

3R - 79

REPORTS

DATE:

3/3/2000

BioTECH REMEDIATION INC.

**1999 Annual Groundwater Sampling
Thomas No. 1 Location
(NOW CLAYTON INVESTMENTS)
BLOOMFIELD, NEW MEXICO**

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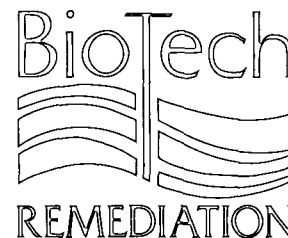
**ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION**

prepared for the

NEW MEXICO OIL CONSERVATION DIVISION

**Mr. Will Olsen, Project Manager, Santa Fe Office
and
Mr. Denny Foust, Aztec Office**

March 3, 2000



**ANNUAL GROUNDWATER SAMPLING
BURLINGTON RESOURCES OIL AND GAS COMPANY'S
THOMAS No. 1 LOCATION
(NOW CLAYTON INVESTMENTS)
BLOOMFIELD, NEW MEXICO**

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Prepared for the

NEW MEXICO OIL CONSERVATION DIVISION

**Mr. Will Olson, Project Manager, Santa Fe Office
and
Mr. Denny Foust, Aztec Office**

March 3, 2000

Prepared by

**BIOTECH REMEDIATION, INC.
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Prepared by:


Ken Sinks
Project Scientist

1999 Annual Report Thomas No.1 Well

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1.0 INTRODUCTION

In compliance with and pursuant to the requirements of the New Mexico Oil Conservation Division (NMOCD), BioTech Remediation, Inc. (BioTech), on behalf of Clayton Investments, submits the following 1999 Annual Monitoring and Sampling Report for the Burlington Resources Oil and Gas Company's Thomas No. 1 (now Clayton Investments) well located in Bloomfield, New Mexico.

This report summarizes the monitoring, sampling and data compilation activities groundwater monitor wells for the period June 1999 through January 2000. Included are groundwater measurement of all wells and laboratory analyses for MW-02 and MW-03.

2.0 ANNUAL MONITORING AND SAMPLING ACTIVITIES

BioTech personnel completed the monitoring and sampling requirements for the Thomas No. 1 well located in Bloomfield, New Mexico on June 17, 1999, September 13, 1999 and January 20, 2000. Normal sampling would be in July and January, however, due to an oversight an extra sampling event in September was performed. During the monitoring and sampling events, groundwater monitor 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 recorded for each monitor well. A Solonist Probe was used to measure from the survey point on the top of the well casing to the top of groundwater in the well. Depth measurements were recorded to 1/100 of a foot. Groundwater measurement data is summarized and presented in Table 1 and groundwater contour plots based on 1999 elevation data were constructed and are found on Figures 1A, 1B and 1C.

2.2 Groundwater Sample Collection

Before groundwater samples were collected, each monitor well was purged of approximately three well volumes and then allowed a short recovery period in order for the groundwater to equilibrate within the well casing. During groundwater purging, dissolved oxygen (DO) content in MW-01, 03, 04 and 05 were measured by a YSI 55 probe and recorded onto the Water Sampling Record Forms. Each monitor well was considered to be successfully purged and ready for sample collection when three well volumes were purged from the well. Following the use of the DO and Solonist Probes they were decontaminated using the protocol 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 slow flow drain device. 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 in the sample bottle. The sample container cap was replaced then tightly closed. The sample vial was observed while rotating to further ascertain that it was void of air.

2.3 Sample Preservation

Sample preservation consisted of the following; the vials were prepared in advance by the analyzing laboratory with hydrochloric acid (HCl) 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 Transport

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. The samples were then placed on ice and cooled to 4° C or less.

2.5 Analysis

Groundwater sampling of the two monitor wells is conducted quarterly during June, 1999 September, 1999 and January, 2000. During each sampling event, collected samples were analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) per EPA Method 8021B. In the June and January sampling, Methyl-Tertiary-Butyl Ether was also reported. The laboratory results analyses are presented in Table 2. In the future sampling will be in July and January.

3.0 EQUIPMENT DECONTAMINATION

In order to ensure data validity and prevent cross-contamination, BioTech personnel employed and strictly followed decontamination protocols. During all monitor well measurement and sample collection, the following method for decontaminating equipment was 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 DISCUSSION AND RECOMMENDATIONS

The contaminant concentrations in MW-03 continue to be below the NMWQCC standards for all contaminants, although the contaminant concentration in MW-02 continues to fluctuate (see Table 2). Table 1 shows the groundwater elevation data in all

monitor wells. Figures 1A through 1C illustrates the groundwater contours for the area at the time of sampling and monitoring in June 1999 through January 2000.

No further action is recommended at this time. BioTech will continue to monitor the site on a semi-annual base (July and January) and report the information on an annual basis by April following the January sampling.

TABLES

TABLE 1
SUMMARY OF GROUNDWATER MONITORING DATA
Thomas Well #1, Bloomfield, NM

WELL	DATE	TOC	OUTAGE FT	WATER ELEV.	TEMP °C	pH	DO mg/l	Cond.	ORP	TDS	NTU's	% Salinity	Purged vol.
MW-01	10/20/94	5376.91	4.95	5371.95	14.8	6.81	NM	2280	NM	NM	NM	NM	
	01/04/95	5376.91	5.90	5371.00	17.5	6.96	NM	2120	NM	NM	NM	NM	
	07/10/95	5376.91	4.85	5372.05	16.7	7.05	NM	2790	NM	NM	NM	NM	
	01/10/96	5376.91	4.86	5372.04	8.9	7.18	NM	3960	NM	NM	NM	NM	
	07/15/96	5376.91	5.14	5371.76	17.8	7.04	NM	2160	NM	NM	NM	NM	
	01/08/97	5376.91	4.76	5372.14	110.2	7.00	NM	2200	NM	NM	NM	NM	
	08/21/98	5376.91	3.29	5373.62	NM	NM	NM	NM	NM	NM	NM	NM	
	03/03/99	5376.91	3.20	5373.71	10.0	6.50	0.07	4300	NM	NM	NM	NM	
	06/17/99	5376.91	3.68	5373.23	NM	NM	NM	NM	NM	NM	NM	NM	
	09/13/99	5376.91	3.33	5373.58	NM	NM	NM	NM	NM	NM	NM	NM	
MW-02	01/20/00	5376.91	3.38	5373.53	10.7	5.90	0.08	NM	NM	NM	NM	NM	1.00
	10/28/92	5376.97	6.43	5370.54	20.0	7.20	NM	2200	NM	NM	NM	NM	
	11/13/92	5376.97	6.49	5370.48	16.1	6.97	NM	2250	NM	NM	NM	NM	
	10/20/94	5376.97	5.71	5371.26	19.1	6.64	NM	2460	NM	NM	NM	NM	
	01/04/95	5376.97	5.95	5371.02	7.1	6.95	NM	2160	NM	NM	NM	NM	
	07/10/95	5376.97	5.74	5371.23	NM	NM	NM	NM	NM	NM	NM	NM	
	01/10/96	5376.97	5.57	5371.40	NM	NM	NM	NM	NM	NM	NM	NM	
	07/15/96	5376.97	5.74	5371.23	NM	NM	NM	NM	NM	NM	NM	NM	
	01/08/97	5376.97	5.44	5371.53	NM	NM	NM	NM	NM	NM	NM	NM	
	08/21/98	5376.97	4.09	5372.88	NM	NM	NM	NM	NM	NM	NM	NM	
MW-03	03/03/99	5376.97	3.73	5373.24	9.7	7.00	NM	2170	NM	NM	NM	NM	
	06/17/99	5376.97	4.18	5372.79	NM	NM	0.01	NM	NM	NM	NM	NM	
	09/13/99	5376.97	3.62	5373.35	NM	NM	NM	NM	NM	NM	NM	NM	
	01/20/00	5376.97	3.89	5373.08	NM	6.20	NM	NM	NM	NM	NM	NM	1.00
	10/28/92	5375.56	4.48	5371.08	20.0	7.12	NM	2450	NM	NM	NM	NM	
	11/13/92	5375.56	4.56	5371.00	13.5	7.03	NM	2300	NM	NM	NM	NM	
	10/20/94	5375.56	4.30	5371.26	16.5	2.86	NM	2970	NM	NM	NM	NM	
	01/04/95	5375.56	4.55	5371.01	6.3	5.35	NM	2640	NM	NM	NM	NM	
	07/10/95	5375.56	4.35	5371.21	17.0	7.08	NM	2160	NM	NM	NM	NM	
	01/10/96	5375.56	4.27	5371.29	8.4	7.43	NM	4640	NM	NM	NM	NM	
	07/15/96	5375.56	4.45	5371.11	23.2	6.95	NM	1610	NM	NM	NM	NM	
	01/08/97	5375.56	4.14	5371.42	9.3	7.21	NM	2550	NM	NM	NM	NM	
	08/21/98	5375.56	2.90	5372.66	NM	NM	NM	NM	NM	NM	NM	NM	
	03/03/99	5375.56	2.27	5373.29	8.3	7.11	NM	4820	NM	NM	NM	NM	
	06/17/99	5375.56	2.95	5372.61	NM	7.40	0.02	NM	NM	NM	NM	NM	
	09/13/99	5375.56	2.63	5372.93	NM	6.80	NM	NM	NM	NM	NM	NM	

