0.017	0.130	0.555
21	09/01/92	ND	ND	ND	ND
	04/28/93	0.033	ND	ND	ND
	09/13/93	0.009	ND	ND	ND
	11/30/93	0.017	0.005	0.005	0.002
22	09/01/92	ND	ND	ND	ND
	04/28/93	ND	ND	ND	ND
	09/13/93	ND	ND	ND	ND
	11/30/93	ND	ND	ND	ND
25	11/29/93	2.373	0.011	0.133	0.345
EFFLUENT	04/28/93	ND	ND	ND	ND
	12/13/93	0.002	0.002	0.001	0.004
INFLUENT	04/28/93	ND	ND	ND	ND
	12/13/93	0.002	0.001	0.002	0.002
NMWQCC	12/24/87	0.010	0.750	0.750	0.620

ND - NON-DETECT

810\QMRTABL3

APPENDIX

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

CLIENT:	Thriftway	Sample Matrix:	WATER
CLIENT NUMBER:	810	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	11-29-93
PROJECT LOCATION:	Thriftway Refinery	Date Received:	11-29-93
SAMPLE ID:	MW # 2	Date Analyzed:	12-02-93
SAMPLE NUMBER:	0002	Date Reported:	12-07-93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	2115	2.0
TOLUENE	136	5.0
ETHLYBENZENE	395	2.0
M,P-XYLENE	551	4.0
O-XYLENE	32.5	3.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

PAGE 2 - QUALITY CONTROL

CLIENT:	Thriftway	Sample Matrix:	WATER
CLIENT NUMBER:	810	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	11-29-93
PROJECT LOCATION:	Thriftway Refinery	Date Received:	11-29-93
SAMPLE ID:	MW # 2	Date Analyzed:	12-02-93
SAMPLE NUMBER:	0002	Date Reported:	12-07-93

QUALITY CONTROL:

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
TRIFLUOROTOLUENE	90 %	80-120%
BROMOFLUOROBENZENE	98 %	80-120%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURGEABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS: Monitor Well No. 2, Thriftway Refinery, #810.

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

CLIENT:	Thriftway	Sample Matrix:	WATER
CLIENT NUMBER:	810	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	11-29-93
PROJECT LOCATION:	Thriftway Refinery	Date Received:	11-29-93
SAMPLE ID:	MW # 6	Date Analyzed:	12-02-93
SAMPLE NUMBER:	0003	Date Reported:	12-07-93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	8.2	0.2
TOLUENE	2.0	0.5
ETHLYBENZENE	2.2	0.2
M,P-XYLENE	1.9	0.4
O-XYLENE	ND	0.3

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

PAGE 2 - QUALITY CONTROL

CLIENT:	Thriftway	Sample Matrix:	WATER
CLIENT NUMBER:	810	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	11-29-93
PROJECT LOCATION:	Thriftway Refinery	Date Received:	11-29-93
SAMPLE ID:	MW # 6	Date Analyzed:	12-02-93
SAMPLE NUMBER:	0003	Date Reported:	12-07-93

QUALITY CONTROL:

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
TRIFLUOROTOLUENE	93 %	80-120%
BROMOFLUOROBENZENE	103 %	80-120%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURGEABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS: Monitor Well No. 6, Thriftway Refinery, #810.

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

CLIENT:	Thriftway	Sample Matrix:	WATER
CLIENT NUMBER:	810	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	11-29-93
PROJECT LOCATION:	Thriftway Refinery	Date Received:	11-29-93
SAMPLE ID:	MW # 7	Date Analyzed:	12-02-93
SAMPLE NUMBER:	0004	Date Reported:	12-07-93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	3541	1.0
TOLUENE	971	2.5
ETHLYBENZENE	419	1.0
M,P-XYLENE	1523	2.0
O-XYLENE	395	1.5

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

PAGE 2 - QUALITY CONTROL

CLIENT:	Thriftway	Sample Matrix:	WATER
CLIENT NUMBER:	810	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	11-29-93
PROJECT LOCATION:	Thriftway Refinery	Date Received:	11-29-93
SAMPLE ID:	MW # 7	Date Analyzed:	12-02-93
SAMPLE NUMBER:	0004	Date Reported:	12-07-93

QUALITY CONTROL:

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
TRIFLUOROTOLUENE	116 %	80-120%
BROMOFLUOROBENZENE	100 %	80-120%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURGEABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS: Monitor Well No. 7, Thriftway Refinery, #810.

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

CLIENT:	Thriftway	Sample Matrix:	WATER
CLIENT NUMBER:	810	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	11-29-93
PROJECT LOCATION:	Thriftway Refinery	Date Received:	11-29-93
SAMPLE ID:	MW # 8	Date Analyzed:	12-02-93
SAMPLE NUMBER:	0005	Date Reported:	12-07-93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	3.4	0.2
TOLUENE	ND	0.5
ETHLYBENZENE	0.4	0.2
M,P-XYLENE	1.0	0.4
O-XYLENE	ND	0.3

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

PAGE 2 - QUALITY CONTROL

CLIENT:	Thriftway	Sample Matrix:	WATER
CLIENT NUMBER:	810	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	11-29-93
PROJECT LOCATION:	Thriftway Refinery	Date Received:	11-29-93
SAMPLE ID:	MW # 8	Date Analyzed:	12-02-93
SAMPLE NUMBER:	0005	Date Reported:	12-07-93

QUALITY CONTROL:

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
TRIFLUOROTOLUENE	94 %	80-120%
BROMOFLUOROBENZENE	98 %	80-120%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURGEABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS: Monitor Well No. 8, Thriftway Refinery, #810.

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

CLIENT:	Thriftway	Sample Matrix:	WATER
CLIENT NUMBER:	810	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	11-29-93
PROJECT LOCATION:	Thriftway Refinery	Date Received:	11-29-93
SAMPLE ID:	MW # 9	Date Analyzed:	12-02-93
SAMPLE NUMBER:	0006	Date Reported:	12-07-93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	0.2
TOLUENE	ND	0.5
ETHLYBENZENE	ND	0.2
M,P-XYLENE	ND	0.4
O-XYLENE	ND	0.3

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

PAGE 2 - QUALITY CONTROL

CLIENT:	Thriftway	Sample Matrix:	WATER
CLIENT NUMBER:	810	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	11-29-93
PROJECT LOCATION:	Thriftway Refinery	Date Received:	11-29-93
SAMPLE ID:	MW # 9	Date Analyzed:	12-02-93
SAMPLE NUMBER:	0006	Date Reported:	12-07-93

QUALITY CONTROL:

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
TRIFLUOROTOLUENE	91 %	80-120%
BROMOFLUOROBENZENE	99 %	80-120%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURGEABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS: Monitor Well No. 9, Thriftway Refinery, #810.

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

CLIENT:	Thriftway	Sample Matrix:	WATER
CLIENT NUMBER:	810	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	11-29-93
PROJECT LOCATION:	Thriftway Refinery	Date Received:	11-29-93
SAMPLE ID:	MW # 10	Date Analyzed:	12-02-93
SAMPLE NUMBER:	0007	Date Reported:	12-07-93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	0.2
TOLUENE	ND	0.5
ETHLYBENZENE	ND	0.2
M,P-XYLENE	ND	0.4
O-XYLENE	ND	0.3

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

PAGE 2 - QUALITY CONTROL

CLIENT:	Thriftway	Sample Matrix:	WATER
CLIENT NUMBER:	810	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	11-29-93
PROJECT LOCATION:	Thriftway Refinery	Date Received:	11-29-93
SAMPLE ID:	MW # 10	Date Analyzed:	12-02-93
SAMPLE NUMBER:	0007	Date Reported:	12-07-93

QUALITY CONTROL:

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
TRIFLUOROTOLUENE	98 %	80-120%
BROMOFLUOROBENZENE	99 %	80-120%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURGEABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS: Monitor Well No. 10, Thriftway Refinery, #810.

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

CLIENT:	NA	Sample Matrix:	WATER
CLIENT NUMBER:	NA	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	NA
PROJECT LOCATION:	NA	Date Received:	NA
SAMPLE ID:	Laboratory Blank	Date Analayzed:	12-02-93
SAMPLE NUMBER:	1202am.00	Date Reported:	12-07-93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	0.2
TOLUENE	ND	0.5
ETHLYBENZENE	ND	0.2
M,P-XYLENE	ND	0.4
O-XYLENE	ND	0.3

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

PAGE 2 - QUALITY CONTROL

CLIENT:	NA	Sample Matrix:	WATER
CLIENT NUMBER:	NA	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	NA
PROJECT LOCATION:	NA	Date Received:	NA
SAMPLE ID:	Laboratory Blank	Date Analayzed:	12-02-93
SAMPLE NUMBER:	1202am.00	Date Reported:	12-07-93

QUALITY CONTROL:	SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
	TRIFLUOROTOLUENE	91 %	80-120%
	BROMOFLUOROBENZENE	99 %	80-120%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURGEABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

CLIENT:	Thriftway	Sample Matrix:	WATER
CLIENT NUMBER:	810	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	11-29-93
PROJECT LOCATION:	Thriftway Refinery	Date Received:	11-29-93
SAMPLE ID:	MW # 11	Date Analyzed:	12-03-93
SAMPLE NUMBER:	0008	Date Reported:	12-07-93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	0.3
TOLUENE	ND	0.6
ETHLYBENZENE	ND	0.3
M,P-XYLENE	ND	0.6
O-XYLENE	ND	0.3

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

PAGE 2 - QUALITY CONTROL

CLIENT:	Thriftway	Sample Matrix:	WATER
CLIENT NUMBER:	810	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	11-29-93
PROJECT LOCATION:	Thriftway Refinery	Date Received:	11-29-93
SAMPLE ID:	MW # 11	Date Analyzed:	12-03-93
SAMPLE NUMBER:	0008	Date Reported:	12-07-93

QUALITY CONTROL:

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
TRIFLUOROTOLUENE	99 %	80-120%
BROMOFLUOROBENZENE	98 %	80-120%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURGEABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS: Monitor Well No. 11, Thriftway Refinery, #810.

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

CLIENT:	Thriftway	Sample Matrix:	WATER
CLIENT NUMBER:	810	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	11-29-93
PROJECT LOCATION:	Thriftway Refinery	Date Received:	11-29-93
SAMPLE ID:	MW # 13	Date Analyzed:	12-03-93
SAMPLE NUMBER:	0009	Date Reported:	12-07-93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	0.3
TOLUENE	ND	0.6
ETHLYBENZENE	ND	0.3
M,P-XYLENE	ND	0.6
O-XYLENE	ND	0.3

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

PAGE 2 - QUALITY CONTROL

CLIENT:	Thriftway	Sample Matrix:	WATER
CLIENT NUMBER:	810	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	11-29-93
PROJECT LOCATION:	Thriftway Refinery	Date Received:	11-29-93
SAMPLE ID:	MW # 13	Date Analyzed:	12-03-93
SAMPLE NUMBER:	0009	Date Reported:	12-07-93

QUALITY CONTROL:	SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
	TRIFLUOROTOLUENE	95 %	80-120%
	BROMOFLUOROBENZENE	103 %	80-120%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURGEABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS: Monitor Well No. 13, Thriftway Refinery, #810.

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

CLIENT:	Thriftway	Sample Matrix:	WATER
CLIENT NUMBER:	810	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	11-29-93
PROJECT LOCATION:	Thriftway Refinery	Date Received:	11-29-93
SAMPLE ID:	MW # 15	Date Analyzed:	12-03-93
SAMPLE NUMBER:	0010	Date Reported:	12-07-93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	0.3
TOLUENE	ND	0.6
ETHLYBENZENE	ND	0.3
M,P-XYLENE	ND	0.6
O-XYLENE	ND	0.3

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

PAGE 2 - QUALITY CONTROL

CLIENT:	Thriftway	Sample Matrix:	WATER
CLIENT NUMBER:	810	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	11-29-93
PROJECT LOCATION:	Thriftway Refinery	Date Received:	11-29-93
SAMPLE ID:	MW # 15	Date Analyzed:	12-03-93
SAMPLE NUMBER:	0010	Date Reported:	12-07-93

QUALITY CONTROL:

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
TRIFLUOROTOLUENE	94 %	80-120%
BROMOFLUOROBENZENE	101 %	80-120%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURGEABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS: Monitor Well No. 15, Thriftway Refinery, #810.

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

CLIENT:	Thriftway	Sample Matrix:	WATER
CLIENT NUMBER:	810	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	11-29-93
PROJECT LOCATION:	Thriftway Refinery	Date Received:	11-29-93
SAMPLE ID:	MW # 16	Date Analyzed:	12-03-93
SAMPLE NUMBER:	0011	Date Reported:	12-07-93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	0.3
TOLUENE	ND	0.6
ETHLYBENZENE	2.4	0.3
M,P-XYLENE	0.6	0.6
O-XYLENE	ND	0.3

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

PAGE 2 - QUALITY CONTROL

CLIENT:	Thriftway	Sample Matrix:	WATER
CLIENT NUMBER:	810	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	11-29-93
PROJECT LOCATION:	Thriftway Refinery	Date Received:	11-29-93
SAMPLE ID:	MW # 16	Date Analyzed:	12-03-93
SAMPLE NUMBER:	0011	Date Reported:	12-07-93

QUALITY CONTROL:	SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
	TRIFLUOROTOLUENE	94 %	80-120%
	BROMOFLUOROBENZENE	103 %	80-120%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURGEABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS: Monitor Well No. 16, Thriftway Refinery, #810.

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

CLIENT:	Thriftway	Sample Matrix:	WATER
CLIENT NUMBER:	810	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	11-29-93
PROJECT LOCATION:	Thriftway Refinery	Date Received:	11-29-93
SAMPLE ID:	MW # 17	Date Analyzed:	12-03-93
SAMPLE NUMBER:	0012	Date Reported:	12-07-93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	21272	15.0
TOLUENE	5285	30.0
ETHLYBENZENE	1063	15.0
M,P-XYLENE	6548	30.0
O-XYLENE	1809	15.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

PAGE 2 - QUALITY CONTROL

CLIENT:	Thriftway	Sample Matrix:	WATER
CLIENT NUMBER:	810	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	11-29-93
PROJECT LOCATION:	Thriftway Refinery	Date Received:	11-29-93
SAMPLE ID:	MW # 17	Date Analyzed:	12-03-93
SAMPLE NUMBER:	0012	Date Reported:	12-07-93

QUALITY CONTROL:	SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
	TRIFLUOROTOLUENE	100 %	80-120%
	BROMOFLUOROBENZENE	102 %	80-120%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURGEABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS: Monitor Well No. 17, Thriftway Refinery, #810.

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

CLIENT:	Thriftway	Sample Matrix:	WATER
CLIENT NUMBER:	810	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	11-29-93
PROJECT LOCATION:	Thriftway Refinery	Date Received:	11-29-93
SAMPLE ID:	MW # 25	Date Analyzed:	12-03-93
SAMPLE NUMBER:	0013	Date Reported:	12-07-93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	2373	1.5
TOLUENE	11.2	3.0
ETHLYBENZENE	133	1.5
M,P-XYLENE	329	3.0
O-XYLENE	16.4	1.5

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

PAGE 2 - QUALITY CONTROL

CLIENT:	Thriftway	Sample Matrix:	WATER
CLIENT NUMBER:	810	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	11-29-93
PROJECT LOCATION:	Thriftway Refinery	Date Received:	11-29-93
SAMPLE ID:	MW # 25	Date Analyzed:	12-03-93
SAMPLE NUMBER:	0013	Date Reported:	12-07-93

QUALITY CONTROL:	SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
	TRIFLUOROTOLUENE	97 %	80-120%
	BROMOFLUOROBENZENE	100 %	80-120%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURGEABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS: Monitor Well No. 25, Thriftway Refinery, #810.

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

CLIENT:	NA	Sample Matrix:	WATER
CLIENT NUMBER:	NA	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	NA
PROJECT LOCATION:	NA	Date Received:	NA
SAMPLE ID:	Laboratory Blank	Date Analayzed:	12-03-93
SAMPLE NUMBER:	1203am.00	Date Reported:	12-07-93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	0.3
TOLUENE	ND	0.6
ETHLYBENZENE	ND	0.3
M,P-XYLENE	ND	0.6
O-XYLENE	ND	0.3

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

PAGE 2 - QUALITY CONTROL

CLIENT:	NA	Sample Matrix:	WATER
CLIENT NUMBER:	NA	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	NA
PROJECT LOCATION:	NA	Date Received:	NA
SAMPLE ID:	Laboratory Blank	Date Analayzed:	12-03-93
SAMPLE NUMBER:	1203am.00	Date Reported:	12-07-93

QUALITY CONTROL:

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
TRIFLUOROTOLUENE	85 %	80-120%
BROMOFLUOROBENZENE	93 %	80-120%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURGEABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

QULITY CONTROL
MATRIX SPIKE RECOVERY
EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

CLIENT NUMBER:	810	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	11-30-93
PROJECT LOCATION:	Thriftway Refinery	Date Received:	11-30-93
SAMPLE ID:	MW # 3	Date Analyzed:	12-03-93
SAMPLE NUMBER:	0014	Date Reported:	12-07-93

Concentration of Spike Added (ug/L) = 20.0

Analyte	Sample Result (ug/L)	Spiked Result (ug/L)	Detection Limit (ug/L)	Percent Recovery (%)
Benzene	ND	19.0	0.3	94
Toluene	ND	19.5	0.6	96
Ethylbenzene	1.1	19.2	0.3	91
p,m-Xylene	0.7	20.3	0.6	98
o-Xylene	ND	19.7	0.3	98

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURGEABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

Comments:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BioTech REMEDIATION
WATER QUALITY LABORATORIES
710 E. 20th Street, Suite 400
Farmington, New Mexico 87401
Office: (505) 632-3365
Fax: (505) 632-0030

11028

CHAIN OF CUSTODY RECORD

Client/Project Name			Project Location		ANALYSIS/PARAMETERS							
THRIFTWAY 810			REFINERY									
Sampler: (Signature)			Tape No.		No. Cont.	BTEX						Remarks
AL CHAHARLANG / RULEN HATCH												
Sample No./ID	Date	Time	Lab No.	Matrix								
MW # 2	11/29/93	1540	0002	WATER	2	✓						
MW # 6	"	1625	0003	"	2	✓						
MW # 7	"	1615	0004	"	2	✓						
MW # 8	"	1510	0005	"	2	✓						
MW # 9	"	1520	0006	"	2	✓						
MW # 10	"	1440	0007	"	2	✓						
MW # 11	"	1435	0008	"	2	✓						
MW # 13	"	1130	0009	"	2	✓						
MW # 15	"	1425	0010	"	2	✓						
MW # 16	"	1410	0011	"	2	✓						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Al Chaharlang	11-29-93	1630	Al Chaharlang	11-29-93	1630
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

BioTech REMEDIATION
WATER QUALITY LABORATORIES
710 E. 20th Street, Suite 400
Farmington, New Mexico 87401
Office: (505) 632-3365
Fax: (505) 632-0030

11028

CHAIN OF CUSTODY RECORD

Client/Project Name			Project Location		ANALYSIS/PARAMETERS							
THRIFTWAY 810			REFINERY									
Sampler: (Signature)			Tape No.		No. Cont.	BTEX						Remarks
AL CHAHARLANG / RULEN HATCH												
Sample No./ID	Date	Time	Lab No.	Matrix								
MW #2	11/29/93	1540	0002	WATER	2	✓						
MW #6	"	1625	0003	"	2	✓						
MW #7	"	1615	0004	"	2	✓						
MW #8	"	1510	0005	"	2	✓						
MW #9	"	1520	0006	"	2	✓						
MW #10	"	1440	0007	"	2	✓						
MW #11	"	1435	0008	"	2	✓						
MW #13	"	1130	0009	"	2	✓						
MW #15	"	1425	0010	"	2	✓						
MW #16	"	1410	0011	"	2	✓						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Al Chaharlang	11-29-93	1630	Al Chaharlang	11-29-93	1630
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

BioTech REMEDIATION
WATER QUALITY LABORATORIES
710 E. 20th Street, Suite 400
Farmington, New Mexico 87401
Office: (505) 632-3365
Fax: (505) 632-0030

11027

CHAIN OF CUSTODY RECORD

Client/Project Name			Project Location		ANALYSIS/PARAMETERS							
THRIFTWAY 810			REFINARY									
Sampler: (Signature) AL CHAHARLANG / RULEN HATCH			Tape No.		No. Cont.	BTEX						Remarks
Sample No./ID	Date	Time	Lab No.	Matrix								
MW #17	11/29/93	1555	0012	WATER	2	✓						
MW #25	"	1345	0013	"	2	✓						
Relinquished by: (Signature) Al Chaharlang			Date 11-29-93	Time 1630	Received by: (Signature) Al Chaharlang						Date 11-29-93	Time 1630
~~Relinquished by: (Signature)~~					Received by: (Signature)							
Relinquished by: (Signature)					Received by: (Signature)							

san juan repro Form 578-97

BioTech REMEDIATION
WATER QUALITY LABORATORIES
710 E. 20th Street, Suite 400
Farmington, New Mexico 87401
Office: (505) 632-3365
Fax: (505) 632-0030

11027

CHAIN OF CUSTODY RECORD

Client/Project Name			Project Location		ANALYSIS/PARAMETERS							
THRIFTWAY 810			REFINARY									
Sampler: (Signature) AL CHAHARLANG / RULON HATCH			Tape No.		No. Cont.	BTEX						Remarks
Sample No./ID	Date	Time	Lab No.	Matrix								
MW #17	11/29/93	1555	0012	WATER	2	✓						
MW #25	"	1345	0013	"	2	✓						
Relinquished by: (Signature) Al Chaharlang			Date 11-29-93	Time 1630	Received by: (Signature) Al Chaharlang						Date 11-29-93	Time 1630
Relinquished by: (Signature)					Received by: (Signature)							
Relinquished by: (Signature)					Received by: (Signature)							

san juan repro Form 578-97

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

CLIENT:	Thriftway	Sample Matrix:	WATER
CLIENT NUMBER:	810	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	11-30-93
PROJECT LOCATION:	Thriftway Refinery	Date Received:	11-30-93
SAMPLE ID:	MW # 3	Date Analyzed:	12-03-93
SAMPLE NUMBER:	0014	Date Reported:	12-07-93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	0.3
TOLUENE	ND	0.6
ETHLYBENZENE	1.1	0.3
M,P-XYLENE	0.7	0.6
O-XYLENE	ND	0.3

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

PAGE 2 - QUALITY CONTROL

CLIENT:	Thriftway	Sample Matrix:	WATER
CLIENT NUMBER:	810	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	11-30-93
PROJECT LOCATION:	Thriftway Refinery	Date Received:	11-30-93
SAMPLE ID:	MW # 3	Date Analyzed:	12-03-93
SAMPLE NUMBER:	0014	Date Reported:	12-07-93

QUALITY CONTROL:

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
TRIFLUOROTOLUENE	94 %	80-120%
BROMOFLUOROBENZENE	95 %	80-120%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURGEABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS: Monitor Well No. 3, Thriftway Refinery, #810.

