

GW - 55

MONITORING REPORTS

DATE:

1998

BioTECH REMEDIATION INC.

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**ANNUAL GROUNDWATER MONITORING REPORT
THRIFTWAY REFINERY
626 COUNTY ROAD 5500
BLOOMFIELD, NEW MEXICO
1 OF 2**

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**ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION**

prepared for the

NEW MEXICO OIL CONSERVATION DIVISION

Mr. Will Olsen, Project Manager, Santa Fe Office

and

Mr. Denny Foust, Aztec Office

March 19, 1999



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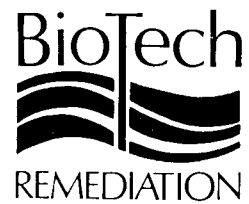
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1.0 INTRODUCTION

In compliance with the Groundwater Discharge Plan GW-55 and pursuant to the requirements of the New Mexico Oil Conservation Division (NMOCD), BioTech Remediation, Inc. (BioTech), on behalf of Thriftway Company, submits the following 1998 Annual Monitoring and Sampling Report for the Thriftway Refinery, 626 County Road 5500, Bloomfield, New Mexico.

This report summarizes the monitoring and sampling activities, groundwater measurement and laboratory analyses data compilation, and the phase-separated product recovery activities for groundwater monitoring wells for 1998. Special activities outside of the normal sampling and monitoring included replacement of the air stripper with the Best Available Technology (BAT) to improve performance. The new air stripper utilizes Diffusion Technology.

2.0 ANNUAL MONITORING AND SAMPLING ACTIVITIES

BioTech personnel completed the monitoring and sampling requirements for the four quarterly monitoring events in 1998. During each monitoring and sampling event, groundwater monitoring well measurements and sample collection strictly followed the procedures outlined below.

2.1 Groundwater Measurement

During each groundwater-sampling event, depth-to-groundwater measurements were made in each monitoring well. A Solonist Air Water Interface Probe was used to measure from the survey point on the top of the well casing to the top of groundwater. Depth measurements were made in feet and were recorded following the measurement of each monitoring well. Groundwater measurement data is summarized and presented in Table 1, and groundwater contour plots based on the elevation data were constructed and are found in Figures 1A through 1D.

2.2 Groundwater Sample Collection and Analyses

Before groundwater samples were collected, each monitoring well was purged of approximately three well volumes, approximately five to seven gallons, and then allowed a short recovery period in order for the groundwater to equilibrate within the well casing. During groundwater purging, the temperature, pH, dissolved oxygen (DO) and electrical conductivity were measured and recorded onto Water Sampling Record forms. Each monitoring well was considered to be successfully purged and ready for sample collection when the pH and conductivity readings stabilized and did not vary by more than ten percent over two purged well volumes. Following the use of each measuring instrument, a thorough decontamination and rinsing was performed. The decontamination and rinsing protocols employed are detailed in Section 3.0.

During BTEX sample collection, a disposable bailer was lowered slowly into the well casing, taking care not to agitate the casing water. The bailer was allowed to take on water and then carefully removed from the well. Once removed, the bailer was fitted with a flow regulating sample collection nipple to transfer the samples into the appropriate sample container. Groundwater samples were added to each sample container at an approximate rate of 100 ml per minute. In transferring the sample from the bailer to the sample container, extreme care was taken to ensure that each container was filled from the bottom completely until a meniscus formed and no headspace or air bubbles were present. The containers were then tightly sealed and observed while rotating to further ascertain that each was completely void of air.

2.3 Sample Preservation

For analyses requiring sample preservation beyond retention at a cool temperature, the viles were prepared in advance by the analyzing laboratory with hydrochloric acid (HCl), Sulfuric acid (H₂SO₄) or other appropriate preservative as required by the laboratory sample protocol. The HCl was added primarily to prevent bacterial degradation of hydrocarbons during sample transport and laboratory holding time.

2.4 Sample Identification

Immediately following sample collection, containers were labeled with the sample origin, time and date of collection, type of sample, sampler identification, preservative used, and the requested analysis. Once labeled, each sample was logged onto a Chain of Custody Record. As they were collected, properly labeling and logging each of the samples avoided the potential for sample misidentification.

2.5 Sample Transport

Once each sample had been collected, labeled, and logged onto the Chain of Custody Record, the containers were placed in an insulated cooler containing ice, where the samples were maintained at approximately 4° C until delivered to On-Site Technologies Laboratory, Farmington, New Mexico. The Chain of Custody Record was completed at the laboratory, and the samples were then relinquished.

2.6 Analyses

Groundwater sampling of the refinery monitoring wells was conducted quarterly, and sampling of the air stripper influent and effluent as well as the pond was conducted monthly. During each sampling event, collected samples were analyzed for methyl-t-butyl ether (MTBE) and benzene, toluene, ethylbenzene, and xylene (BTEX) per EPA Method 8020 at On-Site Technologies in Farmington, New Mexico. Additionally, samples were collected annually and laboratory-analyzed for total dissolved solids (TDS), cations and anions, and poly-aromatic hydrocarbons (PAHs) at Mountain States Analytical, Inc. in Salt Lake City, Utah. The laboratory results of BTEX analyses are

presented in Table 2. The remaining laboratory analyses collected on an annual basis were tabulated, and cations and anions, TDS and pH are found in Table 3; PAHs are found in Table 4; and metals are summarized in Table 5. From field data collected during sampling as well as the analytical laboratory results, several isoconcentration maps were generated. Quarterly benzene concentration maps, free product plume maps, and conductivity contour maps are presented in Figures 2, 3, and 4, respectively. Figures 5 and 6 represent annual contour maps of TDS and chloride, respectively. Laboratory reports, QA/QC data and chain of custody records for the groundwater monitoring wells and the air stripper influent and effluent are included in Appendix A.

3.0 EQUIPMENT DECONTAMINATION

In order to ensure data validity and prevent cross-contamination, BioTech personnel employed and strictly followed decontamination protocols. During all monitoring well measurement and sample collection, the following methods for decontaminating equipment were employed:

- wash with detergent (Alconox) and distilled water
- rinse with distilled water
- wash with detergent (Alconox) and distilled water
- double rinse with distilled water

4.0 FREE PRODUCT RECOVERY

The results of free product recovery were documented and are presented in Table 1. During 1998, 525 gallons of product was recovered from the groundwater. Most of the product was recovered through the groundwater collection system. The remainder of the product was recovered from monitoring wells during monitoring and sampling events. Currently, collected product is being stored in a 500-barrel (BBL) tank, which is located within a concrete berm and pad area.

It is anticipated that with an increase in the air stripper operating time resulting from the installation of the new air stripper, greater volumes of product will be recovered. Further discussion regarding the changes in the groundwater collection and treatment system is provided in the following section.

5.0 GROUNDWATER TREATMENT EQUIPMENT

The mechanical operation of both the old and new air strippers and associated groundwater treatment equipment has obtained an average on-stream air stripper operation of 42.96 percent during 1998. The old air stripper was not able to operate continuously during 1998 due to the high maintenance. The new stripper came on line September 24, 1998 and the system operated almost 100% during the last quarter of 1998.

The new stripper is a Carbatrol air diffuser. This technology uses diffuser piping submerged in six different cells. The water passes from one cell to the next while undergoing air sparging in each cell.

6.0 DISCUSSION AND RECOMMENDATIONS

Models, which take into consideration groundwater elevation contours, contaminant concentrations, and free product extent indicate full capture has not been realized at the refinery property line to contain the spread of hydrocarbon contamination and free product. Although comparing data collected during 1997 with the 1998 data, minimal change has been realized in overall site conditions, it is believed that the reason for this is the down time the air stripper experienced during 1997 and 1998. It is anticipated that heavy scaling of the diffusers will be experienced even with the new equipment, therefore on-going maintenance is required.

In reviewing the cumulative data contained within this report as well as previously submitted data, BioTech concludes that with the most recent modifications and upgrades made to the groundwater extraction and treatment system during 1998, contaminant plume containment should be evident along with plume and contaminant concentration reductions. This will be monitored in outlying monitor wells MW-05, MW-19, MW-20, MW-21 and MW-22. Therefore, BioTech on behalf of Thriftway recommends that the established monitoring and sampling schedule continue through 1999.

TABLES

TABLE 1
THRIFTWAY REFINERY
SUMMARY OF GROUND WATER MONITOR DATA

WELL	DATE	TIME	ELEVATION TOP OF PIPE	(feet)		(feet) WATER OUTAGE	(feet) PRODUCT THICKNESS	(feet) ADJUSTED WATER LEVEL ELEVATION	(gallons)		TEMP DEG. C	Ph	CONDUCTIVITY uohms/cm
				INTERFACE AIR/OIL					ACCUMULATED	D.O. ppm			
8" REC WELL MW-01	06/25/98	-		18.5		19.29	0.79		-	NM		NM	NM
	09/23/98			NOT MEASURED									
	10/07/96	13:37	5449.08	15.68		15.68	0.00	5433.40	1.66				
	12/31/96	16:10	5449.08	15.62		15.62	0.00	5433.46	1.66	1.90			4730
	03/19/97	14:38	5449.08	15.65		15.65	0.00	5433.43	1.66	N/A			4700
	06/18/97	10:06	5449.08	15.37		15.37	0.00	5433.71	1.66	0.18			4670
	09/24/97	15:50	5449.08	15.08		15.08	0.00	5434.00	1.66	0.06			4590
MW-02	12/23/97	12:40	5449.08	15.08		15.08	0.00	5434.00	1.66	NM			4630
	04/28/98	16:37	5449.08	14.72		14.72	0.00	5434.36	1.66	0.11			4620
	06/24/98	12:05	5449.08	14.97		14.97	0.00	5434.11	1.66	0.22		7.35	4990
	09/23/98	10:45	5449.08	15.52		15.52	0.00	5433.56	1.66	0.18	16.60	7.10	4530
	12/30/98	12:25	5449.08	00.00		15.00	0.00	5434.08	1.66	0.28	15.00	7.10	4990
	10/09/96	15:30	5442.65	12.16		13.50	1.34	5430.09	0.20	PRODUCT			PRODUCT
	12/30/96		5442.65	12.35		12.54	0.19	5430.24	0.35	PRODUCT			PRODUCT
	03/17/97		5442.65	12.18		12.37	0.19	5430.41	0.37	PRODUCT			PRODUCT
	06/18/97		5442.65	12.11		12.14	0.03	5430.53	0.43	PRODUCT			PRODUCT
	09/29/97		5442.65	11.86		11.98	0.12	5430.75	0.43	PRODUCT			PRODUCT
MW-03	12/18/97		5442.65	11.64		11.69	0.05	5431.00	0.43	PRODUCT			PRODUCT
	04/29/98	10:55	5442.65	11.75		11.77	0.02	5430.88	0.44	PRODUCT			PRODUCT
	06/22/98	15:40	5442.65	11.74		11.78	0.04	5430.90	0.45	PRODUCT	7.35		3480
	09/23/98	10:15	5442.65	12.04		12.04	0.00	5430.61	0.45	0.15	16.80	7.00	3320
	09/23/98		NA	NA		NA	NA	NA	0.45	NA	NA	NA	NA
	12/30/98	17:39	5442.65	11.6		11.61	0.01	5431.05	0.45	0.15	16.80	7.00	3320
	10/09/96	15:00	5431.43	5.17		5.17	0.00	5426.26	0.00				
	12/31/96	15:45	5431.43	4.60		4.72	0.12	5426.78	0.01	PRODUCT			PRODUCT
	03/17/97	-	5431.43	3.44		3.44	0.00	5427.99	0.01	NM			NM
	06/18/97	15:35	5431.43	3.38		3.38	0.00	5428.05	0.01	NM			NM
MW-04	09/29/97		5431.43	5.15		5.18	0.03	5426.27	0.02	PRODUCT			PRODUCT
	12/18/97		5431.43	3.42		3.42	0.00	5428.01	0.02	PRODUCT			PRODUCT
	04/29/98		5431.43	4.47		4.47	0.00	5426.96	0.02	NM			NM
	06/24/98	15:59	5431.43	4.30		4.30	0.00	5427.13	0.02	0.09	7.16		6080
	09/22/98		5431.43	NM		NM	NM		0.02	NM	NM	NM	NM
	12/30/98	17:39	5431.43	3.57		3.57	0.00	5427.86	0.02	NM	NM	NM	NM
	12/31/96	12:00	5430.12	5.18		5.18	0.00	5424.94	0.00	2.70			4270
	03/19/97		5430.12	4.28		4.28	0.00	5425.84	0.00	N/A			4450
	06/17/97	13:55	5430.12	4.08		4.08	0.00	5426.04	0.00	0.08			5150

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WELL	DATE	TIME	ELEVATION TOP OF PIPE	(feet)		(feet)	WATER OUTAGE	(feet)		(feet)	ADJUSTED WATER LEVEL	(gallons)		TEMP DEG. C	Ph	CONDUCTIVITY uohms/cm
				INTERFACE	AIR/OIL	PRODUCT THICKNESS		PRODUCT	THICKNESS			ACCUMULATED	D.O. ppm			
MW-05	09/24/97	1350	5430.12	4.19		0.00	4.19		0.00		5425.93	0.00	0.19			4170
	12/22/97	956	5430.12	4.31		0.00	4.31		0.00		5425.81	0.00	0.13			3280
	12/22/97	956	5430.12	4.31		0.00	4.31		0.00		5425.81	0.00	0.13			3280
	04/29/98			WELL DESTROYED												
	06/22/98			WELL DESTROYED												
	10/09/96	11:20	5428.97	5.55		0.00	5.55		0.00		5423.42	0.00				
	12/31/96	11:30	5428.97	5.19		0.00	5.19		0.00		5423.78	0.00	1.90			5800
	03/19/97	1050	5428.97	4.63		0.00	4.63		0.00		5424.34	0.00	N/A			5770
	06/17/97	1355	5428.97	4.41		0.00	4.41		0.00		5424.56	0.00	0.30			5850
	09/24/97	1200	5428.97	3.77		0.00	3.77		0.00		5425.20	0.00	0.09			5940
MW-06	12/19/97	1620	5428.97	4.37		0.00	4.37		0.00		5424.80	0.00	0.06			5930
	04/27/98	1505	5428.97	4.47		0.00	4.47		0.00		5424.50	0.00	0.07			5760
	06/24/98	1040	5428.97	4.78		0.00	4.78		0.00		5424.19	0.00	0.09		8.56	5720
	09/24/98	1205	5428.97	5.22		0.00	5.22		0.00		5423.75	0.00	0.09		18.90	5590
	12/29/98	1730	5428.97	4.11		0.00	4.11		0.00		5424.86	0.00	0.12		13.40	6320
	10/09/96	10:25	5430.7	5.28		0.00	5.28		0.00		5425.42	0.00				
	12/31/96		5430.7	4.65		0.00	4.65		0.00		5426.05	0.00	4.70			4230
	03/19/97	907	5430.7	3.65		0.00	3.65		0.00		5427.05	0.00	N/A			4070
	06/17/97	1533	5430.7	3.62		0.00	3.62		0.00		5427.08	0.00	1.71			4250
	09/24/97	1455	5430.7	4.58		0.00	4.58		0.00		5426.12	0.00	0.21			4100
MW-07	12/19/97	1345	5430.7	4.23		0.00	4.23		0.00		5426.47	0.00	NM			4100
	04/27/98	1550	5430.7	4.14		0.00	4.14		0.00		5426.56	0.00	0.14			3870
	06/24/98	1525	5430.7	4.53		0.00	4.53		0.00		5426.17	0.00	0.12		7.60	3990
	09/22/98	1430	5430.7	4.55		0.00	4.55		0.00		5426.15	0.00	0.19		18.80	3840
	12/30/98	1120	5430.7	3.72		0.00	3.72		0.00		5426.98	0.00	0.62		13.50	3650
	10/07/96		5434.34	8.29		0.21	8.50		0.21		5425.99	0.27				
	12/30/96		5434.34	7.54		0.00	7.54		0.00		5426.80	0.27	PRODUCT			PRODUCT
	03/19/97	1527	5434.34	6.55		0.00	6.55		0.00		5427.79	0.27	N/A			N/A
	06/18/97	-	5434.34	6.47		0.00	6.47		0.00		5427.87	0.27	NM			NM
	09/29/97	-	5434.34	8.01		0.00	8.01		0.00		5426.33	0.27	NM			NM
	12/18/97	-	5434.34	6.61		0.00	6.61		0.00		5427.73	0.27	NM			NM
	04/29/98	1040	5434.34	7.65		0.00	7.65		0.00		5426.69	0.27	0.01			4700
	06/24/98	1450	5434.34	7.54		0.00	7.54		0.00		5426.80	0.27	0.14		7.51	4770
	09/23/98	930	5434.34	7.52		0.01	7.53		0.01		5426.82	0.27	NM		NM	NM
	12/30/98	1130	5434.34	6.57		0.00	6.57		0.00		5427.77	0.27	NM		NM	NM

TABLE 1
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WELL	DATE	TIME	ELEVATION TOP OF PIPE	(feet)		(feet)	WATER OUTAGE	(feet) PRODUCT THICKNESS	(feet) ADJUSTED WATER LEVEL	(gallons) PRODUCT ACCUMULATED	D.O. ppm	TEMP DEG. C	Ph	CONDUCTIVITY uohms/cm
				INTERFACE	WATER									
MW-08	10/08/96		5432.09	Well sited in to 3.80 ft.				0.00	DRY	0.00				
	12/31/96	15:30	5432.09	3.14	3.14			0.00	5428.95	0.00				NM
	03/18/97	1500	5432.09	2.93	2.93			0.00	5429.16	0.00				N/A
	06/16/97		5432.09	3.00	3.00			0.00	5429.09	0.00				NM
	09/25/97	1520	5432.09	2.68	2.68			0.00	5429.41	0.00				NM
	12/22/97	1230	5432.09	3.15	3.15			0.00	5428.94	0.00				NM
	04/28/98	1150	5432.09	3.27	3.27			0.00	5428.82	0.00				NM
	06/23/98	1300	5432.09	WELL DRY						0.00			NM	NM
	09/22/98	1050	5432.09	DRY						0.00			NM	NM
	12/29/98	1459	5432.09	SILTED IN									NM	NM
MW-09	10/08/96	15:30	5435.19	4.25	4.25			0.00	5430.94	0.00				
	12/31/96	15:10	5435.19	4.10	4.10			0.00	5431.09	0.00	6.40			7510
	03/18/97	1413	5435.19	4.17	4.17			0.00	5431.02	0.00	N/A			7270
	06/16/97	1402	5435.19	4.27	4.27			0.00	5430.92	0.00	1.85			7450
	09/25/97	1050	5435.19	3.68	3.68			0.00	5431.51	0.00	2.02			8490
	12/22/97	1040	5435.19	4.05	4.05			0.00	5431.14	0.00	1.00			7150
	04/28/98	1135	5435.19	4.28	4.28			0.00	5430.91	0.00	0.88			7450
	06/23/98	1400	5435.19	4.53	4.53			0.00	5430.66	0.00	0.19		7.60	7320
	09/22/98	1134	5435.19	4.55	4.55			0.00	5430.64	0.00	0.18		17.10	7150
	12/29/98	1435	5435.19	3.75	3.75			0.00	5431.44	0.00	4.45		11.90	7840
MW-10	10/08/96	14:31	5436.56	4.21	4.21			0.00	5432.35	0.00				
	12/31/96	1445	5436.56	4.01	4.01			0.00	5432.55	0.00	3.90			7480
	03/18/97	1339	5436.56	4.09	4.09			0.00	5432.47	0.00	N/A			7480
	06/16/97	1109	5436.56	4.10	4.10			0.00	5432.46	0.00	0.69			7450
	09/25/97	1145	5436.56	3.81	3.81			0.00	5432.75	0.00	1.15			7410
	12/22/97	1130	5436.56	3.98	3.98			0.00	5432.58	0.00	0.61			7170
	04/28/98	1033	5436.56	4.24	4.24			0.00	5432.32	0.00	0.22			7340
	06/23/98	1155	5436.56	4.49	4.49			0.00	5432.07	0.00	0.16		7.48	7240
	09/22/98	1037	5436.56	4.54	4.54			0.00	5432.02	0.00	0.16		17.40	7150
	12/29/98	1400	5436.56	3.84	3.84			0.00	5432.72	0.00	0.40		13.20	7440
MW-11	12/31/96	14:20	5438.65	5.02	5.02			0.00	5433.63	0.00	3.70			6970
	12/31/96	14:20	5438.65	5.02	5.02			0.00	5433.63	0.00	3.70			6970
	03/18/97	1145	5438.65	5.01	5.01			0.00	5433.64	0.00	N/A			6870
	06/16/97	1146	5438.65	5.05	5.05			0.00	5433.60	0.00	0.30			6900
	09/25/97	1432	5438.65	4.96	4.96			0.00	5433.69	0.00	0.40			6890

TABLE 1
THRIFTWAY REFINERY
SUMMARY OF GROUND WATER MONITOR DATA

WELL	DATE	TIME	ELEVATION TOP OF PIPE	(feet)		(feet) WATER OUTAGE	(feet) PRODUCT THICKNESS	(feet)		ACCUMULATED PRODUCT (gallons)	D.O. ppm	TEMP DEG. C	Ph	CONDUCTIVITY uohms/cm
				INTERFACE AIR/OIL	ADJUSTED WATER LEVEL ELEVATION			PRODUCT	ADJUSTED WATER LEVEL ELEVATION					
MW-12	12/22/97	1215	5438.65	4.91	5433.74	0.00	0.00	0.00	5433.74	0.00	0.30			6900
	04/28/98	954	5438.65	4.97	5433.68	0.00	0.00	0.00	5433.68	0.00	0.26			6900
	06/23/98	1112	5438.65	5.23	5433.42	0.00	0.00	0.00	5433.42	0.00	0.26		7.73	6730
	09/22/98	955	5438.65	5.37	5433.28	0.00	0.00	0.00	5433.28	0.00	0.18		16.00	6760
	12/29/98	1220	5438.65	4.83	5433.82	0.00	0.00	0.00	5433.82	0.00	0.31		12.70	6700
	10/07/96		5446.09	14.15	5431.50	1.47	1.47	28.74	5431.50	28.74				
	12/30/96		5446.09	14.20	5431.47	1.40	1.40	29.34	5431.47	29.34	PRODUCT			PRODUCT
	03/17/97		5446.09	14.14	5431.58	1.25	1.25	29.56	5431.58	29.56	PRODUCT			PRODUCT
	06/18/97	-	5446.09	14.23	5431.64	0.75	0.75	30.53	5431.64	30.53	PRODUCT			PRODUCT
	09/29/97	-	5446.09	13.98	5431.95	0.55	0.55	30.74	5431.95	30.74	PRODUCT			PRODUCT
MW-13	12/18/97	-	5446.09	13.87	5432.06	0.52	0.52	30.98	5432.06	30.98	PRODUCT			PRODUCT
	04/29/98	-	5446.09	13.73	5432.23	0.42	0.42	31.20	5432.23	31.20	PRODUCT			PRODUCT
	06/22/98	1115	5446.09	13.89	5432.10	0.32	0.32	31.77	5432.10	31.77	PRODUCT		7.01	7060
	09/23/98	1340	5446.09	14.18	5431.60	1.04	1.04	31.99	5431.60	31.99	NM	NM	NM	NM
	12/31/98	1258	5446.09	13.94	5432.00	0.49	0.49	32.18	5432.00	32.18	NM	NM	NM	NM
	10/08/96	11:50	5452.12	18.11	5434.01	0.00	0.00	0.00	5434.01	0.00	NM	NM	NM	NM
	12/30/96	15:30	5452.12	18.04	5434.08	0.00	0.00	0.00	5434.08	0.00	5.20			6140
	03/18/97	1055	5452.12	17.98	5434.14	0.00	0.00	0.00	5434.14	0.00	N/A			6260
	06/16/97	900	5452.12	17.93	5434.19	0.00	0.00	0.00	5434.19	0.00	0.19			6350
	09/23/97	1640	5452.12	17.81	5434.31	0.00	0.00	0.00	5434.31	0.00	0.28			6260
MW-14	12/19/97	1540	5452.12	17.48	5434.64	0.00	0.00	0.00	5434.64	0.00	0.09			6225
	04/24/98	1645	5452.12	17.22	5434.90	0.00	0.00	0.00	5434.90	0.00	0.24			6260
	06/23/98	1457	5452.12	17.48	5434.64	0.00	0.00	0.00	5434.64	0.00	0.19		7.27	6260
	09/24/98	1530	5452.12	17.92	5434.20	0.00	0.00	0.00	5434.20	0.00	0.28		15.90	6320
	12/29/98	1645	5452.12	17.52	5434.60	0.00	0.00	0.00	5434.60	0.00	0.22		15.70	6330
	10/07/96	1135	5446.93	13.05	5433.88	0.00	0.00	3.10	5433.88	3.10				
	12/30/96	1135	5446.93	12.97	5433.96	0.00	0.00	3.10	5433.96	3.10	1.60			6070
	03/17/97	-	5446.93	12.73	5433.97	0.77	0.77	3.26	5433.97	3.26	N/A			PRODUCT
	06/18/97	-	5446.93	12.67	5434.13	0.42	0.42	3.58	5434.13	3.58	NM			PRODUCT
	09/29/97	-	5446.93	12.46	5434.42	0.17	0.17	3.59	5434.42	3.59	PRODUCT			PRODUCT
	12/18/97	-	5446.93	12.42	5434.50	0.03	0.03	3.59	5434.50	3.59	PRODUCT			PRODUCT
	04/28/98	1555	5446.93	12.24	5434.69	0.00	0.00	3.59	5434.69	3.59	0.07			5620
	06/24/98	1700	5446.93	12.37	5434.56	0.00	0.00	3.59	5434.56	3.59	0.08		7.25	4950

TABLE 1
THRIFTWAY REFINERY
SUMMARY OF GROUND WATER MONITOR DATA

WELL	DATE	TIME	ELEVATION TOP OF PIPE	(feet)		(feet)	WATER OUTAGE	(feet)		(feet) ADJUSTED WATER LEVEL	(gallons)		TEMP DEG. C	Ph	CONDUCTIVITY uohms/cm
				INTERFACE	AIR/OIL			PRODUCT	THICKNESS		ACCUMULATED	PRODUCT			
MW-15	09/23/98	1130	5446.93	12.78			12.78	0.00	0.00	5434.15	3.59		16.50	6.90	5230
	12/30/98	1140	5446.93	12.48			12.66	0.18		5434.40	3.66		NM	NM	NM
	10/09/96	11:08	5449.51	13.86			13.86	0.00		5435.05	0.00		NM	NM	NM
	12/30/96	14:45	5449.51	13.72			13.72	0.00		5435.79	0.00		6.80		4850
	03/18/97	1000	5449.51	13.49			13.49	0.00		5436.02	0.00		N/A		4810
	06/17/97	959	5449.51	13.28			13.28	0.00		5436.23	0.00		1.71		4890
	09/26/97	1200	5449.51	12.67			12.67	0.00		5436.84	0.00		0.55		5050
	12/22/97	1345	5449.51	12.98			12.98	0.00		5436.53	0.00		1.10		5000
	04/24/98	1605	5449.51	12.73			12.73	0.00		5436.78	0.00		2.39		4920
	06/23/98	1018	5449.51	12.94			12.94	0.00		5436.57	0.00		0.93	7.73	4500
MW-16	09/24/98	1135	5449.51	13.34			13.34	0.00		5436.17	0.00		0.15	20.00	4430
	12/28/98	1125	5449.51	12.83			12.83	0.00		5436.68	0.00		1.50	13.90	4800
	10/09/96	12:45	5442.63	9.33			9.33	0.00		5433.30	0.00				
	12/30/96	1615	5442.63	9.07			9.07	0.00		5433.56	0.00		3.80		7510
	03/19/97	1515	5442.63	8.98			8.98	0.00		5433.65	0.00		N/A		N/A
	06/18/97	1526	5442.63	8.91			8.91	0.00		5433.72	0.00		NM		NM
	09/29/97		5442.63	NM			NM	0.00		#VALUE!	0.00		NM		NM
	12/22/97		5442.63	NM			NM	0.00		#VALUE!	0.00		NM		NM
	04/29/98		5442.63	8.77			8.77	0.00		5433.86	0.00		NM		NM
	06/24/98	1117	5442.63	8.97			8.97	0.00		5433.66	0.00		0.20	7.54	7190
MW-17	09/23/98		5442.63	9.87			9.87	0.00		5432.76	0.00		NM	NM	NM
	12/29/98		5442.63	NM			NM	NM		NM	0.00		NM	NM	NM
	10/07/96		5435.57	5.98			6.09	0.11		5429.56	5.44				
	12/30/96		5435.57	5.91			6.30	0.39		5429.54	5.91	PRODUCT			PRODUCT
	03/17/97		5435.57	5.63			5.67	0.04		5429.93	5.92	PRODUCT			PRODUCT
	06/18/97	-	5435.57	5.59			5.59	0.00		5429.98	5.92		NM		NM
	09/29/97	-	5435.57	5.53			5.82	0.29		5429.95	5.92		NM		NM
	12/18/97	-	5435.57	5.42			5.78	0.36		5430.04	6.05		NM		NM
	04/29/98	-	5435.57	5.50			5.99	0.49		5429.92	6.36		NM		NM
	06/24/98	1340	5435.57	5.60			6.51	0.91		5429.70	7.62		NM	NM	NM
MW-18	09/23/98	1544	5435.57	5.74			6.68	0.94		5429.55	8.62		NM	NM	NM
	12/31/98	1404	5435.57	5.39			5.71	0.32		5430.08	8.78		NM	NM	NM
	10/09/96	14:40	5429.1	4.24			4.24	0.00		5424.86	0.00				
	12/30/96	10:45	5429.1	4.06			4.06	0.00		5425.04	0.00		2.50		4820
	03/19/97	1400	5429.1	3.26			3.26	0.00		5425.84	0.00		N/A		4860
	06/18/97	852	5429.1	3.00			3.00	0.00		5426.10	0.00		2.03		4670
	09/24/97	1035	5429.1	2.50			2.50	0.00		5426.60	0.00		0.76		3330
	12/23/97	1140	5429.1	3.29			3.29	0.00		5425.81	0.00		NM		2310

TABLE 1
THRIFTWAY REFINERY
SUMMARY OF GROUND WATER MONITOR DATA

WELL	DATE	TIME	ELEVATION TOP OF PIPE	(feet)		(feet)	WATER OUTAGE	(feet)		(feet)	ADJUSTED WATER LEVEL	(gallons)		TEMP DEG. C	Ph	CONDUCTIVITY uohms/cm
				INTERFACE AIR/OIL		PRODUCT THICKNESS		PRODUCT				ACCUMULATED	D.O. ppm			
MW-19	04/28/98	1515	5429.1	3.42		0.00	3.42			5425.68		0.00	0.15			4450
	06/24/98	1635	5429.1	3.72		0.00	3.72			5425.38		0.00	0.10		7.51	4570
	09/22/98	1542	5429.1	3.84		0.00	3.94			5425.16		0.00	0.15	17.70	7.10	4440
	12/29/98	1835	5429.1	3.19		0.00	3.19			5425.91		0.00	0.20	11.90	7.70	3280
	10/09/96	14:20	5428.69	3.70		0.00	3.70			5424.99		0.00				
	12/30/96	17:15	5428.69	3.77		0.00	3.77			5424.92		0.00	3.90			6450
	03/19/97	1123	5428.69	3.32		0.00	3.32			5425.37		0.00	N/A			6300
	06/17/97	1625	5428.69	3.12		0.00	3.12			5425.57		0.00	0.81			4570
	09/26/97	1400	5428.69	2.36		0.00	2.36			5426.33		0.00	0.15			1710
	12/23/97	1050	5428.69	2.91		0.00	2.91			5425.78		0.00	0.07			6240
MW-20	04/28/98	1427	5428.69	2.99		0.00	2.99			5425.70		0.00	0.19			6210
	06/23/98	1531	5428.69	3.38		0.00	3.38			5425.31		0.00	0.19		7.57	5910
	09/22/98	1500	5428.69	3.57		0.00	3.57			5425.12		0.00	0.15	18.10	7.80	7400
	12/29/98	1805	5428.69	3.19		0.00	3.19			5425.50		0.00	0.10	9.70	8.00	3250
	10/09/96	16:15	5430.36	5.72		0.00	5.72			5424.64		0.00				
	12/31/96	900	5430.36	5.74		0.00	5.74			5424.62		0.00	0.90			5330
	03/18/97	1515	5430.36	5.39		0.00	5.39			5424.97		0.00	N/A			6280
	06/16/97	1515	5430.36	5.21		0.00	5.21			5425.15		0.00	0.26			5730
	09/24/97	1705	5430.36	4.41		0.00	4.41			5425.95		0.00	0.27			3500
	12/22/97	1555	5430.36	4.90		0.00	4.90			5425.46		0.00	0.22			6520
MW-21	04/27/98	1050	5430.36	5.02		0.00	5.02			5425.34		0.00	0.31			6540
	06/23/98	1738	5430.36	5.35		0.00	5.35			5425.01		0.00	0.08		7.18	6540
	09/22/98	1430	5430.36	5.67		0.00	5.67			5424.69		0.00	0.15	17.30	7.00	5640
	12/28/98	1840	5430.36	5.02		0.00	5.02			5425.34		0.00	0.10	8.40	7.00	5290
	10/09/96	10:00	5428.62	4.15		0.00	4.15			5424.47		0.00				
	12/31/96	930	5428.62	3.56		0.00	3.56			5425.06		0.00	1.20			5070
	03/18/97	1500	5428.62	2.76		0.00	2.76			5425.86		0.00	N/A			6270
	06/17/97	900	5428.62	2.93		0.00	2.93			5425.69		0.00	0.23			7500
	09/25/97	1700	5428.62	3.03		0.00	3.03			5425.59		0.00	0.09			6050
	12/22/97	1525	5428.62	3.07		0.00	3.07			5425.55		0.00	0.40			4980
MW-22	04/27/98	1145	5428.62	3.16		0.00	3.16			5425.46		0.00	0.07			5400
	06/23/98	1705	5428.62	3.72		0.00	3.72			5424.90		0.00	0.07		7.06	4790
	09/24/98	1040	5428.62	3.81		0.00	3.81			5424.81		0.00	0.15	20.00	7.10	4430
	12/28/98	1650	5428.62	2.66		0.00	2.66			5425.96		0.00	0.31	8.10	7.00	7190
	10/09/96	11:45	5430.75	5.35		0.00	5.35			5425.40		0.00				

TABLE 1
THRIFTWAY REFINERY
SUMMARY OF GROUND WATER MONITOR DATA

WELL	DATE	TIME	ELEVATION TOP OF PIPE	(feet)		(feet) WATER OUTAGE	(feet) PRODUCT THICKNESS	(feet)		ADJUSTED WATER LEVEL ELEVATION	(gallons)		D.O. ppm	TEMP DEG. C	Ph	CONDUCTIVITY uohms/cm
				INTERFACE	AIR/OIL			PRODUCT	THICKNESS		ACCUMULATED	PRODUCT				
MW-23	12/31/96	1000	5430.75	4.64		4.64	0.00			5426.11	0.00		1.80			6660
	03/18/97	1640	5430.75	3.88		3.88	0.00			5426.87	0.00		N/A			6490
	06/18/97	1615	5430.75	4.15		4.15	0.00			5426.60	0.00		0.21			7250
	09/26/97	1045	5430.75	4.36		4.36	0.00			5426.39	0.00		0.32			7970
	12/22/97	1447	5430.75	4.25		4.25	0.00			5426.50	0.00		1.27			8680
	04/27/98	1405	5430.75	4.31		4.31	0.00			5426.44	0.00		1.54			8910
	06/23/98	1635	5430.75	4.97		4.97	0.00			5425.78	0.00		0.27		7.26	9060
	09/24/98	1101	5430.75	5.03		5.03	0.00			5425.72	0.00		0.11		19.40	8460
	12/28/98	1745	5430.75	3.83		3.83	0.00			5426.92	0.00		0.84		8.10	9160
	10/07/96	14:35	5448.32	DRY		DRY	DRY			DRY	0.89					
	12/31/96	1638	5448.32	DRY		DRY	DRY			DRY	0.89		NM			NM
	03/19/97	1620	5448.32	DRY		DRY	DRY			DRY	0.89		N/A			N/A
	06/18/97	-	5448.32	NOT MEASURED						DRY	0.89		NM			NM
	09/29/97	-	5448.32	NOT MEASURED						DRY	0.89		NM			NM
	12/18/97	-	5448.32	NOT MEASURED						DRY	0.89		NM			NM
MW-24	04/27/98	-	5448.32	NOT MEASURED						DRY	0.89		NM			NM
	06/25/98	-	5448.32	DRY						DRY	0.89		NM			NM
	09/24/98	-	5448.32	DRY						DRY	0.89		NM			NM
	12/31/98	-	5448.32	DRY						DRY	0.89		NM			NM
	12/31/96	1637	5447.53	15.00		15.00	0.00			5432.53	0.00		NM			NM
	03/19/97	1621	5447.53	15.01		15.01	0.00			5432.52	0.00		N/A			N/A
	06/18/97	-	5447.53	NOT MEASURED						NM	0.00		NM			NM
	09/29/97	-	5447.53	NOT MEASURED						NM	0.00		NM			NM
	12/18/97	-	5447.53	NOT MEASURED						NM	0.00		NM			NM
	04/29/98	-	5447.53	NOT MEASURED						NM	0.00		NM			NM
	06/25/98	-	5447.53	14.40		14.40	0.00			5433.13	0.00		NM		NM	NM
	09/24/98	-	5447.53	NM		NM	NM			NM	0.00		NM		NM	NM
	12/31/98	-	5447.53	NM		NM	NM			NM	0.00		NM		NM	NM
	10/07/96	14:40	5447.62	14.70		14.70	0.00			5432.92	0.00					
	12/31/96	1635	5447.62	DRY		DRY	DRY			DRY	0.00		NM			NM
MW-25	03/19/97	1622	5447.62	DRY		DRY	DRY			DRY	0.00		N/A			N/A
	06/18/97	1622	5447.62	NOT MEASURED						-	0.00		NM			N/A
	09/29/97		5447.62	NOT MEASURED						-	0.00		NM			NM
	12/18/97		5447.62	NOT MEASURED						-	0.00		NM			NM
	04/29/98		5447.62	NOT MEASURED						-	0.00		NM			NM
	06/25/98	-	5447.62	14.92		14.92	0.00			5432.70	0.00		NM		NM	NM
	09/24/98	-	5447.62	NM		NM	NM			NM	0.00		NM		NM	NM
	12/31/98	-	5447.62	NM		NM	NM			NM	0.00		NM		NM	NM

TABLE 1
THRIFTWAY REFINERY
SUMMARY OF GROUND WATER MONITOR DATA

WELL	DATE	TIME	ELEVATION TOP OF PIPE	(feet)		(feet)		(feet)		ADJUSTED WATER LEVEL ELEVATION	(gallons)		D.O. ppm	TEMP DEG. C	Ph	CONDUCTIVITY uohms/cm
				INTERFACE AIR/OIL	WATER OUTAGE	PRODUCT THICKNESS	PRODUCT THICKNESS	PRODUCT THICKNESS	PRODUCT THICKNESS		ACCUMULATED	PRODUCT				
MW-26	10/07/96		5447.26	DRY	DRY	DRY	DRY			NM	8.55					
	12/31/96		5447.26	WELL COVERED NOT ACCESSABLE						NM	8.55		NM			NM
	03/19/97	1623	5447.26	WELL COVERED NOT ACCESSABLE						NM	8.55		N/A			N/A

TABLE 1
THRIFTWAY REFINERY
SUMMARY OF GROUND WATER MONITOR DATA

WELL	DATE	TIME	ELEVATION TOP OF PIPE	(feet)		(feet)	WATER OUTAGE	(feet)		ADJUSTED WATER LEVEL	(gallons)		TEMP DEG. C	Ph	CONDUCTIVITY uohms/cm
				INTERFACE	AIR/OIL			PRODUCT THICKNESS	ACCUMULATED						
MW-27	06/18/97	-	5447.26	WELL COVERED NOT ACCESSABLE						NM	8.55				NM
	09/29/97	-	5447.26	WELL COVERED NOT ACCESSABLE						NM	8.55				NM
	12/18/97	-	5447.26	WELL COVERED NOT ACCESSABLE						NM	8.55				NM
	04/29/98	-	5447.26	WELL COVERED NOT ACCESSABLE						NM	8.55				NM
	06/25/98	-	5447.26	WELL DESTROYED			-		-	-	8.55		-		-
	10/07/96		5448.04	DRY			DRY		NM	8.44					
	12/31/96	1645	5448.04	DRY			DRY		NM	8.44					NM
	03/19/97	1619	5448.04	DRY			DRY		NM	8.44		N/A			N/A
	06/18/97	-	5448.04	NOT MEASURED					NM	8.44					NM
	09/29/97	-	5448.04	NOT MEASURED					NM	8.44					NM
MW-28	12/18/97	-	5448.04	NOT MEASURED					NM	8.44					NM
	04/29/98	-	5448.04	NOT MEASURED					NM	8.44					NM
	04/29/98	-	5448.04	DRY			DRY		DRY	8.44		DRY		DRY	DRY
	09/24/98	-	5448.04	DRY			DRY		DRY	8.44		DRY		DRY	DRY
	12/31/98	-	5448.04	DRY			DRY		DRY	8.44		DRY		DRY	DRY
	10/07/96	14:35	5448.06	14.98			14.98	0.00	5433.08	6.17					
	12/31/96	1630	5448.06	14.97			14.97	0.00	5433.09	6.17		NM			NM
	03/19/97	1617	5448.06	14.96			14.96	0.00	5433.10	6.17		N/A			N/A
	06/18/97	-	5448.06	NOT MEASURED					NM	6.17					NM
	09/29/97	-	5448.06	NOT MEASURED					NM	6.17					NM
MW-29	12/18/97	-	5448.06	NOT MEASURED					NM	6.17					NM
	04/28/98	-	5448.06	14.74			14.74	0.00	5433.32	6.17					NM
	06/24/98	-	5448.06	14.87			14.87	0.00	5433.19	6.17				NM	NM
	09/24/98	-	5448.06	NM			NM	NM		6.17			NM	NM	NM
	12/31/98	-	5448.06	NM			NM	NM		6.17			NM	NM	NM
	10/07/96	14:42	5446.90	14.59			14.82	0.23	5432.24	7.10					
	12/31/96	1442	5446.90	14.65			14.78	0.13	5432.21	7.11		PRODUCT			PRODUCT
	03/17/97	-	5446.90	14.61			14.69	0.08	5432.27	7.11		PRODUCT			PRODUCT
	06/18/97	-	5446.90	14.50			14.52	0.02	5432.39	7.13		PRODUCT			PRODUCT
	09/29/97	-	5446.90	14.36			14.40	0.04	5432.53	7.14		PRODUCT			PRODUCT
RW-24	12/18/97	-	5446.90	14.36			14.40	0.04	5432.53	7.14		PRODUCT			PRODUCT
	04/29/98	-	5446.90	-			-	-	-	7.14		PRODUCT			PRODUCT
	06/24/98	1710	5446.90	14.09			14.09	0.00	5432.81	7.14		0.20		7.17	5730
	09/24/98		5446.90	NM			NM	NM		7.14			NM	NM	NM
	12/31/98		5446.90	NM			NM	NM		7.14			NM	NM	NM
	10/07/96	15:12		13.87			15.34	1.47	-14.31	103.52					
	12/30/96			13.94			15.34	1.40	-14.36	104.07		PRODUCT			PRODUCT
03/17/97			13.90			14.94	1.04	-14.21	104.21		PRODUCT			PRODUCT	

TABLE 1
THRIFTWAY REFINERY
SUMMARY OF GROUND WATER MONITOR DATA

WELL	DATE	TIME	ELEVATION TOP OF PIPE	(feet)		(feet) WATER OUTAGE	(feet)		(feet) ADJUSTED WATER LEVEL	(gallons)		D.O. ppm	TEMP DEG. C	Ph	CONDUCTIVITY uohms/cm
				INTERFACE	AIR/OIL		PRODUCT THICKNESS	ELEVATION		ACCUMULATED PRODUCT					
RW-25	06/18/97	-		13.77		14.52	0.75		-14.00		104.75	PRODUCT			PRODUCT
	09/29/97	-		13.73		14.25	0.52		-13.89		104.81	PRODUCT			PRODUCT
	12/18/97	-		13.72		14.21	0.49		-13.87		104.92	PRODUCT			PRODUCT
	04/29/98	-		13.55		13.75	0.20		-13.61		104.99	PRODUCT			PRODUCT
	06/22/98	1420		13.63		14.04	0.41		-13.75		105.03	PRODUCT		6.88	6300
	09/23/98	1402		13.88		14.88	1.00		-14.18		105.16	NM		NM	NM
	12/31/98	1335		13.80		14.42	0.62		-13.99		105.26	NM		NM	NM
	10/07/96	14.58	5446.67	14.84		15.01	0.17		5431.78		49.26	NM		NM	NM
	12/30/96		5446.67	14.89		15.02	0.13		5431.74		49.28	PRODUCT			PRODUCT
	03/17/97		5446.67	14.77		15.02	0.25		5431.83		49.30	PRODUCT			PRODUCT
	06/18/97	-	5446.67	14.50		15.29	0.79		5431.93		49.54	PRODUCT			PRODUCT
	09/29/97	-	5446.67	14.49		14.97	0.48		5432.04		49.60	PRODUCT			PRODUCT
12/18/97	-	5446.67	14.39		14.54	0.15		5432.24		49.69	PRODUCT			PRODUCT	
04/29/98	-	5446.67		13.25		13.25	0.00		5433.42		49.69	NM			NM
06/22/98	1320	5446.67		14.36		14.38	0.02		5432.30		49.69	NM		6.97	5900
09/23/98	1420	5446.67		14.66		15.42	0.76		5431.78		49.78	NM		NM	NM
12/31/98	1324	5446.67		14.44		14.86	0.42		5432.10		49.93	NM		NM	NM
12/30/96				12.97		13.70	0.73		-13.19		0.70	PRODUCT			PRODUCT
03/17/97				12.00		12.56	0.56		-12.17		0.87	PRODUCT			PRODUCT
06/18/97				11.60		12.35	0.75		-11.83		2.44	PRODUCT			PRODUCT
09/29/97				11.64		11.77	0.13		-11.68		2.45	PRODUCT			PRODUCT
12/18/97				11.63		11.64	0.01		-11.63		2.45	PRODUCT			PRODUCT
04/29/98				11.47		11.47	0.00		-11.47		2.45	NM			NM
06/22/98	1505			11.59		11.59	0.00		-11.59		2.45	SHEEN		7.09	3620
09/24/98				NM		NM	NM		NM		2.45	NM		NM	NM
12/31/98	1352			11.65		11.75	0.10		-11.68		2.53	NM		NM	NM
10/10/96			5452.41	18.05		18.11	0.06		5434.34		6.40				
12/30/96			5452.41	DRY		DRY	DRY		DRY		6.40	NM			NM
03/19/97	1628		5452.41	DRY		DRY	DRY		DRY		6.40	N/A			N/A
06/18/97	-		5452.41	DRY		DRY	DRY		DRY		6.40	N/A			N/A
09/29/97	-		5452.41	NM		NM	NM		NM		6.40	NM			NM
12/18/97	-		5452.41	NM		NM	NM		NM		6.40	NM			NM
04/29/98	-		5452.41	NM		NM	NM		NM		6.40	NM			NM
6/25/98	-		5452.41	17.52		17.94	0.42		5434.76		6.50	NM		NM	NM
09/24/98	-		5452.41	NM		NM	NM		NM		6.50	NM		NM	NM
12/31/98	-		5452.41	NM		NM	NM		NM		6.50	NM		NM	NM
10/10/96			5453.51	17.35		17.35	0.00		5436.16		0.00				
12/30/96			5453.51	NOT MEASURED							0.00	NM			NM
03/19/97	1632		5453.51	19.74		19.74	0.00		5433.77		0.00	N/A			N/A

TABLE 1
THRIFTWAY REFINERY
SUMMARY OF GROUND WATER MONITOR DATA

WELL	DATE	TIME	ELEVATION TOP OF PIPE	(feet)		(feet)	WATER OUTAGE	(feet)	PRODUCT THICKNESS	(feet) ADJUSTED WATER LEVEL ELEVATION	(gallons)		TEMP DEG. C	Ph	CONDUCTIVITY uohms/cm
				INTERFACE AIR/OIL							ACCUMULATED	PRODUCT			
T-17-3	06/18/97	-	5453.51	NOT MEASURED							0.00				NM
	09/29/97	-	5453.51	NOT MEASURED							0.00				NM
	12/18/97	-	5453.51	NOT MEASURED							0.00				NM
	04/29/98	-	5453.51	NOT MEASURED							0.00				NM
	06/25/98	-	5453.51	WELL DESTROYED							0.00				-
	09/24/98	-	5453.51	WELL DESTROYED							0.00				-
	10/10/96		5450.98	19.85		19.90		0.05		5431.12					
	12/30/96		5450.98	17.16		17.16		0.00		5433.82					NM
	03/19/97	1629	5450.98	17.2		17.20		0.00		5433.78					N/A
	06/18/97		5450.98	17.38		17.38		0.00		5433.60					N/A
	09/29/97		5450.98	NM		NM		NM			0.00				NM
	12/18/97		5450.98	NM		NM		NM			0.00				NM
	04/29/98		5450.98	NM		NM		NM			0.00				NM
	06/25/98	1130	5450.98	16.39		16.39		0.00		5434.59				NM	NM
UST	09/24/98		5450.98	NM		NM		NM			0.00			NM	NM
	12/31/98	1430	5450.98	16.70		16.70		0.00		5434.28				NM	NM
	04/21/95			GALLONS RECOVERED THIS QUARTER				633.25		633.25					
	06/16/95			GALLONS RECOVERED THIS QUARTER				1055.40		1055.40					
	08/25/95			GALLONS RECOVERED THIS QUARTER				0.00		0.00					
	11/12/95			GALLONS RECOVERED THIS QUARTER				79.16		79.16					
	03/05/96			GALLONS RECOVERED THIS QUARTER				0.00		0.00					
	06/04/96			GALLONS RECOVERED THIS QUARTER				250.00		250.00					
	10/10/96			GALLONS RECOVERED THIS QUARTER				2650.00		2650.00					
	12/30/96			NO GALLONS RECOVERED THIS QUARTER				0.00		0.00					NM
	03/19/97			NO GALLONS RECOVERED THIS QUARTER				0.00		0.00					N/A
	06/18/97			NO GALLONS RECOVERED THIS QUARTER				0.00		0.00					N/A
	07/09/97			NO GALLONS RECOVERED				0.00		0.00					NM
	10/01/97			GALLONS RECOVERED THIS QUARTER				250.00		250.00					NM
	12/18/97			NO GALLONS RECOVERED THIS QUARTER				0.00		0.00					N/A
	04/29/98			GALLONS RECOVERED THIS QUARTER				250.00		250.00					N/A
	06/25/98			GALLONS RECOVERED THIS QUARTER				275.00		275.00					N/A
	09/24/98			NO GALLONS RECOVERED THIS QUARTER				0.00		0.00				NM	NM
	12/31/98			NO GALLONS RECOVERED THIS QUARTER				0.00		0.00				NM	NM
NOTE: NM SIGNIFIES NOT MEASURED											TOTAL GALLONS RECOVERED TO DATE				
** DENOTES AIR STRIPPER EFFLUENT DO CONTENT											5685.24				

TABLE 2
SUMMARY OF MTBE AND BTEX LABORATORY ANALYSIS DATA
THRIFTWAY REFINERY, BLOOMFIELD, NEW MEXICO
(concentrations in ug/L)

Well No.	Date	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
MW-01	03/05/96	FREE PRODUCT FOUND IN WELL				
	05/31/96	FREE PRODUCT FOUND IN WELL				
	10/09/96	244.6	255.1	10.9	36.5	192.8
	12/31/96	219.6	164.0	5.3	9.8	176.6
	03/19/97	NM	46.5	1.3	5.1	39.8
	06/18/97	NM	26.7	0.7	3.8	39.7
	09/24/97	NM	134.9	5.9	15.8	94.7
	12/23/97	NM	58.7	1.6	4.9	94.7
	04/28/98	79.0	58.0	2.8	4.9	21.1
	06/24/98	59.0	14.0	ND	1.4	1.8
	09/23/98	71.0	15.0	ND	1.8	ND
	12/30/98	120.0	120.0	1.4	7.5	25.0
MW-02	10/09/96	FREE PRODUCT FOUND IN WELL				
	12/31/96	FREE PRODUCT FOUND IN WELL				
	03/19/97	FREE PRODUCT FOUND IN WELL				
	06/17/97	FREE PRODUCT FOUND IN WELL				
	09/24/97	FREE PRODUCT FOUND IN WELL				
	12/23/97	FREE PRODUCT FOUND IN WELL				
	04/28/98	FREE PRODUCT FOUND IN WELL				
	09/23/98	150.0	2000.0	40.0	610.0	1120.0
	03/05/96	664.0	3120.0	53.5	484.0	519.8
	09/23/98	160.0	2000.0	42.0	630.0	1280.0
	12/30/98	FREE PRODUCT FOUND IN WELL				
	03/05/96	298.0	117.0	5.9	28.2	16.9
MW-03	06/04/96	NOT SAMPLED				
	10/09/96	224.7	41.7	4.0	5.8	4.3
	12/31/96	NOT SAMPLED				
	03/19/97	NOT SAMPLED				
	06/17/97	NOT SAMPLED				
	09/24/97	FREE PRODUCT FOUND IN WELL				
	12/23/97	FREE PRODUCT FOUND IN WELL				
	04/28/98	FREE PRODUCT FOUND IN WELL				
	06/24/98	200.0	120.0	ND	8.2	ND
	09/22/98	NS	NS	NS	NS	NS
	12/30/98	NS	NS	NS	NS	NS
	03/05/96	31.5	50.0	5.6	ND	8.3
MW-04	06/04/96	35.0	1.0	3.3	3.3	7.0
	10/09/96	33.0	0.9	2.1	2.2	1.2
	12/31/96	27.0	3.5	1.4	1.7	1.6
	03/19/97	NM	21.7	0.5	2.6	2.3
	06/17/97	NM	8.4	1.6	2.2	1.4
	09/24/97	NM	3.7	3.0	5.1	2.0
	12/22/97	NM	3.8	3.1	3.0	1.3
	04/28/98	WELL DESTROYED BY AZTEC WELL SERVICE				
	09/22/98	WELL DESTROYED				
	03/05/96	52.9	2.0	0.4	0.6	1.2
	06/04/96	47.2	0.3	ND	0.2	ND
	10/09/96	48.6	0.6	ND	ND	ND
MW-05	12/31/96	47.9	4.8	ND	0.2	1.1
	03/19/97	NM	5.8	ND	0.4	0.2
	06/17/97	NM	6.7	0.3	0.5	0.2
	09/24/97	NM	9.6	9.6	9.6	9.6
	12/19/97	NM	8.6	0.3	0.4	ND
	04/27/98	56.0	9.2	ND	ND	ND
	06/24/98	56.0	10.0	ND	0.6	ND
	09/21/98	56.0	11.0	ND	ND	ND
	12/29/98	52.0	12.0	ND	0.7	0.0
	03/05/96	0.9	0.2	ND	ND	ND
	06/04/96	8.3	1.0	2.5	0.2	0.8
	10/09/96	33.5	1.9	3.7	3.2	1.3
MW-06						

TABLE 2
SUMMARY OF MTBE AND BTEX LABORATORY ANALYSIS DATA
THRIFTWAY REFINERY, BLOOMFIELD, NEW MEXICO
(concentrations in ug/L)

Well No.	Date	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
MW-07	12/31/96	0.9	0.3	5.4	0.9	1.1
	03/19/97	NM	0.6	0.8	0.8	4.0
	06/17/97	NM	19.1	3.3	2.4	0.3
	09/24/97	NM	20.3	6.2	4.5	1.9
	12/23/97	NM	ND	ND	ND	ND
	04/27/98	3.7	6.3	0.6	ND	ND
	06/24/98	36.0	20.0	4.8	3.3	ND
	09/22/98	47.0	8.5	1.8	4.5	3.6
	12/30/98	2.8	ND	ND	ND	0.0
	03/05/96	FREE PRODUCT FOUND IN WELL				
	05/31/96	FREE PRODUCT FOUND IN WELL				
	10/09/96	FREE PRODUCT FOUND IN WELL				
	12/31/96	FREE PRODUCT FOUND IN WELL				
	03/19/97	NOT SAMPLED				
	06/17/97	NOT SAMPLED				
MW-08	09/24/97	NOT SAMPLED				
	12/23/97	NOT SAMPLED				
	04/28/98	NOT SAMPLED				
	06/24/98	190.0	240.0	1.1	44.0	97.4
	09/24/98	TRACE FREE PRODUCT				
	12/30/98	TRACE FREE PRODUCT				
	03/05/96	DRY				
	06/03/96	SILTED IN TO 3.80 FEET BELOW GRADE				
	10/09/96	SILTED IN TO 3.80 FEET BELOW GRADE				
	12/31/96	35.8	ND	ND	ND	ND
MW-09	03/18/97	NM	NM	NM	NM	NM
	06/16/97	SILTED IN TO 3.60 FEET BELOW GRADE				
	09/25/97	NM	ND	ND	ND	ND
	12/22/97	NM	1.2	ND	ND	ND
	04/28/98	42.0	3.6	0.6	0.6	ND
	06/24/98	DRY				
	09/24/98	DRY				
	12/30/98	SILTED IN TO 1.5 FEET BELOW GRADE				
	03/05/96	16.8	0.8	0.3	1.1	1.3
	06/03/96	15.8	0.4	ND	ND	ND
	10/09/96	16.5	ND	ND	ND	ND
	12/31/96	7.2	ND	ND	ND	ND
	03/18/97	NM	ND	ND	ND	0.3
	06/16/97	NM	ND	ND	ND	ND
MW-10	09/25/97	NM	ND	ND	ND	ND
	12/22/97	NM	ND	ND	ND	ND
	04/28/98	ND	ND	ND	ND	ND
	06/23/98	11.0	ND	ND	ND	ND
	09/22/98	19.0	ND	ND	ND	ND
	12/29/98	3.8	ND	ND	ND	0.0
	03/05/96	ND	1.0	ND	0.9	0.4
	06/03/96	ND	ND	ND	ND	ND
	10/09/96	ND	ND	ND	ND	ND
	12/31/96	ND	ND	ND	ND	ND
	03/18/97	NM	ND	ND	ND	ND
	06/16/97	NM	ND	ND	ND	ND
MW-11	09/25/97	NM	ND	ND	ND	ND
	12/22/97	NM	ND	ND	ND	ND
	04/28/98	ND	ND	ND	ND	ND
	06/23/98	ND	ND	ND	ND	ND
	09/22/98	ND	ND	ND	ND	ND
	12/29/98	ND	ND	ND	ND	0.0
	03/05/96	ND	ND	ND	ND	0.3
	06/03/96	ND	ND	ND	ND	ND
	10/09/96	ND	ND	ND	ND	ND

TABLE 2
SUMMARY OF MTBE AND BTEX LABORATORY ANALYSIS DATA
THRIFTWAY REFINERY, BLOOMFIELD, NEW MEXICO
(concentrations in ug/L)

Well No.	Date	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
MW-12	12/31/96	ND	ND	ND	ND	ND
	03/18/97	NM	ND	ND	ND	ND
	06/16/97	NM	ND	ND	ND	ND
	09/25/97	NM	ND	ND	ND	ND
	12/22/97	NM	ND	ND	ND	ND
	04/28/98	ND	ND	ND	ND	ND
	06/23/98	ND	ND	ND	ND	ND
	09/22/98	ND	ND	ND	ND	ND
	12/29/98	ND	ND	ND	ND	0.0
	03/05/96	FREE PRODUCT FOUND IN WELL				
MW-13	05/31/96	FREE PRODUCT FOUND IN WELL				
	10/09/96	FREE PRODUCT FOUND IN WELL				
	12/31/96	FREE PRODUCT FOUND IN WELL				
	03/18/97	FREE PRODUCT FOUND IN WELL				
	06/18/97	FREE PRODUCT FOUND IN WELL				
	09/25/97	FREE PRODUCT FOUND IN WELL				
	12/22/97	FREE PRODUCT FOUND IN WELL				
	04/28/98	FREE PRODUCT FOUND IN WELL				
	06/24/98	FREE PRODUCT FOUND IN WELL				
	09/23/98	FREE PRODUCT FOUND IN WELL				
MW-14	12/30/98	FREE PRODUCT FOUND IN WELL				
	03/05/96	ND	ND	ND	ND	0.5
	06/04/96	ND	ND	ND	ND	ND
	10/09/96	ND	ND	ND	ND	ND
	12/30/96	ND	ND	ND	ND	ND
	03/18/97	NM	ND	ND	ND	ND
	06/16/97	NM	ND	ND	ND	ND
	09/23/97	NM	ND	ND	ND	ND
	12/19/97	NM	ND	ND	ND	ND
	04/24/98	ND	ND	ND	ND	ND
MW-15	06/23/98	ND	ND	ND	ND	ND
	09/21/98	ND	ND	ND	ND	ND
	12/29/98	ND	ND	ND	ND	0.0
	03/05/96	FREE PRODUCT FOUND IN WELL				
	05/31/96	FREE PRODUCT FOUND IN WELL				
	10/09/96	103.7	7698.8	361.7	2107.7	2917.8
	12/30/96	94.8	6673.5	179.4	857.3	940.5
	03/19/97	NOT SAMPLED				
	06/18/97	NOT SAMPLED				
	09/23/97	NOT SAMPLED				
MW-16	12/19/97	NOT SAMPLED				
	04/28/98	69.0	2900.0	800.0	1100.0	1940.0
	06/24/98	89.0	2000.0	150.0	1100.0	360.0
	09/23/98	87.0	950.0	91.0	780.0	256.0
	12/30/98	FREE PRODUCT FOUND IN WELL				
	03/05/96	ND	1.6	0.4	3.8	3.5
	06/03/96	ND	ND	ND	ND	ND
	10/09/96	ND	ND	ND	0.2	ND
	12/30/96	ND	ND	ND	ND	ND
	03/18/97	NM	ND	ND	ND	ND
MW-16	06/17/97	NM	ND	ND	ND	ND
	09/26/97	NM	ND	ND	ND	ND
	12/22/97	NM	ND	ND	ND	ND
	04/24/98	ND	ND	ND	ND	ND
	06/23/98	ND	ND	ND	ND	ND
	09/21/98	ND	ND	ND	ND	ND
	12/29/98	ND	ND	ND	ND	0.0
	03/05/96	ND	ND	ND	0.6	1.6
	06/04/96	NOT SAMPLED				
	10/09/96	ND	ND	ND	0.3	ND

TABLE 2
SUMMARY OF MTBE AND BTEX LABORATORY ANALYSIS DATA
THRIFTWAY REFINERY, BLOOMFIELD, NEW MEXICO
(concentrations in ug/L)

Well No.	Date	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
MW-17	12/30/96	ND	ND	ND	ND	ND
	03/19/97	NOT SAMPLED				
	06/18/97	NOT SAMPLED				
	09/23/97	NOT SAMPLED				
	12/19/97	NOT SAMPLED				
	06/24/98	ND	ND	ND	ND	ND
	09/23/98	NOT SAMPLED				
	12/30/98	ND	ND	ND	ND	0.0
	12/30/98	ND	ND	ND	ND	0.0
	03/05/96	FREE PRODUCT FOUND IN WELL				
MW-18	06/04/96	FREE PRODUCT FOUND IN WELL				
	10/09/96	FREE PRODUCT FOUND IN WELL				
	12/30/96	FREE PRODUCT FOUND IN WELL				
	03/18/97	FREE PRODUCT FOUND IN WELL				
	06/18/97	FREE PRODUCT FOUND IN WELL				
	09/23/97	FREE PRODUCT FOUND IN WELL				
	12/22/97	FREE PRODUCT FOUND IN WELL				
	04/28/98	FREE PRODUCT FOUND IN WELL				
	06/23/98	FREE PRODUCT FOUND IN WELL				
	09/23/98	FREE PRODUCT FOUND IN WELL				
MW-19	12/29/98	FREE PRODUCT FOUND IN WELL				
	03/05/96	53.0	6.8	2.4	1.8	14.1
	06/04/96	36.8	136.4	2.5	6.6	4.7
	10/09/96	31.9	60.1	1.1	1.5	0.7
	12/31/96	43.1	176.0	1.9	1.3	0.7
	03/19/97	NM	150.9	2.4	0.6	2.1
	06/18/97	NM	34.0	2.1	1.2	0.2
	09/24/97	NM	33.2	2.3	3.4	1.4
	12/23/97	NM	63.8	1.2	4.2	0.8
	04/28/98	56.0	68.0	3.9	6.8	2.2
MW-20	06/24/98	60.0	150.0	0.8	13.0	2.1
	09/22/98	74.0	76.0	3.6	12.0	2.5
	12/29/98	56.0	31.0	1.2	5.1	1.0
	03/05/96	80.6	6.1	2.8	24.9	55.3
	06/04/96	80.5	15.3	2.8	92.9	150.5
	10/09/96	11.1	1.4	3.0	39.5	58.0
	12/30/96	65.7	17.9	3.5	43.0	62.5
	03/19/97	NM	24.6	4.1	164.1	352.2
	06/17/97	NM	8.1	2.4	96.7	160.5
	09/26/97	NM	0.8	1.8	11.7	11.0
MW-21	12/23/97	NM	36.9	3.8	244.0	357.4
	04/28/98	98.0	44.0	3.4	190.0	280.8
	06/23/98	130.0	60.0	7.0	280.0	341.9
	09/22/98	46.0	13.0	2.2	31.0	46.0
	12/29/98	37.0	14.0	ND	43.0	23.0
	03/05/96	133.4	3.6	16.8	3.3	21.8
	06/03/96	106.3	1.4	3.8	0.8	1.4
	10/09/96	73.3	2.5	11.5	7.5	4.4
	12/31/96	53.3	2.7	14.3	9.5	5.7
	03/18/97	NM	2.3	2.2	4.4	3.2
MW-21	06/16/97	NM	1.4	4.4	4.0	4.2
	09/24/97	NM	1.7	4.5	3.8	2.4
	12/22/97	NM	4.5	6.7	9.3	6.8
	04/27/98	83.0	6.8	9.4	18.0	20.1
	06/23/98	91.0	4.8	7.5	7.0	3.6
	09/22/98	60.0	2.6	ND	5.8	ND
	12/28/98	71.0	4.0	ND	1.7	ND
	03/05/96	82.0	6.0	2.0	29.3	6.1
	06/03/96	82.1	0.4	0.3	1.1	0.9
	10/09/96	46.0	0.7	ND	0.5	0.3

TABLE 2
SUMMARY OF MTBE AND BTEX LABORATORY ANALYSIS DATA
THRIFTWAY REFINERY, BLOOMFIELD, NEW MEXICO
(concentrations in ug/L)

Well No.	Date	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
MW-22	12/31/96	51.3	ND	ND	0.5	0.2
	03/18/97	NM	0.3	ND	0.4	ND
	06/17/97	NM	ND	ND	0.2	ND
	09/25/97	NM	ND	0.4	0.9	0.4
	12/22/97	NM	1.3	1.5	2.4	0.8
	04/27/98	49.0	2.1	1.4	ND	ND
	06/23/98	80.0	ND	ND	1.8	0.5
	09/21/98	91.0	ND	ND	ND	ND
	12/28/98	81.0	ND	ND	1.1	ND
	03/05/96	36.7	ND	ND	0.2	0.4
MW-23	06/03/96	25.3	ND	ND	ND	0.4
	10/09/96	22.9	ND	ND	ND	ND
	12/31/96	22.1	ND	ND	ND	ND
	03/18/97	NM	ND	ND	ND	ND
	06/16/97	NM	ND	ND	ND	ND
	09/26/97	NM	ND	ND	ND	ND
	12/22/97	NM	ND	ND	ND	ND
	04/27/98	18.0	ND	ND	ND	ND
	06/23/98	24.0	ND	ND	ND	ND
	09/21/98	28.0	ND	ND	ND	ND
MW-24	12/28/98	28.0	ND	ND	ND	ND
	03/05/96	DRY	DRY	DRY	DRY	DRY
	06/04/96	NS	NS	NS	NS	NS
	10/09/96	NS	NS	NS	NS	NS
	12/31/96	NS	NS	NS	NS	NS
	03/18/97	NS	NS	NS	NS	NS
	06/18/97	NS	NS	NS	NS	NS
	09/25/97	NS	NS	NS	NS	NS
	12/19/97	NS	NS	NS	NS	NS
	04/27/98	NS	NS	NS	NS	NS
MW-25	06/23/98	NS	NS	NS	NS	NS
	09/22/98	NS	NS	NS	NS	NS
	12/30/98	NS	NS	NS	NS	NS
	10/09/96	25.6	231.7	144.1	122.5	988.8
	12/31/96	NS	NS	NS	NS	NS
	03/18/97	NS	NS	NS	NS	NS
	06/18/97	NS	NS	NS	NS	NS
	09/25/97	NS	NS	NS	NS	NS
	12/19/97	NS	NS	NS	NS	NS
	04/27/98	NS	NS	NS	NS	NS
MW-29	06/25/98	84.0	640.0	65.0	130.0	820.0
	09/22/98	NS	NS	NS	NS	NS
	12/30/98	NS	NS	NS	NS	NS
	03/05/96	DRY	DRY	DRY	DRY	DRY
	06/04/96	NS	NS	NS	NS	NS
	10/09/96	1.0	39.9	11.3	7.4	14.3
	12/31/96	NS	NS	NS	NS	NS
	03/18/97	NS	NS	NS	NS	NS
	06/18/97	NS	NS	NS	NS	NS
	09/25/97	NS	NS	NS	NS	NS
T-17-3	12/19/97	NS	NS	NS	NS	NS
	06/25/98	3.2	32.0	58.0	8.5	91.0
	09/22/98	NS	NS	NS	NS	NS
	12/30/98	NS	NS	NS	NS	NS
	09/22/98	DRY	DRY	DRY	DRY	DRY
	06/25/98	670.0	3300.0	150.0	220.0	510.0
	09/22/98	NS	NS	NS	NS	NS
	12/30/98	NS	NS	NS	NS	NS

TABLE 2
SUMMARY OF MTBE AND BTEX LABORATORY ANALYSIS DATA
THRIFTWAY REFINERY, BLOOMFIELD, NEW MEXICO
(concentrations in ug/L)

Well No.	Date	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
INFLUENT	06/22/94	PUMP SHUT DOWN				
	09/20/94	50.0	9670.0	754.0	158.0	633.0
	01/20/95	NS	NS	NS	NS	NS
	04/12/95	24.5	2060.0	987.0	246.0	1689.0
	03/05/96	155.0	6990.0	3570.0	1300.0	6680.0
	06/04/96	95.0	4607.7	1794.7	523.8	2554.0
	10/09/96	13.2	3116.0	1332.2	504.2	1588.0
	12/31/96	SYSTEM SHUT DOWN				
	03/24/97	NM	2110.0	1011.0	47.0	1279.0
	03/28/97	NM	1827.0	850.0	40.6	1146.0
	04/02/97	NM	1436.0	650.0	361.0	1279.0
	07/31/97	NM	4641.0	4939.0	1128.0	4708.0
	09/23/97	NM	1600.0	923.0	660.0	1529.0
	12/22/97	NM	2078.0	1610.0	729.0	2053.0
	02/09/98	37.0	1761.0	2542.0	963.0	4631.0
	06/23/98	SYSTEM SHUT DOWN				
	12/31/98	440.0	1200.0	860.0	760.0	1800.0
	02/16/99	40.0	120.0	270.0	230.0	1000.0
EFFLUENT	06/22/94	BLOWER SHUT DOWN				
	09/20/94	ND	9.3	0.9	ND	0.7
	01/20/95	NS	NS	NS	NS	NS
	04/12/95	7.5	97.5	363.0	278.0	2638.0
	11/12/95	3.2	33.9	12.3	8.9	48.1
	03/05/95	7.0	50.0	21.2	7.1	43.4
EFFLUENT	06/04/96	3.5	2.4	0.7	0.9	3.8
	07/18/96	7.4	62.6	43.7	13.1	88.9
	10/09/96	1.2	3.7	ND	1.4	4.4
	12/31/96	SYSTEM SHUT DOWN				
EFFLUENT	03/20/97	AIR STRIPPER MODIFIED				
	03/24/97	NM	3.4	1.9	0.9	2.7
	03/28/97	NM	18.7	10.5	5.3	16.0
	04/02/97	NM	5.4	2.6	1.4	4.8
	04/03/97	NM	ND	ND	ND	ND
	04/04/97	NM	ND	ND	ND	0.1
	04/10/97	NM	0.5	0.3	0.2	1.2
	04/18/97	4.8	4.0	0.4	0.4	1.2
	05/30/97	LARGER BLOWER INSTALLED				
	06/09/97	NM	ND	ND	0.5	0.5
EFFLUENT	06/27/97	NM	ND	0.2	0.2	0.4
	07/25/97	NM	ND	ND	ND	ND
	07/31/97	NM	ND	ND	ND	ND
	09/03/97	NM	0.8	0.5	1.1	6.2
	12/22/97	NM	122.6	97.2	44.5	131.9
	02/09/98	5.9	77.5	115.5	47.1	134.1
	02/09/98	5.9	77.5	97.2	44.5	131.9
	02/19/98	10.0	110.0	110.0	46.0	171.0
	02/20/98	5.6	83.0	96.0	46.0	209.0
	02/23/98	13.0	200.0	160.0	81.0	289.0
	03/03/98	30.0	220.0	140.0	84.0	243.0
	03/04/98	22.0	200.0	140.0	80.0	247.0
	03/05/98	17.0	130.0	94.0	56.0	176.0
	03/05/98	STRIPPER SHUT DOWN FOR CLEANING				
	04/24/98	54.0	310.0	410.0	230.0	970.0
	04/28/98	42.0	770.0	350.0	280.0	580.0
EFFLUENT	04/28/98	STRIPPER SHUT DOWN FOR REPAIRS TO TRAYS				
	06/11/98		117.0			
	06/12/98		270.0			
	06/15/98		200.0			
	06/17/98	STRIPPER SHUT DOWN FOR NEW STRIPPER INSTALLATION				

TABLE 2
SUMMARY OF MTBE AND BTEX LABORATORY ANALYSIS DATA
THRIFTWAY REFINERY, BLOOMFIELD, NEW MEXICO
(concentrations in ug/L)

Well No.	Date	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes
EFFLUENT	06/24/98	STRIPPER SHUT DOWN FOR NEW STRIPPER INSTALLATION				
	09/24/98	6.2	ND	ND	ND	ND
	10/21/98	ND	2.6	1.6	ND	2.7
	11/16/98	ND	ND	ND	ND	2.0
	12/31/98	71.0	9.6	7.7	5.8	21.4
	02/16/99	4.8	1.0	2.6	2.3	8.2
	02/16/99	ND	0.6	2.2	0.8	3.6
EVAP POND	10/09/96	ND	ND	ND	0.5	0.4
	12/31/96	NS	NS	NS	NS	NS
	03/18/97	NS	NS	NS	NS	NS
	06/18/97	NS	NS	NS	NS	NS
	09/23/97	NS	NS	NS	NS	NS
	12/19/97	NS	NS	NS	NS	NS
	06/24/98		DRY			
EVAP POND	09/23/98	NS	NS	NS	NS	NS
	12/30/98	NS	NS	NS	NS	NS
UST LINER	03/19/97	NM	ND	ND	1.7	1.0
UST LINER	12/30/98	NS	NS	NS	NS	NS
NMWQCC	12/24/87	20.0	10.0	750.0	750.0	620.0

TABLE 3
SUMMARY OF LABORATORY ANALYSIS DATA
MAJOR CATIONS AND ANIONS, TDS AND pH
THRIFTWAY REFINERY, BLOOMFIELD, NEW MEXICO
(concentrations in mg/L)

Well No.	Date	CATIONS						ANIONS						Dried at 180 C			pH	CONDUCTIVITY	TOTAL CaCO3 HARDNESS
		Major Cations			Other Cations			Major Anions			Other Anions			TDS	TDS	TDS			
		Sodium	Calcium	Magnesium	Potassium	Chloride	Sulfate	Carbonate	Bicarbonate	Hydroxide	Filterable								
EFFLUENT	03/24/97	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
	06/27/97	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
	09/23/97	760	384	38.4	11.0	711.0	1,882	<1	158.00	<1	3,644	3,736	7.22	5,030	867				
	12/22/97	732	274	31.6	6.6	648.0	1,401	<1	278.00	<1	3,371	3,416	7.57	4,470	814				
	12/31/98	780	220	48.0	8.6	110.0	1,600	ND	730.00	NS	3,500	NS	7.98	3,800	3,500				
INFLUENT	03/24/97	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
	07/31/97	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
	09/23/97	768	297	38.4	10.9	1,068.0	1,662	<1	<1	<1	3,844	3,746	2.49	6,670	900				
	12/22/97	7	272	31.2	6.6	766.0	1,414	<1	86.00	<1	3,304	3,410	5.47	4,530	808				
	12/31/98	790	240	47.0	8.7	110.0	1,600	ND	800.00	NS	3,600	NS	7.14	3,700	3,600				
MW-01	03/19/97	646	482	44.0	5.5	47.6	2,518	<1	336.00	<1	4,079	4,166	7.05	4,470	1,385				
	12/23/97	645	458	34.0	5.2	47.2	2,495	<1	289.00	<1	3,973	4,024	7.06	4,290	1,284				
	12/30/98	640	370	52.0	5.6	39.0	2,400	ND	290.00	NS	3,800	NS	7.04	4,000	3,800				
MW-04	03/19/97	866	199	19.6	8.6	196.0	1,332	<1	863.00	<1	3,484	3,276	7.31	4,250	578				
	12/22/97	648	96	31.0	6.7	116.0	875	<1	914.00	<1	2,687	2,458	7.29	3,270	367				
MW-05	03/19/97	1,282	44	10.6	7.5	478.0	1,518	2.66	864.34	<1	4,204	4,022	8.33	5,610	153				
	12/19/97	1,325	37	7.2	7.0	385.0	1,798	<1	868.00	<1	4,428	4,132	8.39	5,690	123				
	12/29/98	1,600	120	34.0	11.0	240.0	2,700	ND	750.00	NS	5,500	NS	7.83	6,400	5,500				
MW-06	03/19/97	793	192	25.0	9.2	100.5	1,495	<1	691.00	<1	3,306	3,142	7.79	4,010	582				
	12/23/97	762	106	15.5	7.5	94.4	1,314	<1	772.00	<1	3,071	2,744	7.69	3,730	329				
	12/30/98	740	88	27.0	8.4	94.0	1,000	ND	760.00	NS	2,800	NS	7.60	3,200	2,800				
MW-08	12/22/97	INSUFFICIENT SAMPLE FOR THESE TESTS																	
MW-08	12/29/98	WELL SIFTED IN																	
MW-09	03/18/97	1,528	395	42.4	9.4	89.5	3,761	<1	330.00	<1	6,155	6,164	7.62	7,020	1,161				
	12/22/97	1,510	326	28.4	6.4	65.1	3,936	<1	365.00	<1	6,237	6,398	7.71	7,040	931				
	12/29/98	1,700	320	66.0	7.8	54.0	4,100	ND	370.00	NS	6,600	4,100	7.51	370.00	6,200				
MW-10	03/18/97	1,522	365	36.6	10.6	52.4	3,868	<1	313.00	<1	6,168	6,062	7.40	7,190	6,200				
	12/22/97	1,455	318	19.5	6.3	50.6	3,747	<1	326.00	<1	5,922	5,970	7.45	6,740	5,600				
	12/29/98	1,600	290	50.0	8.2	54.0	3,900	ND	320.00	NS	6,200	NS	7.39	6,300	6,200				
MW-11	03/18/97	1,315	421	36.4	15.0	29.4	3,875	<1	244.00	<1	5,936	5,900	7.41	6,670	4,200				
	12/22/97	1,290	420	19.5	11.0	17.8	3,902	<1	241.00	<1	5,901	6,018	7.41	6,470	1,700				
	12/29/98	1,300	350	42.0	14.0	20.0	3,600	ND	230.00	NS	5,600	NS	7.30	5,600	5,600				
MW-13	03/18/97	1,126	432	41.8	11.4	119.0	3,378	<1	288.00	<1	5,396	5,488	7.28	6,390	1,251				
	12/29/98	1,200	360	56.0	9.6	110.0	3,200	ND	270.00	NS	5,200	NS	7.20	5,500	5,200				
	12/19/97	1,155	416	31.0	7.9	125.0	3,437	<1	300.00	<1	5,472	5,456	7.28	5,980	1,166				
MW-15	03/18/97	776	381	36.8	8.8	48.1	2,568	<1	200.00	<1	4,019	4,066	7.60	4,610	1,103				
	12/22/97	825	375	21.4	6.8	78.5	2,696	<1	204.00	<1	4,207	4,258	7.62	4,640	1,025				
	12/29/98	840	390	44.0	8.6	140.0	2,600	ND	180.00	NS	4,200	NS	7.38	4,800	4,200				
MW-16	12/30/98	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
MW-18	03/19/97	882	198	25.8	9.1	91.3	1,720	<1	757.00	<1	3,683	3,532	7.28	4,470	601				
	12/23/97	565	93	10.6	4.9	65.0	928	<1	597.00	<1	2,263	2,008	7.59	2,830	276				
	12/29/98	430	76	14.0	4.6	73.0	620	ND	500.00	NS	1,700	NS	7.40	2,100	1,700				
MW-19	03/19/97	1,335	196	45.8	6.0	273.0	2,390	<1	995.00	<1	5,241	4,850	7.63	6,060	678				
	12/23/97	1,215	118	30.6	4.6	264.0	1,880	<1	1,228.00	<1	4,740	4,238	7.41	5,560	421				
	12/29/98	470	82	24.0	3.4	66.0	680	ND	540.00	<1	1,800	NS	7.68	2,200	1,800				
MW-20	03/18/97	969	464	52.4	8.1	115.0	2,649	<1	836.00	<1	5,094	4,892	7.00	5,590	1,374				
	12/22/97	1,060	500	42.6	6.3	222.0	2,796	<1	756.00	<1	5,383	5,218	7.02	5,860	1,424				
	12/28/98	970	370	66.0	8.1	150.0	2,500	ND	670.00	NS	4,700	NS	6.98	4,900	4,700				

