3R - 396

REPORTS

DATE:

2002-2005

BLAGG ENGINEERING, INC.
P.O. Box 87, Bloomfield, New Mexico 87413
Phone: (505)632-1199 Fax: (505)632-3903

3R0396

RECEIVED February 10, 2006

FEB 14 2006

Oil Conservation Division
Environmental Bureau

2006 FEB 14 PM 1 13

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

Re: BP America Production Company
Groundwater Monitoring Report
Gallegos Canyon Unit (GCU) # 188, Unit J, Sec. 30, T29N, R12W, NMPM
San Juan County, New Mexico

Dear Mr. Von Gonten:

BP America Production Company (**BP**) has retained Blagg Engineering, Inc. to conduct environmental monitoring of groundwater at the GCU # 188.

Formal correspondence to NMOCD was conducted with letter dated, May 15, 2003 (included within this report). Groundwater monitoring commenced in March, 2003. Since then, BP has followed its NMOCD approved groundwater management plan and continues to monitor the site. No permanent closure is requested at this time.

If you have any questions concerning the enclosed documentation, please contact either myself or Jeffrey C. Blagg at the address or phone number listed above. Thank you for your cooperation and assistance.

Respectfully submitted:
Blagg Engineering, Inc.

Nelson J. Velez
Staff Geologist

Attachment: Groundwater Report

cc: Mr. Denny Foust, Environmental Geologist, NMOCD District III Office, Aztec, NM
Mr. Don Brooks, Environmental Coordinator, BP, Farmington, NM (without lab reports)

NJV/njv

GCU 188 02-10-06.CVL.WPD

3R0396

BP AMERICA PRODUCTION CO

RECEIVED

FEB 14 2006

Oil Conservation Division
Environmental Bureau

GROUNDWATER REMEDIATION REPORT

2002-2005

GCU #188
(J) SECTION 30, T29N, R12W, NMPM
SAN JUAN COUNTY, NEW MEXICO

PREPARED FOR:
MR. GLENN VON GONTEN
NEW MEXICO OIL CONSERVATION DIVISION

DECEMBER 2005

PREPARED BY:
BLAGG ENGINEERING, INC.

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

BP America Production Co.
GCU # 188 - Production Tank Pit
Nw/4 Se/4 Sec. 30, T29N, R12W

Pit Closure Date: 6/26/02 (Documentation Included)

Monitor Well Installation Date: 3/11/03 (MW #2)

Monitor Well Sampling Dates: 3/14/03, 5/29/03, 8/18/03, 11/18/03, 3/29/04, 6/23/04, 12/22/04, 3/28/05, 6/23/05, 9/21/05

Site History:

Initial groundwater impacts at this site were discovered in May, 2003 following work on an earthen production tank pit. Impacted soils were removed from the site and a single groundwater monitoring well was placed in the source area to test water depth and quality. Initial water test results indicated impacts were present, but at levels near or below New Mexico Water Quality Control Commission (NMWQCC) standards. Quarterly monitoring has been maintained.

Groundwater Monitor Well Sampling Procedures:

Groundwater samples were collected from the site monitor well (*Figure 1*) following US EPA: SW-846 protocol. Samples were collected using new disposable bailers and placed in new laboratory supplied 40 ml glass vials with teflon septa caps. Analytical testing has included benzene, toluene, ethylbenzene, and total xylenes (**BTEX**) per US EPA Method 8020 or 8021. Samples were preserved cool and with either mercuric chloride or hydrochloric acid and express delivered to a qualified laboratory for testing. Waste generated during monitor well sampling and development was disposed of utilizing the separator tank pit located on the well site.

Water Quality and Gradient Information :

Quarterly monitoring of the source area well has found groundwater impacts with the constituent benzene ranging from just above to slightly below the NMWQCC standard of 10 ug/L. Toluene, ethyl-benzene and xylenes have consistently tested at values well below standards. The regional gradient is believed to be towards the north-west in the GCU #188 area.

Summary and/or Recommendations:

Water quality at this site indicates that impacts are near or below NMWQCC standards. Further delineation to quantify gradient and impact extent is indicated. A minimum of two (2) additional monitoring wells will be required to complete this task. The source area well has tested three (3) consecutive quarters with BTEX values below standards, and additional monitoring of this well is necessary to verify closure.

BP AMERICA PROD. CO. GROUNDWATER LAB RESULTS

SUBMITTED BY BLAGG ENGINEERING, INC.

