

3R - 421

**ANNUAL
MONITORING
REPORT**

05/04/2009

3R 421

RECEIVED

BP AMERICA PRODUCTION CO.

2009 MAY - 4 AM 9 45

GROUNDWATER REMEDIATION REPORT

**GCU # 229E
(I) SECTION 21, T28N, R12W, NMPM
SAN JUAN COUNTY, NEW MEXICO**

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

APRIL 2009

**PREPARED BY:
BLAGG ENGINEERING, INC.**

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

BP AMERICA PRODUCTION COMPANY
GCU # 229E - Blow Pit
NE/4 SE/4, Sec. 21, T28N, R12W

Monitor Well Installation Dates: 11/1/06 (MW #2), 1/18/07 (MW #1, MW #3), 8/30/07 (MW #4)

Monitor Well Sampling Dates: 4/14/08, 8/28/08

Site History:

A site blow pit closure was initiated in August 2002. Groundwater impacts were identified from sampling and testing of MW #2 in November 2006. After receipt of the laboratory results, NMOCD was notified with a letter dated March 2, 2007 of the groundwater impacts. Documentation of this work and subsequent groundwater monitoring data for the site have previously been submitted for New Mexico Oil Conservation Division (NMOCD) review. No further remedial action was suggested within the report. The reporting herein is for site monitoring in 2008 only.

Groundwater Monitor Well Sampling Procedures:

Monitor wells were developed by hand-bailing, using new disposable bailers after installation. Prior to sample collections, the monitor wells were purged approximately three (3) well bore volumes with new disposable bailers. The groundwater samples were collected following US EPA: SW-846 protocol, were placed into laboratory supplied containers with appropriate preservative, and stored in an ice chest for express delivery to an analytical laboratory for testing under strict chain-of-custody procedures. Analytical testing for benzene, toluene, ethylbenzene, and total xylenes (BTEX) by US EPA Method 8021B or 8260 was conducted.

Fluids generated during monitor well development and purging were managed by discarding into the separator below-grade tank (BGT) located on the same well pad (BP's GCU #316 well site). The BGT contents are then disposed through approved NMOCD operational procedures for removal of produced fluids.

Groundwater Quality & Flow Direction Information:

MW #4 has tested with benzene fluctuations below and above the New Mexico Water Quality Control Commission (NMWQCC) standards since its installation. Ethylbenzene and total xylenes in MW #4 has increased above the NMWQCC standards since the initial testing in September 2007. 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.

Groundwater contour maps of relative water table elevations have been measured to flow in the north direction (Figure 2 through 3).

Summary and/or Recommendations:

The well site is located in a very remote area of San Juan County near the Navajo Agricultural Product Industry (NAPI) area. The presence of total xylenes well above NMWQCC standards within MW #4 indicates possible long term monitoring is highly probable. It is recommended to continue monitoring of MW #4 on a bi-annual basis unless circumstances dictate otherwise as well as down gradient delineation from MW #4 by installation of at least one (1) groundwater monitor well. No additional remedial action is suggested until further review of future BTEX analyses.

BP AMERICA PROD. CO. GROUNDWATER LAB RESULTS

SUBMITTED BY BLAGG ENGINEERING, INC.

