3R - 015

CLOSURE REPORT

DECEMBER 2010

3R015

BP AMERICA PRODUCTION CO.

GROUNDWATER REMEDIATION REPORT

GCU # 107
(D) SECTION 19, T29N, R12W, NMPM
SAN JUAN COUNTY, NEW MEXICO

PREPARED FOR:
NEW MEXICO OIL CONSERVATION DIVISION
1220 ST. FRANCIS DRIVE
SANTA FE, NEW MEXICO 87504

DECEMBER 2010

PREPARED BY:
BLAGG ENGINEERING, INC.

Consulting Petroleum / Reclamation Services
P.O. Box 87
Bloomfield, New Mexico 87413

BP AMERICA PRODUCTION COMPANY
GCU # 107 - Separator Pit
NW¼ NW¼, Sec. 19, T29N, R12W

Pit Closure Date: **March-April 1995**

Monitor Well Installation Date: **November 2009**

Monitor Well Sampling Dates: **11/9/09, 3/4/10, 4/29/10, 7/21/10, 10/21/10**

Pit Closure and Background:

Groundwater was encountered at a depth of approximately twenty six (26) feet below surface grade during excavation of impacted soils from the earthen separator pit in March-April 1995 (documentation included). The excavation perimeter was measured at approximately 29 X 38 X 28 feet depth. Approximately 1,140 cubic yards of soils were removed and composted on-site (closure documentation included). After the initial sampling and testing of the exposed groundwater within the excavation, pumping via water hauling trucks commenced. The water was then transported and disposed at an approved facility. Afterward, subsequent sampling and testing for benzene, toluene, ethylbenzene, and total xylenes (**BTEX**) per US EPA method 8020 was conducted. The discovery of confirmed groundwater impact during the pit closure activity was reported to the New Mexico Oil Conservation Division's (**NMOCD**) Santa Fe office with letter dated May 3, 1995. NMOCD responded with a formal correspondence letter dated July 2, 1996 (included – see page 3). The BTEX results of the groundwater sampling from the excavation are as follows;

Sample ID	Date	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Total Xylenes (ppb)
PW1 @ GW (25')	03/09/95	**73**	**1,031**	651	**4,746**
PW2 @ GW (26')	03/23/95	**17.8**	334.7	282.6	**1,905.2**
PW3 @ GW (26')	03/30/95	**14.0**	63.6	1.4	**1,024.6**
PW4 @ GW (26')	03/30/95	0.4	5.9	2.0	107.9
NMWQCC regulatory standards		**10**	**750**	**750**	**620**

Note: GW = groundwater, NMWQCC = New Mexico Water Quality Control Commission, ppb = parts per billion.

Groundwater Investigation and Soil Lithology:

Groundwater monitor wells were installed in October 2009 to test groundwater quality (see Figure 1). Boring logs for all three (3) monitor wells along with well completion information are contained within this report. There are no known receptors impacted by the previous discovery of impacted soil and/or groundwater.

Soil lithology at the site consists of primarily coarse grained sand with varying size gravel at greater depths (beyond 18 feet), non cohesive, and firm. A dark gray to black sand and gravel with an apparent hydrocarbon odor was observed within the drill cuttings at an estimated 26-35 feet below grade within MW #2 (within groundwater near source area).

Groundwater Monitor Well Sampling Procedures:

Monitor wells were developed by hand-bailing, using new disposable bailers after installation. Prior to sample collections, the monitor wells were purged approximately three (3) well bore volumes with new disposable bailers. The groundwater samples were collected following US EPA: SW-846 protocol, were placed into laboratory supplied containers with appropriate preservative, and stored in an ice chest for express delivery to an analytical laboratory for testing under strict chain-of-custody procedures. Analytical testing for BTEX by US EPA Method 8021B was conducted.

Fluids generated during monitor well development and purging were managed by discarding into the site's separator below-grade tank (**BGT**). The BGT contents are eventually disposed through approved NMOCD operational procedures for removal of produced fluids.

Water Quality and Gradient Information:

BP initiated quarterly sampling and testing pursuant to BP's NMOCD approved Groundwater Management Plan (**GMP**). A historical summary of laboratory analytical BTEX results are included within the table on the following page. Field data sheets, laboratory reports, and laboratory quality assurance/quality control information are also included within this report.

Groundwater contour maps (Figure 2 through Figure 6) reveal the relative elevations from the site wells have consistently shown an apparent southwest flow direction toward MW #3.

Summary and/or Recommendations:

Since November 2009, BTEX within MW #1 and MW #3 site monitor wells have tested at non-detectable levels. MW #2 has shown total xylenes well above the NMWQCC standards since testing commenced. However, a significant decrease in the xylene values is a possible indication that natural attenuation may be positively affecting the remaining impacted soil and/or groundwater. It is recommended to follow BP's GMP and continue monitoring MW #2 on at least a bi-annual basis or until the analytical data suggest otherwise.

30045 08131 36.71693/108.14523

CLIENT: AMOCO	BLAGG ENGINEERING, INC. P.O. BOX 87, BLOOMFIELD, NM 87413 (505) 632-1199	LOCATION NO: B0244 C.O.C. NO: 2904 2918

FIELD REPORT: CLOSURE VERIFICATION

PAGE No: 1 of 1

LOCATION: NAME: GCU WELL #: 107 PIT: SEP

QUAD/UNIT: D SEC: A TWP: 29N RNG: 12W PM: NM CNTY: SJ ST: NM

QTR/FOOTAGE: (NW/4 NW/4) 820'N 990'W CONTRACTOR: EPC

DATE STARTED: 3/8/95

DATE FINISHED:

ENVIRONMENTAL SPECIALIST: NV

EXCAVATION APPROX. 29 FT. x 38 FT. x 28 FT. DEEP. CUBIC YARDAGE: 1,140

DISPOSAL FACILITY: ON-SITE REMEDIATION METHOD: COMPOSTED

LAND USE: INDUSTRIAL LEASE: FEE FORMATION: OK

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 240 FT. N50E FROM WELLHEAD.

DEPTH TO GROUNDWATER: <50' NEAREST WATER SOURCE: >1000' NEAREST SURFACE WATER: >1000'

NMOCD RANKING SCORE: 20 NMOCD TPH CLOSURE STD: 100 PPM

CHECK ONE:
- ✓ PIT ABANDONED
- ___ STEEL TANK INSTALLED

SOIL AND EXCAVATION DESCRIPTION:

VARYING COLORS FROM GRAYISH ORANGE TO DK. YELL. BROWN SAND/GRAVEL, NON-COHESIVE, SLIGHTLY MOIST, FIRM, STRONG HC ODOR IN BOTTOM. CONTRACTOR WILL CONTINUE EXCAVATION IN VERTICAL DIRECTION.

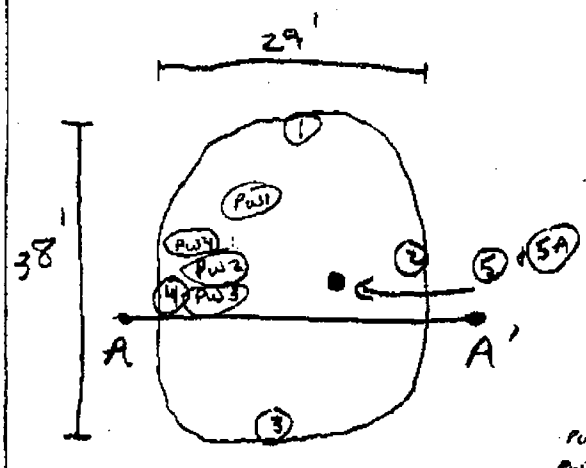
FIELD 418.1 CALCULATIONS

TIME	SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm

SCALE

0 FT

PIT PERIMETER



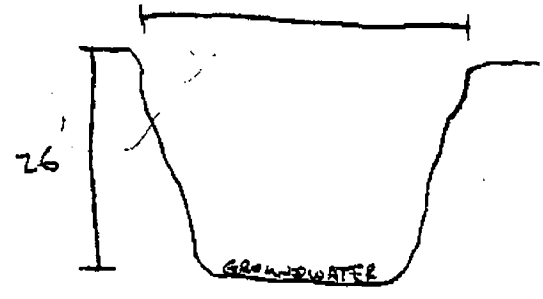
OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
1 @ 12'	2.5
2 @ 12'	1.7
3 @ 12'	1.7
4 @ 8'	10.0
5 @ 18'	521
5A @ 20'	502

LAB SAMPLES

SAMPLE ID	ANALYSIS	TIME	
PW1 @ GW (28')	BTEX	1350	3/9
PW2 @ GW (26')	BTEX	1110	3/23
PW3 @ GW (26')	BTEX	1510	3/30
PW4 @ GW (26')	BTEX	1020	4/10

PIT PROFILE



TRAVEL NOTES: CALLOUT: 3/8/95 ONSITE: 3/8/95

OFF: (505) 325-8786

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn:	*Nelson Velez*	Date:	3/10/95
Company:	*Blagg Engineering*	*Lab ID:*	*2904*
Address:	*P.O. Box 87*	*Sample ID:*	*5441*
City, State:	*Bloomfield, NM 87413*	*Job No.*	*2-1000*

Project Name:	***GCU 107***				
Project Location:	***PW 1 @ GW (25') - Sep. Pit***				
Sampled by:	NV	Date:	3/9/95	Time:	13:50
Analyzed by:	DLA	Date:	3/10/95		
Sample Matrix:	*Water*				

Aromatic Volatile Organics

Component	*Measured Concentration ug/L*	*Detection Limit Concentration ug/L*
Benzene	73	*0.2*
Toluene	1,031	*0.2*
Ethylbenzene	651	*0.2*
m,p-Xylene	3,573	*0.2*
o-Xylene	1,173	*0.2*
	TOTAL 6,501 ug/L	

ND - Not Detectable

Method *- SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography*

Approved by: [signature]
Date: 3/10/95

OFF: (505) 325-8786

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn:	*Nelson Velez*	Date:	3/23/95
Company:	*Blagg Engineering*	*Lab ID:*	*2918*
Address:	*P.O. Box 87*	*Sample ID:*	*5648*
City, State:	*Bloomfield, NM 87413*	*Job No.*	*2-1000*

Project Name:	***GCU 107***				
Project Location:	***PW 2 @ GW (26') - Sep. Pit***				
Sampled by:	NV	Date:	3/23/95	Time:	11:10
Analyzed by:	DLA	Date:	3/23/95		
Sample Matrix:	*Water*				

Aromatic Volatile Organics

Component	*Measured Concentration ug/L*	*Detection Limit Concentration ug/L*
Benzene	17.8	*0.2*
Toluene	334.7	*0.2*
Ethylbenzene	282.6	*0.2*
m,p-Xylene	1390.5	*0.2*
o-Xylene	514.7	*0.2*
	TOTAL 2540.4 *ug/L*	

ND - Not Detectable

Method - *SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography*

Approved by: JA
Date: 3/23/95

OFF: (505) 325-8786

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn:	*Nelson Velez*	Date:	3/30/95
Company:	*Blagg Engineering*	*Lab ID:*	*2964*
Address:	*P.O. Box 87*	*Sample ID:*	*5715*
City, State:	*Bloomfield, NM 87413*	*Job No.*	*2-1000*

Project Name:	***GCU 107***				
Project Location:	***PW 3 @ GW (26') - Sep. Pit***				
Sampled by:	NV	Date:	3/30/95	Time:	15:10
Analyzed by:	DLA	Date:	3/31/95		
Sample Matrix:	*Water*				

Aromatic Volatile Organics

Component	*Measured Concentration ug/L*	*Detection Limit Concentration ug/L*
Benzene	14.0	*0.2*
Toluene	63.6	*0.2*
Ethylbenzene	1.4	*0.2*
m,p-Xylene	588.1	*0.2*
o-Xylene	436.5	*0.2*
	TOTAL 1103.7 ug/L	

ND - Not Detectable

Method *- SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography*

Approved by: D-G

Date: 3/31/95

OFF: (505) 325-8786

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-5667

AROMATIC VOLATILE ORGANICS

Attn:	*Nelson Velez*	Date:	4/10/95
Company:	*Blagg Engineering*	*Lab ID:*	*2923*
Address:	*P.O. Box 87*	*Sample ID:*	*5841*
City, State:	*Bloomfield, NM 87413*	*Job No.*	*2-1000*

Project Name:	***GCU 107***				
Project Location:	***PW 4 @ GW(26') - Sep. Pit***				
Sampled by:	NV	Date:	4/10/95	Time:	10:20
Analyzed by:	DC	Date:	4/10/95		
Sample Matrix:	*Water*				

Aromatic Volatile Organics

Component	*Measured Concentration ug/L*	*Detection Limit Concentration ug/L*
Benzene	0.4	*0.2*
Toluene	5.9	*0.2*
Ethylbenzene	2.0	*0.2*
m,p-Xylene	1.0	*0.2*
o-Xylene	106.9	*0.2*
	TOTAL 116.2 ug/L	

ND - Not Detectable

Method *- SW-846 EPA Method 8020 Aromatic Volatile Organics by Gas Chromatography*

Approved by: DaG

Date: 4/10/95

2904

CHAIN OF CUS. ODY RECORD

ON SITE TECHNOLOGIES, LTD.

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

Date: 3/9/95

Page 1 of 1

B0244

Purchase Order No.:	Job No.		
SEND INVOICE TO: Name		REPORT RESULTS TO: Name	Nelson Velez — Title PG
Company: BURGE ENGINEERING	Dept.	Company: SMNE	
Address		Mailing Address	
City, State, Zip		City, State, Zip	
		Telephone No.	Telefax No.
Sampling Location: GCU 107			
Sampler: Nelson Velez			

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	PRES.	Number of Containers	BTEX (8020)	LAB ID
MWEGW(25') - SEP PIT	3/9/95	1350	water	$HgCl_2$	2	✓	5411-2904

ANALYSIS REQUESTED

Relinquished by: Nelson Velez	Date/Time 3/10/95 0708	Received by: [signature]	Date/Time 3/10/95 0708
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:

Authorized by: _____ Date _____
(Client Signature Must Accompany Request)

Rush	24-48 Hours	10 Working Days	Special Instructions:

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

CHAIN OF CUS. ODY RECORD

2918

ON SITE TECHNOLOGIES, LTD.

