3R - 410

AGWMR

AUGUST 2010

3R410

BP AMERICA PRODUCTION CO.

GROUNDWATER REMEDIATION REPORT

SAMMONS GC F #1
(A) SECTION 18, T29N, R9W, NMPM
SAN JUAN COUNTY, NEW MEXICO

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

AUGUST 2010

PREPARED BY:
BLAGG ENGINEERING, INC.

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

BP AMERICA PRODUCTION COMPANY
SAMMONS GC F # 1 – Production Tank Pit
NE/4 NE/4, Sec. 18, T29N, R9W

Remediation via Excavation Date: 5/28/09

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

Monitor Well Sampling Dates: 3/31/09, 5/16/09, 10/26/09, 2/24/10, 5/12/10

Site History:

A groundwater impact was identified following closure of a production tank pit in August 2004. Documentation for this work and subsequent groundwater monitoring data for the site have previously been submitted for New Mexico Oil Conservation Division (**NMOCD**) review. The reporting herein is for site monitoring from March 2009 to May 2010.

Groundwater Monitor Well Sampling Procedures:

Each monitor well was developed by hand-bailing, using new disposable bailers after installation. Prior to sample collections, each monitor well was 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 well site. The BGT contents were then disposed through approved NMOCD operational procedures for removal of produced fluids.

Soil and Groundwater Abatement:

On May 28, 2009, excavation of the source area was conducted using a trackhoe (Figure 2). Groundwater depth was recorded at approximately five (5) feet below surface grade during the removal of impacted soils. The excavation perimeter was measured at approximately 25 X 28 X 6 feet depth. Approximately 96 cubic yards of soil were removed and transported to BP's Crouch Mesa Facility.

MW #2R was installed on October 20, 2009 and quarterly sampling was initiated thereafter. Boring log of MW #2R along with its well completion information is contained within this report.

Water Quality and Gradient Information:

MW #2R has tested below the New Mexico Water Quality Control Commission (**NMWQCC**) standards for at least four (4) consecutive sampling events. Down gradient delineation appears to have been achieved, based on test results of MW #3A. A summary of BTEX laboratory analytical results is 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 (Figure 3 through Figure 7) reveal the relative elevations from the site wells have consistently shown an apparent southeast flow direction toward MW #3A.

Summary and/or Recommendations:

Hydrocarbon impacted soils and groundwater at the site appear to have been remediated via excavation. All site monitor wells tested at non-detectable or below NMWQCC's standards for BTEX for at least four ($) consecutive sampling events; therefore, meeting sections 2.1, 2.3, and 2.7 of BP's Groundwater Management Plan (GMP). Permanent site closure is recommended. Following approval by the NMOCD, site monitor wells will be abandoned pursuant to the approved GMP.

BP AMERICA PROD. CO. GROUNDWATER LAB RESULTS

SUBMITTED BY BLAGG ENGINEERING, INC.

SAMMONS GC F #1 - PROD. TANK PIT
UNIT A, SEC. 18, T29N, R9W

REVISED DATE: May 26 2010

FILENAME: (SF1-2Q10.WK4) NJV

								BTEX EPA METHOD 8021B (ppb)			
SAMPLE DATE	WELL NAME or No.	D.T.W. (ft)	T.D. (ft)	TDS (mg/L)	COND. umhos	pH	PRODUCT (ft)	Benzene	Toluene	Ethyl Benzene	Total Xylene
19-Sep-07	MW #1A	5.25	15.00		700	6.86		ND	ND	ND	ND
14-Nov-06	MW #2A	6.05	13.00		1,300	6.96		**10**	ND	14	**1,000**
26-Feb-07		5.92			1,500	6.91		**ND**	ND	ND	**670**
22-May-07		3.86			900	6.78		**14**	ND	ND	**270**
16-Aug-07		5.12			1,200	6.73		**4.9**	ND	7.8	**2,300**
03-Dec-07		3.83	11.22		1,200	7.12		**3.7**	3.4	2.1	**1,200**
04-Apr-08		2.59			1,000	6.90		**2.3**	ND	1.2	**1,100**
27-Jun-08		1.31			1,200	6.97		**3.8**	ND	ND	**534**
25-Aug-08		2.65			1,100	7.03		**3.0**	ND	ND	**1,700**
"	duplicate	"			"	"		**3.3**	ND	ND	**1,700**
19-Dec-08		4.09			900	7.30		**2.2**	ND	ND	**740**
31-Mar-09		4.45			800	7.22		**3.3**	1.1	1.4	**240**
16-May-09		1.99			900	7.05		**9.7**	2.2	1.5	**570**
26-Oct-09	MW # 2R	3.72	10.93		1,600	7.25		**ND**	6.0	16	**330**
24-Feb-10		2.96			2,900	7.37		**1.0**	ND	1.2	**16**
12-May-10		2.63			2,100	7.35		**2.6**	ND	3.4	**9.3**
19-Sep-07	MW #3A	3.11	13.50		900	6.74		ND	ND	ND	ND
03-Dec-07		3.49			900	7.11		ND	ND	ND	ND
04-Apr-08		2.15			900	6.88		ND	ND	ND	ND
27-Jun-08		0.94			800	7.02		ND	ND	ND	ND
12-May-10		2.62			900	7.22		ND	ND	ND	ND
					NMWQCC GROUNDWATER STANDARDS			**10**	**750**	**750**	**620**

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

2) **RESULTS IN BOLD BLUE TYPE INDICATE BELOW NMWQCC STANDARDS AFTER PROCEEDING RESULTS 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

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.

