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 RE: REQUEST FOR PERMANENT CLOSURE **BP America Production Company Groundwater Monitoring Report** Hutton GC # 1E, Unit F, Sec. 6, T29N, R12W, NMPM San Juan County, New Mexico NMOCD Administrative/Environmental Order #: 3RP-423-0 Dear Mr. von Gonten: BP America Production Company (BP) has retained Blagg Engineering, Inc. (BEI) to conduct environmental monitoring of groundwater at the Hutton GC # 1E. The last formal correspondence to NMOCD was conducted with letter dated, February 1, 2011. Since then, 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. 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 NJV/njv Hutton GC 1E 01-30-12 CVL.DOC 

## BP AMERICA PRODUCTION CO.

### **GROUNDWATER REMEDIATION REPORT**

### HUTTON GC #1E (F) SECTION 6, 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 Hutton GC #1E SW1/4 NE1/4, Sec. 6, T29N, R12W

Remediation via Excavation Date: October 2008

Monitor Well Installation Dates: September 2006, 10/20/09 (MW # 2R)

<u>Monitor Well Sampling Dates:</u> 2/25/11, 5/31/11, 9/28/11

#### Pit Closure & Background:

Site separator and production tank pit closures were conducted in June 1994 and February 1995 respectively by removing impacted soils via excavation. Groundwater impact was identified within the source area via installation of a monitor well in September 2006 (MW #2). In October 2008, additional excavation near the site separator unit was conducted. A replacement monitor well (MW #2R) was installed and quarterly sampling of groundwater reinitiated in January 2010. Documentation for this work and subsequent groundwater monitoring data for the site has been previously submitted for New Mexico Oil Conservation Division (NMOCD) review. The reporting herein is for site monitoring from February 2011 to September 2011.

Surface owner notification requesting approval of a down gradient groundwater monitor well relative to MW #2R was denied by the landowner (outside the site's western security perimeter fencing). It was communicated to the landowner that future liability of groundwater impact confirmation data may be their obligation if such action is required by any applicable regulatory agency(ies).

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

Monitor well MW #2R was purged by hand-bailing, using new disposable bailers during the February and May 2011 sampling events. A two (2) inch submersible electrical pump with new, clear vinyl tubing was utilized during the September 2011 sampling event. Prior to sample collections, the monitor well 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 separator above-grade tank (AGT) located on the well site. The AGT contents are eventually disposed through approved NMOCD operational procedures for removal of produced fluids.

#### **Water Quality and Gradient Information:**

Sampling of groundwater from monitor well MW #2R was conducted quarterly in 2011. 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 4) reveal the relative elevations from the site wells have shown an apparent south-southwest or 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. 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 sections 2.1, 2.2, and 2.3 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 PRODUCTION CO. GROUNDWATER LAB RESULTS

SUBMITTED BY BLAGG ENGINEERING, INC.

