

3R 381

BLAGG ENGINEERING, INC.

P.O. Box 87, Bloomfield, New Mexico 87413

Phone: (505)632-1199 Fax: (505)632-3903

February 1, 2011

Mr. Glenn von Gonten, Senior Hydrologist
New Mexico Oil Conservation Division-NMOCD
Environmental Bureau
1220 St. Francis Drive
Santa Fe, New Mexico 87505

**Re: BP America Production Company
Groundwater Monitoring Report
GCU # 170, Unit K, Sec. 35, T29N, R12W, NMPM
San Juan County, New Mexico**

NMOCD Administrative/Environmental Order #: 3RP-381-0

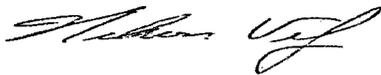
Dear Mr. von Gonten:

BP America Production Company (BP) has retained Blagg Engineering, Inc. (BEI) to conduct environmental monitoring of groundwater at the GCU # 170.

The last formal correspondence to NMOCD was conducted with letter dated, May 1, 2009. Since then, BP has followed its NMOCD approved groundwater management plan and continues to monitor the site. No permanent closure is requested at this time.

If you have any questions concerning the enclosed documentation, please contact either myself or Jeffrey C. Blagg at (505) 632-1199. Thank you for your cooperation and assistance.

Respectfully submitted:
Blagg Engineering, Inc.



Nelson J. Velez
Staff Geologist

Attachment: Groundwater Report (2 copies)

cc: Mr. Brandon Powell, Environmental Specialist, NMOCD District III Office, Aztec, NM
Mr. Jeff Peace, Environmental Advisor, BP, Farmington, NM

BP AMERICA PRODUCTION CO.

GROUNDWATER REMEDIATION REPORT

**GCU #170
(K) SECTION 35, 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 # 170
NE¹/₄ SW¹/₄, Sec. 35, T29N, R12W

Monitor Well Sampling Dates: 5/26/09, 12/28/09, 5/10/10, 10/21/10

Pit Closure and Background:

A site earthen separator pit closure was initiated in March 1995 by removing impacted soil via excavation. Documentation for this work and subsequent groundwater monitoring data for the site was previously submitted to the New Mexico Oil Conservation Division (**NMOCD**) for review. The reporting herein is for site monitoring conducted in 2009 and 2010.

Groundwater Monitor Well Sampling Procedures:

Groundwater monitor well MW #3R was purged of its well bore using a new disposable bailer, then given a sufficient amount of time to allow recovery prior to sample collections. 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 benzene, toluene, ethylbenzene, and total xylenes (BTEX) by US EPA Method 8021B was conducted.

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

Water Quality and Gradient Information:

Bi-annual sampling of the groundwater monitor well MW #3R was conducted in 2009 and 2010. 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 5) reveal the relative elevations from the site wells have consistently shown an apparent northwest flow direction.

Summary and/or Recommendations:

Continued site monitoring per BP's NMOCD approved Ground Water Management Plan is recommended. Hydrocarbon impacts appear to be in a steady state condition. It is necessary to install at least one (1) groundwater monitor well down gradient of MW #3R for delineation of any residual/dissolve phase BTEX. If warranted, alternative remedial actions will be evaluated.

BP AMERICA GROUNDWATER MONITOR WELL LABORATORY RESULTS
SUBMITTED BY BLAGG ENGINEERING, INC.

GCU #170 - SEPARATOR PIT
UNIT K, SEC. 35, T29N, R12W

REVISED DATE: November 2, 2010

FILENAME: (17-4Q-10.WK4) NJV

SAMPLE DATE	MONITOR WELL #	D.T.W. (ft)	T.D. (ft)	TDS mg/L	COND. (umhos/cm)	pH	PRODUCT (ft)	BTEX EPA METHOD 8021B (ppb)			
								Benzene	Toluene	Ethyl Benzene	Total Xylene
28-Jun-95	MW #1	10.50	15.00		1,400	7.4		0.2	0.2	0.3	0.9
08-Sep-95		9.56			1,400	7.8		206	82.3	4.9	67.0
07-Dec-95		9.91			1,700	6.8		ND	0.37	ND	ND
08-Mar-96		10.93			1,200	6.6		ND	0.97	ND	ND
04-Jun-96		10.74			1,300	6.7		ND	ND	ND	ND
28-Jun-95	WP #2	10.45	15.00		1,600	7.4		1.9	38.3	0.2	0.8
08-Sep-95		9.35			1,300	7.4		47.1	19.8	1.2	17.6
07-Dec-95		9.45			1,600	7.2		ND	ND	ND	ND
08-Mar-96		10.24			1,700	7.0		ND	ND	ND	ND
04-Jun-96		10.00			2,100	6.9		ND	ND	ND	ND
28-Jun-95	MW #3	10.45	15.00		1,500	7.4		2115.7	4485.8	318	2704.4
08-Sep-95		9.60			1,700	7.8		1,200	815	131	661
07-Dec-95		9.80			1,800	7.0		4,830	7,680	294	2,760
08-Mar-96		10.74			1,500	6.6		5,020	6,410	105	2,603
04-Jun-96		10.57			1,600	6.6		5,140	5,560	116	2,631
24-Jun-97		10.72			1,700	6.9		1,115	542	88.2	850
08-Jun-98		10.69			1,600	7.3		921	1,020	16.1	279.4
28-May-99		10.29			1,700	7.0		69.3	78.1	3	88.7
24-May-00		10.70			1,700	7.1		1,100	770	19	410
26-Jun-01	MW #3R	10.45	19.50		2,200	7.21		160	540	76	590
31-May-02		10.45			2,600	7.18		32	17	2.3	29.6
29-May-03		10.34			1,800	6.95		75	30	4.8	38
24-Jun-04		10.30			2,300	6.92		71	26	6.4	36
27-Jun-05		10.15			2,000	7.00		80	47	6.6	53
29-Jun-06		9.91			1,900	6.92		130	39	8.3	150
25-Jun-07		9.71			2,000	6.76		270	170	27	310
09-Jun-08		9.82			1,100	7.01		142	104	12.2	114
27-Aug-08		9.39			1,800	7.06		200	150	24	190
26-May-09		10.15			1,400	7.38		150	73	13	93
28-Dec-09		9.45			1,700	7.26		77	44	8.6	50
10-May-10		9.91			1,400	7.35		130	72	12	110
21-Oct-10		8.74			1,500	7.25		87	46	12	86
26-Jun-01	MW #4	11.14	18.50		800	7.41		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).

