AP - 2

ANNUAL MONITORING REPORT

YEAR(S): 2003

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

Woodcreek
200 N Dairy Ashford
Houston, TX 77079

P.O. Box 576
Houston, TX 77001

HAND DELIVERED

April 14, 2004

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

SUBJECT: SUBMITTAL OF 2003 GROUNDWATER MONITORING REPORT, WESTGATE SUBDIVISION, GRIMES BATTERY AND TASKER ROAD

Dear Mr. Olson:

Shell Exploration and Production Company (SEPCo) respectfully submits the enclosed 2003 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 2003. 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

2003 Quarterly Groundwater Monitoring Report

April 2004

SHELL EXPLORATION & PRODUCTION COMPANY
HOUSTON, TEXAS

Prepared By:

BBC International, Inc.
World-Wide Environmental Specialists
Hobbs, New Mexico

TABLE OF CONTENTS

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 2003 GROUNDWATER MONITORING ACTIVITIES

Per NMOCD requirements, there were originally sixteen groundwater monitoring wells in the Westgate Subdivision that were 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 had measurable free product hydrocarbons detected in them. These monitor wells are GMW-1, GMW-3B, and GMW-5. The fourth, GMW-9, has detected a sheen of hydrocarbons.

Due to large scale remediation activities at the site in 2002, several monitor wells were plugged and abandoned since their proximity to the soil remediation area would require their removal. With this knowledge and support analytical data, Shell requested in the annual groundwater report for 2001 submitted to the NMOCD on May 3, 2002 that all five of the Tasker wells (TMW-1 – TMW-5) be plugged and abandoned since all of these wells had gone over 10 consecutive quarters with non-detect results or well below NMWQCC standards. In addition, Shell had requested several Grimes wells (GMW) to be plugged and abandoned for the same reasons. The NMOCD did not respond to this request until March 3, 2003 (Appendix V). The NMOCD approved the request to plug and abandon the five Tasker wells, but denied the plugging of the Grimes wells and altered the sampling frequency of several Grimes wells.

Therefore, the number of wells gauged and sampled in 2003 was reduced from previous years with the elimination of the Tasker wells.

2.1 LNAPL THICKNESS AND GROUNDWATER ELEVATIONS

Each quarter the eleven 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). Three wells were found to have measurable free product hydrocarbons. They are GMW-1, GMW-3B, and GMW-5. GMW-9 occasionally detected a sheen (Tables 1, 2, 3, 4). 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 2003 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	3/4/2003	69.34	69.04	0.22	3578.72
GMW-2	3648.51	3/4/2003	68.38	ND	0.00	3580.13
GMW-3B	3648.26	3/4/2003	68.31	68.25	0.04	3579.99
GMW-4	3647.79	3/4/2003	67.90	ND	0.00	3579.89
GMW-5	3648.41	3/4/2003	69.51	69.31	0.15	3579.05
GMW-6	3648.22	3/4/2003	69.05	ND	0.00	3579.17
GMW-7	3644.98	3/4/2003	69.44	ND	0.00	3575.54
GMW-8	3645.66	3/4/2003	70.10	ND	0.00	3575.56
GMW-9	3646.27	3/4/2003	69.86	ND	0.00	3576.41
GMW-10	3645.65	3/4/2003	67.77	ND	0.00	3577.88
GMW-11	3644.07	3/4/2003	67.99	ND	0.00	3576.08

Table 2. 2nd Quarter 2003 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	6/27/2003	69.81	69.58	0.17	3578.20
GMW-2	3648.51	6/27/2003	68.97	ND	0.00	3579.54
GMW-3B	3648.26	6/27/2003	68.73	68.72	0.01	3579.53
GMW-4	3647.79	6/27/2003	68.35	ND	0.00	3579.89
GMW-5	3648.41	6/27/2003	69.72	69.55	0.12	3578.81
GMW-6	3648.22	6/27/2003	69.64	ND	0.00	3579.17
GMW-7	3644.98	6/27/2003	69.94	ND	0.00	3575.04
GMW-8	3645.66	6/27/2003	70.62	ND	0.00	3575.04
GMW-9	3646.27	6/27/2003	70.37	ND	0.00	3575.90
GMW-10	3645.65	6/27/2003	68.35	ND	0.00	3577.30
GMW-11	3644.07	6/27/2003	68.39	ND	0.00	3576.08

Table 3. 3rd Quarter 2003 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	9/8/2003	69.92	69.90	0.01	3577.92
GMW-2	3648.51	9/8/2003	69.28	ND	0.00	3579.23
GMW-3B	3648.26	9/8/2003	69.15	69.14	0.01	3579.11
GMW-4	3647.79	9/8/2003	68.68	ND	0.00	3579.11
GMW-5	3648.41	9/8/2003	70.27	70.25	0.01	3578.14
GMW-6	3648.22	9/8/2003	69.79	ND	0.00	3578.43
GMW-7	3644.98	9/8/2003	70.25	ND	0.00	3574.73
GMW-8	3645.66	9/8/2003	70.91	ND	0.00	3574.75
GMW-9	3646.27	9/8/2003	70.68	ND	0.00	3575.59
GMW-10	3645.65	9/8/2003	68.70	ND	0.00	3576.95
GMW-11	3644.07	9/8/2003	68.74	ND	0.00	3575.33

Table 4. 4th Quarter 2003 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	12/23/2003	70.47	70.45	0.01	3577.38
GMW-2	3648.51	12/23/2003	69.70	ND	0.00	3578.81
GMW-3B	3648.26	12/23/2003	69.60	Sheen	0.00	3578.66
GMW-4	3647.79	12/23/2003	69.21	ND	0.00	3578.58
GMW-5	3648.41	12/23/2003	70.88	70.86	0.01	3577.54
GMW-6	3648.22	12/23/2003	70.40	ND	0.00	3577.82
GMW-7	3644.98	12/23/2003	70.69	ND	0.00	3574.29
GMW-8	3645.66	12/23/2003	71.37	ND	0.00	3574.29
GMW-9	3646.27	12/23/2003	71.16	ND	0.00	3575.11
GMW-10	3645.65	12/23/2003	69.11	ND	0.00	3576.54
GMW-11	3644.07	12/23/2003	69.20	ND	0.00	3574.87

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. 2003 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				
1/3/2003	0.00	0.00	0.00	0.00
1/7/2003	0.75	0.00	0.00	0.00
1/10/2003	0.00	0.75	0.00	0.00
1/14/2003	0.00	0.00	0.00	0.00
1/17/2003	0.00	0.00	0.75	0.00
1/21/2003	0.00	0.00	0.00	0.00
1/24/2003	0.00	0.00	0.00	0.00
1/28/2003	0.00	0.00	0.00	0.00
1/31/2003	0.00	0.00	0.00	0.00
2/4/2003	0.00	0.75	0.00	0.00
2/7/2003	0.00	0.00	0.00	0.00
2/11/2003	0.00	0.00	0.00	0.00
2/14/2003	0.00	0.00	0.00	0.00
2/18/2003	0.00	0.00	0.00	0.00
2/21/2003	0.00	0.00	0.75	0.00
2/25/2003	0.00	0.00	0.00	0.00
3/4/2003	Quarterly Sampling			
3/7/2003	0.00	0.00	0.00	0.00
3/11/2003	0.00	0.00	0.00	0.00
3/14/2003	0.00	0.00	0.00	0.00
3/18/2003	0.00	0.00	0.00	0.00
3/21/2003	0.00	0.00	0.00	0.00
3/25/2003	0.75	0.00	1.50	0.00
3/28/2004	0.75	0.75	0.75	0.00
First Quarter Total	2.25	2.25	3.75	0.00

Year-to Date Totals	2.25	2.25	3.75	0.00
Second Quarter				
4/1/2003	0.75	1.50	0.75	0.00
4/4/2003	0.75	0.00	1.75	0.00
4/10/2003	0.00	0.00	0.00	0.00
4/15/2003	0.75	0.75	1.50	0.00
4/18/2003	0.75	0.75	0.75	0.00
4/22/2003	0.75	0.00	0.00	0.00
4/25/2003	0.75	0.75	0.00	0.00
4/29/2003	0.75	0.00	0.00	0.00
5/6/2003	1.50	0.75	0.75	0.00
5/9/2003	0.00	0.00	0.00	0.00
5/13/2003	0.75	0.00	0.75	0.00
5/15/2003	1.50	0.75	1.50	0.00
5/20/2003	0.75	0.00	0.00	0.00
5/27/2003	0.00	0.00	0.00	0.00
5/30/2003	0.00	0.00	0.00	0.00
6/3/2003	0.00	0.00	0.00	0.00
6/6/2003	0.00	0.00	0.00	0.00
6/11/2003	0.00	0.00	0.00	0.00
6/13/2003	0.00	0.00	0.00	0.00
6/17/2003	0.00	0.00	0.00	0.00
6/20/2003	0.00	0.00	0.00	0.00
6/27/2003	Quarterly Sampling			
Second Quarter Total	9.75	5.25	7.75	0.00
Year-to Date Totals	12.00	7.50	11.50	0.00
Third Quarter				
7/3/03	0.00	0.00	Tip of soak-ease	0.00
7/8/03	0.00	0.00	0.00	0.00
7/11/03	0.00	0.00	0.00	0.00
7/15/03	0.00	0.00	0.00	0.00
7/18/03	0.00	0.00	0.00	0.00
7/22/03	0.00	0.00	0.75	0.00
7/25/03	0.00	0.00	0.00	0.00
7/29/03	0.75	0.00	0.75	Tip of soak-ease
8/1/03	0.00	0.00	0.75	0.00

8/5/03	0.00	0.00	0.75	0.00
8/8/03	Tip of soak-ease	0.00	0.00	0.00
8/12/03	0.00	0.00	0.00	0.00
8/15/03	0.00	0.00	0.00	0.00
8/20/03	0.00	0.00	0.75	0.00
8/22/03	0.00	0.00	0.75	0.00
8/26/03	0.75	0.00	0.75	0.00
8/29/03	0.00	0.00	0.75	0.00
9/8/03	Quarterly Sampling			
9/12/03	1.50	0.00	1.50	0.00
9/19/03	0.75	Tip of soak-ease	0.75	0.00
9/23/03	0.75	0.00	0.75	0.00
9/26/03	0.75	Tip of soak-ease	Tip of soak-ease	0.00
Third Quarter Total	5.25	0.00	9.00	0.00
Year-to Date Totals	17.25	7.50	20.50	0.00
Fourth Quarter				
10/8/03	0.00	0.00	Tip of soak-ease	0.00
10/10/03	0.00	Tip of soak-ease	0.75	0.00
10/14/03	0.75	Tip of soak-ease	Tip of soak-ease	0.00
10/17/03	0.25	0.00	0.75	0.00
10/22/03	0.00	Tip of soak-ease	0.75	0.00
10/24/03	0.00	Tip of soak-ease	1.50	0.00
10/28/03	0.00	0.00	0.75	0.00
10/31/03	0.00	0.75	0.75	0.00
11/4/03	1.50	0.00	0.75	0.00
11/7/03	Tip of soak-ease	0.00	Tip of soak-ease	0.00
11/12/03	0.00	0.00	0.75	0.00
11/14/03	0.00	Tip of soak-ease	0.75	0.00
11/18/03	0.00	Tip of soak-ease	Tip of soak-ease	0.00
11/21/03	0.75	Tip of soak-ease	0.75	0.00
11/25/03	0.00	0.00	0.75	0.00
12/5/03	0.00	0.75	0.75	0.00
12/17/05	0.00	0.00	0.00	0.00
12/23/04	Quarterly Sampling			
12/30/03	Tip of soak-ease	Tip of soak-ease	0.75	0.00
Fourth Quarter Totals	3.25	1.50	10.50	0.00
Year-to Date Totals	20.50	9.00	31.00	0.00

2.3 PURGING AND SAMPLING ACTIVITIES

Each quarter all eleven 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 (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 2003 Sampling Reports

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

GMW-2

Analyte	*Matrix*	*Method Taken*	*1st Quarter* Order ID Number: A03030507				*2nd Quarter* Order ID Number: 3070107			
			Sample No.	Date Taken	µg/L Result	Detection Limit	Sample No.	Date Taken	µg/L Result	Detection Limit
Benzene	Water	S-8260B	222905	3/4/03	<1.00	1	11742	6/27/03	<1.00	1
Toluene	Water	S-8260B	222905	3/4/03	<1.00	1	11742	6/27/03	<1.00	1
Ethylbenzene	Water	S-8260B	222905	3/4/03	<1.00	1	11742	6/27/03	<1.00	1
M,p-Xylene	Water	S-8260B	222905	3/4/03	<1.00	1	11742	6/27/03	<1.00	1
o-Xylene	Water	S-8260B	222905	3/4/03	<1.00	1	11742	6/27/03	<1.00	1

GMW-7

Analyte	*Matrix*	*Method Taken*	*1st Quarter* Order ID Number: A03030507				*2nd Quarter* Order ID Number: 3070107			
			Sample No.	Date Taken	µg/L Result	Detection Limit	Sample No.	Date Taken	µg/L Result	Detection Limit
Benzene	Water	S-8260B	222908	3/4/03	<1.00	1	11745	6/27/03	<1.00	1
Toluene	Water	S-8260B	222908	3/4/03	<1.00	1	11745	6/27/03	<1.00	1
Ethylbenzene	Water	S-8260B	222908	3/4/03	<1.00	1	11745	6/27/03	<1.00	1
M,p-Xylene	Water	S-8260B	222908	3/4/03	<1.00	1	11745	6/27/03	<1.00	1
o-Xylene	Water	S-8260B	222908	3/4/03	<1.00	1	11745	6/27/03	<1.00	1

GMW-8

Analyte	Matrix	Method Taken	1st Quarter Order ID Number: A03030507				2nd Quarter Order ID Number: 3070107			
			Sample No.	Date Taken	µg/L Result	µg/L Detection Limit	Sample No.	Date Taken	µg/L Result	µg/L Detection Limit
Benzene	Water	S-8260B	222907	3/4/03	<1.00	1	11744	6/27/03	<1.00	1
Toluene	Water	S-8260B	222907	3/4/03	<1.00	1	11744	6/27/03	<1.00	1
Ethylbenzene	Water	S-8260B	222907	3/4/03	<1.00	1	11744	6/27/03	<1.00	1
M,p-Xylene	Water	S-8260B	222907	3/4/03	<1.00	1	11744	6/27/03	<1.00	1
o-Xylene	Water	S-8260B	222907	3/4/03	<1.00	1	11744	6/27/03	<1.00	1