SAMMONS GC F # 1

NE/4 NE/4 SEC. 18, T29N, R9W

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: GW MONITORING

DRAWN BY: NJV

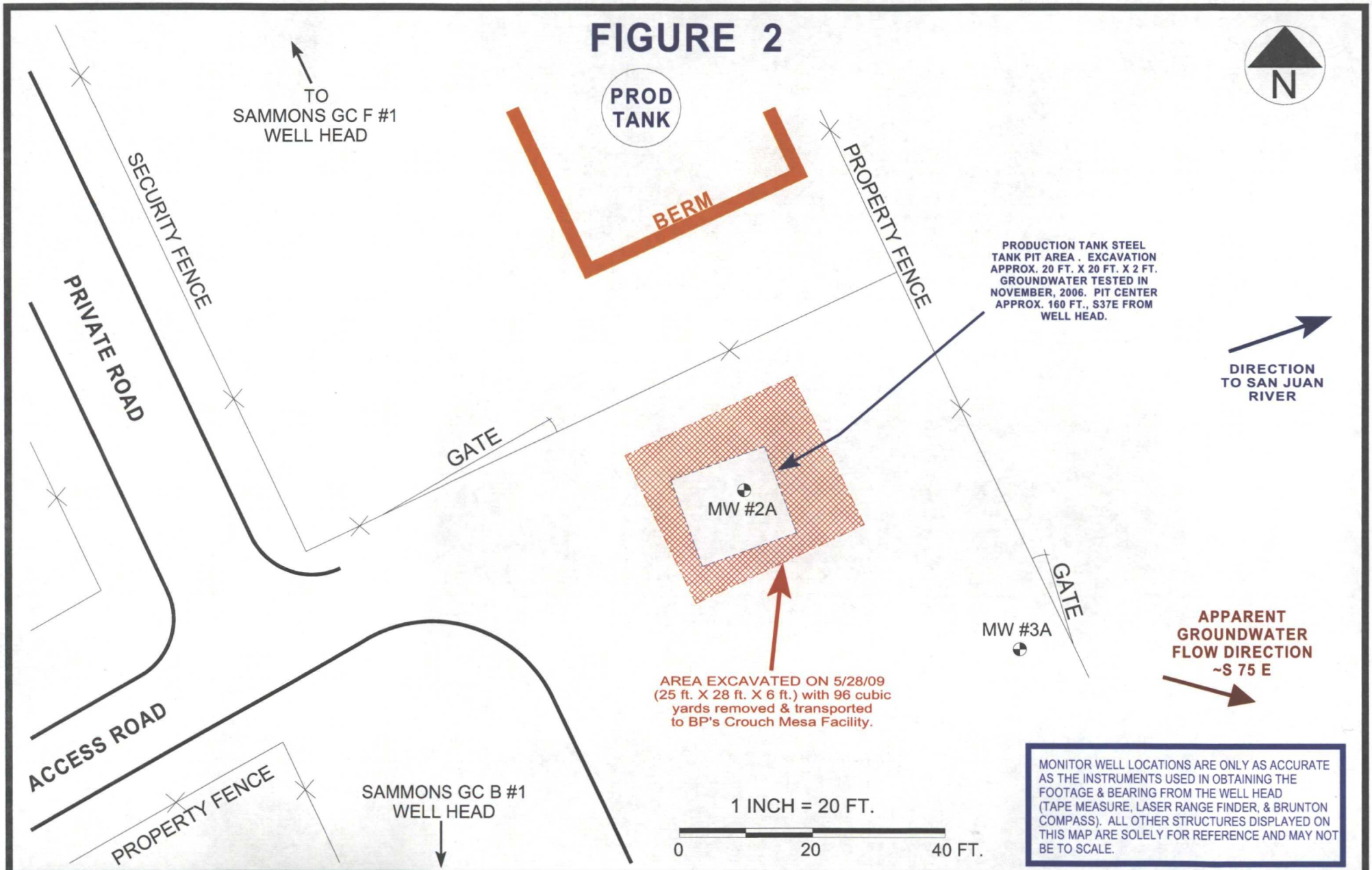
FILENAME: SAMMONS GC F 1-SM3.SKF

REVISED: 08-03-10

SITE MAP

03/09

FIGURE 2



BP AMERICA PRODUCTION CO.
SAMMONS GC F # 1
NE/4 NE/4 SEC. 18, T29N, R9W
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: REMEDIATION
DRAWN BY: NJV
FILENAME: SAMMONS GC F 1-RM-1A.SKF
REVISED: 08-07-09

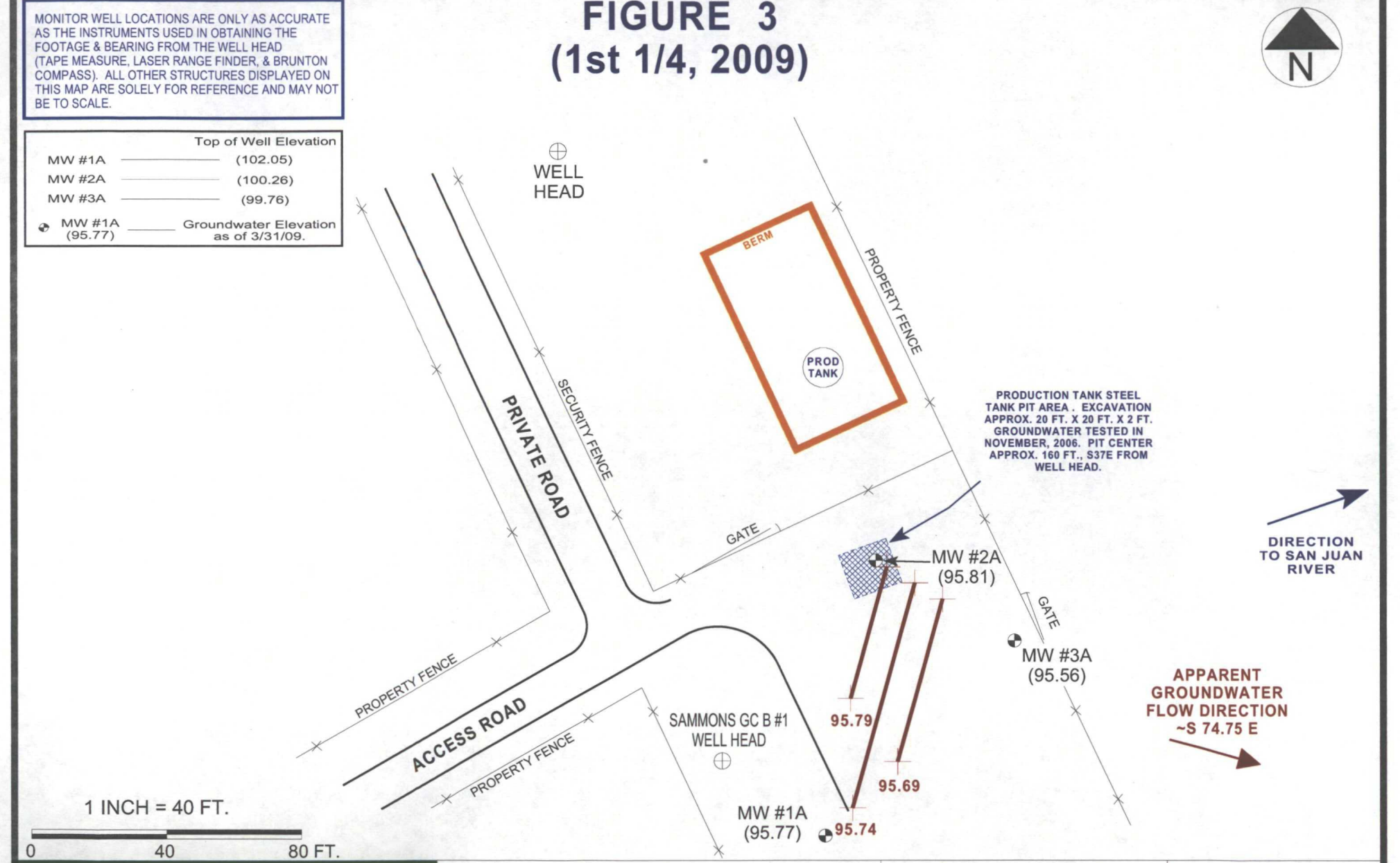
SOIL/GROUNDWATER REMEDIATION SCHEMATIC
05/09

FIGURE 3
(1st 1/4, 2009)

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

	Top of Well Elevation
MW #1A	(102.05)
MW #2A	(100.26)
MW #3A	(99.76)

MW #1A (95.77) ——— Groundwater Elevation as of 3/31/09.



BP AMERICA PRODUCTION CO.

