# **3R-464**

# Request for Permanent Closure

# **Date:** 2012

## BLAGG ENGINEERING, INC. P.O. Box 87, Bloomfield, New Mexico 87413

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

January 30, 2012

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

RCVD JAN 30'12 OIL CONS. DIV. DIST. 3

RE: REQUEST FOR PERMANENT CLOSURE BP America Production Company Groundwater Monitoring Report GCU Com B # 143E, Unit M, Sec. 25, T29N, R12W, NMPM San Juan County, New Mexico

NMOCD Administrative/Environmental Order #: None yet assigned

Dear Mr. von Gonten:

BP America Production Company (BP) has retained Blagg Engineering, Inc. (BEI) to conduct environmental monitoring of groundwater at the GCU Com B # 143E.

The last formal correspondence to NMOCD was conducted with letter dated, February 1, 2011. BP has followed its NMOCD approved groundwater management plan and is requesting permanent closure for this site.

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.

Helon V.

Nelson J. Velez Staff Geologist

Attachment: Groundwater Report (2 copies)

cc: Mr. Brandon Powell, Inspection and Enforcement Supervisor, NMOCD District III Office, Aztec, NM Mr. Jeff Peace, Environmental Advisor, BP, Farmington, NM **BP AMERICA PRODUCTION CO.** 

**GROUNDWATER REMEDIATION REPORT** 

## GCU COM B # 143E (M) SECTION 25, 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 2011** 

PREPARED BY: BLAGG ENGINEERING, INC.

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

# BP AMERICA PRODUCTION COMPANY GCU Com B # 143E - Separator Pit SW<sup>1</sup>/<sub>4</sub> SW<sup>1</sup>/<sub>4</sub>, Sec. 25, T29N, R12W

Pit Closure Date:	February 1996
Monitor Well Installation Date:	November 3, 2009
Monitor Well Sampling Dates:	2/28/11, 5/20/11, 9/29/11, 12/14/11

#### Pit Closure and Background:

Site separator pit closure was conducted in February 1996 by removing impacted soils via excavation. Groundwater impact was identified within the source area during the pit closure activity and was reported to the New Mexico Oil Conservation Division's (NMOCD) Santa Fe office with letter dated March 5, 1996. Documentation for this work and subsequent groundwater monitoring data for the site has been previously submitted for NMOCD review. The reporting herein is for site monitoring from February 2011 to December 2011.

#### **Groundwater Monitor Well Sampling Procedures:**

Monitor well MW #3 was purged by hand-bailing, using new disposable bailers. A two (2) inch submersible electrical pump with new, clear vinyl tubing was utilized during the December 2011 sampling event. Prior to sample collections, MW #3 was purged approximately three (3) well bore volumes. 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 per US EPA Method 8021B was conducted.

Fluids generated during monitor well purging was 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) in December 2009. 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 southwest flow direction.

#### Summary and/or Recommendations:

Hydrocarbon impacted soils and groundwater at the site appear to have been remediated via excavation and natural attenuation. Upon review of the overall lab results from monitor well MW #3, a determination that the total xylenes of 830 parts per billion (**ppb**) from the initial sampling event does not necessitate an additional down gradient well relative to its position. Additionally, the 38 ppb for benzene during the fifth sampling event in October 2010 is dramatically anomalous compared to all previous and subsequent lab results for the constituent.

All site monitor wells tested at non-detectable or below the New Mexico Water Quality Control Commission's groundwater BTEX standards for at least four (4) consecutive sampling events; therefore, meeting all relevant portions of BP's NMOCD approved Groundwater Management Plan (**GMP**). Permanent site closure is recommended. Following approval by the NMOCD, site monitor wells will be abandoned pursuant to section 6.2 of the GMP.

# BP AMERICA PROD. CO. GROUNDWATER LAB RESULTS

SUBMITTED BY BLAGG ENGINEERING, INC.

GCU Com B # 143E - Separator pit UNIT M, SEC. 25, T29N, R12W

REVISED DATE: December 16, 2011 FILENAME: (143E4Q11.WK4) NJV

A Charles	See.		1	1.1		6.1.2		BTEX EPA METHOD 8021B ( ppb )						
SAMPLE WELL DATE NAME or No	WELL NAME or No.	D.T.W. (ft)	T.D. (ft)	TDS (mg/L)	COND. umhos	pH	PRODUCT (ft)	Benzene	Toluene	Ethyl Benzene	Total Xylenes			
03-Dec-09	MW#1	15.90	25.00		1,100	7.33		ND	ND	ND	ND			
03-Dec-09	MW #2	15.69	25.65		1,000	7.29	Sale of	ND	ND	ND	ND			
01-Mar-10		17.23	3100		1,000	7.32		ND	ND	ND	ND			
10-May-10		16.54			1,000	7.32		ND	ND	ND	ND			
21-Oct-10		14.24			1,200	7.18		ND	ND	ND	ND			
03-Dec-09	MW #3	16.18	25.80		800	7.36		5.8	ND	130	830			
01-Mar-10		17.71			900	7.22		ND	ND	120	580			
10-May-10		16.99		No.	1,000	7.20	1.1.	ND	ND	9.2	42			
22-Jul-10		14.88		1.1.2	1,000	7.17		ND	ND	25	88			
21-Oct-10		14.74			1,100	7.11		38	ND	28	180			
28-Feb-11		17.74	15	5. de	1,000	7.30		4.7	ND	23	180			
20-May-11		16.73			1,100	7.37		ND	ND	6.2	36			
29-Sep-11		14.09			1,500	7.13		ND	ND	18	150			
14-Dec-11		15.65	2	120	1,300	7.21		ND	ND	7.1	21			
		NIBRIA	000 00		ATED	TAND	DDC	10	750	750	620			

NMWQCC GROUNDWATER STANDARDS

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).
- 4) NMWQCC INDICATES NEW MEXICO WATER QUALITY CONTROL COMMISSION.











#### BLAGG ENGINEERING, INC. MONITOR WELL DEVELOPMENT &/OR SAMPLING DATA

CLIENT :	BP	AMERICA	PROD.	CO.