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

CLIENT:	Thriftway	Sample Matrix:	WATER
CLIENT NUMBER:	810	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	11-30-93
PROJECT LOCATION:	Thriftway Refinery	Date Received:	11-30-93
SAMPLE ID:	MW # 4	Date Analyzed:	12-03-93
SAMPLE NUMBER:	0015	Date Reported:	12-07-93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	100	0.3
TOLUENE	5.3	0.6
ETHLYBENZENE	1.3	0.3
M,P-XYLENE	0.6	0.6
O-XYLENE	2.9	0.3

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

PAGE 2 - QUALITY CONTROL

CLIENT:	Thriftway	Sample Matrix:	WATER
CLIENT NUMBER:	810	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	11-30-93
PROJECT LOCATION:	Thriftway Refinery	Date Received:	11-30-93
SAMPLE ID:	MW # 4	Date Analyzed:	12-03-93
SAMPLE NUMBER:	0015	Date Reported:	12-07-93

QUALITY CONTROL:

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
TRIFLUOROTOLUENE	98 %	80-120%
BROMOFLUOROBENZENE	105 %	80-120%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURGEABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS: Monitor Well No. 4, Thriftway Refinery, #810.

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

CLIENT:	Thriftway	Sample Matrix:	WATER
CLIENT NUMBER:	810	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	11-30-93
PROJECT LOCATION:	Thriftway Refinery	Date Received:	11-30-93
SAMPLE ID:	MW # 5	Date Analyzed:	12-03-93
SAMPLE NUMBER:	0016	Date Reported:	12-07-93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	1.1	0.3
TOLUENE	ND	0.6
ETHLYBENZENE	ND	0.3
M,P-XYLENE	ND	0.6
O-XYLENE	ND	0.3

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

PAGE 2 - QUALITY CONTROL

CLIENT:	Thriftway	Sample Matrix:	WATER
CLIENT NUMBER:	810	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	11-30-93
PROJECT LOCATION:	Thriftway Refinery	Date Received:	11-30-93
SAMPLE ID:	MW # 5	Date Analyzed:	12-03-93
SAMPLE NUMBER:	0016	Date Reported:	12-07-93

QUALITY CONTROL:	SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
	TRIFLUOROTOLUENE	91 %	80-120%
	BROMOFLUOROBENZENE	99 %	80-120%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURGEABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS: Monitor Well No. 5, Thriftway Refinery, #810.

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

CLIENT:	Thriftway	**Sample Matrix:**	WATER
CLIENT NUMBER:	810	**Preservative:**	HgCl2
PHASE/TASK:	NA	**Date Sampled:**	11-30-93
PROJECT LOCATION:	Thriftway Refinery	**Date Received:**	11-30-93
SAMPLE ID:	MW # 18	**Date Analyzed:**	12-06-93
SAMPLE NUMBER:	0017	**Date Reported:**	12-08-93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	140	1.5
TOLUENE	8.8	8.0
ETHLYBENZENE	15.3	2.5
M,P-XYLENE	133	8.0
O-XYLENE	ND	3.5

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS
PAGE 2 - QUALITY CONTROL

CLIENT:	Thriftway	**Sample Matrix:**	WATER
CLIENT NUMBER:	810	**Preservative:**	HgCl2
PHASE/TASK:	NA	**Date Sampled:**	11-30-93
PROJECT LOCATION:	Thriftway Refinery	**Date Received:**	11-30-93
SAMPLE ID:	MW # 18	**Date Analyzed:**	12-06-93
SAMPLE NUMBER:	0017	**Date Reported:**	12-08-93

QUALITY CONTROL:

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
TRIFLUOROTOLUENE	94 %	80-120%
BROMOFLUOROBENZENE	99 %	80-120%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURGEABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS: Monitor Well No. 18, Thriftway Refinary, #810.

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

CLIENT:	Thriftway	**Sample Matrix:**	WATER
CLIENT NUMBER:	810	**Preservative:**	HgCl2
PHASE/TASK:	NA	**Date Sampled:**	11-30-93
PROJECT LOCATION:	Thriftway Refinery	**Date Received:**	11-30-93
SAMPLE ID:	MW # 19	**Date Analyzed:**	12-06-93
SAMPLE NUMBER:	0018	**Date Reported:**	12-08-93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	24.5	1.5
TOLUENE	11.8	8.0
ETHLYBENZENE	258	2.5
M,P-XYLENE	644	8.0
O-XYLENE	14.2	3.5

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS
PAGE 2 - QUALITY CONTROL

CLIENT:	Thriftway	**Sample Matrix:**	WATER
CLIENT NUMBER:	810	**Preservative:**	HgCl2
PHASE/TASK:	NA	**Date Sampled:**	11-30-93
PROJECT LOCATION:	Thriftway Refinery	**Date Received:**	11-30-93
SAMPLE ID:	MW # 19	**Date Analyzed:**	12-06-93
SAMPLE NUMBER:	0018	**Date Reported:**	12-08-93

QUALITY CONTROL:

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
TRIFLUOROTOLUENE	97 %	80-120%
BROMOFLUOROBENZENE	102 %	80-120%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURGEABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS: Monitor Well No. 19, Thriftway Refinary, #810.

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

CLIENT:	Thriftway	**Sample Matrix:**	WATER
CLIENT NUMBER:	810	**Preservative:**	HgCl2
PHASE/TASK:	NA	**Date Sampled:**	11-30-93
PROJECT LOCATION:	Thriftway Refinery	**Date Received:**	11-30-93
SAMPLE ID:	MW # 20	**Date Analyzed:**	12-06-93
SAMPLE NUMBER:	0019	**Date Reported:**	12-08-93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	27.7	1.5
TOLUENE	16.5	8.0
ETHLYBENZENE	130	2.5
M,P-XYLENE	551	8.0
O-XYLENE	5.1	3.5

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

PAGE 2 - QUALITY CONTROL

CLIENT:	Thriftway	**Sample Matrix:**	WATER
CLIENT NUMBER:	810	**Preservative:**	HgCl2
PHASE/TASK:	NA	**Date Sampled:**	11-30-93
PROJECT LOCATION:	Thriftway Refinery	**Date Received:**	11-30-93
SAMPLE ID:	MW # 20	**Date Analyzed:**	12-06-93
SAMPLE NUMBER:	0019	**Date Reported:**	12-08-93

QUALITY CONTROL:	SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
	TRIFLUOROTOLUENE	103 %	80-120%
	BROMOFLUOROBENZENE	105 %	80-120%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURGEABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS: Monitor Well No. 20, Thriftway Refinary, #810.

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

CLIENT:	Thriftway	**Sample Matrix:**	WATER
CLIENT NUMBER:	810	**Preservative:**	HgCl2
PHASE/TASK:	NA	**Date Sampled:**	11-30-93
PROJECT LOCATION:	Thriftway Refinery	**Date Received:**	11-30-93
SAMPLE ID:	MW # 21	**Date Analyzed:**	12-06-93
SAMPLE NUMBER:	0020	**Date Reported:**	12-08-93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	17.1	0.3
TOLUENE	4.6	1.6
ETHLYBENZENE	5.0	0.5
M,P-XYLENE	2.3	1.6
O-XYLENE	ND	0.7

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS
PAGE 2 - QUALITY CONTROL

CLIENT:	Thriftway	**Sample Matrix:**	WATER
CLIENT NUMBER:	810	**Preservative:**	HgCl2
PHASE/TASK:	NA	**Date Sampled:**	11-30-93
PROJECT LOCATION:	Thriftway Refinery	**Date Received:**	11-30-93
SAMPLE ID:	MW # 21	**Date Analyzed:**	12-06-93
SAMPLE NUMBER:	0020	**Date Reported:**	12-08-93

QUALITY CONTROL:	SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
	TRIFLUOROTOLUENE	96 %	80-120%
	BROMOFLUOROBENZENE	96 %	80-120%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURGEABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS: Monitor Well No. 21, Thriftway Refinary, #810.

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

CLIENT:	Thriftway	**Sample Matrix:**	WATER
CLIENT NUMBER:	810	**Preservative:**	HgCl2
PHASE/TASK:	NA	**Date Sampled:**	11-30-93
PROJECT LOCATION:	Thriftway Refinery	**Date Received:**	11-30-93
SAMPLE ID:	MW # 22	**Date Analyzed:**	12-06-93
SAMPLE NUMBER:	0021	**Date Reported:**	12-08-93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	0.3
TOLUENE	ND	1.6
ETHLYBENZENE	ND	0.5
M,P-XYLENE	ND	1.6
O-XYLENE	ND	0.7

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

PAGE 2 - QUALITY CONTROL

CLIENT:	Thriftway	**Sample Matrix:**	WATER
CLIENT NUMBER:	810	**Preservative:**	HgCl2
PHASE/TASK:	NA	**Date Sampled:**	11-30-93
PROJECT LOCATION:	Thriftway Refinery	**Date Received:**	11-30-93
SAMPLE ID:	MW # 22	**Date Analyzed:**	12-06-93
SAMPLE NUMBER:	0021	**Date Reported:**	12-08-93

QUALITY CONTROL:	SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
	TRIFLUOROTOLUENE	91 %	80-120%
	BROMOFLUOROBENZENE	91 %	80-120%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURGEABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS: Monitor Well No. 22, Thriftway Refinary, #810.

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

CLIENT:	NA	**Sample Matrix:**	WATER
CLIENT NUMBER:	NA	**Preservative:**	HgCl2
PHASE/TASK:	NA	**Date Sampled:**	NA
PROJECT LOCATION:	NA	**Date Received:**	NA
SAMPLE ID:	Laboratory Blank	**Date Analayzed:**	12-06-93
SAMPLE NUMBER:	1206am.00	**Date Reported:**	12-08-93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	0.3
TOLUENE	ND	1.4
ETHLYBENZENE	ND	0.4
M,P-XYLENE	ND	1.3
O-XYLENE	ND	0.6

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

PAGE 2 - QUALITY CONTROL

CLIENT:	NA	**Sample Matrix:**	WATER
CLIENT NUMBER:	NA	**Preservative:**	HgCl2
PHASE/TASK:	NA	**Date Sampled:**	NA
PROJECT LOCATION:	NA	**Date Received:**	NA
SAMPLE ID:	Laboratory Blank	**Date Analayzed:**	12-06-93
SAMPLE NUMBER:	1206am.00	**Date Reported:**	12-08-93

QUALITY CONTROL:

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
TRIFLUOROTOLUENE	100 %	80-120%
BROMOFLUOROBENZENE	104 %	80-120%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURGEABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

QULITY CONTROL
MATRIX SPIKE RECOVERY
EPA METHOD 8020
AROMATIC VOLATILE ORGANICS

CLIENT NUMBER:	810	Preservative:	HgCl2
PHASE/TASK:	NA	Date Sampled:	11-30-93
PROJECT LOCATION:	Thriftway Refinery	Date Received:	11-30-93
SAMPLE ID:	MW # 3	Date Analyzed:	12-03-93
SAMPLE NUMBER:	0014	Date Reported:	12-07-93

Concentration of Spike Added (ug/L) = 20.0

Analyte	Sample Result (ug/L)	Spiked Result (ug/L)	Detection Limit (ug/L)	Percent Recovery (%)
Benzene	ND	19.0	0.3	94
Toluene	ND	19.5	0.6	96
Ethylbenzene	1.1	19.2	0.3	91
p,m-Xylene	0.7	20.3	0.6	98
o-Xylene	ND	19.7	0.3	98

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURGEABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

Comments:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BioTech REMEDIATION
WATER QUALITY LABORATORIES
710 E. 20th Street, Suite 400
Farmington, New Mexico 87401
Office: (505) 632-3365
Fax: (505) 632-0030

11029

CHAIN OF CUSTODY RECORD

Client/Project Name			Project Location		ANALYSIS/PARAMETERS							
THRIFTWAY 810			REFINARY									
Sampler: (Signature)			Tape No.		No. Cont.	BTEX						Remarks
AL CHAHARLANG / EUGENE THAMOS												
Sample No./ID	Date	Time	Lab No.	Matrix								
MW #3	11/30/93	1015	0014	WATER	2	✓						
MW #4	"	1000	0015	"	2	✓						
MW #5	"	0940	0016	"	2	✓						
MW #18	"	1028	0017	"	2	✓						
MW #19	"	0928	0018	"	2	✓						
MW #20	"	0830	0019	"	2	✓						
MW #21	"	0855	0020	"	2	✓						
MW #22	"	0840	0021	"	2	✓						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
A. Chaharlang	11-30-93	1110	A. Chaharlang	11-30-93	1110
~~Relinquished by: (Signature)~~			~~Received by: (Signature)~~		
Relinquished by: (Signature)			Received by: (Signature)		

BioTech REMEDIATION
WATER QUALITY LABORATORIES
710 E. 20th Street, Suite 400
Farmington, New Mexico 87401
Office: (505) 632-3365
Fax: (505) 632-0030

11029

CHAIN OF CUSTODY RECORD

Client/Project Name			Project Location		ANALYSIS/PARAMETERS							
THRIFTWAY 810			REFINART									
Sampler: (Signature)			Tape No.		No. Cont.	BTEX						Remarks
AL CHAHARLANG / EUGENE THAMOS												
Sample No./ID	Date	Time	Lab No.	Matrix								
MW #3	11/30/93	1015	0014	WATER	2	✓						
MW #4	"	1000	0015	"	2	✓						
MW #5	"	0940	0016	"	2	✓						
MW #18	"	1028	0017	"	2	✓						
MW #19	"	0928	0018	"	2	✓						
MW #20	"	0830	0019	"	2	✓						
MW #21	"	0855	0020	"	2	✓						
MW #22	"	0840	0021	"	2	✓						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Al Chaharlang	11-30-93	1110	Al Chaharlang	11-30-93	1110
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

san juan repro Form 578-97

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

CLIENT:	Thriftway	**Sample Matrix:**	WATER
CLIENT NUMBER:	810	**Preservative:**	HgCl2
PHASE/TASK:	NA	**Date Sampled:**	12-13-93
PROJECT LOCATION:	Thriftway Refinery	**Date Received:**	12-13-93
SAMPLE ID:	Effluent	**Date Analyzed:**	12-13-93
SAMPLE NUMBER:	0031	**Date Reported:**	12-20-93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	2.1	0.2
TOLUENE	1.6	0.4
ETHLYBENZENE	1.3	0.2
M,P-XYLENE	2.9	0.3
O-XYLENE	0.9	0.2

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS
PAGE 2 - QUALITY CONTROL

CLIENT:	Thriftway	**Sample Matrix:**	WATER
CLIENT NUMBER:	810	**Preservative:**	HgCl2
PHASE/TASK:	NA	**Date Sampled:**	12-13-93
PROJECT LOCATION:	Thriftway Refinery	**Date Received:**	12-13-93
SAMPLE ID:	Effluent	**Date Analyzed:**	12-13-93
SAMPLE NUMBER:	0031	**Date Reported:**	12-20-93

QUALITY CONTROL:

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
TRIFLUOROTOLUENE	99 %	80-120%
BROMOFLUOROBENZENE	98 %	80-120%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURGEABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS: Efflunet from stripper system, Thriftway Refinary, #810.

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

CLIENT:	Thriftway	**Sample Matrix:**	WATER
CLIENT NUMBER:	810	**Preservative:**	HgCl2
PHASE/TASK:	NA	**Date Sampled:**	12-13-93
PROJECT LOCATION:	Thriftway Refinery	**Date Received:**	12-13-93
SAMPLE ID:	Influent	**Date Analyzed:**	12-13-93
SAMPLE NUMBER:	0032	**Date Reported:**	12-20-93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	1.5	0.2
TOLUENE	0.9	0.4
ETHLYBENZENE	1.7	0.2
M,P-XYLENE	1.9	0.3
O-XYLENE	0.4	0.2

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS
PAGE 2 - QUALITY CONTROL

CLIENT:	Thriftway	**Sample Matrix:**	WATER
CLIENT NUMBER:	810	**Preservative:**	HgCl2
PHASE/TASK:	NA	**Date Sampled:**	12-13-93
PROJECT LOCATION:	Thriftway Refinery	**Date Received:**	12-13-93
SAMPLE ID:	Influent	**Date Analyzed:**	12-13-93
SAMPLE NUMBER:	0032	**Date Reported:**	12-20-93

QUALITY CONTROL:	SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
	TRIFLUOROTOLUENE	96 %	80-120%
	BROMOFLUOROBENZENE	102 %	80-120%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURGEABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS: Influnet from stripper system, Thriftway Refinary, #810.

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

CLIENT:	NA	**Sample Matrix:**	WATER
CLIENT NUMBER:	NA	**Preservative:**	HgCl2
PHASE/TASK:	NA	**Date Sampled:**	NA
PROJECT LOCATION:	NA	**Date Received:**	NA
SAMPLE ID:	Laboratory Blank	**Date Analayzed:**	12-13-93
SAMPLE NUMBER:	1213am.00	**Date Reported:**	12-20-93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	0.2
TOLUENE	ND	0.4
ETHLYBENZENE	ND	0.2
M,P-XYLENE	ND	0.3
O-XYLENE	ND	0.2

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGEABLE AROMATICS

PAGE 2 - QUALITY CONTROL

CLIENT:	NA	**Sample Matrix:**	WATER
CLIENT NUMBER:	NA	**Preservative:**	HgCl2
PHASE/TASK:	NA	**Date Sampled:**	NA
PROJECT LOCATION:	NA	**Date Received:**	NA
SAMPLE ID:	Laboratory Blank	**Date Analayzed:**	12-13-93
SAMPLE NUMBER:	1213am.00	**Date Reported:**	12-20-93

QUALITY CONTROL:

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
TRIFLUOROTOLUENE	106 %	80-120%
BROMOFLUOROBENZENE	96 %	80-120%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURGEABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BioTech REMEDIATION
WATER QUALITY LABORATORIES
710 E. 20th Street, Suite 400
Farmington, New Mexico 87401
Office: (505) 632-3365
Fax: (505) 632-0030

11033

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location	ANALYSIS/PARAMETERS
Thrifty 810	Refinery, Bloomfield, NM	

Sampler: (Signature)	Tape No.	No. Cont.	BTEX						Remarks
AL CHAHARLANG									

Sample No./ID	Date	Time	Lab No.	Matrix								
EFFLUENT	12-13-93	1310	0031	WATER	2	✓						
INFLUENT	"	1320	0032	"	2	✓						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Al Chaharlang	12-13-93	1330	Al Chaharlang	12-13-93	1330
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

BioTech REMEDIATION
WATER QUALITY LABORATORIES
710 E. 20th Street, Suite 400
Farmington, New Mexico 87401
Office: (505) 632-3365
Fax: (505) 632-0030

11033

CHAIN OF CUSTODY RECORD

Client/Project Name			Project Location		ANALYSIS/PARAMETERS							
Thrifty 810			Refinery, Bloomfield, NM									
Sampler: (Signature)			Tape No.		No. Cont.	BTEX						Remarks
AL CHAHARLANG												
Sample No./ID	Date	Time	Lab No.	Matrix								
EFFLUENT	12-13-93	1310	0031	WATER	2	✓						
INFLUENT	"	1320	0032	"	2	✓						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Al Chaharlang	12-13-93	1330	Al Chaharlang	12-13-93	1330
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

BioTech Remediation Inc.