TABLE 1
SUMMARY OF GROUNDWATER MONITORING DATA
Thomas Well #1, Bloomfield, NM

WELL	DATE	TOC	OUTAGE FT	WATER ELEV.	TEMP °C	pH	DO mg/l	Cond.	ORP	TDS	NTU"s	% Salinity	Purged vol.
MW-04	01/20/00	5375.56	2.48	5373.08	9.4	6.30	0.16	NM	NM	NM	NM	NM	1.25
	10/20/94	5375.56	5.52	5370.04	11.9	6.92	NM	4160	NM	NM	NM	NM	
	01/04/95	5375.56	4.76	5370.80	6.1	6.97	NM	2350	NM	NM	NM	NM	
	07/10/95	5375.56	4.58	5370.98	15.0	7.11	NM	1840	NM	NM	NM	NM	
	01/10/96	5375.56	4.41	5371.15	8.4	7.52	NM	2770	NM	NM	NM	NM	
	07/15/96	5375.56	4.58	5370.98	21.6	7.20	NM	1470	NM	NM	NM	NM	
	01/08/97	5375.56	4.29	5371.27	8.2	7.23	NM	1660	NM	NM	NM	NM	
	08/21/98	5375.56	2.95	5372.61	NM	NM	NM	NM	NM	NM	NM	NM	
	03/03/99	5375.56	2.44	5373.12	8.1	8.20	0.12	6820	NM	NM	NM	NM	
	06/17/99	5375.56	3.01	5372.55	NM	NM	NM	NM	NM	NM	NM	NM	
MW-05	09/13/99	5375.56	2.67	5372.89	NM	NM	NM	NM	NM	NM	NM	NM	
	01/20/00	5375.56	2.65	5372.91	9.0	8.40	0.44	NM	NM	NM	NM	NM	0.50
	01/04/95	5376.35	6.04	5370.31	6.1	6.97	NM	2350	NM	NM	NM	NM	
	07/11/95	5376.35	5.97	5370.38	15.0	7.11	NM	1840	NM	NM	NM	NM	
	10/20/95	5376.35	5.80	5370.55	11.9	6.92	NM	4160	NM	NM	NM	NM	
	01/10/96	5376.35	5.81	5370.54	8.8	7.44	NM	3190	NM	NM	NM	NM	
	07/15/96	5376.35	5.88	5370.47	14.8	7.02	NM	1290	NM	NM	NM	NM	
	01/08/97	5376.35	5.70	5370.65	8.5	6.85	NM	2070	NM	NM	NM	NM	
	08/21/98	5376.35	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	
	03/03/99	5376.35	3.62	5372.73	9.2	6.50	0.09	3690	NM	NM	NM	NM	
	06/17/99	5376.35	4.51	5371.84	NM	NM	NM	NM	NM	NM	NM	NM	
	09/13/99	5376.35	4.30	5372.05	NM	NM	NM	NM	NM	NM	NM	NM	
	01/20/00	5376.35	3.91	5372.44	9.8	7.30	0.93	NM	NM	NM	NM	NM	1.00

NM - Signifies the parameter was not measured.

TABLE 2
SUMMARY OF GROUNDWATER LABORATORY ANALYSIS
Thomas Well #1, Bloomfield, NM

WELL	WELL #	DATE	TIME	ug/L				
				MTBE	BENZENE	TOLUENE	ETHYLBENZ	XYLENES
MW-01	MW-01	11/01/91		NS	ND	ND	ND	ND
	MW-01	09/01/92		NS	ND	ND	ND	ND
	MW-01	06/15/93		NS	ND	ND	ND	ND
	MW-01	10/20/94		NS	<0.03	<0.03	<0.03	<0.09
	MW-01	01/04/95		NS	<0.03	<0.03	<0.03	<0.09
	MW-01	07/10/95		NS	1.9	ND(1.0)	2.2	ND(2.0)
	MW-01	01/10/96		NS	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)
	MW-01	07/15/96		NS	<0.10	0.1	<0.10	<0.20
	MW-01	01/08/97		NS	NS	NS	NS	NS
	MW-01	08/21/98		NS	NS	NS	NS	NS
	MW-01	03/03/99		NS	NS	NS	NS	NS
	MW-01	06/17/99		NS	NS	NS	NS	NS
	MW-01	09/13/99		NS	NS	NS	NS	NS
	MW-01	01/20/00		NS	NS	NS	NS	NS
MW-02	MW-02	08/18/91		NS	10.0	750.0	750.0	620.0
	MW-02	08/31/91		NS	800.0	2800.0	400.0	8100.0
	MW-02	11/01/91		NS	800.0	2800.0	400.0	8100.0
	MW-02	09/01/92		NS	251.0	64.0	23.0	346.0
	MW-02	09/15/92		NS	251.0	64.0	23.0	397.0
	MW-02	10/28/92		NS	1230.0	570.0	113.0	2750.0
	MW-02	11/13/92		NS	3.0	484.0	164.0	1190.0
	MW-02	12/07/92		NS	850.0	291.0	98.0	912.0
	MW-02	06/15/93		NS	860.0	420.0	130.0	2540.0
	MW-02	10/20/94		NS	556.0	<0.3	79.4	569.0
	MW-02	01/04/95		NS	448.0	8.3	48.0	340.0
	MW-02	07/10/95		NS	400.0	ND(10.0)	47.0	324.0
	MW-02	01/10/96		NS	390.0	ND(10.0)	64.0	395.0
	MW-02	07/15/96		NS	150.0	<5.0	22.0	110.0
	MW-02	01/08/97		NS	400.0	2.3	78.0	400.0
	MW-02	08/21/98		NS	180.0	4.1	48.0	487.4
	MW-02	03/03/99		NS	260.0	3.7	68.0	703.0
	MW-02	06/17/99	1308	ND	220.0	18.0	84.0	812.0
	MW-02	09/13/99	1359	NS	340.0	20.0	110.0	1403.3
	MW-02	01/20/00	1410	3.3	440.0	ND	130.0	1606.7
MW-03	MW-03	08/18/91		NS	10.0	750.0	750.0	620.0
	MW-03	08/31/91		NS	1500.0	30000.0	2000.0	38000.0
	MW-03	11/01/91		NS	1500.0	30000.0	2000.0	36000.0
	MW-03	09/01/92		NS	ND	8220.0	ND	ND
	MW-03	09/15/92		NS	ND	8220.0	ND	3630.0
	MW-03	10/28/92		NS	256.0	11400.0	1120.0	5640.0
	MW-03	11/13/92		NS	117.0	4270.0	980.0	9850.0
	MW-03	12/08/92		NS	25.6	1560.0	570.0	1720.0
	MW-03	06/15/93		NS	ND	7800.0	780.0	7100.0
	MW-03	10/20/94		NS	521.0	10900.0	455.0	4040.0
	MW-03	01/04/95		NS	122.0	2700.0	155.0	1322.0
	MW-03	07/11/95		NS	ND(10.0)	620.0	61.0	273.0

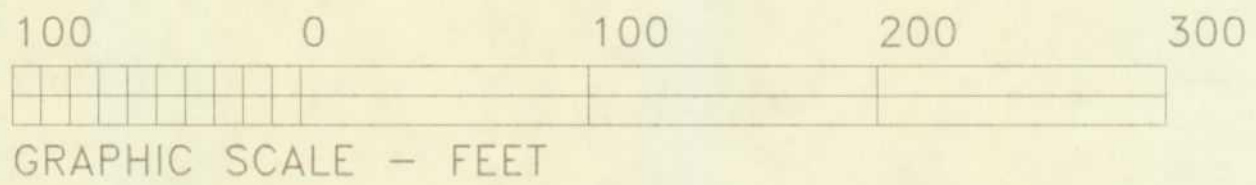
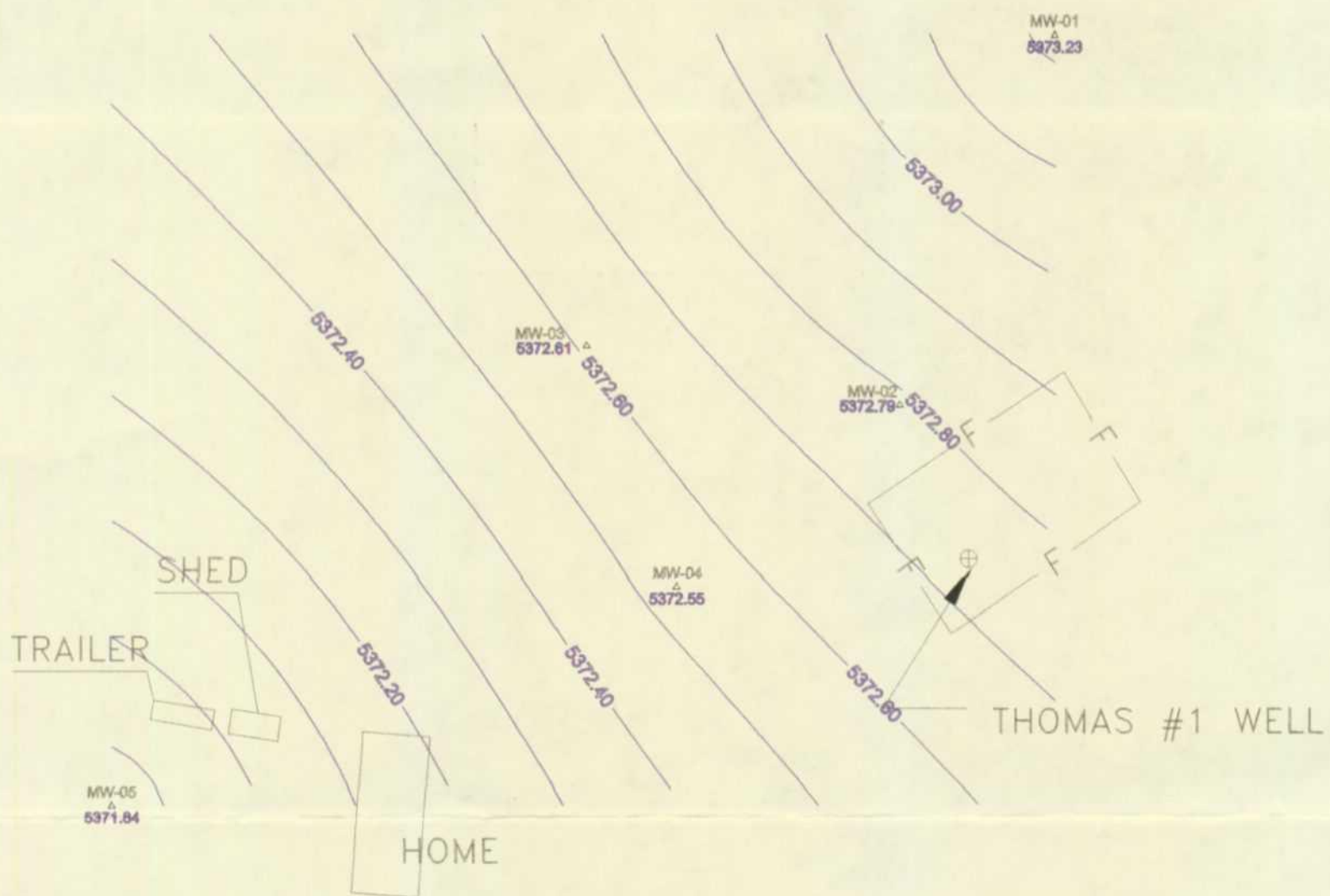
TABLE 2
SUMMARY OF GROUNDWATER LABORATORY ANALYSIS
Thomas Well #1, Bloomfield, NM