GCU # 188 - SEPARATOR PIT
UNIT J, SEC. 30, T29N, R12W

REVISED DATE: December 9, 2005

FILENAME: (188-3Q05.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
14-Mar-03	MW #2	13.93	17.50		2,300	7.47		**23**	8.0	220	**830**
29-May-03		13.78			2,300	6.93		**10**	18	23	**180**
18-Aug-03		13.88			3,000	6.86		**15**	ND	37	**220**
18-Nov-03		13.45			2,700	6.86		**31**	ND	74	**470**
29-Mar-04		13.59			2,600	6.86		**11**	ND	24	**180**
23-Jun-04		13.68			2,800	6.78		**12**	ND	27	**170**
22-Dec-04		12.87			N/A	N/A		**18**	ND	71	**520**
28-Mar-05		12.86			2,300	6.79		**9.3**	15	42	**220**
23-Jun-05		12.60			2,300	6.72		**6.3**	12	29	**120**
21-Sep-05								**9.0**	7.7	18	**190**
				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 .

BLAGG ENGINEERING, INC . - (BEI)
P.O. Box 87, Bloomfield, New Mexico 87413
Phone:(505)632-1199 Fax:(505)632-3903

May 15, 2003

Mr. William C. Olson
Hydrologist
State of New Mexico Oil Conservation Division (**NMOCD**)
2040 So. Pacheco
Santa Fe, New Mexico 87505

RE: Groundwater Impact
BP America Production Company (BP): GCU 188 Well site - Production Tank Pit
Legal Description: Unit J, Sec. 30, T29N, R12W, San Juan County, New Mexico

Dear Mr. Olson:

Initial groundwater sample analytical results at the above referenced well site during pit closure activity indicated contamination to be above the State of New Mexico Water Quality Control Commission's regulatory standards for benzene and total Xylenes. Sampling of the Production Tank pit was conducted March 14, 2003. Depth to water was estimated at fourteen (14) feet below grade. Listed below is the summary analytical results for Benzene, Toluene, Ethylbenzene, and total Xylenes (BTEX) from the groundwater sample collected within the pit:

Parameter	Separator Pit (II) (parts per billion)
Benzene	*23*
Toluene	8.0
Ethylbenzene	220
Total Xylenes	*890*

Telecommunication notification was submitted to Mr. William Olson's voice recorder on May 15, 2003 at approximately 2:00 pm. BP will implement its Groundwater Management Plan to address the findings related to this situation.

If you have any questions concerning this information, please do not hesitate to contact us at (505) 632-1199. Thank you for your cooperation.

Respectfully submitted,
Blagg Engineering, Inc.

Nelson Velez
Staff Geologist

cc: Denny Foust, Environmental Geologist, NMOCD, Aztec, NM
Brittany Benko, Environmental Coordinator, BP America Production Company, Farmington, NM

NV/nv GCU188.LTR

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-144
March 12, 2004

For drilling and production facilities, submit to appropriate NMOCD District Office.
For downstream facilities, submit to Santa Fe office

Pit or Below-Grade Tank Registration or Closure

Is pit or below-grade tank covered by a "general plan"? Yes ☒ No ☐
Type of action: Registration of a pit or below-grade tank ☐ Closure of a pit or below-grade tank ☒

Operator: BP AMERICA PROD. CO. Telephone: (505) 326-9200

Address: 200 Energy Court, Farmington, NM 87410

Facility or well name: GCU #188 API #: 30-045-07840 U/L or Qtr/Qtr J Sec 30 T 29N R 12W

County: San Juan Latitude 36.69613 Longitude 108.13667 NAD: 1927 ☐ 1983 ☒ Surface Owner Federal ☒ State ☐ Private ☐ Indian ☐

Pit	**Below-grade tank**
Type: Drilling ☐ Production ☒ Disposal ☐ PRODUCTION TANK Workover ☐ Emergency ☐ Lined ☐ Unlined ☒ Liner type: Synthetic ☐ Thickness ____ mil Clay ☐ Volume ____ bbl	Volume: ____ bbl Type of fluid: ____ Construction material: ____ Double-walled, with leak detection? Yes ☐ If not, explain why not. N/A

Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.)	Less than 50 feet 50 feet or more, but less than 100 feet 100 feet or more	(20 points) (10 points) (0 points)	20
Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)	Yes No	(20 points) (0 points)	0
Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)	Less than 200 feet 200 feet or more, but less than 1000 feet 1000 feet or more	(20 points) (10 points) (0 points)	10
	Ranking Score (Total Points)		30

If this is a pit closure: (1) attach a diagram of the facility showing the pit's relationship to other equipment and tanks. (2) Indicate disposal location: onsite ☐ offsite ☒ If offsite, name of facility CROUCH MESA FACILITY. (3) Attach a general description of remedial action taken including remediation start date and end date. (4) Groundwater encountered: No ☐ Yes ☒ If yes, show depth below ground surface 14 ft. and attach sample results. (5) Attach soil sample results and a diagram of sample locations and excavations.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. **I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☒, a general permit ☐, or an (attached) alternative OCD-approved plan ☒.**

Date: 05/15/03

Printed Name/Title **Jeff Blagg – P.E. # 11607** Signature Jeffrey C. Blagg

Your certification and NMOCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water or otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.