TABLE 3
SUMMARY OF LABORATORY ANALYSIS DATA
MAJOR CATIONS AND ANIONS, TDS AND pH
THRIFTWAY REFINERY, BLOOMFIELD, NEW MEXICO
(concentrations in mg/L)

Well No.	Date	CATIONS						ANIONS						pH	CONDUCTIVITY at 25 C in uS/cm	TOTAL CaCO3 HARDNESS			
		CATIONS			ANIONS			CO3 as CaCO3			HCO3 as CaCO3						OH as CaCO3		
		Sodium	Calcium	Magnesium	Potassium	Chloride	Sulfate	Carbonate	Bicarbonate	Hydroxide	TDS	Filterable	TDS				Dried at 180 C		
MW-21	03/18/97	1,315	338	39.8	11.4	78.5	2,800	<1	682.00	<1	5,285	5,050	7.08	5,890	5,800				
	12/22/97	985	180	24.4	6.8	68.6	1,704	<1	974.00	<1	3,943	3,546	7.16	4,610	8,100				
	12/28/98	1,400	320	68.0	11.0	110.0	3,200	ND	700.00	NS	5,800	NS	6.97	5,700	5,800				
MW-22	03/18/97	1,229	379	37.0	10.3	30.6	3,422	<1	388.00	<1	5,496	5,518	7.11	6,250	1,099				
	12/22/97	1,740	494	25.5	10.2	67.8	4,733	<1	449.00	<1	7,520	7,602	7.17	8,180	1,339				
	12/28/98	2,000	420	71.0	14.0	98.0	5,000	ND	460.00	NS	8,100	NS	6.95	6,300	8,100				

NS - NOT SAMPLED

TABLE 4
SUMMARY OF LABORATORY ANALYSIS
POLYCYCLIC AROMATIC HYDROCARBONS
THRIFTWAY REFINERY, BLOOMFIELD, NEW MEXICO
(concentrations in mg/L)

Well No.	Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo (a) anthracene	Benzo (b) fluoranthene	Benzo (k) fluoranthene	Benzo (ghi) perylene	Benzo (a) pyrene	Chrysene	Dibenz (a,h) anthracene	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene	Indeno (1,2,3-cd) pyrene	2-Methyl naphthalene
EFFLUENT	03/24/97	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
EFFLUENT	06/27/97	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
EFFLUENT	10/06/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EFFLUENT	12/22/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EFFLUENT	12/31/98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
INFLUENT	03/24/97	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
INFLUENT	07/31/97	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
INFLUENT	10/06/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
INFLUENT	12/22/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
INFLUENT	12/31/98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-01	04/03/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-01	12/23/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-01	12/30/98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-04	03/18/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-04	12/22/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-04	12/30/98	WELL DESTROYED																
MW-05	04/03/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-05	12/19/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-05	12/29/98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-06	04/03/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-06	12/23/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-06	12/30/98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-08	12/22/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-09	03/18/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-09	12/22/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-09	12/29/98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-10	03/18/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-10	12/22/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-10	12/29/98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-11	03/18/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-11	12/22/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-11	12/29/98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-13	04/03/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-13	12/19/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-13	12/29/98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-15	03/18/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-15	12/22/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-15	12/29/98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-18	03/19/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-18	12/23/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-18	12/29/98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-19	03/19/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-19	12/23/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-19	12/29/98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-20	03/18/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-20	12/22/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-20	12/28/98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-21	04/03/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-21	12/22/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-21	12/28/98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-22	04/03/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-22	12/22/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-22	12/28/98	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NS - NOT SAMPLED

TABLE 5
SUMMARY OF METALS LABORATORY ANALYSIS DATA
THRIFTWAY REFINERY, BLOOMFIELD, NEW MEXICO
(concentrations in mg/L)

Well No.	Date	EPA METHOD									
		EPA 300.0 Fluoride	EPA 300.0 Bromide	SW-846 7470 Mercury	SW-846 6010A Arsenic	SW-846 6010A Barium	SW-846 6010A Cadmium	SW-846 6010A Chromium	SW-846 6010A Lead	SW-846 6010A Selenium	SW-846 6010A Silver
EFFLUENT	03/24/97	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
EFFLUENT	06/27/97	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
EFFLUENT	10/06/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EFFLUENT	12/22/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EFFLUENT	12/31/98	ND	3.200	NA	NA	NA	NA	ND	ND	NA	NA
EFFLUENT	12/31/98	1.430	3.190	NA	ND	0.063	ND	ND	ND	0.020	ND
INFLUENT	03/24/97	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
INFLUENT	07/31/97	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
INFLUENT	10/06/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
INFLUENT	12/22/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
INFLUENT	12/31/98	NA	3.100	NA	NA	NA	NA	ND	ND	NA	NA
INFLUENT	12/31/98	1.440	3.130	NA	ND	0.064	ND	ND	ND	ND	ND
MW-01	03/19/97	ND	0.200	ND	ND	0.090	ND	ND	ND	ND	ND
MW-01	12/23/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-01	12/30/98	NA	ND	NA	NA	NA	NA	ND	ND	NA	NA
MW-01	12/30/98	1.530	ND	NA	ND	0.223	ND	0.013	0.019	ND	ND
MW-04	03/19/97	ND	0.400	ND	ND	0.490	ND	ND	ND	ND	ND
MW-04	12/22/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-05	03/19/97	ND	0.500	ND	ND	0.200	ND	ND	ND	ND	ND
MW-05	12/19/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-05	12/29/98	NA	3.100	NA	NA	NA	NA	ND	ND	NA	NA
MW-05	12/29/98	1.650	3.110	NA	0.060	1.390	ND	0.037	0.069	ND	ND
MW-06	03/19/97	ND	0.600	ND	ND	0.050	ND	ND	ND	ND	ND
MW-06	12/23/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-06	12/30/98	NA	3.100	NA	NA	NA	NA	ND	ND	NA	NA
MW-06	12/30/98	1.500	3.060	NA	ND	0.106	ND	ND	ND	ND	ND
MW-08	12/22/97	INSUFFICIENT SAMPLE FOR THESE TESTS									
MW-09	03/18/97	ND	0.200	ND	ND	0.090	ND	ND	ND	ND	ND
MW-09	12/22/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-09	12/29/98	NA	ND	NA	NA	NA	NA	ND	ND	NA	NA

TABLE 5
SUMMARY OF METALS LABORATORY ANALYSIS DATA
THRIFTWAY REFINERY, BLOOMFIELD, NEW MEXICO
(concentrations in mg/L)

Well No.	Date	EPA METHOD										SW-846 6010A Silver
		EPA 300.0 Fluoride	EPA 300.0 Bromide	SW-846 7470 Mercury	SW-846 6010A Arsenic	SW-846 6010A Barium	SW-846 6010A Cadmium	SW-846 6010A Chromium	SW-846 6010A Lead	SW-846 6010A Selenium		
MW-09	12/29/98	1.590	ND	NA	ND	0.410	ND	0.028	0.027	ND	ND	
MW-10	03/18/97	ND	0.300	ND	ND	0.320	ND	ND	ND	ND	ND	
MW-10	12/22/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MW-10	12/29/98	NA	3.000	NA	NA	NA	NA	ND	ND	NA	NA	
MW-10	12/29/98	1.630	3.000	NA	0.020	0.632	ND	0.022	0.016	ND	ND	
MW-11	03/18/97	ND	ND	ND	ND	1.150	ND	ND	ND	ND	ND	
MW-11	12/22/97	ND	ND	ND	ND	ND	ND	0.053	ND	ND	ND	
MW-11	12/29/98	NA	ND	NA	NA	NA	NA	ND	ND	NA	NA	
MW-11	12/29/98	1.410	ND	NA	0.060	0.813	ND	0.023	0.025	ND	ND	
MW-13	03/18/97	ND	0.400	ND	ND	0.430	ND	ND	ND	ND	ND	
MW-13	12/19/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MW-13	12/29/98	NA	3.100	NA	NA	NA	NA	ND	ND	NA	NA	
MW-13	12/29/98	1.670	3.080	NA	ND	0.175	ND	0.014	0.016	ND	0.003	
MW-15	03/18/97	ND	0.300	ND	ND	0.080	ND	ND	ND	ND	ND	
MW-15	12/22/97	ND	1.000	ND	ND	ND	ND	ND	ND	ND	ND	
MW-15	12/29/98	NA	3.500	NA	NA	NA	NA	ND	ND	NA	NA	
MW-15	12/29/98	1.600	3.530	NA	0.020	0.718	ND	0.032	0.032	ND	ND	
MW-18	03/19/97	ND	0.300	0.003	ND	0.140	ND	ND	ND	ND	ND	
MW-18	12/23/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MW-18	12/29/98	NA	3.100	NA	NA	NA	NA	0.050	ND	NA	NA	
MW-18	12/29/98	1.290	3.080	NA	0.070	1.070	ND	0.052	0.043	ND	ND	
MW-19	03/19/97	ND	0.500	ND	ND	0.310	ND	ND	ND	ND	ND	
MW-19	12/23/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MW-19	12/29/98	NA	3.000	NA	NA	NA	NA	ND	ND	NA	NA	
MW-19	12/29/98	1.490	2.990	NA	0.040	0.597	ND	0.026	0.032	ND	0.003	
MW-20	03/18/97	ND	0.600	ND	ND	0.350	ND	ND	ND	ND	ND	
MW-20	12/22/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	
MW-20	12/28/98	NA	3.300	NA	NA	NA	NA	ND	ND	NA	NA	
MW-20	12/28/98	1.440	3.270	NA	0.040	0.382	ND	0.028	0.047	ND	ND	
MW-21	03/18/97	ND	0.400	ND	ND	0.190	ND	ND	ND	ND	ND	

TABLE 5
SUMMARY OF METALS LABORATORY ANALYSIS DATA
THRIFTWAY REFINERY, BLOOMFIELD, NEW MEXICO
(concentrations in mg/L)

Well No.	Date	EPA METHOD									
		EPA 300.0 Fluoride	EPA 300.0 Bromide	SW-846 7470 Mercury	SW-846 6010A Arsenic	SW-846 6010A Barium	SW-846 6010A Cadmium	SW-846 6010A Chromium	SW-846 6010A Lead	SW-846 6010A Selenium	SW-846 6010A Silver
MW-21	12/22/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-21	12/28/98	NA	3.200	NA	NA	NA	NA	ND	ND	NA	NA
MW-21	12/28/98	1.330	3.240	NA	0.080	0.165	ND	0.019	0.023	ND	ND
MW-22	03/18/97	ND	0.400	ND	ND	0.220	ND	ND	ND	ND	ND
MW-22	12/22/97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-22	12/28/98	NA	3.400	NA	NA	NA	NA	ND	0.140	NA	NA
MW-22	12/28/98	1.280	3.430	NA	ND	0.048	ND	0.006	0.135	ND	ND

NA - NOT ANALYZED
NS - NOT SAMPLED

TABLE 6
THRIFWAY REFINERY AIR STRIPPER
1998 ON-STREAM RECORD

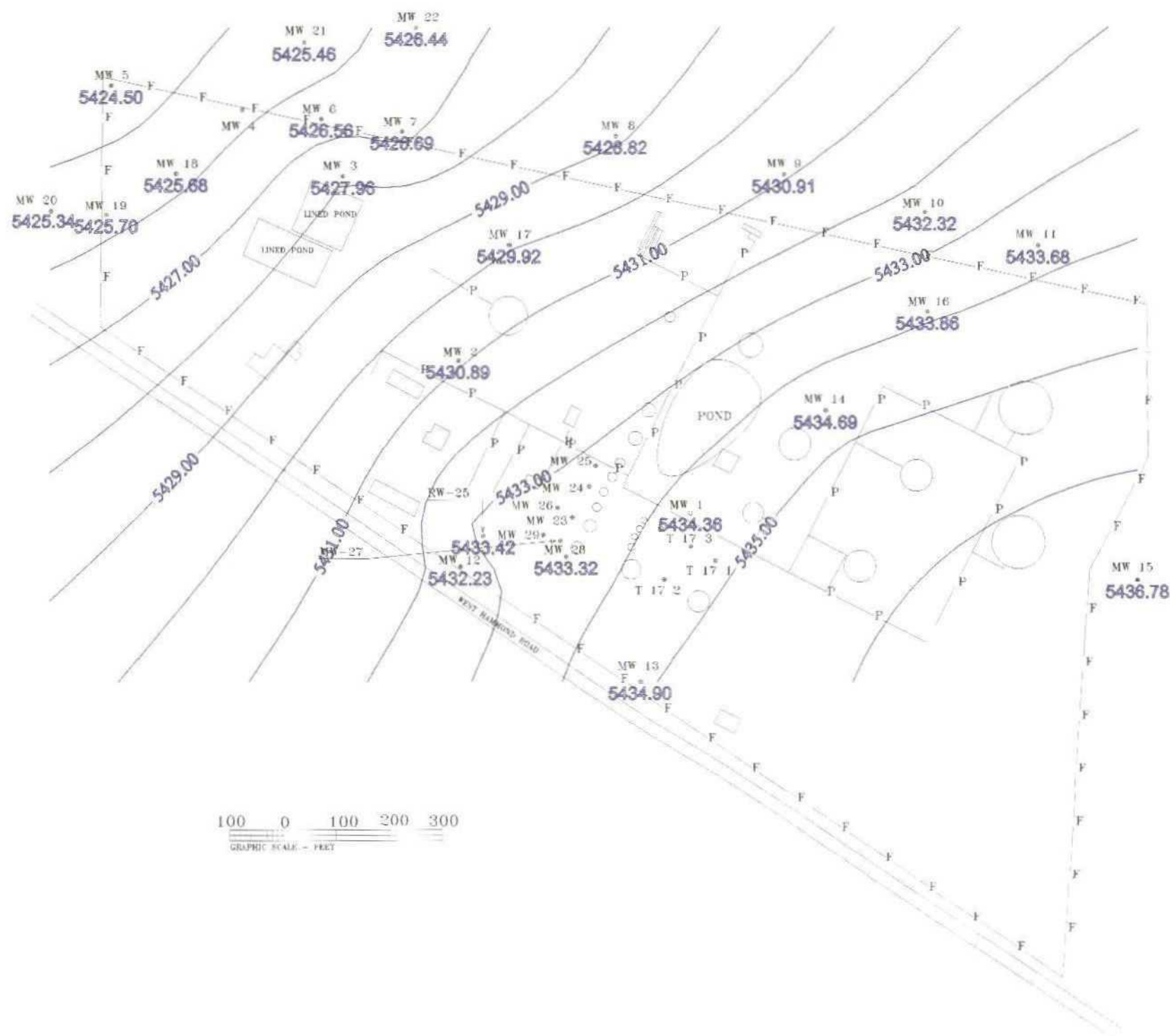
MONTH	DAYS IN MONTH	DAYS ON-LINE	ON-STREAM FACTOR	COMMENTS
JANUARY	31	31	100%	FULL OPERATION
FEBRUARY	28	0	0%	PUMP FAILURE
MARCH	31	0	0%	OFF SPECIFICATION WATER
APRIL	30	10	33%	WAITING ON APPROVAL FOR REPAIRS
MAY	31	11	35%	BLOWER AND PUMP DOWN NEED REPAIRS
JUNE	30	8	27%	TRAY REPAIRS - INTERNAL BYPASSING
JULY	31	0	0%	NEW AIR STRIPPER ORDERED
AUGUST	31	0	0%	AWAITING DELIVERY AND INSTALLATION
SEPTEMBER	30	6	20%	NEW AIR STRIPPER INSTALLED
OCTOBER	31	31	100%	FULL OPERATION
NOVEMBER	30	30	100%	FULL OPERATION
DECEMBER	31	31	100%	FULL OPERATION
	AVERAGE		42.96%	
	THE AVERAGE ON-STREAM FACTOR			
	FOR 1998 WAS			42.96%

FIGURES



KEY

WATER LEVEL
IN FEET



DRAWN BY: K. SINKS
FIGURE 1A. WATER LEVEL
CONTOUR MAP

APRIL 28, 1998

THIRTYWAY REFINERY
626 COUNTY ROAD 5500
BLOOMFIELD, NEW MEXICO

DATE: 04/28/98 BY: SKS



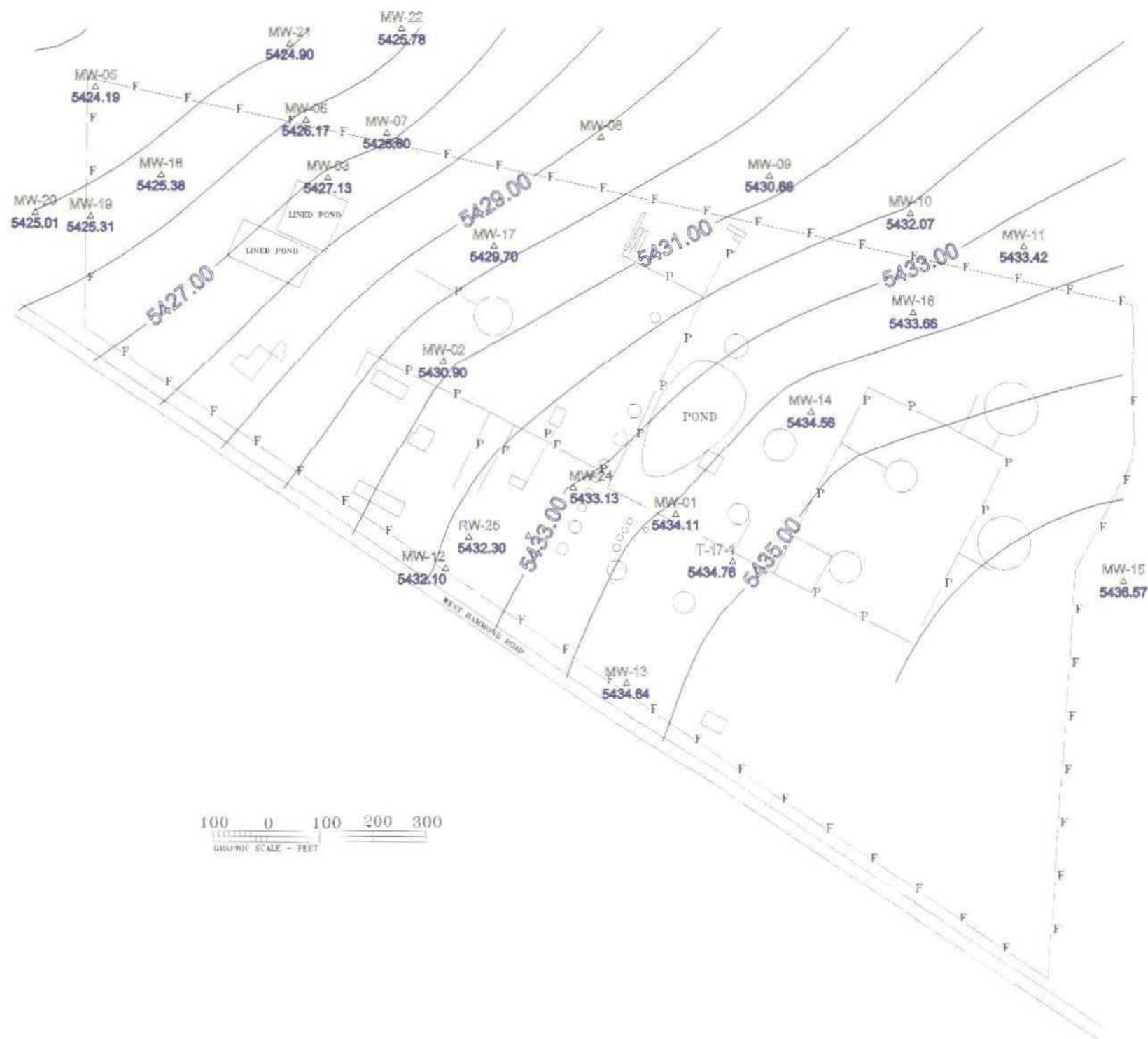
710 EAST 20TH STREET, SUITE 400
FARMINGTON, NEW MEXICO 87401
OFFICE: (505) 327-4965
FAX: (505) 564-3604



KEY

WATER LEVEL
IN FEET

100 0 100 200 300
GRAPHIC SCALE - FEET



710 EAST 20TH STREET, SUITE 400
FARMINGTON, NEW MEXICO 87401
OFFICE: (505) 327-4065
FAX: (505) 541-3604



DRAWN BY: K. SINKS
FIGURE 1B. WATER LEVEL
CONTOUR MAP

JUNE 24, 1998

THRIFTWAY REFINERY
626 COUNTY ROAD 5500
BLOOMFIELD, NEW MEXICO

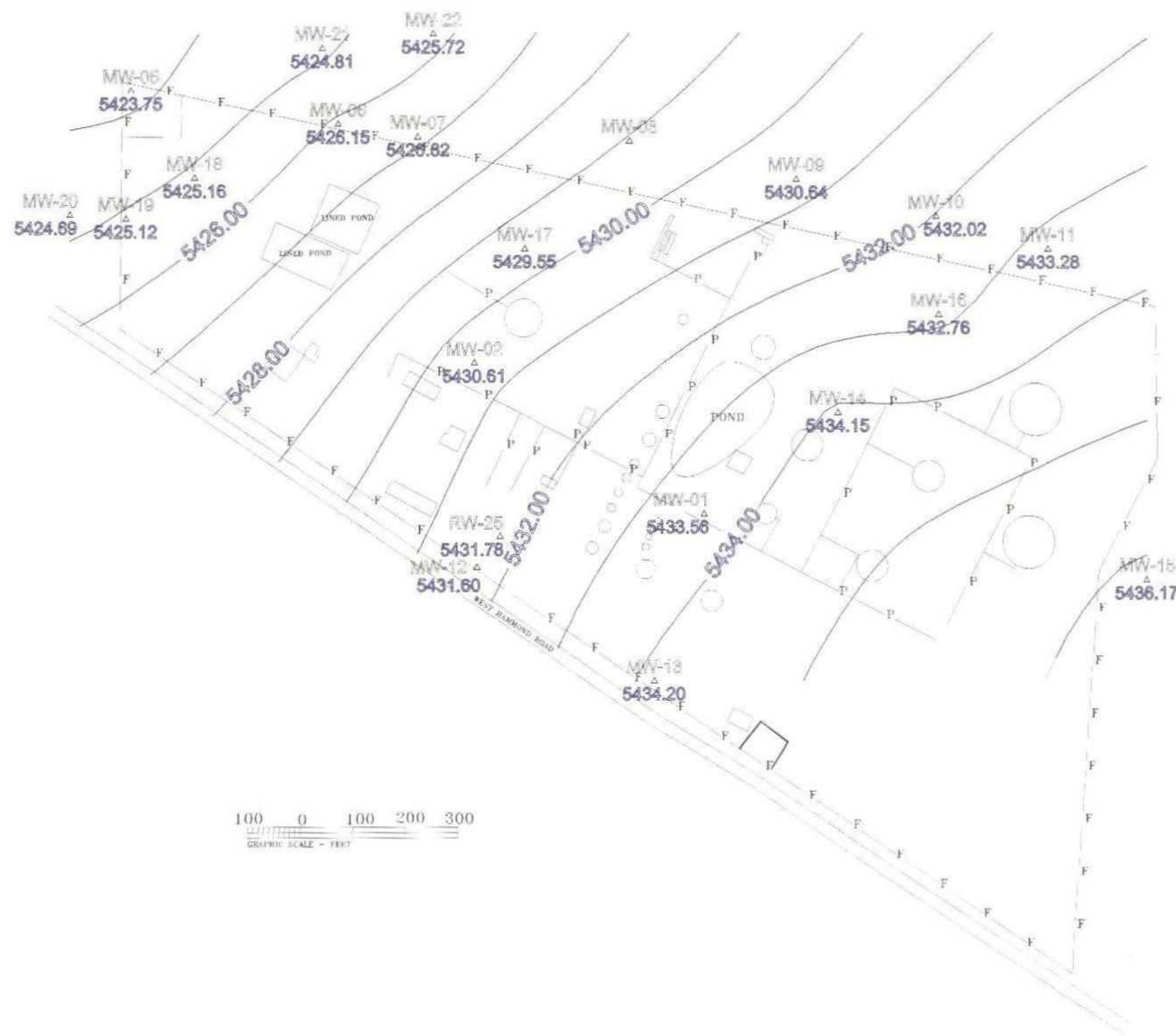
8105-0002-0001-SND



KEY

WATER LEVEL
IN FEET

100 0 100 200 300
GRAPHIC SCALE - FEET



THRIFTWAY REFINERY
626 COUNTY ROAD 5500
BLOOMFIELD, NEW MEXICO

010-302300W1.SKD

DRAWN BY: K. SINKS
FIGURE 1C WATER
LEVEL CONTOUR MAP

SEPTEMBER 23, 1998

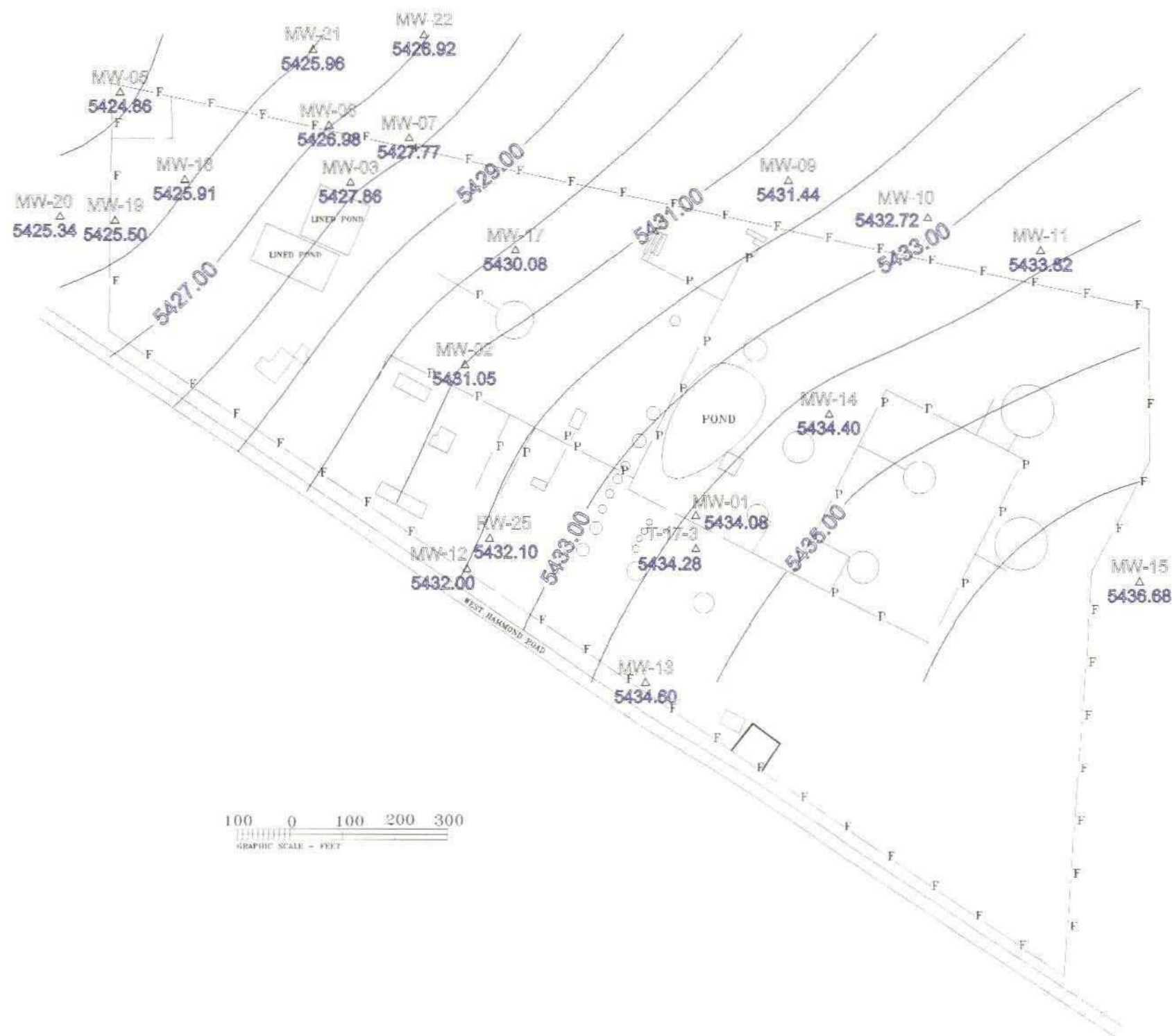
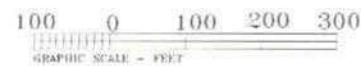


710 EAST 20TH STREET, SUITE 400
FARMINGTON, NEW MEXICO 87401
OFFICE: (505) 327-4065
FAX: (505) 564-3804



KEY

WATER LEVEL
IN FEET



THRIFTWAY REFINERY
626 COUNTY ROAD 5500
BLOOMFIELD, NEW MEXICO

010/125108WLSK

DRAWN BY: K. SINKS
FIGURE 1D WATER
LEVEL CONTOUR MAP

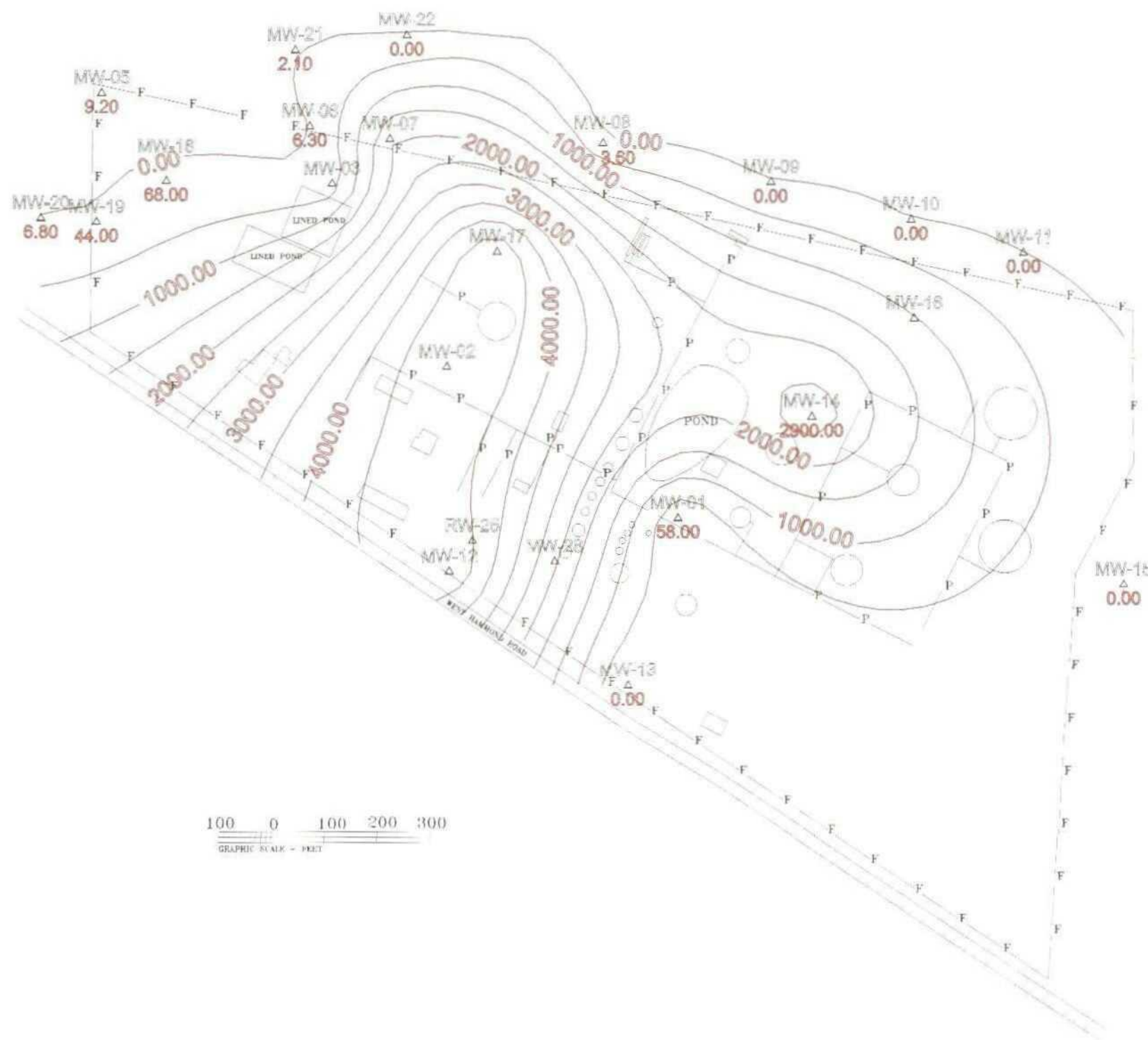
DECEMBER 31, 1998



710 EAST 20TH STREET, SUITE 400
FARMINGTON, NEW MEXICO 87401
OFFICE: (505) 327-4965
FAX: (505) 564-3804



KEY
BENZENE PLUME
IN ug/L



100 0 100 200 300
GRAPHIC SCALE - FEET

710 EAST 20TH STREET, SUITE 100
FAIRMINGTON, NEW MEXICO 87401
OFFICE: (505) 327-4965
FAX: (505) 564-3604

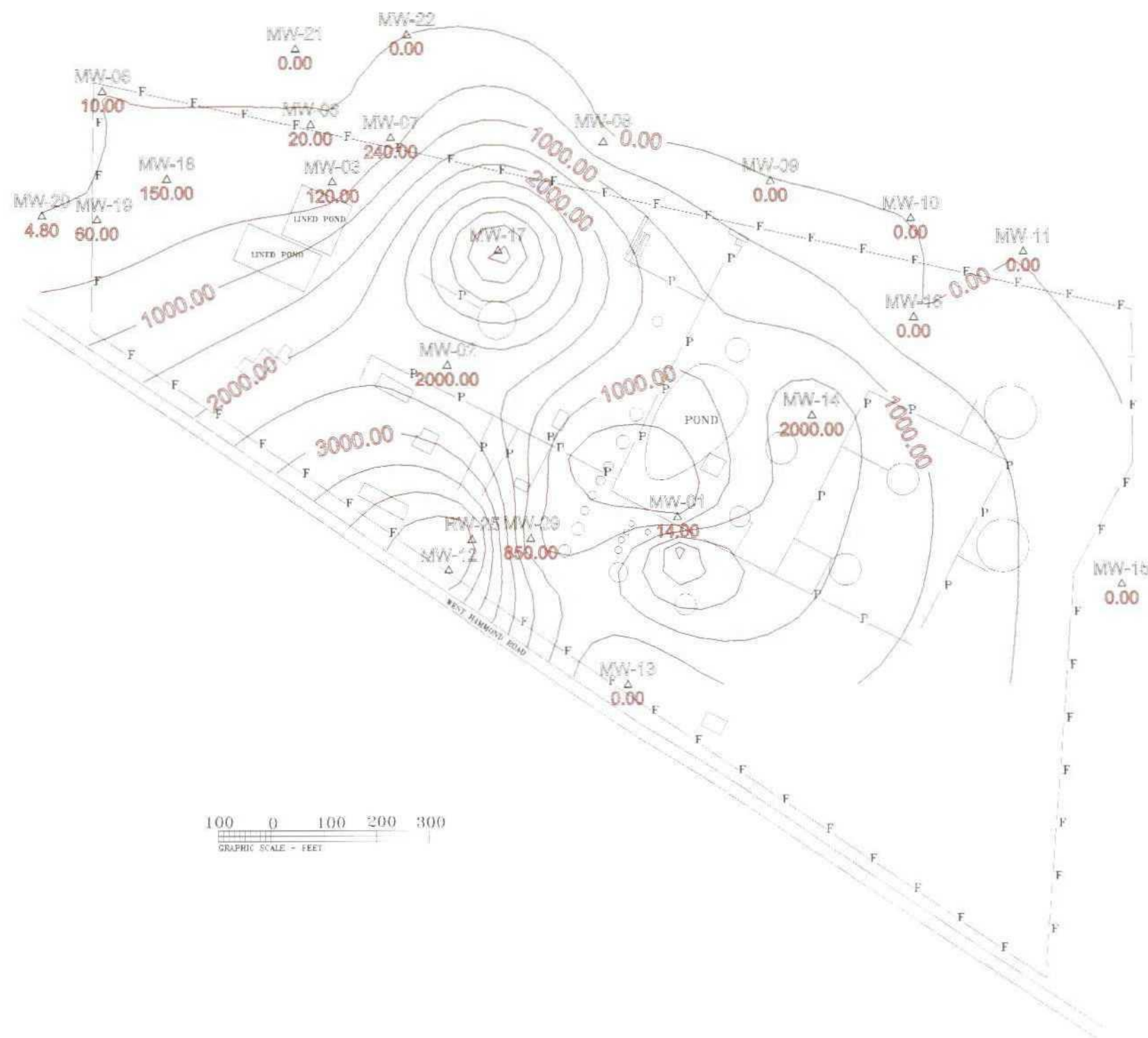


DRAWN BY: K. SINKS
**FIGURE 2A. BENZENE
CONCENTRATION**
APRIL 28, 1998

THIRFTWAY REFINERY
626 COUNTY ROAD 5500
BLOOMFIELD, NEW MEXICO
810 0430842 SKD



KEY
BENZENE PLUME
IN ug/L



710 EAST 20TH STREET, SUITE 400
FARMINGTON, NEW MEXICO 87401
OFFICE: (505) 827-1965
FAX: (505) 561-3604



DRAWN BY: K. SINKS
**FIGURE 2B. BENZENE
CONCENTRATION**

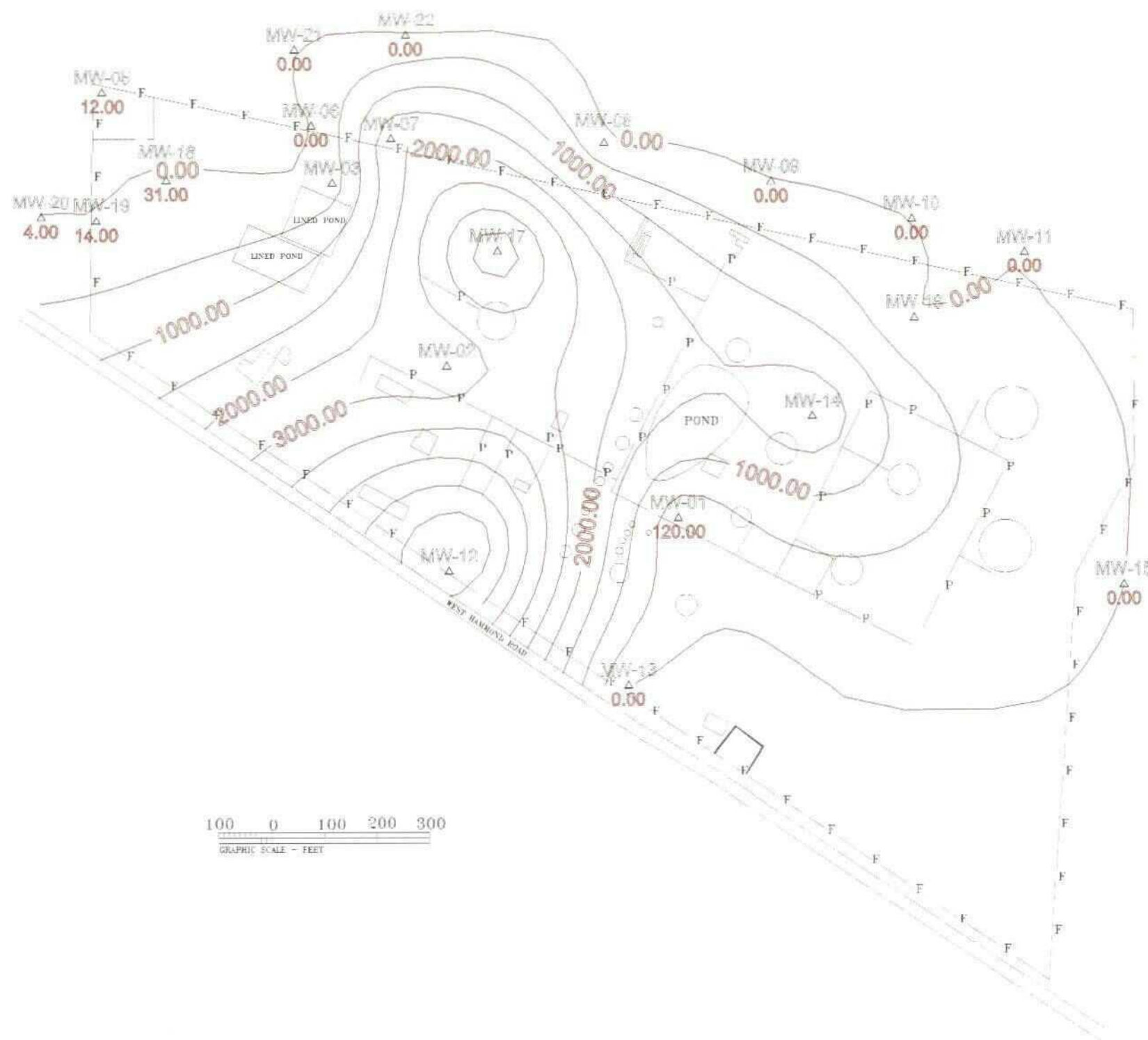
JUNE 24, 1998

THIRTTWAY REFINERY
626 COUNTY ROAD 5500
BLOOMFIELD, NEW MEXICO

BTU-062-0002Z-SKD



KEY
BENZENE PLUME
IN ug/L



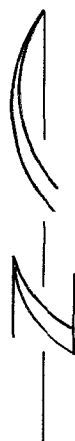
100 0 100 200 300
GRAPHIC SCALE - FEET

710 EAST 20TH STREET, SUITE 400
FARMINGTON, NEW MEXICO 87401
OFFICE: (505) 327-1365
FAX: (505) 564-3604



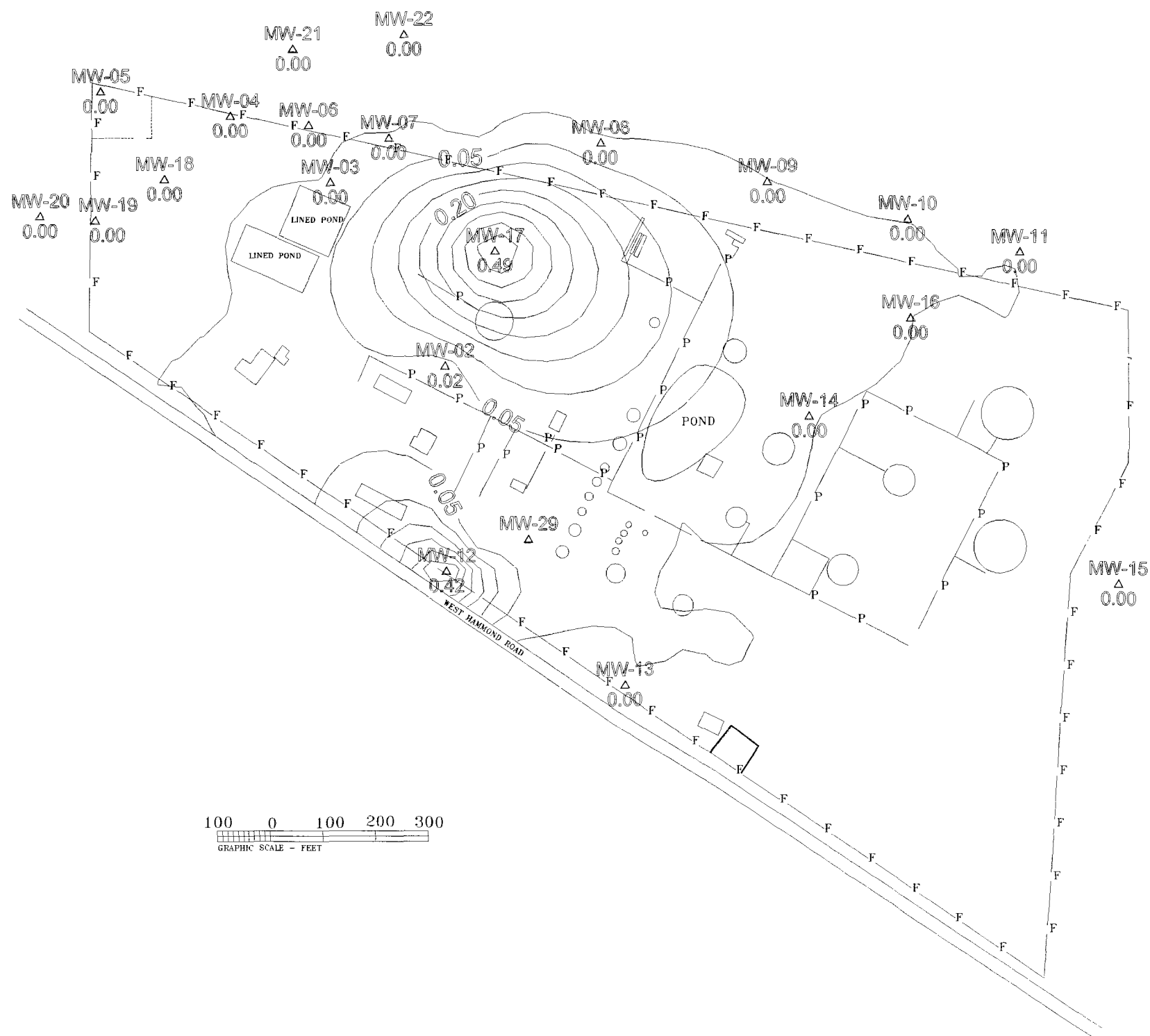
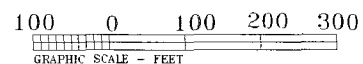
DRAWN BY: K. SINKS
**FIGURE 2D. BENZENE
CONCENTRATION**
DECEMBER 30, 1998

THRIFTWAY REFINERY
626 COUNTY ROAD 5500
BLOOMFIELD, NEW MEXICO
416/438-0825



KEY

PHASE SEPARATED
PRODUCT THICKNESS
IN FEET.

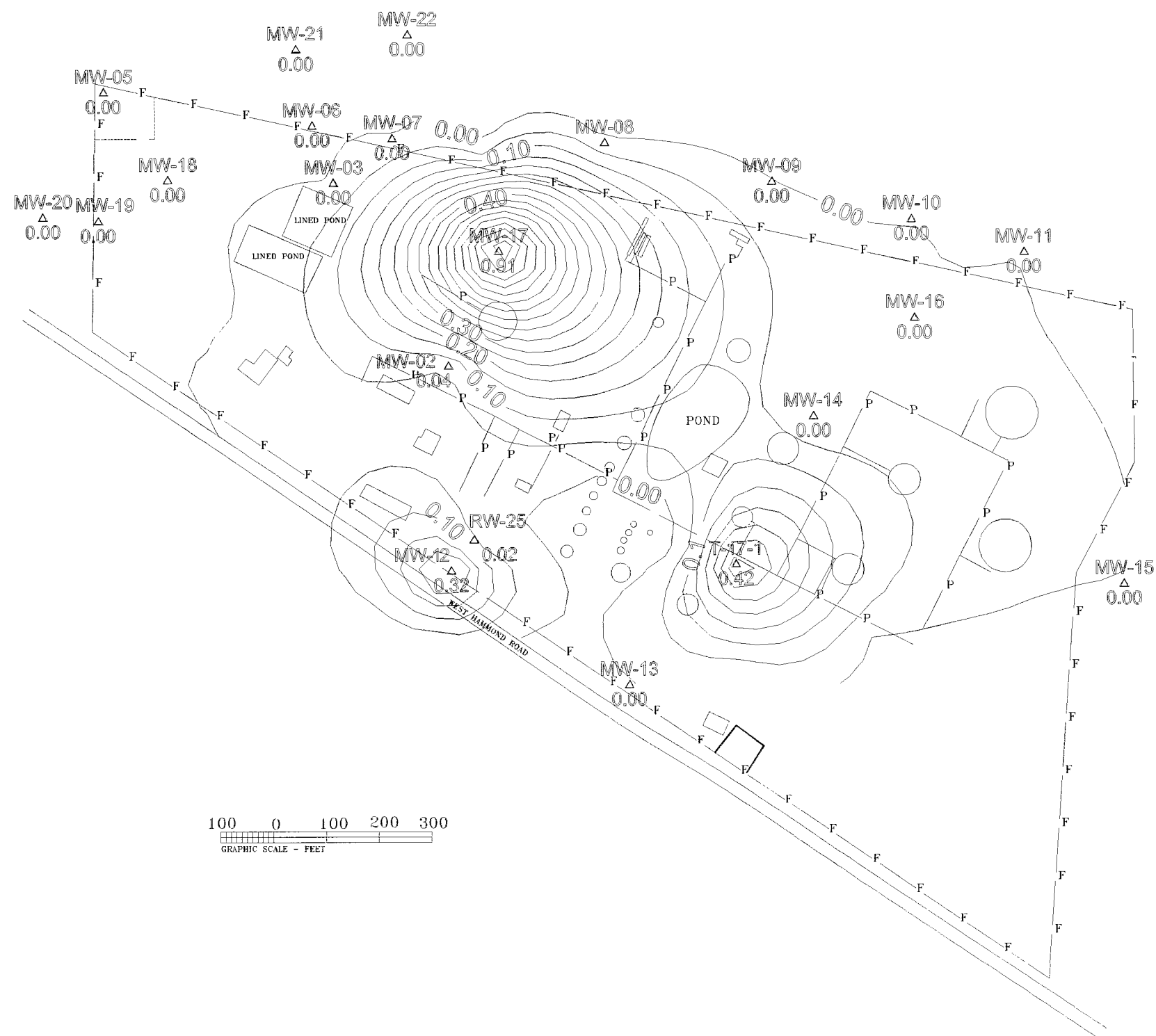
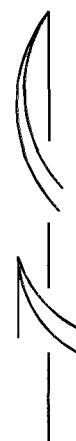


710 EAST 20TH STREET, SUITE 400
FARMINGTON, NEW MEXICO 87401
OFFICE: (505) 327-4965
FAX: (505) 564-3604



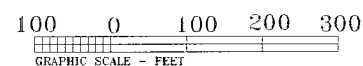
DRAWN BY: K. SINKS
FIGURE 3A PHASE
SEPARATED PRODUCT
THICKNESS
APRIL 28, 1998

THRIFTWAY REFINERY
626 COUNTY ROAD 5500
BLOOMFIELD, NEW MEXICO
810\042896PL.SXD



KEY

PHASE SEPARATED
PRODUCT THICKNESS
IN FEET.

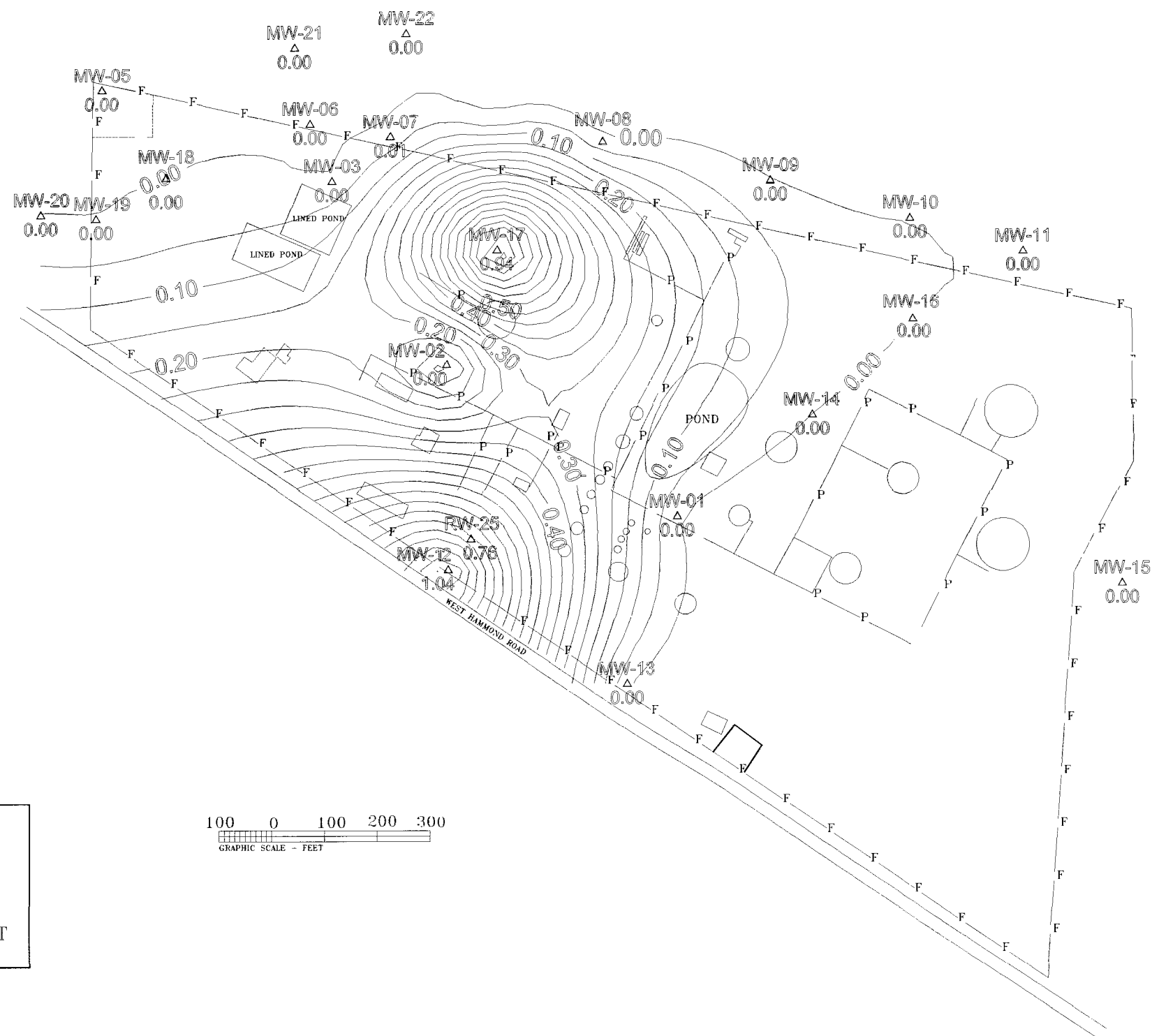
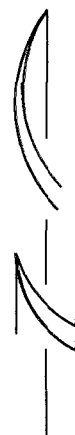


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FARMINGTON, NEW MEXICO 87401
OFFICE: (505) 327-4965
FAX: (505) 564-3604



DRAWN BY: K. SINKS
FIGURE 3B PHASE
SEPARATED PRODUCT
THICKNESS
JUNE 24, 1998

THRIFTWAY REFINERY
626 COUNTY ROAD 5500
BLOOMFIELD, NEW MEXICO
810\062198PLSKD

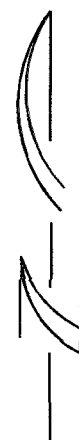


710 EAST 20TH STREET, SUITE 400
FARMINGTON, NEW MEXICO 87401
OFFICE: (505) 327-4965
FAX: (505) 564-3604

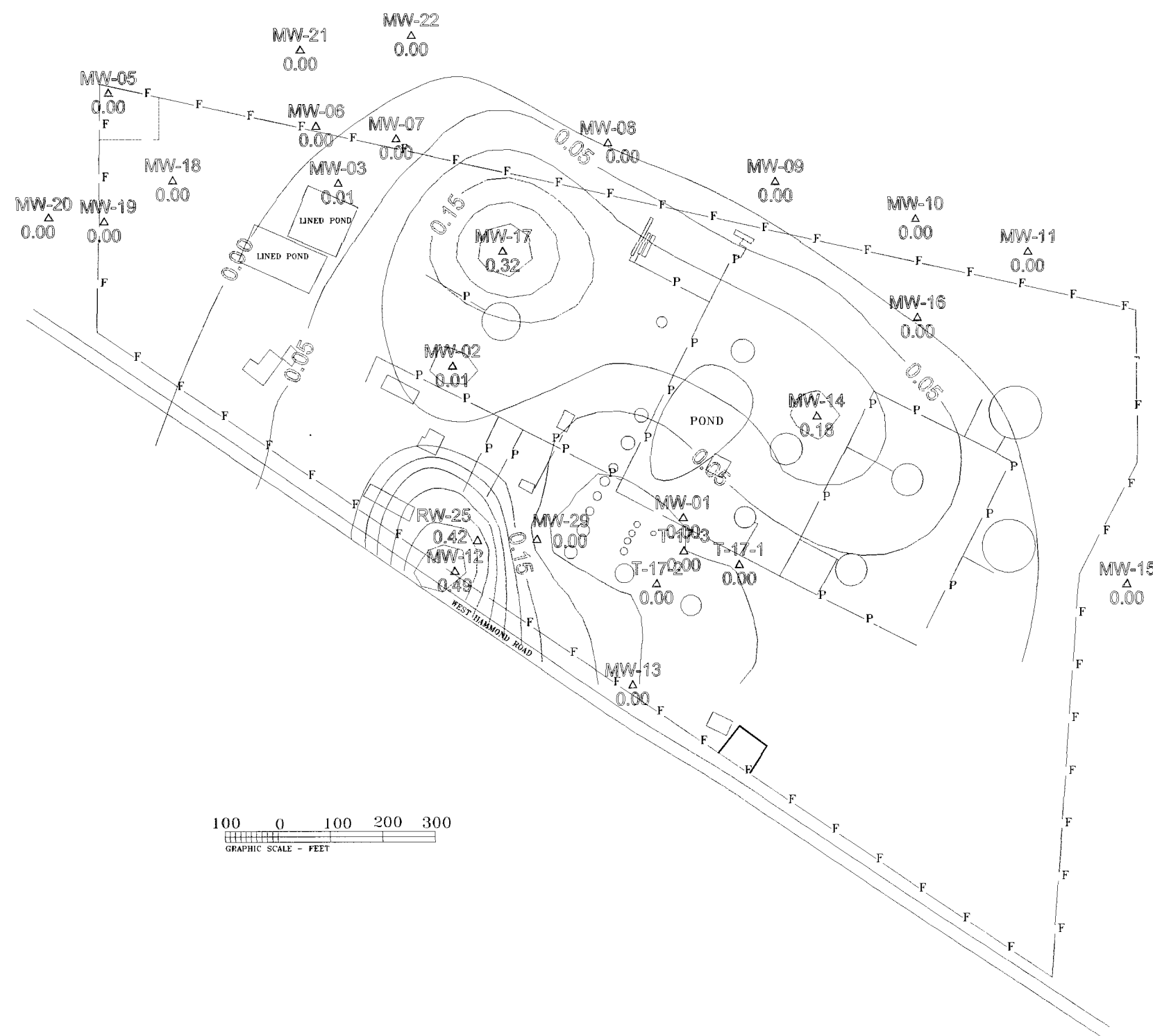
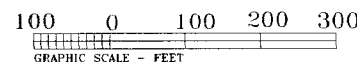


DRAWN BY: K. SINKS
FIGURE 3C PHASE
SEPARATED PRODUCT
SEPTEMBER 23, 1998

THRIFTWAY REFINERY
626 COUNTY ROAD 5500
BLOOMFIELD, NEW MEXICO
810\092398PLSKD



KEY
PRODUCT
THICKNESS
IN FEET



THRIFTWAY REFINERY
626 COUNTY ROAD 5500
BLOOMFIELD, NEW MEXICO

810\123198FL.SKD

DRAWN BY: K. SINKS
**FIGURE 3D PRODUCT
THICKNESS CONTOUR
MAP**

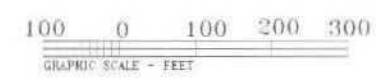
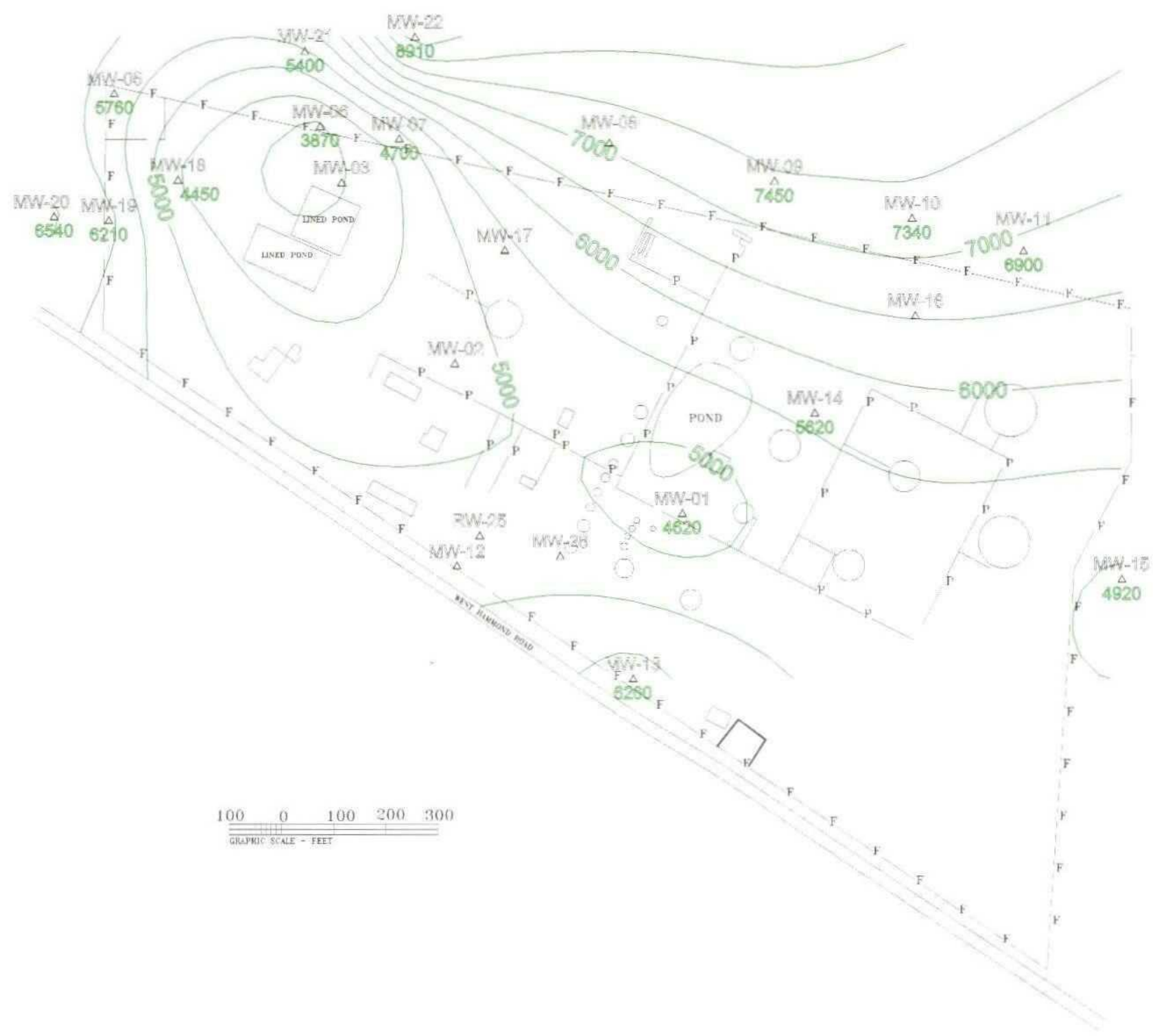
DECEMBER 31, 1998



710 EAST 20TH STREET, SUITE 400
FARMINGTON, NEW MEXICO 87401
OFFICE: (505) 327-4965
FAX: (505) 564-3604



KEY
 CONDUCTIVITY
 IN uohms/cm



710 EAST 20TH STREET, SUITE 400
 FARMINGTON, NEW MEXICO 87401
 OFFICE: (505) 327-1965
 FAX: (505) 564-3604

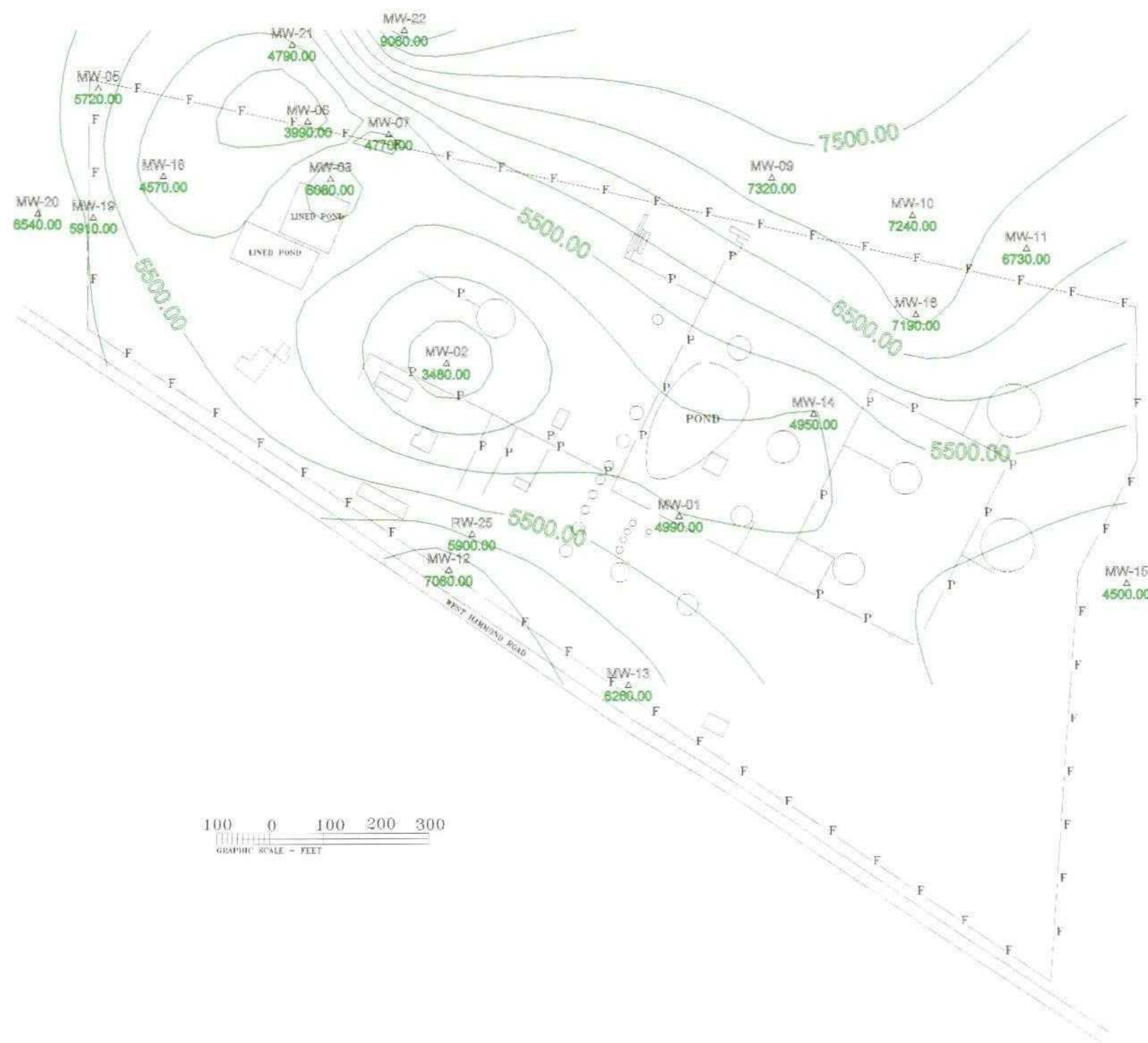


DRAWN BY: K. SINKS
**FIGURE 4A. GROUND
 WATER CONDUCTIVITY**
 APRIL 28, 1998

THRIFTWAY REFINERY
 626 COUNTY ROAD 5500
 BLOOMFIELD, NEW MEXICO
 BIO-042898CU SED



KEY
CONDUCTIVITY
IN uohms/cm



100 0 100 200 300
GRAPHIC SCALE - FEET

DRAWN BY: K. SINKS
**FIGURE 4B. GROUND
WATER CONDUCTIVITY**

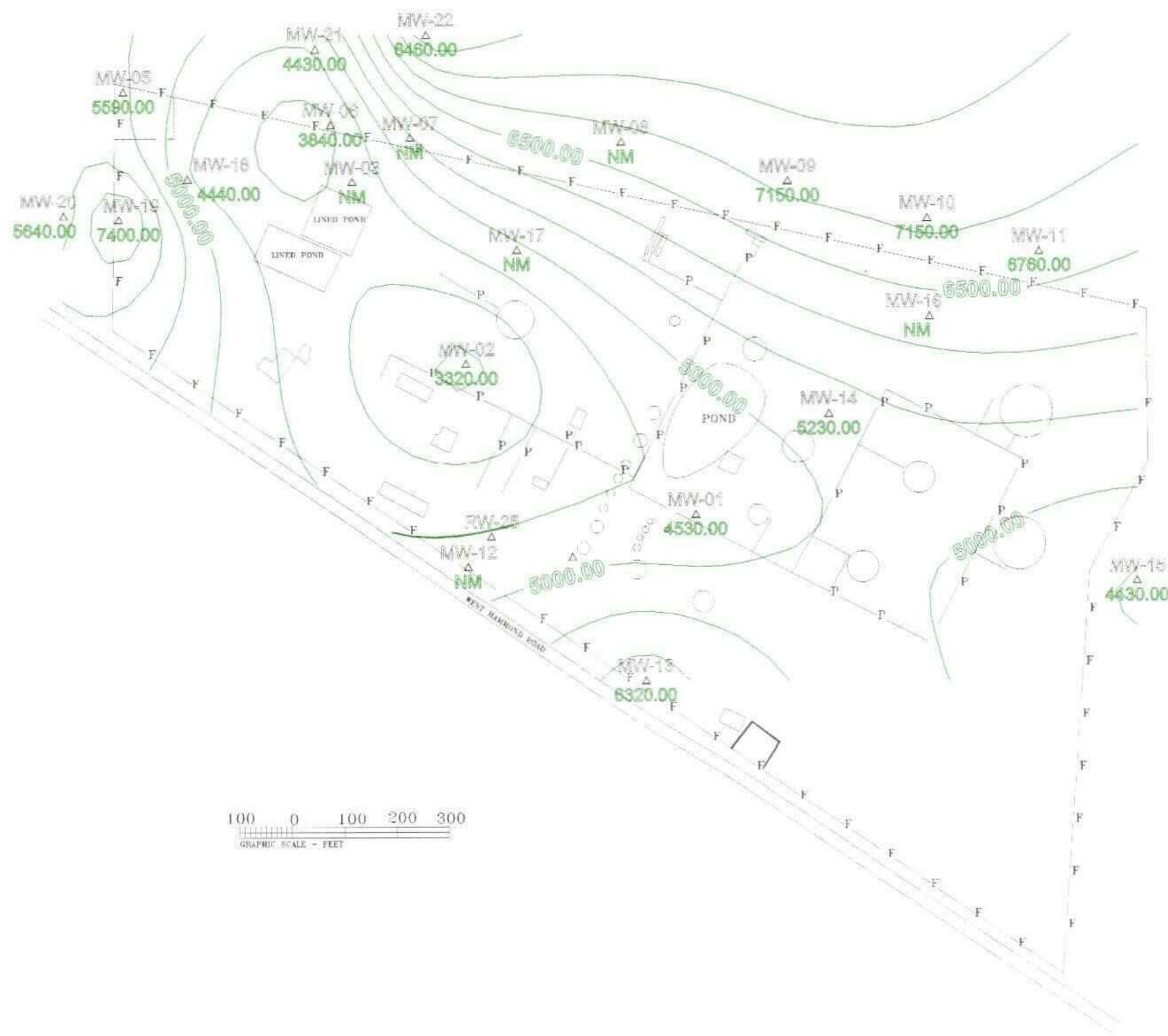
JUNE 24, 1998

THREFTWAY REFINERY
626 COUNTY ROAD 5500
BLOOMFIELD, NEW MEXICO

810\362498-d.skd



710 EAST 20TH STREET, SUITE 400
FARMINGTON, NEW MEXICO 87401
OFFICE: (505) 327-4965
FAX: (505) 564-3604



KEY

CONDUCTIVITY
IN uohms/cm



THRIFTWAY REFINERY
626 COUNTY ROAD 5500
BLOOMFIELD, NEW MEXICO

816-0025020 SED

DRAWN BY: K. SINKS
FIGURE 4C WATER
CONDUCTIVITY MAP

SEPTEMBER 23, 1998

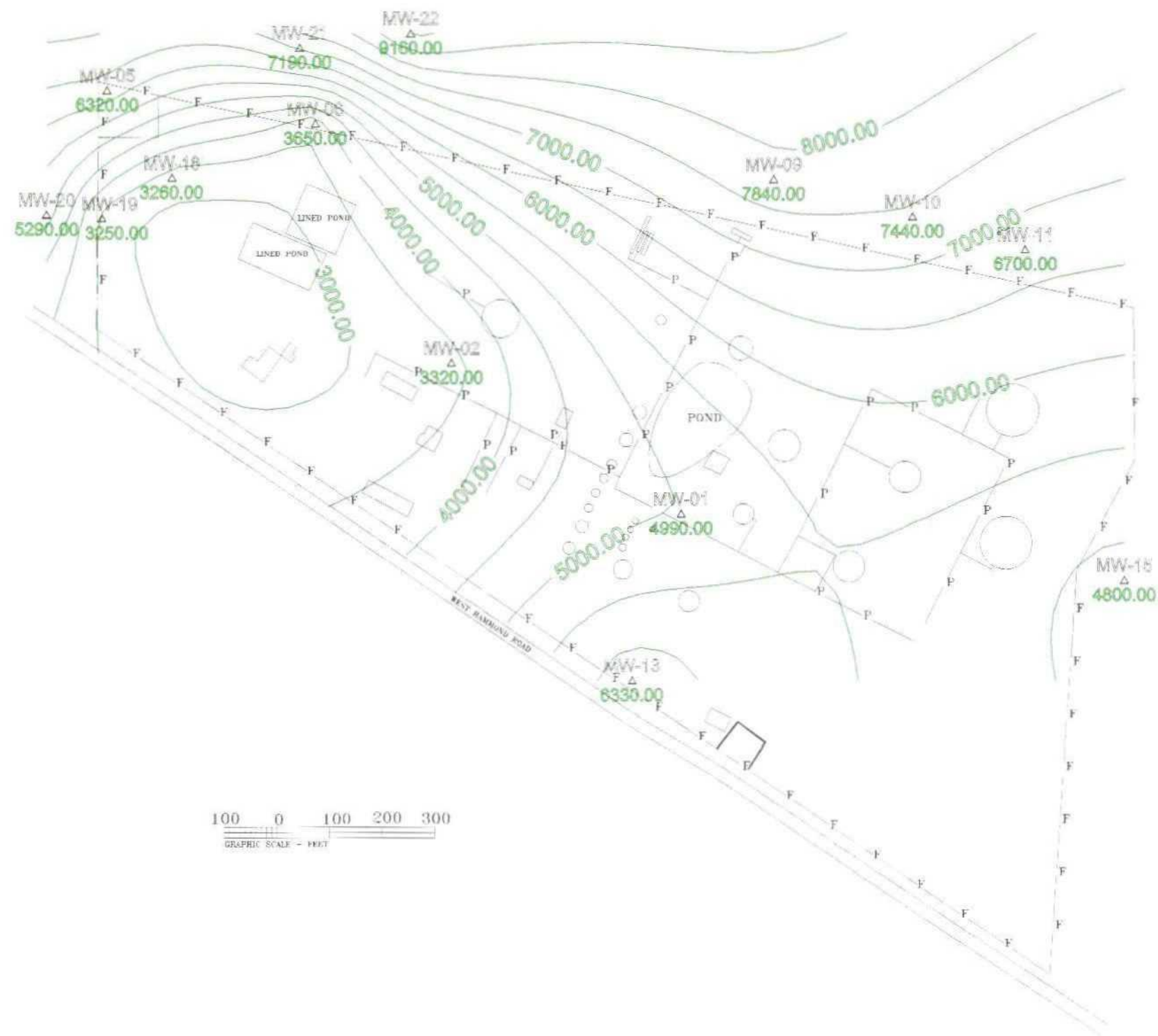


710 EAST 20TH STREET, SUITE 400
FARMINGTON, NEW MEXICO 87401
OFFICE: (505) 327-4365
FAX: (505) 564-3604



KEY
CONDUCTIVITY
IN uohms/cm

100 0 100 200 300
GRAPHIC SCALE - FEET



DRAWN BY: K. SINKS
**FIGURE 4D CONDUCTIVITY
CONTOUR MAP**

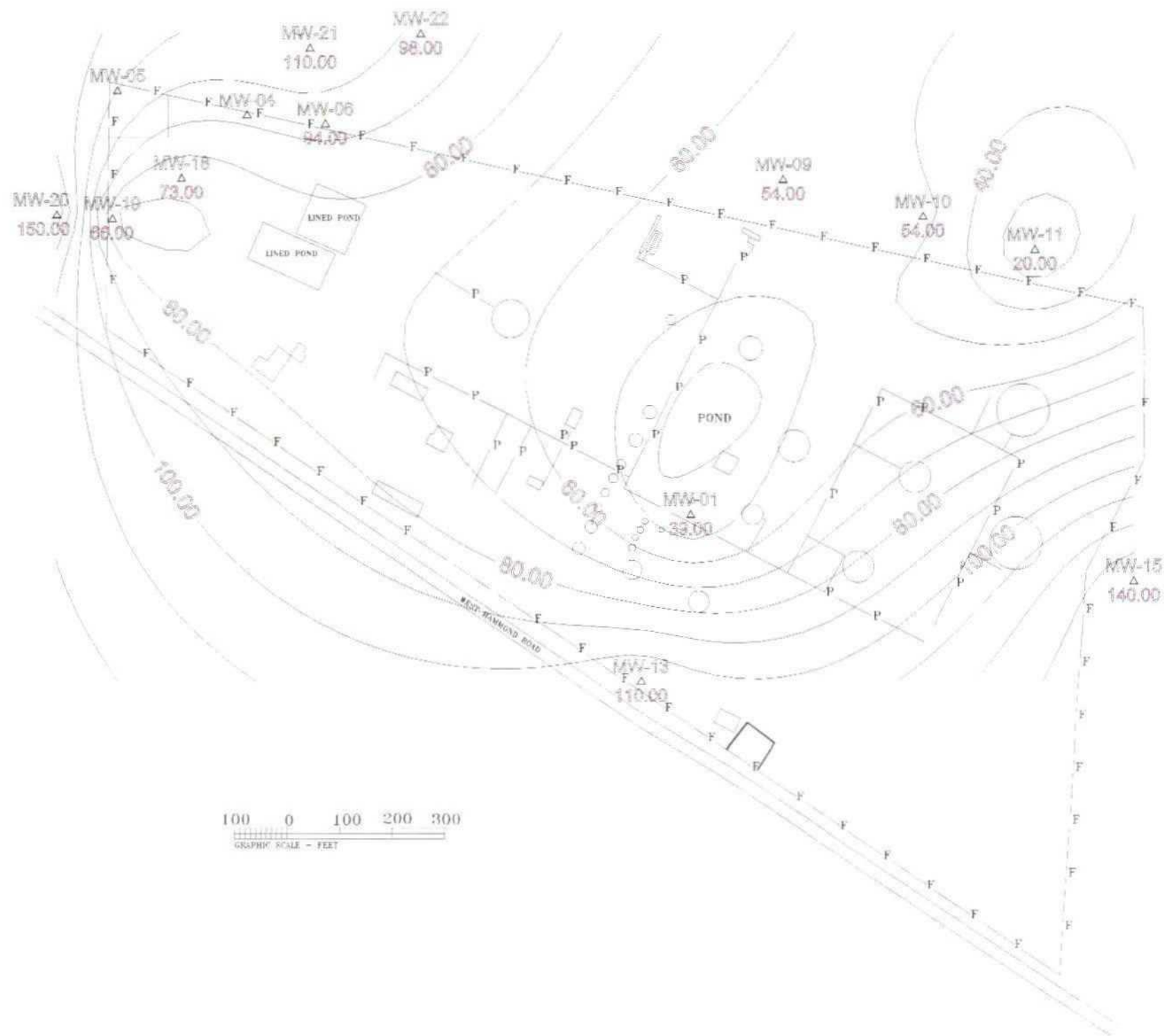
DECEMBER 31, 1998

THRIFTWAY REFINERY
626 COUNTY ROAD 5500
BLOOMFIELD, NEW MEXICO

910-123199CD STD



710 EAST 20TH STREET, SUITE 400
FARMINGTON, NEW MEXICO 87401
OFFICE: (505) 327-4065
FAX: (505) 564-3604



KEY

CHLORIDE
CONCENTRATION MAP

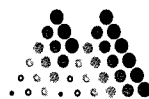
100 0 100 200 300
GRAPHIC SCALE - FEET

710 EAST 20TH STREET, SUITE 100
FARMINGTON, NEW MEXICO 87401
OFFICE: (505) 327-1965
FAX: (505) 561-3604



DRAWN BY: K. SINKS
FIGURE 5. CHLORIDE
CONCENTRATION MAP
MARCH 5, 1998

THIRFTWAY REFINERY
626 COUNTY ROAD 5500
BLOOMFIELD, NEW MEXICO
810-080-1206 SKD



Mountain States Analytical, Inc.