QUARTERLY MONITORING REPORT
THRIFTWAY REFINERY
626 COUNTY ROAD 5500
BLOOMFIELD, NEW MEXICO, 87410

PREPARED FOR THE
NEW MEXICO OIL CONSERVATION DIVISION
MR. WILL OLSEN, PROJECT MANAGER

SEPTEMBER 20, 1993

Thriftway Professional Building ▲ 710 East 20th Street ▲ Suite 400 ▲ Farmington, New Mexico 87401
Corporate Office (505) 326-5571 ▲ Field Office (505) 632-3365 ▲ Fax (505) 632-3365

QUARTERLY MONITORING REPORT
THRIFTWAY REFINERY
626 COUNTY ROAD 5500
BLOOMFIELD, NEW MEXICO, 87410

PREPARED FOR THE
NEW MEXICO OIL CONSERVATION DIVISION
MR. WILL OLSEN PROJECT MANAGER

SEPTEMBER 20, 1993

BY

BIOTECH REMEDIATION INC.
710 EAST 20TH ST., SUITE 400
FARMINGTON, NEW MEXICO, 87401

PREPARED BY

CHRIS HOLLANDSWORTH
ENVIRONMENTAL SCIENTIST

REVIEWED BY

KEN SINKS, Chem E. P.E.
SENIOR SCIENTIST/ENGINEER

810\QMR009203

TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

1.0 INTRODUCTION

The purpose of this report is to update the data base for Thriftway Refinery, through September 1993. BioTech Remediation, Inc., submits this monitoring and well update on behalf of Thriftway Marketing Corp., pursuant to the requirements of the New Mexico Oil Conservation Division. This report discusses the work performed at the site during May, June, July and August 1993, and is compiled in compliance with the terms of the Thriftway Refinery Ground Water Discharge Plan GW-55.

2.0 QUARTERLY SUMMARY OF SITE ACTIVITIES

Site monitoring was performed on September 13th and 14th, 1993. During this quarterly site visit the following activities were performed:

- Water level gauging
- Sample of monitoring wells
- Free product measurements

The descaling and defouling program for the air stripper system, instituted by Thriftway, has been on-going. The system was acidized four (4) times in the past four (4) months. After each acidation the operation of the system was restored to an acceptable level. The injection pump has continued to operate with minimal interruption during the past four (4) months.

3.0 SUMMARY OF GROUND WATER ELEVATION DATA

Table 1 (attached) summarizes all ground water elevation data, to date, for the refinery. The most recent comprehensive ground water elevation data, collected September 13th and 14th, 1993, is presented in the Ground Water Elevation Map on the attached **Figure 1.** The field data was gathered using an ORS air/water interface probe with a 100' tape.

4.0 SUMMARY OF PHASE SEPARATED PRODUCT CONDITIONS

Free product was found in monitoring wells MW-1, 12 and 14. The amounts of free product taken from the monitoring wells are shown in **Table 2.** The current phase separated product plume is indicated in **Figure 2.**

The phase separated product was measured in a transparent bailer and the amount of free product recorded in feet (see **Table 2**). The product and water was disposed of in the refinery oily sewer system. The free phase hydrocarbon is separated from the contaminated water in the waste water holding tank. The free hydrocarbon is pumped off and stored, for later processing, and the contaminated water is stripped of dissolved hydrocarbon in the waste water air stripper tank and then evaporated in the refinery waste water system.

5.0 SUMMARY OF GROUND WATER CHEMISTRY DATA

Table 3 summarizes all ground water quality data collected to date for the refinery. **Appendix A** contains the laboratory reports for the current survey. Ground water samples for analysis were collected September 13th and 14th, 1993, from all monitoring wells not containing free hydrocarbon.

Ground water from each of the above wells was analyzed for Benzene, Toluene, Ethylbenzene and total Xylenes (BTEX). The extent of the dissolved phase ground water plume at this site (based upon the regulated benzene standard of 0.01 mg/l) is shown in **Figure 3.**

The samples were gathered using disposable bailers. New cord was used on each bailer to further insure no cross contamination of wells occurred. Three (3) well volumes were removed whenever possible. If the well recharged slowly, then the water from the last bail was used for analysis. The samples were placed in 40 ml vials previously prepared at the lab with two (2) or three (3) drops of $HgCl_2$ solution. The samples were all marked with their respective location, date, time of sampling and by whom sampled. The samples were then transported on ice to the BioTech Water Quality Laboratory. A chain of custody record accompanied the samples and is included with the laboratory analysis reports.

6.0 DISCUSSION / RECOMMENDATIONS

The ground water recovery system does not appear to be maintaining hydraulic capture of the dissolved phase and phase separated product plumes. This conclusion is based on the calculated ground water contour map (no depression of the ground water table), **Figure 1.** However, the plume does not appear to be growing. This may be due to the intercept/recovery system that is operating. Thriftway Marketing will continue quarterly sampling and monitoring of the site as well as routine maintenance of the system.

During the past quarter there was a gasoline spill at the refinery. A report was filed with the OCD on the spill, however, because of the level of contamination, the project was given to Mr. Ed Horst's group at the Hazardous Waste Management section. Since that initial reporting Mr. John M. Tymkowych, Hazardous Waste Inspector, has visited the site and taken pictures. During the visit, Mr. Tymkowych, stated that we would be receiving a packet of material to fill out and file. To date we have not received this information.

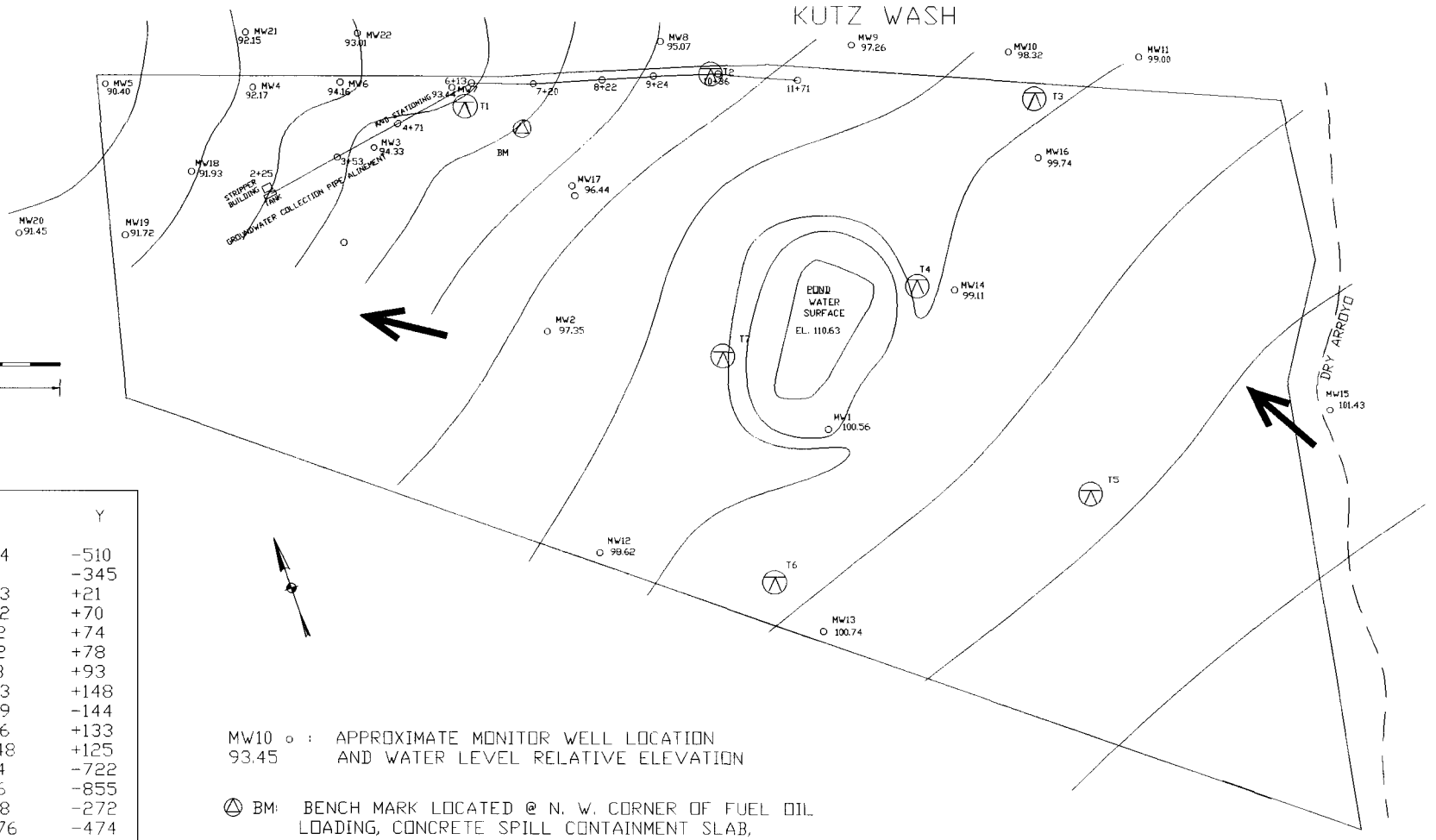
A review of the benzene contour map (See figure 3) shows no appreciable increase in the plume size, however, there does seem to be a increase in the benzene content in MW-4, MW-6 and MW-18 over the past 18 months. This increase is believed to be a side affect from the collection trench. The water contour map (See figure 1) seems to indicate water movement on site in the area of the collection trench. This could explain the increase in hydrocarbon

in the monitor wells.

The free product level in MW-12 was a surprise. Two (2) feet of free product was found after almost a year where only a trace had been found. BioTech will continue to monitor the activity in this well while it tracks information on the June 1993 gasoline spill from tank 23.

This report of the operation and maintenance of the site remediation system at the Thriftway Refinery is provided to comply with the Oil Conservation Division requirements and the Site Ground Water Discharge Plan GW-55.

FIGURES



MW	X	Y
1	+524	-510
2	+44	-345
3	-253	+21
4	-462	+70
5	-712	+74
6	-312	+78
7	-103	+93
8	+233	+148
9	+559	-144
10	+826	+133
11	+1048	+125
12	+134	-722
13	+516	-855
14	+738	-272
15	+1376	-474
16	+879	-46
17	+63	-112
18	-564	-74
19	-675	-182

MW10 o : APPROXIMATE MONITOR WELL LOCATION
93.45 AND WATER LEVEL RELATIVE ELEVATION

BM: BENCH MARK LOCATED @ N. W. CORNER OF FUEL OIL LOADING, CONCRETE SPILL CONTAINMENT SLAB, RELATIVE ELEVATION 100'

APPROXIMATE GROUNDWATER FLOW DIRECTION

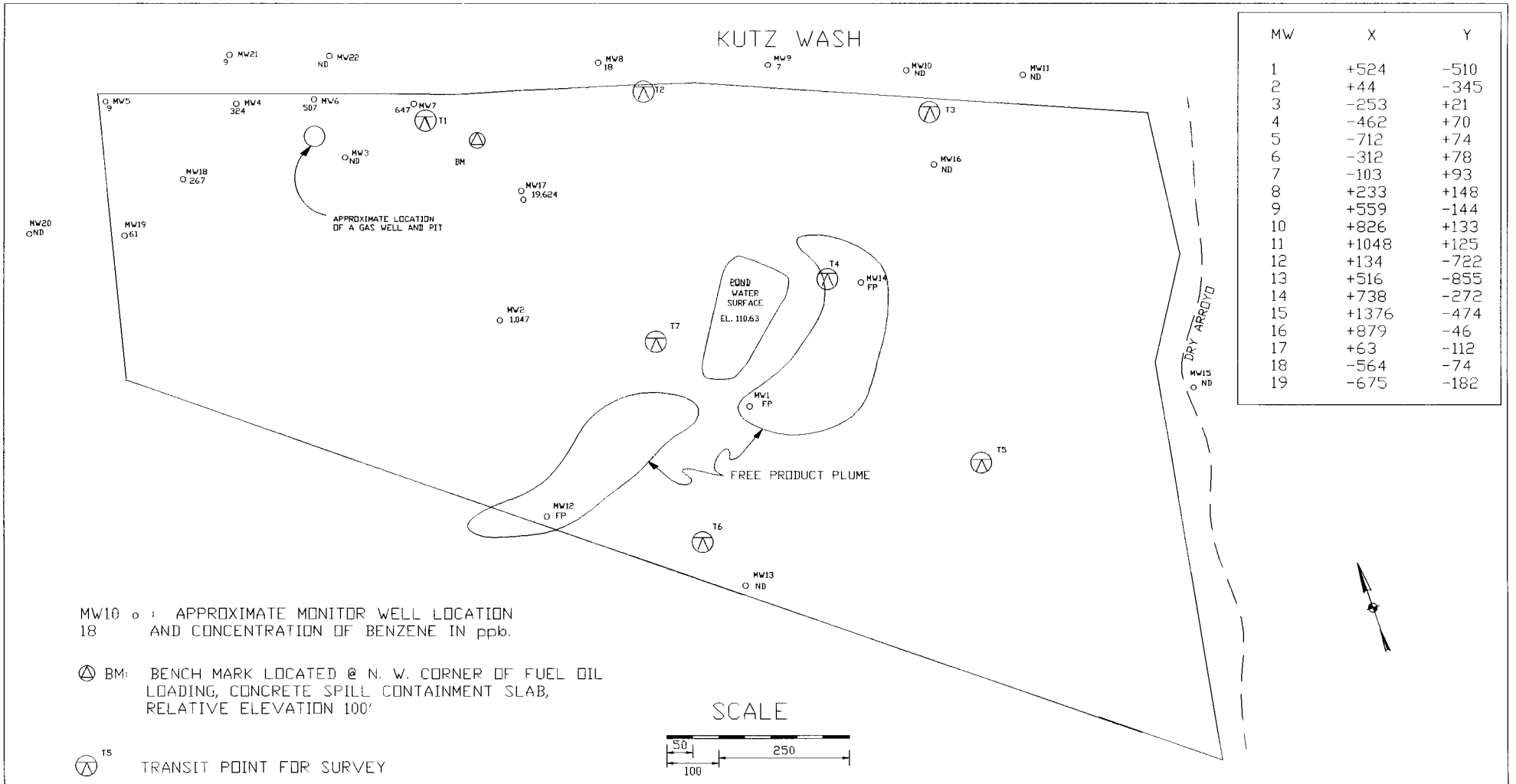
THRIFTWAY REFINERY
BLOOMFIELD, NEW MEXICO
THRIFTWAY MARKETING CORP
710 E 20TH ST, FARMINGTON, NM, 87401

BioTech REMEDIATION
710 EAST 20TH STREET, SUITE 400
FARMINGTON, NEW MEXICO 87401
OFFICE: (505) 632-3365
FAX: (505) 632-0030

ENGINEER: J. DEWEY
DRAFTED BY: J. DEWEY

FIGURE 1 WATER LEVEL CONTOUR MAP

SEPTEMBER 24, 1993



MW	X	Y
1	+524	-510
2	+44	-345
3	-253	+21
4	-462	+70
5	-712	+74
6	-312	+78
7	-103	+93
8	+233	+148
9	+559	-144
10	+826	+133
11	+1048	+125
12	+134	-722
13	+516	-855
14	+738	-272
15	+1376	-474
16	+879	-46
17	+63	-112
18	-564	-74
19	-675	-182

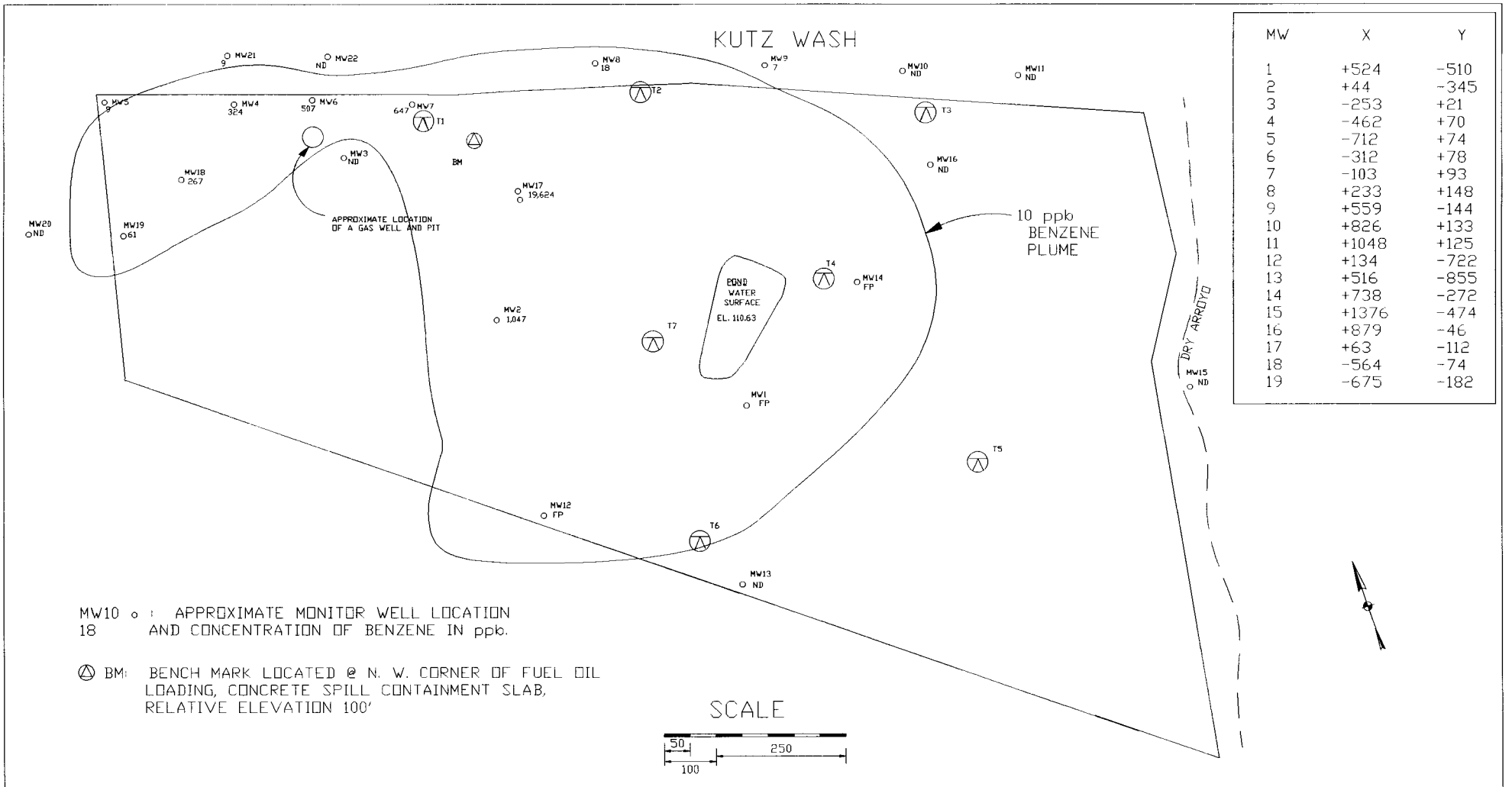
THRIFTWAY REFINERY
BLOOMFIELD, NEW MEXICO
THRIFTWAY MARKETING CORP
710 E 20TH ST, FARMINGTON, NM, 87401

BioTech REMEDIATION
710 EAST 20TH STREET, SUITE 400
FARMINGTON, NEW MEXICO 87401
OFFICE: (505) 632-3365
FAX: (505) 632-0030

ENGINEER: J. DEWEY
DRAFTED BY: J. DEWEY

FIGURE 2 FREE PRODUCT PLUME

SEPTEMBER 24, 1993



MW	X	Y
1	+524	-510
2	+44	-345
3	-253	+21
4	-462	+70
5	-712	+74
6	-312	+78
7	-103	+93
8	+233	+148
9	+559	-144
10	+826	+133
11	+1048	+125
12	+134	-722
13	+516	-855
14	+738	-272
15	+1376	-474
16	+879	-46
17	+63	-112
18	-564	-74
19	-675	-182