GCU # 229E - BLOW PIT

UNIT I, SEC. 21, T28N, R12W

REVISED DATE: September 17, 2008

FILENAME: (229E3Q08.WK4) NJV

SAMPLE DATE	WELL NAME or No.	D.T.W. (ft)	T.D. (ft)	TDS (mg/L)	COND. umhos	pH	PRODUCT (ft)	BTEX EPA METHOD 8021B (ppb)			
								Benzene	Toluene	Ethyl Benzene	Total Xylene
30-Jan-07	MW #1	34.11	42.00	730	1,200	7.13		ND	ND	ND	ND
14-Nov-06	MW #2	31.60	42.00	866	1,300	7.05		ND	25	110	1,800
30-Jan-07		31.63			1,200	6.96		ND	ND	7.9	200
25-Apr-07		31.76			1,200	6.92		ND	ND	1.0	140
23-Jul-07		31.78			1,200	6.87		ND	ND	4.1	130
15-Nov-07		31.73			1,500	6.97		ND	ND	5.1	170
30-Jan-07	MW #3	33.20	42.00	762	1,200	7.18		ND	ND	ND	ND
25-Apr-07		33.34			1,200	7.07		ND	ND	ND	ND
23-Jul-07		33.38			1,100	6.98		ND	ND	ND	ND
15-Nov-07		33.30			1,300	7.16		ND	ND	ND	ND
17-Sep-07	MW #4	23.58	36.88		1,300	7.06		1.2	ND	13	340
15-Nov-07		23.55			1,400	7.15		2.2	1.9	150	6,500
14-Apr-08		23.39			1,000	7.26		13.3	8.7	1,480	10,400
28-Aug-08		24.16			800	7.39		ND	ND	750	18,000
NMWQCC GROUNDWATER STANDARDS								10	750	750	620

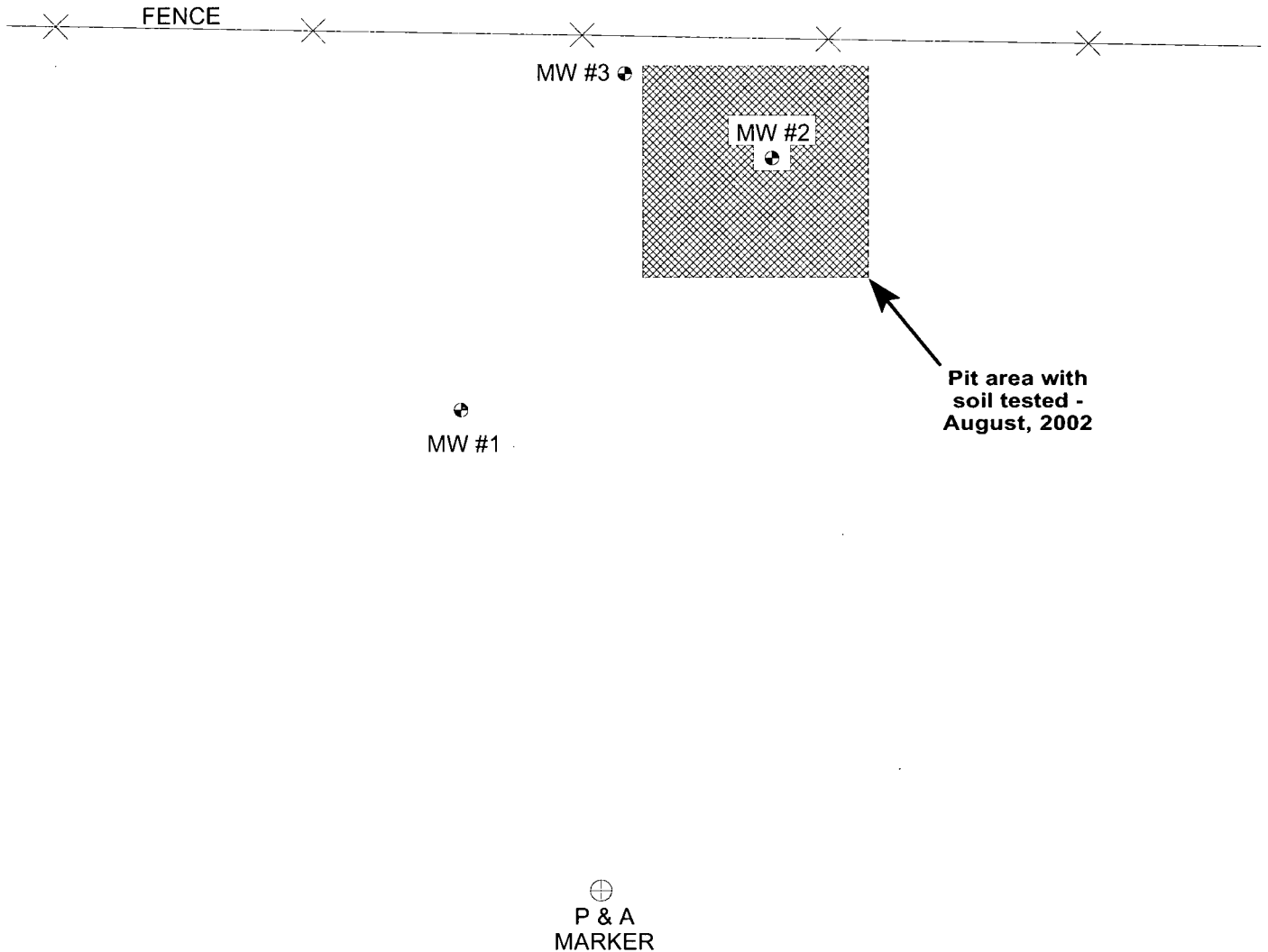
- NOTES :
- 1) RESULTS IN BOLD RED TYPE INDICATE EXCEEDING NMWQCC STANDARDS .
 - 2) RESULTS IN BOLD BLUE TYPE INDICATE BELOW NMWQCC STANDARDS AFTER PREVIOUS RESULTS IN BOLD RED TYPE EXCEEDED .
 - 3) ND INDICATES NOT DETECTED AT THE REPORTING LIMITS (less than regulatory standards of at least a magnitude of 10) .