RECEIVED FEB 22 1999

The Quality Solution

February 16, 1999

Mr. David Cox
On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Reference:

Project: PAH/Cr, Pb/diss Fl and Br
Project No.: 9812051
MSAI Group: 25401

Dear Mr. Cox:

Enclosed are the analytical results for your project referenced above. The following samples are included in the report.

9812051-01

9812051-02

9812051-03

All holding times were met for the tests performed on these samples.

Thank you for selecting Mountain States Analytical, Inc. to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

We look forward to working with you on future projects.

With Regards,

Rolf E. Larsen
Project Manager

APPENDIX

OFF: (505) 325-5667



LAB: (505) 325-1556

February 23, 1999

FEB 26 1999

Terry Griffin
BioTech Remediation, Inc.
710 E. 20th, Suite 400
Farmington, NM 87401
TEL: (505) 327-4965
FAX (505) 564-3604

RE: Thriftway Refinery

Order No. 9912060

Dear Terry Griffin,

On Site Technologies, LTD. received 6 samples on 12/31/98 and were reported on 1/29/99 with the initial requested analyses.

On 2/10/99 Ken Sinks contacted On Site Technologies, LTD. and requested that the metals Mercury (Hg), Arsenic (As), Barium (Ba), Cadmium (Cd), Selenium (Se) and Silver (Ag) be added to the requested analyses.

Due to holding time constraints, Mercury (Hg) could not be determined.

The samples were analyzed for the following tests:

- Arsenic, Total (SW6010A)
- Barium, Total (SW6010A)
- Cadmium, Total (SW6010A)
- Selenium, Total (SW6010A)
- Silver, Total (SW6010A)

There were no problems with the analyses and all the data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

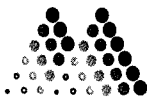
If you have any questions regarding these tests results, please feel free to call.

Sincerely,

A handwritten signature in black ink, appearing to read "David Cox", is written over a horizontal line.

David Cox

RECEIVED FEB 22 1999



Mountain States Analytical, Inc.

The Quality Solution

February 16, 1999

Mr. David Cox
On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Reference:

Project: PAH/Cr&Pb/Fl&Br Analysis
Project No.: 9812060
MSAI Group: 25418

Dear Mr. Cox:

Enclosed are the analytical results for your project referenced above. The following samples are included in the report.

9812060-01

9812060-02

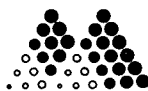
All holding times were met for the tests performed on these samples.

Thank you for selecting Mountain States Analytical, Inc. to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

We look forward to working with you on future projects.

With Regards,

Rolf E. Larsen
Project Manager



Mountain States Analytical, Inc.

The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: PAH/Cr&Pb/Fl&Br Analysis

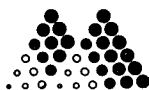
MSAI Sample: 91740
MSAI Group: 25418
Date Reported: 01/20/99
Discard Date: 02/19/99
Date Submitted: 01/05/99
Date Sampled: 12/30/98
Collected by:
Purchase Order:
Project No.: 9812060

Sample ID: 9812060-01 **Thriftway Refinery MW-1**
Matrix: Water

Test Analysis	Results as Received	Units	Method Detection Limit
0393G Flame/hrICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w882	mg/l	
13007 Metals by hrICP, 6010A, w/ww Method: SW-846 6010A			
Arsenic	ND	mg/l	0.02
Barium	0.223	mg/l	0.004
Cadmium	ND	mg/l	0.002
Chromium	0.013	mg/l	0.005
Lead	0.019	mg/l	0.015
Selenium	ND	mg/l	0.02
Silver	ND	mg/l	0.003
3000 SVOA Extraction, w/ww Method: SW-846 3510B	Complete		
6719 Polycyclic Aro/Hydrocarb, 8270A ww Method: SW-846 8270A			
Acenaphthene	ND	ug/l	2.7
Acenaphthylene	ND	ug/l	2.4
Anthracene	ND	ug/l	1.7
Benz(a)anthracene	ND	ug/l	1.5
Benzo(b)fluoranthene	ND	ug/l	1.6
Benzo(k)fluoranthene	ND	ug/l	2.1
Benzo(ghi)perylene	ND	ug/l	2.1
Benzo(a)pyrene	ND	ug/l	1.6
Chrysene	ND	ug/l	2.0
Dibenz(a,h)anthracene	ND	ug/l	2.2
Fluoranthene	ND	ug/l	2.1
Fluorene	4.1	ug/l	2.2
Naphthalene	81.5	ug/l	2.5
Phenanthrene	2.4	ug/l	2.0

Corporate Office: 1645 West 2200 South • Salt Lake City, Utah 84119
801-973-0050 • 1-800-973-6724 (MSAI) • FAX 801-972-6278
e-mail: service@msailabs.com





Mountain States Analytical, Inc.

The Quality Solution

Page 2

On Site Technologies, Ltd.

MSAI Sample: 91740

MSAI Group: 25418

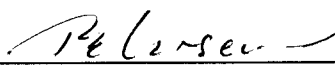
Sample ID: 9812060-01

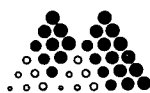
Test	Analysis	Results as Received	Units	Method Detection Limit
6719	Polycyclic Aro/Hydrocarb,8270A ww Method: SW-846 8270A			
	Pyrene	ND	ug/l	2.0
	Indeno(1,2,3-cd)pyrene	ND	ug/l	2.2
	2-Methylnaphthalene	40.5	ug/l	3.4
0504	Fluoride, Ion Chromatography Method: EPA 300.0	1.53	mg/l	0.08
0505	Bromide, Ion Chromatography Method: EPA 300.0	ND	mg/l	0.5

ND - Not detected at the Method Detection Limit.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:


Rolf E. Larsen
Project Manager



Mountain States Analytical, Inc.

The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: PAH/Cr&Pb/Fl&Br Analysis

MSAI Sample: 91741
MSAI Group: 25418
Date Reported: 01/20/99
Discard Date: 02/19/99
Date Submitted: 01/05/99
Date Sampled: 12/30/98
Collected by:
Purchase Order:
Project No.: 9812060

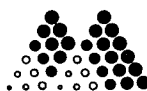
Sample ID: 9812060-02 Thriftway Refinery MW-6
Matrix: Water

(DC)

Test Analysis	Results as Received	Units	Method Detection Limit
0393G Flame/hrICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w882	mg/l	
13007 Metals by hrICP, 6010A, w/ww Method: SW-846 6010A			
Arsenic	ND	mg/l	0.02
Barium	0.106	mg/l	0.004
Cadmium	ND	mg/l	0.002
Chromium	ND	mg/l	0.005
Lead	ND	mg/l	0.015
Selenium	ND	mg/l	0.02
Silver	ND	mg/l	0.003
3000 SVOA Extraction, w/ww Method: SW-846 3510B	Complete		
6719 Polycyclic Aro/Hydrocarb, 8270A ww Method: SW-846 8270A			
Acenaphthene	ND	ug/l	2.7
Acenaphthylene	ND	ug/l	2.4
Anthracene	ND	ug/l	1.7
Benz(a)anthracene	ND	ug/l	1.5
Benzo(b)fluoranthene	ND	ug/l	1.6
Benzo(k)fluoranthene	ND	ug/l	2.1
Benzo(ghi)perylene	ND	ug/l	2.1
Benzo(a)pyrene	ND	ug/l	1.6
Chrysene	ND	ug/l	2.0
Dibenz(a,h)anthracene	ND	ug/l	2.2
Fluoranthene	ND	ug/l	2.1
Fluorene	ND	ug/l	2.2
Naphthalene	ND	ug/l	2.5
Phenanthrene	ND	ug/l	2.0

Corporate Office: 1645 West 2200 South • Salt Lake City, Utah 84119
801-973-0050 • 1-800-973-6724 (MSAI) • FAX 801-972-6278
e-mail: service@msailabs.com





Mountain States Analytical, Inc.

The Quality Solution

Page 2

On Site Technologies, Ltd.

MSAI Sample: 91741

MSAI Group: 25418

Sample ID: 9812060-02

Test	Analysis	Results as Received	Units	Method Detection Limit
6719	Polycyclic Aro/Hydrocarb,8270A ww Method: SW-846 8270A			
	Pyrene	ND	ug/l	2.0
	Indeno(1,2,3-cd)pyrene	ND	ug/l	2.2
	2-Methylnaphthalene	ND	ug/l	3.4
0504	Fluoride, Ion Chromatography Method: EPA 300.0	1.50	mg/l	0.08
0505	Bromide, Ion Chromatography Method: EPA 300.0	3.06	mg/l	0.5

ND - Not detected at the Method Detection Limit.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

Rolf E. Larsen
Project Manager

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting

02/16/99
15:11:45
Group: 25418

11
02/16/99

Analysis Batch Number: ICPHR-01/07/99-114 -2
Test Identification : ICPHR-*IRIS QC parameters
Number of Samples : 4
Batch Data-Date/Time : 02/12/99 / 13:42:47

Sequence : DATP007

BLANK#	ANALYTE	CONC FOUND #	CONC LIMIT
PBW1-882	Silver	0.0002	0.0050
	Arsenic	ND	0.0150
	Barium	0.0006	0.0030
	Cadmium	ND	0.0020
	Chromium	0.0005	0.0100
	Nickel	0.0005	0.0100
	Lead	0.0087	0.0200
	Selenium	ND	0.0300

						QC LIMITS	
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	LOWER	UPPER
5418-91740	Silver	0.0500	0.0009	0.0489	96.0	80.0	120.0
	Arsenic	2.0000	0.0135	1.9999	99.3	80.0	120.0
	Barium	2.0000	0.2228	2.0707	92.4	80.0	120.0
	Cadmium	0.0500	-0.0008	0.0458	93.2	80.0	120.0
	Chromium	0.2000	0.0127	0.2017	94.5	80.0	120.0
	Nickel	0.5000	0.0029	0.4564	90.7	80.0	120.0
	Lead	0.5000	0.0186	0.4840	93.1	80.0	120.0
	Selenium	2.0000	-0.0148	2.0989	105.7	80.0	120.0

						QC LIMITS			
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	LOWER	UPPER	RPD #	LIMIT
25418-91740	Silver	0.0500	0.0009	0.0484	95.1	80.0	120.0	1.0	20.0
	Arsenic	2.0000	0.0135	2.0136	100.0	80.0	120.0	0.7	20.0
	Barium	2.0000	0.2228	2.0692	92.3	80.0	120.0	0.1	20.0
	Cadmium	0.0500	-0.0008	0.0458	93.3	80.0	120.0	0.1	20.0
	Chromium	0.2000	0.0127	0.2003	93.8	80.0	120.0	0.7	20.0
	Nickel	0.5000	0.0029	0.4557	90.6	80.0	120.0	0.1	20.0
	Lead	0.5000	0.0186	0.4924	94.8	80.0	120.0	1.7	20.0
	Selenium	2.0000	-0.0148	2.0861	105.0	80.0	120.0	0.6	20.0

DUPLICATE						
SAMPLE#	ANALYTE	RESULT 1	RESULT 2	RPD #	LIMIT	DILUTION
25418-91740	Silver	0.0009	0.0013	38.5(11)	20.0	1.00
	Arsenic	0.0135	0.0056	83.2(11)	20.0	1.00
	Barium	0.2228	0.2114	5.3	20.0	1.00
	Cadmium	-0.0008	0.0000	200.0(11)	20.0	1.00
	Chromium	0.0127	0.0129	1.0	20.0	1.00
	Nickel	0.0029	0.0043	38.0(11)	20.0	1.00
	Lead	0.0186	0.0152	20.0	20.0	1.00
	Selenium	-0.0148	0.0000	200.0(11)	20.0	1.00

CONTROL					QC LIMITS	
SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	LOWER	UPPER
LCSW-882	Silver	0.0529	0.0500	105.8	80.0	120.0
	Arsenic	2.0964	2.0000	104.8	80.0	120.0
	Barium	2.0502	2.0000	102.5	80.0	120.0
	Cadmium	0.0526	0.0500	105.1	80.0	120.0
	Chromium	0.2164	0.2000	108.2	80.0	120.0
	Nickel	0.5028	0.5000	100.6	80.0	120.0

Analysis Batch Number: ICPHR-01/07/99-114 -2

Test Identification : ICPHR-*IRIS QC parameters

Sequence : DATP007

Number of Samples : 4

Batch Data-Date/Time : 02/12/99 / 13:42:47

CONTROL

SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS	
					LOWER	UPPER
CSW-882	Lead	0.5499	0.5000	110.0	80.0	120.0
	Selenium	2.2491	2.0000	112.5	80.0	120.0

QC LIMITS

CV #	ANALYTE	TRUE VALUE	BATCH READ	% REC #	LOWER	UPPER
ICV-	Silver	0.1000	0.0966	96.6	90.0	110.0
	Arsenic	0.4000	0.3971	99.3	90.0	110.0
	Barium	1.0000	0.9879	98.8	90.0	110.0
	Cadmium	1.0000	0.9845	98.4	90.0	110.0
	Chromium	1.0000	1.0118	101.2	90.0	110.0
	Nickel	2.0000	1.9017	95.1	90.0	110.0
	Lead	5.0000	5.1669	103.3	90.0	110.0
	Selenium	0.4000	0.3849	96.2	90.0	110.0
CV1--2	Silver	0.1000	0.0964	96.4	90.0	110.0
	Arsenic	0.4000	0.4040	101.0	90.0	110.0
	Barium	1.0000	1.0053	100.5	90.0	110.0
	Cadmium	1.0000	1.0116	101.2	90.0	110.0
	Chromium	1.0000	1.0057	100.6	90.0	110.0
	Nickel	2.0000	2.0037	100.2	90.0	110.0
	Lead	5.0000	5.1464	102.9	90.0	110.0
	Selenium	0.4000	0.4056	101.4	90.0	110.0
CV2--3	Silver	0.1000	0.0981	98.1	90.0	110.0
	Arsenic	0.4000	0.4026	100.6	90.0	110.0
	Barium	1.0000	0.9938	99.4	90.0	110.0
	Cadmium	1.0000	0.9935	99.4	90.0	110.0
	Chromium	1.0000	1.0194	101.9	90.0	110.0
	Nickel	2.0000	1.9112	95.6	90.0	110.0
	Lead	5.0000	5.2292	104.6	90.0	110.0
	Selenium	0.4000	0.4050	101.3	90.0	110.0
CV3--4	Silver	0.1000	0.0974	97.4	90.0	110.0
	Arsenic	0.4000	0.3890	97.2	90.0	110.0
	Barium	1.0000	0.9847	98.5	90.0	110.0
	Cadmium	1.0000	0.9838	98.4	90.0	110.0
	Chromium	1.0000	1.0146	101.5	90.0	110.0
	Nickel	2.0000	1.8831	94.2	90.0	110.0
	Lead	5.0000	5.1839	103.7	90.0	110.0
	Selenium	0.4000	0.4063	101.6	90.0	110.0

CCB#	ANALYTE	CONC FOUND #	CONC LIMIT
ICB-	Silver	0.0002	0.0050
	Arsenic	0.0048	0.0150
	Barium	0.0001	0.0030
	Cadmium	ND	0.0020
	Chromium	0.0000	0.0100
	Nickel	ND	0.0100
	Lead	0.0063	0.0200
	Selenium	ND	0.0300
CCB1-	Silver	ND	0.0050
	Arsenic	0.0021	0.0150

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting02/16/99
15:11:47
Group: 25418

Analysis Batch Number: ICPHR-01/07/99-114 -2

Test Identification : ICPHR-*IRIS QC parameters

Sequence : DATP007

Number of Samples : 4

Batch Data-Date/Time : 02/12/99 / 13:42:47

CCB#	ANALYTE	CONC FOUND #	CONC LIMIT
CCB1-	Barium	0.0002	0.0030
	Cadmium	0.0000	0.0020
	Chromium	0.0001	0.0100
	Nickel	0.0002	0.0100
	Lead	0.0040	0.0200
	Selenium	0.0001	0.0300
CCB2-	Silver	ND	0.0050
	Arsenic	0.0030	0.0150
	Barium	0.0002	0.0030
	Cadmium	0.0001	0.0020
	Chromium	0.0000	0.0100
	Nickel	ND	0.0100
	Lead	0.0009	0.0200
	Selenium	ND	0.0300
CB3-	Silver	0.0003	0.0050
	Arsenic	ND	0.0150
	Barium	0.0004	0.0030
	Cadmium	0.0001	0.0020
	Chromium	0.0001	0.0100
	Nickel	0.0005	0.0100
	Lead	0.0052	0.0200
	Selenium	ND	0.0300

----- Result Footnotes -----

11) - The duplicate results cannot be evaluated because both results are <MDL.

Groups & Samples

25418-91740 25418-91741 25419-91742 25419-91743

On Site Technologies, LTD.

612 E. Murray Drive
Farmington, NM 87401
(505) 325-2432

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Subcontractor:

Mountain States Analytical, Inc.
1645 West 2200 South

TEL: (800) 973-6724
FAX: (801) 972-6278

Salt Lake City, UT 84119

Acct #:

04-Jan-99

Sample ID	Matrix	Collection Date	Bottle Type	Requested Tests		
				E218-2 E6010	E239-2 E6010	E300
9812060-01C	Aqueous	12/30/98 12:30:00 PM	1LAMGU			
9812060-01D	Aqueous	12/30/98 12:30:00 PM	500HDPEHNO3	1	1	
9812060-01E	Aqueous	12/30/98 12:30:00 PM	250HDPE			2
9812060-02C	Aqueous	12/30/98 11:20:00 AM	1LAMGU			
9812060-02D	Aqueous	12/30/98 11:20:00 AM	500HDPEHNO3	1	1	
9812060-02E	Aqueous	12/30/98 11:20:00 AM	250HDPE			2

Comments:

Please analyze submitted samples for the following: (C) PAH E8270, (D) Total Chromium and Lead (E) Fluoride and Bromide

ROLF, SAME FORMAT AS PRIOR SAMPLES SUBMITTED FOR ABOVE ANALYSES (20) 1/4/99

Relinquished by: Heidi Rees	Date/Time: 1/4/99 1000
Relinquished by:	Date/Time: 01/05/99 1030

CHAIN OF CUSTODY RECORD

5048

Page 1 of 1

Date: 12/31/98

ON SITE

657 W. Maple • P. O. Box 2606 • Farmington NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

TECHNOLOGIES, LTD.

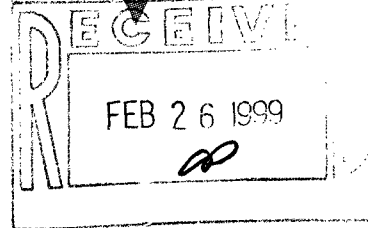
Purchase Order No.: B98-651		Job No.	
Name: Sam		Title	
Company: Sam		Company: Biotech Remediation	
Address: Thriftway Refinery		Mailing Address: 710 E 20th St, Suite 400	
City, State, Zip: 626 Rd 5300 Bloomfield, NM 87401		City, State, Zip: Farmington, NM 87401	
City, State, Zip		Telephone No. 325-4965 Telefax No.	
Sampling Location: Thriftway Refinery		ANALYSIS REQUESTED	
Sampler: Ken Sinks		705, pH Conductivity, TDS, H₂O, F, B, (K) 4/10/99	
REPORT TO		RESULTS TO	
Number of Containers		LAB ID	
DATE		DATE	
TIME		TIME	
MATRIX		PRES.	
MW-1		12/30 1230 1420 gm	
MW-6		12/30 1120 1420 gm	
Travel blank		12/30 1000 1420 gm	
Field Blank		12/30 1630 1420 gm	
MW-16		12/30 1715 1420 gm	
MW-16 Dup		12/30 1715 1420 gm	
(AD) KEN SINKS REQUESTED ON 12/10/99 THAT THE METALS Hg, As, Se, Ag, Ba, Cd BE ADDED FOR ANALYSIS			
Hg COULD NOT BE DETERMINED DUE TO HOLDING TIME CONSTRAINTS			
Relinquished by: Ken Sinks		Received by: David D. Martin	
Date/Time: 12/31/98 0900		Date/Time: 12/31/98 0901	
Relinquished by:		Received by:	
Date/Time:		Date/Time:	
Relinquished by:		Received by:	
Date/Time:		Date/Time:	
Method of Shipment:		Rush	
Authorized by: Ken Sinks		Date: 12/31/98	
(Client Signature Must Accompany Request)		Special Instructions:	
Distribution: White - On Site Yellow - LAB Pink - Sampler Goldenrod - Client		10 Working Days	

OFF: (505) 325-5667



LAB: (505) 325-1556

February 23, 1999



Terry Griffin
BioTech Remediation, Inc.
710 E. 20th, Suite 400
Farmington, NM 87401
TEL: (505) 327-4965
FAX (505) 564-3604

RE: Thriftway Refinery

Order No. 9912051

Dear Terry Griffin,

On Site Technologies, LTD. received 5 samples on 12/29/98 and were reported on 1/29/99 with the initial requested analyses.

On 2/10/99 Ken Sinks contacted On Site Technologies, LTD. and requested that the metals Mercury (Hg), Arsenic (As), Barium (Ba), Cadmium (Cd), Selenium (Se) and Silver (Ag) be added to the requested analyses.

Due to holding time constraints, Mercury (Hg) could not be determined.

The samples were analyzed for the following tests:

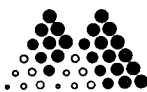
- Arsenic, Total (SW6010A)
- Barium, Total (SW6010A)
- Cadmium, Total (SW6010A)
- Selenium, Total (SW6010A)
- Silver, Total (SW6010A)

There were no problems with the analyses and all the data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

David Cox



Mountain States Analytical, Inc.

The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: PAH/Cr,Pb/diss Fl and Br

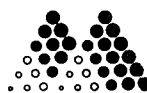
MSAI Sample: 91695
MSAI Group: 25401
Date Reported: 01/20/99
Discard Date: 02/19/99
Date Submitted: 12/31/98
Date Sampled: 12/28/98
Collected by:
Purchase Order:
Project No.: 9812051

Sample ID: 9812051-01
Matrix: Water Thriftway Refinery MW-20

Test Analysis	Results as Received	Units	Method Detection Limit
0393G Flame/hrICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w873	mg/l	
13007 Metals by hrICP, 6010A, w/ww Method: SW-846 6010A			
Arsenic	0.04	mg/l	0.02
Barium	0.382	mg/l	0.004
Cadmium	ND	mg/l	0.002
Chromium	0.028	mg/l	0.005
Lead	0.047	mg/l	0.015
Selenium	ND	mg/l	0.02
Silver	ND	mg/l	0.003
3000 SVOA Extraction, w/ww Method: SW-846 3510B	Complete		
6719 Polycyclic Aro/Hydrocarb,8270A ww Method: SW-846 8270A			
Acenaphthene	ND	ug/l	2.7
Acenaphthylene	ND	ug/l	2.4
Anthracene	ND	ug/l	1.7
Benz(a)anthracene	ND	ug/l	1.5
Benzo(b)fluoranthene	ND	ug/l	1.6
Benzo(k)fluoranthene	ND	ug/l	2.1
Benzo(ghi)perylene	ND	ug/l	2.1
Benzo(a)pyrene	ND	ug/l	1.6
Chrysene	ND	ug/l	2.0
Dibenz(a,h)anthracene	ND	ug/l	2.2
Fluoranthene	ND	ug/l	2.1
Fluorene	ND	ug/l	2.2
Naphthalene	ND	ug/l	2.5
Phenanthrene	ND	ug/l	2.0

Corporate Office: 1645 West 2200 South • Salt Lake City, Utah 84119
801-973-0050 • 1-800-973-6724 (MSAI) • FAX 801-972-6278
e-mail: service@msailabs.com





Mountain States Analytical, Inc.

The Quality Solution

Page 2

On Site Technologies, Ltd.

MSAI Sample: 91695

MSAI Group: 25401

Sample ID: 9812051-01

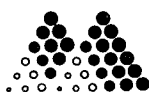
Test	Analysis	Results as Received	Units	Method Detection Limit
6719	Polycyclic Aro/Hydrocarb, 8270A WW Method: SW-846 8270A			
	Pyrene	ND	ug/l	2.0
	Indeno(1,2,3-cd)pyrene	ND	ug/l	2.2
	2-Methylnaphthalene	ND	ug/l	3.4
0001G	**Special Instructions, GC VOA Method: SPECIAL INST. MSAI	Complete		
0504	Fluoride, Ion Chromatography Method: EPA 300.0	1.44	mg/l	0.08
0505	Bromide, Ion Chromatography Method: EPA 300.0	3.27	mg/l	0.5

ND - Not detected at the Method Detection Limit.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

Rolf E. Larsen
Project Manager



Mountain States Analytical, Inc.

The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: PAH/Cr,Pb/diss Fl and Br

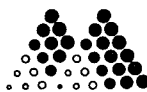
MSAI Sample: 91696
MSAI Group: 25401
Date Reported: 01/20/99
Discard Date: 02/19/99
Date Submitted: 12/31/98
Date Sampled: 12/28/98
Collected by:
Purchase Order:
Project No.: 9812051

Sample ID: 9812051-02
Matrix: Water Thriftway Refinery MW-21

Test Analysis	Results as Received	Units	Method Detection Limit
0393G Flame/hrICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w873	mg/l	
13007 Metals by hrICP, 6010A, w/ww Method: SW-846 6010A			
Arsenic	0.08	mg/l	0.02
Barium	0.165	mg/l	0.004
Cadmium	ND	mg/l	0.002
Chromium	0.019	mg/l	0.005
Lead	0.023	mg/l	0.015
Selenium	ND	mg/l	0.02
Silver	ND	mg/l	0.003
3000 SVOA Extraction, w/ww Method: SW-846 3510B	Complete	ug/l	
6719 Polycyclic Aro/Hydrocarb, 8270A ww Method: SW-846 8270A			
Acenaphthene	ND	ug/l	(1) 2.7
Acenaphthylene	ND	ug/l	2.4
Anthracene	ND	ug/l	1.7
Benz(a)anthracene	ND	ug/l	1.5
Benzo(b)fluoranthene	ND	ug/l	1.6
Benzo(k)fluoranthene	ND	ug/l	2.1
Benzo(ghi)perylene	ND	ug/l	2.1
Benzo(a)pyrene	ND	ug/l	1.6
Chrysene	ND	ug/l	2.0
Dibenz(a,h)anthracene	ND	ug/l	2.2
Fluoranthene	ND	ug/l	2.1
Fluorene	ND	ug/l	2.2
Naphthalene	ND	ug/l	2.5
Phenanthrene	ND	ug/l	2.0

Corporate Office: 1645 West 2200 South • Salt Lake City, Utah 84119
801-973-0050 • 1-800-973-6724 (MSAI) • FAX 801-972-6278
e-mail: service@msailabs.com





Mountain States Analytical, Inc.

The Quality Solution

Page 2

On Site Technologies, Ltd.

MSAI Sample: 91696

MSAI Group: 25401

Sample ID: 9812051-02

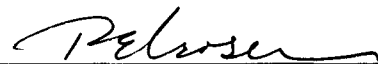
Test	Analysis	Results as Received	Units	Method Detection Limit
6719	Polycyclic Aro/Hydrocarb,8270A ww Method: SW-846 8270A			
	Pyrene	ND	ug/l	2.0
	Indeno(1,2,3-cd)pyrene	ND	ug/l	2.2
	2-Methylnaphthalene	ND	ug/l	3.4
0504	Fluoride, Ion Chromatography Method: EPA 300.0	1.33	mg/l	0.08
0505	Bromide, Ion Chromatography Method: EPA 300.0	3.24	mg/l	0.5

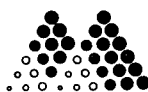
- (1) Sample 91696 was reanalyzed due to internal standard failures in the initial analysis. These failures were not confirmed in the reanalysis of the samples. The results from the second analysis are reported.

ND - Not detected at the Method Detection Limit.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:


Rolf E. Larsen
Project Manager



Mountain States Analytical, Inc.

The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: PAH/Cr,Pb/diss Fl and Br

MSAI Sample: 91697
MSAI Group: 25401
Date Reported: 01/20/99
Discard Date: 02/19/99
Date Submitted: 12/31/98
Date Sampled: 12/28/98
Collected by:
Purchase Order:
Project No.: 9812051

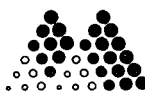
Sample ID: 9812051-03
Matrix: Water

Thriftway Refinery MW-22

Test Analysis	Results as Received	Units	Method Detection Limit
0393G Flame/hrICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w873	mg/l	
13007 Metals by hrICP, 6010A, w/ww Method: SW-846 6010A			
Arsenic	ND	mg/l	0.02
Barium	0.048	mg/l	0.004
Cadmium	ND	mg/l	0.002
Chromium	0.006	mg/l	0.005
Lead	0.135	mg/l	0.015
Selenium	ND	mg/l	0.02
Silver	ND	mg/l	0.003
3000 SVOA Extraction, w/ww Method: SW-846 3510B	Complete	ug/l	
6719 Polycyclic Aro/Hydrocarb, 8270A ww Method: SW-846 8270A			
Acenaphthene	ND	ug/l	(1) 2.7
Acenaphthylene	ND	ug/l	2.4
Anthracene	ND	ug/l	1.7
Benz(a)anthracene	ND	ug/l	1.5
Benzo(b)fluoranthene	ND	ug/l	1.6
Benzo(k)fluoranthene	ND	ug/l	2.1
Benzo(ghi)perylene	ND	ug/l	2.1
Benzo(a)pyrene	ND	ug/l	1.6
Chrysene	ND	ug/l	2.0
Dibenz(a,h)anthracene	ND	ug/l	2.2
Fluoranthene	ND	ug/l	2.1
Fluorene	ND	ug/l	2.2
Naphthalene	ND	ug/l	2.5
Phenanthrene	ND	ug/l	2.0

Corporate Office: 1645 West 2200 South • Salt Lake City, Utah 84119
801-973-0050 • 1-800-973-6724 (MSAI) • FAX 801-972-6278
e-mail: service@msailabs.com





Mountain States Analytical, Inc.

The Quality Solution

Page 2

On Site Technologies, Ltd.

MSAI Sample: 91697

MSAI Group: 25401

Sample ID: 9812051-03

Test	Analysis	Results as Received	Units	Method Detection Limit
6719	Polycyclic Aro/Hydrocarb,8270A ww Method: SW-846 8270A			
	Pyrene	ND	ug/l	2.0
	Indeno(1,2,3-cd)pyrene	ND	ug/l	2.2
	2-Methylnaphthalene	ND	ug/l	3.4
0504	Fluoride, Ion Chromatography Method: EPA 300.0	1.28	mg/l	0.08
0505	Bromide, Ion Chromatography Method: EPA 300.0	3.43	mg/l	0.5

- (1) Sample 91697 was reanalyzed due to internal standard failures in the initial analysis. These failures were not confirmed in the reanalysis of the samples. The results from the second analysis are reported.

ND - Not detected at the Method Detection Limit.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

Rolf E. Larsen
Project Manager

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting

02/16/99
15:09:42
Group: 25401

Analysis Batch Number: ICPHR-01/05/99-114 -1
Test Identification : ICPHR-*IRIS QC parameters
Number of Samples : 13
Batch Date-Time : 01/06/99 / 08:38:23

Sequence : DATR005

11/10/99

BLANK#	ANALYTE	CONC FOUND #	CONC LIMIT
PBW1-873	Silver	0.0005	0.0050
	Arsenic	ND	0.0150
	Barium	0.0005	0.0030
	Beryllium	0.0000	0.0002
	Cadmium	ND	0.0020
	Chromium	0.0007	0.0100
	Copper	0.0053	0.0100
	Nickel	0.0005	0.0100
	Lead	ND	0.0200
	Antimony	0.0061	0.0200
	Selenium	0.0076	0.0300
	Thallium	ND	0.0200
	Vanadium	0.0009	0.0030
	Zinc	0.0075	0.0300

PIKE						QC LIMITS	
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	LOWER	UPPER
25398-91690	Silver	0.0500	0.0018	0.0544	105.2	80.0	120.0
	Arsenic	2.0000	0.0044	2.1504	107.3	80.0	120.0
	Barium	2.0000	0.1394	2.1724	101.7	80.0	120.0
	Beryllium	0.0500	0.0002	0.0488	97.1	80.0	120.0
	Cadmium	0.0500	0.0171	0.0651	96.0	80.0	120.0
	Chromium	0.2000	0.0272	0.2250	98.9	80.0	120.0
	Copper	0.2500	0.0502	0.3103	104.0	80.0	120.0
	Nickel	0.5000	0.5395	1.0531	102.7	80.0	120.0
	Lead	0.5000	1.0217	1.5906	113.8	80.0	120.0
	Antimony	1.0000	0.0143	1.0747	106.0	80.0	120.0
	Selenium	2.0000	0.0066	2.1715	108.2	80.0	120.0
	Thallium	2.0000	0.0018	1.8862	94.2	80.0	120.0
	Vanadium	0.5000	0.0013	0.4963	99.0	80.0	120.0
	Zinc	0.5000	9.4932	10.7359	248.5(2k)	80.0	120.0

SD						QC LIMITS			
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	LOWER	UPPER	RPD #	LIMIT
25398-91691	Silver	0.0500	0.0018	0.0528	102.0	80.0	120.0	2.9	20.0
	Arsenic	2.0000	0.0044	2.1574	107.6	80.0	120.0	0.3	20.0
	Barium	2.0000	0.1394	2.1706	101.6	80.0	120.0	0.1	20.0
	Beryllium	0.0500	0.0002	0.0489	97.4	80.0	120.0	0.3	20.0
	Cadmium	0.0500	0.0171	0.0646	95.2	80.0	120.0	0.6	20.0
	Chromium	0.2000	0.0272	0.2240	98.4	80.0	120.0	0.4	20.0
	Copper	0.2500	0.0502	0.3049	101.9	80.0	120.0	1.8	20.0
	Nickel	0.5000	0.5395	1.0365	99.4	80.0	120.0	1.6	20.0
	Lead	0.5000	1.0217	1.5633	108.3	80.0	120.0	1.7	20.0
	Antimony	1.0000	0.0143	1.0680	105.4	80.0	120.0	0.6	20.0
	Selenium	2.0000	0.0066	2.1805	108.7	80.0	120.0	0.4	20.0
	Thallium	2.0000	0.0018	1.9232	96.1	80.0	120.0	1.9	20.0
	Vanadium	0.5000	0.0013	0.4972	99.2	80.0	120.0	0.2	20.0
	Zinc	0.5000	9.4932	10.3210	165.6(2k)	80.0	120.0	3.9	20.0

Analysis Batch Number: ICPHR-01/05/99-114 -1

Test Identification : ICPHR-*IRIS QC parameters

Sequence : DATR005

Number of Samples : 13

Batch Data-Date/Time : 01/06/99 / 08:38:23

DUPLICATE

SAMPLE#	ANALYTE	RESULT 1	RESULT 2	RPD #	LIMIT	DILUTION
5398-91689	Silver	0.0018	0.0019	4.9	20.0	1.00
	Arsenic	0.0044	0.0009	131.1(11)	20.0	1.00
	Barium	0.1394	0.1397	0.2	20.0	1.00
	Beryllium	0.0002	0.0002	0.0	20.0	1.00
	Cadmium	0.0171	0.0172	0.9	20.0	1.00
	Chromium	0.0272	0.0252	7.8	20.0	1.00
	Copper	0.0502	0.0533	6.0	20.0	1.00
	Nickel	0.5395	0.5587	3.5	20.0	1.00
	Lead	1.0217	1.1282	9.9	20.0	1.00
	Antimony	0.0143	0.0253	55.7(5a)	20.0	1.00
	Selenium	0.0066	0.0161	83.2(11)	20.0	1.00
	Thallium	0.0018	0.0090	132.7(11)	20.0	1.00
	Vanadium	0.0013	0.0020	43.8(11)	20.0	1.00
	Zinc	9.4932	9.7766	2.9	20.0	1.00

CONTROL

SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS	
					LOWER	UPPER
CSW-873	Silver	0.0500	0.0500	100.0	80.0	120.0
	Arsenic	2.0400	2.0000	102.0	80.0	120.0
	Barium	2.0325	2.0000	101.6	80.0	120.0
	Beryllium	0.0507	0.0500	101.4	80.0	120.0
	Cadmium	0.0506	0.0500	101.1	80.0	120.0
	Chromium	0.2053	0.2000	102.7	80.0	120.0
	Copper	0.2542	0.2500	101.7	80.0	120.0
	Nickel	0.5104	0.5000	102.1	80.0	120.0
	Lead	0.5191	0.5000	103.8	80.0	120.0
	Antimony	0.9982	1.0000	99.8	80.0	120.0
	Selenium	2.0892	2.0000	104.5	80.0	120.0
	Thallium	2.0257	2.0000	101.3	80.0	120.0
	Vanadium	0.4985	0.5000	99.7	80.0	120.0
	Zinc	0.5286	0.5000	105.7	80.0	120.0

QC LIMITS

CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC #	LOWER	UPPER
CV-	Silver	0.1000	0.0956	95.6	90.0	110.0
	Arsenic	0.4000	0.3953	98.8	90.0	110.0
	Barium	1.0000	1.0032	100.3	90.0	110.0
	Beryllium	0.1000	0.1020	102.0	90.0	110.0
	Cadmium	1.0000	0.9856	98.6	90.0	110.0
	Chromium	1.0000	0.9933	99.3	90.0	110.0
	Copper	1.0000	0.9837	98.4	90.0	110.0
	Nickel	2.0000	2.0000	100.0	90.0	110.0
	Lead	5.0000	4.9708	99.4	90.0	110.0
	Antimony	1.0000	1.0159	101.6	90.0	110.0
	Selenium	0.4000	0.3872	96.8	90.0	110.0
	Thallium	1.0000	0.9945	99.5	90.0	110.0
	Vanadium	0.4000	0.3810	95.3	90.0	110.0
	Zinc	1.0000	0.9957	99.6	90.0	110.0
CV1--2	Silver	0.1000	0.0953	95.3	90.0	110.0

Analysis Batch Number: ICPHR-01/05/99-114 -1

Test Identification : ICPHR-*IRIS QC parameters

Sequence : DATR005

Number of Samples : 13

Batch Data-Date/Time : 01/06/99 / 08:38:23

		QC LIMITS				
CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC #	LOWER	UPPER
CV1--2	Arsenic	0.4000	0.3964	99.1	90.0	110.0
	Barium	1.0000	1.0055	100.5	90.0	110.0
	Beryllium	0.1000	0.1007	100.7	90.0	110.0
	Cadmium	1.0000	0.9828	98.3	90.0	110.0
	Chromium	1.0000	0.9963	99.6	90.0	110.0
	Copper	1.0000	0.9836	98.4	90.0	110.0
	Nickel	2.0000	1.9892	99.5	90.0	110.0
	Lead	5.0000	4.9936	99.9	90.0	110.0
	Antimony	1.0000	1.0289	102.9	90.0	110.0
	Selenium	0.4000	0.3955	98.9	90.0	110.0
	Thallium	1.0000	0.9961	99.6	90.0	110.0
	Vanadium	0.4000	0.3815	95.4	90.0	110.0
	Zinc	1.0000	0.9939	99.4	90.0	110.0
CV2--3	Silver	0.1000	0.0947	94.7	90.0	110.0
	Arsenic	0.4000	0.3872	96.8	90.0	110.0
	Barium	1.0000	1.0117	101.2	90.0	110.0
	Beryllium	0.1000	0.0983	98.3	90.0	110.0
	Cadmium	1.0000	0.9769	97.7	90.0	110.0
	Chromium	1.0000	0.9938	99.4	90.0	110.0
	Copper	1.0000	0.9651	96.5	90.0	110.0
	Nickel	2.0000	1.9758	98.8	90.0	110.0
	Lead	5.0000	5.0288	100.6	90.0	110.0
	Antimony	1.0000	1.0110	101.1	90.0	110.0
	Selenium	0.4000	0.3783	94.6	90.0	110.0
	Thallium	1.0000	0.9874	98.7	90.0	110.0
	Vanadium	0.4000	0.3785	94.6	90.0	110.0
	Zinc	1.0000	0.9813	98.1	90.0	110.0
CV3--4	Silver	0.1000	0.0957	95.7	90.0	110.0
	Arsenic	0.4000	0.3857	96.4	90.0	110.0
	Barium	1.0000	0.9947	99.5	90.0	110.0
	Beryllium	0.1000	0.0977	97.7	90.0	110.0
	Cadmium	1.0000	0.9479	94.8	90.0	110.0
	Chromium	1.0000	0.9884	98.8	90.0	110.0
	Copper	1.0000	0.9676	96.8	90.0	110.0
	Nickel	2.0000	1.9209	96.0	90.0	110.0
	Lead	5.0000	4.8892	97.8	90.0	110.0
	Antimony	1.0000	1.0001	100.0	90.0	110.0
	Selenium	0.4000	0.3818	95.4	90.0	110.0
	Thallium	1.0000	0.9701	97.0	90.0	110.0
	Vanadium	0.4000	0.3787	94.7	90.0	110.0
	Zinc	1.0000	0.9627	96.3	90.0	110.0
CV4--5	Silver	0.1000	0.0949	94.9	90.0	110.0
	Arsenic	0.4000	0.3869	96.7	90.0	110.0
	Barium	1.0000	0.9979	99.8	90.0	110.0
	Beryllium	0.1000	0.0984	98.4	90.0	110.0
	Cadmium	1.0000	0.9582	95.8	90.0	110.0
	Chromium	1.0000	0.9872	98.7	90.0	110.0
	Copper	1.0000	0.9734	97.3	90.0	110.0
	Nickel	2.0000	1.9478	97.4	90.0	110.0

Analysis Batch Number: ICPHR-01/05/99-114 -1

Test Identification : ICPHR-*IRIS QC parameters

Sequence : DATR005

Number of Samples : 13

Batch Data-Date/Time : 01/06/99 / 08:38:23

CCV #	ANALYTE	QC LIMITS				
		TRUE VALUE	BATCH READ	% REC #	LOWER	UPPER
CV4--5	Lead	5.0000	4.8865	97.7	90.0	110.0
	Antimony	1.0000	0.9989	99.9	90.0	110.0
	Selenium	0.4000	0.3778	94.5	90.0	110.0
	Thallium	1.0000	0.9801	98.0	90.0	110.0
	Vanadium	0.4000	0.3780	94.5	90.0	110.0
	Zinc	1.0000	0.9674	96.7	90.0	110.0

CB#	ANALYTE	CONC FOUND #	CONC LIMIT
CB-	Silver	0.0004	0.0050
	Arsenic	ND	0.0150
	Barium	0.0002	0.0030
	Beryllium	ND	0.0002
	Cadmium	0.0000	0.0020
	Chromium	0.0002	0.0100
	Copper	ND	0.0100
	Nickel	ND	0.0100
	Lead	0.0006	0.0200
	Antimony	ND	0.0200
	Selenium	0.0018	0.0300
	Thallium	ND	0.0200
	Vanadium	ND	0.0030
	Zinc	ND	0.0300
CCB1-	Silver	0.0002	0.0050
	Arsenic	ND	0.0150
	Barium	0.0002	0.0030
	Beryllium	ND	0.0002
	Cadmium	ND	0.0020
	Chromium	0.0004	0.0100
	Copper	ND	0.0100
	Nickel	ND	0.0100
	Lead	ND	0.0200
	Antimony	0.0043	0.0200
	Selenium	ND	0.0300
	Thallium	ND	0.0200
	Vanadium	0.0004	0.0030
	Zinc	ND	0.0300
CCB2-	Silver	ND	0.0050
	Arsenic	ND	0.0150
	Barium	0.0005	0.0030
	Beryllium	ND	0.0002
	Cadmium	ND	0.0020
	Chromium	0.0002	0.0100
	Copper	0.0003	0.0100
	Nickel	0.0002	0.0100
	Lead	0.0017	0.0200
	Antimony	ND	0.0200
	Selenium	ND	0.0300
	Thallium	0.0046	0.0200
	Vanadium	0.0005	0.0030

Analysis Batch Number: ICPHR-01/05/99-114 -1

Test Identification : ICPHR-*IRIS QC parameters

Sequence : DATR005

Number of Samples : 13

Batch Data-Date/Time : 01/06/99 / 08:38:23

CB#	ANALYTE	CONC FOUND #	CONC LIMIT
CCB2-	Zinc	ND	0.0300
CB3-	Silver	0.0002	0.0050
	Arsenic	ND	0.0150
	Barium	0.0002	0.0030
	Beryllium	ND	0.0002
	Cadmium	0.0002	0.0020
	Chromium	0.0007	0.0100
	Copper	ND	0.0100
	Nickel	ND	0.0100
	Lead	0.0013	0.0200
	Antimony	0.0017	0.0200
	Selenium	ND	0.0300
	Thallium	0.0054	0.0200
	Vanadium	ND	0.0030
	Zinc	0.0002	0.0300
CB4-	Silver	0.0004	0.0050
	Arsenic	0.0015	0.0150
	Barium	0.0001	0.0030
	Beryllium	ND	0.0002
	Cadmium	0.0001	0.0020
	Chromium	0.0004	0.0100
	Copper	0.0003	0.0100
	Nickel	0.0009	0.0100
	Lead	0.0049	0.0200
	Antimony	0.0083	0.0200
	Selenium	ND	0.0300
	Thallium	0.0100	0.0200
	Vanadium	ND	0.0030
	Zinc	ND	0.0300

----- Result Footnotes -----

(2k) - Sample concentration >4X spk added. Serial dilution was recovered within 10% limits.

(11) - The duplicate results cannot be evaluated because both results are <MDL.

(5a) - Duplicates not evaluated: Results are <10x detection limit

Groups & Samples

25389-91677	25398-91689	25398-91690	25398-91691	25401-91695	25401-91696	25401-91697	25403-91700
25403-91701	25403-91702	25403-91703	25403-91704	25403-91705	25403-91706	25403-91707	

On Site Technologies, LTD.

612 E. Murray Drive
Farmington, NM 87401
(505) 325-2432

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Subcontractor:

Mountain States Analytical, Inc.
1645 West 2200 South

TEL: (800) 973-6724
FAX: (801) 972-6278

Salt Lake City, UT 84119

Acct #:

29-Dec-98

Sample ID	Matrix	Collection Date	Bottle Type	Requested Tests			
				E218.2	E239.2	E300	SW8310
9812051-01C	Aqueous	12/28/98 6:30:00 PM	1LAMGU				1
9812051-01D	Aqueous	12/28/98 6:30:00 PM	500HDPEHNO3	1	1		
9812051-01E	Aqueous	12/28/98 6:30:00 PM	250HDPE			2	
9812051-02C	Aqueous	12/28/98 4:50:00 PM	1LAMGU				1
9812051-02D	Aqueous	12/28/98 4:50:00 PM	500HDPEHNO3	1	1		
9812051-02E	Aqueous	12/28/98 4:50:00 PM	250HDPE			2	
9812051-03C	Aqueous	12/28/98 5:45:00 PM	1LAMGU				1
9812051-03D	Aqueous	12/28/98 5:45:00 PM	500HDPEHNO3	1	1		
9812051-03E	Aqueous	12/28/98 5:45:00 PM	250HDPE			2	

Comments:

Please analyze the submitted samples for the following: (C) PAH (D) Total Chromium and Lead (E) Dissolved Fluoride and Bromide.

Date/Time

Date/Time

Relinquished by: Heidi Rees

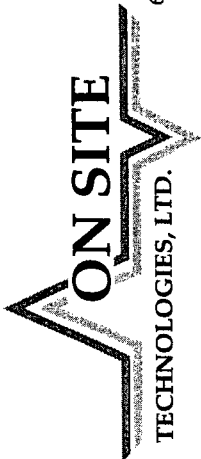
12/30/98 1400

Received by:

12/31/98

Relinquished by:

Received by:



657 W. Maple • P. O. Box 2606 • Farmington NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

CHAIN OF CUSTODY RECORD

5641

Date: 12/29/98

Page 1 of 1

Purchase Order No.: 898-651		Job No.	
Name: Same		Title	
Company: Same		Company: Biotech Remediation	
Address: Same		Mailing Address: 710 E. 20th St. Suite 400	
City, State, Zip: Same		City, State, Zip: Farmington, NM 87401	
Telephone No.		Telefax No.	
Sampling Location: Thriftway Refinery 626 RL 5500 Bloomfield, NM 87401		RESULTS TO	
Sampler: Ken Sinks		REPORT	
SAMPLE IDENTIFICATION		Number of Containers	
DATE	SAMPLE TIME	MATRIX	PRES.
12/28	1830	1/20	g/L
12/28	1650	✓	✓
12/28	1745	✓	✓
12/28	1355	✓	✓
12/28	1630	✓	✓
Travel Blank			
Field Blank			
ADKEN SINKS REQUESTED ON 2/10/99 THAT THE METALS Hg, As, Se, Ag, Ba, Cd BE ADDED FOR ANALYSIS. Hg COULD NOT BE DETERMINED DUE TO HOLDING TIME CONSTRAINTS.			
Relinquished by: Ken Sinks		Date/Time: 12/29 0915	
Relinquished by:		Date/Time:	
Relinquished by:		Date/Time:	
Method of Shipment:		Rush	
Authorized by: Ken Sinks		Date: 12/29/98	
(Client Signature Must Accompany Request)			
Distribution: White - On Site		Yellow - LAB	
Pink - Sampler		Goldenrod - Client	

On Site Technologies, LTD.

612 E. Murray Drive
Farmington, NM 87401
(505) 325-2432

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Subcontractor:

Mountain States Analytical, Inc.
1645 West 2200 South

TEL: (800) 973-6724
FAX: (801) 972-6278

Salt Lake City, UT 84119

Acct #:

04-Jan-99

Sample ID	Matrix	Collection Date	Bottle Type	Requested Tests		
				E2467 E6010	E2397 E6010	E300 SW8370 E6270
9812061-01C	Aqueous	12/31/98 10:15:00 AM	1LAMGU			1
9812061-01D	Aqueous	12/31/98 10:15:00 AM	500HDPEHNO3	1		
9812061-01E	Aqueous	12/31/98 10:15:00 AM	250HDPE		1	
9812061-02C	Aqueous	12/31/98 10:45:00 AM	1LAMGU			1
9812061-02D	Aqueous	12/31/98 10:45:00 AM	500HDPEHNO3	1		
9812061-02E	Aqueous	12/31/98 10:45:00 AM	250HDPE		2	

Comments: Please analyze submitted samples for (C) PAH E8270, (D) Total Chromium and Lead (E) Fluoride and Bromide.

NOLF, SAME FORMAT AS PRIOR SAMPLES SUBMITTED FOR ABOVE ANALYSES.
1/4/99

Relinquished by: *Heidi Reese*

Relinquished by:

Date/Time

1/4/99 1600

Received by:

Patty Anderson

Received by:

Date/Time

01/05/99 1030

CHAIN OF CUSTODY RECORD

5649

ON SITE

TECHNOLOGIES, LTD.

657 W. Maple • P. O. Box 2606 • Farmington NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

Date: 12/31/98

Page 1 of 1

Purchase Order No.: 898-651		Job No.	
Name: Same		Title	
Company		Company: BioTech Remediation	
Address		Mailing Address: 710 E 20th, Suite 400	
City, State, Zip		City, State, Zip: Farmington, NM 87401	
City, State, Zip		Telephone No.: 327-4965	
City, State, Zip		Telefax No.	
Sampling Location: Thriftway Refinery 626 Rd 5500 Bloomfield, NM 87401		ANALYSIS REQUESTED	
Sampler: Ken Sinks		Number of Containers	
SAMPLE IDENTIFICATION		LAB ID	
DATE		PRES.	
12/31/015		H2O ga 6	
12/31/045		H2O ga 6	
12/31/090		H2O ga 1	
12/31/1020		H2O ga 1	
STEPPER EFFLUENT		STEPPER EFFLUENT	
STEPPER EFFLUENT		STEPPER EFFLUENT	
TRAP AND BLANK		TRAP AND BLANK	
FIELD BLANK		FIELD BLANK	
THE METALS Hg, Se, As, Ag, Ba, Ca BE ADDED FOR ANALYSIS		THE METALS Hg, Se, As, Ag, Ba, Ca BE ADDED FOR ANALYSIS	
HY COULD NOT BE DETERMINED DUE TO HOLDING TIME CONSTRAINTS		HY COULD NOT BE DETERMINED DUE TO HOLDING TIME CONSTRAINTS	
Relinquished by: Ken Sinks		Received by: Harold Reese	
Date/Time: 12/31/98 1121		Date/Time: 12/31/98 1123	
Relinquished by:		Received by:	
Date/Time:		Date/Time:	
Relinquished by:		Received by:	
Date/Time:		Date/Time:	
Method of Shipment:		Rush	
Authorized by: Ken Sinks		24-48 Hours	
(Client Signature Must Accompany Request)		10 Working Days	
Date: 12/31/98		Special Instructions:	

Distribution: White - On Site Yellow - LAB Pink - Sampler Goldenrod - Client

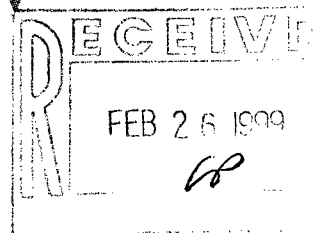
OFF: (505) 325-5667



LAB: (505) 325-1556

February 23, 1999

Terry Griffin
BioTech Remediation, Inc.
710 E. 20th, Suite 400
Farmington, NM 87401
TEL: (505) 327-4965
FAX (505) 564-3604



RE: Thriftway Refinery

Order No. 9912056

Dear Terry Griffin,

On Site Technologies, LTD. received 10 samples on 12/30/98 and were reported on 1/29/99 with the initial requested analyses.

On 2/10/99 Ken Sinks contacted On Site Technologies, LTD. and requested that the metals Mercury (Hg), Arsenic (As), Barium (Ba), Cadmium (Cd), Selenium (Se) and Silver (Ag) be added to the requested analyses.

Due to holding time constraints, Mercury (Hg) could not be determined.

The samples were analyzed for the following tests:

- Arsenic, Total (SW6010A)
- Barium, Total (SW6010A)
- Cadmium, Total (SW6010A)
- Selenium, Total (SW6010A)
- Silver, Total (SW6010A)

There were no problems with the analyses and all the data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

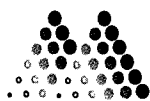
If you have any questions regarding these tests results, please feel free to call.

Sincerely,

A handwritten signature in dark ink, appearing to read "David Cox".

David Cox

RECEIVED FEB 22 1999



Mountain States Analytical, Inc.

The Quality Solution

February 16, 1999

Mr. David Cox
On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Reference:

Project: PAH/Cr,Pb/Fluoride, Bromide
Project No.: 9812056
MSAI Group: 25403

Dear Mr. Cox:

Enclosed are the analytical results for your project referenced above. The following samples are included in the report.

9812056-01	9812056-02	9812056-03
9812056-04	9812056-05	9812056-06
9812056-07	9812056-08	

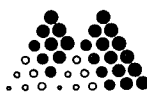
All holding times were met for the tests performed on these samples.

Thank you for selecting Mountain States Analytical, Inc. to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

We look forward to working with you on future projects.

With Regards,

Rolf E. Larsen
Project Manager



Mountain States Analytical, Inc.

The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: PAH/Cr,Pb/Fluoride, Bromide

Sample ID: 9812056-01
Matrix: Water

Thriftway Refinery MW-5

MSAI Sample: 91700
MSAI Group: 25403
Date Reported: 01/20/99
Discard Date: 02/19/99
Date Submitted: 12/31/98
Date Sampled: 12/29/98
Collected by:
Purchase Order:
Project No.: 9812056

Test Analysis	Results as Received	Units	Method Detection Limit
0393G Flame/hrICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w873	mg/l	
13007 Metals by hrICP, 6010A, w/ww Method: SW-846 6010A			
Arsenic	0.06	mg/l	0.02
Barium	1.39	mg/l	0.004
Cadmium	ND	mg/l	0.002
Chromium	0.037	mg/l	0.005
Lead	0.069	mg/l	0.015
Selenium	ND	mg/l	0.02
Silver	ND	mg/l	0.003
3000 SVOA Extraction, w/ww Method: SW-846 3510B	Complete		
6719 Polycyclic Aro/Hydrocarb, 8270A ww Method: SW-846 8270A			
Acenaphthene	ND	ug/l	(1) 2.7
Acenaphthylene	ND	ug/l	2.4
Anthracene	ND	ug/l	1.7
Benz(a)anthracene	ND	ug/l	1.5
Benzo(b)fluoranthene	ND	ug/l	1.6
Benzo(k)fluoranthene	ND	ug/l	2.1
Benzo(ghi)perylene	ND	ug/l	2.1
Benzo(a)pyrene	ND	ug/l	1.6
Chrysene	ND	ug/l	2.0
Dibenz(a,h)anthracene	ND	ug/l	2.2
Fluoranthene	ND	ug/l	2.1
Fluorene	ND	ug/l	2.2
Naphthalene	ND	ug/l	2.5
Phenanthrene	ND	ug/l	2.0

Corporate Office: 1645 West 2200 South • Salt Lake City, Utah 84119
801-973-0050 • 1-800-973-6724 (MSAI) • FAX 801-972-6278
e-mail: service@msailabs.com

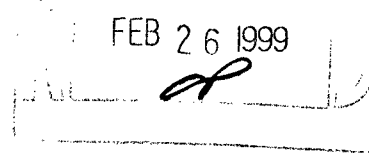


OFF: (505) 325-5667



LAB: (505) 325-1556

February 23, 1999



Terry Griffin
BioTech Remediation, Inc.
710 E. 20th, Suite 400
Farmington, NM 87401
TEL: (505) 327-4965
FAX (505) 564-3604

RE: Thriftway Refinery

Order No. 9912061

Dear Terry Griffin,

On Site Technologies, LTD. received 4 samples on 12/31/98 and were reported on 1/29/99 with the initial requested analyses.

On 2/10/99 Ken Sinks contacted On Site Technologies, LTD. and requested that the metals Mercury (Hg), Arsenic (As), Barium (Ba), Cadmium (Cd), Selenium (Se) and Silver (Ag) be added to the requested analyses.

Due to holding time constraints, Mercury (Hg) could not be determined.

The samples were analyzed for the following tests:

- Arsenic, Total (SW6010A)
- Barium, Total (SW6010A)
- Cadmium, Total (SW6010A)
- Selenium, Total (SW6010A)
- Silver, Total (SW6010A)

There were no problems with the analyses and all the data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

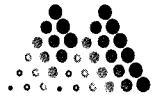
A handwritten signature in dark ink, appearing to read "David Cox".

David Cox

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

RECEIVED FEB 22 1999



Mountain States Analytical, Inc.

The Quality Solution

February 16, 1999

Mr. David Cox
On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Reference:

Project: PAH/Cr&Pb/Fl&Br
Project No.: 9812061
MSAI Group: 25419

Dear Mr. Cox:

Enclosed are the analytical results for your project referenced above. The following samples are included in the report.

9812061-01

9812061-02

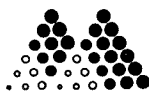
All holding times were met for the tests performed on these samples.

Thank you for selecting Mountain States Analytical, Inc. to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

We look forward to working with you on future projects.

With Regards,

Rolf E. Larsen
Project Manager



Mountain States Analytical, Inc.

The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: PAH/Cr&Pb/Fl&Br

MSAI Sample: 91742
MSAI Group: 25419
Date Reported: 01/20/99
Discard Date: 02/19/99
Date Submitted: 01/05/99
Date Sampled: 12/31/98
Collected by:
Purchase Order:
Project No.: 9812061

Sample ID: 9812061-01

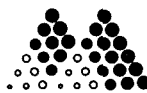
Matrix: Water

Thriftway Refinery Stripper Influent (X)

Test	Analysis	Results as Received	Units	Method Detection Limit
0393G	Flame/hrICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w882	mg/l	
13007	Metals by hrICP, 6010A, w/ww Method: SW-846 6010A			
	Arsenic	ND	mg/l	0.02
	Barium	0.064	mg/l	0.004
	Cadmium	ND	mg/l	0.002
	Chromium	ND	mg/l	0.005
	Lead	ND	mg/l	0.015
	Selenium	ND	mg/l	0.02
	Silver	ND	mg/l	0.003
3000	SVOA Extraction, w/ww Method: SW-846 3510B	Complete		
6719	Polycyclic Aro/Hydrocarb, 8270A ww Method: SW-846 8270A			
	Acenaphthene	ND	ug/l	2.7
	Acenaphthylene	ND	ug/l	2.4
	Anthracene	ND	ug/l	1.7
	Benz(a)anthracene	ND	ug/l	1.5
	Benzo(b)fluoranthene	ND	ug/l	1.6
	Benzo(k)fluoranthene	ND	ug/l	2.1
	Benzo(ghi)perylene	ND	ug/l	2.1
	Benzo(a)pyrene	ND	ug/l	1.6
	Chrysene	ND	ug/l	2.0
	Dibenz(a,h)anthracene	ND	ug/l	2.2
	Fluoranthene	ND	ug/l	2.1
	Fluorene	ND	ug/l	2.2
	Naphthalene	3.1	ug/l	2.5
	Phenanthrene	ND	ug/l	2.0

Corporate Office: 1645 West 2200 South • Salt Lake City, Utah 84119
801-973-0050 • 1-800-973-6724 (MSAI) • FAX 801-972-6278
e-mail: service@msailabs.com





Mountain States Analytical, Inc.

The Quality Solution

Page 2

On Site Technologies, Ltd.

MSAI Sample: 91742

MSAI Group: 25419

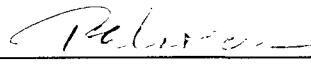
Sample ID: 9812061-01

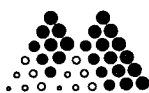
Test	Analysis	Results as Received	Units	Method Detection Limit
6719	Polycyclic Aro/Hydrocarb, 8270A ww Method: SW-846 8270A			
	Pyrene	ND	ug/l	2.0
	Indeno(1,2,3-cd)pyrene	ND	ug/l	2.2
	2-Methylnaphthalene	ND	ug/l	3.4
0504	Fluoride, Ion Chromatography Method: EPA 300.0	1.44	mg/l	0.08
0505	Bromide, Ion Chromatography Method: EPA 300.0	3.13	mg/l	0.5

ND - Not detected at the Method Detection Limit.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:


Rolf E. Larsen
Project Manager



Mountain States Analytical, Inc.

The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: PAH/Cr&Pb/Fl&Br

MSAI Sample: 91743
MSAI Group: 25419
Date Reported: 01/20/99
Discard Date: 02/19/99
Date Submitted: 01/05/99
Date Sampled: 12/31/98
Collected by:
Purchase Order:
Project No.: 9812061

Sample ID: 9812061-02

Matrix: Water

Thriftway Refinery Stripper Effluent *(u)*

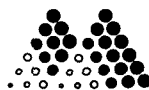
Test	Analysis	Results as Received	Units	Method Detection Limit
0393G	Flame/hrICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w882	mg/l	
13007	Metals by hrICP, 6010A, w/ww Method: SW-846 6010A			
	Arsenic	ND	mg/l	0.02
	Barium	0.063	mg/l	0.004
	Cadmium	ND	mg/l	0.002
	Chromium	ND	mg/l	0.005
	Lead	ND	mg/l	0.015
	Selenium	0.02	mg/l	0.02
	Silver	ND	mg/l	0.003
3000	SVOA Extraction, w/ww Method: SW-846 3510B	Complete		
6719	Polycyclic Aro/Hydrocarb, 8270A ww Method: SW-846 8270A			
	Acenaphthene	ND	ug/l	2.7
	Acenaphthylene	ND	ug/l	2.4
	Anthracene	ND	ug/l	1.7
	Benz(a)anthracene	ND	ug/l	1.5
	Benzo(b)fluoranthene	ND	ug/l	1.6
	Benzo(k)fluoranthene	ND	ug/l	2.1
	Benzo(ghi)perylene	ND	ug/l	2.1
	Benzo(a)pyrene	ND	ug/l	1.6
	Chrysene	ND	ug/l	2.0
	Dibenz(a,h)anthracene	ND	ug/l	2.2
	Fluoranthene	ND	ug/l	2.1
	Fluorene	2.9	ug/l	2.2
	Naphthalene	24.9	ug/l	2.5
	Phenanthrene	2.0	ug/l	2.0

Corporate Office: 1645 West 2200 South • Salt Lake City, Utah 84119

801-973-0050 • 1-800-973-6724 (MSAI) • FAX 801-972-6278

e-mail: service@msailabs.com





Mountain States Analytical, Inc.

The Quality Solution

Page 2

On Site Technologies, Ltd.

MSAI Sample: 91743

MSAI Group: 25419

Sample ID: 9812061-02

Test	Analysis	Results as Received	Units	Method Detection Limit
6719	Polycyclic Aro/Hydrocarb,8270A ww Method: SW-846 8270A			
	Pyrene	ND	ug/l	2.0
	Indeno(1,2,3-cd)pyrene	ND	ug/l	2.2
	2-Methylnaphthalene	8.2	ug/l	3.4
0504	Fluoride, Ion Chromatography Method: EPA 300.0	1.43	mg/l	0.08
0505	Bromide, Ion Chromatography Method: EPA 300.0	3.19	mg/l	0.5

ND - Not detected at the Method Detection Limit.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

Rolf E. Larsen
Project Manager

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting

02/16/99
15:12:07
Group: 25419

Analysis Batch Number: ICPHR-01/07/99-114 -2
Test Identification : ICPHR-*IRIS QC parameters
Number of Samples : 4
Batch Date/Time : 02/12/99 / 13:42:47

Sequence : DATP007

111
02/16/99

BLANK#	ANALYTE	CONC FOUND #	CONC LIMIT
PBW1-882	Silver	0.0002	0.0050
	Arsenic	ND	0.0150
	Barium	0.0006	0.0030
	Cadmium	ND	0.0020
	Chromium	0.0005	0.0100
	Nickel	0.0005	0.0100
	Lead	0.0087	0.0200
	Selenium	ND	0.0300

						QC LIMITS	
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	LOWER	UPPER
5418-91740	Silver	0.0500	0.0009	0.0489	96.0	80.0	120.0
	Arsenic	2.0000	0.0135	1.9999	99.3	80.0	120.0
	Barium	2.0000	0.2228	2.0707	92.4	80.0	120.0
	Cadmium	0.0500	-0.0008	0.0458	93.2	80.0	120.0
	Chromium	0.2000	0.0127	0.2017	94.5	80.0	120.0
	Nickel	0.5000	0.0029	0.4564	90.7	80.0	120.0
	Lead	0.5000	0.0186	0.4840	93.1	80.0	120.0
	Selenium	2.0000	-0.0148	2.0989	105.7	80.0	120.0

						QC LIMITS			
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	LOWER	UPPER	RPD #	LIMIT
5418-91740	Silver	0.0500	0.0009	0.0484	95.1	80.0	120.0	1.0	20.0
	Arsenic	2.0000	0.0135	2.0136	100.0	80.0	120.0	0.7	20.0
	Barium	2.0000	0.2228	2.0692	92.3	80.0	120.0	0.1	20.0
	Cadmium	0.0500	-0.0008	0.0458	93.3	80.0	120.0	0.1	20.0
	Chromium	0.2000	0.0127	0.2003	93.8	80.0	120.0	0.7	20.0
	Nickel	0.5000	0.0029	0.4557	90.6	80.0	120.0	0.1	20.0
	Lead	0.5000	0.0186	0.4924	94.8	80.0	120.0	1.7	20.0
	Selenium	2.0000	-0.0148	2.0861	105.0	80.0	120.0	0.6	20.0

DUPLICATE						
SAMPLE#	ANALYTE	RESULT 1	RESULT 2	RPD #	LIMIT	DILUTION
25418-91740	Silver	0.0009	0.0013	38.5(11)	20.0	1.00
	Arsenic	0.0135	0.0056	83.2(11)	20.0	1.00
	Barium	0.2228	0.2114	5.3	20.0	1.00
	Cadmium	-0.0008	0.0000	200.0(11)	20.0	1.00
	Chromium	0.0127	0.0129	1.0	20.0	1.00
	Nickel	0.0029	0.0043	38.0(11)	20.0	1.00
	Lead	0.0186	0.0152	20.0	20.0	1.00
	Selenium	-0.0148	0.0000	200.0(11)	20.0	1.00

CONTROL					QC LIMITS	
SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	LOWER	UPPER
LCSW-882	Silver	0.0529	0.0500	105.8	80.0	120.0
	Arsenic	2.0964	2.0000	104.8	80.0	120.0
	Barium	2.0502	2.0000	102.5	80.0	120.0
	Cadmium	0.0526	0.0500	105.1	80.0	120.0
	Chromium	0.2164	0.2000	108.2	80.0	120.0
	Nickel	0.5028	0.5000	100.6	80.0	120.0

Analysis Batch Number: ICPHR-01/07/99-114 -2

Test Identification : ICPHR-*IRIS QC parameters

Sequence : DATP007

Number of Samples : 4

Batch Data-Date/Time : 02/12/99 / 13:42:47

CONTROL		QC LIMITS				
SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	LOWER	UPPER
CSW-882	Lead	0.5499	0.5000	110.0	80.0	120.0
	Selenium	2.2491	2.0000	112.5	80.0	120.0

		QC LIMITS				
CV #	ANALYTE	TRUE VALUE	BATCH READ	% REC #	LOWER	UPPER
ICV-	Silver	0.1000	0.0966	96.6	90.0	110.0
	Arsenic	0.4000	0.3971	99.3	90.0	110.0
	Barium	1.0000	0.9879	98.8	90.0	110.0
	Cadmium	1.0000	0.9845	98.4	90.0	110.0
	Chromium	1.0000	1.0118	101.2	90.0	110.0
	Nickel	2.0000	1.9017	95.1	90.0	110.0
	Lead	5.0000	5.1669	103.3	90.0	110.0
	Selenium	0.4000	0.3849	96.2	90.0	110.0
ICV1--2	Silver	0.1000	0.0964	96.4	90.0	110.0
	Arsenic	0.4000	0.4040	101.0	90.0	110.0
	Barium	1.0000	1.0053	100.5	90.0	110.0
	Cadmium	1.0000	1.0116	101.2	90.0	110.0
	Chromium	1.0000	1.0057	100.6	90.0	110.0
	Nickel	2.0000	2.0037	100.2	90.0	110.0
	Lead	5.0000	5.1464	102.9	90.0	110.0
	Selenium	0.4000	0.4056	101.4	90.0	110.0
ICV2--3	Silver	0.1000	0.0981	98.1	90.0	110.0
	Arsenic	0.4000	0.4026	100.6	90.0	110.0
	Barium	1.0000	0.9938	99.4	90.0	110.0
	Cadmium	1.0000	0.9935	99.4	90.0	110.0
	Chromium	1.0000	1.0194	101.9	90.0	110.0
	Nickel	2.0000	1.9112	95.6	90.0	110.0
	Lead	5.0000	5.2292	104.6	90.0	110.0
	Selenium	0.4000	0.4050	101.3	90.0	110.0
ICV3--4	Silver	0.1000	0.0974	97.4	90.0	110.0
	Arsenic	0.4000	0.3890	97.2	90.0	110.0
	Barium	1.0000	0.9847	98.5	90.0	110.0
	Cadmium	1.0000	0.9838	98.4	90.0	110.0
	Chromium	1.0000	1.0146	101.5	90.0	110.0
	Nickel	2.0000	1.8831	94.2	90.0	110.0
	Lead	5.0000	5.1839	103.7	90.0	110.0
	Selenium	0.4000	0.4063	101.6	90.0	110.0

ICB#	ANALYTE	CONC FOUND #	CONC LIMIT
ICB-	Silver	0.0002	0.0050
	Arsenic	0.0048	0.0150
	Barium	0.0001	0.0030
	Cadmium	ND	0.0020
	Chromium	0.0000	0.0100
	Nickel	ND	0.0100
	Lead	0.0063	0.0200
	Selenium	ND	0.0300
ICB1-	Silver	ND	0.0050
	Arsenic	0.0021	0.0150

Analysis Batch Number: ICPHR-01/07/99-114 -2

Test Identification : ICPHR-*IRIS QC parameters

Sequence : DATP007

Number of Samples : 4

Batch Data-Date/Time : 02/12/99 / 13:42:47

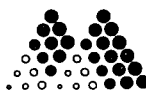
CCB#	ANALYTE	CONC FOUND #	CONC LIMIT
CCB1-	Barium	0.0002	0.0030
	Cadmium	0.0000	0.0020
	Chromium	0.0001	0.0100
	Nickel	0.0002	0.0100
	Lead	0.0040	0.0200
	Selenium	0.0001	0.0300
CCB2-	Silver	ND	0.0050
	Arsenic	0.0030	0.0150
	Barium	0.0002	0.0030
	Cadmium	0.0001	0.0020
	Chromium	0.0000	0.0100
	Nickel	ND	0.0100
	Lead	0.0009	0.0200
	Selenium	ND	0.0300
CCB3-	Silver	0.0003	0.0050
	Arsenic	ND	0.0150
	Barium	0.0004	0.0030
	Cadmium	0.0001	0.0020
	Chromium	0.0001	0.0100
	Nickel	0.0005	0.0100
	Lead	0.0052	0.0200
	Selenium	ND	0.0300

----- Result Footnotes -----

(11) - The duplicate results cannot be evaluated because both results are <MDL.

Groups & Samples

25418-91740 25418-91741 25419-91742 25419-91743



Mountain States Analytical, Inc.

The Quality Solution

Page 2

On Site Technologies, Ltd.

MSAI Sample: 91700

MSAI Group: 25403

Sample ID: 9812056-01

Test	Analysis	Results as Received	Units	Method Detection Limit
6719	Polycyclic Aro/Hydrocarb,8270A WW Method: SW-846 8270A			
	Pyrene	ND	ug/l	2.0
	Indeno(1,2,3-cd)pyrene	ND	ug/l	2.2
	2-Methylnaphthalene	ND	ug/l	3.4
0504	Fluoride, Ion Chromatography Method: EPA 300.0	1.65	mg/l	0.08
0505	Bromide, Ion Chromatography Method: EPA 300.0	3.11	mg/l	0.5

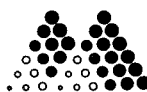
- (1) Sample 91700 was reanalyzed due to internal standard failures in the initial analysis. These failures were not confirmed in the reanalysis of the samples. The results from the second analysis are reported.

ND - Not detected at the Method Detection Limit.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

Rolf E. Larsen
Project Manager



Mountain States Analytical, Inc.

The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: PAH/Cr,Pb/Fluoride, Bromide

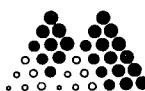
Sample ID: 9812056-02
Matrix: Water **Thriftway Refinery MW-9** (6)

MSAI Sample: 91701
MSAI Group: 25403
Date Reported: 01/20/99
Discard Date: 02/19/99
Date Submitted: 12/31/98
Date Sampled: 12/29/98
Collected by:
Purchase Order:
Project No.: 9812056

Test Analysis	Results as Received	Units	Method Detection Limit
0393G Flame/hrICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w873	mg/l	
13007 Metals by hrICP, 6010A, w/ww Method: SW-846 6010A			
Arsenic	ND	mg/l	0.02
Barium	0.410	mg/l	0.004
Cadmium	ND	mg/l	0.002
Chromium	0.028	mg/l	0.005
Lead	0.027	mg/l	0.015
Selenium	ND	mg/l	0.02
Silver	ND	mg/l	0.003
3000 SVOA Extraction, w/ww Method: SW-846 3510B	Complete		
6719 Polycyclic Aro/Hydrocarb,8270A ww Method: SW-846 8270A			
Acenaphthene	ND	ug/l	(1) 2.7
Acenaphthylene	ND	ug/l	2.4
Anthracene	ND	ug/l	1.7
Benz(a)anthracene	ND	ug/l	1.5
Benzo(b)fluoranthene	ND	ug/l	1.6
Benzo(k)fluoranthene	ND	ug/l	2.1
Benzo(ghi)perylene	ND	ug/l	2.1
Benzo(a)pyrene	ND	ug/l	1.6
Chrysene	ND	ug/l	2.0
Dibenz(a,h)anthracene	ND	ug/l	2.2
Fluoranthene	ND	ug/l	2.1
Fluorene	ND	ug/l	2.2
Naphthalene	ND	ug/l	2.5
Phenanthrene	ND	ug/l	2.0

Corporate Office: 1645 West 2200 South • Salt Lake City, Utah 84119
801-973-0050 • 1-800-973-6724 (MSAI) • FAX 801-972-6278
e-mail: service@msailabs.com





Mountain States Analytical, Inc.

The Quality Solution

Page 2

On Site Technologies, Ltd.