WELL	WELL #	DATE	TIME	ug/L				
				MTBE	BENZENE	TOLUENE	ETHYLBENZ	XYLENES
	MW-03	01/10/96		NS	ND(25.0)	1200.0	88.0	470.0
	MW-03	07/15/96		NS	<1.0	57.0	8.0	33.0
	MW-03	01/08/97		NS	<1.0	150.0	22.0	77.0
	MW-03	08/21/98		NS	ND	4.6	13.0	16.2
	MW-03	03/03/99		NS	ND	51.0	14.0	40.2
	MW-03	06/17/99	1240	ND	ND	10.0	16.0	22.6
	MW-03	09/13/99	1425	NS	5.8	4.0	8.6	16.5
	MW-03	01/20/00	1220	ND	ND	110.0	31.0	95.0
MW-04	MW-04	11/01/91		NS	ND	ND	ND	ND
	MW-04	09/04/92		NS	ND	ND	ND	ND
	MW-04	06/15/93		NS	ND	ND	ND	ND
	MW-04	01/04/95		NS	<0.3	<0.3	<0.3	<0.5
	MW-04	07/10/95		NS	ND(1.0)	ND(1.0)	ND(1.0)	1.3
	MW-04	01/10/96		NS	ND(1.0)	ND(1.0)	3.6	15.4
	MW-04	07/16/96		NS	<1.0	0.1	<0.1	0.2
	MW-04	01/08/97		NS	<1.0	1.3	3.7	35.0
	MW-04	08/21/98		NS	NS	NS	NS	NS
	MW-04	03/03/99		NS	NS	NS	NS	NS
	MW-04	06/17/99		NS	NS	NS	NS	NS
	MW-04	09/13/99		NS	NS	NS	NS	NS
	MW-04	01/20/00		NS	NS	NS	NS	NS
MW-05	MW-05	10/20/34		NS	<0.3	<0.3	<0.3	<0.9
	MW-05	11/01/91		NS	ND	ND	ND	ND
	MW-05	09/01/92		NS	ND	ND	ND	ND
	MW-05	06/15/93		NS	9.7	ND	ND	ND
	MW-05	01/04/95		NS	<0.3	<0.3	<0.3	<0.9
	MW-05	07/11/95		NS	13.0	6.1	3.7	9.0
	MW-05	01/10/96		NS	ND(1.0)	ND(1.0)	ND(1.0)	ND(2.0)
	MW-05	07/16/96		NS	<0.1	<0.1	<0.1	<0.2
	MW-05	01/08/97		NS	<1.0	1.1	<0.1	<0.1
	MW-05	08/21/98		NS	NS	NS	NS	NS
	MW-05	03/03/99		NS	NS	NS	NS	NS
	MW-05	06/17/99		NS	NS	NS	NS	NS
	MW-05	09/13/99		NS	NS	NS	NS	NS
	MW-05	01/20/00		NS	NS	NS	NS	NS

NS - Signifies Not Sampled for this test

ND - Signifies Not Detected at tests lowest limits of detection

FIGURES



KEY
GROUNDWATER
CONTOUR

THOMAS NO. 1 WELL
BLOOMFIELD, NM

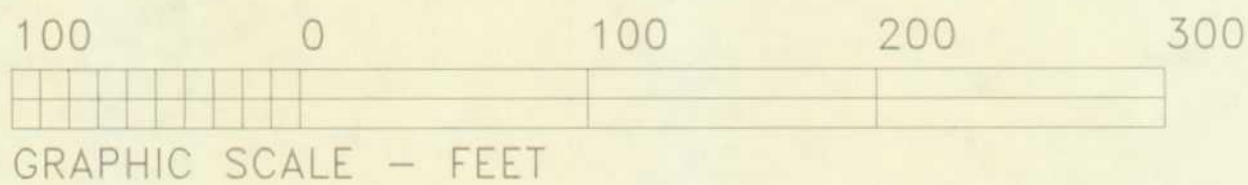
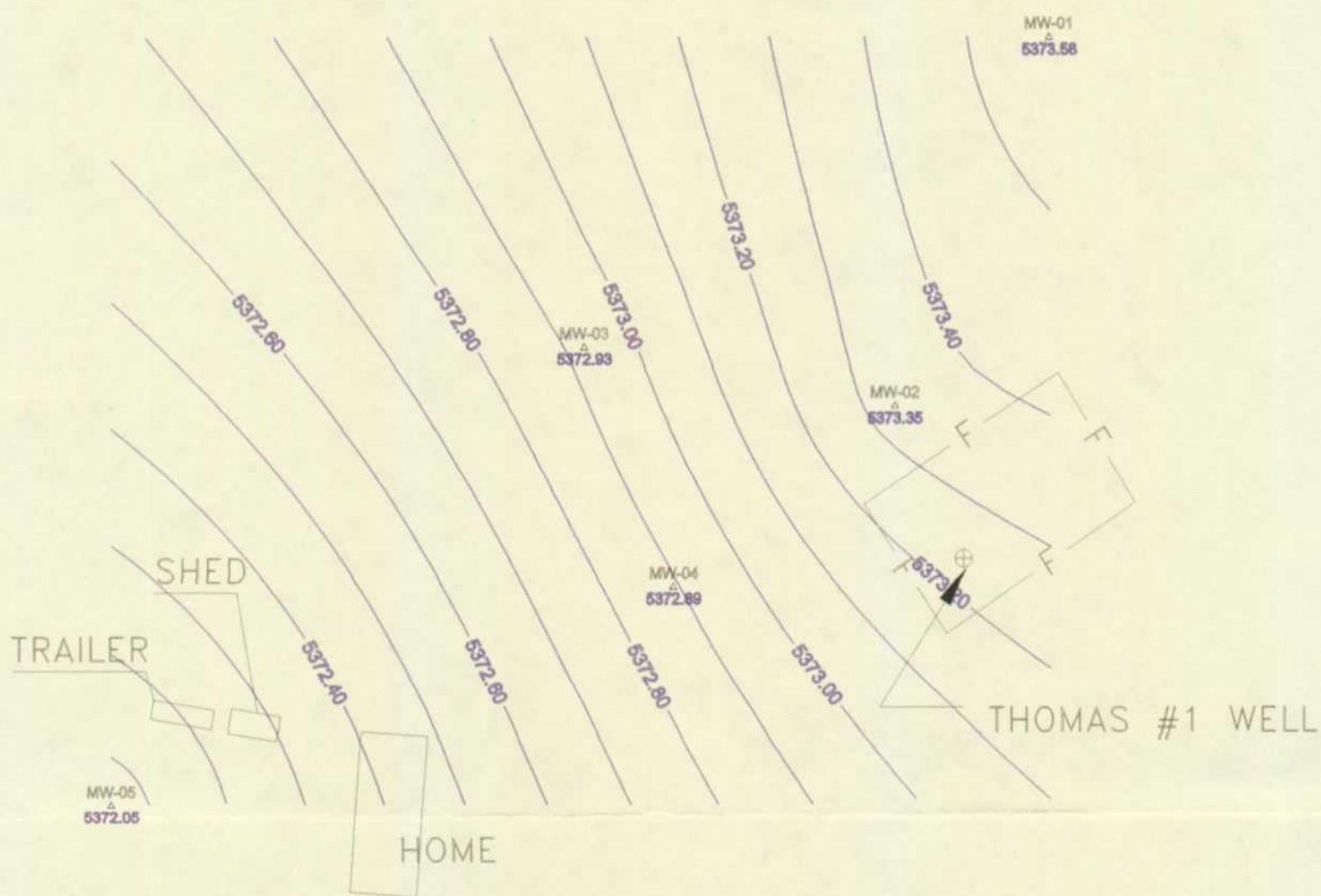
DRAWN BY: K. SINKS

FIGURE 1A
GROUNDWATER
CONTOUR MAP

JUNE 17, 1999



710 EAST 20TH STREET, SUITE 400
FARMINGTON, NEW MEXICO 87401
PHONE 505-327-4965
FAX 505-564-3604



KEY

GROUNDWATER
CONTOUR

THOMAS NO. 1 WELL
BLOOMFIELD, NM

99THO\091399WL

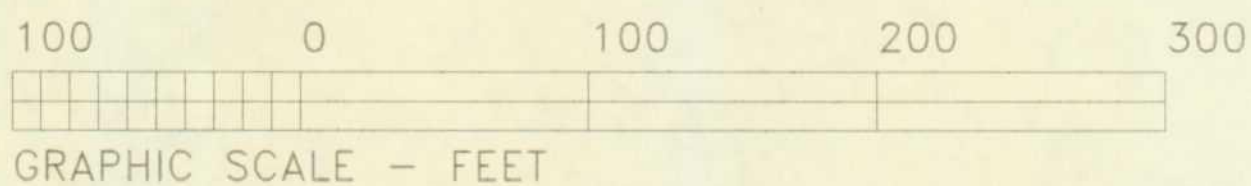
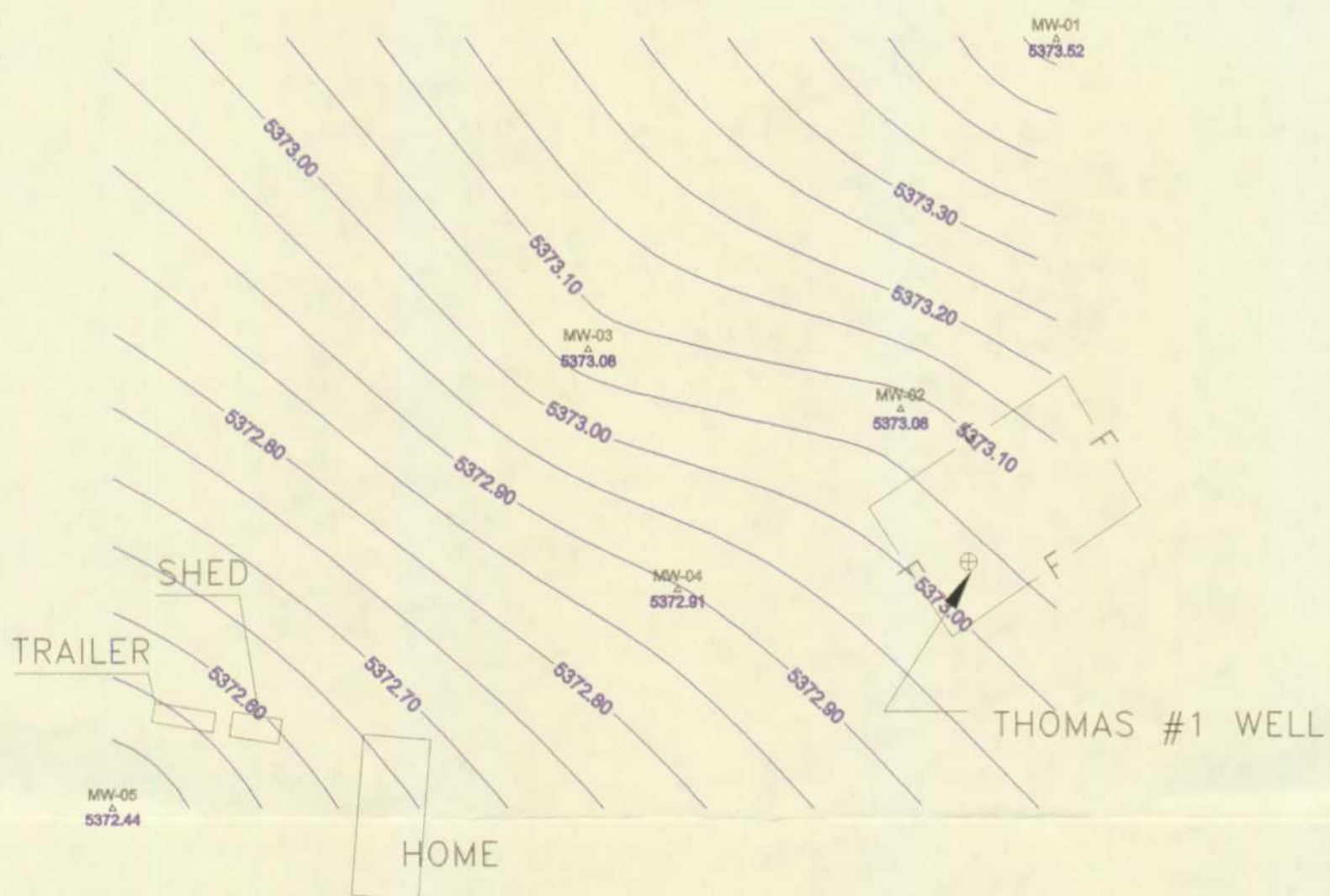
DRAWN BY: K. SINKS