FIGURE 1



Direction to
Gallegos wash.

OPEN RANGE



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

BP AMERICA PRODUCTION CO.
GCU #229E
NE/4 SE/4 SEC. 21, T28N, 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 INSTALL.
DRAWN BY: NJV
FILENAME: GCU 229E-SM.SKF
DRAFTED: 01-30-07 NJV

SITE MAP

01/07

FIGURE 2 (2nd 1/4, 2008)



**OPEN
RANGE**

MW #4
(63.34)

Direction to
Gallegos wash.

64.00

FENCE

MW #3
(64.62)

64.65

MW #2
(64.76)

65.30

MW #1
(65.81)

Blow pit -
soil tested
Aug., 2002

APPARENT
GROUNDWATER
FLOW DIRECTION
~N15.5E

1 INCH = 30 FT.

0 30 60 FT.

	Top of Well Elevation
MW #1	(100.00)
MW #2	(96.43)
MW #3	(97.86)
MW #4	(86.73)
MW #1	Groundwater Elevation as of 4/14/08.

P & A
MARKER

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

BP AMERICA PRODUCTION CO.

GCU #229E

NE/4 SE/4 SEC. 21, T28N, R12W

SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

PROJECT: MW SAMPLING

DRAWN BY: NJV

FILENAME: 04-14-08-GW.SKF

REVISED: 04-14-08 NJV

**GROUNDWATER
CONTOUR
MAP**

04/08

FIGURE 3 (3rd 1/4, 2008)



Direction to
Gallegos wash.

**OPEN
RANGE**

MW #4
(62.57)

APPARENT
GROUNDWATER
FLOW DIRECTION
~N21.25E

64.00

MW #3
(64.43)

64.50

MW #2
(64.55)

65.00

~N17.75E

MW #1
(65.68)

Blow pit -
soil tested
Aug., 2002

1 INCH = 30 FT.

0 30 60 FT.

	Top of Well Elevation
MW #1	(100.00)
MW #2	(96.43)
MW #3	(97.86)
MW #4	(86.73)
MW #1	Groundwater Elevation as of 8/28/08.
(65.68)	

P & A
MARKER

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

BP AMERICA PRODUCTION CO.

GCU #229E

NE/4 SE/4 SEC. 21, T28N, 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: 08-28-08-GW.SKF

REVISED: 08-28-08 NJV

**GROUNDWATER
CONTOUR
MAP**

08/08

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

CLIENT : **BP AMERICA PROD. CO.**

CHAIN-OF-CUSTODY # : **156394**

GCU # 229E - BLOW PIT
UNIT I, SEC. 21, T28N, R12W

LABORATORY (S) USED : **PACE ANALYTICAL**

Date : **April 14, 2008**

SAMPLER : **N J V**

Filename : **04-14-08.WK4**

PROJECT MANAGER : **N J V**

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
MW - 1	100.00	65.81	34.19	42.00	-	-	-	-	-
MW - 2	96.43	64.76	31.67	42.00	-	-	-	-	-
MW - 3	97.86	64.62	33.24	42.00	-	-	-	-	-
MW - 4	86.73	63.34	23.39	36.88	1518	7.26	1,000	22.8	6.50

