

AP - 2

ANNUAL MONITORING REPORT

YEAR(S):

2002

Shell E&P Company
A Division of Shell Exploration & Production Company



Woodcreek
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Houston, TX 77079

P.O. Box 576
Houston, TX 77001

HAND DELIVERED

April 8, 2003

Mr. William C. Olson
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

**SUBJECT: SUBMITTAL OF 2002 GROUNDWATER MONITORING
REPORT, WESTGATE SUBDIVISION,
GRIMES BATTERY AND TASKER ROAD**

Dear Mr. Olson:

Shell Exploration and Production Company (SEPCo) respectfully submits the enclosed 2002 Groundwater Monitoring Report for the Westgate Subdivision, Grimes Battery and Tasker Road.

This report details the groundwater monitoring and free product recovery activities for the four quarters of 2002. Also included are summary data tables, original laboratory data, and isopleth maps.

If you have any questions, please call me at (281) 544-2322 or Cliff Brunson at (505) 397-6388 or via e-mail to me at wahamilton@shell.com or Cliff at cbrunson@bbcinternational.com.

Sincerely,

Cliff P. Brunson

for
Wayne A. Hamilton
Manager, Legacy Properties

cc: Chris Williams, NMOCD District 1 Supervisor, 2 copies
Cliff P. Brunson, BBC International, Inc.

WESTGATE SUBDIVISION
GRIMES BATTERY & TASKER ROAD

**2002 Quarterly Groundwater
Monitoring Report**

April 2003

**SHELL EXPLORATION & PRODUCTION
COMPANY
HOUSTON, TEXAS**

Prepared By:

BBC International, Inc.

**World-Wide Environmental Specialists
Hobbs, New Mexico**

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1.0 INTRODUCTION

The subject site is located in west Hobbs, New Mexico. Assessment activities (Stage 1 Abatement activities) were conducted on developed and undeveloped property bordered by Tasker Road to the east, the Los Cuatro, Inc. property to the west, Sanger Road to the south, and Princess Jeanne Drive to the North. Assessment activities also included undeveloped property extending approximately 400 feet west of Cobb Drive. Based on the results of the assessment activities (both Stage 1 and proposed Stage 2 Abatement activities), quarterly groundwater monitoring and remediation activities are being performed.

The Grimes Lease is an oil production property that has been in operation since the late 1920's. It consists of producing and injection wells, tank batteries, and associated flow lines. Oil and saltwater were produced from the wells on this lease and transported by flow lines to the Grimes Battery. Prior to decommissioning of the Grimes Battery in 1993, produced oil from the battery was transported south in a pipeline owned by Shell Pipeline (currently known as Equilon Pipeline). The pipeline is decommissioned and terminates at the former battery location.

2.0 2002 GROUNDWATER MONITORING ACTIVITIES

Per NMOCD requirements, there are sixteen groundwater monitoring wells in the Westgate Subdivision that are being monitored quarterly for BTEX using USEPA Method 8260-B and annually for PAHs using USEPA Method 8270-C. Three of the sixteen wells have measurable free product hydrocarbons detected in them. These monitor wells are GMW-1, GMW-3B, and GMW-5. GMW-9 was detected with a sheen. Since large scale remediation activities were scheduled to start at the end of the first quarter of 2002 it was approved by the NMOCD to remove the Tasker monitor wells (TMW) from the gauging and sampling rotation as each well was plugged and abandoned due to the remediation activities. Therefore, during the course of the year some wells would be gauged or sampled while others were not. Eventually all Tasker wells would be plugged and abandoned since they had laboratory non-detection of hydrocarbons for over eight (8) consecutive quarters.

2.1 LNAPL THICKNESS AND GROUNDWATER ELEVATIONS

Each quarter the monitor wells were measured from the top of the casing for depth to groundwater, depth to LNAPL, LNAPL thickness, and corrected groundwater elevations prior to sampling (Tables 1, 2, 3, 4). Four wells were found to have measurable free product hydrocarbons for the first two quarters. They are GMW-1, GMW-3B, GMW-5, and GMW-9 (Tables 1, 2, 3, 4). In the second and third quarter only GMW-1, GMW-3B, and GMW-5 had measurable free product hydrocarbons. GMW-9 did not measure hydrocarbons so it was sampled in quarters three and four to check for hydrocarbons since no free product had been detected.

Groundwater gradient and elevations for the first quarter are depicted in Figure Q1, for the second quarter in Figure Q4, for the third quarter in Figure Q7, and for the fourth quarter in Figure Q10. LNAPL thicknesses for the first quarter are depicted in Figure Q2, for the second quarter in Figure Q5, for the third quarter in Figure Q8, and for the fourth quarter in Figure Q11.

**Table 1. 1st Quarter 2002 LNAPL and Groundwater Elevation
Westgate Subdivision - Hobbs, NM**

MONITORING WELL	TOP OF CASING	DATE	DEPTH TO GROUNDWATER	DEPTH TO LNAPL	LNAPL THICKNESS	CORRECTED GROUNDWATER
GMW-1	3647.84	3/18/2002	70.54	70.50	0.03	3577.33
GMW-2	3648.51	3/18/2002	70.38	ND	0.00	3578.13
GMW-3B	3648.26	3/18/2002	70.52	70.50	0.01	3577.75
GMW-4	3647.79	3/18/2002	69.95	ND	0.00	3577.84
GMW-5	3648.41	3/18/2002	71.50	71.40	0.07	3576.98
GMW-6	3648.22	3/18/2002	70.94	ND	0.00	3577.28
GMW-7	3644.98	3/18/2002	68.46	ND	0.00	3576.52
GMW-8	3645.66	3/18/2002	69.06	ND	0.00	3576.60
GMW-9	3646.27	3/18/2002	69.15	ND	Sheen	3577.12
GMW-10	3645.65	3/18/2002	67.28	ND	0.00	3578.37
GMW-11	3644.07	3/18/2002	66.60	ND	0.00	3577.47
TMW-1	3646.18	3/18/2002	69.98	ND	0.00	3576.20
TMW-2	3643.94	3/18/2002	68.02	ND	0.00	3575.92
TMW-3	3643.5	3/18/2002	67.62	ND	0.00	3575.88
TMW-4	3643.69	3/18/2002	68.50	ND	0.00	3575.19
TMW-5	3643.35	3/18/2002	68.37	ND	0.00	3574.98

**Table 2. 2nd Quarter 2002 LNAPL and Groundwater Elevation
Westgate Subdivision - Hobbs, NM**

MONITORING WELL	TOP OF CASING	DATE	DEPTH TO GROUNDWATER	DEPTH TO LNAPL	LNAPL THICKNESS	CORRECTED GROUNDWATER
GMW-1	3647.84	6/20/2002	70.88	70.85	0.02	3576.98
GMW-2	3648.51	6/20/2002	70.70	ND	0.00	3577.81
GMW-3B	3648.26	6/20/2002	71.87	71.85	0.01	3576.40
GMW-4	3647.79	6/20/2002	70.30	ND	0.00	3577.49
GMW-5	3648.41	6/20/2002	71.80	71.71	0.07	3576.68
GMW-6	3648.22	6/20/2002	70.98	ND	0.00	3577.24
GMW-7	3644.98	6/20/2002	68.75	ND	0.00	3576.23
GMW-8	3645.66	6/20/2002	69.40	ND	0.00	3576.26
GMW-9	3646.27	6/20/2002	69.44	ND	0.00	3576.83
GMW-10	3645.65	6/20/2002	67.57	ND	0.00	3578.08
GMW-11	3644.07	6/20/2002	66.76	ND	0.00	3577.31
TMW-1	3646.18	6/20/2002	70.25	ND	0.00	3575.93
TMW-2	3643.94	6/20/2002	68.35	ND	0.00	3575.59
TMW-3	3643.5	6/20/2002	--	--	--	--
TMW-4	3643.69	6/20/2002	--	--	--	--
TMW-5	3643.35	6/20/2002	68.60	ND	0.00	3574.75

**Table 3. 3rd Quarter 2002 LNAPL and Groundwater Elevation
Westgate Subdivision - Hobbs, NM**

MONITORING WELL	TOP OF CASING	DATE	DEPTH TO GROUNDWATER	DEPTH TO LNAPL	LNAPL THICKNESS	CORRECTED GROUNDWATER
GMW-1	3647.84	9/27/2002	--	--	--	--
GMW-2	3648.51	9/27/2002	71.14	ND	0.00	3577.37
GMW-3B	3648.26	9/27/2002	--	--	--	--
GMW-4	3647.79	9/27/2002	--	--	--	--
GMW-5	3648.41	9/27/2002	--	--	--	--
GMW-6	3648.22	9/27/2002	--	--	--	--
GMW-7	3644.98	9/27/2002	69.13	ND	0.00	3575.85
GMW-8	3645.66	9/27/2002	--	--	--	--
GMW-9	3646.27	9/27/2002	69.91	ND	0.00	3576.36
GMW-10	3645.65	9/27/2002	67.98	ND	0.00	3577.67
GMW-11	3644.07	9/27/2002	--	--	--	--

**Table 4. 4th Quarter 2002 LNAPL and Groundwater Elevation
Westgate Subdivision - Hobbs, NM**

MONITORING WELL	TOP OF CASING	DATE	DEPTH TO GROUNDWATER	DEPTH TO LNAPL	LNAPL THICKNESS	CORRECTED GROUNDWATER
GMW-1	3647.84	12/9/2002	71.57	71.51	0.04	3576.31
GMW-2	3648.51	12/9/2002	71.43	ND	0.00	3577.08
GMW-3B	3648.26	12/9/2002	71.52	71.50	0.01	3576.75
GMW-4	3647.79	12/9/2002	--	--	--	--
GMW-5	3648.41	12/9/2002	72.55	72.39	0.12	3575.98
GMW-6	3648.22	12/9/2002	--	--	--	--
GMW-7	3644.98	12/9/2002	69.42	ND	0.00	3575.56
GMW-8	3645.66	12/9/2002	--	--	--	--
GMW-9	3646.27	12/9/2002	70.18	ND	0.00	3576.09
GMW-10	3645.65	12/9/2002	68.30	ND	0.00	3577.35
GMW-11	3644.07	12/9/2002	--	--	--	--

2.2 FREE PRODUCT RECOVERY

Down hole passive absorbing skimmers were installed in monitor wells GMW-1, GMW-3B, GMW-5, and GMW-9. Free product was removed periodically from each monitor well (Table 5). All recovered fluids were transported to the Sundance Services NMOCD approved disposal facility near Eunice, NM for recycling and disposal.

Table 5. 2002 Quarterly Product Recovery Volumes

Date	Location			
	GMW-1	GMW-3B	GMW-5	GMW-9
	Product Recovery (quarts)	Product Recovery (quarts)	Product Recovery (quarts)	Product Recovery (quarts)
First Quarter				
1/4/02	0.00	0.00	0.00	0.00
1/8/02	0.00	0.00	0.00	0.00
1/11/02	0.00	0.00	0.00	0.75
1/15/02	0.00	0.00	0.00	0.00
1/18/02	0.00	0.00	0.00	0.00
1/22/02	0.00	0.00	0.00	0.00
1/25/02	0.00	0.00	0.00	0.00
1/29/02	0.00	0.00	0.00	0.75
1/31/02	0.00	0.00	0.00	0.00
2/1/02	0.00	0.00	1.50	0.00
2/5/02	0.00	0.00	1.50	0.00
2/7/02	0.00	0.00	3.00	0.00
2/12/02	0.00	0.00	3.00	0.00
2/15/02	0.00	0.00	1.50	0.00
2/19/02	some product	0.00	0.00	0.75
2/22/02	0.00	0.00	0.00	0.00
2/26/02	0.00	0.00	0.00	0.00
3/5/02	0.00	0.00	3.00	0.00
3/8/02	some product	some product	0.75	0.00
3/12/02	0.00	0.00	0.00	0.00
3/15/02	0.00	0.00	0.00	0.00
3/18/02	Quarterly Sampling			
3/22/02	0.00	0.00	0.00	0.00
3/25/02	0.00	0.00	0.00	0.75
3/28/02	0.00	0.00	0.00	0.00
First Quarter Total	0.00	0.00	14.25	3.00
Year-to Date Totals	0.00	0.00	14.25	3.00

Second Quarter				
4/1/02	0.75	Tip of soak-ease	1.50	0.00
4/4/02	0.00	0.00	0.00	0.00
4/16/02	0.00	0.75	0.75	0.00
4/19/02	0.00	0.00	0.00	0.00
4/25/02	0.00	0.00	0.00	0.00
4/30/02	0.00	0.00	0.00	0.00
5/1/02	0.00	0.00	0.00	0.00
5/7/02	0.00	0.00	0.00	0.00
5/10/02	Tip of soak-ease	0.00	0.75	0.00
5/14/02	0.00	0.00	0.00	0.00
5/16/02	0.00	0.00	0.00	0.00
5/21/02	0.25	0.25	0.75	0.00
5/24/02	Tip of soak-ease	0.00	0.50	0.00
5/28/02	0.00	0.00	0.00	0.00
6/4/02	Tip of soak-ease	0.00	0.75	0.00
6/7/02	0.00	0.00	0.50	0.00
6/11/02	0.00	0.00	0.00	0.00
6/13/02	0.00	0.00	0.00	0.00
6/20/02	Quarterly Sampling			
6/24/02	0.00	0.00	0.00	0.00
Second Quarter Total	1.00	1.00	5.50	0.00
Year-to Date Totals	1.00	1.00	19.75	3.00
Third Quarter				
7/5/02	0.00	0.00	0.25	0.00
7/9/02	0.25	0.00	0.75	0.00
7/16/02	0.00	0.00	0.00	0.00
7/29/02	0.00	0.00	0.00	0.00
7/31/02	0.00	0.00	0.00	0.00
8/15/02	0.00	0.00	0.00	0.00
8/20/02	0.00	0.00	0.00	0.00
8/23/02	0.00	0.00	0.00	0.00
8/26/02	0.00	0.00	0.00	0.00
8/30/02	0.00	0.00	0.00	0.00
9/3/02	0.00	0.00	0.00	0.00
9/6/02	0.00	0.00	0.00	0.00
9/16/02	0.00	0.00	0.00	0.00
9/19/02	0.00	0.00	0.00	0.00
9/24/02	0.00	0.00	0.00	0.00
9/26/02	0.00	0.00	0.00	0.00
9/27/02	Quarterly Sampling			

9/30/02	0.00	0.00	0.00	0.00
Third Quarter Total	0.25	0.00	1.00	0.00
Year-to Date Totals	1.25	1.00	20.75	3.00
Fourth Quarter				
10/2/02				
10/8/02	0.25	0.00	0.75	0.00
10/11/02	0.00	0.00	0.50	0.00
10/16/02	0.00	0.00	0.00	0.00
10/18/02	0.00	0.00	0.00	0.00
10/21/02	0.00	0.00	0.00	0.00
10/28/02	0.00	0.00	0.00	0.00
10/31/02	0.00	0.00	0.00	0.00
11/4/02	0.00	0.00	0.00	0.00
11/6/02	0.00	0.00	0.00	0.00
11/8/02	0.00	0.00	0.00	0.00
11/12/02	Tip of soak-ease	0.25	0.75	0.00
11/18/02	0.00	0.00	0.00	0.00
11/20/02	0.00	0.00	0.00	0.00
11/22/02	0.00	0.00	0.00	0.00
11/27/02	0.00	0.00	0.25	0.00
12/9/02	Quarterly Sampling			
12/13/02	0.00	0.00	0.00	0.00
12/17/02	0.00	0.00	0.00	0.00
Fourth Quarter Totals	0.25	0.25	2.25	0.00
Year-to Date Totals	1.50	1.25	23.00	3.00

2.3 PURGING AND SAMPLING ACTIVITIES

Each quarter the monitor wells that were available during remediation activities or were not plugged and abandoned were measured from the top of the casing for depth to groundwater, depth to LNAPL, LNAPL thickness, and corrected groundwater elevations prior to sampling (Table 1). All purged fluids were drummed, transported, and disposed of at Sundance Services NMOCD approved disposal facility near Eunice, NM for recycling and disposal.

The groundwater samples were sent to Trace Analysis Laboratories in Lubbock, TX to be analyzed for BTEX (USEPA Method 8260-B) and PAHs (USEPA Method 8270-C). The results per quarter per monitor well are summarized in Tables 6, 7, 8, and 9. Laboratory analytical results, QA/QC, and chain-of-custody reports for the groundwater samples collected and analyzed are included in Appendix I through Appendix IV.