THRIFTWAY REFINERY
BLOOMFIELD, NEW MEXICO
THRIFTWAY MARKETING CORP
710 E 20TH ST, FARMINGTON, NM, 87401

BioTech REMEDIATION
710 EAST 20TH STREET, SUITE 400
FARMINGTON, NEW MEXICO 87401
OFFICE: (505) 632-3365
FAX: (505) 632-0030

ENGINEER: J. DEWEY
DRAFTED BY: J. DEWEY

FIGURE 3 10 ppb BENZENE PLUME

SEPTEMBER 24, 1993

TABLES

TABLE 1
THRIFTWAY REFINERY, BLOOMFIELD, NM
GROUNDWATER MONITORING DATA

WELL #	TOP OF PIPE ELEVATION	DATE	TIME	WATER LEVEL (feet)	WATER LEVEL ELEVATION (feet)
1	114.08	08/28/91		12.67	101.41
		09/02/92	13:15	14.00	100.08
		04/28/93	10:45	12.77	101.31
		09/14/93		13.52	100.56
2	107.62	08/28/91		10.31	97.31
		08/31/92	13:07	10.25	97.37
		04/28/93	10:25	9.24	98.18
		09/14/93		10.27	97.35
3	96.28	08/28/91		3.67	92.61
		09/01/92	12:45	2.24	94.04
		04/28/93	10:10	2.01	94.27
		09/14/93		1.95	94.33
4	95.82	08/28/91		4.31	91.51
		09/01/92	12:15	3.78	92.04
		04/28/93	9:50	3.30	92.52
		09/13/93		3.65	92.17
5	94.66	08/28/91		4.43	90.23
		09/01/92	12:00	4.20	90.46
		04/28/93	9:45	3.64	91.02
		09/13/93		4.26	90.40
6	96.31	08/28/91		3.68	92.63
		09/01/92	12:30	2.63	93.68
		04/28/93	10:00	2.44	93.87
		09/13/93		2.15	94.16
7	96.79	08/28/91		3.35	93.44
		09/01/92		WELL NOT FOUND	
		04/28/93		WELL NOT FOUND	
		09/14/93		5.15	
8	97.04	08/28/91		2.83	94.21
		09/02/92	14:50	2.75	94.29
		04/28/93	11:15	1.95	95.09
		09/14/93		1.97	95.07
9	100.16	08/28/91		3.42	96.74
		09/02/92	14:45	3.50	96.66
		04/28/93	11:25	2.87	97.29
		09/14/93		2.90	97.26
10	101.55	08/28/91		3.50	98.05
		09/02/92	15:05	3.50	98.05
		04/28/93	11:35	3.02	98.53
		09/14/93		3.23	98.32

TABLE 1
THRIFTWAY REFINERY, BLOOMFIELD, NM
GROUNDWATER MONITORING DATA

WELL #	TOP OF PIPE ELEVATION	DATE	TIME	WATER LEVEL (feet)	WATER LEVEL ELEVATION (feet)
11	103.63	08/28/91		4.60	99.03
		09/02/92	15:15	4.65	98.98
		04/28/93	11:45	4.22	99.41
		09/14/93		4.63	99.00
12	111.11	08/28/91		12.51	98.62
		08/31/92	13:30	13.67	97.44
		04/28/93	9:10	11.50	99.61
		09/14/93		15.39	95.72
13	117.12	08/28/91		16.24	100.88
		09/02/92	13:50	16.25	100.87
		04/28/93	9:00	15.77	101.35
		09/14/93		16.38	100.74
14	111.94	08/28/91		11.33	100.61
		09/02/92	14:00	13.00	98.94
		04/28/93	10:55	11.34	100.60
		09/14/93		12.83	99.11
15	114.53	08/28/91		12.58	101.95
		09/03/92	8:00	13.05	101.48
		04/28/93	11:55	12.57	101.96
		09/14/93		13.10	101.43
16	107.64	08/28/91		8.28	99.36
		09/02/92	14:25	8.45	99.19
		04/28/93	11:05	7.90	99.74
		09/14/93		LEVEL NOT TAKEN	
17	100.84	08/28/91		5.10	95.74
		08/31/93	12:44	4.65	96.19
		04/28/93	10:35	3.35	97.49
		09/14/93		4.40	96.44
18	94.04	08/28/91		3.21	90.83
		09/01/92	11:51	2.39	91.65
		04/28/93	9:35	2.14	91.90
		09/13/93		2.11	91.93
19	93.64	08/28/91		2.90	90.23
		09/02/92	11:30	2.41	91.23
		04/28/93	9:25	2.05	91.59
		09/13/93		1.92	91.72
20	96.01	09/01/92	13:05	3.85	92.16
		04/28/93	8:30	4.18	91.83
		09/13/93		4.56	91.45

TABLE 1
THRIFTWAY REFINERY, BLOOMFIELD, NM
GROUNDWATER MONITORING DATA

WELL #	TOP OF PIPE ELEVATION	DATE	TIME	WATER LEVEL (feet)	WATER LEVEL ELEVATION (feet)
21	94.34	09/01/92	13:20	3.97	90.37
		04/28/93	8:40	2.27	92.07
		09/13/93		2.19	92.15
22	97.51	09/01/92	13:30	3.34	94.17
		04/28/93	8:50	4.44	93.07
		09/13/93		4.50	93.01

810\QMRTABL1

TABLE 2
SUMMARY OF PHASE SEPERATED PRODUCT MEASUREMENTS
THRIFTWAY REFINERY
BLOOMFIELD, NEW MEXICO

WELL	DATE	THICKNESS (in feet)	LITERS OF HYDROCARBON RECLAIMED
1	10/14/92	TRACE	
	04/28/93	0.02	
	09/14/93	0.01	
2	10/14/92	TRACE	
	04/28/93	ND	
	09/14/93	ND	
6	10/14/92	TRACE	
	04/28/93	TRACE	
	09/13/93	ND	
12	10/14/92	TRACE	
	04/28/93	TRACE	
	09/14/93	2.00	
14	10/14/92	1.58	
	04/28/93	0.12	
	09/14/93	0.50	
17	10/14/92	TRACE	
	04/28/93	TRACE	
	09/14/93	ND	

ND - NON-DETECT

810\QMRTABL2

TABLE 3
SUMMARY OF LABORATORY ANALYSIS DATA
THRIFTWAY REFINERY
BLOOMFIELD , NEW MEXICO
Concentrations in mg/L

WELL #	DATE	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES	IRON	MANGANESE	LEAD	CALCIUM
1	08/28/91	4.321	2.352	0.635	5.137	24.40	9.10	0.02	92.40
	09/02/92	FREE PRODUCT FOUND IN WELL							
	04/28/93	FREE PRODUCT FOUND IN WELL							
	09/14/93	FREE PRODUCT FOUND IN WELL							
2	08/28/91	3.332	ND	0.536	0.972	0.40	34.20	ND	108.60
	08/31/92	FREE PRODUCT FOUND IN WELL							
	04/28/93	0.974	0.189	0.273	0.843				
	09/14/93	1.047	0.245	0.487	0.794				
3	08/28/91	0.013	0.004	0.002	0.001	5.90	17.50	ND	99.90
	09/01/92	0.018	0.004	0.010	0.108				
	04/28/93	ND	ND	ND	ND				
	09/14/93	ND	ND	ND	0.004				
4	08/28/91	0.006	ND	ND	ND	5.43	10.90	ND	75.40
	09/01/92	0.005	0.007	0.017	0.056				
	04/28/93	0.588	0.004	0.039	0.329				
	09/13/93	0.324	0.021	0.051	0.287				
5	08/28/91	ND	0.002	ND	0.001	0.063	3.40	ND	14.00
	09/01/92	ND	ND	ND	ND				
	04/28/93	0.014	0.033	0.004	0.026				
	09/13/93	0.009	0.021	0.006	0.037				
6	08/28/91	0.315	0.006	0.082	0.235	1.21	12.90	ND	86.70
	09/01/92	FREE PRODUCT FOUND IN WELL							
	04/28/93	0.427	0.036	0.094	0.230				
	09/13/93	0.507	0.078	0.135	0.319				
7	08/28/91	35.037	6.013	0.375	3.343	0.25	26.40	ND	105.40
	09/01/92	WELL NOT FOUND							
	04/28/93	WELL NOT FOUND							
	09/14/93	0.647	0.197	0.168	0.691				
8	08/28/91	0.010	0.017	0.002	0.017	4.00	33.10	ND	161.00
	09/02/92	0.014	0.009	0.019	0.068				
	04/28/93	ND	ND	ND	ND				
	09/14/93	0.018	0.021	0.034	0.051				

TABLE 3
SUMMARY OF LABORATORY ANALYSIS DATA
THRIFTWAY REFINERY
BLOOMFIELD , NEW MEXICO
Concentrations in mg/L

WELL #	DATE	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES	IRON	MANGANESE	LEAD	CALCIUM
9	08/28/91	0.005	0.016	0.002	0.020	0.89	50.60	ND	196.20
	09/02/92	0.010	0.021	0.030	0.018				
	04/28/93	ND	ND	ND	ND				
	09/14/93	0.007	0.015	0.024	0.006				
10	08/28/91	0.003	0.009	0.001	0.013	2.01	41.60	ND	195.30
	09/02/92	0.001	0.005	0.001	0.009				
	04/28/93	ND	ND	ND	ND				
	09/14/93	ND	ND	ND	ND				
11	08/28/91	ND	ND	<1.0	0.002	ND	37.40	ND	207.40
	09/02/92	ND	ND	ND	ND				
	04/28/93	ND	ND	ND	ND				
	09/14/93	ND	ND	ND	ND				
12	08/28/91	ND	ND	ND	ND	170.80	123.40	ND	240.40
	08/31/92	FREE PRODUCT FOUND IN WELL							
	04/28/93	0.482	0.089	0.180	0.517				
	09/14/93	FREE PRODUCT FOUND IN WELL							
13	08/28/91	0.001	0.004	<1.0	0.006	2.41	60.70	ND	212.90
	09/02/92	0.002	0.002	ND	0.003				
	04/28/93	ND	ND	ND	ND				
	09/14/93	ND	ND	ND	ND				
14	08/28/91	ND	ND	<1.0	0.001	ND	64.20	ND	195.40
	09/02/92	FREE PRODUCT FOUND IN WELL							
	04/28/93	FREE PRODUCT FOUND IN WELL							
	09/14/93	FREE PRODUCT FOUND IN WELL							
15	08/28/91	0.005	0.009	0.001	0.013	0.70	42.80	ND	186.40
	09/03/92	0.002	0.002	ND	0.003				
	04/28/93	ND	0.028	ND	ND				
	09/14/93	ND	ND	ND	ND				
16	08/28/91	0.006	<1.0	0.043	0.003	0.25	50.40	ND	191.50
	09/02/92	0.012	0.006	0.060	0.013				
	04/28/93	ND	ND	0.003	0.005				
	09/14/93	ND	ND	0.009	0.006				

TABLE 3
SUMMARY OF LABORATORY ANALYSIS DATA
THRIFTWAY REFINERY
BLOOMFIELD , NEW MEXICO
Concentrations in mg/L

WELL #	DATE	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES	IRON	MANGANESE	LEAD	CALCIUM
17	08/28/91	25.660	21.453	1.074	10.372	3.59	38.30	0.00	144.60
	08/31/93	28.453	23.682	2.145	13.461				
	04/28/93	23.424	22.173	1.967	13.161				
	09/14/93	19.624	19.347	2.687	12.481				
18	08/28/91	0.036	0.003	0.005	0.129	7.13	8.60	ND	38.80
	09/01/92	0.047	0.010	0.014	0.171				
	04/28/93	0.223	0.019	0.013	0.503				
	09/13/93	0.267	0.135	0.067	0.345				
19	08/28/91	0.014	0.006	0.578	1.193	6.62	21.00	ND	67.80
	09/02/92	0.022	0.015	0.319	0.894				
	04/28/93	0.045	0.005	0.118	0.623				
	09/13/93	0.061	0.024	0.165	0.719				
20	09/01/92	ND	ND	ND	ND	50.70	49.80	0.147	323.00
	04/28/93	0.003	0.003	0.032	0.325				
	09/13/93	ND	ND	ND	0.034				
21	09/01/92	ND	ND	ND	ND	49.80	43.70	0.078	199.00
	04/28/93	0.033	ND	ND	ND				
	09/13/93	0.009	ND	ND	ND				
22	09/01/92	ND	ND	ND	ND	47.10	62.00	0.058	407.00
	04/28/93	ND	ND	ND	ND				
	09/13/93	ND	ND	ND	ND				
EFFLUENT	04/28/93	ND	ND	ND	ND				
INFLUENT	04/28/93	ND	ND	ND	ND				
NMWQCCR	12/24/87	0.010	0.750	0.750	0.620	1	0.2	0.2	

ND - NON-DETECT

810\QMRTABL3

APPENDIX A

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/14/93
SAMPLE ID:	MONITOR WELL #2	DATE RECIEVED:	09/14/93
SAMPLE NUMBER:	W0209143	DATE ANALYZED:	09/17/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	1047.0	100.0
TOLUENE	245.0	100.0
ETHLYBENZENE	487.0	100.0
M,P-XYLENE	478.0	100.0
O-XYLENE	316.0	100.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
PAGE 2 - QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	01810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/14/93
SAMPLE ID:	MONITOR WELL #2	DATE RECIEVED:	09/14/93
SAMPLE NUMBER:	W0209143	DATE ANALYZED:	09/17/93

QUALITY CONTROL:	SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
	BROMOCHLOROMETHANE	101.1 %	85-115%
	2-BROMO-1-CHLOROPROPANE	104.2 %	85-115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/14/93
SAMPLE ID:	MONITOR WELL #3	DATE RECIEVED:	09/14/93
SAMPLE NUMBER:	W0309143	DATE ANALYZED:	09/16/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	1.0
TOLUENE	ND	1.0
ETHLYBENZENE	ND	1.0
M,P-XYLENE	4.0	1.0
O-XYLENE	ND	1.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
PAGE 2 - QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	01810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/14/93
SAMPLE ID:	MONITOR WELL #3	DATE RECIEVED:	09/14/93
SAMPLE NUMBER:	W0309143	DATE ANALYZED:	09/16/93

QUALITY CONTROL:	SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
	BROMOCHLOROMETHANE	104.8 %	85-115%
	2-BROMO-1-CHLOROPROPANE	110.7 %	85-115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/13/93
SAMPLE ID:	MONITOR WELL #4	DATE RECIEVED:	09/13/93
SAMPLE NUMBER:	W0409133	DATE ANALYZED:	09/17/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	324.0	10.0
TOLUENE	21.0	10.0
ETHLYBENZENE	51.0	10.0
M,P-XYLENE	201.0	10.0
O-XYLENE	86.0	10.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

PAGE 2 - QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	01810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/13/93
SAMPLE ID:	MONITOR WELL #4	DATE RECIEVED:	09/13/93
SAMPLE NUMBER:	W0409133	DATE ANALYZED:	09/17/93

QUALITY CONTROL:

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
BROMOCHLOROMETHANE	109.7 %	85-115%
2-BROMO-1-CHLOROPROPANE	102.3 %	85-115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/13/93
SAMPLE ID:	MONITOR WELL #5	DATE RECIEVED:	09/13/93
SAMPLE NUMBER:	W0509133	DATE ANALYZED:	09/16/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	9.0	1.0
TOLUENE	21.0	1.0
ETHLYBENZENE	6.0	1.0
M,P-XYLENE	25.0	1.0
O-XYLENE	12.0	1.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

PAGE 2 - QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	01810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/13/93
SAMPLE ID:	MONITOR WELL #5	DATE RECIEVED:	09/13/93
SAMPLE NUMBER:	W0509133	DATE ANALYZED:	09/16/93

QUALITY CONTROL:	SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
	BROMOCHLOROMETHANE	103.9 %	85-115%
	2-BROMO-1-CHLOROPROPANE	104.4 %	85-115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/13/93
SAMPLE ID:	MONITOR WELL #6	DATE RECIEVED:	09/13/93
SAMPLE NUMBER:	W0609133	DATE ANALYZED:	09/17/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	507.0	50.0
TOLUENE	78.0	50.0
ETHLYBENZENE	135.0	50.0
M,P-XYLENE	197.0	50.0
O-XYLENE	122.0	50.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
PAGE 2 - QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	01810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/13/93
SAMPLE ID:	MONITOR WELL #6	DATE RECIEVED:	09/13/93
SAMPLE NUMBER:	W0609133	DATE ANALYZED:	09/17/93

QUALITY CONTROL:	SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
	BROMOCHLOROMETHANE	103.4 %	85-115%
	2-BROMO-1-CHLOROPROPANE	106.1 %	85-115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/14/93
SAMPLE ID:	MONITOR WELL #7	DATE RECIEVED:	09/14/93
SAMPLE NUMBER:	W0709143	DATE ANALYZED:	09/17/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	647.0	50.0
TOLUENE	197.0	50.0
ETHLYBENZENE	168.0	50.0
M,P-XYLENE	418.0	50.0
O-XYLENE	273.0	50.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

PAGE 2 - QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	01810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/14/93
SAMPLE ID:	MONITOR WELL #7	DATE RECIEVED:	09/14/93
SAMPLE NUMBER:	W0709143	DATE ANALYZED:	09/17/93

QUALITY CONTROL:	SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
	BROMOCHLOROMETHANE	97.1 %	85-115%
	2-BROMO-1-CHLOROPROPANE	97.4 %	85-115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/14/93
SAMPLE ID:	MONITOR WELL #8	DATE RECIEVED:	09/14/93
SAMPLE NUMBER:	W0809143	DATE ANALYZED:	09/16/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	18.0	1.0
TOLUENE	21.0	1.0
ETHLYBENZENE	34.0	1.0
M,P-XYLENE	35.0	1.0
O-XYLENE	16.0	1.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

PAGE 2 - QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	01810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/14/93
SAMPLE ID:	MONITOR WELL #8	DATE RECIEVED:	09/14/93
SAMPLE NUMBER:	W0809143	DATE ANALYZED:	09/16/93

QUALITY CONTROL:

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
BROMOCHLOROMETHANE	96.7 %	85-115%
2-BROMO-1-CHLOROPROPANE	99.5 %	85-115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/14/93
SAMPLE ID:	MONITOR WELL #9	DATE RECIEVED:	09/14/93
SAMPLE NUMBER:	W0909143	DATE ANALYZED:	09/16/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	7.0	1.0
TOLUENE	15.0	1.0
ETHLYBENZENE	24.0	1.0
M,P-XYLENE	4.0	1.0
O-XYLENE	2.0	1.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

PAGE 2 - QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	01810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/14/93
SAMPLE ID:	MONITOR WELL #9	DATE RECIEVED:	09/14/93
SAMPLE NUMBER:	W0909143	DATE ANALYZED:	09/16/93

QUALITY CONTROL:

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
BROMOCHLOROMETHANE	97.5 %	85-115%
2-BROMO-1-CHLOROPROPANE	100.1 %	85-115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/14/93
SAMPLE ID:	MONITOR WELL #10	DATE RECIEVED:	09/14/93
SAMPLE NUMBER:	W1009143	DATE ANALYZED:	09/16/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	1.0
TOLUENE	ND	1.0
ETHLYBENZENE	ND	1.0
M,P-XYLENE	ND	1.0
O-XYLENE	ND	1.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

PAGE 2 - QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	01810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/14/93
SAMPLE ID:	MONITOR WELL #10	DATE RECIEVED:	09/14/93
SAMPLE NUMBER:	W1009143	DATE ANALYZED:	09/16/93

QUALITY CONTROL:	SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
	BROMOCHLOROMETHANE	105.7 %	85-115%
	2-BROMO-1-CHLOROPROPANE	107.1 %	85-115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/14/93
SAMPLE ID:	MONITOR WELL #11	DATE RECIEVED:	09/14/93
SAMPLE NUMBER:	W1109143	DATE ANALYZED:	09/16/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	1.0
TOLUENE	ND	1.0
ETHLYBENZENE	ND	1.0
M,P-XYLENE	ND	1.0
O-XYLENE	ND	1.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
PAGE 2 - QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	01810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/14/93
SAMPLE ID:	MONITOR WELL #11	DATE RECIEVED:	09/14/93
SAMPLE NUMBER:	W1109143	DATE ANALYZED:	09/16/93

QUALITY CONTROL:	SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
	BROMOCHLOROMETHANE	96.5 %	85-115%
	2-BROMO-1-CHLOROPROPANE	103.6 %	85-115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/14/93
SAMPLE ID:	MONITOR WELL #13	DATE RECIEVED:	09/14/93
SAMPLE NUMBER:	W1309143	DATE ANALYZED:	09/16/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	1.0
TOLUENE	ND	1.0
ETHLYBENZENE	ND	1.0
M,P-XYLENE	ND	1.0
O-XYLENE	ND	1.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