MSAI Sample: 91701

MSAI Group: 25403

Sample ID: 9812056-02

Test	Analysis	Results as Received	Units	Method Detection Limit
6719	Polycyclic Aro/Hydrocarb,8270A ww Method: SW-846 8270A			
	Pyrene	ND	ug/l	2.0
	Indeno(1,2,3-cd)pyrene	ND	ug/l	2.2
	2-Methylnaphthalene	ND	ug/l	3.4
0504	Fluoride, Ion Chromatography Method: EPA 300.0	1.59	mg/l	0.08
0505	Bromide, Ion Chromatography Method: EPA 300.0	ND	mg/l	0.5

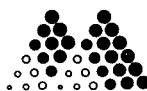
- (1) Sample 91701 was reanalyzed due to internal standard failures in the initial analysis. These failures were not confirmed in the reanalysis of the samples. The results from the second analysis are reported.

ND - Not detected at the Method Detection Limit.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

Rolf E. Larsen
Project Manager



Mountain States Analytical, Inc.

The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: PAH/Cr,Pb/Fluoride, Bromide

Sample ID: 9812056-03
Matrix: Water

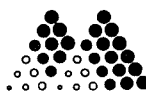
Thriftway Refinery MW-10

MSAI Sample: 91702
MSAI Group: 25403
Date Reported: 01/20/99
Discard Date: 02/19/99
Date Submitted: 12/31/98
Date Sampled: 12/29/98
Collected by:
Purchase Order:
Project No.: 9812056

Test Analysis	Results as Received	Units	Method Detection Limit
0393G Flame/hrICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w873	mg/l	
13007 Metals by hrICP, 6010A, w/ww Method: SW-846 6010A			
Arsenic	0.02	mg/l	0.02
Barium	0.623	mg/l	0.004
Cadmium	ND	mg/l	0.002
Chromium	0.022	mg/l	0.005
Lead	0.016	mg/l	0.015
Selenium	ND	mg/l	0.02
Silver	ND	mg/l	0.003
3000 SVOA Extraction, w/ww Method: SW-846 3510B	Complete		
6719 Polycyclic Aro/Hydrocarb, 8270A ww Method: SW-846 8270A			
Acenaphthene	ND	ug/l	(1) 2.7
Acenaphthylene	ND	ug/l	2.4
Anthracene	ND	ug/l	1.7
Benz(a)anthracene	ND	ug/l	1.5
Benzo(b)fluoranthene	ND	ug/l	1.6
Benzo(k)fluoranthene	ND	ug/l	2.1
Benzo(ghi)perylene	ND	ug/l	2.1
Benzo(a)pyrene	ND	ug/l	1.6
Chrysene	ND	ug/l	2.0
Dibenz(a,h)anthracene	ND	ug/l	2.2
Fluoranthene	ND	ug/l	2.1
Fluorene	ND	ug/l	2.2
Naphthalene	ND	ug/l	2.5
Phenanthrene	ND	ug/l	2.0

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The Quality Solution

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On Site Technologies, Ltd.

MSAI Sample: 91702

MSAI Group: 25403

Sample ID: 9812056-03

Test	Analysis	Results as Received	Units	Method Detection Limit
6719	Polycyclic Aro/Hydrocarb, 8270A WW Method: SW-846 8270A			
	Pyrene	ND	ug/l	2.0
	Indeno(1,2,3-cd)pyrene	ND	ug/l	2.2
	2-Methylnaphthalene	ND	ug/l	3.4
0504	Fluoride, Ion Chromatography Method: EPA 300.0	1.63	mg/l	0.08
0505	Bromide, Ion Chromatography Method: EPA 300.0	3.00	mg/l	0.5

- (1) Sample 91702 was reanalyzed due to internal standard failures in the initial analysis. These failures were not confirmed in the reanalysis of the samples. The results from the second analysis are reported.

ND - Not detected at the Method Detection Limit.

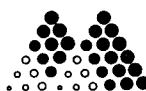
This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:


Rolf E. Larsen
Project Manager

Corporate Office: 1645 West 2200 South • Salt Lake City, Utah 84119
801-973-0050 • 1-800-973-6724 (MSAI) • FAX 801-972-6278
e-mail: service@msailabs.com





Mountain States Analytical, Inc.

The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: PAH/Cr,Pb/Fluoride, Bromide

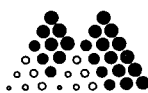
Sample ID: 9812056-04 Thriftway Refinery MW-11
Matrix: Water

MSAI Sample: 91703
MSAI Group: 25403
Date Reported: 01/20/99
Discard Date: 02/19/99
Date Submitted: 12/31/98
Date Sampled: 12/29/98
Collected by:
Purchase Order:
Project No.: 9812056

Test Analysis	Results as Received	Units	Method Detection Limit
0393G Flame/hrICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w873	mg/l	
13007 Metals by hrICP, 6010A, w/ww Method: SW-846 6010A			
Arsenic	0.06	mg/l	0.02
Barium	0.813	mg/l	0.004
Cadmium	ND	mg/l	0.002
Chromium	0.023	mg/l	0.005
Lead	0.025	mg/l	0.015
Selenium	ND	mg/l	0.02
Silver	ND	mg/l	0.003
3000 SVOA Extraction, w/ww Method: SW-846 35108	Complete		
6719 Polycyclic Aro/Hydrocarb, 8270A ww Method: SW-846 8270A			
Acenaphthene	ND	ug/l	(1) 2.7
Acenaphthylene	ND	ug/l	2.4
Anthracene	ND	ug/l	1.7
Benz(a)anthracene	ND	ug/l	1.5
Benzo(b)fluoranthene	ND	ug/l	1.6
Benzo(k)fluoranthene	ND	ug/l	2.1
Benzo(ghi)perylene	ND	ug/l	2.1
Benzo(a)pyrene	ND	ug/l	1.6
Chrysene	ND	ug/l	2.0
Dibenz(a,h)anthracene	ND	ug/l	2.2
Fluoranthene	ND	ug/l	2.1
Fluorene	ND	ug/l	2.2
Naphthalene	ND	ug/l	2.5
Phenanthrene	ND	ug/l	2.0

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The Quality Solution

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On Site Technologies, Ltd.

MSAI Sample: 91703

MSAI Group: 25403

Sample ID: 9812056-04

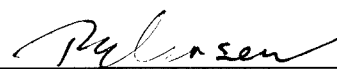
Test	Analysis	Results as Received	Units	Method Detection Limit
6719	Polycyclic Aro/Hydrocarb, 8270A WW Method: SW-846 8270A			
	Pyrene	ND	ug/l	2.0
	Indeno(1,2,3-cd)pyrene	ND	ug/l	2.2
	2-Methylnaphthalene	ND	ug/l	3.4
0504	Fluoride, Ion Chromatography Method: EPA 300.0	1.41	mg/l	0.08
0505	Bromide, Ion Chromatography Method: EPA 300.0	ND	mg/l	0.5

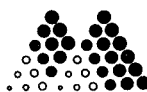
- (1) Sample 91703 was reanalyzed due to internal standard failures in the initial analysis. These internal standard failures were not confirmed in the reanalysis of the samples. The sample also had surrogate recovery failures which were confirmed upon reanalysis. There was insufficient sample volume for re-extraction, so the sample is reported with this exception. The results from the second analysis are reported.

ND - Not detected at the Method Detection Limit.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:


Rolf E. Larsen
Project Manager



Mountain States Analytical, Inc.

The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: PAH/Cr,Pb/Fluoride, Bromide

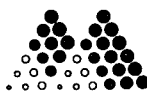
Sample ID: 9812056-05 Thriftway Refinery MW-i3
Matrix: Water

MSAI Sample: 91704
MSAI Group: 25403
Date Reported: 01/20/99
Discard Date: 02/19/99
Date Submitted: 12/31/98
Date Sampled: 12/29/98
Collected by:
Purchase Order:
Project No.: 9812056

Test Analysis	Results as Received	Units	Method Detection Limit
0393G Flame/hrICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w873	mg/l	
13007 Metals by hrICP, 6010A, w/ww Method: SW-846 6010A			
Arsenic	ND	mg/l	0.02
Barium	0.175	mg/l	0.004
Cadmium	ND	mg/l	0.002
Chromium	0.014	mg/l	0.005
Lead	0.016	mg/l	0.015
Selenium	ND	mg/l	0.02
Silver	0.003	mg/l	0.003
3000 SVOA Extraction, w/ww Method: SW-846 3510B	Complete		
6719 Polycyclic Aro/Hydrocarb, 8270A ww Method: SW-846 8270A			
Acenaphthene	ND	ug/l	(1) 2.7
Acenaphthylene	ND	ug/l	2.4
Anthracene	ND	ug/l	1.7
Benz(a)anthracene	ND	ug/l	1.5
Benzo(b)fluoranthene	ND	ug/l	1.6
Benzo(k)fluoranthene	ND	ug/l	2.1
Benzo(ghi)perylene	ND	ug/l	2.1
Benzo(a)pyrene	ND	ug/l	1.6
Chrysene	ND	ug/l	2.0
Dibenz(a,h)anthracene	ND	ug/l	2.2
Fluoranthene	ND	ug/l	2.1
Fluorene	ND	ug/l	2.2
Naphthalene	ND	ug/l	2.5
Phenanthrene	ND	ug/l	2.0

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On Site Technologies, Ltd.

MSAI Sample: 91704

MSAI Group: 25403

Sample ID: 9812056-05

Test	Analysis	Results as Received	Units	Method Detection Limit
6719	Polycyclic Aro/Hydrocarb, 8270A WW Method: SW-846 8270A			
	Pyrene	ND	ug/l	2.0
	Indeno(1,2,3-cd)pyrene	ND	ug/l	2.2
	2-Methylnaphthalene	ND	ug/l	3.4
0504	Fluoride, Ion Chromatography Method: EPA 300.0	1.67	mg/l	0.08
0505	Bromide, Ion Chromatography Method: EPA 300.0	3.08	mg/l	0.5

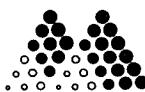
- (1) Sample 91704 was reanalyzed due to internal standard failures in the initial analysis. These failures were not confirmed in the reanalysis of the samples. The results from the second analysis are reported.

ND - Not detected at the Method Detection Limit.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:


Rolf E. Larsen
Project Manager



Mountain States Analytical, Inc.

The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: PAH/Cr,Pb/Fluoride, Bromide

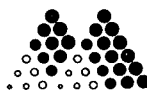
Sample ID: 9812056-06 Thriftway Refinery MW-15
Matrix: Water

MSAI Sample: 91705
MSAI Group: 25403
Date Reported: 01/20/99
Discard Date: 02/19/99
Date Submitted: 12/31/98
Date Sampled: 12/29/98
Collected by:
Purchase Order:
Project No.: 9812056

Test Analysis	Results as Received	Units	Method Detection Limit
0393G Flame/hrICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w873	mg/l	
13007 Metals by hrICP, 6010A, w/ww Method: SW-846 6010A			
Arsenic	0.02	mg/l	0.02
Barium	0.718	mg/l	0.004
Cadmium	ND	mg/l	0.002
Chromium	0.032	mg/l	0.005
Lead	0.032	mg/l	0.015
Selenium	ND	mg/l	0.02
Silver	ND	mg/l	0.003
3000 SVOA Extraction, w/ww Method: SW-846 3510B	Complete		
6719 Polycyclic Aro/Hydrocarb, 8270A ww Method: SW-846 8270A			
Acenaphthene	ND	ug/l	(1) 2.7
Acenaphthylene	ND	ug/l	2.4
Anthracene	ND	ug/l	1.7
Benz(a)anthracene	ND	ug/l	1.5
Benzo(b)fluoranthene	ND	ug/l	1.6
Benzo(k)fluoranthene	ND	ug/l	2.1
Benzo(ghi)perylene	ND	ug/l	2.1
Benzo(a)pyrene	ND	ug/l	1.6
Chrysene	ND	ug/l	2.0
Dibenz(a,h)anthracene	ND	ug/l	2.2
Fluoranthene	ND	ug/l	2.1
Fluorene	ND	ug/l	2.2
Naphthalene	ND	ug/l	2.5
Phenanthrene	ND	ug/l	2.0

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On Site Technologies, Ltd.

MSAI Sample: 91705

MSAI Group: 25403

Sample ID: 9812056-06

Test	Analysis	Results as Received	Units	Method Detection Limit
6719	Polycyclic Aro/Hydrocarb, 8270A ww Method: SW-846 8270A			
	Pyrene	ND	ug/l	2.0
	Indeno(1,2,3-cd)pyrene	ND	ug/l	2.2
	2-Methylnaphthalene	ND	ug/l	3.4
0504	Fluoride, Ion Chromatography Method: EPA 300.0	1.60	mg/l	0.08
0505	Bromide, Ion Chromatography Method: EPA 300.0	3.53	mg/l	0.5

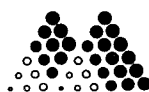
- (1) Sample 91705 was reanalyzed due to internal standard failures in the initial analysis. These failures were not confirmed in the reanalysis of the samples. The results from the second analysis are reported.

ND - Not detected at the Method Detection Limit.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:


Rolf E. Larsen
Project Manager



Mountain States Analytical, Inc.

The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: PAH/Cr,Pb/Fluoride, Bromide

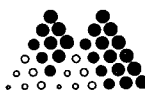
Sample ID: 9812056-07 Thriftway Refinery MW-18
Matrix: Water

MSAI Sample: 91706
MSAI Group: 25403
Date Reported: 01/20/99
Discard Date: 02/19/99
Date Submitted: 12/31/98
Date Sampled: 12/29/98
Collected by:
Purchase Order:
Project No.: 9812056

Test Analysis	Results as Received	Units	Method Detection Limit
0393G Flame/hrICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w873	mg/l	
13007 Metals by hrICP, 6010A, w/ww Method: SW-846 6010A			
Arsenic	0.07	mg/l	0.02
Barium	1.07	mg/l	0.004
Cadmium	ND	mg/l	0.002
Chromium	0.052	mg/l	0.005
Lead	0.043	mg/l	0.015
Selenium	ND	mg/l	0.02
Silver	ND	mg/l	0.003
3000 SVOA Extraction, w/ww Method: SW-846 3510B	Complete		
6719 Polycyclic Aro/Hydrocarb, 8270A ww Method: SW-846 8270A			
Acenaphthene	ND	ug/l	(1) 2.7
Acenaphthylene	ND	ug/l	2.4
Anthracene	ND	ug/l	1.7
Benz(a)anthracene	ND	ug/l	1.5
Benzo(b)fluoranthene	ND	ug/l	1.6
Benzo(k)fluoranthene	ND	ug/l	2.1
Benzo(ghi)perylene	ND	ug/l	2.1
Benzo(a)pyrene	ND	ug/l	1.6
Chrysene	ND	ug/l	2.0
Dibenz(a,h)anthracene	ND	ug/l	2.2
Fluoranthene	ND	ug/l	2.1
Fluorene	ND	ug/l	2.2
Naphthalene	ND	ug/l	2.5
Phenanthrene	ND	ug/l	2.0

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MSAI Sample: 91706

MSAI Group: 25403

Sample ID: 9812056-07

Test	Analysis	Results	Units	Method
		as Received		Detection Limit
6719	Polycyclic Aro/Hydrocarb, 8270A WW Method: SW-846 8270A			
	Pyrene	ND	ug/l	2.0
	Indeno(1,2,3-cd)pyrene	ND	ug/l	2.2
	2-Methylnaphthalene	ND	ug/l	3.4
0504	Fluoride, Ion Chromatography Method: EPA 300.0	1.29	mg/l	0.08
0505	Bromide, Ion Chromatography Method: EPA 300.0	3.08	mg/l	0.5

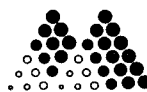
- (1) Sample 91706 was reanalyzed due to internal standard failures in the initial analysis. These failures were not confirmed in the reanalysis of the samples. The results from the second analysis are reported.

ND - Not detected at the Method Detection Limit.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

Rolf E. Larsen
Project Manager



Mountain States Analytical, Inc.

The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: PAH/Cr,Pb/Fluoride, Bromide

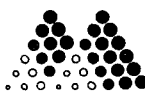
Sample ID: 9812056-08 Thriftway Refinery MW-19
Matrix: Water

MSAI Sample: 91707
MSAI Group: 25403
Date Reported: 01/20/99
Discard Date: 02/19/99
Date Submitted: 12/31/98
Date Sampled: 12/29/98
Collected by:
Purchase Order:
Project No.: 9812056

Test Analysis	Results as Received	Units	Method Detection Limit
0393G Flame/hrICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w873	mg/l	
13007 Metals by hrICP, 6010A, w/ww Method: SW-846 6010A			
Arsenic	0.04	mg/l	0.02
Barium	0.597	mg/l	0.004
Cadmium	ND	mg/l	0.002
Chromium	0.026	mg/l	0.005
Lead	0.032	mg/l	0.015
Selenium	ND	mg/l	0.02
Silver	0.003	mg/l	0.003
3000 SVOA Extraction, w/ww Method: SW-846 3510B	Complete		
6719 Polycyclic Aro/Hydrocarb, 8270A ww Method: SW-846 8270A			
Acenaphthene	ND	ug/l	(1) 2.7
Acenaphthylene	ND	ug/l	2.4
Anthracene	ND	ug/l	1.7
Benz(a)anthracene	ND	ug/l	1.5
Benzo(b)fluoranthene	ND	ug/l	1.6
Benzo(k)fluoranthene	ND	ug/l	2.1
Benzo(ghi)perylene	ND	ug/l	2.1
Benzo(a)pyrene	ND	ug/l	1.6
Chrysene	ND	ug/l	2.0
Dibenz(a,h)anthracene	ND	ug/l	2.2
Fluoranthene	ND	ug/l	2.1
Fluorene	ND	ug/l	2.2
Naphthalene	ND	ug/l	2.5
Phenanthrene	ND	ug/l	2.0

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Mountain States Analytical, Inc.

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On Site Technologies, Ltd.

MSAI Sample: 91707

MSAI Group: 25403

Sample ID: 9812056-08

Test	Analysis	Results as Received	Units	Method Detection Limit
6719	Polycyclic Aro/Hydrocarb, 8270A ww Method: SW-846 8270A			
	Pyrene	ND	ug/l	2.0
	Indeno(1,2,3-cd)pyrene	ND	ug/l	2.2
	2-Methylnaphthalene	ND	ug/l	3.4
0504	Fluoride, Ion Chromatography Method: EPA 300.0	1.49	mg/l	0.08
0505	Bromide, Ion Chromatography Method: EPA 300.0	2.99	mg/l	0.5

- (1) Sample 91707 was reanalyzed due to internal standard failures in the initial analysis. These failures were not confirmed in the reanalysis of the samples. The results from the second analysis are reported.

ND - Not detected at the Method Detection Limit.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:


Rolf E. Larsen
Project Manager

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting

02/16/99
15:11:30
Group: 25403

Analysis Batch Number: ICPHR-01/05/99-114 -1
Test Identification : ICPHR-*IRIS QC parameters
Number of Samples : 13
Batch Data-Date/Time : 01/06/99 / 08:38:23

Sequence : DATR005

11
02/16/25

BLANK#	ANALYTE	CONC FOUND #	CONC LIMIT
PBW1-873	Silver	0.0005	0.0050
	Arsenic	ND	0.0150
	Barium	0.0005	0.0030
	Beryllium	0.0000	0.0002
	Cadmium	ND	0.0020
	Chromium	0.0007	0.0100
	Copper	0.0053	0.0100
	Nickel	0.0005	0.0100
	Lead	ND	0.0200
	Antimony	0.0061	0.0200
	Selenium	0.0076	0.0300
	Thallium	ND	0.0200
	Vanadium	0.0009	0.0030
	Zinc	0.0075	0.0300

PIKE							QC LIMITS	
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #		LOWER	UPPER
25398-91690	Silver	0.0500	0.0018	0.0544	105.2		80.0	120.0
	Arsenic	2.0000	0.0044	2.1504	107.3		80.0	120.0
	Barium	2.0000	0.1394	2.1724	101.7		80.0	120.0
	Beryllium	0.0500	0.0002	0.0488	97.1		80.0	120.0
	Cadmium	0.0500	0.0171	0.0651	96.0		80.0	120.0
	Chromium	0.2000	0.0272	0.2250	98.9		80.0	120.0
	Copper	0.2500	0.0502	0.3103	104.0		80.0	120.0
	Nickel	0.5000	0.5395	1.0531	102.7		80.0	120.0
	Lead	0.5000	1.0217	1.5906	113.8		80.0	120.0
	Antimony	1.0000	0.0143	1.0747	106.0		80.0	120.0
	Selenium	2.0000	0.0066	2.1715	108.2		80.0	120.0
	Thallium	2.0000	0.0018	1.8862	94.2		80.0	120.0
	Vanadium	0.5000	0.0013	0.4963	99.0		80.0	120.0
	Zinc	0.5000	9.4932	10.7359	248.5(2k)		80.0	120.0

SD							QC LIMITS			
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #		LOWER	UPPER	RPD #	LIMIT
25398-91691	Silver	0.0500	0.0018	0.0528	102.0		80.0	120.0	2.9	20.0
	Arsenic	2.0000	0.0044	2.1574	107.6		80.0	120.0	0.3	20.0
	Barium	2.0000	0.1394	2.1706	101.6		80.0	120.0	0.1	20.0
	Beryllium	0.0500	0.0002	0.0489	97.4		80.0	120.0	0.3	20.0
	Cadmium	0.0500	0.0171	0.0646	95.2		80.0	120.0	0.6	20.0
	Chromium	0.2000	0.0272	0.2240	98.4		80.0	120.0	0.4	20.0
	Copper	0.2500	0.0502	0.3049	101.9		80.0	120.0	1.8	20.0
	Nickel	0.5000	0.5395	1.0365	99.4		80.0	120.0	1.6	20.0
	Lead	0.5000	1.0217	1.5633	108.3		80.0	120.0	1.7	20.0
	Antimony	1.0000	0.0143	1.0680	105.4		80.0	120.0	0.6	20.0
	Selenium	2.0000	0.0066	2.1805	108.7		80.0	120.0	0.4	20.0
	Thallium	2.0000	0.0018	1.9232	96.1		80.0	120.0	1.9	20.0
	Vanadium	0.5000	0.0013	0.4972	99.2		80.0	120.0	0.2	20.0
	Zinc	0.5000	9.4932	10.3210	165.6(2k)		80.0	120.0	3.9	20.0

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting

02/16/99
15:11:31
Group: 25403

Analysis Batch Number: ICPHR-01/05/99-114 -1
Test Identification : ICPHR-*IRIS QC parameters
Number of Samples : 13
Batch Data-Date/Time : 01/06/99 / 08:38:23

Sequence : DATR005

DUPLICATE

SAMPLE#	ANALYTE	RESULT 1	RESULT 2	RPD #	LIMIT	DILUTION
5398-91689	Silver	0.0018	0.0019	4.9	20.0	1.00
	Arsenic	0.0044	0.0009	131.1(11)	20.0	1.00
	Barium	0.1394	0.1397	0.2	20.0	1.00
	Beryllium	0.0002	0.0002	0.0	20.0	1.00
	Cadmium	0.0171	0.0172	0.9	20.0	1.00
	Chromium	0.0272	0.0252	7.8	20.0	1.00
	Copper	0.0502	0.0533	6.0	20.0	1.00
	Nickel	0.5395	0.5587	3.5	20.0	1.00
	Lead	1.0217	1.1282	9.9	20.0	1.00
	Antimony	0.0143	0.0253	55.7(5a)	20.0	1.00
	Selenium	0.0066	0.0161	83.2(11)	20.0	1.00
	Thallium	0.0018	0.0090	132.7(11)	20.0	1.00
	Vanadium	0.0013	0.0020	43.8(11)	20.0	1.00
	Zinc	9.4932	9.7766	2.9	20.0	1.00

CONTROL

SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS	
					LOWER	UPPER
CSW-873	Silver	0.0500	0.0500	100.0	80.0	120.0
	Arsenic	2.0400	2.0000	102.0	80.0	120.0
	Barium	2.0325	2.0000	101.6	80.0	120.0
	Beryllium	0.0507	0.0500	101.4	80.0	120.0
	Cadmium	0.0506	0.0500	101.1	80.0	120.0
	Chromium	0.2053	0.2000	102.7	80.0	120.0
	Copper	0.2542	0.2500	101.7	80.0	120.0
	Nickel	0.5104	0.5000	102.1	80.0	120.0
	Lead	0.5191	0.5000	103.8	80.0	120.0
	Antimony	0.9982	1.0000	99.8	80.0	120.0
	Selenium	2.0892	2.0000	104.5	80.0	120.0
	Thallium	2.0257	2.0000	101.3	80.0	120.0
	Vanadium	0.4985	0.5000	99.7	80.0	120.0
	Zinc	0.5286	0.5000	105.7	80.0	120.0

QC LIMITS

CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC #	LOWER	UPPER
CV-	Silver	0.1000	0.0956	95.6	90.0	110.0
	Arsenic	0.4000	0.3953	98.8	90.0	110.0
	Barium	1.0000	1.0032	100.3	90.0	110.0
	Beryllium	0.1000	0.1020	102.0	90.0	110.0
	Cadmium	1.0000	0.9856	98.6	90.0	110.0
	Chromium	1.0000	0.9933	99.3	90.0	110.0
	Copper	1.0000	0.9837	98.4	90.0	110.0
	Nickel	2.0000	2.0000	100.0	90.0	110.0
	Lead	5.0000	4.9708	99.4	90.0	110.0
	Antimony	1.0000	1.0159	101.6	90.0	110.0
	Selenium	0.4000	0.3872	96.8	90.0	110.0
	Thallium	1.0000	0.9945	99.5	90.0	110.0
	Vanadium	0.4000	0.3810	95.3	90.0	110.0
	Zinc	1.0000	0.9957	99.6	90.0	110.0
CV1--2	Silver	0.1000	0.0953	95.3	90.0	110.0

Analysis Batch Number: ICPHR-01/05/99-114 -1

Test Identification : ICPHR-*IRIS QC parameters

Sequence : DATR005

Number of Samples : 13

Batch Data-Date/Time : 01/06/99 / 08:38:23

CCV #	ANALYTE	TRUE VALUE	BATCH READ	QC LIMITS		
				% REC #	LOWER	UPPER
CV1--2	Arsenic	0.4000	0.3964	99.1	90.0	110.0
	Barium	1.0000	1.0055	100.5	90.0	110.0
	Beryllium	0.1000	0.1007	100.7	90.0	110.0
	Cadmium	1.0000	0.9828	98.3	90.0	110.0
	Chromium	1.0000	0.9963	99.6	90.0	110.0
	Copper	1.0000	0.9836	98.4	90.0	110.0
	Nickel	2.0000	1.9892	99.5	90.0	110.0
	Lead	5.0000	4.9936	99.9	90.0	110.0
	Antimony	1.0000	1.0289	102.9	90.0	110.0
	Selenium	0.4000	0.3955	98.9	90.0	110.0
	Thallium	1.0000	0.9961	99.6	90.0	110.0
	Vanadium	0.4000	0.3815	95.4	90.0	110.0
	Zinc	1.0000	0.9939	99.4	90.0	110.0
CV2--3	Silver	0.1000	0.0947	94.7	90.0	110.0
	Arsenic	0.4000	0.3872	96.8	90.0	110.0
	Barium	1.0000	1.0117	101.2	90.0	110.0
	Beryllium	0.1000	0.0983	98.3	90.0	110.0
	Cadmium	1.0000	0.9769	97.7	90.0	110.0
	Chromium	1.0000	0.9938	99.4	90.0	110.0
	Copper	1.0000	0.9651	96.5	90.0	110.0
	Nickel	2.0000	1.9758	98.8	90.0	110.0
	Lead	5.0000	5.0288	100.6	90.0	110.0
	Antimony	1.0000	1.0110	101.1	90.0	110.0
	Selenium	0.4000	0.3783	94.6	90.0	110.0
	Thallium	1.0000	0.9874	98.7	90.0	110.0
	Vanadium	0.4000	0.3785	94.6	90.0	110.0
	Zinc	1.0000	0.9813	98.1	90.0	110.0
CV3--4	Silver	0.1000	0.0957	95.7	90.0	110.0
	Arsenic	0.4000	0.3857	96.4	90.0	110.0
	Barium	1.0000	0.9947	99.5	90.0	110.0
	Beryllium	0.1000	0.0977	97.7	90.0	110.0
	Cadmium	1.0000	0.9479	94.8	90.0	110.0
	Chromium	1.0000	0.9884	98.8	90.0	110.0
	Copper	1.0000	0.9676	96.8	90.0	110.0
	Nickel	2.0000	1.9209	96.0	90.0	110.0
	Lead	5.0000	4.8892	97.8	90.0	110.0
	Antimony	1.0000	1.0001	100.0	90.0	110.0
	Selenium	0.4000	0.3818	95.4	90.0	110.0
	Thallium	1.0000	0.9701	97.0	90.0	110.0
	Vanadium	0.4000	0.3787	94.7	90.0	110.0
	Zinc	1.0000	0.9627	96.3	90.0	110.0
CV4--5	Silver	0.1000	0.0949	94.9	90.0	110.0
	Arsenic	0.4000	0.3869	96.7	90.0	110.0
	Barium	1.0000	0.9979	99.8	90.0	110.0
	Beryllium	0.1000	0.0984	98.4	90.0	110.0
	Cadmium	1.0000	0.9582	95.8	90.0	110.0
	Chromium	1.0000	0.9872	98.7	90.0	110.0
	Copper	1.0000	0.9734	97.3	90.0	110.0
	Nickel	2.0000	1.9478	97.4	90.0	110.0

Analysis Batch Number: ICPHR-01/05/99-114 -1

Test Identification : ICPHR-*IRIS QC parameters

Sequence : DATR005

Number of Samples : 13

Batch Data-Date/Time : 01/06/99 / 08:38:23

QC LIMITS

CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC #	LOWER	UPPER
CV4--5	Lead	5.0000	4.8865	97.7	90.0	110.0
	Antimony	1.0000	0.9989	99.9	90.0	110.0
	Selenium	0.4000	0.3778	94.5	90.0	110.0
	Thallium	1.0000	0.9801	98.0	90.0	110.0
	Vanadium	0.4000	0.3780	94.5	90.0	110.0
	Zinc	1.0000	0.9674	96.7	90.0	110.0

CB#	ANALYTE	CONC FOUND #	CONC LIMIT
CB-	Silver	0.0004	0.0050
	Arsenic	ND	0.0150
	Barium	0.0002	0.0030
	Beryllium	ND	0.0002
	Cadmium	0.0000	0.0020
	Chromium	0.0002	0.0100
	Copper	ND	0.0100
	Nickel	ND	0.0100
	Lead	0.0006	0.0200
	Antimony	ND	0.0200
	Selenium	0.0018	0.0300
	Thallium	ND	0.0200
	Vanadium	ND	0.0030
	Zinc	ND	0.0300
CCB1-	Silver	0.0002	0.0050
	Arsenic	ND	0.0150
	Barium	0.0002	0.0030
	Beryllium	ND	0.0002
	Cadmium	ND	0.0020
	Chromium	0.0004	0.0100
	Copper	ND	0.0100
	Nickel	ND	0.0100
	Lead	ND	0.0200
	Antimony	0.0043	0.0200
	Selenium	ND	0.0300
	Thallium	ND	0.0200
	Vanadium	0.0004	0.0030
	Zinc	ND	0.0300
CCB2-	Silver	ND	0.0050
	Arsenic	ND	0.0150
	Barium	0.0005	0.0030
	Beryllium	ND	0.0002
	Cadmium	ND	0.0020
	Chromium	0.0002	0.0100
	Copper	0.0003	0.0100
	Nickel	0.0002	0.0100
	Lead	0.0017	0.0200
	Antimony	ND	0.0200
	Selenium	ND	0.0300
	Thallium	0.0046	0.0200
	Vanadium	0.0005	0.0030

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting02/16/99
15:11:34
Group: 25403

Analysis Batch Number: ICPHR-01/05/99-114 -1

Test Identification : ICPHR-*IRIS QC parameters

Sequence : DATR005

Number of Samples : 13

Batch Data-Date/Time : 01/06/99 / 08:38:23

CCB#	ANALYTE	CONC FOUND #	CONC LIMIT
CCB2-	Zinc	ND	0.0300
CB3-	Silver	0.0002	0.0050
	Arsenic	ND	0.0150
	Barium	0.0002	0.0030
	Beryllium	ND	0.0002
	Cadmium	0.0002	0.0020
	Chromium	0.0007	0.0100
	Copper	ND	0.0100
	Nickel	ND	0.0100
	Lead	0.0013	0.0200
	Antimony	0.0017	0.0200
	Selenium	ND	0.0300
	Thallium	0.0054	0.0200
	Vanadium	ND	0.0030
	Zinc	0.0002	0.0300
CB4-	Silver	0.0004	0.0050
	Arsenic	0.0015	0.0150
	Barium	0.0001	0.0030
	Beryllium	ND	0.0002
	Cadmium	0.0001	0.0020
	Chromium	0.0004	0.0100
	Copper	0.0003	0.0100
	Nickel	0.0009	0.0100
	Lead	0.0049	0.0200
	Antimony	0.0083	0.0200
	Selenium	ND	0.0300
	Thallium	0.0100	0.0200
	Vanadium	ND	0.0030
	Zinc	ND	0.0300

----- Result Footnotes -----

(2k) - Sample concentration >4X spk added. Serial dilution was recovered within 10% limits.

(11) - The duplicate results cannot be evaluated because both results are <MDL.

(5a) - Duplicates not evaluated: Results are <10x detection limit

Groups & Samples

25389-91677	25398-91689	25398-91690	25398-91691	25401-91695	25401-91696	25401-91697	25403-91700
25403-91701	25403-91702	25403-91703	25403-91704	25403-91705	25403-91706	25403-91707	

CHAIN-OF-CUSTODY RECORD

On Site Technologies, LTD.

612 E. Murray Drive
Farmington, NM 87401
(505) 325-2432

Subcontractor:

Mountain States Analytical, Inc.
1645 West 2200 South

TEL: (800) 973-6724
FAX: (801) 972-6278

Salt Lake City, UT 84119

Acct #:

30-Dec-98

Sample ID	Matrix	Collection Date	Bottle Type	Requested Tests		
				E218.2	E239.2	SW8310
9812056-01C	Aqueous	12/29/98 5:30:00 PM	1LAMGU			1
9812056-01D	Aqueous	12/29/98 5:30:00 PM	500HDPEHNO3	1	1	
9812056-01E	Aqueous	12/29/98 5:30:00 PM	250HDPE		2	
9812056-02C	Aqueous	12/29/98 2:45:00 PM	1LAMGU			1
9812056-02D	Aqueous	12/29/98 2:45:00 PM	500HDPEHNO3	1	1	
9812056-02E	Aqueous	12/29/98 2:45:00 PM	250HDPE		2	
9812056-03C	Aqueous	12/29/98 2:00:00 PM	1LAMGU			1
9812056-03D	Aqueous	12/29/98 2:00:00 PM	500HDPEHNO3	1	1	
9812056-03E	Aqueous	12/29/98 2:00:00 PM	250HDPE		2	
9812056-04C	Aqueous	12/29/98 12:20:00 PM	1LAMGU			1
9812056-04D	Aqueous	12/29/98 12:20:00 PM	500HDPEHNO3	1	1	
9812056-04E	Aqueous	12/29/98 12:20:00 PM	250HDPE		2	
9812056-05C	Aqueous	12/29/98 4:45:00 PM	1LAMGU			1
9812056-05D	Aqueous	12/29/98 4:45:00 PM	500HDPEHNO3	1	1	
9812056-05E	Aqueous	12/29/98 4:45:00 PM	250HDPE		2	
9812056-06C	Aqueous	12/29/98 11:25:00 AM	1LAMGU			1
9812056-06D	Aqueous	12/29/98 11:25:00 AM	500HDPEHNO3	1	1	
9812056-06E	Aqueous	12/29/98 11:25:00 AM	250HDPE		2	

Comments: Please analyze the submitted samples for the following: (C) PAH (D) Total Chromium and Lead (E) Dissolved Fluoride and Bromide.

Relinquished by: Heidi Rens	Date/Time: 12/30/98 1000
Relinquished by: [Signature]	Date/Time: 12/31/98/1200

On Site Technologies, LTD.

612 E. Murray Drive
Farmington, NM 87401
(505) 325-2432

CHAIN-OF-CUSTODY RECORD

Page 2 of 2

Subcontractor:

Mountain States Analytical, Inc.
1645 West 2200 South

TEL: (800) 973-6724
FAX: (801) 972-6278

Salt Lake City, UT 84119

Acct #:

30-Dec-98

Sample ID	Matrix	Collection Date	Bottle Type	E218.2	E239.2	E300	Requested Tests	
							SW8310	
9812056-07C	Aqueous	12/29/98 6:35:00 PM	1LAMGU	1	1		1	
9812056-07D	Aqueous	12/29/98 6:35:00 PM	500HDPEHNO3					
9812056-07E	Aqueous	12/29/98 6:35:00 PM	250HDPE			2		
9812056-08C	Aqueous	12/29/98 6:05:00 PM	1LAMGU				1	
9812056-08D	Aqueous	12/29/98 6:05:00 PM	500HDPEHNO3	1	1			
9812056-08E	Aqueous	12/29/98 6:05:00 PM	250HDPE			2		

Comments:

Please analyze the submitted samples for the following: (C) PAH (D) Total Chromium and Lead (E) Dissolved Fluoride and Bromide.

Relinquished by: Heidi Rees

Relinquished by:

Date/Time

12/30/98 1:00

Received by:

Patricia A. Henderson

Date/Time

12/31/98

Received by:

@JDO

CHAIN OF CUSTODY RECORD

TECHNOLOGIES, LTD.
657 W. Maple • P. O. Box 2606 • Farmington NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

Purchase Order No.: B98-651

SEND
INVOICE
TO

Name Sande

Company

City, State, Zip

Sampling Location: Thriftway Refinery

00-510111

626 Re 93-0
Bloomfield, NM 87401

Ken Sinks

10

3. CAMBII E IDENTIFICAZIONE

MW-5

0-211

6-24

mw-10

mw-11

44-13

10

mw-13

mw-18

67-44

Trail Risk

12/18/11 12:11

[illegible]

AD) KEN SINKS REQUESTED ON 2/10/99 THAT THE METALS Hg, As, Se, Ag, Ba, Cd, Be

IF (204) A VOLT = NOTEN W/LED DIE TO 400, 01/16 TIME DEATHKALTS

5

Relinquished by:

Relinquished by:

Relinquished by:

Abstract of Claims

Method of Study

Authorized by:

Client Signature Must Accompany Request

Distribution: White – On Site Yellow – LAB Pink – Sampler Goldenrod – Client

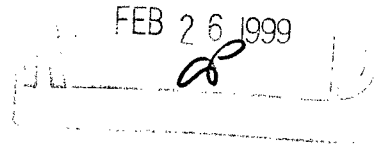
OFF: (505) 325-5667



LAB: (505) 325-1556

February 23, 1999

Terry Griffin
BioTech Remediation, Inc.
710 E. 20th, Suite 400
Farmington, NM 87401
TEL: (505) 327-4965
FAX (505) 564-3604



RE: Thriftway Refinery

Order No.: 9902069

Dear Terry Griffin,

On Site Technologies, LTD. received 3 samples on 2/16/99 for the analyses presented in the following report.

The Samples were analyzed for the following tests:
BTEX (SW8021B)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

A handwritten signature in dark ink, appearing to be "David Cox".

David Cox

OFF: (505) 325-5667



LAB: (505) 325-1556

On Site Technologies, LTD.

Date: 23-Feb-99

CLIENT: BioTech Remediation, Inc.

Project: Thriftway Refinery

Lab Order: 9902069

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 23-Feb-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery - Air Stripper
Work Order:	9902069	Client Sample ID:	Stripper Influent
Lab ID:	9902069-01A	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	2/16/99 8:50:00 AM
		COC Record:	5743

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B				Analyst: HR
Methyl tert-Butyl Ether	40	5		µg/L	5	2/18/99
Benzene	120	2.5		µg/L	5	2/18/99
Toluene	270	2.5		µg/L	5	2/18/99
Ethylbenzene	230	2.5		µg/L	5	2/18/99
m,p-Xylene	800	5		µg/L	5	2/18/99
o-Xylene	200	2.5		µg/L	5	2/18/99

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 23-Feb-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery - Air Stripper
Work Order:	9902069	Client Sample ID:	Stripper Effluent
Lab ID:	9902069-02A	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	2/16/99 9:00:00 AM
		COC Record:	5743

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B		Analyst: HR		
Methyl tert-Butyl Ether	4.8	1		µg/L	1	2/17/99
Benzene	1	0.5		µg/L	1	2/17/99
Toluene	2.6	0.5		µg/L	1	2/17/99
Ethylbenzene	2.3	0.5		µg/L	1	2/17/99
m,p-Xylene	7.9	1		µg/L	1	2/17/99
o-Xylene	3	0.5		µg/L	1	2/17/99

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted recovery limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 23-Feb-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery - Air Stripper
Work Order:	9902069	Client Sample ID:	Travel Blank
Lab ID:	9902069-03A	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	2/16/99 8:30:00 AM
		COC Record:	5743

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B		Analyst: HR		
Methyl tert-Butyl Ether	ND	1		µg/L	1	2/18/99
Benzene	0.6	0.5		µg/L	1	2/18/99
Toluene	2.2	0.5		µg/L	1	2/18/99
Ethylbenzene	0.8	0.5		µg/L	1	2/18/99
m,p-Xylene	3.6	1		µg/L	1	2/18/99
o-Xylene	ND	0.5		µg/L	1	2/18/99

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted recovery limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

On Site Technologies, LTD.

Date: 23-Feb-99

CLIENT: BioTech Remediation, Inc.

Work Order: 9902069

Project: Thriftway Refinery

QC SUMMARY REPORT

Method Blank

Sample ID: MB1	Batch ID: GC-1_990217	Test Code: SW8021B	Units: µg/L	Analysis Date 2/17/99	Prep Date:
Client ID:	9902069	Run ID: GC-1_990217A		SeqNo: 11133	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	.0423	0.5			J
Ethylbenzene	ND	0.5			
m,p-Xylene	ND	1			
Methyl tert-Butyl Ether	ND	1			
o-Xylene	.0269	0.5			J
Toluene	.1228	0.5			J

Sample ID: MB1	Batch ID: GC-1_990218	Test Code: SW8021B	Units: µg/L	Analysis Date 2/18/99	Prep Date:
Client ID:	9902069	Run ID: GC-1_990218A		SeqNo: 11171	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	.0429	0.5			J
Ethylbenzene	ND	0.5			
m,p-Xylene	ND	1			
Methyl tert-Butyl Ether	ND	1			
o-Xylene	ND	0.5			J
Toluene	.098	0.5			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

CLIENT: BioTech Remediation, Inc.
Work Order: 9902069
Project: Thriftway Refinery

Date: 23-Feb-99

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9902063-02AMS		Batch ID: GC-1_990217		Test Code: SW8021B		Units: µg/L		Analysis Date 2/17/99		Prep Date:	
Client ID: 9902069		Run ID: GC-1_990217A		SeqNo: 11134							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	621.5	2.5	200	432.8	94.3%	73	115				
Ethylbenzene	202.6	2.5	200	0.762	100.9%	74	117				
m,p-Xylene	388.5	5	400	1.306	96.8%	76	112				
Methyl tert-Butyl Ether	205	5	200	0	102.5%	62	122				
o-Xylene	202.5	2.5	200	0.9555	100.8%	83	112				
Toluene	200.7	2.5	200	0.763	100.0%	71	120				

Sample ID: 9902063-02AMSD		Batch ID: GC-1_990217		Test Code: SW8021B		Units: µg/L		Analysis Date 2/17/99		Prep Date:	
Client ID: 9902069		Run ID: GC-1_990217A		SeqNo: 11135							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	631.3	2.5	200	432.8	99.2%	73	115	621.5	1.6%	8	
Ethylbenzene	205.6	2.5	200	0.762	102.4%	74	117	202.6	1.5%	9	
m,p-Xylene	393.8	5	400	1.306	98.1%	76	112	388.5	1.4%	9	
Methyl tert-Butyl Ether	203.6	5	200	0	101.8%	62	122	205	0.7%	7	
o-Xylene	205.2	2.5	200	0.9555	102.1%	83	112	202.5	1.3%	9	
Toluene	203.8	2.5	200	0.763	101.5%	71	120	200.7	1.5%	9	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.

Work Order: 9902069

Project: Thriftway Refinery

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9902063-07AMS	Batch ID: GC-1_990218	Test Code: SW8021B	Units: µg/L	Analysis Date 2/18/99	Prep Date:
Client ID: 9902069	Run ID: GC-1_990218A	PQL	SPK value	SeqNo: 11172	
Analyte	Result	PQL	SPK Ref Val	LowLimit	HighLimit
Benzene	429.3	2.5	233.1	73	115
Ethylbenzene	220.2	2.5	18.37	74	117
m,p-Xylene	526.1	5	139.4	76	112
Methyl tert-Butyl Ether	221.2	5	6.191	62	122
o-Xylene	237.9	2.5	37.77	83	112
Toluene	339.8	2.5	136.8	71	120

Sample ID: 9902063-07AMSD	Batch ID: GC-1_990218	Test Code: SW8021B	Units: µg/L	Analysis Date 2/18/99	Prep Date:
Client ID: 9902069	Run ID: GC-1_990218A	PQL	SPK value	SeqNo: 11173	
Analyte	Result	PQL	SPK Ref Val	LowLimit	HighLimit
Benzene	430.8	2.5	233.1	73	115
Ethylbenzene	220.9	2.5	18.37	74	117
m,p-Xylene	528	5	139.4	76	112
Methyl tert-Butyl Ether	213.3	5	6.191	62	122
o-Xylene	238	2.5	37.77	83	112
Toluene	341.3	2.5	136.8	71	120

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 23-Feb-99

CLIENT: BioTech Remediation, Inc.

Work Order: 9902069

Project: Thriftway Refinery

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS WATER	Batch ID: GC-1_990217	Test Code: SW8021B	Units: µg/L	Analysis Date 2/17/99	Prep Date:
Client ID: 9902069	Run ID: GC-1_990217A	PQL	SPK value	SeqNo: 11132	
Analyte	Result	QQL	SPK Ref Val	LowLimit	HighLimit
Benzene	39.99	0.5	0.0423	84	110
Ethylbenzene	40.12	0.5	0	86	113
m,p-Xylene	77.23	1	0	81	114
Methyl tert-Butyl Ether	41.32	1	0	69	129
o-Xylene	39.98	0.5	0.0269	86	112
Toluene	39.75	0.5	0.1228	85	111

Sample ID: LCS WATER	Batch ID: GC-1_990218	Test Code: SW8021B	Units: µg/L	Analysis Date 2/18/99	Prep Date:
Client ID: 9902069	Run ID: GC-1_990218A	PQL	SPK value	SeqNo: 11170	
Analyte	Result	QQL	SPK Ref Val	LowLimit	HighLimit
Benzene	40.38	0.5	0.0429	84	110
Ethylbenzene	40.75	0.5	0	86	113
m,p-Xylene	78.46	1	0	81	114
Methyl tert-Butyl Ether	41.06	1	0	69	129
o-Xylene	40.64	0.5	0	86	112
Toluene	40.35	0.5	0.098	85	111

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 23-Feb-99

CLIENT: BioTech Remediation, Inc.

Work Order: 9902069

Project: Thriftway Refinery

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 QC0606/07		Batch ID: GC-1_990217		Test Code: SW8021B		Units: µg/L		Analysis Date 2/17/99		Prep Date:	
Client ID: 9902069		Run ID: GC-1_990217A		PQL		SPK value		SPK Ref Val		%REC	
Analyte		Result		QOL		SPK value		SPK Ref Val		%REC	
Benzene		21.27		0.5		20		0		106.3%	
Ethylbenzene		21.16		0.5		20		0		105.8%	
m,p-Xylene		40.62		1		40		0		101.5%	
Methyl tert-Butyl Ether		21.15		1		20		0		105.8%	
o-Xylene		21.08		0.5		20		0		105.4%	
Toluene		21.04		0.5		20		0		105.2%	
1,4-Difluorobenzene		93.24		0		100		0		93.2%	
4-Bromochlorobenzene		97.55		0		100		0		97.6%	
Fluorobenzene		94.06		0		100		0		94.1%	

Sample ID: CCV2 QC0606/07		Batch ID: GC-1_990217		Test Code: SW8021B		Units: µg/L		Analysis Date 2/17/99		Prep Date:													
Client ID: 9902069		Run ID: GC-1_990217A		PQL		SPK value		SPK Ref Val		%REC		LowLimit		HighLimit		RPD Ref Val		%RPD		RPDLimit		Qual	
Analyte		Result																					
Benzene		21.68		0.5		20		0		108.4%		85		115									
Ethylbenzene		21.52		0.5		20		0		107.6%		85		115									
m,p-Xylene		41.22		1		40		0		103.1%		85		115									
Methyl tert-Butyl Ether		20.81		1		20		0		104.1%		85		115									
o-Xylene		21.42		0.5		20		0		107.1%		85		115									
Toluene		21.42		0.5		20		0		107.1%		85		115									
1,4-Difluorobenzene		94.01		0		100		0		94.0%		84		100									
4-Bromochlorobenzene		96.02		0		100		0		96.0%		87		105									
Fluorobenzene		94.09		0		100		0		94.1%		87		99									

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.

Work Order: 9902069

Project: Thriftway Refinery

QC SUMMARY REPORT
Continuing Calibration Verification Standard

Sample ID: CCV3 QC0606/07	Batch ID: GC-1_990217	Test Code: SW8021B	Units: µg/L	Analysis Date 2/17/99	Prep Date:
Client ID: 9902069	Run ID: GC-1_990217A	PQL	SPK value	SeqNo: 11131	
Analyte	Result		SPK Ref Val	LowLimit	HighLimit
Benzene	40.77	0.5	40	85	115
Ethylbenzene	40.64	0.5	40	85	115
m,p-Xylene	77.98	1	80	85	115
Methyl tert-Butyl Ether	40.07	1	40	85	115
o-Xylene	40.58	0.5	40	85	115
Toluene	40.48	0.5	40	85	115
1,4-Difluorobenzene	93.25	0	100	84	100
4-Bromochlorobenzene	97.11	0	100	87	105
Fluorobenzene	93.63	0	100	87	99
		%REC		RPD Ref Val	%RPD

Sample ID: CCV1 QC0606/07	Batch ID: GC-1_990218	Test Code: SW8021B	Units: µg/L	Analysis Date 2/18/99	Prep Date:
Client ID: 9902069	Run ID: GC-1_990218A	PQL	SPK value	SeqNo: 11166	
Analyte	Result		SPK Ref Val	LowLimit	HighLimit
Benzene	21.32	0.5	20	85	115
Ethylbenzene	21.16	0.5	20	85	115
m,p-Xylene	40.7	1	40	85	115
Methyl tert-Butyl Ether	20.81	1	20	85	115
o-Xylene	21	0.5	20	85	115
Toluene	20.86	0.5	20	85	115
1,4-Difluorobenzene	93.85	0	100	84	100
4-Bromochlorobenzene	95.98	0	100	87	105
Fluorobenzene	94.72	0	100	87	99
		%REC		RPD Ref Val	%RPD

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.

Work Order: 9902069

Project: Thriftway Refinery

QC SUMMARY REPORT
Continuing Calibration Verification Standard

Sample ID: CCV2 QC0606/07	Batch ID: GC-1_990218	Test Code: SW8021B	Units: µg/L	Analysis Date 2/18/99	Prep Date:
Client ID: 9902069	Run ID: GC-1_990218A	PQL	SPK value	SeqNo: 11167	
Analyte	Result	PQL	SPK value	LowLimit	HighLimit
Benzene	20.92	0.5	20	85	115
Ethylbenzene	20.78	0.5	20	85	115
m,p-Xylene	40.82	1	40	85	115
Methyl tert-Butyl Ether	20.3	1	20	85	115
o-Xylene	20.92	0.5	20	85	115
Toluene	22.96	0.5	20	85	115
1,4-Difluorobenzene	93.25	0	100	84	100
4-Bromochlorobenzene	93.28	0	100	87	105
Fluorobenzene	94.01	0	100	87	99
				%REC	RPD Ref Val
				104.6%	
				103.9%	
				102.0%	
				101.5%	
				104.6%	
				114.8%	
				93.2%	
				93.3%	
				94.0%	

Sample ID: CCV3 QC0606/07	Batch ID: GC-1_990218	Test Code: SW8021B	Units: µg/L	Analysis Date 2/18/99	Prep Date:
Client ID: 9902069	Run ID: GC-1_990218A	PQL	SPK value	SeqNo: 11168	
Analyte	Result	PQL	SPK value	LowLimit	HighLimit
Benzene	40.68	0.5	40	85	115
Ethylbenzene	40.82	0.5	40	85	115
m,p-Xylene	78.56	1	80	85	115
Methyl tert-Butyl Ether	40.85	1	40	85	115
o-Xylene	40.72	0.5	40	85	115
Toluene	41.01	0.5	40	85	115
1,4-Difluorobenzene	93.07	0	100	84	100
4-Bromochlorobenzene	95.76	0	100	87	105
Fluorobenzene	93.92	0	100	87	99
				%REC	RPD Ref Val
				101.7%	
				102.0%	
				98.2%	
				102.1%	
				101.8%	
				102.5%	
				93.1%	
				95.8%	
				93.9%	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.
Work Order: 9902069
Project: Thriftway Refinery

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV4 QC0606/07		Batch ID: GC-1_990218		Test Code: SW8021B		Units: µg/L		Analysis Date 2/18/99		Prep Date:	
Client ID: 9902069		Run ID: GC-1_990218A		PQL		SPK value		SeqNo: 11169			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	40.61	0.5	40	0	101.5%	85	115				
Ethylbenzene	41.01	0.5	40	0	102.5%	85	115				
m,p-Xylene	79.27	1	80	0	99.1%	85	115				
Methyl tert-Butyl Ether	41.06	1	40	0	102.7%	85	115				
o-Xylene	40.89	0.5	40	0	102.2%	85	115				
Toluene	41.02	0.5	40	0	102.6%	85	115				
1,4-Difluorobenzene	93.59	0	100	0	93.6%	84	100				
4-Bromochlorobenzene	96.08	0	100	0	96.1%	87	105				
Fluorobenzene	93.46	0	100	0	93.5%	87	99				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 23-Feb-99

CLIENT: BioTech Remediation, Inc.

Work Order: 9902069

Project: Thriftway Refinery

Test No: SW8021B

QC SUMMARY REPORT SURROGATE RECOVERIES

BTEX

Sample ID	14FBZ	4BCBZ	FLBZ					
9902052-01A	90.6	96.1	91.9					
9902060-04A	92.4	96.1	92.8					
9902060-05A	92.8	97	93					
9902063-02A	92.5	97.2	93.1					
9902063-02AMS	92.2	97.6	92.2					
9902063-02AMSD	92	97.1	92.2					
9902063-03A	93.6	96.9	94					
9902063-04A	94.1	97.4	94.8					
9902063-05A	94.4	96.8	94.9					
9902063-06A	87	89.5	92.3					
9902063-07A	90.4	94.8	91.9					
9902063-07AMS	90.2	94.7	91.2					
9902063-07AMSD	90	94.1	91.1					
9902063-08A	88.1	90.8	93.9					
9902065-01A	87.1	89.4	87.7					
9902065-02A	94.1	97.6	94.7					
9902065-03A	90.8	94.8	90.8					
9902065-04A	90.4	94.6	91.3					
9902067-01A	94.8	97.2	94.6					
9902067-02A	93.7	96.6	93.8					
9902067-03A	95.2	97.5	95.5					
9902067-04A	94.4	97.3	95					
9902069-01A	93.6	94	94.6					
9902069-02A	91.5	93.7	92.1					
9902069-03A	94.4	94.6	95					
9902079-01A	91.7	94.7	92.2					
CCV1 QC0606/07	93.8	96	94.7					

Acronym

14FBZ

4BCBZ

FLBZ

Surrogate

= 1,4-Difluorobenzene

= 4-Bromochlorobenzene

= Fluorobenzene

QC Limits

84-100

87-105

87-99

* Surrogate recovery outside acceptance limits

1

CLIENT: BioTech Remediation, Inc.
Work Order: 9902069
Project: Thriftway Refinery
Test No: SW8021B

QC SUMMARY REPORT SURROGATE RECOVERIES

BTEX

Sample ID	14FBZ	4BCBZ	FLBZ					
CCV2 QC0606/07	93.2	93.3	94					
CCV3 QC0606/07	93.1	95.8	93.9					
CCV4 QC0606/07	93.6	96.1	93.5					
LCS WATER	93.7	96.1	93.4					
MB1	95	95.1	95.2					

Acronym	Surrogate	QC Limits
14FBZ	= 1,4-Difluorobenzene	84-100
4BCBZ	= 4-Bromochlorobenzene	87-105
FLBZ	= Fluorobenzene	87-99

* Surrogate recovery outside acceptance limits

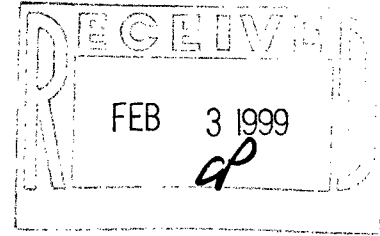
OFF: (505) 325-5667



LAB: (505) 325-1556

January 29, 1999

Terry Griffin
BioTech Remediation, Inc.
710 E. 20th, Suite 400
Farmington, NM 87401
TEL: (505) 327-4965
FAX (505) 564-3604



RE: Thriftway Refinery

Order No.: 9812060

Dear Terry Griffin,

On Site Technologies, LTD. received 6 samples on 12/31/98 for the analyses presented in the following report.

The Samples were analyzed for the following tests:

- Alkalinity, Total (M2320 B)
- Bromide (E300)
- BTEX (SW8021B)
- Calcium, Dissolved (E215.1)
- Chloride (E325.3)
- Chromium, Total (SW6010A)
- Conductivity (E120.1)
- Fluoride (E300)
- Lead, Total (SW6010A)
- Magnesium, Dissolved (E242.1)
- pH (E150.1)
- Polynuclear Aromatic Hydrocarbons (SW8270A)
- Potassium, Dissolved (E258.1)
- Sodium, Dissolved (E273.1)
- Sulfate (M4500-SO4 D)
- Total Dissolved Solids (E160.1)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

A handwritten signature in black ink, appearing to be "J. [unclear]".

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

On Site Technologies, LTD.

Date: 29-Jan-99

CLIENT: BioTech Remediation, Inc.

Project: Thriftway Refinery

Lab Order: 9812060

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition. Methods for Chemical Analysis of Water and Wastes EPA-600/4-79-020, March 1983.

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812060	Client Sample ID:	MW-1
Lab ID:	9812060-01A	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/30/98 12:30:00 PM
		COC Record:	5648

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B				Analyst: HR
Methyl tert-Butyl Ether	120	0.5		µg/L	1	12/31/98
Benzene	120	0.5		µg/L	1	12/31/98
Toluene	1.4	0.5		µg/L	1	12/31/98
Ethylbenzene	7.5	0.5		µg/L	1	12/31/98
m,p-Xylene	21	1		µg/L	1	12/31/98
o-Xylene	4	0.5		µg/L	1	12/31/98

Qualifiers:

PQL - Practical Quantitation Limit

S - Spike Recovery outside accepted recovery limits

ND - Not Detected at Practical Quantitation Limit

R - RPD outside accepted recovery limits

J - Analyte detected below Practical Quantitation Limit

E - Value above quantitation range

B - Analyte detected in the associated Method Blank

Surr: - Surrogate

1 of 1

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT**Date:** 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812060	Client Sample ID:	MW-1
Lab ID:	9812060-01B	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/30/98 12:30:00 PM
		COC Record:	5648

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
CALCIUM, DISSOLVED	E215.1					Analyst: HR
Calcium	370	50		mg/L	100	1/7/99
POTASSIUM, DISSOLVED	E258.1					Analyst: HR
Potassium	5.6	1.2		mg/L	5	1/7/99
MAGNESIUM, DISSOLVED	E242.1					Analyst: HR
Magnesium	52	5		mg/L	20	1/8/99
SODIUM, DISSOLVED	E273.1					Analyst: HR
Sodium	640	50		mg/L	200	1/7/99
ALKALINITY, TOTAL	M2320 B					Analyst: HR
Alkalinity, Bicarbonate (As CaCO ₃)	290	5		mg/L CaCO ₃	1	1/4/99
Alkalinity, Carbonate (As CaCO ₃)	ND	5		mg/L CaCO ₃	1	1/4/99
Alkalinity, Total (As CaCO ₃)	290	5		mg/L CaCO ₃	1	1/4/99
CHLORIDE	E325.3					Analyst: HR
Chloride	39	10		mg/L	1	1/6/99
CONDUCTIVITY	E120.1					Analyst: HR
Specific Conductance	4000	2		uS/cm	1	1/4/99
PH	E150.1					Analyst: HR
pH	7.04	2		pH units	1	1/4/99
SULFATE	M4500-SO4 D					Analyst: HR
Sulfate	2400	5		mg/L	1	1/5/99
TOTAL DISSOLVED SOLIDS	E160.1					Analyst: HR
Total Dissolved Solids (Residue, Filterable)	3800	40		mg/L	1	1/5/99

Qualifiers:

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate

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P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812060	Client Sample ID:	MW-6
Lab ID:	9812060-02A	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/30/98 11:20:00 AM
		COC Record:	5648

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B				Analyst: HR
Methyl tert-Butyl Ether	2.8	0.5		µg/L	1	12/31/98
Benzene	ND	0.5		µg/L	1	12/31/98
Toluene	ND	0.5		µg/L	1	12/31/98
Ethylbenzene	ND	0.5		µg/L	1	12/31/98
m,p-Xylene	ND	1		µg/L	1	12/31/98
o-Xylene	ND	0.5		µg/L	1	12/31/98

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted recovery limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812060	Client Sample ID:	MW-6
Lab ID:	9812060-02B	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/30/98 11:20:00 AM
		COC Record:	5648

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
CALCIUM, DISSOLVED	E215.1					Analyst: HR
Calcium	88	50		mg/L	20	1/7/99
POTASSIUM, DISSOLVED	E258.1					Analyst: HR
Potassium	8.4	1.2		mg/L	5	1/7/99
MAGNESIUM, DISSOLVED	E242.1					Analyst: HR
Magnesium	27	5		mg/L	20	1/8/99
SODIUM, DISSOLVED	E273.1					Analyst: HR
Sodium	740	50		mg/L	200	1/7/99
ALKALINITY, TOTAL	M2320 B					Analyst: HR
Alkalinity, Bicarbonate (As CaCO ₃)	760	5		mg/L CaCO ₃	1	1/4/99
Alkalinity, Carbonate (As CaCO ₃)	ND	5		mg/L CaCO ₃	1	1/4/99
Alkalinity, Total (As CaCO ₃)	760	5		mg/L CaCO ₃	1	1/4/99
CHLORIDE	E325.3					Analyst: HR
Chloride	94	10		mg/L	1	1/5/99
CONDUCTIVITY	E120.1					Analyst: HR
Specific Conductance	3200	2		uS/cm	1	1/4/99
PH	E150.1					Analyst: HR
pH	7.60	2		pH units	1	1/4/99
SULFATE	M4500-SO4 D					Analyst: HR
Sulfate	1000	5		mg/L	1	1/5/99
TOTAL DISSOLVED SOLIDS	E160.1					Analyst: HR
Total Dissolved Solids (Residue, Filterable)	2800	40		mg/L	1	1/5/99

Qualifiers:

PQL - Practical Quantitation Limit

S - Spike Recovery outside accepted recovery limits

ND - Not Detected at Practical Quantitation Limit

R - RPD outside accepted recovery limits

J - Analyte detected below Practical Quantitation Limit

E - Value above quantitation range

B - Analyte detected in the associated Method Blank

Surr: - Surrogate

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812060	Client Sample ID:	Travel Blank
Lab ID:	9812060-03A	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/30/98 10:00:00 AM
		COC Record:	5648

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B		Analyst: HR		
Methyl tert-Butyl Ether	ND	0.5		µg/L	1	12/31/98
Benzene	ND	0.5		µg/L	1	12/31/98
Toluene	ND	0.5		µg/L	1	12/31/98
Ethylbenzene	ND	0.5		µg/L	1	12/31/98
m,p-Xylene	ND	1		µg/L	1	12/31/98
o-Xylene	ND	0.5		µg/L	1	12/31/98

Qualifiers:

PQL - Practical Quantitation Limit

S - Spike Recovery outside accepted recovery limits

ND - Not Detected at Practical Quantitation Limit

R - RPD outside accepted recovery limits

J - Analyte detected below Practical Quantitation Limit

E - Value above quantitation range

B - Analyte detected in the associated Method Blank

Surr: - Surrogate

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P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812060	Client Sample ID:	Field Blank
Lab ID:	9812060-04A	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/30/98 4:30:00 PM
		COC Record:	5648

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B				Analyst: HR
Methyl tert-Butyl Ether	ND	0.5		µg/L	1	12/31/98
Benzene	ND	0.5		µg/L	1	12/31/98
Toluene	ND	0.5		µg/L	1	12/31/98
Ethylbenzene	ND	0.5		µg/L	1	12/31/98
m,p-Xylene	ND	1		µg/L	1	12/31/98
o-Xylene	ND	0.5		µg/L	1	12/31/98

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812060	Client Sample ID:	MW-16
Lab ID:	9812060-05A	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/30/98 5:15:00 PM
		COC Record:	5648

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B		Analyst: DC		
Methyl tert-Butyl Ether	ND	0.5		µg/L	1	1/4/99
Benzene	ND	0.5		µg/L	1	1/4/99
Toluene	ND	0.5		µg/L	1	1/4/99
Ethylbenzene	ND	0.5		µg/L	1	1/4/99
m,p-Xylene	ND	1		µg/L	1	1/4/99
o-Xylene	ND	0.5		µg/L	1	1/4/99

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted recovery limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812060	Client Sample ID:	MW-16 Dup
Lab ID:	9812060-06A	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/30/98 5:15:00 PM
		COC Record:	5648

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B				Analyst: DC
Methyl tert-Butyl Ether	ND	0.5		µg/L	1	1/4/99
Benzene	ND	0.5		µg/L	1	1/4/99
Toluene	ND	0.5		µg/L	1	1/4/99
Ethylbenzene	ND	0.5		µg/L	1	1/4/99
m,p-Xylene	ND	1		µg/L	1	1/4/99
o-Xylene	ND	0.5		µg/L	1	1/4/99

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted recovery limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

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P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

On Site Technologies, LTD.

CLIENT: BioTech Remediation, Inc.
Work Order: 9812060
Project: Thriftway Refinery

Date: 12-Jan-99

QC SUMMARY REPORT

Method Blank

Sample ID: MBBlank	Batch ID: API H2O_990	Test Code: SW7140	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812060	Run ID:	API H2O_990108A	SeqNo: 9916	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Calcium	ND	0.25			
Sample ID: MBBlank	Batch ID: API H2O_990	Test Code: SW7450	Units: mg/L	Analysis Date 1/8/99	Prep Date:
Client ID:	9812060	Run ID:	API H2O_990108A	SeqNo: 9942	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Magnesium	ND	0.25			
Sample ID: MBBlank	Batch ID: API H2O_990	Test Code: SW7770	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812060	Run ID:	API H2O_990108A	SeqNo: 9962	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sodium	ND	0.25			
Sample ID: MBBlank	Batch ID: API H2O_990	Test Code: SW7610	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812060	Run ID:	API H2O_990108A	SeqNo: 9982	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Potassium	ND	0.25			
Sample ID: MBBlank	Batch ID: API H2O_990	Test Code: M4500-Cl C.	Units: mg/L	Analysis Date 1/5/99	Prep Date:
Client ID:	9812060	Run ID:	API H2O_990108A	SeqNo: 10015	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	ND	10			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.
Work Order: 9812060
Project: Thriftway Refinery

QC SUMMARY REPORT

Method Blank

Sample ID: MBlank	Batch ID: API H2O_990	Test Code: M4500-Cl C.	Units: mg/L	Analysis Date 1/6/99	Prep Date:
Client ID:	9812060	Run ID:	API H2O_990108A	SeqNo: 10037	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	ND	10			

Sample ID: MBlank	Batch ID: API H2O_990	Test Code: M2320 B	Units: mg/L CaCO3	Analysis Date 1/4/99	Prep Date:
Client ID:	9812060	Run ID:	API H2O_990108A	SeqNo: 10066	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Alkalinity, Bicarbonate (As CaCO3)	3	5			J
Alkalinity, Carbonate (As CaCO3)	ND	5			
Alkalinity, Total (As CaCO3)	3	5			J

Sample ID: MBlank	Batch ID: API H2O_990	Test Code: E120.1	Units: uS/cm	Analysis Date 1/4/99	Prep Date:
Client ID:	9812060	Run ID:	API H2O_990108A	SeqNo: 10104	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Specific Conductance	ND	2			

Sample ID: MBlank	Batch ID: API H2O_990	Test Code: M4500-SO4 D	Units: mg/L	Analysis Date 1/4/99	Prep Date:
Client ID:	9812060	Run ID:	API H2O_990108A	SeqNo: 10232	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate	ND	5			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

CLIENT: BioTech Remediation, Inc.
Work Order: 9812060
Project: Thriftway Refinery

Date: 12-Jan-99

QC SUMMARY REPORT

Sample Duplicate

Sample ID: 9812051-02BD	Batch ID: API H2O_990	Test Code: M4500-SO4 D	Units: mg/L	Analysis Date 1/5/99	Prep Date:
Client ID:	9812060	Run ID: API H2O_990108A		SeqNo: 10246	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate	3213	5	0	0	0.0% 0 3159 1.7% 6
Sample ID: 9812056-01BD	Batch ID: API H2O_990	Test Code: M4500-Cl C.	Units: mg/L	Analysis Date 1/5/99	Prep Date:
Client ID:	9812060	Run ID: API H2O_990108A		SeqNo: 10026	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	244	10	0	0	0.0% 0 244 0.0% 7
Sample ID: 9812056-01BD	Batch ID: API H2O_990	Test Code: M2320 B	Units: mg/L CaCO3	Analysis Date 1/4/99	Prep Date:
Client ID:	9812060	Run ID: API H2O_990108A		SeqNo: 10083	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Alkalinity, Bicarbonate (As CaCO3)	758	5	0	0	0.0% 0 754 0.5% 3
Alkalinity, Carbonate (As CaCO3)	ND	5	0	0	0.0% 0 0 0.0% 3
Alkalinity, Total (As CaCO3)	758	5	0	0	0.0% 0 754 0.5% 3
Sample ID: 9812056-06BD	Batch ID: API H2O_990	Test Code: M4500-Cl C.	Units: mg/L	Analysis Date 1/5/99	Prep Date:
Client ID:	9812060	Run ID: API H2O_990108A		SeqNo: 10027	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	138	10	0	0	0.0% 0 138 0.0% 7

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.
Work Order: 9812060
Project: Thriftway Refinery

QC SUMMARY REPORT
Sample Duplicate

Sample ID: 9812060-01BD	Batch ID: API H2O_990	Test Code: M2320 B	Units: mg/L CaCO3	Analysis Date 1/4/99	Prep Date:
Client ID: MW-1	Run ID: 9812060	PQL	SPK value	SeqNo: 10084	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Alkalinity, Bicarbonate (As CaCO3)	284	5	0	0	0.0% 0 0 289 1.7% 3
Alkalinity, Carbonate (As CaCO3)	ND	5	0	0	0.0% 0 0 0 0.0% 3
Alkalinity, Total (As CaCO3)	284	5	0	0	0.0% 0 0 289 1.7% 3

Sample ID: 9812061-02BD	Batch ID: API H2O_990	Test Code: M4500-SO4 D	Units: mg/L	Analysis Date 1/5/99	Prep Date:
Client ID:	Run ID: 9812060	PQL	SPK value	SeqNo: 10247	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate	1607	5	0	0	0.0% 0 0 1608 0.1% 6

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

CLIENT: BioTech Remediation, Inc.
Work Order: 9812060
Project: Thriftway Refinery

Date: 12-Jan-99

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9812051-01BMS		Batch ID: API H2O_990	Test Code: SW7140	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:		9812060	Run ID: API H2O_990108A		SeqNo: 9934	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Calcium	494	50	100	370	124.0%	69 159
Sample ID: 9812056-02BMS		Batch ID: API H2O_990	Test Code: SW7610	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:		9812060	Run ID: API H2O_990108A		SeqNo: 10000	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Potassium	15	1.2	5	7.8	144.0%	67 157
Sample ID: 9812056-03BMS		Batch ID: API H2O_990	Test Code: SW7450	Units: mg/L	Analysis Date 1/8/99	Prep Date:
Client ID:		9812060	Run ID: API H2O_990108A		SeqNo: 9960	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Magnesium	93.2	5	40	50	108.0%	78 126
Sample ID: 9812056-06BMS		Batch ID: API H2O_990	Test Code: SW7770	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:		9812060	Run ID: API H2O_990108A		SeqNo: 9980	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sodium	1272	100	400	840	108.0%	81 135

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

CLIENT: BioTech Remediation, Inc.
Work Order: 9812060
Project: Thriftway Refinery

Date: 12-Jan-99

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS	Batch ID: API H2O_990	Test Code: M2320 B	Units: mg/L CaCO3	Analysis Date 1/4/99	Prep Date:
Client ID:	9812060	Run ID:	API H2O_990108A	SeqNo: 10067	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Alkalinity, Bicarbonate (As CaCO3)	116	5	116	3	97.4% 91 116
Alkalinity, Total (As CaCO3)	116	5	116	3	97.4% 91 116
Sample ID: LCS	Batch ID: API H2O_990	Test Code: E120.1	Units: uS/cm	Analysis Date 1/4/99	Prep Date:
Client ID:	9812060	Run ID:	API H2O_990108A	SeqNo: 10105	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Specific Conductance	1049	2	1040	0	100.9% 97 103
Sample ID: LCS	Batch ID: API H2O_990	Test Code: E120.1	Units: uS/cm	Analysis Date 1/4/99	Prep Date:
Client ID:	9812060	Run ID:	API H2O_990108A	SeqNo: 10121	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Specific Conductance	1058	2	1040	0	101.7% 97 103
Sample ID: LCS	Batch ID: API H2O_990	Test Code: E150.1	Units: pH units	Analysis Date 1/4/99	Prep Date:
Client ID:	9812060	Run ID:	API H2O_990108A	SeqNo: 10160	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
pH	8.895	2	9.07	0	98.1% 98 102
Sample ID: LCS	Batch ID: API H2O_990	Test Code: E150.1	Units: pH units	Analysis Date 1/4/99	Prep Date:
Client ID:	9812060	Run ID:	API H2O_990108A	SeqNo: 10176	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
pH	8.896	2	9.07	0	98.1% 98 102

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.

Work Order: 9812060

Project: Thriftway Refinery

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS	Batch ID: API H2O_990	Test Code: M4500-SO4 D	Units: mg/L	Analysis Date 1/4/99	Prep Date:
Client ID:	9812060	Run ID:	API H2O_990108A	SeqNo: 10233	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate	120	5	122	0	98.4% 83 113
Sample ID: LCS	Batch ID: API H2O_990	Test Code: M4500-SO4 D	Units: mg/L	Analysis Date 1/5/99	Prep Date:
Client ID:	9812060	Run ID:	API H2O_990108A	SeqNo: 10242	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate	124	5	122	0	101.6% 83 113
Sample ID: LCS-CI	Batch ID: API H2O_990	Test Code: M4500-CI C.	Units: mg/L	Analysis Date 1/6/99	Prep Date:
Client ID:	9812060	Run ID:	API H2O_990108A	SeqNo: 10038	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	47	10	50	0	94.0% 88.4 115
Sample ID: LCS-CI 0.141N	Batch ID: API H2O_990	Test Code: M4500-CI C.	Units: mg/L	Analysis Date 1/5/99	Prep Date:
Client ID:	9812060	Run ID:	API H2O_990108A	SeqNo: 10016	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	116.7	10	122	0	95.7% 88.4 115

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

CLIENT: BioTech Remediation, Inc.
Work Order: 9812060
Project: Thriftway Refinery

Date: 12-Jan-99

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV-2 Ca	Batch ID: API H2O_990	Test Code: SW7140	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID: 9812060	Run ID: API H2O_990108A			SeqNo: 9927	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Calcium	1.77	0.25	1.95	0	90.8% 89 107
Sample ID: CCV-2 Mg	Batch ID: API H2O_990	Test Code: SW7450	Units: mg/L	Analysis Date 1/8/99	Prep Date:
Client ID: 9812060	Run ID: API H2O_990108A			SeqNo: 9953	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Magnesium	1.79	0.25	1.71	0	104.7% 96 114
Sample ID: CCV-2 Na	Batch ID: API H2O_990	Test Code: SW7770	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID: 9812060	Run ID: API H2O_990108A			SeqNo: 9973	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sodium	2.75	0.25	2.64	0	104.2% 87 111
Sample ID: CCV1 - Ca	Batch ID: API H2O_990	Test Code: SW7140	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID: 9812060	Run ID: API H2O_990108A			SeqNo: 9917	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Calcium	1.78	0.25	1.95	0	91.3% 89 107
Sample ID: CCV1 - K	Batch ID: API H2O_990	Test Code: SW7610	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID: 9812060	Run ID: API H2O_990108A			SeqNo: 9983	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Potassium	2.65	0.25	2.68	0	98.9% 84 114

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.

Work Order: 9812060

Project: Thriftway Refinery

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 - Mg	Batch ID: API H2O_990	Test Code: SW7450	Units: mg/L	Analysis Date 1/8/99	Prep Date:
Client ID:	9812060	Run ID: API H2O_990108A		SeqNo: 9943	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Magnesium	1.82	0.25	1.71	0	106.4% 96 114

Sample ID: CCV1 - Na	Batch ID: API H2O_990	Test Code: SW7770	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812060	Run ID: API H2O_990108A		SeqNo: 9963	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sodium	2.79	0.25	2.64	0	105.7% 87 111

Sample ID: CCV2-K	Batch ID: API H2O_990	Test Code: SW7610	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812060	Run ID: API H2O_990108A		SeqNo: 9993	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Potassium	2.65	0.25	2.68	0	98.9% 84 114

Sample ID: CCV3-Ca	Batch ID: API H2O_990	Test Code: SW7140	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812060	Run ID: API H2O_990108A		SeqNo: 9935	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Calcium	1.79	0.25	1.95	0	91.8% 89 107

Sample ID: CCV3-K	Batch ID: API H2O_990	Test Code: SW7610	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812060	Run ID: API H2O_990108A		SeqNo: 10001	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Potassium	2.66	0.25	2.68	0	99.3% 84 114

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.
Work Order: 9812060
Project: Thriftway Refinery

QC SUMMARY REPORT
Continuing Calibration Verification Standard

Sample ID: CCV3-Mg	Batch ID: API H2O_990	Test Code: SW7450	Units: mg/L	Analysis Date 1/8/99	Prep Date:
Client ID: 9812060	Run ID: API H2O_990108A	PQL	SPK value	SeqNo: 9961	
Analyte	Result	QOL	SPK Ref Val	LowLimit HighLimit	%RPD RPDLimit Qual
Magnesium	1.83	0.25	1.71	96	114

Sample ID: CCV3-Na	Batch ID: API H2O_990	Test Code: SW7770	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID: 9812060	Run ID: API H2O_990108A	PQL	SPK value	SeqNo: 9981	
Analyte	Result	QOL	SPK Ref Val	LowLimit HighLimit	%RPD RPDLimit Qual
Sodium	2.76	0.25	2.64	87	111

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 29-Jan-99

CLIENT: BioTech Remediation, Inc.