GMW-10

Analyte	Matrix	Method Taken	1st Quarter Order ID Number: A03030507				2nd Quarter Order ID Number: 3070107			
			Sample No.	Date Taken	µg/L Result	µg/L Detection Limit	Sample No.	Date Taken	µg/L Result	µg/L Detection Limit
Benzene	Water	S-8260B	222906	3/4/03	<1.00	1	11743	6/27/03	<1.00	1
Toluene	Water	S-8260B	222906	3/4/03	<1.00	1	11743	6/27/03	<1.00	1
Ethylbenzene	Water	S-8260B	222906	3/4/03	<1.00	1	11743	6/27/03	<1.00	1
M,p-Xylene	Water	S-8260B	222906	3/4/03	<1.00	1	11743	6/27/03	<1.00	1
o-Xylene	Water	S-8260B	222906	3/4/03	<1.00	1	11743	6/27/03	<1.00	1

Table 7. 3rd & 4th Quarter 2003 Sampling Reports

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

GMW-2

Analyte	Matrix	Method Taken	3rd Quarter Order ID Number: 3090921				4th Quarter Order ID Number: 3122408			
			Sample No.	Date Taken	µg/L Result	µg/L Detection Limit	Sample No.	Date Taken	µg/L Result	µg/L Detection Limit
Benzene	Water	S-8260B	16933	9/08/03	<1.00	1	24027	12/23/03	<1.00	1
Toluene	Water	S-8260B	16933	9/08/03	<1.00	1	24027	12/23/03	<1.00	1
Ethylbenzene	Water	S-8260B	16933	9/08/03	<1.00	1	24027	12/23/03	<1.00	1
M,p-Xylene	Water	S-8260B	16933	9/08/03	<1.00	1	24027	12/23/03	<1.00	1
o-Xylene	Water	S-8260B	16933	9/08/03	<1.00	1	24027	12/23/03	<1.00	1
Analyte	Matrix	Method Taken	Sample No.	Date Taken	mg/L Result	mg/L Detection Limit	Sample No.	Date Taken	mg/L Result	mg/L Detection Limit
Naphthalene	Water	S-8270C					24027	12/23/03	<0.0002	0.200
Acenaphthylene	Water	S-8270C					24027	12/23/03	<0.0002	0.200
Acenaphthene	Water	S-8270C					24027	12/23/03	<0.0002	0.200
Fluorene	Water	S-8270C					24027	12/23/03	<0.0002	0.200
Phenanthrene	Water	S-8270C					24027	12/23/03	<0.0002	0.200
Anthracene	Water	S-8270C					24027	12/23/03	<0.0002	0.200
Fluoranthene	Water	S-8270C					24027	12/23/03	<0.0002	0.200
Pyrene	Water	S-8270C					24027	12/23/03	<0.0002	0.200
Benzo[a]anthracene	Water	S-8270C					24027	12/23/03	<0.0002	0.200
Chrysene	Water	S-8270C					24027	12/23/03	<0.0002	0.200
Benzo[b]fluoranthene	Water	S-8270C					24027	12/23/03	<0.0002	0.200
Benzo[k]fluoranthene	Water	S-8270C					24027	12/23/03	<0.0002	0.200
Benzo[a]pyrene	Water	S-8270C					24027	12/23/03	<0.0002	0.200
Indeno[1,2-3-cd]pyrene	Water	S-8270C					24027	12/23/03	<0.0002	0.200
Dibenz[a,h]anthracene	Water	S-8270C					24027	12/23/03	<0.0002	0.200
Benzo[g,h,i]perylene	Water	S-8270C					24027	12/23/03	<0.0002	0.200

GMW-7

Analyte	Matrix	Method Taken	3rd Quarter Order ID Number: 3090921				4th Quarter Order ID Number: 3122408			
			Sample No.	Date Taken	µg/L Result	Detection Limit	Sample No.	Date Taken	µg/L Result	Detection Limit
Benzene	Water	S-8260B	16936	9/08/03	<1.00	1	24030	12/23/03	<1.00	1
Toluene	Water	S-8260B	16936	9/08/03	<1.00	1	24030	12/23/03	<1.00	1
Ethylbenzene	Water	S-8260B	16936	9/08/03	<1.00	1	24030	12/23/03	<1.00	1
M,p-Xylene	Water	S-8260B	16936	9/08/03	<1.00	1	24030	12/23/03	<1.00	1
o-Xylene	Water	S-8260B	16936	9/08/03	<1.00	1	24030	12/23/03	<1.00	1
Analyte	Matrix	Method Taken	Sample No.	Date Taken	mg/L Result	Detection Limit	Sample No.	Date Taken	mg/L Result	Detection Limit
Naphthalene	Water	S-8270C					24030	12/23/03	<0.0002	0.200
Acenaphthylene	Water	S-8270C					24030	12/23/03	<0.0002	0.200
Acenaphthene	Water	S-8270C					24030	12/23/03	<0.0002	0.200
Fluorene	Water	S-8270C					24030	12/23/03	<0.0002	0.200
Phenanthrene	Water	S-8270C					24030	12/23/03	<0.0002	0.200
Anthracene	Water	S-8270C					24030	12/23/03	<0.0002	0.200
Fluoranthene	Water	S-8270C					24030	12/23/03	<0.0002	0.200
Pyrene	Water	S-8270C					24030	12/23/03	<0.0002	0.200
Benzo[a]anthracene	Water	S-8270C					24030	12/23/03	<0.0002	0.200
Chrysene	Water	S-8270C					24030	12/23/03	<0.0002	0.200
Benzo[b]fluoranthene	Water	S-8270C					24030	12/23/03	<0.0002	0.200
Benzo[k]fluoranthene	Water	S-8270C					24030	12/23/03	<0.0002	0.200
Benzo[a]pyrene	Water	S-8270C					24030	12/23/03	<0.0002	0.200
Indeno[1,2-3-cd]pyrene	Water	S-8270C					24030	12/23/03	<0.0002	0.200
Dibenz[a,h]anthracene	Water	S-8270C					24030	12/23/03	<0.0002	0.200
Benzo[g,h,i]perylene	Water	S-8270C					24030	12/23/03	<0.0002	0.200

GMW-8

Analyte	Matrix	Method Taken	3rd Quarter Order ID Number: 3090921				4th Quarter Order ID Number: 3122408			
			Sample No.	Date Taken	µg/L Result	Detection Limit	Sample No.	Date Taken	µg/L Result	Detection Limit
Benzene	Water	S-8260B	16935	9/08/03	<1.00	1	24031	12/23/03	<1.00	1
Toluene	Water	S-8260B	16935	9/08/03	<1.00	1	24031	12/23/03	<1.00	1
Ethylbenzene	Water	S-8260B	16935	9/08/03	<1.00	1	24031	12/23/03	<1.00	1
M,p-Xylene	Water	S-8260B	16935	9/08/03	<1.00	1	24031	12/23/03	<1.00	1
o-Xylene	Water	S-8260B	16935	9/08/03	<1.00	1	24031	12/23/03	<1.00	1
Analyte	Matrix	Method Taken	Sample No.	Date Taken	mg/L Result	Detection Limit	Sample No.	Date Taken	mg/L Result	Detection Limit
Naphthalene	Water	S-8270C					24031	12/23/03	<0.0002	0.200
Acenaphthylene	Water	S-8270C					24031	12/23/03	<0.0002	0.200
Acenaphthene	Water	S-8270C					24031	12/23/03	<0.0002	0.200
Fluorene	Water	S-8270C					24031	12/23/03	0.00043	0.200
Phenanthrene	Water	S-8270C					24031	12/23/03	<0.0002	0.200
Anthracene	Water	S-8270C					24031	12/23/03	<0.0002	0.200
Fluoranthene	Water	S-8270C					24031	12/23/03	<0.0002	0.200
Pyrene	Water	S-8270C					24031	12/23/03	<0.0002	0.200
Benzo[a]anthracene	Water	S-8270C					24031	12/23/03	<0.0002	0.200
Chrysene	Water	S-8270C					24031	12/23/03	<0.0002	0.200
Benzo[b]fluoranthene	Water	S-8270C					24031	12/23/03	<0.0002	0.200
Benzo[k]fluoranthene	Water	S-8270C					24031	12/23/03	<0.0002	0.200
Benzo[a]pyrene	Water	S-8270C					24031	12/23/03	<0.0002	0.200
Indeno[1,2-3-cd]pyrene	Water	S-8270C					24031	12/23/03	<0.0002	0.200
Dibenz[a,h]anthracene	Water	S-8270C					24031	12/23/03	<0.0002	0.200
Benzo[g,h,i]perylene	Water	S-8270C					24031	12/23/03	<0.0002	0.200

GMW-10

Analyte	Matrix	Method Taken	3rd Quarter Order ID Number: 3090921				4th Quarter Order ID Number: 3122408			
			Sample No.	Date Taken	µg/L Result	Detection Limit	Sample No.	Date Taken	µg/L Result	Detection Limit
Benzene	Water	S-8260B	16934	9/08/03	<1.00	1	24028	12/23/03	<1.00	1
Toluene	Water	S-8260B	16934	9/08/03	<1.00	1	24028	12/23/03	<1.00	1
Ethylbenzene	Water	S-8260B	16934	9/08/03	<1.00	1	24028	12/23/03	<1.00	1
M,p-Xylene	Water	S-8260B	16934	9/08/03	<1.00	1	24028	12/23/03	<1.00	1
o-Xylene	Water	S-8260B	16934	9/08/03	<1.00	1	24028	12/23/03	<1.00	1
Analyte	*Matrix*	*Method Taken*	Sample No.	Date Taken	mg/L Result	Detection Limit	Sample No.	Date Taken	mg/L Result	Detection Limit
Naphthalene	Water	S-8270C					24028	12/23/03	<0.0002	0.200
Acenaphthylene	Water	S-8270C					24028	12/23/03	<0.0002	0.200
Acenaphthene	Water	S-8270C					24028	12/23/03	<0.0002	0.200
Fluorene	Water	S-8270C					24028	12/23/03	<0.0002	0.200
Phenanthrene	Water	S-8270C					24028	12/23/03	<0.0002	0.200
Anthracene	Water	S-8270C					24028	12/23/03	<0.0002	0.200
Fluoranthene	Water	S-8270C					24028	12/23/03	<0.0002	0.200
Pyrene	Water	S-8270C					24028	12/23/03	<0.0002	0.200
Benzo[a]anthracene	Water	S-8270C					24028	12/23/03	<0.0002	0.200
Chrysene	Water	S-8270C					24028	12/23/03	<0.0002	0.200
Benzo[b]fluoranthene	Water	S-8270C					24028	12/23/03	<0.0002	0.200
Benzo[k]fluoranthene	Water	S-8270C					24028	12/23/03	<0.0002	0.200
Benzo[a]pyrene	Water	S-8270C					24028	12/23/03	<0.0002	0.200
Indeno[1,2-3-cd]pyrene	Water	S-8270C					24028	12/23/03	<0.0002	0.200
Dibenz[a,h]anthracene	Water	S-8270C					24028	12/23/03	<0.0002	0.200
Benzo[g,h,i]perylene	Water	S-8270C					24028	12/23/03	<0.0002	0.200

GMW-4

Analyte	Matrix	Method Taken	3rd Quarter Order ID Number: A03030507				4th Quarter Order ID Number: 3122408			
			Sample No.	Sample No.	Sample No.		Sample No.	Sample No.	µg/L Result	Detection Limit
Benzene	Water	S-8260B					24029	6/27/03	<1.00	1
Toluene	Water	S-8260B					24029	6/27/03	<1.00	1
Ethylbenzene	Water	S-8260B					24029	6/27/03	<1.00	1
M,p-Xylene	Water	S-8260B					24029	6/27/03	<1.00	1
o-Xylene	Water	S-8260B					24029	6/27/03	<1.00	1

GMW-6

Analyte	Matrix	Method Taken	3rd Quarter Order ID Number:				4th Quarter Order ID Number: 3122408			
			Sample No.	Date Taken	µg/L Result	Detection Limit	Sample No.	Date Taken	µg/L Result	Detection Limit
Benzene	Water	S-8260B					24032	12/23/03	<1.00	1
Toluene	Water	S-8260B					24032	12/23/03	<1.00	1
Ethylbenzene	Water	S-8260B					24032	12/23/03	<1.00	1
M,p-Xylene	Water	S-8260B					24032	12/23/03	<1.00	1
o-Xylene	Water	S-8260B					24032	12/23/03	<1.00	1

GMW-11

Analyte	Matrix	Method Taken	3rd Quarter Order ID Number:		µg/L		4th Quarter Order ID Number: 3122408		µg/L	
			Sample No.	Date Taken	Result	Detection Limit	Sample No.	Date Taken	Result	Detection Limit
Benzene	Water	S-8260B					24033	12/23/03	<1.00	1
Toluene	Water	S-8260B					24033	12/23/03	<1.00	1
Ethylbenzene	Water	S-8260B					24033	12/23/03	<1.00	1
M,p-Xylene	Water	S-8260B					24033	12/23/03	<1.00	1
o-Xylene	Water	S-8260B					24033	12/23/03	<1.00	1

In the first quarter of 2003, all analytes tested non-detect in all of the wells. Figure Q3 is an isopleth map of total BTEX concentration detected in the groundwater samples.

In the second quarter of 2003, all 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 of 2003, all 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 of 2003, fluorene was detected in GMW #8 at a concentration of 0.00043 parts per billion (ppb). 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

Monitor wells GMW-2, GMW-7, GMW-8, GMW-9, and GMW-10 will be sampled quarterly for BTEX using USEPA Method 8260-B. Monitor wells GMW-2, GMW-4, GMW-6, GMW-7, GMW-8, GMW-10, and GMW-11 will be sampled annually for PAHs 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 2003

Westgate Subdivision
Grimes Battery & Tasker Road

April 2004

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 18, 2003

Order ID Number: A03030507

Project Number: N/A
Project Name: Shell Westgate
Project Location: Hobbs,NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
222905	MW-2	Water	3/4/03	12:25	3/5/03
222906	MW-10	Water	3/4/03	12:40	3/5/03
222907	MW-8	Water	3/4/03	13:05	3/5/03
222908	MW-7	Water	3/4/03	13:25	3/5/03

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: 222905 - MW-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: 222906 - MW-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: 222907 - MW-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

Continued on next page ...