CHAIN-OF-CUSTODY #: N / A

LABORATORY (S) USED : HALL ENVIRONMENTAL

GCU COM B #143E - SEPARATOR PIT UNIT M, SEC. 25, T29N, R12W

Date : February 28, 2011

lename : 02-28-11.WK4

DEVELOPER / SAMPLER :	NJV
PROJECT MANAGER :	NJV

CONDUCT

1010

pH

TEMP.

VOLUME

ilename :	02-28-11.	WK4		P	
WELL	WELL	WATER	DEPTH TO	TOTAL	SAMPLING
				DEDTI	

#	ELEV. (ft)	ELEV. (ft)	WATER (ft)	DEPTH (ft)	TIME		(umhos)	(celcius)	PURGED (gal.)
1	102.10	84.55	17.55	25.00	=	140-15		-	
2	101.89	84.62	17.27	25.65	-			-	
3	102.20	84.46	17.74	25.80	1145	7.30	1,000	14.2	4.00
1.			INCTOUR		-	4.01/7.00/10.00	2 800	Product in the	

INSTRUMENT CALIBRATIONS = 4.017.00710.00

DATE & TIME = 02/22/2011

NOTES: <u>Volume of water purged from well prior to sampling; V = pi X r2 X h X 7.48 gal./ft3) X 3 (wellbores)</u>.(i.e. 2" MW r = (1/12) ft. h = 1 ft.) (i.e. 4" MW r = (2/12) ft. h = 1 ft.)</u>

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 and light brown tint appearance in MW #3. Collected sample from MW #3 only to analyze for BTEX per US EPA Method 8021B.

Top of casing MW #1 ~ 2.40 ft., MW #2 ~ 2.25 ft., MW #3 ~ 2.30 ft. above grade.

on-site	11:05	temp	41 F
off-site	11:58	temp	44 F
sky cond.	Sun	ny	
wind speed	0 - 10	direct.	S-SE

CLIENT: Lab Order: Project: Lab ID:	Blagg Engineering 1103139 Gen Com B #143E 1103139-01	Client Sample ID: Collection Date: Date Received: Matrix:				MW #3 2/28/2011 11:45:00 AM 3/2/2011 AQUEOUS				
Analyses		Result	PQL	Qual	Units	DF	Date Analyzed			
EPA METHOD	8021B: VOLATILES	14 A. A. M.	1000	16.95	2012/01/01	Contraction of the	Analyst: BDH			
Benzene		4.7	1.0		µg/L	1	3/5/2011 7:11:58 AM			
Toluene		ND	1.0		µg/L	1	3/5/2011 7:11:58 AM			
Ethylbenzene	CALLER THE PARTY	23	1.0		µg/L	1	3/5/2011 7:11:58 AM			
Xylenes, Total		180	2.0		µg/L	1	3/5/2011 7:11:58 AM			
Surr: 4-Brom	ofluorobenzene	105	96.8-145		%REC	1	3/5/2011 7:11:58 AM			

Date: 09-Mar-11

#### Hall Environmental Analysis Laboratory, Inc.

#### Qualifiers:

J

- \* Value exceeds Maximum Contaminant Level
- E Estimated value
  - 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

Client: Mailing Phone	Address	ENGR. P.O. BLFD. 505)	BOX 87 ,NM 874/3 632-1199	Project Name: Gen com B #143E Project #:					HALL ENVIRONMENTAL ANALYSIS LABORATORY www.hallenvironmental.com 4901 Hawkins NE - Albuquerque, NM 87109 Tel. 505-345-3975 Fax 505-345-4107 Analysis Request										
email o QA/QC Star Accred	Package: ndard itation		Level 4 (Full Validation)	Project Mana	nger: Jewson V Verson V	erez lerez	911	TMB'e (80216)	TPH (Gas only)	5B (Gas/Diesel)	()	(H		NO2,PO4,SO4)	8082 PCB's				N)
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type			STEX-MTBE +	STEX + MTBE + '	TPH Method 801	EDB (Method 504	310 (PNA or PA	<b>RCRA 8 Metals</b>	Vnions (F,CI,NO <sub>3</sub> ,	081 Pesticides /	(260B (VOA)	(270 (Semi-VOA)		vir Bubbles (Y or
2/28/n	1145	WATER	MW #3	40m1-2	Held		-1								8		3		
Datej	Time:	Relinquishe	ad by:	Received by:		Date	Time	Ren	narks										
Date: 3/, / , )	936 Time: 1311	Relinquishe	other life (	Received by:	- Doeter Mr Cro	- 3/1/11 Date	936 Time					in the							

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

# **QA/QC SUMMARY REPORT**

Client: Project:	Blagg Engine Gen Com B	ering #143E							a see	Work	Order:	1103139
Analyte		Result	Units	PQL	SPK Va S	PK ref	%Rec L	owLimit Hi	ghLimit	%RPD	RPDLimit	Qual
Method: EPA	Method 8021B: V	olatiles							2. 19		4	
Sample ID: 5MI	RB		MBLK				Batch ID:	R43957	Analys	is Date:	3/4/2011	9:06:28 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: 100	NG BTEX LCS		LCS				Batch ID:	R43957	Analysi	is Date:	3/4/2011	8:10:00 PM
Benzene		20.94	µg/L	1.0	20	0	105	93.4	120			
Toluene		21.44	µg/L	1.0	20	0	107	96.2	122			
Ethylbenzene		20.92	µg/L	1.0	20	0	105	95	121			
Xylenes, Total		64.43	µg/L	2.0	60	0	107	97.6	122			
Sample ID: 100	NG BTEX LCSD		LCSD				Batch ID:	R43957	Analysi	is Date:	3/4/2011	8:40:11 PM
Benzene		20.56	µg/L	1.0	20	0	103	93.4	120	1.83	10.1	
Toluene		21.17	µg/L	1.0	20	0	106	96.2	122	1.28	14.3	
Ethylbenzene		20.72	µg/L	1.0	20	0	104	95	121	0.951	15.5	
Xylenes, Total		63.92	µg/L	2.0	60	0	107	97.6	122	0.798	10.4	