FIGURE 1



APPROXIMATE LOCATION
OF BLOW PIT TRENCH

MW #3R

WELL
HEAD ⊕

ORIGINAL
PIT
EXCAVATION

MW #4

BERM

PROD
TANK

FENCE

BERM

WP #2

S
E
P

95 BBL
BGT

WOODEN RETAINING WALL

WP #1

FENCE

0 25 50 FT.

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

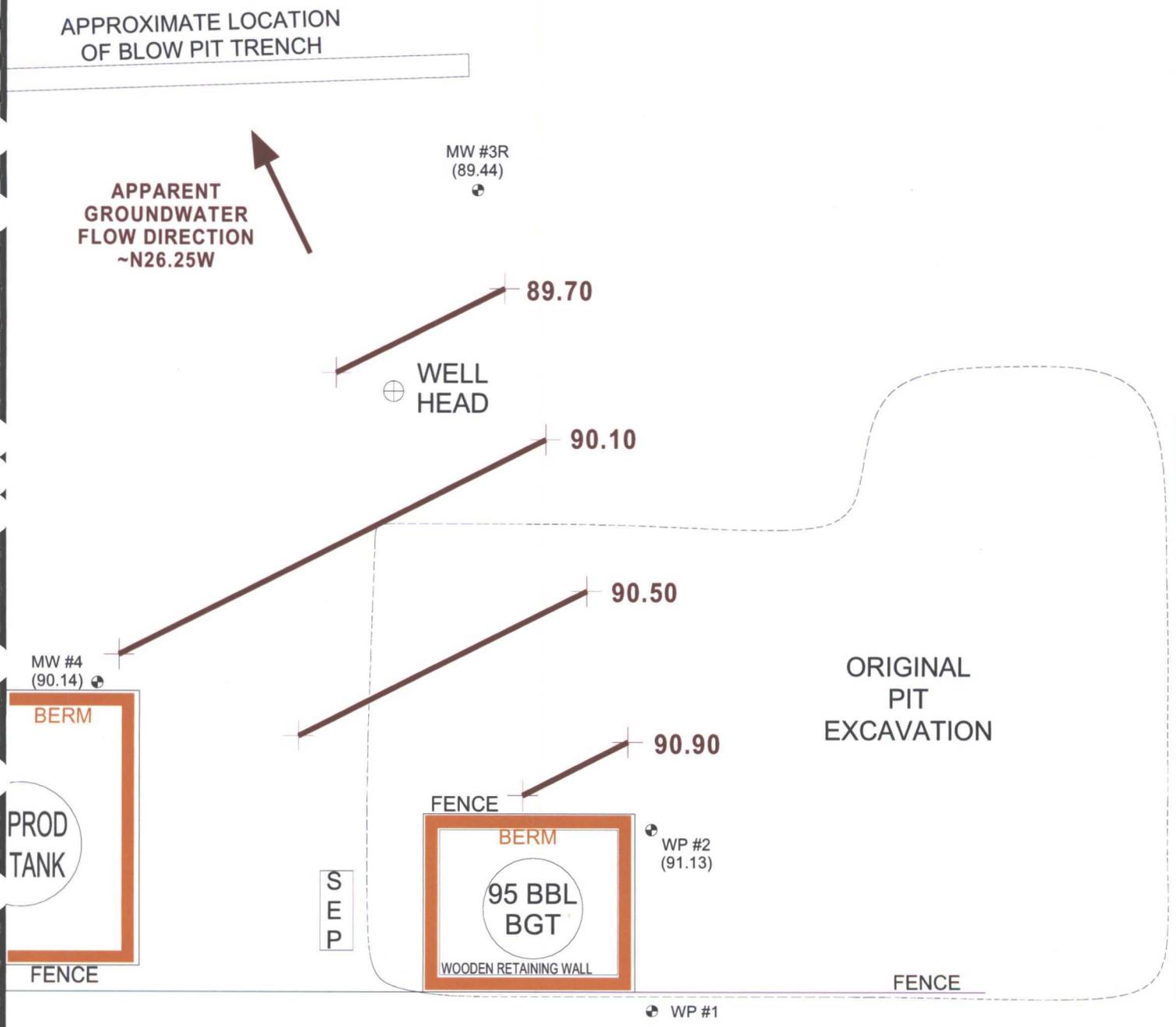
BP AMERICA PRODUCTION COMPANY
GCU 170
NE/4 SW/4 SEC. 35, T29N, R12W
SAN JUAN COUNTY, NEW MEXICO

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: GCU170-SM-05-10.SKF
REVISED: 05/10/10 NJV

**SITE
MAP**
05/10

FIGURE 2 (2nd 1/4, 2009)



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

	Top of Well Elevation
WP #2	(100.80)
MW #3R	(99.59)
MW #4	(101.14)
MW #4 (90.14)	Groundwater Elevation as of 5/26/09.