SAMMONS GC F # 1

NE/4 NE/4 SEC. 18, T29N, R9W

SAN JUAN COUNTY, NEW MEXICO

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CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

PROJECT: MW SAMPLING

DRAWN BY: NJV

FILENAME: 03-31-09-GW.SKF

REVISED: 04-01-09

GROUNDWATER CONTOUR MAP

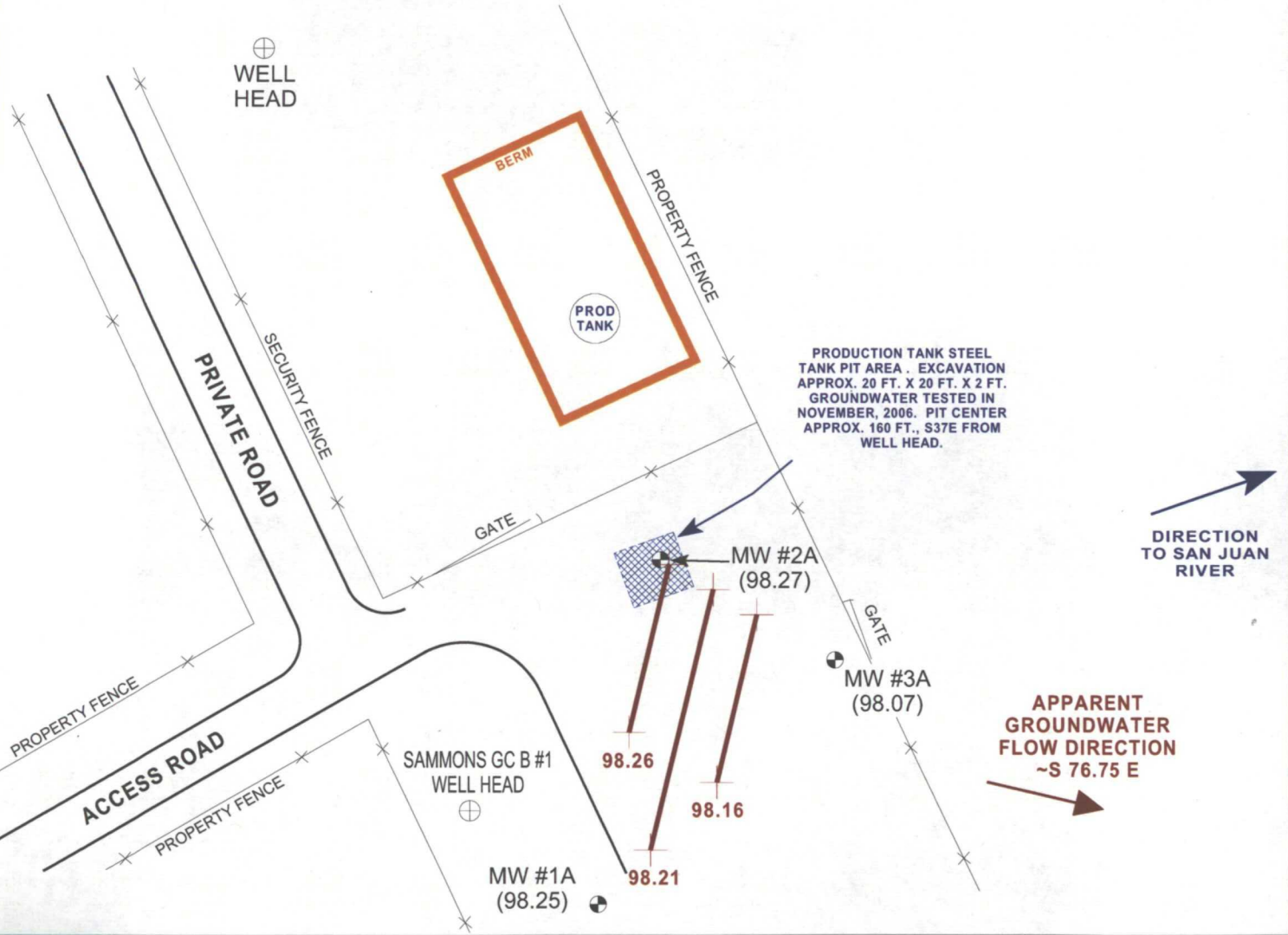
03/09

FIGURE 4
(2nd 1/4, 2009)

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

	Top of Well Elevation
MW #1A	(102.05)
MW #2A	(100.26)
MW #3A	(99.76)

MW #1A (97.25) — Groundwater Elevation as of 5/16/09.



BP AMERICA PRODUCTION CO.
SAMMONS GC F # 1
NE/4 NE/4 SEC. 18, T29N, R9W
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: 05-16-09-GW.SKF
REVISED: 05-23-09

GROUNDWATER CONTOUR MAP
05/09

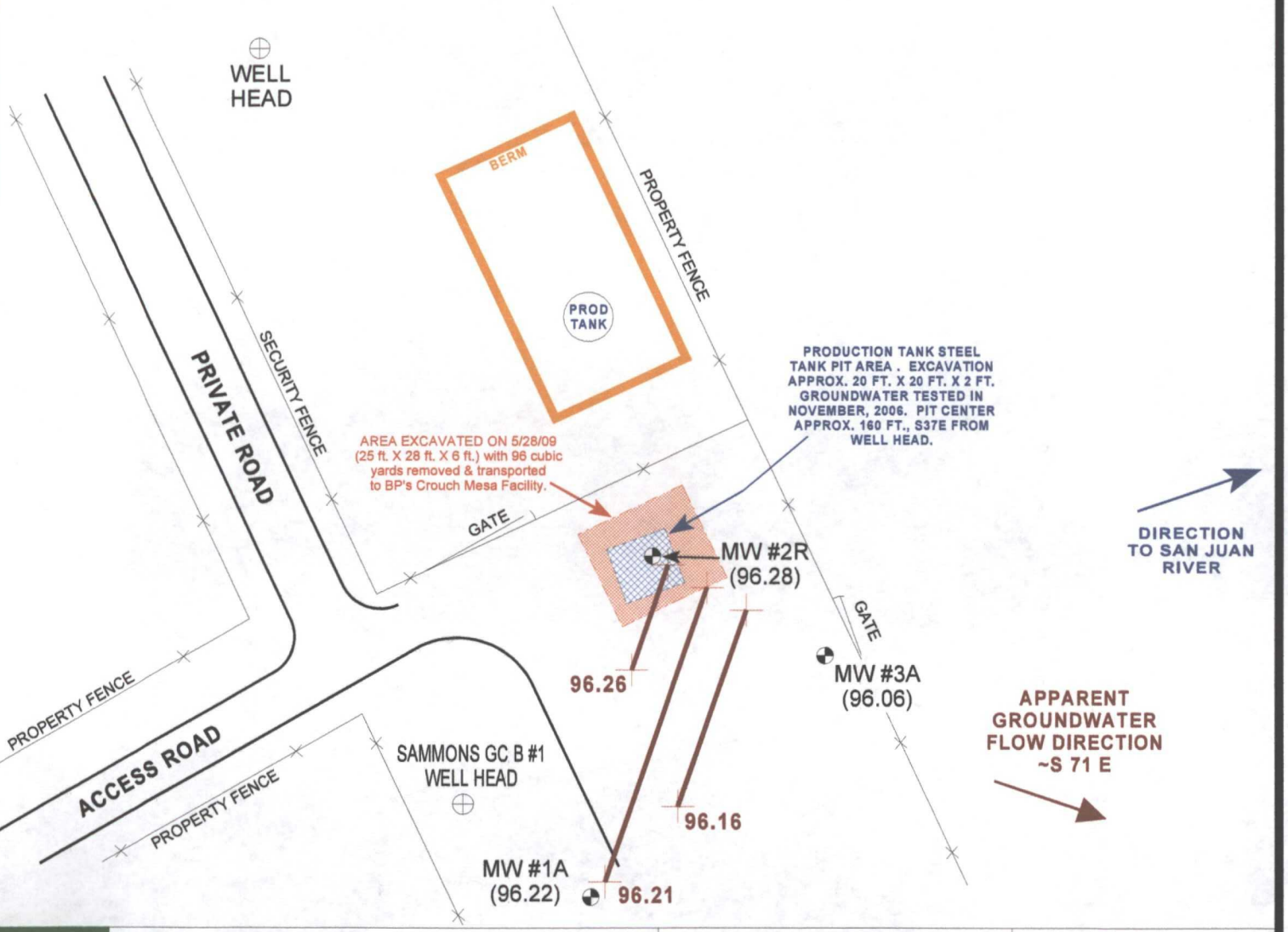
FIGURE 5
(4th 1/4, 2009)

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

	Top of Well Elevation
MW #1A	(102.04)
MW #2R	(100.00)
MW #3A	(99.74)

MW #1A (96.22) — Groundwater Elevation as of 5/16/09.