Table 6. 1st & 2nd Quarter 2002 Sampling Reports

**Grimes Monitor Wells – Westgate Subdivision
BTEX: S-8260B Method**

GMW-2

Analyte	Matrix	Method Taken	1 st Quarter				2 nd Quarter			
			Order ID Number: A02032104				Order ID Number: A02062505			
			Sample No.	Date Taken	µg/L		Sample No.	Date Taken	µg/L	
					Result	Detection Limit			Result	Detection Limit
Benzene	Water	S-8260B	193399	3/18/02	<1.00	1	199976	6/20/02	<1.00	1
Toluene	Water	S-8260B	193399	3/18/02	<1.00	1	199976	6/20/02	<1.00	1
Ethylbenzene	Water	S-8260B	193399	3/18/02	<1.00	1	199976	6/20/02	<1.00	1
M,p-Xylene	Water	S-8260B	193399	3/18/02	<1.00	1	199976	6/20/02	<1.00	1
o-Xylene	Water	S-8260B	193399	3/18/02	<1.00	1	199976	6/20/02	<1.00	1

GMW-4

Analyte	Matrix	Method Taken	1 st Quarter				2 nd Quarter			
			Order ID Number: A02032104				Order ID Number: A02062505			
			Sample No.	Date Taken	µg/L		Sample No.	Date Taken	µg/L	
					Result	Detection Limit			Result	Detection Limit
Benzene	Water	S-8260B	193400	3/18/02	<1.00	1	199977	6/20/02	<1.00	1
Toluene	Water	S-8260B	193400	3/18/02	<1.00	1	199977	6/20/02	<1.00	1
Ethylbenzene	Water	S-8260B	193400	3/18/02	<1.00	1	199977	6/20/02	<1.00	1
M,p-Xylene	Water	S-8260B	193400	3/18/02	<1.00	1	199977	6/20/02	<1.00	1
o-Xylene	Water	S-8260B	193400	3/18/02	<1.00	1	199977	6/20/02	<1.00	1

GMW-6

Analyte	Matrix	Method Taken	1 st Quarter				2 nd Quarter			
			Order ID Number: A02032104				Order ID Number: A02062505			
			Sample No.	Date Taken	µg/L		Sample No.	Date Taken	µg/L	
					Result	Detection Limit			Result	Detection Limit
Benzene	Water	S-8260B	193401	3/18/02	<1.00	1	199983	6/20/02	<1.00	1
Toluene	Water	S-8260B	193401	3/18/02	<1.00	1	199983	6/20/02	<1.00	1
Ethylbenzene	Water	S-8260B	193401	3/18/02	<1.00	1	199983	6/20/02	<1.00	1
M,p-Xylene	Water	S-8260B	193401	3/18/02	<1.00	1	199983	6/20/02	<1.00	1
o-Xylene	Water	S-8260B	193401	3/18/02	<1.00	1	199983	6/20/02	<1.00	1

GMW-7

Analyte	Matrix	Method Taken	1 st Quarter				2 nd Quarter			
			Order ID Number: A02032104				Order ID Number: A02062505			
			Sample No.	Date Taken	µg/L		Sample No.	Date Taken	µg/L	
					Result	Detection Limit			Result	Detection Limit
Benzene	Water	S-8260B	193402	3/18/02	<1.00	1	199975	6/20/02	<1.00	1
Toluene	Water	S-8260B	193402	3/18/02	<1.00	1	199975	6/20/02	<1.00	1
Ethylbenzene	Water	S-8260B	193402	3/18/02	<1.00	1	199975	6/20/02	<1.00	1
M,p-Xylene	Water	S-8260B	193402	3/18/02	<1.00	1	199975	6/20/02	<1.00	1
o-Xylene	Water	S-8260B	193402	3/18/02	<1.00	1	199975	6/20/02	<1.00	1

GMW-8

Analyte	Matrix	Method Taken	1 st Quarter				2 nd Quarter			
			Order ID Number: A02032104				Order ID Number: A02062505			
			Sample No.	Date Taken	µg/L		Sample No.	Date Taken	µg/L	
					Result	Detection Limit			Result	Detection Limit
Benzene	Water	S-8260B	193398	3/18/02	<1.00	1	199974	6/20/02	<1.00	1
Toluene	Water	S-8260B	193398	3/18/02	<1.00	1	199974	6/20/02	<1.00	1
Ethylbenzene	Water	S-8260B	193398	3/18/02	<1.00	1	199974	6/20/02	<1.00	1
M,p-Xylene	Water	S-8260B	193398	3/18/02	<1.00	1	199974	6/20/02	<1.00	1
o-Xylene	Water	S-8260B	193398	3/18/02	<1.00	1	199974	6/20/02	<1.00	1

GMW-10

Analyte	Matrix	Method Taken	1 st Quarter				2 nd Quarter			
			Order ID Number: A02032104				Order ID Number: A02062505			
			Sample No.	Date Taken	µg/L		Sample No.	Date Taken	µg/L	
					Result	Detection Limit			Result	Detection Limit
Benzene	Water	S-8260B	193403	3/18/02	<1.00	1	199982	6/20/02	<1.00	1
Toluene	Water	S-8260B	193403	3/18/02	<1.00	1	199982	6/20/02	<1.00	1
Ethylbenzene	Water	S-8260B	193403	3/18/02	<1.00	1	199982	6/20/02	<1.00	1
M,p-Xylene	Water	S-8260B	193403	3/18/02	<1.00	1	199982	6/20/02	<1.00	1
o-Xylene	Water	S-8260B	193403	3/18/02	<1.00	1	199982	6/20/02	<1.00	1

GMW-11

Analyte	Matrix	Method Taken	1 st Quarter				2 nd Quarter			
			Order ID Number: A02032104				Order ID Number: A02062505			
			Sample No.	Date Taken	µg/L		Sample No.	Date Taken	µg/L	
					Result	Detection Limit			Result	Detection Limit
Benzene	Water	S-8260B	193406	3/18/02	<1.00	1	199981	6/20/02	<1.00	1
Toluene	Water	S-8260B	193406	3/18/02	<1.00	1	199981	6/20/02	<1.00	1
Ethylbenzene	Water	S-8260B	193406	3/18/02	<1.00	1	199981	6/20/02	<1.00	1
M,p-Xylene	Water	S-8260B	193406	3/18/02	<1.00	1	199981	6/20/02	<1.00	1
o-Xylene	Water	S-8260B	193406	3/18/02	<1.00	1	199981	6/20/02	<1.00	1

Table 7. 1st & 2nd Quarter 2002 Sampling Reports

**Tasker Monitor Wells - Westgate Subdivision
BTEX: S-8260B Method**

TMW-1

Analyte	Matrix	Method Taken	1 st Quarter				2 nd Quarter			
			Order ID Number: A02032104				Order ID Number: A02062505			
			Sample No.	Date Taken	µg/L		Sample No.	Date Taken	µg/L	
					Result	Detection Limit			Result	Detection Limit
Benzene	Water	S-8260B	193404	3/18/02	<1.00	1	199978	6/20/02	<1.00	1
Toluene	Water	S-8260B	193404	3/18/02	<1.00	1	199978	6/20/02	<1.00	1
Ethylbenzene	Water	S-8260B	193404	3/18/02	<1.00	1	199978	6/20/02	<1.00	1
M,p-Xylene	Water	S-8260B	193404	3/18/02	<1.00	1	199978	6/20/02	<1.00	1
o-Xylene	Water	S-8260B	193404	3/18/02	<1.00	1	199978	6/20/02	<1.00	1

TMW-2

Analyte	Matrix	Method Taken	1 st Quarter				2 nd Quarter			
			Order ID Number: A02032104				Order ID Number: A02062505			
			Sample No.	Date Taken	µg/L		Sample No.	Date Taken	µg/L	
					Result	Detection Limit			Result	Detection Limit
Benzene	Water	S-8260B	193396	3/18/02	<1.00	1	199979	6/20/02	<1.00	1
Toluene	Water	S-8260B	193396	3/18/02	<1.00	1	199979	6/20/02	<1.00	1
Ethylbenzene	Water	S-8260B	193396	3/18/02	<1.00	1	199979	6/20/02	<1.00	1
M,p-Xylene	Water	S-8260B	193396	3/18/02	<1.00	1	199979	6/20/02	<1.00	1
o-Xylene	Water	S-8260B	193396	3/18/02	<1.00	1	199979	6/20/02	<1.00	1

TMW-3

Analyte	Matrix	Method Taken	1 st Quarter				2 nd Quarter			
			Order ID Number: A02032104				Order ID Number: A02062505			
			Sample No.	Date Taken	µg/L		Sample No.	Date Taken	µg/L	
					Result	Detection Limit			Result	Detection Limit
Benzene	Water	S-8260B	193397	3/18/02	<1.00	1				
Toluene	Water	S-8260B	193397	3/18/02	<1.00	1				
Ethylbenzene	Water	S-8260B	193397	3/18/02	<1.00	1				
M,p-Xylene	Water	S-8260B	193397	3/18/02	<1.00	1				
o-Xylene	Water	S-8260B	193397	3/18/02	<1.00	1				

TMW-4

Analyte	Matrix	Method Taken	1 st Quarter				2 nd Quarter			
			Order ID Number: A02032104				Order ID Number: A02062505			
			Sample No.	Date Taken	µg/L		Sample No.	Date Taken	µg/L	
					Result	Detection Limit			Result	Detection Limit
Benzene	Water	S-8260B	193395	3/18/02	<1.00	1				
Toluene	Water	S-8260B	193395	3/18/02	<1.00	1				
Ethylbenzene	Water	S-8260B	193395	3/18/02	<1.00	1				
M,p-Xylene	Water	S-8260B	193395	3/18/02	<1.00	1				
o-Xylene	Water	S-8260B	193395	3/18/02	<1.00	1				

TMW-5

Analyte	Matrix	Method Taken	1 st Quarter				2 nd Quarter			
			Order ID Number: A02032104				Order ID Number: A02062505			
			Sample No.	Date Taken	µg/L		Sample No.	Date Taken	µg/L	
					Result	Detection Limit			Result	Detection Limit
Benzene	Water	S-8260B	193405	3/18/02	1.13	1	199980	6/20/02	<1.00	1
Toluene	Water	S-8260B	193405	3/18/02	<1.00	1	199980	6/20/02	<1.00	1
Ethylbenzene	Water	S-8260B	193405	3/18/02	70.7	1	199980	6/20/02	44.9	1
M,p-Xylene	Water	S-8260B	193405	3/18/02	<1.00	1	199980	6/20/02	<1.00	1
o-Xylene	Water	S-8260B	193405	3/18/02	<1.00	1	199980	6/20/02	<1.00	1

Table 8. 3rd & 4th Quarter 2002 Sampling Reports

**Grimes Monitor Wells - Westgate Subdivision
BTEX: S-8260B Method and PAH: S-8270C**

GMW-2

Analyte	Matrix	Method Taken	3 rd Quarter				4 th Quarter			
			Order ID Number: A02093018				Order ID Number: A02121017			
			Sample No.	Date Taken	µg/L		Sample No.	Date Taken	µg/L	
					Result	Detection Limit			Result	Detection Limit
Benzene	Water	S-8260B	209276	9/27/02	<1.00	1	215483	12/9/02	<1.00	1
Toluene	Water	S-8260B	209276	9/27/02	<1.00	1	215483	12/9/02	<1.00	1
Ethylbenzene	Water	S-8260B	209276	9/27/02	<1.00	1	215483	12/9/02	<1.00	1
M,p-Xylene	Water	S-8260B	209276	9/27/02	<1.00	1	215483	12/9/02	<1.00	1
o-Xylene	Water	S-8260B	209276	9/27/02	<1.00	1	215483	12/9/02	<1.00	1
Analyte	Matrix	Method Taken	Sample No.	Date Taken	mg/L		Sample No.	Date Taken	mg/L	
					Result	Detection Limit			Result	Detection Limit
Naphthalene	Water	S-8270C					215483	12/9/02	<0.0002	0.0002
Acenaphthylene	Water	S-8270C					215483	12/9/02	<0.0002	0.0002
Acenaphthene	Water	S-8270C					215483	12/9/02	<0.0002	0.0002
Fluorene	Water	S-8270C					215483	12/9/02	<0.0002	0.0002
Phenanthrene	Water	S-8270C					215483	12/9/02	<0.0002	0.0002
Anthracene	Water	S-8270C					215483	12/9/02	<0.0002	0.0002
Fluoranthene	Water	S-8270C					215483	12/9/02	<0.0002	0.0002
Pyrene	Water	S-8270C					215483	12/9/02	<0.0002	0.0002
Benzo[a]anthracene	Water	S-8270C					215483	12/9/02	<0.0002	0.0002
Chrysene	Water	S-8270C					215483	12/9/02	<0.0002	0.0002
Benzo[b]fluoranthene	Water	S-8270C					215483	12/9/02	<0.0002	0.0002
Benzo[k]fluoranthene	Water	S-8270C					215483	12/9/02	<0.0002	0.0002
Benzo[a]pyrene	Water	S-8270C					215483	12/9/02	<0.0002	0.0002
Indeno[1,2,3-cd]pyrene	Water	S-8270C					215483	12/9/02	<0.0002	0.0002
Dibenzo[a,h]anthracene	Water	S-8270C					215483	12/9/02	<0.0002	0.0002
Benzo[g,h,i]perylene	Water	S-8270C					215483	12/9/02	<0.0002	0.0002

GMW-7

Analyte	Matrix	Method Taken	3 rd Quarter				4 th Quarter			
			Order ID Number: A02093018				Order ID Number: A02121017			
			Sample No.	Date Taken	µg/L		Sample No.	Date Taken	µg/L	
					Result	Detection Limit			Result	Detection Limit
Benzene	Water	S-8260B	209279	9/27/02	<1.00	1	215482	12/9/02	<1.00	1
Toluene	Water	S-8260B	209279	9/27/02	<1.00	1	215482	12/9/02	<1.00	1
Ethylbenzene	Water	S-8260B	209279	9/27/02	<1.00	1	215482	12/9/02	<1.00	1
M,p-Xylene	Water	S-8260B	209279	9/27/02	<1.00	1	215482	12/9/02	1.83	1
o-Xylene	Water	S-8260B	209279	9/27/02	<1.00	1	215482	12/9/02	<1.00	1
Analyte	Matrix	Method Taken	Sample No.	Date Taken	mg/L		Sample No.	Date Taken	mg/L	
					Result	Detection Limit			Result	Detection Limit
Naphthalene	Water	S-8270C					215482	12/9/02	<0.0002	0.0002
Acenaphthylene	Water	S-8270C					215482	12/9/02	<0.0002	0.0002
Acenaphthene	Water	S-8270C					215482	12/9/02	<0.0002	0.0002
Fluorene	Water	S-8270C					215482	12/9/02	<0.0002	0.0002
Phenanthrene	Water	S-8270C					215482	12/9/02	<0.0002	0.0002
Anthracene	Water	S-8270C					215482	12/9/02	<0.0002	0.0002
Fluoranthene	Water	S-8270C					215482	12/9/02	<0.0002	0.0002
Pyrene	Water	S-8270C					215482	12/9/02	<0.0002	0.0002
Benzo[a]anthracene	Water	S-8270C					215482	12/9/02	<0.0002	0.0002
Chrysene	Water	S-8270C					215482	12/9/02	<0.0002	0.0002
Benzo[b]fluoranthene	Water	S-8270C					215482	12/9/02	<0.0002	0.0002
Benzo[k]fluoranthene	Water	S-8270C					215482	12/9/02	<0.0002	0.0002
Benzo[a]pyrene	Water	S-8270C					215482	12/9/02	<0.0002	0.0002
Indeno[1,2,3-cd]pyrene	Water	S-8270C					215482	12/9/02	<0.0002	0.0002
Dibenz[a,h]anthracene	Water	S-8270C					215482	12/9/02	<0.0002	0.0002
Benzo[g,h,i]perylene	Water	S-8270C					215482	12/9/02	<0.0002	0.0002

GMW-9

Analyte	Matrix	Method Taken	3 rd Quarter				4 th Quarter			
			Order ID Number: A02093018				Order ID Number: A02121017			
			Sample No.	Date Taken	µg/L		Sample No.	Date Taken	µg/L	
					Result	Detection Limit			Result	Detection Limit
Benzene	Water	S-8260B	209278	9/27/02	<5.00	1	215485	12/9/02	<1.00	1
Toluene	Water	S-8260B	209278	9/27/02	<5.00	1	215485	12/9/02	<1.00	1
Ethylbenzene	Water	S-8260B	209278	9/27/02	6.74	1	215485	12/9/02	8.83	1
M,p-Xylene	Water	S-8260B	209278	9/27/02	<5.00	1	215485	12/9/02	4.79	1
o-Xylene	Water	S-8260B	209278	9/27/02	<5.00	1	215485	12/9/02	1.32	1
Analyte	Matrix	Method Taken	Sample No.	Date Taken	mg/L		Sample No.	Date Taken	mg/L	
					Result	Detection Limit			Result	Detection Limit
Naphthalene	Water	S-8270C					215485	12/9/02	<0.0002	0.0002
Acenaphthylene	Water	S-8270C					215485	12/9/02	<0.0002	0.0002
Acenaphthene	Water	S-8270C					215485	12/9/02	<0.0002	0.0002
Fluorene	Water	S-8270C					215485	12/9/02	<0.0002	0.0002
Phenanthrene	Water	S-8270C					215485	12/9/02	<0.0002	0.0002
Anthracene	Water	S-8270C					215485	12/9/02	<0.0002	0.0002
Fluoranthene	Water	S-8270C					215485	12/9/02	<0.0002	0.0002
Pyrene	Water	S-8270C					215485	12/9/02	<0.0002	0.0002
Benzo[a]anthracene	Water	S-8270C					215485	12/9/02	<0.0002	0.0002
Chrysene	Water	S-8270C					215485	12/9/02	<0.0002	0.0002
Benzo[b]fluoranthene	Water	S-8270C					215485	12/9/02	<0.0002	0.0002
Benzo[k]fluoranthene	Water	S-8270C					215485	12/9/02	<0.0002	0.0002
Benzo[a]pyrene	Water	S-8270C					215485	12/9/02	<0.0002	0.0002
Indeno[1,2,3-cd]pyrene	Water	S-8270C					215485	12/9/02	<0.0002	0.0002
Dibenz[a,h]anthracene	Water	S-8270C					215485	12/9/02	<0.0002	0.0002
Benzo[g,h,i]perylene	Water	S-8270C					215485	12/9/02	<0.0002	0.0002

GMW-10

Analyte	Matrix	Method Taken	3 rd Quarter				4 th Quarter			
			Order ID Number: A02093018				Order ID Number: A02121017			
			Sample No.	Date Taken	µg/L		Sample No.	Date Taken	µg/L	
					Result	Detection Limit			Result	Detection Limit
Benzene	Water	S-8260B	209277	9/27/02	<1.00	1	215484	12/9/02	<1.00	1
Toluene	Water	S-8260B	209277	9/27/02	<1.00	1	215484	12/9/02	<1.00	1
Ethylbenzene	Water	S-8260B	209277	9/27/02	<1.00	1	215484	12/9/02	<1.00	1
m,p-Xylene	Water	S-8260B	209277	9/27/02	<1.00	1	215484	12/9/02	<1.00	1
o-Xylene	Water	S-8260B	209277	9/27/02	<1.00	1	215484	12/9/02	<1.00	1
Analyte	Matrix	Method Taken	Sample No.	Date Taken	mg/L		Sample No.	Date Taken	mg/L	
					Result	Detection Limit			Result	Detection Limit
Naphthalene	Water	S-8270C					215484	12/9/02	<0.0002	0.0002
Acenaphthylene	Water	S-8270C					215484	12/9/02	<0.0002	0.0002
Acenaphthene	Water	S-8270C					215484	12/9/02	<0.0002	0.0002
Fluorene	Water	S-8270C					215484	12/9/02	<0.0002	0.0002
Phenanthrene	Water	S-8270C					215484	12/9/02	<0.0002	0.0002
Anthracene	Water	S-8270C					215484	12/9/02	<0.0002	0.0002
Fluoranthene	Water	S-8270C					215484	12/9/02	<0.0002	0.0002
Pyrene	Water	S-8270C					215484	12/9/02	<0.0002	0.0002
Benzo[a]anthracene	Water	S-8270C					215484	12/9/02	<0.0002	0.0002
Chrysene	Water	S-8270C					215484	12/9/02	<0.0002	0.0002
Benzo[b]fluoranthene	Water	S-8270C					215484	12/9/02	<0.0002	0.0002
Benzo[k]fluoranthene	Water	S-8270C					215484	12/9/02	<0.0002	0.0002
Benzo[a]pyrene	Water	S-8270C					215484	12/9/02	<0.0002	0.0002
Indeno[1,2,3-cd]pyrene	Water	S-8270C					215484	12/9/02	<0.0002	0.0002
Dibenz[a,h]anthracene	Water	S-8270C					215484	12/9/02	<0.0002	0.0002
Benzo[g,h,i]perylene	Water	S-8270C					215484	12/9/02	<0.0002	0.0002

In the first quarter of 2002, benzene and ethylbenzene was detected in TMW #5, at concentrations of 1.13 and 70.7 parts per billion (ppb), respectively. All other analytes tested non-detect in all of the wells. Figure Q3 is an isopleth map of total BTEX concentration detected in the groundwater samples.

The second quarter results detected ethylbenzene in TMW #5 at a concentration of 44.9 parts per billion (ppb). All other analytes tested non-detect in all of the wells. Figure Q6 is an isopleth map of total BTEX concentrations detected in the groundwater samples.

In the third quarter ethylbenzene was detected in GMW #9, at a concentration of 6.74 parts per billion (ppb). All other analytes tested non-detect in all of the wells. Figure Q9 is an isopleth map of total BTEX concentrations detected in the groundwater samples.