Hutton GC #1E UNIT F, SEC. 6, T29N, R12W

REVISED DATE: October 11, 2011

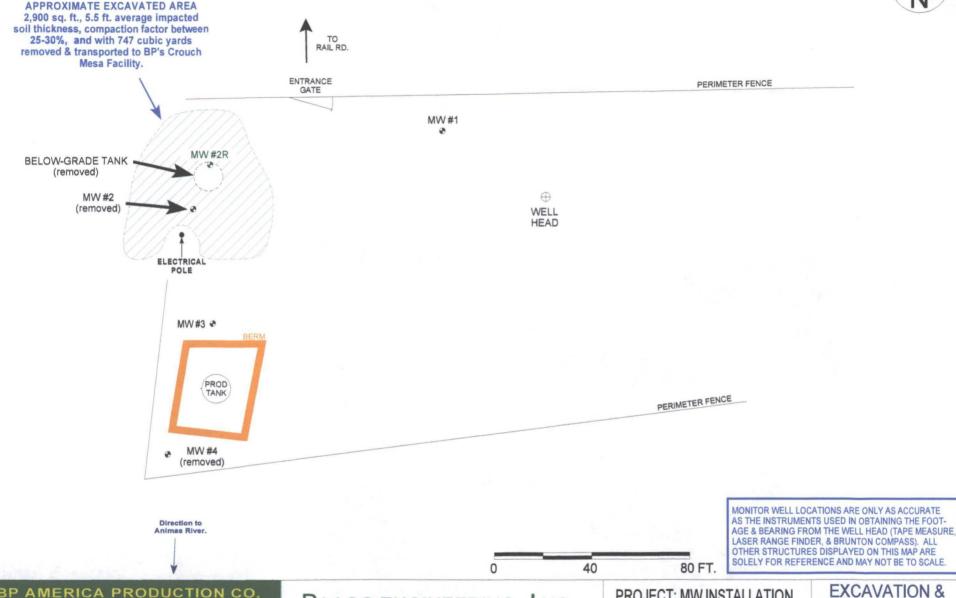
FILENAME: (Hut-3Q11.WK4) NJV

								BTEX	EPA METH	IOD 8021B (	ppb )
SAMPLE DATE	WELL NAME or No.	D.T.W.	T.D. (ft)	TDS (mg/L)	COND. umhos	рН	PRODUCT	Benzene	Toluene	Ethyl Benzene	Total Xylene
02-Oct-06	MW #1	6.80	15.00		2,100	6.93		ND	ND	ND	ND
02-Oct-06	MW #2	7.39	15.00		2,000	7.14		2.4	13	12	81
20-Dec-06		6.75			2,100	7.25		1.7	24	58	1,000
17-May-07		7.03					0.04				
12-Sep-08		7.71			1,500	7.36		ND	ND	ND	ND
13-Jan-10	MW #2R	5.88			1,500	7.35		40	20	86	770
"	dup.	11			u	,,		38.4	ND	92.0	816
29-Apr-10		5.87			1,600	7.18		20	5.3	13	110
21-Jul-10		7.31			2,100	7.08		37	5.4	61	100
12-Oct-10		6.56			1,800	7.11		1.9	ND	1.3	ND
25-Feb-11		5.83			2,000	7.30		2.2	ND	ND	ND
31-May-11		6.05			1,900	7.36		3.1	ND	ND	ND
28-Sep-11		6.67			2,400	7.01		1.9	ND	ND	ND
02-Oct-06	MW#3	7.63	15.00		1,900	7.39		ND	ND	4.9	34
20-Dec-06		7.04			2,000	7.44		ND	ND	ND	ND
21-Feb-07		6.95			1,900	7.31		ND	ND	ND	ND
17-May-07		7.34			2,100	7.25		ND	ND	ND	ND
02-Oct-06	MW #4	7.01	15.00		2,200	7.17		ND	ND	ND	ND
20-Dec-06		6.65			1,900	7.49		ND	ND	ND	ND
21-Feb-07		6.59			1,800	7.34		ND	ND	ND	ND
17-May-07		6.96			2,000	7.35		ND	ND	ND	ND
		NMW	QCC GR	NOUNDW	IATER S	TANDA	RDS	10	750	750	620

- NOTES: 1) RESULTS IN BOLD RED TYPE INDICATE EXCEEDING NAWQCC 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.

# FIGURE 1





BP AMERICA PRODUCTION CO. **HUTTON GC # 1E** 

SE/4 NW/4 SEC. 6, 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 INSTALLATION

DRAWN BY: NJV

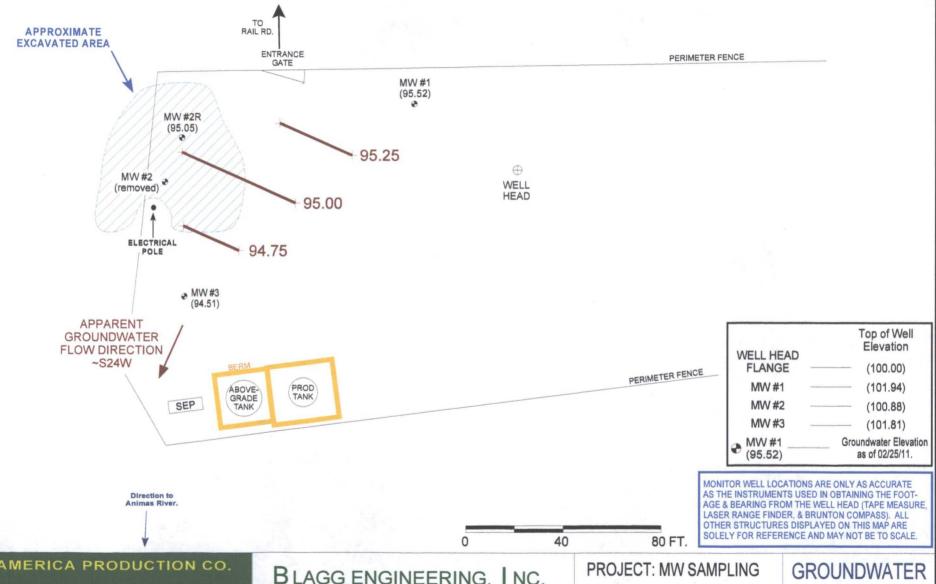
FILENAME: HUTTON GC 1E-SM3.SKF

REVISED: 04-30-10 NJV

MONITOR WELL INSTALLATION **SCHEMATIC** 08/09

# FIGURE 2 (1st 1/4, 2011)





BP AMERICA PRODUCTION CO.