FIGURE 1B
GROUNDWATER
CONTOUR MAP

SEPTEMBER 13, 1999



710 EAST 20TH STREET, SUITE 400
FARMINGTON, NEW MEXICO 87401
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THOMAS NO. 1 WELL
BLOOMFIELD, NM

DRAWN BY: K. SINKS

FIGURE 1C
GROUNDWATER
CONTOUR MAP

JANUARY 20, 2000



710 EAST 20TH STREET, SUITE 400
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APPENDIX

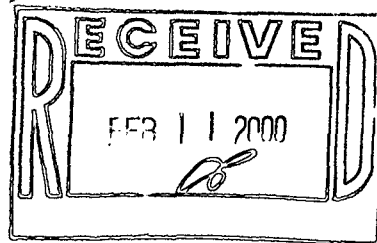
OFF: (505) 325-5667



LAB: (505) 325-1556

February 09, 2000

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FAX (505) 564-3604



RE: Thomas Well #1, Clayton Farms

Order No.: 0001024

Dear Terry Griffin,

On Site Technologies, LTD. received 4 samples on 1/20/2000 for the analyses presented in the following report.

The Samples were analyzed for the following tests:
Aromatic Volatiles by GC/PID (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 black ink, appearing to be "D Cox".

David Cox

OFF: (505) 325-5667



LAB: (505) 325-1556

On Site Technologies, LTD.

Date: 09-Feb-00

CLIENT: BioTech Remediation, Inc.
Project: Thomas Well #1, Clayton Farms
Lab Order: 0001024

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: 09-Feb-00

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thomas Well #1, Clayton Farms
Work Order:	0001024	Client Sample ID:	Travel Blank
Lab ID:	0001024-01A	Matrix:	AQUEOUS
Project:	Thomas Well #1, Clayton Farms	Collection Date:	1/20/2000 9:00:00 AM
		COC Record:	10495

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: DM		
Methyl tert-Butyl Ether	ND	1		µg/L	1	1/24/2000
Benzene	ND	0.5		µg/L	1	1/24/2000
Toluene	ND	0.5		µg/L	1	1/24/2000
Ethylbenzene	ND	0.5		µg/L	1	1/24/2000
m,p-Xylene	ND	1		µg/L	1	1/24/2000
o-Xylene	ND	0.5		µg/L	1	1/24/2000

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: 09-Feb-00

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thomas Well #1, Clayton Farms
Work Order:	0001024	Client Sample ID:	Field Blank
Lab ID:	0001024-02A	Matrix:	AQUEOUS
Project:	Thomas Well #1, Clayton Farms	Collection Date:	1/20/2000 10:25:00 AM
		COC Record:	10495

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: DM		
Methyl tert-Butyl Ether	ND	1		µg/L	1	1/24/2000
Benzene	ND	0.5		µg/L	1	1/24/2000
Toluene	ND	0.5		µg/L	1	1/24/2000
Ethylbenzene	ND	0.5		µg/L	1	1/24/2000
m,p-Xylene	ND	1		µg/L	1	1/24/2000
o-Xylene	ND	0.5		µg/L	1	1/24/2000

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: 09-Feb-00

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thomas Well #1, Clayton Farms
Work Order:	0001024	Client Sample ID:	MW-03
Lab ID:	0001024-03A	Matrix:	AQUEOUS
Project:	Thomas Well #1, Clayton Farms	Collection Date:	1/20/2000 12:20:00 PM
		COC Record:	10495

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: DM		
Methyl tert-Butyl Ether	ND	1		µg/L	1	1/24/2000
Benzene	ND	0.5		µg/L	1	1/24/2000
Toluene	110	0.5		µg/L	1	1/24/2000
Ethylbenzene	31	0.5		µg/L	1	1/24/2000
m,p-Xylene	59	1		µg/L	1	1/24/2000
o-Xylene	36	0.5		µg/L	1	1/24/2000

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: 09-Feb-00

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thomas Well #1, Clayton Farms
Work Order:	0001024	Client Sample ID:	MW-02
Lab ID:	0001024-04A	Matrix:	AQUEOUS
Project:	Thomas Well #1, Clayton Farms	Collection Date:	1/20/2000 2:10:00 PM
		COC Record:	10495

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: DM		
Methyl tert-Butyl Ether	3.3	1		µg/L	1	1/27/2000
Benzene	440	2.5		µg/L	5	1/24/2000
Toluene	ND	2.5		µg/L	5	1/24/2000
Ethylbenzene	130	2.5		µg/L	5	1/24/2000
m,p-Xylene	1600	5		µg/L	5	1/24/2000
o-Xylene	6.7	2.5		µg/L	5	1/24/2000

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: 09-Feb-00

CLIENT: BioTech Remediation, Inc.
Work Order: 0001024
Project: Thomas Well #1, Clayton Farms

QC SUMMARY REPORT

Method Blank

Sample ID: MB1	Batch ID: GC-1_000124	Test Code: SW8021B	Units: µg/L	Analysis Date 1/24/2000	Prep Date:						
Client ID:	0001024	Run ID: GC-1_000124A		SeqNo: 23037							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	.1502										J
Ethylbenzene	.1305										J
m,p-Xylene	.2985										J
Methyl tert-Butyl Ether	ND										J
o-Xylene	.0937										J
Toluene	.177										J

Sample ID: MB1	Batch ID: GC-1_000127	Test Code: SW8021B	Units: µg/L	Analysis Date 1/27/2000	Prep Date:						
Client ID:	0001024	Run ID: GC-1_000127A		SeqNo: 23154							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	.0957										J
Ethylbenzene	.1201										J
m,p-Xylene	.2381										J
Methyl tert-Butyl Ether	ND										J
o-Xylene	.0984										J
Toluene	.1544										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: 09-Feb-00

CLIENT: BioTech Remediation, Inc.
Work Order: 0001024
Project: Thomas Well #1, Clayton Farms

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 0001024-04AMS		Batch ID: GC-1_000124	Test Code: SW8021B	Units: µg/L	Analysis Date 1/24/2000		Prep Date:				
Client ID: MW-02		0001024	Run ID: GC-1_000124A		SeqNo: 23038						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	640.7	2.5	200	440	100.3%	73	126				ES
Ethylbenzene	325.6	2.5	200	130	97.8%	88	113				
m,p-Xylene	2082	5	400	1600	120.5%	83	112				
Methyl tert-Butyl Ether	204.2	5	200	3	100.6%	81	125				
o-Xylene	205.3	2.5	200	6.7	99.3%	93	110				
Toluene	214.3	2.5	200	0	107.1%	76	126				

Sample ID: 0001024-04AMSD		Batch ID: GC-1_000124	Test Code: SW8021B	Units: µg/L	Analysis Date 1/24/2000		Prep Date:				
Client ID: MW-02		0001024	Run ID: GC-1_000124A		SeqNo: 23039						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	613.9	2.5	200	440	87.0%	73	126	640.7	4.3%	6	
Ethylbenzene	312.3	2.5	200	130	91.2%	88	113	325.6	4.2%	5	
m,p-Xylene	1992	5	400	1600	98.1%	83	112	2082	4.4%	7	
Methyl tert-Butyl Ether	196	5	200	3	96.5%	81	125	204.2	4.1%	9	
o-Xylene	197.4	2.5	200	6.7	95.3%	93	110	205.3	4.0%	6	
Toluene	206.4	2.5	200	0	103.2%	76	126	214.3	3.8%	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

CLIENT: BioTech Remediation, Inc.

Work Order: 0001024

Project: Thomas Well #1, Clayton Farms

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 0001031-01AMS	Batch ID: GC-1_000127	Test Code: SW8021B	Units: µg/L	Analysis Date 1/27/2000	Prep Date:
Client ID: 0001024	Run ID: GC-1_000127A	PQL	SPK value	SeqNo: 23156	
Analyte	Result		SPK Ref Val	LowLimit	HighLimit
Benzene	389	5	0.5	73	126
Ethylbenzene	394.4	5	0.5	88	113
m,p-Xylene	752.5	10	1	83	112
Methyl tert-Butyl Ether	399.5	10	0	81	125
o-Xylene	395.4	5	0.4	93	110
Toluene	392.6	5	0.8	76	126

Sample ID: 0001031-01AMSD	Batch ID: GC-1_000127	Test Code: SW8021B	Units: µg/L	Analysis Date 1/27/2000	Prep Date:
Client ID: 0001024	Run ID: GC-1_000127A	PQL	SPK value	SeqNo: 23158	
Analyte	Result		SPK Ref Val	LowLimit	HighLimit
Benzene	392.6	5	0.5	73	126
Ethylbenzene	398.2	5	0.5	88	113
m,p-Xylene	760.4	10	1	83	112
Methyl tert-Butyl Ether	408	10	0	81	125
o-Xylene	400.5	5	0.4	93	110
Toluene	396.5	5	0.8	76	126

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
2 of 2

On Site Technologies, LTD.