In the fourth quarter, m,p-Xylene was detected in GMW #7 at a concentration of 1.83 parts per billion (ppb). Ethylbenzene, m,p-Xylene, and o-Xylene were detected in GMW #9 at concentration levels of 8.83, 4.79, and 1.32 parts per billion (ppb), respectively. All other analytes tested non-detect in all of the wells. Figure Q12 is an isopleth map of total BTEX concentrations detected in the groundwater samples.

3.0 CONCLUSION

All required monitor wells will be sampled quarterly for four quarters in year 2003. Groundwater samples will be analyzed for BTEX using USEPA Method 8260-B for each of four quarters and PAH's annually using USEPA Method 8270-C. Based on sample results for one year (four quarters), sampling frequency will be reviewed and may be revised.

Sampling will be discontinued when eight quarters of sample results indicate analyte concentrations below New Mexico Water Quality Control Commission, Title 20, Chapter 6, part 2 (20 NMAC 6.2 Standards). If no 20 NMAC 6.2 Standard is available for a detected analyte, USEPA standards will be used. Free product recovery will continue until no free product is recovered for an extended period of time.

Sample results will be submitted to NMOCD annually on or about April 1. All recovered fluids will be recycled and disposed of at an NMOCD approved facility.

Per discussions with the NMOCD in early 2000 it was agreed that Shell would not be required to sample any monitor wells that have free product until such time that free product is no longer detected in the wells. These wells would only be sampled quarterly when no measurable free product exists.

APPENDIX I

TRACE ANALYSIS, INC.

Laboratory Results

1st Quarter 2002

**Westgate Subdivision
Grimes Battery & Tasker Road**

April 2003

**Shell Exploration & Production Company
Houston, Texas**

**Prepared by:
BBC International, Inc.**

Summary Report

Cliff Brunson
BBC International Inc.
P.O. Box 805
Hobbs, NM 88241

Report Date: March 28, 2002

Order ID Number: A02032104

Project Number: Westgate
Project Name: 1331 Tasker
Project Location: Hobbs, NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
193395	T.M.W. #4	Water	3/18/02	11:40	3/20/02
193396	T.M.W. #2	Water	3/18/02	:	3/20/02
193397	T.M.W. #3	Water	3/18/02	:	3/20/02
193398	G.M.W. #8	Water	3/18/02	:	3/20/02
193399	G.M.W. #2	Water	3/18/02	:	3/20/02
193400	G.M.W. #4	Water	3/18/02	:	3/20/02
193401	G.M.W. #6	Water	3/18/02	:	3/20/02
193402	G.M.W. #7	Water	3/18/02	:	3/20/02
193403	G.M.W. #10	Water	3/18/02	:	3/20/02
193404	T.M.W. 1	Water	3/18/02	:	3/20/02
193405	T.M.W. 5	Water	3/18/02	:	3/20/02
193406	G.M.W. #8 (11)?	Water	3/18/02	:	3/20/02

0 This report consists of a total of 3 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample: 193395 - T.M.W. #4

Param	Flag	Result	Units
Benzene		<1.00	µg/L
Toluene		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
o-Xylene		<1.00	µg/L

Sample: 193396 - T.M.W. #2

Param	Flag	Result	Units
Benzene		<1.00	µg/L
Toluene		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
o-Xylene		<1.00	µg/L

Report Date: March 28, 2002 Order Number: A02032104

Page Number: 2 of 3

Westgate

1331 Tasker

Hobbs,NM

Sample: 193397 - T.M.W. #3

Param	Flag	Result	Units
Benzene		<1.00	µg/L
Toluene		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
o-Xylene		<1.00	µg/L

Sample: 193398 - G.M.W. #8

Param	Flag	Result	Units
Benzene		<1.00	µg/L
Toluene		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
o-Xylene		<1.00	µg/L

Sample: 193399 - G.M.W. #2

Param	Flag	Result	Units
Benzene		<1.00	µg/L
Toluene		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
o-Xylene		<1.00	µg/L

Sample: 193400 - G.M.W. #4

Param	Flag	Result	Units
Benzene		<1.00	µg/L
Toluene		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
o-Xylene		<1.00	µg/L

Sample: 193401 - G.M.W. #6

Param	Flag	Result	Units
Benzene		<1.00	µg/L
Toluene		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
o-Xylene		<1.00	µg/L

Continued on next page ...

Report Date: March 28, 2002 Order Number: A02032104

Page Number: 3 of 3

Westgate

1331 Tasker

Hobbs, NM

Sample 193402 continued ...

Param	Flag	Result	Units
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Sample: 193402 - G.M.W. #7

Param	Flag	Result	Units
Benzene		<1.00	µg/L
Toluene		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
o-Xylene		<1.00	µg/L

Sample: 193403 - G.M.W. #10

Param	Flag	Result	Units
Benzene		<1.00	µg/L
Toluene		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
o-Xylene		<1.00	µg/L

Sample: 193404 - T.M.W. 1

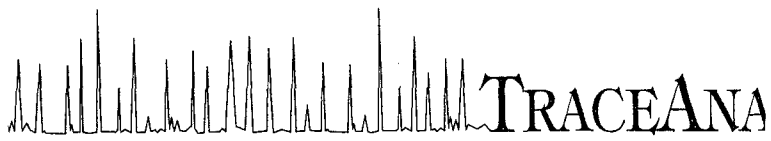
Param	Flag	Result	Units
Benzene		<1.00	µg/L
Toluene		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
o-Xylene		<1.00	µg/L

Sample: 193405 - T.M.W. 5

Param	Flag	Result	Units
Benzene		1.13	µg/L
Toluene		<1.00	µg/L
Ethylbenzene		70.7	µg/L
m,p-Xylene		<1.00	µg/L
o-Xylene		<1.00	µg/L

Sample: 193406 - G.M.W. #8

Param	Flag	Result	Units
Benzene		<1.00	µg/L
Toluene		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
o-Xylene		<1.00	µg/L



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Analytical and Qua

Cliff Brunson
BBC International Inc.
P.O. Box 805
Hobbs, NM 88241

Project Number: Westgate
Project Name: 1331 Tasker
Project Location: Hobbs, NM

Enclosed are the Analytical Results and Quality Control I
Analysis, Inc.

Sample	Description	Matrix
193395	T.M.W. #4	Water
193396	T.M.W. #2	Water
193397	T.M.W. #3	Water
193398	G.M.W. #8	Water
193399	G.M.W. #2	Water
193400	G.M.W. #4	Water
193401	G.M.W. #6	Water
193402	G.M.W. #7	Water
193403	G.M.W. #10	Water
193404	T.M.W. 1	Water
193405	T.M.W. 5	Water
193406	G.M.W. #8 (11)	Water

These results represent only the samples received in the lab
basis. All information contained in this report is for the
Note: the RDL is equal to MQL for all organic analytes inc

This report consists of a total of 9 pages and shall not be req
(COC), without written approval of TraceAnalysis, Inc.

Analytical Report

Sample: 193395 - T.M.W. #4

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC19092 Date Analyzed: 3/26/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB18450 Date Prepared: 3/26/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		49.5	µg/L	1	50	99	85 - 111
Toluene-d8		50.8	µg/L	1	50	102	93 - 107
4-Bromofluorobenzene		47.3	µg/L	1	50	95	86 - 106

Sample: 193396 - T.M.W. #2

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC19092 Date Analyzed: 3/26/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB18450 Date Prepared: 3/26/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		48.6	µg/L	1	50	97	85 - 111
Toluene-d8		50.3	µg/L	1	50	101	93 - 107
4-Bromofluorobenzene		46.9	µg/L	1	50	94	86 - 106

Sample: 193397 - T.M.W. #3

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC19092 Date Analyzed: 3/26/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB18450 Date Prepared: 3/26/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		49.3	µg/L	1	50	99	85 - 111
Toluene-d8		50.9	µg/L	1	50	102	93 - 107
4-Bromofluorobenzene		47.7	µg/L	1	50	95	86 - 106

Sample: 193398 - G.M.W. #8

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC19092 Date Analyzed: 3/26/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB18450 Date Prepared: 3/26/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		49.2	µg/L	1	50	98	85 - 111
Toluene-d8		50.7	µg/L	1	50	101	93 - 107
4-Bromofluorobenzene		47.9	µg/L	1	50	96	86 - 106

Sample: 193399 - G.M.W. #2

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC19092 Date Analyzed: 3/26/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB18450 Date Prepared: 3/26/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.0	µg/L	1	50	100	85 - 111
Toluene-d8		50.5	µg/L	1	50	101	93 - 107
4-Bromofluorobenzene		46.9	µg/L	1	50	94	86 - 106

Sample: 193400 - G.M.W. #4

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC19092 Date Analyzed: 3/26/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB18450 Date Prepared: 3/26/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1

Continued ...

... Continued Sample: 193400 Analysis: 8260

Param	Flag	Result	Units	Dilution	RDL
m,p-Xylene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		49.2	µg/L	1	50	98	85 - 111
Toluene-d8		50.9	µg/L	1	50	102	93 - 107
4-Bromofluorobenzene		47.4	µg/L	1	50	95	86 - 106

Sample: 193401 - G.M.W. #6

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC19092 Date Analyzed: 3/26/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB18450 Date Prepared: 3/26/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		49.9	µg/L	1	50	100	85 - 111
Toluene-d8		51.0	µg/L	1	50	102	93 - 107
4-Bromofluorobenzene		46.3	µg/L	1	50	93	86 - 106

Sample: 193402 - G.M.W. #7

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC19092 Date Analyzed: 3/26/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB18450 Date Prepared: 3/26/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.1	µg/L	1	50	102	85 - 111
Toluene-d8		50.8	µg/L	1	50	102	93 - 107
4-Bromofluorobenzene		46.8	µg/L	1	50	94	86 - 106

Sample: 193403 - G.M.W. #10

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC19092 Date Analyzed: 3/26/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB18450 Date Prepared: 3/26/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.4	µg/L	1	50	101	85 - 111
Toluene-d8		50.8	µg/L	1	50	102	93 - 107
4-Bromofluorobenzene		47.1	µg/L	1	50	94	86 - 106

Sample: 193404 - T.M.W. 1

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC19092 Date Analyzed: 3/26/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB18450 Date Prepared: 3/26/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.5	µg/L	1	50	103	85 - 111
Toluene-d8		51.0	µg/L	1	50	102	93 - 107
4-Bromofluorobenzene		47.5	µg/L	1	50	95	86 - 106

Sample: 193405 - T.M.W. 5

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC19134 Date Analyzed: 3/27/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB18492 Date Prepared: 3/27/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		1.13	µg/L	1	1
Toluene		<1.00	µg/L	1	1
Ethylbenzene		70.7	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		46.4	µg/L	1	50	93	85 - 111
Toluene-d8		49.7	µg/L	1	50	99	93 - 107
4-Bromofluorobenzene		50.0	µg/L	1	50	100	86 - 106

Report Date: March 28, 2002
Westgate

Order Number: A02032104
1331 Tasker

Page Number: 6 of 9
Hobbs,NM

Sample: 193406 - G.M.W. #8

Analysis: 8260 Analytical Method: S 8260B QC Batch: QC19134 Date Analyzed: 3/27/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB18492 Date Prepared: 3/27/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		47.6	µg/L	1	50	95	85 - 111
Toluene-d8		49.8	µg/L	1	50	100	93 - 107
4-Bromofluorobenzene		48.5	µg/L	1	50	97	86 - 106

Quality Control Report Method Blank

Method Blank

QCBatch: QC19092

Param	Flag	Results	Units	Reporting Limit
Benzene		<1.00	µg/L	1
Toluene		<1.00	µg/L	1
Ethylbenzene		<1.00	µg/L	1
m,p-Xylene		<1.00	µg/L	1
o-Xylene		<1.00	µg/L	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		48.5	µg/L	1	50	97	85 - 111
Toluene-d8		50.3	µg/L	1	50	101	93 - 107
4-Bromofluorobenzene		47.4	µg/L	1	50	95	86 - 106

Method Blank

QCBatch: QC19134

Param	Flag	Results	Units	Reporting Limit
Benzene		<1.00	µg/L	1
Toluene		<1.00	µg/L	1
Ethylbenzene		<1.00	µg/L	1
m,p-Xylene		<1.00	µg/L	1
o-Xylene		<1.00	µg/L	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		49.3	µg/L	1	50	99	85 - 111
Toluene-d8		49.9	µg/L	1	50	100	93 - 107
4-Bromofluorobenzene		48.2	µg/L	1	50	96	86 - 106

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes

QCBatch: QC19092

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	93.1	93.8	µg/L	1	100	<1.00	93	1	85 - 122	20
Benzene	96.6	97.8	µg/L	1	100	<1.00	97	1	95 - 108	20
Trichloroethene (TCE)	94.0	94.0	µg/L	1	100	<1.00	94	0	81 - 116	20
Toluene	98.9	99.5	µg/L	1	100	<1.00	99	1	87 - 110	20
Chlorobenzene	101	103	µg/L	1	100	<1.00	101	2	86 - 117	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	49.4	49.9	µg/L	1	50	99	100	85 - 111
Toluene-d8	49.8	49.8	µg/L	1	50	100	100	93 - 107
4-Bromofluorobenzene	47.8	48.1	µg/L	1	50	96	96	86 - 106

Laboratory Control Spikes

QCBatch: QC19134

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	97.1	101	µg/L	1	100	<1.00	97	4	85 - 122	20
Benzene	100	104	µg/L	1	100	<1.00	100	4	95 - 108	20
Trichloroethene (TCE)	93.2	95.7	µg/L	1	100	<1.00	93	3	81 - 116	20
Toluene	97.4	102	µg/L	1	100	<1.00	97	5	87 - 110	20
Chlorobenzene	100	103	µg/L	1	100	<1.00	100	3	86 - 117	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	48.8	49.5	µg/L	1	50	98	99	85 - 111
Toluene-d8	49.3	49.7	µg/L	1	50	99	99	93 - 107
4-Bromofluorobenzene	49.1	49.0	µg/L	1	50	98	98	86 - 106

Quality Control Report Continuing Calibration Verification Standards

CCV (1)

QCBatch: QC19092

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/L	100	90.0	90	80 - 120	3/26/02
1,1-Dichloroethene		µg/L	100	95.0	95	80 - 120	3/26/02
Chloroform		µg/L	100	101	101	80 - 120	3/26/02
1,2-Dichloropropane		µg/L	100	104	104	80 - 120	3/26/02
Toluene		µg/L	100	98.0	98	80 - 120	3/26/02
Chlorobenzene		µg/L	100	99.0	99	80 - 120	3/26/02
Ethylbenzene		µg/L	100	100	100	80 - 120	3/26/02
Dibromofluoromethane		µg/L	50	48.3	97	80 - 120	3/26/02
Toluene-d8		µg/L	50	49.6	99	80 - 120	3/26/02
4-Bromofluorobenzene		µg/L	50	49.8	100	80 - 120	3/26/02

CCV (1)

QCBatch: QC19134

Continued ...

... Continued

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/L	100	99.0	99	80 - 120	3/27/02
1,1-Dichloroethene		µg/L	100	104	104	80 - 120	3/27/02
Chloroform		µg/L	100	103	103	80 - 120	3/27/02
1,2-Dichloropropane		µg/L	100	103	103	80 - 120	3/27/02
Toluene		µg/L	100	100	100	80 - 120	3/27/02
Chlorobenzene		µg/L	100	101	101	80 - 120	3/27/02
Ethylbenzene		µg/L	100	103	103	80 - 120	3/27/02
Dibromofluoromethane		µg/L	50	48.3	97	80 - 120	3/27/02
Toluene-d8		µg/L	50	49.5	99	80 - 120	3/27/02
4-Bromofluorobenzene		µg/L	50	51.0	102	80 - 120	3/27/02

El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID #

Phone #: 813-233-1100

Address: _____ (Street, City, Zip)

Fax #: 1-800-333-3333

Contact Person: ^ ^ ^

Invoice to: 21110

Project Name:

Project Name: Project Phoenix

Sampler Signature: _____

Sampler Signature: _____

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX			PRESERVATIVE METHOD						SAMPLING		
				WATER	SOIL	AIR	SLUDGE	HCl	HNO ₃	H ₂ SO ₄	NaOH	ICE	NONE	DATE	TIME
39395	T.M.W.#4	2	Vol A	✓				✓						3 APR 11:40	
96	T.M.W.#2	2	~~~~~					✓							
97	T.M.W.#3	2	~~~~~					✓							
98	G.M.W.#8	2	~~~~~					✓							
99	G.M.W.#2	2	~~~~~					✓							
400	G.M.W.#4	2	~~~~~					✓							
401	G.M.W.#6	2	~~~~~					✓							
402	G.M.W.#7	2	~~~~~					✓							
403	G.M.W.#10	2	~~~~~					✓							
404	T.M.W.#1	2	~~~~~					✓							
405	T.M.W.#5	2	~~~~~					✓							

Belinquished by: Date: Time:

Date: _____ Time: _____

Time:

Relinquished by: _____ Date: _____ Time: _____

Date: _____ Time: _____

Time:

Relinquished by: _____ Date: _____ Time: _____

Date: Time:

Time:

/

2000

2000

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

ORIGINAL COPY

Carrier #

REMARKS:

LAB USE ONLY

Intact Y / N

Intact Y / N

Intact Y / N

1

**Check If Special Reporting
Limits Are Needed**

FDP 3/28/02

6701 Aberdeen Ave., Ste. 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

TraceAnalysis, Inc.

333 McCutcheon, Suite H
El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

Company Name:

BRC International

Phone #:

505-397-4388

Address:

(Street, City, Zip)

1324 West Planetary 88246

Fax #:

505-397-0247

Contact Person:

Cliff P. Brunson

Invoice to:

(If different from above)

Shell E&P Company; Attn. Wayne Hamilton

Project #:

Westgate

Project Name:

Attn. Wayne Hamilton

Project Location:

Hobbs W.M.

Sampler Signature:

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX					PRESERVATIVE METHOD					SAMPLING	
				WATER	SOIL	AIR	SLUDGE	HCl	HNO ₃	H ₂ SO ₄	NaOH	ICE	NONE	DATE	TIME

193406 G.M.W. #8

2 Vol

✓

3-19-02

3:00 PM

ANALYSIS REQUEST

(Circle or Specify Method No.)

MTBE 8021B/602	
BTEX 8021B/602	
TPH 418.1/TX1005	
PAH 8270C	
Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	
TCLP Metals Ag As Ba Cd Cr Pb Se Hg	
TCLP Volatiles	
TCLP Semi Volatiles	
TCLP Pesticides	
RCI	
GC/MS Vol 8260B/624	<i>✓</i>
GC/MS Semi Vol 8270C/625	<i>✓</i>
PCBs 8082/608	
Pesticides 8081A/608	
BOD, TSS, pH	
Turn Around Time if different from standard	
Hold	

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID #

LAB USE ONLY

Intact *Y* / *N*
Headspace *Y* / *N*
Temp *5* °
Log-in Review *NA*

REMARKS:

☐ Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

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Carrier #

APPENDIX II

TRACE ANALYSIS, INC.