Sample 222907 continued ...

Param	Flag	Result	Units
o-Xylene		<1.00	µg/L

Sample: 222908 - MW-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

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
155 McCutcheon, Suite H El Paso, Texas 79932 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

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

Report Date: March 18, 2003

Order ID Number: A03030507

Project Number: N/A
Project Name: Shell Westgate
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
222905	MW-2	Water	3/4/03	12:25	3/5/03
222906	MW-10	Water	3/4/03	12:40	3/5/03
222907	MW-8	Water	3/4/03	13:05	3/5/03
222908	MW-7	Water	3/4/03	13:25	3/5/03

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: 222905 - MW-2

Analysis:	Volatiles	Analytical Method:	S 8260B	QC Batch:	QC27768	Date Analyzed:	3/12/03
Analyst:	JG	Preparation Method:	E 5030B	Prep Batch:	PB25444	Date Prepared:	3/12/03

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		50.6	µg/L	1	50	101	70 - 130
Toluene-d8		49.7	µg/L	1	50	99	70 - 130
4-Bromofluorobenzene		45.5	µg/L	1	50	91	70 - 130

Sample: 222906 - MW-10

Analysis:	Volatiles	Analytical Method:	S 8260B	QC Batch:	QC27768	Date Analyzed:	3/12/03
Analyst:	JG	Preparation Method:	E 5030B	Prep Batch:	PB25444	Date Prepared:	3/12/03

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	70 - 130
Toluene-d8		49.7	µg/L	1	50	99	70 - 130
4-Bromofluorobenzene		45.5	µg/L	1	50	91	70 - 130

Sample: 222907 - MW-8

Analysis:	Volatiles	Analytical Method:	S 8260B	QC Batch:	QC27768	Date Analyzed:	3/12/03
Analyst:	JG	Preparation Method:	E 5030B	Prep Batch:	PB25444	Date Prepared:	3/12/03

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		50.3	µg/L	1	50	101	70 - 130
Toluene-d8		49.9	µg/L	1	50	100	70 - 130
4-Bromofluorobenzene		46.3	µg/L	1	50	93	70 - 130

Sample: 222908 - MW-7

Analysis:	Volatiles	Analytical Method:	S 8260B	QC Batch:	QC27768	Date Analyzed:	3/12/03
Analyst:	JG	Preparation Method:	E 5030B	Prep Batch:	PB25444	Date Prepared:	3/12/03

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		51.4	µg/L	1	50	103	70 - 130
Toluene-d8		49.6	µg/L	1	50	99	70 - 130
4-Bromofluorobenzene		45.2	µg/L	1	50	90	70 - 130

Quality Control Report
Method Blank

Method Blank

QCBatch: QC27768

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		50.6	µg/L	1	50	101	70 - 130
Toluene-d8		50.4	µg/L	1	50	101	70 - 130
4-Bromofluorobenzene		45.4	µg/L	1	50	91	70 - 130

Quality Control Report
Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes

QCBatch: QC27768

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	105	106	µg/L	1	100	<1.00	105	1	70 - 130	20
Benzene	96.8	95.6	µg/L	1	100	<1.00	97	1	70 - 130	20
Trichloroethene (TCE)	99.3	98.9	µg/L	1	100	<1.00	99	0	70 - 130	20
Toluene	94.7	94.2	µg/L	1	100	<1.00	95	0	70 - 130	20
Chlorobenzene	102	102	µg/L	1	100	<1.00	102	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	49.8	50.2	µg/L	1	50	100	100	70 - 130
Toluene-d8	49.7	50.4	µg/L	1	50	99	101	70 - 130
4-Bromofluorobenzene	46.0	45.8	µg/L	1	50	92	92	70 - 130

Quality Control Report
Continuing Calibration Verification Standards

CCV (1)

QCBatch: QC27768

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/L	50	54.0	108	80 - 120	3/12/03
1,1-Dichloroethene		µg/L	50	53.0	106	80 - 120	3/12/03
Chloroform		µg/L	50	50.0	100	80 - 120	3/12/03
1,2-Dichloropropane		µg/L	50	52.0	104	80 - 120	3/12/03
Toluene		µg/L	50	46.0	92	80 - 120	3/12/03
Chlorobenzene		µg/L	50	51.0	102	80 - 120	3/12/03
Ethylbenzene		µg/L	50	51.0	102	80 - 120	3/12/03
Dibromofluoromethane		µg/L	50	49.8	100	80 - 120	3/12/03
Toluene-d8		µg/L	50	50.0	100	80 - 120	3/12/03
4-Bromofluorobenzene		µg/L	50	50.3	101	80 - 120	3/12/03

222905-08

Page 1 of 1

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

TraceAnalysis, Inc.

4725 Ripley Dr., Ste A
El Paso, Texas 79922-1028
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # ADB030507

Company Name: BBC International
Phone #: 505-397-6388
Address: (Street, City, Zip) 1324 W Marland Hobbs NM.
Fax #: 505-397-0397
Contact Person: Cliff P Branson
Invoice to: (If different from above) Shell-P Company West Gate Attn Richard
Project #:
Project Name:
Project Location: Hobbs NM.
Sampler Signature: Roger Hernandez

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	NaHSO4	H2SO4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
222905	Monitor Well #2	2	VOA	✓				✓							3/4/03	12:25
06	MW# 10	2	VOA	✓				✓							3/4/03	12:40
07	MW# 8	2	VOA	✓				✓							3/4/03	1:05
08	MW# 7	2	VOA	✓				✓							3/4/03	1:25

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 BTEX only	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH						Turn Around Time if different from standard	Hold
										✓											
										✓											
										✓											
										✓											

Relinquished by: Roger Hernandez Date: 03-04-03 Time: 2:00pm
Received by: Date: Time:

Relinquished by: Date: Time:
Received by: Date: Time:

Relinquished by: Date: Time:
Received at laboratory by: Vicki Henry Date: 3-5-03 Time: 10:00

LAB USE ONLY
Intact (Y) N
Headspace Y / (N)
Temp 4° °
Log-in Review MS

REMARKS: 3/18

Carrier # TRAVIS 902951440'6

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

ORIGINAL COPY

APPENDIX II

TRACE ANALYSIS, INC.
Laboratory Results
2nd Quarter 2003

Westgate Subdivision
Grimes Battery & Tasker Road

April 2004

Shell Exploration & Production Company
Houston, Texas

Prepared by:
BBC International, Inc.

Summary Report

Wayne Hamilton
Shell EP
200 N. Dairy Ashford WCK Rm 4134
Houston, TX 77079

Report Date: July 9, 2003
Work Order: 3070107

Project Location: Hobbs,New Mexico

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
11742	Monitor Well #2	water	2003-06-27	14:10	2003-07-01
11743	Monitor Well #10	water	2003-06-27	14:45	2003-07-01
11744	Monitor Well #8	water	2003-06-27	15:20	2003-07-01
11745	Monitor Well #7	water	2003-06-27	15:50	2003-07-01

	BTEX by 8260				
Sample - Field Code	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	m,p-Xylene (µg/L)	o-Xylene (µg/L)
11742 - Monitor Well #2	<1.00	<1.00	<1.00	<1.00	<1.00
11743 - Monitor Well #10	<1.00	<1.00	<1.00	<1.00	<1.00
11744 - Monitor Well #8	<1.00	<1.00	<1.00	<1.00	<1.00
11745 - Monitor Well #7	<1.00	<1.00	<1.00	<1.00	<1.00

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
155 McCutcheon, Suite H El Paso, Texas 79932 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Wayne Hamilton
Shell EP
200 N. Dairy Ashford WCK Rm 4134
Houston, TX 77079

Report Date: July 9, 2003

Work Order: 3070107

Project Location: Hobbs,New Mexico
Project Number: Hobbs,New Mexico

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
11742	Monitor Well #2	water	2003-06-27	14:10	2003-07-01
11743	Monitor Well #10	water	2003-06-27	14:45	2003-07-01
11744	Monitor Well #8	water	2003-06-27	15:20	2003-07-01
11745	Monitor Well #7	water	2003-06-27	15:50	2003-07-01

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.

Dr. Blair Leftwich, Director

Analytical Report

Sample: 11742 - Monitor Well #2

Analysis:	BTEX by 8260	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	2724	Date Analyzed:	2003-07-04	Analyzed By:	JG
Prep Batch:	2483	Date Prepared:	2003-07-04	Prepared By:	JG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.5	µg/L	1	50.0	101	70 - 130
Toluene-d8		49.7	µg/L	1	50.0	99	70 - 130
4-Bromofluorobenzene (4-BFB)		45.3	µg/L	1	50.0	91	70 - 130

Sample: 11743 - Monitor Well #10

Analysis:	BTEX by 8260	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	2724	Date Analyzed:	2003-07-04	Analyzed By:	JG
Prep Batch:	2483	Date Prepared:	2003-07-04	Prepared By:	JG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.2	µg/L	1	50.0	100	70 - 130
Toluene-d8		49.8	µg/L	1	50.0	100	70 - 130
4-Bromofluorobenzene (4-BFB)		46.1	µg/L	1	50.0	92	70 - 130

Sample: 11744 - Monitor Well #8

Analysis:	BTEX by 8260	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	2724	Date Analyzed:	2003-07-04	Analyzed By:	JG
Prep Batch:	2483	Date Prepared:	2003-07-04	Prepared By:	JG

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<1.00	µg/L	1	1.00
Toluene		<1.00	µg/L	1	1.00
Ethylbenzene		<1.00	µg/L	1	1.00
m,p-Xylene		<1.00	µg/L	1	1.00

continued ...

sample 11744 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL
o-Xylene		<1.00	µg/L	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.3	µg/L	1	50.0	101	70 - 130
Toluene-d8		49.2	µg/L	1	50.0	98	70 - 130
4-Bromofluorobenzene (4-BFB)		47.8	µg/L	1	50.0	96	70 - 130

Sample: 11745 - Monitor Well #7

Analysis:	BTEX by 8260	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	2724	Date Analyzed:	2003-07-04	Analyzed By:	JG
Prep Batch:	2483	Date Prepared:	2003-07-04	Prepared By:	JG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.6	µg/L	1	50.0	101	70 - 130
Toluene-d8		50.5	µg/L	1	50.0	101	70 - 130
4-Bromofluorobenzene (4-BFB)		44.5	µg/L	1	50.0	89	70 - 130

Method Blank (1) QC Batch: 2724

Parameter	Flag	Result	Units	RL
1,1-Dichloroethene		<1.00	µg/L	1
Benzene		<1.00	µg/L	1
Trichloroethene (TCE)		<1.00	µg/L	1
Toluene		<1.00	µg/L	1
Chlorobenzene		<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		51.1	µg/L	1	50.0	102	70 - 130
Toluene-d8		50.2	µg/L	1	50.0	100	70 - 130
4-Bromofluorobenzene (4-BFB)		45.2	µg/L	1	50.0	90	70 - 130

Laboratory Control Spike (LCS-1) QC Batch: 2724

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
1,1-Dichloroethene	98.2	97.5	µg/L	1	100	<0.136	98	1	70 - 130	20
Benzene	103	102	µg/L	1	100	<0.146	103	1	70 - 130	20
Trichloroethene (TCE)	97.4	95.8	µg/L	1	100	0.13	97	2	70 - 130	20
Toluene	103	102	µg/L	1	100	0.19	103	1	70 - 130	20
Chlorobenzene	102	101	µg/L	1	100	<0.0540	102	1	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	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Dibromofluoromethane	51.5	50.9	µg/L	1	50.0	103	102	70 - 130
Toluene-d8	49.7	50.0	µg/L	1	50.0	99	100	70 - 130
4-Bromofluorobenzene (4-BFB)	46.0	45.3	µg/L	1	50.0	92	91	70 - 130

Standard (CCV-1) QC Batch: 2724

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/L	50.0	47.0	94	80 - 120	2003-07-04
1,1-Dichloroethene		µg/L	50.0	54.0	108	80 - 120	2003-07-04
Chloroform		µg/L	50.0	52.0	104	80 - 120	2003-07-04
1,2-Dichloropropane		µg/L	50.0	54.0	108	80 - 120	2003-07-04
Toluene		µg/L	50.0	53.0	106	80 - 120	2003-07-04
Chlorobenzene		µg/L	50.0	52.0	104	80 - 120	2003-07-04
Ethylbenzene		µg/L	50.0	55.0	110	80 - 120	2003-07-04

11742-45

Page 1 of 1

TraceAnalysis, Inc.

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

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

LAB Order ID # 3070107

Company Name: BBC INTERNATIONAL
Phone #: (505) 397-6388
Address: 1324 W. MARLAND Hobbs NM
Fax #: (505) 397-0397
Contact Person: CLIFF BRUNSON
Invoice to: (If different from above) Shell EP Company West Gate Attn: Wayne Hamilton
Project #:
Project Name:
Project Location: Hobbs New Mexico
Sampler Signature: Roger Hernandez

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	SAMPLING: DATE	TIME
11742	Monitor Well #2	2	✓	✓				✓		✓		6/27/03	2:10
43	# 10	2	✓	✓				✓		✓		6/27/03	2:45
44	# 8	2	✓	✓				✓		✓		6/27/03	3:20
45	# 7	2	✓	✓				✓		✓		6/27/03	3:50

ANALYSIS REQUEST
(Circle or Specify Method No.)

MTBE 8020/602	BTEX ~~8020~~ 8260 BTEX	TPH	PAH 8270	Total Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/~~624~~ BTEX ONLY	GC/MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 8080/608	BOD, TSS, PH	Turn Around Time if different from standard	Hold
									✓						
									✓						
									✓						
									✓						

Relinquished by: Roger Hernandez Date: 6-30-03 Time: 8:45
Received by: Date: Time:
Relinquished by: Date: Time:
Received by: Date: Time:
Relinquished by: Date: Time:
Received at Laboratory by: Vicki Dinsley Date: 7-1-03 Time: 13:11

LAB USE ONLY

Intact Y / N
Headspace Y / N
Temp 3c °
Log-in Review MA

REMARKS:

RF 7/10/03

Carrier # TRANSTO 903 014885-3

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

ORIGINAL COPY

APPENDIX III

TRACE ANALYSIS, INC.