Date: 09-Feb-00

CLIENT: BioTech Remediation, Inc.
Work Order: 0001024
Project: Thomas Well #1, Clayton Farms

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS WATER		Batch ID: GC-1_000124	Test Code: SW8021B	Units: µg/L	Analysis Date 1/24/2000		Prep Date:				
Client ID:		0001024	Run ID: GC-1_000124A		SeqNo: 23036						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	40.37	0.5	40	0.1502	100.6%	89	112				
Ethylbenzene	41.09	0.5	40	0.1305	102.4%	93	112				
m,p-Xylene	78.55	1	80	0.2985	97.8%	88	108				
Methyl tert-Butyl Ether	41.08	1	40	0	102.7%	87	115				
o-Xylene	41.24	0.5	40	0.0937	102.9%	93	112				
Toluene	40.75	0.5	40	0.177	101.4%	92	111				

Sample ID: LCS WATER		Batch ID: GC-1_000127	Test Code: SW8021B	Units: µg/L	Analysis Date 1/27/2000		Prep Date:				
Client ID:		0001024	Run ID: GC-1_000127A		SeqNo: 23153						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	40.49	0.5	40	0.0957	101.0%	89	112				
Ethylbenzene	41.11	0.5	40	0.1201	102.5%	93	112				
m,p-Xylene	78.47	1	80	0.2381	97.8%	88	108				
Methyl tert-Butyl Ether	40.58	1	40	0	101.5%	87	115				
o-Xylene	41.19	0.5	40	0.0984	102.7%	93	112				
Toluene	40.84	0.5	40	0.1544	101.7%	92	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: 09-Feb-00

CLIENT: BioTech Remediation, Inc.

Work Order: 0001024

Project: Thomas Well #1, Clayton Farms

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 BTEX_0001		Batch ID: GC-1_000124		Test Code: SW8021B		Units: µg/L		Analysis Date 1/24/2000		Prep Date:	
Client ID:		0001024		Run ID: GC-1_000124A				SeqNo: 23034			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.31	0.5	20	0	101.5%	85	115				
Ethylbenzene	20.9	0.5	20	0	104.5%	85	115				
m,p-Xylene	39.35	1	40	0	98.4%	85	115				
Methyl tert-Butyl Ether	20.79	1	20	0	104.0%	85	115				
o-Xylene	20.88	0.5	20	0	104.4%	85	115				
Toluene	20.33	0.5	20	0	101.7%	85	115				
1,4-Difluorobenzene	89.42	0	100	0	89.4%	80	105				
4-Bromochlorobenzene	87.91	0	100	0	87.9%	78	108				
Fluorobenzene	88.73	0	100	0	88.7%	78	108				

Sample ID: CCV2 BTEX_0001		Batch ID: GC-1_000124	Test Code: SW8021B	Units: µg/L	Analysis Date 1/24/2000		Prep Date:							
Client ID:		0001024	Run ID:	GC-1_000124A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Analyte		Result												
Benzene		19.72		0.5		20	0	98.6%	85	115				
Ethylbenzene		20.31		0.5		20	0	101.6%	85	115				
m,p-Xylene		38.28		1		40	0	95.7%	85	115				
Methyl tert-Butyl Ether		20.63		1		20	0	103.1%	85	115				
o-Xylene		20.36		0.5		20	0	101.8%	85	115				
Toluene		19.8		0.5		20	0	99.0%	85	115				
1,4-Difluorobenzene		89.89		0		100	0	89.9%	80	105				
4-Bromochlorobenzene		88.15		0		100	0	88.2%	78	108				
Fluorobenzene		88.74		0		100	0	88.7%	78	108				

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: 0001024
Project: Thomas Well #1, Clayton Farms

QC SUMMARY REPORT
 Continuing Calibration Verification Standard

Sample ID: CCV1 BTEX_0001		Batch ID: GC-1_000127	Test Code: SW8021B	Units: µg/L	Analysis Date 1/27/2000		Prep Date:				
Client ID:		0001024	Run ID: GC-1_000127A		SeqNo: 23150						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.4	0.5	20	0	102.0%	85	115				
Ethylbenzene	21.74	0.5	20	0	108.7%	85	115				
m,p-Xylene	40.96	1	40	0	102.4%	85	115				
Methyl tert-Butyl Ether	20.92	1	20	0	104.6%	85	115				
o-Xylene	21.71	0.5	20	0	108.5%	85	115				
Toluene	20.71	0.5	20	0	103.5%	85	115				
1,4-Difluorobenzene	88.81	0	100	0	88.8%	80	105				
4-Bromochlorobenzene	88.76	0	100	0	88.8%	78	108				
Fluorobenzene	88.02	0	100	0	88.0%	78	108				

Sample ID: CCV2 BTEX_0001		Batch ID: GC-1_000127	Test Code: SW8021B	Units: µg/L	Analysis Date 1/27/2000		Prep Date:				
Client ID:		0001024	Run ID: GC-1_000127A		SeqNo: 23151						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.8	0.5	20	0	99.0%	85	115				
Ethylbenzene	21.07	0.5	20	0	105.4%	85	115				
m,p-Xylene	39.76	1	40	0	99.4%	85	115				
Methyl tert-Butyl Ether	21.12	1	20	0	105.6%	85	115				
o-Xylene	21.2	0.5	20	0	106.0%	85	115				
Toluene	20.16	0.5	20	0	100.8%	85	115				
1,4-Difluorobenzene	89.42	0	100	0	89.4%	80	105				
4-Bromochlorobenzene	88.98	0	100	0	89.0%	78	108				
Fluorobenzene	87.84	0	100	0	87.8%	78	108				

CLIENT: BioTech Remediation, Inc.

Work Order: 0001024

Project: Thomas Well #1, Clayton Farms

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV3 BTEX_0001	Batch ID: GC-1_000127	Test Code: SW8021B	Units: µg/L	Analysis Date 1/27/2000	Prep Date:
Client ID: 0001024	Run ID: GC-1_000127A	PQL	SPK value	SeqNo: 23152	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	20.65	0.5	20	0	103.2% 85 115
Ethylbenzene	21.36	0.5	20	0	106.8% 85 115
m,p-Xylene	40.43	1	40	0	101.1% 85 115
Methyl tert-Butyl Ether	20.69	1	20	0	103.5% 85 115
o-Xylene	21.26	0.5	20	0	106.3% 85 115
Toluene	20.93	0.5	20	0	104.7% 85 115
1,4-Difluorobenzene	89.12	0	100	0	89.1% 80 105
4-Bromochlorobenzene	88.52	0	100	0	88.5% 78 108
Fluorobenzene	88.09	0	100	0	88.1% 78 108

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: 09-Feb-00

CLIENT: BioTech Remediation, Inc.
Work Order: 0001024
Project: Thomas Well #1, Clayton Farms
Test No: SW8021B

QC SUMMARY REPORT SURROGATE RECOVERIES

Aromatic Volatiles by GC/PID

Sample ID	14FBZ	4BCBZ	FLBZ					
0001023-01A	90.3	87.7	89.2					
0001023-02A	87.4	85.2	88					
0001023-03A	89.5	87.7	89.5					
0001023-04A	89.8	87.8	89.7					
0001023-05A	87.1	84.7	87.3					
0001024-01A	90.1	87.9	89.5					
0001024-02A	90.3	88.1	89.2					
0001024-03A	85.2	83.9	85.8					
0001024-04A	83.7	82.5	83.1					
0001024-04AMS	86	87.4	85					
0001024-04AMSD	85.8	87.3	85.1					
0001028-03A	89.7	88.5	88.5					
0001028-04A	89.2	88.3	88.3					
0001030-01A	87.5	88.4	86.6					
0001030-03A	85.7	88.4	85.3					
0001030-04A	81	88	81.7					
0001031-01AMS	88.4	88.4	87.6					
0001031-01AMSD	88.8	89.3	87.5					
0001031-02A	89.1	89.5	88.5					
0001031-03A	85.6	83.3	89					
0001031-04A	86.6	87.8	86.3					
0001031-05A	89.6	88.7	88.8					
0001031-06A	88.6	86.4	88.4					
0001031-07A	89.8	88.9	89.2					
0001031-08A	90.4	89.4	88.7					
0001031-09A	87.2	88.6	87.6					
CCV1 BTEX_00010	88.8	88.8	88					

Acronym	Surrogate	QC Limits
14FBZ	= 1,4-Difluorobenzene	80-105
4BCBZ	= 4-Bromochlorobenzene	78-108
FLBZ	= Fluorobenzene	78-108

CLIENT: BioTech Remediation, Inc.
Work Order: 0001024
Project: Thomas Well #1, Clayton Farms
Test No: SW8021B

QC SUMMARY REPORT SURROGATE RECOVERIES

Aromatic Volatiles by GC/PID

Sample ID	14FBZ	4BCBZ	FLBZ					
CCV2 BTEX_00010	89.4	89	87.8					
CCV3 BTEX_00010	89.1	88.5	88.1					
LCS WATER	88.8	88.4	87.4					
MB1	89.6	87.9	89					

Acronym	Surrogate	QC Limits
14FBZ	= 1,4-Difluorobenzene	80-105
4BCBZ	= 4-Bromochlorobenzene	78-108
FLBZ	= Fluorobenzene	78-108

* Surrogate recovery outside acceptance limits



CHAIN OF CUSTODY RECORD

TECHNOLOGIES, LTD.

612 E. Murray Dr. • P.O. Box 2606 • Farmington, NM 87499
LAB: (505) 325-5667 • FAX: (505) 327-1496

Date:

Page:

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OFF: (505) 325-5667



SEP 27 1999

GP

LAB: (505) 325-1556

September 21, 1999

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

RE: Thomas #1 Well; Bloomfield, NM

Order No.: 9909041

Dear Terry Griffin,

On Site Technologies, LTD. received 4 samples on 9/13/99 for the analyses presented in the following report.

The Samples were analyzed for the following tests:
Aromatic Volatiles by GC/PID (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 black ink, appearing to read "David Cox", with a stylized flourish at the end.

David Cox

OFF: (505) 325-5667



LAB: (505) 325-1556

On Site Technologies, LTD.