INSTRUMENT CALIBRATIONS =

4.01/7.00/10.00	2,800
04/14/08	0800

DATE & TIME =

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 # 4 . MW # 4 contained possible free phase product during development / purging process with strong hydrocarbon odor . Collected BTEX sample from MW # 4 only .

Top of casing MW # 1 ~ 2.40 ft . , MW # 2 ~ 2.60 ft . , MW # 3 ~ 2.50 ft . , MW # 4 ~ 2.25 ft. above grade .

ANALYTICAL RESULTS

Project: GCU #229E
Pace Project No.: 6038712

Sample: MW #4		Lab ID: 6038712001	Collected: 04/14/08 15:18	Received: 04/16/08 08:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST, Water		Analytical Method: EPA 8260						
Benzene	13.3J	ug/L	50.0	50		04/22/08 07:12	71-43-2	
Ethylbenzene	1480	ug/L	50.0	50		04/22/08 07:12	100-41-4	
Toluene	8.7J	ug/L	50.0	50		04/22/08 07:12	108-88-3	
Xylene (Total)	10400	ug/L	300	100		04/22/08 13:08	1330-20-7	
Dibromofluoromethane (S)	100	%	85-114	50		04/22/08 07:12	1868-53-7	
Toluene-d8 (S)	106	%	82-114	50		04/22/08 07:12	2037-26-5	
4-Bromofluorobenzene (S)	99	%	85-119	50		04/22/08 07:12	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	81-118	50		04/22/08 07:12	17060-07-0	
Preservation pH	1.0		1.0	50		04/22/08 07:12		

Date: 04/24/2008 09:44 PM

REPORT OF LABORATORY ANALYSIS

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156394

Chain of Custody Record

Project Name: GCN # 229E

BP BU/AR Region/Enfos Segment: SAN JUAN OC SOUTH

State or Lead Regulatory Agency: NMOC/D/BLM/NEPA

Requested Due Date (mm/dd/yy): 4/28/08

Page 1 of 1

On-site Time: 2:28 Temp: 74°F
Off-site Time: 3:40 Temp: 75°F
Sky Conditions: SUNNY
Meteorological Events:
Wind Speed: 0-5 Direction: WEST

Lab Name: KACE ANALYTICAL		BP/AR Facility No.: WR 192508		Consultant/Contractor: BLASS /URS	
Address: 9608 LOIRET BLVD.		BP/AR Facility Address:		Address: 110 N. FORTTH ST.	
LENEKA, KS 66219		Site Lat/Long:		Bloomfield, NM 87413	
Lab PM: MARY JANE WAPUS		California Global ID No.:		Consultant/Contractor Project No.: 41008752	
Tele/Fax: (913) 599-5665 FAX: (913) 599-1759		Enfos Project No.: 0018W		Consultant/Contractor PM: NELSON VELEZ	
BP/AR PM Contact: MIKE WHELAN, PG		Provision or RCOP (circle one)		Tele/Fax: (505) 632-1199 FAX: (505) 632-3903	
Address: 501 WESTLAKE PARK BLVD.		Phase/WBS:		Report Type & QC Level: STANDARD	
Rm. 28.144B Houston TX 77079		Sub Phase/Task:		E-mail EDD To: b1993-niv@yahoo.com	
Tele/Fax: (281) 366-7485 FAX: (281) 366-7094		Cost Element: 01		Invoice to: Consultant or BP of Atlantic Richfield Co. (circle one)	
Lab Bottle Order No: 15752		Matrix		Requested Analysis	
Sample Description		Date		Time	
MW # 4		1518		4/14/08	
Item No.		Water/Liquid		Soil/Solid	
1		✓		✓	
2					
3					
4					
5					
6					
7					
8					
9					
10					
Relinquished By / Affiliation		Date		Time	
Nelson Velez		4/15/08		1540	
Sampler's Name: NELSON VELEZ		Date		Time	
Sampler's Company: BLASS ENGINEERING, INC.		4/15/08		1540	
Shipment Date: APRIL 15, 2008		Date		Time	
Shipment Method: FED EX OVERNITE		4/15/08		1540	
Shipment Tracking No: 4994348726		Date		Time	
Special Instructions: REPORT BTEX CONSTITUENTS ONLY.		SAN JUAN COUNTY, NM		Date	
Custody Seals In Place Yes X No		Temp Blank Yes No X		Cooler Temperature on Receipt 0.7 °F	
Trip Blank Yes X No		Trip Blank Yes X No		Date	