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

Date: 3/23/95

Page 1 of 1

B0244

Purchase Order No.: | Job No.

SEND INVOICE TO
Name
Company: BLAGG ENGINEERING | Dept.
Address
City, State, Zip

REPORT RESULTS TO
Name: NELSON VELEZ | Title: PE
Company
Mailing Address
City, State, Zip
Telephone No. | Telefax No.

Sampling Location: GCU 107

Sampler: Nelson Velez

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	PRES.	Number of Containers	BTEX (8020)	LAB ID
PW 2 @ GW (26') - SEP. PIT	3/23/95	1110	WATER	$HgCl_2$	2	✓	5245-2118

Relinquished by: Nelson Velez | Date/Time 3/23/95 1110 | Received by: [signature] | Date/Time 3/23/95 1110

Relinquished by: | Date/Time | Received by: | Date/Time

Relinquished by: | Date/Time | Received by: | Date/Time

Method of Shipment:

Authorized by: _____ Date _____
(Client Signature Must Accompany Request)

Rush	24-48 Hours	10 Working Days	Special Instructions:

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

ON SITE TECHNOLOGIES, LTD.

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

CHAIN OF CUSTODY RECORD

2964

Date: 3/30/95

802HM

Purchase Order No.: Job No.:

SEND INVOICE TO
Name:
Company: BLAGG ENGINEERING Dept.:
Address:
City, State, Zip:

REPORT RESULTS TO
Name: NELSON VELEZ Title: PG
Company:
Mailing Address:
City, State, Zip:
Telephone No.: Telefax No.:

Sampling Location: GCU 107

Sampler: Nelson Velez

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	PRES.	Number of Containers	ANALYSIS REQUESTED: BTEX (8020)									LAB ID
PW3 @ GW (26') - SEP. PIT	3/30/95	1510	WATER		2	✓									5715-2964

Relinquished by: Nelson Velez	Date/Time 3/30/95 1522	Received by: Bill Vail	Date/Time 3/30/95 15:2
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:

Rush | 24-48 Hours | 10 Working Days | Special Instructions:

Authorized by: ______ Date ______
(Client Signature Must Accompany Request)

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

CHAIN OF CUSTODY RECORD

2923

ON SITE TECHNOLOGIES, LTD.

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

Date: 4/10/95

Page 1 of 1

B02494

Purchase Order No.:	Job No.		
SEND INVOICE TO: Name		REPORT RESULTS TO: Name Nelson Velez	Title PG
Company Bragg Engineering	Dept.	Company	
Address		Mailing Address	
City, State, Zip		City, State, Zip	
		Telephone No.	Telefax No.

Sampling Location: GCU 107

Sampler: Nelson Velez

ANALYSIS REQUESTED

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	PRES.	Number of Containers	BTEX (8020)	LAB ID
PW 4 E GW (26') - SEP. PIT	4/10/95	1020	WATER	$HgCl_2$	2	✓	5611-2923

Relinquished by: Nelson Velez	Date/Time 4/10/95 1033	Received by:	Date/Time 4/10/95 1033
Relinquished by:	Date/Time	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:

Authorized by: _____ Date _____
(Client Signature Must Accompany Request)

Rush	24-48 Hours	10 Working Days	Special Instructions:

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

CLIENT: Amoco

BLAGG ENGINEERING, INC.
P.O. BOX 87, BLOOMFIELD, NM 87413
(505) 632-1199

LOCATION NO: 80244
C.O.C. NO: ANALYT.

FIELD REPORT: LANDFARM/COMPOST PILE CLOSURE VERIFICATION

LOCATION: 6C4 107 PITS: Blow - DRY - SEP.
QUAD/UNIT: D SEC: 19 TWP: 29N RNG: 12W BM: NM CNTY: SJ ST: NM
QTR/FOOTAGE: CONTRACTOR: EPC

DATE STARTED: 1-23-96
DATE FINISHED:
ENVIRONMENTAL SPECIALIST: REG

SOIL REMEDIATION:

REMEDIATION SYSTEM: Compost APPROX. CUBIC YARDAGE: 1195
LAND USE: INDUSTRIAL BUSINESS LEASE: —

FIELD NOTES & REMARKS:

DEPTH TO GROUNDWATER: <50' NEAREST WATER SOURCE: >1000' NEAREST SURFACE WATER: >1000'
NMOCD RANKING SCORE: 20 NMOCD TPH CLOSURE STD: 100 PPM ? (1000)

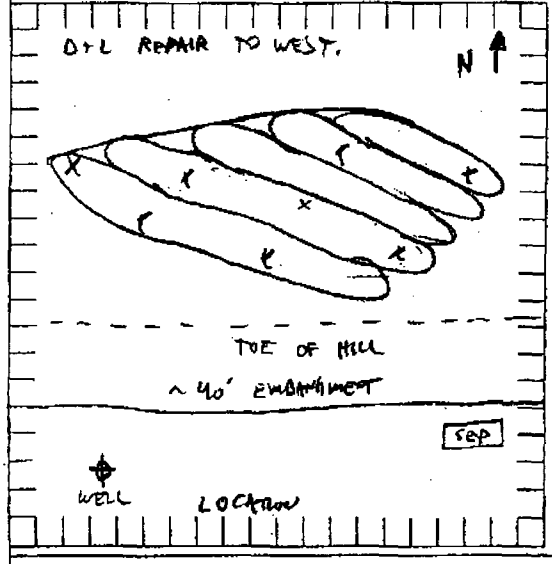
COMPOSITE SAMPLE TAKEN OF COMPOST PILES,
MOIST, BROWN, SILT - SAND - COBBLE MIXTURE - NO ODOR, NO STAIN APPARENT.
COMPOST PILES LOCATED NORTH OF LOCATION AT A LOWER ELEVATION.

CLOSE COMPOST PILE

FIELD 418.1 CALCULATIONS

SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm

SKETCH/SAMPLE LOCATIONS



SCALE
0 FT

OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
Comp. A	65

LAB SAMPLES

SAMPLE ID	ANALYSIS
Comp. A	8015 = 66.2 ppm

TRAVEL NOTES: CALLOUT: 1-23-96 ONSITE: 1-23-96 1030

FORM REVISED 7/95

ANALYTICA
ENVIRONMENTAL LABORATORY

TOTAL VOLATILE PETROLEUM HYDROCARBONS

Gasoline Range Organics

Blagg Engineering, Inc.

Project ID:	Amoco/GCU 107	Report Date:	01/29/96
Sample Matrix:	Soil	Date Sampled:	01/23/96
Preservative:	Cool	Date Received:	01/25/96
Condition:	Intact	Date Extracted:	01/25/96
		Date Analyzed:	01/27/96

Sample ID	Lab ID	Concentration (mg/kg)	Detection Limits (mg/kg)
Comp A	2500	ND	16.9

ND- Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	% Recovery	Acceptance Limits
Trifluorotoluene	96%	50 - 150%

Reference: Method for the Determination of Gasoline Range Organics, State of Tennessee, Department of Environment and Conservation, Division of Underground Storage Tanks.

Comments:

Analyst

Review

ANALYTICA
ENVIRONMENTAL LABORATORY

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

Diesel Range Organics

Blagg Engineering, Inc.

Project ID:	Amoco/ GCU 107	Report Date:	01/29/96
Sample Matrix:	Soil	Date Sampled:	01/23/96
Preservative:	Cool	Date Received:	01/25/96
Condition:	Intact	Date Extracted:	01/25/96
		Date Analyzed:	01/26/96

Sample ID	Lab ID	Concentration (mg/kg)	Detection Limit (mg/kg)
Comp A	2500	66.2	20.0

ND- Analyte not detected at the stated detection limit.

Quality Control:

Surrogate	% Recovery	Acceptance Limits
o - Terphenyl	97%	50 - 150%

Reference: EPA Method 8015A, modified. "Nonhalogenated Volatile Organics by Gas Chromatography." Test Methods for Evaluating Solid Waste, Physical/ Chemical Methods, SW-846, 3rd Ed, Final Update I, July, 1992. USEPA.

Comments:

Analyst

Review

ANALYTICA
ENVIRONMENTAL LABORATORY
607 S. CARLTON • FARMINGTON, NM 87401 • (505) 326-2395

CHAIN OF CUSTODY

PROJECT MANAGER:
Analytica Lab I.D.:

Company: BLAGG ENGR.
Address: P.O. BOX 87
Phone: 632-1199
Fax:

Bill To: SAME
Company:
Address:

Sample ID	Date	Time	Matrix	Lab ID
COMP. A	1-23-96	1040	SOIL	

ORGANIC ANALYSES														
Petroleum Hydrocarbons (418.1)	Gasoline / Diesel (mod. 8015)	Gasoline (GRO)	Aromatic HCs BTEX/MTBE (602 / 8020)	Chlorinated Hydrocarbons (8010)	SDWA Volatiles (502.1 / 503.1)	Chlorinated Pesticides / PCBs (608 / 8080)	Herbicides (615 / 8150)	Volatiles GC/MS (624 / 8240 / 8260)	Base / Neutral / Acid GC/MS (625 / 8270)	Polynuclear Aromatic Hydrocarbons (8100)	TCLP Extraction	Other (specify):		
✓														

WATER ANALYSES								
Cation / Anion	Specific Cations (specify):	Specific Anions (specify):	BOD / Fecal / Total Coliform	Solids: TDS / TSS / SS	Nutrients: NH4+ / NO2- / NO3- / TKN	Oil and Grease	Other (specify):	

METALS				
Priority Pollutants	RCRA Metals (Total)	RCRA Metals TCLP (1311)	Other (specify):	

COMMENTS

PRES:
COOL

Project Information	Sample Receipt
Proj. #: AMOCO	No. Containers:
Proj. Name: GCU 107	Custody Seals: Y / N / NA
P.O. No:	Received Intact:
Shipped Via: DELD	Received Cold:

Required Turnaround Time (Prior Authorization Required for Rush)

Sampled By:	Relinquished By:	Relinquished By:
Signature: R. E. Old — Date: 1-23-96	Signature: R Eo — Date: 1-25-96	Signature: — Date:
Company: BEI — Time: —	Company: BEI — Time: 0754	Company: — Time:
Received By:	**Received By:**	**Received By:**
Signature: — Date:	Signature: — Date:	Signature: — Date:
Company: — Time:	Company: — Time:	Company: — Time:

Please Fill Out Thoroughly.

Shaded areas for lab use only.

White/Yellow: Analytica
Pink: Client

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

July 2, 1996

CERTIFIED MAIL
RETURN RECEIPT NO. P-269-269-167

Mr. B.D. Shaw
Amoco Production Company
200 Amoco Court
Farmington, New Mexico 87401

RE: FINAL SAN JUAN BASIN PIT CLOSURE REPORTS

Dear Mr. Shaw:

The New Mexico Oil Conservation Division (OCD) has completed a review of Amoco Production Company's (Amoco) May 3, 1995 "AMOCO PRODUCTION COMPANY PIT CLOSURE VERIFICATIONS" which were submitted on behalf of Amoco by their consultant Blagg Engineering, Inc. This document contains "PIT REMEDIATION AND CLOSURE REPORTS" for 29 unlined pits in the San Juan Basin of Northwestern New Mexico.

The OCD's review of the above referenced document is addressed below:

A. The pit closure/soil remediation activities conducted at the sites listed below are approved as meeting the standards in effect at the time of closure.

1.	GCU #95E (Blow pit)	Unit P, Sec. 31, T28N, R11W.
2.	GCU #107 (Blow pit)	Unit D, Sec. 19, T29N, R12W.
3.	GCU #174E (Blow pit)	Unit E, Sec. 28, T28N, R12W.
4.	GCU #174E (Separator pit)	Unit E, Sec. 28, T28N, R12W.
5.	GCU #202 (Separator pit)	Unit B, Sec. 33, T29N, R12W.
6.	GCU #231E (Blow pit)	Unit E, Sec. 27, T28N, R12W.
7.	GCU #400E (Blow pit)	Unit A, Sec. 25, T28N, R12W.
8.	Jack Frost C#1E (Blow pit)	Unit H, Sec. 26, T27N, R10W.
9.	Jack Frost C#1E (Separator pit)	Unit H, Sec. 26, T27N, R10W.
10.	Jack Frost D#1E (Blow pit)	Unit N, Sec. 26, T27N, R10W.
11.	Jack Frost D#1E (Separator pit)	Unit N, Sec. 26, T27N, R10W.
12.	Lodewick #4 (Separator pit)	Unit F, Sec. 18, T27N, R09W.
13.	V.W. McManus #1 (Tank drain pit)	Unit M, Sec. 22, T28N, R12W.
14.	V.W. McManus #1 (Line drain pit)	Unit M, Sec. 22, T28N, R12W.
15.	Sammons GC B#1 (Separator pit)	Unit A, Sec. 18, T29N, R09W.

Please be advised that OCD approval does not relieve Amoco of liability if, in the future, remaining contaminants are found to pose a threat to surface water, ground water, human health or the environment. In addition, OCD approval does not relieve Amoco of responsibility for compliance with any other federal, state or local laws and/or regulations.

B. The pit remedial activities conducted at the site listed below are satisfactory. However, according to the report, onsite landfarming and/or composting actions are still continuing at the site. Subsequently, the OCD cannot issue final closure approval at this time and approval of closure actions at this site is denied. Please resubmit the closure report for this site upon completion of the landfarming and/or composting activities. The final report will include the results of the soil remediation levels achieved and the disposition of the remediated soils.

1.	Heath GC A#1A (Separator pit)	Unit O, Sec. 32, T30N, R09W.

C. The final pit remedial contaminant levels at the sites listed below are in excess of the OCD's recommended remediation levels. Subsequently, the OCD cannot issue final closure approval and approval of closure actions at these sites is denied. The OCD requests that Amoco submit a plan to address the remaining contamination at these sites. The plan will be submitted to the OCD Santa Fe Office by August 2, 1996 with a copy supplied to the OCD Aztec Office.