Date: 21-Sep-99

CLIENT: BioTech Remediation, Inc.
Project: Thomas #1 Well; Bloomfield, NM
Lab Order: 9909041

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: 21-Sep-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thomas #1 Well
Work Order:	9909041	Client Sample ID:	Travel Blank
Lab ID:	9909041-01A	Matrix:	AQUEOUS
Project:	Thomas #1 Well; Bloomfield, NM	Collection Date:	09/13/1999 12:00:00 PM
		COC Record:	5371

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: HR		
Benzene	ND	0.5		µg/L	1	09/14/1999
Toluene	ND	0.5		µg/L	1	09/14/1999
Ethylbenzene	ND	0.5		µg/L	1	09/14/1999
m,p-Xylene	ND	1		µg/L	1	09/14/1999
o-Xylene	ND	0.5		µg/L	1	09/14/1999

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: 21-Sep-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thomas #1 Well
Work Order:	9909041	Client Sample ID:	MW-2
Lab ID:	9909041-02A	Matrix:	AQUEOUS
Project:	Thomas #1 Well; Bloomfield, NM	Collection Date:	09/13/1999 1:59:00 PM
		COC Record:	5371

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: DM		
Benzene	340	2.5		µg/L	5	09/20/1999
Toluene	20	2.5		µg/L	5	09/20/1999
Ethylbenzene	110	2.5		µg/L	5	09/20/1999
m,p-Xylene	1400	5		µg/L	5	09/20/1999
o-Xylene	3.3	2.5		µg/L	5	09/20/1999

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: 21-Sep-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thomas #1 Well
Work Order:	9909041	Client Sample ID:	Field Blank
Lab ID:	9909041-03A	Matrix:	AQUEOUS
Project:	Thomas #1 Well; Bloomfield, NM	Collection Date:	09/13/1999 2:00:00 PM
		COC Record:	5371

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: HR		
Benzene	ND	0.5		µg/L	1	09/14/1999
Toluene	ND	0.5		µg/L	1	09/14/1999
Ethylbenzene	ND	0.5		µg/L	1	09/14/1999
m,p-Xylene	ND	1		µg/L	1	09/14/1999
o-Xylene	ND	0.5		µg/L	1	09/14/1999

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: 21-Sep-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thomas #1 Well
Work Order:	9909041	Client Sample ID:	MW-3
Lab ID:	9909041-04A	Matrix:	AQUEOUS
Project:	Thomas #1 Well; Bloomfield, NM	Collection Date:	09/13/1999 2:25:00 PM
		COC Record:	5371

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: HR		
Benzene	5.8	0.5		µg/L	1	09/14/1999
Toluene	4	0.5		µg/L	1	09/14/1999
Ethylbenzene	8.6	0.5		µg/L	1	09/14/1999
m,p-Xylene	13	1		µg/L	1	09/14/1999
o-Xylene	3.5	0.5		µg/L	1	09/14/1999

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: 21-Sep-99

CLIENT: BioTech Remediation, Inc.

Work Order: 9909041

Project: Thomas #1 Well; Bloomfield, NM

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9909035-24AMS		Batch ID: GC-1_990914		Test Code: SW8021B		Units: µg/L		Analysis Date: 9/14/99		Prep Date:	
Client ID:		9909041		Run ID: GC-1_990914A				SeqNo: 19508			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	2496	10	800	1774	90.2%	80	116				
Ethylbenzene	1971	10	800	1215	94.5%	80	118				
m,p-Xylene	5264	20	1600	3764	93.8%	77	116				
Methyl tert-Butyl Ether	1032	20	800	361.1	83.9%	62	122				
o-Xylene	1955	10	800	1186	96.2%	83	117				
Toluene	6919	10	800	6123	99.5%	80	116				E

Sample ID: 9909035-24AMSD		Batch ID: GC-1_990914		Test Code: SW8021B		Units: µg/L		Analysis Date: 9/14/99			Prep Date:	
Client ID:		9909041		Run ID: GC-1_990914A				SeqNo: 19509				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Benzene	2543	10	800	1800	92.9%	80	116	2496	1.9%	7		
Ethylbenzene	2008	10	800	1200	101.0%	80	118	1971	1.9%	7		
m,p-Xylene	5367	20	1600	3800	97.9%	77	116	5264	1.9%	7		
Methyl tert-Butyl Ether	998.5	20	800	360	79.8%	62	122	1032	3.3%	7		
o-Xylene	1986	10	800	1200	98.2%	83	117	1955	1.6%	6		
Toluene	7010	10	800	6100	113.8%	80	116	6919	1.3%	6	E	

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: 9909041

Project: Thomas #1 Well; Bloomfield, NM

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9909035-22AMS		Batch ID: GC-1_990920		Test Code: SW8021B		Units: µg/L		Analysis Date: 9/20/99				Prep Date:										
Client ID:		9909041		Run ID:		GC-1_990920A		SeqNo: 19777														
Analyte		Result		PQL		SPK value		SPK Ref Val		%REC		LowLimit		HighLimit		RPD Ref Val		%RPD		RPDLimit		Qual
Benzene		945.4		5		400		600.5		86.2%		80		116								
Ethylbenzene		415.9		5		400		20.78		98.8%		80		118								
m,p-Xylene		749		10		800		5.711		92.9%		77		116								
Methyl tert-Butyl Ether		494.3		10		400		73.44		105.2%		62		122								
o-Xylene		397.6		5		400		1.036		99.1%		83		117								
Toluene		400		5		400		1.024		99.8%		80		116								

Sample ID: 9909035-22AMSD		Batch ID: GC-1_990920		Test Code: SW8021B		Units: µg/L		Analysis Date: 9/20/99				Prep Date:	
Client ID:		9909041		Run ID:		GC-1_990920A		SeqNo:		19778			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Benzene	928.3	5	400	600.5	81.9%	80	116	945.4	1.8%	7			
Ethylbenzene	408.6	5	400	20.78	97.0%	80	118	415.9	1.8%	7			
m,p-Xylene	736.8	10	800	5.711	91.4%	77	116	749	1.6%	7			
Methyl tert-Butyl Ether	498.1	10	400	73.44	106.2%	62	122	494.3	0.8%	7			
o-Xylene	393.2	5	400	1.036	98.1%	83	117	397.6	1.1%	6			
Toluene	393.8	5	400	1.024	98.2%	80	116	400	1.6%	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: 21-Sep-99

CLIENT: BioTech Remediation, Inc.

Work Order: 9909041

Project: Thomas #1 Well; Bloomfield, NM

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS WATER		Batch ID: GC-1_990914	Test Code: SW8021B	Units: µg/L	Analysis Date: 9/14/99		Prep Date:				
Client ID:	9909041	Run ID:	GC-1_990914A		SeqNo:	19506					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	40.27	0.5	40	0.0446	100.6%	87	119				
Ethylbenzene	41.1	0.5	40	0	102.7%	89	117				
m,p-Xylene	77.2	1	80	0	96.5%	88	114				
Methyl tert-Butyl Ether	41.27	1	40	0	103.2%	69	129				
o-Xylene	41.04	0.5	40	0	102.6%	90	116				
Toluene	40.67	0.5	40	0.1364	101.3%	90	115				

Sample ID: LCS WATER		Batch ID: GC-1_990920	Test Code: SW8021B	Units: µg/L	Analysis Date: 9/20/99		Prep Date:				
Client ID:	9909041	Run ID:	GC-1_990920A		SeqNo:	19775					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	40.58	0.5	40	0.1348	101.1%	87	119				
Ethylbenzene	40.67	0.5	40	0.1017	101.4%	89	117				
m,p-Xylene	75.85	1	80	0.1836	94.6%	88	114				
Methyl tert-Butyl Ether	40.49	1	40	0	101.2%	69	129				
o-Xylene	40.31	0.5	40	0.0895	100.5%	90	116				
Toluene	40.45	0.5	40	0.1756	100.7%	90	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.

Date: 21-Sep-99

CLIENT: BioTech Remediation, Inc.

Work Order: 9909041

Project: Thomas #1 Well; Bloomfield, NM

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 BTEX_9906		Batch ID: GC-1_990914	Test Code: SW8021B	Units: µg/L	Analysis Date: 9/14/99				Prep Date:			
Client ID: 9909041		Run ID: GC-1_990914A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Analyte	Result											
Benzene	20.11		0.5	20	0	100.6%	85	115				
Ethylbenzene	20.47		0.5	20	0	102.4%	85	115				
m,p-Xylene	38.52		1	40	0	96.3%	85	115				
Methyl tert-Butyl Ether	20.42		1	20	0	102.1%	85	115				
o-Xylene	20.44		0.5	20	0	102.2%	85	115				
Toluene	20.16		0.5	20	0	100.8%	85	115				
1,4-Difluorobenzene	89.02		0	100	0	89.0%	80	120				
4-Bromochlorobenzene	89.72		0	100	0	89.7%	80	120				
Fluorobenzene	87.84		0	100	0	87.8%	80	120				

Sample ID: CCV2 BTEX_9906		Batch ID: GC-1_990914	Test Code: SW8021B	Units: µg/L		Analysis Date: 9/14/99				Prep Date:		
Client ID: 9909041		Run ID: GC-1_990914A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Analyte	Result											
Benzene	20.54		0.5	20	0	102.7%	85	115				
Ethylbenzene	20.98		0.5	20	0	104.9%	85	115				
m,p-Xylene	39.5		1	40	0	98.7%	85	115				
Methyl tert-Butyl Ether	20.52		1	20	0	102.6%	85	115				
o-Xylene	20.93		0.5	20	0	104.7%	85	115				
Toluene	20.72		0.5	20	0	103.6%	85	115				
1,4-Difluorobenzene	89.01		0	100	0	89.0%	80	120				
4-Bromochlorobenzene	89.95		0	100	0	90.0%	80	120				
Fluorobenzene	87.79		0	100	0	87.8%	80	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

CLIENT: BioTech Remediation, Inc.
Work Order: 9909041
Project: Thomas #1 Well; Bloomfield, NM

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV3 BTEX_9906		Batch ID: GC-1_990914	Test Code: SW8021B	Units: µg/L	Analysis Date: 9/14/99		Prep Date:				
Client ID:		9909041	Run ID: GC-1_990914A		SeqNo: 19504						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	39.32	0.5	40	0	98.3%	85	115				
Ethylbenzene	39.87	0.5	40	0	99.7%	85	115				
m,p-Xylene	74.83	1	80	0	93.5%	85	115				
Methyl tert-Butyl Ether	41.42	1	40	0	103.6%	85	115				
o-Xylene	40.13	0.5	40	0	100.3%	85	115				
Toluene	39.66	0.5	40	0	99.1%	85	115				
1,4-Difluorobenzene	88.79	0	100	0	88.8%	80	120				
4-Bromochlorobenzene	89.54	0	100	0	89.5%	80	120				
Fluorobenzene	87	0	100	0	87.0%	80	120				

Sample ID: CCV4 BTEX_9906		Batch ID: GC-1_990914	Test Code: SW8021B	Units: µg/L		Analysis Date: 9/14/99		Prep Date:			
Client ID:		9909041	Run ID:	GC-1_990914A		SeqNo: 19505					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	39	0.5	40	0	97.5%	85	115				
Ethylbenzene	40.06	0.5	40	0	100.1%	85	115				
m,p-Xylene	74.86	1	80	0	93.6%	85	115				
Methyl tert-Butyl Ether	41.34	1	40	0	103.4%	85	115				
o-Xylene	40.41	0.5	40	0	101.0%	85	115				
Toluene	39.73	0.5	40	0	99.3%	85	115				
1,4-Difluorobenzene	88.73	0	100	0	88.7%	80	120				
4-Bromochlorobenzene	88.82	0	100	0	88.8%	80	120				
Fluorobenzene	87.03	0	100	0	87.0%	80	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

CLIENT: BioTech Remediation, Inc.