**Qualifiers:** 

E Estimated value

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

H

NC Non-Chlorinated

R RPD outside accepted recovery limits

Holding times for preparation or analysis exceeded

1

Sam	ple Receipt C	hecklist		
Client Name BLAGG		Date Recei	ved:	3/2/2011
Work Order Number 1103139		Received	by: MMG	
1.1 4		Sample ID	labels checked by:	MG
Checklist completed by:	- 03	3/12/11		Iniliets
agrature	Date		1922	
Matrix: Carrier na	me: <u>Greyhound</u>			
Shipping container/cooler in good condition?	Yes 🗹	No 🗖	Not Present	1. Alexandra
Custody seals intact on shipping container/cooler?	Yes 🗹	No 🗆	Not Present	Not Shipped
Custody seals intact on sample bottles?	Yes 🗆	No 🗆	N/A 🗹	1
Chain of custody present?	Yes 🗹	No 🗆		
Chain of custody signed when relinquished and received?	Yes 🗹	No 🗖	4. 19 19	
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 M	No		Number of preserved
Water - VOA viele have zero headenare? No VOA viels	submitted	Yes	No 🗔	bottles checked for pH:
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
Container/Temp Blank temperature? COMMENTS:	4.5°	<6° C Accepta If given sufficie	able ant time to cool.	Delow.

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 COM B # 143E - SEPARATOR PIT UNIT M, SEC. 25, T29N, R12W

Date : May 20, 2011

Filename : 05-20-11.WK4

LABORATORY (S) USED : HALL ENVIRONMENTAL

DEVELOPER / SAMPLER : NJV PROJECT MANAGER : NJV

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING	рН	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
1	102.10	85.61	16.49	25.00	-			0-1-1	-
2	101.89	85.61	16.28	25.65	-	mes-	-	Section 2	1994
3	102.20	85.47	16.73	25.80	1115	7.37	1,100	14.7	4.50
			INSTRUME	NT CALIB	RATIONS =	4.01/7.00/10.00	2,800		
				DATE	& TIME =	05/20/2011	1110		

NOTES: <u>Volume of water purged from well prior to sampling:  $V = pi X r^2 X h X 7.48 gal./ft3) X 3 (wellbores)</u>.$ (i.e. 2" MW r = (1/12) ft. h = 1 ft.) (i.e. 4" MW r = (2/12) ft. h = 1 ft.)</u>

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 and light brown tint appearance in MW #3. Collected sample from MW #3 only to analyze for BTEX per US EPA Method 8021B.

Top of casing MW #1 ~ 2.40 ft., MW #2 ~ 2.25 ft., MW #3 ~ 2.30 ft. above grade.

on-site	10:15	temp	48 F
off-site	11:35	temp	53 F
sky cond.	Partly o		
wind speed	5 - 10	direct.	WSW-WNW

CLIENT: Lab Order: Project: Lab ID:	Blagg Engineering 1105916 GCU COM B #143E 1105916-01	ID: nte: ed: rix:	: MW #3 :: 5/20/2011 11:15:00 AM :: 5/24/2011 :: AQUEOUS						
Analyses	And And And And	Result	PQL	Qual	Units	5	DF	Date Analyzed	
EPA METHOD	8021B: VOLATILES							Analyst: NSB	
Benzene		ND	1.0		µg/L		1	5/26/2011 1:43:46 AM	
Toluene		ND	1.0	5004	µg/L		1	5/26/2011 1:43:46 AM	
Ethylbenzene		6.2	1.0	1.1	ug/L		1	5/26/2011 1:43:46 AM	
Xylenes, Total		36	2.0	Part 1	ug/L		1	5/26/2011 1:43:46 AM	
Surr: 4-Brom	ofluorobenzene	127	96.8-145		%REC		1	5/26/2011 1:43:46 AM	

Date: 27-May-11

### Hall Environmental Analysis Laboratory, Inc.

#### 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

Client:	BLAG	Dain-of-Custody Record     Turn-Around Time:       BLAGG ENGR. / BP AMERICA     Image: Standard     Rush       Project Name:     Project Name:								HA Al	NA NA ww.h		SIS	VIF 5 L	RO Al	NI BO	RA	TO	L XY	
waning	Address:	P.O. BO)	(87	G	CU COM B #	143E	4901 Hawkins NE - Albuquerque, NM 87109													
		BLOOM	FIELD, NM 87413	Project #:				Te	1. 50	5-345	397	5	Fax	505-	345	-410	7			
Phone #	1	(505) 63	2-1199	a sing								Ana	lysis	Rec	ques	st				
email or	Fax#:			Project Manag	ler:								(1)							
QAVQC F	Package: Idard		Level 4 (Full Validation)	NELSON VELEZ			0218)	only)	(Diesel)				PO4, SO	.B's		N.W.				
	ation:	C Other	A State Lat	Sampler: NELSON VELEZ			19-5-G	H (Gas	B (Gas/				N02, I	082 PC					nple	-
EDD	(Type)	- ouioi_		Sample Term			f	4TP	3015	418.	PAH		NO3,	8/s		(MC	6		le sa	or N
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEALNO 11659116	BTEX +-MTDE	<b>STEX + MTBE</b>	PH Method 8	PH (Method	310 (PNA or	ICRA 8 Metak	mions (F, Cl, I	081 Pesticide	260B (VOA)	270 (Semi-VC	hloride (300.		pt. composit	ir Bubbles (Y
26/11	1115	WATER	MW #3	40 ml VOA - 2	HCI & Cool	-1	V	-	F			-	A	8	8	8	0		S	4
			2004 			•														
						<u> </u>	-			+	+									
1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 -		See.							1			+								
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															1					
-											L			P						
Date:	Time:	Relinquishe	gov: d. UT	Received by:		Date Time	Ren	narks	5:			1						1		
Date:	Time:	Relinquishe	d by:	Redeived by:	1 5	123/11 1505 Date Time 24/11 QV2				Bill to	Bla	gg Ei	ngine	eri	ng, l	inc.				