Laboratory Results

2nd Quarter 2002

**Westgate Subdivision
Grimes Battery & Tasker Road**

April 2003

**Shell Exploration & Production Company
Houston, Texas**

**Prepared by:
BBC International, Inc.**

Report Date: July 1, 2002 Order Number: A02062505
Westgate 1331 Tasker

Page Number: 1 of 3
Hobbs,NM

Summary Report

Cliff Brunson
BBC International Inc.
P.O. Box 805
Hobbs, NM 88241

Report Date: July 1, 2002

Order ID Number: A02062505

Project Number: Westgate
Project Name: 1331 Tasker
Project Location: Hobbs,NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
199974	GMW-8	Water	6/20/02	6:35	6/24/02
199975	GMW-7	Water	6/20/02	7:15	6/24/02
199976	GMW-2	Water	6/20/02	8:40	6/24/02
199977	GMW-4	Water	6/20/02	9:25	6/24/02
199978	TMW-1	Water	6/20/02	10:00	6/24/02
199979	TMW-2	Water	6/20/02	10:35	6/24/02
199980	TMW-5	Water	6/20/02	11:45	6/24/02
199981	GMW-11	Water	6/20/02	13:25	6/24/02
199982	GMW-10	Water	6/20/02	15:30	6/24/02
199983	GMW-6	Water	6/20/02	16:00	6/24/02

0 This report consists of a total of 3 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample: 199974 - GMW-8

Param	Flag	Result	Units
Benzene		<1.00	µg/L
Toluene		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
o-Xylene		<1.00	µg/L

Sample: 199975 - GMW-7

Param	Flag	Result	Units
Benzene		<1.00	µg/L
Toluene		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
o-Xylene		<1.00	µg/L

This is only a summary. Please, refer to the complete report package for quality control data.

Report Date: July 1, 2002 Order Number: A02062505
Westgate 1331 TaskerPage Number: 2 of 3
Hobbs,NM**Sample: 199976 - GMW-2**

Param	Flag	Result	Units
Benzene		<1.00	µg/L
Toluene		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
o-Xylene		<1.00	µg/L

Sample: 199977 - GMW-4

Param	Flag	Result	Units
Benzene		<1.00	µg/L
Toluene		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
o-Xylene		<1.00	µg/L

Sample: 199978 - TMW-1

Param	Flag	Result	Units
Benzene		<1.00	µg/L
Toluene		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
o-Xylene		<1.00	µg/L

Sample: 199979 - TMW-2

Param	Flag	Result	Units
Benzene		<1.00	µg/L
Toluene		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
o-Xylene		<1.00	µg/L

Sample: 199980 - TMW-5

Param	Flag	Result	Units
Benzene		<1.00	µg/L
Toluene		<1.00	µg/L
Ethylbenzene		44.9	µg/L
m,p-Xylene		<1.00	µg/L
o-Xylene		<1.00	µg/L

Report Date: July 1, 2002 Order Number: A02062505
Westgate 1331 Tasker

Page Number: 3 of 3
Hobbs,NM

Sample: 199981 - GMW-11

Param	Flag	Result	Units
Benzene		<1.00	µg/L
Toluene		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
o-Xylene		<1.00	µg/L

Sample: 199982 - GMW-10

Param	Flag	Result	Units
Benzene		<1.00	µg/L
Toluene		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
o-Xylene		<1.00	µg/L

Sample: 199983 - GMW-6

Param	Flag	Result	Units
Benzene		<1.00	µg/L
Toluene		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
o-Xylene		<1.00	µg/L

TRACE ANALYSIS, INC.

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E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Report Date: July 1, 2002

Order ID Number: A02062505

nc.

Westgate
1331 Tasker
Hobbs, NM

analytical Results and Quality Control Data Reports for the following samples submitted to Trace-

Description	Matrix	Date Taken	Time Taken	Date Received
GMW-8	Water	6/20/02	6:35	6/24/02
GMW-7	Water	6/20/02	7:15	6/24/02
GMW-2	Water	6/20/02	8:40	6/24/02
GMW-4	Water	6/20/02	9:25	6/24/02
TMW-1	Water	6/20/02	10:00	6/24/02
TMW-2	Water	6/20/02	10:35	6/24/02
TMW-5	Water	6/20/02	11:45	6/24/02
GMW-11	Water	6/20/02	13:25	6/24/02
GMW-10	Water	6/20/02	15:30	6/24/02
GMW-6	Water	6/20/02	16:00	6/24/02

ent only the samples received in the laboratory. The Quality Control Report is generated on a batch
on contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.
qual to MQL for all organic analytes including TPH.
tained within this report meet all requirements of LAC 33:I unless otherwise noted.

of a total of 8 pages and shall not be reproduced except in its entirety including the chain of custody
tten approval of TraceAnalysis, Inc.



Dr. Blair Leftwich, Director

Analytical Report

Sample: 199974 - GMW-8

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC21410 Date Analyzed: 6/27/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB20334 Date Prepared: 6/27/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.6	µg/L	1	50	103	82 - 114
Toluene-d8		51.9	µg/L	1	50	104	86 - 113
4-Bromofluorobenzene		50.8	µg/L	1	50	102	90 - 105

Sample: 199975 - GMW-7

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC21410 Date Analyzed: 6/27/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB20334 Date Prepared: 6/27/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.1	µg/L	1	50	102	82 - 114
Toluene-d8		51.8	µg/L	1	50	104	86 - 113
4-Bromofluorobenzene		49.4	µg/L	1	50	99	90 - 105

Sample: 199976 - GMW-2

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC21410 Date Analyzed: 6/27/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB20334 Date Prepared: 6/27/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1

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Westgate

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1331 Tasker

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Hobbs,NM

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.5	µg/L	1	50	101	82 - 114
Toluene-d8		52.4	µg/L	1	50	105	86 - 113
4-Bromofluorobenzene		49.5	µg/L	1	50	99	90 - 105

Sample: 199977 - GMW-4

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC21412 Date Analyzed: 6/27/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB20336 Date Prepared: 6/27/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.7	µg/L	1	50	103	82 - 114
Toluene-d8		52.7	µg/L	1	50	105	86 - 113
4-Bromofluorobenzene		48.3	µg/L	1	50	97	90 - 105

Sample: 199978 - TMW-1

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC21412 Date Analyzed: 6/27/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB20336 Date Prepared: 6/27/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		52.5	µg/L	1	50	105	82 - 114
Toluene-d8		53.1	µg/L	1	50	106	86 - 113
4-Bromofluorobenzene		48.6	µg/L	1	50	97	90 - 105

Sample: 199979 - TMW-2

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC21412 Date Analyzed: 6/27/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB20336 Date Prepared: 6/27/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1

Continued ...

Report Date: July 1, 2002
Westgate

Order Number: A02062505
1331 Tasker

Page Number: 4 of 8
Hobbs,NM

...Continued Sample: 199979 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		52.0	µg/L	1	50	104	82 - 114
Toluene-d8		52.0	µg/L	1	50	104	86 - 113
4-Bromofluorobenzene		49.7	µg/L	1	50	99	90 - 105

Sample: 199980 - TMW-5

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC21412 Date Analyzed: 6/27/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB20336 Date Prepared: 6/27/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
Ethylbenzene		44.9	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		52.6	µg/L	1	50	105	82 - 114
Toluene-d8		52.0	µg/L	1	50	104	86 - 113
4-Bromofluorobenzene		52.8	µg/L	1	50	106	90 - 105

Sample: 199981 - GMW-11

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC21412 Date Analyzed: 6/27/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB20336 Date Prepared: 6/27/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.0	µg/L	1	50	102	82 - 114
Toluene-d8		52.3	µg/L	1	50	105	86 - 113
4-Bromofluorobenzene		49.5	µg/L	1	50	99	90 - 105

Report Date: July 1, 2002
Westgate

Order Number: A02062505
1331 Tasker

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Hobbs,NM

Sample: 199982 - GMW-10

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC21412 Date Analyzed: 6/27/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB20336 Date Prepared: 6/27/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.8	µg/L	1	50	102	82 - 114
Toluene-d8		52.8	µg/L	1	50	106	86 - 113
4-Bromofluorobenzene		49.0	µg/L	1	50	98	90 - 105

Sample: 199983 - GMW-6

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC21412 Date Analyzed: 6/27/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB20336 Date Prepared: 6/27/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.9	µg/L	1	50	104	82 - 114
Toluene-d8		52.3	µg/L	1	50	105	86 - 113
4-Bromofluorobenzene		47.9	µg/L	1	50	96	90 - 105

Quality Control Report Method Blank

Method Blank QCBatch: QC21410

Param	Flag	Results	Units	Reporting Limit
Benzene		<1.00	µg/L	1
Toluene		<1.00	µg/L	1
Ethylbenzene		<1.00	µg/L	1
m,p-Xylene		<1.00	µg/L	1
o-Xylene		<1.00	µg/L	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.4	µg/L	1	50	101	82 - 114
Toluene-d8		51.8	µg/L	1	50	104	86 - 113
4-Bromofluorobenzene		49.4	µg/L	1	50	99	90 - 105

Method Blank QCBatch: QC21412

Param	Flag	Results	Units	Reporting Limit
Benzene		<1.00	µg/L	1
Toluene		<1.00	µg/L	1
Ethylbenzene		<1.00	µg/L	1
m,p-Xylene		<1.00	µg/L	1
o-Xylene		<1.00	µg/L	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		52.2	µg/L	1	50	104	82 - 114
Toluene-d8		52.7	µg/L	1	50	105	86 - 113
4-Bromofluorobenzene		49.6	µg/L	1	50	99	90 - 105

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes QCBatch: QC21410

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	105	105	µg/L	1	100	<1.00	105	0	70 - 130	20
Benzene	101	96	µg/L	1	100	<1.00	101	5	70 - 130	20
Trichloroethene (TCE)	90	87	µg/L	1	100	<1.00	90	3	70 - 130	20
Toluene	102	98	µg/L	1	100	<1.00	102	4	70 - 130	20
Chlorobenzene	98	93	µg/L	1	100	<1.00	98	5	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	51.2	51.8	µg/L	1	50	102	103	82 - 114
Toluene-d8	52.0	51.7	µg/L	1	50	104	103	86 - 113
4-Bromofluorobenzene	49.2	49.5	µg/L	1	50	98	99	90 - 105

Laboratory Control Spikes

QCBatch: QC21412

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	105	105	µg/L	1	100	<1.00	105	0	70 - 130	20
Benzene	101	96.3	µg/L	1	100	<1.00	101	5	70 - 130	20
Trichloroethene (TCE)	90.4	86.6	µg/L	1	100	<1.00	90	4	70 - 130	20
Toluene	102	98.0	µg/L	1	100	<1.00	102	4	70 - 130	20
Chlorobenzene	98.5	92.7	µg/L	1	100	<1.00	98	6	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	51.2	51.8	µg/L	1	50	102	104	82 - 114
Toluene-d8	52.0	51.7	µg/L	1	50	104	103	86 - 113
4-Bromofluorobenzene	49.2	49.5	µg/L	1	50	98	99	90 - 105

Quality Control Report Matrix Spikes and Duplicate Spikes

Matrix Spikes

QCBatch: QC21410

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Benzene	99.7	100	µg/L	1	100	<1.00	100	0	80 - 120	20
Toluene	99.9	102	µg/L	1	100	<1.00	100	2	87 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dilution	Spike Amount	MS % Rec	MSD % Rec	Recovery Limits
Dibromofluoromethane	51.9	51.0	µg/L	1	50	104	102	82 - 114
Toluene-d8	51.9	52.0	µg/L	1	50	104	104	86 - 113
4-Bromofluorobenzene	47.9	49.0	µg/L	1	50	96	98	90 - 105

Quality Control Report Continuing Calibration Verification Standards

CCV (1)

QCBatch: QC21410

Report Date: July 1, 2002
Westgate

Order Number: A02062505
1331 Tasker

Page Number: 8 of 8
Hobbs,NM

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/L	50	51.0	102	80 - 120	6/27/02
1,1-Dichloroethene		µg/L	50	49.0	98	80 - 120	6/27/02
Chloroform		µg/L	50	50.0	100	80 - 120	6/27/02
1,2-Dichloropropane		µg/L	50	52.0	104	80 - 120	6/27/02
Toluene		µg/L	50	52.0	104	80 - 120	6/27/02
Chlorobenzene		µg/L	50	50.0	100	80 - 120	6/27/02
Ethylbenzene		µg/L	50	52.0	104	80 - 120	6/27/02
Dibromofluoromethane		µg/L	50	52.3	105	80 - 120	6/27/02
Toluene-d8		µg/L	50	52.1	104	80 - 120	6/27/02
4-Bromofluorobenzene		µg/L	50	53.7	107	80 - 120	6/27/02

CCV (1)

QCBatch: QC21412

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/L	50	47.0	94	80 - 120	6/27/02
1,1-Dichloroethene		µg/L	50	49.0	98	80 - 120	6/27/02
Chloroform		µg/L	50	51.0	102	80 - 120	6/27/02
1,2-Dichloropropane		µg/L	50	51.0	102	80 - 120	6/27/02
Toluene		µg/L	50	51.0	102	80 - 120	6/27/02
Chlorobenzene		µg/L	50	49.0	98	80 - 120	6/27/02
Ethylbenzene		µg/L	50	52.0	104	80 - 120	6/27/02
Dibromofluoromethane		µg/L	50	52.2	104	80 - 120	6/27/02
Toluene-d8		µg/L	50	52.1	104	80 - 120	6/27/02
4-Bromofluorobenzene		µg/L	50	54.3	109	80 - 120	6/27/02

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El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID #

AD2062505

Phone #:

Fax #:

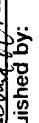
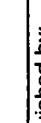
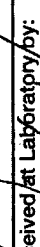
Contact Person:

Invoice to:

Project Name:

Sampler Signature:

[illegible]

Relinquished by: 	Date: 6-20-02	Time: 9:30
Received by:	Date:	Time:
Relinquished by: 	Date:	Time:
Received by:	Date:	Time:
Relinquished by: 	Date:	Time:
Received at Laboratory by: 	Date: 6-24-03	Time: 6:25-00 10:00

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

ORIGINAL COPY

ANALYSIS REQUEST

(Circle or Specify Method No.)

	MTBE 8021B/602	N/A
	BTEX 8021B/602	N/A
	TPH 418.1/TX1005	N/A
	PAH 8270C	N/A
	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	N/A
	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	N/A
	TCLP Volatiles	N/A
	TCLP Semi Volatiles	N/A
	TCLP Pesticides	N/A
	RCl	N/A
	GC/MS Vol. 8260B/624	N/A
	GC/MS Semi. Vol. 8270C/625	N/A
	PCBs 8082/608	N/A
	Pesticides 8081A/608	N/A
	BOD, TSS, pH	N/A
	Turn Around Time if different from standard	N/A
	Hold	N/A

LAB USE ONLY

REMARKS:

Intact Y / N
 Headspace Y / N
 Temp 4 °
 Log-in Review MS

☐ Che
 Limi

7/2 F

☐ Check If Special Reporting Limits Are Needed

Carrier # Cas Priority Parcel 42765

APPENDIX III

TRACE ANALYSIS, INC.
Laboratory Results
3rd Quarter 2002

Westgate Subdivision
Grimes Battery & Tasker Road

April 2003

Shell Exploration & Production Company
Houston, Texas

Prepared by:
BBC International, Inc.

Report Date: October 14, 2002 Order Number: A02093018
Westgate 1331 Tasker

Page Number: 1 of 2
Hobbs, NM

Summary Report

Cliff Brunson
BBC International Inc.
P.O. Box 805
Hobbs, NM 88241

Report Date: October 14, 2002

Order ID Number: A02093018

Project Number: Westgate
Project Name: 1331 Tasker
Project Location: Hobbs, NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
209276	GMW #2	Water	9/27/02	14:00	9/28/02
209277	GMW #10	Water	9/27/02	14:30	9/28/02
209278	GMW #9	Water	9/27/02	15:10	9/28/02
209279	GMW #7	Water	9/27/02	16:00	9/28/02

0 This report consists of a total of 2 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample: 209276 - GMW #2

Param	Flag	Result	Units
Benzene		<1.00	µg/L
Toluene		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
o-Xylene		<1.00	µg/L

Sample: 209277 - GMW #10

Param	Flag	Result	Units
Benzene		<1.00	µg/L
Toluene		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
o-Xylene		<1.00	µg/L

Sample: 209278 - GMW #9

Param	Flag	Result	Units
Benzene		<5.00	µg/L
Toluene		<5.00	µg/L
Ethylbenzene		6.74	µg/L
m,p-Xylene		<5.00	µg/L

Continued on next page ...

This is only a summary. Please, refer to the complete report package for quality control data.

TraceAnalysis, Inc.

6701 Aberdeen Ave., Suite 9

Lubbock, TX 79424-1515

(806) 794-1296

Report Date: October 14, 2002 Order Number: A02093018
Westgate 1331 TaskerPage Number: 2 of 2
Hobbs, NM*Sample 209278 continued ...*

Param	Flag	Result	Units
o-Xylene		<5.00	µg/L

Sample: 209279 - GMW #7

Param	Flag	Result	Units
Benzene		<1.00	µg/L
Toluene		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
o-Xylene		<1.00	µg/L

This is only a summary. Please, refer to the complete report package for quality control data.

TRACE ANALYSIS, INC.

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Analytical and Quality Control Report

Cliff Brunson
BBC International Inc.
P.O. Box 805
Hobbs, NM 88241

Report Date: October 14, 2002

Order ID Number: A02093018

Project Number: Westgate
Project Name: 1331 Tasker
Project Location: Hobbs, NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
209276	GMW #2	Water	9/27/02	14:00	9/28/02
209277	GMW #10	Water	9/27/02	14:30	9/28/02
209278	GMW #9	Water	9/27/02	15:10	9/28/02
209279	GMW #7	Water	9/27/02	16:00	9/28/02

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed. Note: the RDL is equal to MQL for all organic analytes including TPH.

The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

This report consists of a total of 5 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.

Note: Samples will be disposed of 30 days from the report date unless the lab is contacted before the 30 days has past.