1.	Gallegos #008 (Separator pit)	Unit D, Sec. 19, T29N, R12W.
2.	GCU #107 (Drip pit)	Unit D, Sec. 19, T29N, R12W.
3.	GCU #165 (Blow pit)	Unit H, Sec. 29, T28N, R12W.
4.	Jack Frost D#1E (Dehy pit)	Unit N, Sec. 26, T27N, R10W.
5.	Jack Frost E#1 (Separator pit)	Unit D, Sec. 25, T27N, R10W.
6.	C.A. McAdams C#1E (Dehy pit)	Unit B, Sec. 05, T27N, R10W.
7.	V.W. McManus #1 (Abandoned pit)	Unit M, Sec. 22, T28N, R12W.
8.	V.W. McManus #1 (Tank battery pit)	Unit M, Sec. 22, T28N, R12W.

D. Ground water at the sites listed below is contaminated with petroleum related constituents in excess of New Mexico Water Quality Control Commission ground water standards and the extent of ground water contamination at these sites has not been determined. Therefore, approval of these pit closure forms is denied. The OCD requests that Amoco investigate the extent of contamination and, if necessary, remediate contaminated ground water pursuant to Amoco's November 21, 1995 ground water investigation/remediation work plan which was approved by the OCD on November 29, 1995.

1.	GCU #107 (Separator pit)	Unit D, Sec. 19, T29N, R12W.
2.	GCU #165 (Separator pit)	Unit H, Sec. 29, T28N, R12W.
3.	GCU Com D#160 (Separator pit)	Unit I, Sec. 27, T29N, R12W.
4.	GCU Com D#160 (Blow pit)	Unit I, Sec. 27, T29N, R12W.
5.	Sammons GC B#1 (Blow pit)	Unit A, Sec. 18, T29N, R09W.

To simplify the approval process for both Amoco and OCD, the OCD requests that Amoco submit all future pit closure reports only upon completion of all closure activities including onsite landfarming or composting of contaminated soils. The results of final remediation levels achieved during landfarming or composting and the disposition of the remediated soils should be included in the report.

If you have any questions, please call me at (505) 827-7154.

Sincerely,

William C. Olson
Hydrogeologist
Environmental Bureau

xc: OCD Aztec District Office
Bill Liess, BLM Farmington District Office
Robert O'Neill, Blagg Engineering, Inc.

BP AMERICA PROD. CO. GROUNDWATER LAB RESULTS

SUBMITTED BY BLAGG ENGINEERING, INC.

GCU # 107 - Separator pit
UNIT D, SEC. 19, T29N, R12W

REVISED DATE: November 2, 2010

FILENAME: (1074Q10.WK4) NJV

SAMPLE DATE	WELL NAME or No.	D.T.W. (ft)	T.D. (ft)	TDS (mg/L)	COND. umhos	pH	PRODUCT (ft)	BTEX EPA METHOD 8021B (ppb) Benzene	Toluene	Ethyl Benzene	Total Xylenes
09-Nov-09	MW #1	29.13	36.08		1,800	6.92		ND	ND	ND	ND
09-Nov-09	MW #2	29.97	36.08		1,500	7.44		ND	**1,900**	560	**4,100**
"	(dup.)	"	"		"	"		ND	**1,900**	570	**4,100**
04-Mar-10		29.59			1,600	7.47		ND	**330**	430	**2,500**
29-Apr-10		29.38			1,600	7.45		ND	**180**	350	**1,300**
21-Jul-10		29.44			1,800	7.55		1.6	**220**	440	**1,000**
21-Oct-10		29.25			1,900	7.36		ND	**370**	370	**1,500**
09-Nov-09	MW #3	28.78	36.19		1,700	7.20		ND	ND	ND	ND
04-Mar-10		28.43			1,300	7.25		ND	ND	ND	ND
29-Apr-10		28.19			1,200	7.33		ND	ND	ND	ND
					NMWQCC GROUNDWATER STANDARDS			**10**	**750**	**750**	**620**

NOTES : 1) **RESULTS IN BOLD RED TYPE INDICATE EXCEEDING NMWQCC STANDARDS .**

2) **RESULTS IN BOLD BLUE TYPE INDICATE BELOW NMWQCC STANDARDS AFTER PREVIOUS RESULTS IN BOLD RED TYPE EXCEEDED .**

3) **ND INDICATES NOT DETECTED AT THE REPORTING LIMITS (less than regulatory standards of at least a magnitude of 10) .**

GENERAL WATER QUALITY

BP AMERICA PRODUCTION COMPANY

GCU # 107

Sample Date : November 9 , 2009

PARAMETERS	MW # 1	MW # 2	MW # 3	NMWQCC STANDARDS	Units
pH	-	-	-	**6 - 9**	s. u.
TOTAL DISSOLVED SOLIDS	3,300	2,100	2,430	**1,000**	mg / L
NITROGEN, NITRITE	ND	ND	4.2	**10.0**	mg / L
NITROGEN , NITRATE	150	ND	3.8	**10.0**	mg / L
CHLORIDE	170	190	210	**250**	mg / L
FLUORIDE	0.60	1.2	0.81	**1.6**	mg / L
SULFATE	1,500	830	1,200	**600**	mg / L
IRON	ND	0.12	ND	**1.0**	mg / L

Notes :

1) NMWQCC - New Mexico Water Quality Control Commission .

2) s. u. - stanadard unit .

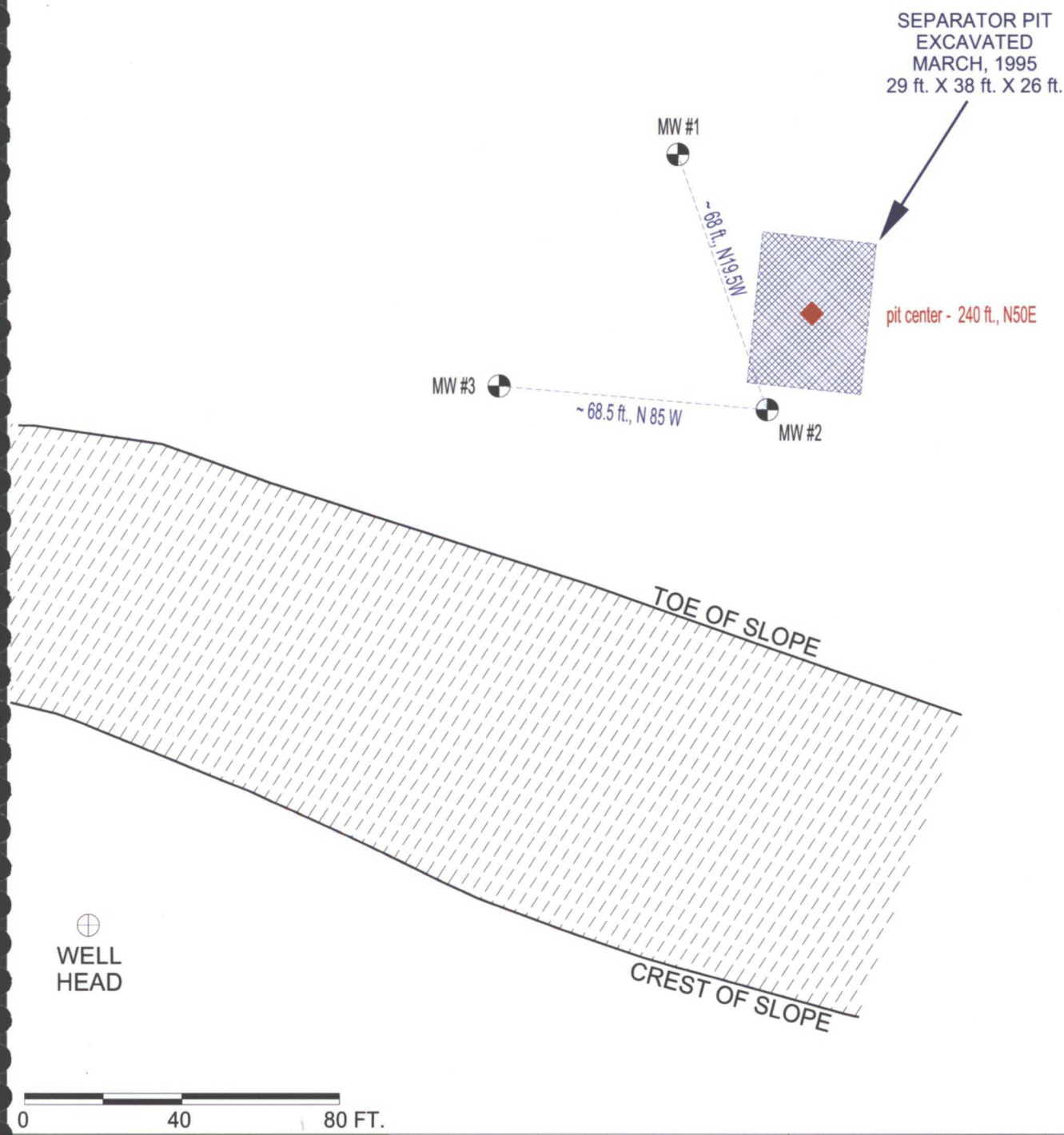
3) mg / L - milligrams per liter or otherwise known as parts per million (ppm) .

4) ND - Non detected at the reporting limit .

5) New Mexico Oil Conservation Division (NMOCD) recognizes the NMWQCC or background levels (statistical equivalence) as the standards for each site specific scenario .

FIGURE 1

MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE & BEARING FROM THE WELL HEAD (TAPE MEASURE, LASER RANGE FINDER, & BRUNTON COMPASS). ALL OTHER STRUCTURES DISPLAYED ON THIS MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE.



BP AMERICA PRODUCTION CO.

GCU # 107

NW/4 NW/4 SEC. 19, T29N, R12W

SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

PROJECT: MW INSTALLATIONS

DRAWN BY: NJV

FILENAME: GCU 107-SM.SKF

REVISED: 10-30-09 NJV

SITE MAP

10/09

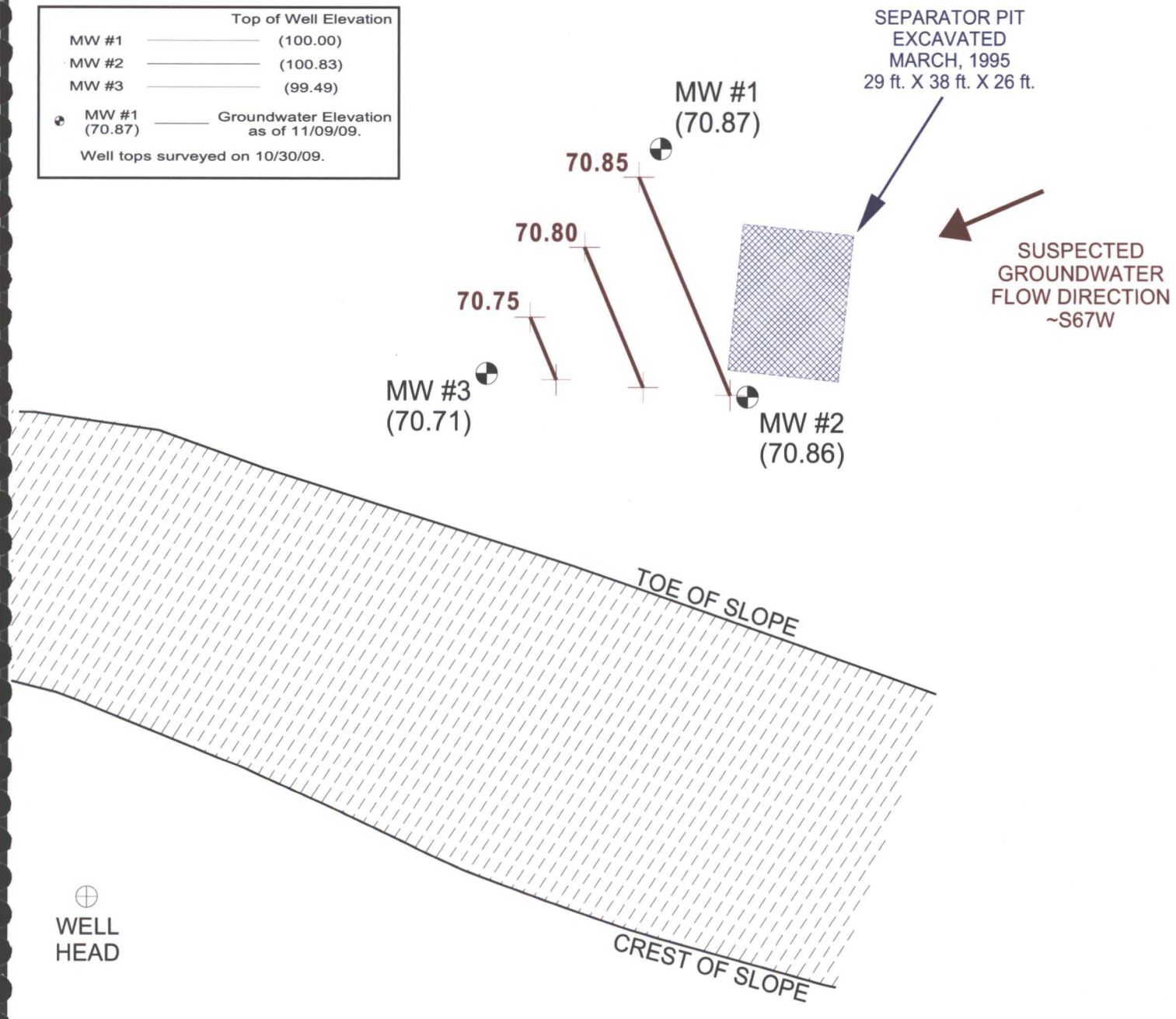
FIGURE 2
(4th 1/4, 2009)

MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE & BEARING FROM THE WELL HEAD (TAPE MEASURE, LASER RANGE FINDER, & BRUNTON COMPASS). ALL OTHER STRUCTURES DISPLAYED ON THIS MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE.

	Top of Well Elevation
MW #1	(100.00)
MW #2	(100.83)
MW #3	(99.49)

MW #1 (70.87) ——— Groundwater Elevation as of 11/09/09.

Well tops surveyed on 10/30/09.



BP AMERICA PRODUCTION CO.