# **QA/QC SUMMARY REPORT**

Client: Blagg Engi Project: GCU COM	ineering IB#143E								Work	Order:	1105916
Analyte	Result	Units	PQL	SPK Val	SPK ref	%Rec L	owLimit Hi	ghLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B:	Volatiles		See 1			Sec. 1					
Sample ID: 5ML RB		MBLK				Batch ID:	R45591	Analys	is Date:	5/25/2011	8:59:40 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:	R45591	Analys	is Date:	5/25/2011	3:42:54 PM
Benzene	23.20	µg/L	1.0	20	0	116	93.4	120			
Toluene	23.05	µg/L	1.0	20	0.124	115	96.2	122			
Ethylbenzene	21.62	µg/L	1.0	20	0	108	95	121 -			
Xylenes, Total	66.39	µg/L	2.0	60	0	111	97.6	122			

#### Qualifiers:

R

E Estimated value

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

- H Holding times for preparation or analysis exceeded
- NC Non-Chlorinated
- R RPD outside accepted recovery limits

Page 1

Sample	Rec	eipt C	hecklist				
Client Name BLAGG			Date Receiv	5/24/2011			
Work Order Number 1105916			Received b	y: AMG		. ~	
14 14		-	Sample ID	labels checked	by:	Mg1	
Checklist completed by: Cham ML	-	OS/ Date	24///			Initials •	
Matrix: Carrier name:	Grey	hound					
Shipping container/cooler in good condition?	Yes			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						
Chain of custody agrees with sample labels?	Yes		No 🗖				
Samples in proper container/bottle?	Yes					TE Entry	
Sample containers intact?	Yes		No 🗆				
Sufficient sample volume for indicated test?	Yes		No 🗆				
All samples received within holding time?	Yes		No 🗖			Number of preserved	
Water - VOA vials have zero headspace? No VOA vials subr	mitted		Yes M	No 🗆		bottles checked for pH:	
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	
Container/Temp Blank temperature?	1.	.9°	<6° C Accepta	ble		Deiow.	
COMMENTS:			If given sufficien	nt time to cool.			
=======================================	:==	===	====	=====		=======================================	

Client contacted	Date contacted:	Person contacted						
Contacted by:	Regarding:	Rep 1 Anna State						
Comments:			2					
			-					
Corrective Action								

#### BLAGG ENGINEERING, INC. MONITOR WELL DEVELOPMENT &/OR SAMPLING DATA

SAMPLING

TIME

-

1225

DATE & TIME = 09/28/2011

#### CLIENT: BP AMERICA PROD. CO.

GCU COM B # 143E - SEPARATOR PIT UNIT M, SEC. 25, T29N, R12W LABORATORY (S) USED : HALL ENVIRONMENTAL

CONDUCT

(umhos)

4

1,500

2,800

1030

-

N/A

NJV

NJV

VOLUME

PURGED

(gal.)

5.75

TEMP.

(celcius)

19.1

CHAIN-OF-CUSTODY #:

**DEVELOPER / SAMPLER :** 

pH

-

7.13

4.01/7.00/10.00

**PROJECT MANAGER:** 

Date : September 29, 2011

WATER

ELEV.

(ft)

88.32

88.30

88.11

Filename : 09-29-11.WK4

WELL

ELEV.

(ft)

102.10

101.89

102.20

WELL

#

1

2

3

NOT

ES ·	Volume of water purg	d from well prior to sampling. V	= ni X r2 X h X 7 48 nal /ft3) X 3 (wellhore

(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:

DEPTH TO

WATER

(ft)

13.78

13.59

14.09

2.00 " well diameter = 0.49 gallons per foot of water.

TOTAL

DEPTH

(ft)

25.00

25.65

25.80

**INSTRUMENT CALIBRATIONS =** 

Comments or note well diameter if not standard 2 ".

Excellent recovery and light brown tint appearance in MW #3. Collected sample from MW #3 only to analyze for BTEX per US EPA Method 8021B.

Top of casing MW #1 ~ 2.40 ft., MW #2 ~ 2.25 ft., MW #3 ~ 2.30 ft. above grade.

on-site	12:05	temp	77 F				
off-site	12:55	temp	81 F				
sky cond.	Sun	iny					
wind speed	0-5	direct.	SE				

Date: 10-Oct-11 Analytical Report

CLIENT:Blagg EngineeringLab Order:1109C37Project:GCU COM B #143E				Clien Col Da	t Sample ID: lection Date: ate Received:	MW # 3 9/29/201 9/30/201	1 12:25:00 PM 1
Lab ID:	1109C37-01	16-1-5		3516	Matrix:	AQUEOU	JS
Analyses	Sand Starte	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD	8021B: VOLATILES		19.28	1940	5.2.23	1.	Analyst: RAA
Benzene		ND	1.0		µg/L	1	10/6/2011 7:45:22 PM
Toluene		ND	1.0		µg/L	1 .	10/6/2011 7:45:22 PM
Ethylbenzene		18	1.0		µg/L	1	10/6/2011 7:45:22 PM
Xylenes, Total		150	2.0		µg/L	1	10/6/2011 7:45:22 PM
Surr: 4-Brom	ofluorobenzene	97.0	76.5-115		%REC	1	10/6/2011 7:45:22 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