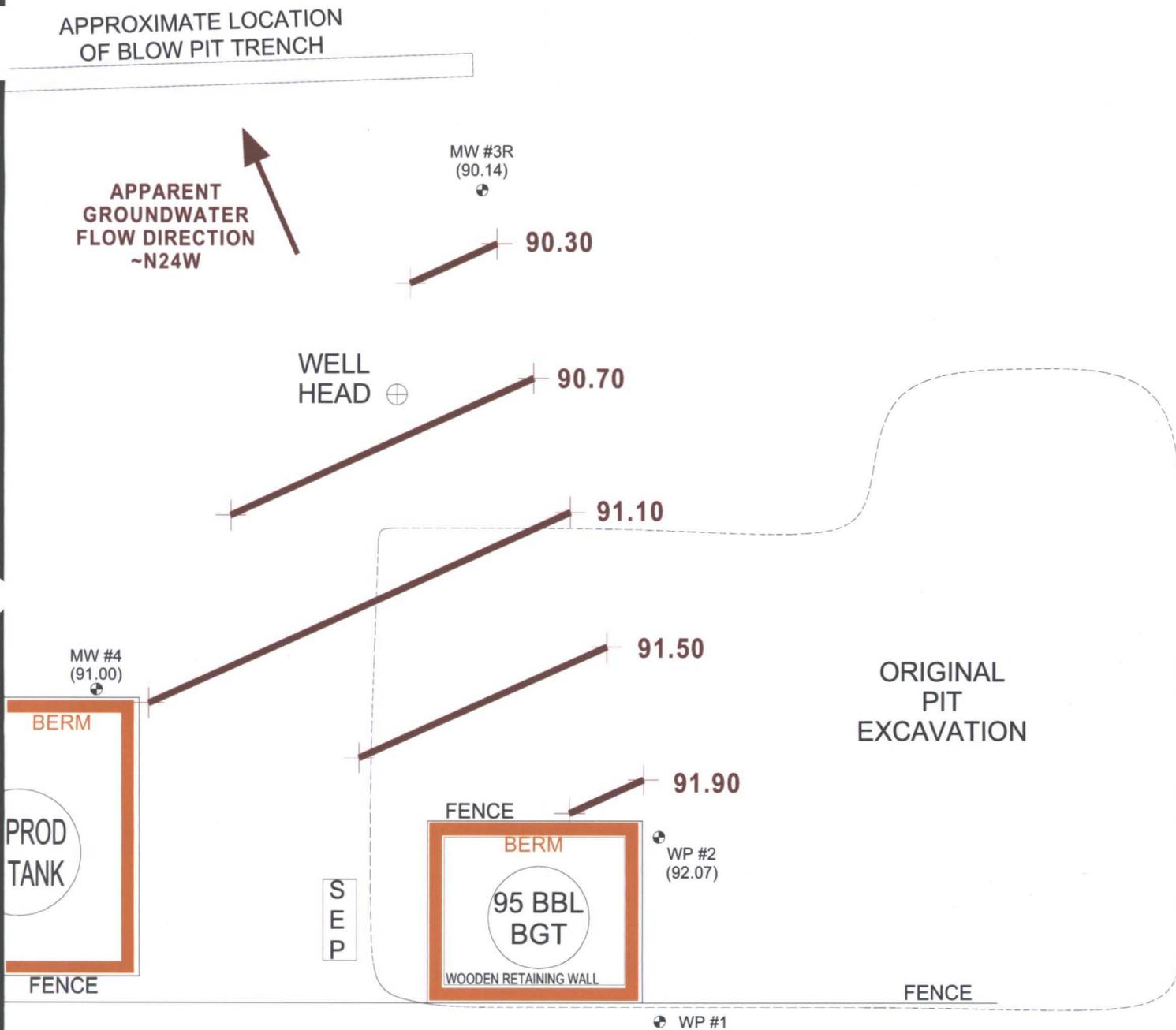
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 BLOOMFIELD, NEW MEXICO 87413
 PHONE: (505) 632-1199

PROJECT: MW SAMPLING
 DRAWN BY: NJV
 FILENAME: 05-26-09-GW.SKF
 REVISED: 05/27/09 NJV

**GROUNDWATER
 CONTOUR
 MAP
 05/09**

FIGURE 3 (4th 1/4, 2009)



0 25 50 FT.

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

	Top of Well Elevation
WP #2	(100.80)
MW #3R	(99.59)
MW #4	(101.14)
⊕ MW #4 (91.00)	Groundwater Elevation as of 12/28/09.