Well tops resurveyed on 10/22/09.



BP AMERICA PRODUCTION CO.
SAMMONS GC F # 1
NE/4 NE/4 SEC. 18, T29N, R9W
SAN JUAN COUNTY, NEW MEXICO

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

PROJECT: MW SAMPLING
DRAWN BY: NJV
FILENAME: 10-26-09-GW.SKF
REVISED: 10-26-09

GROUNDWATER CONTOUR MAP
10/09

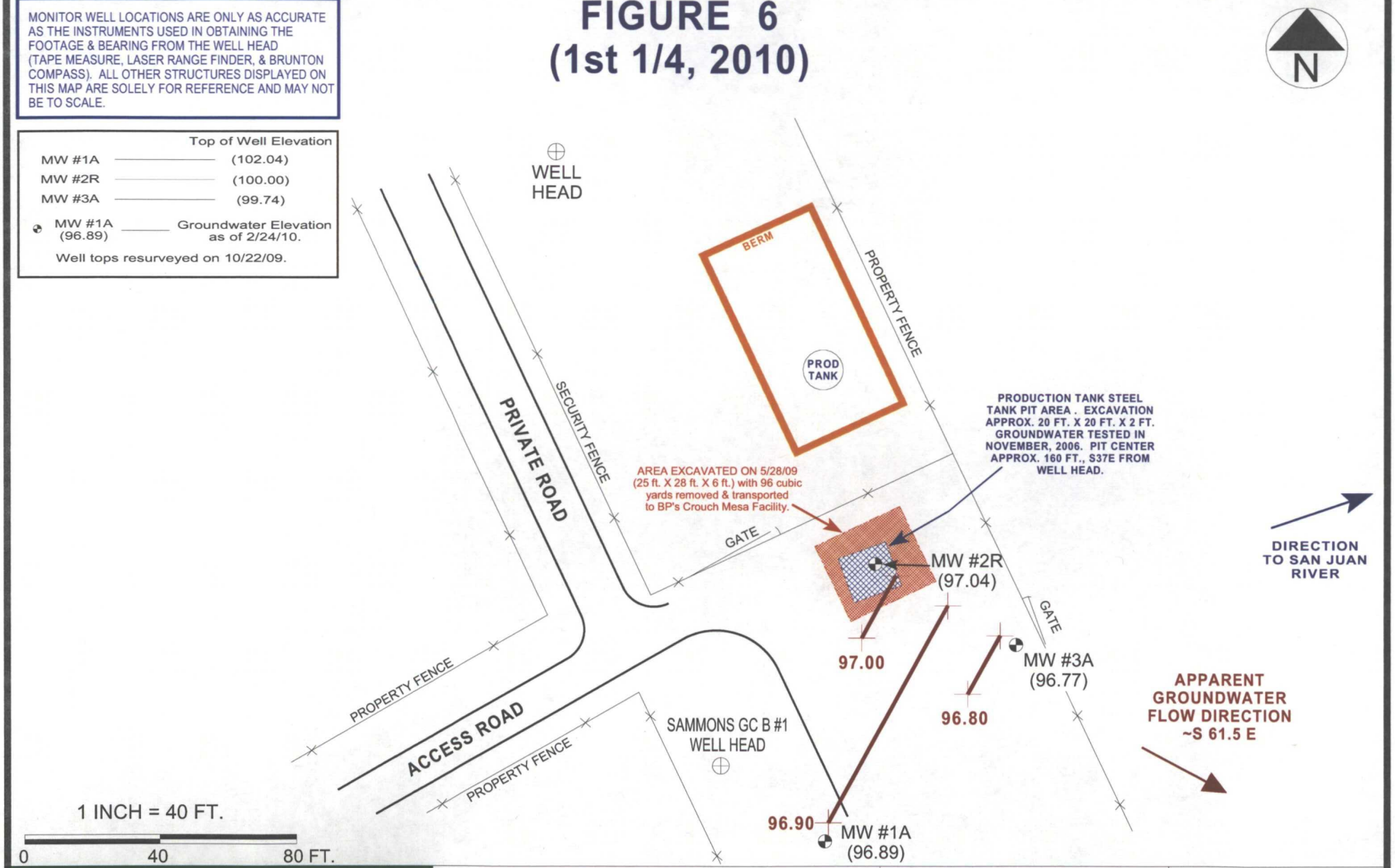
FIGURE 6
(1st 1/4, 2010)

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

	Top of Well Elevation
MW #1A	(102.04)
MW #2R	(100.00)
MW #3A	(99.74)

MW #1A (96.89) ——— Groundwater Elevation as of 2/24/10.

Well tops resurveyed on 10/22/09.



BP AMERICA PRODUCTION CO.