PAGE 2 - QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	01810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/14/93
SAMPLE ID:	MONITOR WELL #13	DATE RECIEVED:	09/14/93
SAMPLE NUMBER:	W1309143	DATE ANALYZED:	09/16/93

QUALITY CONTROL:

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
BROMOCHLOROMETHANE	109.4 %	85-115%
2-BROMO-1-CHLOROPROPANE	101.4 %	85-115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/14/93
SAMPLE ID:	MONITOR WELL #15	DATE RECIEVED:	09/14/93
SAMPLE NUMBER:	W1509143	DATE ANALYZED:	09/16/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	1.0
TOLUENE	ND	1.0
ETHLYBENZENE	ND	1.0
M,P-XYLENE	ND	1.0
O-XYLENE	ND	1.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
PAGE 2 - QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	01810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/14/93
SAMPLE ID:	MONITOR WELL #15	DATE RECIEVED:	09/14/93
SAMPLE NUMBER:	W1509143	DATE ANALYZED:	09/16/93

QUALITY CONTROL:	SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
	BROMOCHLOROMETHANE	99.4 %	85-115%
	2-BROMO-1-CHLOROPROPANE	106.8 %	85-115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/14/93
SAMPLE ID:	MONITOR WELL #16	DATE RECIEVED:	09/14/93
SAMPLE NUMBER:	W1609143	DATE ANALYZED:	09/16/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	1.0
TOLUENE	ND	1.0
ETHLYBENZENE	9.0	1.0
M,P-XYLENE	5.0	1.0
O-XYLENE	1.0	1.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

PAGE 2 - QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	01810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/14/93
SAMPLE ID:	MONITOR WELL #16	DATE RECIEVED:	09/14/93
SAMPLE NUMBER:	W1609143	DATE ANALYZED:	09/16/93

QUALITY CONTROL:

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
BROMOCHLOROMETHANE	103.4 %	85-115%
2-BROMO-1-CHLOROPROPANE	109.6 %	85-115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/14/93
SAMPLE ID:	MONITOR WELL #17	DATE RECIEVED:	09/14/93
SAMPLE NUMBER:	W1709143	DATE ANALYZED:	09/17/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	19624.0	500.0
TOLUENE	19347.0	500.0
ETHLYBENZENE	2867.0	500.0
M,P-XYLENE	7415.0	500.0
O-XYLENE	5066.0	500.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

PAGE 2 - QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	01810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/14/93
SAMPLE ID:	MONITOR WELL #17	DATE RECIEVED:	09/14/93
SAMPLE NUMBER:	W1709143	DATE ANALYZED:	09/17/93

QUALITY CONTROL:

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
BROMOCHLOROMETHANE	108.7 %	85-115%
2-BROMO-1-CHLOROPROPANE	113.2 %	85-115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/13/93
SAMPLE ID:	MONITOR WELL #18	DATE RECIEVED:	09/13/93
SAMPLE NUMBER:	W1809133	DATE ANALYZED:	09/17/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	267.0	10.0
TOLUENE	135.0	10.0
ETHLYBENZENE	67.0	10.0
M,P-XYLENE	226.0	10.0
O-XYLENE	119.0	10.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

PAGE 2 - QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	01810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/13/93
SAMPLE ID:	MONITOR WELL #18	DATE RECIEVED:	09/13/93
SAMPLE NUMBER:	W1809133	DATE ANALYZED:	09/17/93

QUALITY CONTROL:	SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
	BROMOCHLOROMETHANE	108.1 %	85-115%
	2-BROMO-1-CHLOROPROPANE	101.7 %	85-115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/13/93
SAMPLE ID:	MONITOR WELL #19	DATE RECIEVED:	09/13/93
SAMPLE NUMBER:	W1909133	DATE ANALYZED:	09/17/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	61.0	10.0
TOLUENE	24.0	10.0
ETHLYBENZENE	165.0	10.0
M,P-XYLENE	487.0	10.0
O-XYLENE	232.0	10.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
PAGE 2 - QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	01810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/13/93
SAMPLE ID:	MONITOR WELL #19	DATE RECIEVED:	09/13/93
SAMPLE NUMBER:	W1909133	DATE ANALYZED:	09/17/93

QUALITY CONTROL:	SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
	BROMOCHLOROMETHANE	105.7 %	85-115%
	2-BROMO-1-CHLOROPROPANE	103.4 %	85-115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/13/93
SAMPLE ID:	MONITOR WELL #20	DATE RECIEVED:	09/13/93
SAMPLE NUMBER:	W2009133	DATE ANALYZED:	09/15/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	1.0
TOLUENE	ND	1.0
ETHLYBENZENE	ND	1.0
M,P-XYLENE	27.0	1.0
O-XYLENE	7.0	1.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
PAGE 2 - QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	01810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/13/93
SAMPLE ID:	MONITOR WELL #20	DATE RECIEVED:	09/13/93
SAMPLE NUMBER:	W2009133	DATE ANALYZED:	09/15/93

QUALITY CONTROL:	SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
	BROMOCHLOROMETHANE	111.4 %	85-115%
	2-BROMO-1-CHLOROPROPANE	113.4 %	85-115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/13/93
SAMPLE ID:	MONITOR WELL #21	DATE RECIEVED:	09/13/93
SAMPLE NUMBER:	W2109133	DATE ANALYZED:	09/15/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	9.0	1.0
TOLUENE	ND	1.0
ETHLYBENZENE	ND	1.0
M,P-XYLENE	ND	1.0
O-XYLENE	ND	1.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
PAGE 2 - QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	01810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/13/93
SAMPLE ID:	MONITOR WELL #21	DATE RECIEVED:	09/13/93
SAMPLE NUMBER:	W2109133	DATE ANALYZED:	09/15/93

QUALITY CONTROL:	SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
	BROMOCHLOROMETHANE	104.7 %	85-115%
	2-BROMO-1-CHLOROPROPANE	110.5 %	85-115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/13/93
SAMPLE ID:	MONITOR WELL #22	DATE RECIEVED:	09/13/93
SAMPLE NUMBER:	W2209133	DATE ANALYZED:	09/15/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	1.0
TOLUENE	ND	1.0
ETHLYBENZENE	ND	1.0
M,P-XYLENE	ND	1.0
O-XYLENE	ND	1.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
PAGE 2 - QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	01810	PRESERVATIVE:	HgCl2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NEW MEXICO	DATE SAMPLED:	09/13/93
SAMPLE ID:	MONITOR WELL #22	DATE RECIEVED:	09/13/93
SAMPLE NUMBER:	W2209133	DATE ANALYZED:	09/15/93

QUALITY CONTROL:	SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
	BROMOCHLOROMETHANE	106.7 %	85-115%
	2-BROMO-1-CHLOROPROPANE	111.2 %	85-115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

QUALITY CONTROL

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	09/22/93
PROJECT LOCATION:	BLOOMFIELD, NM	DATE SAMPLED:	09/14/93
SAMPLE ID:	SPIKE SAMPLE MONITOR WELL #11	DATE RECIEVED:	09/14/93
SAMPLE NUMBER:	WSS09163	DATE ANALYZED:	09/16/93

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE RESULTS (ug/L)	SPIKED SAMPLE RESULTS (ug/L)	PERCENT RECOVERY
BENZENE	10.0	ND	10.7	107
TOLUENE	10.0	ND	10.7	107
ETHLYBENZENE	10.0	ND	10.1	101

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
QUALITY CONTROL

CLIENT:	NA	SAMPLE MATRIX:	NA
CLIENT NUMBER:	NA	PRESERVATIVE:	NA
PROJECT NAME:	NA	REPORT DATE:	09/15/93
PROJECT LOCATION:	NA	DATE SAMPLED:	NA
SAMPLE ID:	LABORATORY BLANK	DATE RECIEVED:	NA
SAMPLE NUMBER:	B2009153	DATE ANALYZED:	09/15/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	1.0
TOLUENE	ND	1.0
ETHLYBENZENE	ND	1.0
M,P-XYLENE	ND	1.0
O-XYLENE	ND	1.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
QUALITY CONTROL

CLIENT:	NA	SAMPLE MATRIX:	NA
CLIENT NUMBER:	NA	PRESERVATIVE:	NA
PROJECT NAME:	NA	REPORT DATE:	09/16/93
PROJECT LOCATION:	NA	DATE SAMPLED:	NA
SAMPLE ID:	LABORATORY BLANK	DATE RECIEVED:	NA
SAMPLE NUMBER:	B2009163	DATE ANALYZED:	09/16/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	1.0
TOLUENE	ND	1.0
ETHLYBENZENE	ND	1.0
M,P-XYLENE	ND	1.0
O-XYLENE	ND	1.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
QUALITY CONTROL

CLIENT:	NA	SAMPLE MATRIX:	NA
CLIENT NUMBER:	NA	PRESERVATIVE:	NA
PROJECT NAME:	NA	REPORT DATE:	09/17/93
PROJECT LOCATION:	NA	DATE SAMPLED:	NA
SAMPLE ID:	LABORATORY BLANK	DATE RECIEVED:	NA
SAMPLE NUMBER:	B2009173	DATE ANALYZED:	09/17/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	1.0
TOLUENE	ND	1.0
ETHLYBENZENE	ND	1.0
M,P-XYLENE	ND	1.0
O-XYLENE	ND	1.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BioTech REMEDIATION
WATER QUALITY LABORATORIES
710 E. 20th Street, Suite 400
Farmington, New Mexico 87401
Office: (505) 632-3365
Fax: (505) 632-0030

11004

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location	ANALYSIS/PARAMETERS
THRIFTWAY REFINERY	BLOOMFIELD	
Sampler: (Signature) Ruben Statton	Tape No.	

Sample No./ID	Date	Time	Lab No.	Matrix	No. Cont.	BTEX						Remarks
MW 20	9/13/93	4:45	W2009133	H_2O	2	✓						
MW 21	9/13/93	4:30	W2109133	"	2	✓						
MW 22	9/13/93	4:35	W2209133	"	2	✓						
MW 19	9/13/93	5:00	W1909133	"	2	✓						
MW 18	9/13/93	5:07	W1809133	"	2	✓						
MW 5	9/13/93	5:15	W0509133	"	2	✓						
MW 6	9/13/93	5:30	W0609133	"	2	✓						
MW 4	9/13/93	5:40	W0409133	"	2	✓						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Ruben Statton	9-14-93	8:00			
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)	9-14-93	8:00

san juan repro Form 578-97

BioTech REMEDIATION
WATER QUALITY LABORATORIES
710 E. 20th Street, Suite 400
Farmington, New Mexico 87401
Office: (505) 632-3365
Fax: (505) 632-0030

11005

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location	ANALYSIS/PARAMETERS
THRIFTWAY REFINERY	BLOOMFIELD	

Sampler: (Signature)	Tape No.	No. Cont.	BTEX						Remarks

Sample No./ID	Date	Time	Lab No.	Matrix								
MW 3	9/14/93	9:00	W03091443	H_2O	2	✓						
MW 7	"	9:10	W07091443	✓	2	✓						
MW 17	"	9:25	W17091443	"	2	✓						
MW 2	"	9:35	W02091443	"	2	✓						
MW 8	"	10:40	W08091443	"	2	✓						
MW 9	"	10:50	W09091443	"	2	✓						
MW 15	"	11:15	W15091443	"	2	✓						
MW 11	"	11:25	W11091443	"	2	✓						
MW 10	"	11:30	W10091443	"	2	✓						
MW 13	"	11:45	W13091443	"	2	✓						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	9-14-93	13:00			
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)	9-14-93	13:00

san juan repro Form 578-97

BIOTECH REMEDIATION INC.

QUARTERLY MONITORING REPORT
THRIFTWAY REFINERY
626 COUNTY ROAD 5500
BLOOMFIELD, NEW MEXICO 87410

RECEIVED
JUN 18 1993
OIL CONSERVATION DIV.
SANTA FE

PREPARED FOR THE
NEW MEXICO OIL CONSERVATION DIVISION

BY

BIOTECH REMEDIATION, INC.
710 EAST 20TH ST., SUITE 400
FARMINGTON, NEW MEXICO 87401

MAY 28, 1993

BioTech
REMEDIATION

710 East 20th Street, Suite 400
Farmington, New Mexico 87401
Field Office: (505) 632-3365
Fax: (505) 632-0030

QUARTERLY MONITORING REPORT
THRIFTWAY REFINERY
626 COUNTY ROAD 5500
BLOOMFIELD, NEW MEXICO, 87410

PREPARED FOR THE
NEW MEXICO OIL CONSERVATION DIVISION

MAY 28, 1993

BY

BIOTECH REMEDIATION INC.
710 EAST 20TH ST., SUITE 400
FARMINGTON, NEW MEXICO, 87401

PREPARED BY

CHRIS HOLLANDSWORTH
ENVIRONMENTAL SCIENTIST

REVIEWED BY

KEN SINKS
ENVIRONMENTAL ENGINEER

810\QMR05283.WIN

TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

1.0 INTRODUCTION

The purpose of this report is to update the data base for Thriftway Refinery, through April 1993. BioTech Remediation, Inc., submits this monitoring and well update on behalf of Thriftway Marketing Corp., pursuant to the requirements of the New Mexico Oil Conservation Division. This report discusses the work performed at the site during October, November, December, January, February, March and April 1993, and is compiled in compliance with the terms of the Thriftway Refinery Ground Water Discharge Plan GW-55.

2.0 QUARTERLY SUMMARY OF SITE ACTIVITIES

Site monitoring was performed on April 28, 1993. During this quarterly site visit the following activities were performed:

- Water level gauging
- Sample of monitoring wells

Thriftway instituted a descaling and biofouling removal program during the past quarter. This program was needed due to the extensive scaling and biofouling experienced in the stripper and injection gallery. The system was acidized four (4) times in the past four (4) months. After each acidation the operation of the repaired system was restored to an acceptable level. The injection pump was taken off line and repaired two (2) times during this period due to heavy scaling.

In the previous Quarterly Monitoring Report (QMR) it was reported that free product was found in monitoring well MW-12 where none had been found before. Mark Weidler, Certified Professional Geologist, began an investigation into this anomaly. It was determined that only a trace of free product was detected in the area of MW-12. However, a new area of free product was discovered. Please refer to Mark Weidler's report in **Appendix B** entitled "Investigation of Free Phase Product Thriftway Refinery - Site 810, Bloomfield, New Mexico."

3.0 SUMMARY OF GROUND WATER ELEVATION DATA

Table 1 (attached) summarizes all ground water elevation data, to date, for the refinery. The most recent comprehensive ground water elevation data, collected April 28, 1993, is presented in the Ground Water Elevation Map on the attached **Figure 1.** The field data was gathered using an ORS air/water interface probe with a 100' tape.

4.0 SUMMARY OF PHASE SEPARATED PRODUCT CONDITIONS

Free product was found in monitoring wells MW-1, 2, 6, 12, 14 and 17. The amounts of free product taken from the monitoring wells are shown in **Table 2.** The current phase separated product plume is indicated in **Figure 2.** (For additional free product areas refer to **Appendix B**).

Total phase separated product was measured in a transparent bailer and the feet of free product recorded (see **Table 2**). The product and water was disposed of in the refinery oily sewer system. The free phase hydrocarbon is separated from the contaminated water in the waste water holding tank. The free hydrocarbon is pumped off and stored, for later processing, and the contaminated water is stripped of dissolved hydrocarbon in the waste water air stripper tank and then evaporated in the refinery waste water system.

5.0 SUMMARY OF GROUND WATER CHEMISTRY DATA

Table 3 summarizes all ground water quality data collected to date for the refinery. **Appendix A** contains the laboratory reports for the current survey. Ground water samples for analysis were collected April 28, 1993, from all monitoring wells not containing free hydrocarbon. Stripper influent and effluent were also sampled.

Ground water from each of the above wells was analyzed for Benzene, Toluene, Ethylbenzene and total Xylenes (BTEX). The extent of the dissolved phase ground water plume at this site (based upon the regulated benzene standard of 0.01 mg/l) is shown in **Figure 3**.

The samples were gathered using disposable bailers. New cord was used on each bailer to further insure no cross contamination of wells occurred. Three (3) well volumes were removed whenever possible. If the well recharged slowly, then the water from the

last bail was used for analysis. The samples were placed in 40 ml vials previously prepared at the lab with two (2) or three (3) drops of $HgCl_2$ solution. The samples were all marked with their respective location, date, time of sampling and by whom sampled. The samples were then transported on ice to the BioTech Water Quality Laboratory. A chain of custody accompanied the samples and is included with the laboratory analysis reports.

6.0 DISCUSSION / RECOMMENDATIONS

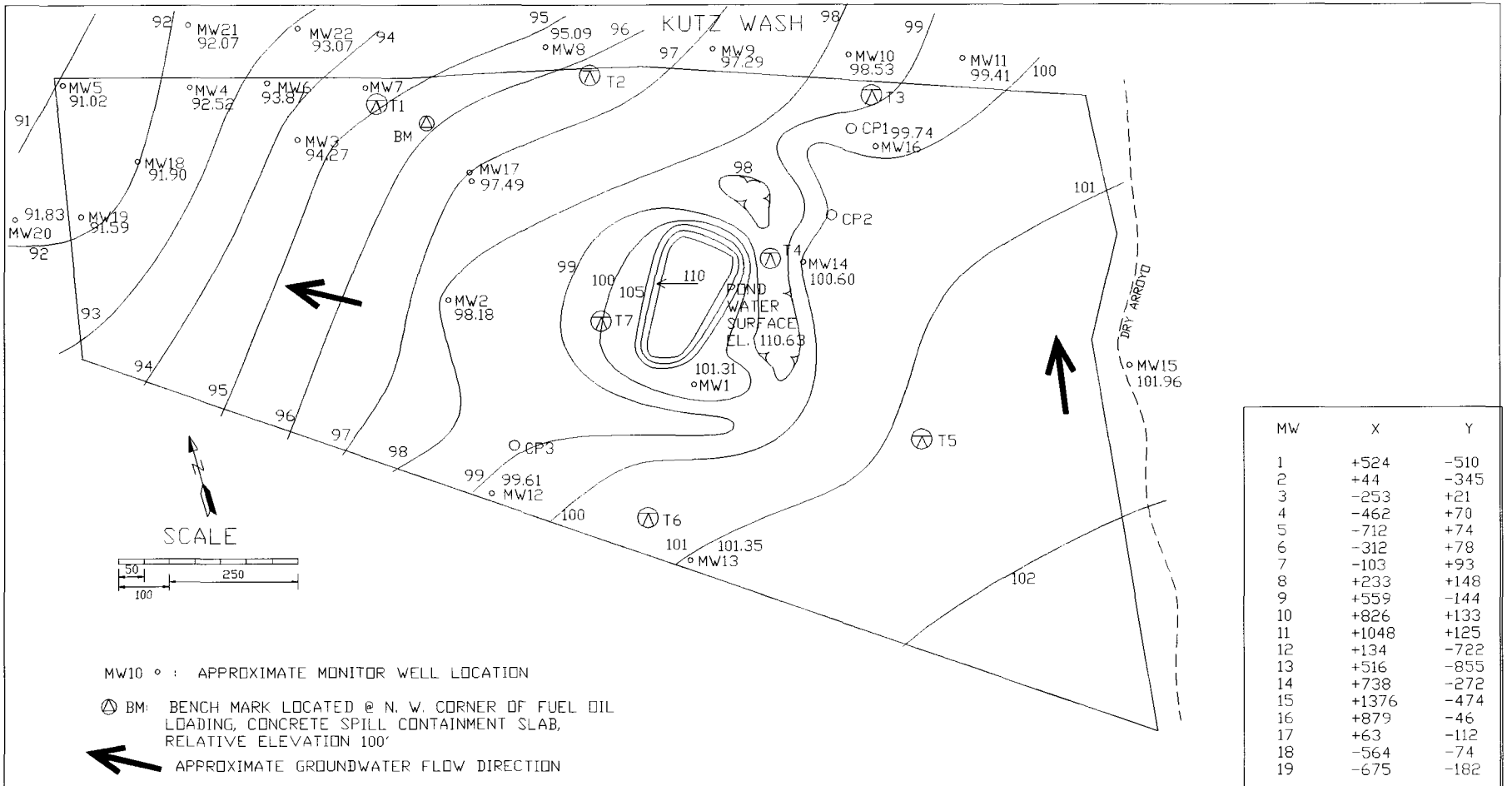
The ground water recovery system does not appear to be maintaining hydraulic capture of the dissolved phase and phase separated product plumes. This conclusion is based on the calculated ground water contour map (no depression of the ground water table), **Figure 1.** However, the plume does not appear to be growing. This may be due to the intercept/recovery system that is operating. Thriftway Marketing will continue quarterly sampling and monitoring of the site as well as routine maintenance of the system.