Dr. Blair Leftwich, Director

Analytical Report

Sample: 209276 - GMW #2

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC24030 Date Analyzed: 10/7/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB22445 Date Prepared: 10/7/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		48.0	µg/L	1	50	96	77 - 122
Toluene-d8		47.8	µg/L	1	50	96	96 - 111
4-Bromofluorobenzene		48.4	µg/L	1	50	97	87 - 113

Sample: 209277 - GMW #10

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC24030 Date Analyzed: 10/7/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB22445 Date Prepared: 10/7/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		48.0	µg/L	1	50	96	77 - 122
Toluene-d8		48.4	µg/L	1	50	97	96 - 111
4-Bromofluorobenzene		48.1	µg/L	1	50	96	87 - 113

Sample: 209278 - GMW #9

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC24030 Date Analyzed: 10/7/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB22445 Date Prepared: 10/7/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<5.00	µg/L	5	1
Toluene		<5.00	µg/L	5	1
Ethylbenzene		6.74	µg/L	5	1
m,p-Xylene		<5.00	µg/L	5	1
o-Xylene		<5.00	µg/L	5	1

Report Date: October 14, 2002
Westgate

Order Number: A02093018
1331 Tasker

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Hobbs,NM

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		48.3	µg/L	1	50	96	77 - 122
Toluene-d8		48.4	µg/L	1	50	96	96 - 111
4-Bromofluorobenzene		48.5	µg/L	1	50	97	87 - 113

Sample: 209279 - GMW #7

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC24030 Date Analyzed: 10/7/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB22445 Date Prepared: 10/7/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		47.8	µg/L	1	50	96	77 - 122
Toluene-d8		48.1	µg/L	1	50	96	96 - 111
4-Bromofluorobenzene		47.8	µg/L	1	50	96	87 - 113

Quality Control Report Method Blank

Method Blank QCBatch: QC24030

Param	Flag	Results	Units	Reporting Limit
Benzene		<1.00	µg/L	1
Toluene		<1.00	µg/L	1
Ethylbenzene		<1.00	µg/L	1
m,p-Xylene		<1.00	µg/L	1
o-Xylene		<1.00	µg/L	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		47.6	µg/L	1	50	95	77 - 122
Toluene-d8		48.0	µg/L	1	50	96	96 - 111
4-Bromofluorobenzene		48.4	µg/L	1	50	97	87 - 113

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes QCBatch: QC24030

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	99.4	101	µg/L	1	100	<1.00	99	2	84 - 124	20
Benzene	99.1	99.7	µg/L	1	100	<1.00	99	1	87 - 112	20
Trichloroethene (TCE)	93.0	93.5	µg/L	1	100	<1.00	93	0	81 - 105	20
Toluene	97.3	98.0	µg/L	1	100	<1.00	97	1	90 - 108	20
Chlorobenzene	95.3	96.0	µg/L	1	100	<1.00	95	1	84 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	47.2	47.0	µg/L	1	50	94	94	77 - 122
Toluene-d8	47.8	47.8	µg/L	1	50	96	96	96 - 111
4-Bromofluorobenzene	49.2	48.2	µg/L	1	50	98	96	87 - 113

Quality Control Report Continuing Calibration Verification Standards

CCV (1) QCBatch: QC24030

Report Date: October 14, 2002
Westgate

Order Number: A02093018
1331 Tasker

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Hobbs,NM

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/L	50	48.0	96	80 - 120	10/7/02
1,1-Dichloroethene		µg/L	50	48.0	96	80 - 120	10/7/02
Chloroform		µg/L	50	49.0	98	80 - 120	10/7/02
1,2-Dichloropropane		µg/L	50	51.0	102	80 - 120	10/7/02
Toluene		µg/L	50	50.0	100	80 - 120	10/7/02
Chlorobenzene		µg/L	50	50.0	100	80 - 120	10/7/02
Ethylbenzene		µg/L	50	51.0	102	80 - 120	10/7/02
Dibromofluoromethane		µg/L	50	46.8	94	80 - 120	10/7/02
Toluene-d8		µg/L	50	48.2	96	80 - 120	10/7/02
4-Bromofluorobenzene		µg/L	50	49.0	98	80 - 120	10/7/02

TraceAnalysis, Inc.

6701 Aberdeen Ave., Suite 9

Lubbock, TX 79424-1515

(806) 794-1296

Report Date: October 3, 2002
WestgateOrder Number: A02093018
1331 TaskerPage Number: 1 of 1
Hobbs,NM

Summary Report

Cliff Brunson
BBC International Inc.
P.O. Box 805
Hobbs, NM 88241

Report Date: October 3, 2002

Order ID Number: A02093018

Project Number: Westgate
Project Name: 1331 Tasker
Project Location: Hobbs,NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
209276	GMW #2	Water	9/27/02	14:00	9/28/02
209277	GMW #10	Water	9/27/02	14:30	9/28/02
209278	GMW #9	Water	9/27/02	15:10	9/28/02
209279	GMW #7	Water	9/27/02	16:00	9/28/02

0 This report consists of a total of 1 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample - Field Code	BTEX				
	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	M,P,O-Xylene (ppm)	Total BTEX (ppm)
209276 - GMW #2	<0.005	<0.005	<0.005	<0.005	<0.005
209277 - GMW #10	<0.001	<0.001	<0.001	<0.001	<0.001
209278 - GMW #9	<0.005	<0.005	<0.005	<0.005	<0.005
209279 - GMW #7	<0.005	<0.005	<0.005	<0.005	<0.005

This is only a summary. Please, refer to the complete report package for quality control data.



TRACE ANALYSIS, INC.

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Analytical and Quality Control Report

Cliff Brunson
BBC International Inc.
P.O. Box 805
Hobbs, NM 88241

Report Date: October 3, 2002

Order ID Number: A02093018

Project Number: Westgate
Project Name: 1331 Tasker
Project Location: Hobbs, NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
209276	GMW #2	Water	9/27/02	14:00	9/28/02
209277	GMW #10	Water	9/27/02	14:30	9/28/02
209278	GMW #9	Water	9/27/02	15:10	9/28/02
209279	GMW #7	Water	9/27/02	16:00	9/28/02

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed. Note: the RDL is equal to MQL for all organic analytes including TPH.

The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

This report consists of a total of 7 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.

Note: Samples will be disposed of 30 days from the report date unless the lab is contacted before the 30 days has past.



Dr. Blair Leftwich, Director

Report Date: October 3, 2002
Westgate

Order Number: A02093018
1331 Tasker

Page Number: 2 of 7
Hobbs,NM

Analytical Report

Sample: 209276 - GMW #2

Analysis: BTEX Analytical Method: S 8021B QC Batch: QC23858 Date Analyzed: 9/30/02
Analyst: CG Preparation Method: S 5035 Prep Batch: PB22304 Date Prepared: 9/30/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<0.005	mg/Kg	5	0.001
Toluene		<0.005	mg/Kg	5	0.001
Ethylbenzene		<0.005	mg/Kg	5	0.001
M,P,O-Xylene		<0.005	mg/Kg	5	0.001
Total BTEX		<0.005	mg/Kg	5	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.0922	mg/Kg	5	1	92	70 - 130
4-BFB		0.0836	mg/Kg	5	1	84	70 - 130

Sample: 209277 - GMW #10

Analysis: BTEX Analytical Method: S 8021B QC Batch: QC23858 Date Analyzed: 9/30/02
Analyst: CG Preparation Method: S 5035 Prep Batch: PB22304 Date Prepared: 9/30/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<0.001	mg/Kg	1	0.001
Toluene		<0.001	mg/Kg	1	0.001
Ethylbenzene		<0.001	mg/Kg	1	0.001
M,P,O-Xylene		<0.001	mg/Kg	1	0.001
Total BTEX		<0.001	mg/Kg	1	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.101	mg/Kg	1	1	101	70 - 130
4-BFB		0.0931	mg/Kg	1	1	93	70 - 130

Sample: 209278 - GMW #9

Analysis: BTEX Analytical Method: S 8021B QC Batch: QC23882 Date Analyzed: 10/1/02
Analyst: CG Preparation Method: S 5035 Prep Batch: PB22325 Date Prepared: 10/1/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<0.005	mg/Kg	5	0.001
Toluene		<0.005	mg/Kg	5	0.001
Ethylbenzene		<0.005	mg/Kg	5	0.001
M,P,O-Xylene		<0.005	mg/Kg	5	0.001
Total BTEX		<0.005	mg/Kg	5	0.001

Report Date: October 3, 2002
Westgate

Order Number: A02093018
1331 Tasker

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Hobbs,NM

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.0902	mg/Kg	5	1	90	70 - 130
4-BFB		0.0781	mg/Kg	5	1	78	70 - 130

Sample: 209279 - GMW #7

Analysis: BTEX Analytical Method: S 8021B QC Batch: QC23858 Date Analyzed: 9/30/02
Analyst: CG Preparation Method: S 5035 Prep Batch: PB22304 Date Prepared: 9/30/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<0.005	mg/Kg	5	0.001
Toluene		<0.005	mg/Kg	5	0.001
Ethylbenzene		<0.005	mg/Kg	5	0.001
M,P,O-Xylene		<0.005	mg/Kg	5	0.001
Total BTEX		<0.005	mg/Kg	5	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.0912	mg/Kg	5	1	91	70 - 130
4-BFB		0.0835	mg/Kg	5	1	83	70 - 130

Quality Control Report Method Blank

Method Blank QCBatch: QC23858

Param	Flag	Results	Units	Reporting Limit
Benzene		<0.001	mg/L	0.001
Toluene		<0.001	mg/L	0.001
Ethylbenzene		<0.001	mg/L	0.001
M,P,O-Xylene		<0.001	mg/L	0.001
Total BTEX		<0.001	mg/L	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT	1	0.0553	mg/L	1	0.10	55	70 - 130
4-BFB	2	0.0557	mg/L	1	0.10	55	70 - 130

Method Blank QCBatch: QC23882

Param	Flag	Results	Units	Reporting Limit
Benzene		<0.001	mg/L	0.001
Toluene		<0.001	mg/L	0.001
Ethylbenzene		<0.001	mg/L	0.001
M,P,O-Xylene		<0.001	mg/L	0.001
Total BTEX		<0.001	mg/L	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.0895	mg/L	1	0.10	90	70 - 130
4-BFB		0.0769	mg/L	1	0.10	77	70 - 130

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes QCBatch: QC23858

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
MTBE	0.092	0.0917	mg/L	1	0.10	<0.001	92	0	70 - 130	20
Benzene	0.0936	0.0946	mg/L	1	0.10	<0.001	94	1	70 - 130	20
Toluene	0.0936	0.094	mg/L	1	0.10	<0.001	94	0	70 - 130	20

Continued ...

¹Low surrogate recovery due to prep. ICV, CCV show the method to be in control.

²Low surrogate recovery due to prep. ICV, CCV show the method to be in control.

... Continued

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Ethylbenzene	0.0939	0.094	mg/L	1	0.10	<0.001	94	0	70 - 130	20
M,P,O-Xylene	0.275	0.276	mg/L	1	0.30	<0.001	92	0	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
TFT	0.101	0.102	mg/L	1	0.10	101	102	70 - 130
4-BFB	0.0982	0.0981	mg/L	1	0.10	98	98	70 - 130

Laboratory Control Spikes

QCBatch: QC23882

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
MTBE	0.0934	0.0902	mg/L	1	0.10	<0.001	93	3	70 - 130	20
Benzene	0.0935	0.0911	mg/L	1	0.10	<0.001	94	3	70 - 130	20
Toluene	0.0922	0.0907	mg/L	1	0.10	<0.001	92	2	70 - 130	20
Ethylbenzene	0.0894	0.0903	mg/L	1	0.10	<0.001	89	1	70 - 130	20
M,P,O-Xylene	0.269	0.269	mg/L	1	0.30	<0.001	90	0	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
TFT	0.0937	0.0908	mg/L	1	0.10	94	91	70 - 130
4-BFB	0.0894	0.0866	mg/L	1	0.10	89	87	70 - 130

Quality Control Report Continuing Calibration Verification Standards

CCV (1)

QCBatch: QC23858

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/L	0.10	0.0928	93	85 - 115	9/30/02
Benzene		mg/L	0.10	0.0949	95	85 - 115	9/30/02
Toluene		mg/L	0.10	0.0951	95	85 - 115	9/30/02
Ethylbenzene		mg/L	0.10	0.0942	94	85 - 115	9/30/02
M,P,O-Xylene		mg/L	0.30	0.277	92	85 - 115	9/30/02

CCV (2)

QCBatch: QC23858

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/L	0.10	0.0938	93	85 - 115	9/30/02
Benzene		mg/L	0.10	0.0957	95	85 - 115	9/30/02
Toluene		mg/L	0.10	0.0957	95	85 - 115	9/30/02
Ethylbenzene		mg/L	0.10	0.0953	95	85 - 115	9/30/02
M,P,O-Xylene		mg/L	0.30	0.279	93	85 - 115	9/30/02

ICV (1) QCBatch: QC23858

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/L	0.10	0.0904	90	85 - 115	9/30/02
Benzene		mg/L	0.10	0.0942	94	85 - 115	9/30/02
Toluene		mg/L	0.10	0.0948	95	85 - 115	9/30/02
Ethylbenzene		mg/L	0.10	0.095	95	85 - 115	9/30/02
M,P,O-Xylene		mg/L	0.30	0.278	93	85 - 115	9/30/02

CCV (1) QCBatch: QC23882

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/L	0.10	0.092	92	85 - 115	10/1/02
Benzene		mg/L	0.10	0.0914	91	85 - 115	10/1/02
Toluene		mg/L	0.10	0.0918	92	85 - 115	10/1/02
Ethylbenzene		mg/L	0.10	0.0911	91	85 - 115	10/1/02
M,P,O-Xylene		mg/L	0.30	0.272	91	85 - 115	10/1/02

CCV (2) QCBatch: QC23882

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/L	0.10	0.0911	91	85 - 115	10/1/02
Benzene		mg/L	0.10	.0904	90	85 - 115	10/1/02
Toluene		mg/L	0.10	0.0899	89	85 - 115	10/1/02
Ethylbenzene		mg/L	0.10	0.091	91	85 - 115	10/1/02
M,P,O-Xylene		mg/L	0.30	0.2725	90	85 - 115	10/1/02

ICV (1) QCBatch: QC23882

Report Date: October 3, 2002
Westgate

Order Number: A02093018
1331 Tasker

Page Number: 7 of 7
Hobbs,NM

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/L	0.10	0.0937	94	85 - 115	10/1/02
Benzene		mg/L	0.10	0.0928	93	85 - 115	10/1/02
Toluene		mg/L	0.10	0.0917	92	85 - 115	10/1/02
Ethylbenzene		mg/L	0.10	0.092	92	85 - 115	10/1/02
M,P,O-Xylene		mg/L	0.30	0.275	92	85 - 115	10/1/02

APPENDIX IV

TRACE ANALYSIS, INC.

Laboratory Results

4th Quarter 2002

**Westgate Subdivision
Grimes Battery & Tasker Road**

April 2003

**Shell Exploration & Production Company
Houston, Texas**

**Prepared by:
BBC International, Inc.**

Summary Report

Cliff Brunson
BBC International Inc.
P.O. Box 805
Hobbs, NM 88241

Report Date: December 18, 2002

Order ID Number: A02121017

Project Number: Westgate
Project Name: 1331 Tasker
Project Location: Hobbs,NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
215482	GWM #7	Water	12/9/02	9:30	12/10/02
215483	GWM #2	Water	12/9/02	9:45	12/10/02
215484	GWM #10	Water	12/9/02	10:10	12/10/02
215485	GWM #9	Water	12/9/02	10:25	12/10/02

0 This report consists of a total of 3 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample: 215482 - GWM #7

Param	Flag	Result	Units
Naphthalene		<0.0002	mg/L
Acenaphthylene		<0.0002	mg/L
Acenaphthene		<0.0002	mg/L
Fluorene		<0.0002	mg/L
Phenanthrene		<0.0002	mg/L
Anthracene		<0.0002	mg/L
Fluoranthene		<0.0002	mg/L
Pyrene		<0.0002	mg/L
Benzo(a)anthracene		<0.0002	mg/L
Chrysene		<0.0002	mg/L
Benzo(b)fluoranthene		<0.0002	mg/L
Benzo(k)fluoranthene		<0.0002	mg/L
Benzo(a)pyrene		<0.0002	mg/L
Indeno(1,2,3-cd)pyrene		<0.0002	mg/L
Dibenzo(a,h)anthracene		<0.0002	mg/L
Benzo(g,h,i)perylene		<0.0002	mg/L
Benzene		<1.00	µg/L
Toluene		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		1.83	µg/L
o-Xylene		<1.00	µg/L

This is only a summary. Please, refer to the complete report package for quality control data.

Report Date: December 18, 2002 Order Number: A02121017
Westgate 1331 Tasker

Page Number: 2 of 3
Hobbs, NM

Sample: 215483 - GWM #2

Param	Flag	Result	Units
Naphthalene		<0.0002	mg/L
Acenaphthylene		<0.0002	mg/L
Acenaphthene		<0.0002	mg/L
Fluorene		<0.0002	mg/L
Phenanthrene		<0.0002	mg/L
Anthracene		<0.0002	mg/L
Fluoranthene		<0.0002	mg/L
Pyrene		<0.0002	mg/L
Benzo(a)anthracene		<0.0002	mg/L
Chrysene		<0.0002	mg/L
Benzo(b)fluoranthene		<0.0002	mg/L
Benzo(k)fluoranthene		<0.0002	mg/L
Benzo(a)pyrene		<0.0002	mg/L
Indeno(1,2,3-cd)pyrene		<0.0002	mg/L
Dibenzo(a,h)anthracene		<0.0002	mg/L
Benzo(g,h,i)perylene		<0.0002	mg/L
Benzene		<1.00	µg/L
Toluene		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
o-Xylene		<1.00	µg/L

Sample: 215484 - GWM #10

Param	Flag	Result	Units
Naphthalene		<0.0002	mg/L
Acenaphthylene		<0.0002	mg/L
Acenaphthene		<0.0002	mg/L
Fluorene		<0.0002	mg/L
Phenanthrene		<0.0002	mg/L
Anthracene		<0.0002	mg/L
Fluoranthene		<0.0002	mg/L
Pyrene		<0.0002	mg/L
Benzo(a)anthracene		<0.0002	mg/L
Chrysene		<0.0002	mg/L
Benzo(b)fluoranthene		<0.0002	mg/L
Benzo(k)fluoranthene		<0.0002	mg/L
Benzo(a)pyrene		<0.0002	mg/L
Indeno(1,2,3-cd)pyrene		<0.0002	mg/L
Dibenzo(a,h)anthracene		<0.0002	mg/L
Benzo(g,h,i)perylene		<0.0002	mg/L
Benzene		<1.00	µg/L
Toluene		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
o-Xylene		<1.00	µg/L

This is only a summary. Please, refer to the complete report package for quality control data.

Report Date: December 18, 2002 Order Number: A02121017
Westgate 1331 Tasker

Page Number: 3 of 3
Hobbs, NM

Sample: 215485 - GWM #9

Param	Flag	Result	Units
Naphthalene		<0.0002	mg/L
Acenaphthylene		<0.0002	mg/L
Acenaphthene		<0.0002	mg/L
Fluorene		<0.0002	mg/L
Phenanthrene		<0.0002	mg/L
Anthracene		<0.0002	mg/L
Fluoranthene		<0.0002	mg/L
Pyrene		<0.0002	mg/L
Benzo(a)anthracene		<0.0002	mg/L
Chrysene		<0.0002	mg/L
Benzo(b)fluoranthene		<0.0002	mg/L
Benzo(k)fluoranthene		<0.0002	mg/L
Benzo(a)pyrene		<0.0002	mg/L
Indeno(1,2,3-cd)pyrene		<0.0002	mg/L
Dibenzo(a,h)anthracene		<0.0002	mg/L
Benzo(g,h,i)perylene		<0.0002	mg/L
Benzene		<1.00	µg/L
Toluene		<1.00	µg/L
Ethylbenzene		8.83	µg/L
m,p-Xylene		4.79	µg/L
o-Xylene		1.32	µg/L

This is only a summary. Please, refer to the complete report package for quality control data.