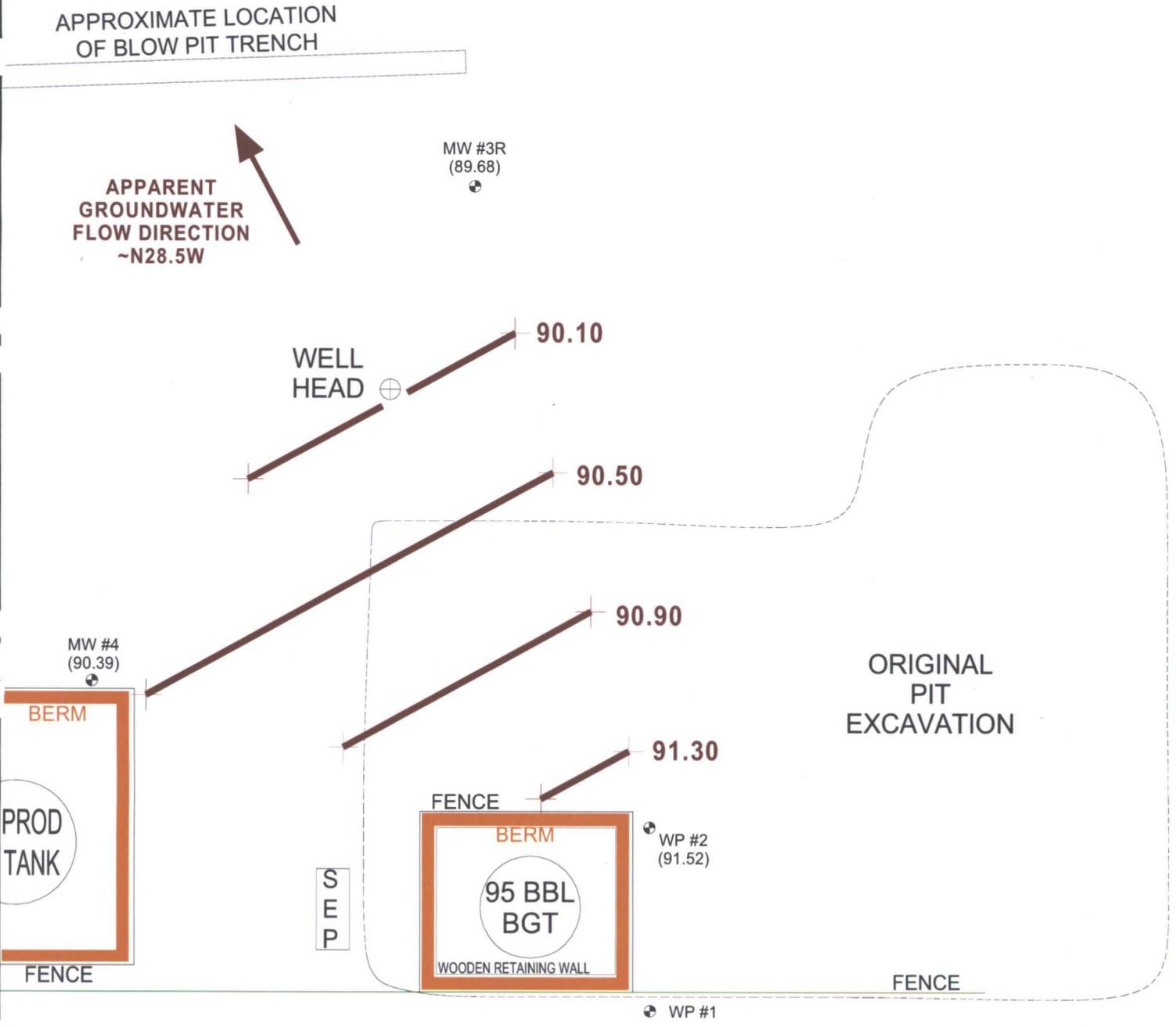
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PROJECT: MW SAMPLING
 DRAWN BY: NJV
 FILENAME: 12-28-09-GW.SKF
 REVISED: 12/28/09 NJV

**GROUNDWATER
 CONTOUR
 MAP
 12/09**

FIGURE 4 (2nd 1/4, 2010)



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

	Top of Well Elevation
WP #2	(100.80)
MW #3R	(99.59)
MW #4	(101.14)
MW #4 (90.39)	Groundwater Elevation as of 5/10/10.