GCU # 107

NW/4 NW/4 SEC. 19, T29N, R12W

SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

PROJECT: MW SAMPLING

DRAWN BY: NJV

FILENAME: 11-09-09-GW.SKF

REVISED: 11-09-09 NJV

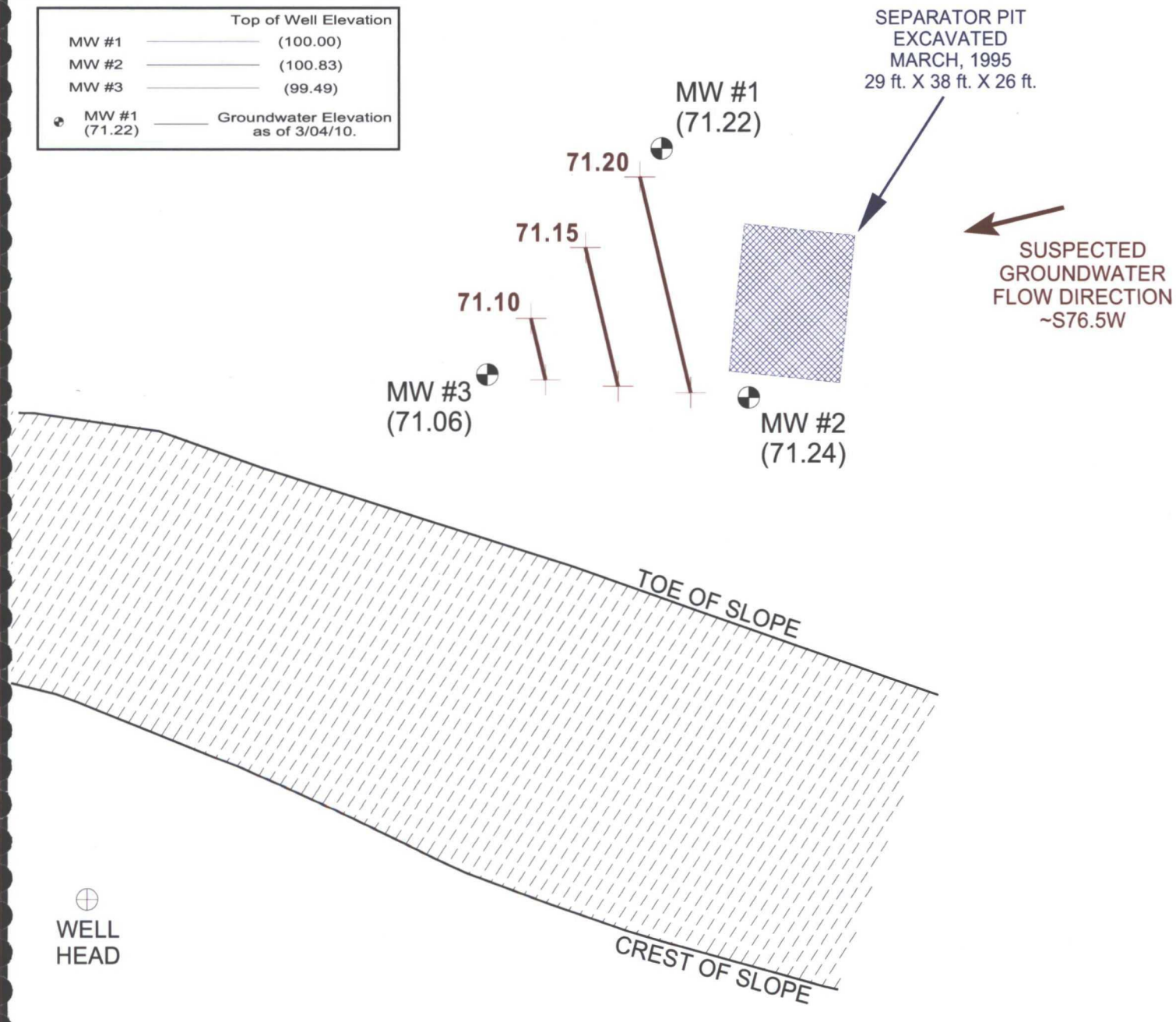
GROUNDWATER CONTOUR MAP

11/09

FIGURE 3
(1st 1/4, 2010)

MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE & BEARING FROM THE WELL HEAD (TAPE MEASURE, LASER RANGE FINDER, & BRUNTON COMPASS). ALL OTHER STRUCTURES DISPLAYED ON THIS MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE.

	Top of Well Elevation
MW #1	(100.00)
MW #2	(100.83)
MW #3	(99.49)
MW #1 (71.22)	Groundwater Elevation as of 3/04/10.



BP AMERICA PRODUCTION CO.

GCU # 107

NW/4 NW/4 SEC. 19, T29N, R12W

SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

PROJECT: MW SAMPLING

DRAWN BY: NJV

FILENAME: 03-04-10-GW.SKF

REVISED: 03-04-10 NJV

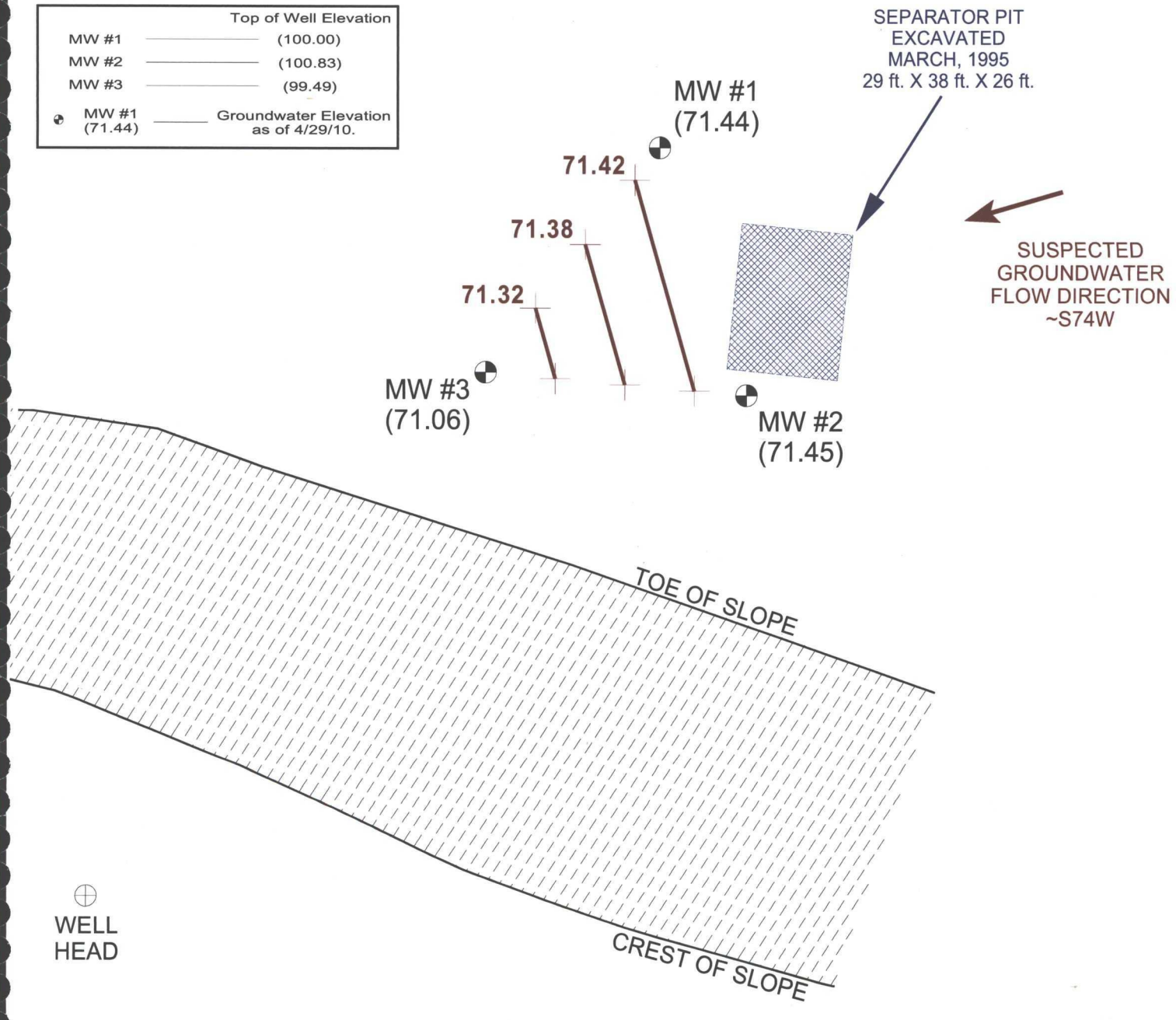
GROUNDWATER CONTOUR MAP

03/10

FIGURE 4
(2nd 1/4, 2010)

MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE & BEARING FROM THE WELL HEAD (TAPE MEASURE, LASER RANGE FINDER, & BRUNTON COMPASS). ALL OTHER STRUCTURES DISPLAYED ON THIS MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE.

	Top of Well Elevation
MW #1	(100.00)
MW #2	(100.83)
MW #3	(99.49)
MW #1 (71.44)	Groundwater Elevation as of 4/29/10.



BP AMERICA PRODUCTION CO.
GCU # 107
NW/4 NW/4 SEC. 19, T29N, R12W
SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.
CONSULTING PETROLEUM / RECLAMATION SERVICES
P.O. BOX 87
BLOOMFIELD, NEW MEXICO 87413
PHONE: (505) 632-1199

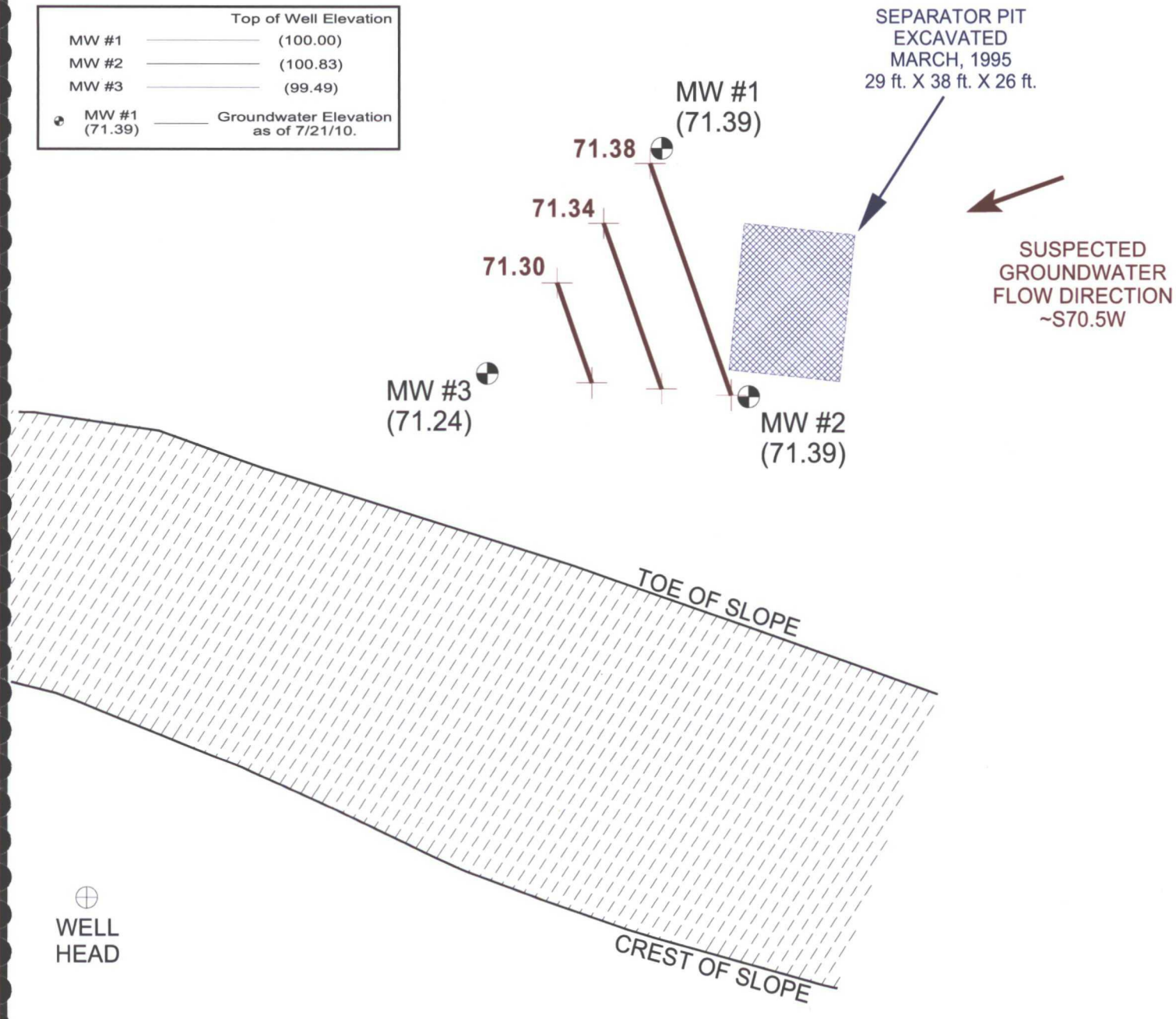
PROJECT: MW SAMPLING
DRAWN BY: NJV
FILENAME: 04-29-10-GW.SKF
REVISED: 04-29-10 NJV

GROUNDWATER CONTOUR MAP
04/10

FIGURE 5
(3rd 1/4, 2010)

MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE & BEARING FROM THE WELL HEAD (TAPE MEASURE, LASER RANGE FINDER, & BRUNTON COMPASS). ALL OTHER STRUCTURES DISPLAYED ON THIS MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE.

	Top of Well Elevation
MW #1	(100.00)
MW #2	(100.83)
MW #3	(99.49)
MW #1 (71.39)	Groundwater Elevation as of 7/21/10.



BP AMERICA PRODUCTION CO.