SAMMONS GC F # 1

NE/4 NE/4 SEC. 18, T29N, R9W

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: 02-24-10-GW.SKF

REVISED: 02-24-10

GROUNDWATER CONTOUR MAP

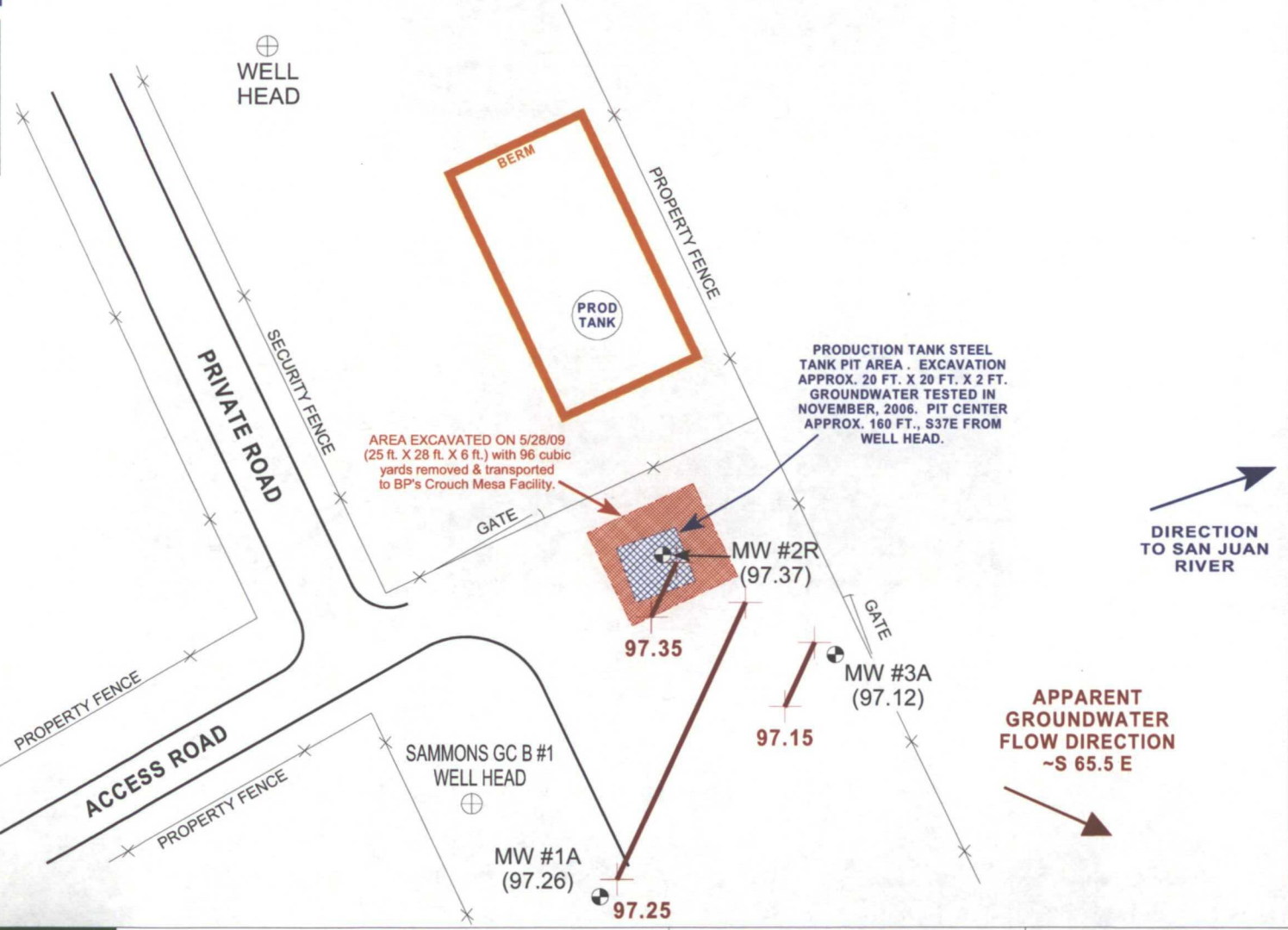
02/10

FIGURE 7
(2nd 1/4, 2010)

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

	Top of Well Elevation
MW #1A	(102.04)
MW #2R	(100.00)
MW #3A	(99.74)

MW #1A (97.26) — Groundwater Elevation as of 5/12/10.



BP AMERICA PRODUCTION CO.

SAMMONS GC F # 1

NE/4 NE/4 SEC. 18, T29N, R9W

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: 05-12-10-GW.SKF

REVISED: 05-12-10

GROUNDWATER CONTOUR MAP

05/10

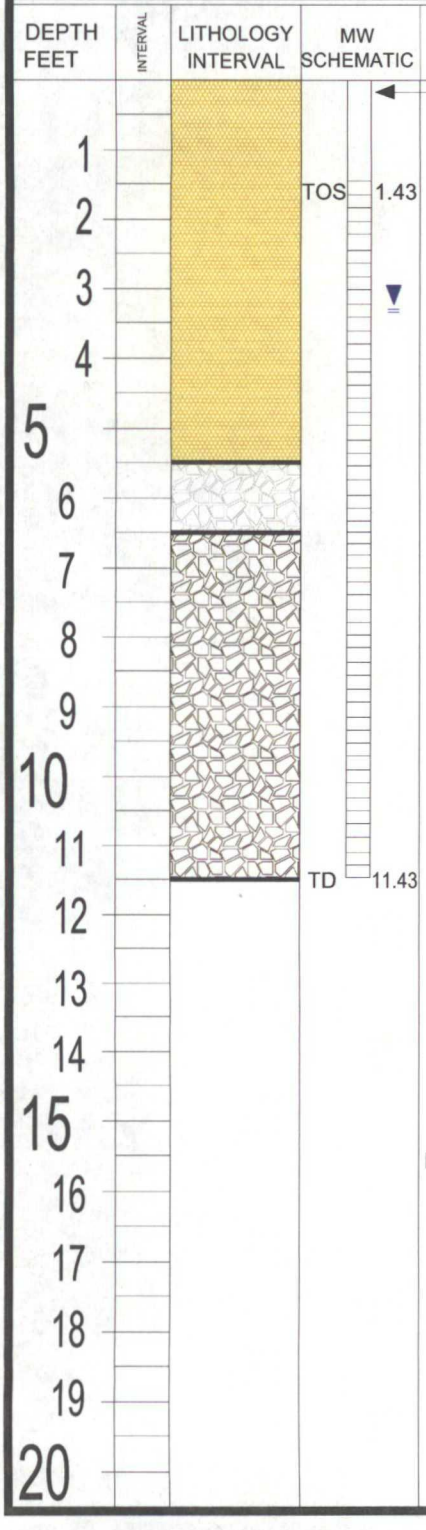
BLAGG ENGINEERING, INC.
P.O. BOX 87
BLOOMFIELD, NM 87413
(505) 632-1199

MW #2R

BORE / TEST HOLE REPORT

BORING #.....	BH - 4
MW #.....	2R
PAGE #.....	4
DATE STARTED	10/20/09
DATE FINISHED	10/20/09
OPERATOR.....	KP
PREPARED BY	NJV

CLIENT: BP AMERICA PRODUCTION CO.
LOCATION NAME: SAMMONS GC F #1 UNIT A, SEC. 18, T29N, R9W
CONTRACTOR: BLAGG ENGINEERING, INC. / KYVEK ENERGY SERVICES, INC.
EQUIPMENT USED: MOBILE DRILL RIG (CME 75)
BORING LOCATION: 156 FT., S37.5E FROM WELL HEAD.



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROX. 0.50 FEET BELOW GRADE.

DARK YELLOWISH BROWN SAND AND GRAVEL (FILL MATERIAL), NON COHESIVE, SLIGHTLY MOIST TO SATURATED, FIRM, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (0.0 - 5.5 FT. BELOW GRADE).

DEPTH TO WATER APPROX. 3.22 FT. FROM GROUND SURFACE MEASURED ON 10/26/09.

DARK GRAY TO GRAYISH BLACK SAND AND GRAVEL, NON COHESIVE, SATURATED, FIRM, APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (5.5 - 6.5 FT. BELOW GRADE).

SAME AS ABOVE EXCEPT GRAYISH TO OLIVE BLACK AND WITH NO APPARENT HYDRO - CARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (6.5 - 11.5 FT. BELOW GRADE).

NOTES:
- SAND.
- SAND AND GRAVEL.

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

Monitor well consist of 2 inch PVC piping - casing from 0.50 ft. to 1.43 ft. below grade, 0.010 slotted screen between 1.43 to 11.43 ft. below grade, sand packed annular to 1.0 ft. below grade. Completed with concreting flush mount well cover encompassing 0.4 ft. of casing below grade casing and secured with locking cap and padlock.

DRAWING: SAMMONS GC F 1 MW 2R-BH4. SKF | DATE: 11/23/09 | DWN BY: NJV

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : N / A

SAMMONS GC F # 1 - PROD. TANK PIT
UNIT A, SEC. 18, T29N, R9W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : March 31, 2009

SAMPLER : N J V

Filename : 03-31-09.WK4

PROJECT MANAGER : N J V

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
1A	102.05	95.77	6.28	15.00	-	-	-	-	-
2A	100.26	95.81	4.45	11.22	1110	7.22	800	11.6	1.75
3A	99.76	95.56	4.20	13.50	-	-	-	-	-

INSTRUMENT CALIBRATIONS =	4.01/7.00/10.00	2,800
DATE & TIME =	03/31/09	0945

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 ".

Fair recovery in MW #2A . Collected sample from MW # 2A only for BTEX analysis .

Top of casing MW # 1A ~ 2.40 ft., MW # 2A ~ 0.20 ft. below grade , MW # 3A ~ 0.35 ft. below grade .

on-site	10:24	temp	45 F
off-site	11:20	temp	48 F
sky cond.	Sunny		
wind speed	0-10	direct.	W

Hall Environmental Analysis Laboratory, Inc.