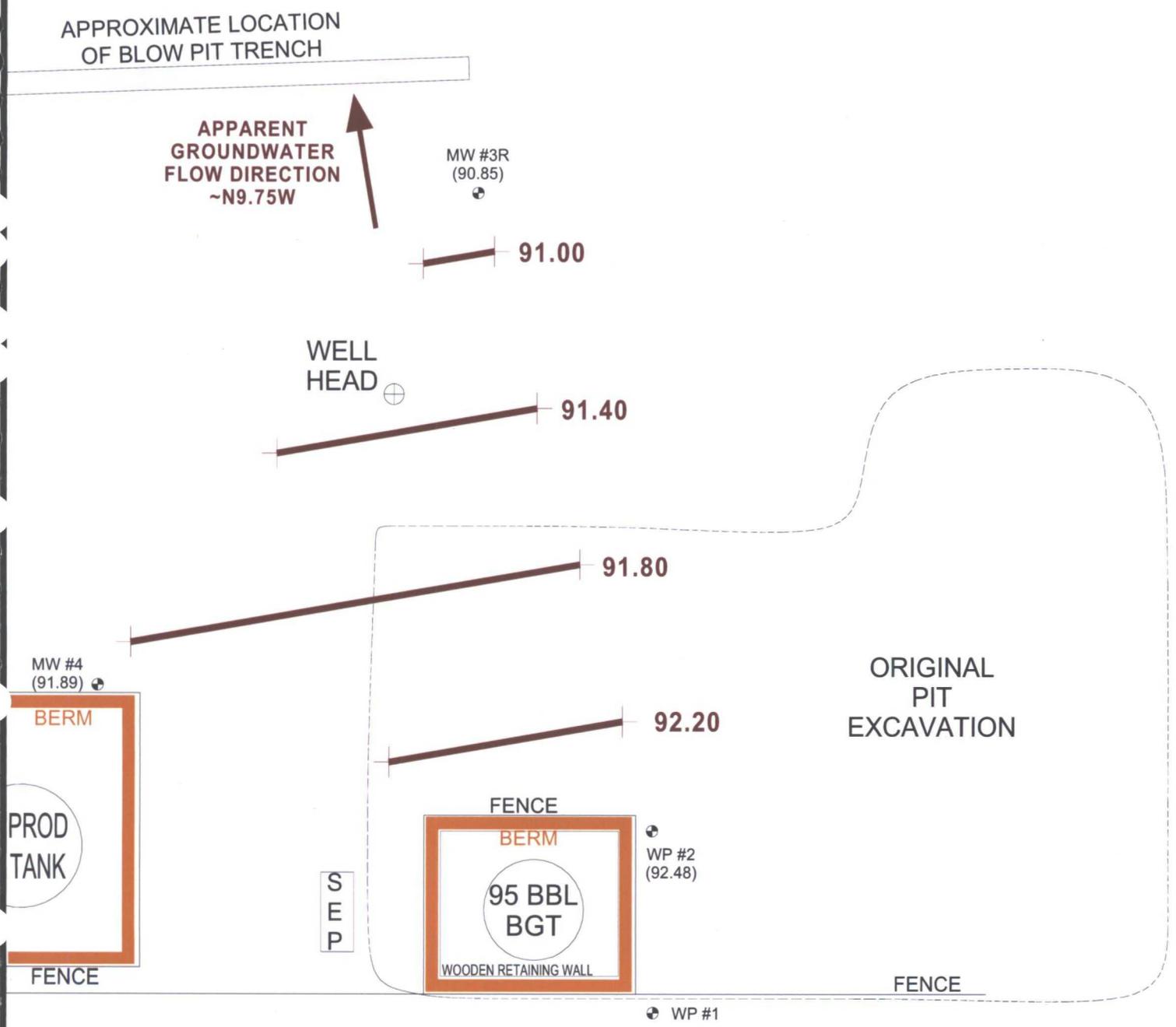
BP AMERICA PRODUCTION COMPANY
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 NE/4 SW/4 SEC. 35, T29N, R12W
 SAN JUAN COUNTY, NEW MEXICO

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PROJECT: MW SAMPLING
 DRAWN BY: NJV
 FILENAME: 05-10-10-GW.SKF
 REVISED: 05/10/10 NJV

**GROUNDWATER
 CONTOUR
 MAP
 05/10**

FIGURE 5 (4th 1/4, 2010)



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

	Top of Well Elevation
WP #2	(100.80)
MW #3R	(99.59)
MW #4	(101.14)
MW #4 (91.89)	Groundwater Elevation as of 10/21/10.

BP AMERICA PRODUCTION COMPANY
 GCU # 170
 NE/4 SW/4 SEC. 35, T29N, R12W
 SAN JUAN COUNTY, NEW MEXICO

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 BLOOMFIELD, NEW MEXICO 87413
 PHONE: (505) 632-1199

PROJECT: MW SAMPLING
 DRAWN BY: NJV
 FILENAME: 10-21-10-GW.SKF
 REVISED: 10/23/10 NJV

**GROUNDWATER
 CONTOUR
 MAP
 10/10**

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & /OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : N / A

GCU # 170 - SEPARATOR PIT
UNIT K, SEC. 35, T29N, R12W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : May 19, 2009

SAMPLER : NJV

Filename : 05-19-09.WK4

PROJECT MANAGER : NJV

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
WP-2	100.80	91.13	9.67	15.00	-	-	-	-	-
MW-3R	99.59	89.44	10.15	19.50	0810	7.38	1,400	12.7	4.50
MW-4	101.14	90.14	11.00	18.50	-	-	-	-	-

INSTRUMENT CALIBRATIONS =	4.01/7.00/10.00	2,800
DATE & TIME =	05/16/09	0810

NOTES : Volume of water purged from well prior to sampling: $V = \pi \times r^2 \times h \times 7.48 \text{ gal./ft}^3 \times 3 \text{ (wellbores)}$
(i.e. 2" MW $r = (1/12) \text{ ft. } h = 1 \text{ ft.}$) (i.e. 4" MW $r = (2/12) \text{ ft. } h = 1 \text{ ft.}$)

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 # 3R. Collected sample for BTEX per US EPA Method 8021B from MW # 3R only.

on-site	7:42	temp	55 F
off-site	8:16	temp	59 F
sky cond.	Mostly sunny		
wind speed	0 - 5	direct.	North

Hall Environmental Analysis Laboratory, Inc.