**HUTTON GC # 1E** 

SE/4 NW/4 SEC. 6, 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

DRAWN BY: NJV

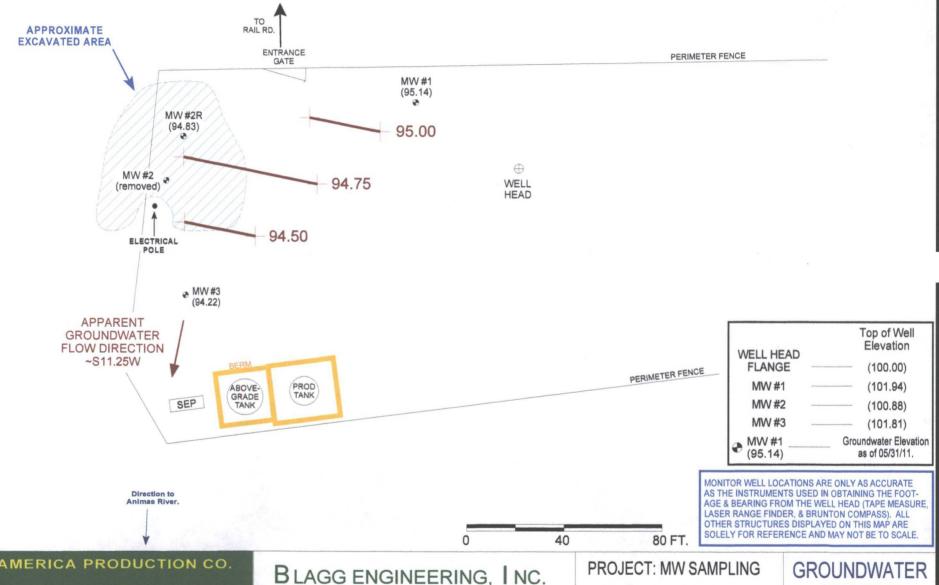
FILENAME: 02-25-11-GW.SKF

REVISED: 02-25-11 NJV

CONTOUR MAP 02/11

# FIGURE 3 (2nd 1/4, 2011)





BP AMERICA PRODUCTION CO.

**HUTTON GC # 1E** 

SE/4 NW/4 SEC. 6, T29N, R12W

SAN JUAN COUNTY, NEW MEXICO

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

**BLOOMFIELD, NEW MEXICO 87413** 

PHONE: (505) 632-1199

DRAWN BY: NJV

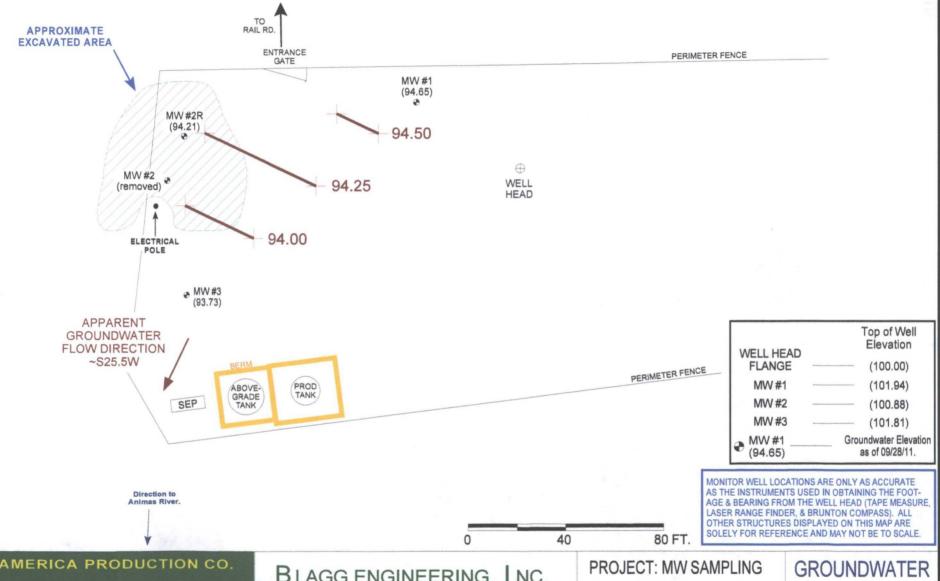
FILENAME: 05-31-11-GW.SKF

REVISED: 05-31-11 NJV

CONTOUR MAP 05/11

# FIGURE 4 (3rd 1/4, 2011)





BP AMERICA PRODUCTION CO.

**HUTTON GC # 1E** 

SE/4 NW/4 SEC. 6, 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

DRAWN BY: NJV

FILENAME: 09-28-11-GW.SKF

REVISED: 09-29-11 NJV

CONTOUR MAP 09/11

### BLAGG ENGINEERING, INC.

#### MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT: BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY #: N/A

HUTTON GC # 1E

UNIT F, SEC. 6, T29N, R12W

Date: February 25, 2011

DEVELOPER / SAMPLER: N J V

Filename: 02-25-11.WK4

PROJECT MANAGER: N J V

WELL	WELL	WATER	DEPTH TO	TOTAL	SAMPLING	pН	CONDUCT	TEMP.	VOLUME
#	ELEV.	ELEV.	WATER	DEPTH	TIME		(umhos)	(celcius)	PURGED
	(ft)	(ft)	(ft)	(ft)					(gal.)
1	101.94	95.52	6.42	15.00	-	*-	-	-	-
2R	100.88	95.05	5.83	14.50	1515	7.30	2,000	10.1	4.25
3	101.81	94.51	7.30	15.00	-	-	-	-	-

INSTRUMENT CALIBRATIONS = | 4.01/7.00/10.00 | 2,800 | DATE & TIME = | 02/22/2011 | 1010

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 # 2R, Collected sample from MW # 2R only for BTEX per US EPA

Method 8021B.