SAMPLE SUMMARY

Project: GCU #229E
Pace Project No.: 6038712

Lab ID	Sample ID	Matrix	Date Collected	Date Received
6038712001	MW #4	Water	04/14/08 15:18	04/16/08 08:30

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: GCU #229E
Pace Project No.: 6038712

Lab ID	Sample ID	Method	Analysts	Analytes Reported
6038712001	MW #4	EPA 8260	AJA	9

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: GCU #229E
Pace Project No.: 6038712

Method: EPA 8260
Description: 8260 MSV UST, Water
Client: BP-Blagg Engineering
Date: April 24, 2008

General Information:

1 sample was analyzed for EPA 8260. All samples were received in acceptable condition with any exceptions noted below.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Internal Standards:

All internal standards were within QC limits with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: MSV/14124

A matrix spike/matrix spike duplicate was not performed due to insufficient sample volume.

Duplicate Sample:

All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: GCU #229E

Pace Project No.: 6038712

QC Batch: MSV/14124

Analysis Method: EPA 8260

QC Batch Method: EPA 8260

Analysis Description: 8260 MSV UST-WATER

Associated Lab Samples: 6038712001

METHOD BLANK: 315205

Associated Lab Samples: 6038712001

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
Benzene	ug/L	ND	1.0	
Ethylbenzene	ug/L	ND	1.0	
Toluene	ug/L	ND	1.0	
Xylene (Total)	ug/L	ND	3.0	
1,2-Dichloroethane-d4 (S)	%	102	81-118	
4-Bromofluorobenzene (S)	%	98	85-119	
Dibromofluoromethane (S)	%	100	85-114	
Toluene-d8 (S)	%	100	82-114	

LABORATORY CONTROL SAMPLE: 315206

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	10	9.4	94	87-117	
Ethylbenzene	ug/L	10	9.5	95	84-123	
Toluene	ug/L	10	9.5	95	81-124	
Xylene (Total)	ug/L	30	29.4	98	83-125	
1,2-Dichloroethane-d4 (S)	%			101	81-118	
4-Bromofluorobenzene (S)	%			98	85-119	
Dibromofluoromethane (S)	%			100	85-114	
Toluene-d8 (S)	%			100	82-114	

QUALIFIERS

Project: GCU #229E
Pace Project No.: 6038712

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

Pace Analytical is NELAP accredited. Contact your Pace PM for the current list of accredited analytes.

BATCH QUALIFIERS

Batch: MSV/14124

[1] A matrix spike/matrix spike duplicate was not performed for this batch due to insufficient sample volume.

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: GCU #229E
Pace Project No.: 6038712

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
6038712001	MW #4	EPA 8260	MSV/14124		

Date: 04/24/2008 09:44 PM

REPORT OF LABORATORY ANALYSIS

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Sample Condition Upon Receipt

Client Name: BP BLAGE

Project #

6038712

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☒ yes ☐ no Seals intact: ☒ yes ☐ no

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other _____

Thermometer Used T-168 / ~~T-169~~

Type of Ice: Wet Blue None ☐

☐ Samples on ice, cooling process has begun

Cooler Temperature 0.7

Biological Tissue is Frozen: Yes No

Temp should be above freezing to 6°C

Comments:

Optional
Proj. Due Date: 4/28/08
Proj. Name: GCU #2796
Date and Initials of person examining contents: EW 4/16
S: 1511 E: 1522

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient Volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix: <u>WT</u>		
All containers needing preservation have been checked.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.
All containers needing preservation are found to be in compliance with EPA recommendation.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
exceptions: <u>VOA</u> coliform, TOC, O&G, WI-DRO (water)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Initial when completed
		Lot # of added preservative
Samples checked for dechlorination:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	14.
Headspace in VOA Vials (>6mm):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	15.
Trip Blank Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	16.
Trip Blank Custody Seals Present	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased): <u>031708</u>		

Client Notification/ Resolution:

Field Data Required?

Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: mw 4/17/08

Date: _____

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers)

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & /OR SAMPLING DATA

CLIENT : **BP AMERICA PROD. CO.**

CHAIN-OF-CUSTODY # : **N / A**

GCU # 229E - BLOW PIT

LABORATORY (S) USED : **HALL ENVIRONMENTAL**

UNIT I, SEC. 21, T28N, R12W

Date : **August 28, 2008**

SAMPLER : **N J V**

Filename : **08-28-08.WK4**

PROJECT MANAGER : **N J V**

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
MW - 1	100.00	65.68	34.32	42.00	-	-	-	-	-
MW - 2	96.43	64.55	31.88	42.00	-	-	-	-	-
MW - 3	97.86	64.43	33.43	42.00	-	-	-	-	-
MW - 4	86.73	62.57	24.16	36.88	1240	7.39	800	19.0	6.25

INSTRUMENT CALIBRATIONS =	4.01/7.00/10.00	2,800
DATE & TIME =	08/25/08	0730

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 # 4 . MW # 4 contained possible free phase product during development / purging process with strong hydrocarbon odor . Collected BTEX sample from MW # 4 only .

Top of casing MW # 1 ~ 2.40 ft. , MW # 2 ~ 2.60 ft. , MW # 3 ~ 2.50 ft. , MW # 4 ~ 2.25 ft. above grade .

on-site	11:44	temp	80
off-site	12:57	temp	84
sky cond.	Mostly sunny		
wind speed	0-5	direct.	southwest

Hall Environmental Analysis Laboratory, Inc.

Date: 15-Sep-08

CLIENT: Blagg Engineering
Lab Order: 0808491
Project: GCU #229E
Lab ID: 0808491-01

Client Sample ID: MW #4
Collection Date: 8/28/2008 12:40:00 PM
Date Received: 8/29/2008
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: BDH
Benzene	ND	10		µg/L	10	9/11/2008 11:47:09 AM
Toluene	ND	10		µg/L	10	9/11/2008 11:47:09 AM
Ethylbenzene	750	100		µg/L	100	9/10/2008 2:50:41 PM
Xylenes, Total	18000	200		µg/L	100	9/10/2008 2:50:41 PM
Surr: 4-Bromofluorobenzene	97.5	80.4-119		%REC	100	9/10/2008 2:50:41 PM

Qualifiers: * Value exceeds Maximum Contaminant Level
E Value above quantitation range
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

QA/QC SUMMARY REPORT

Client: Blagg Engineering
Project: GCU #229E

Work Order: 0808491

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8260: Volatiles Short List

Sample ID: 5ml rb

MBLK

Batch ID: R30168 Analysis Date: 9/10/2008 9:10:32 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-b

LCS

Batch ID: R30168 Analysis Date: 9/10/2008 11:50:00 AM

Benzene	20.84	µg/L	1.0	104	86.8	120
Toluene	21.20	µg/L	1.0	106	64.1	127

Sample ID: 100ng lcsd

LCSD

Batch ID: R30168 Analysis Date: 9/10/2008 11:45:58 PM

Benzene	20.84	µg/L	1.0	104	86.8	120	0.00192	20
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Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name **BLAGG**

Date Received:

8/29/2008

Work Order Number 0808491

Received by: **AT**

Checklist completed by:

Signature

Date

Sample ID labels checked by:

Initials

Matrix:

Carrier name **UPS**

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 checked="" type="checkbox"/>	Yes <input 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"/>	

Container/Temp Blank temperature?

2°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____