Date: 08-Jun-09

CLIENT: Blagg Engineering
Lab Order: 0905495
Project: GCU #170
Lab ID: 0905495-01**Client Sample ID:** MW-3R
Collection Date: 5/26/2009 8:10:00 AM
Date Received: 5/27/2009
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: DAM
Benzene	150	10		µg/L	10	6/6/2009 8:14:13 PM
Toluene	73	1.0		µg/L	1	6/5/2009 6:22:16 PM
Ethylbenzene	13	1.0		µg/L	1	6/5/2009 6:22:16 PM
Xylenes, Total	93	2.0		µg/L	1	6/5/2009 6:22:16 PM
Surr: 4-Bromofluorobenzene	116	65.9-130		%REC	1	6/5/2009 6:22:16 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

Chain-of-Custody Record

Client: BLAGE ENER / BP AMERICA

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

Phone #: 632-1199

email or Fax#:

QA/QC Package:

- Standard Level 4 (Full Validation)
 Other _____
 EDD (Type) _____

Location: _____

Standard Rush

Project Name:

GCU #170

Project #:

Project Manager:

NELSON VELEZ

Sampler:

NELSON VELEZ

On Ice: Yes No

Sample Temperature: _____



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	REAL NO	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)	
5/26/09	0810	WATER	MW #3R	40ml-2	HCl	0905495	✓												

Date: 5/26/09 Time: 1615 Relinquished by: Nelson Velez

Received by: [Signature] Date: 5/26/09 Time: 1300

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 #170

Work Order: 0905495

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: Volatiles									
Sample ID: 5ML RB		MBLK	Batch ID: R33978 Analysis Date: 6/5/2009 8:52:07 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: R33978 Analysis Date: 6/5/2009 7:23:20 PM						
Benzene	19.32	µg/L	1.0	96.6	85.9	113			
Toluene	19.52	µg/L	1.0	97.6	86.4	113			
Ethylbenzene	19.52	µg/L	1.0	97.6	83.5	118			
Xylenes, Total	59.44	µg/L	2.0	99.1	83.4	122			
Sample ID: 100NG BTEX LCSD		LCSD	Batch ID: R33978 Analysis Date: 6/5/2009 7:53:53 PM						
Benzene	19.61	µg/L	1.0	98.0	85.9	113	1.49	27	
Toluene	19.70	µg/L	1.0	98.5	86.4	113	0.918	19	
Ethylbenzene	19.64	µg/L	1.0	98.2	83.5	118	0.613	10	
Xylenes, Total	59.29	µg/L	2.0	98.8	83.4	122	0.253	13	

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name **BLAGG**

Date Received:

5/27/2009

Work Order Number 0905495

Received by: **TLS**

Checklist completed by:

[Signature]
Signature

5/27/09
Date

Sample ID labels checked by:

[Initials]
Initials

Matrix:

Carrier name: UPS

- 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

Number of preserved bottles checked for pH:

<2 >12 unless noted below.

Container/Temp Blank temperature? **4.9°** <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 # 170 - SEPARATOR PIT
UNIT K, SEC. 35, T29N, R12W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : December 28, 2009

SAMPLER : NJV

Filename : 12-28-09.WK4

PROJECT MANAGER : NJV

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
WP-2	100.80	92.07	8.73	15.00	-	-	-	-	-
MW-3R	99.59	90.14	9.45	19.50	1325	7.26	1,700	13.4	5.00
MW-4	101.14	91.00	10.14	18.50	-	-	-	-	-

INSTRUMENT CALIBRATIONS =	4.01/7.00/10.00	2,800
DATE & TIME =	12/28/09	1320

NOTES : Volume of water purged from well prior to sampling: $V = \pi \times r^2 \times h \times 7.48 \text{ gal./ft}^3 \times 3$ (wellbores).
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2.00 " well diameter = 0.49 gallons per foot of water.

Comments or note well diameter if not standard 2."

Excellent recovery in MW # 3R. Collected sample for BTEX per US EPA Method 8021B from MW # 3R only.

on-site	12:55	temp	29 F
off-site	1:35	temp	31 F
sky cond.	Mostly cloudy		
wind speed	0 - 10	direct.	E

Hall Environmental Analysis Laboratory, Inc.

Date: 04-Jan-10

CLIENT: Blagg Engineering
Lab Order: 0912560
Project: GCU #170
Lab ID: 0912560-01

Client Sample ID: MW #3R
Collection Date: 12/28/2009 1:25:00 PM
Date Received: 12/29/2009
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	77	1.0		µg/L	1	12/31/2009 1:36:33 AM
Toluene	44	1.0		µg/L	1	12/31/2009 1:36:33 AM
Ethylbenzene	8.6	1.0		µg/L	1	12/31/2009 1:36:33 AM
Xylenes, Total	50	2.0		µg/L	1	12/31/2009 1:36:33 AM
Surr: 4-Bromofluorobenzene	104	65.9-130		%REC	1	12/31/2009 1:36:33 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- S Spike recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level
- RL Reporting Limit

1. Hall Environmental, Inc.

Client: BLAGE 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)

Other

EDD (Type)

Standard Rush

Project Name:

GCM # 170

Project #:

Project Manager:

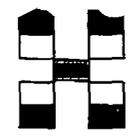
NELSON VELEZ

Sampler:

NELSON VELEZ

On Ice: YES NO

Sample Temperature: 2X



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.	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)
12/28/09	1325	WATER	MW # 3R	2-40ml	HCl & COOL	0912560	<input checked="" type="checkbox"/>											

Date: 12/28/09 Time: 1500 Relinquished by: [Signature] Received by: [Signature] Date Time: 10:20 12/29/09

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 #170

Work Order: 0912560

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: Volatiles											
Sample ID: 5ML RB		MBLK									
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: R36771 Analysis Date: 12/30/2009 8:55:29 AM											
Benzene	20.55	µg/L	1.0	20	0	103	85.9	113			
Toluene	21.01	µg/L	1.0	20	0	105	86.4	113			
Ethylbenzene	20.64	µg/L	1.0	20	0.1	103	83.5	118			
Xylenes, Total	62.32	µg/L	2.0	60	0	104	83.4	122			
Sample ID: 100NG BTEX LCSD		LCSD									
Batch ID: R36771 Analysis Date: 12/30/2009 7:32:46 PM											
Benzene	19.64	µg/L	1.0	20	0	98.2	85.9	113	4.51	27	
Toluene	19.63	µg/L	1.0	20	0	98.2	86.4	113	6.75	19	
Ethylbenzene	19.16	µg/L	1.0	20	0.1	95.3	83.5	118	7.45	10	
Xylenes, Total	58.67	µg/L	2.0	60	0	97.8	83.4	122	6.04	13	

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name **BLAGG**

Date Received:

12/29/2009

Work Order Number **0912580**

Received by:

ARS

Checklist completed by:

Signature



Date

12/29/09

Sample ID labels checked by:

Initials

TS

Matrix:

Carrier name: Greyhound

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>	
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>	Not Shipped <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Water - VOA vials have zero headspace?	No VOA vials submitted <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Number of preserved bottles checked for pH:
Water - Preservation labels on bottle and cap match?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>	<2 >12 unless noted below.
Container/Temp Blank temperature?	2.8°	<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 # 170 - SEPARATOR PIT
UNIT K, SEC. 35, T29N, R12W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : May 10, 2010

SAMPLER : NJV

Filename : 05-10-10.WK4

PROJECT MANAGER : NJV

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
WP-2	100.80	91.52	9.28	15.00	-	-	-	-	-
MW-3R	99.59	89.68	9.91	19.50	0925	7.35	1,400	13.3	4.75
MW-4	101.14	90.39	10.75	18.50	-	-	-	-	-

INSTRUMENT CALIBRATIONS =	4.01/7.00/10.00	2,800
DATE & TIME =	05/10/10	0915

NOTES : Volume of water purged from well prior to sampling: $V = \pi \times r^2 \times h \times 7.48 \text{ gal./ft}^3 \times 3$ (wellbores).
 (i.e. 2" MW $r = (1/12) \text{ ft.}$ $h = 1 \text{ ft.}$) (i.e. 4" MW $r = (2/12) \text{ ft.}$ $h = 1 \text{ ft.}$)

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 # 3R . Collected sample for BTEX per US EPA Method 8021B from MW # 3R only .

on-site	8:40	temp	49 F
off-site	9:35	temp	52 F
sky cond.	Sunny / partly cloudy		
wind speed	10 - 20	direct.	W - WSW

Hall Environmental Analysis Laboratory, Inc.

Date: 26-May-10

CLIENT: Blagg Engineering

Client Sample ID: MW #3R

Lab Order: 1005290

Collection Date: 5/10/2010 9:25:00 AM

Project: GCU #170

Date Received: 5/12/2010

Lab ID: 1005290-01

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	130	10		µg/L	10	5/21/2010 1:05:05 PM
Toluene	72	1.0		µg/L	1	5/20/2010 5:15:41 PM
Ethylbenzene	12	1.0		µg/L	1	5/20/2010 5:15:41 PM
Xylenes, Total	110	2.0		µg/L	1	5/20/2010 5:15:41 PM
Surr: 4-Bromofluorobenzene	103	65.9-130		%REC	1	5/20/2010 5:15:41 PM

Qualifiers:

* Value exceeds Maximum Contaminant Level
E Estimated value
J Analyte detected below quantitation limits
NC Non-Chlorinated
PQL Practical Quantitation Limit

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
MCL Maximum Contaminant Level
ND Not Detected at the Reporting Limit
S Spike recovery outside accepted recovery limits

QA/QC SUMMARY REPORT

Client: Blagg Engineering
Project: GCU #170

Work Order: 1005290

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: R38838 Analysis Date: 5/20/2010 9:10:09 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: R38870 Analysis Date: 5/21/2010 9:16:27 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: R38838 Analysis Date: 5/20/2010 8:48:11 PM

Benzene	20.66	µg/L	1.0	20	0	103	87.9	121			
Toluene	19.36	µg/L	1.0	20	0	96.8	83	124			
Ethylbenzene	19.10	µg/L	1.0	20	0.134	94.8	81.7	122			
Xylenes, Total	59.26	µg/L	2.0	60	0	98.8	85.6	121			