Top of casing MW # 1 ~ 2.70 ft., MW # 2R ~ 2.50 ft., MW # 3 ~ 2.80 ft. above grade.

on-site	2:30	temp	47 F
off-site	3:30	temp	47 F
sky cond.	Cloud	y	
wind speed	0 - 10	direct.	NNE - E

Date: 09-Mar-11

**CLIENT:** 

Blagg Engineering

Lab Order:

1103121

Project:

Hutton GC #1E

Lab ID:

1103121-01

Client Sample ID: MW #2R

Collection Date: 2/25/2011 3:15:00 PM

Date Received: 3/2/2011

Matrix: AQUEOUS

Analyses	Result	PQL Q	ual Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES					Analyst: BDH
Benzene	2.2	1.0	μg/L	1	3/5/2011 5:11:39 AM
Toluene	ND	1.0	μg/L	1	3/5/2011 5:11:39 AM
Ethylbenzene	ND	1.0	μg/L	1	3/5/2011 5:11:39 AM
Xylenes, Total	NĐ	2.0	μg/L	1	3/5/2011 5:11:39 AM
Surr: 4-Bromofluorobenzene	111	96.8-145	%REC	1	3/5/2011 5:11:39 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

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	BLFD	, NM 87413	Project #:											•	-						
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Date: 09-Mar-11

# **QA/QC SUMMARY REPORT**

Client:

**Blagg Engineering** 

Project:

Hutton GC #1E

Work Order:

1103121

Analyte	Result	Units	PQL	SPK Va S	PK ref	%Rec L	owLimit Hi	ghLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: V	olatiles			•		-		,			
Sample ID: 5ML RB		MBLK				Batch ID:	R43957	Analysi	is Date:	3/4/2011 9	9:06:28 AN
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:	R43957	Analysi	is Date:	3/4/2011 8	3:10:00 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	μ <b>g/</b> L	2.0	60	0	107	97.6	122			
Sample ID: 100NG BTEX LCSD		LCSD				Batch ID:	R43957	Analysi	s Date:	3/4/2011 8	3:40:11 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	

•			
	Ong	lifie	re:

E Estimated value

ND Not Detected at the Reporting Limit

R RPD outside accepted recovery limits

J Analyte detected below quantitation limits

H Holding times for preparation or analysis exceeded

NC Non-Chlorinated

### Sample Receipt Checklist

Water - VOA vials have zero headspace? No VOA vials submitted  Yes V No Dottles checked for pH:  Water - Preservation labels on bottle and cap match? Yes No No N/A V  Water - pH acceptable upon receipt? Yes No N/A V  Container/Temp Blank temperature? 4.5° <6° C Acceptable If given sufficient time to cool.	Client Name BLAGG			Date Received	i:	3/2/2011
Checklist completed by:	Work Order Number 1103121			Received by:	MMG	
Shipping container/cooler in good condition?  Custody seals intact on shipping container/cooler?  Ves  No  Not Present  Not Shipped  No		h			bels checked by:	
Custody seals intact on shipping container/cooler?  Yes	Matrix:	Carrier name:	Greyhound			
Custody seals intact on sample bottles?  Chain of custody present?  Chain of custody signed when relinquished and received?  Yes W No Chain of custody agrees with sample tabels?  Samples in proper container/bottle?  Sample containers intact?  Yes M No Sample containers intact?  Yes M No Sample containers intact?  Yes M No Sufficient sample volume for indicated test?  Yes M No Sufficient sample volume for indicated test?  Yes M No Sufficient sample volume for indicated test?  Yes M No Sufficient sample volume for indicated test?  Yes M No Sufficient sample volume for indicated test?  Yes M No Sufficient sample volume for indicated test?  Yes M No Sufficient sample volume for indicated test?  Yes M No Sufficient sample volume for indicated test?  Yes M No Sufficient sample volume for indicated test?  Yes M No Sufficient sample volume for preserved bottles checked for pH:  Water - Preservation labels on bottle and cap match?  Yes No No No No Sufficient sample volumes noted below.  Yes M No Sufficient time to cool.  Citent contacted Date contacted:  Person contacted  Person contacted	Shipping container/cooler in good condition?		Yes 🗹	No 🗌	Not Present	1
Chain of custody present?  Chain of custody signed when relinquished and received?  Yes  No  No  No  No  No  No  No  No  No  N	Custody seals intact on shipping container/coole	r?	Yes 🗹	No 🗌	Not Present	Not Shipped
Chain of custody signed when relinquished and received?  Chain of custody agrees with sample tabels?  Samples in proper container/bottle?  Samples containers intact?  Yes M No Sample received within holding time?  Yes M No Samples received within holding time?  No No Samples received within holding tim	Custody seals intact on sample bottles?		Yes 🗌	No 🗆	N/A	
Chain of custody agrees with sample tabels?  Samples in proper container/bottle?  Samples in proper container/bottle?  Sample containers intact?  Yes W No Sample containers intact?  Sufficient sample volume for indicated test?  Yes No No No Number of preserved bottles checked for Water - VOA vials have zero headspace?  No VOA vials submitted Yes No No NA Water - Preservation labels on bottle and cap match?  Water - PH acceptable upon receipt?  Yes No No NA Water - PH acceptable upon receipt?  Container/Temp Blank temperature?  4.5°  **G** C** Acceptable**  If given sufficient time to cool.  Client contacted  Date contacted:  Person contacted  Person contacted	Chain of custody present?		Yes 🗹	No 🗆		
Samples in proper container/bottle?  Sample containers intact?  Yes	Chain of custody signed when relinquished and	received?	Yes 🗹	No 🗌		•
Sample containers intact?  Sufficient sample volume for indicated test?  All samples received within holding time?  Water - VOA vials have zero headspace?  No VOA vials submitted	Chain of custody agrees with sample labels?		Yes 🗹	No 🗌		
Sufficient sample volume for indicated test?  All samples received within holding time?  Yes  No  No  No  Number of preserved bottles checked for pH:  Water - VOA vials have zero headspace?  No VOA vials submitted  Yes  No  No  NIA  W  Water - Preservation tabels on bottle and cap match?  Water - pH acceptable upon receipt?  Yes  No  No  NIA  So  So C Acceptable  If given sufficient time to cool.  Comments:  Client contacted  Date contacted: Person contacted	Samples in proper container/bottle?		Yes 🗹	No 🗌		
All samples received within holding time?  Water - VOA vials have zero headspace?  No VOA vials submitted	Sample containers intact?		Yes 🗹	No 🗀		
Water - VOA vials have zero headspace? No VOA vials submitted  Yes  No  Dottles checked for pH:  Water - Preservation labels on bottle and cap match? Yes  No  No  N/A  So  No  N/A  N/A  N/A  N/A  N/A  N/A  N/A	Sufficient sample volume for indicated test?		Yes 🗹	No 🗀		
Water - VOA vials have zero headspace? No VOA vials submitted  Yes No No PH:  Water - Preservation labels on bottle and cap match? Yes No No N/A   Water - pH acceptable upon receipt? Yes No No N/A   Container/Temp Blank temperature?	All samples received within holding time?		Yes 🗹	No 🗆		Number of preserved
Water - pH acceptable upon receipt?  Yes No NA 2 <2 >12 unless noted below.  Container/Temp Blank temperature?  4.5° <6° C Acceptable If given sufficient time to cool.  Comments:  Client contacted Date contacted:  Person contacted  Contacted by:  Person contacted	Water - VOA vials have zero headspace?	No VOA vials subm	nitted 🗌	Yes 🗹	No 🗌	
Container/Temp Blank temperature?  4.5° C Acceptable If given sufficient time to cool.  Client contacted  Date contacted:  Person contacted  Contacted by:  Pageording:	Water - Preservation labels on bottle and cap ma	atch?	Yes 🗌	No 🗌	N/A 🗹	
COMMENTS:  4.5° <6° C Acceptable If given sufficient time to cool.  Client contacted  Date contacted:  Person contacted  Contacted by:  Person contacted  Person contacted	Water - pH acceptable upon receipt?		Yes 🗌	No 🗌	N/A 🗹	
Contacted by:  Person contacted  Person contacted  Contacted by:  Person contacted	Container/Temp Blank temperature?		4.5°	-		D6.0W.
Contacted by:	COMMENTS:			If given sufficient	time to cool.	
Contacted by:		· ====================================		======	<b></b>	========
Contacted by: Regarding:	Client contacted	Date contacted:		Perso	on contacted	
·	Contacted by:	Regarding:				
Comments:	Comments:					· · · · · · · · · · · · · · · · · · ·
Corrective Action	Corrective Action		n-J			
	-					

### BLAGG ENGINEERING, INC.

#### MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT: BP AMERICA PROD. CO. CHAIN-OF-CUSTODY #: N/A **HUTTON GC #1E** LABORATORY (S) USED: HALL ENVIRONMENTAL UNIT F. SEC. 6, T29N, R12W Date: May 31, 2011 **DEVELOPER / SAMPLER:** NJV Filename: **05-31-11.WK4** PROJECT MANAGER: NJVSAMPLING WELL WELL **WATER** DEPTH TO TOTAL CONDUCT TEMP. VOLUME ΡH # ELEV. ELEV. WATER **DEPTH** TIME **PURGED** (umhos) (celcius) (ft) (ft) (ft) (ft) (gal.) 1 101.94 95.14 6.80 15.00 2R 100.88 94.83 6.05 14.50 1025 7.36 1,900 15.2 4.25 3 101.81 94.22 7.59 15.00

NOTES:

Volume of water purged from well prior to sampling; V = pi X r2 X h X 7.48 gal./ft3) X 3 (wellbores).

DATE & TIME =

4.01/7.00/10.00

05/31/2011

2.800

1020

(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.