Work Order: 9909041

Project: Thomas #1 Well; Bloomfield, NM

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 BTEX_9906	Batch ID: GC-1_990920	Test Code: SW8021B	Units: µg/L	Analysis Date: 9/20/99	Prep Date:
Client ID: 9909041	Run ID: GC-1_990920A	PQL	SPK value	SPK Ref Val	SeqNo: 19772
Analyte	Result			%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	21.41	0.5	20	0	107.1% 85 115
Ethylbenzene	21.58	0.5	20	0	107.9% 85 115
m,p-Xylene	40.41	1	40	0	101.0% 85 115
Methyl tert-Butyl Ether	21.27	1	20	0	106.4% 85 115
o-Xylene	21.38	0.5	20	0	106.9% 85 115
Toluene	21.23	0.5	20	0	106.1% 85 115
1,4-Difluorobenzene	93.75	0	100	0	93.8% 80 120
4-Bromochlorobenzene	93.41	0	100	0	93.4% 80 120
Fluorobenzene	92	0	100	0	92.0% 80 120

Sample ID: CCV2 BTEX_9906	Batch ID: GC-1_990920	Test Code: SW8021B	Units: µg/L	Analysis Date: 9/20/99	Prep Date:
Client ID: 9909041	Run ID: GC-1_990920A	PQL	SPK value	SPK Ref Val	SeqNo: 19773
Analyte	Result			%REC	LowLimit HighLimit RPD Ref Val %RPD RPDLimit Qual
Benzene	20.2	0.5	20	0	101.0% 85 115
Ethylbenzene	20.39	0.5	20	0	101.9% 85 115
m,p-Xylene	38.38	1	40	0	95.9% 85 115
Methyl tert-Butyl Ether	21.36	1	20	0	106.8% 85 115
o-Xylene	20.42	0.5	20	0	102.1% 85 115
Toluene	20.2	0.5	20	0	101.0% 85 115
1,4-Difluorobenzene	93.99	0	100	0	94.0% 80 120
4-Bromochlorobenzene	88.76	0	100	0	88.8% 80 120
Fluorobenzene	92.64	0	100	0	92.6% 80 120

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

CLIENT: BioTech Remediation, Inc.

Work Order: 9909041

Project: Thomas #1 Well; Bloomfield, NM

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV3 BTEX_9906		Batch ID: GC-1_990920	Test Code: SW8021B	Units: µg/L	Analysis Date: 9/20/99		Prep Date:					
Client ID: 9909041		Run ID: GC-1_990920A	PQL	SPK value	SPK Ref Val	%REC	SeqNo: 19774	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Analyte	Result							LowLimit				
Benzene	20.04		0.5	20	0	100.2%		85			115	
Ethylbenzene	20.37		0.5	20	0	101.9%		85			115	
m,p-Xylene	38.48		1	40	0	96.2%		85			115	
Methyl tert-Butyl Ether	20.26		1	20	0	101.3%		85			115	
o-Xylene	21.01		0.5	20	0	105.0%		85			115	
Toluene	20.24		0.5	20	0	101.2%		85			115	
1,4-Difluorobenzene	94.52		0	100	0	94.5%		80			120	
4-Bromochlorobenzene	86.54		0	100	0	86.5%		80			120	
Fluorobenzene	92.63		0	100	0	92.6%		80			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: 21-Sep-99

CLIENT: BioTech Remediation, Inc.
Work Order: 9909041
Project: Thomas #1 Well; Bloomfield, NM
Test No: SW8021B

QC SUMMARY REPORT SURROGATE RECOVERIES

Aromatic Volatiles by GC/PID

Sample ID	14FBZ	4BCBZ	FLBZ					
9909015-01A	90.7	91.8	90.2					
9909023-01A	89.5	89.6	88.4					
9909028-01A	87.4	87.8	87.2					
9909035-17A	89.8	90.2	88.7					
9909035-18A	85.5	88.4	85.2					
9909035-19A	89.1	91.5	88.6					
9909035-20A	89.7	89.8	89.3					
9909035-21A	86.6	89.9	85.5					
9909035-22A	91.9	91.7	90.4					
9909035-22AMS	92.4	90.6	90.8					
9909035-22AMSD	92.6	90.6	91.1					
9909035-23A	89.9	90.3	88.7					
9909035-24A	93.4	85.9	92.2					
9909035-24AMS	87.2	91.1	84.9					
9909035-24AMSD	87.4	91	84.9					
9909035-25A	87.7	88.2	88					
9909036-01A	89.8	90.3	88.7					
9909037-01A	90.2	90	88.7					
9909038-01A	89.2	89.7	88.4					
9909041-01A	89.4	90	89					
9909041-02A	90.8	84.8	89.9					
9909041-03A	89.4	90.2	89					
9909041-04A	71.8 *	71.8 *	71.2 *					
9909042-01B	94.5	93.8	93.1					
9909042-02B	94	92.5	92.8					
9909042-03B	93.5	91.3	93.7					
9909042-04B	94.1	92.2	93.5					

Acronym

Surrogate

QC Limits

14FBZ	=	1,4-Difluorobenzene	80-120
4BCBZ	=	4-Bromochlorobenzene	80-120
FLBZ	=	Fluorobenzene	80-120

* Surrogate recovery outside acceptance limits

CLIENT: BioTech Remediation, Inc.
Work Order: 9909041
Project: Thomas #1 Well; Bloomfield, NM
Test No: SW8021B

QC SUMMARY REPORT SURROGATE RECOVERIES

Aromatic Volatiles by GC/PID

Sample ID	14FBZ	4BCBZ	FLBZ					
9909042-05B	94.2	91.4	93.4					
9909046-01A	94.1	89.5	92.3					
9909047-01A	91.7	81.8	92.6					
9909048-01A	94.7	91.2	93.5					
9909048-02A	95.2	91.3	93.7					
9909048-03A	94.2	92.2	93.5					
9909049-01B	96.1	86.8	94.4					
9909054-01A	94.3	87.9	93					
9909054-02A	94.7	88.7	93.8					
9909054-03A	95.1	89.6	94					
9909054-04A	95.3	88.5	94.4					
9909054-05A	94.8	85.8	93.2					
CCV1 BTEX_99061	93.8	93.4	92					
CCV2 BTEX_99061	94	88.8	92.6					
CCV3 BTEX_99061	94.5	86.5	92.6					
CCV4 BTEX_99061	88.7	88.8	87					
LCS WATER	93	93.5	91.4					
MB1	94.2	93.1	93					

Acronym	Surrogate	QC Limits
14FBZ	= 1,4-Difluorobenzene	80-120
4BCBZ	= 4-Bromochlorobenzene	80-120
FLBZ	= Fluorobenzene	80-120

* Surrogate recovery outside acceptance limits

CHAIN OF CUSTODY RECORD

Date: .

Page

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LAB: (505) 325-5667 • FAX: (505) 325-6256

TECHNOLOGIES, LTD.

[illegible]

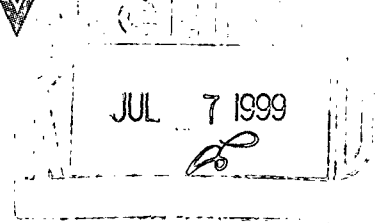
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LAB: (505) 325-1556

July 01, 1999

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



RE: Thomas Well #1

Order No.: 9906064

Dear Terry Griffin,

On Site Technologies, LTD. received 5 samples on 6/17/99 for the analyses presented in the following report.

The Samples were analyzed for the following tests:

Aromatic Volatiles by GC/PID (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 read "David Cox", is written over the name.

David Cox

OFF: (505) 325-5667



LAB: (505) 325-1556

On Site Technologies, LTD.

Date: 01-Jul-99

CLIENT: BioTech Remediation, Inc.
Project: Thomas Well #1
Lab Order: 9906064

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.

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ANALYTICAL REPORT

Date: 01-Jul-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thomas Well #1
Work Order:	9906064	Client Sample ID:	Travel Blank
Lab ID:	9906064-01A	Matrix:	AQUEOUS
Project:	Thomas Well #1	Collection Date:	6/17/99 9:00:00 AM
		COC Record:	5271

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: DC		
Methyl tert-Butyl Ether	ND	1		µg/L	1	6/28/99
Benzene	ND	0.5		µg/L	1	6/28/99
Toluene	ND	0.5		µg/L	1	6/28/99
Ethylbenzene	ND	0.5		µg/L	1	6/28/99
m,p-Xylene	ND	1		µg/L	1	6/28/99
o-Xylene	ND	0.5		µg/L	1	6/28/99

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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1 of 1

OFF: (505) 325-5667



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ANALYTICAL REPORT

Date: 01-Jul-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thomas Well #1
Work Order:	9906064	Client Sample ID:	Field Blank
Lab ID:	9906064-02A	Matrix:	AQUEOUS
Project:	Thomas Well #1	Collection Date:	6/17/99 12:16:00 PM
		COC Record:	5271

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: DC		
Methyl tert-Butyl Ether	ND	1		µg/L	1	6/28/99
Benzene	ND	0.5		µg/L	1	6/28/99
Toluene	ND	0.5		µg/L	1	6/28/99
Ethylbenzene	ND	0.5		µg/L	1	6/28/99
m,p-Xylene	ND	1		µg/L	1	6/28/99
o-Xylene	ND	0.5		µg/L	1	6/28/99