The free product reported in the last QMR revealed over 1.5 feet of free product in monitoring well MW-14. Thriftway Marketing retained the services of Mr. Mark Weidler, Certified Professional Geologist, to investigate the area around MW-14. His report is included in **Appendix B** as part of this report.

During the winter of 1992 and the spring of 1993, several monitoring wells, test borings and recovery wells were installed. The purpose of this exercise was to evaluate the extent of the free product plume near MW-14. The recovery wells have been pumped on a regular basis and the water and product processed through the refinery waste water system. There has been a marked improvement in the level of free product in this area. Thriftway Marketing will continue to pump the product from this area.

This report of the operation and maintenance of the site remediation system at the Thriftway Refinery is provided to comply with the Oil Conservation Division requirements and the Site Ground Water Discharge Plan GW-55.

FIGURES



MW	X	Y
1	+524	-510
2	+44	-345
3	-253	+21
4	-462	+70
5	-712	+74
6	-312	+78
7	-103	+93
8	+233	+148
9	+559	-144
10	+826	+133
11	+1048	+125
12	+134	-722
13	+516	-855
14	+738	-272
15	+1376	-474
16	+879	-46
17	+63	-112
18	-564	-74
19	-675	-182

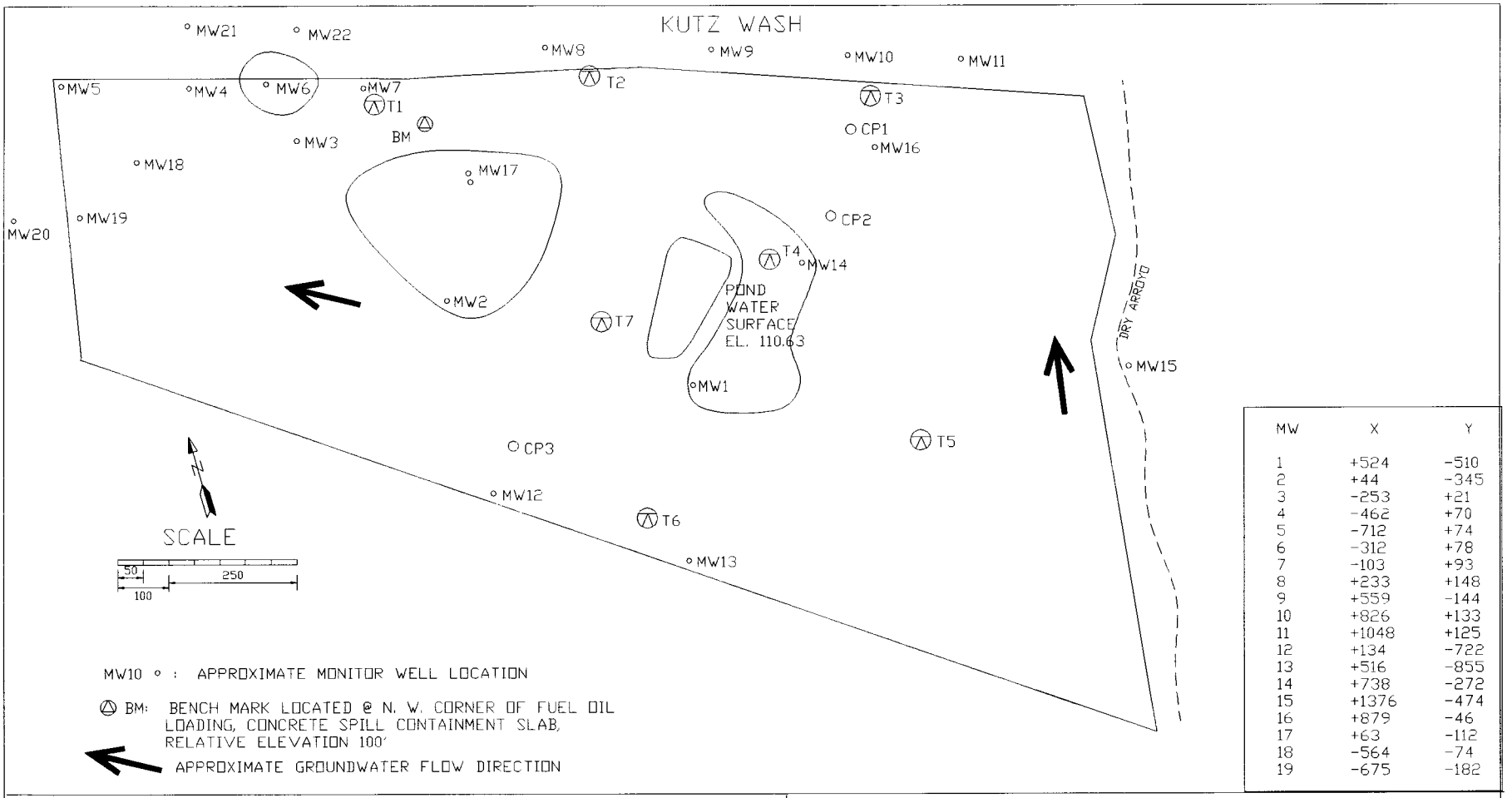
THRIFTWAY REFINERY
BLOOMFIELD, NEW MEXICO

FIGURE 1
GROUNDWATER ELEVATION MAP

BIOTECH REMEDIATION, INC.

THRIFTWAY PROFFESIONAL BULDING
710 EAST 20TH ST., SUITE 400
FARMINGTON, NEW MEXICO

810FIG1	APRIL 1993	1



MW	X	Y
1	+524	-510
2	+44	-345
3	-253	+21
4	-462	+70
5	-712	+74
6	-312	+78
7	-103	+93
8	+233	+148
9	+559	-144
10	+826	+133
11	+1048	+125
12	+134	-722
13	+516	-855
14	+738	-272
15	+1376	-474
16	+879	-46
17	+63	-112
18	-564	-74
19	-675	-182

THRIFTWAY REFINERY
BLOOMFIELD, NEW MEXICO

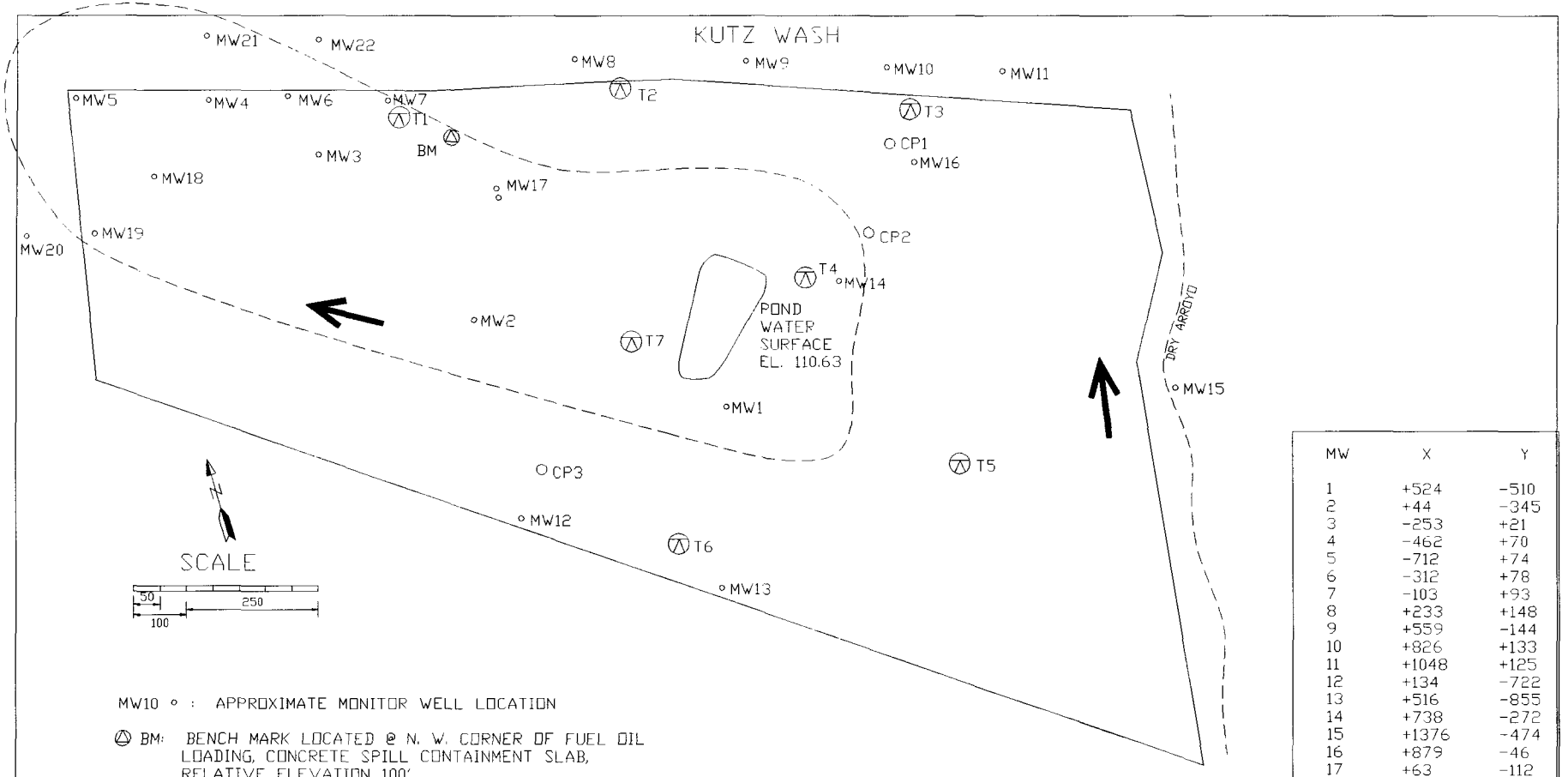
FIGURE 2
PHASE SEPARATED PLUME MAP

PHASE SEPARATED PRODUCT

BIOTECH REMEDIATION, INC.

THRIFTWAY PROFFESIONAL BULDING
710 EAST 20TH ST., SUITE 400
FARMINGTON, NEW MEXICO

810FIG2	APRIL 1993	2



MW	X	Y
1	+524	-510
2	+44	-345
3	-253	+21
4	-462	+70
5	-712	+74
6	-312	+78
7	-103	+93
8	+233	+148
9	+559	-144
10	+826	+133
11	+1048	+125
12	+134	-722
13	+516	-855
14	+738	-272
15	+1376	-474
16	+879	-46
17	+63	-112
18	-564	-74
19	-675	-182

THRIFTWAY REFINERY
BLOOMFIELD, NEW MEXICO

FIGURE 3
BENZENE PLUME MAP

- - - - - 10 PPB BENZENE

BIOTECH REMEDIATION, INC.

THRIFTWAY PROFFESIONAL BULDING
710 EAST 20TH ST., SUITE 400
FARMINGTON, NEW MEXICO

810FIG3	APRIL 1993	3

TABLES

TABLE 1
THRIFTWAY REFINERY, BLOOMFIELD, NM
GROUNDWATER MONITORING DATA

WELL #	TOP OF PIPE ELEVATION (feet)	DATE	TIME	WATER LEVEL (feet)	WATER LEVEL ELEVATION (feet)
1	114.08	08/28/91		12.67	101.41
		09/02/92	13:15	14.00	100.08
		04/28/93	10:45	12.77	101.31
2	107.62	08/28/91		10.31	97.31
		08/31/92	13:07	10.25	97.37
		04/28/93	10:25	9.24	98.18
3	96.28	08/28/91		3.67	92.61
		09/01/92	12:45	2.24	94.04
		04/28/93	10:10	2.01	94.27
4	95.82	08/28/91		4.31	91.51
		09/01/92	12:15	3.78	92.04
		04/28/93	9:50	3.30	92.52
5	94.66	08/28/91		4.43	90.23
		09/01/92	12:00	4.20	90.46
		04/28/93	9:45	3.64	91.02
6	96.31	08/28/91		3.68	92.63
		09/01/92	12:30	2.63	93.68
		04/28/93	10:00	2.44	93.87
7	96.79	08/28/91		3.35	93.44
		09/01/92		WELL NOT FOUND	
		04/28/93		WELL NOT FOUND	
8	97.04	08/28/91		2.83	94.21
		09/02/92	14:50	2.75	94.29
		04/28/93	11:15	1.95	95.09
9	100.16	08/28/91		3.42	96.74
		09/02/92	14:45	3.50	96.66
		04/28/93	11:25	2.87	97.29
10	101.55	08/28/91		3.50	98.05
		09/02/92	15:05	3.50	98.05
		04/28/93	11:35	3.02	98.53
11	103.63	08/28/91		4.60	99.03
		09/02/92	15:15	4.65	98.98
		04/28/93	11:45	4.22	99.41

TABLE 1
THRIFTWAY REFINERY, BLOOMFIELD, NM
GROUNDWATER MONITORING DATA

WELL #	TOP OF PIPE ELEVATION (feet)	DATE	TIME	WATER LEVEL (feet)	WATER LEVEL ELEVATION (feet)
12	111.11	08/28/91		12.51	98.62
		08/31/92	13:30	13.67	97.44
		04/28/93	9:10	11.50	99.61
13	117.12	08/28/91		16.24	100.88
		09/02/92	13:50	16.25	100.87
		04/28/93	9:00	15.77	101.35
14	111.94	08/28/91		11.33	100.61
		09/02/92	14:00	13.00	98.94
		04/28/93	10:55	11.34	100.60
15	114.53	08/28/91		12.58	101.95
		09/03/92	8:00	13.05	101.48
		04/28/93	11:55	12.57	101.96
16	107.64	08/28/91		8.28	99.36
		09/02/92	14:25	8.45	99.19
		04/28/93	11:05	7.90	99.74
17	100.84	08/28/91		5.10	95.74
		08/31/92	12:44	4.65	96.19
		04/28/93	10:35	3.35	97.49
18	94.04	08/28/91		3.21	90.83
		09/01/92	11:51	2.39	91.65
		04/28/93	9:35	2.14	91.90
19	93.64	08/28/91		2.90	90.23
		09/01/92	11:30	2.41	91.23
		04/28/93	9:25	2.05	91.59
20		09/01/92	13:05	3.85	
		04/28/93	8:30	4.18	
21		09/01/92	13:20	3.97	
		04/28/93	8:40	2.27	
22		09/01/92	13:30	3.34	
		04/28/93	8:50	4.44	

810/QMRTBL1

TABLE 2
SUMMARY OF PHASE SEPERATED PRODUCT MEASUREMENTS
THRIFTWAY REFINERY
BLOOMFIELD, NEW MEXICO

WELL	DATE	THICKNESS (IN FEET)	LITERS OF HYDROCARBON RECLAIMED
1	10-14-92	TRACE	
	04-28-93	0.02	
2	10-14-92	TRACE	
	04-28-93		
6	10-14-92	TRACE	
	04-28-93	TRACE	
12	10-14-92	TRACE	
	04-28-93	TRACE	
14	10-14-92	1.58	
	04-28-93	0.12	
17	10-14-92	TRACE	
	04-28-93	TRACE	

TABLE 3

SUMMARY OF LABORATORY ANALYSIS DATA
THRIFTWAY REFINERY
Concentrations in mg/1

Location	Date	Benzene	Toulene	Ethylbenzene	Xylenes	Iron	Manganese	Lead	Calcium
1	08/28/91	4.321	2.352	0.635	5.137	24.4	9.1	0.02	92.4
	09/03/92	FREE PRODUCT FOUND IN WELL							
	04/28/93	FREE PRODUCT FOUND IN WELL							
2	08/28/91	3.332	ND	0.536	0.972	0.4	34.2	ND	108.6
	09/03/92	FREE PRODUCT FOUND IN WELL							
	04/28/93	0.974	0.189	0.273	0.843				
3	08/28/91	0.013	0.004	0.002	0.001	5.9	17.5	ND	99.9
	09/03/92	0.018	0.004	0.01	0.108				
	04/28/93	ND	ND	ND	ND				
4	08/28/91	0.006	ND	ND	ND	5.43	10.9	ND	75.4
	09/03/92	0.005	0.007	0.017	0.056				
	04/28/93	0.588	0.004	0.039	0.329				
5	08/28/91	ND	0.002	ND	0.001	0.063	3.4	ND	14
	09/03/92	ND	ND	ND	ND				
	04/28/93	0.014	0.033	0.004	0.026				
6	08/28/91	0.315	0.006	0.082	0.235	1.21	12.9	ND	86.7
	09/03/92	FREE PRODUCT FOUND IN WELL							
	04/28/93	0.427	0.036	0.094	0.23				
7	08/28/91	35.037	6.013	0.375	3.343	0.25	26.4	ND	105.4
	09/03/92	WELL NOT FOUND							
	04/28/93	WELL NOT FOUND							
8	08/28/91	0.01	0.017	0.002	0.017	4	33.1	ND	161
	09/03/92	0.014	0.009	0.019	0.068				
	04/28/93	ND	ND	ND	ND				
9	08/28/91	0.005	0.016	0.002	0.02	0.89	50.6	ND	196.2
	09/03/92	0.01	0.021	0.03	0.018				
	04/28/93	ND	ND	ND	ND				

TABLE 3

SUMMARY OF LABORATORY ANALYSIS DATA
THRIFTWAY REFINERY
Concentrations in mg/1

Location	Date	Benzene	Toulene	Ethylbenzene	Xylenes	Iron	Manganese	Lead	Calcium
10	08/28/91	0.003	0.009	0.001	0.013	2.01	41.6	ND	195.3
	09/03/92	0.001	0.005	0.001	0.009				
	04/28/93	ND	ND	ND	ND				
11	08/28/91	ND	ND	<1.0	0.002	ND	37.4	ND	207.4
	09/03/92	ND	ND	ND	ND				
	04/28/93	ND	ND	ND	ND				
12	08/28/91	ND	ND	ND	ND	170.8	123.4	ND	240.4
	09/03/92	FREE PRODUCT FOUND IN WELL							
	04/28/93	0.482	0.089	0.18	0.517				
13	08/28/91	0.001	0.004	<1.0	0.006	2.41	60.7	ND	212.9
	09/03/92	0.002	0.002	ND	0.003				
	04/28/93	ND	ND	ND	ND				
14	08/28/91	ND	ND	<1.0	0.001	ND	64.2	ND	195.4
	09/03/92	FREE PRODUCT FOUND IN WELL							
	04/28/93	FREE PRODUCT FOUND IN WELL							
15	08/28/91	0.005	0.009	0.001	0.013	0.7	42.8	ND	186.4
	09/03/92	0.002	0.002	ND	0.003				
	04/28/93	ND	0.028	ND	ND				
16	08/28/91	0.006	<1.0	0.043	0.003	0.25	50.4	ND	191.5
	09/03/92	0.012	0.006	0.06	0.013				
	04/28/93	ND	ND	0.003	0.005				
17	08/28/91	25.66	21.453	1.074	10.372	3.59	38.3	0.02	144.6
	09/03/92	28.453	23.682	2.145	13.461				
	04/28/93	23.424	22.173	1.967	13.161				
18	08/28/91	0.036	0.003	0.005	0.129	7.13	8.6	ND	38.8
	09/03/92	0.047	0.01	0.014	0.171				
	04/28/93	0.223	0.019	0.013	0.503				

TABLE 3

SUMMARY OF LABORATORY ANALYSIS DATA
THRIFTWAY REFINERY
Concentrations in mg/1

Location	Date	Benzene	Toulene	Ethylbenzene	Xylenes	Iron	Manganese	Lead	Calcium
19	08/28/91	0.014	0.006	0.578	1.193	6.62	21	ND	67.8
	09/03/92	0.022	0.015	0.319	0.894				
	04/28/93	0.045	0.005	0.118	0.623				
20	09/03/92	ND	ND	ND	ND	50.7	49.8	0.147	323
	04/28/93	0.003	0.003	0.032	0.325				
21	09/03/92	ND	ND	ND	ND	49.8	43.7	0.078	199
	04/28/93	0.033	ND	ND	ND				
22	09/03/92	ND	ND	ND	ND	47.1	62	0.058	407
	04/28/93	ND	ND	ND	ND				
EFFLUENT	04/28/93	ND	ND	ND	ND				
INFLUENT	04/28/93	0.232	0.174	0.089	0.246				
NMWQCCR	12/24/87	0.01	0.75	0.75	0.62	1	0.2	0.2	

Notes:

Organic analysis by EPS Method 8020
Inorganic analysis by various EPA Methods
Metal analysis by EPA Method 200.7
Influent indicated untreated pumped groundwater entering tower
Effluent indicated treated water exiting tower and being discharged
(INC) indicates that the results of this analysis was not complete at the time of the report

I0\QMRTBL3

APPENDIX A

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location	ANALYSIS/PARAMETERS
THRIFTWAY	THRIFTWAY REFINERY	
Sampler: (Signature)	Chain of Custody Tape No.	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	BTEX						Remarks
mw 2	4-28-93	9:20	W0304283	H_2O	2	✓						
mw 3	"	9:30	W0304283	"	2	✓						
mw 4	"	8:40	W0404283	"	2	✓						
mw 5	"	8:25	W0504283	"	2	✓						
mw 6	"	8:50	W0604283	"	2	✓						
mw 8	"	9:45	W0804283	"	2	✓						
mw 9	"	9:55	W0904283	"	2	✓						
mw 10	"	10:10	W1004283	"	2	✓						
mw 11	"	10:20	W1104283	"	2	✓						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	4-28-93	14:20			
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)	4-28-93	14:20

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location	ANALYSIS/PARAMETERS
THRIFTWAY	THRIFTWAY REFINERY	

Sampler: (Signature) [signature]

Chain of Custody Tape No.