Laboratory Results
3rd Quarter 2003

Westgate Subdivision
Grimes Battery & Tasker Road

April 2004

Shell Exploration & Production Company
Houston, Texas

Prepared by:
BBC International, Inc.

Summary Report

Cliff Brunson
BBC International
1324 W. Marland
Hobbs, NM 88240

Report Date: September 16, 2003

Work Order: 3090921

Project Location: Hobbs,NM
Project Name: Shell Westgate

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
16933	MW-2	water	2003-09-08	14:00	2003-09-09
16934	MW-10	water	2003-09-08	14:55	2003-09-09
16935	MW-8	water	2003-09-08	15:30	2003-09-09
16936	MW-7	water	2003-09-08	16:05	2003-09-09

	BTEX by 8260				
Sample - Field Code	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	m,p-Xylene (µg/L)	o-Xylene (µg/L)
16933 - MW-2	<1.00	<1.00	<1.00	<1.00	<1.00
16934 - MW-10	<1.00	<1.00	<1.00	<1.00	<1.00
16935 - MW-8	<1.00	<1.00	<1.00	<1.00	<1.00
16936 - MW-7	<1.00	<1.00	<1.00	<1.00	<1.00

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
155 McCutcheon, Suite H El Paso, Texas 79932 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Cliff Brunson
BBC International
1324 W. Marland
Hobbs, NM 88240

Report Date: September 16, 2003

Work Order: 3090921

Project Location: Hobbs,NM
Project Name: Shell Westgate
Project Number: Shell Westgate

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
16933	MW-2	water	2003-09-08	14:00	2003-09-09
16934	MW-10	water	2003-09-08	14:55	2003-09-09
16935	MW-8	water	2003-09-08	15:30	2003-09-09
16936	MW-7	water	2003-09-08	16:05	2003-09-09

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.

This report consists of a total of 5 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

Analytical Report

Sample: 16933 - MW-2

Analysis:	BTEX by 8260	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	4313	Date Analyzed:	2003-09-10	Analyzed By:	JG
Prep Batch:	3871	Date Prepared:	2003-09-10	Prepared By:	JG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		52.0	µg/L	1	50.0	104	70 - 130
Toluene-d8		49.6	µg/L	1	50.0	99	70 - 130
4-Bromofluorobenzene (4-BFB)		46.0	µg/L	1	50.0	92	70 - 130

Sample: 16934 - MW-10

Analysis:	BTEX by 8260	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	4313	Date Analyzed:	2003-09-10	Analyzed By:	JG
Prep Batch:	3871	Date Prepared:	2003-09-10	Prepared By:	JG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.8	µg/L	1	50.0	104	70 - 130
Toluene-d8		50.9	µg/L	1	50.0	102	70 - 130
4-Bromofluorobenzene (4-BFB)		45.9	µg/L	1	50.0	92	70 - 130

Sample: 16935 - MW-8

Analysis:	BTEX by 8260	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	4313	Date Analyzed:	2003-09-10	Analyzed By:	JG
Prep Batch:	3871	Date Prepared:	2003-09-10	Prepared By:	JG

Parameter	Flag	RL Result	Units	Dilution	RL
Benzene		<1.00	µg/L	1	1.00
Toluene		<1.00	µg/L	1	1.00

continued ...

sample 16935 continued ...

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		53.0	µg/L	1	50.0	106	70 - 130
Toluene-d8		50.4	µg/L	1	50.0	101	70 - 130
4-Bromofluorobenzene (4-BFB)		46.6	µg/L	1	50.0	93	70 - 130

Sample: 16936 - MW-7

Analysis:	BTEX by 8260	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	4313	Date Analyzed:	2003-09-10	Analyzed By:	JG
Prep Batch:	3871	Date Prepared:	2003-09-10	Prepared By:	JG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		53.2	µg/L	1	50.0	106	70 - 130
Toluene-d8		51.0	µg/L	1	50.0	102	70 - 130
4-Bromofluorobenzene (4-BFB)		44.9	µg/L	1	50.0	90	70 - 130

Method Blank (1) QC Batch: 4313

Parameter	Flag	Result	Units	RL
1,1-Dichloroethene		<1.00	µg/L	1
Benzene		<1.00	µg/L	1
Trichloroethene (TCE)		<1.00	µg/L	1
Toluene		<1.00	µg/L	1
Chlorobenzene		<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		51.9	µg/L	1	50.0	104	70 - 130
Toluene-d8		51.4	µg/L	1	50.0	103	70 - 130
4-Bromofluorobenzene (4-BFB)		45.9	µg/L	1	50.0	92	70 - 130

Laboratory Control Spike (LCS-1) QC Batch: 4313

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
1,1-Dichloroethene	109	108	µg/L	1	100	<0.136	109	1	70 - 130	20
Benzene	103	102	µg/L	1	100	<0.146	103	1	70 - 130	20
Trichloroethene (TCE)	91.8	89.6	µg/L	1	100	0.17	92	2	70 - 130	20
Toluene	102	101	µg/L	1	100	0.23	102	1	70 - 130	20
Chlorobenzene	95.9	94.7	µg/L	1	100	<0.0540	96	1	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	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Dibromofluoromethane	51.8	51.6	µg/L	1	50.0	104	103	70 - 130
Toluene-d8	51.0	51.4	µg/L	1	50.0	102	103	70 - 130
4-Bromofluorobenzene (4-BFB)	45.4	46.3	µg/L	1	50.0	91	93	70 - 130

Standard (CCV-1) QC Batch: 4313

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/L	50.0	49.7	99	80 - 120	2003-09-10
1,1-Dichloroethene		µg/L	50.0	52.7	105	80 - 120	2003-09-10
Chloroform		µg/L	50.0	50.3	101	80 - 120	2003-09-10
1,2-Dichloropropane		µg/L	50.0	47.6	95	80 - 120	2003-09-10
Toluene		µg/L	50.0	47.9	96	80 - 120	2003-09-10
Chlorobenzene		µg/L	50.0	44.8	90	80 - 120	2003-09-10
Ethylbenzene		µg/L	50.0	48.1	96	80 - 120	2003-09-10

Page Number: 5 of 5
Hobbs,NM

Work Order: 3090921
Shell Westgate

Report Date: September 16, 2003
Shell Westgate

Page_____of_____

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

TraceAnalysis, Inc.

4725 Ripley Dr., Ste A
El Paso, Texas 79922-1028
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 3090921

Company Name: BBC International
Phone #: 505-397-6588
Address: (Street, City, Zip) 1324 W Marland Hobbs N.M.
Fax #: 505-397-0397
Contact Person: Cliff P Brawson
Invoice to: (If different from above) Shell E-P Company West Gate Attn Wayne Hamilton
Project #:
Project Name: West Gate
Project Location: Hobbs N.M.
Sampler Signature:

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	SAMPLING: DATE	TIME
16933	Monitor Well #2	2	VOA	✓				✓				9-8-03	2:00
34	M.W. #10	2	VOA	✓				✓				9-8-03	2:55
35	MW #8	2	VOA	✓				✓				9-8-03	3:30
36	MW #7	2	VOA	✓				✓				9-8-03	4:05

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	GC/MS Semi Vol 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH						Turn Around Time if different from standard	Hold
										✓	BTEX only										

Relinquished by:	Date: 9-8-03	Time: 4:35	Received by:
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date:	Time:	Received at Laboratory by: Vicki Dinn

Date: Time:
Date: Time:
Date: 9-9-03 Time: 13:17

LAB USE ONLY
Intact (Y) N
Headspace Y / N
Temp 2 °
Log-In Review

REMARKS:

Carrier # Keyroute Express 26993

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

ORIGINAL COPY

16933-34

Page ___ of ___

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

TraceAnalysis, Inc.

4725 Ripley Dr., Ste A
El Paso, Texas 79922-1028
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 3090921

Company Name: BBC International
Phone #: 505-397-6588
Address: (Street, City, Zip) 1324 W Marland Hobbs N.M.
Fax #: 505-397-0397
Contact Person: Cliff P Brawson
Invoice to: (If different from above) Shell E-P Company West Gate Attn Wayne Hamilton
Project #:
Project Name: West Gate
Project Location: Hobbs N.M.
Sampler Signature:

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	SAMPLING: DATE	TIME
16933	Monitor Well #2	2	VOA	✓				✓				9-8-03	2:00
34	M.W. #10	2	VOA	✓				✓				9-8-03	2:55
35	MW #8	2	VOA	✓				✓				9-8-03	3:30
36	M.W. #7	2	VOA	✓				✓				9-8-03	4:05

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	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH						Turn Around Time if different from standard	Hold
										✓											
										✓											
										✓											
										✓											

BTEX only

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
	9-8-03	4:35			
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received at Laboratory by: Vicki Hunt	Date: 9-9-03	Time: 13:17

LAB USE ONLY

Intact (Y) / N
Headspace Y / N
Temp 2 °
Log-in Review

REMARKS:

Carrier # Keynote Express 26993

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

APPENDIX IV

TRACE ANALYSIS, INC.
Laboratory Results
4th Quarter 2003

Westgate Subdivision
Grimes Battery & Tasker Road

April 2004

Shell Exploration & Production Company
Houston, Texas

Prepared by:
BBC International, Inc.

Summary Report

Cliff Brunson
BBC International
1324 W. Marland
Hobbs, NM 88240

Report Date: January 5, 2004

Work Order: 3122408

Project Location: Hobbs,NM
Project Name: Shell Westgate

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
24027	MW-2	water	2003-12-23	09:30	2003-12-24
24028	MW-10	water	2003-12-23	10:30	2003-12-24
24029	MW-4	water	2003-12-23	11:50	2003-12-24
24030	MW-7	water	2003-12-23	12:40	2003-12-24
24031	MW-8	water	2003-12-23	13:40	2003-12-24
24032	MW-6	water	2003-12-23	14:00	2003-12-24
24033	MW-11	water	2003-12-23	15:11	2003-12-24

	BTEX by 8260				
Sample - Field Code	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	m,p-Xylene (µg/L)	o-Xylene (µg/L)
24027 - MW-2	<1.00	<1.00	<1.00	<1.00	<1.00
24028 - MW-10	<1.00	<1.00	<1.00	<1.00	<1.00
24029 - MW-4	<1.00	<1.00	<1.00	<1.00	<1.00
24030 - MW-7	<1.00	<1.00	<1.00	<1.00	<1.00
24031 - MW-8	<1.00	<1.00	<1.00	<1.00	<1.00
24032 - MW-6	<1.00	<1.00	<1.00	<1.00	<1.00
24033 - MW-11	<1.00	<1.00	<1.00	<1.00	<1.00

Sample: 24027 - MW-2

Param	Flag	Result	Units	RL
Naphthalene		<0.000200	mg/L	0.200
Acenaphthylene		<0.000200	mg/L	0.200
Acenaphthene		<0.000200	mg/L	0.200
Fluorene		<0.000200	mg/L	0.200
Phenanthrene		<0.000200	mg/L	0.200
Anthracene		<0.000200	mg/L	0.200
Fluoranthene		<0.000200	mg/L	0.200
Pyrene		<0.000200	mg/L	0.200
Benzo(a)anthracene		<0.000200	mg/L	0.200
Chrysene		<0.000200	mg/L	0.200
Benzo(b)fluoranthene		<0.000200	mg/L	0.200
Benzo(k)fluoranthene		<0.000200	mg/L	0.200
Benzo(a)pyrene		<0.000200	mg/L	0.200
Indeno(1,2,3-cd)pyrene		<0.000200	mg/L	0.200

continued ...

sample 24027 continued ...

Param	Flag	Result	Units	RL
Dibenzo(a,h)anthracene		<0.000200	mg/L	0.200
Benzo(g,h,i)perylene		<0.000200	mg/L	0.200

Sample: 24028 - MW-10

Param	Flag	Result	Units	RL
Naphthalene		<0.000200	mg/L	0.200
Acenaphthylene		<0.000200	mg/L	0.200
Acenaphthene		<0.000200	mg/L	0.200
Fluorene		<0.000200	mg/L	0.200
Phenanthrene		<0.000200	mg/L	0.200
Anthracene		<0.000200	mg/L	0.200
Fluoranthene		<0.000200	mg/L	0.200
Pyrene		<0.000200	mg/L	0.200
Benzo(a)anthracene		<0.000200	mg/L	0.200
Chrysene		<0.000200	mg/L	0.200
Benzo(b)fluoranthene		<0.000200	mg/L	0.200
Benzo(k)fluoranthene		<0.000200	mg/L	0.200
Benzo(a)pyrene		<0.000200	mg/L	0.200
Indeno(1,2,3-cd)pyrene		<0.000200	mg/L	0.200
Dibenzo(a,h)anthracene		<0.000200	mg/L	0.200
Benzo(g,h,i)perylene		<0.000200	mg/L	0.200

Sample: 24030 - MW-7

Param	Flag	Result	Units	RL
Naphthalene		<0.000200	mg/L	0.200
Acenaphthylene		<0.000200	mg/L	0.200
Acenaphthene		<0.000200	mg/L	0.200
Fluorene		<0.000200	mg/L	0.200
Phenanthrene		<0.000200	mg/L	0.200
Anthracene		<0.000200	mg/L	0.200
Fluoranthene		<0.000200	mg/L	0.200
Pyrene		<0.000200	mg/L	0.200
Benzo(a)anthracene		<0.000200	mg/L	0.200
Chrysene		<0.000200	mg/L	0.200
Benzo(b)fluoranthene		<0.000200	mg/L	0.200
Benzo(k)fluoranthene		<0.000200	mg/L	0.200
Benzo(a)pyrene		<0.000200	mg/L	0.200
Indeno(1,2,3-cd)pyrene		<0.000200	mg/L	0.200
Dibenzo(a,h)anthracene		<0.000200	mg/L	0.200
Benzo(g,h,i)perylene		<0.000200	mg/L	0.200

Sample: 24031 - MW-8

Param	Flag	Result	Units	RL
Naphthalene		<0.000200	mg/L	0.200
Acenaphthylene		<0.000200	mg/L	0.200

continued ...

sample 24031 continued ...