INSTRUMENT CALIBRATIONS =

Comments or note well diameter if not standard 2 ".

Excellent recovery in MW # 2R, Collected sample from MW # 2R only for BTEX per US EPA

Method 8021B.

Top of casing MW #1 ~ 2.70 ft., MW # 2R ~ 2.50 ft., MW #3 ~ 2.80 ft. above grade.

on-site	9:47	temp	61 F
off-site			67 F
sky cond.	Sunny	-	
wind speed	0 - 10	direct.	ESE - SE

Date: 06-Jun-11

CLIENT:

Blagg Engineering

Lab Order:

1106059

Project:

Hutton GC #1E

Lab ID:

1106059-01

Client Sample ID: MW #2R

Collection Date: 5/31/2011 10:25:00 AM

Date Received: 6/1/2011

Matrix: AQUEOUS

Analyses	Result	PQL Q	ual Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	3.1	1.0	µg/L	1	6/2/2011 3:54:05 PM
Toluene	ND	1.0	µg/L	1	6/2/2011 3:54:05 PM
Ethylbenzene	ND	1.0	µg/L	1	6/2/2011 3:54:05 PM
Xylenes, Total	ND	2.0	μg/L	1	6/2/2011 3:54:05 PM
Surr: 4-Bromofluorobenzene	106	96.8-145	%REC	· 1	6/2/2011 3:54:05 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

C	hain-	of-Cus	stody Record	Turn-Around T	ime:					١,	HA	LL	FI	NV	TE	20	NA	a F	NT	ΓΑΙ	ı	
Client:	BLAG	G ENGR.	/ BP AMERICA	Standard Project Name:	☐ Rush _						AN	AL w.ha	YS	SIS	L	AE	30	RA				
Mailing A	Address:	P.O. BOX	K 87	н	UTTON GC	# 1E			4901	. Haw									•			
		BLOOM	FIELD, NM 87413	Project #:						505-3				-	•		410					
Phone #		(505) 63	2-1199										nal	ysis	Rec	ues	t					
email or	Fax#:			Project Manag	er:									504)					$\Box$			
QA/QC Pa	-		Level 4 (Full Validation)		NELSON VI	LEZ		F(8021B)	only)	/Diesel				PO4, S(	CB's							
Accredit		□ Other		Sampler: Onvice	NELSON VI	ELEZ - No.		8)  -  -	PH (Gas	58 (Gas 8.1)	4.1)	£		3, NO2,	, 8082 Р				ļ		sample	Ê
□ EDD	(Type)			Sample Lempe	erature"			ĮΙ	<b>E</b>	d 41	d 50	F P	aks	NO.	des/		VOA	9			site	<u>ر</u> م
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEALNO		BTEX +- INTR	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,	8081 Pesticides / 8082 PC8's	8260B (VOA)	8270 (Semi-VOA)	Chloride (300.0)	i		5 pt. composite sample	Air Bubbles (Y or N)
5/31/11	1025	WATER	MW # 3R	40 ml VOA - 2	HCl & Cool	-	7	<b>V</b>														
	·																					
																				·		
Date: 5/31/11	Time: 1445	Relinquish	In J	Received by:	last	Date Time 5/31/11 144	ľ	Rem	arks:													
Date: 5/31/11	Time:	Relinquish	ed by: Huch	Received by:	11, Com	Date Time				Bi	li to	Blag	g.Er	ngin	eeri	ing,	inc.					

Date: 06-Jun-11

# **QA/QC SUMMARY REPORT**

Client:

Blagg Engineering

Project:

Hutton GC #1E

Work Order:

1106059

Analyte	Result	Units	PQL	SPK Va SF	'K ref	%Rec L	owLimit Hi	ghLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: V	olatiles										
Sample ID: 5ML RB		MBLK				Batch ID:	R45717	Analys	is Date:	6/2/2011	9:23:06 AN
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:	R45717	Analys	is Date:	6/2/2011 1	1:53:29 AN
Benzene	22.42	µg/L	1.0	20	0	112	93.4	120			
Toluene	22.61	µg/L	1.0	20	0	113	96.2	122			
Ethylbenzene	21.44	μg/L	1.0	20 ·	0	107	95	121			
Xylenes, Total	66.46	μg/L	2.0	60	0	111	97.6	122			
Sample ID: 100NG BTEX LCSD		LCSD				Batch ID:	R45717	Analys	is Date:	6/2/2011 13	2:23:35 PN
Benzene	21.67	μg/L	1.0	20	0	108	93.4	120	3.40	10.1	
Toluene	22.20	μg/L	1.0	20	0	111	96.2	122	1.83	14.3	
Ethylbenzene	20.95	µg/L	1.0	20	0	105	95	121	2.29	15.5	
Xylenes, Total	65.05	µg/L	2.0	60	0	108	97.6	122	2.14	10.4	