Work Order: 9812060

Project: Thriftway Refinery

QC SUMMARY REPORT

Method Blank

Sample ID: MB1	Batch ID: GC-1_981231	Test Code: SW8021B	Units: µg/L	Analysis Date 12/31/98	Prep Date:						
Client ID:	9812060	Run ID: GC-1_981231A		SeqNo: 9830							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	.0577	0.5									J
Ethylbenzene	ND	0.5									
m,p-Xylene	.1113	1									J
Methyl tert-Butyl Ether	.035	0.5									J
o-Xylene	ND	0.5									
Toluene	.1093	0.5									J

Sample ID: MB1	Batch ID: GC-1_990104	Test Code: SW8021B	Units: µg/L	Analysis Date 1/4/99	Prep Date:						
Client ID:	9812060	Run ID: GC-1_990104A		SeqNo: 9849							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	.037	0.5									J
Ethylbenzene	ND	0.5									
m,p-Xylene	ND	1									
Methyl tert-Butyl Ether	.0537	0.5									J
o-Xylene	ND	0.5									
Toluene	.0536	0.5									J

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 29-Jan-99

CLIENT: BioTech Remediation, Inc.

Work Order: 9812060

Project: Thriftway Refinery

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS WATER	Batch ID: GC-1_981231	Test Code: SW8021B	Units: µg/L	Analysis Date 12/31/98	Prep Date:
Client ID: 9812060	Run ID: GC-1_981231A	PQL	SPK value	SeqNo: 9829	
Analyte	Result	QQL	SPK Ref Val	LowLimit	HighLimit
Benzene	43.2	0.5	0.06	84	110
Ethylbenzene	43.65	0.5	0	86	113
m,p-Xylene	85.15	1	0.1	81	114
Methyl tert-Butyl Ether	42.98	0.5	0.04	69	129
o-Xylene	43.34	0.5	0	86	112
Toluene	43.02	0.5	0.1	85	111
				%REC	%RPD
				107.9%	
				109.1%	
				106.3%	
				107.4%	
				108.4%	
				107.3%	
				RPDLimit	Qual

Sample ID: LCS WATER	Batch ID: GC-1_990104	Test Code: SW8021B	Units: µg/L	Analysis Date 1/4/99	Prep Date:
Client ID: 9812060	Run ID: GC-1_990104A	PQL	SPK value	SeqNo: 9848	
Analyte	Result	QQL	SPK Ref Val	LowLimit	HighLimit
Benzene	41.57	0.5	0.04	84	110
Ethylbenzene	41.84	0.5	0	86	113
m,p-Xylene	81.93	1	0	81	114
Methyl tert-Butyl Ether	40.62	0.5	0.05	69	129
o-Xylene	41.28	0.5	0	86	112
Toluene	41.1	0.5	0.05	85	111
				%REC	%RPD
				103.8%	
				104.6%	
				102.4%	
				101.4%	
				103.2%	
				102.6%	
				RPDLimit	Qual

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

CLIENT: BioTech Remediation, Inc.
Work Order: 9812060
Project: Thriftway Refinery

Date: 29-Jan-99

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9812056-08AMS	Batch ID: GC-1_981231	Test Code: SW8021B	Units: µg/L	Analysis Date 12/31/98	Prep Date:
Client ID: 9812060	Run ID: GC-1_981231A	PQL	SPK value	SeqNo: 9831	
Analyte	Result		SPK Ref Val	LowLimit	HighLimit
Benzene	221.7	2.5	12	73	115
Ethylbenzene	247.1	2.5	39	74	117
m,p-Xylene	430.4	5	21	76	112
Methyl tert-Butyl Ether	237.5	2.5	39	62	122
o-Xylene	207.4	2.5	0.4	83	112
Toluene	209.7	2.5	0.3	71	120
				%REC	%RPD
				104.9%	
				104.0%	
				102.3%	
				99.3%	
				103.5%	
				104.7%	
				RPD Ref Val	RPDLimit
					Qual

Sample ID: 9812056-08AMS	Batch ID: GC-1_981231	Test Code: SW8021B	Units: µg/L	Analysis Date 12/31/98	Prep Date:
Client ID: 9812060	Run ID: GC-1_981231A	PQL	SPK value	SeqNo: 9832	
Analyte	Result		SPK Ref Val	LowLimit	HighLimit
Benzene	215.7	2.5	12	73	115
Ethylbenzene	240.4	2.5	39	74	117
m,p-Xylene	418.7	5	21	76	112
Methyl tert-Butyl Ether	235.2	2.5	39	62	122
o-Xylene	202.6	2.5	0.4	83	112
Toluene	204	2.5	0.3	71	120
				%REC	%RPD
				101.9%	2.7%
				100.7%	2.7%
				99.4%	2.8%
				98.1%	1.0%
				101.1%	2.3%
				101.9%	2.7%
				RPD Ref Val	RPDLimit
					Qual
				221.7	12
				247.1	11
				430.4	10
				237.5	15
				207.4	14
				209.7	14

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.

Work Order: 9812060

Project: Thriftway Refinery

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9812061-01AMS		Batch ID: GC-1_990104		Test Code: SW8021B		Units: µg/L		Analysis Date 1/4/99		Prep Date:	
Client ID:		9812060		Run ID: GC-1_990104A				SeqNo: 9850			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	5279	50	4000	1200	102.0%	73	115				
Ethylbenzene	4892	50	4000	760	103.3%	74	117				
m,p-Xylene	9862	100	8000	1800	100.8%	76	112				
Methyl tert-Butyl Ether	4304	50	4000	440	96.6%	62	122				
o-Xylene	4501	50	4000	450	101.3%	83	112				
Toluene	4932	50	4000	860	101.8%	71	120				

Sample ID: 9812061-01AMSD		Batch ID: GC-1_990104		Test Code: SW8021B		Units: µg/L		Analysis Date 1/4/99		Prep Date:	
Client ID:		9812060		Run ID: GC-1_990104A				SeqNo: 9851			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	5207	50	4000	1200	100.2%	73	115	5279	1.4%	12	
Ethylbenzene	4737	50	4000	760	99.4%	74	117	4892	3.2%	11	
m,p-Xylene	9561	100	8000	1800	97.0%	76	112	9862	3.1%	10	
Methyl tert-Butyl Ether	4353	50	4000	440	97.8%	62	122	4304	1.1%	15	
o-Xylene	4602	50	4000	450	103.8%	83	112	4501	2.2%	14	
Toluene	4872	50	4000	860	100.3%	71	120	4932	1.2%	14	

Qualifiers:

ND - Not Detected at the Reporting Limit

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R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

CLIENT: BioTech Remediation, Inc.
Work Order: 9812060
Project: Thriftway Refinery

Date: 29-Jan-99

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 QC0606/07		Batch ID: GC-1_981231		Test Code: SW8021B		Units: µg/L		Analysis Date 12/31/98		Prep Date:	
Client ID:		9812060		Run ID: GC-1_981231A				SeqNo: 9826			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.74	0.5	20	0	108.7%	85	115				
Ethylbenzene	21.96	0.5	20	0	109.8%	85	115				
m,p-Xylene	41.97	1	40	0	104.9%	85	115				
Methyl tert-Butyl Ether	22.06	0.5	20	0	110.3%	85	115				
o-Xylene	21.64	0.5	20	0	108.2%	85	115				
Toluene	21.61	0.5	20	0	108.1%	85	115				
1,4-Difluorobenzene	96	0	100	0	96.0%	70	130				
4-Bromochlorobenzene	98.18	0	100	0	98.2%	70	130				
Fluorobenzene	93.42	0	100	0	93.4%	70	130				

Sample ID: CCV2 QC0606/07		Batch ID: GC-1_981231		Test Code: SW8021B		Units: µg/L		Analysis Date 12/31/98		Prep Date:	
Client ID:		9812060		Run ID: GC-1_981231A				SeqNo: 9827			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.25	0.5	20	0	106.2%	85	115				
Ethylbenzene	21.15	0.5	20	0	105.8%	85	115				
m,p-Xylene	40.48	1	40	0	101.2%	85	115				
Methyl tert-Butyl Ether	21.66	0.5	20	0	108.3%	85	115				
o-Xylene	20.94	0.5	20	0	104.7%	85	115				
Toluene	20.93	0.5	20	0	104.7%	85	115				
1,4-Difluorobenzene	96.66	0	100	0	96.7%	70	130				
4-Bromochlorobenzene	97.82	0	100	0	97.8%	70	130				
Fluorobenzene	94.35	0	100	0	94.3%	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits
 S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits
 B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.

Work Order: 9812060

Project: Thriftway Refinery

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV3 QC0606/07	Batch ID: GC-1_981231	Test Code: SW8021B	Units: µg/L	Analysis Date 12/31/98		Prep Date:							
Client ID:	9812060	Run ID:	GC-1_981231A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Analyte	Result												
Benzene	42.44	0.5	40	0	106.1%	85	115						
Ethylbenzene	42.63	0.5	40	0	106.6%	85	115						
m,p-Xylene	83.52	1	80	0	104.4%	85	115						
Methyl tert-Butyl Ether	43.92	0.5	40	0	109.8%	85	115						
o-Xylene	42.98	0.5	40	0	107.5%	85	115						
Toluene	42.18	0.5	40	0	105.4%	85	115						
1,4-Difluorobenzene	96.24	0	100	0	96.2%	70	130						
4-Bromochlorobenzene	96.9	0	100	0	96.9%	70	130						
Fluorobenzene	94.25	0	100	0	94.2%	70	130						

Sample ID: CCV1 QC0606/07		Batch ID: GC-1_990104		Test Code: SW8021B		Units: µg/L		Analysis Date 1/4/99		Prep Date:	
Client ID:		9812060		Run ID:		GC-1_990104A		SeqNo: 9844			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.75	0.5	20	0	108.7%	85	115				
Ethylbenzene	21.45	0.5	20	0	107.3%	85	115				
m,p-Xylene	41.26	1	40	0	103.1%	85	115				
Methyl tert-Butyl Ether	21.22	0.5	20	0	106.1%	85	115				
o-Xylene	21.02	0.5	20	0	105.1%	85	115				
Toluene	20.99	0.5	20	0	105.0%	85	115				
1,4-Difluorobenzene	96.38	0	100	0	96.4%	70	130				
4-Bromochlorobenzene	97.36	0	100	0	97.4%	70	130				
Fluorobenzene	95	0	100	0	95.0%	70	130				

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.

Work Order: 9812060

Project: Thriftway Refinery

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV2 QC0606/07	Batch ID: GC-1_990104	Test Code: SW8021B	Units: µg/L	Analysis Date 1/4/99	Prep Date:
Client ID: 9812060	Run ID: GC-1_990104A	PQL	SPK value	SeqNo: 9845	
Analyte	Result	PQL	SPK value	LowLimit	HighLimit
Benzene	21.33	0.5	20	85	115
Ethylbenzene	20.49	0.5	20	85	115
m,p-Xylene	39.28	1	40	85	115
Methyl tert-Butyl Ether	20.62	0.5	20	85	115
o-Xylene	20.2	0.5	20	85	115
Toluene	20.32	0.5	20	85	115
1,4-Difluorobenzene	97.07	0	100	70	130
4-Bromochlorobenzene	97.33	0	100	70	130
Fluorobenzene	95.67	0	100	70	130
				%REC	%RPD
				106.6%	
				102.5%	
				98.2%	
				103.1%	
				101.0%	
				101.6%	
				97.1%	
				97.3%	
				95.7%	

Sample ID: CCV3 QC0606/07	Batch ID: GC-1_990104	Test Code: SW8021B	Units: µg/L	Analysis Date 1/4/99	Prep Date:
Client ID: 9812060	Run ID: GC-1_990104A	PQL	SPK value	SeqNo: 9846	
Analyte	Result	PQL	SPK value	LowLimit	HighLimit
Benzene	21.2	0.5	20	85	115
Ethylbenzene	21.34	0.5	20	85	115
m,p-Xylene	41.1	1	40	85	115
Methyl tert-Butyl Ether	18.04	0.5	20	85	115
o-Xylene	21.05	0.5	20	85	115
Toluene	20.82	0.5	20	85	115
1,4-Difluorobenzene	96.52	0	100	70	130
4-Bromochlorobenzene	97.31	0	100	70	130
Fluorobenzene	94.51	0	100	70	130
				%REC	%RPD
				106.0%	
				106.7%	
				102.8%	
				90.2%	
				105.3%	
				104.1%	
				96.5%	
				97.3%	
				94.5%	

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.

Work Order: 9812060

Project: Thriftway Refinery

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV4 QC0606/07	Batch ID: GC-1_990104	Test Code: SW8021B	Units: µg/L	Analysis Date 1/4/99	Prep Date:
Client ID: 9812060	Run ID: GC-1_990104A	PQL	SPK value	SeqNo: 9847	
Analyte	Result	PQL	SPK value	LowLimit	HighLimit
Benzene	20.69	0.5	20	85	115
Ethylbenzene	20.74	0.5	20	85	115
m,p-Xylene	39.99	1	40	85	115
Methyl tert-Butyl Ether	20.21	0.5	20	85	115
o-Xylene	21.95	0.5	20	85	115
Toluene	20.4	0.5	20	85	115
1,4-Difluorobenzene	96.04	0	100	70	130
4-Bromochlorobenzene	97.98	0	100	70	130
Fluorobenzene	94.43	0	100	70	130
				%REC	
				103.4%	
				103.7%	
				100.0%	
				101.1%	
				109.8%	
				102.0%	
				96.0%	
				98.0%	
				94.4%	
				RPD Ref Val	RPDLimit
					Qual

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 29-Jan-99

CLIENT: BioTech Remediation, Inc.

Work Order: 9812060

Project: Thriftway Refinery

Test No: SW8021B

QC SUMMARY REPORT SURROGATE RECOVERIES

BTEX

Sample ID	14FBZ	4BCBZ	FLBZ				
9812052-01A	90.7	96.2	79.9				
9812052-02A	95.8	98.5	88.4				
9812053-04A	95	96.1	93.5				
9812055-02A	92.2	117	90.9				
9812055-03A	98.6	99.8	94.8				
9812055-04A	96.2	96.7	94.8				
9812056-01A	95.2	98.2	94.4				
9812056-02A	96.7	97.4	94.4				
9812056-03A	96.5	97.3	94.4				
9812056-04A	95.5	97.1	94.3				
9812056-05A	95.8	97.2	94.3				
9812056-06A	96	97.6	94.2				
9812056-07A	96.5	97.6	94				
9812056-08A	95.4	95.4	94.5				
9812056-08AMS	94.6	96.8	93.4				
9812056-08AMSD	94.5	97.7	93.3				
9812056-09A	96.2	97.4	93.9				
9812056-10A	96.3	97.6	93.8				
9812057-01A	93.3	94.7	92.7				
9812060-01A	92.8	96.2	91.4				
9812060-02A	95.9	98.2	94.7				
9812060-03A	96.6	96.9	94				
9812060-04A	96	97.2	94.2				
9812060-05A	96.1	98.2	94.8				
9812060-06A	98	101	96.6				
9812061-01A	102	99.5	98.8				
9812061-01AMS	95.9	97.6	94.7				

Acronym

14FBZ

4BCBZ

FLBZ

Surrogate

= 1,4-Difluorobenzene

= 4-Bromochlorobenzene

= Fluorobenzene

QC Limits

70-130

70-130

70-130

* Surrogate recovery outside acceptance limits

CLIENT: BioTech Remediation, Inc.
Work Order: 9812060
Project: Thriftway Refinery
Test No: SW8021B

QC SUMMARY REPORT SURROGATE RECOVERIES

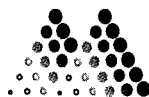
BTEX

Sample ID	14FBZ	4BCBZ	FLBZ					
9812061-01AMSD	97	97.3	96					
9812061-02A	95.1	96	93.8					
9812061-03A	96.3	98	95.4					
9812061-04A	96.7	98.3	94.8					
CCV1 QC0606/07	96.4	97.4	95					
CCV2 QC0606/07	97.1	97.3	95.7					
CCV3 QC0606/07	96.5	97.3	94.5					
CCV4 QC0606/07	96	98	94.4					
LCS WATER	96.2	98.9	94.7					
MB1	96.6	95.6	94.9					

Acronym	Surrogate	QC Limits
14FBZ	= 1,4-Difluorobenzene	70-130
4BCBZ	= 4-Bromochlorobenzene	70-130
FLBZ	= Fluorobenzene	70-130

* Surrogate recovery outside acceptance limits

RECEIVED JAN 25 1999



Mountain States Analytical, Inc.

The Quality Solution

January 20, 1999

Mr. David Cox
On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Reference:

Project: PAH/Cr&Pb/Fl&Br Analysis
Project No.: 9812060
MSAI Group: 25418

Dear Mr. Cox:

Enclosed are the analytical results for your project referenced above. The following samples are included in the report.

9812060-01

9812060-02

All holding times were met for the tests performed on these samples.

Thank you for selecting Mountain States Analytical, Inc. to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

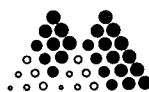
We look forward to working with you on future projects.

With Regards,

Rolf E. Larsen
Project Manager

Corporate Office: 1645 West 2200 South • Salt Lake City, Utah 84119
801-973-0050 • 1-800-973-6724 (MSAI) • FAX 801-972-6278
e-mail: service@msailabs.com





Mountain States Analytical, Inc.

The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: PAH/Cr&Pb/Fl&Br Analysis

Sample ID: 9812060-01
Matrix: Water

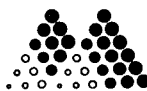
Thriftway Refinery MW-1

MSAI Sample: 91740
MSAI Group: 25418
Date Reported: 01/20/99
Discard Date: 02/19/99
Date Submitted: 01/05/99
Date Sampled: 12/30/98
Collected by:
Purchase Order:
Project No.: 9812060

Test Analysis	Results as Received	Units	Limit of Quantitation
0393G Flame/hrICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w882	mg/l	
13007 Metals by hrICP, 6010A, w/ww Method: SW-846 6010A			
Chromium	ND	mg/l	0.025
Lead	ND	mg/l	0.08
3000 SVOA Extraction, w/ww Method: SW-846 3510B	Complete		
6719 Polycyclic Aro/Hydrocarb, 8270A ww Method: SW-846 8270A			
Acenaphthene	ND	ug/l	10.0
Acenaphthylene	ND	ug/l	10.0
Anthracene	ND	ug/l	10.0
Benz(a)anthracene	ND	ug/l	10.0
Benzo(b)fluoranthene	ND	ug/l	10.0
Benzo(k)fluoranthene	ND	ug/l	10.0
Benzo(ghi)perylene	ND	ug/l	10.0
Benzo(a)pyrene	ND	ug/l	25.0
Chrysene	ND	ug/l	10.0
Dibenz(a,h)anthracene	ND	ug/l	10.0
Fluoranthene	ND	ug/l	10.0
Fluorene	ND	ug/l	10.0
Naphthalene	81.5	ug/l	10.0
Phenanthrene	ND	ug/l	10.0
Pyrene	ND	ug/l	10.0
Indeno(1,2,3-cd)pyrene	ND	ug/l	10.0
2-Methylnaphthalene	40.5	ug/l	10.0

Corporate Office: 1645 West 2200 South • Salt Lake City, Utah 84119
801-973-0050 • 1-800-973-6724 (MSAI) • FAX 801-972-6278
e-mail: service@msailabs.com





Mountain States Analytical, Inc.

The Quality Solution

Page 2

On Site Technologies, Ltd.

MSAI Sample: 91740

MSAI Group: 25418

Sample ID: 9812060-01

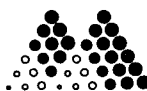
Test	Analysis	Results as Received	Units	Limit of Quantitation
0504	Fluoride, Ion Chromatography Method: EPA 300.0	ND	mg/l	3
0505	Bromide, Ion Chromatography Method: EPA 300.0	ND	mg/l	3

ND - Not detected at the Limit of Quantitation.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

Rolf E. Larsen
Project Manager



Mountain States Analytical, Inc.

The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: PAH/Cr&Pb/Fl&Br Analysis

Sample ID: 9812060-02
Matrix: Water

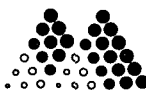
Thriftway Refinery MW-6

MSAI Sample: 91741
MSAI Group: 25418
Date Reported: 01/20/99
Discard Date: 02/19/99
Date Submitted: 01/05/99
Date Sampled: 12/30/98
Collected by:
Purchase Order:
Project No.: 9812060

Test Analysis	Results as Received	Units	Limit of Quantitation
0393G Flame/hrICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w882	mg/l	
13007 Metals by hrICP, 6010A, w/ww Method: SW-846 6010A			
Chromium	ND	mg/l	0.025
Lead	ND	mg/l	0.08
3000 SVOA Extraction, w/ww Method: SW-846 3510B	Complete		
6719 Polycyclic Aro/Hydrocarb, 8270A ww Method: SW-846 8270A			
Acenaphthene	ND	ug/l	10.0
Acenaphthylene	ND	ug/l	10.0
Anthracene	ND	ug/l	10.0
Benz(a)anthracene	ND	ug/l	10.0
Benzo(b)fluoranthene	ND	ug/l	10.0
Benzo(k)fluoranthene	ND	ug/l	10.0
Benzo(ghi)perylene	ND	ug/l	10.0
Benzo(a)pyrene	ND	ug/l	25.0
Chrysene	ND	ug/l	10.0
Dibenz(a,h)anthracene	ND	ug/l	10.0
Fluoranthene	ND	ug/l	10.0
Fluorene	ND	ug/l	10.0
Naphthalene	ND	ug/l	10.0
Phenanthrene	ND	ug/l	10.0
Pyrene	ND	ug/l	10.0
Indeno(1,2,3-cd)pyrene	ND	ug/l	10.0
2-Methylnaphthalene	ND	ug/l	10.0

Corporate Office: 1645 West 2200 South • Salt Lake City, Utah 84119
801-973-0050 • 1-800-973-6724 (MSAI) • FAX 801-972-6278
e-mail: service@msailabs.com





Mountain States Analytical, Inc.

The Quality Solution

Page 2

On Site Technologies, Ltd.

MSAI Sample: 91741

MSAI Group: 25418

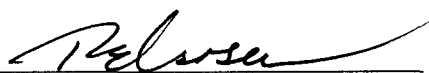
Sample ID: 9812060-02

Test Analysis	Results as Received	Units	Limit of Quantitation
0504 Fluoride, Ion Chromatography Method: EPA 300.0	ND	mg/l	3
0505 Bromide, Ion Chromatography Method: EPA 300.0	3.1	mg/l	3

ND - Not detected at the Limit of Quantitation.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:


Rolf E. Larsen
Project Manager

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK

Lab Name: MOUNTAIN STATES

Contract:

Lab Code: MSAI

Case No.:

SAS No.:

SDG No.: 990112C

Matrix: (soil/water) WATER

Lab Sample ID: 990106WB

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: X5030

Level: (low/med) LOW

Date Received: _____

% Moisture: _____ decanted: (Y/N) _____

Date Extracted:

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 01/12/99

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
---------	----------	--	---

91-20-3-----	Naphthalene	10.0	U
91-57-6-----	2-Methylnaphthalene	10.0	U
208-96-8-----	Acenaphthylene	10.0	U
83-32-9-----	Acenaphthene	10.0	U
86-73-7-----	Fluorene	10.0	U
85-01-8-----	Phenanthrene	10.0	U
120-12-7-----	Anthracene	10.0	U
206-44-0-----	Fluoranthene	10.0	U
129-00-0-----	Pyrene	10.0	U
56-55-3-----	Benz (a) anthracene	10.0	U
218-01-9-----	Chrysene	10.0	U
205-99-2-----	Benzo (b) fluoranthene	10.0	U
207-08-9-----	Benzo (k) fluoranthene	10.0	U
50-32-8-----	Benzo (a) pyrene	10.0	U
193-39-5-----	Indeno (1,2,3-cd) pyrene	10.0	U
53-70-3-----	Dibenz (a,h) anthracene	10.0	U
191-24-2-----	Benzo (ghi) perylene	10.0	U

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: MOUNTAIN STATES

Contract:

Lab Code: MSAI

Case No.:

SAS No.:

SDG No.: 990112C

	EPA SAMPLE NO.	S1 (2FP) #	S2 (PHL) #	S3 (NBZ) #	S4 (FBP) #	S5 (TBP) #	S6 (TPH) #	S7 #	S8 #	TOT OUT
01	SBLK	35	25	55	44	48	50			0
02	LCS	43	31	67	59	55	56			0
03	4056	4	38	65	56	48	45			0
04	4057	44	37	60	54	52	51			0
05	4057MS	34	26	65	58	53	58			0
06	4057MSD	37	32	67	61	56	60			0
07										
08										
09										
10										
11										
12										
13										
14										
15										
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22										
23										
24										
25										
26										
27										
28										
29										
30										

QC LIMITS

S1 (2FP) = 2-Fluorophenol (1- 90)
 S2 (PHL) = Phenol-d6 (1- 67)
 S3 (NBZ) = Nitrobenzene-d5 (18-114)
 S4 (FBP) = 2-Fluorobiphenyl (31- 97)
 S5 (TBP) = 2,4,6-Tribromophenol (19-139)
 S6 (TPH) = Terphenyl-d14 (15-141)

Column to be used to flag recovery values
 * Values outside of contract required QC limits
 D Surrogate diluted out

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: MOUNTAIN STATES

Contract:

Lab Code: MSAI

Case No.:

SAS No.:

SDG No.: 990119C

	EPA SAMPLE NO.	S1 (2FP) #	S2 (PHL) #	S3 (NBZ) #	S4 (FBP) #	S5 (TBP) #	S6 (TPH) #	S7 #	S8 #	TOT OUT
01	0199AMB	39	29	56	42	46	54			0
02	0199ALCS	41	30	62	58	57	59			0
03	0199ALCSD	42	30	64	58	58	60			0
04	CBNEAA	40	33	62	48	46	51			0
05	CBNEAAMS	41	35	60	56	52	53			0
06	CBNEAAMSD	44	36	66	60	57	55			0
07	1188-2 R	51	41	93	54	52	55			0
08	981205607	33	26	58	48	45	54			0
09	981205608	37	28	56	46	48	45			0
10	981206001	43	38	57	44	49	44			0
11	981206002	36	33	56	42	45	51			0
12	981206101	4	6	56	43	19	52			0
13	981206102	42	41	63	45	48	53			0
14										
15										
16										
17										
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22										
23										
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25										
26										
27										
28										
29										
30										

QC LIMITS

S1 (2FP) = 2-Fluorophenol (1- 90)
 S2 (PHL) = Phenol-d6 (1- 67)
 S3 (NBZ) = Nitrobenzene-d5 (18-114)
 S4 (FBP) = 2-Fluorobiphenyl (31- 97)
 S5 (TBP) = 2,4,6-Tribromophenol (19-139)
 S6 (TPH) = Terphenyl-d14 (15-141)

Column to be used to flag recovery values
 * Values outside of contract required QC limits
 D Surrogate diluted out

FORM 3
WATER SEMI-VOLATILE LAB CONTROL SAMPLE

Lab Name: MOUNTAIN STATES

Contract:

Lab Code: MSAI

Case No.:

SAS No.:

SDG No.: 990112C

Matrix Spike - Sample No.: LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
=====	=====	=====	=====	=====	=====
Phenol	100.00		38.11	38	5-112
2-Chlorophenol	100.00		74.89	75	23-134
1,4-Dichlorobenzene	100.00		57.67	58	20-124
N-Nitrosodi-N-propylami	100.00		83.93	84	1-230
1,2,4-Trichlorobenzene	100.00		61.04	61	44-142
4-Chloro-3-methylphenol	100.00		83.11	83	22-147
Acenaphthene	100.00		84.51	84	47-145
4-Nitrophenol	100.00		44.79	45	1-132
2,4-Dinitrotoluene	100.00		87.07	87	39-139
Pentachlorophenol	100.00		79.09	79	14-176
Pyrene	100.00		83.64	84	52-115

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 11 outside limits

COMMENTS:

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MOUNTAIN STATES

Contract:

Lab Code: MSAI

Case No.:

SAS No.:

SDG No.: 990112C

Matrix Spike - EPA Sample No.: 4057

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
=====	=====	=====	=====	=====	=====
Phenol	100.00	7.54	35.88	28	5-112
2-Chlorophenol	100.00	0.00	68.06	68	23-134
1,4-Dichlorobenzene	100.00	0.00	61.02	61	20-124
N-Nitrosodi-N-propylami	100.00	0.00	75.57	76	1-230
1,2,4-Trichlorobenzene	100.00	0.00	68.25	68	44-142
4-Chloro-3-methylphenol	100.00	0.00	79.65	80	22-147
Acenaphthene	100.00	0.00	80.32	80	47-145
4-Nitrophenol	100.00	0.00	26.78	27	1-132
2,4-Dinitrotoluene	100.00	0.00	48.02	48	39-139
Pentachlorophenol	100.00	0.00	76.96	77	14-176
Pyrene	100.00	0.00	65.64	66	52-115

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
=====	=====	=====	=====	=====	=====	=====
Phenol	100.00	43.69	36	25	42	5-112
2-Chlorophenol	100.00	72.51	72	6	40	23-134
1,4-Dichlorobenzene	100.00	69.26	69	12	28	20-124
N-Nitrosodi-N-propylami	100.00	81.25	81	6	38	1-230
1,2,4-Trichlorobenzene	100.00	73.89	74	8	28	44-142
4-Chloro-3-methylphenol	100.00	86.24	86	7	42	22-147
Acenaphthene	100.00	84.87	85	6	31	47-145
4-Nitrophenol	100.00	28.43	28	4	50	1-132
2,4-Dinitrotoluene	100.00	50.30	50	4	38	39-139
Pentachlorophenol	100.00	81.57	82	6	50	14-176
Pyrene	100.00	62.06	62	6	31	52-115

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 11 outside limits

Spike Recovery: 0 out of 22 outside limits

COMMENTS:

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting

01/14/99
14:44:05
Group: 25418

Analysis Batch Number: ICPHR-01/07/99-114 -1

Test Identification : ICPHR-*IRIS QC parameters

Sequence : DATP007

Number of Samples : 4

Batch Data-Date/Time : 01/07/99 / 12:21:38

BLANK#	ANALYTE	CONC FOUND #	CONC LIMIT
PBW1-882	Chromium	0.0005	0.0100
	Lead	0.0087	0.0200

						QC LIMITS	
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	LOWER	UPPER
5418-91740	Chromium	0.2000	0.0127	0.2017	94.5	80.0	120.0
	Lead	0.5000	0.0186	0.4840	93.1	80.0	120.0

						QC LIMITS			
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	LOWER	UPPER	RPD #	LIMIT
25418-91740	Chromium	0.2000	0.0127	0.2003	93.8	80.0	120.0	0.7	20.0
	Lead	0.5000	0.0186	0.4924	94.8	80.0	120.0	1.7	20.0

DUPLICATE						
SAMPLE#	ANALYTE	RESULT 1	RESULT 2	RPD #	LIMIT	DILUTION
5418-91740	Chromium	0.0127	0.0129	1.0	20.0	1.00
	Lead	0.0186	0.0152	20.0	20.0	1.00

						QC LIMITS	
SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	LOWER	UPPER	
LCSW-882	Chromium	0.2164	0.2000	108.2	80.0	120.0	
	Lead	0.5499	0.5000	110.0	80.0	120.0	

						QC LIMITS	
CV #	ANALYTE	TRUE VALUE	BATCH READ	% REC #	LOWER	UPPER	
CV-	Chromium	1.0000	1.0118	101.2	90.0	110.0	
	Lead	5.0000	5.1669	103.3	90.0	110.0	
CCV1--2	Chromium	1.0000	1.0057	100.6	90.0	110.0	
	Lead	5.0000	5.1464	102.9	90.0	110.0	
CCV2--3	Chromium	1.0000	1.0194	101.9	90.0	110.0	
	Lead	5.0000	5.2292	104.6	90.0	110.0	
CCV3--4	Chromium	1.0000	1.0146	101.5	90.0	110.0	
	Lead	5.0000	5.1839	103.7	90.0	110.0	

CCB#	ANALYTE	CONC FOUND #	CONC LIMIT
CB-	Chromium	0.0000	0.0100
	Lead	0.0063	0.0200
CCB1-	Chromium	0.0001	0.0100
	Lead	0.0040	0.0200
CB2-	Chromium	0.0000	0.0100
	Lead	0.0009	0.0200
CB3-	Chromium	0.0001	0.0100
	Lead	0.0052	0.0200

Groups & Samples

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting

01/14/99
14:44:07
Group: 25418

Analysis Batch Number: ICPHR-01/07/99-114 -1

Test Identification : ICPHR-*IRIS QC parameters

Sequence : DATP007

Number of Samples : 4

Batch Data-Date/Time : 01/07/99 / 12:21:38

25418-91740 25418-91741 25419-91742 25419-91743

MOUNTAIN STATES ANALYTICAL

```

=====
Data File   : C:\PEAKNET\DATA\DATA0118.D02   Report Date: 1/11/99 11:55:34 AM |
Sample Name: LRB                               Collected  : 1/11/99 11:41:08 AM |
Inject #    : 2                               Vial #       :                |
Method File: c:\peaknet\method\as14low.met   Calibrated   : 1/6/99 11:26:07 AM |
System Name: System1                         Detector     : CD20              |
Column Type: AS14+AG14 (Both 4mm)           Operator     : TG                |
Data Points: 3900                           Rate         : 5.00   Hz          |
Module Name:                               Moduleware   : 1.17              |
=====
  
```

```

-----
Calibration Volume Dilution Start Stop Area Reject Pk. Width Threshold
-----
External           1           1    0.00 13.00           750    10.00    0.50
  
```

***** Component Report: All Components *****

Pk. Num	Ret Time	Component Name	Concentration mg/l	Area	Peak Start	Peak End	% Delta
0	0.00	Flouride	0.000	0	0.00	0.00	0.00
1	4.27	Chloride	0.207	4589	4.00	4.47	1.11
0	0.00	Nitrite as N	0.000	0	0.00	0.00	0.00
0	0.00	Bromide	0.000	0	0.00	0.00	0.00
0	0.00	Nitrate as N	0.000	0	0.00	0.00	0.00
3	9.55	O-phos as P	0.016	1631	9.33	9.87	0.00
0	0.00	Sulfate	0.000	0	0.00	0.00	0.00
Totals			0.223	6220			

***** Peak Report: Unknown Peaks *****

Pk. Num	Ret Time	Component Name	Concentration mg/l	Area	Peak Start	Peak End	% Delta
2	8.98		0.000	1609	8.76	9.15	
Totals			0.000	1609			

3A
WATER ANION LFB/LFBD RECOVERY

Lab Name: MOUNTAIN STATES ANALYTICAL Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - MSAI Sample No.: LFB/LFBD Date Analyzed: 01/11/99

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	LFB CONCENTRATION (mg/L)	LFB % REC #	QC. LIMITS REC.
FLUORIDE	100.00	0.00	98.95	99	90 110
BROMIDE	400.00	0.00	392.06	98	90 110

COMPOUND	SPIKE ADDED (mg/L)	LFBD CONCENTRATION (mg/L)	LFBD % REC #	% RPD #	QC RPD	LIMITS REC.
FLUORIDE	100.00	98.26	98	0.7	20.0	90 110
BROMIDE	400.00	390.58	98	0.4	20.0	90 110

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of in-house QC limits

RPD: 0 out of 2 outside of in-house QC limits

LFB Recovery: 0 out of 4 outside of in-house QC limits

Comments: _____

3A
WATER ANION LFB/LFBD RECOVERY

Lab Name: MOUNTAIN STATES ANALYTICAL Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - MSAI Sample No.: LFB/LFBD Date Analyzed: 01/11/99

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	LFB CONCENTRATION (mg/L)	LFB % REC #	QC. LIMITS REC.
FLUORIDE	100.00	0.00	100.94	101	90 110
BROMIDE	400.00	0.00	395.40	99	90 110

COMPOUND	SPIKE ADDED (mg/L)	LFBD CONCENTRATION (mg/L)	LFBD % REC #	% RPD #	QC RPD	LIMITS REC.
FLUORIDE	100.00	100.91	101	0.0	20.0	90 110
BROMIDE	400.00	404.16	101	2.2	20.0	90 110

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of in-house QC limits

RPD: 0 out of 2 outside of in-house QC limits

LFB Recovery: 0 out of 4 outside of in-house QC limits

Comments: _____

3A
WATER ANION SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MOUNTAIN STATES ANALYTICAL Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - MSAI Sample No.: 91695 Date Analyzed: 01/11/99

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC #	QC. LIMITS REC.
CHLORIDE	25	1.435	25.299	95	80 120
BROMIDE	100	3.274	99.574	96	80 120

COMPOUND	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC #	% RPD #	QC RPD	LIMITS REC.
CHLORIDE	25	25.228	95	0.3	20.0	80 120
BROMIDE	100	99.834	97	0.3	20.0	80 120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of in-house QC limits

RPD: 0 out of 2 outside of in-house QC limits

Spike Recovery: 0 out of 4 outside of in-house QC limits

Comments: _____

3A
WATER ANION SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MOUNTAIN STATES ANALYTICAL Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - MSAI Sample No.: 91701 Date Analyzed: 01/11/99

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC #	QC. LIMITS REC.
CHLORIDE	25	1.587	25.434	95	80 120
BROMIDE	100	0	97.516	98	80 120

COMPOUND	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC #	% RPD #	QC LIMITS RPD REC.
CHLORIDE	25	25.632	96	0.8	20.0 80 120
BROMIDE	100	99.364	99	1.9	20.0 80 120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of in-house QC limits

RPD: 0 out of 2 outside of in-house QC limits

Spike Recovery: 0 out of 4 outside of in-house QC limits

Comments: _____

On Site Technologies, LTD.

612 E. Murray Drive
Farmington, NM 87401
(505) 325-2432

CHAIN-OF-CUSTODY RECORD

Subcontractor:

Mountain States Analytical, Inc.
1645 West 2200 South

TEL: (800) 973-6724
FAX: (801) 972-6278

Salt Lake City, UT 84119

Acct #:

04-Jan-99

Sample ID	Matrix	Collection Date	Bottle Type	Requested Tests			
				E248Z E6010	E2992 E6010	E300	SW8240 E0730
9812060-01C	Aqueous	12/30/98 12:30:00 PM	1LAMGU				1
9812060-01D	Aqueous	12/30/98 12:30:00 PM	500HDPEHNO3	1	1		
9812060-01E	Aqueous	12/30/98 12:30:00 PM	250HDPE			2	
9812060-02C	Aqueous	12/30/98 11:20:00 AM	1LAMGU				1
9812060-02D	Aqueous	12/30/98 11:20:00 AM	500HDPEHNO3	1	1		
9812060-02E	Aqueous	12/30/98 11:20:00 AM	250HDPE			2	

Comments:

Please analyze submitted samples for the following: (C) PAH E8270, (D) Total Chromium and Lead (E) Fluoride and Bromide

NOTE, SAME FORMAT AS PREVIOUS SAMPLES SUBMITTED FOR ABOVE ANALYSES (2) 1/14/99

Relinquished by: Heidi Reaso
Relinquished by:

Date/Time

1/21/99 1000

Received by:

Pat Anderson

Received by:

01/05/99 1050

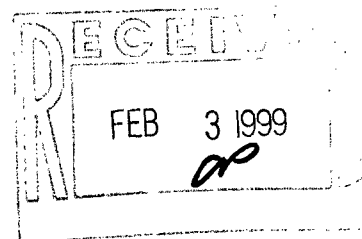
Date/Time

OFF: (505) 325-5667



LAB: (505) 325-1556

January 29, 1999



Terry Griffin
BioTech Remediation, Inc.
710 E. 20th, Suite 400
Farmington, NM 87401
TEL: (505) 327-4965
FAX (505) 564-3604

RE: Thriftway Refinery

Order No.: 9812061

Dear Terry Griffin,

On Site Technologies, LTD. received 4 samples on 12/31/98 for the analyses presented in the following report.

The Samples were analyzed for the following tests:

- Alkalinity, Total (M2320 B)
- Bromide (E300)
- BTEX (SW8021B)
- Calcium, Dissolved (E215.1)
- Chloride (E325.3)
- Chromium, Total (SW6010A)
- Conductivity (E120.1)
- Fluoride (E300)
- Lead, Total (SW6010A)
- Magnesium, Dissolved (E242.1)
- pH (E150.1)
- Polynuclear Aromatic Hydrocarbons (SW8270A)
- Potassium, Dissolved (E258.1)
- Sodium, Dissolved (E273.1)
- Sulfate (M4500-SO4 D)
- Total Dissolved Solids (E160.1)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

A handwritten signature, likely of the sender, is written in dark ink.

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

On Site Technologies, LTD.

Date: 29-Jan-99

CLIENT: BioTech Remediation, Inc.

Project: Thriftway Refinery

Lab Order: 9812061

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition. Methods for Chemical Analysis of Water and Wastes EPA-600/4-79-020, March 1983.

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812061	Client Sample ID:	Stripper Influent
Lab ID:	9812061-01A	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/31/98 10:15:00 AM
		COC Record:	5649

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B				Analyst: DC
Methyl tert-Butyl Ether	440	5		µg/L	10	1/4/99
Benzene	1200	5		µg/L	10	1/4/99
Toluene	860	5		µg/L	10	1/4/99
Ethylbenzene	760	5		µg/L	10	1/4/99
m,p-Xylene	1800	10		µg/L	10	1/4/99
o-Xylene	450	5		µg/L	10	1/4/99

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted recovery limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT**Date:** 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812061	Client Sample ID:	Stripper Influent
Lab ID:	9812061-01B	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/31/98 10:15:00 AM
		COC Record:	5649

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
CALCIUM, DISSOLVED	E215.1					Analyst: HR
Calcium	240	50		mg/L	50	1/7/99
POTASSIUM, DISSOLVED	E258.1					Analyst: HR
Potassium	8.7	1.2		mg/L	5	1/7/99
MAGNESIUM, DISSOLVED	E242.1					Analyst: HR
Magnesium	47	5		mg/L	20	1/8/99
SODIUM, DISSOLVED	E273.1					Analyst: HR
Sodium	790	50		mg/L	200	1/7/99
ALKALINITY, TOTAL	M2320 B					Analyst: HR
Alkalinity, Bicarbonate (As CaCO ₃)	800	5		mg/L CaCO ₃	1	1/4/99
Alkalinity, Carbonate (As CaCO ₃)	ND	5		mg/L CaCO ₃	1	1/4/99
Alkalinity, Total (As CaCO ₃)	800	5		mg/L CaCO ₃	1	1/4/99
CHLORIDE	E325.3					Analyst: HR
Chloride	110	10		mg/L	1	1/5/99
CONDUCTIVITY	E120.1					Analyst: HR
Specific Conductance	3700	2		uS/cm	1	1/4/99
PH	E150.1					Analyst: HR
pH	7.14	2		pH units	1	1/4/99
SULFATE	M4500-SO4 D					Analyst: HR
Sulfate	1600	5		mg/L	1	1/5/99
TOTAL DISSOLVED SOLIDS	E160.1					Analyst: HR
Total Dissolved Solids (Residue, Filterable)	3600	40		mg/L	1	1/5/99

Qualifiers:

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812061	Client Sample ID:	Stripper Effluent
Lab ID:	9812061-02A	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/31/98 10:45:00 AM
		COC Record:	5649

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B		Analyst: DC		
Methyl tert-Butyl Ether	71	0.5		µg/L	1	1/4/99
Benzene	9.6	0.5		µg/L	1	1/4/99
Toluene	7.7	0.5		µg/L	1	1/4/99
Ethylbenzene	5.8	0.5		µg/L	1	1/4/99
m,p-Xylene	15	1		µg/L	1	1/4/99
o-Xylene	6.4	0.5		µg/L	1	1/4/99

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted recovery limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT**Date:** 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812061	Client Sample ID:	Stripper Effluent
Lab ID:	9812061-02B	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/31/98 10:45:00 AM
		COC Record:	5649

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
CALCIUM, DISSOLVED	E215.1					Analyst: HR
Calcium	220	50		mg/L	50	1/7/99
POTASSIUM, DISSOLVED	E258.1					Analyst: HR
Potassium	8.6	1.2		mg/L	5	1/7/99
MAGNESIUM, DISSOLVED	E242.1					Analyst: HR
Magnesium	48	5		mg/L	20	1/8/99
SODIUM, DISSOLVED	E273.1					Analyst: HR
Sodium	780	50		mg/L	200	1/7/99
ALKALINITY, TOTAL	M2320 B					Analyst: HR
Alkalinity, Bicarbonate (As CaCO ₃)	730	5		mg/L CaCO ₃	1	1/4/99
Alkalinity, Carbonate (As CaCO ₃)	ND	5		mg/L CaCO ₃	1	1/4/99
Alkalinity, Total (As CaCO ₃)	730	5		mg/L CaCO ₃	1	1/4/99
CHLORIDE	E325.3					Analyst: HR
Chloride	110	10		mg/L	1	1/5/99
CONDUCTIVITY	E120.1					Analyst: HR
Specific Conductance	3800	2		uS/cm	1	1/4/99
PH	E150.1					Analyst: HR
pH	7.98	2		pH units	1	1/4/99
SULFATE	M4500-SO4 D					Analyst: HR
Sulfate	1600	5		mg/L	1	1/5/99
TOTAL DISSOLVED SOLIDS	E160.1					Analyst: HR
Total Dissolved Solids (Residue, Filterable)	3500	40		mg/L	1	1/5/99

Qualifiers:

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812061	Client Sample ID:	Travel Blank
Lab ID:	9812061-03A	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/31/98 9:00:00 AM
		COC Record:	5649

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B				Analyst: DC
Methyl tert-Butyl Ether	ND	0.5		µg/L	1	1/4/99
Benzene	ND	0.5		µg/L	1	1/4/99
Toluene	ND	0.5		µg/L	1	1/4/99
Ethylbenzene	ND	0.5		µg/L	1	1/4/99
m,p-Xylene	ND	1		µg/L	1	1/4/99
o-Xylene	ND	0.5		µg/L	1	1/4/99

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812061	Client Sample ID:	Field Blank
Lab ID:	9812061-04A	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/31/98 10:20:00 AM
		COC Record:	5649

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B				Analyst: DC
Methyl tert-Butyl Ether	ND	0.5		µg/L	1	1/4/99
Benzene	ND	0.5		µg/L	1	1/4/99
Toluene	ND	0.5		µg/L	1	1/4/99
Ethylbenzene	ND	0.5		µg/L	1	1/4/99
m,p-Xylene	ND	1		µg/L	1	1/4/99
o-Xylene	ND	0.5		µg/L	1	1/4/99

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted recovery limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

1 of 1

On Site Technologies, LTD.

CLIENT: BioTech Remediation, Inc.
Work Order: 9812061
Project: Thriftway Refinery

Date: 12-Jan-99

QC SUMMARY REPORT

Method Blank

Sample ID: MBBlank	Batch ID: API H2O_990	Test Code: SW7140	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812061	Run ID: API H2O_990108A		SeqNo: 9916	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Calcium	ND	0.25			
Sample ID: MBBlank	Batch ID: API H2O_990	Test Code: SW7450	Units: mg/L	Analysis Date 1/8/99	Prep Date:
Client ID:	9812061	Run ID: API H2O_990108A		SeqNo: 9942	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Magnesium	ND	0.25			
Sample ID: MBBlank	Batch ID: API H2O_990	Test Code: SW7770	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812061	Run ID: API H2O_990108A		SeqNo: 9962	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sodium	ND	0.25			
Sample ID: MBBlank	Batch ID: API H2O_990	Test Code: SW7610	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812061	Run ID: API H2O_990108A		SeqNo: 9982	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Potassium	ND	0.25			
Sample ID: MBBlank	Batch ID: API H2O_990	Test Code: M4500-Cl C.	Units: mg/L	Analysis Date 1/5/99	Prep Date:
Client ID:	9812061	Run ID: API H2O_990108A		SeqNo: 10015	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	ND	10			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.

Work Order: 9812061

Project: Thriftway Refinery

QC SUMMARY REPORT

Method Blank

Sample ID: MBlank	Batch ID: API H2O_990	Test Code: M4500-Cl C	Units: mg/L	Analysis Date 1/6/99	Prep Date:
Client ID: 9812061	Run ID: API H2O_990108A			SeqNo: 10037	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	ND	10			

Sample ID: MBlank	Batch ID: API H2O_990	Test Code: M2320 B	Units: mg/L CaCO3	Analysis Date 1/4/99	Prep Date:
Client ID: 9812061	Run ID: API H2O_990108A			SeqNo: 10066	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Alkalinity, Bicarbonate (As CaCO3)	3	5			J
Alkalinity, Carbonate (As CaCO3)	ND	5			
Alkalinity, Total (As CaCO3)	3	5			J

Sample ID: MBlank	Batch ID: API H2O_990	Test Code: E120.1	Units: uS/cm	Analysis Date 1/4/99	Prep Date:
Client ID: 9812061	Run ID: API H2O_990108A			SeqNo: 10104	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Specific Conductance	ND	2			

Sample ID: MBlank	Batch ID: API H2O_990	Test Code: M4500-SO4 D	Units: mg/L	Analysis Date 1/4/99	Prep Date:
Client ID: 9812061	Run ID: API H2O_990108A			SeqNo: 10232	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate	ND	5			

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

CLIENT: BioTech Remediation, Inc.
Work Order: 9812061
Project: Thriftway Refinery

Date: 12-Jan-99

QC SUMMARY REPORT

Sample Duplicate

Sample ID: 9812051-02BD	Batch ID: API H2O_990	Test Code: M4500-SO4 D	Units: mg/L	Analysis Date 1/5/99	Prep Date:
Client ID:	9812061	Run ID:	API H2O_990108A	SeqNo: 10246	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate	3213	5	0	0	0.0% 0 0 3159 1.7% 6
Sample ID: 9812056-01BD	Batch ID: API H2O_990	Test Code: M4500-Cl C.	Units: mg/L	Analysis Date 1/5/99	Prep Date:
Client ID:	9812061	Run ID:	API H2O_990108A	SeqNo: 10026	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	244	10	0	0	0.0% 0 0 244 0.0% 7
Sample ID: 9812056-01BD	Batch ID: API H2O_990	Test Code: M2320 B	Units: mg/L CaCO3	Analysis Date 1/4/99	Prep Date:
Client ID:	9812061	Run ID:	API H2O_990108A	SeqNo: 10083	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Alkalinity, Bicarbonate (As CaCO3)	758	5	0	0	0.0% 0 0 754 0.5% 3
Alkalinity, Carbonate (As CaCO3)	ND	5	0	0	0.0% 0 0 0 0.0% 3
Alkalinity, Total (As CaCO3)	758	5	0	0	0.0% 0 0 754 0.5% 3
Sample ID: 9812056-06BD	Batch ID: API H2O_990	Test Code: M4500-Cl C.	Units: mg/L	Analysis Date 1/5/99	Prep Date:
Client ID:	9812061	Run ID:	API H2O_990108A	SeqNo: 10027	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	138	10	0	0	0.0% 0 0 138 0.0% 7

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.

Work Order: 9812061

Project: Thriftway Refinery

QC SUMMARY REPORT

Sample Duplicate

Sample ID: 9812060-01BD	Batch ID: API H2O_990	Test Code: M2320 B	Units: mg/L CaCO3	Analysis Date 1/4/99	Prep Date:
Client ID: 9812061	Run ID: API H2O_990108A	PQL	SPK value	SeqNo: 10084	
Analyte	Result	PQL	SPK value	LowLimit	HighLimit
Alkalinity, Bicarbonate (As CaCO3)	284	5	0	0	0
Alkalinity, Carbonate (As CaCO3)	ND	5	0	0	0
Alkalinity, Total (As CaCO3)	284	5	0	0	0
				%REC	RPD Ref Val
				0.0%	1.7%
				0.0%	0.0%
				0.0%	1.7%

Sample ID: 9812061-02BD	Batch ID: API H2O_990	Test Code: M4500-SO4 D	Units: mg/L	Analysis Date 1/5/99	Prep Date:
Client ID: Stripper Effluent	Run ID: API H2O_990108A	PQL	SPK value	SeqNo: 10247	
Analyte	Result	PQL	SPK value	LowLimit	HighLimit
Sulfate	1607	5	0	0	0
				%REC	RPD Ref Val
				0.0%	1608
				0.1%	6

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

CLIENT: BioTech Remediation, Inc.
Work Order: 9812061
Project: Thriftway Refinery

Date: 12-Jan-99

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9812051-01BMS	Batch ID: API H2O_990	Test Code: SW7140	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812061	Run ID:	API H2O_990108A	SeqNo: 9934	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Calcium	494	50	100	370	124.0% 69 159
Sample ID: 9812056-02BMS	Batch ID: API H2O_990	Test Code: SW7610	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812061	Run ID:	API H2O_990108A	SeqNo: 10000	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Potassium	15	1.2	5	7.8	144.0% 67 157
Sample ID: 9812056-03BMS	Batch ID: API H2O_990	Test Code: SW7450	Units: mg/L	Analysis Date 1/8/99	Prep Date:
Client ID:	9812061	Run ID:	API H2O_990108A	SeqNo: 9960	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Magnesium	93.2	5	40	50	108.0% 78 126
Sample ID: 9812056-06BMS	Batch ID: API H2O_990	Test Code: SW7770	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812061	Run ID:	API H2O_990108A	SeqNo: 9980	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sodium	1272	100	400	840	108.0% 81 135

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

CLIENT: BioTech Remediation, Inc.
Work Order: 9812061
Project: Thriftway Refinery

Date: 12-Jan-99

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS	Batch ID: API H2O_990	Test Code: M2320 B	Units: mg/L CaCO3	Analysis Date 1/4/99	Prep Date:
Client ID: 9812061	Run ID: API H2O_990108A			SeqNo: 10067	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Alkalinity, Bicarbonate (As CaCO3)	116	5	116	3	97.4% 91 116
Alkalinity, Total (As CaCO3)	116	5	116	3	97.4% 91 116
Sample ID: LCS	Batch ID: API H2O_990	Test Code: E120.1	Units: uS/cm	Analysis Date 1/4/99	Prep Date:
Client ID: 9812061	Run ID: API H2O_990108A			SeqNo: 10105	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Specific Conductance	1049	2	1040	0	100.9% 97 103
Sample ID: LCS	Batch ID: API H2O_990	Test Code: E120.1	Units: uS/cm	Analysis Date 1/4/99	Prep Date:
Client ID: 9812061	Run ID: API H2O_990108A			SeqNo: 10121	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Specific Conductance	1058	2	1040	0	101.7% 97 103
Sample ID: LCS	Batch ID: API H2O_990	Test Code: E150.1	Units: pH units	Analysis Date 1/4/99	Prep Date:
Client ID: 9812061	Run ID: API H2O_990108A			SeqNo: 10160	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
pH	8.895	2	9.07	0	98.1% 98 102
Sample ID: LCS	Batch ID: API H2O_990	Test Code: E150.1	Units: pH units	Analysis Date 1/4/99	Prep Date:
Client ID: 9812061	Run ID: API H2O_990108A			SeqNo: 10176	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
pH	8.896	2	9.07	0	98.1% 98 102

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.
Work Order: 9812061
Project: Thriftway Refinery

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS	Batch ID: API H2O_990	Test Code: M4500-SO4 D	Units: mg/L	Analysis Date 1/4/99	Prep Date:
Client ID:	9812061	Run ID: API H2O_990108A		SeqNo: 10233	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate	120	5	122	0	98.4% 83 113

Sample ID: LCS	Batch ID: API H2O_990	Test Code: M4500-SO4 D	Units: mg/L	Analysis Date 1/5/99	Prep Date:
Client ID:	9812061	Run ID: API H2O_990108A		SeqNo: 10242	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate	124	5	122	0	101.8% 83 113

Sample ID: LCS-Cl	Batch ID: API H2O_990	Test Code: M4500-Cl C.	Units: mg/L	Analysis Date 1/6/99	Prep Date:
Client ID:	9812061	Run ID: API H2O_990108A		SeqNo: 10038	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	47	10	50	0	94.0% 88.4 115

Sample ID: LCS-Cl 0.141N	Batch ID: API H2O_990	Test Code: M4500-Cl C.	Units: mg/L	Analysis Date 1/5/99	Prep Date:
Client ID:	9812061	Run ID: API H2O_990108A		SeqNo: 10016	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	116.7	10	122	0	95.7% 88.4 115

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

CLIENT: BioTech Remediation, Inc.
Work Order: 9812061
Project: Thriftway Refinery

Date: 12-Jan-99

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV-2 Ca	Batch ID: API H2O_990	Test Code: SW7140	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812061	Run ID:	API H2O_990108A	SeqNo: 9927	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Calcium	1.77	0.25	1.95	0	90.8% 89 107

Sample ID: CCV-2 Mg	Batch ID: API H2O_990	Test Code: SW7450	Units: mg/L	Analysis Date 1/8/99	Prep Date:
Client ID:	9812061	Run ID:	API H2O_990108A	SeqNo: 9953	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Magnesium	1.79	0.25	1.71	0	104.7% 96 114

Sample ID: CCV-2 Na	Batch ID: API H2O_990	Test Code: SW7770	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812061	Run ID:	API H2O_990108A	SeqNo: 9973	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sodium	2.75	0.25	2.64	0	104.2% 87 111

Sample ID: CCV1 - Ca	Batch ID: API H2O_990	Test Code: SW7140	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812061	Run ID:	API H2O_990108A	SeqNo: 9917	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Calcium	1.78	0.25	1.95	0	91.3% 89 107

Sample ID: CCV1 - K	Batch ID: API H2O_990	Test Code: SW7610	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812061	Run ID:	API H2O_990108A	SeqNo: 9983	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Potassium	2.65	0.25	2.68	0	98.9% 84 114

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.

Work Order: 9812061

Project: Thriftway Refinery

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 - Mg	Batch ID: API H2O_990	Test Code: SW7450	Units: mg/L	Analysis Date 1/8/99	Prep Date:
Client ID:	9812061	Run ID: API H2O_990108A		SeqNo: 9943	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Magnesium	1.82	0.25	1.71	0	106.4% 96 114

Sample ID: CCV1 - Na	Batch ID: API H2O_990	Test Code: SW7770	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812061	Run ID: API H2O_990108A		SeqNo: 9963	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sodium	2.79	0.25	2.64	0	105.7% 87 111

Sample ID: CCV2-K	Batch ID: API H2O_990	Test Code: SW7610	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812061	Run ID: API H2O_990108A		SeqNo: 9993	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Potassium	2.65	0.25	2.68	0	98.9% 84 114

Sample ID: CCV3-Ca	Batch ID: API H2O_990	Test Code: SW7140	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812061	Run ID: API H2O_990108A		SeqNo: 9935	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Calcium	1.79	0.25	1.95	0	91.8% 89 107

Sample ID: CCV3-K	Batch ID: API H2O_990	Test Code: SW7610	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812061	Run ID: API H2O_990108A		SeqNo: 10001	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Potassium	2.66	0.25	2.68	0	99.3% 84 114

Qualifiers:

ND - Not Detected at the Reporting Limit

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S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.

Work Order: 9812061

Project: Thriftway Refinery

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV3-Mg	Batch ID: API H2O_990	Test Code: SW7450	Units: mg/L	Analysis Date 1/8/99	Prep Date:
Client ID:	9812061	Run ID: API H2O_990108A		SeqNo: 9961	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Magnesium	1.83	0.25	1.71	0	107.0% 96 114

Sample ID: CCV3-Na	Batch ID: API H2O_990	Test Code: SW7770	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812061	Run ID: API H2O_990108A		SeqNo: 9981	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sodium	2.76	0.25	2.64	0	104.5% 87 111

Sample ID: CCV1 QC0606/07	Batch ID: GC-1_990104	Test Code: SW8021B	Units: µg/L	Analysis Date 1/4/99	Prep Date:
Client ID:	9812061	Run ID: GC-1_990104A		SeqNo: 9844	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	21.75	0.5	20	0	108.7% 85 115
Ethylbenzene	21.45	0.5	20	0	107.3% 85 115
m,p-Xylene	41.26	1	40	0	103.1% 85 115
Methyl tert-Butyl Ether	21.22	0.5	20	0	106.1% 85 115
o-Xylene	21.02	0.5	20	0	105.1% 85 115
Toluene	20.99	0.5	20	0	105.0% 85 115
1,4-Difluorobenzene	96.38	0	100	0	96.4% 70 130
4-Bromochlorobenzene	97.36	0	100	0	97.4% 70 130
Fluorobenzene	95	0	100	0	95.0% 70 130

1/22/99

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 29-Jan-99

CLIENT: BioTech Remediation, Inc.

Work Order: 9812061

Project: Thriftway Refinery

QC SUMMARY REPORT

Method Blank

Sample ID: MB1	Batch ID: GC-1_990104	Test Code: SW8021B	Units: µg/L	Analysis Date 1/4/99	Prep Date:
Client ID:	9812061	Run ID: GC-1_990104A		SeqNo: 9849	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	.037	0.5			J
Ethylbenzene	ND	0.5			
m,p-Xylene	ND	1			
Methyl tert-Butyl Ether	.0537	0.5			J
o-Xylene	ND	0.5			
Toluene	.0536	0.5			J

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 29-Jan-99

CLIENT: BioTech Remediation, Inc.

Work Order: 9812061

Project: Thriftway Refinery

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9812061-01AMS		Batch ID: GC-1_990104		Test Code: SW8021B		Units: µg/L		Analysis Date 1/4/99		Prep Date:	
Client ID: Stripper Influent		Run ID: 9812061		PQL		GC-1_990104A		SeqNo: 9850			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	5279	50	4000	1200	102.0%	73	115				
Ethylbenzene	4892	50	4000	760	103.3%	74	117				
m,p-Xylene	9862	100	8000	1800	100.8%	76	112				
Methyl tert-Butyl Ether	4304	50	4000	440	96.6%	62	122				
o-Xylene	4501	50	4000	450	101.3%	83	112				
Toluene	4932	50	4000	860	101.8%	71	120				

Sample ID: 9812061-01AMSD		Batch ID: GC-1_990104		Test Code: SW8021B		Units: µg/L		Analysis Date 1/4/99		Prep Date:	
Client ID: Stripper Influent		Run ID: 9812061		PQL		GC-1_990104A		SeqNo: 9851			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	5207	50	4000	1200	100.2%	73	115	5279	1.4%	12	
Ethylbenzene	4737	50	4000	760	99.4%	74	117	4892	3.2%	11	
m,p-Xylene	9561	100	8000	1800	97.0%	76	112	9862	3.1%	10	
Methyl tert-Butyl Ether	4353	50	4000	440	97.8%	62	122	4304	1.1%	15	
o-Xylene	4602	50	4000	450	103.8%	83	112	4501	2.2%	14	
Toluene	4872	50	4000	860	100.3%	71	120	4932	1.2%	14	

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 29-Jan-99

CLIENT: BioTech Remediation, Inc.

Work Order: 9812061

Project: Thriftway Refinery

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS WATER		Batch ID: GC-1_990104	Test Code: SW8021B	Units: µg/L	Analysis Date 1/4/99		Prep Date:				
Client ID:		9812061	Run ID: GC-1_990104A		SeqNo: 9848						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	41.57	0.5	40	0.04	103.8%	84	110				
Ethylbenzene	41.84	0.5	40	0	104.6%	86	113				
m,p-Xylene	81.93	1	80	0	102.4%	81	114				
Methyl tert-Butyl Ether	40.62	0.5	40	0.05	101.4%	69	129				
o-Xylene	41.28	0.5	40	0	103.2%	86	112				
Toluene	41.1	0.5	40	0.05	102.6%	85	111				

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 29-Jan-99

CLIENT: BioTech Remediation, Inc.

Work Order: 9812061

Project: Thriftway Refinery

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 QC0606/07		Batch ID: GC-1_990104	Test Code: SW8021B	Units: µg/L		Analysis Date 1/4/99		Prep Date:			
Client ID:		9812061	Run ID:	GC-1_990104A			SeqNo:	9844			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.75	0.5	20	0	108.7%	85	115				
Ethylbenzene	21.45	0.5	20	0	107.3%	85	115				
m,p-Xylene	41.26	1	40	0	103.1%	85	115				
Methyl tert-Butyl Ether	21.22	0.5	20	0	106.1%	85	115				
o-Xylene	21.02	0.5	20	0	105.1%	85	115				
Toluene	20.99	0.5	20	0	105.0%	85	115				
1,4-Difluorobenzene	96.38	0	100	0	96.4%	70	130				
4-Bromochlorobenzene	97.36	0	100	0	97.4%	70	130				
Fluorobenzene	95	0	100	0	95.0%	70	130				

Sample ID: CCV2 QC0606/07		Batch ID: GC-1_990104		Test Code: SW8021B		Units: µg/L		Analysis Date 1/4/99		Prep Date:	
Client ID: 9812061		Run ID: GC-1_990104A		PQL		SPK value		SeqNo: 9845			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.33	0.5	20	0	106.6%	85	115				
Ethylbenzene	20.49	0.5	20	0	102.5%	85	115				
m,p-Xylene	39.28	1	40	0	98.2%	85	115				
Methyl tert-Butyl Ether	20.62	0.5	20	0	103.1%	85	115				
o-Xylene	20.2	0.5	20	0	101.0%	85	115				
Toluene	20.32	0.5	20	0	101.6%	85	115				
1,4-Difluorobenzene	97.07	0	100	0	97.1%	70	130				
4-Bromochlorobenzene	97.33	0	100	0	97.3%	70	130				
Fluorobenzene	95.67	0	100	0	95.7%	70	130				

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.

Work Order: 9812061

Project: Thriftway Refinery

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV3 QC0606/07	Batch ID: GC-1_990104	Test Code: SW8021B	Units: µg/L	Analysis Date 1/4/99	Prep Date:
Client ID: 9812061	Run ID: GC-1_990104A	PQL	SPK value	SeqNo: 9846	
Analyte	Result		SPK Ref Val	LowLimit	HighLimit
Benzene	21.2	0.5	0	85	115
Ethylbenzene	21.34	0.5	0	85	115
m,p-Xylene	41.1	1	0	85	115
Methyl tert-Butyl Ether	18.04	0.5	0	85	115
o-Xylene	21.05	0.5	0	85	115
Toluene	20.82	0.5	0	85	115
1,4-Difluorobenzene	96.52	0	0	70	130
4-Bromochlorobenzene	97.31	0	0	70	130
Fluorobenzene	94.51	0	0	70	130
				%REC	%RPD

Sample ID: CCV4 QC0606/07	Batch ID: GC-1_990104	Test Code: SW8021B	Units: µg/L	Analysis Date 1/4/99	Prep Date:
Client ID: 9812061	Run ID: GC-1_990104A	PQL	SPK value	SeqNo: 9847	
Analyte	Result		SPK Ref Val	LowLimit	HighLimit
Benzene	20.69	0.5	0	85	115
Ethylbenzene	20.74	0.5	0	85	115
m,p-Xylene	39.99	1	0	85	115
Methyl tert-Butyl Ether	20.21	0.5	0	85	115
o-Xylene	21.95	0.5	0	85	115
Toluene	20.4	0.5	0	85	115
1,4-Difluorobenzene	96.04	0	0	70	130
4-Bromochlorobenzene	97.98	0	0	70	130
Fluorobenzene	94.43	0	0	70	130
				%REC	%RPD

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 29-Jan-99

CLIENT: BioTech Remediation, Inc.

Work Order: 9812061

Project: Thriftway Refinery

Test No: SW8021B

QC SUMMARY REPORT SURROGATE RECOVERIES

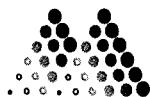
BTEX

Sample ID	14FBZ	4BCBZ	FLBZ				
9812055-04A	96.2	96.7	94.8				
9812056-01A	95.2	98.2	94.4				
9812056-08A	95.4	95.4	94.5				
9812057-01A	93.3	94.7	92.7				
9812060-05A	96.1	98.2	94.8				
9812060-06A	98	101	96.6				
9812061-01A	102	99.5	98.8				
9812061-01AMS	95.9	97.6	94.7				
9812061-01AMSD	97	97.3	96				
9812061-02A	95.1	96	93.8				
9812061-03A	96.3	98	95.4				
9812061-04A	96.7	98.3	94.8				
CCV1 QC0606/07	96.4	97.4	95				
CCV2 QC0606/07	97.1	97.3	95.7				
CCV3 QC0606/07	96.5	97.3	94.5				
CCV4 QC0606/07	96	98	94.4				
LCS WATER	96.2	98.9	94.7				
MB1	96.6	95.6	94.9				

Acronym	Surrogate	QC Limits
14FBZ	= 1,4-Difluorobenzene	70-130
4BCBZ	= 4-Bromochlorobenzene	70-130
FLBZ	= Fluorobenzene	70-130

* Surrogate recovery outside acceptance limits

RECEIVED JAN 25 1999



Mountain States Analytical, Inc.

The Quality Solution

January 20, 1999

Mr. David Cox
On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Reference:

Project: PAH/Cr&Pb/Fl&Br
Project No.: 9812061
MSAI Group: 25419

Dear Mr. Cox:

Enclosed are the analytical results for your project referenced above. The following samples are included in the report.

9812061-01

9812061-02

All holding times were met for the tests performed on these samples.

Thank you for selecting Mountain States Analytical, Inc. to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

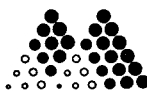
We look forward to working with you on future projects.

With Regards,

Rolf E. Larsen
Project Manager

Corporate Office: 1645 West 2200 South • Salt Lake City, Utah 84119
801-973-0050 • 1-800-973-6724 (MSAI) • FAX 801-972-6278
e-mail: service@msailabs.com





Mountain States Analytical, Inc.

The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: PAH/Cr&Pb/Fl&Br

Sample ID: 9812061-01
Matrix: Water

MSAI Sample: 91742
MSAI Group: 25419
Date Reported: 01/20/99
Discard Date: 02/19/99
Date Submitted: 01/05/99
Date Sampled: 12/31/98
Collected by:
Purchase Order:
Project No.: 9812061

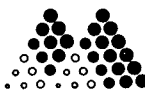
06

Thriftway Refinery Stripper Influent

Test Analysis	Results as Received	Units	Limit of Quantitation
0393G Flame/hrICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w882	mg/l	
13007 Metals by hrICP, 6010A, w/ww Method: SW-846 6010A			
Chromium	ND	mg/l	0.025
Lead	ND	mg/l	0.08
3000 SV0A Extraction, w/ww Method: SW-846 3510B	Complete		
6719 Polycyclic Aro/Hydrocarb, 8270A ww Method: SW-846 8270A			
Acenaphthene	ND	ug/l	10.0
Acenaphthylene	ND	ug/l	10.0
Anthracene	ND	ug/l	10.0
Benz(a)anthracene	ND	ug/l	10.0
Benzo(b)fluoranthene	ND	ug/l	10.0
Benzo(k)fluoranthene	ND	ug/l	10.0
Benzo(ghi)perylene	ND	ug/l	10.0
Benzo(a)pyrene	ND	ug/l	25.0
Chrysene	ND	ug/l	10.0
Dibenz(a,h)anthracene	ND	ug/l	10.0
Fluoranthene	ND	ug/l	10.0
Fluorene	ND	ug/l	10.0
Naphthalene	ND	ug/l	10.0
Phenanthrene	ND	ug/l	10.0
Pyrene	ND	ug/l	10.0
Indeno(1,2,3-cd)pyrene	ND	ug/l	10.0
2-Methylnaphthalene	ND	ug/l	10.0

Corporate Office: 1645 West 2200 South • Salt Lake City, Utah 84119
801-973-0050 • 1-800-973-6724 (MSAI) • FAX 801-972-6278
e-mail: service@msailabs.com





Mountain States Analytical, Inc.

The Quality Solution

Page 2

On Site Technologies, Ltd.

MSAI Sample: 91742

MSAI Group: 25419

Sample ID: 9812061-01

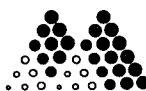
Test	Analysis	Results as Received	Units	Limit of Quantitation
0504	Fluoride, Ion Chromatography Method: EPA 300.0	ND	mg/l	3
0505	Bromide, Ion Chromatography Method: EPA 300.0	3.1	mg/l	3

ND - Not detected at the Limit of Quantitation.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

Rolf E. Larsen
Project Manager



Mountain States Analytical, Inc.

The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: PAH/Cr&Pb/Fl&Br

Sample ID: 9812061-02
Matrix: Water

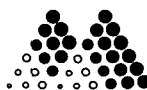
MSAI Sample: 91743
MSAI Group: 25419
Date Reported: 01/20/99
Discard Date: 02/19/99
Date Submitted: 01/05/99
Date Sampled: 12/31/98
Collected by:
Purchase Order:
Project No.: 9812061

Thriftway Refinery Stripper Effluent

Test	Analysis	Results as Received	Units	Limit of Quantitation
0393G	Flame/hrICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w882	mg/l	
13007	Metals by hrICP, 6010A, w/ww Method: SW-846 6010A			
	Chromium	ND	mg/l	0.025
	Lead	ND	mg/l	0.08
3000	SVOA Extraction, w/ww Method: SW-846 3510B	Complete		
6719	Polycyclic Aro/Hydrocarb, 8270A ww Method: SW-846 8270A			
	Acenaphthene	ND	ug/l	10.0
	Acenaphthylene	ND	ug/l	10.0
	Anthracene	ND	ug/l	10.0
	Benz(a)anthracene	ND	ug/l	10.0
	Benzo(b)fluoranthene	ND	ug/l	10.0
	Benzo(k)fluoranthene	ND	ug/l	10.0
	Benzo(ghi)perylene	ND	ug/l	10.0
	Benzo(a)pyrene	ND	ug/l	25.0
	Chrysene	ND	ug/l	10.0
	Dibenz(a,h)anthracene	ND	ug/l	10.0
	Fluoranthene	ND	ug/l	10.0
	Fluorene	ND	ug/l	10.0
	Naphthalene	24.9	ug/l	10.0
	Phenanthrene	ND	ug/l	10.0
	Pyrene	ND	ug/l	10.0
	Indeno(1,2,3-cd)pyrene	ND	ug/l	10.0
	2-Methylnaphthalene	ND	ug/l	10.0

Corporate Office: 1645 West 2200 South • Salt Lake City, Utah 84119
801-973-0050 • 1-800-973-6724 (MSAI) • FAX 801-972-6278
e-mail: service@msailabs.com





Mountain States Analytical, Inc.

The Quality Solution

Page 2

On Site Technologies, Ltd.