Sample No./ Identification	Sample ~~Date~~	Sample ~~Time~~ DATE	Lab Number	Sample Matrix	No. of Containers	BTEX						Remarks
mw 12	11:00	4-25-93	W1204283	H_2O	2	✓						
mw 13	10:50	"	W1304283	"	2	✓						
mw 15	10:35	"	W1504283	"	2	✓						
mw 16	11:15	"	W1604283	"	2	✓						
mw 17	9:05	"	W1704283	"	2	✓						
mw 18	8:10	"	W1804283	"	2	✓						
mw 19	8:00	"	W1904283	"	2	✓						
mw 20	7:30	"	W2004283	"	2	✓						
mw 21	7:40	"	W2104283	"	2	✓						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	4-28-93	14:20			
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature) [signature]	4-28-93	14:20

CHAIN OF CUSTODY RECORD

Client/Project Name	Project Location	ANALYSIS/PARAMETERS
Sampler: (Signature) Ruben W Gallardo	Chain of Custody Tape No.	

Sample No./ Identification	Sample Date ~~Time~~	Sample ~~Date~~ Time	Lab Number	Sample Matrix	No. of Containers	BTEX						Remarks
MW22	7:50	4-28-93	W2204283	H_2O	2	✓						
STRIPPER EFFLUENT	11:25	"	WEF04283	"	2	✓						
STRIPPER INFLUENT	11:25	"	WIN04283	"	2	✓						
~~TRIP BLANK~~												

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Ruben W Gallardo	4-28-93	14:20			
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature) Alan Stuart	4-28-93	14:20

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#2	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W0204283	DATE ANALYZED:	05/04/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	974.0	1.0
TOLUENE	189.0	1.0
ETHLYBENZENE	273.0	1.0
M,P-XYLENE	655.0	1.0
O-XYLENE	118.0	1.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
PAGE 2 – QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#2	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W0204283	DATE ANALYZED:	05/04/93

QUALITY CONTROL:

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
BROMOCHLOROMETHANE	109.0 %	85–115%
2–BROMO–1–CHLOROPROPANE	106.0 %	85–115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW–846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632–3365 FAX (505) 632–3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#3	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W0304283	DATE ANALYZED:	05/04/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	1.0
TOLUENE	ND	1.0
ETHLYBENZENE	ND	1.0
M,P-XYLENE	ND	1.0
O-XYLENE	ND	1.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
PAGE 2 – QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#3	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W0304283	DATE ANALYZED:	05/04/93

QUALITY CONTROL:	SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
	BROMOCHLOROMETHANE	111.0 %	85–115%
	2–BROMO–1–CHLOROPROPANE	108.0 %	85–115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW–846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632–3365 FAX (505) 632–3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#4	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W0404283	DATE ANALYZED:	05/04/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	588.0	1.0
TOLUENE	4.0	1.0
ETHLYBENZENE	39.0	1.0
M,P-XYLENE	323.0	1.0
O-XYLENE	6.0	1.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
PAGE 2 – QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#4	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W0404283	DATE ANALYZED:	05/04/93

QUALITY CONTROL:	SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
	BROMOCHLOROMETHANE	107.0 %	85–115%
	2–BROMO–1–CHLOROPROPANE	106.0 %	85–115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW–846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632–3365 FAX (505) 632–3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#5	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W0504283	DATE ANALYZED:	05/04/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	14.0	1.0
TOLUENE	33.0	1.0
ETHLYBENZENE	4.0	1.0
M,P-XYLENE	10.0	1.0
O-XYLENE	16.0	1.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
PAGE 2 – QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#5	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W0504283	DATE ANALYZED:	05/04/93

QUALITY CONTROL:	SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
	BROMOCHLOROMETHANE	100.0 %	85–115%
	2–BROMO–1–CHLOROPROPANE	96.0 %	85–115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW–846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632–3365 FAX (505) 632–3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#6	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W0604283	DATE ANALYZED:	05/05/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	427.0	50.0
TOLUENE	36.0	50.0
ETHLYBENZENE	94.0	50.0
M,P-XYLENE	176.0	50.0
O-XYLENE	54.0	50.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
PAGE 2 – QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#6	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W0604283	DATE ANALYZED:	05/05/93

QUALITY CONTROL:

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
BROMOCHLOROMETHANE	98.0 %	85–115%
2–BROMO–1–CHLOROPROPANE	94.0 %	85–115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW–846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632–3365 FAX (505) 632–3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#8	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W0804283	DATE ANALYZED:	05/04/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	1.0
TOLUENE	ND	1.0
ETHLYBENZENE	ND	1.0
M,P-XYLENE	ND	1.0
O-XYLENE	ND	1.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

PAGE 2 – QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#8	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W0804283	DATE ANALYZED:	05/04/93

QUALITY CONTROL:

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
BROMOCHLOROMETHANE	87.0 %	85–115%
2–BROMO–1–CHLOROPROPANE	87.0 %	85–115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW–846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632–3365 FAX (505) 632–3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#9	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W0904283	DATE ANALYZED:	05/01/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	1.0
TOLUENE	ND	1.0
ETHLYBENZENE	ND	1.0
M,P-XYLENE	ND	1.0
O-XYLENE	ND	1.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
PAGE 2 – QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#9	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W0904283	DATE ANALYZED:	05/01/93

QUALITY CONTROL:

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
BROMOCHLOROMETHANE	92.0 %	85–115%
2–BROMO–1–CHLOROPROPANE	103.0 %	85–115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW–846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632–3365 FAX (505) 632–3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#10	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W1004283	DATE ANALYZED:	05/01/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	1.0
TOLUENE	ND	1.0
ETHLYBENZENE	ND	1.0
M,P-XYLENE	ND	1.0
O-XYLENE	ND	1.0

ND – ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
PAGE 2 – QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#10	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W1004283	DATE ANALYZED:	05/01/93

QUALITY CONTROL:

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
BROMOCHLOROMETHANE	98.0 %	85–115%
2–BROMO–1–CHLOROPROPANE	107.0 %	85–115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW–846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632–3365 FAX (505) 632–3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#11	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W1104283	DATE ANALYZED:	05/01/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	1.0
TOLUENE	ND	1.0
ETHLYBENZENE	ND	1.0
M,P-XYLENE	ND	1.0
O-XYLENE	ND	1.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
PAGE 2 – QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#11	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W1104283	DATE ANALYZED:	05/01/93

QUALITY CONTROL:	SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
	BROMOCHLOROMETHANE	106.0 %	85–115%
	2–BROMO–1–CHLOROPROPANE	114.0 %	85–115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW–846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632–3365 FAX (505) 632–3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#12	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W1204283	DATE ANALYZED:	05/05/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	482.0	1.0
TOLUENE	89.0	1.0
ETHLYBENZENE	180.0	1.0
M,P-XYLENE	229.0	1.0
O-XYLENE	288.0	1.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
PAGE 2 – QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#12	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W1204283	DATE ANALYZED:	05/05/93

QUALITY CONTROL:	SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
	BROMOCHLOROMETHANE	93.0 %	85–115%
	2–BROMO–1–CHLOROPROPANE	97.0 %	85–115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW–846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632–3365 FAX (505) 632–3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#13	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W1304283	DATE ANALYZED:	05/05/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	1.0
TOLUENE	ND	1.0
ETHLYBENZENE	ND	1.0
M,P-XYLENE	ND	1.0
O-XYLENE	ND	1.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
PAGE 2 – QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#13	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W1304283	DATE ANALYZED:	05/05/93

QUALITY CONTROL:

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
BROMOCHLOROMETHANE	103.0 %	85–115%
2–BROMO–1–CHLOROPROPANE	106.0 %	85–115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW–846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632–3365 FAX (505) 632–3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#15	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W1504283	DATE ANALYZED:	04/30/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	1.0
TOLUENE	28.0	1.0
ETHLYBENZENE	ND	1.0
M,P-XYLENE	ND	1.0
O-XYLENE	ND	1.0

ND – ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
PAGE 2 – QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#15	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W1504283	DATE ANALYZED:	04/30/93

QUALITY CONTROL:	SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
	BROMOCHLOROMETHANE	111.0 %	85–115%
	2–BROMO–1–CHLOROPROPANE	108.0 %	85–115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW–846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632–3365 FAX (505) 632–3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#16	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W1604283	DATE ANALYZED:	05/03/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	1.0
TOLUENE	ND	1.0
ETHLYBENZENE	3.0	1.0
M,P-XYLENE	2.0	1.0
O-XYLENE	3.0	1.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
PAGE 2 – QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#16	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W1604283	DATE ANALYZED:	05/03/93

QUALITY CONTROL:	SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
	BROMOCHLOROMETHANE	90.0 %	85–115%
	2–BROMO–1–CHLOROPROPANE	101.0 %	85–115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW–846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632–3365 FAX (505) 632–3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#17	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W1704283	DATE ANALYZED:	05/03/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	23424.0	50.0
TOLUENE	22173.0	50.0
ETHLYBENZENE	1967.0	50.0
M,P-XYLENE	8427.0	50.0
O-XYLENE	4734.0	50.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
PAGE 2 – QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#17	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W1704283	DATE ANALYZED:	05/03/93

QUALITY CONTROL:	SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
	BROMOCHLOROMETHANE	96.0 %	85–115%
	2–BROMO–1–CHLOROPROPANE	94.0 %	85–115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW–846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632–3365 FAX (505) 632–3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#18	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W1804283	DATE ANALYZED:	04/30/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	223.0	1.0
TOLUENE	19.0	1.0
ETHLYBENZENE	13.0	1.0
M,P-XYLENE	499.0	1.0
O-XYLENE	4.0	1.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
PAGE 2 – QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#18	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W1804283	DATE ANALYZED:	04/30/93

QUALITY CONTROL:	SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
	BROMOCHLOROMETHANE	98.0 %	85–115%
	2–BROMO–1–CHLOROPROPANE	99.0 %	85–115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW–846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632–3365 FAX (505) 632–3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#19	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W1904283	DATE ANALYZED:	04/30/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	45.0	1.0
TOLUENE	5.0	1.0
ETHLYBENZENE	118.0	1.0
M,P-XYLENE	612.0	1.0
O-XYLENE	11.0	1.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
PAGE 2 – QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#19	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W1904283	DATE ANALYZED:	04/30/93

QUALITY CONTROL:

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
BROMOCHLOROMETHANE	92.0 %	85–115%
2–BROMO–1–CHLOROPROPANE	86.0 %	85–115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW–846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632–3365 FAX (505) 632–3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#20	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W2004283	DATE ANALYZED:	04/30/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	3.0	1.0
TOLUENE	3.0	1.0
ETHLYBENZENE	32.0	1.0
M,P-XYLENE	315.0	1.0
O-XYLENE	10.0	1.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
PAGE 2 – QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#20	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W2004283	DATE ANALYZED:	04/30/93

QUALITY CONTROL:	SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
	BROMOCHLOROMETHANE	103.0 %	85–115%
	2–BROMO–1–CHLOROPROPANE	108.0 %	85–115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW–846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632–3365 FAX (505) 632–3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#21	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W2104283	DATE ANALYZED:	04/30/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	33.0	1.0
TOLUENE	ND	1.0
ETHLYBENZENE	ND	1.0
M,P-XYLENE	ND	1.0
O-XYLENE	ND	1.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
PAGE 2 – QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#21	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W2104283	DATE ANALYZED:	04/30/93

QUALITY CONTROL:

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
BROMOCHLOROMETHANE	99.0 %	85–115%
2–BROMO–1–CHLOROPROPANE	100.0 %	85–115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW–846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632–3365 FAX (505) 632–3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#22	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W2204283	DATE ANALYZED:	04/29/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	1.0
TOLUENE	ND	1.0
ETHLYBENZENE	ND	1.0
M,P-XYLENE	ND	1.0
O-XYLENE	ND	1.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
PAGE 2 – QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	MW#22	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	W2204283	DATE ANALYZED:	04/29/93

QUALITY CONTROL:

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
BROMOCHLOROMETHANE	85.0 %	85–115%
2–BROMO–1–CHLOROPROPANE	92.0 %	85–115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW–846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632–3365 FAX (505) 632–3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	STRIPPER EFFLUENT	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	WEF04283	DATE ANALYZED:	05/05/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	1.0
TOLUENE	ND	1.0
ETHLYBENZENE	ND	1.0
M,P-XYLENE	ND	1.0
O-XYLENE	ND	1.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
PAGE 2 – QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	STRIPPER EFFLUENT	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	WEF04283	DATE ANALYZED:	05/05/93

QUALITY CONTROL:	SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
	BROMOCHLOROMETHANE	113.0 %	85–115%
	2–BROMO–1–CHLOROPROPANE	106.0 %	85–115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW–846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632–3365 FAX (505) 632–3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	STRIPPER INFLUENT	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	WIN04283	DATE ANALYZED:	04/30/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	232.0	1.0
TOLUENE	174.0	1.0
ETHLYBENZENE	89.0	1.0
M,P-XYLENE	212.0	1.0
O-XYLENE	34.0	1.0

ND - ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
PAGE 2 – QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD	DATE SAMPLED:	04/28/93
SAMPLE ID:	STRIPPER INFLUENT	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	WIN04283	DATE ANALYZED:	04/30/93

QUALITY CONTROL:

SURROGATE	PERCENT RECOVERY	ACCEPTANCE LIMIT
BROMOCHLOROMETHANE	104.0 %	85–115%
2–BROMO–1–CHLOROPROPANE	109.0 %	85–115%

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW–846,
VOLUME IB, NOVEMBER 1990

COMMENTS:

ANALYST

REVIEW

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632–3365 FAX (505) 632–3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
QUALITY CONTROL

CLIENT:	THRIFTWAY	SAMPLE MATRIX:	WATER
CLIENT NUMBER:	99810	PRESERVATIVE:	HGCL2
PROJECT NAME:	THRIFTWAY REFINERY	REPORT DATE:	05/19/93
PROJECT LOCATION:	BLOOMFIELD, NM	DATE SAMPLED:	04/28/93
SAMPLE ID:	WSS05013	DATE RECIEVED:	04/28/93
SAMPLE NUMBER:	SPIKE SAMPLE	DATE ANALYZED:	05/01/93

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE RESULTS (ug/L)	SPIKED SAMPLE RESULTS (ug/L)	PERCENT RECOVERY
BENZENE	10.0	ND	10.4	104
TOLUENE	10.0	ND	10.6	106
ETHLYBENZENE	10.0	ND	9.4	94

ND – ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW–846,
VOLUME IB, NOVEMBER 1990

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 8740
LABORATORY OFFICE (505) 632–3365 FAX (505) 632–3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
QUALITY CONTROL

CLIENT:	NA	SAMPLE MATRIX:	NA
CLIENT NUMBER:	NA	PRESERVATIVE:	NA
PROJECT NAME:	NA	REPORT DATE:	04/29/93
PROJECT LOCATION:	NA	DATE SAMPLED:	NA
SAMPLE ID:	LABORATORY BLANK	DATE RECIEVED:	NA
SAMPLE NUMBER:	B2004293	DATE ANALYZED:	04/29/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	1.0
TOLUENE	ND	1.0
ETHLYBENZENE	ND	1.0
M,P-XYLENE	ND	1.0
O-XYLENE	ND	1.0

ND – ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
QUALITY CONTROL

CLIENT:	NA	SAMPLE MATRIX:	NA
CLIENT NUMBER:	NA	PRESERVATIVE:	NA
PROJECT NAME:	NA	REPORT DATE:	04/30/93
PROJECT LOCATION:	NA	DATE SAMPLED:	NA
SAMPLE ID:	LABORATORY BLANK	DATE RECIEVED:	NA
SAMPLE NUMBER:	B2004303	DATE ANALYZED:	04/30/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	1.0
TOLUENE	ND	1.0
ETHLYBENZENE	ND	1.0
M,P-XYLENE	ND	1.0
O-XYLENE	ND	1.0

ND – ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
QUALITY CONTROL

CLIENT:	NA	SAMPLE MATRIX:	NA
CLIENT NUMBER:	NA	PRESERVATIVE:	NA
PROJECT NAME:	NA	REPORT DATE:	05/01/93
PROJECT LOCATION:	NA	DATE SAMPLED:	NA
SAMPLE ID:	LABORATORY BLANK	DATE RECIEVED:	NA
SAMPLE NUMBER:	B2001043	DATE ANALYZED:	05/01/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	1.0
TOLUENE	ND	1.0
ETHLYBENZENE	ND	1.0
M,P-XYLENE	ND	1.0
O-XYLENE	ND	1.0

ND – ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
QUALITY CONTROL

CLIENT:	NA	SAMPLE MATRIX:	NA
CLIENT NUMBER:	NA	PRESERVATIVE:	NA
PROJECT NAME:	NA	REPORT DATE:	05/04/93
PROJECT LOCATION:	NA	DATE SAMPLED:	NA
SAMPLE ID:	LABORATORY BLANK	DATE RECIEVED:	NA
SAMPLE NUMBER:	B2004043	DATE ANALYZED:	05/04/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	1.0
TOLUENE	ND	1.0
ETHLYBENZENE	ND	1.0
M,P-XYLENE	ND	1.0
O-XYLENE	ND	1.0

ND – ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

BIOTECH LABORATORIES

EPA METHOD 8020
PURGABLE AROMATICS
QUALITY CONTROL

CLIENT:	NA	SAMPLE MATRIX:	NA
CLIENT NUMBER:	NA	PRESERVATIVE:	NA
PROJECT NAME:	NA	REPORT DATE:	05/05/93
PROJECT LOCATION:	NA	DATE SAMPLED:	NA
SAMPLE ID:	LABORATORY BLANK	DATE RECIEVED:	NA
SAMPLE NUMBER:	B2005053	DATE ANALYZED:	05/05/93

ANALYTE	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
BENZENE	ND	1.0
TOLUENE	ND	1.0
ETHLYBENZENE	ND	1.0
M,P-XYLENE	ND	1.0
O-XYLENE	ND	1.0

ND – ANALYTE NOT DETECTED AT STATED DETECTION LIMIT

REFERENCE: METHOD 5030, PURGE AND TRAP
METHOD 8020, PURAGABLE AROMATICS
TEST METHOD FOR EVALUATION SOLID WASTE,
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, SW-846,
VOLUME IB, NOVEMBER 1990

THRIFTWAY PROFESSIONAL BUILDING 710 EAST 20TH STREET SUITE 400 FARMINGTON, NEW MEXICO 87401
LABORATORY OFFICE (505) 632-3365 FAX (505) 632-3365

APPENDIX B

MARK E. WEIDLER
Certified Professional Geologist

Office: (505) 325-9359
Residence: (505) 325-3641
AIPG NO. 2488

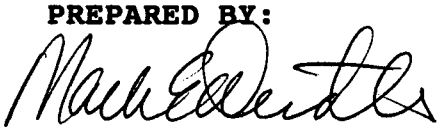
3001 Nothridge Drive
P.O. Box 3028
Farmington, New Mexico 87499

Hydrolgeologic Studies
Site Investigations
Remediation Plans

INVESTIGATION OF FREE PHASE PRODUCT THRIFTWAY REFINERY-SITE 810 BLOOMFIELD, NEW MEXICO

PREPARED FOR:
KEN SINKS, SENIOR PROJECT MANAGER
BIOTECH REMEDIATION, INC.

PREPARED BY:



MARK E. WEIDLER
CERTIFIED PROFESSIONAL GEOLOGIST
CPG-2488

MAY 25, 1993

\810\060193.WIN

TABLE OF CONTENTS

LIST OF FIGURES

1.0 BACKGROUND

During the fall of 1992, several inches of free product was discovered in MW-12 adjacent to the south boundary of the refinery, east of the office building. The product was light straw colored and appeared to be fresh diesel. The well was bailed several times and the product reduced to a trace after recovering several gallons. Mr. Ken Sinks asked me to investigate the possible source of the contamination. In the course of this investigation, the author found an additional, sizeable area of free-product not previously recognized.