hain-	of-Cus G ENGR.	stody Record / BP AMERICA	Turn-Around Time:    Standard Rush  Project Name:						HA	NA	L I	EN (S] envir	VII S I	RO LAI ental	BO .con	MEI RA	TOP	L RY	
ddress:	P.O. BO)	( 87	G	CU COM B #	† 143E	4901 Hawkins NE - Albuquerque, NM 87109 Tel. 505-345-3975 Fax 505-345-4107													
	BLOOM	FIELD, NM 87413	Project #:		and the fact of the														
	(505) 63	2-1199				Analysis Request													
Fax#:			Project Manag	jer:	Carlo Andrea							41			1				3.5
ackage: dard		Level 4 (Full Validation)		NELSON V	ELEZ	0218)	only)	(Diesel)				US PUG	B's						
ntion: P	Other_		Sampler:	Sampler: NELSON VELEZ 97			PH (Gas	5B (Gas	(7)	(1)	(H)	CUN	8082 PC			1			5
Type)			Sample Temp	stature. 4,0-			H+	801	1438	1504	AF .	SICN	es	mil	NO	0			or
Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAP No.	ITEX +-MTDI	ITEX + MTBE	PH Method	PH (Method	DB (Method	IN ANA OI	unions (F. Cl	081 Pesticid	260B (VOA)	270 (Semi-V	hloride (300			ir Bubbles ()
1225	WATER	MW # 3	40 mi VOA - 2	HCI & Cool	1109037-1	۷									~				-
<u></u>	3.01										+								
										+		+							
										+									
						-			+	-		+	+						
Time: 1320 Time:	Relinquishe	d by: d by:	Received by: Allata Received by:	uli)rela	Date Time 929/11 1320 Date Time 91.11	Rer Bl Je	nark	S: RECTINCE, 2	LY TO	BP: hergy	Cour	t, Far	ming	ton, I	MM 8	7401			
	hain- BLAG	hain-of-Cus BLAGG ENGR. Address: P.O. BO) BLOOMI (505) 63 Fax#: ackage: dard [] fax#: ackage: dard [] fax#: ackage: dard [] fax#: ackage: dard [] fax#: ackage: dard [] fax#: ackage: dard [] fax#: ackage: dard [] fax#: fax#: ackage: dard [] fax#: fax#: ackage: dard [] fax#: fax#: ackage: dard [] fax#: fax#	hain-of-Custody Record   BLAGG ENGR. / BP AMERICA   Address: P.O. BOX 87   BLOOMFIELD, NM 87413   (505) 632-1199   Fax#:   ackage:   dard [] Level 4 (Full Validation)   ation:   P Other   Time Matrix   Sample Request ID   /ZZS WATER   MW # 3   Image: Image:   Image: Image:   Relinguished by:   Time: Relinguished by:   Image: Relinguished by:	hain-of-Custody Record       Turn-Around T         BLAGG ENGR. / BP AMERICA       ☑ Standard         Address:       P.O. BOX 87       GC         BLOOMFIELD, NM 87413       Project Name;         (505) 632-1199       Project Manage         Jard       □       Level 4 (Full Validation)         Ation:       Project Manage         P       □         Other       Öräces         Time       Matrix         Sample Request ID       Container         Type       Sample Request ID         Time       Matrix         Sample Request ID       Container         Type and #       Image         Image       Image	hain-of-Custody Record       Turn-Around Time:         BLAGG ENGR. / BP AMERICA       ☑ Standard □ Rush _         Address:       P.O. BOX 87         BLOOMFIELD, NM 87413       Project Namager:         (505) 632-1199       Project Manager:         Fax#:       Project Manager:         ackage:       Sampler:       NELSON V         jard       Level 4 (Full Validation)       Sampler:       NELSON V         Attion:       Sampler:       NELSON V         P       Other       Object #:       Object #:         Time       Matrix       Sample Request ID       Container       Preservative         7/225       WATER       MW#3       40 ml VOA - 2       HCl & Cool         1/225       WATER       MW #3       40 ml VOA - 2       HCl & Cool         1/225       WATER       MW #3       40 ml VOA - 2       HCl & Cool         1/225       WATER       MW # 3       40 ml VOA - 2       HCl & Cool         1/225       WATER       MW # 3       40 ml VOA - 2       HCl & Cool         1/225       WATER       MW # 3       40 ml VOA - 2       HCl & Cool         1/225       WATER       MW # 3       40 ml VOA - 2       HCl & Cool	hain-of-Custody Record       Turn-Around Time:         BLAGG ENGR. / BP AMERICA       Istandard       Rush         Project Name:       Project Name:         Address:       P.O. BOX 87       GCU COM B # 143E         BLOOMFIELD, NM 87413       Project #:         (505) 632-1199       Fax#:       Project Manager:         ackage:       Level 4 (Full Validation)       Sampler:       NELSON VELEZ         stion:       Sample Request ID       Container       Preservative       Type         Time       Matrix       Sample Request ID       Container       Preservative       FEAR NO         7225       WATER       MW # 3       40 ml VOA-2       HCI & Cool       1109 C 37 - 1         1       Image:       Image:       Image:       Image:       Image:         1       Image:       Image:       Image:       Image:       Image:         1       Image:       Image:       Image:       Image:       Image:       Image:         1       Image:       Image:	hain-of-Custody Record       Turn-Around Time:         BLAGG ENGR. / BP AMERICA       ☑ Standard       □ Rush         Project Name:       GCU COM B # 143E         BLOOMFIELD, NM 87413       Project Name:       GCU COM B # 143E         BLOOMFIELD, NM 87413       Project Manager:       NELSON VELEZ         Sakage:       Project Manager:       NELSON VELEZ         sakage:       Barpier:       NELSON VELEZ         Sample:       Nelson VELEZ       7/7         P       Other       Orifice:       9/7         Time       Matrix       Sample Request ID       Container Type and #       Preservative Type       9/7         7225       WATER       MW # 3       40 mi vOA-2       HCI & Cool       1109 C 37-7       V         1225       WATER       MW # 3       40 mi vOA-2       HCI & Cool       1109 C 37-7       V         1225       WATER       MW # 3       40 mi vOA-2       HCI & Cool       1109 C 37-7       V         1225       WATER       MW # 3       40 mi vOA-2       HCI & Cool       1109 C 37-7       V         1225       WATER       MW # 3       40 mi vOA-2       HCI & Cool       1109 C 37-7       V         1226       IIIIIIIIIIIIIIII	hain-of-Custody Record       Turn-Around Time:         BLAGG ENGR. / BP AMERICA       Istandard       Rush         Project Name:       Project Name:         Address:       P.O. BOX 87       GCU COM B # 143E         BLOOMFIELD, NM 87413       Project #:       Te         (505) 632-1199       Project Manager:       NELSON VELEZ         Fax#:       Project Manager:       NELSON VELEZ         ackage:       Sampler:       NELSON VELEZ         jard       Level 4 (Full Validation)       Sampler:         P       Other       Simple Request ID         Time       Matrix       Sample Request ID       Container         Time       Matrix       Sample Request ID       Container         Time       MW # 3       40 mi VOA - 2       HCI & Cool       HO Q C37 - 7       V         I       I       I       I       I       I       I         I       I       I       I       I       I       I         III       IIII       IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	hain-of-Custody Record       Turn-Around Time:         BLAGG ENGR. / BP AMERICA       I Standard       Rush         Project Name:       GCU COM B # 143E         Address:       P.O. BOX 87       GCU COM B # 143E         BLOOMFIELD, NM 87413       Project #:       Tel. 50         (505) 632-1199       Project Manager:       NELSON VELEZ         Fax#:       Project Manager:       NELSON VELEZ         ackage:       asmpler:       NELSON VELEZ         fard       Level 4 (Full Validation)       Sampler:         Ntion:       Sample:       NELSON VELEZ         P       Other       Osscerative         Time       Matrix       Sample Request ID       Container         Type       Sample Request ID       Container       Type         /2ZS       WATER       MW # 3       40 mi vOA - 2       HC1 & Cool       10 Q C 37 - 7       V         /2ZS       WATER       MW # 3       40 mi vOA - 2       HC1 & Cool       10 Q C 37 - 7       V       I         /2ZS       WATER       MW # 3       40 mi vOA - 2       HC1 & Cool       10 Q C 37 - 7       V       I         /2ZS       WATER       MW # 3       40 mi vOA - 2       HC1 & Cool       10 Q C 37 - 7<	hain-of-Custody Record       Turn-Around Time:         BLAGG ENGR. / BP AMERICA       I Standard       Rush         Address:       Project Name:         Address:       P.O. BOX 87       GCU COM B # 143E         BLOOMFIELD, NM 87413       Project #:       4901 Hawki         Tel. 505-34       Project Manager:       1505 632-1199         Fax#:       Project Manager:       NELSON VELEZ         ackage:       Bampler:       NELSON VELEZ         faint:       Sample:       NELSON VELEZ         Time       