Approval:

Date: ____

Printed Name/Title ____ Signature ____

VUL 3004507840 NV 36.69613/108.13667

CLIENT: BP	BLAGG ENGINEERING, INC. P.O. BOX 87, BLOOMFIELD, NM 87413 (505) 632-1199	LOCATION NO: B1005 C.O.C. NO: 10035

FIELD REPORT: PIT CLOSURE VERIFICATION

PAGE No: 1 of 1

LOCATION: NAME: GCU WELL #: 188 TYPE: SEP
QUAD/UNIT: J SEC: 30 TWP: 29N RNG: 12W PM: NM CNTY: SJ ST: NM
QTR/FOOTAGE: 2150'S/1580'E unit E CONTRACTOR: FLINT

DATE STARTED: 6-26-02
DATE FINISHED:
ENVIRONMENTAL SPECIALIST: JCB

~~EXCAVATION~~ PIT APPROX. 21 FT. x 18 FT. x 4 FT. DEEP. CUBIC YARDAGE: 100 NV
DISPOSAL FACILITY: BP CROUCH MESA FACILITY REMEDIATION METHOD: LANDFARM NV
LAND USE: BLACK RANCH LEASE: FEE FORMATION: DK NV

FIELD NOTES & REMARKS: PIT LOCATED APPROXIMATELY 138' FT. 552°E FROM WELLHEAD.
DEPTH TO GROUNDWATER: <50 NEAREST WATER SOURCE: >1000 NEAREST SURFACE WATER: <~~500~~ 1000' NV
NMOCD RANKING SCORE: 20 NMOCD TPH CLOSURE STD: 100 PPM

OVM CALIB. READ. 129.7 ppm
OVM CALIB. GAS = 250 ppm RF = 0.52
TIME: 1024 am/pm DATE: 6-26-02

SOIL AND EXCAVATION DESCRIPTION:

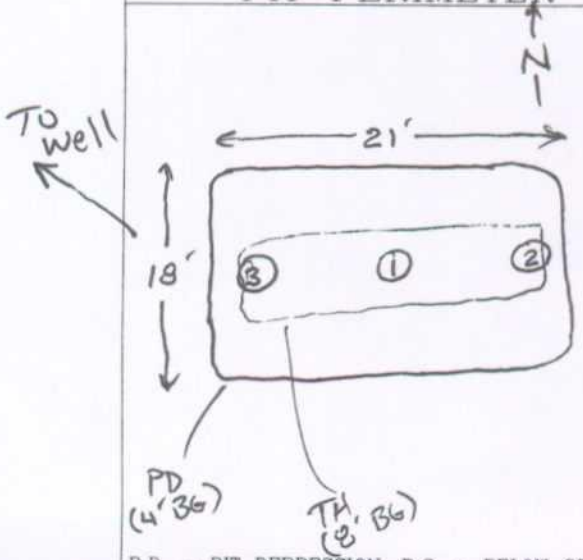
SOIL TYPE: SAND / (SILTY SAND) / SILT / SILTY CLAY / CLAY / GRAVEL / OTHER
SOIL COLOR: YELLOW TAN
COHESION (ALL OTHERS): (NON COHESIVE) / SLIGHTLY COHESIVE / COHESIVE / HIGHLY COHESIVE
CONSISTENCY (NON COHESIVE SOILS): (LOOSE) / FIRM / DENSE / VERY DENSE
PLASTICITY (CLAYS): NON PLASTIC / SLIGHTLY PLASTIC / COHESIVE / MEDIUM PLASTIC / HIGHLY PLASTIC
DENSITY (COHESIVE CLAYS & SILTS): SOFT / FIRM / STIFF / VERY STIFF / HARD
MOISTURE: DRY / (SLIGHTLY MOIST) / MOIST / WET / SATURATED / SUPER SATURATED
DISCOLORATION/STAINING OBSERVED: (YES) / NO EXPLANATION - ON SAMPLE (1) - LITE GRAY
HC ODOR DETECTED: (YES) / NO EXPLANATION - ON SAMPLE (1) - MINOR
SAMPLE TYPE: (GRAB) / COMPOSITE - # OF PTS.
ADDITIONAL COMMENTS: USE BACKHOE TO DIG TEST TRENCH & SAMPLE.