2.0 MONITOR WELL NO. 12

The fresh, straw color of the product recovered from MW-12 is unlike free-product found elsewhere underlying the refinery. Free-product is normally dark in color and has a strong odor of gasoline vapors. The product from MW-12 has a distinct diesel odor and color. The nearest tanks that contained diesel during the time the refinery was operating was No. 20 and No. 25. Both are located across gradient and over 300 feet from MW-12, and it seems unreasonable for a well previously uncontaminated, to suddenly evidence several inches of product when no precursers were found during previous monitoring. It appears that the well was purposely 'salted' by someone who hoped to embarrass Thriftway or cause problems. The fact that the product is nearly gone, with no recharging, supports this view.

3.0 OTHER PRODUCT CONTAMINATION

In the course of the investigation regarding MW-12, we measured fluid levels and checked for free-product in all monitor wells at the refinery, except MW-7, which was destroyed during construction of the collection trench along the north property boundary. During this survey, MW-14 showed nearly 20 inches of product. The well was bailed several times and remeasured, but continued to show about 20 inches of product. This was reported to Thriftway management, who directed that further investigation be conducted to define the area of contamination, and that product recovery be immediately initiated. It was apparent that the contamination was old, and not the result of a recent release.

3.1 METHOD OF INVESTIGATION

In order to obtain accurate data on fluid levels and product thickness, it was decided to utilize well points to obtain the desired data. A boring would be advanced with an auger to approximately 6 inches above the top of subsurface fluid. A 30-inch well point would be driven on blank 2-inch pipe until fluid level was near the top of the well screen. The well was allowed to equilibrate for 24 hours before measurements were made for depth to fluid and thickness of product. These test wells provided data on the thickness of product and fluid levels for the design of recovery wells. In addition the data was utilized to map the water-table (Figure 3), and product thickness (Figure 1) in the study area.

3.2 RECOVERY WELLS

The design of recovery wells (Figure 4) was intended to maximize the rate of product recovery. Eight-inch or 6-inch, schedule 40 PVC, was utilized for casing. Based upon fluid measurements from the test boring (observation well), the well casing was designed to place perforations opposite free product. We believed that by allowing product to gravity drain into a sump provided by several feet of casing rat-hole below the perforations, we could increase the rate of recovery.

The recovery wells were drilled with a rotary auger, 13-inches in diameter. The well was drilled approximately 3-feet deeper than the casing design length, so it could be 'pressed' into the zone of saturation and be positioned at the proper depth so perforations were opposite product. The bottom of the perforations were placed several inches above the product-water interface, because we expected the interface would rise as product was recovered. Sand (10/20 mesh) grout was placed around the casing to the level of the top of perforations.

3.3 METHOD OF RECOVERY

Product and water accumulated in the reservoir by gravity drainage. It was pumped from the casing 'sump' by utilizing a pneumatic diaphragm pump through 3/4-inch PVC and 1-inch I.D. suction hose. Recovered fluid was pumped via 3/4" PVC line to a buried tank utilized for waste oil and water at the refinery.

Eight recovery wells were installed during October, 1992, in the area north of Tank No. 19 and east and northeast of Tank NO. 21

(Figures 1,2,3). Twenty one (21) test borings were made to further define the area of contamination in this area. We later made five test borings north of Tank No. 17, and one within the berm at the southeast corner of Tank No. 18, which revealed product.
It appears that this area of contamination is continuous with the area adjacent to Tank No. 19 and 21 (Figure 1 and 2).

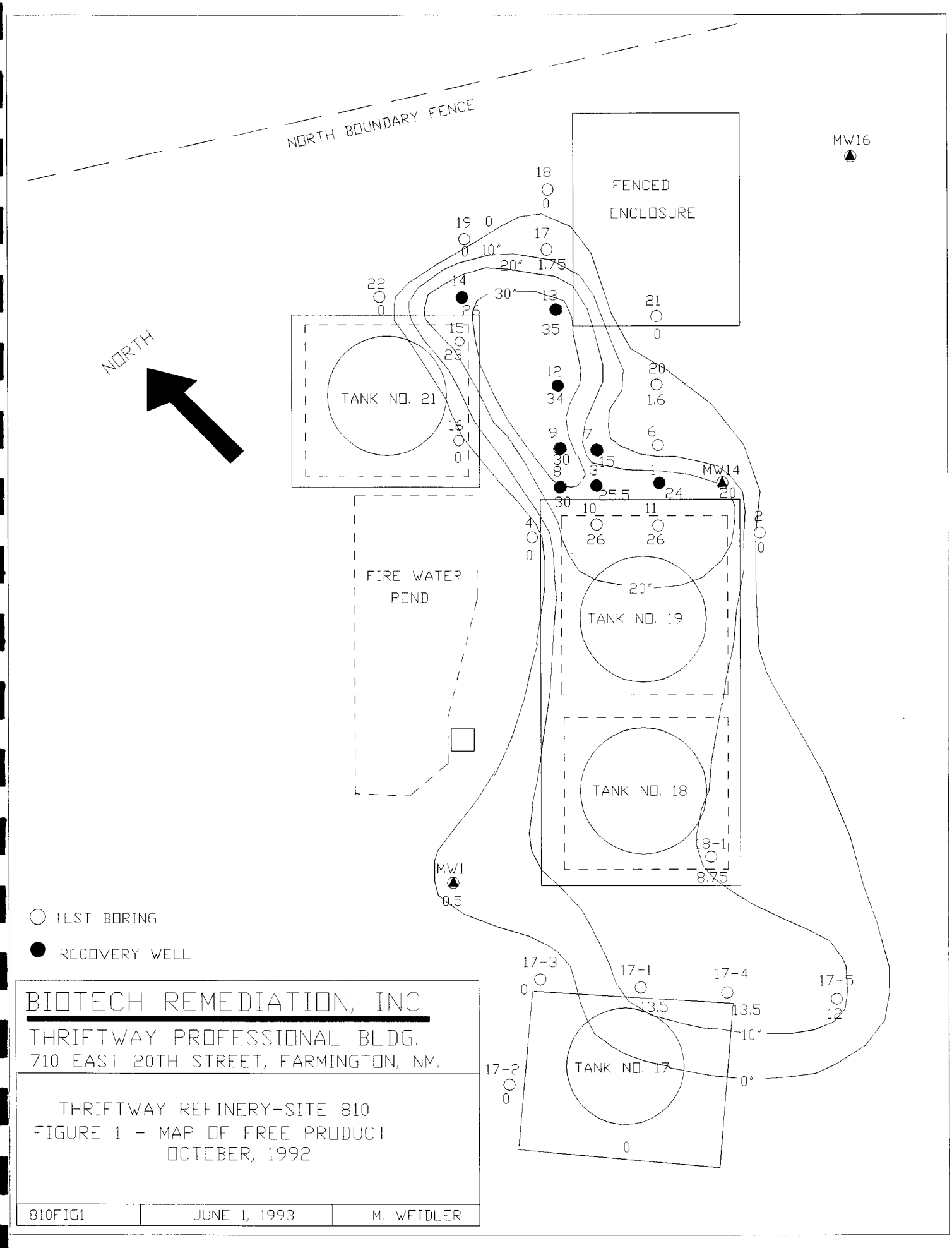
4.0 MAPPING CONTAMINATION

The data collected from observation wells were compiled into work maps that were utilized to guide work on the recovery project, and served as the basis for this report. Casing elevations were surveyed utilizing the bench mark used for earlier hydrogeologic work at the refinery. Figure 3 shows contours on top of the water table. Figure 1 shows thickness of free product prior to initiation of regular pumping and recovery. Figure 2 shows free product thicknesses measured May 12, 1993. These data indicate a significant reduction in product thickness has been achieved by withdrawals through the winter and spring months.

It is apparent that the free product is a long time accumulation of releases, overfills, spills, etc. that occurred at the refinery. The configuration of the water table is obviously dramatically affected by the hydraulic head of the fire water pond, and this has provided a hydraulic barrier that has led to the 'entrapment' of a large amount of product to the east of the fire pond barrier. This is probably fortunate in that we can more easily recover the product because of its containment.

5.0 FUTURE WORK

Based upon this study, additional recovery wells should be installed to accelerate product recovery. We are testing an 'Oil Mop' recovery system at another site. If it proves beneficial for accelerating product recovery, we should consider utilizing a similar system at this site.

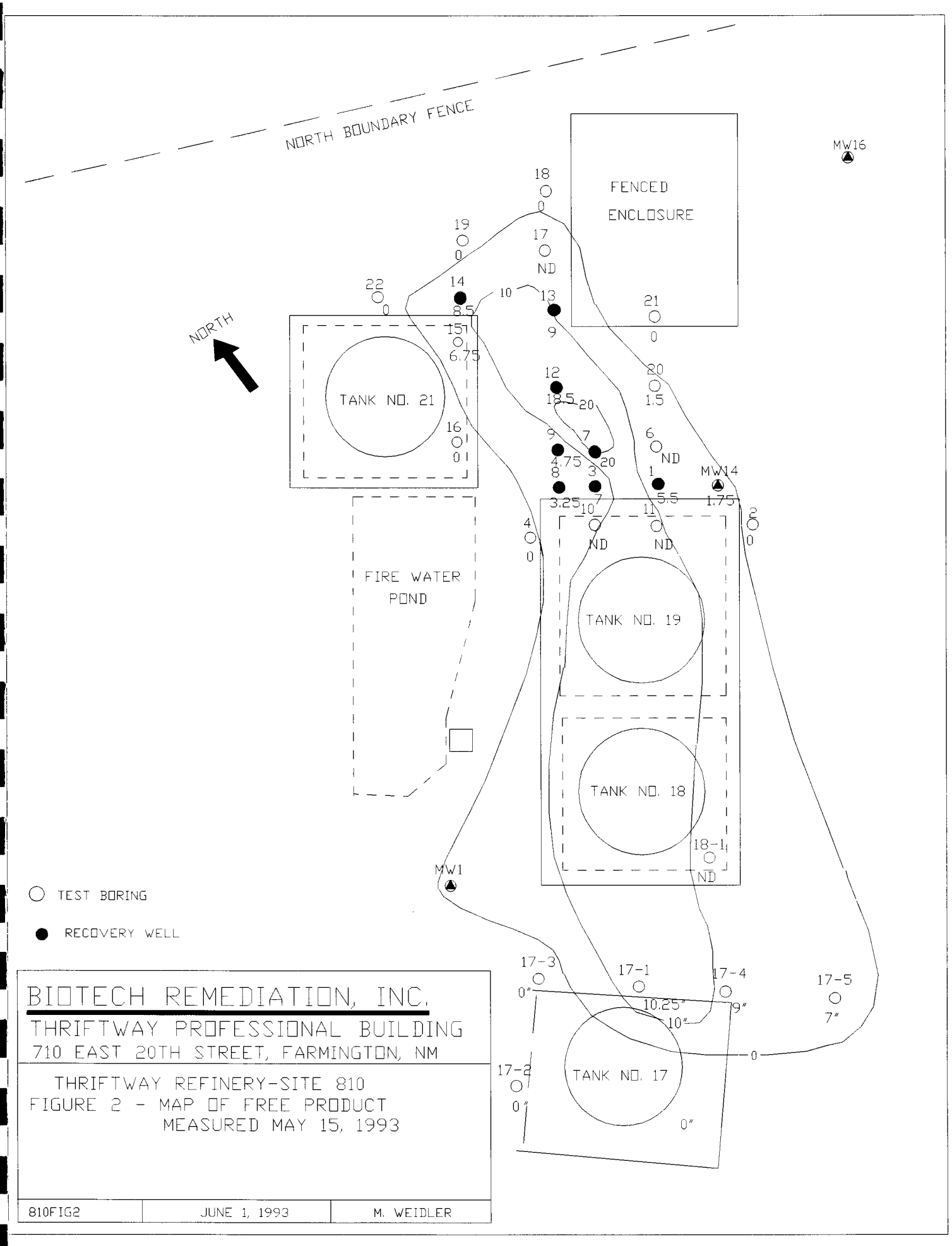


BIOTECH REMEDIATION, INC.

THRIFTWAY PROFESSIONAL BLDG.
710 EAST 20TH STREET, FARMINGTON, NM.

THRIFTWAY REFINERY-SITE 810
FIGURE 1 - MAP OF FREE PRODUCT
OCTOBER, 1992

810FIG1	JUNE 1, 1993	M. WEIDLER



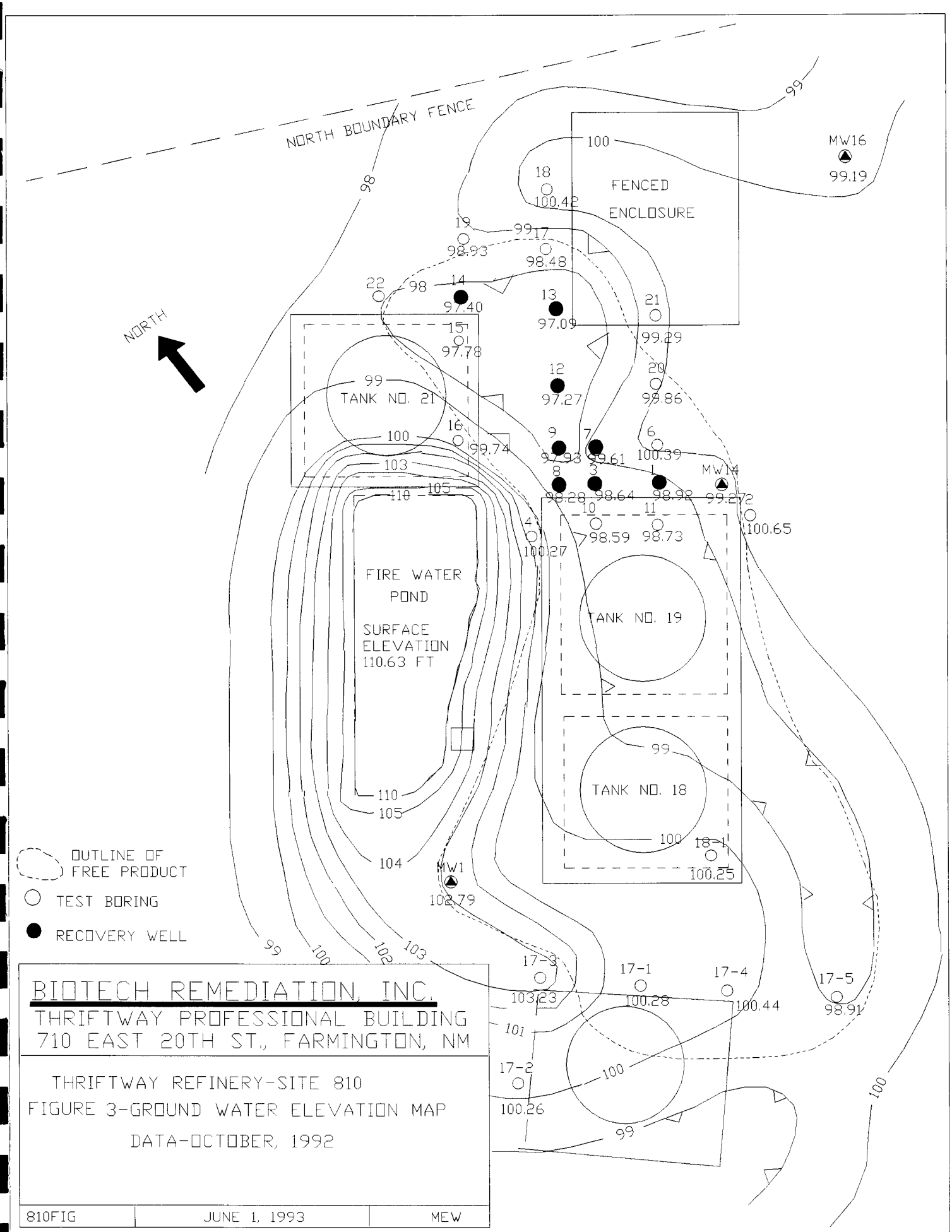
BIOTECH REMEDIATION, INC.

THRIFTWAY PROFESSIONAL BUILDING

710 EAST 20TH STREET, FARMINGTON, NM

THRIFTWAY REFINERY-SITE 810
FIGURE 2 - MAP OF FREE PRODUCT
MEASURED MAY 15, 1993

810FIG2	JUNE 1, 1993	M. WEIDLER

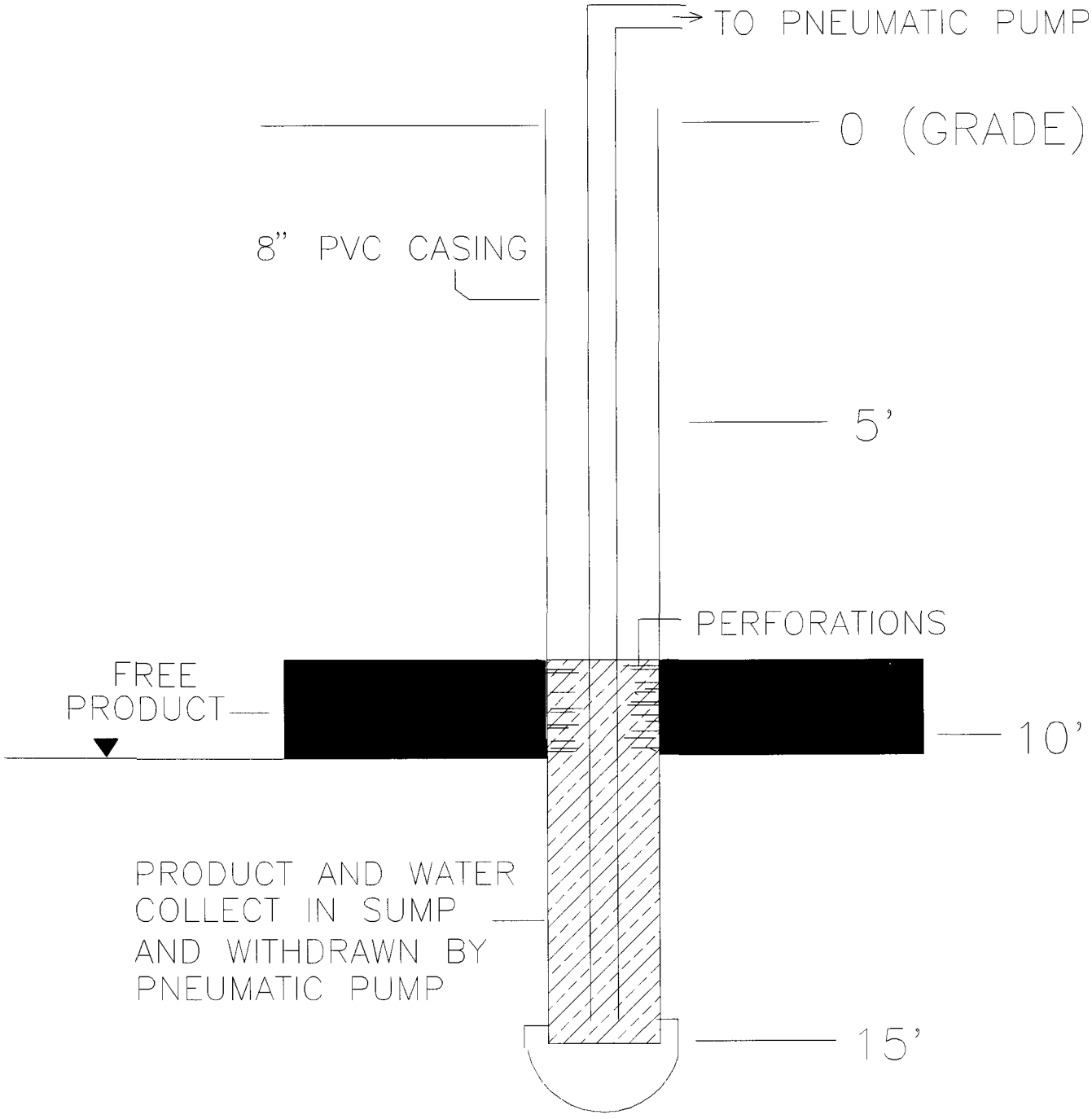


BIOTECH REMEDIATION, INC.

THRIFTWAY PROFESSIONAL BUILDING
710 EAST 20TH ST., FARMINGTON, NM

THRIFTWAY REFINERY-SITE 810
FIGURE 3-GROUND WATER ELEVATION MAP
DATA-OCTOBER, 1992

810FIG	JUNE 1, 1993	MEW



BIOTECH REMEDIATION, INC.
THRIFTWAY PROFESSIONAL BUILDING
710 EAST 20TH ST., FARMINGTON, NM

THRIFTWAY REFINERY–SITE 810

FIGURE 4 – SCHEMATIC DRAWING OF TYPICAL RECOVERY WELL

810FIG4M	JUNE 1, 1993	M. WEIDLER