Matrix       Sample Request ID         Container       Type and #       Type         Image:       MW # 3       40 mi vOA-2         Hait X       Sample Request ID       Container         Time       MW # 3       40 mi vOA-2         Hait X       Sample Request ID       II 0 P C 37-7         V       III 0 P C 37-7       V         Image:       III 0 P C 37-7       III 0 P C 37-7         Image:       Image:       IIII 0 P C 37-7       IIII 0 P C 37-7         Image:       Image:       Image:       Image:       Image:         Image:       Image:       Image:       Image:       Image:         Image:	hain-of-Custody Record       Turn-Around Time:       Hall         BLAGG ENGR. / BP AMERICA       Standard       Rush         Project Name:       Project Name:       WWW         Address:       P.O. BOX 87       GCU COM B # 143E         BLOOMFIELD, NM 87413       Project Manager:       WWW         (S05) 632-1199       Project Manager:       NELSON VELEZ         Fack:       Project Manager:       NELSON VELEZ         Address:       Project Manager:       NELSON VELEZ         Time       Matrix       Sample Request ID       Container         Type       Simple Request ID       Container       Preservative         Time       Matrix       Sample Request ID       Container         YzzS       WATER       MW # 3       40 mi vOA-2       HCI & Cool       II O Q C 37 -1       V         Image:       Ima	hain-of-Custody Record       Turn-Around Time:       Hall I         BLAGG ENGR. / BP AMERICA       Standard       Rush         Project Name:       Project Name:       Www.halk         Address:       P.O. BOX 87       GCU COM B # 143E         BLOOMFIELD, NM 87413       Project Manager:       Tel. 505-345-3975         Standard       Level 4 (Full Validation)       NELSON VELEZ       717         Fack:       Project Manager:       NELSON VELEZ       717         Standard       Level 4 (Full Validation)       Sampler:       NELSON VELEZ       717         Time       Matrix       Sample Request ID       Container       717       1100 gill gill gill gill gill gill gill gi	hain-of-Custody Record       Turm-Around Time:         BLAGG ENGR. / BP AMERICA       Colspan="2">Colspan="2">HALL EN         Nddress:       P.O. BOX 87       GCU COM B # 143E       HALL EN         BLOOMFIELD, NM 87413       Project Name:       www.hallenvin         (505) 632-1199       Project Manager:       Analysi         Fax#:       Project Manager:       NELSON VELEZ       Time         Analysi       Sampler:       NELSON VELEZ       Time         Poloct Manager:       Sampler:       NELSON VELEZ       Time         Matrix       Sample Request ID       Container       Preservative       Preservative       Project 36-397.5         Time       Matrix       Sample Request ID       Container       Preservative       Preservative       Preservative       Project 36-7.1       V	hain-of-Custody Record       Turn-Around Time:       HALL ENVII         BLAGG ENGR. / BP AMERICA       Standard       Rush       HALL ENVII         Wdress:       Project Name:       Www.hallenvironm         Mdress:       Project Name:       Www.hallenvironm         Standard       Project Name:       Www.hallenvironm         Mdress:       Project #:       Project #:       Www.hallenvironm         (505) 632-1199       Project Manager:       NELSON VELEZ       Time         Pack:       Project Manager:       NELSON VELEZ       Time         Sampler:       NELSON VELEZ       Time       Nick (Full Validation)       Sample Request ID       Container       Preservative       Time       Time       Net X       Sample Request ID       Container       Preservative       Preservative       Time       Nick (Full Validation)       Nick (Full	hain-of-Custody Record       Turn-Around Time:         BLAGG ENGR. / BP AMERICA       2 Standard       Rush         Project Name:       GCU COM B # 143E         Wddress:       Project Name:       www.hallenvironmenta         Uddress:       Project #:       GCU COM B # 143E         BLOOMFIELD, NM 87413       Project #:       rel. 505-345-3975       Fax 505-345         (505) 632-1199       Project Manager:       NELSON VELEZ       rel. 505-345-3975       Fax 505-345         Analysis Requestion:       NELSON VELEZ       rel. 505-345-3975       Fax 505-345         Analysis Requestion:       NELSON VELEZ       rel. 505-345-3975       Fax 505-345         Time       Matrix Sample Request ID       Container       Preservative       reservative       reservative<	hain-of-Custody Record         Turn-Around Time:           BLAGG ENGR. / BP AMERICA         Standard         Rush           Project Name:         GCU COM B # 143E           BLOOMFIELD, NM 87433         Project #:         GCU COM B # 143E           BLOOMFIELD, NM 87433         Project #:         Container         NELSON VELEZ         Nelson VELEZ           Standard         Level 4 (Full Validation)         Sampler:         NELSON VELEZ         Nelson VELEZ	hain-of-Custody Record       Turn-Around Time:         BLAGE ENGR. / BP AMERICA       Standard       Rush         Project Name:       MALL ENVIRONMEI         Nelson Sox S7       GCU COM B # 143E         Project Name:       GCU COM B # 143E         BLOOMFIELD, NM 87413       Project #:       Project #:         Standard       Project #:         Intekage:       NELSON VELEZ         And/yeis Request         Type       Sampler: NELSON VELEZ       NELSON VELEZ         Type       Sampler: NELSON VELEZ       NUM         Type       Sampler: NELSON VELEZ       NUM       NOV 000 000 000 000 000 000 000 000 000 0	hain-of-Custody Record       Turn-Anound Time:         BLAGG EINGR. / BP AMERICA       ☑ Standard □ Rush         Project Name:       GCU COM B # 143E         BLOOMFIELD, NM 87413       Project %:         GSD 632-1199       Project Manager:         Facth:       Project Manager:         Intro-       Sampler:         NELSON VELEZ       Standard 0         Bard       Level 4 (Full Validation)         Sampler:       NELSON VELEZ         Sampler:       NELSON VELEZ         Time       Matrix         Sample Request ID       Container         Type       Container         Type and #       Type         ZZS       WATER         MW # 3       40 mi VOA-2         HCL       Lace of 100 °C 374-7         V       V         Container       Preservative         Time:       Reinguisted by:         Parter       Sample/Fieldophartice         Add mi VOA-2       HCL & Cool         V       V       V         Imme       Matrix Sample Request ID         Type and #       Type         Sample/Fieldophartice       V         V       V       V <td>Turn-Around Time:         BLAGG ENGR. / BP AMERICA         DI AGG ENGR. / BP AMERICA       Distandard       Rush         Project Name:       CLU COM B # 143E       Project #:         BLOOMFIELD, NM 87433       Project #:       Project #:       Project #:         Project Manager:       Project #:       Project #:       Project #:       Project #:         Project Manager:       NELSON VELEZ       Mall stabulation       Non Bit Mass         Project Manager:       NELSON VELEZ       Mall stabulation       Non Bit Mass         Project Manager:       NELSON VELEZ       Mall stabulation       Non Bit Mass         March       Sampler:       NELSON VELEZ       Mall stabulation       Non Bit Mass         Time       Matrix       Sample Request ID       Container       Preservative       Preservative       Project #:         Time       MW # 3       40 m IV0A-2       HCI &amp; Cool II (09 C 37 - 7)       V       I</td>	Turn-Around Time:         BLAGG ENGR. / BP AMERICA         DI AGG ENGR. / BP AMERICA       Distandard       Rush         Project Name:       CLU COM B # 143E       Project #:         BLOOMFIELD, NM 87433       Project #:       Project #:       Project #:         Project Manager:       Project #:       Project #:       Project #:       Project #:         Project Manager:       NELSON VELEZ       Mall stabulation       Non Bit Mass         Project Manager:       NELSON VELEZ       Mall stabulation       Non Bit Mass         Project Manager:       NELSON VELEZ       Mall stabulation       Non Bit Mass         March       Sampler:       NELSON VELEZ       Mall stabulation       Non Bit Mass         Time       Matrix       Sample Request ID       Container       Preservative       Preservative       Project #:         Time       MW # 3       40 m IV0A-2       HCI & Cool II (09 C 37 - 7)       V       I