GCU # 107

NW/4 NW/4 SEC. 19, T29N, R12W

SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

PROJECT: MW SAMPLING

DRAWN BY: NJV

FILENAME: 07-21-10-GW.SKF

REVISED: 07-21-10 NJV

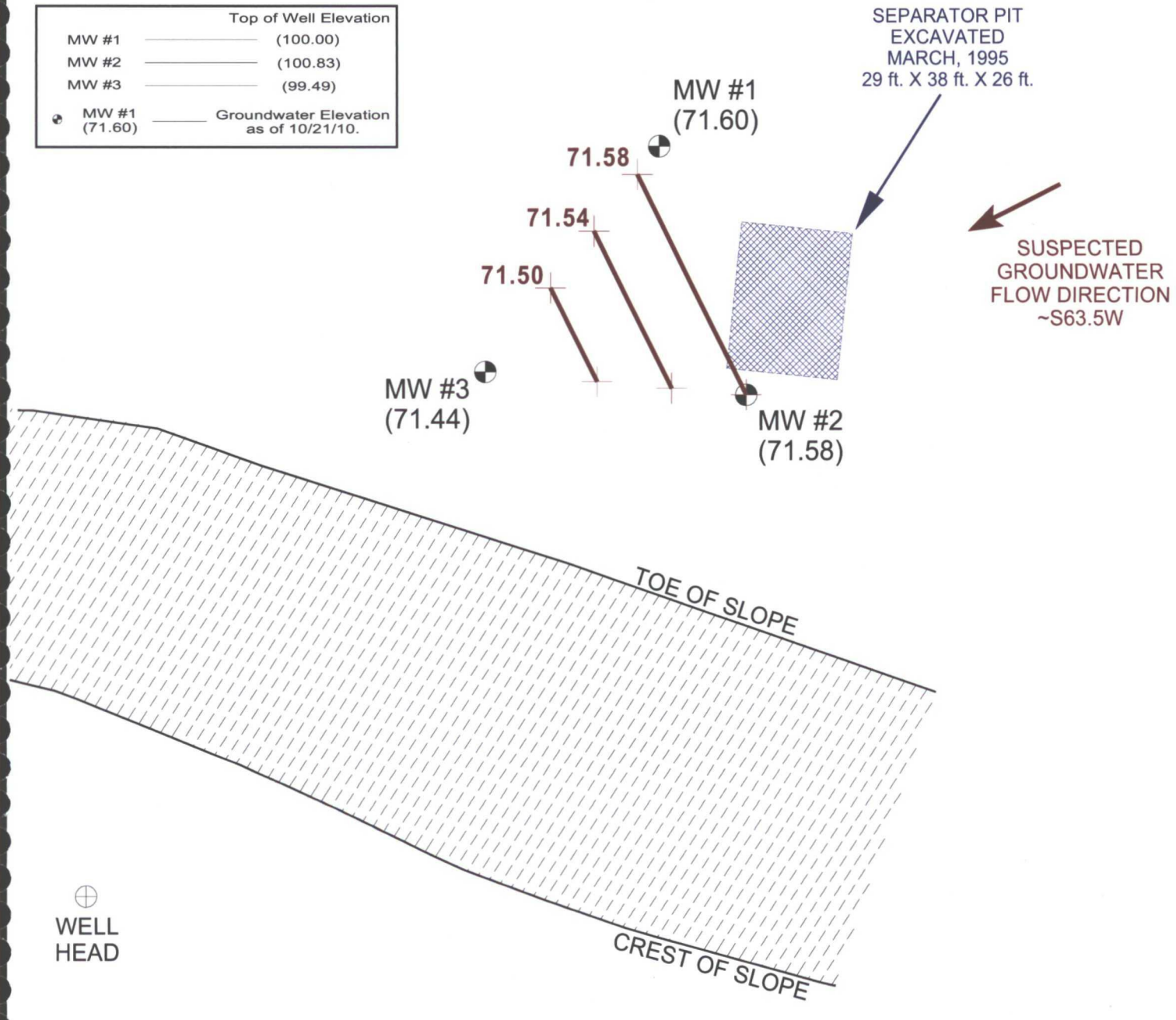
GROUNDWATER CONTOUR MAP

07/10

FIGURE 6
(4th 1/4, 2010)

MONITOR WELL LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE & BEARING FROM THE WELL HEAD (TAPE MEASURE, LASER RANGE FINDER, & BRUNTON COMPASS). ALL OTHER STRUCTURES DISPLAYED ON THIS MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE.

	Top of Well Elevation
MW #1	(100.00)
MW #2	(100.83)
MW #3	(99.49)
MW #1 (71.60)	Groundwater Elevation as of 10/21/10.



BP AMERICA PRODUCTION CO.

GCU # 107

NW/4 NW/4 SEC. 19, T29N, R12W

SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

PROJECT: MW SAMPLING

DRAWN BY: NJV

FILENAME: 10-21-10-GW.SKF

REVISED: 10-21-10 NJV

GROUNDWATER CONTOUR MAP

10/10

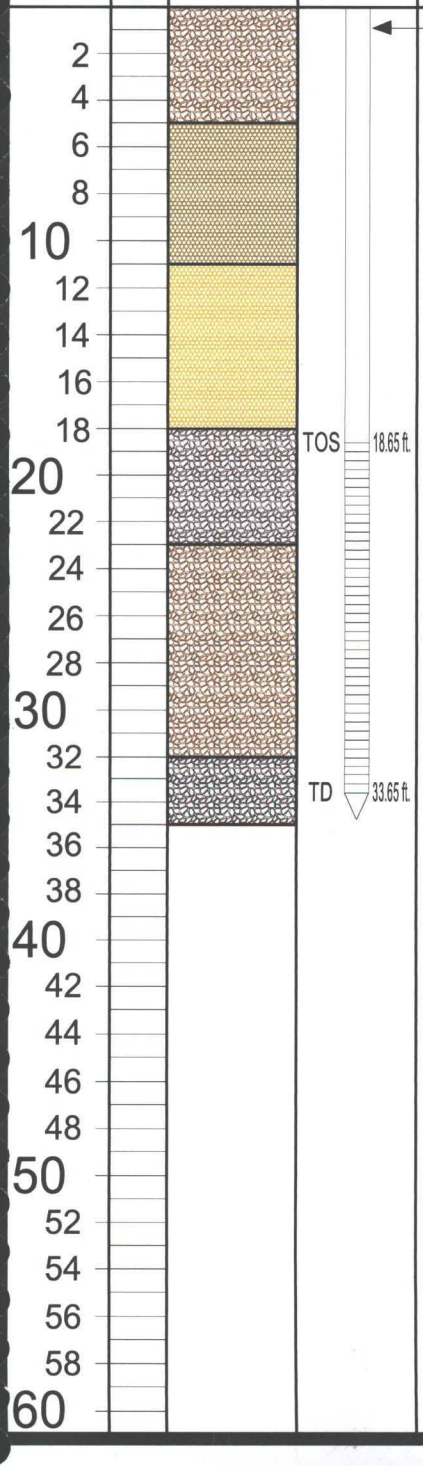
BLAGG ENGINEERING, Inc.
P.O. BOX 87
BLOOMFIELD, NM 87413
(505) 632-1199

MW #1

BORE / TEST HOLE REPORT

CLIENT:	BP AMERICA PRODUCTION CO.
LOCATION NAME:	GCU # 107 UNIT D, SEC. 19, T29N, R12W
CONTRACTOR:	BLAGG ENGINEERING, INC. / KYVEK ENERGY SERVICES, INC.
EQUIPMENT USED:	MOBILE DRILL RIG (CME 75) - TUBEX SYSTEM
BORING LOCATION:	68 FEET, N19.5W FROM MW #2.

BORING #.....	BH - 1
MW #.....	1
PAGE #.....	1
DATE STARTED	10/27/09
DATE FINISHED	10/27/09
OPERATOR.....	KP
PREPARED BY	NJV



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 2.43 FEET ABOVE GRADE.

DARK YELLOWISH BROWN SAND & GRAVEL, NON COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (0.0 - 5.0 FT. BELOW GRADE).

MODERATE YELLOWISH BROWN SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (5.0 - 11.0 FT. BELOW GRADE).

PALE YELLOWISH ORANGE SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (11.0 - 18.0 FT. BELOW GRADE).

MODERATE BROWN SAND & GRAVEL, NON COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (18.0 - 23.0 FT. BELOW GRADE).

26.67 ft. BELOW GRADE ; MEASURED 10/29/09.

DARK YELLOWISH BROWN SAND & GRAVEL, NON COHESIVE, SLIGHTLY MOIST TO MOIST, FIRM, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (23.0 - 32.0 FT. BELOW GRADE).

GRAYISH BROWN SAND & GRAVEL, NON COHESIVE, MOIST TO WET, FIRM, NO APPARENT HYDRO - CARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (32.0 - 35.0 FT. BELOW GRADE).

NOTES:
- SAND.
- SAND & GRAVEL.

TOS - Top of screen of monitor well.
TD - Total depth/bottom extent of monitor well.

Monitor well consist of 2 inch PVC piping - casing from 2.43 ft. above grade to 18.65 ft. below grade, 0.010 slotted screen between 18.65 to 33.65 ft. below grade, sand packed annular to 16.0 ft. below grade, bentonite grout between 14.0 to 16.0 ft. below grade, clean fill dirt between 0.5 to 14.0 ft. below grade. Cemented well protector encompassing above grade casing and secured with padlock. Three ballards surrounding well protector for added security from physical damage.

DRAWING: GCU 107 MW1-BH1. SKF | DATE: 10/29/09 | DWN BY: NJV

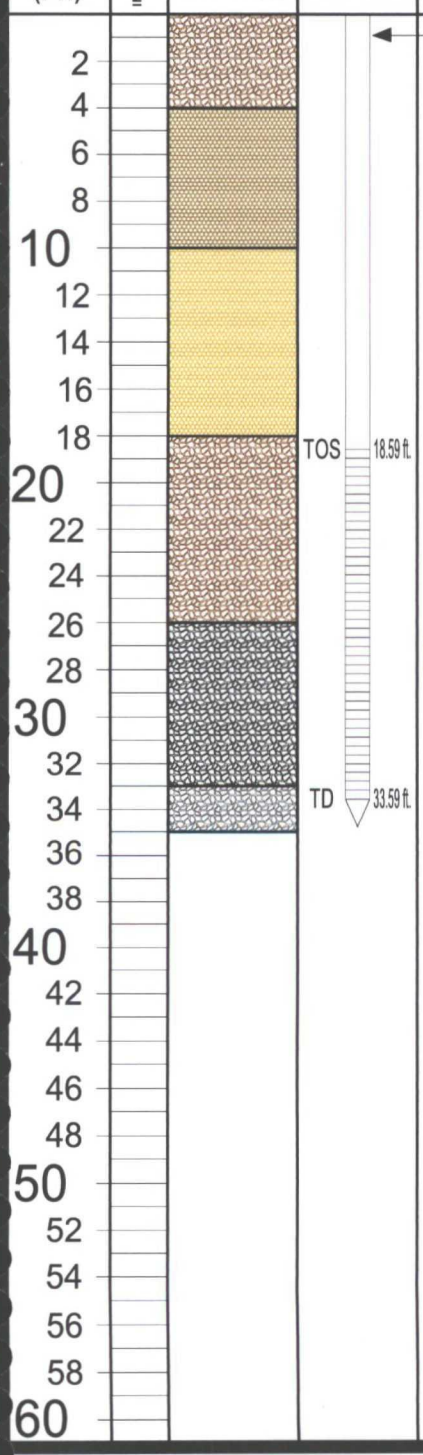
BLAGG ENGINEERING, Inc.
P.O. BOX 87
BLOOMFIELD, NM 87413
(505) 632-1199

MW #2

BORE / TEST HOLE REPORT

CLIENT:	BP AMERICA PRODUCTION CO.
LOCATION NAME:	GCU # 107 UNIT D, SEC. 19, T29N, R12W
CONTRACTOR:	BLAGG ENGINEERING, INC. / KYVEK ENERGY SERVICES, INC.
EQUIPMENT USED:	MOBILE DRILL RIG (CME 75) - TUBEX SYSTEM
BORING LOCATION:	216 FEET, N53E FROM WELL HEAD.

BORING #.....	BH - 3
MW #.....	2
PAGE #.....	3
DATE STARTED	10/28/09
DATE FINISHED	10/28/09
OPERATOR.....	KP
PREPARED BY	NJV



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 2.43 FEET ABOVE GRADE.

DARK YELLOWISH BROWN SAND & GRAVEL, NON COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (0.0 - 4.0 FT. BELOW GRADE).

MODERATE YELLOWISH BROWN SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (4.0 - 10.0 FT. BELOW GRADE).

GRAYISH TO PALE YELLOWISH ORANGE SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (10.0 - 18.0 FT. BELOW GRADE).

DARK YELLOWISH BROWN SAND & GRAVEL, NON COHESIVE, SLIGHTLY MOIST TO MOIST, FIRM, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (18.0 - 26.0 FT. BELOW GRADE).

27.50 ft. BELOW GRADE ; MEASURED 10/29/09.

BLACK SAND & GRAVEL, NON COHESIVE, MOIST TO WET, FIRM, APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (26.0 - 33.0 FT. BELOW GRADE).

DARK GRAY SAND & GRAVEL, NON COHESIVE, MOIST TO WET, FIRM, NO TO SLIGHT APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (33.0 - 35.0 FT. BELOW GRADE).

NOTES:
- SAND.
- SAND & GRAVEL.

TOS - Top of screen of monitor well.
TD - Total depth/bottom extent of monitor well.

Monitor well consist of 2 inch PVC piping - casing from 2.43 ft. above grade to 18.65 ft. below grade, 0.010 slotted screen between 18.65 to 33.65 ft. below grade, sand packed annular to 16.0 ft. below grade, bentonite grout between 14.0 to 16.0 ft. below grade, clean fill dirt between 0.5 to 14.0 ft. below grade. Cemented well protector encompassing above grade casing and secured with padlock. Three ballards surrounding well protector for added security from physical damage.