Date: *10-Apr-09*

CLIENT:	Blagg Engineering	**Client Sample ID:**	MW #2A
Lab Order:	0904021	**Collection Date:**	3/31/2009 11:10:00 AM
Project:	Sammons GC F #1	**Date Received:**	4/1/2009
Lab ID:	0904021-01	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **DAM**
Benzene	3.3	1.0		µg/L	1	4/7/2009 3:13:54 PM
Toluene	1.1	1.0		µg/L	1	4/7/2009 3:13:54 PM
Ethylbenzene	1.4	1.0		µg/L	1	4/7/2009 3:13:54 PM
Xylenes, Total	240	20		µg/L	10	4/8/2009 2:35:48 PM
Surr: 4-Bromofluorobenzene	105	65.9-130		%REC	1	4/7/2009 3:13:54 PM

Qualifiers:

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

CHAIN-OF-CUSTODY RECORD

QA / QC Package:
Std ☒ Level 4 ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: BLAGG ENGR. / BP AMERICA

Project Name: SAMMONS GC F #1

Address: P.O. BOX 87
BLFD., N.M. 87413

Project #:

Project Manager: NELSON VELEZ

Phone #: 632-1199

Sampler: NELSON VELEZ

Fax #:

Sample Temperature: 2°

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	Preservative HCl	HEAL No. 0904021	(BTEX) ~~+ MTBE + TMB's~~ (8021B)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles or Headspace (Y or N)
3/31/09	1110	WATER	MW #2A	2-40ml			✓	-1	Y																

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)
4/1/09	0830		4/1/09 1645
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)

Remarks:

QA/QC SUMMARY REPORT

Client: Blagg Engineering
Project: Sammons GC F #1 **Work Order:** 0904021

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: Volatiles									
Sample ID: 5ML RB		*MBLK*			Batch ID:	**R33112**	Analysis Date:		4/6/2009 10:05:03 AM
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Sample ID: 5ML RB		*MBLK*			Batch ID:	**R33137**	Analysis Date:		4/7/2009 9:38:13 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:	**R33112**	Analysis Date:		4/6/2009 8:13:23 PM
Benzene	21.79	µg/L	1.0	109	85.9	113			
Toluene	22.74	µg/L	1.0	114	86.4	113			S
Ethylbenzene	21.76	µg/L	1.0	109	83.5	118			
Xylenes, Total	64.38	µg/L	2.0	107	83.4	122			
Sample ID: 100NG BTEX LCS		*LCS*			Batch ID:	**R33137**	Analysis Date:		4/7/2009 8:19:01 PM
Benzene	21.36	µg/L	1.0	107	85.9	113			
Toluene	22.01	µg/L	1.0	110	86.4	113			
Ethylbenzene	21.38	µg/L	1.0	107	83.5	118			
Xylenes, Total	63.41	µg/L	2.0	106	83.4	122			
Sample ID: 100NG BTEX LCSD		*LCSD*			Batch ID:	**R33137**	Analysis Date:		4/7/2009 8:49:21 PM
Benzene	20.65	µg/L	1.0	103	85.9	113	3.39	27	
Toluene	20.87	µg/L	1.0	104	86.4	113	5.31	19	
Ethylbenzene	20.36	µg/L	1.0	102	83.5	118	4.86	10	
Xylenes, Total	60.47	µg/L	2.0	101	83.4	122	4.75	13	

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name BLAGG | Date Received: 4/1/2009

Work Order Number 0904021 | Received by: AT

Checklist completed by: [signature] Signature | 4/1/09 Date | Sample ID labels checked by: [initials] Initials

Matrix: | Carrier name: Greyhound

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

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : N / A

SAMMONS GC F # 1 - PROD. TANK PIT
UNIT A, SEC. 18, T29N, R9W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : **May 16, 2009**

SAMPLER : N J V

Filename : **05-16-09.WK4**

PROJECT MANAGER : N J V

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
1A	102.05	98.25	3.80	15.00	-	-	-	-	-
2A	100.26	98.27	1.99	11.22	1050	7.05	900	21.6	4.50
3A	99.76	98.07	1.69	13.50	-	-	-	-	-

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

NOTES : Volume of water purged from well prior to sampling; V = pi 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_i = (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 #2A . Collected sample for BTEX per US EPA Method 8021B from MW # 2A only.

Top of casing MW # 1A ~ 2.40 ft., MW # 2A ~ 0.20 ft. below grade , MW # 3A ~ 0.35 ft. below grade .

on-site	10:15	temp	72 F
off-site	11:08	temp	77 F
sky cond.	Mostly sunny		
wind speed	0 - 5	direct.	W

Hall Environmental Analysis Laboratory, Inc.

Date: *02-Jun-09*

CLIENT:	Blagg Engineering	**Client Sample ID:**	MW #2A
Lab Order:	0905357	**Collection Date:**	5/16/2009 10:50:00 AM
Project:	Sammons GC F #1	**Date Received:**	5/20/2009
Lab ID:	0905357-01	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **DAM**
Benzene	9.7	1.0		µg/L	1	5/29/2009 12:08:45 PM
Toluene	2.2	1.0		µg/L	1	5/29/2009 12:08:45 PM
Ethylbenzene	1.5	1.0		µg/L	1	5/29/2009 12:08:45 PM
Xylenes, Total	570	20		µg/L	10	5/28/2009 11:25:55 PM
Surr: 4-Bromofluorobenzene	110	65.9-130		%REC	1	5/29/2009 12:08:45 PM

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

CHAIN-OF-CUSTODY RECORD

QA / QC Package:
Std ☒ Level 4 ☐
Other:

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

Client: BLAGG ENGL. / BP AMERICA
Address: P.O. BOX 87 BLFD., NM 87413
Phone #: 632-1199
Fax #:

Project Name: SAMMONS GC F #1
Project #: 96
Project Manager: NELSON VELEZ
Sampler: NELSON VELEZ
Sample Temperature: 3.8

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	Preservative HCl	HEAL No.
5/16/09	1050	WATER	MW #2A	2-40ml			✓	0905357-1

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

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)
5/19/09	1425		5/20/09 850
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)

Remarks:

QA/QC SUMMARY REPORT

Client: Blagg Engineering
Project: Sammons GC F #1 **Work Order:** 0905357

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: Volatiles									
Sample ID: 5ML RB		*MBLK*			Batch ID:	**R33871**	Analysis Date:		5/28/2009 8:39:43 AM
Benzene	ND	µg/L	1.0						
Toluene	ND	µg/L	1.0						
Ethylbenzene	ND	µg/L	1.0						
Xylenes, Total	ND	µg/L	2.0						
Sample ID: 100NG BTEX LCS		*LCS*			Batch ID:	**R33871**	Analysis Date:		5/29/2009 3:29:31 AM
Benzene	20.76	µg/L	1.0	104	85.9	113			
Toluene	20.87	µg/L	1.0	102	86.4	113			
Ethylbenzene	21.00	µg/L	1.0	104	83.5	118			
Xylenes, Total	63.28	µg/L	2.0	105	83.4	122			
Sample ID: 100NG BTEX LCSD		*LCSD*			Batch ID:	**R33871**	Analysis Date:		5/29/2009 4:00:07 AM
Benzene	20.80	µg/L	1.0	104	85.9	113	0.183	27	
Toluene	20.71	µg/L	1.0	101	86.4	113	0.750	19	
Ethylbenzene	20.97	µg/L	1.0	104	83.5	118	0.152	10	
Xylenes, Total	62.85	µg/L	2.0	105	83.4	122	0.685	13	

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name BLAGG | Date Received: 5/20/2009

Work Order Number 0905357 | Received by: TLS

Checklist completed by: _____ 5/20/09 | Sample ID labels checked by: _____

Signature | Date | Initials

Matrix: | Carrier name: Greyhound

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

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : N / A

SAMMONS GC F # 1 - PROD. TANK PIT
UNIT A, SEC. 18, T29N, R9W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : **October 26, 2009**

DEVELOPER / SAMPLER : N J V

Filename : **10-26-09.WK4**

PROJECT MANAGER : N J V

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
1A	102.04	96.22	5.82	15.00	-	-	-	-	-
2R	100.00	96.28	3.72	10.93	1325	7.25	1,600	17.2	3.50
3A	99.74	96.06	3.68	13.50	-	-	-	-	-

INSTRUMENT CALIBRATIONS =	4.01/7.00/10.00	2,800
DATE & TIME =	10/26/09	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 ".