TRACE ANALYSIS, INC.

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Analytical and Quality Control Report

Cliff Brunson
BBC International Inc.
P.O. Box 805
Hobbs, NM 88241

Report Date: December 18, 2002

Order ID Number: A02121017

Project Number: Westgate
Project Name: 1331 Tasker
Project Location: Hobbs, NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
215482	GWM #7	Water	12/9/02	9:30	12/10/02
215483	GWM #2	Water	12/9/02	9:45	12/10/02
215484	GWM #10	Water	12/9/02	10:10	12/10/02
215485	GWM #9	Water	12/9/02	10:25	12/10/02

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed. Note: the RDL is equal to MQL for all organic analytes including TPH.

The test results contained within this report meet all requirements of LAC 33:1 unless otherwise noted.

This report consists of a total of 9 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of Trace Analysis, Inc.

Note: Samples will be disposed of 30 days from the report date unless the lab is contacted before the 30 days has past.



Dr. Blair Leftwich, Director

Analytical Report

Sample: 215482 - GWM #7

Analysis: PAH Analytical Method: S 8270C QC Batch: QC25632 Date Analyzed: 12/16/02
Analyst: RC Preparation Method: E 3510C Prep Batch: PB23757 Date Prepared: 12/13/02

Param	Flag	Result	Units	Dilution	RDL
Naphthalene		<0.0002	mg/L	1	0.0002
Acenaphthylene		<0.0002	mg/L	1	0.0002
Acenaphthene		<0.0002	mg/L	1	0.0002
Fluorene		<0.0002	mg/L	1	0.0002
Phenanthrene		<0.0002	mg/L	1	0.0002
Anthracene		<0.0002	mg/L	1	0.0002
Fluoranthene		<0.0002	mg/L	1	0.0002
Pyrene		<0.0002	mg/L	1	0.0002
Benzo(a)anthracene		<0.0002	mg/L	1	0.0002
Chrysene		<0.0002	mg/L	1	0.0002
Benzo(b)fluoranthene		<0.0002	mg/L	1	0.0002
Benzo(k)fluoranthene		<0.0002	mg/L	1	0.0002
Benzo(a)pyrene		<0.0002	mg/L	1	0.0002
Indeno(1,2,3-cd)pyrene		<0.0002	mg/L	1	0.0002
Dibenzo(a,h)anthracene		<0.0002	mg/L	1	0.0002
Benzo(g,h,i)perylene		<0.0002	mg/L	1	0.0002

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5		47.95	mg/L	1	80	59	35 - 114
2-Fluorobiphenyl		47.34	mg/L	1	80	59	43 - 116
Terphenyl-d14		49.04	mg/L	1	80	61	33 - 141

Sample: 215482 - GWM #7

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC25552 Date Analyzed: 12/11/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB23688 Date Prepared: 12/11/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		1.83	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		49.4	µg/L	1	50	99	70 - 130
Toluene-d8		47.6	µg/L	1	50	95	70 - 130
4-Bromofluorobenzene		41.1	µg/L	1	50	82	70 - 130

Sample: 215483 - GWM #2

Analysis: PAH Analytical Method: S 8270C QC Batch: QC25632 Date Analyzed: 12/16/02
Analyst: RC Preparation Method: E 3510C Prep Batch: PB23757 Date Prepared: 12/13/02

Param	Flag	Result	Units	Dilution	RDL
Naphthalene		<0.0002	mg/L	1	0.0002
Acenaphthylene		<0.0002	mg/L	1	0.0002
Acenaphthene		<0.0002	mg/L	1	0.0002
Fluorene		<0.0002	mg/L	1	0.0002
Phenanthrene		<0.0002	mg/L	1	0.0002
Anthracene		<0.0002	mg/L	1	0.0002
Fluoranthene		<0.0002	mg/L	1	0.0002
Pyrene		<0.0002	mg/L	1	0.0002
Benzo(a)anthracene		<0.0002	mg/L	1	0.0002
Chrysene		<0.0002	mg/L	1	0.0002
Benzo(b)fluoranthene		<0.0002	mg/L	1	0.0002
Benzo(k)fluoranthene		<0.0002	mg/L	1	0.0002
Benzo(a)pyrene		<0.0002	mg/L	1	0.0002
Indeno(1,2,3-cd)pyrene		<0.0002	mg/L	1	0.0002
Dibenzo(a,h)anthracene		<0.0002	mg/L	1	0.0002
Benzo(g,h,i)perylene		<0.0002	mg/L	1	0.0002

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5	1	18.56	mg/L	1	80	23	35 - 114
2-Fluorobiphenyl	2	26.81	mg/L	1	80	33	43 - 116
Terphenyl-d14	3	21.7	mg/L	1	80	27	33 - 141

Sample: 215483 - GWM #2

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC25552 Date Analyzed: 12/11/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB23688 Date Prepared: 12/11/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.0	µg/L	1	50	102	70 - 130
Toluene-d8		46.7	µg/L	1	50	93	70 - 130
4-Bromofluorobenzene		39.2	µg/L	1	50	78	70 - 130

¹Sample surrogate recovery out of limits due to sample matrix.

²Sample surrogate recovery out of limits due to sample matrix.

³Sample surrogate recovery out of limits due to sample matrix.

Report Date: December 18, 2002
Westgate

Order Number: A02121017
1331 Tasker

Page Number: 4 of 9
Hobbs,NM

Sample: 215484 - GWM #10

Analysis: PAH Analytical Method: S 8270C QC Batch: QC25632 Date Analyzed: 12/16/02
Analyst: RC Preparation Method: E 3510C Prep Batch: PB23757 Date Prepared: 12/13/02

Param	Flag	Result	Units	Dilution	RDL
Naphthalene		<0.0002	mg/L	1	0.0002
Acenaphthylene		<0.0002	mg/L	1	0.0002
Acenaphthene		<0.0002	mg/L	1	0.0002
Fluorene		<0.0002	mg/L	1	0.0002
Phenanthrene		<0.0002	mg/L	1	0.0002
Anthracene		<0.0002	mg/L	1	0.0002
Fluoranthene		<0.0002	mg/L	1	0.0002
Pyrene		<0.0002	mg/L	1	0.0002
Benzo(a)anthracene		<0.0002	mg/L	1	0.0002
Chrysene		<0.0002	mg/L	1	0.0002
Benzo(h)fluoranthene		<0.0002	mg/L	1	0.0002
Benzo(k)fluoranthene		<0.0002	mg/L	1	0.0002
Benzo(a)pyrene		<0.0002	mg/L	1	0.0002
Indeno(1,2,3-cd)pyrene		<0.0002	mg/L	1	0.0002
Dibenzo(a,h)anthracene		<0.0002	mg/L	1	0.0002
Benzo(g,h,i)perylene		<0.0002	mg/L	1	0.0002

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5		39.53	mg/L	1	80	49	35 - 114
2-Fluorobiphenyl		38.21	mg/L	1	80	47	43 - 116
Terphenyl-d14		45.83	mg/L	1	80	57	33 - 141

Sample: 215484 - GWM #10

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC25623 Date Analyzed: 12/14/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB23747 Date Prepared: 12/14/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		49.8	µg/L	1	50	100	70 - 130
Toluene-d8		51.2	µg/L	1	50	102	70 - 130
4-Bromofluorobenzene		46.7	µg/L	1	50	93	70 - 130

Sample: 215485 - GWM #9

Analysis: PAH Analytical Method: S 8270C QC Batch: QC25632 Date Analyzed: 12/16/02
Analyst: RC Preparation Method: E 3510C Prep Batch: PB23757 Date Prepared: 12/13/02

Param	Flag	Result	Units	Dilution	RDL
Naphthalene		<0.0002	mg/L	1	0.0002
Acenaphthylene		<0.0002	mg/L	1	0.0002
Acenaphthene		<0.0002	mg/L	1	0.0002
Fluorene		<0.0002	mg/L	1	0.0002
Phenanthrene		<0.0002	mg/L	1	0.0002
Anthracene		<0.0002	mg/L	1	0.0002
Fluoranthene		<0.0002	mg/L	1	0.0002
Pyrene		<0.0002	mg/L	1	0.0002
Benzo(a)anthracene		<0.0002	mg/L	1	0.0002
Chrysene		<0.0002	mg/L	1	0.0002
Benzo(b)fluoranthene		<0.0002	mg/L	1	0.0002
Benzo(k)fluoranthene		<0.0002	mg/L	1	0.0002
Benzo(a)pyrene		<0.0002	mg/L	1	0.0002
Indeno(1,2,3-cd)pyrene		<0.0002	mg/L	1	0.0002
Dibenzo(a,h)anthracene		<0.0002	mg/L	1	0.0002
Benzo(g,h,i)perylene		<0.0002	mg/L	1	0.0002

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5	⁴	0.18	mg/L	1	80	0	35 - 114
2-Fluorobiphenyl	⁵	3.65	mg/L	1	80	4	43 - 116
Terphenyl-d14		50.88	mg/L	1	80	63	33 - 141

Sample: 215485 - GWM #9

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC25623 Date Analyzed: 12/14/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB23747 Date Prepared: 12/14/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
Ethylbenzene		8.83	µg/L	1	1
m,p-Xylene		4.79	µg/L	1	1
o-Xylene		1.32	µg/L	1	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		48.1	µg/L	1	50	96	70 - 130
Toluene-d8		51.9	µg/L	1	50	104	70 - 130
4-Bromofluorobenzene		49.5	µg/L	1	50	99	70 - 130

⁴Sample surrogate recovery out of limits due to sample matrix.

⁵Sample surrogate recovery out of limits due to sample matrix.

Quality Control Report Method Blank

Method Blank

QCBatch: QC25552

Param	Flag	Results	Units	Reporting Limit
Benzene		<1.00	µg/L	1
Toluene		<1.00	µg/L	1
Ethylbenzene		<1.00	µg/L	1
m,p-Xylene		<1.00	µg/L	1
o-Xylene		<1.00	µg/L	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.8	µg/L	1	50	104	70 - 130
Toluene-d8		50.7	µg/L	1	50	101	70 - 130
4-Bromofluorobenzene		40.2	µg/L	1	50	80	70 - 130

Method Blank

QCBatch: QC25623

Param	Flag	Results	Units	Reporting Limit
Benzene		<1.00	µg/L	1
Toluene		<1.00	µg/L	1
Ethylbenzene		<1.00	µg/L	1
m,p-Xylene		<1.00	µg/L	1
o-Xylene		<1.00	µg/L	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		49.5	µg/L	1	50	99	70 - 130
Toluene-d8		52.8	µg/L	1	50	106	70 - 130
4-Bromofluorobenzene		47.7	µg/L	1	50	95	70 - 130

Method Blank

QCBatch: QC25632

Param	Flag	Results	Units	Reporting Limit
Naphthalene		<0.0002	mg/L	0.0002
Acenaphthylene		<0.0002	mg/L	0.0002
Acenaphthene		<0.0002	mg/L	0.0002
Fluorene		<0.0002	mg/L	0.0002
Phenanthrene		<0.0002	mg/L	0.0002
Anthracene		<0.0002	mg/L	0.0002
Fluoranthene		<0.0002	mg/L	0.0002
Pyrene		<0.0002	mg/L	0.0002

Continued ...

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Param	Flag	Results	Units	Reporting Limit
Benzo(a)anthracene		<0.0002	mg/L	0.0002
Chrysene		<0.0002	mg/L	0.0002
Benzo(b)fluoranthene		<0.0002	mg/L	0.0002
Benzo(k)fluoranthene		<0.0002	mg/L	0.0002
Benzo(a)pyrene		<0.0002	mg/L	0.0002
Indeno(1,2,3-cd)pyrene		<0.0002	mg/L	0.0002
Dibenzo(a,h)anthracene		<0.0002	mg/L	0.0002
Benzo(g,h,i)perylene		<0.0002	mg/L	0.0002

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5		78.46	mg/L	1	80	98	35 - 114
2-Fluorobiphenyl		71.52	mg/L	1	80	89	43 - 116
Terphenyl-d14		79.77	mg/L	1	80	99	33 - 141

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes

QCBatch: QC25552

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	101	101	µg/L	1	100	<1.00	101	0	70 - 130	20
Benzene	104	103	µg/L	1	100	<1.00	104	1	70 - 130	20
Trichloroethene (TCE)	93.6	92.0	µg/L	1	100	<1.00	94	2	70 - 130	20
Toluene	98.0	98.8	µg/L	1	100	<1.00	98	1	70 - 130	20
Chlorobenzene	97.6	97.4	µg/L	1	100	<1.00	98	0	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	50.3	50.2	µg/L	1	50	101	100	70 - 130
Toluene-d8	49.1	49.1	µg/L	1	50	98	98	70 - 130
4-Bromofluorobenzene	43.8	44.0	µg/L	1	50	88	88	70 - 130

Laboratory Control Spikes

QCBatch: QC25623

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	91.7	91.7	µg/L	1	100	<1.00	92	0	70 - 130	20
Benzene	98.7	100	µg/L	1	100	<1.00	99	1	70 - 130	20
Trichloroethene (TCE)	89.8	89.8	µg/L	1	100	<1.00	90	0	70 - 130	20
Toluene	98.8	99.6	µg/L	1	100	<1.00	99	1	70 - 130	20
Chlorobenzene	96.5	96.6	µg/L	1	100	<1.00	96	0	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	47.7	47.6	µg/L	1	50	95	95	70 - 130
Toluene-d8	50.5	50.0	µg/L	1	50	101	100	70 - 130
4-Bromofluorobenzene	47.2	45.4	µg/L	1	50	94	91	70 - 130

Laboratory Control Spikes

QCBatch: QC25632

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Naphthalene	53.31	53.49	mg/L	1	80	<0.0002	66	0	16 - 96	20
Acenaphthylene	64.75	66.11	mg/L	1	80	<0.0002	80	2	20 - 110	20
Acenaphthene	60.06	60.69	mg/L	1	80	<0.0002	75	1	18 - 108	20
Fluorene	60.98	61.3	mg/L	1	80	<0.0002	76	0	22 - 102	20
Phenanthrene	57.3	56.07	mg/L	1	80	<0.0002	71	2	25 - 103	20
Anthracene	63.36	63.07	mg/L	1	80	<0.0002	79	0	22 - 110	20
Fluoranthene	58.49	58.93	mg/L	1	80	<0.0002	73	0	21 - 110	20
Pyrene	61.58	60.64	mg/L	1	80	<0.0002	76	1	22 - 100	20
Benzo(a)anthracene	68.02	65.8	mg/L	1	80	<0.0002	85	3	30 - 99	20
Chrysene	59.03	59.18	mg/L	1	80	<0.0002	73	0	27 - 108	20
Benzo(b)fluoranthene	65.25	56.42	mg/L	1	80	<0.0002	81	14	19 - 102	20
Benzo(k)fluoranthene	60.38	70.71	mg/L	1	80	<0.0002	75	15	35 - 103	20
Benzo(a)pyrene	68.8	70.89	mg/L	1	80	<0.0002	86	2	24 - 105	20
Indeno(1,2,3-cd)pyrene	66.59	66.28	mg/L	1	80	<0.0002	83	0	22 - 108	20
Dibenzo(a,h)anthracene	49.44	49.04	mg/L	1	80	<0.0002	61	0	23 - 77	20
Benzo(g,h,i)perylene	71.66	72.17	mg/L	1	80	<0.0002	89	0	19 - 119	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Nitrobenzene-d5	66.48	66.99	mg/L	1	80	83	83	35 - 114
2-Fluorobiphenyl	60.96	65.42	mg/L	1	80	76	81	43 - 116
Terphenyl-d14	70.8	68.72	mg/L	1	80	88	85	33 - 141

Quality Control Report Continuing Calibration Verification Standards

CCV (1)

QCBatch: QC25552

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/L	50	53.0	106	80 - 120	12/11/02
1,1-Dichloroethene		µg/L	50	56.0	112	80 - 120	12/11/02
Chloroform		µg/L	50	57.0	114	80 - 120	12/11/02
1,2-Dichloropropane		µg/L	50	53.0	106	80 - 120	12/11/02
Toluene		µg/L	50	52.0	104	80 - 120	12/11/02
Chlorobenzene		µg/L	50	52.0	104	80 - 120	12/11/02
Ethylbenzene		µg/L	50	53.0	106	80 - 120	12/11/02

Continued ...

... Continued

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dibromofluoromethane		µg/L	50	49.8	100	80 - 120	12/11/02
Toluene-d8		µg/L	50	49.3	99	80 - 120	12/11/02
4-Bromofluorobenzene		µg/L	50	46.4	93	80 - 120	12/11/02

CCV (1) QCBatch: QC25623

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/L	50	49.0	98	80 - 120	12/14/02
1,1-Dichloroethene		µg/L	50	49.0	98	80 - 120	12/14/02
Chloroform		µg/L	50	54.0	108	80 - 120	12/14/02
1,2-Dichloropropane		µg/L	50	53.0	106	80 - 120	12/14/02
Toluene		µg/L	50	55.0	110	80 - 120	12/14/02
Chlorobenzene		µg/L	50	53.0	106	80 - 120	12/14/02
Ethylbenzene		µg/L	50	55.0	110	80 - 120	12/14/02
Dibromofluoromethane		µg/L	50	50.2	100	80 - 120	12/14/02
Toluene-d8		µg/L	50	52.0	104	80 - 120	12/14/02
4-Bromofluorobenzene		µg/L	50	50.2	100	80 - 120	12/14/02

CCV (1) QCBatch: QC25632

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Naphthalene		mg/L	60	60.11	100	80 - 120	12/16/02
Acenaphthylene		mg/L	60	58.67	97	80 - 120	12/16/02
Acenaphthene		mg/L	60	59.84	99	80 - 120	12/16/02
Fluorene		mg/L	60	56.73	94	80 - 120	12/16/02
Phenanthrene		mg/L	60	59.01	98	80 - 120	12/16/02
Anthracene		mg/L	60	62.62	104	80 - 120	12/16/02
Fluoranthene		mg/L	60	56.69	94	80 - 120	12/16/02
Pyrene		mg/L	60	51.06	85	80 - 120	12/16/02
Benzo(a)anthracene		mg/L	60	68.44	114	80 - 120	12/16/02
Chrysene		mg/L	60	63.42	105	80 - 120	12/16/02
Benzo(b)fluoranthene		mg/L	60	58.97	98	80 - 120	12/16/02
Benzo(k)fluoranthene		mg/L	60	60.01	100	80 - 120	12/16/02
Benzo(a)pyrene		mg/L	60	64.02	106	80 - 120	12/16/02
Indeno(1,2,3-cd)pyrene		mg/L	60	65.43	109	80 - 120	12/16/02
Dibenzo(a,h)anthracene		mg/L	60	60.88	101	80 - 120	12/16/02
Benzo(g,h,i)perylene		mg/L	60	64.54	107	80 - 120	12/16/02
Nitrobenzene-d5		mg/L	60	60.77	101	80 - 120	12/16/02
2-Fluorobiphenyl		mg/L	60	57.57	95	80 - 120	12/16/02
Terphenyl-d14		mg/L	60	49.64	82	80 - 120	12/16/02

6701 Aberdeen Avenue, Ste. 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

TraceAnalysis, Inc.