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 -

1 of 1

OFF: (505) 325-5667



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ANALYTICAL REPORT

Date: 01-Jul-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thomas Well #1
Work Order:	9906064	Client Sample ID:	Rinse Blank
Lab ID:	9906064-03A	Matrix:	AQUEOUS
Project:	Thomas Well #1	Collection Date:	6/17/99 1:12:00 PM
		COC Record:	5271

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: DC		
Methyl tert-Butyl Ether	ND	1		µg/L	1	6/28/99
Benzene	ND	0.5		µg/L	1	6/28/99
Toluene	ND	0.5		µg/L	1	6/28/99
Ethylbenzene	ND	0.5		µg/L	1	6/28/99
m,p-Xylene	ND	1		µg/L	1	6/28/99
o-Xylene	ND	0.5		µg/L	1	6/28/99

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 -

1 of 1

OFF: (505) 325-5667



LAB: (505) 325-1556

ANALYTICAL REPORT

Date: 01-Jul-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thomas Well #1
Work Order:	9906064	Client Sample ID:	MW-3
Lab ID:	9906064-04A	Matrix:	AQUEOUS
Project:	Thomas Well #1	Collection Date:	6/17/99 12:40:00 PM
		COC Record:	5271

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: DC		
Methyl tert-Butyl Ether	ND	1		µg/L	1	6/28/99
Benzene	ND	0.5		µg/L	1	6/28/99
Toluene	10	0.5		µg/L	1	6/28/99
Ethylbenzene	16	0.5		µg/L	1	6/28/99
m,p-Xylene	18	1		µg/L	1	6/28/99
o-Xylene	4.6	0.5		µg/L	1	6/28/99

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: 01-Jul-99

Client:	BioTech Remediation, Inc.	Client Sample Info:	Thomas Well #1
Work Order:	9906064	Client Sample ID:	MW-2
Lab ID:	9906064-05A	Matrix:	AQUEOUS
Project:	Thomas Well #1	Collection Date:	6/17/99 1:08:00 PM
		COC Record:	5271

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		SW8021B		Analyst: DC		
Methyl tert-Butyl Ether	ND	5		µg/L	5	6/28/99
Benzene	220	2.5		µg/L	5	6/28/99
Toluene	18	2.5		µg/L	5	6/28/99
Ethylbenzene	84	2.5		µg/L	5	6/28/99
m,p-Xylene	800	5		µg/L	5	6/28/99
o-Xylene	12	2.5		µg/L	5	6/28/99

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 -

1 of 1

On Site Technologies, LTD.

Date: 01-Jul-99

CLIENT: BioTech Remediation, Inc.

Work Order: 9906064

Project: Thomas Well #1

QC SUMMARY REPORT

Method Blank

Sample ID: MB1	Batch ID: GC-1_990628	Test Code: SW8021B	Units: µg/L	Analysis Date 6/28/99	Prep Date:						
Client ID:	9906064	Run ID: GC-1_990628A		SeqNo: 16541							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND										
Ethylbenzene	ND	0.5									
m,p-Xylene	ND	1									
Methyl tert-Butyl Ether	ND	1									
o-Xylene	ND	0.5									
Toluene	.1616	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: 01-Jul-99

CLIENT: BioTech Remediation, Inc.

Work Order: 9906064

Project: Thomas Well #1

QC SUMMARY REPORT

Sample Matrix Spike

Sample ID: 9906061-04AMS		Batch ID: GC-1_990628	Test Code: SW8021B	Units: µg/L	Analysis Date 6/28/99		Prep Date:	
Client ID: 9906064		Run ID: GC-1_990628A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit
Analyte	Result							
Benzene	441.7		5	400	76.3	91.4%	73	115
Ethylbenzene	602.5		5	400	234.1	92.1%	74	117
m,p-Xylene	2708		10	800	2012	87.1%	76	112
Methyl tert-Butyl Ether	405.2		10	400	0	101.3%	62	122
o-Xylene	364.2		5	400	6.435	89.5%	83	112
Toluene	388.6		5	400	16.16	93.1%	71	120
Sample ID: 9906061-04AMSD		Batch ID: GC-1_990628	Test Code: SW8021B	Units: µg/L	Analysis Date 6/28/99		Prep Date:	
Client ID: 9906064		Run ID: GC-1_990628A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit
Analyte	Result							

Benzene	427.6		5	400	76.3	87.8%	73	115	441.7	3.2%	8
Ethylbenzene	585.4		5	400	234.1	87.8%	74	117	602.5	2.9%	9
m,p-Xylene	2635		10	800	2012	78.0%	76	112	2708	2.7%	9
Methyl tert-Butyl Ether	405.1		10	400	0	101.3%	62	122	405.2	0.0%	7
o-Xylene	355.1		5	400	6.435	87.2%	83	112	364.2	2.6%	9
Toluene	376.2		5	400	16.16	90.0%	71	120	388.6	3.3%	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

On Site Technologies, LTD.

Date: 01-Jul-99

CLIENT: BioTech Remediation, Inc.

Work Order: 9906064

Project: Thomas Well #1

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS WATER		Batch ID: GC-1_990628	Test Code: SW8021B	Units: µg/L	Analysis Date 6/28/99		Prep Date:				
Client ID:		9906064	Run ID: GC-1_990628A		SeqNo:	16540					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	42.13	0.5	40	0	105.3%	84	110				
Ethylbenzene	41.58	0.5	40	0	103.9%	86	113				
m,p-Xylene	79.82	1	80	0	99.8%	81	114				
Methyl tert-Butyl Ether	45.7	1	40	0	114.3%	69	129				
o-Xylene	41.59	0.5	40	0	104.0%	86	112				
Toluene	41.17	0.5	40	0.1616	102.5%	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
1 of 1

On Site Technologies, LTD.

Date: 01-Jul-99

CLIENT: BioTech Remediation, Inc.

Work Order: 9906064

Project: Thomas Well #1

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV1 BTEX_9906		Batch ID: GC-1_990628	Test Code: SW8021B	Units: µg/L		Analysis Date 6/28/99		Prep Date:	
Client ID: 9906064		Run ID: GC-1_990628A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	SeqNo: 16537
Analyte	Result								
Benzene	21.8		0.5	20	0	109.0%	85	115	
Ethylbenzene	21.56		0.5	20	0	107.8%	85	115	
m,p-Xylene	41.46		1	40	0	103.6%	85	115	
Methyl tert-Butyl Ether	22.97		1	20	0	114.8%	85	115	
o-Xylene	21.56		0.5	20	0	107.8%	85	115	
Toluene	21.38		0.5	20	0	106.9%	85	115	
1,4-Difluorobenzene	94.82		0	100	0	94.8%	86	100	
4-Bromochlorobenzene	93.8		0	100	0	93.8%	90	104	
Fluorobenzene	97.56		0	100	0	97.6%	89	101	

Sample ID: CCV2 BTEX_9906		Batch ID: GC-1_990628	Test Code: SW8021B	Units: µg/L		Analysis Date 6/28/99		Prep Date:	
Client ID: 9906064		Run ID: GC-1_990628A	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	SeqNo: 16538
Analyte	Result								
Benzene	19.62		0.5	20	0	98.1%	85	115	
Ethylbenzene	19.21		0.5	20	0	96.1%	85	115	
m,p-Xylene	36.85		1	40	0	92.1%	85	115	
Methyl tert-Butyl Ether	20.92		1	20	0	104.6%	85	115	
o-Xylene	19.08		0.5	20	0	95.4%	85	115	
Toluene	19.01		0.5	20	0	95.1%	85	115	
1,4-Difluorobenzene	94.88		0	100	0	94.9%	86	100	
4-Bromochlorobenzene	92.7		0	100	0	92.7%	90	104	
Fluorobenzene	97.33		0	100	0	97.3%	89	101	

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: 9906064
 Project: Thomas Well #1

QC SUMMARY REPORT

Continuing Calibration Verification Standard

Sample ID: CCV3 BTEX_9906 Batch ID: GC-1_990628 Test Code: SW8021B Units: µg/L Analysis Date: 6/28/99 Prep Date:
 Client ID: 9906064 Run ID: GC-1_990628A SeqNo: 16539

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	42.8	0.5	40	0	107.0%	85	115				
Ethylbenzene	36.82	0.5	40	0	92.1%	85	115				
m,p-Xylene	71.88	1	80	0	89.8%	85	115				
Methyl tert-Butyl Ether	49.4	1	40	0	123.5%	85	115				
o-Xylene	39.19	0.5	40	0	98.0%	85	115				
Toluene	35.86	0.5	40	0	89.6%	85	115				
1,4-Difluorobenzene	98.12	0	100	0	98.1%	86	100				
4-Bromochlorobenzene	102.5	0	100	0	102.5%	90	104				
Fluorobenzene	103.8	0	100	0	103.8%	89	101				

SV
 REPORTABLE
 VALUES < PQL
 6/21/99
 RB
 7/1/99
 S

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: 01-Jul-99

CLIENT: BioTech Remediation, Inc.

Work Order: 9906064

Project: Thomas Well #1

Test No: SW8021B

QC SUMMARY REPORT SURROGATE RECOVERIES

Aromatic Volatiles by GC/PID

Sample ID	14FBZ	4BCBZ	FLBZ					
9906060-01A	93.1	92.7	95.9					
9906061-03A	90.4	89.2 *	94					
9906061-04A	93.4	90.6	97.2					
9906061-04AMS	92.6	91.7	96.3					
9906061-04AMSD	91.8	91	95.6					
9906062-10A	94.4	91.6	97.4					
9906062-11A	94.3	93.1	97.9					
9906062-13A	94.3	93.3	99.9					
9906062-19A	95	92.6	98.1					
9906064-01A	94.8	92.4	98					
9906064-02A	95.5	92.8	98.1					
9906064-03A	95.1	93.1	98.1					
9906064-04A	79.7 *	77 *	82.6 *					
9906064-05A	92.6	91.2	95.4					
9906065-01A	93.6	92	96.8					
9906076-01A	95.1	93	98					
9906076-02A	95	92.1	97.4					
9906076-03A	96.1	93.6	98.2					
CCV1 BTEX_99061	94.8	93.8	97.6					
CCV2 BTEX_99061	94.9	92.7	97.3					
CCV3 BTEX_99061	98.1	102	104 *					
LCS WATER	94.4	93.1	97.1					
MB1	94.7	93.5	97.4					

Acronym	Surrogate	QC Limits
14FBZ	= 1,4-Difluorobenzene	86-100
4BCBZ	= 4-Bromochlorobenzene	90-104
FLBZ	= Fluorobenzene	89-101

* Surrogate recovery outside acceptance limits

ON SITE

Page _____ of _____

Date: -

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[illegible]

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