MW # 2R - excellent recovery , dark yellowish orange color in appearance . Collected sample from MW # 2R and analyzed for BTEX per US EPA Method 8021B .

Monitor well top elevations surveyed on 10 / 22 / 09 .
Top of casing MW # 1A ~ 2.40 ft. , MW # 2R ~ 0.50 ft. below grade , MW # 3A ~ 0.35 ft. below grade .

on-site	12:50	temp	48 F
off-site	1:40	temp	50 F
sky cond.	mostly sunny		
wind speed	0 - 5	direct.	SE

Hall Environmental Analysis Laboratory, Inc.

Date: *04-Nov-09*

CLIENT:	Blagg Engineering	**Client Sample ID:**	MW #2R
Lab Order:	0910478	**Collection Date:**	10/26/2009 1:25:00 PM
Project:	Sammons GC F #1	**Date Received:**	10/27/2009
Lab ID:	0910478-01	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **DAM**
Benzene	ND	5.0		µg/L	5	10/30/2009 11:07:21 AM
Toluene	6.0	5.0		µg/L	5	10/30/2009 11:07:21 AM
Ethylbenzene	16	5.0		µg/L	5	10/30/2009 11:07:21 AM
Xylenes, Total	330	10		µg/L	5	10/30/2009 11:07:21 AM
Surr: 4-Bromofluorobenzene	99.3	65.9-130		%REC	5	10/30/2009 11:07:21 AM

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

Chain-of-Custody Record

Client: BLAGG ENER. / BP AMERICA

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

Phone #: (505) 632-1199

email or Fax#:

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

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: SAMMONS GC F #1

Project #:

Project Manager: NELSON VELEZ

Sampler: NELSON VELEZ

On Ice: ☑ Yes ☐ No

Sample Temperature: 1.9

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

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 0910147	Analysis Request: BTEX + MTBE + TMBs (8021B)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
10/26/09	1325	WATER	MW #2R	2-40ml	HCl & COOL	-1	✓															

Date:	Time:	Relinquished by:	Received by:	Date	Time
10/26/09	1630				
Date:	Time:	Relinquished by:	Received by:	10/27/09	940

Remarks:

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

QA/QC SUMMARY REPORT

Client: Blagg Engineering
Project: Sammons GC F #1 **Work Order:** 0910478

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: Volatiles											
Sample ID: 5ML RB		*MBLK*				Batch ID:	**R35953**	Analysis Date:	10/29/2009 8:23:38 AM		
Benzene	ND	µg/L	1.0								
Toluene	ND	µg/L	1.0								
Ethylbenzene	ND	µg/L	1.0								
Xylenes, Total	ND	µg/L	2.0								
Sample ID: 5ML RB		*MBLK*				Batch ID:	**R35973**	Analysis Date:	10/30/2009 8:35:09 AM		
Benzene	ND	µg/L	1.0								
Toluene	ND	µg/L	1.0								
Ethylbenzene	ND	µg/L	1.0								
Xylenes, Total	ND	µg/L	2.0								
Sample ID: b 5		*MBLK*				Batch ID:	**R35973**	Analysis Date:	10/30/2009 10:36:51 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 BTEX LCS		*LCS*				Batch ID:	**R35953**	Analysis Date:	10/30/2009 3:36:59 AM		
Benzene	18.39	µg/L	1.0	20	0	91.9	85.9	113			
Toluene	18.18	µg/L	1.0	20	0	90.9	86.4	113			
Ethylbenzene	17.96	µg/L	1.0	20	0	89.8	83.5	118			
Xylenes, Total	52.51	µg/L	2.0	60	0	87.5	83.4	122			
Sample ID: 100NG BTEX LCS		*LCS*				Batch ID:	**R35973**	Analysis Date:	10/30/2009 5:41:56 PM		
Benzene	18.93	µg/L	1.0	20	0	94.7	85.9	113			
Toluene	19.83	µg/L	1.0	20	0	99.2	86.4	113			
Ethylbenzene	19.82	µg/L	1.0	20	0	99.1	83.5	118			
Xylenes, Total	58.39	µg/L	2.0	60	0	97.3	83.4	122			
Sample ID: 100NG BTEX LCS-II		*LCS*				Batch ID:	**R35973**	Analysis Date:	10/31/2009 10:53:36 AM		
Benzene	19.07	µg/L	1.0	20	0	95.3	85.9	113			
Toluene	18.74	µg/L	1.0	20	0.23	92.6	86.4	113			
Ethylbenzene	18.26	µg/L	1.0	20	0	91.3	83.5	118			
Xylenes, Total	54.21	µg/L	2.0	60	0	90.3	83.4	122			

Qualifiers:

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

Page 1

Hall Environmental Analysis Laboratory, Inc. **Date:** *04-Nov-09*

CLIENT: Blagg Engineering
Project: Sammons GC F #1
Lab Order: 0910478

CASE NARRATIVE

Analytical Comments for METHOD 8021BTEX_W, SAMPLE 0910478-01A: necessary dilution due to late eluting hydrocarbons

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name **BLAGG** Date Received: **10/27/2009**

Work Order Number **0910478** Received by: **TLS**

Checklist completed by: _____ 10/27/09 Sample ID labels checked by: _____

Signature Date Initials

Matrix: Carrier name: Greyhound

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Container/Temp Blank temperature?	1.9°	<6° C Acceptable If given sufficient time to cool.		

Number of preserved bottles checked for pH: _____

<2 >12 unless noted below.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : N / A

SAMMONS GC F # 1 - PROD. TANK PIT
UNIT A, SEC. 18, T29N, R9W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : **February 24, 2010**

DEVELOPER / SAMPLER : N J V

Filename : **02-24-10.WK4**

PROJECT MANAGER : N J V

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
1A	102.04	96.89	5.15	15.00	-	-	-	-	-
2R	100.00	97.04	2.96	10.93	1145	7.37	2,900	9.4	4.00
3A	99.74	96.77	2.97	13.50	-	-	-	-	-

INSTRUMENT CALIBRATIONS =	4.01/7.00/10.00	2,800
DATE & TIME =	02/23/10	1000

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 ".

MW # 2R - excellent recovery , light gray color in appearance . Collected sample from MW # 2R and analyzed for BTEX per US EPA Method 8021B .

Top of casing MW # 1A ~ 2.40 ft. , MW # 2R ~ 0.50 ft. below grade , MW # 3A ~ 0.35 ft. below grade .

on-site	10:58	temp	32 F
off-site	11:57	temp	35 F
sky cond.	Partly cloudy		
wind speed	0 - 5	direct.	E

Hall Environmental Analysis Laboratory, Inc.