155 McCutcheon Suite H
El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

Company Name:

Phone #: 505-397-6388

Address: (Street, City, Zip)

Fax #:

Contact Person:

Invoice to:

(if different from above)

Project #:

Project Name:

Project Location:

Sampler Signature:

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX				PRESERVATIVE METHOD						DATE	TIME
				WATER	SOIL	AIR	SLUDGE	HCl	HNO ₃	H ₂ SO ₄	NaOH	ICE	NONE		
25482	GMW#7	2	100A	✓				✓						12-02-13	
	GMW#7	1	1hr	✓				✓						12-02-13	
83	GMW#2	2	100A	✓				✓						12-02-13	
	GMW#2	1	1hr	✓				✓						12-02-13	
84	GMW#140	2	100A	✓				✓						12-02-13	
	GMW#140	1	1hr	✓				✓						12-02-13	
85	GMW#9	2	100A	✓				✓						12-02-13	
	GMW#9	1	1hr	✓				✓						12-02-13	
							</								

Relinquished by: Date: 12-09-02 Time: 11:00

Received by: Date: Time:

Relinquished by: Date: Time:

Received by: Date: Time:

Relinquished by: Date: Time:

Received by: Date: Time:

Received at Laboratory by: Date: Time:

Received at Laboratory by: Date: Time:

Submittal of sample: Institutes agreement to Terms and Conditions listed on reverse side C.O.C.

ORIGINAL COPY

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # A021017

ANALYSIS REQUEST

(Circle or Specify Method No.)

MTBE 8021B/602
BTX 8021B/602
TPH 418.1/TX1005
PAH 8270C
Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7
TCLP Metals Ag As Ba Cd Cr Pb Se Hg
TCLP Volatiles
TCLP Semi Volatiles
TCLP Pesticides
RCI
GC/MS Vol. 8260B/82
GC/MS Semi. Vol. 8270C/82
PCB's 8082/608
Pesticides 8081A/608
BOD, TSS, pH

Turn Around Time if different from standard

Hold

LAB USE ONLY

Intact ☒ NHeadspace ☒ Y/NTemp ☒ 50Log-in Review ☒ 014

REMARKS:

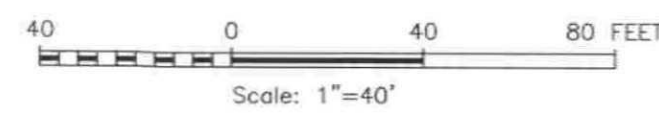
12/18/13

☐ Check if Special Reporting Limits Are Needed

Carrier # 121111 902-928-4506



- LEGEND
- //// DENOTES EXCAVATED AREA
 - DENOTES PROPOSED PARK CURVE-OUT
 - DENOTES EXISTING RESIDENCE
 - DENOTES DIRT LEASE ROAD
 - DENOTES NEW EXCAVATION SITE
 - TSB - DENOTES TASKER SOIL BORING
 - GSB - DENOTES GRIMES SOIL BORING
 - TMW - DENOTES TASKER MONITOR WELL
 - GMW - DENOTES GRIMES MONITOR WELL
 - GBS - DENOTES SURFACE SAMPLES PRIOR TO EXCAVATION
 - GBN - DENOTES SURFACE SAMPLES PRIOR TO EXCAVATION
 - GBS - DENOTES SURFACE SAMPLES AFTER EXCAVATION
 - GBN - DENOTES SURFACE SAMPLES AFTER EXCAVATION



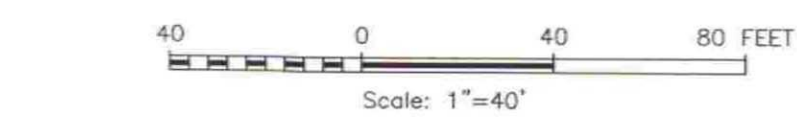
BBC INTERNATIONAL, INC. / ARCADIS GERAGHTY & MILLER

GRIMES BATTERY & TASKER ROAD
GROUND WATER ELEVATION/GRADIENT
1st Quarter 2002
MEASURED 3/18/02

CONTOURS DEPICTED ON THIS DRAWING BASED ON INTERPRETATION BY S. HALL

SURVEYED BY: LAWLESS	DRAWN BY: LA	REV. DATE: 03/21/03	E-3081
DATE BEGN: 5/11/98	DATE: 8/13/98	FILE NAME: FIGUREQ1	FIGURE Q1
DATE END: 9/11/98	CHECKED BY:	SHEET 1 OF 1	1st Quarter 2002
PROJECT #: 02.13.0368	DISK #: BBC	Scale: 1"=40'	

JOHN WEST SURVEYING COMPANY
HOBBBS, NEW MEXICO



BBC INTERNATIONAL, INC. / ARCADIS GERAGHTY & MILLER

GRIMES BATTERY & TASKER ROAD
LNAPL THICKNESS
1st Quarter 2002
MEASURED 3/18/02
CONTOUR INTERVAL 0.05 FEET

CONTOURS DEPICTED ON THIS DRAWING BASED ON INTERPRETATION BY S. HALL

SURVEYED BY: LAWLESS	DRAWN BY: LMP	REV. DATE: 03/21/03	E-3081
DATE BEGN: 5/11/99	DATE: 8/13/99	FILE NAME: FIGUREQ2	
DATE END: 9/1/99	CHECKED BY:	SHEET 1 OF 1	FIGURE Q2
PROJECT #: 02.13.0368	DSK #: BBC	Scale: 1"=40'	1st Quarter 2002

JOHN WEST SURVEYING COMPANY
HOBBS, NEW MEXICO

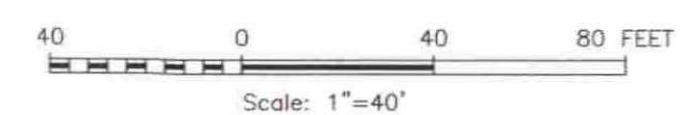


- LEGEND
- DENOTES EXCAVATED AREA
 - DENOTES PROPOSED PARK CURVE-OUT
 - DENOTES EXISTING RESIDENCE
 - DENOTES DIRT LEASE ROAD
 - DENOTES NEW EXCAVATION SITE
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 - GMW - DENOTES GRIMES MONITOR WELL
 - GBS - DENOTES SURFACE SAMPLES PRIOR TO EXCAVATION
 - GBN - DENOTES SURFACE SAMPLES PRIOR TO EXCAVATION
 - GBS - DENOTES SURFACE SAMPLES AFTER EXCAVATION
 - GBN - DENOTES SURFACE SAMPLES AFTER EXCAVATION
 - ND - NOT DETECTED
 - NG - NOT GAUGED

First Quarter - 2002

Crimes Monitor Well #	UG/L	Benzene	Toluene	Ethylbenzene	M, p-Xylene	o-Xylene
GMW-2	Result	<1.00	<1.00	<1.00	<1.00	<1.00
	Detection Limit	1	1	1	1	1
GMW-4	Result	<1.00	<1.00	<1.00	<1.00	<1.00
	Detection Limit	1	1	1	1	1
GMW-6	Result	<1.00	<1.00	<1.00	<1.00	<1.00
	Detection Limit	1	1	1	1	1
GMW-7	Result	<1.00	<1.00	<1.00	<1.00	<1.00
	Detection Limit	1	1	1	1	1
GMW-8	Result	<1.00	<1.00	<1.00	<1.00	<1.00
	Detection Limit	1	1	1	1	1
GMW-10	Result	<1.00	<1.00	<1.00	<1.00	<1.00
	Detection Limit	1	1	1	1	1
GMW-11	Result	<1.00	<1.00	<1.00	<1.00	<1.00
	Detection Limit	1	1	1	1	1

Tasker Monitor Well #	UG/L	Benzene	Toluene	Ethylbenzene	M, p-Xylene	o-Xylene
TMW-1	Result	<1.00	<1.00	<1.00	<1.00	<1.00
	Detection Limit	1	1	1	1	1
TMW-2	Result	<1.00	<1.00	<1.00	<1.00	<1.00
	Detection Limit	1	1	1	1	1
TMW-3	Result	<1.00	<1.00	<1.00	<1.00	<1.00
	Detection Limit	1	1	1	1	1
TMW-4	Result	<1.00	<1.00	<1.00	<1.00	<1.00
	Detection Limit	1	1	1	1	1
TMW-5	Result	1.13	<1.00	70.7	<1.00	<1.00
	Detection Limit	1	1	1	1	1



BBC INTERNATIONAL, INC. / ARCADIS GERAGHTY & MILLER

GRIMES BATTERY & TASKER ROAD
TOTAL BTEX CONCENTRATIONS UG/L
1st Quarter 2002
MEASURED DATE: 3/18/02
CONTOUR INTERVAL IS SHOWN (MILLIGRAMS PER LITER)

CONTOURS DEPICTED ON THIS DRAWING BASED ON INTERPRETATION BY S. HALL

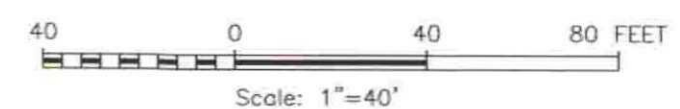
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DATE BEGN: 5/11/98	DATE: 8/13/98	FILE NAME: FIGURE Q3	
DATE END: 9/1/98	CHECKED BY:	SHEET: 1 OF 1	
PROJECT #: 02.13.0368	DISK #: BBC	Scale: 1"=40'	

FIGURE Q3
1st Quarter 2002

JOHN WEST SURVEYING COMPANY
HOBBS, NEW MEXICO



- LEGEND**
- //// DENOTES EXCAVATED AREA
 - DENOTES PROPOSED PARK CURVE-OUT
 - DENOTES EXISTING RESIDENCE
 - DENOTES DIRT LEASE ROAD
 - DENOTES NEW EXCAVATION SITE
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 - GBS - DENOTES SURFACE SAMPLES PRIOR TO EXCAVATION
 - GBS - DENOTES SURFACE SAMPLES AFTER EXCAVATION
 - GBS - DENOTES SURFACE SAMPLES AFTER EXCAVATION
 - NG - NOT GAUGED



BBC INTERNATIONAL, INC. / ARCADIS GERAGHTY & MILLER

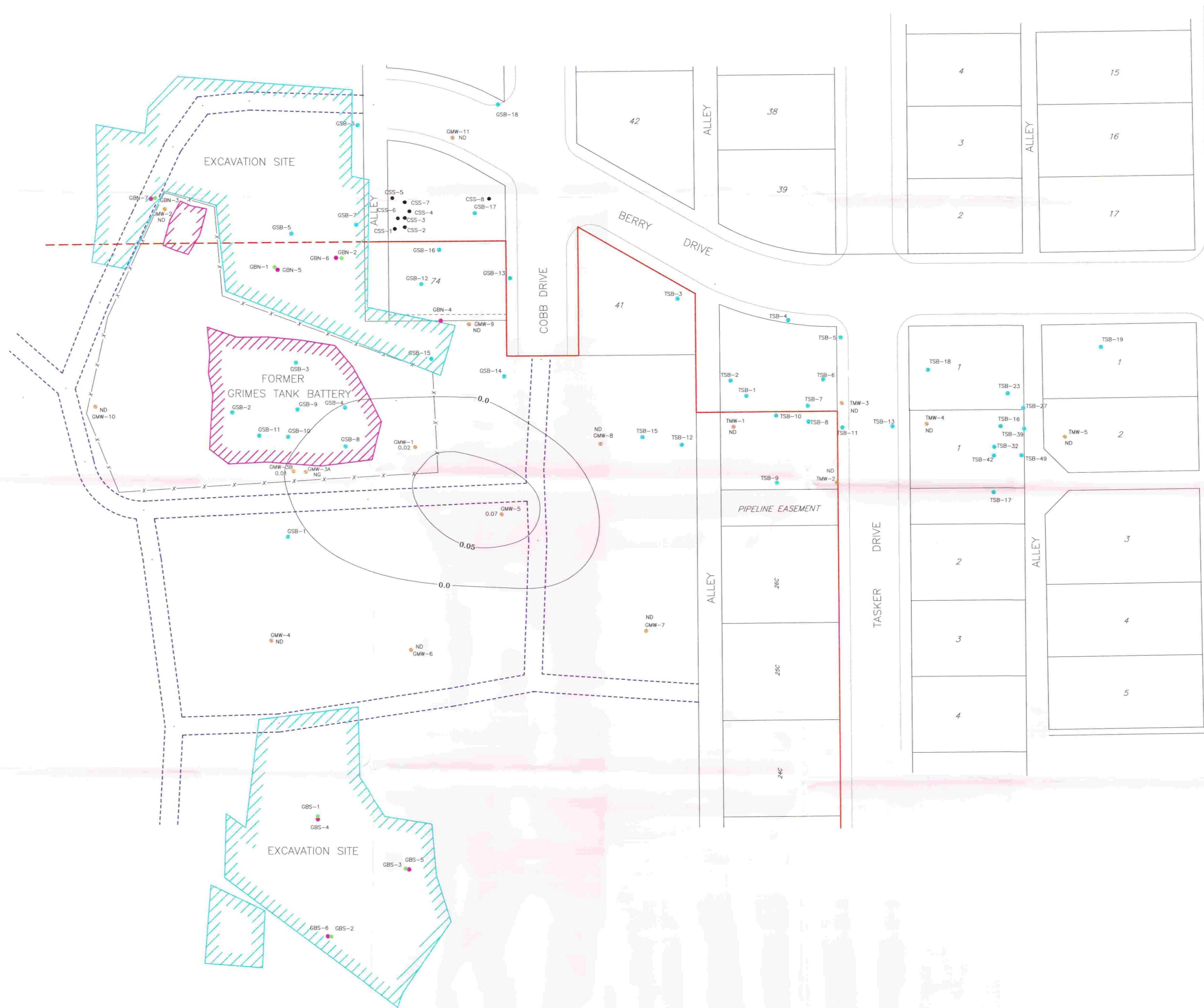
GRIMES BATTERY & TASKER ROAD
GROUND WATER ELEVATION/GRADIENT
2nd Quarter 2002
MEASURED 6/20/2002

CONTOURS DEPICTED ON THIS DRAWING BASED ON INTERPRETATION BY S. HALL

SURVEYED BY: LAWLESS	DRAWN BY: LMP	REV. DATE: 03/21/03
DATE BEGIN: 5/11/98	DATE: 8/13/98	FILE NAME: FIGURE04
DATE END: 9/1/98	CHECKED BY:	SHEET 1 OF 1
PROJECT #: 02.13.0368	DISK #: BBC	Scale: 1"=40'

E-3084
FIGURE Q4
2nd Quarter 2002

JOHN WEST SURVEYING COMPANY
HOBBS, NEW MEXICO



BBC INTERNATIONAL, INC. / ARCADIS GERAGHTY & MILLER

GRIMES BATTERY & TASKER ROAD
LNAPL THICKNESS
2nd Quarter 2002
MEASURED 6/20/02
CONTOUR INTERVAL 0.05 FEET

CONTOURS DEPICTED ON THIS DRAWING BASED ON INTERPRETATION BY S. HALL

SURVEYED BY: LANKLESS	DRAWN BY: LMP	REV. DATE: 03/21/03
DATE BEGN: 5/11/98	DATE: 8/13/98	FILE NAME: FIGUREQ5
DATE END: 9/1/98	CHECKED BY:	SHEET 1 OF 1
PROJECT #: 02.13.0368	DISK #: BBC	Scale: 1"=40'

E-3085

FIGURE Q5
2nd Quarter 2002

JOHN WEST SURVEYING COMPANY
HOBBBS, NEW MEXICO

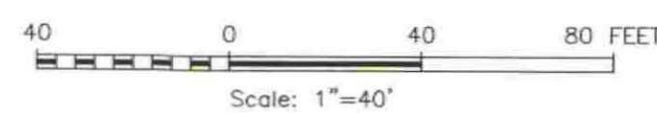


- LEGEND
- /// DENOTES EXCAVATED AREA
 - DENOTES PROPOSED PARK CURVE-OUT
 - DENOTES EXISTING RESIDENCE
 - - - DENOTES DIRT LEASE ROAD
 - DENOTES NEW EXCAVATION SITE
 - TSB - DENOTES TASKER SOIL BORING
 - GSB - DENOTES GRIMES SOIL BORING
 - GMW - DENOTES GRIMES MONITOR WELL
 - TMW - DENOTES TASKER MONITOR WELL
 - GBS - DENOTES SURFACE SAMPLES PRIOR TO EXCAVATION
 - GBN - DENOTES SURFACE SAMPLES AFTER EXCAVATION
 - ND - NOT DETECTED
 - NG - NOT GAUGED

Second Quarter - 2002

Grimes Monitor Well #	UC/L	Benzene	Toluene	Ethylbenzene	M, p-Xylene	o-Xylene
GMW-2	Result	<1.00	<1.00	<1.00	<1.00	<1.00
	Detection Limit	1	1	1	1	1
GMW-4	Result	<1.00	<1.00	<1.00	<1.00	<1.00
	Detection Limit	1	1	1	1	1
GMW-6	Result	<1.00	<1.00	<1.00	<1.00	<1.00
	Detection Limit	1	1	1	1	1
GMW-7	Result	<1.00	<1.00	<1.00	<1.00	<1.00
	Detection Limit	1	1	1	1	1
GMW-8	Result	<1.00	<1.00	<1.00	<1.00	<1.00
	Detection Limit	1	1	1	1	1
GMW-10	Result	<1.00	<1.00	<1.00	<1.00	<1.00
	Detection Limit	1	1	1	1	1
GMW-11	Result	<1.00	<1.00	<1.00	<1.00	<1.00
	Detection Limit	1	1	1	1	1

Tasker Monitor Well #	UC/L	Benzene	Toluene	Ethylbenzene	M, p-Xylene	o-Xylene
TMW-1	Result	<1.00	<1.00	<1.00	<1.00	<1.00
	Detection Limit	1	1	1	1	1
TMW-2	Result	<1.00	<1.00	<1.00	<1.00	<1.00
	Detection Limit	1	1	1	1	1
TMW-5	Result	<1.00	<1.00	44.9	<1.00	<1.00
	Detection Limit	1	1	1	1	1



BBC INTERNATIONAL, INC. / ARCADIS GERAGHTY & MILLER

GRIMES BATTERY & TASKER ROAD
TOTAL BTX CONCENTRATIONS IN GROUNDWATER
2nd Quarter 2002
MEASURED DATE: 6/20/02
CONTOUR INTERVAL IS SHOWN (MILLIGRAMS PER LITER)

CONTOURS DEPICTED ON THIS DRAWING BASED ON INTERPRETATION BY S. HALL

SURVEYED BY: LAWLESS DRAWN BY: LMP REV. DATE: 03/21/03
DATE BEGIN: 5/11/98 DATE: 6/13/98 FILE NAME: FIGURE06
DATE END: 9/1/98 CHECKED BY: SHEET 1 OF 1
PROJECT #: 02.13.0368 DISK #: BBC Scale: 1"=40'