#### Qualifiers:

ND Not Detected at the Reporting Limit

H Holding times for preparation or analysis exceeded

NC Non-Chlorinated

R RPD outside accepted recovery limits

E Estimated value

J Analyte detected below quantitation limits

### Sample Receipt Checklist

Client Name BLAGG				Date F	Received	:		6/1/2011
Work Order Number 1106059	()			Rece	eived by:	·Mi	MG	100
Checklist completed by:	M		ol	8am	ple ID tat	els chec	ked by:	Initials
Signature			Oate	<del></del>				
Matrix:	Carrier name: (	Greyl	<u>hound</u>					
Shipping container/cooler in good condition?	١	Yes	$ \mathbf{V} $	No [		Not Pres	ent 🗀	l
Custody seals intact on shipping container/coole	r? Y	Yes	$ \mathbf{Z} $	No [	]	Not Pres	ent 🗌	Not Shipped
Custody seals intact on sample bottles?	۲	Yes		No [	]	N/A	~	
Chain of custody present?	١	Yes	V	No [	]			
Chain of custody signed when relinquished and	received?	Yes		No [	3			
Chain of custody agrees with sample labels?	)	Yes	abla	No [	]			
Samples in proper container/bottle?	,	Yes	$\checkmark$	No [	]			
Sample containers intact?	,	Yes	V	No [				
Sufficient sample volume for indicated test?	,	Yes	<b>V</b>	No [				
All samples received within holding time?	}	Yes	<b>V</b>	No [				Number of preserved
Water - VOA vials have zero headspace?	No VOA vials submitt	ted		Yes 🖳		No		bottles checked for pH:
Water - Preservation labels on bottle and cap ma	atch?	Yes		No [	]	N/A	V	
Water - pH acceptable upon receipt?	Y	Yes		No [		N/A	V	<2 >12 unless noted
Container/Temp Blank temperature?		1.4	4°	<6° C Ac	cceptable	<del>)</del>		below.
COMMENTS:				If given s	ufficient (	time to co		
						~		
	- — — — — — — — — — — — — — — — — — — —							- <b></b>
Client contacted	Date contacted:				Perso	n contact	ed	
Contacted by:	Regarding:							
comments: Spoke W/Ni Should be MW	elson or 1#2R A	7	ref.	1/11	sa	coli	sa,	mple nam
		<	<u> </u>			·	<b>-</b>	
					· · ·			
		•			<del></del>			
Corrective Action					·			
			···-··	···, * * * * * * * * * * * * * * * * * *				

### BLAGG ENGINEERING, INC.

#### MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT: BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY #: N / A

HUTTON GC # 1E

UNIT F, SEC. 6, T29N, R12W

CHAIN-OF-CUSTODY #: N / A

LABORATORY (S) USED: HALL ENVIRONMENTAL

Date: September 28, 2011 DEVELOPER/SAMPLER: NJV

Filename: 09-28-11.WK4 PROJECT MANAGER: NJV

WELL	WELL	WATER	DEPTH TO	TOTAL	SAMPLING	pН	CONDUCT	TEMP.	VOLUME
#	ELEV.	ELEV.	WATER	DEPTH	TIME		(umhos)	(celcius)	PURGED
	(ft)	(ft)	(ft)	(ft)					(gal.)
1	101.94	94.65	7.29	15.00	-	*	-	-	-
2R	100.88	94.21	6.67	14.50	1600	7.01	2,400	21.1	4.00
3	101.81	93.73	8.08	15.00	-	-	-	-	-

INSTRUMENT CALIBRATIONS = 4.01/7.00/10.00 2,800

DATE & TIME = 09/28/2011 1030

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 # 2R, Collected sample from MW # 2R only for BTEX per US EPA

Method 8021B.

Top of casing MW #1 ~ 2.70 ft., MW #2R ~ 2.50 ft., MW #3 ~ 2.80 ft. above grade.

on-site	3:42	temp	86 F
off-site	4:27	temp	86 F
sky cond.	Sunn	y	
wind speed	5 - 15	direct.	W

Date: 10-Oct-11 Analytical Report

CLIENT:

Blagg Engineering

Lab Order:

1109C45

Client Sample ID: MW # 2R

Collection Date: 9/28/2011 4:00:00 PM

Project:

Hutton GC #IE

Date Received: 9/30/2011

Matrix: AQUEOUS

Lab ID: 1109C45-01

Analyses	Result	PQL Q	ial Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES				· · · · · · · · · · · · · · · · · · ·	Analyst: RAA
Benzene	1.9	1.0	μg/L	1	10/4/2011 8:59:28 PM
Toluene	ND	1.0	μg/L	1	10/4/2011 8:59:28 PM
Ethylbenzene	ND	1.0	μg/L	1	10/4/2011 8:59:28 PM
Xylenes, Total	ND	2.0	μg/L	1	10/4/2011 8:59:28 PM
Surr: 4-Bromofluorobenzene	95.0	76.5-115	%REC	1	10/4/2011 8:59:28 PM