Date: *03-Mar-10*

CLIENT:	Blagg Engineering	**Client Sample ID:**	MW #2R
Lab Order:	1002518	**Collection Date:**	2/24/2010 11:45:00 AM
Project:	Sammons GC F #1	**Date Received:**	2/26/2010
Lab ID:	1002518-01	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	1.0	1.0		µg/L	1	3/2/2010 1:41:51 PM
Toluene	ND	1.0		µg/L	1	3/2/2010 1:41:51 PM
Ethylbenzene	1.2	1.0		µg/L	1	3/2/2010 1:41:51 PM
Xylenes, Total	16	2.0		µg/L	1	3/2/2010 1:41:51 PM
Surr: 4-Bromofluorobenzene	106	65.9-130		%REC	1	3/2/2010 1:41:51 PM

Qualifiers:

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

Chain-of-Custody Record

Client: BLAGG ENGR. / BP AMERICA

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

Phone #: (505) 632-1199

email or Fax#:

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

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: SAMMONS GC F #1

Project #:

Project Manager: NELSON VELEZ NV

Sampler: NELSON VELEZ

On Ice: ☒ Yes ☐ No

Sample Temperature: 3.7

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

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1002512	Analysis Request: (BTEX + MTBE + TMB's (8021B))	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
2/24/10	1145	WATER	MW #2R	2-40ml	HCl & COOL	-1	✓															

Date: 2/25/10 Time: 1530 Relinquished by: [signature]
Received by: [signature] Date: 2/26/10 Time: 9:30

Date: Time: Relinquished by:
Received by: Date: Time:

Remarks:

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

QA/QC SUMMARY REPORT

Client: Blagg Engineering
Project: Sammons GC F #1 **Work Order:** 1002518

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8021B: Volatiles											
Sample ID: 5ML RB		*MBLK*				Batch ID: **R37565**		Analysis Date:	3/1/2010 9:25:06 AM		
Benzene	ND	µg/L	1.0								
Toluene	ND	µg/L	1.0								
Ethylbenzene	ND	µg/L	1.0								
Xylenes, Total	ND	µg/L	2.0								
Sample ID: 5ML RB		*MBLK*				Batch ID: **R37588**		Analysis Date:	3/2/2010 9:39:39 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: **R37565**		Analysis Date:	3/2/2010 6:07:50 AM		
Benzene	22.44	µg/L	1.0	20	0	112	85.9	113			
Toluene	22.13	µg/L	1.0	20	0	111	86.4	113			
Ethylbenzene	21.98	µg/L	1.0	20	0.148	109	83.5	118			
Xylenes, Total	65.70	µg/L	2.0	60	0	110	83.4	122			
Sample ID: 100NG BTEX LCS		*LCS*				Batch ID: **R37588**		Analysis Date:	3/2/2010 9:17:15 PM		
Benzene	21.05	µg/L	1.0	20	0	105	85.9	113			
Toluene	20.63	µg/L	1.0	20	0	103	86.4	113			
Ethylbenzene	20.52	µg/L	1.0	20	0	103	83.5	118			
Xylenes, Total	61.99	µg/L	2.0	60	0	103	83.4	122			

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name BLAGG | Date Received: 2/26/2010

Work Order Number 1002518 | Received by: TLS

Checklist completed by: _____ (Signature) 2/26/10 (Date) | Sample ID labels checked by: _____ (Initials)

Matrix: | Carrier name Greyhound

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		Number of preserved bottles checked for pH:
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	<2 >12 unless noted below.
Container/Temp Blank temperature?	3.7°	<6° C Acceptable If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : N / A

SAMMONS GC F # 1 - PROD. TANK PIT
UNIT A, SEC. 18, T29N, R9W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : **May 12, 2010**

DEVELOPER / SAMPLER : N J V

Filename : **05-12-10.WK4**

PROJECT MANAGER : N J V

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
1A	102.04	97.26	4.78	15.00	-	-	-	-	-
2R	100.00	97.37	2.63	10.93	1610	7.35	2,100	16.2	4.00
3A	99.74	97.12	2.62	13.50	1535	7.22	900	16.3	5.25

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

NOTES : Volume of water purged from well prior to sampling; V = pi 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 both MW # 2R & # 3A . Collected samples from MW # 2R & # 3A for BTEX analysis per US EPA Method 8021B .

Top of casing MW # 1A ~ 2.40 ft., MW # 2R ~ 0.50 ft. below grade , MW # 3A ~ 0.35 ft. below grade .

on-site	3:03	temp	61 F
off-site	4:15	temp	61 F
sky cond.	Sunny		
wind speed	**5 - 15 G-20**	direct.	W - NW

Hall Environmental Analysis Laboratory, Inc.

Date: *25-May-10*

CLIENT: Blagg Engineering
Project: Sammons GC F #1
Lab Order: 1005383

Lab ID: 1005383-01
Collection Date: 5/12/2010 4:10:00 PM
Client Sample ID: MW #2R
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **BDH**
Benzene	2.6	1.0		µg/L	1	5/24/2010 8:27:06 PM
Toluene	ND	1.0		µg/L	1	5/24/2010 8:27:06 PM
Ethylbenzene	3.4	1.0		µg/L	1	5/24/2010 8:27:06 PM
Xylenes, Total	9.3	2.0		µg/L	1	5/24/2010 8:27:06 PM
Surr: 4-Bromofluorobenzene	103	60.1-133		%REC	1	5/24/2010 8:27:06 PM

Lab ID: 1005383-02
Collection Date: 5/12/2010 3:35:00 PM
Client Sample ID: MW #3A
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: **BDH**
Benzene	ND	1.0		µg/L	1	5/24/2010 8:55:09 PM
Toluene	ND	1.0		µg/L	1	5/24/2010 8:55:09 PM
Ethylbenzene	ND	1.0		µg/L	1	5/24/2010 8:55:09 PM
Xylenes, Total	ND	2.0		µg/L	1	5/24/2010 8:55:09 PM
Surr: 4-Bromofluorobenzene	99.3	60.1-133		%REC	1	5/24/2010 8:55:09 PM

Qualifiers:

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

Chain-of-Custody Record

Client: BLAGG ENGR. / BP AMERICA

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

Phone #: 505 632-1199

email or Fax#:

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: SIMMONS GC F #1

Project #:

Project Manager: NELSON VELEZ

Sampler: NELSON VELEZ

On Ice: ☒ Yes ☐ No

Sample Temperature: 12

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1006322	BTEX + MTBE + TMBs (8021B)	BTEX + MTBE + TPH (Gas only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
5/12/10	1610	WATER	MW #2R	2-40ml	HCl & COOL	1	✓															
5/12/10	1535	WATER	MW #3A	2-40ml	HCl & COOL	2	✓															

Date: 5/13/10 Time: 1530 Relinquished by:

Received by: Date Time 9:00 5/14/10

Date: Time: Relinquished by:

Received by: Date Time

Remarks:

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

QA/QC SUMMARY REPORT

Client: Blagg Engineering
Project: Sammons GC F #1 **Work Order:** 1005383

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 8260: Volatiles Short List											
Sample ID: 5mL rb		*MBLK*				Batch ID: **R38881**		Analysis Date:	5/24/2010 11:59:38 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: **R38881**		Analysis Date:	5/24/2010 12:56:02 PM		
Benzene	21.58	µg/L	1.0	20	0	108	82.4	116			
Toluene	23.39	µg/L	1.0	20	0	117	89.5	123			

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

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name **BLAGG** Date Received: **5/14/2010**

Work Order Number **1005383** *Received by:* ARS

Checklist completed by: _____ 5/14/10 Sample ID labels checked by: _____
Signature Date Initials

Matrix: Carrier name: Greyhound

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐	Not Shipped ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		Number of preserved bottles checked for pH:
Water - VOA vials have zero headspace?	No VOA vials submitted ☐	Yes ☑	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	*<2 >12 unless noted below.*
Container/Temp Blank temperature?	**2.6°**	*<6° C Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

_____

_____

_____

_____

Corrective Action _____

_____

_____