FIELD 418.1 CALCULATIONS

SAMP. TIME	SAMPLE I.D.	LAB No:	WEIGHT (g)	mL. FREON	DILUTION	READING	CALC. ppm

SCALE 0 FT

PIT PERIMETER



P.D. = PIT DEPRESSION; B.G. = BELOW GRADE
T.H. = TEST HOLE; ~ = APPROX.; B = BELOW

OVM RESULTS

SAMPLE ID	FIELD HEADSPACE PID (ppm)
1 @ 8'	780
2 @ 8'	1.8
3 @ 8'	4.0
4 @	
5 @	

LAB SAMPLES

SAMPLE ID	ANALYSIS	TIME
C@8'	TPH/BTEX	1005

PIT PROFILE

TRAVEL NOTES: CALLOUT: 6/25/02 1530 ONSITE: 6/26/02 0945

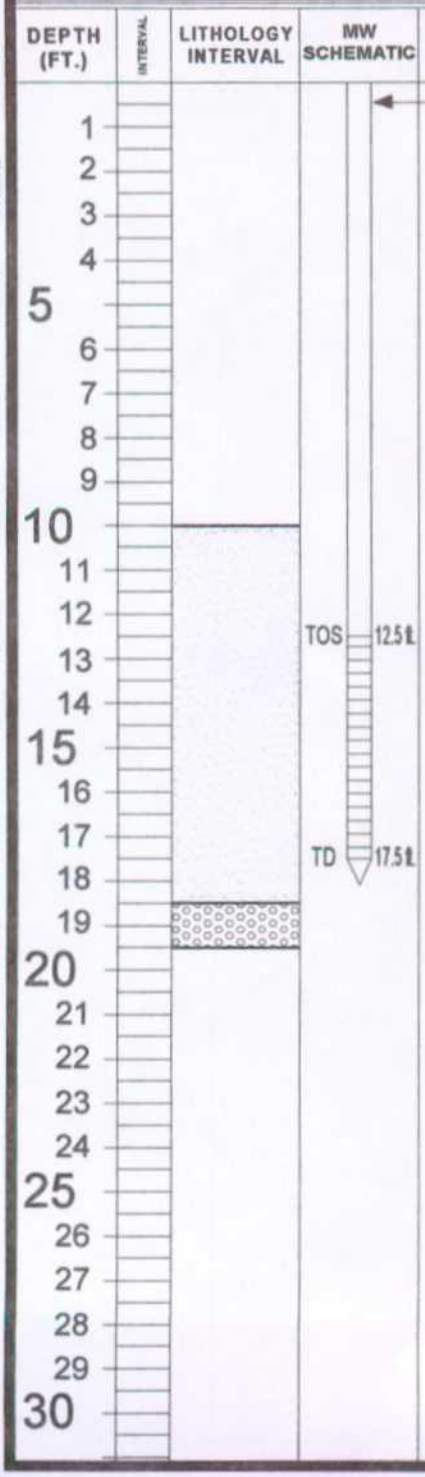
revised: 02/27/02 bei1005C.skd

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

BORE / TEST HOLE REPORT

BORING #.....	BH - 1
MW #.....	2
PAGE #.....	1
DATE STARTED	3/11/03
DATE FINISHED	3/11/03
OPERATOR.....	JCB
PREPARED BY	NJV

CLIENT: **BP AMERICA PRODUCTION COMPANY**
LOCATION NAME: GCU # 188 PROD. TANK PIT - UNIT J, SEC. 30, T29N, R12W
CONTRACTOR: **BLAGG ENGINEERING, INC.**
EQUIPMENT USED: **MOBILE DRILL RIG (EARTHPROBE 200)**
BORING LOCATION: **138** FEET, **S52E** FROM WELL HEAD.



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APROX. AT GRADE.

BACKFILL MATERIAL - DARK YELLOWISH BROWN SAND, NON COHESIVE, SLIGHTLY MOIST, LOOSE TO FIRM, NO APPARENT HC ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (0.0 - 10.0 FT. BELOW GRADE).

SAMPLE 1 @ 8 FT. - CONDUCTED DURING TEST HOLE ADVANCEMENT ON 6/26/02; TIME COLLECTED 1005, OVM = **780** ppm; TPH = **2,190** ppm; Benzene = **ND** ppb; Total BTEX = **785** ppb (see Pit Closure Field Report for additional information).