#### Qualifiers:

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

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

	<u>hain-c</u>	of-Cus	stody Record	Tum-Around T	ime:		HALL ENVIRONM				1EI	NT	ΔL								
Client:	BLAG	G ENGR.	/ BP AMERICA		☐ Rush _														TC		
				Project Name:				-		\	۸W۷	v.hal	lenv	iron	mei	ntal.	com				
Mailing A	Address:	P.O. BOX	( 87	H	IUTTON GC	#1E	[	49	01 H	awki	ns N	E -	Albu	ıque	erqu	e, N	M 8	7109			
		BLOOMF	TELD, NM 87413	Project #:				4901 Hawkins NE - Albuquerque, NM 87109  Tel. 505-345-3975 Fax 505-345-4107													
Phone #:		(505) 63:	2-1199								Analysis Request										
email or	Fax#:			Project Manag	er:								1	504)	1	Ì	1				
QA/QC Pr	_		Level 4 (Full Validation)	NELSON VELEZ			-(8021B)	only)	/Diesel					P04, S	CB's			İ			
Accredita	ation:			Sampler:	<b>NELSON VE</b>	LEZ 'n√	F	(Gas	(Gas				j	Ž0,	82 P		Ì	Ì		1	
□ NELA		□ Other_			₹2√e\$	Dino.	#	TPH	158	18.1	8	£		03, 1	/ 80	Í	=				Z
□ EDD	Type)			Sample Tempe	ratures / , 7		Į,	+ 36	8 p	od 4	l d	o P	tals	Ž	iges	2	\ \ \ \	9			اڅ ا
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL NO.	BTEX +-MT	BTEX + MTBE + TPH (Gas only)	TPH Method 80158 (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO3, NO2, PO4,	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Chloride (300.0)			Air Bubbles (Y or N)
9/28/11	1600	WATER	MW # 2R	40 ml VOA - 2	HCI & Cool	1109045-1	٧														
																					-
<del></del>																			$\top$		
						·															
Date: /	Time: 1320	Relinquishe	g by: L VJ	Received by:	e Waster	Date Time 9/29/11 18 26	BI		RECT	LY TO			, mar. 2				INA 6.	7401	<b>-</b>	······································	
Date:	Time: 1545	Relinquishe	ed by:  Little Well-tru  Abmitted to Half Environmental may be s	Received by:		Date Time 9/38/// /308	w	ork (	Order	: _1	V126	5193	9	_ P	ayke	y:	ZPE/	7401 ACJD	ENV		_

Date: 10-Oct-11

# **QA/QC SUMMARY REPORT**

Client:

Blagg Engineering

Project:

Hutton GC #1E

Work Order:

1109C45

Analyte	Result	Units	PQL	SPK Va	a SPK ref	%Rec Lo	owLimit Hi	ghLimit %RPD	RPDLimit Qual
Method: EPA Method 8021B: 1	<b>Volatiles</b>								
Sample ID: 5ML-RB		MBLK				Batch ID:	R48181	Analysis Date:	10/4/2011 10:04:45 AN
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:	R48181	Analysis Date:	10/4/2011 12:29:15 PM
Benzene	19.23	μg/L	1.0	20	0.3422	94.4	80	120	
Toluene	19.46	µg/L	1.0	20	0	97.3	80	120	
Ethylbenzene	19.31	µg/L	1.0	20	0	96.6	80	120	
Xylenes, Total	58.35	μg/L	2.0	60	0	97.3	80	120	

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

### Sample Receipt Checklist

Client Name BLAGG				Date	Recei	ved:		9/30/2011
Work Order Number 1109C45				Re	ceived	by: Af	AF.	b /
Checklist completed by:			9	Sai	nple IC	) labels check	ked by:	J.C. Initials
Signature		i	Date		11			
Matrix:	Carrier name: 0	Grey	hound		•			
Shipping container/cooler in good condition?	١	<b>′e</b> s	<b>V</b>	No	! :	Not Pres	ent :	
Custody seals intact on shipping container/cooler?	١	es (	<b>✓</b>	No	Ī	Not Pres	ent	Not Shipped
Custody seals intact on sample bottles?	١	/es	<b>√</b> :	No	•	N/A		
Chain of custody present?	•	es/	a <b>√</b> i	No				
Chain of custody signed when relinquished and rece	ived?	⁄es	<b>,</b>	No				
Chain of custody agrees with sample labels?	١	es/	<b>:</b> ✔	No	:			
Samples in proper container/bottle?	١	⁄es	i <b>√</b> i	No				
Sample containers intact?	•	⁄es	Vi	No				
Sufficient sample volume for indicated test?	Y	es (	<b>V</b>	No				
All samples received within holding time?	Y	es/	V	No				Number of preserved bottles checked for
Water - VOA vials have zero headspace?	o VOA vials submiti	ted		Yes	✓	No	1	pH:
Water - Preservation labels on bottle and cap match	?	es/	: ;	No		N/A	.✔	
Water - pH acceptable upon receipt?	Υ	es/		No		N/A	•	<2 >12 unless noted below.
Container/Temp Blank temperature?		4.	-	<6° C	-			<b>.</b>
COMMENTS:				If given	suffici	ent time to co	ol.	
								·
Client contacted Date	contacted:				Pe	erson contact	ed	
Contacted by: Reg	arding:							
Comments:								