Sample ID: 100NG BTEX LCSD

LCSD

Batch ID: R38838 Analysis Date: 5/20/2010 9:18:30 PM

Benzene	20.59	µg/L	1.0	20	0	103	87.9	121	0.330	14.6	
Toluene	19.61	µg/L	1.0	20	0	98.1	83	124	1.29	18	
Ethylbenzene	19.55	µg/L	1.0	20	0.134	97.1	81.7	122	2.33	15.8	
Xylenes, Total	60.09	µg/L	2.0	60	0	100	85.6	121	1.39	15.9	

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:

5/12/2010

Work Order Number 1005290

Received by: **ARS**

Checklist completed by:

Signature



5/12/10
Date

Sample ID labels checked by:

Initials



Matrix:

Carrier name: Greyhound

- | | | | | |
|---|---|---|---|--------------------------------------|
| Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> | |
| Custody seals intact on shipping container/cooler? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> | Not Shipped <input type="checkbox"/> |
| Custody seals intact on sample bottles? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | N/A <input checked="" type="checkbox"/> | |
| Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Chain of custody agrees with sample labels? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Samples in proper container/bottle? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Sample containers intact? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| All samples received within holding time? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | | |
| Water - VOA vials have zero headspace? | No VOA vials submitted <input type="checkbox"/> | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Water - Preservation labels on bottle and cap match? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | N/A <input checked="" type="checkbox"/> | |
| Water - pH acceptable upon receipt? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | N/A <input checked="" type="checkbox"/> | |

Number of preserved bottles checked for pH:

<2 >12 unless noted below.

Container/Temp Blank temperature?

3.4°

<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 # 170 - SEPARATOR PIT
UNIT K, SEC. 35, T29N, R12W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : October 21, 2010

SAMPLER : NJV

Filename : 10-21-10.WK4

PROJECT MANAGER : NJV

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
WP-2	100.80	92.48	8.32	15.00	-	-	-	-	-
MW-3R	99.59	90.85	8.74	19.50	0950	7.25	1,500	16.0	5.25
MW-4	101.14	91.89	9.25	18.50	-	-	-	-	-

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: $V = \pi \times r^2 \times h \times 7.48 \text{ gal./ft}^3 \times 3$ (wellbores).
 (i.e. 2" MW $r = (1/12) \text{ ft. } h = 1 \text{ ft.}$) (i.e. 4" MW $r = (2/12) \text{ ft. } h = 1 \text{ ft.}$)

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 # 3R . Collected sample for BTEX per US EPA Method 8021B from MW # 3R only .

on-site	8:50	temp	47 F
off-site	10:00	temp	50 F
sky cond.	Sunny / partly cloudy		
wind speed	0 - 5	direct.	E - NE

Hall Environmental Analysis Laboratory, Inc.

Date: 29-Oct-10

CLIENT: Blagg Engineering
Lab Order: 1010A01
Project: GCU #170
Lab ID: 1010A01-01

Client Sample ID: MW #3R
Collection Date: 10/21/2010 9:50:00 AM
Date Received: 10/22/2010
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	87	5.0		µg/L	5	10/28/2010 2:59:43 AM
Toluene	46	5.0		µg/L	5	10/28/2010 2:59:43 AM
Ethylbenzene	12	5.0		µg/L	5	10/28/2010 2:59:43 AM
Xylenes, Total	86	10		µg/L	5	10/28/2010 2:59:43 AM
Surr: 4-Bromofluorobenzene	107	81.3-151		%REC	5	10/28/2010 2:59:43 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level
- E Estimated value
- J Analyte detected below quantitation limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- MCL Maximum Contaminant Level

Chain-of-Custody Record

Client: BLAGE 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
Project Name: _____

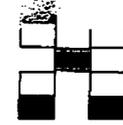
SCU #170

Project #: _____

Project Manager: 7.5
Nelson Velez

Sampler: Nelson Velez
On Ice: Yes No

Sample Temperature: _____



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.	<input checked="" type="checkbox"/> BTEX + MTBE + TMB's (8021B)	<input type="checkbox"/> BTEX + MTBE + TPH (Gas only)	<input type="checkbox"/> TPH Method 8015B (Gas/Diesel)	<input type="checkbox"/> TPH (Method 418.1)	<input type="checkbox"/> EDB (Method 504.1)	<input type="checkbox"/> 8310 (PNA or PAH)	<input type="checkbox"/> RCRA 8 Metals	<input type="checkbox"/> Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	<input type="checkbox"/> 8081 Pesticides / 8082 PCB's	<input type="checkbox"/> 8260B (VOA)	<input type="checkbox"/> 8270 (Semi-VOA)	<input type="checkbox"/> Air Bubbles (Y or N)
<u>07/10</u>	<u>0950</u>	<u>WATER</u>	<u>MW # 3R</u>	<u>40ml-2</u>	<u>HCl & COOL</u>	<u>1016A01</u>	<input checked="" type="checkbox"/>											

Date: 07/10 Time: 1550 Relinquished by: [Signature] Received by: [Signature] Date: 10/22/10 Time: 1020 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 #170

Work Order: 1010A01

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

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name **BLAGG**

Date Received:

10/22/2010

Work Order Number **1010A01**

Received by:

MLW

Checklist completed by:

[Handwritten Signature]
Signature

10/22/10
Date

Sample ID labels checked by:

[Handwritten Initials]
Initials

Matrix:

Carrier name: Priority US Mail

- Shipping container/cooler in good condition? Yes No Not Present
- Justody seals intact on shipping container/cooler? Yes No Not Present Not Shipped
- Justody 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 _____