MSAI Sample: 91743

MSAI Group: 25419

Sample ID: 9812061-02

Test	Analysis	Results as Received	Units	Limit of Quantitation
0504	Fluoride, Ion Chromatography Method: EPA 300.0	ND	mg/l	3
0505	Bromide, Ion Chromatography Method: EPA 300.0	3.2	mg/l	3

ND - Not detected at the Limit of Quantitation.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

Rolf E. Larsen
Project Manager

UNTAIN STATES ANALYTICAL

```

=====
Data File   : C:\PEAKNET\DATA\DATA0118.D02   Report Date: 1/11/99 11:55:34 AM
Sample Name: LRB                               Collected  : 1/11/99 11:41:08 AM
Inject #    : 2                               Vial #       :
Method File : c:\peaknet\method\as14low.met   Calibrated   : 1/6/99 11:26:07 AM
System Name : System1                         Detector     : CD20
Column Type : AS14+AG14 (Both 4mm)           Operator      : TG
Data Points : 3900                           Rate         : 5.00   Hz
Module Name :                               Moduleware   : 1.17
=====
  
```

Calibration	Volume	Dilution	Start	Stop	Area	Reject	Pk. Width	Threshold
External	1	1	0.00	13.00	750	10.00	0.50	

***** Component Report: All Components *****

Pk. Num	Ret Time	Component Name	Concentration mg/l	Area	Peak Start	Peak End	% Delta
0	0.00	Flouride	0.000	0	0.00	0.00	0.00
1	4.27	Chloride	0.207	4589	4.00	4.47	1.11
0	0.00	Nitrite as N	0.000	0	0.00	0.00	0.00
0	0.00	Bromide	0.000	0	0.00	0.00	0.00
0	0.00	Nitrate as N	0.000	0	0.00	0.00	0.00
3	9.55	O-phos as P	0.016	1631	9.33	9.87	0.00
0	0.00	Sulfate	0.000	0	0.00	0.00	0.00
Totals			0.223	6220			

***** Peak Report: Unknown Peaks *****

Pk. Num	Ret Time	Component Name	Concentration mg/l	Area	Peak Start	Peak End	% Delta
2	8.98		0.000	1609	8.76	9.15	
Totals			0.000	1609			

3A
WATER ANION LFB/LFBD RECOVERY

Lab Name: MOUNTAIN STATES ANALYTICAL Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - MSAI Sample No.: LFB/LFBD Date Analyzed: 01/11/99

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	LFB CONCENTRATION (mg/L)	LFB % REC #	QC. LIMITS REC.
FLUORIDE	100.00	0.00	98.95	99	90 110
BROMIDE	400.00	0.00	392.06	98	90 110

COMPOUND	SPIKE ADDED (mg/L)	LFBD CONCENTRATION (mg/L)	LFBD % REC #	% RPD #	QC RPD	LIMITS REC.
FLUORIDE	100.00	98.26	98	0.7	20.0	90 110
BROMIDE	400.00	390.58	98	0.4	20.0	90 110

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of in-house QC limits

RPD: 0 out of 2 outside of in-house QC limits

LFB Recovery: 0 out of 4 outside of in-house QC limits

Comments: _____

3A
WATER ANION LFB/LFBD RECOVERY

Lab Name: MOUNTAIN STATES ANALYTICAL Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - MSAI Sample No.: LFB/LFBD Date Analyzed: 01/11/99

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	LFB CONCENTRATION (mg/L)	LFB % REC #	QC. LIMITS REC.
FLUORIDE	100.00	0.00	100.94	101	90 110
BROMIDE	400.00	0.00	395.40	99	90 110

COMPOUND	SPIKE ADDED (mg/L)	LFBD CONCENTRATION (mg/L)	LFBD % REC #	% RPD #	QC RPD	LIMITS REC.
FLUORIDE	100.00	100.91	101	0.0	20.0	90 110
BROMIDE	400.00	404.16	101	2.2	20.0	90 110

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of in-house QC limits

RPD: 0 out of 2 outside of in-house QC limits

LFB Recovery: 0 out of 4 outside of in-house QC limits

Comments: _____

3A
WATER ANION SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MOUNTAIN STATES ANALYTICAL Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - MSAI Sample No.: 91695 Date Analyzed: 01/11/99

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC #	QC. LIMITS REC.
CHLORIDE	25	1.435	25.299	95	80 120
BROMIDE	100	3.274	99.574	96	80 120

COMPOUND	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC #	% RPD #	QC RPD	LIMITS REC.
CHLORIDE	25	25.228	95	0.3	20.0	80 120
BROMIDE	100	99.834	97	0.3	20.0	80 120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of in-house QC limits

RPD: 0 out of 2 outside of in-house QC limits

Spike Recovery: 0 out of 4 outside of in-house QC limits

Comments: _____

3A
WATER ANION SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MOUNTAIN STATES ANALYTICAL Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - MSAI Sample No.: 91701 Date Analyzed: 01/11/99

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC #	QC. LIMITS REC.
CHLORIDE	25	1.587	25.434	95	80 120
BROMIDE	100	0	97.516	98	80 120

COMPOUND	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC #	% RPD #	QC RPD	LIMITS REC.
CHLORIDE	25	25.632	96	0.8	20.0	80 120
BROMIDE	100	99.364	99	1.9	20.0	80 120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of in-house QC limits

RPD: 0 out of 2 outside of in-house QC limits

Spike Recovery: 0 out of 4 outside of in-house QC limits

Comments: _____

Analysis Batch Number: ICPHR-01/07/99-114 -1

Test Identification : ICPHR-*IRIS QC parameters

Sequence : DATP007

Number of Samples : 4

Batch Data-Date/Time : 01/07/99 / 12:21:38

BLANK#	ANALYTE	CONC FOUND #	CONC LIMIT
PBW1-882	Chromium	0.0005	0.0100
	Lead	0.0087	0.0200

						QC LIMITS	
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	LOWER	UPPER
5418-91740	Chromium	0.2000	0.0127	0.2017	94.5	80.0	120.0
	Lead	0.5000	0.0186	0.4840	93.1	80.0	120.0

						QC LIMITS			
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	LOWER	UPPER	RPD #	LIMIT
25418-91740	Chromium	0.2000	0.0127	0.2003	93.8	80.0	120.0	0.7	20.0
	Lead	0.5000	0.0186	0.4924	94.8	80.0	120.0	1.7	20.0

DUPLICATE						
SAMPLE#	ANALYTE	RESULT 1	RESULT 2	RPD #	LIMIT	DILUTION
5418-91740	Chromium	0.0127	0.0129	1.0	20.0	1.00
	Lead	0.0186	0.0152	20.0	20.0	1.00

						QC LIMITS	
SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	LOWER	UPPER	
LCSW-882	Chromium	0.2164	0.2000	108.2	80.0	120.0	
	Lead	0.5499	0.5000	110.0	80.0	120.0	

						QC LIMITS	
CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC #	LOWER	UPPER	
CV-	Chromium	1.0000	1.0118	101.2	90.0	110.0	
	Lead	5.0000	5.1669	103.3	90.0	110.0	
CCV1--2	Chromium	1.0000	1.0057	100.6	90.0	110.0	
	Lead	5.0000	5.1464	102.9	90.0	110.0	
CV2--3	Chromium	1.0000	1.0194	101.9	90.0	110.0	
	Lead	5.0000	5.2292	104.6	90.0	110.0	
CCV3--4	Chromium	1.0000	1.0146	101.5	90.0	110.0	
	Lead	5.0000	5.1839	103.7	90.0	110.0	

CCB#	ANALYTE	CONC FOUND #	CONC LIMIT
CB-	Chromium	0.0000	0.0100
	Lead	0.0063	0.0200
CCB1-	Chromium	0.0001	0.0100
	Lead	0.0040	0.0200
CB2-	Chromium	0.0000	0.0100
	Lead	0.0009	0.0200
CCB3-	Chromium	0.0001	0.0100
	Lead	0.0052	0.0200

Groups & Samples

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting

01/14/99
14:44:12
Group: 25419

Analysis Batch Number: ICPHR-01/07/99-114 -1

Test Identification : ICPHR-*IRIS QC parameters

Sequence : DATP007

Number of Samples : 4

Batch Data-Date/Time : 01/07/99 / 12:21:38

25418-91740 25418-91741 25419-91742 25419-91743

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK

Lab Name: MOUNTAIN STATES

Contract:

Lab Code: MSAI

Case No.:

SAS No.:

SDG No.: 990112C

Matrix: (soil/water) WATER

Lab Sample ID: 990106WB

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: X5030

Level: (low/med) LOW

Date Received: _____

% Moisture: _____ decanted: (Y/N) _____

Date Extracted:

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 01/12/99

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
---------	----------	--	---

91-20-3-----	Naphthalene	10.0	U
91-57-6-----	2-Methylnaphthalene	10.0	U
208-96-8-----	Acenaphthylene	10.0	U
83-32-9-----	Acenaphthene	10.0	U
86-73-7-----	Fluorene	10.0	U
85-01-8-----	Phenanthrene	10.0	U
120-12-7-----	Anthracene	10.0	U
206-44-0-----	Fluoranthene	10.0	U
129-00-0-----	Pyrene	10.0	U
56-55-3-----	Benz (a) anthracene	10.0	U
218-01-9-----	Chrysene	10.0	U
205-99-2-----	Benzo (b) fluoranthene	10.0	U
207-08-9-----	Benzo (k) fluoranthene	10.0	U
50-32-8-----	Benzo (a) pyrene	10.0	U
193-39-5-----	Indeno (1,2,3-cd) pyrene	10.0	U
53-70-3-----	Dibenz (a,h) anthracene	10.0	U
191-24-2-----	Benzo (ghi) perylene	10.0	U

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: MOUNTAIN STATES

Contract:

Lab Code: MSAI

Case No.:

SAS No.:

SDG No.: 990112C

	EPA SAMPLE NO.	S1 (2FP) #	S2 (PHL) #	S3 (NBZ) #	S4 (FBP) #	S5 (TBP) #	S6 (TPH) #	S7 #	S8 #	TOT OUT
01	SBLK	35	25	55	44	48	50			0
02	LCS	43	31	67	59	55	56			0
03	4056	4	38	65	56	48	45			0
04	4057	44	37	60	54	52	51			0
05	4057MS	34	26	65	58	53	58			0
06	4057MSD	37	32	67	61	56	60			0
07										
08										
09										
10										
11										
12										
13										
14										
15										
16										
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22										
23										
24										
25										
26										
27										
28										
29										
30										

QC LIMITS

S1 (2FP) = 2-Fluorophenol (1- 90)
 S2 (PHL) = Phenol-d6 (1- 67)
 S3 (NBZ) = Nitrobenzene-d5 (18-114)
 S4 (FBP) = 2-Fluorobiphenyl (31- 97)
 S5 (TBP) = 2,4,6-Tribromophenol (19-139)
 S6 (TPH) = Terphenyl-d14 (15-141)

Column to be used to flag recovery values
 * Values outside of contract required QC limits
 D Surrogate diluted out

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: MOUNTAIN STATES

Contract:

Lab Code: MSAI

Case No.:

SAS No.:

SDG No.: 990119C

	EPA SAMPLE NO.	S1 (2FP) #	S2 (PHL) #	S3 (NBZ) #	S4 (FBP) #	S5 (TBP) #	S6 (TPH) #	S7 #	S8 #	TOT OUT
01	0199AMB	39	29	56	42	46	54			0
02	0199ALCS	41	30	62	58	57	59			0
03	0199ALCSD	42	30	64	58	58	60			0
04	CBNEAA	40	33	62	48	46	51			0
05	CBNEAAMS	41	35	60	56	52	53			0
06	CBNEAAMSD	44	36	66	60	57	55			0
07	1188-2 R	51	41	93	54	52	55			0
08	981205607	33	26	58	48	45	54			0
09	981205608	37	28	56	46	48	45			0
10	981206001	43	38	57	44	49	44			0
11	981206002	36	33	56	42	45	51			0
12	981206101	4	6	56	43	19	52			0
13	981206102	42	41	63	45	48	53			0
14										
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QC LIMITS

S1 (2FP) = 2-Fluorophenol (1- 90)
 S2 (PHL) = Phenol-d6 (1- 67)
 S3 (NBZ) = Nitrobenzene-d5 (18-114)
 S4 (FBP) = 2-Fluorobiphenyl (31- 97)
 S5 (TBP) = 2,4,6-Tribromophenol (19-139)
 S6 (TPH) = Terphenyl-d14 (15-141)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogate diluted out

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MOUNTAIN STATES

Contract:

Lab Code: MSAI

Case No.:

SAS No.:

SDG No.: 990112C

Matrix Spike - Sample No.: LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Phenol	100.00		38.11	38	5-112
2-Chlorophenol	100.00		74.89	75	23-134
1,4-Dichlorobenzene	100.00		57.67	58	20-124
N-Nitrosodi-N-propylami	100.00		83.93	84	1-230
1,2,4-Trichlorobenzene	100.00		61.04	61	44-142
4-Chloro-3-methylphenol	100.00		83.11	83	22-147
Acenaphthene	100.00		84.51	84	47-145
4-Nitrophenol	100.00		44.79	45	1-132
2,4-Dinitrotoluene	100.00		87.07	87	39-139
Pentachlorophenol	100.00		79.09	79	14-176
Pyrene	100.00		83.64	84	52-115

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 0 out of 11 outside limits

COMMENTS:

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MOUNTAIN STATES

Contract:

Lab Code: MSAI

Case No.:

SAS No.:

SDG No.: 990112C

Matrix Spike - EPA Sample No.: 4057

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Phenol	100.00	7.54	35.88	28	5-112
2-Chlorophenol	100.00	0.00	68.06	68	23-134
1,4-Dichlorobenzene	100.00	0.00	61.02	61	20-124
N-Nitrosodi-N-propylami	100.00	0.00	75.57	76	1-230
1,2,4-Trichlorobenzene	100.00	0.00	68.25	68	44-142
4-Chloro-3-methylphenol	100.00	0.00	79.65	80	22-147
Acenaphthene	100.00	0.00	80.32	80	47-145
4-Nitrophenol	100.00	0.00	26.78	27	1-132
2,4-Dinitrotoluene	100.00	0.00	48.02	48	39-139
Pentachlorophenol	100.00	0.00	76.96	77	14-176
Pyrene	100.00	0.00	65.64	66	52-115

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
Phenol	100.00	43.69	36	25	42	5-112
2-Chlorophenol	100.00	72.51	72	6	40	23-134
1,4-Dichlorobenzene	100.00	69.26	69	12	28	20-124
N-Nitrosodi-N-propylami	100.00	81.25	81	6	38	1-230
1,2,4-Trichlorobenzene	100.00	73.89	74	8	28	44-142
4-Chloro-3-methylphenol	100.00	86.24	86	7	42	22-147
Acenaphthene	100.00	84.87	85	6	31	47-145
4-Nitrophenol	100.00	28.43	28	4	50	1-132
2,4-Dinitrotoluene	100.00	50.30	50	4	38	39-139
Pentachlorophenol	100.00	81.57	82	6	50	14-176
Pyrene	100.00	62.06	62	6	31	52-115

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 11 outside limits

Spike Recovery: 0 out of 22 outside limits

COMMENTS:

On Site Technologies, LTD.

612 E. Murray Drive
Farmington, NM 87401
(505) 325-2432

CHAIN-OF-CUSTODY RECORD

Subcontractor:

Mountain States Analytical, Inc.
1645 West 2200 South

TEL: (800) 973-6724
FAX: (801) 972-6278

Salt Lake City, UT 84119

Acct #:

04-Jan-99

Sample ID	Matrix	Collection Date	Bottle Type	Requested Tests		
				E248.2 E6010	E239.2 E6010	E300 SW8310 E6010
9812061-01C	Aqueous	12/31/98 10:15:00 AM	1LAMGU			1
9812061-01D	Aqueous	12/31/98 10:15:00 AM	500HDPEHNO3	1	1	
9812061-01E	Aqueous	12/31/98 10:15:00 AM	250HDPE			2
9812061-02C	Aqueous	12/31/98 10:45:00 AM	1LAMGU			1
9812061-02D	Aqueous	12/31/98 10:45:00 AM	500HDPEHNO3	1	1	
9812061-02E	Aqueous	12/31/98 10:45:00 AM	250HDPE			2

Comments:

Please analyze submitted samples for (C) PAH E8270, (D) Total Chromium and Lead (E) Fluoride and Bromide.

NOELF, SAME FORMAT AS PRIOR SAMPLES SUBMITTED FOR ABOVE ANALYSES
11/4/98

Relinquished by:

Heidi Reese

Date/Time

1/4/99 1600

Received by:

Ruth Alford

Date/Time

01/05/99 1030

CHAIN OF CUSTODY RECORD

5549

ON SITE

TECHNOLOGIES, LTD. 657 W. Maple • P.O. Box 2606 • Farmington NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

Date: 12/31/98

Page 1 of 1

Purchase Order No.: 898-651		Job No.		Name: Terry Grafton		Title	
SEND INVOICE TO		Company: Same		Company: BioTech Remediation			
Address		Dept.		Mailing Address: 710 E 20th Suite 400			
City, State, Zip				City, State, Zip: Farmington, NM 87401		Telephone No. 322-4965	
City, State, Zip				Telephone No.		Telefax No.	
Sampling Location: Thriftway Refinery 626 Rd 5500 Blomfield, NM 87401				ANALYSIS REQUESTED			
Sampler: Ken Sinker				RESULTS TO REPORT			
Number of Containers				LAB ID			
STRIPPER Influent				9812061-01			
STRIPPER Effluent				-02			
TRAVEL Blank				-03A			
FIELD Blank				-04A			
RELINQUISHED BY: Ken Sinker				Date/Time: 12/31/98			
RELINQUISHED BY:				Date/Time			
RELINQUISHED BY:				Date/Time			
Method of Shipment:				Special Instructions:			
Authorized by: Ken Sinker				Date: 12/31/98			
(Client Signature Must Accompany Request)							

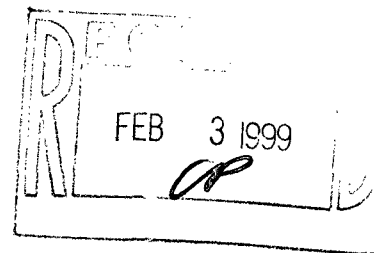
OFF: (505) 325-5667



LAB: (505) 325-1556

January 29, 1999

Terry Griffin
BioTech Remediation, Inc.
710 E. 20th, Suite 400
Farmington, NM 87401
TEL: (505) 327-4965
FAX (505) 564-3604



RE: Thriftway Refinery

Order No.: 9812051

Dear Terry Griffin,

On Site Technologies, LTD. received 5 samples on 12/29/98 for the analyses presented in the following report.

The Samples were analyzed for the following tests:

- Alkalinity, Total (M2320 B)
- Bromide (E300)
- BTEX (SW8021B)
- Calcium, Dissolved (E215.1)
- Chloride (E325.3)
- Chromium, Total (SW6010A)
- Conductivity (E120.1)
- Fluoride (E300)
- Lead, Total (SW6010A)
- Magnesium, Dissolved (E242.1)
- pH (E150.1)
- Polynuclear Aromatic Hydrocarbons (SW8270A)
- Potassium, Dissolved (E258.1)
- Sodium, Dissolved (E273.1)
- Sulfate (M4500-SO4 D)
- Total Dissolved Solids (E160.1)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

A handwritten signature in dark ink, appearing to be "J. E." or similar.

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

On Site Technologies, LTD.

Date: 29-Jan-99

CLIENT: BioTech Remediation, Inc.

Project: Thriftway Refinery

Lab Order: 9812051

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition. Methods for Chemical Analysis of Water and Wastes EPA-600/4-79-020, March 1983.

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812051	Client Sample ID:	MW-20
Lab ID:	9812051-01A	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/28/98 6:30:00 PM
		COC Record:	5641

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B		Analyst: HR		
Methyl tert-Butyl Ether	71	0.5		µg/L	1	12/30/98
Benzene	4	0.5		µg/L	1	12/30/98
Toluene	ND	0.5		µg/L	1	12/30/98
Ethylbenzene	1.7	0.5		µg/L	1	12/30/98
m,p-Xylene	ND	1		µg/L	1	12/30/98
o-Xylene	ND	0.5		µg/L	1	12/30/98

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted recovery limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT**Date:** 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812051	Client Sample ID:	MW-20
Lab ID:	9812051-01B	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/28/98 6:30:00 PM
		COC Record:	5641

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
CALCIUM, DISSOLVED		E215.1				Analyst: HR
Calcium	370	50		mg/L	100	1/7/99
POTASSIUM, DISSOLVED		E258.1				Analyst: HR
Potassium	8.1	1.2		mg/L	5	1/7/99
MAGNESIUM, DISSOLVED		E242.1				Analyst: HR
Magnesium	66	12		mg/L	50	1/8/99
SODIUM, DISSOLVED		E273.1				Analyst: HR
Sodium	970	50		mg/L	200	1/7/99
ALKALINITY, TOTAL		M2320 B				Analyst: HR
Alkalinity, Bicarbonate (As CaCO ₃)	670	5		mg/L CaCO ₃	1	1/4/99
Alkalinity, Carbonate (As CaCO ₃)	ND	5		mg/L CaCO ₃	1	1/4/99
Alkalinity, Total (As CaCO ₃)	670	5		mg/L CaCO ₃	1	1/4/99
CHLORIDE		E325.3				Analyst: HR
Chloride	150	10		mg/L	1	1/5/99
CONDUCTIVITY		E120.1				Analyst: HR
Specific Conductance	4900	2		uS/cm	1	1/4/99
PH		E150.1				Analyst: HR
pH	6.98	2		pH units	1	1/4/99
SULFATE		M4500-SO4 D				Analyst: HR
Sulfate	2500	5		mg/L	1	1/4/99
TOTAL DISSOLVED SOLIDS		E160.1				Analyst: HR
Total Dissolved Solids (Residue, Filterable)	4700	40		mg/L	1	1/4/99

Qualifiers:

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812051	Client Sample ID:	MW-21
Lab ID:	9812051-02A	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/28/98 4:50:00 PM
		COC Record:	5641

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B				Analyst: HR
Methyl tert-Butyl Ether	81	0.5		µg/L	1	12/30/98
Benzene	ND	0.5		µg/L	1	12/30/98
Toluene	ND	0.5		µg/L	1	12/30/98
Ethylbenzene	1.1	0.5		µg/L	1	12/30/98
m,p-Xylene	ND	1		µg/L	1	12/30/98
o-Xylene	ND	0.5		µg/L	1	12/30/98

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted recovery limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812051	Client Sample ID:	MW-21
Lab ID:	9812051-02B	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/28/98 4:50:00 PM
		COC Record:	5641

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
CALCIUM, DISSOLVED		E215.1				Analyst: HR
Calcium	320	120		mg/L	100	1/7/99
POTASSIUM, DISSOLVED		E258.1				Analyst: HR
Potassium	11	1.2		mg/L	5	1/7/99
MAGNESIUM, DISSOLVED		E242.1				Analyst: HR
Magnesium	68	12		mg/L	50	1/8/99
SODIUM, DISSOLVED		E273.1				Analyst: HR
Sodium	1400	120		mg/L	500	1/7/99
ALKALINITY, TOTAL		M2320 B				Analyst: HR
Alkalinity, Bicarbonate (As CaCO ₃)	700	5		mg/L CaCO ₃	1	1/4/99
Alkalinity, Carbonate (As CaCO ₃)	ND	5		mg/L CaCO ₃	1	1/4/99
Alkalinity, Total (As CaCO ₃)	700	5		mg/L CaCO ₃	1	1/4/99
CHLORIDE		E325.3				Analyst: HR
Chloride	110	10		mg/L	1	1/5/99
CONDUCTIVITY		E120.1				Analyst: HR
Specific Conductance	5700	2		uS/cm	1	1/4/99
PH		E150.1				Analyst: HR
pH	6.97	2		pH units	1	1/4/99
SULFATE		M4500-SO4 D				Analyst: HR
Sulfate	3200	5		mg/L	1	1/4/99
TOTAL DISSOLVED SOLIDS		E160.1				Analyst: HR
Total Dissolved Solids (Residue, Filterable)	5800	40		mg/L	1	1/4/99

Qualifiers:

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812051	Client Sample ID:	MW-22
Lab ID:	9812051-03A	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/28/98 5:45:00 PM
		COC Record:	5641

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B		Analyst: HR		
Methyl tert-Butyl Ether	28	0.5		µg/L	1	12/30/98
Benzene	ND	0.5		µg/L	1	12/30/98
Toluene	ND	0.5		µg/L	1	12/30/98
Ethylbenzene	ND	0.5		µg/L	1	12/30/98
m,p-Xylene	ND	1		µg/L	1	12/30/98
o-Xylene	ND	0.5		µg/L	1	12/30/98

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted recovery limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surrogate - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812051	Client Sample ID:	MW-22
Lab ID:	9812051-03B	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/28/98 5:45:00 PM
		COC Record:	5641

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
CALCIUM, DISSOLVED		E215.1				Analyst: HR
Calcium	420	200		mg/L	200	1/7/99
POTASSIUM, DISSOLVED		E258.1				Analyst: HR
Potassium	14	1.2		mg/L	5	1/7/99
MAGNESIUM, DISSOLVED		E242.1				Analyst: HR
Magnesium	71	12		mg/L	50	1/8/99
SODIUM, DISSOLVED		E273.1				Analyst: HR
Sodium	2000	200		mg/L	800	1/7/99
ALKALINITY, TOTAL		M2320 B				Analyst: HR
Alkalinity, Bicarbonate (As CaCO ₃)	460	5		mg/L CaCO ₃	1	1/4/99
Alkalinity, Carbonate (As CaCO ₃)	ND	5		mg/L CaCO ₃	1	1/4/99
Alkalinity, Total (As CaCO ₃)	460	5		mg/L CaCO ₃	1	1/4/99
CHLORIDE		E325.3				Analyst: HR
Chloride	98	10		mg/L	1	1/5/99
CONDUCTIVITY		E120.1				Analyst: HR
Specific Conductance	6300	2		uS/cm	1	1/4/99
PH		E150.1				Analyst: HR
pH	6.95	2		pH units	1	1/4/99
SULFATE		M4500-SO4 D				Analyst: HR
Sulfate	5000	5		mg/L	1	1/4/99
TOTAL DISSOLVED SOLIDS		E160.1				Analyst: HR
Total Dissolved Solids (Residue, Filterable)	8100	40		mg/L	1	1/4/99

Qualifiers:

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812051	Client Sample ID:	Travel Blank
Lab ID:	9812051-04A	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/28/98 1:55:00 PM
		COC Record:	5641

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B				Analyst: HR
Methyl tert-Butyl Ether	ND	0.5		µg/L	1	12/30/98
Benzene	ND	0.5		µg/L	1	12/30/98
Toluene	ND	0.5		µg/L	1	12/30/98
Ethylbenzene	ND	0.5		µg/L	1	12/30/98
m,p-Xylene	ND	1		µg/L	1	12/30/98
o-Xylene	ND	0.5		µg/L	1	12/30/98

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted recovery limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surrogate - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812051	Client Sample ID:	Field Blank
Lab ID:	9812051-05A	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/28/98 4:30:00 PM
		COC Record:	5641

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B				Analyst: HR
Methyl tert-Butyl Ether	ND	0.5		µg/L	1	12/30/98
Benzene	ND	0.5		µg/L	1	12/30/98
Toluene	ND	0.5		µg/L	1	12/30/98
Ethylbenzene	ND	0.5		µg/L	1	12/30/98
m,p-Xylene	ND	1		µg/L	1	12/30/98
o-Xylene	ND	0.5		µg/L	1	12/30/98

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

On Site Technologies, LTD.

CLIENT: BioTech Remediation, Inc.
Work Order: 9812051
Project: Thriftway Refinery

Date: 12-Jan-99

QC SUMMARY REPORT

Method Blank

Sample ID: MBLank	Batch ID: API H2O_990	Test Code: SW7140	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812051	Run ID: API H2O_990108A		SeqNo: 9916	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Calcium	ND	0.25			
Sample ID: MBLank	Batch ID: API H2O_990	Test Code: SW7450	Units: mg/L	Analysis Date 1/8/99	Prep Date:
Client ID:	9812051	Run ID: API H2O_990108A		SeqNo: 9942	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Magnesium	ND	0.25			
Sample ID: MBLank	Batch ID: API H2O_990	Test Code: SW7770	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812051	Run ID: API H2O_990108A		SeqNo: 9962	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sodium	ND	0.25			
Sample ID: MBLank	Batch ID: API H2O_990	Test Code: SW7610	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812051	Run ID: API H2O_990108A		SeqNo: 9982	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Potassium	ND	0.25			
Sample ID: MBLank	Batch ID: API H2O_990	Test Code: M4500-Cl C.	Units: mg/L	Analysis Date 1/5/99	Prep Date:
Client ID:	9812051	Run ID: API H2O_990108A		SeqNo: 10015	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	ND	10			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.

Work Order: 9812051

Project: Thriftway Refinery

QC SUMMARY REPORT

Method Blank

Sample ID: MBlank	Batch ID: API H2O_990	Test Code: M4500-Cl C	Units: mg/L	Analysis Date 1/6/99	Prep Date:
Client ID:	9812051	Run ID:	API H2O_990108A	SeqNo: 10037	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	ND	10			

Sample ID: MBlank	Batch ID: API H2O_990	Test Code: M2320 B	Units: mg/L CaCO3	Analysis Date 1/4/99	Prep Date:
Client ID:	9812051	Run ID:	API H2O_990108A	SeqNo: 10066	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Alkalinity, Bicarbonate (As CaCO3)	3	5			J
Alkalinity, Carbonate (As CaCO3)	ND	5			
Alkalinity, Total (As CaCO3)	3	5			J

Sample ID: MBlank	Batch ID: API H2O_990	Test Code: E120.1	Units: uS/cm	Analysis Date 1/4/99	Prep Date:
Client ID:	9812051	Run ID:	API H2O_990108A	SeqNo: 10104	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Specific Conductance	ND	2			

Sample ID: MBlank	Batch ID: API H2O_990	Test Code: M4500-SO4 D	Units: mg/L	Analysis Date 1/4/99	Prep Date:
Client ID:	9812051	Run ID:	API H2O_990108A	SeqNo: 10232	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate	ND	5			

Qualifiers: ND - Not Detected at the Reporting Limit
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R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

CLIENT: BioTech Remediation, Inc.
Work Order: 9812051
Project: Thriftway Refinery

Date: 12-Jan-99

QC SUMMARY REPORT

Sample Duplicate

Sample ID: 9812051-02BD		Batch ID: API H2O_990		Test Code: M4500-SO4 D		Units: mg/L		Analysis Date 1/5/99		Prep Date:	
Client ID: MW-21		Run ID: 9812051		Run ID: API H2O_990108A				SeqNo: 10246			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3213	5	0	0	0.0%	0	0	3159	1.7%	6	
Sample ID: 9812056-01BD		Batch ID: API H2O_990		Test Code: M4500-Cl C.		Units: mg/L		Analysis Date 1/5/99		Prep Date:	
Client ID:		Run ID: 9812051		Run ID: API H2O_990108A				SeqNo: 10026			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	244	10	0	0	0.0%	0	0	244	0.0%	7	
Sample ID: 9812056-01BD		Batch ID: API H2O_990		Test Code: M2320 B		Units: mg/L CaCO3		Analysis Date 1/4/99		Prep Date:	
Client ID:		Run ID: 9812051		Run ID: API H2O_990108A				SeqNo: 10083			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	758	5	0	0	0.0%	0	0	754	0.5%	3	
Alkalinity, Carbonate (As CaCO3)	ND	5	0	0	0.0%	0	0	0	0.0%	3	
Alkalinity, Total (As CaCO3)	758	5	0	0	0.0%	0	0	754	0.5%	3	
Sample ID: 9812056-06BD		Batch ID: API H2O_990		Test Code: M4500-Cl C.		Units: mg/L		Analysis Date 1/5/99		Prep Date:	
Client ID:		Run ID: 9812051		Run ID: API H2O_990108A				SeqNo: 10027			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	138	10	0	0	0.0%	0	0	138	0.0%	7	

Qualifiers: ND - Not Detected at the Reporting Limit
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S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.

Work Order: 9812051

Project: Thriftway Refinery

QC SUMMARY REPORT

Sample Duplicate

Sample ID: 9812060-01BD	Batch ID: API H2O_990	Test Code: M2320 B	Units: mg/L CaCO3	Analysis Date 1/4/99	Prep Date:
Client ID: 9812051	Run ID: API H2O_990108A	PQL	SPK value	SeqNo: 10084	
Analyte	Result	PQL	SPK value	LowLimit	HighLimit
Alkalinity, Bicarbonate (As CaCO3)	284	5	0	0	0
Alkalinity, Carbonate (As CaCO3)	ND	5	0	0	0
Alkalinity, Total (As CaCO3)	284	5	0	0	0
				%REC	RPD Ref Val
				0.0%	289
				0.0%	0
				0.0%	289
				%RPD	RPDLimit
				1.7%	3
				0.0%	3
				1.7%	3

Sample ID: 9812061-02BD	Batch ID: API H2O_990	Test Code: M4500-SO4 D	Units: mg/L	Analysis Date 1/5/99	Prep Date:
Client ID: 9812051	Run ID: API H2O_990108A	PQL	SPK value	SeqNo: 10247	
Analyte	Result	PQL	SPK value	LowLimit	HighLimit
Sulfate	1607	5	0	0	0
				%REC	RPD Ref Val
				0.0%	1608
				0.1%	6

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

CLIENT: BioTech Remediation, Inc.
Work Order: 9812051
Project: Thriftway Refinery

Date: 12-Jan-99

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID: 9812051-01BMS	Batch ID: API H2O_990	Test Code: SW7140	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID: MW-20	9812051	Run ID: API H2O_990108A		SeqNo: 9934	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Calcium	494	50	100	370	124.0% 69 159
Sample ID: 9812056-02BMS	Batch ID: API H2O_990	Test Code: SW7610	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812051	Run ID: API H2O_990108A		SeqNo: 10000	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Potassium	15	1.2	5	7.8	144.0% 67 157
Sample ID: 9812056-03BMS	Batch ID: API H2O_990	Test Code: SW7450	Units: mg/L	Analysis Date 1/8/99	Prep Date:
Client ID:	9812051	Run ID: API H2O_990108A		SeqNo: 9960	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Magnesium	93.2	5	40	50	108.0% 78 126
Sample ID: 9812056-06BMS	Batch ID: API H2O_990	Test Code: SW7770	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812051	Run ID: API H2O_990108A		SeqNo: 9980	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sodium	1272	100	400	840	108.0% 81 135

Qualifiers: ND - Not Detected at the Reporting Limit
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R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

CLIENT: BioTech Remediation, Inc.
Work Order: 9812051
Project: Thriftway Refinery

Date: 12-Jan-99

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS	Batch ID: API H2O_990	Test Code: M2320 B	Units: mg/L CaCO3	Analysis Date 1/4/99	Prep Date:
Client ID:	9812051	Run ID:	API H2O_990108A	SeqNo: 10067	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Alkalinity, Bicarbonate (As CaCO3)	116	5	116	3	97.4% 91 116
Alkalinity, Total (As CaCO3)	116	5	116	3	97.4% 91 116
Sample ID: LCS	Batch ID: API H2O_990	Test Code: E120.1	Units: uS/cm	Analysis Date 1/4/99	Prep Date:
Client ID:	9812051	Run ID:	API H2O_990108A	SeqNo: 10105	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Specific Conductance	1049	2	1040	0	100.9% 97 103
Sample ID: LCS	Batch ID: API H2O_990	Test Code: E120.1	Units: uS/cm	Analysis Date 1/4/99	Prep Date:
Client ID:	9812051	Run ID:	API H2O_990108A	SeqNo: 10121	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Specific Conductance	1058	2	1040	0	101.7% 97 103
Sample ID: LCS	Batch ID: API H2O_990	Test Code: E150.1	Units: pH units	Analysis Date 1/4/99	Prep Date:
Client ID:	9812051	Run ID:	API H2O_990108A	SeqNo: 10160	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
pH	8.895	2	9.07	0	98.1% 98 102
Sample ID: LCS	Batch ID: API H2O_990	Test Code: E150.1	Units: pH units	Analysis Date 1/4/99	Prep Date:
Client ID:	9812051	Run ID:	API H2O_990108A	SeqNo: 10176	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
pH	8.896	2	9.07	0	98.1% 98 102

Qualifiers: ND - Not Detected at the Reporting Limit
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R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.
Work Order: 9812051
Project: Thriftway Refinery

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS	Batch ID: API H2O_990	Test Code: M4500-SO4 D	Units: mg/L	Analysis Date 1/4/99	Prep Date:
Client ID: 9812051	Run ID: API H2O_990108A	PQL	SPK value	SeqNo: 10233	
Analyte	Result	SPK Ref Val	%REC	LowLimit	HighLimit
Sulfate	120	5	122	0	98.4%
				83	113
Sample ID: LCS	Batch ID: API H2O_990	Test Code: M4500-SO4 D	Units: mg/L	Analysis Date 1/5/99	Prep Date:
Client ID: 9812051	Run ID: API H2O_990108A	PQL	SPK value	SeqNo: 10242	
Analyte	Result	SPK Ref Val	%REC	LowLimit	HighLimit
Sulfate	124	5	122	0	101.6%
				83	113
Sample ID: LCS-CI	Batch ID: API H2O_990	Test Code: M4500-CI C.	Units: mg/L	Analysis Date 1/6/99	Prep Date:
Client ID: 9812051	Run ID: API H2O_990108A	PQL	SPK value	SeqNo: 10038	
Analyte	Result	SPK Ref Val	%REC	LowLimit	HighLimit
Chloride	47	10	50	0	94.0%
				88.4	115
Sample ID: LCS-CI 0.141N	Batch ID: API H2O_990	Test Code: M4500-CI C.	Units: mg/L	Analysis Date 1/5/99	Prep Date:
Client ID: 9812051	Run ID: API H2O_990108A	PQL	SPK value	SeqNo: 10016	
Analyte	Result	SPK Ref Val	%REC	LowLimit	HighLimit
Chloride	116.7	10	122	0	95.7%
				88.4	115

Qualifiers: ND - Not Detected at the Reporting Limit
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R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

CLIENT: BioTech Remediation, Inc.
Work Order: 9812051
Project: Thriftway Refinery

Date: 12-Jan-99

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV-2 Ca	Batch ID: API H2O_990	Test Code: SW7140	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812051	Run ID:	API H2O_990108A	SeqNo: 9927	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Calcium	1.77	0.25	1.95	0	90.8% 89 107
Sample ID: CCV-2 Mg	Batch ID: API H2O_990	Test Code: SW7450	Units: mg/L	Analysis Date 1/8/99	Prep Date:
Client ID:	9812051	Run ID:	API H2O_990108A	SeqNo: 9953	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Magnesium	1.79	0.25	1.71	0	104.7% 96 114
Sample ID: CCV-2 Na	Batch ID: API H2O_990	Test Code: SW7770	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812051	Run ID:	API H2O_990108A	SeqNo: 9973	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sodium	2.75	0.25	2.64	0	104.2% 87 111
Sample ID: CCV1 - Ca	Batch ID: API H2O_990	Test Code: SW7140	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812051	Run ID:	API H2O_990108A	SeqNo: 9917	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Calcium	1.78	0.25	1.95	0	91.3% 89 107
Sample ID: CCV1 - K	Batch ID: API H2O_990	Test Code: SW7610	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812051	Run ID:	API H2O_990108A	SeqNo: 9983	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Potassium	2.65	0.25	2.68	0	98.9% 84 114

Qualifiers: ND - Not Detected at the Reporting Limit
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R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.
Work Order: 9812051
Project: Thriftway Refinery

QC SUMMARY REPORT
Continuing Calibration Verification Standard

Sample ID: CCV1 - Mg	Batch ID: API H2O_990	Test Code: SW7450	Units: mg/L	Analysis Date 1/8/99	Prep Date:
Client ID:	9812051	Run ID: API H2O_990108A		SeqNo: 9943	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Magnesium	1.82	0.25	1.71	0	106.4% 96 114

Sample ID: CCV1 - Na	Batch ID: API H2O_990	Test Code: SW7770	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812051	Run ID: API H2O_990108A		SeqNo: 9963	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sodium	2.79	0.25	2.64	0	105.7% 87 111

Sample ID: CCV2-K	Batch ID: API H2O_990	Test Code: SW7610	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812051	Run ID: API H2O_990108A		SeqNo: 9993	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Potassium	2.65	0.25	2.68	0	98.9% 84 114

Sample ID: CCV3-Ca	Batch ID: API H2O_990	Test Code: SW7140	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812051	Run ID: API H2O_990108A		SeqNo: 9935	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Calcium	1.79	0.25	1.95	0	91.8% 89 107

Sample ID: CCV3-K	Batch ID: API H2O_990	Test Code: SW7610	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812051	Run ID: API H2O_990108A		SeqNo: 10001	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Potassium	2.66	0.25	2.68	0	99.3% 84 114

Qualifiers: ND - Not Detected at the Reporting Limit
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R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.

Work Order: 9812051

Project: Thriftway Refinery

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV3-Mg	Batch ID: API H2O_990	Test Code: SW7450	Units: mg/L	Analysis Date 1/8/99	Prep Date:
Client ID: 9812051	Run ID: API H2O_990108A	PQL	SPK value	SeqNo: 9961	
Analyte	Result	SPK Ref Val	%REC	LowLimit	HighLimit
Magnesium	1.83	0.25	1.71	0	107.0%
				96	114

Sample ID: CCV3-Na	Batch ID: API H2O_990	Test Code: SW7770	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID: 9812051	Run ID: API H2O_990108A	PQL	SPK value	SeqNo: 9981	
Analyte	Result	SPK Ref Val	%REC	LowLimit	HighLimit
Sodium	2.76	0.25	2.64	0	104.5%
				87	111

Qualifiers:

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R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 29-Jan-99

CLIENT: BioTech Remediation, Inc.

Work Order: 9812051

Project: Thriftway Refinery

QC SUMMARY REPORT

Method Blank

Sample ID: MB1	Batch ID: GC-1_981230	Test Code: SW8021B	Units: µg/L	Analysis Date 12/30/98	Prep Date:
Client ID:	9812051	Run ID:	GC-1_981230A	SeqNo: 9801	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	.0614	0.5			J
Ethylbenzene	.0721	0.5			J
m,p-Xylene	.1759	1			J
Methyl tert-Butyl Ether	.0843	0.5			J
o-Xylene	.0738	0.5			J
Toluene	.1483	0.5			J

Qualifiers:

ND - Not Detected at the Reporting Limit
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R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 29-Jan-99

CLIENT: BioTech Remediation, Inc.

Work Order: 9812051

Project: Thriftway Refinery

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9812053-04AMS	Batch ID: GC-1_981230	Test Code: SW8021B	Units: µg/L	Analysis Date 12/30/98	Prep Date:
Client ID: 9812051	Run ID: GC-1_981230A	PQL	SPK value	SeqNo: 9802	
Analyte	Result		SPK Ref Val	LowLimit	HighLimit
Benzene	43540	500	610	73	115
Ethylbenzene	44990	500	1000	74	117
m,p-Xylene	93000	1000	6000	76	112
Methyl tert-Butyl Ether	44330	500	100	62	122
o-Xylene	43350	500	100	83	112
Toluene	44610	500	400	71	120
				%REC	%RPD
				RPD Ref Val	RPDLimit
				Qual	

Sample ID: 9812053-04AMSD	Batch ID: GC-1_981230	Test Code: SW8021B	Units: µg/L	Analysis Date 12/30/98	Prep Date:
Client ID: 9812051	Run ID: GC-1_981230A	PQL	SPK value	SeqNo: 9803	
Analyte	Result		SPK Ref Val	LowLimit	HighLimit
Benzene	45270	500	610	73	115
Ethylbenzene	44990	500	1000	74	117
m,p-Xylene	93000	1000	6000	76	112
Methyl tert-Butyl Ether	45850	500	100	62	122
o-Xylene	43350	500	100	83	112
Toluene	44610	500	400	71	120
				%REC	%RPD
				RPD Ref Val	RPDLimit
				Qual	

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 29-Jan-99

CLIENT: BioTech Remediation, Inc.

Work Order: 9812051

Project: Thriftway Refinery

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS WATER	Batch ID: GC-1_981230	Test Code: SW8021B	Units: µg/L	Analysis Date 12/30/98	Prep Date:
Client ID: 9812051	Run ID: GC-1_981230A	PQL	SPK value	SeqNo: 9800	
Analyte	Result	SPK	SPK Ref Val	LowLimit	HighLimit
Benzene	43.62	0.5	0.06	84	110
Ethylbenzene	43.74	0.5	0.07	86	113
m,p-Xylene	85.1	1	0.2	81	114
Methyl tert-Butyl Ether	45.56	0.5	0.08	69	129
o-Xylene	43.49	0.5	0.07	86	112
Toluene	43.24	0.5	0.1	85	111
				%REC	%RPD
				108.9%	
				109.2%	
				106.1%	
				113.7%	
				108.5%	
				107.8%	
				RPDLimit	Qual

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 29-Jan-99

CLIENT: BioTech Remediation, Inc.

Work Order: 9812051

Project: Thriftway Refinery

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 QC0606/07		Batch ID: GC-1_981230		Test Code: SW8021B		Units: µg/L		Analysis Date 12/30/98			Prep Date:	
Client ID:		9812051		Run ID:		GC-1_981230A		SeqNo:		9797		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Benzene	21.77	0.5	20	0	108.9%	85	115					
Ethylbenzene	21.93	0.5	20	0	109.7%	85	115					
m,p-Xylene	42.04	1	40	0	105.1%	85	115					
Methyl tert-Butyl Ether	22.44	0.5	20	0	112.2%	85	115					
o-Xylene	21.72	0.5	20	0	108.6%	85	115					
Toluene	21.56	0.5	20	0	107.8%	85	115					
1,4-Difluorobenzene	92.6	0	100	0	92.6%	70	130					
4-Bromochlorobenzene	101.9	0	100	0	101.9%	70	130					
Fluorobenzene	86.3	0	100	0	86.3%	70	130					

Sample ID: CCV2 QC0606/07		Batch ID: GC-1_981230		Test Code: SW8021B		Units: µg/L		Analysis Date 12/30/98		Prep Date:	
Client ID:		Run ID:		GC-1_981230A				SeqNo: 9798			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.88	0.5	20	0	109.4%	85	115				
Ethylbenzene	22.01	0.5	20	0	110.0%	85	115				
m,p-Xylene	42.05	1	40	0	105.1%	85	115				
Methyl tert-Butyl Ether	22.45	0.5	20	0	112.2%	85	115				
o-Xylene	21.76	0.5	20	0	108.8%	85	115				
Toluene	21.76	0.5	20	0	108.8%	85	115				
1,4-Difluorobenzene	92.29	0	100	0	92.3%	70	130				
4-Bromochlorobenzene	104	0	100	0	104.0%	70	130				
Fluorobenzene	86.55	0	100	0	86.5%	70	130				

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.

Work Order: 9812051

Project: Thriftway Refinery

QC SUMMARY REPORT
Continuing Calibration Verification Standard

Sample ID: CCV3 QC0606/07		Batch ID: GC-1_981230		Test Code: SW8021B		Units: µg/L		Analysis Date 12/30/98		Prep Date:	
Client ID:		9812051		Run ID:		GC-1_981230A		SeqNo: 9799			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	42.67	0.5	40	0	106.7%	85	115				
Ethylbenzene	42.97	0.5	40	0	107.4%	85	115				
m,p-Xylene	83.74	1	80	0	104.7%	85	115				
Methyl tert-Butyl Ether	44.61	0.5	40	0	111.5%	85	115				
o-Xylene	42.62	0.5	40	0	106.5%	85	115				
Toluene	43.9	0.5	40	0	109.8%	85	115				
1,4-Difluorobenzene	92.61	0	100	0	92.6%	70	130				
4-Bromochlorobenzene	105	0	100	0	105.0%	70	130				
Fluorobenzene	85.96	0	100	0	86.0%	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 29-Jan-99

CLIENT: BioTech Remediation, Inc.

Work Order: 9812051

Project: Thriftway Refinery

Test No: SW8021B

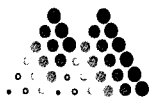
QC SUMMARY REPORT SURROGATE RECOVERIES

BTEX

Sample ID	14FBZ	4BCBZ	FLBZ				
9812050-01A	92.7	102	87				
9812050-02A	92	102	85.7				
9812051-01A	91.6	104	86				
9812051-02A	92.8	105	87.3				
9812051-03A	91.9	104	86.1				
9812051-04A	92.8	104	86.6				
9812051-05A	93.4	103	87				
9812053-01A	93.3	104	86.9				
9812053-02A	93	104	87.2				
9812053-03A	92.4	102	86.2				
9812053-04AMS	92	104	85.8				
9812053-04AMSD	92.5	102	86.5				
9812053-05A	93.9	104	88				
9812053-06A	93.4	104	87.3				
9812055-01A	92	102	86.3				
CCV1 QC0606/07	92.6	102	86.3				
CCV2 QC0606/07	92.3	104	86.5				
CCV3 QC0606/07	92.6	105	86				
LCS WATER	92.3	103	85.9				
MB1	93.8	103	87.3				

Acronym	Surrogate	QC Limits
14FBZ	= 1,4-Difluorobenzene	70-130
4BCBZ	= 4-Bromochlorobenzene	70-130
FLBZ	= Fluorobenzene	70-130

* Surrogate recovery outside acceptance limits



Mountain States Analytical, Inc.

RECEIVED JAN 25 1999

The Quality Solution

January 20, 1999

Mr. David Cox
On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Reference:

Project: PAH/Cr,Pb/diss Fl and Br
Project No.: 9812051
MSAI Group: 25401

Dear Mr. Cox:

Enclosed are the analytical results for your project referenced above. The following samples are included in the report.

9812051-01

9812051-02

9812051-03

All holding times were met for the tests performed on these samples.

Thank you for selecting Mountain States Analytical, Inc. to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

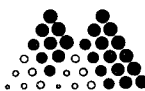
We look forward to working with you on future projects.

With Regards,

Rolf E. Larsen
Project Manager

Corporate Office: 1645 West 2200 South • Salt Lake City, Utah 84119
801-973-0050 • 1-800-973-6724 (MSAI) • FAX 801-972-6278
e-mail: service@msailabs.com





Mountain States Analytical, Inc.

The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: PAH/Cr,Pb/diss Fl and Br

Sample ID: 9812051-01

Matrix: Water

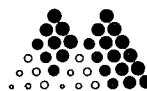
MSAI Sample: 91695
MSAI Group: 25401
Date Reported: 01/20/99
Discard Date: 02/19/99
Date Submitted: 12/31/98
Date Sampled: 12/28/98
Collected by:
Purchase Order:
Project No.: 9812051

Thriftway Refinery MW-20

Test Analysis	Results as Received	Units	Limit of Quantitation
0393G Flame/hrICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w873	mg/l	
13007 Metals by hrICP, 6010A, w/ww Method: SW-846 6010A			
Chromium	ND	mg/l	0.05
Lead	ND	mg/l	0.10
3000 SVOA Extraction, w/ww Method: SW-846 3510B	Complete		
6719 Polycyclic Aro/Hydrocarb, 8270A ww Method: SW-846 8270A			
Acenaphthene	ND	ug/l	10.0
Acenaphthylene	ND	ug/l	10.0
Anthracene	ND	ug/l	10.0
Benz(a)anthracene	ND	ug/l	10.0
Benzo(b)fluoranthene	ND	ug/l	10.0
Benzo(k)fluoranthene	ND	ug/l	10.0
Benzo(ghi)perylene	ND	ug/l	10.0
Benzo(a)pyrene	ND	ug/l	25.0
Chrysene	ND	ug/l	10.0
Dibenz(a,h)anthracene	ND	ug/l	10.0
Fluoranthene	ND	ug/l	10.0
Fluorene	ND	ug/l	10.0
Naphthalene	ND	ug/l	10.0
Phenanthrene	ND	ug/l	10.0
Pyrene	ND	ug/l	10.0
Indeno(1,2,3-cd)pyrene	ND	ug/l	10.0
2-Methylnaphthalene	ND	ug/l	10.0

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e-mail: service@msailabs.com





Mountain States Analytical, Inc.

The Quality Solution

Page 2

On Site Technologies, Ltd.

MSAI Sample: 91695

MSAI Group: 25401

Sample ID: 9812051-01

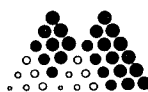
Test Analysis	Results as Received	Units	Limit of Quantitation
0001G **Special Instructions, GC VOA Method: SPECIAL INST. MSAI	Complete		
0504 Fluoride, Ion Chromatography Method: EPA 300.0	ND	mg/l	3
0505 Bromide, Ion Chromatography Method: EPA 300.0	3.3	mg/l	3

ND - Not detected at the Limit of Quantitation.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

Rolf E. Larsen
Project Manager



Mountain States Analytical, Inc.

The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: PAH/Cr,Pb/diss Fl and Br

Sample ID: 9812051-02

Matrix: Water

Thriftway Refinery MW-21

MSAI Sample: 91696
MSAI Group: 25401
Date Reported: 01/20/99
Discard Date: 02/19/99
Date Submitted: 12/31/98
Date Sampled: 12/28/98
Collected by:
Purchase Order:
Project No.: 9812051

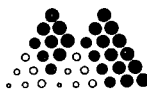
Test Analysis	Results as Received	Units	Limit of Quantitation
0393G Flame/hrICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w873	mg/l	
13007 Metals by hrICP, 6010A, w/ww Method: SW-846 6010A			
Chromium	ND	mg/l	0.05
Lead	ND	mg/l	0.10
3000 SVOA Extraction, w/ww Method: SW-846 3510B	Complete	ug/l	
6719 Polycyclic Aro/Hydrocarb, 8270A ww Method: SW-846 8270A			
Acenaphthene	ND	ug/l	(1) 10.0
Acenaphthylene	ND	ug/l	10.0
Anthracene	ND	ug/l	10.0
Benzo(a)anthracene	ND	ug/l	10.0
Benzo(b)fluoranthene	ND	ug/l	10.0
Benzo(k)fluoranthene	ND	ug/l	10.0
Benzo(ghi)perylene	ND	ug/l	10.0
Benzo(a)pyrene	ND	ug/l	25.0
Chrysene	ND	ug/l	10.0
Dibenz(a,h)anthracene	ND	ug/l	10.0
Fluoranthene	ND	ug/l	10.0
Fluorene	ND	ug/l	10.0
Naphthalene	ND	ug/l	10.0
Phenanthrene	ND	ug/l	10.0
Pyrene	ND	ug/l	10.0
Indeno(1,2,3-cd)pyrene	ND	ug/l	10.0
2-Methylnaphthalene	ND	ug/l	10.0

Corporate Office: 1645 West 2200 South • Salt Lake City, Utah 84119

801-973-0050 • 1-800-973-6724 (MSAI) • FAX 801-972-6278

e-mail: service@msailabs.com





Mountain States Analytical, Inc.

The Quality Solution

Page 2

On Site Technologies, Ltd.

MSAI Sample: 91696

MSAI Group: 25401

Sample ID: 9812051-02

Test Analysis	Results as Received	Units	Limit of Quantitation
-----	-----	-----	-----
0504 Fluoride, Ion Chromatography Method: EPA 300.0	ND	mg/l	3
0505 Bromide, Ion Chromatography Method: EPA 300.0	3.2	mg/l	3

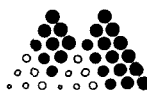
- 1) Sample 91696 was reanalyzed due to internal standard failures in the initial analysis. These failures were not confirmed in the reanalysis of the samples. The results from the second analysis are reported.

ND - Not detected at the Limit of Quantitation.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:


Rolf E. Larsen
Project Manager



Mountain States Analytical, Inc.

The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: PAH/Cr,Pb/diss Fl and Br

Sample ID: 9812051-03

Matrix: Water

Thriftway Refinery MW-22

MSAI Sample: 91697
MSAI Group: 25401
Date Reported: 01/20/99
Discard Date: 02/19/99
Date Submitted: 12/31/98
Date Sampled: 12/28/98
Collected by:
Purchase Order:
Project No.: 9812051

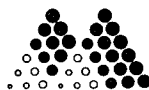
Test Analysis	Results as Received	Units	Limit of Quantitation
0393G Flame/hrICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w873	mg/l	
13007 Metals by hrICP, 6010A, w/ww Method: SW-846 6010A			
Chromium	ND	mg/l	0.05
Lead	0.14	mg/l	0.10
3000 SVOA Extraction, w/ww Method: SW-846 3510B	Complete	ug/l	
6719 Polycyclic Aro/Hydrocarb, 8270A ww Method: SW-846 8270A			
Acenaphthene	ND	ug/l	(1) 10.0
Acenaphthylene	ND	ug/l	10.0
Anthracene	ND	ug/l	10.0
Benz(a)anthracene	ND	ug/l	10.0
Benzo(b)fluoranthene	ND	ug/l	10.0
Benzo(k)fluoranthene	ND	ug/l	10.0
Benzo(ghi)perylene	ND	ug/l	10.0
Benzo(a)pyrene	ND	ug/l	25.0
Chrysene	ND	ug/l	10.0
Dibenz(a,h)anthracene	ND	ug/l	10.0
Fluoranthene	ND	ug/l	10.0
Fluorene	ND	ug/l	10.0
Naphthalene	ND	ug/l	10.0
Phenanthrene	ND	ug/l	10.0
Pyrene	ND	ug/l	10.0
Indeno(1,2,3-cd)pyrene	ND	ug/l	10.0
2-Methylnaphthalene	ND	ug/l	10.0

Corporate Office: 1645 West 2200 South • Salt Lake City, Utah 84119

801-973-0050 • 1-800-973-6724 (MSAI) • FAX 801-972-6278

e-mail: service@msailabs.com





Mountain States Analytical, Inc.

The Quality Solution

Page 2

On Site Technologies, Ltd.

MSAI Sample: 91697

MSAI Group: 25401

Sample ID: 9812051-03

Test	Analysis	Results as Received	Units	Limit of Quantitation
0504	Fluoride, Ion Chromatography Method: EPA 300.0	ND	mg/l	3
0505	Bromide, Ion Chromatography Method: EPA 300.0	3.4	mg/l	3

- 1) Sample 91697 was reanalyzed due to internal standard failures in the initial analysis. These failures were not confirmed in the reanalysis of the samples. The results from the second analysis are reported.

ND - Not detected at the Limit of Quantitation.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

Rolf E. Larsen
Project Manager

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting

01/11/99
13:22:07
Group: 25401

Analysis Batch Number: ICPHR-01/05/99-114 -1
Test Identification : ICPHR-*IRIS QC parameters
Number of Samples : 13
Batch Data-Date/Time : 01/06/99 / 08:38:23

Sequence : DATR005

BLANK#	ANALYTE	CONC FOUND #	CONC LIMIT
PBW1-873	Silver	0.0005	0.0050
	Arsenic	ND	0.0150
	Barium	0.0005	0.0030
	Beryllium	0.0000	0.0002
	Cadmium	ND	0.0020
	Chromium	0.0007	0.0100
	Copper	0.0053	0.0100
	Nickel	0.0005	0.0100
	Lead	ND	0.0200
	Antimony	0.0061	0.0200
	Selenium	0.0076	0.0300
	Thallium	ND	0.0200
	Vanadium	0.0009	0.0030
	Zinc	0.0075	0.0300

Spike		QC LIMITS					
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	LOWER	UPPER
25398-91690	Silver	0.0500	0.0018	0.0544	105.2	80.0	120.0
	Arsenic	2.0000	0.0044	2.1504	107.3	80.0	120.0
	Barium	2.0000	0.1394	2.1724	101.7	80.0	120.0
	Beryllium	0.0500	0.0002	0.0488	97.1	80.0	120.0
	Cadmium	0.0500	0.0171	0.0651	96.0	80.0	120.0
	Chromium	0.2000	0.0272	0.2250	98.9	80.0	120.0
	Copper	0.2500	0.0502	0.3103	104.0	80.0	120.0
	Nickel	0.5000	0.5395	1.0531	102.7	80.0	120.0
	Lead	0.5000	1.0217	1.5906	113.8	80.0	120.0
	Antimony	1.0000	0.0143	1.0747	106.0	80.0	120.0
	Selenium	2.0000	0.0066	2.1715	108.2	80.0	120.0
	Thallium	2.0000	0.0018	1.8862	94.2	80.0	120.0
	Vanadium	0.5000	0.0013	0.4963	99.0	80.0	120.0
	Zinc	0.5000	9.4932	10.7359	248.5(2k)	80.0	120.0

						QC LIMITS				
SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	LOWER	UPPER	RPD	#	LIMIT
25398-91691	Silver	0.0500	0.0018	0.0528	102.0	80.0	120.0	2.9		20.0
	Arsenic	2.0000	0.0044	2.1574	107.6	80.0	120.0	0.3		20.0
	Barium	2.0000	0.1394	2.1706	101.6	80.0	120.0	0.1		20.0
	Beryllium	0.0500	0.0002	0.0489	97.4	80.0	120.0	0.3		20.0
	Cadmium	0.0500	0.0171	0.0646	95.2	80.0	120.0	0.6		20.0
	Chromium	0.2000	0.0272	0.2240	98.4	80.0	120.0	0.4		20.0
	Copper	0.2500	0.0502	0.3049	101.9	80.0	120.0	1.8		20.0
	Nickel	0.5000	0.5395	1.0365	99.4	80.0	120.0	1.6		20.0
	Lead	0.5000	1.0217	1.5633	108.3	80.0	120.0	1.7		20.0
	Antimony	1.0000	0.0143	1.0680	105.4	80.0	120.0	0.6		20.0
	Selenium	2.0000	0.0066	2.1805	108.7	80.0	120.0	0.4		20.0
	Thallium	2.0000	0.0018	1.9232	96.1	80.0	120.0	1.9		20.0
	Vanadium	0.5000	0.0013	0.4972	99.2	80.0	120.0	0.2		20.0
	Zinc	0.5000	9.4932	10.3210	165.6(2k)	80.0	120.0	3.9		20.0

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting01/11/99
13:22:08
Group: 25401Analysis Batch Number: ICPHR-01/05/99-114 -1
Test Identification : ICPHR-*IRIS QC parameters
Number of Samples : 13
Batch Date-Time : 01/06/99 / 08:38:23

Sequence : DATR005

DUPLICATE

SAMPLE#	ANALYTE	RESULT 1	RESULT 2	RPD #	LIMIT	DILUTION
398-91689	Silver	0.0018	0.0019	4.9	20.0	1.00
	Arsenic	0.0044	0.0009	131.1(11)	20.0	1.00
	Barium	0.1394	0.1397	0.2	20.0	1.00
	Beryllium	0.0002	0.0002	0.0	20.0	1.00
	Cadmium	0.0171	0.0172	0.9	20.0	1.00
	Chromium	0.0272	0.0252	7.8	20.0	1.00
	Copper	0.0502	0.0533	6.0	20.0	1.00
	Nickel	0.5395	0.5587	3.5	20.0	1.00
	Lead	1.0217	1.1282	9.9	20.0	1.00
	Antimony	0.0143	0.0253	55.7(5a)	20.0	1.00
	Selenium	0.0066	0.0161	83.2(11)	20.0	1.00
	Thallium	0.0018	0.0090	132.7(11)	20.0	1.00
	Vanadium	0.0013	0.0020	43.8(11)	20.0	1.00
	Zinc	9.4932	9.7766	2.9	20.0	1.00

CONTROL

SAMPLE#	ANALYTE	QC LIMITS			
		CONC FOUND	CONC KNOWN	% REC #	LOWER UPPER
SW-873	Silver	0.0500	0.0500	100.0	80.0 120.0
	Arsenic	2.0400	2.0000	102.0	80.0 120.0
	Barium	2.0325	2.0000	101.6	80.0 120.0
	Beryllium	0.0507	0.0500	101.4	80.0 120.0
	Cadmium	0.0506	0.0500	101.1	80.0 120.0
	Chromium	0.2053	0.2000	102.7	80.0 120.0
	Copper	0.2542	0.2500	101.7	80.0 120.0
	Nickel	0.5104	0.5000	102.1	80.0 120.0
	Lead	0.5191	0.5000	103.8	80.0 120.0
	Antimony	0.9982	1.0000	99.8	80.0 120.0
	Selenium	2.0892	2.0000	104.5	80.0 120.0
	Thallium	2.0257	2.0000	101.3	80.0 120.0
	Vanadium	0.4985	0.5000	99.7	80.0 120.0
	Zinc	0.5286	0.5000	105.7	80.0 120.0

QC LIMITS

CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC #	LOWER UPPER
V-	Silver	0.1000	0.0956	95.6	90.0 110.0
	Arsenic	0.4000	0.3953	98.8	90.0 110.0
	Barium	1.0000	1.0032	100.3	90.0 110.0
	Beryllium	0.1000	0.1020	102.0	90.0 110.0
	Cadmium	1.0000	0.9856	98.6	90.0 110.0
	Chromium	1.0000	0.9933	99.3	90.0 110.0
	Copper	1.0000	0.9837	98.4	90.0 110.0
	Nickel	2.0000	2.0000	100.0	90.0 110.0
	Lead	5.0000	4.9708	99.4	90.0 110.0
	Antimony	1.0000	1.0159	101.6	90.0 110.0
	Selenium	0.4000	0.3872	96.8	90.0 110.0
	Thallium	1.0000	0.9945	99.5	90.0 110.0
	Vanadium	0.4000	0.3810	95.3	90.0 110.0
	Zinc	1.0000	0.9957	99.6	90.0 110.0
11-2	Silver	0.1000	0.0953	95.3	90.0 110.0

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting

01/11/99
13:22:10
Group: 25401

Analysis Batch Number: ICPHR-01/05/99-114 -1
Test Identification : ICPHR-*IRIS QC parameters
Number of Samples : 13
Batch Date/Time : 01/06/99 / 08:38:23

Sequence : DATR005

CCV #	ANALYTE	TRUE VALUE	BATCH READ	QC LIMITS		
				% REC #	LOWER	UPPER
V1--2	Arsenic	0.4000	0.3964	99.1	90.0	110.0
	Barium	1.0000	1.0055	100.5	90.0	110.0
	Beryllium	0.1000	0.1007	100.7	90.0	110.0
	Cadmium	1.0000	0.9828	98.3	90.0	110.0
	Chromium	1.0000	0.9963	99.6	90.0	110.0
	Copper	1.0000	0.9836	98.4	90.0	110.0
	Nickel	2.0000	1.9892	99.5	90.0	110.0
	Lead	5.0000	4.9936	99.9	90.0	110.0
	Antimony	1.0000	1.0289	102.9	90.0	110.0
	Selenium	0.4000	0.3955	98.9	90.0	110.0
	Thallium	1.0000	0.9961	99.6	90.0	110.0
	Vanadium	0.4000	0.3815	95.4	90.0	110.0
	Zinc	1.0000	0.9939	99.4	90.0	110.0
V2--3	Silver	0.1000	0.0947	94.7	90.0	110.0
	Arsenic	0.4000	0.3872	96.8	90.0	110.0
	Barium	1.0000	1.0117	101.2	90.0	110.0
	Beryllium	0.1000	0.0983	98.3	90.0	110.0
	Cadmium	1.0000	0.9769	97.7	90.0	110.0
	Chromium	1.0000	0.9938	99.4	90.0	110.0
	Copper	1.0000	0.9651	96.5	90.0	110.0
	Nickel	2.0000	1.9758	98.8	90.0	110.0
	Lead	5.0000	5.0288	100.6	90.0	110.0
	Antimony	1.0000	1.0110	101.1	90.0	110.0
	Selenium	0.4000	0.3783	94.6	90.0	110.0
	Thallium	1.0000	0.9874	98.7	90.0	110.0
	Vanadium	0.4000	0.3785	94.6	90.0	110.0
	Zinc	1.0000	0.9813	98.1	90.0	110.0
V3--4	Silver	0.1000	0.0957	95.7	90.0	110.0
	Arsenic	0.4000	0.3857	96.4	90.0	110.0
	Barium	1.0000	0.9947	99.5	90.0	110.0
	Beryllium	0.1000	0.0977	97.7	90.0	110.0
	Cadmium	1.0000	0.9479	94.8	90.0	110.0
	Chromium	1.0000	0.9884	98.8	90.0	110.0
	Copper	1.0000	0.9676	96.8	90.0	110.0
	Nickel	2.0000	1.9209	96.0	90.0	110.0
	Lead	5.0000	4.8892	97.8	90.0	110.0
	Antimony	1.0000	1.0001	100.0	90.0	110.0
	Selenium	0.4000	0.3818	95.4	90.0	110.0
	Thallium	1.0000	0.9701	97.0	90.0	110.0
	Vanadium	0.4000	0.3787	94.7	90.0	110.0
	Zinc	1.0000	0.9627	96.3	90.0	110.0
V4--5	Silver	0.1000	0.0949	94.9	90.0	110.0
	Arsenic	0.4000	0.3869	96.7	90.0	110.0
	Barium	1.0000	0.9979	99.8	90.0	110.0
	Beryllium	0.1000	0.0984	98.4	90.0	110.0
	Cadmium	1.0000	0.9582	95.8	90.0	110.0
	Chromium	1.0000	0.9872	98.7	90.0	110.0
	Copper	1.0000	0.9734	97.3	90.0	110.0
	Nickel	2.0000	1.9478	97.4	90.0	110.0

Analysis Batch Number: ICPHR-01/05/99-114 -1

Test Identification : ICPHR-*IRIS QC parameters

Sequence : DATR005

Number of Samples : 13

Batch Data-Date/Time : 01/06/99 / 08:38:23

CCV #	ANALYTE	TRUE VALUE	BATCH READ	QC LIMITS		
				% REC #	LOWER	UPPER
V4--5	Lead	5.0000	4.8865	97.7	90.0	110.0
	Antimony	1.0000	0.9989	99.9	90.0	110.0
	Selenium	0.4000	0.3778	94.5	90.0	110.0
	Thallium	1.0000	0.9801	98.0	90.0	110.0
	Vanadium	0.4000	0.3780	94.5	90.0	110.0
	Zinc	1.0000	0.9674	96.7	90.0	110.0

B#	ANALYTE	CONC FOUND #	CONC LIMIT
ICB-	Silver	0.0004	0.0050
	Arsenic	ND	0.0150
	Barium	0.0002	0.0030
	Beryllium	ND	0.0002
	Cadmium	0.0000	0.0020
	Chromium	0.0002	0.0100
	Copper	ND	0.0100
	Nickel	ND	0.0100
	Lead	0.0006	0.0200
	Antimony	ND	0.0200
	Selenium	0.0018	0.0300
	Thallium	ND	0.0200
	Vanadium	ND	0.0030
	Zinc	ND	0.0300
CCB1-	Silver	0.0002	0.0050
	Arsenic	ND	0.0150
	Barium	0.0002	0.0030
	Beryllium	ND	0.0002
	Cadmium	ND	0.0020
	Chromium	0.0004	0.0100
	Copper	ND	0.0100
	Nickel	ND	0.0100
	Lead	ND	0.0200
	Antimony	0.0043	0.0200
	Selenium	ND	0.0300
	Thallium	ND	0.0200
	Vanadium	0.0004	0.0030
	Zinc	ND	0.0300
CCB2-	Silver	ND	0.0050
	Arsenic	ND	0.0150
	Barium	0.0005	0.0030
	Beryllium	ND	0.0002
	Cadmium	ND	0.0020
	Chromium	0.0002	0.0100
	Copper	0.0003	0.0100
	Nickel	0.0002	0.0100
	Lead	0.0017	0.0200
	Antimony	ND	0.0200
	Selenium	ND	0.0300
	Thallium	0.0046	0.0200
	Vanadium	0.0005	0.0030

Analysis Batch Number: ICPHR-01/05/99-114 -1

Test Identification : ICPHR-*IRIS QC parameters

Sequence : DATR005

Number of Samples : 13

Batch Data-Date/Time : 01/06/99 / 08:38:23

CCB#	ANALYTE	CONC FOUND #	CONC LIMIT
CCB2-	Zinc	ND	0.0300
B3-	Silver	0.0002	0.0050
	Arsenic	ND	0.0150
	Barium	0.0002	0.0030
	Beryllium	ND	0.0002
	Cadmium	0.0002	0.0020
	Chromium	0.0007	0.0100
	Copper	ND	0.0100
	Nickel	ND	0.0100
	Lead	0.0013	0.0200
	Antimony	0.0017	0.0200
	Selenium	ND	0.0300
	Thallium	0.0054	0.0200
	Vanadium	ND	0.0030
	Zinc	0.0002	0.0300
B4-	Silver	0.0004	0.0050
	Arsenic	0.0015	0.0150
	Barium	0.0001	0.0030
	Beryllium	ND	0.0002
	Cadmium	0.0001	0.0020
	Chromium	0.0004	0.0100
	Copper	0.0003	0.0100
	Nickel	0.0009	0.0100
	Lead	0.0049	0.0200
	Antimony	0.0083	0.0200
	Selenium	ND	0.0300
	Thallium	0.0100	0.0200
	Vanadium	ND	0.0030
	Zinc	ND	0.0300

----- Result Footnotes -----

(k) - Sample concentration >4X spk added. Serial dilution was recovered within 10% limits.

(1) - The duplicate results cannot be evaluated because both results are <MDL.

(5a) - Duplicates not evaluated: Results are <10x detection limit

Groups & Samples

25389-91677	25398-91689	25398-91690	25398-91691	25401-91695	25401-91696	25401-91697	25403-91700
25403-91701	25403-91702	25403-91703	25403-91704	25403-91705	25403-91706	25403-91707	

MOUNTAIN STATES ANALYTICAL

```

=====
Data File   : C:\PEAKNET\DATA\DATA0118.D02   Report Date: 1/11/99 11:55:34 AM |
Sample Name: LRB                               Collected  : 1/11/99 11:41:08 AM |
Inject #    : 2                               Vial #       :                |
Method File: c:\peaknet\method\as14low.met   Calibrated   : 1/6/99 11:26:07 AM |
System Name: System1                         Detector     : CD20              |
Column Type: AS14+AG14 (Both 4mm)           Operator      : TG                |
Data Points: 3900                           Rate         : 5.00   Hz          |
Module Name:                               Moduleware   : 1.17              |
=====
  
```

```

-----
Calibration Volume Dilution Start Stop Area Reject Pk. Width Threshold
-----
External          1          1   0.00 13.00          750    10.00    0.50
  
```

***** Component Report: All Components *****

Pk. Num	Ret Time	Component Name	Concentration mg/l	Area	Peak Start	Peak End	% Delta
0	0.00	Flouride	0.000	0	0.00	0.00	0.00
1	4.27	Chloride	0.207	4589	4.00	4.47	1.11
0	0.00	Nitrite as N	0.000	0	0.00	0.00	0.00
0	0.00	Bromide	0.000	0	0.00	0.00	0.00
0	0.00	Nitrate as N	0.000	0	0.00	0.00	0.00
3	9.55	O-phos as P	0.016	1631	9.33	9.87	0.00
0	0.00	Sulfate	0.000	0	0.00	0.00	0.00
Totals			0.223	6220			

***** Peak Report: Unknown Peaks *****

Pk. Num	Ret Time	Component Name	Concentration mg/l	Area	Peak Start	Peak End	% Delta
2	8.98		0.000	1609	8.76	9.15	
Totals			0.000	1609			

3A
WATER ANION LFB/LFBD RECOVERY

Lab Name: MOUNTAIN STATES ANALYTICAL Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - MSAI Sample No.: LFB/LFBD Date Analyzed: 01/11/99

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	LFB CONCENTRATION (mg/L)	LFB % REC #	QC. LIMITS REC.
FLUORIDE	100.00	0.00	98.95	99	90 110
BROMIDE	400.00	0.00	392.06	98	90 110

COMPOUND	SPIKE ADDED (mg/L)	LFBD CONCENTRATION (mg/L)	LFBD % REC #	% RPD #	QC RPD	LIMITS REC.
FLUORIDE	100.00	98.26	98	0.7	20.0	90 110
BROMIDE	400.00	390.58	98	0.4	20.0	90 110

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of in-house QC limits

RPD: 0 out of 2 outside of in-house QC limits

LFB Recovery: 0 out of 4 outside of in-house QC limits

Comments: _____

3A
WATER ANION LFB/LFBD RECOVERY

Lab Name: MOUNTAIN STATES ANALYTICAL Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - MSAI Sample No.: LFB/LFBD Date Analyzed: 01/11/99

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	LFB CONCENTRATION (mg/L)	LFB % REC #	QC. LIMITS REC.
FLUORIDE	100.00	0.00	100.94	101	90 110
BROMIDE	400.00	0.00	395.40	99	90 110

COMPOUND	SPIKE ADDED (mg/L)	LFBD CONCENTRATION (mg/L)	LFBD % REC #	% RPD #	QC RPD	LIMITS REC.
FLUORIDE	100.00	100.91	101	0.0	20.0	90 110
BROMIDE	400.00	404.16	101	2.2	20.0	90 110

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of in-house QC limits

RPD: 0 out of 2 outside of in-house QC limits

LFB Recovery: 0 out of 4 outside of in-house QC limits

Comments: _____

3A
WATER ANION SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MOUNTAIN STATES ANALYTICAL Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - MSAI Sample No.: 91695 Date Analyzed: 01/11/99

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC #	QC. LIMITS REC.
CHLORIDE	25	1.435	25.299	95	80 120
BROMIDE	100	3.274	99.574	96	80 120

COMPOUND	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC #	% RPD #	QC RPD	LIMITS REC.
CHLORIDE	25	25.228	95	0.3	20.0	80 120
BROMIDE	100	99.834	97	0.3	20.0	80 120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of in-house QC limits

RPD: 0 out of 2 outside of in-house QC limits

Spike Recovery: 0 out of 4 outside of in-house QC limits

Comments: _____

3A
WATER ANION SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MOUNTAIN STATES ANALYTICAL Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - MSAI Sample No.: 91701 Date Analyzed: 01/11/99

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC #	QC. LIMITS REC.
CHLORIDE	25	1.587	25.434	95	80 120
BROMIDE	100	0	97.516	98	80 120

COMPOUND	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC #	% RPD #	QC RPD	LIMITS REC.
CHLORIDE	25	25.632	96	0.8	20.0	80 120
BROMIDE	100	99.364	99	1.9	20.0	80 120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of in-house QC limits

RPD: 0 out of 2 outside of in-house QC limits

Spike Recovery: 0 out of 4 outside of in-house QC limits

Comments: _____

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK

Lab Name: MOUNTAIN STATES

Contract:

Lab Code: MSAI

Case No.:

SAS No.:

SDG No.: 990109C2

Matrix: (soil/water) WATER

Lab Sample ID: 990104WB

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: X5000

Level: (low/med) LOW

Date Received: _____

% Moisture: 0 decanted: (Y/N) N

Date Extracted:

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 01/10/99

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
---------	----------	---	---

108-95-2-----Phenol	830.00	U
111-44-4-----bis(2-Chloroethyl) ether	330.00	U
95-57-8-----2-Chlorophenol	830.00	U
541-73-1-----1,3-Dichlorobenzene	330.00	U
106-46-7-----1,4-Dichlorobenzene	330.00	U
100-51-6-----Benzyl alcohol	330.00	U
95-50-1-----1,2-Dichlorobenzene	330.00	U
95-48-7-----2-Methylphenol (o-Cresol)	830.00	U
108-60-1-----bis(2-Chloroisopropyl) ether	330.00	U
N0019500-----3 and 4-Methylphenol	830.00	U
621-64-7-----N-Nitrosodi-N-propylamine	330.00	U
67-72-1-----Hexachloroethane	330.00	U
98-95-3-----Nitrobenzene	330.00	U
78-59-1-----Isophorone	330.00	U
105-67-9-----2,4-Dimethylphenol	830.00	U
88-75-5-----2-Nitrophenol	830.00	U
65-85-0-----Benzoic acid	830.00	U
111-91-1-----bis(2-Chloroethoxy) methane	330.00	U
120-83-2-----2,4-Dichlorophenol	830.00	U
120-82-1-----1,2,4-Trichlorobenzene	330.00	U
91-20-3-----Naphthalene	330.00	U
106-47-8-----4-Chloroaniline	330.00	U
87-68-3-----Hexachlorobutadiene	330.00	U
59-50-7-----4-Chloro-3-methylphenol	830.00	U
91-57-6-----2-Methylnaphthalene	330.00	U
77-47-4-----Hexachlorocyclopentadiene	670.00	U
88-06-2-----2,4,6-Trichlorophenol	830.00	U
95-95-4-----2,4,5-Trichlorophenol	830.00	U
91-58-7-----2-Chloronaphthalene	330.00	U
88-74-4-----2-Nitroaniline	330.00	U
130-15-4-----1,4-Naphthoquinone	330.00	U
131-11-3-----Dimethyl phthalate	330.00	U
606-20-2-----2,6-Dinitrotoluene	330.00	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK

Lab Name: MOUNTAIN STATES

Contract:

Lab Code: MSAI

Case No.:

SAS No.:

SDG No.: 990109C2

Matrix: (soil/water) SOIL

Lab Sample ID: 990104WB

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: X5000

Level: (low/med) LOW

Date Received: _____

% Moisture: 0 decanted: (Y/N) N

Date Extracted:

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 01/10/99

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
---------	----------	---	---

208-96-8-----	Acenaphthylene	330.00	U
99-09-2-----	3-Nitroaniline	330.00	U
51-28-5-----	2,4-Dinitrophenol	830.00	U
83-32-9-----	Acenaphthene	330.00	U
100-02-7-----	4-Nitrophenol	830.00	U
121-14-2-----	2,4-Dinitrotoluene	330.00	U
132-64-9-----	Dibenzofuran	330.00	U
84-66-2-----	Diethyl phthalate	330.00	U
7005-72-3-----	4-Chlorophenyl-phenyl ether	330.00	U
86-73-7-----	Fluorene	330.00	U
100-01-6-----	4-Nitroaniline	330.00	U
534-52-1-----	4,6-Dinitro-2-methylphenol	830.00	U
86-30-6-----	N-Nitrosodiphenylamine (1)	330.00	U
101-55-3-----	4-Bromophenyl-phenyl ether	330.00	U
118-74-1-----	Hexachlorobenzene	330.00	U
87-86-5-----	Pentachlorophenol	830.00	U
85-01-8-----	Phenanthrene	330.00	U
120-12-7-----	Anthracene	330.00	U
86-74-8-----	Carbazole	330.00	U
84-74-2-----	Di-N-butylphthalate	330.00	U
206-44-0-----	Fluoranthene	330.00	U
129-00-0-----	Pyrene	330.00	U
52-85-7-----	Famphur	330.00	U
85-68-7-----	Butylbenzyl phthalate	330.00	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	49.45	J
91-94-1-----	3,3'-Dichlorobenzidine	330.00	U
56-55-3-----	Benz(a)anthracene	330.00	U
218-01-9-----	Chrysene	330.00	U
117-84-0-----	Di-N-octyl phthalate	330.00	U
205-99-2-----	Benzo(b)fluoranthene	330.00	U
207-08-9-----	Benzo(k)fluoranthene	330.00	U
50-32-8-----	Benzo(a)pyrene	330.00	U
193-39-5-----	Indeno(1,2,3-cd)pyrene	330.00	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

OLM03.0

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK

Lab Name: MOUNTAIN STATES

Contract:

Lab Code: MSAI

Case No.:

SAS No.:

SDG No.: 990109C2

Matrix: (soil/water) SOIL

Lab Sample ID: 990104WB

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: X5000

Level: (low/med) LOW

Date Received: _____

% Moisture: 0 decanted: (Y/N) N

Date Extracted:

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 01/10/99

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NO.