Param	Flag	Result	Units	RL
Acenaphthene		<0.000200	mg/L	0.200
Fluorene		0.000430	mg/L	0.200
Phenanthrene		<0.000200	mg/L	0.200
Anthracene		<0.000200	mg/L	0.200
Fluoranthene		<0.000200	mg/L	0.200
Pyrene		<0.000200	mg/L	0.200
Benzo(a)anthracene		<0.000200	mg/L	0.200
Chrysene		<0.000200	mg/L	0.200
Benzo(b)fluoranthene		<0.000200	mg/L	0.200
Benzo(k)fluoranthene		<0.000200	mg/L	0.200
Benzo(a)pyrene		<0.000200	mg/L	0.200
Indeno(1,2,3-cd)pyrene		<0.000200	mg/L	0.200
Dibenzo(a,h)anthracene		<0.000200	mg/L	0.200
Benzo(g,h,i)perylene		<0.000200	mg/L	0.200

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
155 McCutcheon, Suite H El Paso, Texas 79932 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Cliff Brunson
BBC International
1324 W. Marland
Hobbs, NM 88240

Report Date: January 5, 2004

Work Order: 3122408

Project Location: Hobbs,NM
Project Name: Shell Westgate
Project Number: Shell Westgate

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
24027	MW-2	water	2003-12-23	09:30	2003-12-24
24028	MW-10	water	2003-12-23	10:30	2003-12-24
24029	MW-4	water	2003-12-23	11:50	2003-12-24
24030	MW-7	water	2003-12-23	12:40	2003-12-24
24031	MW-8	water	2003-12-23	13:40	2003-12-24
24032	MW-6	water	2003-12-23	14:00	2003-12-24
24033	MW-11	water	2003-12-23	15:11	2003-12-24

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.

Dr. Blair Leftwich, Director

Analytical Report

Sample: 24027 - MW-2

Analysis:	BTEX by 8260	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	6640	Date Analyzed:	2003-12-31	Analyzed By:	JG
Prep Batch:	5937	Date Prepared:	2003-12-31	Prepared By:	JG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.0	µg/L	1	50.0	102	70 - 130
Toluene-d8		51.5	µg/L	1	50.0	103	70 - 130
4-Bromofluorobenzene (4-BFB)		47.6	µg/L	1	50.0	95	70 - 130

Sample: 24027 - MW-2

Analysis:	PAH	Analytical Method:	S 8270C	Prep Method:	S 3510C
QC Batch:	6656	Date Analyzed:	2003-12-30	Analyzed By:	RC
Prep Batch:	5880	Date Prepared:	2003-12-29	Prepared By:	JH

Parameter	Flag	Result	RL	Units	Dilution	RL
Naphthalene		<0.000200		mg/L	0.001	0.200
Acenaphthylene		<0.000200		mg/L	0.001	0.200
Acenaphthene		<0.000200		mg/L	0.001	0.200
Fluorene		<0.000200		mg/L	0.001	0.200
Phenanthrene		<0.000200		mg/L	0.001	0.200
Anthracene		<0.000200		mg/L	0.001	0.200
Fluoranthene		<0.000200		mg/L	0.001	0.200
Pyrene		<0.000200		mg/L	0.001	0.200
Benzo(a)anthracene		<0.000200		mg/L	0.001	0.200
Chrysene		<0.000200		mg/L	0.001	0.200
Benzo(b)fluoranthene		<0.000200		mg/L	0.001	0.200
Benzo(k)fluoranthene		<0.000200		mg/L	0.001	0.200
Benzo(a)pyrene		<0.000200		mg/L	0.001	0.200
Indeno(1,2,3-cd)pyrene		<0.000200		mg/L	0.001	0.200
Dibenzo(a,h)anthracene		<0.000200		mg/L	0.001	0.200
Benzo(g,h,i)perylene		<0.000200		mg/L	0.001	0.200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5		0.0427	mg/L	0.001	80.0	53	21 - 145
2-Fluorobiphenyl		0.0440	mg/L	0.001	80.0	55	25 - 145
Terphenyl-d14		0.0289	mg/L	0.001	80.0	36	26 - 127

Sample: 24028 - MW-10

Analysis:	BTEX by 8260	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	6640	Date Analyzed:	2003-12-31	Analyzed By:	JG
Prep Batch:	5937	Date Prepared:	2003-12-31	Prepared By:	JG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.9	µg/L	1	50.0	102	70 - 130
Toluene-d8		50.9	µg/L	1	50.0	102	70 - 130
4-Bromofluorobenzene (4-BFB)		47.4	µg/L	1	50.0	95	70 - 130

Sample: 24028 - MW-10

Analysis:	PAH	Analytical Method:	S 8270C	Prep Method:	S 3510C
QC Batch:	6656	Date Analyzed:	2003-12-30	Analyzed By:	RC
Prep Batch:	5880	Date Prepared:	2003-12-29	Prepared By:	JH

Parameter	Flag	Result	RL	Units	Dilution	RL
Naphthalene		<0.000200		mg/L	0.001	0.200
Acenaphthylene		<0.000200		mg/L	0.001	0.200
Acenaphthene		<0.000200		mg/L	0.001	0.200
Fluorene		<0.000200		mg/L	0.001	0.200
Phenanthrene		<0.000200		mg/L	0.001	0.200
Anthracene		<0.000200		mg/L	0.001	0.200
Fluoranthene		<0.000200		mg/L	0.001	0.200
Pyrene		<0.000200		mg/L	0.001	0.200
Benzo(a)anthracene		<0.000200		mg/L	0.001	0.200
Chrysene		<0.000200		mg/L	0.001	0.200
Benzo(b)fluoranthene		<0.000200		mg/L	0.001	0.200
Benzo(k)fluoranthene		<0.000200		mg/L	0.001	0.200
Benzo(a)pyrene		<0.000200		mg/L	0.001	0.200
Indeno(1,2,3-cd)pyrene		<0.000200		mg/L	0.001	0.200
Dibenzo(a,h)anthracene		<0.000200		mg/L	0.001	0.200
Benzo(g,h,i)perylene		<0.000200		mg/L	0.001	0.200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5		0.0469	mg/L	0.001	80.0	59	21 - 145
2-Fluorobiphenyl		0.0482	mg/L	0.001	80.0	60	25 - 145
Terphenyl-d14		0.0462	mg/L	0.001	80.0	58	26 - 127

Sample: 24029 - MW-4

Analysis:	BTEX by 8260	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	6640	Date Analyzed:	2003-12-31	Analyzed By:	JG
Prep Batch:	5937	Date Prepared:	2003-12-31	Prepared By:	JG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.0	µg/L	1	50.0	102	70 - 130
Toluene-d8		50.9	µg/L	1	50.0	102	70 - 130
4-Bromofluorobenzene (4-BFB)		47.8	µg/L	1	50.0	96	70 - 130

Sample: 24030 - MW-7

Analysis:	BTEX by 8260	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	6640	Date Analyzed:	2003-12-31	Analyzed By:	JG
Prep Batch:	5937	Date Prepared:	2003-12-31	Prepared By:	JG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.6	µg/L	1	50.0	101	70 - 130
Toluene-d8		50.2	µg/L	1	50.0	100	70 - 130
4-Bromofluorobenzene (4-BFB)		47.9	µg/L	1	50.0	96	70 - 130

Sample: 24030 - MW-7

Analysis:	PAH	Analytical Method:	S 8270C	Prep Method:	S 3510C
QC Batch:	6656	Date Analyzed:	2003-12-30	Analyzed By:	RC
Prep Batch:	5880	Date Prepared:	2003-12-29	Prepared By:	JH

Parameter	Flag	RL Result	Units	Dilution	RL
Naphthalene		<0.000200	mg/L	0.001	0.200
Acenaphthylene		<0.000200	mg/L	0.001	0.200
Acenaphthene		<0.000200	mg/L	0.001	0.200
Fluorene		<0.000200	mg/L	0.001	0.200
Phenanthrene		<0.000200	mg/L	0.001	0.200
Anthracene		<0.000200	mg/L	0.001	0.200

continued ...

sample 24030 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL
Fluoranthene		<0.000200	mg/L	0.001	0.200
Pyrene		<0.000200	mg/L	0.001	0.200
Benzo(a)anthracene		<0.000200	mg/L	0.001	0.200
Chrysene		<0.000200	mg/L	0.001	0.200
Benzo(b)fluoranthene		<0.000200	mg/L	0.001	0.200
Benzo(k)fluoranthene		<0.000200	mg/L	0.001	0.200
Benzo(a)pyrene		<0.000200	mg/L	0.001	0.200
Indeno(1,2,3-cd)pyrene		<0.000200	mg/L	0.001	0.200
Dibenzo(a,h)anthracene		<0.000200	mg/L	0.001	0.200
Benzo(g,h,i)perylene		<0.000200	mg/L	0.001	0.200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5		0.0433	mg/L	0.001	80.0	54	21 - 145
2-Fluorobiphenyl		0.0462	mg/L	0.001	80.0	58	25 - 145
Terphenyl-d14		0.0492	mg/L	0.001	80.0	62	26 - 127

Sample: 24031 - MW-8

Analysis:	BTEX by 8260	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	6640	Date Analyzed:	2003-12-31	Analyzed By:	JG
Prep Batch:	5937	Date Prepared:	2003-12-31	Prepared By:	JG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.2	µg/L	1	50.0	102	70 - 130
Toluene-d8		50.5	µg/L	1	50.0	101	70 - 130
4-Bromofluorobenzene (4-BFB)		49.0	µg/L	1	50.0	98	70 - 130

Sample: 24031 - MW-8

Analysis:	PAH	Analytical Method:	S 8270C	Prep Method:	S 3510C
QC Batch:	6656	Date Analyzed:	2003-12-30	Analyzed By:	RC
Prep Batch:	5880	Date Prepared:	2003-12-29	Prepared By:	JH

Parameter	Flag	RL Result	Units	Dilution	RL
Naphthalene		<0.000200	mg/L	0.001	0.200
Acenaphthylene		<0.000200	mg/L	0.001	0.200
Acenaphthene		<0.000200	mg/L	0.001	0.200

continued ...

ample 24031 continued ...

Parameter	Flag	Result	RL	Units	Dilution	RL
Fluorene		0.000430		mg/L	0.001	0.200
Phenanthrene		<0.000200		mg/L	0.001	0.200
Anthracene		<0.000200		mg/L	0.001	0.200
Fluoranthene		<0.000200		mg/L	0.001	0.200
Pyrene		<0.000200		mg/L	0.001	0.200
Benzo(a)anthracene		<0.000200		mg/L	0.001	0.200
Chrysene		<0.000200		mg/L	0.001	0.200
Benzo(b)fluoranthene		<0.000200		mg/L	0.001	0.200
Benzo(k)fluoranthene		<0.000200		mg/L	0.001	0.200
Benzo(a)pyrene		<0.000200		mg/L	0.001	0.200
Indeno(1,2,3-cd)pyrene		<0.000200		mg/L	0.001	0.200
Dibenzo(a,h)anthracene		<0.000200		mg/L	0.001	0.200
Benzo(g,h,i)perylene		<0.000200		mg/L	0.001	0.200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5		0.0500	mg/L	0.001	80.0	62	21 - 145
2-Fluorobiphenyl		0.0558	mg/L	0.001	80.0	70	25 - 145
Terphenyl-d14		0.0558	mg/L	0.001	80.0	70	26 - 127

ample: 24032 - MW-6

Analysis:	BTEX by 8260	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	6640	Date Analyzed:	2003-12-31	Analyzed By:	JG
Prep Batch:	5937	Date Prepared:	2003-12-31	Prepared By:	JG

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.5	µg/L	1	50.0	101	70 - 130
Toluene-d8		50.5	µg/L	1	50.0	101	70 - 130
4-Bromofluorobenzene (4-BFB)		47.4	µg/L	1	50.0	95	70 - 130

Sample: 24033 - MW-11

Analysis:	BTEX by 8260	Analytical Method:	S 8260B	Prep Method:	S 5030B
QC Batch:	6640	Date Analyzed:	2003-12-31	Analyzed By:	JG
Prep Batch:	5937	Date Prepared:	2003-12-31	Prepared By:	JG

continued ...

ample 24033 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.9	µg/L	1	50.0	102	70 - 130
Toluene-d8		50.1	µg/L	1	50.0	100	70 - 130
4-Bromofluorobenzene (4-BFB)		47.7	µg/L	1	50.0	95	70 - 130

Method Blank (1) QC Batch: 6640

Parameter	Flag	Result	Units	RL
1,1-Dichloroethene		<1.00	µg/L	1
Benzene		<1.00	µg/L	1
Trichloroethene (TCE)		<1.00	µg/L	1
Toluene		<1.00	µg/L	1
Chlorobenzene		<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		51.3	µg/L	1	50.0	103	70 - 130
Toluene-d8		51.0	µg/L	1	50.0	102	70 - 130
4-Bromofluorobenzene (4-BFB)		48.3	µg/L	1	50.0	97	70 - 130

Method Blank (1) QC Batch: 6656

Parameter	Flag	Result	Units	RL
Naphthalene		<0.000200	mg/L	0.2
Acenaphthylene		<0.000200	mg/L	0.2
Acenaphthene		<0.000200	mg/L	0.2
Fluorene		<0.000200	mg/L	0.2
Phenanthrene		<0.000200	mg/L	0.2
Anthracene		<0.000200	mg/L	0.2
Fluoranthene		<0.000200	mg/L	0.2
Pyrene		<0.000200	mg/L	0.2
Benzo(a)anthracene		<0.000200	mg/L	0.2
Chrysene		<0.000200	mg/L	0.2

continued ...

method blank continued ...