DRAWING: GCU 107 MW2-BH3. SKF | DATE: 10/29/09 | DWN BY: NJV

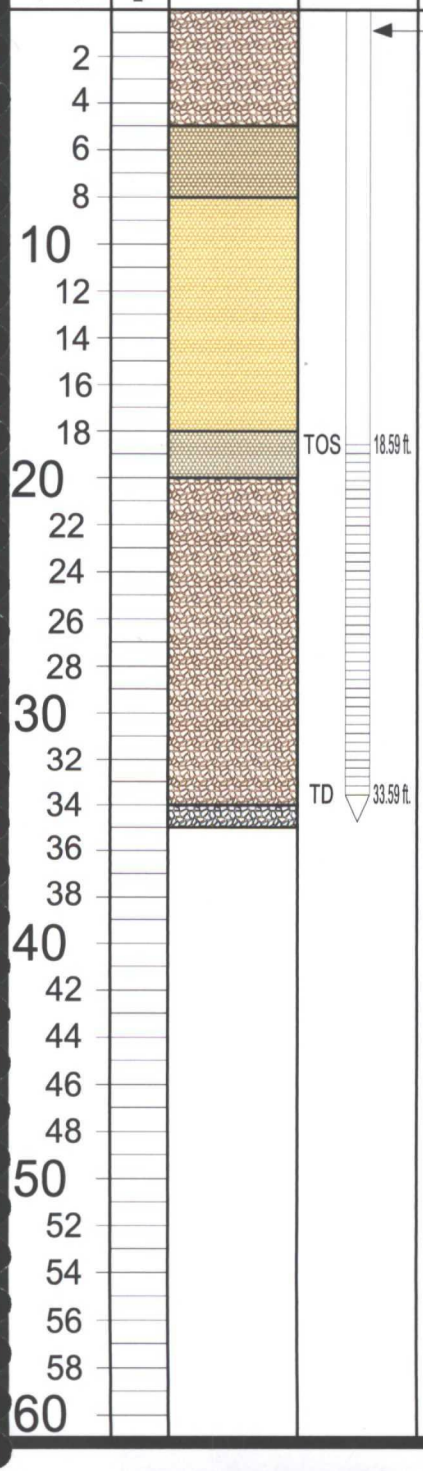
BLAGG ENGINEERING, Inc.
P.O. BOX 87
BLOOMFIELD, NM 87413
(505) 632-1199

MW #3

BORE / TEST HOLE REPORT

CLIENT:	BP AMERICA PRODUCTION CO.
LOCATION NAME:	GCU # 107 UNIT D, SEC. 19, T29N, R12W
CONTRACTOR:	**BLAGG ENGINEERING, INC. / KYVEK ENERGY SERVICES, INC.**
EQUIPMENT USED:	**MOBILE DRILL RIG (CME 75) - TUBEX SYSTEM**
BORING LOCATION:	**69.5 FEET, N85W FROM MW #2.**

BORING #.....	BH - 2
MW #.....	3
PAGE #.....	2
DATE STARTED	10/28/09
DATE FINISHED	10/28/09
OPERATOR.....	KP
PREPARED BY	NJV



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 2.60 FEET ABOVE GRADE.

DARK YELLOWISH BROWN SAND & GRAVEL, NON COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (0.0 - 5.0 FT. BELOW GRADE).

MODERATE YELLOWISH BROWN SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (5.0 - 8.0 FT. BELOW GRADE).

GRAYISH TO PALE YELLOWISH ORANGE SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (8.0 - 18.0 FT. BELOW GRADE).

LIGHT BROWN SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (18.0 - 20.0 FT. BELOW GRADE).

26.16 ft. BELOW GRADE ; MEASURED 10/29/09.

DARK YELLOWISH BROWN SAND & GRAVEL, NON COHESIVE, SLIGHTLY MOIST TO MOIST, FIRM, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (20.0 - 34.0 FT. BELOW GRADE).

GRAYISH BROWN SAND & GRAVEL, NON COHESIVE, MOIST TO WET, FIRM, NO APPARENT HYDRO - CARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (34.0 - 35.0 FT. BELOW GRADE).

NOTES:
- SAND.
- SAND & GRAVEL.

TOS - Top of screen of monitor well.
TD - Total depth/bottom extent of monitor well.

Monitor well consist of 2 inch PVC piping - casing from 2.60 ft. above grade to 18.59 ft. below grade, 0.010 slotted screen between 18.59 to 33.59 ft. below grade, sand packed annular to 16.5 ft. below grade, bentonite grout between 14.5 to 16.5 ft. below grade, clean fill dirt between 0.5 to 14.5 ft. below grade. Cemented well protector encompassing above grade casing and secured with padlock. Three ballards surrounding well protector for added security from physical damage.

DRAWING: GCU 107 MW3-BH2. SKF | DATE: 10/29/09 | DWN BY: NJV

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : N / A

GCU # 107 - SEPARATOR PIT
UNIT D, SEC. 19, T29N, R12W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : **November 9, 2009**

DEVELOPER / SAMPLER : N J V

Filename : **11-09-09.WK4**

PROJECT MANAGER : N J V

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
1	100.00	70.87	29.13	36.08	1150	6.92	1,800	16.9	3.50
2	100.83	70.86	29.97	36.08	1130	7.44	1,500	16.5	3.00
3	99.49	70.71	28.78	36.19	1210	7.20	1,700	16.4	3.75
					INSTRUMENT CALIBRATIONS =	4.01/7.00/10.00	2,800		
					DATE & TIME =	11/09/09	1120		

NOTES : Volume of water purged from well prior to sampling: V = pi X r2 X h X 7.48 gal./ft3) X 3 (wellbores).
(i.e. 2" MW r = (1/12) ft. h = 1 ft.) (i.e. 4" MW r = (2/12) ft. h = 1 ft.)
Ideally a minimum of three (3) wellbore volumes:
2.00 " well diameter = 0.49 gallons per foot of water.

Comments or note well diameter if not standard 2 ".

Excellent recovery in all monitor wells . Collected samples from all monitor wells for BTEX , TDS , chloride , fluoride , nitrate , sulfate , & iron . Collected duplicate sample for BTEX analysis from MW # 2 & labeled as MW # 2 under Project Name : GCU # 187 ; time collected : 1430 .

Top of casing MW # 1 ~ 2.43 ft. , MW # 2 ~ 2.43 ft. , MW # 3 ~ 2.60 ft. above grade .

on-site	10:00	temp	49 F
off-site	12:42	temp	63 F
sky cond.	sunny		
wind speed	0 - 10	direct.	E - SE

Hall Environmental Analysis Laboratory, Inc.

Date: *18-Nov-09*

CLIENT:	Blagg Engineering	**Client Sample ID:**	MW #1
Lab Order:	0911194	**Collection Date:**	11/9/2009 11:50:00 AM
Project:	GCU #107	**Date Received:**	11/10/2009
Lab ID:	0911194-01	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	1.0		µg/L	1	11/14/2009 1:12:03 AM
Toluene	ND	1.0		µg/L	1	11/14/2009 1:12:03 AM
Ethylbenzene	ND	1.0		µg/L	1	11/14/2009 1:12:03 AM
Xylenes, Total	ND	2.0		µg/L	1	11/14/2009 1:12:03 AM
Surr: 4-Bromofluorobenzene	78.8	65.9-130		%REC	1	11/14/2009 1:12:03 AM
EPA METHOD 300.0: ANIONS						Analyst: **TAF**
Fluoride	0.60	0.10		mg/L	1	11/10/2009 12:54:51 PM
Chloride	170	2.0		mg/L	20	11/10/2009 1:12:16 PM
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	11/10/2009 1:12:16 PM
Nitrogen, Nitrate (As N)	150	2.0		mg/L	20	11/10/2009 1:12:16 PM
Sulfate	1500	25		mg/L	50	11/11/2009 12:58:45 PM
EPA METHOD 6010B: DISSOLVED METALS						Analyst: **RAGS**
Iron	ND	0.020		mg/L	1	11/16/2009 7:45:36 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **MMS**
Total Dissolved Solids	3300	40.0		mg/L	1	11/13/2009 2:18:00 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Estimated value	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *18-Nov-09*

CLIENT:	Blagg Engineering	**Client Sample ID:**	MW #2
Lab Order:	0911194	**Collection Date:**	11/9/2009 11:30:00 AM
Project:	GCU #107	**Date Received:**	11/10/2009
Lab ID:	0911194-02	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	10		µg/L	10	11/14/2009 2:12:43 AM
Toluene	1900	50		µg/L	50	11/13/2009 2:56:44 AM
Ethylbenzene	560	10		µg/L	10	11/14/2009 2:12:43 AM
Xylenes, Total	4100	100		µg/L	50	11/13/2009 2:56:44 AM
Surr: 4-Bromofluorobenzene	84.1	65.9-130		%REC	50	11/13/2009 2:56:44 AM
EPA METHOD 300.0: ANIONS						Analyst: **TAF**
Fluoride	1.2	0.10		mg/L	1	11/10/2009 1:29:41 PM
Chloride	190	2.0		mg/L	20	11/10/2009 2:21:54 PM
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	11/10/2009 2:21:54 PM
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	11/10/2009 1:29:41 PM
Sulfate	830	10		mg/L	20	11/10/2009 2:21:54 PM
EPA METHOD 6010B: DISSOLVED METALS						Analyst: **RAGS**
Iron	0.12	0.020		mg/L	1	11/16/2009 7:49:35 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **MMS**
Total Dissolved Solids	2100	20.0		mg/L	1	11/13/2009 2:18:00 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *17-Nov-09*

CLIENT:	Blagg Engineering	**Client Sample ID:**	MW #2
Lab Order:	0911197	**Collection Date:**	11/9/2009 2:30:00 PM
Project:	GCU #187	**Date Received:**	11/10/2009
Lab ID:	0911197-01	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	10		µg/L	10	11/13/2009 1:25:59 AM
Toluene	1900	50		µg/L	50	11/14/2009 3:43:39 AM
Ethylbenzene	570	10		µg/L	10	11/13/2009 1:25:59 AM
Xylenes, Total	4100	100		µg/L	50	11/14/2009 3:43:39 AM
Surr: 4-Bromofluorobenzene	101	65.9-130		%REC	10	11/13/2009 1:25:59 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *18-Nov-09*

CLIENT:	Blagg Engineering	**Client Sample ID:**	MW #3
Lab Order:	0911194	**Collection Date:**	11/9/2009 12:10:00 PM
Project:	GCU #107	**Date Received:**	11/10/2009
Lab ID:	0911194-03	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	1.0		µg/L	1	11/14/2009 3:13:24 AM
Toluene	ND	1.0		µg/L	1	11/14/2009 3:13:24 AM
Ethylbenzene	ND	1.0		µg/L	1	11/14/2009 3:13:24 AM
Xylenes, Total	ND	2.0		µg/L	1	11/14/2009 3:13:24 AM
Surr: 4-Bromofluorobenzene	86.4	65.9-130		%REC	1	11/14/2009 3:13:24 AM
EPA METHOD 300.0: ANIONS						Analyst: **TAF**
Fluoride	0.81	0.10		mg/L	1	11/10/2009 2:39:19 PM
Chloride	210	2.0		mg/L	20	11/10/2009 2:56:44 PM
Nitrogen, Nitrite (As N)	4.2	2.0		mg/L	20	11/10/2009 2:56:44 PM
Nitrogen, Nitrate (As N)	3.8	0.10		mg/L	1	11/10/2009 2:39:19 PM
Sulfate	1200	25		mg/L	50	11/11/2009 1:16:09 PM
EPA METHOD 6010B: DISSOLVED METALS						Analyst: **RAGS**
Iron	ND	0.020		mg/L	1	11/16/2009 7:53:31 PM
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **MMS**
Total Dissolved Solids	2430	20.0		mg/L	1	11/13/2009 2:18:00 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Estimated value	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike recovery outside accepted recovery limits		

Chain-of-Custody Record

Client: BLAGG ENGR. / BP AMERICA

Mailing Address: P.O. BOX 87
BLFD., NM 87413

Phone #: (505) 632-1199

email or Fax#:

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)
☐ Other
☐ EDD (Type)

☒ Standard ☐ Rush

Project Name: GCU #107

Project #:

Project Manager: NELSON VELEZ

Sampler: NELSON VELEZ

On Ice: ☒ Yes ☐ No

Sample Temperature: 10 °C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0911194	BTEX + ~~MTBE + TMB's~~ (8021B)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO3,NO2,PO4,SO4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	IRON, FERROUS (FILTERED)	TDS	NITRATE-N / NITRITE-N		Air Bubbles (Y or N)
11/9/09	1150	WATER	MW #1	40ml-2 125ml-1	HCl & COOL	1	✓											✓				
"	"	"	"	250ml-1	COOL	1								✓					✓			
"	"	"	"	125ml-1	H_2SO_4 & COOL	1														✓		
11/9/09	1130	WATER	MW #2	40ml-2 125ml-1	HCl & COOL	2	✓											✓				
"	"	"	"	250ml-1	COOL	2								✓					✓			
"	"	"	"	125ml-1	H_2SO_4 & COOL	2														✓		
11/9/09	1210	WATER	MW #3	40ml-2 125ml-1	HCl & COOL	3	✓											✓				
"	"	"	"	250ml-1	COOL	3								✓					✓			
"	"	"	"	125ml-1	H_2SO_4 & COOL	3														✓		

Date:	Time:	Relinquished by:	Received by:	Date	Time
11/9/09	1530				
Date:	Time:	Relinquished by:	Received by:	11/10/09	920

Remarks:
IF ANION NO_3 CAN NOT BE ANALYZED WITHIN 48 HRS., THEN RUN NITRATE-N / NITRITE-N.