COMPOUND

Q

53-70-3-----	Dibenz (a,h) anthracene	330.00	U
191-24-2-----	Benzo (ghi) perylene	330.00	U
79-10-7-----	Acrylic Acid	670.00	U
110-86-1-----	Pyridine	330.00	U
62-75-9-----	N-Nitrosodimethylamine	330.00	U
564-00-1-----	2,2'-Bioxirane	330.00	U
542-76-7-----	3-Chloropropionitrile	330.00	U
109-06-8-----	2-Picoline	330.00	U
51-79-6-----	Ethyl Carbamate	330.00	U
66-27-3-----	Methyl methanesulfonate	330.00	U
55-18-5-----	N-Nitrosodiethylamine	330.00	U
62-50-0-----	Ethyl methanesulfonate	330.00	U
62-53-3-----	Aniline	330.00	U
95-13-6-----	Indene	330.00	U
76-01-7-----	Pentachloroethane	330.00	U
930-55-2-----	N-Nitrosopyrrolidine	330.00	U
98-86-2-----	Acetophenone	330.00	U
59-89-2-----	N-Nitrosomorpholine	330.00	U
95-53-4-----	o-Toluidine	330.00	U
98-87-3-----	Benzal Chloride	330.00	U
100-75-4-----	N-Nitrosopiperidine	330.00	U
126-68-1-----	o,o,o-Triethylphosphorothioa	330.00	U
87-65-0-----	2,6-Dichlorophenol	330.00	U
1888-71-7-----	Hexachloropropene	330.00	U
122-09-8-----	a,a-Dimethylphenethylamine	670.00	U
106-50-3-----	1,4-Phenylenediamine	3300.00	U
91-22-5-----	Quinoline	330.00	U
924-16-3-----	N-Nitrosodi-N-butylamine	330.00	U
108-46-3-----	Resorcinol	330.00	U
90-12-0-----	1-Methylnaphthalene	330.00	U
85-44-9-----	Phthalic Anhydride	1700.00	U
95-94-3-----	1,2,4,5-Tetrachlorobenzene	330.00	U
120-58-1-----	Isosafrole	330.00	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK

Lab Name: MOUNTAIN STATES

Contract:

Lab Code: MSAI

Case No.:

SAS No.:

SDG No.: 990109C2

Matrix: (soil/water) SOIL

Lab Sample ID: 990104WB

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: X5000

Level: (low/med) LOW

Date Received: _____

% Moisture: 0 decanted: (Y/N) N

Date Extracted:

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 01/10/99

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
---------	----------	---	---

94-59-7-----	Safrole	330.00	U
99-65-0-----	1,3-Dinitrobenzene	330.00	U
608-93-5-----	Pentachlorobenzene	330.00	U
134-32-7-----	1-Naphthylamine	330.00	U
935-95-5-----	2,3,5,6-Tetrachlorophenol	330.00	U
58-90-2-----	2,3,4,5 or 2,3,4,6-TCPPhenol	670.00	U
91-59-8-----	2-Naphthylamine	330.00	U
96-45-7-----	Ethylene Thiourea	330.00	U
122-66-7-----	1,2-Diphenylhydrazine	330.00	U
297-97-2-----	Thionazin	330.00	U
99-55-8-----	5-Nitro-o-toluidine	330.00	U
3689-24-5-----	Tetraethyldithiopyrophosphat	330.00	U
99-35-4-----	1,3,5-Trinitrobenzene	1700.00	U
2303-16-4-----	Diallate (cis)	330.00	U
2303-16-4-----	Diallate (trans)	330.00	U
60-51-5-----	Dimethoate	3300.00	U
62-44-2-----	Phenacetin	330.00	U
92-67-1-----	4-Aminobiphenyl	330.00	U
82-63-8-----	Pentachloronitrobenzene	330.00	U
23950-58-5-----	Pronamide	330.00	U
88-85-7-----	Dinoseb	1300.00	U
298-00-0-----	Parathion, Methyl	670.00	U
56-38-2-----	Parathion, Ethyl	670.00	U
56-57-5-----	4-Nitroquinoline-1-oxide	3300.00	U
91-80-5-----	Methapyrilene	670.00	U
465-73-6-----	Isodrin	330.00	U
92-87-5-----	Benzidine	3300.00	U
140-57-8-----	Aramite	330.00	U
143-50-0-----	Kepone	1700.00	U
60-11-7-----	p- (Dimethylamino) azobenzene	330.00	U
510-15-6-----	Chlorobenzilate	330.00	U
119-93-7-----	3,3'-Dimethylbenzidine	330.00	U
53-96-3-----	2-Acetylaminofluorene	330.00	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK

Lab Name: MOUNTAIN STATES

Contract:

Lab Code: MSAI

Case No.:

SAS No.:

SDG No.: 990109C2

Matrix: (soil/water) SOIL

Lab Sample ID: 990104WB

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: X5000

Level: (low/med) LOW

Date Received: _____

% Moisture: 0 decanted: (Y/N) N

Date Extracted:

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 01/10/99

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO. COMPOUND CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG Q

101-14-4-----	4,4'-Methylenebis(2-chloroan	330.00	U
126-72-7-----	Tris(2,3-DBP) phosphate	17000.00	U
57-97-6-----	7,12-Dimethylbenz[a]anthrace	330.00	U
56-49-5-----	3-Methylcholanthrene	330.00	U
10595-95-6-----	N-Nitrosomethylethylamine	330.00	U
79-46-9-----	2-Nitropropane	330.00	U
100-80-5-----	2-Ethoxyethanol (Cellosolve)	330.00	U
92-52-4-----	Biphenyl	330.00	U
198-55-0-----	Perylene	330.00	U
298-04-4-----	Disulfoton	670.00	U
298-02-2-----	Phorate	670.00	U
108-98-5-----	Benzenethiol	330.00	U
226-36-8-----	Dibenz(a,h)acridine	330.00	U
72-54-8-----	4,4'-DDD	670.00	U
72-55-9-----	4,4'-DDE	670.00	U
319-85-7-----	beta-BHC	330.00	U
-----	6-Methylchrysene	330.00	U
70-30-4-----	Hexachlorophene	330.00	U
192-65-4-----	Dibenzo(a,e)pyrene	330.00	U
90-13-1-----	1-Chloronaphthalene	330.00	U
100-25-4-----	1,4-Dinitrobenzene	330.00	U

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: MOUNTAIN STATES

Contract:

Lab Code: MSAI

Case No.:

SAS No.:

SDG No.: 990109C2

	EPA SAMPLE NO.	S1 (2FP) #	S2 (PHL) #	S3 (NBZ) #	S4 (FBP) #	S5 (TBP) #	S6 (TPH) #	S7 #	S8 #	TOT OUT
01	SBLK	39	28	62	55	61	63			0
02	LCS	52	36	83	77	70	65			0
03	FT69	53	45	81	65	56	53			0
04	FT69MS	50	26	75	63	51	54			0
05	FT69MSD	51	27	76	64	55	56			0
06										
07										
08										
09										
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29										
30										

QC LIMITS

S1 (2FP) = 2-Fluorophenol (21-110)
 S2 (PHL) = Phenol-d6 (10-110)
 S3 (NBZ) = Nitrobenzene-d5 (35-114)
 S4 (FBP) = 2-Fluorobiphenyl (43-116)
 S5 (TBP) = 2,4,6-Tribromophenol (10-123)
 S6 (TPH) = Terphenyl-d14 (33-141)

Column to be used to flag recovery values
 * Values outside of contract required QC limits
 D Surrogate diluted out

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: MOUNTAIN STATES

Contract:

Lab Code: MSAI

Case No.:

SAS No.:

SDG No.: 990111A

	EPA SAMPLE NO.	S1 (2FP) #	S2 (PHL) #	S3 (NBZ) #	S4 (FBP) #	S5 (TBP) #	S6 (TPH) #	S7 #	S8 #	TOT OUT
01	981205101	45	42	55	55	60	43			0
02										
03										
04										
05										
06										
07										
08										
09										
10										
11										
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27										
28										
29										
30										

QC LIMITS

S1 (2FP) = 2-Fluorophenol (1- 90)
 S2 (PHL) = Phenol-d6 (1- 67)
 S3 (NBZ) = Nitrobenzene-d5 (18-114)
 S4 (FBP) = 2-Fluorobiphenyl (31- 97)
 S5 (TBP) = 2,4,6-Tribromophenol (19-139)
 S6 (TPH) = Terphenyl-d14 (15-141)

Column to be used to flag recovery values
 * Values outside of contract required QC limits
 D Surrogate diluted out

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: MOUNTAIN STATES

Contract:

Lab Code: MSAI

Case No.:

SAS No.:

SDG No.: 990118C

	EPA SAMPLE NO.	S1 (2FP) #	S2 (PHL) #	S3 (NBZ) #	S4 (FBP) #	S5 (TBP) #	S6 (TPH) #	S7 #	S8 #	TOT OUT
01	981205102	11	18	60	59	29	49			0
02	981205103	9	10	58	82	54	45			0
03	981205601	27	25	60	64	46	45			0
04	981205602	16	16	60	52	28	50			0
05	981205603	22	17	58	44	30	49			0
06	981205604	3	2	60	46	18*	51			1
07	981205605	24	18	60	45	36	46			0
08	981205606	39	28	62	48	39	53			0
09	981205607	34	26	60	49	43	53			0
10	981205608	37	28	56	45	46	45			0
11										
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01/20/98 (3)
JL

QC LIMITS

S1 (2FP) = 2-Fluorophenol (1- 90)
 S2 (PHL) = Phenol-d6 (1- 67)
 S3 (NBZ) = Nitrobenzene-d5 (18-114)
 S4 (FBP) = 2-Fluorobiphenyl (31- 97)
 S5 (TBP) = 2,4,6-Tribromophenol (19-139)
 S6 (TPH) = Terphenyl-d14 (15-141)

Column to be used to flag recovery values
 * Values outside of contract required QC limits
 D Surrogate diluted out

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MOUNTAIN STATES

Contract:

Lab Code: MSAI

Case No.:

SAS No.:

SDG No.: 990109C2

Matrix Spike - Sample No.: LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Phenol	100.00		36.25	36	5-112
2-Chlorophenol	100.00		70.45	70	23-134
1,4-Dichlorobenzene	100.00		68.57	68	20-124
N-Nitrosodi-N-propylami	100.00		84.80	85	1-230
1,2,4-Trichlorobenzene	100.00		76.34	76	44-142
4-Chloro-3-methylphenol	100.00		81.17	81	22-147
Acenaphthene	100.00		88.93	89	47-145
4-Nitrophenol	100.00		35.54	36	1-132
2,4-Dinitrotoluene	100.00		84.55	84	39-139
Pentachlorophenol	100.00		61.55	62	14-176
Pyrene	100.00		89.36	89	52-115

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 0 out of 11 outside limits

COMMENTS:

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MOUNTAIN STATES

Contract:

Lab Code: MSAI

Case No.:

SAS No.:

SDG No.: 990109C2

Matrix Spike - EPA Sample No.: FT69

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Phenol	100.00	0.00	25.72	26	5-112
2-Chlorophenol	100.00	0.00	62.21	62	23-134
1,4-Dichlorobenzene	100.00	0.00	43.22	43	20-124
N-Nitrosodi-N-propylami	100.00	0.00	78.12	78	1-230
1,2,4-Trichlorobenzene	100.00	0.00	47.83	48	44-142
4-Chloro-3-methylphenol	100.00	0.00	71.71	72	22-147
Acenaphthene	100.00	0.00	65.63	66	47-145
4-Nitrophenol	100.00	0.00	27.84	28	1-132
2,4-Dinitrotoluene	100.00	0.00	80.67	81	39-139
Pentachlorophenol	100.00	0.00	7.67	8*	14-176
Pyrene	100.00	0.00	83.58	84	52-115

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	REC.
Phenol	100.00	26.95	27	4	42	5-112
2-Chlorophenol	100.00	64.47	64	3	40	23-134
1,4-Dichlorobenzene	100.00	45.66	46	7	28	20-124
N-Nitrosodi-N-propylami	100.00	80.64	81	4	38	1-230
1,2,4-Trichlorobenzene	100.00	51.84	52	8	28	44-142
4-Chloro-3-methylphenol	100.00	73.01	73	1	42	22-147
Acenaphthene	100.00	67.91	68	3	31	47-145
4-Nitrophenol	100.00	32.05	32	13	50	1-132
2,4-Dinitrotoluene	100.00	80.13	80	1	38	39-139
Pentachlorophenol	100.00	19.76	20	86*	50	14-176
Pyrene	100.00	83.78	84	0	31	52-115

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 11 outside limits

Spike Recovery: 1 out of 22 outside limits

COMMENTS:

ms/msd possible marker nt, ^{45c}ics for qc purposes

On Site Technologies, LTD.

CHAIN-OF-CUSTODY RECORD

612 E. Murray Drive
Farmington, NM 87401
(505) 325-2432

Subcontractor:

Mountain States Analytical, Inc.
1645 West 2200 South

TEL: (800) 973-6724
FAX: (801) 972-6278

Salt Lake City, UT 84119

Acci #:

29-Dec-98

Sample ID	Matrix	Collection Date	Bottle Type	Requested Tests				
				E218.2	E239.2	E300	SW6310	
9812051-01C	Aqueous	12/28/98 6:30:00 PM	1LAMGU				1	
9812051-01D	Aqueous	12/28/98 6:30:00 PM	500HDPEHNO3	1	1			
9812051-01E	Aqueous	12/28/98 6:30:00 PM	250HDPE			2		
9812051-02C	Aqueous	12/28/98 4:50:00 PM	1LAMGU				1	
9812051-02D	Aqueous	12/28/98 4:50:00 PM	500HDPEHNO3	1	1			
9812051-02E	Aqueous	12/28/98 4:50:00 PM	250HDPE			2		
9812051-03C	Aqueous	12/28/98 5:45:00 PM	1LAMGU				1	
9812051-03D	Aqueous	12/28/98 5:45:00 PM	500HDPEHNO3	1	1			
9812051-03E	Aqueous	12/28/98 5:45:00 PM	250HDPE			2		

Comments:

Please analyze the submitted samples for the following: (C) PAH (D) Total Chromium and Lead (E) Dissolved Fluoride and Bromide.

Relinquished by: <i>Heidi Rees</i>	Date/Time: 12/30/98 1:00	Received by: <i>Pat & Shunda</i>	Date/Time: 12/31/98
Relinquished by:		Received by:	

ON SITE

CHAIN OF CUSTODY RECORD

5641

TECHNOLOGIES, LTD.

657 W. Maple • P. O. Box 2606 • Farmington NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

Date: 12/29/98

Page 1 of 1

Purchase Order No.: 898-651		Job No.	
Name: Same		Title	
Company: Same		Company: Biotech Remediation	
Address:		Mailing Address: 710 E. 20th St Suite 400	
City, State, Zip		City, State, Zip: Farmington, NM 87401	
Telephone No.		Telefax No.	
SEND INVOICE TO		ANALYSIS REQUESTED	
Sampling Location: Thriftway Refinery 626 Rd 5500 Bloomfield, NM 87401		RESULTS TO	
Sampler: Ken Sinks		Number of Containers	
SAMPLE IDENTIFICATION		LAB ID	
DATE		DATE	
TIME		TIME	
MATRIX		PRES.	
MW-20		12/28 1830 H2O Y2	
MW-21		12/28 1650 ✓	
MW-22		12/28 1745 ✓	
Travel Blank		12/28 1355 ✓	
Field Blank		12/28 1630 ✓	
Relinquished by: Ken Sinks		Date/Time 12/29 0915	
Relinquished by:		Date/Time	
Relinquished by:		Date/Time	
Method of Shipment:		Rush	
Authorized by: Ken Sinks		Date 12/29/98	
(Client Signature Must Accompany Request)		Special Instructions:	

Distribution: White - On Site Yellow - LAB Pink - Sampler Goldenrod - Client

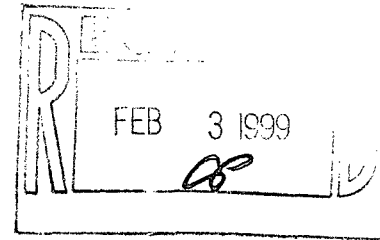
OFF: (505) 325-5667



LAB: (505) 325-1556

January 29, 1999

Terry Griffin
BioTech Remediation, Inc.
710 E. 20th, Suite 400
Farmington, NM 87401
TEL: (505) 327-4965
FAX (505) 564-3604



RE: Thriftway Refinery

Order No.: 9812056

Dear Terry Griffin,

On Site Technologies, LTD. received 10 samples on 12/30/98 for the analyses presented in the following report.

The Samples were analyzed for the following tests:

- Alkalinity, Total (M2320 B)
- Bromide (E300)
- BTEX (SW8021B)
- Calcium, Dissolved (E215.1)
- Chloride (E325.3)
- Chromium, Total (SW6010A)
- Conductivity (E120.1)
- Fluoride (E300)
- Lead, Total (SW6010A)
- Magnesium, Dissolved (E242.1)
- pH (E150.1)
- Polynuclear Aromatic Hydrocarbons (SW8270A)
- Potassium, Dissolved (E258.1)
- Sodium, Dissolved (E273.1)
- Sulfate (M4500-SO4 D)
- Total Dissolved Solids (E160.1)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

A handwritten signature in dark ink, appearing to be "J. E." or similar.

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

On Site Technologies, LTD.

Date: 29-Jan-99

CLIENT: BioTech Remediation, Inc.

Project: Thriftway Refinery

Lab Order: 9812056

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition. Methods for Chemical Analysis of Water and Wastes EPA-600-4-79-020, March, 1983.

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812056	Client Sample ID:	MW-5
Lab ID:	9812056-01A	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/29/98 5:30:00 PM
		COC Record:	5645

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B		Analyst: DC		
Methyl tert-Butyl Ether	52	0.5		µg/L	1	1/4/99
Benzene	12	0.5		µg/L	1	1/4/99
Toluene	ND	0.5		µg/L	1	1/4/99
Ethylbenzene	0.7	0.5		µg/L	1	1/4/99
m,p-Xylene	ND	1		µg/L	1	1/4/99
o-Xylene	ND	0.5		µg/L	1	1/4/99

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT**Date:** 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812056	Client Sample ID:	MW-5
Lab ID:	9812056-01B	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/29/98 5:30:00 PM
		COC Record:	5645

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
CALCIUM, DISSOLVED		E215.1				Analyst: HR
Calcium	120	120		mg/L	50	1/7/99
POTASSIUM, DISSOLVED		E258.1				Analyst: HR
Potassium	11	1.2		mg/L	5	1/7/99
MAGNESIUM, DISSOLVED		E242.1				Analyst: HR
Magnesium	34	5		mg/L	20	1/8/99
SODIUM, DISSOLVED		E273.1				Analyst: HR
Sodium	1600	120		mg/L	500	1/7/99
ALKALINITY, TOTAL		M2320 B				Analyst: HR
Alkalinity, Bicarbonate (As CaCO ₃)	750	5		mg/L CaCO ₃	1	1/4/99
Alkalinity, Carbonate (As CaCO ₃)	ND	5		mg/L CaCO ₃	1	1/4/99
Alkalinity, Total (As CaCO ₃)	750	5		mg/L CaCO ₃	1	1/4/99
CHLORIDE		E325.3				Analyst: HR
Chloride	240	10		mg/L	1	1/5/99
CONDUCTIVITY		E120.1				Analyst: HR
Specific Conductance	6400	2		uS/cm	1	1/4/99
PH		E150.1				Analyst: HR
pH	7.83	2		pH units	1	1/4/99
SULFATE		M4500-SO4 D				Analyst: HR
Sulfate	2700	5		mg/L	1	1/4/99
TOTAL DISSOLVED SOLIDS		E160.1				Analyst: HR
Total Dissolved Solids (Residue, Filterable)	5500	40		mg/L	1	1/4/99

Qualifiers:

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812056	Client Sample ID:	MW-9
Lab ID:	9812056-02A	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/29/98 2:45:00 PM
		COC Record:	5645

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B		Analyst: HR		
Methyl tert-Butyl Ether	3.8	0.5		µg/L	1	12/31/98
Benzene	ND	0.5		µg/L	1	12/31/98
Toluene	ND	0.5		µg/L	1	12/31/98
Ethylbenzene	ND	0.5		µg/L	1	12/31/98
m,p-Xylene	ND	1		µg/L	1	12/31/98
o-Xylene	ND	0.5		µg/L	1	12/31/98

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted recovery limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT**Date:** 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812056	Client Sample ID:	MW-9
Lab ID:	9812056-02B	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/29/98 2:45:00 PM
		COC Record:	5645

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
CALCIUM, DISSOLVED		E215.1				Analyst: HR
Calcium	320	120		mg/L	100	1/7/99
POTASSIUM, DISSOLVED		E258.1				Analyst: HR
Potassium	7.8	1.2		mg/L	5	1/7/99
MAGNESIUM, DISSOLVED		E242.1				Analyst: HR
Magnesium	66	12		mg/L	50	1/8/99
SODIUM, DISSOLVED		E273.1				Analyst: HR
Sodium	1700	120		mg/L	500	1/7/99
ALKALINITY, TOTAL		M2320 B				Analyst: HR
Alkalinity, Bicarbonate (As CaCO ₃)	370	5		mg/L CaCO ₃	1	1/4/99
Alkalinity, Carbonate (As CaCO ₃)	ND	5		mg/L CaCO ₃	1	1/4/99
Alkalinity, Total (As CaCO ₃)	370	5		mg/L CaCO ₃	1	1/4/99
CHLORIDE		E325.3				Analyst: HR
Chloride	54	10		mg/L	1	1/6/99
CONDUCTIVITY		E120.1				Analyst: HR
Specific Conductance	6200	2		uS/cm	1	1/4/99
PH		E150.1				Analyst: HR
pH	7.51	2		pH units	1	1/4/99
SULFATE		M4500-SO4 D				Analyst: HR
Sulfate	4100	5		mg/L	1	1/4/99
TOTAL DISSOLVED SOLIDS		E160.1				Analyst: HR
Total Dissolved Solids (Residue, Filterable)	6600	40		mg/L	1	1/4/99

Qualifiers:

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate

1 of 1

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812056	Client Sample ID:	MW-10
Lab ID:	9812056-03A	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/29/98 2:00:00 PM
		COC Record:	5645

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B				Analyst: HR
Methyl tert-Butyl Ether	ND	0.5		µg/L	1	12/31/98
Benzene	ND	0.5		µg/L	1	12/31/98
Toluene	ND	0.5		µg/L	1	12/31/98
Ethylbenzene	ND	0.5		µg/L	1	12/31/98
m,p-Xylene	ND	1		µg/L	1	12/31/98
o-Xylene	ND	0.5		µg/L	1	12/31/98

Qualifiers:

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

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Surr: - Surrogate

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812056	Client Sample ID:	MW-10
Lab ID:	9812056-03B	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/29/98 2:00:00 PM
		COC Record:	5645

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
CALCIUM, DISSOLVED	E215.1					Analyst: HR
Calcium	290	120		mg/L	100	1/7/99
POTASSIUM, DISSOLVED	E258.1					Analyst: HR
Potassium	8.2	1.2		mg/L	5	1/7/99
MAGNESIUM, DISSOLVED	E242.1					Analyst: HR
Magnesium	50	5		mg/L	20	1/8/99
SODIUM, DISSOLVED	E273.1					Analyst: HR
Sodium	1600	120		mg/L	500	1/7/99
ALKALINITY, TOTAL	M2320 B					Analyst: HR
Alkalinity, Bicarbonate (As CaCO ₃)	320	5		mg/L CaCO ₃	1	1/4/99
Alkalinity, Carbonate (As CaCO ₃)	ND	5		mg/L CaCO ₃	1	1/4/99
Alkalinity, Total (As CaCO ₃)	320	5		mg/L CaCO ₃	1	1/4/99
CHLORIDE	E325.3					Analyst: HR
Chloride	54	10		mg/L	1	1/6/99
CONDUCTIVITY	E120.1					Analyst: HR
Specific Conductance	6300	2		uS/cm	1	1/4/99
PH	E150.1					Analyst: HR
pH	7.39	2		pH units	1	1/4/99
SULFATE	M4500-SO4 D					Analyst: HR
Sulfate	3900	5		mg/L	1	1/4/99
TOTAL DISSOLVED SOLIDS	E160.1					Analyst: HR
Total Dissolved Solids (Residue, Filterable)	6200	40		mg/L	1	1/4/99

Qualifiers:

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

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S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



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ANALYTICAL REPORT

Date: 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812056	Client Sample ID:	MW-11
Lab ID:	9812056-04A	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/29/98 12:20:00 PM
		COC Record:	5645

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B		Analyst: HR		
Methyl tert-Butyl Ether	ND	0.5		µg/L	1	12/31/98
Benzene	ND	0.5		µg/L	1	12/31/98
Toluene	ND	0.5		µg/L	1	12/31/98
Ethylbenzene	ND	0.5		µg/L	1	12/31/98
m,p-Xylene	ND	1		µg/L	1	12/31/98
o-Xylene	ND	0.5		µg/L	1	12/31/98

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812056	Client Sample ID:	MW-11
Lab ID:	9812056-04B	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/29/98 12:20:00 PM
		COC Record:	5645

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
CALCIUM, DISSOLVED		E215.1				Analyst: HR
Calcium	350	120		mg/L	100	1/7/99
POTASSIUM, DISSOLVED		E258.1				Analyst: HR
Potassium	14	1.2		mg/L	5	1/7/99
MAGNESIUM, DISSOLVED		E242.1				Analyst: HR
Magnesium	42	5		mg/L	20	1/8/99
SODIUM, DISSOLVED		E273.1				Analyst: HR
Sodium	1300	120		mg/L	500	1/7/99
ALKALINITY, TOTAL		M2320 B				Analyst: HR
Alkalinity, Bicarbonate (As CaCO ₃)	230	5		mg/L CaCO ₃	1	1/4/99
Alkalinity, Carbonate (As CaCO ₃)	ND	5		mg/L CaCO ₃	1	1/4/99
Alkalinity, Total (As CaCO ₃)	230	5		mg/L CaCO ₃	1	1/4/99
CHLORIDE		E325.3				Analyst: HR
Chloride	20	10		mg/L	1	1/6/99
CONDUCTIVITY		E120.1				Analyst: HR
Specific Conductance	5600	2		uS/cm	1	1/4/99
PH		E150.1				Analyst: HR
pH	7.30	2		pH units	1	1/4/99
SULFATE		M4500-SO4 D				Analyst: HR
Sulfate	3600	5		mg/L	1	1/4/99
TOTAL DISSOLVED SOLIDS		E160.1				Analyst: HR
Total Dissolved Solids (Residue, Filterable)	5600	40		mg/L	1	1/4/99

Qualifiers:

PQL - Practical Quantitation Limit

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J - Analyte detected below Practical Quantitation Limit

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Surr: - Surrogate

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ANALYTICAL REPORT

Date: 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812056	Client Sample ID:	MW-13
Lab ID:	9812056-05A	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/29/98 4:45:00 PM
		COC Record:	5645

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B				Analyst: HR
Methyl tert-Butyl Ether	ND	0.5		µg/L	1	12/31/98
Benzene	ND	0.5		µg/L	1	12/31/98
Toluene	ND	0.5		µg/L	1	12/31/98
Ethylbenzene	ND	0.5		µg/L	1	12/31/98
m,p-Xylene	ND	1		µg/L	1	12/31/98
o-Xylene	ND	0.5		µg/L	1	12/31/98

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits
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ANALYTICAL REPORT**Date:** 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812056	Client Sample ID:	MW-13
Lab ID:	9812056-05B	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/29/98 4:45:00 PM
		COC Record:	5645

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
CALCIUM, DISSOLVED		E215.1				Analyst: HR
Calcium	360	100		mg/L	100	1/7/99
POTASSIUM, DISSOLVED		E258.1				Analyst: HR
Potassium	9.6	1.2		mg/L	5	1/7/99
MAGNESIUM, DISSOLVED		E242.1				Analyst: HR
Magnesium	56	12		mg/L	50	1/8/99
SODIUM, DISSOLVED		E273.1				Analyst: HR
Sodium	1200	100		mg/L	400	1/7/99
ALKALINITY, TOTAL		M2320 B				Analyst: HR
Alkalinity, Bicarbonate (As CaCO ₃)	270	5		mg/L CaCO ₃	1	1/4/99
Alkalinity, Carbonate (As CaCO ₃)	ND	5		mg/L CaCO ₃	1	1/4/99
Alkalinity, Total (As CaCO ₃)	270	5		mg/L CaCO ₃	1	1/4/99
CHLORIDE		E325.3				Analyst: HR
Chloride	110	10		mg/L	1	1/5/99
CONDUCTIVITY		E120.1				Analyst: HR
Specific Conductance	5500	2		uS/cm	1	1/4/99
PH		E150.1				Analyst: HR
pH	7.20	2		pH units	1	1/4/99
SULFATE		M4500-SO4 D				Analyst: HR
Sulfate	3200	5		mg/L	1	1/4/99
TOTAL DISSOLVED SOLIDS		E160.1				Analyst: HR
Total Dissolved Solids (Residue, Filterable)	5200	40		mg/L	1	1/4/99

Qualifiers:

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

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ANALYTICAL REPORT

Date: 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812056	Client Sample ID:	MW-15
Lab ID:	9812056-06A	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/29/98 11:25:00 AM
		COC Record:	5645

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B				Analyst: HR
Methyl tert-Butyl Ether	ND	0.5		µg/L	1	12/31/98
Benzene	ND	0.5		µg/L	1	12/31/98
Toluene	ND	0.5		µg/L	1	12/31/98
Ethylbenzene	ND	0.5		µg/L	1	12/31/98
m,p-Xylene	ND	1		µg/L	1	12/31/98
o-Xylene	ND	0.5		µg/L	1	12/31/98

Qualifiers:

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate

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OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT**Date:** 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812056	Client Sample ID:	MW-15
Lab ID:	9812056-06B	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/29/98 11:25:00 AM
		COC Record:	5645

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
CALCIUM, DISSOLVED	E215.1					Analyst: HR
Calcium	390	100		mg/L	100	1/7/99
POTASSIUM, DISSOLVED	E258.1					Analyst: HR
Potassium	8.6	1.2		mg/L	5	1/7/99
MAGNESIUM, DISSOLVED	E242.1					Analyst: HR
Magnesium	44	6		mg/L	25	1/8/99
SODIUM, DISSOLVED	E273.1					Analyst: HR
Sodium	840	100		mg/L	400	1/7/99
ALKALINITY, TOTAL	M2320 B					Analyst: HR
Alkalinity, Bicarbonate (As CaCO ₃)	180	5		mg/L CaCO ₃	1	1/4/99
Alkalinity, Carbonate (As CaCO ₃)	ND	5		mg/L CaCO ₃	1	1/4/99
Alkalinity, Total (As CaCO ₃)	180	5		mg/L CaCO ₃	1	1/4/99
CHLORIDE	E325.3					Analyst: HR
Chloride	140	10		mg/L	1	1/5/99
CONDUCTIVITY	E120.1					Analyst: HR
Specific Conductance	4800	2		uS/cm	1	1/4/99
PH	E150.1					Analyst: HR
pH	7.38	2		pH units	1	1/4/99
SULFATE	M4500-SO4 D					Analyst: HR
Sulfate	2600	5		mg/L	1	1/5/99
TOTAL DISSOLVED SOLIDS	E160.1					Analyst: HR
Total Dissolved Solids (Residue, Filterable)	4200	40		mg/L	1	1/5/99

Qualifiers:

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812056	Client Sample ID:	MW-18
Lab ID:	9812056-07A	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/29/98 6:35:00 PM
		COC Record:	5645

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B		Analyst: HR		
Methyl tert-Butyl Ether	56	0.5		µg/L	1	12/31/98
Benzene	31	0.5		µg/L	1	12/31/98
Toluene	1.2	0.5		µg/L	1	12/31/98
Ethylbenzene	5.1	0.5		µg/L	1	12/31/98
m,p-Xylene	1	1		µg/L	1	12/31/98
o-Xylene	ND	0.5		µg/L	1	12/31/98

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812056	Client Sample ID:	MW-18
Lab ID:	9812056-07B	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/29/98 6:35:00 PM
		COC Record:	5645

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
CALCIUM, DISSOLVED	E215.1					Analyst: HR
Calcium	76	50		mg/L	20	1/7/99
POTASSIUM, DISSOLVED	E258.1					Analyst: HR
Potassium	4.6	1.2		mg/L	5	1/7/99
MAGNESIUM, DISSOLVED	E242.1					Analyst: HR
Magnesium	14	2.5		mg/L	10	1/8/99
SODIUM, DISSOLVED	E273.1					Analyst: HR
Sodium	430	50		mg/L	200	1/7/99
ALKALINITY, TOTAL	M2320 B					Analyst: HR
Alkalinity, Bicarbonate (As CaCO ₃)	500	5		mg/L CaCO ₃	1	1/4/99
Alkalinity, Carbonate (As CaCO ₃)	ND	5		mg/L CaCO ₃	1	1/4/99
Alkalinity, Total (As CaCO ₃)	500	5		mg/L CaCO ₃	1	1/4/99
CHLORIDE	E325.3					Analyst: HR
Chloride	73	10		mg/L	1	1/6/99
CONDUCTIVITY	E120.1					Analyst: HR
Specific Conductance	2100	2		uS/cm	1	1/4/99
PH	E150.1					Analyst: HR
pH	7.40	2		pH units	1	1/4/99
SULFATE	M4500-SO4 D					Analyst: HR
Sulfate	620	5		mg/L	1	1/5/99
TOTAL DISSOLVED SOLIDS	E160.1					Analyst: HR
Total Dissolved Solids (Residue, Filterable)	1700	40		mg/L	1	1/5/99

Qualifiers:

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate

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- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



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ANALYTICAL REPORT

Date: 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812056	Client Sample ID:	MW-19
Lab ID:	9812056-08A	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/29/98 6:05:00 PM
		COC Record:	5645

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B				Analyst: DC
Methyl tert-Butyl Ether	37	0.5		µg/L	1	1/4/99
Benzene	14	0.5		µg/L	1	1/4/99
Toluene	ND	0.5		µg/L	1	1/4/99
Ethylbenzene	43	0.5		µg/L	1	1/4/99
m,p-Xylene	23	1		µg/L	1	1/4/99
o-Xylene	ND	0.5		µg/L	1	1/4/99

Qualifiers:	PQL - Practical Quantitation Limit	S - Spike Recovery outside accepted recovery limits
	ND - Not Detected at Practical Quantitation Limit	R - RPD outside accepted recovery limits
	J - Analyte detected below Practical Quantitation Limit	E - Value above quantitation range
	B - Analyte detected in the associated Method Blank	Surrogate - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT**Date:** 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812056	Client Sample ID:	MW-19
Lab ID:	9812056-08B	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/29/98 6:05:00 PM
		COC Record:	5645

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
CALCIUM, DISSOLVED	E215.1					Analyst: HR
Calcium	82	50		mg/L	20	1/7/99
POTASSIUM, DISSOLVED	E258.1					Analyst: HR
Potassium	3.4	1.2		mg/L	5	1/7/99
MAGNESIUM, DISSOLVED	E242.1					Analyst: HR
Magnesium	24	2.5		mg/L	10	1/8/99
SODIUM, DISSOLVED	E273.1					Analyst: HR
Sodium	470	50		mg/L	200	1/7/99
ALKALINITY, TOTAL	M2320 B					Analyst: HR
Alkalinity, Bicarbonate (As CaCO ₃)	540	5		mg/L CaCO ₃	1	1/4/99
Alkalinity, Carbonate (As CaCO ₃)	ND	5		mg/L CaCO ₃	1	1/4/99
Alkalinity, Total (As CaCO ₃)	540	5		mg/L CaCO ₃	1	1/4/99
CHLORIDE	E325.3					Analyst: HR
Chloride	66	10		mg/L	1	1/6/99
CONDUCTIVITY	E120.1					Analyst: HR
Specific Conductance	2200	2		uS/cm	1	1/4/99
PH	E150.1					Analyst: HR
pH	7.68	2		pH units	1	1/4/99
SULFATE	M4500-SO4 D					Analyst: HR
Sulfate	680	5		mg/L	1	1/5/99
TOTAL DISSOLVED SOLIDS	E160.1					Analyst: HR
Total Dissolved Solids (Residue, Filterable)	1800	40		mg/L	1	1/5/99

Qualifiers:

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812056	Client Sample ID:	Travel Blank
Lab ID:	9812056-09A	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/29/98 9:00:00 AM
		COC Record:	5645

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B		Analyst: HR		
Methyl tert-Butyl Ether	ND	0.5		µg/L	1	12/31/98
Benzene	ND	0.5		µg/L	1	12/31/98
Toluene	ND	0.5		µg/L	1	12/31/98
Ethylbenzene	ND	0.5		µg/L	1	12/31/98
m,p-Xylene	ND	1		µg/L	1	12/31/98
o-Xylene	ND	0.5		µg/L	1	12/31/98

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 29-Jan-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9812056	Client Sample ID:	Field Blank
Lab ID:	9812056-10A	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	12/29/98 2:45:00 PM
		COC Record:	5645

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8021B		Analyst: HR		
Methyl tert-Butyl Ether	ND	0.5		µg/L	1	12/31/98
Benzene	ND	0.5		µg/L	1	12/31/98
Toluene	ND	0.5		µg/L	1	12/31/98
Ethylbenzene	ND	0.5		µg/L	1	12/31/98
m,p-Xylene	ND	1		µg/L	1	12/31/98
o-Xylene	ND	0.5		µg/L	1	12/31/98

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

On Site Technologies, LTD.

Date: 12-Jan-99

CLIENT: BioTech Remediation, Inc.

Work Order: 9812056

Project: Thriftway Refinery

QC SUMMARY REPORT

Method Blank

Sample ID: MBBlank	Batch ID: API H2O_990	Test Code: SW7140	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812056	Run ID:	API H2O_990108A	SeqNo: 9916	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Calcium	ND		0.25		

Sample ID: MBBlank	Batch ID: API H2O_990	Test Code: SW7450	Units: mg/L	Analysis Date 1/8/99	Prep Date:
Client ID:	9812056	Run ID:	API H2O_990108A	SeqNo: 9942	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Magnesium	ND		0.25		

Sample ID: MBBlank	Batch ID: API H2O_990	Test Code: SW7770	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812056	Run ID:	API H2O_990108A	SeqNo: 9962	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sodium	ND		0.25		

Sample ID: MBBlank	Batch ID: API H2O_990	Test Code: SW7610	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812056	Run ID:	API H2O_990108A	SeqNo: 9982	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Potassium	ND		0.25		

Sample ID: MBBlank	Batch ID: API H2O_990	Test Code: M4500-Cl C.	Units: mg/L	Analysis Date 1/5/99	Prep Date:
Client ID:	9812056	Run ID:	API H2O_990108A	SeqNo: 10015	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	ND		10		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.

Work Order: 9812056

Project: Thriftway Refinery

QC SUMMARY REPORT

Method Blank

Sample ID: MBLank	Batch ID: API H2O_990	Test Code: M4500-CI C	Units: mg/L	Analysis Date 1/6/99	Prep Date:
Client ID:	9812056	Run ID:	API H2O_990108A	SeqNo: 10037	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	ND	10			

Sample ID: MBLank	Batch ID: API H2O_990	Test Code: M2320 B	Units: mg/L CaCO3	Analysis Date 1/4/99	Prep Date:
Client ID:	9812056	Run ID:	API H2O_990108A	SeqNo: 10066	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Alkalinity, Bicarbonate (As CaCO3)	3	5			J
Alkalinity, Carbonate (As CaCO3)	ND	5			
Alkalinity, Total (As CaCO3)	3	5			J

Sample ID: MBLank	Batch ID: API H2O_990	Test Code: E120.1	Units: uS/cm	Analysis Date 1/4/99	Prep Date:
Client ID:	9812056	Run ID:	API H2O_990108A	SeqNo: 10104	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Specific Conductance	ND	2			

Sample ID: MBLank	Batch ID: API H2O_990	Test Code: M4500-SO4 D	Units: mg/L	Analysis Date 1/4/99	Prep Date:
Client ID:	9812056	Run ID:	API H2O_990108A	SeqNo: 10232	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate	ND	5			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

CLIENT: BioTech Remediation, Inc.
Work Order: 9812056
Project: Thriftway Refinery

Date: 12-Jan-99

QC SUMMARY REPORT

Sample Duplicate

Sample ID: 9812051-02BD	Batch ID: API H2O_990	Test Code: M4500-SO4 D	Units: mg/L	Analysis Date 1/5/99	Prep Date:
Client ID: 9812056	Run ID: API H2O_990108A			SeqNo: 10246	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate	3213	5	0	0	0.0% 0 3159 1.7% 6
Sample ID: 9812056-01BD	Batch ID: API H2O_990	Test Code: M4500-Cl C.	Units: mg/L	Analysis Date 1/5/99	Prep Date:
Client ID: MW-5	Run ID: API H2O_990108A			SeqNo: 10026	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	244	10	0	0	0.0% 0 244 0.0% 7
Sample ID: 9812056-01BD	Batch ID: API H2O_990	Test Code: M2320 B	Units: mg/L CaCO3	Analysis Date 1/4/99	Prep Date:
Client ID: MW-5	Run ID: API H2O_990108A			SeqNo: 10083	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Alkalinity, Bicarbonate (As CaCO3)	758	5	0	0	0.0% 0 754 0.5% 3
Alkalinity, Carbonate (As CaCO3)	ND	5	0	0	0.0% 0 0 0.0% 3
Alkalinity, Total (As CaCO3)	758	5	0	0	0.0% 0 754 0.5% 3
Sample ID: 9812056-06BD	Batch ID: API H2O_990	Test Code: M4500-Cl C.	Units: mg/L	Analysis Date 1/5/99	Prep Date:
Client ID: MW-15	Run ID: API H2O_990108A			SeqNo: 10027	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Chloride	138	10	0	0	0.0% 0 138 0.0% 7

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.
Work Order: 9812056
Project: Thriftway Refinery

QC SUMMARY REPORT

Sample Duplicate

Sample ID: 9812060-01BD	Batch ID: API H2O_990	Test Code: M2320 B	Units: mg/L CaCO3	Analysis Date 1/4/99	Prep Date:
Client ID: 9812056	Run ID: API H2O_990108A	PQL	SPK value	SeqNo: 10084	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Alkalinity, Bicarbonate (As CaCO3)	284	5	0	0	0.0% 0 0 289 1.7% 3
Alkalinity, Carbonate (As CaCO3)	ND	5	0	0	0.0% 0 0 0 0.0% 3
Alkalinity, Total (As CaCO3)	284	5	0	0	0.0% 0 0 289 1.7% 3

Sample ID: 9812061-02BD	Batch ID: API H2O_990	Test Code: M4500-SO4 D	Units: mg/L	Analysis Date 1/5/99	Prep Date:
Client ID: 9812056	Run ID: API H2O_990108A	PQL	SPK value	SeqNo: 10247	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sulfate	1607	5	0	0	0.0% 0 0 1608 0.1% 6

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 12-Jan-99

CLIENT: BioTech Remediation, Inc.
Work Order: 9812056
Project: Thriftway Refinery

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9812051-01BMS		Batch ID: API H2O_990	Test Code: SW7140	Units: mg/L	Analysis Date 1/7/99		Prep Date:	
Client ID: 9812056		Run ID: API H2O_990108A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit
Analyte		Result					RPD Ref Val	RPDLimit
Calcium		494	50	100	370	124.0%	69	159
Sample ID: 9812056-02BMS		Batch ID: API H2O_990	Test Code: SW7610	Units: mg/L	Analysis Date 1/7/99		Prep Date:	
Client ID: MW-9		Run ID: API H2O_990108A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit
Analyte		Result					RPD Ref Val	RPDLimit
Potassium		15	1.2	5	7.8	144.0%	67	157
Sample ID: 9812056-03BMS		Batch ID: API H2O_990	Test Code: SW7450	Units: mg/L	Analysis Date 1/8/99		Prep Date:	
Client ID: MW-10		Run ID: API H2O_990108A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit
Analyte		Result					RPD Ref Val	RPDLimit
Magnesium		93.2	5	40	50	108.0%	78	126
Sample ID: 9812056-06BMS		Batch ID: API H2O_990	Test Code: SW7770	Units: mg/L	Analysis Date 1/7/99		Prep Date:	
Client ID: MW-15		Run ID: API H2O_990108A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit
Analyte		Result					RPD Ref Val	RPDLimit
Sodium		1272	100	400	840	108.0%	81	135

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

CLIENT: BioTech Remediation, Inc.
Work Order: 9812056
Project: Thriftway Refinery

Date: 12-Jan-99

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS	Batch ID: API H2O_990	Test Code: M2320 B	Units: mg/L CaCO3	Analysis Date 1/4/99	Prep Date:
Client ID: 9812056	Run ID: API H2O_990108A			SeqNo: 10067	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Alkalinity, Bicarbonate (As CaCO3)	116	5	116	3	97.4% 91 116
Alkalinity, Total (As CaCO3)	116	5	116	3	97.4% 91 116
Sample ID: LCS	Batch ID: API H2O_990	Test Code: E120.1	Units: uS/cm	Analysis Date 1/4/99	Prep Date:
Client ID: 9812056	Run ID: API H2O_990108A			SeqNo: 10105	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Specific Conductance	1049	2	1040	0	100.9% 97 103
Sample ID: LCS	Batch ID: API H2O_990	Test Code: E120.1	Units: uS/cm	Analysis Date 1/4/99	Prep Date:
Client ID: 9812056	Run ID: API H2O_990108A			SeqNo: 10121	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Specific Conductance	1058	2	1040	0	101.7% 97 103
Sample ID: LCS	Batch ID: API H2O_990	Test Code: E150.1	Units: pH units	Analysis Date 1/4/99	Prep Date:
Client ID: 9812056	Run ID: API H2O_990108A			SeqNo: 10160	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
pH	8.895	2	9.07	0	98.1% 98 102
Sample ID: LCS	Batch ID: API H2O_990	Test Code: E150.1	Units: pH units	Analysis Date 1/4/99	Prep Date:
Client ID: 9812056	Run ID: API H2O_990108A			SeqNo: 10176	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
pH	8.896	2	9.07	0	98.1% 98 102

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.
Work Order: 9812056
Project: Thriftway Refinery

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS	Batch ID: API H2O_990	Test Code: M4500-SO4 D	Units: mg/L	Analysis Date 1/4/99	Prep Date:						
Client ID:	9812056	Run ID: API H2O_990108A		SeqNo: 10233							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	120	5	122	0	98.4%	83	113				

Sample ID: LCS	Batch ID: API H2O_990	Test Code: M4500-SO4 D	Units: mg/L	Analysis Date 1/5/99	Prep Date:						
Client ID:	9812056	Run ID: API H2O_990108A		SeqNo: 10242							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	124	5	122	0	101.6%	83	113				

Sample ID: LCS-CI	Batch ID: API H2O_990	Test Code: M4500-CI C.	Units: mg/L	Analysis Date 1/6/99	Prep Date:						
Client ID:	9812056	Run ID: API H2O_990108A		SeqNo: 10038							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	47	10	50	0	94.0%	88.4	115				

Sample ID: LCS-CI 0.141N	Batch ID: API H2O_990	Test Code: M4500-CI C.	Units: mg/L	Analysis Date 1/5/99	Prep Date:						
Client ID:	9812056	Run ID: API H2O_990108A		SeqNo: 10016							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	116.7	10	122	0	95.7%	88.4	115				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

CLIENT: BioTech Remediation, Inc.
Work Order: 9812056
Project: Thriftway Refinery

Date: 12-Jan-99

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV-2 Ca	Batch ID: API H2O_990	Test Code: SW7140	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812056	Run ID:	API H2O_990108A	SeqNo: 9927	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Calcium	1.77	0.25	1.95	0	90.8% 89 107

Sample ID: CCV-2 Mg	Batch ID: API H2O_990	Test Code: SW7450	Units: mg/L	Analysis Date 1/8/99	Prep Date:
Client ID:	9812056	Run ID:	API H2O_990108A	SeqNo: 9953	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Magnesium	1.79	0.25	1.71	0	104.7% 96 114

Sample ID: CCV-2 Na	Batch ID: API H2O_990	Test Code: SW7770	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812056	Run ID:	API H2O_990108A	SeqNo: 9973	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sodium	2.75	0.25	2.64	0	104.2% 87 111

Sample ID: CCV1 - Ca	Batch ID: API H2O_990	Test Code: SW7140	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812056	Run ID:	API H2O_990108A	SeqNo: 9917	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Calcium	1.78	0.25	1.95	0	91.3% 89 107

Sample ID: CCV1 - K	Batch ID: API H2O_990	Test Code: SW7610	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812056	Run ID:	API H2O_990108A	SeqNo: 9983	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Potassium	2.65	0.25	2.68	0	98.9% 84 114

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.
Work Order: 9812056
Project: Thriftway Refinery

QC SUMMARY REPORT
Continuing Calibration Verification Standard

Sample ID: CCV1 - Mg	Batch ID: API H2O_990	Test Code: SW7450	Units: mg/L	Analysis Date 1/8/99	Prep Date:
Client ID:	9812056	Run ID:	API H2O_990108A	SeqNo: 9943	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Magnesium	1.82	0.25	1.71	0	106.4% 96 114

Sample ID: CCV1 - Na	Batch ID: API H2O_990	Test Code: SW7770	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812056	Run ID:	API H2O_990108A	SeqNo: 9963	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Sodium	2.79	0.25	2.64	0	105.7% 87 111

Sample ID: CCV2-K	Batch ID: API H2O_990	Test Code: SW7610	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812056	Run ID:	API H2O_990108A	SeqNo: 9993	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Potassium	2.65	0.25	2.68	0	98.9% 84 114

Sample ID: CCV3-Ca	Batch ID: API H2O_990	Test Code: SW7140	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812056	Run ID:	API H2O_990108A	SeqNo: 9935	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Calcium	1.79	0.25	1.95	0	91.8% 89 107

Sample ID: CCV3-K	Batch ID: API H2O_990	Test Code: SW7610	Units: mg/L	Analysis Date 1/7/99	Prep Date:
Client ID:	9812056	Run ID:	API H2O_990108A	SeqNo: 10001	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Potassium	2.66	0.25	2.68	0	99.3% 84 114

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.
Work Order: 9812056
Project: Thriftway Refinery

QC SUMMARY REPORT
Continuing Calibration Verification Standard

Sample ID: CCV3-Mg	Batch ID: API H2O_990	Test Code: SW7450	Units: mg/L	Analysis Date 1/8/99	Prep Date:						
Client ID:	9812056	Run ID: API H2O_990108A		SeqNo: 9961							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	1.83	0.25	1.71	0	107.0%	96	114				

Sample ID: CCV3-Na	Batch ID: API H2O_990	Test Code: SW7770	Units: mg/L	Analysis Date 1/7/99	Prep Date:						
Client ID:	9812056	Run ID: API H2O_990108A		SeqNo: 9981							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	2.76	0.25	2.64	0	104.5%	87	111				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 29-Jan-99

CLIENT: BioTech Remediation, Inc.

Work Order: 9812056

Project: Thriftway Refinery

QC SUMMARY REPORT

Method Blank

Sample ID: MB1	Batch ID: GC-1_981231	Test Code: SW8021B	Units: µg/L	Analysis Date 12/31/98	Prep Date:						
Client ID:	9812056	Run ID: GC-1_981231A		SeqNo: 9830							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	.0577										J
Ethylbenzene	ND	0.5									
m,p-Xylene	.1113	1									J
Methyl tert-Butyl Ether	.035	0.5									J
o-Xylene	ND	0.5									
Toluene	.1093	0.5									J

Sample ID: MB1	Batch ID: GC-1_990104	Test Code: SW8021B	Units: µg/L	Analysis Date 1/4/99	Prep Date:						
Client ID:	9812056	Run ID: GC-1_990104A		SeqNo: 9849							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	.037		0.5								J
Ethylbenzene	ND		0.5								
m,p-Xylene	ND		1								
Methyl tert-Butyl Ether	.0537		0.5								J
o-Xylene	ND		0.5								
Toluene	.0536		0.5								J

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 29-Jan-99

CLIENT: BioTech Remediation, Inc.

Work Order: 9812056

Project: Thriftway Refinery

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9812056-08AMS		Batch ID: GC-1_981231		Test Code: SW8021B		Units: µg/L		Analysis Date 12/31/98		Prep Date:	
Client ID: MW-19		Run ID: 9812056		GC-1_981231A				SeqNo: 9831			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	221.7	2.5	200	12	104.9%	73	115				
Ethylbenzene	247.1	2.5	200	39	104.0%	74	117				
m,p-Xylene	430.4	5	400	21	102.3%	76	112				
Methyl tert-Butyl Ether	237.5	2.5	200	39	99.3%	62	122				
o-Xylene	207.4	2.5	200	0.4	103.5%	83	112				
Toluene	209.7	2.5	200	0.3	104.7%	71	120				

Sample ID: 9812056-08AMSD		Batch ID: GC-1_981231		Test Code: SW8021B		Units: µg/L		Analysis Date 12/31/98		Prep Date:	
Client ID: MW-19		Run ID: 9812056		GC-1_981231A				SeqNo: 9832			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	215.7	2.5	200	12	101.9%	73	115	221.7	2.7%	12	
Ethylbenzene	240.4	2.5	200	39	100.7%	74	117	247.1	2.7%	11	
m,p-Xylene	418.7	5	400	21	99.4%	76	112	430.4	2.8%	10	
Methyl tert-Butyl Ether	235.2	2.5	200	39	98.1%	62	122	237.5	1.0%	15	
o-Xylene	202.6	2.5	200	0.4	101.1%	83	112	207.4	2.3%	14	
Toluene	204	2.5	200	0.3	101.9%	71	120	209.7	2.7%	14	

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.

Work Order: 9812056

Project: Thriftway Refinery

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9812061-01AMS	Batch ID: GC-1_990104	Test Code: SW8021B	Units: µg/L	Analysis Date 1/4/99	Prep Date:						
Client ID:	9812056	Run ID: GC-1_990104A		SeqNo: 9850							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	5279	50	4000	1200	102.0%	73	115				
Ethylbenzene	4892	50	4000	760	103.3%	74	117				
m,p-Xylene	9862	100	8000	1800	100.8%	76	112				
Methyl tert-Butyl Ether	4304	50	4000	440	96.6%	62	122				
o-Xylene	4501	50	4000	450	101.3%	83	112				
Toluene	4932	50	4000	860	101.8%	71	120				

Sample ID: 9812061-01AMSD		Batch ID: GC-1_990104		Test Code: SW8021B		Units: µg/L		Analysis Date 1/4/99		Prep Date:	
Client ID: 9812056		Run ID: GC-1_990104A						SeqNo: 9851			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	5207	50	4000	1200	100.2%	73	115	5279	1.4%	12	
Ethylbenzene	4737	50	4000	760	99.4%	74	117	4892	3.2%	11	
m,p-Xylene	9561	100	8000	1800	97.0%	76	112	9862	3.1%	10	
Methyl tert-Butyl Ether	4353	50	4000	440	97.8%	62	122	4304	1.1%	15	
o-Xylene	4602	50	4000	450	103.8%	83	112	4501	2.2%	14	
Toluene	4872	50	4000	860	100.3%	71	120	4932	1.2%	14	

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 29-Jan-99

CLIENT: BioTech Remediation, Inc.

Work Order: 9812056

Project: Thriftway Refinery

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS WATER		Batch ID: GC-1_981231		Test Code: SW8021B		Units: µg/L		Analysis Date 12/31/98		Prep Date:	
Client ID:		9812056		Run ID: GC-1_981231A		PQL		SeqNo: 9829			
Analyte	Result	PQL		SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit Qual
Benzene	43.2	0.5		40	0.06	107.9%	84	110			
Ethylbenzene	43.65	0.5		40	0	109.1%	86	113			
m,p-Xylene	85.15	1		80	0.1	106.3%	81	114			
Methyl tert-Butyl Ether	42.98	0.5		40	0.04	107.4%	69	129			
o-Xylene	43.34	0.5		40	0	108.4%	86	112			
Toluene	43.02	0.5		40	0.1	107.3%	85	111			

Sample ID: LCS WATER	Batch ID: GC-1_990104	Test Code: SW8021B	Units: µg/L	Analysis Date 1/4/99	Prep Date:						
Client ID:	9812056	Run ID:	GC-1_990104A	SeqNo: 9848							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	41.57	0.5	40	0.04	103.8%	84	110				
Ethylbenzene	41.84	0.5	40	0	104.6%	86	113				
m,p-Xylene	81.93	1	80	0	102.4%	81	114				
Methyl tert-Butyl Ether	40.62	0.5	40	0.05	101.4%	69	129				
o-Xylene	41.28	0.5	40	0	103.2%	86	112				
Toluene	41.1	0.5	40	0.05	102.6%	85	111				

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

CLIENT: BioTech Remediation, Inc.
Work Order: 9812056
Project: Thriftway Refinery

Date: 29-Jan-99

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 QC0606/07		Batch ID: GC-1_981231		Test Code: SW8021B		Units: µg/L		Analysis Date 12/31/98		Prep Date:		
Client ID:		9812056		Run ID: GC-1_981231A				SeqNo: 9826				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene		21.74	0.5	20	0	108.7%	85	115				
Ethylbenzene		21.96	0.5	20	0	109.8%	85	115				
m,p-Xylene		41.97	1	40	0	104.9%	85	115				
Methyl tert-Butyl Ether		22.06	0.5	20	0	110.3%	85	115				
o-Xylene		21.64	0.5	20	0	108.2%	85	115				
Toluene		21.61	0.5	20	0	108.1%	85	115				
1,4-Difluorobenzene		96	0	100	0	96.0%	70	130				
4-Bromochlorobenzene		98.18	0	100	0	98.2%	70	130				
Fluorobenzene		93.42	0	100	0	93.4%	70	130				

Sample ID: CCV2 QC0606/07		Batch ID: GC-1_981231		Test Code: SW8021B		Units: µg/L		Analysis Date 12/31/98		Prep Date:	
Client ID:		9812056		Run ID:		GC-1_981231A		SeqNo: 9827			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.25	0.5	20	0	106.2%	85	115				
Ethylbenzene	21.15	0.5	20	0	105.8%	85	115				
m,p-Xylene	40.48	1	40	0	101.2%	85	115				
Methyl tert-Butyl Ether	21.66	0.5	20	0	108.3%	85	115				
o-Xylene	20.94	0.5	20	0	104.7%	85	115				
Toluene	20.93	0.5	20	0	104.7%	85	115				
1,4-Difluorobenzene	96.66	0	100	0	96.7%	70	130				
4-Bromochlorobenzene	97.82	0	100	0	97.8%	70	130				
Fluorobenzene	94.35	0	100	0	94.3%	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.

Work Order: 9812056

Project: Thriftway Refinery

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV3 QC0606/07	Batch ID: GC-1_981231	Test Code: SW8021B	Units: µg/L	Analysis Date 12/31/98	Prep Date:
Client ID: 9812056	Run ID: GC-1_981231A	PQL	SPK value	SeqNo: 9828	
Analyte	Result		SPK Ref Val	LowLimit	HighLimit
Benzene	42.44	0.5	40	0	115
Ethylbenzene	42.63	0.5	40	0	115
m,p-Xylene	83.52	1	80	0	115
Methyl tert-Butyl Ether	43.92	0.5	40	0	115
o-Xylene	42.98	0.5	40	0	115
Toluene	42.18	0.5	40	0	115
1,4-Difluorobenzene	96.24	0	100	0	130
4-Bromochlorobenzene	96.9	0	100	0	130
Fluorobenzene	94.25	0	100	0	130
				%REC	RPD Ref Val
				106.1%	
				106.6%	
				104.4%	
				109.8%	
				107.5%	
				105.4%	
				96.2%	
				96.9%	
				94.2%	
				%RPD	RPDLimit
					Qual

Sample ID: CCV1 QC0606/07	Batch ID: GC-1_990104	Test Code: SW8021B	Units: µg/L	Analysis Date 1/4/99	Prep Date:
Client ID: 9812056	Run ID: GC-1_990104A	PQL	SPK value	SeqNo: 9844	
Analyte	Result		SPK Ref Val	LowLimit	HighLimit
Benzene	21.75	0.5	20	0	115
Ethylbenzene	21.45	0.5	20	0	115
m,p-Xylene	41.26	1	40	0	115
Methyl tert-Butyl Ether	21.22	0.5	20	0	115
o-Xylene	21.02	0.5	20	0	115
Toluene	20.99	0.5	20	0	115
1,4-Difluorobenzene	96.38	0	100	0	130
4-Bromochlorobenzene	97.36	0	100	0	130
Fluorobenzene	95	0	100	0	130
				%REC	RPD Ref Val
				108.7%	
				107.3%	
				103.1%	
				106.1%	
				105.1%	
				105.0%	
				96.4%	
				97.4%	
				95.0%	
				%RPD	RPDLimit
					Qual

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.

Work Order: 9812056

Project: Thriftway Refinery

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV2 QC0606/07	Batch ID: GC-1_990104	Test Code: SW8021B	Units: µg/L	Analysis Date 1/4/99	Prep Date:
Client ID: 9812056	Run ID: GC-1_990104A	PQL	SPK value	SeqNo: 9845	
Analyte	Result		SPK Ref Val	LowLimit	HighLimit
Benzene	21.33	0.5	20	85	115
Ethylbenzene	20.49	0.5	20	85	115
m,p-Xylene	39.28	1	40	85	115
Methyl tert-Butyl Ether	20.62	0.5	20	85	115
o-Xylene	20.2	0.5	20	85	115
Toluene	20.32	0.5	20	85	115
1,4-Difluorobenzene	97.07	0	100	70	130
4-Bromochlorobenzene	97.33	0	100	70	130
Fluorobenzene	95.67	0	100	70	130
				%REC	RPD Ref Val
				106.6%	
				102.5%	
				98.2%	
				103.1%	
				101.0%	
				101.6%	
				97.1%	
				97.3%	
				95.7%	
				%RPD	RPDLimit
					Qual

Sample ID: CCV3 QC0606/07	Batch ID: GC-1_990104	Test Code: SW8021B	Units: µg/L	Analysis Date 1/4/99	Prep Date:
Client ID: 9812056	Run ID: GC-1_990104A	PQL	SPK value	SeqNo: 9846	
Analyte	Result		SPK Ref Val	LowLimit	HighLimit
Benzene	21.2	0.5	20	85	115
Ethylbenzene	21.34	0.5	20	85	115
m,p-Xylene	41.1	1	40	85	115
Methyl tert-Butyl Ether	18.04	0.5	20	85	115
o-Xylene	21.05	0.5	20	85	115
Toluene	20.82	0.5	20	85	115
1,4-Difluorobenzene	96.52	0	100	70	130
4-Bromochlorobenzene	97.31	0	100	70	130
Fluorobenzene	94.51	0	100	70	130
				%REC	RPD Ref Val
				106.0%	
				106.7%	
				102.8%	
				90.2%	
				105.3%	
				104.1%	
				96.5%	
				97.3%	
				94.5%	
				%RPD	RPDLimit
					Qual

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.

Work Order: 9812056

Project: Thriftway Refinery

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV4 QC0606/07		Batch ID: GC-1_990104		Test Code: SW8021B		Units: µg/L		Analysis Date 1/4/99		Prep Date:	
Client ID: 9812056		Run ID: GC-1_990104A		SeqNo: 9847							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.69	0.5	20	0	103.4%	85	115				
Ethylbenzene	20.74	0.5	20	0	103.7%	85	115				
m,p-Xylene	39.99	1	40	0	100.0%	85	115				
Methyl tert-Butyl Ether	20.21	0.5	20	0	101.1%	85	115				
o-Xylene	21.95	0.5	20	0	109.8%	85	115				
Toluene	20.4	0.5	20	0	102.0%	85	115				
1,4-Difluorobenzene	96.04	0	100	0	96.0%	70	130				
4-Bromochlorobenzene	97.98	0	100	0	98.0%	70	130				
Fluorobenzene	94.43	0	100	0	94.4%	70	130				

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 29-Jan-99

CLIENT: BioTech Remediation, Inc.

Work Order: 9812056

Project: Thriftway Refinery

Test No: SW8021B

QC SUMMARY REPORT SURROGATE RECOVERIES

BTEX

Sample ID	14FBZ	4BCBZ	FLBZ					
9812052-01A	90.7	96.2	79.9					
9812052-02A	95.8	98.5	88.4					
9812053-04A	95	96.1	93.5					
9812055-02A	92.2	117	90.9					
9812055-03A	98.6	99.8	94.8					
9812055-04A	96.2	96.7	94.8					
9812056-01A	95.2	98.2	94.4					
9812056-02A	96.7	97.4	94.4					
9812056-03A	96.5	97.3	94.4					
9812056-04A	95.5	97.1	94.3					
9812056-05A	95.8	97.2	94.3					
9812056-06A	96	97.6	94.2					
9812056-07A	96.5	97.6	94					
9812056-08A	95.4	95.4	94.5					
9812056-08AMS	94.6	96.8	93.4					
9812056-08AMSD	94.5	97.7	93.3					
9812056-09A	96.2	97.4	93.9					
9812056-10A	96.3	97.6	93.8					
9812057-01A	93.3	94.7	92.7					
9812060-01A	92.8	96.2	91.4					
9812060-02A	95.9	98.2	94.7					
9812060-03A	96.6	96.9	94					
9812060-04A	96	97.2	94.2					
9812060-05A	96.1	98.2	94.8					
9812060-06A	98	101	96.6					
9812061-01A	102	99.5	98.8					
9812061-01AMS	95.9	97.6	94.7					

Acronym

Surrogate

QC Limits

14FBZ

= 1,4-Difluorobenzene

70-130

4BCBZ

= 4-Bromochlorobenzene

70-130

FLBZ

= Fluorobenzene

70-130

* Surrogate recovery outside acceptance limits

CLIENT: BioTech Remediation, Inc.
Work Order: 9812056
Project: Thriftway Refinery
Test No: SW8021B

QC SUMMARY REPORT SURROGATE RECOVERIES

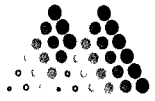
BTEX

Sample ID	14FBZ	4BCBZ	FLBZ				
9812061-01AMSD	97	97.3	96				
9812061-02A	95.1	96	93.8				
9812061-03A	96.3	98	95.4				
9812061-04A	96.7	98.3	94.8				
CCV1 QC0606/07	96.4	97.4	95				
CCV2 QC0606/07	97.1	97.3	95.7				
CCV3 QC0606/07	96.5	97.3	94.5				
CCV4 QC0606/07	96	98	94.4				
LCS WATER	96.2	98.9	94.7				
MB1	96.6	95.6	94.9				

Acronym	Surrogate	QC Limits
14FBZ	= 1,4-Difluorobenzene	70-130
4BCBZ	= 4-Bromochlorobenzene	70-130
FLBZ	= Fluorobenzene	70-130

* Surrogate recovery outside acceptance limits

RECEIVED JAN 25 1999



Mountain States Analytical, Inc.

The Quality Solution

January 20, 1999

Mr. David Cox
On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Reference:

Project: PAH/Cr,Pb/Fluoride, Bromide
Project No.: 9812056
MSAI Group: 25403

Dear Mr. Cox:

Enclosed are the analytical results for your project referenced above. The following samples are included in the report.

9812056-01	9812056-02	9812056-03
9812056-04	9812056-05	9812056-06
9812056-07	9812056-08	

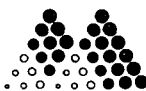
All holding times were met for the tests performed on these samples.

Thank you for selecting Mountain States Analytical, Inc. to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

We look forward to working with you on future projects.

With Regards,

Rolf E. Larsen
Project Manager



Mountain States Analytical, Inc.

The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: PAH/Cr,Pb/Fluoride, Bromide

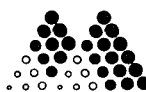
Sample ID: 9812056-01

Matrix: Water

Thriftway Refinery MW-5

MSAI Sample: 91700
MSAI Group: 25403
Date Reported: 01/20/99
Discard Date: 02/19/99
Date Submitted: 12/31/98
Date Sampled: 12/29/98
Collected by:
Purchase Order:
Project No.: 9812056

Test Analysis	Results as Received	Units	Limit of Quantitation
0393G Flame/hrICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w873	mg/l	
13007 Metals by hrICP, 6010A, w/ww Method: SW-846 6010A			
Chromium	ND	mg/l	0.05
Lead	ND	mg/l	0.10
3000 SVOA Extraction, w/ww Method: SW-846 3510B	Complete		
6719 Polycyclic Aro/Hydrocarb, 8270A ww Method: SW-846 8270A			
Acenaphthene	ND	ug/l	(1) 10.0
Acenaphthylene	ND	ug/l	10.0
Anthracene	ND	ug/l	10.0
Benz(a)anthracene	ND	ug/l	10.0
Benzo(b)fluoranthene	ND	ug/l	10.0
Benzo(k)fluoranthene	ND	ug/l	10.0
Benzo(ghi)perylene	ND	ug/l	10.0
Benzo(a)pyrene	ND	ug/l	25.0
Chrysene	ND	ug/l	10.0
Dibenz(a,h)anthracene	ND	ug/l	10.0
Fluoranthene	ND	ug/l	10.0
Fluorene	ND	ug/l	10.0
Naphthalene	ND	ug/l	10.0
Phenanthrene	ND	ug/l	10.0
Pyrene	ND	ug/l	10.0
Indeno(1,2,3-cd)pyrene	ND	ug/l	10.0
2-Methylnaphthalene	ND	ug/l	10.0



Mountain States Analytical, Inc.

The Quality Solution

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On Site Technologies, Ltd.

MSAI Sample: 91700

Sample ID: 9812056-01

MSAI Group: 25403

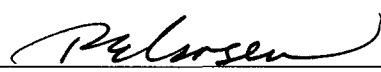
Test	Analysis	Results as Received	Units	Limit of Quantitation
0504	Fluoride, Ion Chromatography Method: EPA 300.0	ND	mg/l	3
0505	Bromide, Ion Chromatography Method: EPA 300.0	3.1	mg/l	3

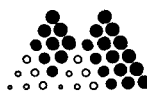
- (1) Sample 91700 was reanalyzed due to internal standard failures in the initial analysis. These failures were not confirmed in the reanalysis of the samples. The results from the second analysis are reported.

ND - Not detected at the Limit of Quantitation.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:


Rolf E. Larsen
Project Manager



Mountain States Analytical, Inc.

The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: PAH/Cr,Pb/Fluoride, Bromide

Sample ID: 9812056-02
Matrix: Water

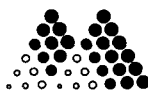
Thriftway Refinery MW-9

MSAI Sample: 91701
MSAI Group: 25403
Date Reported: 01/20/99
Discard Date: 02/19/99
Date Submitted: 12/31/98
Date Sampled: 12/29/98
Collected by:
Purchase Order:
Project No.: 9812056

Test Analysis	Results as Received	Units	Limit of Quantitation
0393G Flame/hrICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w873	mg/l	
13007 Metals by hrICP, 6010A, w/ww Method: SW-846 6010A			
Chromium	ND	mg/l	0.05
Lead	ND	mg/l	0.10
3000 SVOA Extraction, w/ww Method: SW-846 3510B	Complete		
6719 Polycyclic Aro/Hydrocarb, 8270A ww Method: SW-846 8270A			
Acenaphthene	ND	ug/l	(1) 10.0
Acenaphthylene	ND	ug/l	10.0
Anthracene	ND	ug/l	10.0
Benz(a)anthracene	ND	ug/l	10.0
Benzo(b)fluoranthene	ND	ug/l	10.0
Benzo(k)fluoranthene	ND	ug/l	10.0
Benzo(ghi)perylene	ND	ug/l	10.0
Benzo(a)pyrene	ND	ug/l	25.0
Chrysene	ND	ug/l	10.0
Dibenz(a,h)anthracene	ND	ug/l	10.0
Fluoranthene	ND	ug/l	10.0
Fluorene	ND	ug/l	10.0
Naphthalene	ND	ug/l	10.0
Phenanthrene	ND	ug/l	10.0
Pyrene	ND	ug/l	10.0
Indeno(1,2,3-cd)pyrene	ND	ug/l	10.0
2-Methylnaphthalene	ND	ug/l	10.0

Corporate Office: 1645 West 2200 South • Salt Lake City, Utah 84119
801-973-0050 • 1-800-973-6724 (MSAI) • FAX 801-972-6278
e-mail: service@msailabs.com





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The Quality Solution

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On Site Technologies, Ltd.

MSAI Sample: 91701

MSAI Group: 25403

Sample ID: 9812056-02

Test	Analysis	Results as Received	Units	Limit of Quantitation
0504	Fluoride, Ion Chromatography Method: EPA 300.0	ND	mg/l	3
0505	Bromide, Ion Chromatography Method: EPA 300.0	ND	mg/l	3

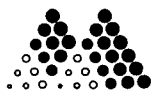
- 1) Sample 91701 was reanalyzed due to internal standard failures in the initial analysis. These failures were not confirmed in the reanalysis of the samples. The results from the second analysis are reported.

ND - Not detected at the Limit of Quantitation.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

Rolf E. Larsen
Project Manager



Mountain States Analytical, Inc.

The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: PAH/Cr,Pb/Fluoride, Bromide

Sample ID: 9812056-03

Matrix: Water

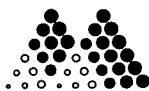
Thriftway Refinery MW-10

MSAI Sample: 91702
MSAI Group: 25403
Date Reported: 01/20/99
Discard Date: 02/19/99
Date Submitted: 12/31/98
Date Sampled: 12/29/98
Collected by:
Purchase Order:
Project No.: 9812056

Test	Analysis	Results as Received	Units	Limit of Quantitation
0393G	Flame/hrICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w873	mg/l	
13007	Metals by hrICP, 6010A, w/ww Method: SW-846 6010A			
	Chromium	ND	mg/l	0.05
	Lead	ND	mg/l	0.10
3000	SVOA Extraction, w/ww Method: SW-846 3510B	Complete		
6719	Polycyclic Aro/Hydrocarb, 8270A ww Method: SW-846 8270A			
	Acenaphthene	ND	ug/l	(1) 10.0
	Acenaphthylene	ND	ug/l	10.0
	Anthracene	ND	ug/l	10.0
	Benz(a)anthracene	ND	ug/l	10.0
	Benzo(b)fluoranthene	ND	ug/l	10.0
	Benzo(k)fluoranthene	ND	ug/l	10.0
	Benzo(ghi)perylene	ND	ug/l	10.0
	Benzo(a)pyrene	ND	ug/l	25.0
	Chrysene	ND	ug/l	10.0
	Dibenz(a,h)anthracene	ND	ug/l	10.0
	Fluoranthene	ND	ug/l	10.0
	Fluorene	ND	ug/l	10.0
	Naphthalene	ND	ug/l	10.0
	Phenanthrene	ND	ug/l	10.0
	Pyrene	ND	ug/l	10.0
	Indeno(1,2,3-cd)pyrene	ND	ug/l	10.0
	2-Methylnaphthalene	ND	ug/l	10.0

Corporate Office: 1645 West 2200 South • Salt Lake City, Utah 84119
801-973-0050 • 1-800-973-6724 (MSAI) • FAX 801-972-6278
e-mail: service@msailabs.com





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The Quality Solution

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On Site Technologies, Ltd.

MSAI Sample: 91702

MSAI Group: 25403

Sample ID: 9812056-03

Test	Analysis	Results as Received	Units	Limit of Quantitation
0504	Fluoride, Ion Chromatography Method: EPA 300.0	ND	mg/l	3
0505	Bromide, Ion Chromatography Method: EPA 300.0	3.0	mg/l	3

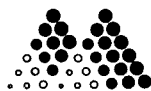
- 1) Sample 91702 was reanalyzed due to internal standard failures in the initial analysis. These failures were not confirmed in the reanalysis of the samples. The results from the second analysis are reported.

ND - Not detected at the Limit of Quantitation.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

Rolf E. Larsen
Project Manager



Mountain States Analytical, Inc.

The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: PAH/Cr,Pb/Fluoride, Bromide

Sample ID: 9812056-04

Matrix: Water

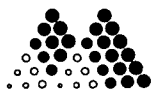
MSAI Sample: 91703
MSAI Group: 25403
Date Reported: 01/20/99
Discard Date: 02/19/99
Date Submitted: 12/31/98
Date Sampled: 12/29/98
Collected by:
Purchase Order:
Project No.: 9812056

Thriftway Refinery MW-11

Test Analysis	Results as Received	Units	Limit of Quantitation
0393G Flame/hrICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w873	mg/l	
13007 Metals by hrICP, 6010A, w/ww Method: SW-846 6010A			
Chromium	ND	mg/l	0.05
Lead	ND	mg/l	0.10
3000 SVOA Extraction, w/ww Method: SW-846 3510B	Complete		
6719 Polycyclic Aro/Hydrocarb, 8270A ww Method: SW-846 8270A			
Acenaphthene	ND	ug/l	(1) 10.0
Acenaphthylene	ND	ug/l	10.0
Anthracene	ND	ug/l	10.0
Benz(a)anthracene	ND	ug/l	10.0
Benzo(b)fluoranthene	ND	ug/l	10.0
Benzo(k)fluoranthene	ND	ug/l	10.0
Benzo(ghi)perylene	ND	ug/l	10.0
Benzo(a)pyrene	ND	ug/l	25.0
Chrysene	ND	ug/l	10.0
Dibenz(a,h)anthracene	ND	ug/l	10.0
Fluoranthene	ND	ug/l	10.0
Fluorene	ND	ug/l	10.0
Naphthalene	ND	ug/l	10.0
Phenanthrene	ND	ug/l	10.0
Pyrene	ND	ug/l	10.0
Indeno(1,2,3-cd)pyrene	ND	ug/l	10.0
2-Methylnaphthalene	ND	ug/l	10.0

Corporate Office: 1645 West 2200 South • Salt Lake City, Utah 84119
801-973-0050 • 1-800-973-6724 (MSAI) • FAX 801-972-6278
e-mail: service@msailabs.com





Mountain States Analytical, Inc.

The Quality Solution

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On Site Technologies, Ltd.

MSAI Sample: 91703

MSAI Group: 25403

Sample ID: 9812056-04

Test	Analysis	Results as Received	Units	Limit of Quantitation
0504	Fluoride, Ion Chromatography Method: EPA 300.0	ND	mg/l	3
0505	Bromide, Ion Chromatography Method: EPA 300.0	ND	mg/l	3

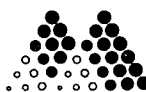
- (1) Sample 91703 was reanalyzed due to internal standard failures in the initial analysis. These internal standard failures were not confirmed in the reanalysis of the samples. The sample also had surrogate recovery failures which were confirmed upon reanalysis. There was insufficient sample volume for re-extraction, so the sample is reported with this exception. The results from the second analysis are reported.

ND - Not detected at the Limit of Quantitation.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

Rolf E. Larsen
Project Manager



Mountain States Analytical, Inc.

The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

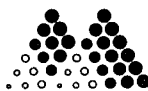
Attn: Mr. David Cox
Project: PAH/Cr,Pb/Fluoride, Bromide

Sample ID: 9812056-05
Matrix: Water

Thriftway Refinery MW-13

MSAI Sample: 91704
MSAI Group: 25403
Date Reported: 01/20/99
Discard Date: 02/19/99
Date Submitted: 12/31/98
Date Sampled: 12/29/98
Collected by:
Purchase Order:
Project No.: 9812056

Test	Analysis	Results as Received	Units	Limit of Quantitation
0393G	Flame/hrICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w873	mg/l	
13007	Metals by hrICP, 6010A, w/ww Method: SW-846 6010A			
	Chromium	ND	mg/l	0.05
	Lead	ND	mg/l	0.10
3000	SVOA Extraction, w/ww Method: SW-846 3510B	Complete		
6719	Polycyclic Aro/Hydrocarb, 8270A ww Method: SW-846 8270A			
	Acenaphthene	ND	ug/l	(1) 10.0
	Acenaphthylene	ND	ug/l	10.0
	Anthracene	ND	ug/l	10.0
	Benz(a)anthracene	ND	ug/l	10.0
	Benzo(b)fluoranthene	ND	ug/l	10.0
	Benzo(k)fluoranthene	ND	ug/l	10.0
	Benzo(ghi)perylene	ND	ug/l	10.0
	Benzo(a)pyrene	ND	ug/l	25.0
	Chrysene	ND	ug/l	10.0
	Dibenz(a,h)anthracene	ND	ug/l	10.0
	Fluoranthene	ND	ug/l	10.0
	Fluorene	ND	ug/l	10.0
	Naphthalene	ND	ug/l	10.0
	Phenanthrene	ND	ug/l	10.0
	Pyrene	ND	ug/l	10.0
	Indeno(1,2,3-cd)pyrene	ND	ug/l	10.0
	2-Methylnaphthalene	ND	ug/l	10.0



Mountain States Analytical, Inc.

The Quality Solution

Page 2

On Site Technologies, Ltd.

MSAI Sample: 91704

MSAI Group: 25403

Sample ID: 9812056-05

Test	Analysis	Results as Received	Units	Limit of Quantitation
0504	Fluoride, Ion Chromatography Method: EPA 300.0	ND	mg/l	3
0505	Bromide, Ion Chromatography Method: EPA 300.0	3.1	mg/l	3

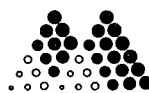
- (1) Sample 91704 was reanalyzed due to internal standard failures in the initial analysis. These failures were not confirmed in the reanalysis of the samples. The results from the second analysis are reported.

ND - Not detected at the Limit of Quantitation.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

Rolf E. Larsen
Project Manager



Mountain States Analytical, Inc.

The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: PAH/Cr,Pb/Fluoride, Bromide

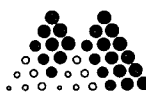
Sample ID: 9812056-06

Matrix: Water

Thriftway Refinery MW-15

MSAI Sample: 91705
MSAI Group: 25403
Date Reported: 01/20/99
Discard Date: 02/19/99
Date Submitted: 12/31/98
Date Sampled: 12/29/98
Collected by:
Purchase Order:
Project No.: 9812056

Test	Analysis	Results as Received	Units	Limit of Quantitation
0393G	Flame/hrICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w873	mg/l	
13007	Metals by hrICP, 6010A, w/ww Method: SW-846 6010A			
	Chromium	ND	mg/l	0.05
	Lead	ND	mg/l	0.10
3000	SVOA Extraction, w/ww Method: SW-846 3510B	Complete		
6719	Polycyclic Aro/Hydrocarb, 8270A ww Method: SW-846 8270A			
	Acenaphthene	ND	ug/l	(1) 10.0
	Acenaphthylene	ND	ug/l	10.0
	Anthracene	ND	ug/l	10.0
	Benz(a)anthracene	ND	ug/l	10.0
	Benzo(b)fluoranthene	ND	ug/l	10.0
	Benzo(k)fluoranthene	ND	ug/l	10.0
	Benzo(ghi)perylene	ND	ug/l	10.0
	Benzo(a)pyrene	ND	ug/l	25.0
	Chrysene	ND	ug/l	10.0
	Dibenz(a,h)anthracene	ND	ug/l	10.0
	Fluoranthene	ND	ug/l	10.0
	Fluorene	ND	ug/l	10.0
	Naphthalene	ND	ug/l	10.0
	Phenanthrene	ND	ug/l	10.0
	Pyrene	ND	ug/l	10.0
	Indeno(1,2,3-cd)pyrene	ND	ug/l	10.0
	2-Methylnaphthalene	ND	ug/l	10.0



Mountain States Analytical, Inc.