Parameter	Flag	Result	Units	RL
Benzo(b)fluoranthene		<0.000200	mg/L	0.2
Benzo(k)fluoranthene		<0.000200	mg/L	0.2
Benzo(a)pyrene		<0.000200	mg/L	0.2
Indeno(1,2,3-cd)pyrene		<0.000200	mg/L	0.2
Dibenzo(a,h)anthracene		<0.000200	mg/L	0.2
Benzo(g,h,i)perylene		<0.000200	mg/L	0.2

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Nitrobenzene-d5		0.0581	mg/L	0.001	80.0	73	21 - 145
2-Fluorobiphenyl		0.0624	mg/L	0.001	80.0	78	25 - 145
Terphenyl-d14		0.0685	mg/L	0.001	80.0	86	26 - 127

Laboratory Control Spike (LCS-1) QC Batch: 6640

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
1,1-Dichloroethene	104	104	µg/L	1	100	<0.136	104	0	70 - 130	20
Benzene	102	102	µg/L	1	100	0.15	102	0	70 - 130	20
Trichloroethene (TCE)	100	97.7	µg/L	1	100	0.17	100	2	70 - 130	20
Toluene	89.9	90.6	µg/L	1	100	0.19	90	1	70 - 130	20
Chlorobenzene	105	103	µg/L	1	100	<0.0540	105	2	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	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Dibromofluoromethane	49.5	50.2	µg/L	1	50.0	99	100	70 - 130
Toluene-d8	51.1	50.3	µg/L	1	50.0	102	101	70 - 130
4-Bromofluorobenzene (4-BFB)	49.8	49.7	µg/L	1	50.0	100	99	70 - 130

Laboratory Control Spike (LCS-1) QC Batch: 6656

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Naphthalene	48.6	49.0	mg/L	1	80.0	<0.0445	61	1	21.4 - 134	20
Acenaphthylene	65.0	65.6	mg/L	1	80.0	<0.0383	81	1	42.1 - 135	20
Acenaphthene	62.0	62.2	mg/L	1	80.0	<0.0421	78	0	41 - 133	20
Fluorene	58.6	58.2	mg/L	1	80.0	<0.0655	73	1	49.3 - 133	20
Phenanthrene	61.4	61.4	mg/L	1	80.0	<0.0383	77	0	54.4 - 135	20
Anthracene	62.6	62.7	mg/L	1	80.0	<0.0468	78	0	42.2 - 130	20
Fluoranthene	63.3	62.9	mg/L	1	80.0	<0.0550	79	1	44.4 - 146	20
Pyrene	83.1	85.5	mg/L	1	80.0	<0.0904	104	3	52.8 - 137	20
Benzo(a)anthracene	66.6	68.0	mg/L	1	80.0	<0.0993	83	2	59 - 134	20
Chrysene	81.8	83.6	mg/L	1	80.0	<0.121	102	2	49.6 - 107	20
Benzo(b)fluoranthene	56.9	58.5	mg/L	1	80.0	<0.171	71	3	43.2 - 134	20
Benzo(k)fluoranthene	66.6	68.2	mg/L	1	80.0	<0.0951	83	2	55.2 - 145	20
Benzo(a)pyrene	65.2	67.4	mg/L	1	80.0	<0.135	82	3	63.9 - 138	20

continued ...

control spikes continued ...

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	RPD	Rec. Limit	RPD Limit
Indeno(1,2,3-cd)pyrene	60.2	63.6	mg/L	1	80.0	<0.176	75	5	64.6 - 145	20
Dibenzo(a,h)anthracene	48.6	51.8	mg/L	1	80.0	<0.184	61	6	48.6 - 142	20
Benzo(g,h,i)perylene	61.9	67.0	mg/L	1	80.0	<0.134	77	8	71.5 - 146	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	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Nitrobenzene-d5	53.7	52.7	mg/L	1	80.0	67	66	20 - 146
2-Fluorobiphenyl	59.4	59.9	mg/L	1	80.0	74	75	25.3 - 146
Terphenyl-d14	74.6	76.4	mg/L	1	80.0	93	96	26 - 127

Standard (CCV-1) QC Batch: 6640

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/L	50.0	46.4	93	80 - 120	2003-12-31
1,1-Dichloroethene		µg/L	50.0	51.2	102	80 - 120	2003-12-31
Chloroform		µg/L	50.0	45.7	91	80 - 120	2003-12-31
1,2-Dichloropropane		µg/L	50.0	49.6	99	80 - 120	2003-12-31
Toluene		µg/L	50.0	43.5	87	80 - 120	2003-12-31
Chlorobenzene		µg/L	50.0	49.2	98	80 - 120	2003-12-31
Ethylbenzene		µg/L	50.0	50.3	101	80 - 120	2003-12-31

Standard (CCV-1) QC Batch: 6656

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Naphthalene		mg/L	60.0	58.6	98	80 - 120	2003-12-30
Acenaphthylene		mg/L	60.0	54.6	91	80 - 120	2003-12-30
Acenaphthene		mg/L	60.0	52.8	88	80 - 120	2003-12-30
Fluorene		mg/L	60.0	49.2	82	80 - 120	2003-12-30
Phenanthrene		mg/L	60.0	65.2	109	80 - 120	2003-12-30
Anthracene		mg/L	60.0	64.7	108	80 - 120	2003-12-30
Fluoranthene		mg/L	60.0	60.7	101	80 - 120	2003-12-30
Pyrene		mg/L	60.0	59.3	99	80 - 120	2003-12-30
Benzo(a)anthracene		mg/L	60.0	52.3	87	80 - 120	2003-12-30
Chrysene		mg/L	60.0	60.5	101	80 - 120	2003-12-30
Benzo(b)fluoranthene		mg/L	60.0	67.0	112	80 - 120	2003-12-30
Benzo(k)fluoranthene		mg/L	60.0	62.4	104	80 - 120	2003-12-30
Benzo(a)pyrene		mg/L	60.0	62.1	104	80 - 120	2003-12-30
Indeno(1,2,3-cd)pyrene		mg/L	60.0	58.6	98	80 - 120	2003-12-30
Dibenzo(a,h)anthracene		mg/L	60.0	51.0	85	80 - 120	2003-12-30
Benzo(g,h,i)perylene		mg/L	60.0	58.2	97	80 - 120	2003-12-30

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limit
Nitrobenzene-d5		72.1	mg/L	1	60.0	120	80 - 120
2-Fluorobiphenyl		66.7	mg/L	1	60.0	111	80 - 120

continued ...

tandard continued ...

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limit
Terphenyl-d14		68.3	mg/L	1	60.0	114	80 - 120

Page 1 of 1

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 3122408

Company Name: BAC International, Inc. Phone #: (505) 397-6388
Address: (Street, City, Zip) 1324 W. Marland Fax #: (505) 397-0397
Contact Person: Cliff R. Brunson
Invoice to: (If different from above) Shell E&P Company Attn: Wayne Hamilton
Project #: Westgate Project Name: Westgate
Project Location: Hobbs, N.M. Sampler Signature:

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
24027	M.W. #2	VOA	2	✓				✓						12-23-03	4:30
	M.W #2	Liter	1	✓								✓		12-23-03	930
28	M.W #10	VOA	2	✓				✓						12-23-03	10:30
	M.W #10	Liter	1	✓								✓		12-23-03	10:30
29	M.W #4	VOA	2	✓				✓						12-23-03	11:50
30	M.W #7	VOA	2	✓				✓						12-23-03	12:40
	MW #7	Liter	1	✓								✓		12-23-03	12:40
31	M.W #8	VOA	2	✓				✓						12-23-03	1:40
	MW #8	Liter	1	✓								✓		12-23-03	1:40
32	MW #6	VOA	2	✓				✓						12-23-03	2:00
33	MW #11	VOA	2	✓				✓						12-23-03	3:11

ANALYSIS REQUEST	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 BTEX only	GC/MS Semi Vol 8270C/625 PAH	PCB's 8082/608	Pesticides 8081A/608	BOD TSS pH	Turn Around Time if different from standard	Hold
											✓						
												✓					
											✓						
												✓					
											✓						
											✓						
												✓					
											✓						
												✓					
											✓						
												✓					

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
	12-23-03	3:43			
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received at Laboratory by:	Date:	Time:
				12-24-03	9:56

LAB USE ONLY
Intact Y / N
Headspace Y / N
Temp 2°C °
Log-in Review MA

REMARKS:

☐ Check If Special Reporting Limits Are Needed

Carrier # TNMD 903 133 947-1

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

ORIGINAL COPY

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # 312408

Company Name: BBC International, Inc. Phone #: (505) 397-6388
Address: (Street, City, Zip) 1324 W. Marland Fax #: (505) 397-0397
Contact Person: Cliff P. Brunson
Invoice to: (If different from above) Shell E&P Company Attn: Wayne Hamilton
Project #: Westgate Project Name: Westgate
Project Location: Hobbs, N.M. Sampler Signature:

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
24027	M.W. #2	VOA	2	✓				✓						12-23-03	9:50
	M.W #2	1 Liter	1	✓								✓		12-23-03	9:30
28	M.W #10	VOA	2	✓				✓						12-23-03	10:30
	M.W #10	1 Liter	1	✓								✓		12-23-03	10:30
29	M.W #4	VOA	2	✓				✓						12-23-03	11:50
30	M.W #7	VOA	2	✓				✓						12-23-03	12:40
	MW #7	1 Liter	1	✓								✓		12-23-03	12:40
31	M.W #8	VOA	2	✓				✓						12-23-03	1:40
	M.W #8	1 Liter	1	✓								✓		12-23-03	1:40
32	M.W #6	VOA	2	✓				✓						12-23-03	2:00
33	M.W #11	VOA	2	✓				✓						12-23-03	3:11

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 BTEX only	GC/MS Semi. Vol. 8270C/625 PAH	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH								Turn Around Time if different from standard	Hold
										✓													
											✓												
										✓													
											✓												
										✓													
										✓													
											✓												
										✓													
											✓												
										✓													

Relinquished by: Date: 12-23-03 Time: 3:43 Received by: Date: Time:
Relinquished by: Date: Time: Received by: Date: Time:
Relinquished by: Date: Time: Received at Laboratory by: Date: 12-24-03 Time: 9:56

LAB USE ONLY
Intact Y / N
Headspace Y / N
Temp 2° °
Log-in Review MA

REMARKS:

☐ Check If Special Reporting Limits Are Needed

1150 P

Carrier # TNMD 903 133 947-1

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

ORIGINAL COPY

APPENDIX V

NMOCD LETTER DATED
MARCH 3, 2003

Westgate Subdivision
Grimes Battery & Tasker Road

April 2004

Shell Exploration & Production Company
Houston, Texas

Prepared by:
BBC International, Inc.

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

March 3, 2003

Mr. Wayne A. Hamilton
Shell E&P Technology Company
Rm. 4304 Woodcreek
200 N. Dairy Ashford
Houston, Texas 77079

RE: GROUND WATER MONITORING
STAGE 2 ABATEMENT PLAN (AP-2)
GRIMES BATTERY/TASKER ROAD
HOBBS, NEW MEXICO

Dear Mr. Hamilton:

The New Mexico Oil Conservation Division (OCD) has reviewed Shell E&P Company's (Shell) May 3, 2002 "SUBMITTAL OF 2001 GROUNDWATER MONITORING REPORT, WESTGATE SUBDIVISION, GRIMES BATTERY AND TASKER ROAD." This document contains the results of Shell's annual ground water monitoring under the Stage 2 Abatement Plan for remediation of soil and ground water contamination related to the former Grimes Tank Battery located in the Westgate Subdivision in Hobbs, New Mexico. The document also contains recommendations for modifications to the ground water sampling program and plugging several monitor wells where ground water has been below Water Quality Control Commission Standards for at least 8 consecutive quarters.

The above-referenced recommendations are approved with the following conditions:

1. Shell shall not plug and abandon monitor wells GMW-4, GMW-6 and GMW-11.

2. Plugging and abandonment shall be conducted by cutting the casing off below the ground surface and filling the casing annulus from the bottom to the top with a cement grout containing 3-5% bentonite.

3. Ground water from monitor wells GMW-4, GMW-6 and GMW-11 shall be sampled on an annual basis for concentrations of benzene, toluene, ethylbenzene and xylene.

Please be advised that OCD approval does not relieve Shell of responsibility if the plan fails to adequately monitor contamination related to Shell's activities or if contamination exists which is outside the scope of the plan. In addition, OCD approval does not relieve Shell of responsibility for compliance with any other federal, state or local laws and regulations.

If you have any questions, please contact me at (505) 476-3491.

Sincerely,

William C. Olson
Hydrologist
Environmental Bureau

xc: Chris Williams, OCD Hobbs District Supervisor
Jose Jaques, Westgate Subdivision
William G. Rosch, III, Rosch & Ross
Cliff P. Brunson, BBC International

EXCAVATION SITE

FORMER GRIMES TANK BATTERY

EXCAVATION SITE

ALLEY

COBB DRIVE

BERRY DRIVE

ALLEY

TASKER DRIVE

ALLEY

SAN ANDRES

PIPELINE EASEMENT

GMW-2 3580.23

GMW-10 3577.80

GMW-1 3578.72

GMW-3B 3579.99

GMW-5 3579.05

GMW-4 3579.89

GMW-6 3579.17

GMW-11 3576.08

GMW-9 3576.41

GMW-8 3575.56

GMW-7 3575.54

3580

3579

3578

3576

42

38

39

74

41

4

3

2

15

16

17

1

1

2

1

2

3

4

5

260

250

240

LEGEND

- DENOTES EXCAVATED AREA
- DENOTES PROPOSED PARK CARVE-OUT
- DENOTES EXISTING RESIDENCE
- DENOTES DIRT LEASE ROAD
- DENOTES NEW EXCAVATION SITE
- GMW – DENOTES GRIMES MONITOR WELL

40 0 40 80 FEET

Scale: 1"=40'

BBC INTERNATIONAL, INC. / ARCADIS GERAGHTY & MILLER

GRIMES BATTERY & TASKER ROAD

GROUND WATER ELEVATION/GRADIENT

1st Quarter 2003

MEASURED 3/4/03

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

SURVEYED BY: LAWLESS	DRAWN BY: LA	REV. DATE: 03/29/04	E-3081
DATE BEGIN: 5/11/98	DATE: 8/13/98	FILE NAME: FIGURE01	FIGURE Q1
DATE END: 9/1/98	CHECKED BY:	SHEET 1 OF 1	1st Quarter 2003
PROJECT #: 02.13.0368	DISK #: BBC	Scale: 1"=40'	