Chain-of-Custody Record

Client: BLAGG ENGR./BP AMERICA

Mailing Address: P.O. BOX 87
BLFD. NM 87413

Phone #: (505) 632-1199

email or Fax#:

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)
☐ Other
☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: GCU #187

Project #:

Project Manager: NELSON VELEZ

Sampler: NELSON VELEZ

On Ice: ☒ Yes ☐ No

Sample Temperature: 0.9

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL NO. 0911197	BTEX + MTBE + TMB's (8021B)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
11/9/09	1430	WATER	MW #2	40ml-2	HCl & COOL	-1	✓											

Date:	Time:	Relinquished by:	Received by:	Date	Time
11/9/09	1530				
Date:	Time:	Relinquished by:	Received by:	11/10/09	920

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

QA/QC SUMMARY REPORT

Client: Blagg Engineering
Project: GCU #107 **Work Order:** 0911194

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 300.0: Anions											
Sample ID: MB		*MBLK*				**Batch ID:**	**R36114**	**Analysis Date:**	11/10/2009 10:52:59 AM		
Fluoride	ND	mg/L	0.10								
Chloride	ND	mg/L	0.10								
Nitrogen, Nitrite (As N)	ND	mg/L	0.10								
Nitrogen, Nitrate (As N)	ND	mg/L	0.10								
Sulfate	ND	mg/L	0.50								
Sample ID: MB		*MBLK*				**Batch ID:**	**R36133**	**Analysis Date:**	11/11/2009 9:29:50 AM		
Fluoride	ND	mg/L	0.10								
Chloride	ND	mg/L	0.10								
Nitrogen, Nitrite (As N)	ND	mg/L	0.10								
Nitrogen, Nitrate (As N)	ND	mg/L	0.10								
Sulfate	ND	mg/L	0.50								
Sample ID: LCS		*LCS*				**Batch ID:**	**R36114**	**Analysis Date:**	11/10/2009 11:10:24 AM		
Fluoride	0.5176	mg/L	0.10	0.5	0	104	90	110			
Chloride	5.108	mg/L	0.10	5	0	102	90	110			
Nitrogen, Nitrite (As N)	0.9476	mg/L	0.10	1	0	94.8	90	110			
Nitrogen, Nitrate (As N)	2.630	mg/L	0.10	2.5	0	105	90	110			
Sulfate	10.23	mg/L	0.50	10	0	102	90	110			
Sample ID: LCS		*LCS*				**Batch ID:**	**R36133**	**Analysis Date:**	11/11/2009 9:47:14 AM		
Fluoride	0.5664	mg/L	0.10	0.5	0	113	90	110			S
Chloride	5.162	mg/L	0.10	5	0	103	90	110			
Nitrogen, Nitrite (As N)	0.9362	mg/L	0.10	1	0	93.6	90	110			
Nitrogen, Nitrate (As N)	2.657	mg/L	0.10	2.5	0	106	90	110			
Sulfate	10.31	mg/L	0.50	10	0	103	90	110			

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Blagg Engineering
Project: GCU #187 **Work Order:** 0911197

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: Volatiles											
Sample ID: 5ML RB		*MBLK*				Batch ID:	**R36161**	Analysis Date:	11/12/2009 10:10:54 AM		
Benzene	ND	µg/L	1.0								
Toluene	ND	µg/L	1.0								
Ethylbenzene	ND	µg/L	1.0								
Xylenes, Total	ND	µg/L	2.0								
Sample ID: 5ML RB		*MBLK*				Batch ID:	**R36179**	Analysis Date:	11/13/2009 10:41:17 AM		
Benzene	ND	µg/L	1.0								
Toluene	ND	µg/L	1.0								
Ethylbenzene	ND	µg/L	1.0								
Xylenes, Total	ND	µg/L	2.0								
Sample ID: 100NG BTEX LCS		*LCS*				Batch ID:	**R36161**	Analysis Date:	11/13/2009 5:28:07 AM		
Benzene	18.02	µg/L	1.0	20	0	90.1	85.9	113			
Toluene	18.41	µg/L	1.0	20	0	92.0	86.4	113			
Ethylbenzene	18.37	µg/L	1.0	20	0	91.8	83.5	118			
Xylenes, Total	55.04	µg/L	2.0	60	0	91.7	83.4	122			
Sample ID: 100NG BTEX LCS		*LCS*				Batch ID:	**R36179**	Analysis Date:	11/13/2009 8:38:43 PM		
Benzene	18.56	µg/L	1.0	20	0	92.8	85.9	113			
Toluene	18.79	µg/L	1.0	20	0	94.0	86.4	113			
Ethylbenzene	17.97	µg/L	1.0	20	0	89.8	83.5	118			
Xylenes, Total	53.88	µg/L	2.0	60	0	89.8	83.4	122			

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Blagg Engineering
Project: GCU #107 **Work Order:** 0911194

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: Volatiles											
Sample ID: 5ML RB		*MBLK*				Batch ID: **R36161**		Analysis Date: 11/12/2009 10:10:54 AM			
Benzene	ND	µg/L	1.0								
Toluene	ND	µg/L	1.0								
Ethylbenzene	ND	µg/L	1.0								
Xylenes, Total	ND	µg/L	2.0								
Sample ID: 5ML RB		*MBLK*				Batch ID: **R36179**		Analysis Date: 11/13/2009 10:41:17 AM			
Benzene	ND	µg/L	1.0								
Toluene	ND	µg/L	1.0								
Ethylbenzene	ND	µg/L	1.0								
Xylenes, Total	ND	µg/L	2.0								
Sample ID: 100NG BTEX LCS		*LCS*				Batch ID: **R36161**		Analysis Date: 11/13/2009 5:28:07 AM			
Benzene	18.02	µg/L	1.0	20	0	90.1	85.9	113			
Toluene	18.41	µg/L	1.0	20	0	92.0	86.4	113			
Ethylbenzene	18.37	µg/L	1.0	20	0	91.8	83.5	118			
Xylenes, Total	55.04	µg/L	2.0	60	0	91.7	83.4	122			
Sample ID: 100NG BTEX LCS		*LCS*				Batch ID: **R36179**		Analysis Date: 11/13/2009 8:38:43 PM			
Benzene	18.56	µg/L	1.0	20	0	92.8	85.9	113			
Toluene	18.79	µg/L	1.0	20	0	94.0	86.4	113			
Ethylbenzene	17.97	µg/L	1.0	20	0	89.8	83.5	118			
Xylenes, Total	53.88	µg/L	2.0	60	0	89.8	83.4	122			
Method: EPA Method 6010B: Dissolved Metals											
Sample ID: MB		*MBLK*				Batch ID: **R36196**		Analysis Date: 11/16/2009 5:42:23 PM			
Iron	ND	mg/L	0.020								
Sample ID: MB		*MBLK*				Batch ID: **R36196**		Analysis Date: 11/16/2009 5:51:02 PM			
Iron	ND	mg/L	0.020								
Sample ID: LCS		*LCS*				Batch ID: **R36196**		Analysis Date: 11/16/2009 5:45:09 PM			
Iron	0.4900	mg/L	0.020	0.5	0	98.0	80	120			
Sample ID: LCSRR		*LCS*				Batch ID: **R36196**		Analysis Date: 11/16/2009 5:48:07 PM			
Iron	0.4920	mg/L	0.020	0.5	0	98.4	80	120			
Sample ID: LCS		*LCS*				Batch ID: **R36196**		Analysis Date: 11/16/2009 5:53:51 PM			
Iron	0.4866	mg/L	0.020	0.5	0	97.3	80	120			
Method: SM2540C MOD: Total Dissolved Solids											
Sample ID: MB-20605		*MBLK*				Batch ID: **20605**		Analysis Date: 11/13/2009 2:18:00 PM			
Total Dissolved Solids	ND	mg/L	20.0								
Sample ID: LCS-20605		*LCS*				Batch ID: **20605**		Analysis Date: 11/13/2009 2:18:00 PM			
Total Dissolved Solids	1040	mg/L	20.0	1000	0	104	80	120			

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name **BLAGG** Date Received: **11/10/2009**

Work Order Number **0911194** Received by: TLS

Checklist completed by: _____ 11/10/09 Sample ID labels checked by: _____
Signature Date Initials

Matrix: Carrier name: Greyhound

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☑	No ☐	N/A ☐	
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐	
Container/Temp Blank temperature?	**-0.6°**	*<6° C Acceptable* If given sufficient time to cool.		

Number of preserved bottles checked for pH: 12

<2 >12 unless noted below.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name **BLAGG** Date Received: **11/10/2009**

Work Order Number **0911197** Received by: TLS

Checklist completed by: Signature 11/10/09 Date

Sample ID labels checked by: Initials

Matrix: Carrier name: Greyhound

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Container/Temp Blank temperature?	**-0.6°**	*<6° C Acceptable* If given sufficient time to cool.		

Number of preserved bottles checked for pH: _____

<2 >12 unless noted below.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : N / A

GCU # 107 - SEPARATOR PIT
UNIT D, SEC. 19, T29N, R12W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : **March 4, 2010**

DEVELOPER / SAMPLER : N J V

Filename : **03-04-10.WK4**

PROJECT MANAGER : N J V

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
1	100.00	71.22	28.78	36.08	-	-	-	-	-
2	100.83	71.24	29.59	36.08	1230	7.47	1,600	18.4	3.25
3	99.49	71.06	28.43	36.19	1150	7.25	1,300	18.7	3.75

INSTRUMENT CALIBRATIONS =	4.01/7.00/10.00	2,800
DATE & TIME =	03/01/10	1215

NOTES : Volume of water purged from well prior to sampling: V = pi X r2 X h X 7.48 gal./ft3) X 3 (wellbores).
(i.e. 2" MW r = (1/12) ft. h = 1 ft.) (i.e. 4" MW r = (2/12) ft. h = 1 ft.)
Ideally a minimum of three (3) wellbore volumes:
2.00 " well diameter = 0.49 gallons per foot of water.

Comments or note well diameter if not standard 2 ".

Excellent recovery in MW # 2 & # 3 . Collected samples from MW # 2 & # 3 for BTEX per US EPA Method 8021B .

Top of casing MW # 1 ~ 2.43 ft., MW # 2 ~ 2.43 ft., MW # 3 ~ 2.60 ft. above grade .

on-site	11:15	temp	55 F
off-site	12:45	temp	60 F
sky cond.	Sunny		
wind speed	0 - 10 G(20-25)	direct.	E / SE / SW

Hall Environmental Analysis Laboratory, Inc.

Date: *10-Mar-10*

CLIENT: Blagg Engineering
Project: GCU #107
Lab Order: 1003180

Lab ID: 1003180-01 **Collection Date:** 3/4/2010 12:30:00 PM
Client Sample ID: MW #2 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	10		µg/L	10	3/9/2010 5:33:50 AM
Toluene	330	10		µg/L	10	3/9/2010 5:33:50 AM
Ethylbenzene	430	10		µg/L	10	3/9/2010 5:33:50 AM
Xylenes, Total	2500	100		µg/L	50	3/9/2010 5:03:31 AM
Surr: 4-Bromofluorobenzene	116	65.9-130		%REC	10	3/9/2010 5:33:50 AM

Lab ID: 1003180-02 **Collection Date:** 3/4/2010 11:50:00 AM
Client Sample ID: MW #3 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	1.0		µg/L	1	3/9/2010 2:14:42 PM
Toluene	ND	1.0		µg/L	1	3/9/2010 2:14:42 PM
Ethylbenzene	ND	1.0		µg/L	1	3/9/2010 2:14:42 PM
Xylenes, Total	ND	2.0		µg/L	1	3/9/2010 2:14:42 PM
Surr: 4-Bromofluorobenzene	101	65.9-130		%REC	1	3/9/2010 2:14:42 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

Chain-of-Custody Record

Client: BLAGG ENGR. / BP AMERICA

Mailing Address: P.O. BOX 87
BLFD., NM 87413

Phone #: (505) 632-1199

email or Fax#:

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)
☐ Other
☐ EDD (Type)

☒ Standard ☐ Rush

Project Name: GCU #107

Project #:

Project Manager: NELSON VELEZ

Sampler: NELSON VELEZ

On Ice: ☒ Yes ☐ No

Sample Temperature: 5°

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1003180	BTEX + MTBE + TMBs (8021B)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
3/4/10	1230	WATER	MW #2	2-40ml	HCl & COOL	-1	✓															
3/4/10	1150	WATER	MW #3	2-40ml	HCl & COOL	-2	✓															

Date:	Time:	Relinquished by:	Received by:	Date	Time
3/4/10	1415			3/5/10	12:20
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

QA/QC SUMMARY REPORT

Client: Blagg Engineering
Project: GCU #107 **Work Order:** 1003180

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: Volatiles											
Sample ID: b 5		*MBLK*				Batch ID:	**R37677**	Analysis Date:		3/8/2010 11:21:44 AM	
Benzene	ND	µg/L	1.0								
Toluene	ND	µg/L	1.0								
Ethylbenzene	ND	µg/L	1.0								
Xylenes, Total	ND	µg/L	2.0								
Sample ID: 5ML RB		*MBLK*				Batch ID:	**R37695**	Analysis Date:		3/9/2010 9:14:19 AM	
Benzene	ND	µg/L	1.0								
Toluene	ND	µg/L	1.0								
Ethylbenzene	ND	µg/L	1.0								
Xylenes, Total	ND	µg/L	2.0								
Sample ID: 100NG BTEX LCS		*LCS*				Batch ID:	**R37677**	Analysis Date:		3/8/2010 8:58:22 PM	
Benzene	21.82	µg/L	1.0	20	0	109	85.9	113			
Toluene	21.28	µg/L	1.0	20	0	106	86.4	113			
Ethylbenzene	20.95	µg/L	1.0	20	0	105	83.5	118			
Xylenes, Total	62.35	µg/L	2.0	60	0	104	83.4	122			
Sample ID: 100NG BTEX LCS		*LCS*				Batch ID:	**R37695**	Analysis Date:		3/9/2010 8:20:39 PM	
Benzene	22.19	µg/L	1.0	20	0	111	85.9	113			
Toluene	22.25	µg/L	1.0	20	0	111	86.4	113			
Ethylbenzene	21.60	µg/L	1.0	20	0	108	83.5	118			
Xylenes, Total	64.44	µg/L	2.0	60	0	107	83.4	122			
Sample ID: 100NG BTEX LCSD		*LCSD*				Batch ID:	**R37695**	Analysis Date:		3/9/2010 8:50:56 PM	
Benzene	19.44	µg/L	1.0	20	0	97.2	85.9	113	13.2	27	
Toluene	18.65	µg/L	1.0	20	0	93.2	86.4	113	17.6	19	
Ethylbenzene	18.40	µg/L	1.0	20	0	92.0	83.5	118	16.0	10	R
Xylenes, Total	55.87	µg/L	2.0	60	0	93.1	83.4	122	14.3	13	R

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	NC	Non-Chlorinated
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name **BLAGG** Date Received: **3/8/2010**

Work Order Number **1003180** Received by: **ARS**

Checklist completed by: _____ 3/8/10 Sample ID labels checked by: _____

Signature Date Initials

Matrix: Carrier name: Greyhound

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		Number of preserved bottles checked for pH:
Water - VOA vials have zero headspace? No VOA vials submitted ☐		Yes ☑	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	*<2 >12 unless noted below.*
Container/Temp Blank temperature?	**3.8°**	*<6° C Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : N / A

GCU # 107 - SEPARATOR PIT
UNIT D, SEC. 19, T29N, R12W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : **April 29, 2010**

DEVELOPER / SAMPLER : N J V

Filename : **04-29-10.WK4**

PROJECT MANAGER : N J V

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
1	100.00	71.44	28.56	36.08	-	-	-	-	-
2	100.83	71.45	29.38	36.08	1410	7.45	1,600	15.5	3.25
3	99.49	71.30	28.19	36.19	1345	7.33	1,200	15.6	4.00

INSTRUMENT CALIBRATIONS =	4.01/7.00/10.00	2,800
DATE & TIME =	04/29/10	1230

NOTES : Volume of water purged from well prior to sampling: V = pi X r2 X h X 7.48 gal./ft3) X 3 (wellbores).
(i.e. 2" MW r = (1/12) ft. h = 1 ft.) (i.e. 4" MW r = (2/12) ft. h = 1 ft.)
Ideally a minimum of three (3) wellbore volumes:
2.00 " well diameter = 0.49 gallons per foot of water.