E-3086

FIGURE Q6
2nd Quarter 2002

JOHN WEST SURVEYING COMPANY
HOBBS, NEW MEXICO



- LEGEND**
- DENOTES EXCAVATED AREA
 - DENOTES PROPOSED PARK CURVE-OUT
 - DENOTES EXISTING RESIDENCE
 - DENOTES DIRT LEASE ROAD
 - DENOTES NEW EXCAVATION SITE
 - TSB - DENOTES TASKER SOIL BORING
 - GSB - DENOTES GRIMES SOIL BORING
 - TMW - DENOTES TASKER MONITOR WELL
 - GMW - DENOTES GRIMES MONITOR WELL
 - GBS - DENOTES SURFACE SAMPLES PRIOR TO EXCAVATION
 - GBN - DENOTES SURFACE SAMPLES PRIOR TO EXCAVATION
 - GBS - DENOTES SURFACE SAMPLES AFTER EXCAVATION
 - GBN - DENOTES SURFACE SAMPLES AFTER EXCAVATION
 - NM - NOT GAUGED

40 0 40 80 FEET
Scale: 1"=40'

BBC INTERNATIONAL, INC. / ARCADIS GERAGHTY & MILLER

GRIMES BATTERY & TASKER ROAD
GROUND WATER ELEVATION/GRADIENT
3rd Quarter 2002
MEASURED 9/27/2002

CONTOURS DEPICTED ON THIS DRAWING BASED ON INTERPRETATION BY S. HALL

SURVEYED BY: LAWLESS	DRAWN BY: LMP	REV. DATE: 03/21/03	E-3087
DATE BEGN: 5/11/98	DATE: 8/13/98	FILE NAME: FIGURE07	FIGURE Q7
DATE END: 9/1/98	CHECKED BY:	SHEET 1 OF 1	3rd Quarter 2002
PROJECT #: 02.13.0368	DISK #: BBC	Scale: 1"=40'	

JOHN WEST SURVEYING COMPANY
HOBBS, NEW MEXICO

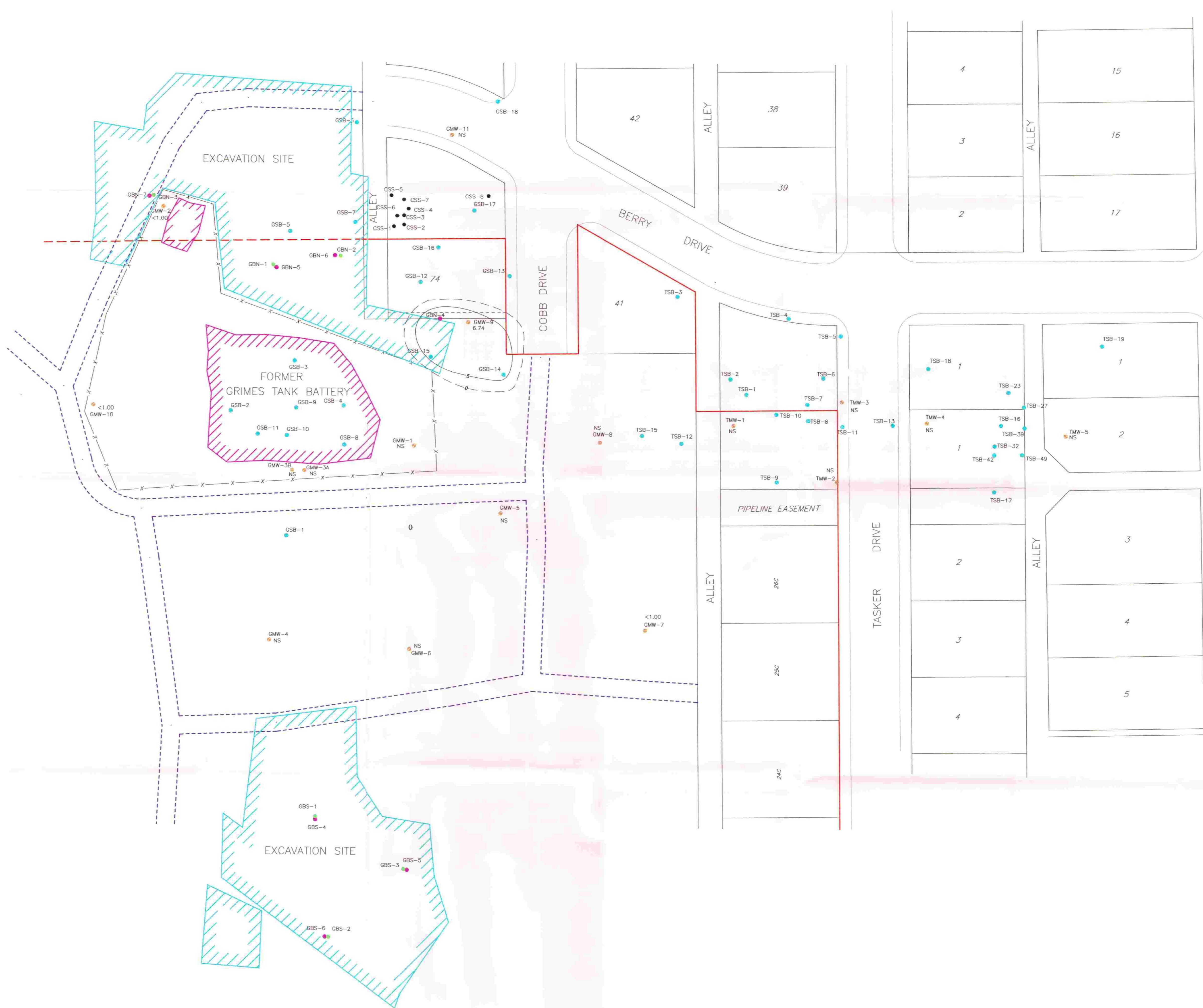


BBC INTERNATIONAL, INC. / ARCADIS GERAGHTY & MILLER

GRIMES BATTERY & TASKER ROAD
LNAPL WELLS
3rd Quarter 2002
MEASURED 9/27/2002

CONTOURS DEPICTED ON THIS DRAWING BASED ON INTERPRETATION BY S. HALL

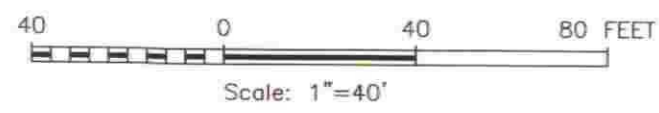
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DATE BEGN: 5/11/99	DATE: 8/13/99	FILE NAME: FIGURE08	FIGURE Q8
DATE END: 9/11/99	CHECKED BY:	SHEET 1 OF 1	3rd Quarter 2002
PROJECT #: 02.13.0368	DISK #: BBC	Scale: 1"=40'	



- LEGEND**
- DENOTES EXCAVATED AREA
 - DENOTES PROPOSED PARK CURVE-OUT
 - DENOTES EXISTING RESIDENCE
 - DENOTES DIRT LEASE ROAD
 - DENOTES NEW EXCAVATION SITE
 - TSB - DENOTES TASKER SOIL BORING
 - GSB - DENOTES GRIMES SOIL BORING
 - TMW - DENOTES TASKER MONITOR WELL
 - GMW - DENOTES GRIMES MONITOR WELL
 - GBS - DENOTES SURFACE SAMPLES PRIOR TO EXCAVATION
 - GBN - DENOTES SURFACE SAMPLES AFTER EXCAVATION
 - GBS - DENOTES SURFACE SAMPLES AFTER EXCAVATION
 - GBN - DENOTES SURFACE SAMPLES AFTER EXCAVATION
 - ND - NOT DETECTED
 - NG - NOT GAUGED

Third Quarter - 2001

Crimes Monitor Well #	UC/L	Benzene	Toluene	Ethylbenzene	m, p-Xylene	o-Xylene
GMW-2	Result	<1.00	1.38	<1.00	<1.00	<1.00
	Detection Limit	1	1	1	1	1
GMW-7	Result	<1.00	<1.00	<1.00	<1.00	<1.00
	Detection Limit	1	1	1	1	1
GMW-9	Result	<5.00	<5.00	6.74	<5.00	<5.00
	Detection Limit	1	1	1	1	1
GMW-10	Result	<1.00	<1.00	<1.00	<1.00	<1.00
	Detection Limit	1	1	1	1	1



BBC INTERNATIONAL, INC. / ARCADIS GERAGHTY & MILLER

GRIMES BATTERY & TASKER ROAD
TOTAL BTEX CONCENTRATIONS UG/L
3rd Quarter 2002
MEASURED DATE: 9/27/02
CONTOUR INTERVAL IS SHOWN (MILLIGRAMS PER LITER)

CONTOURS DEPICTED ON THIS DRAWING BASED ON INTERPRETATION BY S. HALL

SURVEYED BY: LAWLESS	DRAWN BY: LMP	REV. DATE: 03/21/03	E-3089
DATE BEGN: 5/11/98	DATE: 8/13/98	FILE NAME: FIGUREQ9	
DATE END: 9/1/98	CHECKED BY:	SHEET 1 OF 1	FIGURE Q9
PROJECT #: 02.13.0368	DISK #: BBC	Scale: 1"=40'	3rd Quarter 2002

JOHN WEST SURVEYING COMPANY
HOBBS, NEW MEXICO

3578

EXCAVATION SITE

FORMER
GRIMES TANK BATTERY

EXCAVATION SITE

BERRY DRIVE

COBB DRIVE

ALLEY

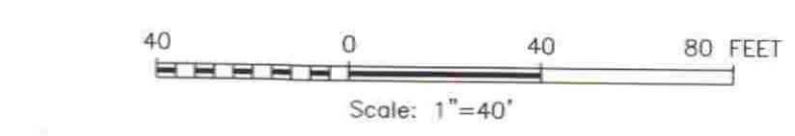
PIPELINE EASEMENT

TASKER DRIVE

ALLEY

ALLEY

SAN ANDRES



- LEGEND**
- //// DENOTES EXCAVATED AREA
 - DENOTES PROPOSED PARK CARVE-OUT
 - DENOTES EXISTING RESIDENCE
 - DENOTES DIRT LEASE ROAD
 - DENOTES NEW EXCAVATION SITE
 - TSB - DENOTES TASKER SOIL BORING
 - GSB - DENOTES GRIMES SOIL BORING
 - TMW - DENOTES TASKER MONITOR WELL
 - GMW - DENOTES GRIMES MONITOR WELL
 - GBS - DENOTES SURFACE SAMPLES PRIOR TO EXCAVATION
 - GBN - DENOTES SURFACE SAMPLES AFTER EXCAVATION
 - GBS - DENOTES SURFACE SAMPLES AFTER EXCAVATION
 - GBN - DENOTES SURFACE SAMPLES AFTER EXCAVATION

BBC INTERNATIONAL, INC. / ARCADIS GERAGHTY & MILLER

GRIMES BATTERY & TASKER ROAD
GROUND WATER ELEVATION/GRADIENT
4th Quarter 2002
MEASURED 12/9/2002

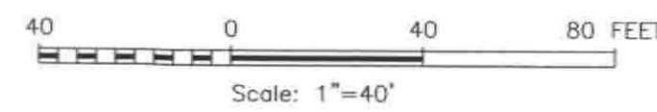
CONTOURS DEPICTED ON THIS DRAWING BASED ON INTERPRETATION BY S. HALL

SURVEYED BY: LAWLESS	DRAWN BY: LMP	REV. DATE: 03/21/03	E-3090
DATE BEGIN: 5/11/98	DATE: 8/13/98	FILE NAME: FIGUREQ10	FIGURE Q10
DATE END: 9/1/98	CHECKED BY:	SHEET 1 OF 1	4th Quarter 2002
PROJECT #: 02.13.0368	DISK #: BBC	Scale: 1"=40'	

JOHN WEST SURVEYING COMPANY
HOBBS, NEW MEXICO



- LEGEND
- /// DENOTES EXCAVATED AREA
 - DENOTES PROPOSED PARK CURVE-OUT
 - DENOTES EXISTING RESIDENCE
 - - - DENOTES DIRT LEASE ROAD
 - DENOTES NEW EXCAVATION SITE
 - TSB - DENOTES TASKER SOIL BORING
 - GSB - DENOTES GRIMES SOIL BORING
 - TMW - DENOTES TASKER MONITOR WELL
 - GMW - DENOTES GRIMES MONITOR WELL
 - GBS - DENOTES SURFACE SAMPLES PRIOR TO EXCAVATION
 - GBN - DENOTES SURFACE SAMPLES PRIOR TO EXCAVATION
 - GBS - DENOTES SURFACE SAMPLES AFTER EXCAVATION
 - GBN - DENOTES SURFACE SAMPLES AFTER EXCAVATION
 - ND - NOT DETECTED
 - NG - NOT GAUGED



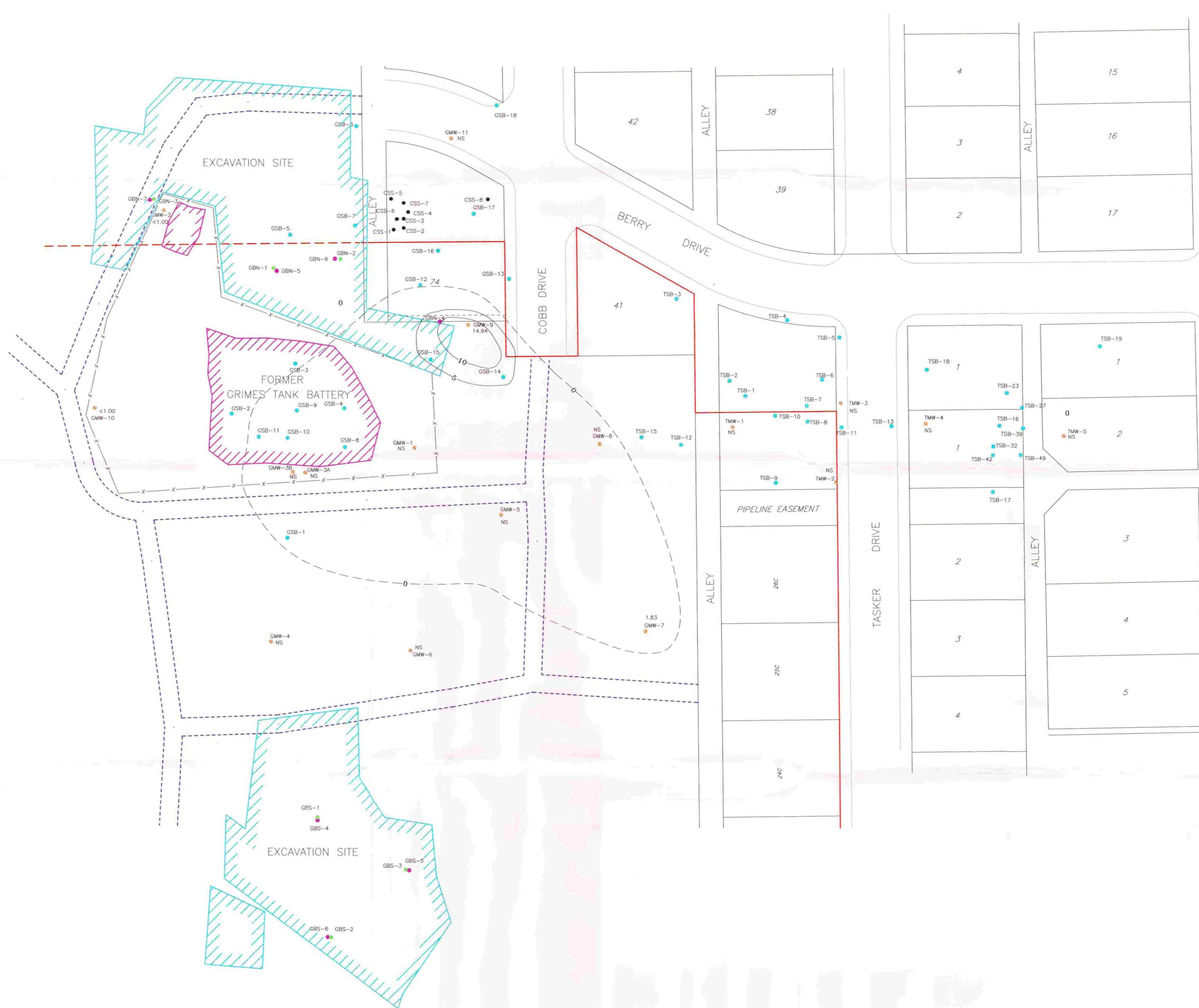
BBC INTERNATIONAL, INC. / ARCADIS GERAGHTY & MILLER

GRIMES BATTERY & TASKER ROAD
LNAPL THICKNESS
4th Quarter 2002
MEASURED 12/9/02
CONTOUR INTERVAL = 0.5 FEET

CONTOURS DEPICTED ON THIS DRAWING BASED ON INTERPRETATION BY S. HALL

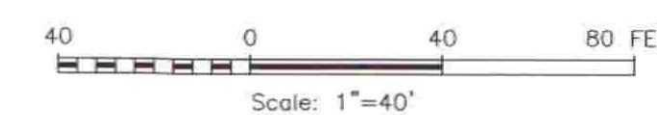
SURVEYED BY: LAMLESS	DRAWN BY: LMP	REV. DATE: 03/21/03	E-3081
DATE BEGN: 5/11/99	DATE: 8/13/99	FILE NAME: FIGUREQ11	
DATE END: 9/1/99	CHECKED BY:	SHEET 1 OF 1	FIGURE Q11
PROJECT #: 02.13.0368	DSK #: BBC	Scale: 1"=40'	4th Quarter 2002

JOHN WEST SURVEYING COMPANY
HOBBS, NEW MEXICO



Fourth Quarter - 2002

Grimes Monitor Well #	UC/L	Benzene	Toluene	Ethylbenzene	M, p-Xylene	o-Xylene
GMW-2	Result	<1.00	<1.00	<1.00	<1.00	<1.00
	Detection Limit	1	1	1	1	1
GMW-7	Result	<1.00	<1.00	<1.00	1.83	<1.00
	Detection Limit	1	1	1	1	1
GMW-9	Result	<1.00	<1.00	8.83	4.79	1.32
	Detection Limit	1	1	1	1	1
GMW-10	Result	<1.00	<1.00	<1.00	<1.00	<1.00
	Detection Limit	1	1	1	1	1



BBC INTERNATIONAL, INC. / ARCADIS GERAGHTY & MILLER

GRIMES BATTERY & TASKER ROAD
TOTAL BTX CONCENTRATIONS
4th Quarter 2002
MEASURED DATE: 12/9/02
CONTOUR INTERVAL AS SHOWN

CONTOURS DEPICTED ON THIS DRAWING BASED ON INTERPRETATION BY S. HALL

SURVEYED BY: LAWLESS	DRAWN BY: LMP	REV. DATE: 03/21/03	E-3092
DATE BEG: 5/11/98	DATE: 8/13/98	FILE NAME: FIGURE012	FIGURE Q12
DATE END: 9/1/98	CHECKED BY:	SHEET: 1 OF 1	4th Quarter 2002
PROJECT #: 02.13.0368	DISK #: BBC	Scale: 1"=40'	

JOHN WEST SURVEYING COMPANY
HOBBBS, NEW MEXICO