JOHN WEST SURVEYING COMPANY
HOBBS, NEW MEXICO

EXCAVATION SITE

FORMER GRIMES TANK BATTERY

EXCAVATION SITE

ALLEY

COBB DRIVE

BERRY DRIVE

ALLEY

PIPELINE EASEMENT

TASKER DRIVE

ALLEY

SAN ANDRES

42 38 39 74 41 28C 25C 24C

4 3 2 1 1 2 3 15 16 17 1 2 3 4 5

GMW-11 ND

GMW-2 ND

GMW-9 ND

GMW-10 ND

GMW-1 0.22

GMW-3B 0.04

GMW-8 ND

GMW-5 0.15

GMW-4 ND

GMW-6 ND

GMW-7 ND

0.20

0.15

0.10

0.05

0.0

NORTH

LEGEND

- DENOTES EXCAVATED AREA
- DENOTES PROPOSED PARK CARVE-OUT
- DENOTES EXISTING RESIDENCE
- DENOTES DIRT LEASE ROAD
- DENOTES NEW EXCAVATION SITE
- GMW – DENOTES GRIMES MONITOR WELL

40 0 40 80 FEET

Scale: 1"=40'

BBC INTERNATIONAL, INC. / ARCADIS GERAGHTY & MILLER

GRIMES BATTERY & TASKER ROAD

LNAPL THICKNESS
1st Quarter 2003
MEASURED 3/4/03

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

SURVEYED BY: LAWLESS	DRAWN BY: LA	REV. DATE: 03/29/04	E-3081
DATE BEGIN: 5/11/98	DATE: 8/13/98	FILE NAME: FIGURE01	FIGURE Q2
DATE END: 9/1/98	CHECKED BY:	SHEET 1 OF 1	1st Quarter 2003
PROJECT #: 02.13.0368	DISK #: BBC	Scale: 1"=40'	

JOHN WEST SURVEYING COMPANY
HOBBS, NEW MEXICO

LEGEND

- DENOTES EXCAVATED AREA
- DENOTES PROPOSED PARK CARVE-OUT
- DENOTES EXISTING RESIDENCE
- DENOTES DIRT LEASE ROAD
- DENOTES NEW EXCAVATION SITE
- GMW – DENOTES GRIMES MONITOR WELL
- NS DENOTES NOT SAMPLED

First Quarter – 2003

Grimes 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-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

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

BBC INTERNATIONAL, INC. / ARCADIS GERAGHTY & MILLER

GRIMES BATTERY & TASKER ROAD

TOTAL BTEX
1st Quarter 2003
MEASURED 3/14/03

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

SURVEYED BY: LAWLESS	DRAWN BY: LA	REV. DATE: 03/29/04	E-3081
DATE BEGIN: 5/11/98	DATE: 8/13/98	FILE NAME: FIGURE01	FIGURE Q3
DATE END: 9/1/98	CHECKED BY:	SHEET 1 OF 1	1st Quarter 2003
PROJECT #: 02.13.0368	DISK #: BBC	Scale: 1"=40'	

JOHN WEST SURVEYING COMPANY
HOBBS, NEW MEXICO

EXCAVATION SITE

FORMER
GRIMES TANK BATTERY

EXCAVATION SITE

ALLEY

COBB DRIVE

BERRY DRIVE

ALLEY

TASKER DRIVE

ALLEY

ANDRES

SAN

PIPELINE EASEMENT

74

41

42

38

39

26C

25C

24C

4
3
2

15
16
17

1
1
2

1
2
3
4

3
4
5

GMW-2
3579.64

3576.08
GMW-11

GMW-9
3575.90

3577.30
GMW-10

GMW-1
3578.20'

3579.53
GMW-3B

GMW-8
3575.04

GMW-5
3578.81

GMW-4
3579.89

3579.17
GMW-6

GMW-7
3575.04

3579

3578

3577

3576

3575

LEGEND

- DENOTES EXCAVATED AREA
- DENOTES PROPOSED PARK CARVE-OUT
- DENOTES EXISTING RESIDENCE
- DENOTES DIRT LEASE ROAD
- DENOTES NEW EXCAVATION SITE
- GMW – DENOTES GRIMES MONITOR WELL

40 0 40 80 FEET

Scale: 1"=40'

BBC INTERNATIONAL, INC. / ARCADIS GERAGHTY & MILLER

GRIMES BATTERY & TASKER ROAD

GROUND WATER ELEVATION/GRADIENT

2nd Quarter 2003

MEASURED 6/27/03

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

SURVEYED BY: LAWLESS	DRAWN BY: LA	REV. DATE: 03/29/04	E-3081
DATE BEGIN: 5/11/98	DATE: 8/13/98	FILE NAME: FIGURE01	FIGURE Q4
DATE END: 9/1/98	CHECKED BY:	SHEET 1 OF 1	2nd Quarter 2003
PROJECT #: 02.13.0368	DISK #: BBC	Scale: 1"=40'	

JOHN WEST SURVEYING COMPANY
HOBBS, NEW MEXICO

EXCAVATION SITE

FORMER
GRIMES TANK BATTERY

EXCAVATION SITE

GMW-1
0.17

GMW-2
ND

GMW-3B
0.01

GMW-4
ND

GMW-5
0.12

GMW-6
ND

GMW-7
ND

GMW-8
ND

GMW-9
ND

GMW-10
ND

GMW-11
ND

0.15

0.10

0.05

0.00

ALLEY

COBB DRIVE

BERRY DRIVE

TASKER DRIVE

ALLEY

ALLEY

ALLEY

SAN ANDRES

PIPELINE EASEMENT

74

41

42

38

39

26C

25C

24C

4
3
2

15
16
17

1
1
2

1
2
3
4

3
4
5

LEGEND

DENOTES EXCAVATED AREA

DENOTES PROPOSED PARK CARVE-OUT

DENOTES EXISTING RESIDENCE

DENOTES DIRT LEASE ROAD

DENOTES NEW EXCAVATION SITE

GMW – DENOTES GRIMES MONITOR WELL

ND DENOTES NOT DETECTED

40 0 40 80 FEET

Scale: 1"=40'

BBC INTERNATIONAL, INC. / ARCADIS GERAGHTY & MILLER

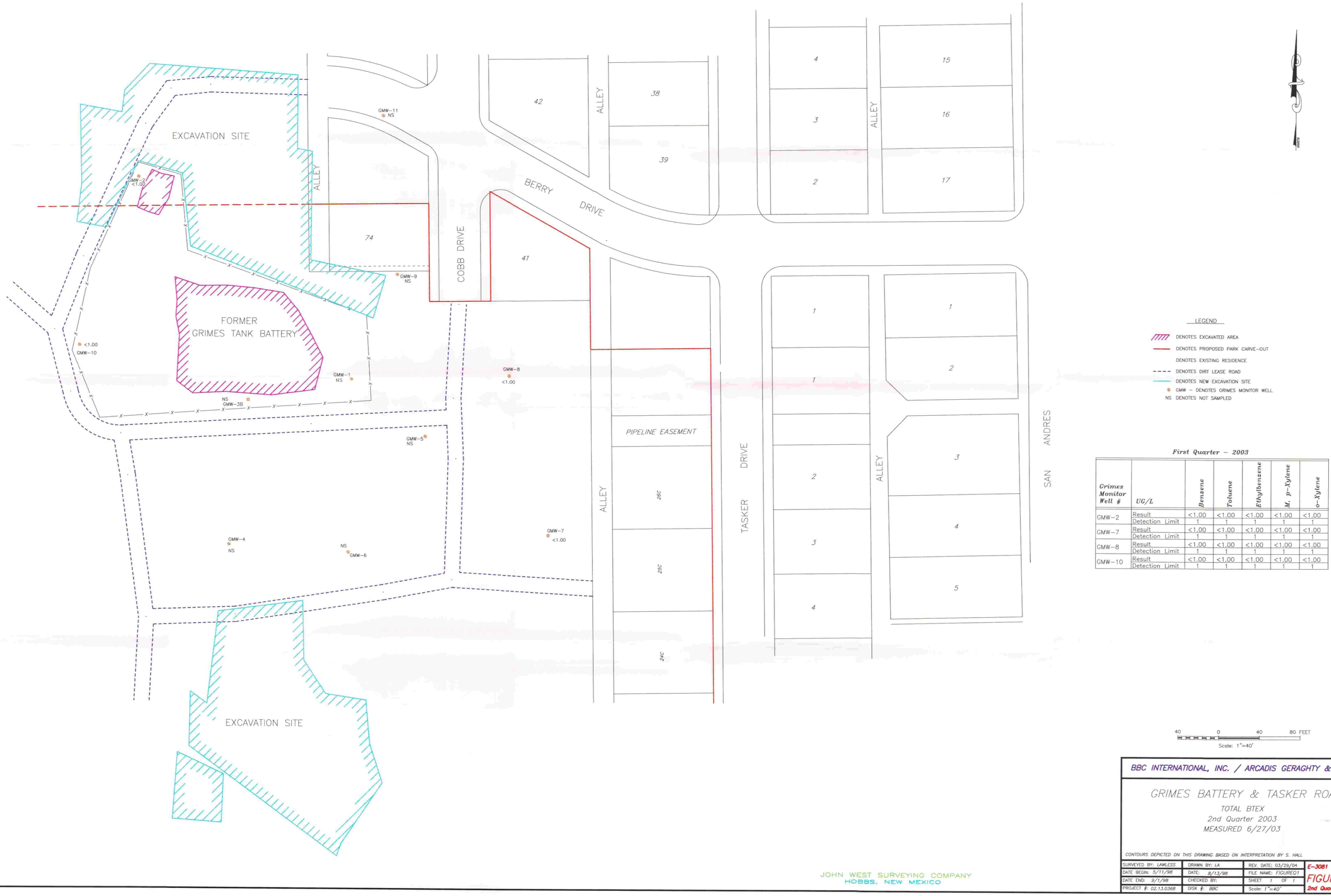
GRIMES BATTERY & TASKER ROAD

LNAPL THICKNESS
2nd Quarter 2003
MEASURED 6/27/03

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

SURVEYED BY: LAWLESS	DRAWN BY: LA	REV. DATE: 03/29/04	E-3081
DATE BEGIN: 5/11/98	DATE: 8/13/98	FILE NAME: FIGUREQ1	FIGURE Q5
DATE END: 9/1/98	CHECKED BY:	SHEET 1 OF 1	2nd Quarter 2003
PROJECT #: 02.13.0368	DISK #: BBC	Scale: 1"=40'	

JOHN WEST SURVEYING COMPANY
HOBBS, NEW MEXICO



LEGEND

- DENOTES EXCAVATED AREA
- DENOTES PROPOSED PARK CARVE-OUT
- DENOTES EXISTING RESIDENCE
- DENOTES DIRT LEASE ROAD
- DENOTES NEW EXCAVATION SITE
- GMW – DENOTES GRIMES MONITOR WELL
- NS DENOTES NOT SAMPLED

First Quarter – 2003

Grimes 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-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

40 0 40 80 FEET

Scale: 1"=40'

BBC INTERNATIONAL, INC. / ARCADIS GERAGHTY & MILLER

GRIMES BATTERY & TASKER ROAD

TOTAL BTEX
2nd Quarter 2003
MEASURED 6/27/03

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

SURVEYED BY: LAWLESS	DRAWN BY: LA	REV. DATE: 03/29/04	E-3081
DATE BEGIN: 5/11/98	DATE: 8/13/98	FILE NAME: FIGUREQ1	FIGURE Q6
DATE END: 9/1/98	CHECKED BY:	SHEET 1 OF 1	2nd Quarter 2003
PROJECT #: 02.13.0368	DISK #: BBC	Scale: 1"=40'	

JOHN WEST SURVEYING COMPANY
HOBBS, NEW MEXICO

EXCAVATION SITE

FORMER
GRIMES TANK BATTERY

EXCAVATION SITE

ALLEY

COBB DRIVE

BERRY DRIVE

ALLEY

ALLEY

TASKER DRIVE

ALLEY

SAN ANDRES

PIPELINE EASEMENT

GMW-2
3579.33

GMW-10
3576.95

GMW-1
3577.92

GMW-3B
3579.11

GMW-5
3578.14

GMW-4
3579.11

3578.43
GMW-6

GMW-7
3574.73

GMW-8
3574.75

GMW-9
3575.59

3575.33
GMW-11

3579

3578

3577

3576

3575

74

41

42

38

39

4

3

2

15

16

17

1

1

2

1

2

3

4

5

280

250

240

LEGEND

- DENOTES EXCAVATED AREA
- DENOTES PROPOSED PARK CARVE-OUT
- DENOTES EXISTING RESIDENCE
- DENOTES DIRT LEASE ROAD
- DENOTES NEW EXCAVATION SITE
- GMW – DENOTES GRIMES MONITOR WELL

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

BBC INTERNATIONAL, INC. / ARCADIS GERAGHTY & MILLER

GRIMES BATTERY & TASKER ROAD

GROUND WATER ELEVATION/GRADIENT
3rd Quarter 2003
MEASURED 9/8/03

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

SURVEYED BY: LAWLESS	DRAWN BY: LA	REV. DATE: 03/29/04	E-3081
DATE BEGIN: 5/11/98	DATE: 8/13/98	FILE NAME: FIGUREQ1	FIGURE Q7
DATE END: 9/1/98	CHECKED BY:	SHEET 1 OF 1	3rd Quarter 2003
PROJECT #: 02.13.0368	DISK #: BBC	Scale: 1"=40'	

JOHN WEST SURVEYING COMPANY
HOBBS, NEW MEXICO

EXCAVATION SITE

FORMER GRIMES TANK BATTERY

EXCAVATION SITE

GMW-1 0.01
GMW-2 ND
GMW-3B 0.01
GMW-4 ND
GMW-5 0.01
GMW-6 ND
GMW-7 ND
GMW-8 ND
GMW-9 ND
GMW-10 ND
GMW-11 ND

0.0

ALLEY
COBB DRIVE
BERRY DRIVE
TASKER DRIVE
SAN ANDRES
PIPELINE EASEMENT

42
38
39
74
41
26C
25C
24C
4
3
2
15
16
17
1
1
1
2
2
3
4
5

LEGEND

- DENOTES EXCAVATED AREA
- DENOTES PROPOSED PARK CARVE-OUT
- DENOTES EXISTING RESIDENCE
- DENOTES DIRT LEASE ROAD
- DENOTES NEW EXCAVATION SITE
- GMW – DENOTES GRIMES MONITOR WELL
- ND DENOTES NOT DETECTED