# **QA/QC SUMMARY REPORT**

Client: B Project: G	lagg Engineering CU COM B #143E							Work	Order:	1109C37
Analyte	Result	Units	PQL	SPK Va SPK n	of %Rec L	owLimit Hi	ghLimit	%RPD	RPDLimi	t Qual
Method: EPA Metho	d 8021B: Volatiles	123		S Salar						Sec. P.
Sample ID: 5ML-RB		MBLK			Batch ID:	R48262	Analysis	Date:	10/6/2011	10:14:00 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 BT	TEX LCS	LCS			Batch ID:	R48262	Analysis	Date:	10/6/2011	12:44:44 PM
Benzene	20.09	µg/L	1.0	20 0	100	80	120			
Toluene	20.37	µg/L	1.0	20 0	102	80	120			
Ethylbenzene	20.06	µg/L	1.0	20 0	100	80	120			
Xylenes, Total	60.62	µg/L	2.0	60 0	101	80	120			

Qualifiers:

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

H

RPD outside accepted recovery limits R

1

#### Sample Receipt Checklist

Client Name BLAGG		Date Recei	ved:	9/30/2011
Work Order Number 1109C37		Received	by: AMF	ter .
Checklist completed by:	; 1	Date 9/30/1)	ADDIS CHOCKED DE	Initials
Matrix: Carrier name	e: <u>Greyhou</u>	nd		
Shipping container/cooler in good condition?	Yes V	No	Not Present	
Custody seals intact on shipping container/cooler?	Yes 🖌	No : '	Not Present	Not Shipped
Custody seals intact on sample bottles?	Yes vi	No	N/A	
Chain of custody present?	Yes Vi	No		
Chain of custody signed when relinquished and received?	Yes V	No		
Chain of custody agrees with sample labels?	Yes 🗸	No		
Samples in proper container/bottle?	Yes Vi	No		
Sample containers intact?	Yes 🖌	No		
Sufficient sample volume for indicated test?	Yes 🔽	No		
All samples received within holding time?	Yes M	No		Number of preserved
Water - VOA vials have zero headspace? No VOA vials sul	bmitted i	Yes 🗸	No	bottles checked for pH:
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
Container/Temp Blank temperature?	4.7°	<6° C Accepta	able	Delow.
COMMENTS:		If given sufficie	ent time to cool.	

**Client** contacted

Contacted by:

Comments:

Date contacted:

Person contacted

Regarding:

**Corrective Action** 

#### BLAGG ENGINEERING, INC. MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT :	BP AME	RICA PROD. CO.
GCU CON	B # 143E	- SEPARATOR PIT

CHAIN-OF-CUSTODY #: N / A

LABORATORY (S) USED : HALL ENVIRONMENTAL

UNIT M, SEC. 25, T29N, R12W

Date : December 14, 2011

Filename : 12-14-11.WK4

DEVELOPER	/ SAMPLER :	NJV

PROJECT MANAGER : NJV

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pН	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
1	102.10	86.70	15.40	25.00				-	
2	101.89	86.74	15.15	25.65	-				-
3	102.20	86.55	15.65	25.80	1330	7.21	1,300	14.1	5.00
			INSTRUME	NT CALIB	RATIONS =	4.01/7.00/10.00	2,800		
				DATE	& TIME =	12/14/2011	1145		

NOTES: Volume of water purged from well prior to sampling;  $V = pi X r^2 X h X 7.48 gal./ft3) X 3$  (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 #3. Collected samples from MW #3 for BTEX per US EPA

Method 8021B.