Comments or note well diameter if not standard 2 ".

Excellent recovery in MW # 2 & # 3 . Collected samples from MW # 2 & # 3 for BTEX per US EPA Method 8021B .

Top of casing MW # 1 ~ 2.43 ft., MW # 2 ~ 2.43 ft., MW # 3 ~ 2.60 ft. above grade .

on-site	**1:10**	temp	**51 F**
off-site	**2:20**	temp	**51 F**
sky cond.	**Partly cloudy**		
wind speed	10-25 G 32	direct.	**W**

Hall Environmental Analysis Laboratory, Inc.

Date: *05-May-10*

CLIENT: Blagg Engineering
Project: GCU #107
Lab Order: 1005035

Lab ID: 1005035-01
Collection Date: 4/29/2010 2:10:00 PM
Client Sample ID: MW #2
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	5.0		µg/L	5	5/5/2010 12:32:23 AM
Toluene	180	5.0		µg/L	5	5/5/2010 12:32:23 AM
Ethylbenzene	350	5.0		µg/L	5	5/5/2010 12:32:23 AM
Xylenes, Total	1300	10		µg/L	5	5/5/2010 12:32:23 AM
Surr: 4-Bromofluorobenzene	94.7	65.9-130		%REC	5	5/5/2010 12:32:23 AM

Lab ID: 1005035-02
Collection Date: 4/29/2010 1:45:00 PM
Client Sample ID: MW #3
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	1.0		µg/L	1	5/5/2010 1:32:55 AM
Toluene	ND	1.0		µg/L	1	5/5/2010 1:32:55 AM
Ethylbenzene	ND	1.0		µg/L	1	5/5/2010 1:32:55 AM
Xylenes, Total	ND	2.0		µg/L	1	5/5/2010 1:32:55 AM
Surr: 4-Bromofluorobenzene	103	65.9-130		%REC	1	5/5/2010 1:32:55 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

Chain-of-Custody Record

Client: BLAGG ENER./BP AMERICA

Mailing Address: P.O. BOX 87
BLOOMFIELD, NM 87413

Phone #: (505) 632-1199

email or Fax#:

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: GCU #107

Project #:

Project Manager: NELSON VELEZ

Sampler: NELSON VELEZ

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.1

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1005035	Analysis Request: BTEX + MTBE + TMB's (8021B)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
4/23/10	1410	WATER	MW #2	2-40ml	HCl & COOL	1	✓															
4/29/10	1345	WATER	MW #3	2-40ml	HCl & COOL	2	✓															

Date: 4/29/10 Time: 1615 Relinquished by:

Date: 4/30/10 Time: 1430 Relinquished by:

Received by: Date: 5/4/10 Time: 935

Received by: Date Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

QA/QC SUMMARY REPORT

Client: Blagg Engineering
Project: GCU #107 **Work Order:** 1005035

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: Volatiles											
Sample ID: 5ML RB		*MBLK*				Batch ID:	**R38525**	Analysis Date:		5/4/2010 9:52:23 AM	
Benzene	ND	µg/L	1.0								
Toluene	ND	µg/L	1.0								
Ethylbenzene	ND	µg/L	1.0								
Xylenes, Total	ND	µg/L	2.0								
Sample ID: 100NG BTEX LCS		*LCS*				Batch ID:	**R38525**	Analysis Date:		5/5/2010 5:34:55 AM	
Benzene	21.22	µg/L	1.0	20	0	106	85.9	113			
Toluene	20.93	µg/L	1.0	20	0	105	86.4	113			
Ethylbenzene	20.75	µg/L	1.0	20	0	104	83.5	118			
Xylenes, Total	62.80	µg/L	2.0	60	0	105	83.4	122			

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	NC	Non-Chlorinated
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name **BLAGG** Date Received: **5/4/2010**

Work Order Number **1005035** Received by: TLS

Checklist completed by: _____ 5/4/10 Sample ID labels checked by: _____
Signature Date Initials

Matrix: Carrier name: Greyhound

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace? No VOA vials submitted ☐		Yes ☑	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Container/Temp Blank temperature?	**2.1°**	*<6° C Acceptable* If given sufficient time to cool.		

Number of preserved bottles checked for pH: _____

<2 >12 unless noted below.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : N / A

GCU # 107 - SEPARATOR PIT
UNIT D, SEC. 19, T29N, R12W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : **July 21, 2010**

DEVELOPER / SAMPLER : N J V

Filename : **07-21-10.WK4**

PROJECT MANAGER : N J V

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
1	100.00	71.39	28.61	36.08	-	-	-	-	-
2	100.83	71.39	29.44	36.08	1015	7.55	1,800	21.3	3.25
3	99.49	71.24	28.25	36.19	-	-	-	-	-

INSTRUMENT CALIBRATIONS =	4.01/7.00/10.00	2,800
DATE & TIME =	07/20/10	0800

NOTES : Volume of water purged from well prior to sampling: V = pi X r2 X h X 7.48 gal./ft3) X 3 (wellbores).
(i.e. 2" MW r = (1/12) ft. h = 1 ft.) (i.e. 4" MW r = (2/12) ft. h = 1 ft.)
Ideally a minimum of three (3) wellbore volumes:
2.00 " well diameter = 0.49 gallons per foot of water.

Comments or note well diameter if not standard 2 ".

Excellent recovery in MW # 2 . Collected samples from MW # 2 for BTEX per US EPA Method 8021B .

Top of casing MW # 1 ~ 2.43 ft., MW # 2 ~ 2.43 ft., MW # 3 ~ 2.60 ft. above grade .

on-site	**9:28**	temp	**76 F**
off-site	**10:28**	temp	**78 F**
sky cond.	**Cloudy**		
wind speed	**0 - 5**	direct.	**ENE - E**

Hall Environmental Analysis Laboratory, Inc.

Date: *28-Jul-10*

CLIENT:	Blagg Engineering	**Client Sample ID:**	MW #2
Lab Order:	1007842	**Collection Date:**	7/21/2010 10:15:00 AM
Project:	GCU #107	**Date Received:**	7/23/2010
Lab ID:	1007842-01	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	1.6	1.0		µg/L	1	7/27/2010 5:01:01 AM
Toluene	220	10		µg/L	10	7/27/2010 4:30:49 AM
Ethylbenzene	440	10		µg/L	10	7/27/2010 4:30:49 AM
Xylenes, Total	1000	20		µg/L	10	7/27/2010 4:30:49 AM
Surr: 4-Bromofluorobenzene	114	65.9-130		%REC	10	7/27/2010 4:30:49 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

Chain-of-Custody Record

Client: BLAGG ENGR. / BP AMERICA

Mailing Address: P.O. BOX 87
BLFD. NM 87413

Phone #: (505) 632-1199

email or Fax#:

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name:
GCU #107

Project #:

Project Manager:
NELSON VELEZ

Sampler: NELSON VELEZ

On Ice: ☒ Yes ☐ No

Sample Temperature: 0.7

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1001852
7/21/10	1015	WATER	MW #2	40ml-2	HCl & Cool	1

Analysis Request

(BTEX + MTBE + TMB's (8021B)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
✓											

Date	Time	Relinquished by:	Received by:	Date	Time
7/22/10	1530			7/23/10	735
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks:

QA/QC SUMMARY REPORT

Client: Blagg Engineering
Project: GCU #107 **Work Order:** 1007842

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: Volatiles											
Sample ID: 5ML RB		*MBLK*				Batch ID:	**R40035**	Analysis Date:	7/26/2010 9:47:15 AM		
Benzene	ND	µg/L	1.0								
Toluene	ND	µg/L	1.0								
Ethylbenzene	ND	µg/L	1.0								
Xylenes, Total	ND	µg/L	2.0								
Sample ID: 100NG BTEX LCS		*LCS*				Batch ID:	**R40035**	Analysis Date:	7/26/2010 12:19:12 PM		
Benzene	19.22	µg/L	1.0	20	0	96.1	87.9	121			
Toluene	20.45	µg/L	1.0	20	0	102	83	124			
Ethylbenzene	20.00	µg/L	1.0	20	0	100	81.7	122			
Xylenes, Total	60.28	µg/L	2.0	60	0	100	85.6	121			

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	NC	Non-Chlorinated
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name **BLAGG** Date Received: **7/23/2010**

Work Order Number **1007842** Received by: **TLS**

Checklist completed by: _____ 7/23/10 Sample ID labels checked by: _____
Signature Date Initials

Matrix: Carrier name: Greyhound

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Container/Temp Blank temperature?	**0.7°**	*<6° C Acceptable* If given sufficient time to cool.		

Number of preserved bottles checked for pH: _____

<2 >12 unless noted below.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : N / A

GCU # 107 - SEPARATOR PIT
UNIT D, SEC. 19, T29N, R12W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : **October 21, 2010**

DEVELOPER / SAMPLER : N J V

Filename : **10-21-10.WK4**

PROJECT MANAGER : N J V

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
1	100.00	71.60	28.40	36.08	-	-	-	-	-
2	100.83	71.58	29.25	36.08	1205	7.36	1,900	17.5	3.25
3	99.49	71.44	28.05	36.19	-	-	-	-	-

INSTRUMENT CALIBRATIONS =	4.01/7.00/10.00	2,800
DATE & TIME =	10/21/10	0940

NOTES : Volume of water purged from well prior to sampling: V = pi X r2 X h X 7.48 gal./ft3) X 3 (wellbores).
(i.e. 2" MW r = (1/12) ft. h = 1 ft.) (i.e. 4" MW r = (2/12) ft. h = 1 ft.)
Ideally a minimum of three (3) wellbore volumes:
2.00 " well diameter = 0.49 gallons per foot of water.

Comments or note well diameter if not standard 2 ".

Excellent recovery in MW # 2 . Collected samples from MW # 2 for BTEX per US EPA Method 8021B .

Top of casing MW # 1 ~ 2.43 ft., MW # 2 ~ 2.43 ft., MW # 3 ~ 2.60 ft. above grade .

on-site	**11:30**	temp	**53 F**
off-site	**12:30**	temp	**56 F**
sky cond.	**Partly cloudy**		
wind speed	**0 - 5**	direct.	**calm**

Hall Environmental Analysis Laboratory, Inc.

Date: *29-Oct-10*

CLIENT:	Blagg Engineering	**Client Sample ID:**	MW #2
Lab Order:	1010A04	**Collection Date:**	10/21/2010 12:05:00 PM
Project:	GCU #107	**Date Received:**	10/22/2010
Lab ID:	1010A04-01	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	5.0		µg/L	5	10/28/2010 5:01:13 AM
Toluene	370	5.0		µg/L	5	10/28/2010 5:01:13 AM
Ethylbenzene	370	5.0		µg/L	5	10/28/2010 5:01:13 AM
Xylenes, Total	1500	40		µg/L	20	10/28/2010 3:43:54 PM
Surr: 4-Bromofluorobenzene	120	81.3-151		%REC	5	10/28/2010 5:01:13 AM

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
NC	Non-Chlorinated	ND	Not Detected at the Reporting Limit
PQL	Practical Quantitation Limit	S	Spike recovery outside accepted recovery limits

Chain-of-Custody Record

Client: BLAZE ENER. / BP AMERICA

Mailing Address: P.O. BOX 87
BLFD. NM 87413

Phone #: (505) 632-1199

email or Fax#:

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____
☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name:
GCU #107

Project #:

Project Manager:
NELSON VELEZ

Sampler: NELSON VELEZ

On Ice: ☒ Yes ☐ No

Sample Temperature: 3.1

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1005064	Analysis Request: (BTEX + MTBE + TMBs (8021B))	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
10/21/10	1205	WATER	MW #2	40ml-2	HCl & COOL	-1	✓															

Date: 10/21/10 Time: 1550 Relinquished by: [signature]

Received by: [signature] Date: 10/22/10 Time: 1020

Date: Time: Relinquished by:

Received by: Date: Time:

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

QA/QC SUMMARY REPORT

Client: Blagg Engineering
Project: GCU #107 **Work Order:** 1010A04

Analyte	Result	Units	PQL	SPK Val	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: Volatiles											
Sample ID: 5ML RB		*MBLK*				Batch ID: **R41813**		Analysis Date: 10/27/2010 9:16:43 AM			
Benzene	ND	µg/L	1.0								
Toluene	ND	µg/L	1.0								
Ethylbenzene	ND	µg/L	1.0								
Xylenes, Total	ND	µg/L	2.0								
Sample ID: 100NG BTEX LCS		*LCS*				Batch ID: **R41813**		Analysis Date: 10/27/2010 12:52:24 PM			
Benzene	20.85	µg/L	1.0	20	0	104	84.7	118			
Toluene	21.96	µg/L	1.0	20	0	110	82	123			
Ethylbenzene	22.04	µg/L	1.0	20	0.096	110	83	118			
Xylenes, Total	69.60	µg/L	2.0	60	0	116	85.4	119			

Qualifiers:

E	Estimated value	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	NC	Non-Chlorinated
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name BLAGG | Date Received: 10/22/2010

Work Order Number 1010A04 | Received by: MLW

Checklist completed by: Signature 10/22/10 Date | Sample ID labels checked by: Initials

Matrix: | Carrier name: Priority US Mail

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☑	No ☐	N/A ☐	
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐	
Container/Temp Blank temperature?	**2.7°**	*<6° C Acceptable* If given sufficient time to cool.		

Number of preserved bottles checked for pH: _____

<2 >12 unless noted below.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____