The Quality Solution

Page 2

On Site Technologies, Ltd.

MSAI Sample: 91705

MSAI Group: 25403

Sample ID: 9812056-06

Test	Analysis	Results as Received	Units	Limit of Quantitation
0504	Fluoride, Ion Chromatography Method: EPA 300.0	ND	mg/l	3
0505	Bromide, Ion Chromatography Method: EPA 300.0	3.5	mg/l	3

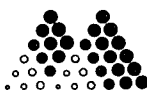
- 1) Sample 91705 was reanalyzed due to internal standard failures in the initial analysis. These failures were not confirmed in the reanalysis of the samples. The results from the second analysis are reported.

ND - Not detected at the Limit of Quantitation.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:


Rolf E. Larsen
Project Manager



Mountain States Analytical, Inc.

The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

Attn: Mr. David Cox
Project: PAH/Cr,Pb/Fluoride, Bromide

Sample ID: 9812056-07

Matrix: Water

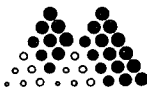
Thriftway Refinery MW-18

MSAI Sample: 91706
MSAI Group: 25403
Date Reported: 01/20/99
Discard Date: 02/19/99
Date Submitted: 12/31/98
Date Sampled: 12/29/98
Collected by:
Purchase Order:
Project No.: 9812056

Test	Analysis	Results as Received	Units	Limit of Quantitation
0393G	Flame/hrICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w873	mg/l	
13007	Metals by hrICP, 6010A, w/ww Method: SW-846 6010A			
	Chromium	0.05	mg/l	0.05
	Lead	ND	mg/l	0.10
3000	SVOA Extraction, w/ww Method: SW-846 3510B	Complete		
6719	Polycyclic Aro/Hydrocarb, 8270A ww Method: SW-846 8270A			
	Acenaphthene	ND	ug/l	(1) 10.0
	Acenaphthylene	ND	ug/l	10.0
	Anthracene	ND	ug/l	10.0
	Benz(a)anthracene	ND	ug/l	10.0
	Benzo(b)fluoranthene	ND	ug/l	10.0
	Benzo(k)fluoranthene	ND	ug/l	10.0
	Benzo(ghi)perylene	ND	ug/l	10.0
	Benzo(a)pyrene	ND	ug/l	25.0
	Chrysene	ND	ug/l	10.0
	Dibenz(a,h)anthracene	ND	ug/l	10.0
	Fluoranthene	ND	ug/l	10.0
	Fluorene	ND	ug/l	10.0
	Naphthalene	ND	ug/l	10.0
	Phenanthrene	ND	ug/l	10.0
	Pyrene	ND	ug/l	10.0
	Indeno(1,2,3-cd)pyrene	ND	ug/l	10.0
	2-Methylnaphthalene	ND	ug/l	10.0

Corporate Office: 1645 West 2200 South • Salt Lake City, Utah 84119
801-973-0050 • 1-800-973-6724 (MSAI) • FAX 801-972-6278
e-mail: service@msailabs.com





Mountain States Analytical, Inc.

The Quality Solution

Page 2

On Site Technologies, Ltd.

MSAI Sample: 91706

MSAI Group: 25403

Sample ID: 9812056-07

Test	Analysis	Results as Received	Units	Limit of Quantitation
0504	Fluoride, Ion Chromatography Method: EPA 300.0	ND	mg/l	3
0505	Bromide, Ion Chromatography Method: EPA 300.0	3.1	mg/l	3

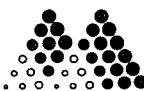
- 1) Sample 91706 was reanalyzed due to internal standard failures in the initial analysis. These failures were not confirmed in the reanalysis of the samples. The results from the second analysis are reported.

ND - Not detected at the Limit of Quantitation.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

Rolf E. Larsen
Project Manager



Mountain States Analytical, Inc.

The Quality Solution

On Site Technologies, Ltd.
612 E Murray Drive
Farmington, NM 87401

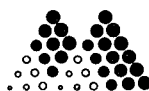
Attn: Mr. David Cox
Project: PAH/Cr,Pb/Fluoride, Bromide

Sample ID: 9812056-08
Matrix: Water

MSAI Sample: 91707
MSAI Group: 25403
Date Reported: 01/20/99
Discard Date: 02/19/99
Date Submitted: 12/31/98
Date Sampled: 12/29/98
Collected by:
Purchase Order:
Project No.: 9812056

Thriftway Refinery MW-19

Test Analysis	Results as Received	Units	Limit of Quantitation
0393G Flame/hrICP Prep, w/ww, 3005A Method: SW-846 3005A	Batch. w873	mg/l	
13007 Metals by hrICP, 6010A, w/ww Method: SW-846 6010A			
Chromium	ND	mg/l	0.05
Lead	ND	mg/l	0.10
3000 SVOA Extraction, w/ww Method: SW-846 35108	Complete		
6719 Polycyclic Aro/Hydrocarb, 8270A ww Method: SW-846 8270A			
Acenaphthene	ND	ug/l	(1) 10.0
Acenaphthylene	ND	ug/l	10.0
Anthracene	ND	ug/l	10.0
Benz(a)anthracene	ND	ug/l	10.0
Benzo(b)fluoranthene	ND	ug/l	10.0
Benzo(k)fluoranthene	ND	ug/l	10.0
Benzo(ghi)perylene	ND	ug/l	10.0
Benzo(a)pyrene	ND	ug/l	25.0
Chrysene	ND	ug/l	10.0
Dibenz(a,h)anthracene	ND	ug/l	10.0
Fluoranthene	ND	ug/l	10.0
Fluorene	ND	ug/l	10.0
Naphthalene	ND	ug/l	10.0
Phenanthrene	ND	ug/l	10.0
Pyrene	ND	ug/l	10.0
Indeno(1,2,3-cd)pyrene	ND	ug/l	10.0
2-Methylnaphthalene	ND	ug/l	10.0



Mountain States Analytical, Inc.

The Quality Solution

Page 2

On Site Technologies, Ltd.

MSAI Sample: 91707

MSAI Group: 25403

Sample ID: 9812056-08

Test	Analysis	Results as Received	Units	Limit of Quantitation
0504	Fluoride, Ion Chromatography Method: EPA 300.0	ND	mg/l	3
0505	Bromide, Ion Chromatography Method: EPA 300.0	3.0	mg/l	3

- (1) Sample 91707 was reanalyzed due to internal standard failures in the initial analysis. These failures were not confirmed in the reanalysis of the samples. The results from the second analysis are reported.

ND - Not detected at the Limit of Quantitation.

This report consists of the following items: A cover letter, a signed analytical report for each sample specified on the cover letter, and if applicable, an inorganic quality control summary. Organic sample reports contain footnotes which describe any quality control anomalies which may have occurred.

Respectfully Submitted,
Reviewed and Approved by:

Rolf E. Larsen
Project Manager

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting

01/12/99
11:44:15
Group: 25403

Analysis Batch Number: ICPHR-01/05/99-114 -1

Test Identification : ICPHR-*IRIS QC parameters

Sequence : DATR005

Number of Samples : 13

Batch Data-Date/Time : 01/06/99 / 08:38:23

BLANK#	ANALYTE	CONC FOUND #	CONC LIMIT
PRW1-873	Silver	0.0005	0.0050
	Arsenic	ND	0.0150
	Barium	0.0005	0.0030
	Beryllium	0.0000	0.0002
	Cadmium	ND	0.0020
	Chromium	0.0007	0.0100
	Copper	0.0053	0.0100
	Nickel	0.0005	0.0100
	Lead	ND	0.0200
	Antimony	0.0061	0.0200
	Selenium	0.0076	0.0300
	Thallium	ND	0.0200
	Vanadium	0.0009	0.0030
	Zinc	0.0075	0.0300

							QC LIMITS	
IK	SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	CONC SPIKE	% REC #	LOWER	UPPER
	25398-91690	Silver	0.0500	0.0018	0.0544	105.2	80.0	120.0
		Arsenic	2.0000	0.0044	2.1504	107.3	80.0	120.0
		Barium	2.0000	0.1394	2.1724	101.7	80.0	120.0
		Beryllium	0.0500	0.0002	0.0488	97.1	80.0	120.0
		Cadmium	0.0500	0.0171	0.0651	96.0	80.0	120.0
		Chromium	0.2000	0.0272	0.2250	98.9	80.0	120.0
		Copper	0.2500	0.0502	0.3103	104.0	80.0	120.0
		Nickel	0.5000	0.5395	1.0531	102.7	80.0	120.0
		Lead	0.5000	1.0217	1.5906	113.8	80.0	120.0
		Antimony	1.0000	0.0143	1.0747	106.0	80.0	120.0
		Selenium	2.0000	0.0066	2.1715	108.2	80.0	120.0
		Thallium	2.0000	0.0018	1.8862	94.2	80.0	120.0
		Vanadium	0.5000	0.0013	0.4963	99.0	80.0	120.0
		Zinc	0.5000	9.4932	10.7359	248.5(2k)	80.0	120.0

							QC LIMITS			
LD	SAMPLE#	ANALYTE	CONC ADDED	CONC SAMPLE	RESULT 2	%REC2 #	LOWER	UPPER	RPD #	LIMIT
	25398-91691	Silver	0.0500	0.0018	0.0528	102.0	80.0	120.0	2.9	20.0
		Arsenic	2.0000	0.0044	2.1574	107.6	80.0	120.0	0.3	20.0
		Barium	2.0000	0.1394	2.1706	101.6	80.0	120.0	0.1	20.0
		Beryllium	0.0500	0.0002	0.0489	97.4	80.0	120.0	0.3	20.0
		Cadmium	0.0500	0.0171	0.0646	95.2	80.0	120.0	0.6	20.0
		Chromium	0.2000	0.0272	0.2240	98.4	80.0	120.0	0.4	20.0
		Copper	0.2500	0.0502	0.3049	101.9	80.0	120.0	1.8	20.0
		Nickel	0.5000	0.5395	1.0365	99.4	80.0	120.0	1.6	20.0
		Lead	0.5000	1.0217	1.5633	108.3	80.0	120.0	1.7	20.0
		Antimony	1.0000	0.0143	1.0680	105.4	80.0	120.0	0.6	20.0
		Selenium	2.0000	0.0066	2.1805	108.7	80.0	120.0	0.4	20.0
		Thallium	2.0000	0.0018	1.9232	96.1	80.0	120.0	1.9	20.0
		Vanadium	0.5000	0.0013	0.4972	99.2	80.0	120.0	0.2	20.0
		Zinc	0.5000	9.4932	10.3210	165.6(2k)	80.0	120.0	3.9	20.0

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting

01/12/99
11:44:16
Group: 25403

Analysis Batch Number: ICPHR-01/05/99-114 -1
Test Identification : ICPHR-*IRIS QC parameters
Number of Samples : 13
Batch Data-Date/Time : 01/06/99 / 08:38:23

Sequence : DATR005

DUPLICATE

SAMPLE#	ANALYTE	RESULT 1	RESULT 2	RPD #	LIMIT	DILUTION
398-91689	Silver	0.0018	0.0019	4.9	20.0	1.00
	Arsenic	0.0044	0.0009	131.1(11)	20.0	1.00
	Barium	0.1394	0.1397	0.2	20.0	1.00
	Beryllium	0.0002	0.0002	0.0	20.0	1.00
	Cadmium	0.0171	0.0172	0.9	20.0	1.00
	Chromium	0.0272	0.0252	7.8	20.0	1.00
	Copper	0.0502	0.0533	6.0	20.0	1.00
	Nickel	0.5395	0.5587	3.5	20.0	1.00
	Lead	1.0217	1.1282	9.9	20.0	1.00
	Antimony	0.0143	0.0253	55.7(5a)	20.0	1.00
	Selenium	0.0066	0.0161	83.2(11)	20.0	1.00
	Thallium	0.0018	0.0090	132.7(11)	20.0	1.00
	Vanadium	0.0013	0.0020	43.8(11)	20.0	1.00
	Zinc	9.4932	9.7766	2.9	20.0	1.00

CONTROL

SAMPLE#	ANALYTE	CONC FOUND	CONC KNOWN	% REC #	QC LIMITS	
					LOWER	UPPER
SW-873	Silver	0.0500	0.0500	100.0	80.0	120.0
	Arsenic	2.0400	2.0000	102.0	80.0	120.0
	Barium	2.0325	2.0000	101.6	80.0	120.0
	Beryllium	0.0507	0.0500	101.4	80.0	120.0
	Cadmium	0.0506	0.0500	101.1	80.0	120.0
	Chromium	0.2053	0.2000	102.7	80.0	120.0
	Copper	0.2542	0.2500	101.7	80.0	120.0
	Nickel	0.5104	0.5000	102.1	80.0	120.0
	Lead	0.5191	0.5000	103.8	80.0	120.0
	Antimony	0.9982	1.0000	99.8	80.0	120.0
	Selenium	2.0892	2.0000	104.5	80.0	120.0
	Thallium	2.0257	2.0000	101.3	80.0	120.0
	Vanadium	0.4985	0.5000	99.7	80.0	120.0
	Zinc	0.5286	0.5000	105.7	80.0	120.0

QC LIMITS

CCV #	ANALYTE	TRUE VALUE	BATCH READ	% REC #	LOWER	UPPER
11-2	Silver	0.1000	0.0956	95.6	90.0	110.0
	Arsenic	0.4000	0.3953	98.8	90.0	110.0
	Barium	1.0000	1.0032	100.3	90.0	110.0
	Beryllium	0.1000	0.1020	102.0	90.0	110.0
	Cadmium	1.0000	0.9856	98.6	90.0	110.0
	Chromium	1.0000	0.9933	99.3	90.0	110.0
	Copper	1.0000	0.9837	98.4	90.0	110.0
	Nickel	2.0000	2.0000	100.0	90.0	110.0
	Lead	5.0000	4.9708	99.4	90.0	110.0
	Antimony	1.0000	1.0159	101.6	90.0	110.0
	Selenium	0.4000	0.3872	96.8	90.0	110.0
	Thallium	1.0000	0.9945	99.5	90.0	110.0
	Vanadium	0.4000	0.3810	95.3	90.0	110.0
	Zinc	1.0000	0.9957	99.6	90.0	110.0
	Silver	0.1000	0.0953	95.3	90.0	110.0

Analysis Batch Number: ICPHR-01/05/99-114 -1

Test Identification : ICPHR-*IRIS QC parameters

Sequence : DATR005

Number of Samples : 13

Batch Data-Date/Time : 01/06/99 / 08:38:23

CCV #	ANALYTE	TRUE VALUE	BATCH READ	QC LIMITS		
				% REC #	LOWER	UPPER
V1--2	Arsenic	0.4000	0.3964	99.1	90.0	110.0
	Barium	1.0000	1.0055	100.5	90.0	110.0
	Beryllium	0.1000	0.1007	100.7	90.0	110.0
	Cadmium	1.0000	0.9828	98.3	90.0	110.0
	Chromium	1.0000	0.9963	99.6	90.0	110.0
	Copper	1.0000	0.9836	98.4	90.0	110.0
	Nickel	2.0000	1.9892	99.5	90.0	110.0
	Lead	5.0000	4.9936	99.9	90.0	110.0
	Antimony	1.0000	1.0289	102.9	90.0	110.0
	Selenium	0.4000	0.3955	98.9	90.0	110.0
	Thallium	1.0000	0.9961	99.6	90.0	110.0
	Vanadium	0.4000	0.3815	95.4	90.0	110.0
	Zinc	1.0000	0.9939	99.4	90.0	110.0
V2--3	Silver	0.1000	0.0947	94.7	90.0	110.0
	Arsenic	0.4000	0.3872	96.8	90.0	110.0
	Barium	1.0000	1.0117	101.2	90.0	110.0
	Beryllium	0.1000	0.0983	98.3	90.0	110.0
	Cadmium	1.0000	0.9769	97.7	90.0	110.0
	Chromium	1.0000	0.9938	99.4	90.0	110.0
	Copper	1.0000	0.9651	96.5	90.0	110.0
	Nickel	2.0000	1.9758	98.8	90.0	110.0
	Lead	5.0000	5.0288	100.6	90.0	110.0
	Antimony	1.0000	1.0110	101.1	90.0	110.0
	Selenium	0.4000	0.3783	94.6	90.0	110.0
	Thallium	1.0000	0.9874	98.7	90.0	110.0
	Vanadium	0.4000	0.3785	94.6	90.0	110.0
	Zinc	1.0000	0.9813	98.1	90.0	110.0
V3--4	Silver	0.1000	0.0957	95.7	90.0	110.0
	Arsenic	0.4000	0.3857	96.4	90.0	110.0
	Barium	1.0000	0.9947	99.5	90.0	110.0
	Beryllium	0.1000	0.0977	97.7	90.0	110.0
	Cadmium	1.0000	0.9479	94.8	90.0	110.0
	Chromium	1.0000	0.9884	98.8	90.0	110.0
	Copper	1.0000	0.9676	96.8	90.0	110.0
	Nickel	2.0000	1.9209	96.0	90.0	110.0
	Lead	5.0000	4.8892	97.8	90.0	110.0
	Antimony	1.0000	1.0001	100.0	90.0	110.0
	Selenium	0.4000	0.3818	95.4	90.0	110.0
	Thallium	1.0000	0.9701	97.0	90.0	110.0
	Vanadium	0.4000	0.3787	94.7	90.0	110.0
	Zinc	1.0000	0.9627	96.3	90.0	110.0
V4--5	Silver	0.1000	0.0949	94.9	90.0	110.0
	Arsenic	0.4000	0.3869	96.7	90.0	110.0
	Barium	1.0000	0.9979	99.8	90.0	110.0
	Beryllium	0.1000	0.0984	98.4	90.0	110.0
	Cadmium	1.0000	0.9582	95.8	90.0	110.0
	Chromium	1.0000	0.9872	98.7	90.0	110.0
	Copper	1.0000	0.9734	97.3	90.0	110.0
	Nickel	2.0000	1.9478	97.4	90.0	110.0

Mountain States Analytical, Inc.
Daily QC Batching Data
Data Released for Reporting

01/12/99
11:44:18
Group: 25403

Analysis Batch Number: ICPHR-01/05/99-114 -1
Test Identification : ICPHR-*IRIS QC parameters
Number of Samples : 13
Batch Data-Date/Time : 01/06/99 / 08:38:23

Sequence : DATR005

CCV #	ANALYTE	QC LIMITS			
		TRUE VALUE	BATCH READ	% REC #	LOWER UPPER
V4--5	Lead	5.0000	4.8865	97.7	90.0 110.0
	Antimony	1.0000	0.9989	99.9	90.0 110.0
	Selenium	0.4000	0.3778	94.5	90.0 110.0
	Thallium	1.0000	0.9801	98.0	90.0 110.0
	Vanadium	0.4000	0.3780	94.5	90.0 110.0
	Zinc	1.0000	0.9674	96.7	90.0 110.0

B#	ANALYTE	CONC FOUND #	CONC LIMIT
ICB-	Silver	0.0004	0.0050
	Arsenic	ND	0.0150
	Barium	0.0002	0.0030
	Beryllium	ND	0.0002
	Cadmium	0.0000	0.0020
	Chromium	0.0002	0.0100
	Copper	ND	0.0100
	Nickel	ND	0.0100
	Lead	0.0006	0.0200
	Antimony	ND	0.0200
	Selenium	0.0018	0.0300
	Thallium	ND	0.0200
	Vanadium	ND	0.0030
	Zinc	ND	0.0300
CCB1-	Silver	0.0002	0.0050
	Arsenic	ND	0.0150
	Barium	0.0002	0.0030
	Beryllium	ND	0.0002
	Cadmium	ND	0.0020
	Chromium	0.0004	0.0100
	Copper	ND	0.0100
	Nickel	ND	0.0100
	Lead	ND	0.0200
	Antimony	0.0043	0.0200
	Selenium	ND	0.0300
	Thallium	ND	0.0200
	Vanadium	0.0004	0.0030
	Zinc	ND	0.0300
CCB2-	Silver	ND	0.0050
	Arsenic	ND	0.0150
	Barium	0.0005	0.0030
	Beryllium	ND	0.0002
	Cadmium	ND	0.0020
	Chromium	0.0002	0.0100
	Copper	0.0003	0.0100
	Nickel	0.0002	0.0100
	Lead	0.0017	0.0200
	Antimony	ND	0.0200
	Selenium	ND	0.0300
	Thallium	0.0046	0.0200
	Vanadium	0.0005	0.0030

Analysis Batch Number: ICPHR-01/05/99-114 -1
Test Identification : ICPHR-*IRIS QC parameters
Number of Samples : 13
Batch Data-Date/Time : 01/06/99 / 08:38:23

Sequence : DATR005

CCB#	ANALYTE	CONC FOUND #	CONC LIMIT
CB2-	Zinc	ND	0.0300
CB3-	Silver	0.0002	0.0050
	Arsenic	ND	0.0150
	Barium	0.0002	0.0030
	Beryllium	ND	0.0002
	Cadmium	0.0002	0.0020
	Chromium	0.0007	0.0100
	Copper	ND	0.0100
	Nickel	ND	0.0100
	Lead	0.0013	0.0200
	Antimony	0.0017	0.0200
	Selenium	ND	0.0300
	Thallium	0.0054	0.0200
	Vanadium	ND	0.0030
	Zinc	0.0002	0.0300
CB4-	Silver	0.0004	0.0050
	Arsenic	0.0015	0.0150
	Barium	0.0001	0.0030
	Beryllium	ND	0.0002
	Cadmium	0.0001	0.0020
	Chromium	0.0004	0.0100
	Copper	0.0003	0.0100
	Nickel	0.0009	0.0100
	Lead	0.0049	0.0200
	Antimony	0.0083	0.0200
	Selenium	ND	0.0300
	Thallium	0.0100	0.0200
	Vanadium	ND	0.0030
	Zinc	ND	0.0300

----- Result Footnotes -----

- (2k) - Sample concentration >4X spk added. Serial dilution was recovered within 10% limits.
(11) - The duplicate results cannot be evaluated because both results are <MDL.
(5a) - Duplicates not evaluated: Results are <10x detection limit

Groups & Samples

25389-91677	25398-91689	25398-91690	25398-91691	25401-91695	25401-91696	25401-91697	25403-91700
25403-91701	25403-91702	25403-91703	25403-91704	25403-91705	25403-91706	25403-91707	

MOUNTAIN STATES ANALYTICAL

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=====
Data File   : C:\PEAKNET\DATA\DATA0118.D02   Report Date: 1/11/99 11:55:34 AM |
Sample Name: LRB                               Collected  : 1/11/99 11:41:08 AM |
Inject #    : 2                               Vial #       :                |
Method File : c:\peaknet\method\as14low.met   Calibrated   : 1/6/99 11:26:07 AM |
System Name : System1                         Detector    : CD20              |
Column Type : AS14+AG14 (Both 4mm)           Operator     : TG                |
Data Points : 3900                           Rate        : 5.00   Hz          |
Module Name :                               Moduleware  : 1.17              |
=====
  
```

Calibration	Volume	Dilution	Start	Stop	Area	Reject	Pk. Width	Threshold
External	1	1	0.00	13.00	750	10.00	0.50	

***** Component Report: All Components *****

Pk. Num	Ret Time	Component Name	Concentration mg/l	Area	Peak Start	Peak End	% Delta
0	0.00	Flouride	0.000	0	0.00	0.00	0.00
1	4.27	Chloride	0.207	4589	4.00	4.47	1.11
0	0.00	Nitrite as N	0.000	0	0.00	0.00	0.00
0	0.00	Bromide	0.000	0	0.00	0.00	0.00
0	0.00	Nitrate as N	0.000	0	0.00	0.00	0.00
3	9.55	O-phos as P	0.016	1631	9.33	9.87	0.00
0	0.00	Sulfate	0.000	0	0.00	0.00	0.00
Totals			0.223	6220			

***** Peak Report: Unknown Peaks *****

Pk. Num	Ret Time	Component Name	Concentration mg/l	Area	Peak Start	Peak End	% Delta
2	8.98		0.000	1609	8.76	9.15	
Totals			0.000	1609			

3A
WATER ANION LFB/LFBD RECOVERY

Lab Name: MOUNTAIN STATES ANALYTICAL Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - MSAI Sample No.: LFB/LFBD Date Analyzed: 01/11/99

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	LFB CONCENTRATION (mg/L)	LFB % REC #	QC. LIMITS REC.
FLUORIDE	100.00	0.00	98.95	99	90 110
BROMIDE	400.00	0.00	392.06	98	90 110

COMPOUND	SPIKE ADDED (mg/L)	LFBD CONCENTRATION (mg/L)	LFBD % REC #	% RPD #	QC RPD	LIMITS REC.
FLUORIDE	100.00	98.26	98	0.7	20.0	90 110
BROMIDE	400.00	390.58	98	0.4	20.0	90 110

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of in-house QC limits

RPD: 0 out of 2 outside of in-house QC limits

LFB Recovery: 0 out of 4 outside of in-house QC limits

Comments: _____

3A
WATER ANION LFB/LFBD RECOVERY

Lab Name: MOUNTAIN STATES ANALYTICAL Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - MSAI Sample No.: LFB/LFBD Date Analyzed: 01/11/99

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	LFB CONCENTRATION (mg/L)	LFB % REC #	QC. LIMITS REC.
FLUORIDE	100.00	0.00	100.94	101	90 110
BROMIDE	400.00	0.00	395.40	99	90 110

COMPOUND	SPIKE ADDED (mg/L)	LFBD CONCENTRATION (mg/L)	LFBD % REC #	% RPD #	QC LIMITS RPD REC.
FLUORIDE	100.00	100.91	101	0.0	20.0 90 110
BROMIDE	400.00	404.16	101	2.2	20.0 90 110

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of in-house QC limits

RPD: 0 out of 2 outside of in-house QC limits

LFB Recovery: 0 out of 4 outside of in-house QC limits

Comments: _____

3A
WATER ANION SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MOUNTAIN STATES ANALYTICAL Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - MSAI Sample No.: 91695 Date Analyzed: 01/11/99

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC #	QC. LIMITS REC.
CHLORIDE	25	1.435	25.299	95	80 120
BROMIDE	100	3.274	99.574	96	80 120

COMPOUND	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC #	% RPD #	QC RPD	LIMITS REC.
CHLORIDE	25	25.228	95	0.3	20.0	80 120
BROMIDE	100	99.834	97	0.3	20.0	80 120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of in-house QC limits

RPD: 0 out of 2 outside of in-house QC limits

Spike Recovery: 0 out of 4 outside of in-house QC limits

Comments: _____

3A
WATER ANION SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MOUNTAIN STATES ANALYTICAL Contract: _____

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix Spike - MSAI Sample No.: 91701 Date Analyzed: 01/11/99

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC #	QC. LIMITS REC.
CHLORIDE	25	1.587	25.434	95	80 120
BROMIDE	100	0	97.516	98	80 120

COMPOUND	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC #	% RPD #	QC RPD	LIMITS REC.
CHLORIDE	25	25.632	96	0.8	20.0	80 120
BROMIDE	100	99.364	99	1.9	20.0	80 120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of in-house QC limits

RPD: 0 out of 2 outside of in-house QC limits

Spike Recovery: 0 out of 4 outside of in-house QC limits

Comments: _____

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK

Lab Name: MOUNTAIN STATES

Contract:

Lab Code: MSAI

Case No.:

SAS No.:

SDG No.: 990109C2

Matrix: (soil/water) WATER

Lab Sample ID: 990104WB

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: X5000

Level: (low/med) LOW

Date Received: _____

% Moisture: 0 decanted: (Y/N) N

Date Extracted:

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 01/10/99

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
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108-95-2-----	Phenol	830.00	U
111-44-4-----	bis(2-Chloroethyl) ether	330.00	U
95-57-8-----	2-Chlorophenol	830.00	U
541-73-1-----	1,3-Dichlorobenzene	330.00	U
106-46-7-----	1,4-Dichlorobenzene	330.00	U
100-51-6-----	Benzyl alcohol	330.00	U
95-50-1-----	1,2-Dichlorobenzene	330.00	U
95-48-7-----	2-Methylphenol (o-Cresol)	830.00	U
108-60-1-----	bis(2-Chloroisopropyl) ether	330.00	U
N0019500-----	3 and 4-Methylphenol	830.00	U
621-64-7-----	N-Nitrosodi-N-propylamine	330.00	U
67-72-1-----	Hexachloroethane	330.00	U
98-95-3-----	Nitrobenzene	330.00	U
78-59-1-----	Isophorone	330.00	U
105-67-9-----	2,4-Dimethylphenol	830.00	U
88-75-5-----	2-Nitrophenol	830.00	U
65-85-0-----	Benzoic acid	830.00	U
111-91-1-----	bis(2-Chloroethoxy) methane	330.00	U
120-83-2-----	2,4-Dichlorophenol	830.00	U
120-82-1-----	1,2,4-Trichlorobenzene	330.00	U
91-20-3-----	Naphthalene	330.00	U
106-47-8-----	4-Chloroaniline	330.00	U
87-68-3-----	Hexachlorobutadiene	330.00	U
59-50-7-----	4-Chloro-3-methylphenol	830.00	U
91-57-6-----	2-Methylnaphthalene	330.00	U
77-47-4-----	Hexachlorocyclopentadiene	670.00	U
88-06-2-----	2,4,6-Trichlorophenol	830.00	U
95-95-4-----	2,4,5-Trichlorophenol	830.00	U
91-58-7-----	2-Chloronaphthalene	330.00	U
88-74-4-----	2-Nitroaniline	330.00	U
130-15-4-----	1,4-Naphthoquinone	330.00	U
131-11-3-----	Dimethyl phthalate	330.00	U
606-20-2-----	2,6-Dinitrotoluene	330.00	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK

Lab Name: MOUNTAIN STATES

Contract:

Lab Code: MSAI

Case No.:

SAS No.:

SDG No.: 990109C2

Matrix: (soil/water) SOIL

Lab Sample ID: 990104WB

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: X5000

Level: (low/med) LOW

Date Received: _____

% Moisture: 0 decanted: (Y/N) N

Date Extracted:

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 01/10/99

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
---------	----------	---	---

208-96-8-----	Acenaphthylene	330.00	U
99-09-2-----	3-Nitroaniline	330.00	U
51-28-5-----	2,4-Dinitrophenol	830.00	U
83-32-9-----	Acenaphthene	330.00	U
100-02-7-----	4-Nitrophenol	830.00	U
121-14-2-----	2,4-Dinitrotoluene	330.00	U
132-64-9-----	Dibenzofuran	330.00	U
84-66-2-----	Diethyl phthalate	330.00	U
7005-72-3-----	4-Chlorophenyl-phenyl ether	330.00	U
86-73-7-----	Fluorene	330.00	U
100-01-6-----	4-Nitroaniline	330.00	U
534-52-1-----	4,6-Dinitro-2-methylphenol	830.00	U
86-30-6-----	N-Nitrosodiphenylamine (1)	330.00	U
101-55-3-----	4-Bromophenyl-phenyl ether	330.00	U
118-74-1-----	Hexachlorobenzene	330.00	U
87-86-5-----	Pentachlorophenol	830.00	U
85-01-8-----	Phenanthrene	330.00	U
120-12-7-----	Anthracene	330.00	U
86-74-8-----	Carbazole	330.00	U
84-74-2-----	Di-N-butylphthalate	330.00	U
206-44-0-----	Fluoranthene	330.00	U
129-00-0-----	Pyrene	330.00	U
52-85-7-----	Famphur	330.00	U
85-68-7-----	Butylbenzyl phthalate	330.00	U
117-81-7-----	bis(2-Ethylhexyl)phthalate	49.45	J
91-94-1-----	3,3'-Dichlorobenzidine	330.00	U
56-55-3-----	Benz (a) anthracene	330.00	U
218-01-9-----	Chrysene	330.00	U
117-84-0-----	Di-N-octyl phthalate	330.00	U
205-99-2-----	Benzo (b) fluoranthene	330.00	U
207-08-9-----	Benzo (k) fluoranthene	330.00	U
50-32-8-----	Benzo (a) pyrene	330.00	U
193-39-5-----	Indeno (1,2,3-cd) pyrene	330.00	U

(1) - Cannot be separated from Diphenylamine
FORM I SV-2

OLM03.0

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK

Lab Name: MOUNTAIN STATES

Contract:

Lab Code: MSAI

Case No.:

SAS No.:

SDG No.: 990109C2

Matrix: (soil/water) SOIL

Lab Sample ID: 990104WB

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: X5000

Level: (low/med) LOW

Date Received: _____

% Moisture: 0 decanted: (Y/N) N

Date Extracted:

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 01/10/99

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
---------	----------	---	---

53-70-3-----	Dibenz(a,h)anthracene	330.00	U
191-24-2-----	Benzo(ghi)perylene	330.00	U
79-10-7-----	Acrylic Acid	670.00	U
110-86-1-----	Pyridine	330.00	U
62-75-9-----	N-Nitrosodimethylamine	330.00	U
564-00-1-----	2,2'-Bioxirane	330.00	U
542-76-7-----	3-Chloropropionitrile	330.00	U
109-06-8-----	2-Picoline	330.00	U
51-79-6-----	Ethyl Carbamate	330.00	U
66-27-3-----	Methyl methanesulfonate	330.00	U
55-18-5-----	N-Nitrosodiethylamine	330.00	U
62-50-0-----	Ethyl methanesulfonate	330.00	U
62-53-3-----	Aniline	330.00	U
95-13-6-----	Indene	330.00	U
76-01-7-----	Pentachloroethane	330.00	U
930-55-2-----	N-Nitrosopyrrolidine	330.00	U
98-86-2-----	Acetophenone	330.00	U
59-89-2-----	N-Nitrosomorpholine	330.00	U
95-53-4-----	o-Toluidine	330.00	U
98-87-3-----	Benzal Chloride	330.00	U
100-75-4-----	N-Nitrosopiperidine	330.00	U
126-68-1-----	o,o,o-Triethylphosphorothioa	330.00	U
87-65-0-----	2,6-Dichlorophenol	330.00	U
1888-71-7-----	Hexachloropropene	330.00	U
122-09-8-----	a,a-Dimethylphenethylamine	670.00	U
106-50-3-----	1,4-Phenylenediamine	3300.00	U
91-22-5-----	Quinoline	330.00	U
924-16-3-----	N-Nitrosodi-N-butylamine	330.00	U
108-46-3-----	Resorcinol	330.00	U
90-12-0-----	1-Methylnaphthalene	330.00	U
85-44-9-----	Phthalic Anhydride	1700.00	U
95-94-3-----	1,2,4,5-Tetrachlorobenzene	330.00	U
120-58-1-----	Isosafrole	330.00	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK

Lab Name: MOUNTAIN STATES

Contract:

Lab Code: MSAI

Case No.:

SAS No.:

SDG No.: 990109C2

Matrix: (soil/water) SOIL

Lab Sample ID: 990104WB

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: X5000

Level: (low/med) LOW

Date Received: _____

% Moisture: 0 decanted: (Y/N) N

Date Extracted:

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 01/10/99

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
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94-59-7-----	Safrole	330.00	U
99-65-0-----	1,3-Dinitrobenzene	330.00	U
608-93-5-----	Pentachlorobenzene	330.00	U
134-32-7-----	1-Naphthylamine	330.00	U
935-95-5-----	2,3,5,6-Tetrachlorophenol	330.00	U
58-90-2-----	2,3,4,5 or 2,3,4,6-TCPhenol	670.00	U
91-59-8-----	2-Naphthylamine	330.00	U
96-45-7-----	Ethylene Thiourea	330.00	U
122-66-7-----	1,2-Diphenylhydrazine	330.00	U
297-97-2-----	Thionazin	330.00	U
99-55-8-----	5-Nitro-o-toluidine	330.00	U
3689-24-5-----	Tetraethyldithiopyrophosphat	330.00	U
99-35-4-----	1,3,5-Trinitrobenzene	1700.00	U
2303-16-4-----	Diallate (cis)	330.00	U
2303-16-4-----	Diallate (trans)	330.00	U
60-51-5-----	Dimethoate	3300.00	U
62-44-2-----	Phenacetin	330.00	U
92-67-1-----	4-Aminobiphenyl	330.00	U
82-63-8-----	Pentachloronitrobenzene	330.00	U
23950-58-5-----	Pronamide	330.00	U
88-85-7-----	Dinoseb	1300.00	U
298-00-0-----	Parathion, Methyl	670.00	U
56-38-2-----	Parathion, Ethyl	670.00	U
56-57-5-----	4-Nitroquinoline-1-oxide	3300.00	U
91-80-5-----	Methapyrilene	670.00	U
465-73-6-----	Isodrin	330.00	U
92-87-5-----	Benzidine	3300.00	U
140-57-8-----	Aramite	330.00	U
143-50-0-----	Kepone	1700.00	U
60-11-7-----	p- (Dimethylamino) azobenzene	330.00	U
510-15-6-----	Chlorobenzilate	330.00	U
119-93-7-----	3,3'-Dimethylbenzidine	330.00	U
53-96-3-----	2-Acetylaminofluorene	330.00	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK

Lab Name: MOUNTAIN STATES

Contract:

Lab Code: MSAI

Case No.:

SAS No.:

SDG No.: 990109C2

Matrix: (soil/water) SOIL

Lab Sample ID: 990104WB

Sample wt/vol: 30.0 (g/mL) G

Lab File ID: X5000

Level: (low/med) LOW

Date Received: _____

% Moisture: 0 decanted: (Y/N) N

Date Extracted:

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 01/10/99

Injection Volume: 1.0 (uL)

Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
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101-14-4-----	4,4'-Methylenebis(2-chloroan	330.00	U
126-72-7-----	Tris (2,3-DBP) phosphate	17000.00	U
57-97-6-----	7,12-Dimethylbenz[a]anthracene	330.00	U
56-49-5-----	3-Methylcholanthrene	330.00	U
10595-95-6-----	N-Nitrosomethylethylamine	330.00	U
79-46-9-----	2-Nitropropane	330.00	U
100-80-5-----	2-Ethoxyethanol (Cellosolve)	330.00	U
92-52-4-----	Biphenyl	330.00	U
198-55-0-----	Perylene	330.00	U
298-04-4-----	Disulfoton	670.00	U
298-02-2-----	Phorate	670.00	U
108-98-5-----	Benzenethiol	330.00	U
226-36-8-----	Dibenz(a,h)acridine	330.00	U
72-54-8-----	4,4'-DDD	670.00	U
72-55-9-----	4,4'-DDE	670.00	U
319-85-7-----	beta-BHC	330.00	U
-----	6-Methylchrysene	330.00	U
70-30-4-----	Hexachlorophene	330.00	U
192-65-4-----	Dibenzo(a,e)pyrene	330.00	U
90-13-1-----	1-Chloronaphthalene	330.00	U
100-25-4-----	1,4-Dinitrobenzene	330.00	U

2C
WATER SEMI-VOLATILE SURROGATE RECOVERY

Lab Name: MOUNTAIN STATES

Contract:

Lab Code: MSAI

Case No.:

SAS No.:

SDG No.: 990109C2

	EPA SAMPLE NO.	S1 (2FP) #	S2 (PHL) #	S3 (NBZ) #	S4 (FBP) #	S5 (TBP) #	S6 (TPH) #	S7 #	S8 #	TOT OUT
01	SBLK	39	28	62	55	61	63			0
02	LCS	52	36	83	77	70	65			0
03	FT69	53	45	81	65	56	53			0
04	FT69MS	50	26	75	63	51	54			0
05	FT69MSD	51	27	76	64	55	56			0
06										
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QC LIMITS

S1 (2FP) = 2-Fluorophenol (21-110)
 S2 (PHL) = Phenol-d6 (10-110)
 S3 (NBZ) = Nitrobenzene-d5 (35-114)
 S4 (FBP) = 2-Fluorobiphenyl (43-116)
 S5 (TBP) = 2,4,6-Tribromophenol (10-123)
 S6 (TPH) = Terphenyl-d14 (33-141)

Column to be used to flag recovery values
 * Values outside of contract required QC limits
 D Surrogate diluted out

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: MOUNTAIN STATES

Contract:

Lab Code: MSAI

Case No.:

SAS No.:

SDG No.: 990118C

	EPA SAMPLE NO.	S1 (2FP) #	S2 (PHL) #	S3 (NBZ) #	S4 (FBP) #	S5 (TBP) #	S6 (TPH) #	S7 #	S8 #	TOT OUT
01	981205102	11	18	60	59	29	49			0
02	981205103	9	10	58	82	54	45			0
03	981205601	27	25	60	64	46	45			0
04	981205602	16	16	60	52	28	50			0
05	981205603	22	17	58	44	30	49			0
06	981205604	3	2	60	46	18*	51			1
07	981205605	24	18	60	45	36	46			0
08	981205606	39	28	62	48	39	53			0
09	981205607	34	26	60	49	43	53			0
10	981205608	37	28	56	45	46	45			0
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30										

01/20/41 (3)
NA

QC LIMITS

S1 (2FP) = 2-Fluorophenol (1- 90)
 S2 (PHL) = Phenol-d6 (1- 67)
 S3 (NBZ) = Nitrobenzene-d5 (18-114)
 S4 (FBP) = 2-Fluorobiphenyl (31- 97)
 S5 (TBP) = 2,4,6-Tribromophenol (19-139)
 S6 (TPH) = Terphenyl-d14 (15-141)

Column to be used to flag recovery values
 * Values outside of contract required QC limits
 D Surrogate diluted out

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: MOUNTAIN STATES

Contract:

Lab Code: MSAI

Case No.:

SAS No.:

SDG No.: 990119C

	EPA SAMPLE NO.	S1 (2FP) #	S2 (PHL) #	S3 (NBZ) #	S4 (FBP) #	S5 (TBP) #	S6 (TPH) #	S7 #	S8 #	TOT OUT
01	0199AMB	39	29	56	42	46	54			0
02	0199ALCS	41	30	62	58	57	59			0
03	0199ALCSD	42	30	64	58	58	60			0
04	CBNEAA	40	33	62	48	46	51			0
05	CBNEAAMS	41	35	60	56	52	53			0
06	CBNEAAMSD	44	36	66	60	57	55			0
07	1188-2 R	51	41	93	54	52	55			0
08	981205607	33	26	58	48	45	54			0
09	981205608	37	28	56	46	48	45			0
10	981206001	43	38	57	44	49	44			0
11	981206002	36	33	56	42	45	51			0
12	981206101	4	6	56	43	19	52			0
13	981206102	42	41	63	45	48	53			0
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QC LIMITS

S1 (2FP) = 2-Fluorophenol (1- 90)
 S2 (PHL) = Phenol-d6 (1- 67)
 S3 (NBZ) = Nitrobenzene-d5 (18-114)
 S4 (FBP) = 2-Fluorobiphenyl (31- 97)
 S5 (TBP) = 2,4,6-Tribromophenol (19-139)
 S6 (TPH) = Terphenyl-d14 (15-141)

Column to be used to flag recovery values
 * Values outside of contract required QC limits
 D Surrogate diluted out

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MOUNTAIN STATES

Contract:

Lab Code: MSAI

Case No.:

SAS No.:

SDG No.: 990109C2

Matrix Spike - Sample No.: LCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
=====	=====	=====	=====	=====	=====
Phenol	100.00		36.25	36	5-112
2-Chlorophenol	100.00		70.45	70	23-134
1,4-Dichlorobenzene	100.00		68.57	68	20-124
N-Nitrosodi-N-propylami	100.00		84.80	85	1-230
1,2,4-Trichlorobenzene	100.00		76.34	76	44-142
4-Chloro-3-methylphenol	100.00		81.17	81	22-147
Acenaphthene	100.00		88.93	89	47-145
4-Nitrophenol	100.00		35.54	36	1-132
2,4-Dinitrotoluene	100.00		84.55	84	39-139
Pentachlorophenol	100.00		61.55	62	14-176
Pyrene	100.00		89.36	89	52-115

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits

Spike Recovery: 0 out of 11 outside limits

COMMENTS:

3C
WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MOUNTAIN STATES

Contract:

Lab Code: MSAI

Case No.:

SAS No.:

SDG No.: 990109C2

Matrix Spike - EPA Sample No.: FT69

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Phenol	100.00	0.00	25.72	26	5-112
2-Chlorophenol	100.00	0.00	62.21	62	23-134
1,4-Dichlorobenzene	100.00	0.00	43.22	43	20-124
N-Nitrosodi-N-propylami	100.00	0.00	78.12	78	1-230
1,2,4-Trichlorobenzene	100.00	0.00	47.83	48	44-142
4-Chloro-3-methylphenol	100.00	0.00	71.71	72	22-147
Acenaphthene	100.00	0.00	65.63	66	47-145
4-Nitrophenol	100.00	0.00	27.84	28	1-132
2,4-Dinitrotoluene	100.00	0.00	80.67	81	39-139
Pentachlorophenol	100.00	0.00	7.67	8*	14-176
Pyrene	100.00	0.00	83.58	84	52-115

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS	
					RPD	REC.
Phenol	100.00	26.95	27	4	42	5-112
2-Chlorophenol	100.00	64.47	64	3	40	23-134
1,4-Dichlorobenzene	100.00	45.66	46	7	28	20-124
N-Nitrosodi-N-propylami	100.00	80.64	81	4	38	1-230
1,2,4-Trichlorobenzene	100.00	51.84	52	8	28	44-142
4-Chloro-3-methylphenol	100.00	73.01	73	1	42	22-147
Acenaphthene	100.00	67.91	68	3	31	47-145
4-Nitrophenol	100.00	32.05	32	13	50	1-132
2,4-Dinitrotoluene	100.00	80.13	80	1	38	39-139
Pentachlorophenol	100.00	19.76	20	86*	50	14-176
Pyrene	100.00	83.78	84	0	31	52-115

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 11 outside limits

Spike Recovery: 1 out of 22 outside limits

COMMENTS: ms/msd possible matrix interferences, use ICS for QC

CHAIN-OF-CUSTODY RECORD

On Site Technologies, LTD.

612 E. Murray Drive
Farmington, NM 87401
(505) 325-2432

Subcontractor:

Mountain States Analytical, Inc.
1645 West 2200 South

TEL: (800) 973-6724
FAX: (801) 972-6278

Salt Lake City, UT 84119

Acct #:

30-Dec-98

Sample ID	Matrix	Collection Date	Bottle Type	Requested Tests		
				E218.2	E239.2	SW8310
9812056-01C	Aqueous	12/29/98 5:30:00 PM	1LAMGU			1
9812056-01D	Aqueous	12/29/98 5:30:00 PM	500HDPEHNO3	1	1	
9812056-01E	Aqueous	12/29/98 5:30:00 PM	250HDPE		2	
9812056-02C	Aqueous	12/29/98 2:45:00 PM	1LAMGU			1
9812056-02D	Aqueous	12/29/98 2:45:00 PM	500HDPEHNO3	1	1	
9812056-02E	Aqueous	12/29/98 2:45:00 PM	250HDPE		2	
9812056-03C	Aqueous	12/29/98 2:00:00 PM	1LAMGU			1
9812056-03D	Aqueous	12/29/98 2:00:00 PM	500HDPEHNO3	1	1	
9812056-03E	Aqueous	12/29/98 2:00:00 PM	250HDPE		2	
9812056-04C	Aqueous	12/29/98 12:20:00 PM	1LAMGU			1
9812056-04D	Aqueous	12/29/98 12:20:00 PM	500HDPEHNO3	1	1	
9812056-04E	Aqueous	12/29/98 12:20:00 PM	250HDPE		2	
9812056-05C	Aqueous	12/29/98 4:45:00 PM	1LAMGU			1
9812056-05D	Aqueous	12/29/98 4:45:00 PM	500HDPEHNO3	1	1	
9812056-05E	Aqueous	12/29/98 4:45:00 PM	250HDPE		2	
9812056-06C	Aqueous	12/29/98 11:25:00 AM	1LAMGU			1
9812056-06D	Aqueous	12/29/98 11:25:00 AM	500HDPEHNO3	1	1	
9812056-06E	Aqueous	12/29/98 11:25:00 AM	250HDPE		2	

Comments: Please analyze the submitted samples for the following: (C) PAH (D) Total Chromium and Lead (E) Dissolved Fluoride and Bromide.

Date/Time

Date/Time

Relinquished by: Heidi Rouse

Received by:

12/30/98 1600

12/31/98 1200

Relinquished by:

Received by:

On Site Technologies, LTD.

612 E. Murray Drive
Farmington, NM 87401
(505) 325-2432

CHAIN-OF-CUSTODY RECORD

Subcontractor:

Mountain States Analytical, Inc.
1645 West 2200 South

TEL: (800) 973-6724
FAX: (801) 972-6278

Salt Lake City, UT 84119

Acct #:

30-Dec-98

Sample ID	Matrix	Collection Date	Bottle Type	E218.2	E239.2	E300	Requested Tests	
							SW8310	
9812056-07C	Aqueous	12/29/98 6:35:00 PM	1LAMGU					
9812056-07D	Aqueous	12/29/98 6:35:00 PM	500HDPEHNO3	1	1		1	
9812056-07E	Aqueous	12/29/98 6:35:00 PM	250HDPE			2		
9812056-08C	Aqueous	12/29/98 6:05:00 PM	1LAMGU				1	
9812056-08D	Aqueous	12/29/98 6:05:00 PM	500HDPEHNO3	1	1			
9812056-08E	Aqueous	12/29/98 6:05:00 PM	250HDPE			2		

Comments:

Please analyze the submitted samples for the following: (C) PAH (D) Total Chromium and Lead (E) Dissolved Fluoride and Bromide.

Relinquished by: Heidi Rees

Relinquished by:

Date/Time

12/30/98 1200

Received by:

Patricia A. Hansen

Date/Time

12/31/98 @ 1200

Received by:

CHAIN OF CUSTODY RECORD

ON SITE

6557 W. Maple • P. O. Box 2606 • Farmington NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

TECHNOLOGIES, LTD.

[illegible]

Distribution: White – On Site Yellow – LAB Pink – Sampler Goldenrod – Client

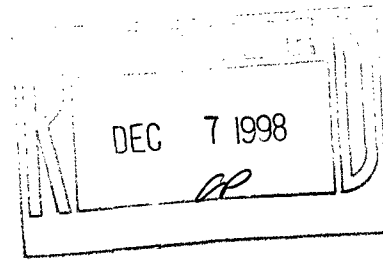
OFF: (505) 325-5667



LAB: (505) 325-1556

November 23, 1998

Terry Griffin
BioTech Remediation, Inc.
710 E. 20th, Suite 400
Farmington, NM 87401
TEL: (505) 327-4965
FAX (505) 564-3604



RE: Thriftway Refinery

Order No.: 9811055

Dear Terry Griffin,

On Site Technologies, LTD. received 1 sample on 11/16/98 for the analyses presented in the following report.

The Samples were analyzed for the following tests:
BTEX (SW8020A)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

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

David Cox

OFF: (505) 325-5667



LAB: (505) 325-1556

On Site Technologies, LTD.

Date: 23-Nov-98

CLIENT: BioTech Remediation, Inc.
Project: Thriftway Refinery
Lab Order: 9811055

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 23-Nov-98

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9811055	Client Sample ID:	Air Stripper Effluent
Lab ID:	9811055-01A	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	11/16/98 1:45:00 PM
		COC Record:	5602

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: HR
Methyl tert-Butyl Ether	ND	1		µg/L	1	11/23/98
Benzene	ND	1		µg/L	1	11/23/98
Toluene	ND	1		µg/L	1	11/23/98
Ethylbenzene	ND	1		µg/L	1	11/23/98
m,p-Xylene	2	2		µg/L	1	11/23/98
o-Xylene	ND	1		µg/L	1	11/23/98

Qualifiers:

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

On Site Technologies, LTD.

Date: 23-Nov-98

CLIENT: BioTech Remediation, Inc.

Work Order: 9811055

Project: Thriftway Refinery

QC SUMMARY REPORT
Method Blank

Sample ID: MB1	Batch ID: GC-1_981123	Test Code: SW8020A	Units: µg/L	Analysis Date 11/23/98	Prep Date:
Client ID:	9811055	Run ID: GC-1_981123A		SeqNo: 8982	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	.0733	1			J
Ethylbenzene	.1182	1			J
m,p-Xylene	.2526	2			J
Methyl tert-Butyl Ether	ND	1			
o-Xylene	.1434	1			J
Toluene	.1328	1			J

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 23-Nov-98

CLIENT: BioTech Remediation, Inc.

Work Order: 9811055

Project: Thriftway Refinery

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9811039-01AMS		Batch ID: GC-1_981123		Test Code: SW8020A		Units: µg/L		Analysis Date 11/23/98		Prep Date:	
Client ID: 9811055		Run ID: GC-1_981123A		SeqNo: 8983							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	402.4	10	400	1.118	100.3%	56	128				
Ethylbenzene	406	10	400	1.616	101.1%	78	107				
m,p-Xylene	808.1	20	800	3.587	100.6%	67	118				
Methyl tert-Butyl Ether	395.8	10	400	0	98.9%	70	130				
o-Xylene	414.8	10	400	1.83	103.2%	78	107				
Toluene	408.1	10	400	1.968	101.5%	74	116				

Sample ID: 9811039-01AMSD		Batch ID: GC-1_981123		Test Code: SW8020A		Units: µg/L		Analysis Date 11/23/98		Prep Date:	
Client ID: 9811055		Run ID: GC-1_981123A		SeqNo: 8984							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	389.6	10	400	1.118	97.1%	56	128	402.4	3.2%	12	
Ethylbenzene	392.4	10	400	1.616	97.7%	78	107	406	3.4%	11	
m,p-Xylene	783.9	20	800	3.587	97.5%	67	118	808.1	3.0%	10	
Methyl tert-Butyl Ether	388.6	10	400	0	97.2%	70	130	395.8	1.8%	15	
o-Xylene	402.9	10	400	1.83	100.3%	78	107	414.8	2.9%	14	
Toluene	395.3	10	400	1.968	98.3%	74	116	408.1	3.2%	14	

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 23-Nov-98

CLIENT: BioTech Remediation, Inc.

Work Order: 9811055

Project: Thriftway Refinery

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS WATER	Batch ID: GC-1_981123	Test Code: SW8020A	Units: µg/L	Analysis Date 11/23/98	Prep Date:						
Client ID:	9811055	Run ID: GC-1_981123A		SeqNo: 8981							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	78.96	1	80	0.0733	98.6%	56	128				
Ethylbenzene	79.94	1	80	0.1182	99.8%	78	107				
m,p-Xylene	158.2	2	160	0.2526	98.7%	67	118				
Methyl tert-Butyl Ether	76.64	1	80	0	95.8%	70	130				
o-Xylene	81.03	1	80	0.1434	101.1%	78	107				
Toluene	80.12	1	80	0.1328	100.0%	74	116				

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

CLIENT: BioTech Remediation, Inc.
Work Order: 9811055
Project: Thriftway Refinery

Date: 23-Nov-98

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 QC0606/07	Batch ID: GC-1_981123	Test Code: SW8020A	Units: µg/L	Analysis Date 11/23/98	Prep Date:						
Client ID: 9811055	Run ID: GC-1_981123A			SeqNo: 8979							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.81	1	20	0	99.1%	85	115				
Ethylbenzene	20.42	1	20	0	102.1%	85	115				
m,p-Xylene	40.24	2	40	0	100.6%	85	115				
Methyl tert-Butyl Ether	19.95	1	20	0	99.7%	85	115				
o-Xylene	20.76	1	20	0	103.8%	85	115				
Toluene	20.25	1	20	0	101.2%	85	115				
1,4-Difluorobenzene	89.36	0	100	0	89.4%	70	130				
4-Bromochlorobenzene	104	0	100	0	104.0%	70	130				
Fluorobenzene	87.24	0	100	0	87.2%	70	130				

Sample ID: CCV2 QC0606/07		Batch ID: GC-1_981123		Test Code: SW8020A		Units: µg/L		Analysis Date 11/23/98		Prep Date:	
Client ID:		9811055		Run ID: GC-1_981123A				SeqNo: 8980			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.68	1	20	0	103.4%	85	115				
Ethylbenzene	21.27	1	20	0	106.4%	85	115				
m,p-Xylene	41.75	2	40	0	104.4%	85	115				
Methyl tert-Butyl Ether	20.4	1	20	0	102.0%	85	115				
o-Xylene	21.52	1	20	0	107.6%	85	115				
Toluene	21.05	1	20	0	105.3%	85	115				
1,4-Difluorobenzene	89.3	0	100	0	89.3%	70	130				
4-Bromochlorobenzene	104	0	100	0	104.0%	70	130				
Fluorobenzene	87.42	0	100	0	87.4%	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 23-Nov-98

CLIENT: BioTech Remediation, Inc.

Work Order: 9811055

Project: Thriftway Refinery

Test No: SW8020A

QC SUMMARY REPORT SURROGATE RECOVERIES

BTEX

Sample ID	14FBZ	4BCBZ	FLBZ					
9811039-01AMS	89.1	106	87.2					
9811039-01AMSD	88.8	106	87.5					
9811055-01A	88.1	104	87.2					
CCV1 QC0606/07	89.4	104	87.2					
CCV2 QC0606/07	89.3	104	87.4					
LCS WATER	88.6	105	86.8					
MB1	89.3	103	87.8					

Acronym	Surrogate	QC Limits
14FBZ	= 1,4-Difluorobenzene	70-130
4BCBZ	= 4-Bromochlorobenzene	70-130
FLBZ	= Fluorobenzene	70-130

* Surrogate recovery outside acceptance limits

CHAIN OF CUSTODY RECORD

ON SITE

TECHNOLOGIES, LTD.

657 W. Maple • P.O. Box 2606 • Farmington NM 87499
LAB: (505) 325-5667 • FAX: (505) 325-6256

Date:

Page

_____ of _____

[illegible]

Distribution:	White – On Site	Yellow – LAB	Pink – Sampler	Goldenrod – Client
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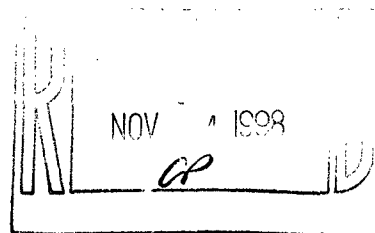
OFF: (505) 325-5667



LAB: (505) 325-1556

October 29, 1998

Terry Griffin
BioTech Remediation, Inc.
710 E. 20th, Suite 400
Farmington, NM 87401
TEL: (505) 327-4965
FAX (505) 564-3604



RE: Thriftway Refinery Air Stripper

Order No.: 9810064

Dear Terry Griffin,

On Site Technologies, LTD. received 2 samples on 10/21/98 for the analyses presented in the following report.

The Samples were analyzed for the following tests:
BTEX (SW8020A)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

A handwritten signature in dark ink, appearing to read "David Cox".

David Cox

OFF: (505) 325-5667



LAB: (505) 325-1556

On Site Technologies, LTD.

Date: 29-Oct-98

CLIENT: BioTech Remediation, Inc.
Project: Thriftway Refinery Air Stripper
Lab Order: 9810064

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 29-Oct-98

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9810064	Client Sample ID:	Air Stripper Effluent
Lab ID:	9810064-01A	Matrix:	AQUEOUS
Project:	Thriftway Refinery Air Stripper	Collection Date:	10/21/98 10:40:00 AM
		COC Record:	5580

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: DC
Methyl tert-Butyl Ether	ND	1		µg/L	1	10/26/98
Benzene	2.6	1		µg/L	1	10/26/98
Toluene	1.6	1		µg/L	1	10/26/98
Ethylbenzene	ND	1		µg/L	1	10/26/98
m,p-Xylene	2.7	2		µg/L	1	10/26/98
o-Xylene	ND	1		µg/L	1	10/26/98

Qualifiers:

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate

1 of 1

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 29-Oct-98

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9810064	Client Sample ID:	Travel Blank
Lab ID:	9810064-02A	Matrix:	AQUEOUS
Project:	Thriftway Refinery Air Stripper	Collection Date:	10/21/98 9:03:00 AM
		COC Record:	5580

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: DC
Methyl tert-Butyl Ether	ND	1		µg/L	1	10/26/98
Benzene	ND	1		µg/L	1	10/26/98
Toluene	ND	1		µg/L	1	10/26/98
Ethylbenzene	ND	1		µg/L	1	10/26/98
m,p-Xylene	ND	2		µg/L	1	10/26/98
o-Xylene	ND	1		µg/L	1	10/26/98

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

On Site Technologies, LTD.

Date: 29-Oct-98

CLIENT: BioTech Remediation, Inc.
Work Order: 9810064
Project: Thriftway Refinery Air Stripper

QC SUMMARY REPORT
Method Blank

Sample ID: MB1	Batch ID: GC-1_981026	Test Code: SW8020A	Units: µg/L	Analysis Date	10/26/98	Prep Date:					
Client ID:	9810064	Run ID:	GC-1_981026A	SeqNo:	8037						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	.0461	1									J
Ethylbenzene	ND	1									
m,p-Xylene	ND	2									
Methyl tert-Butyl Ether	ND	1									
o-Xylene	.2056	1									J
Toluene	.1356	1									J

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank
1 of 1

On Site Technologies, LTD.

Date: 29-Oct-98

CLIENT: BioTech Remediation, Inc.

Work Order: 9810064

Project: Thriftway Refinery Air Stripper

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9810050-02AMS		Batch ID: GC-1_981026		Test Code: SW8020A		Units: µg/L		Analysis Date 10/26/98		Prep Date:	
Client ID:		9810064		Run ID:		GC-1_981026A		SeqNo: 8038			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	360.6	10	400	2.174	89.6%	56	128				
Ethylbenzene	383.4	10	400	10.63	93.2%	78	107				
m,p-Xylene	761.4	20	800	24.54	92.1%	67	118				
Methyl tert-Butyl Ether	370.8	10	400	0	92.7%	70	130				
o-Xylene	388.4	10	400	9.975	94.6%	78	107				
Toluene	373.2	10	400	5.001	92.1%	74	116				

Sample ID: 9810050-02AMS		Batch ID: GC-1_981026		Test Code: SW8020A		Units: µg/L		Analysis Date 10/26/98		Prep Date:	
Client ID:		9810064		Run ID:		GC-1_981026A		SeqNo: 8039			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	359.7	10	400	2.174	89.4%	56	128	360.6	0.2%	12	
Ethylbenzene	382.9	10	400	10.63	93.1%	78	107	383.4	0.1%	11	
m,p-Xylene	760.4	20	800	24.54	92.0%	67	118	761.4	0.1%	10	
Methyl tert-Butyl Ether	376.4	10	400	0	94.1%	70	130	370.8	1.5%	15	
o-Xylene	385.5	10	400	9.975	93.9%	78	107	388.4	0.7%	14	
Toluene	372.3	10	400	5.001	91.8%	74	116	373.2	0.2%	14	

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 29-Oct-98

CLIENT: BioTech Remediation, Inc.
Work Order: 9810064
Project: Thriftway Refinery Air Stripper

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS WATER		Batch ID: GC-1_981026		Test Code: SW8020A		Units: µg/L		Analysis Date 10/26/98		Prep Date:	
Client ID:		9810064		Run ID: GC-1_981026A				SeqNo: 8036			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	35.87	1	40	0.0461	89.6%	56	128				
Ethylbenzene	37.44	1	40	0	93.6%	78	107				
m,p-Xylene	74.04	2	80	0	92.6%	67	118				
Methyl tert-Butyl Ether	38.08	1	40	0	95.2%	70	130				
o-Xylene	38.45	1	40	0.2056	95.6%	78	107				
Toluene	37.02	1	40	0.1356	92.2%	74	116				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

CLIENT: BioTech Remediation, Inc.
Work Order: 9810064
Project: Thriftway Refinery Air Stripper

Date: 29-Oct-98

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 QC0606/07		Batch ID: GC-1_981026		Test Code: SW8020A		Units: µg/L		Analysis Date 10/26/98		Prep Date:	
Client ID:		9810064		Run ID:		GC-1_981026A		SeqNo: 8033			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.6	1	20	0	98.0%	85	115				
Ethylbenzene	21.02	1	20	0	105.1%	85	115				
m,p-Xylene	41.34	2	40	0	103.4%	85	115				
Methyl tert-Butyl Ether	20.43	1	20	0	102.1%	85	115				
o-Xylene	21.06	1	20	0	105.3%	85	115				
Toluene	20.31	1	20	0	101.6%	85	115				
1,4-Difluorobenzene	90.14	0	100	0	90.1%	70	130				
4-Bromochlorobenzene	100.5	0	100	0	100.5%	70	130				
Fluorobenzene	89.56	0	100	0	89.6%	70	130				

Sample ID: CCV2 QC0606/07		Batch ID: GC-1_981026		Test Code: SW8020A		Units: µg/L		Analysis Date 10/26/98		Prep Date:	
Client ID:		9810064		Run ID:		GC-1_981026A		SeqNo: 8034			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	18.74	1	20	0	93.7%	85	115				
Ethylbenzene	19.64	1	20	0	98.2%	85	115				
m,p-Xylene	38.66	2	40	0	96.6%	85	115				
Methyl tert-Butyl Ether	19.83	1	20	0	99.1%	85	115				
o-Xylene	20.14	1	20	0	100.7%	85	115				
Toluene	19.33	1	20	0	96.7%	85	115				
1,4-Difluorobenzene	90.56	0	100	0	90.6%	70	130				
4-Bromochlorobenzene	100.7	0	100	0	100.7%	70	130				
Fluorobenzene	89.76	0	100	0	89.8%	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.
Work Order: 9810064
Project: Thriftway Refinery Air Stripper

QC SUMMARY REPORT
Continuing Calibration Verification Standard

Sample ID: CCV3 QC0606/07	Batch ID: GC-1_981026	Test Code: SW8020A	Units: µg/L	Analysis Date 10/26/98	Prep Date:
Client ID: 9810064	Run ID: GC-1_981026A	PQL	SPK value	SeqNo: 8035	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC
Benzene	36.65	1	40	0	91.6%
Ethylbenzene	38.13	1	40	0	95.3%
m,p-Xylene	75.25	2	80	0	94.1%
Methyl tert-Butyl Ether	37.66	1	40	0	94.2%
o-Xylene	38.89	1	40	0	97.2%
Toluene	37.72	1	40	0	94.3%
1,4-Difluorobenzene	90.17	0	100	0	90.2%
4-Bromochlorobenzene	99.3	0	100	0	99.3%
Fluorobenzene	89.4	0	100	0	89.4%
				HighLimit	RPD Ref Val
				85	115
				85	115
				85	115
				85	115
				85	115
				85	115
				70	130
				70	130
				70	130

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 29-Oct-98

CLIENT: BioTech Remediation, Inc.
Work Order: 9810064
Project: Thriftway Refinery Air Stripper
Test No: SW8020A

QC SUMMARY REPORT SURROGATE RECOVERIES

BTEX

Sample ID	14FBZ	4BCBZ	FLBZ					
9810040-05A	90.7	98.9	89.6					
9810050-01A	89	98	88.3					
9810050-02A	88.6	98.2	88.2					
9810050-02AMS	89.4	98.1	89					
9810050-02AMSD	89.7	99	89					
9810062-01A	90.8	100	89.6					
9810062-02A	90.2	100	89.8					
9810062-03A	90.6	100	89.3					
9810062-04A	89.7	101	89.9					
9810064-01A	90.2	101	89.8					
9810064-02A	90.9	100	89.9					
9810065-01A	90.4	101	89.9					
9810065-02A	90.7	102	89.6					
9810065-03A	90.7	100	89.7					
9810065-04A	91.3	99.4	89.8					
9810065-05A	90.4	100	90.1					
CCV1 QC0606/07	90.1	100	89.6					
CCV2 QC0606/07	90.6	101	89.8					
CCV3 QC0606/07	90.2	99.3	89.4					
LCS WATER	89.9	100	89.5					
MB1	90.7	101	89.5					

Acronym

Surrogate

QC Limits

14FBZ

= 1,4-Difluorobenzene

70-130

4BCBZ

= 4-Bromochlorobenzene

70-130

FLBZ

= Fluorobenzene

70-130

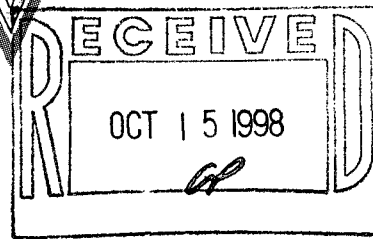
* Surrogate recovery outside acceptance limits

OFF: (505) 325-5667



LAB: (505) 325-1556

October 08, 1998



Terry Griffin
BioTech Remediation, Inc.
710 E. 20th, Suite 400
Farmington, NM 87401
TEL: (505) 632-3365
FAX (505) 632-0030

RE: Thriftway Refinery

Order No.: 9809064

Dear Terry Griffin,

On Site Technologies, LTD. received 1 sample on 9/24/98 for the analyses presented in the following report.

The Samples were analyzed for the following tests:
BTEX (SW8020A)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

A handwritten signature in dark ink, appearing to read "D Cox".

David Cox

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 08-Oct-98

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thriftway Refinery
Work Order:	9809064	Client Sample ID:	Air Stripper Effluent
Lab ID:	9809064-01A	Matrix:	AQUEOUS
Project:	Thriftway Refinery	Collection Date:	9/24/98 7:30:00 AM
		COC Record:	5272

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		SW8020A				Analyst: DC
Methyl tert-Butyl Ether	6.2	1		µg/L	1	10/2/98
Benzene	ND	1		µg/L	1	10/2/98
Toluene	ND	1		µg/L	1	10/2/98
Ethylbenzene	ND	1		µg/L	1	10/2/98
m,p-Xylene	ND	2		µg/L	1	10/2/98
o-Xylene	ND	1		µg/L	1	10/2/98

Qualifiers:

PQL - Practical Quantitation Limit
ND - Not Detected at Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
Surr: - Surrogate

P.O. BOX 2606 • FARMINGTON, NM 87499

- TECHNOLOGY BLENDING INDUSTRY WITH THE ENVIRONMENT -

1 of 1

On Site Technologies, LTD.

Date: 08-Oct-98

CLIENT: BioTech Remediation, Inc.

Work Order: 9809064

Project: Thriftway Refinery

QC SUMMARY REPORT

Method Blank

Sample ID: MB1	Batch ID: GC-1_981002	Test Code: SW8020A	Units: µg/L	Analysis Date: 10/2/98	Prep Date:
Client ID:	9809064	Run ID:	GC-1_981002A	SeqNo: 7285	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	.1808	1			J
Ethylbenzene	.0659	1			J
m,p-Xylene	.1632	2			J
Methyl tert-Butyl Ether	ND	1			
o-Xylene	.4715	1			J
Toluene	.2248	1			J

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 08-Oct-98

CLIENT: BioTech Remediation, Inc.
Work Order: 9809064
Project: Thriftway Refinery

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9809060-08AMS		Batch ID: GC-1_981002		Test Code: SW8020A		Units: µg/L		Analysis Date: 10/2/98		Prep Date:	
Client ID: 9809064		Run ID: GC-1_981002A		SeqNo: 7286							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	408.9	10	400	16.9	98.0%	56	128				
Ethylbenzene	446.3	10	400	36.09	102.6%	78	107				
m,p-Xylene	859.2	20	800	52.48	100.8%	67	118				
Methyl tert-Butyl Ether	347.9	10	400	0	87.0%	70	130				
o-Xylene	411.2	10	400	5.683	101.4%	78	107				
Toluene	412.5	10	400	8.916	100.9%	74	116				

Sample ID: 9809060-08AMSD		Batch ID: GC-1_981002		Test Code: SW8020A		Units: µg/L		Analysis Date: 10/2/98		Prep Date:	
Client ID: 9809064		Run ID: GC-1_981002A		SeqNo: 7288							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	379.9	10	400	16.9	90.8%	56	128	408.9	7.4%	12	
Ethylbenzene	414.5	10	400	36.09	94.6%	78	107	446.3	7.4%	11	
m,p-Xylene	798	20	800	52.48	93.2%	67	118	859.2	7.4%	10	
Methyl tert-Butyl Ether	327.8	10	400	0	81.9%	70	130	347.9	6.0%	15	
o-Xylene	382.3	10	400	5.683	94.2%	78	107	411.2	7.3%	14	
Toluene	382.4	10	400	8.916	93.4%	74	116	412.5	7.6%	14	

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.

Work Order: 9809064

Project: Thriftway Refinery

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9809063-04AMS		Batch ID: GC-1_981002		Test Code: SW8020A		Units: µg/L		Analysis Date: 10/2/98		Prep Date:	
Client ID:		9809064		Run ID: GC-1_981002A				SeqNo: 7287			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	2819	20	800	2032	98.3%	56	128				
Ethylbenzene	1417	20	800	612.7	100.6%	78	107				
m,p-Xylene	2439	40	1600	851.9	99.2%	67	118				
Methyl tert-Butyl Ether	722.6	20	800	134	73.6%	70	130				
o-Xylene	1023	20	800	273.3	93.7%	78	107				
Toluene	832.1	20	800	40.49	99.0%	74	116				

Sample ID: 9809063-04AMSD		Batch ID: GC-1_981002		Test Code: SW8020A		Units: µg/L		Analysis Date: 10/2/98		Prep Date:	
Client ID:		9809064		Run ID: GC-1_981002A				SeqNo: 7289			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	2733	20	800	2032	87.6%	56	128	2819	3.1%	12	
Ethylbenzene	1394	20	800	612.7	97.6%	78	107	1417	1.7%	11	
m,p-Xylene	2406	40	1600	851.9	97.1%	67	118	2439	1.4%	10	
Methyl tert-Butyl Ether	715	20	800	134	72.6%	70	130	722.6	1.1%	15	
o-Xylene	1018	20	800	273.3	93.0%	78	107	1023	0.5%	14	
Toluene	819	20	800	40.49	97.3%	74	116	832.1	1.6%	14	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 08-Oct-98

CLIENT: BioTech Remediation, Inc.

Work Order: 9809064

Project: Thriftway Refinery

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS WATER		Batch ID: GC-1_981002	Test Code: SW8020A	Units: µg/L	Analysis Date: 10/2/98		Prep Date:				
Client ID:		9809064	Run ID:	GC-1_981002A	SeqNo: 7284						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	39.48	1	40	0.1808	98.3%	56	128				
Ethylbenzene	39.46	1	40	0.0659	98.5%	78	107				
m,p-Xylene	79.01	2	80	0.1632	98.6%	67	118				
Methyl tert-Butyl Ether	39.56	1	40	0	98.9%	70	130				
o-Xylene	40.15	1	40	0.4715	99.2%	78	107				
Toluene	39.67	1	40	0.2248	98.6%	74	116				

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 08-Oct-98

CLIENT: BioTech Remediation, Inc.
Work Order: 9809064
Project: Thriftway Refinery

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 QC0606/07		Batch ID: GC-1_981002		Test Code: SW8020A		Units: µg/L		Analysis Date: 10/2/98		Prep Date:	
Client ID: 9809064		Run ID: GC-1_981002A		SeqNo: 7281							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.42	1	20	0	107.1%	85	115				
Ethylbenzene	21.25	1	20	0	106.3%	85	115				
m,p-Xylene	42.25	2	40	0	105.6%	85	115				
Methyl tert-Butyl Ether	20.93	1	20	0	104.7%	85	115				
o-Xylene	21.71	1	20	0	108.5%	85	115				
Toluene	21.6	1	20	0	108.0%	85	115				
1,4-Difluorobenzene	91.32	0	100	0	91.3%	70	130				
4-Bromochlorobenzene	98.14	0	100	0	98.1%	70	130				
Fluorobenzene	90.02	0	100	0	90.0%	70	130				

Sample ID: CCV2 QC0606/07		Batch ID: GC-1_981002		Test Code: SW8020A		Units: µg/L		Analysis Date: 10/2/98		Prep Date:	
Client ID: 9809064		Run ID: GC-1_981002A		SeqNo: 7282							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.43	1	20	0	102.1%	85	115				
Ethylbenzene	21.01	1	20	0	105.1%	85	115				
m,p-Xylene	41.13	2	40	0	102.8%	85	115				
Methyl tert-Butyl Ether	18.88	1	20	0	94.4%	85	115				
o-Xylene	20.86	1	20	0	104.3%	85	115				
Toluene	20.7	1	20	0	103.5%	85	115				
1,4-Difluorobenzene	90.69	0	100	0	90.7%	70	130				
4-Bromochlorobenzene	95.3	0	100	0	95.3%	70	130				
Fluorobenzene	90.06	0	100	0	90.1%	70	130				

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: BioTech Remediation, Inc.

Work Order: 9809064

Project: Thriftway Refinery

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV3 QC0606/07		Batch ID: GC-1_981002		Test Code: SW8020A		Units: µg/L		Analysis Date: 10/2/98		Prep Date:	
Client ID: 9809064		Run ID: GC-1_981002A		SeqNo: 7283							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	37.78	1	40	0	94.5%	85	115				
Ethylbenzene	40.19	1	40	0	100.5%	85	115				
m,p-Xylene	79.18	2	80	0	99.0%	85	115				
o-Xylene	39.27	1	40	0	98.2%	85	115				
Toluene	39.41	1	40	0	98.5%	85	115				
1,4-Difluorobenzene	90.11	0	100	0	90.1%	70	130				
4-Bromochlorobenzene	76.24	0	100	0	76.2%	70	130				
Fluorobenzene	88.39	0	100	0	88.4%	70	130				

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

On Site Technologies, LTD.

Date: 08-Oct-98

CLIENT: BioTech Remediation, Inc.

Work Order: 9809064

Project: Thriftway Refinery

Test No: SW8020A

QC SUMMARY REPORT SURROGATE RECOVERIES

BTEX

Sample ID	14FBZ	4BCBZ	FLBZ					
9809058-03A	90.9	101	90.4					
9809058-04A	91.9	101	90.7					
9809058-05A	92.4	100	90.5					
9809058-06A	91.2	100	90.6					
9809058-07A	91.2	97.8	90.9					
9809060-03A	88.7	96.3	88.5					
9809060-04A	91.8	97.2	90.4					
9809060-05A	90.8	94.5	90.1					
9809060-06A	91.3	93.5	89.8					
9809060-07A	91.4	89.4	88.5					
9809060-08AMS	91.2	79.4	90.1					
9809060-08AMSD	89.5	79.2	88					
9809060-09A	87.4	86.7	87.1					
9809063-01A	92	99	90.9					
9809063-02A	92.1	100	90.7					
9809063-03A	91.4	85.6	90.4					
9809063-04A	87.4	77.7	86.9					
9809063-04AMS	87.5	77.4	86.9					
9809063-04AMSD	87.2	78.2	86.8					
9809063-05A	89	77.8	88.2					
9809063-06A	93.2	78.6	90.9					
9809064-01A	90.6	100	90.3					
CCV1 QC0606/07	91.3	98.1	90					
CCV2 QC0606/07	90.7	95.3	90					
CCV3 QC0606/07	90.1	76.2	88.4					
LCS WATER	90.9	98.6	89.9					
MBI	90.3	94.9	89.2					

Acronym

Surrogate

QC Limits

14FBZ	= 1,4-Difluorobenzene	70-130
4BCBZ	= 4-Bromochlorobenzene	70-130
FLBZ	= Fluorobenzene	70-130

* Surrogate recovery outside acceptance limits

ON SITE

TECHNOLOGIES, LTD.

[illegible]

Distribution:	White – On Site	Yellow – LAB	Pink – Sampler	Goldenrod – Client

OFF: (505) 325-5667



LAB: (505) 325-1556

On Site Technologies, LTD.

Date: 08-Oct-98

CLIENT: BioTech Remediation, Inc.

Project: Thriftway Refinery

Lab Order: 9809064

CASE NARRATIVE

Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