Purged wells using 2 inch submersible electrical pump, new / clear vinyl tubing, and with brass adjustable flow valve attachment added near sampling end of tubing.

Top of casing MW #1 ~ 2.40 ft., MW #2 ~ 2.25 ft., MW #3 ~ 2.30 ft. above grade.

on-site	12:56	temp	37 F
off-site	1:40	temp	38 F
sky cond.	Partly	sunny	1
wind speed	10 - 15	direct.	WNW

Date: 27-Dec-11 Analytical Report

#### Hall Environmental Analysis Laboratory, Inc.

CLIENT:	Blagg Engineering		<b>Client Sample I</b>	D: MW #3		
Lab Order:	1112766			Collection Dat	e: 12/14/20	11 1:30:00 PM
Project:	GCU COM B #143E			Date Receive	d: 12/16/20	11
Lab ID:	1112766-01	Matrix: AQUEOUS				US
Analyses	Constant States	Result	PQL	Qual Units	DF	Date Analyzed
EPA METHOD	8260: VOLATILES SHOR	T LIST		CALL CONST.		Analyst: MMS
Benzene		ND	1.0	µg/L	1	12/23/2011 6:13:32 AM
Toluene		ND	1.0	µg/L	1	12/23/2011 6:13:32 AM
Ethylbenzene		7.1	1.0	µg/L	1	12/23/2011 6:13:32 AM
Xylenes, Total		21	2.0	µg/L	1	12/23/2011 6:13:32 AM
Surr: 1,2-Dic	hloroethane-d4	104	70-130	%REC	1	12/23/2011 6:13:32 AM
Surr: 4-Brom	nofluorobenzene	79.6	73-131	%REC	1	12/23/2011 6:13:32 AM
Surr: Dibrom	ofluoromethane	114	70-130	%REC	1	12/23/2011 6:13:32 AM
Surr: Toluen	e-d8	99.6	70-130	%REC	1	12/23/2011 6:13:32 AM

#### 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

Client: Mailing	hain- BLAG Address:	of-Cus ig ENGR. P.O. BOX BLOOMF	A BP AMERICA	Turn-Around Time: Standard □ Rush Project Name: G ⊂ u ⊂ o m B # /4/3 E Project #:				490 Tel	)1 Haw	HA AN www kins 345-3	IAL W.ha NE -	Alb	NV SIS viron	IF S L nme erqu	AE ntal. ue, N 345-	NI 30 .com IM 8 410	<b>RA</b> 7109	TO	RY	
Phone #	Fax#:	(505) 633	2-1199	Project Mana	ner						A	Analy	ysis	Rec	lues	t				
QA/QC P	ackage: dard		Level 4 (Full Validation)	Neu	sond VELE	2	0218)	only)	(Diesel)				PO4, SO4	28's						
	ation: P (Type)	Other_		Sampler: N On Icel Sample Temp	ELSON VER	EZ NO	S-OML-	+ TPH (Gas	8015B (Gas, 418.1)	504.1)	PAH)	s	NO3, NO2,	es / 8082 P(		(VO)	(0)		site sample	( or N)
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	STEX +-MTDE	STEX + MTBE	PH Method PH (Method	DB (Method	310 (PNA or	ICRA 8 Meta	viions (F, Cl,	081 Pesticid	(KOA) 8092	270 (Semi-V	hloride (300	irab sample	pt. compo	ur Bubbles ()
12/14/11	1330	WATER	MW #3	40ml-2	4c1 2000	-1	~							~	~		-			
										F							+	+		
		Balany.															-			
Date: 4/15/11 Date: 2/11.1	Time: 15 27 Time:	Relinquisher	d by: h g d by: t l h l	Received by: Mustus Received by:	placter "	Date Time 12/15/11 1527 Date Time	Rem	arks BILL Jeff Wor	DIREC Peace, i		O BP: nergy	Cour	t. Far	rmin P	eton.	0N NM y: Z	87401 PEA	2073	5-V	

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.

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# **QA/QC SUMMARY REPORT**

Project:	GCU COM B #143E	·					140.9	Work	Order:	1112766
Analyte	Result	Units	PQL	SPK Va SPK ref	%Rec L	owLimit Hi	ghLimit	%RPD	RPDLimit	Qual
Method: EPA Me	ethod 8260: Volatiles Shor	t List	1		1142		18.04		1. 1.	50.2M
Sample ID: b2		MBLK			Batch ID:	R49796	Analysis	Date:	12/22/2011	9:23:51 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	lcs	LCS			Batch ID:	R49796	Analysis	Date:	12/22/2011 1	1:49:53 AM
Benzene	18.46	µg/L	1.0	20 0	92.3	81.1	130			
Toluene	19.72	µg/L	1.0	20 0	98.6	82.3	122			

Qualifiers:

E Estimated value

J Analyte detected below quantitation limits

ND Not Detected at the Reporting Limit

H Holding times for preparation or analysis exceeded

NC Non-Chlorinated

R RPD outside accepted recovery limits

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Sample	Receipt C	hecklist		
Client Name BLAGG		Date Receiv	ved:	12/16/2011
Work Order Number 1112766		Received I	by: AT	Det
Checklist completed by:	/2 Date	Sample ID	labels checked by:	Initialis
Matrix: Carrier name	Courier			
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 M	No 🗆		Number of preserved
Water - VOA vials have zero headspace? No VOA vials subr	mitted 🔲	Yes 🗹	No 🗆	bottles checked for pH:
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
Container/Temp Blank temperature? COMMENTS:	1.9°	<6° C Accepta If given sufficie	able ent time to cool.	Dalow.

Client contacted	Date contacted:	Person contacted
Contacted by:	Regarding:	
Comments:		
	10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	Contraction of the second	
Corrective Action		and the second of the

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