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

BBC INTERNATIONAL, INC. / ARCADIS GERAGHTY & MILLER

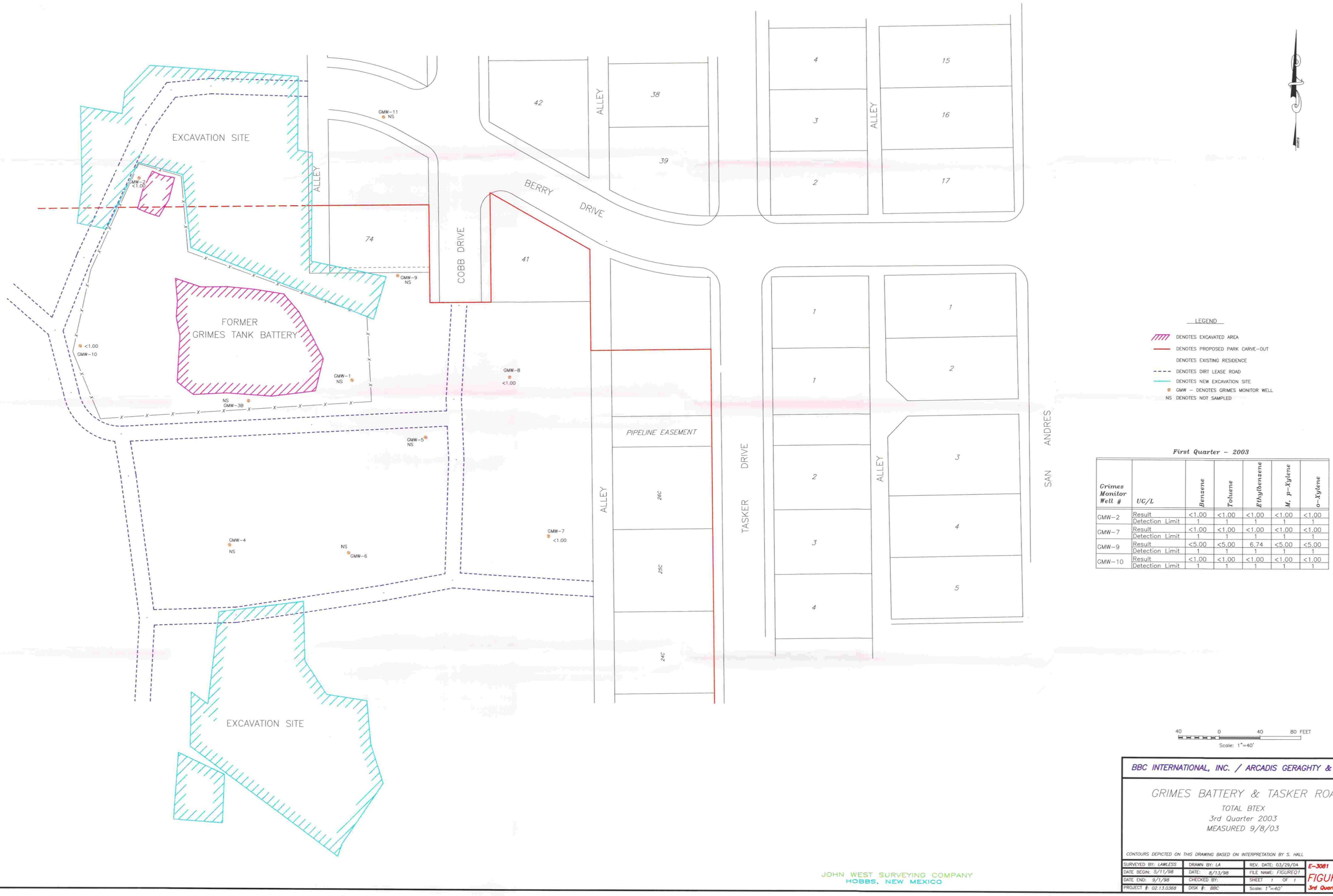
GRIMES BATTERY & TASKER ROAD

LNAPL THICKNESS
3rd Quarter 2003
MEASURED 9/8/03

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

SURVEYED BY: LAWLESS	DRAWN BY: LA	REV. DATE: 03/29/04	E-3081
DATE BEGIN: 5/11/98	DATE: 8/13/98	FILE NAME: FIGUREQ1	FIGURE Q8
DATE END: 9/1/98	CHECKED BY:	SHEET 1 OF 1	3rd Quarter 2003
PROJECT #: 02.13.0368	DISK #: BBC	Scale: 1"=40'	

JOHN WEST SURVEYING COMPANY
HOBBS, NEW MEXICO



First Quarter – 2003

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	<1.00	<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
3rd Quarter 2003
MEASURED 9/8/03

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

SURVEYED BY: LAWLESS	DRAWN BY: LA	REV. DATE: 03/29/04	E-3081
DATE BEGIN: 5/11/98	DATE: 8/13/98	FILE NAME: FIGUREQ1	FIGURE Q9
DATE END: 9/1/98	CHECKED BY:	SHEET 1 OF 1	3rd Quarter 2003
PROJECT #: 02.13.0368	DISK #: BBC	Scale: 1"=40'	

JOHN WEST SURVEYING COMPANY
HOBBS, NEW MEXICO

EXCAVATION SITE

FORMER GRIMES TANK BATTERY

EXCAVATION SITE

ALLEY

COBB DRIVE

BERRY DRIVE

ALLEY

TASKER DRIVE

ALLEY

SAN ANDRES

PIPELINE EASEMENT

GMW-2 <1.00

GMW-11 NS

GMW-9 NS

GMW-10 <1.00

GMW-1 NS

GMW-3B NS

GMW-8 <1.00

GMW-5 NS

GMW-4 NS

GMW-6 NS

GMW-7 <1.00

42 38 39 74 41 26C 25C 24C

4 3 2 15 16 17

1 1 2 1 2 3 4 5

LEGEND

- DENOTES EXCAVATED AREA
- DENOTES PROPOSED PARK CARVE-OUT
- DENOTES EXISTING RESIDENCE
- DENOTES DIRT LEASE ROAD
- DENOTES NEW EXCAVATION SITE
- GMW – DENOTES GRIMES MONITOR WELL
- NS DENOTES NOT SAMPLED

First Quarter – 2003

Grimes 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-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

40 0 40 80 FEET

Scale: 1"=40'

BBC INTERNATIONAL, INC. / ARCADIS GERAGHTY & MILLER

GRIMES BATTERY & TASKER ROAD

TOTAL BTEX

3rd Quarter 2003

MEASURED 9/8/03

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

SURVEYED BY: LAWLESS	DRAWN BY: LA	REV. DATE: 03/29/04	E-3081
DATE BEGIN: 5/11/98	DATE: 8/13/98	FILE NAME: FIGURE01	FIGURE Q9
DATE END: 9/1/98	CHECKED BY:	SHEET 1 OF 1	3rd Quarter 2003
PROJECT #: 02.13.0368	DISK #: BBC	Scale: 1"=40'	

JOHN WEST SURVEYING COMPANY
HOBBS, NEW MEXICO

EXCAVATION SITE

FORMER GRIMES TANK BATTERY

EXCAVATION SITE

GMW-2 3578.81

GMW-10 3576.54

GMW-1 3577.38

3578.66 GMW-3B

GMW-5 3577.54

GMW-4 3578.58

3577.82 GMW-6

GMW-7 3574.29

GMW-8 3574.29

GMW-9 3575.11

3574.87 GMW-11

ALLEY

COBB DRIVE

BERRY DRIVE

TASKER DRIVE

ALLEY

ALLEY

ALLEY

SAN ANDRES

42

38

39

74

41

4

3

2

15

16

17

1

1

2

1

3

2

3

4

5

PIPELINE EASEMENT

26C

25C

24C

3578

3577

3576

3575

3574

LEGEND

- DENOTES EXCAVATED AREA
- DENOTES PROPOSED PARK CARVE-OUT
- DENOTES EXISTING RESIDENCE
- DENOTES DIRT LEASE ROAD
- DENOTES NEW EXCAVATION SITE
- GMW – DENOTES GRIMES MONITOR WELL

NORTH

40 0 40 80 FEET

Scale: 1"=40'

BBC INTERNATIONAL, INC. / ARCADIS GERAGHTY & MILLER

GRIMES BATTERY & TASKER ROAD

GROUND WATER ELEVATION/GRADIENT

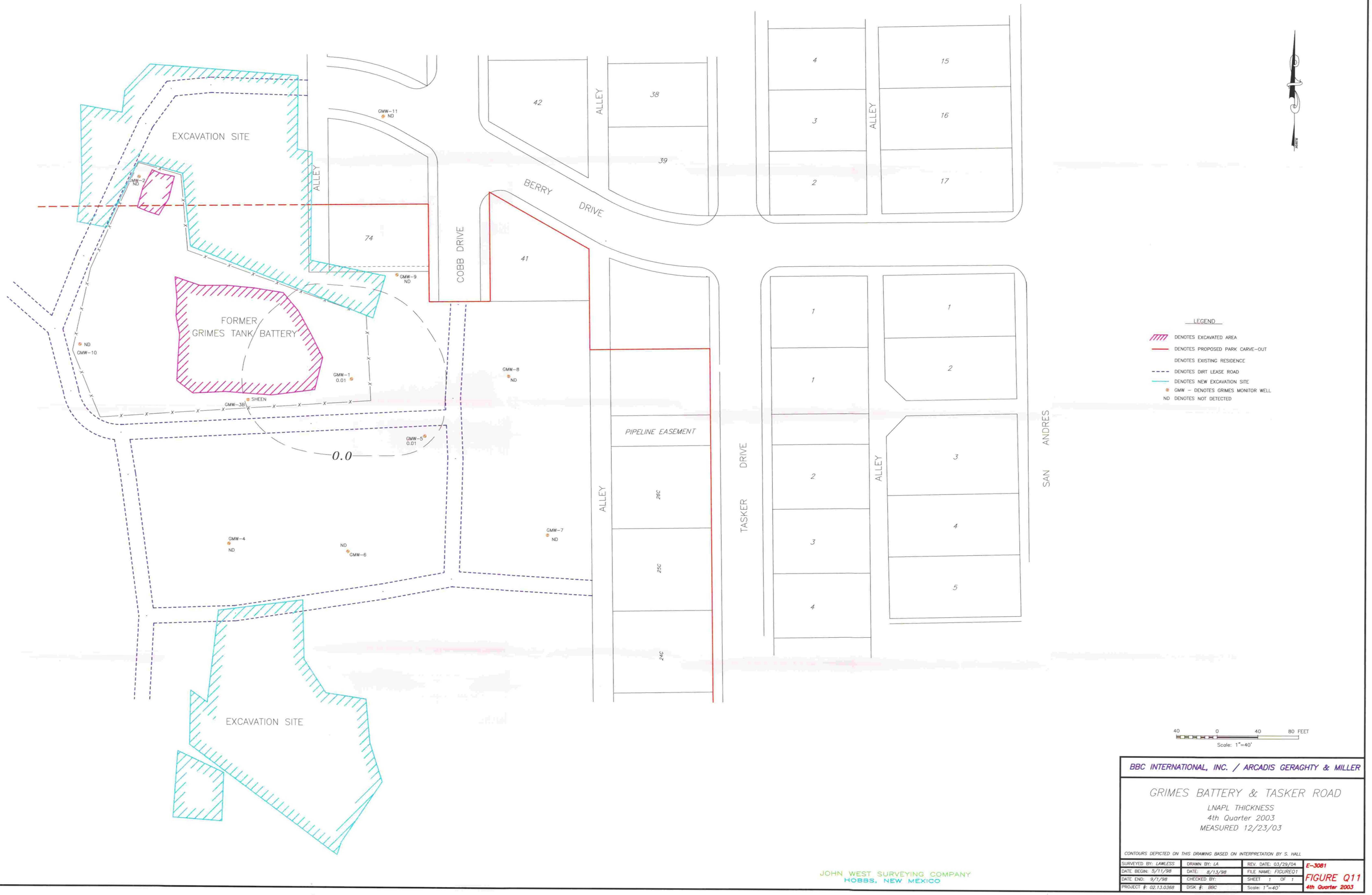
4th Quarter 2003

MEASURED 12/23/03

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

SURVEYED BY: LAWLESS	DRAWN BY: LA	REV. DATE: 03/29/04	E-3081
DATE BEGIN: 5/11/98	DATE: 8/13/98	FILE NAME: FIGURE01	FIGURE Q10
DATE END: 9/1/98	CHECKED BY:	SHEET 1 OF 1	4th Quarter 2003
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 THICKNESS
4th Quarter 2003
MEASURED 12/23/03

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

SURVEYED BY: LAWLESS	DRAWN BY: LA	REV. DATE: 03/29/04	E-3081
DATE BEGIN: 5/11/98	DATE: 8/13/98	FILE NAME: FIGURE01	FIGURE Q11
DATE END: 9/1/98	CHECKED BY:	SHEET 1 OF 1	4th Quarter 2003
PROJECT #: 02.13.0368	DISK #: BBC	Scale: 1"=40'	

JOHN WEST SURVEYING COMPANY
HOBBS, NEW MEXICO

LEGEND

- DENOTES EXCAVATED AREA
- DENOTES PROPOSED PARK CARVE-OUT
- DENOTES EXISTING RESIDENCE
- DENOTES DIRT LEASE ROAD
- DENOTES NEW EXCAVATION SITE
- GMW – DENOTES GRIMES MONITOR WELL
- NS DENOTES NOT SAMPLED

Fourth Quarter – 2003

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-4	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-9	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

40 0 40 80 FEET

Scale: 1"=40'

BBC INTERNATIONAL, INC. / ARCADIS GERAGHTY & MILLER

GRIMES BATTERY & TASKER ROAD

TOTAL BTEX
4th Quarter 2003
MEASURED 12/23/03

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

SURVEYED BY: LAWLESS	DRAWN BY: LA	REV. DATE: 03/29/04	E-3081
DATE BEGIN: 5/11/98	DATE: 8/13/98	FILE NAME: FIGURE01	FIGURE Q12
DATE END: 9/1/98	CHECKED BY:	SHEET 1 OF 1	4th Quarter 2003
PROJECT #: 02.13.0368	DISK #: BBC	Scale: 1"=40'	

JOHN WEST SURVEYING COMPANY
HOBBS, NEW MEXICO