MEDIUM GRAY TO BLACK SAND, NON COHESIVE, MOIST TO SATURATED, STRONG HC ODOR DETECTED WITHIN CUTTINGS (10.0 - 18.5 FT. BELOW GRADE).

BH1 @ 14 FT. - CONDUCTED DURING DRILLING ON 3/11/03; TIME COLLECTED 1050,
TPH = **497** ppm (Envirotech)
TPH = **3,400** ppm (iina ba lab - formerly On-Site Technology)
TPH = **3,390** ppm. (Hall Environmental).

BLACK SAND & GRAVEL, NON COHESIVE, SATURATED, STRONG HC ODOR DETECTED PHYSICALLY WITHIN CUTTINGS, (18.5 - 19.5 FT. BELOW GRADE).

NOTES:
- SAND.
- SAND & GRAVEL.

OVM - organic vapor meter or PID (photoionization detector).
ppm - parts per million.
ppb - parts per billion.
TPH - total petroleum hydrocarbons (US Epa modified method 8015B).
BTEX - benzene, toluene, ethylbenzene, & total xylenes (US Epa method 8021B).
TOS - Top of screen of monitor well.
TD - Total depth/bottom extent of monitor well.

OVM CALIBRATION:
129.7 ppm; RF = 0.52 (RF = response factor).
250 ppm calibration gas - isobutylene.
Date - 6/26/02.
Time - 1024.

Monitor well consist of 2 inch PVC piping - casing from grade to 12.50 ft. below grade, 0.010 slotted screen between 12.50 to 17.50 feet below grade, sand packed annular to 1 ft. below grade. Slip cap at top of casing.

DRAWING: GCU 188-BH1-MW2. SKF | DATE: 5/13/03 | DWN BY: NJV

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Separator C @ 8'	Date Reported:	07-01-02
Laboratory Number:	23182	Date Sampled:	06-26-02
Chain of Custody No:	10035	Date Received:	06-26-02
Sample Matrix:	Soil	Date Extracted:	06-28-02
Preservative:	Cool	Date Analyzed:	07-01-02
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	**1,140**	**0.2**
Diesel Range (C10 - C28)	**1,050**	**0.1**
Total Petroleum Hydrocarbons	**2,190**	**0.2**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **GCU 188.**

Analyst

Review

5796 U.S. Highway 64 • Farmington, NM 87401 • Tel 505 • 632 • 0615 • Fax 505 • 632 • 1865

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	Separator C @ 8'	Date Reported:	07-01-02
Laboratory Number:	23182	Date Sampled:	06-26-02
Chain of Custody:	10035	Date Received:	06-26-02
Sample Matrix:	Soil	Date Analyzed:	07-01-02
Preservative:	Cool	Date Extracted:	06-28-02
Condition:	Cool & Intact	Analysis Requested:	BTEX

Parameter	Concentration (ug/Kg)	Det. Limit (ug/Kg)
Benzene	**ND**	**1.8**
Toluene	**98.7**	**1.7**
Ethylbenzene	**159**	**1.5**
p,m-Xylene	**265**	**2.2**
o-Xylene	**262**	**1.0**
Total BTEX	**785**	

ND - Parameter not detected at the stated detection limit.

Surrogate Recoveries:	Parameter	Percent Recovery
	Fluorobenzene	**99 %**
	1,4-difluorobenzene	**99 %**
	Bromochlorobenzene	**99 %**

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Method 8021B, Aromatic Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **GCU 188.**

Analyst

Review

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CHAIN OF CUSTODY RECORD

10035

Client / Project Name	Project Location	ANALYSIS / PARAMETERS
BLAGG/BP	GCU 188	
Sampler: J-C. Blagg	**Client No.** 94034-010	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	TPH 8015	BTEX 8021					Remarks
SEPARATOR C @ 8'	6/26/02	1005	23182	SOIL	1	X	X					

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
J-C. Blagg	6/26/02	1522	[signature]	6/26/02	1530
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

ENVIROTECH INC.

5796 U.S. Highway 64
Farmington, New Mexico 87401
(505) 632-0615

Sample Receipt	Y	N	N/A
Received Intact	✓		
Cool - Ice/Blue Ice	✓		

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA Method 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	07-01-TPH QA/QC	Date Reported:	07-01-02
Laboratory Number:	23181	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	07-01-02
Condition:	N/A	Analysis Requested:	TPH

	I-Cal Date	I-Cal RF:	C-Cal RF:	% Difference	Accept. Range
Gasoline Range C5 - C10	04-25-02	2.7355E-002	2.7328E-002	**0.10%**	**0 - 15%**
Diesel Range C10 - C28	04-25-02	2.4557E-002	2.4508E-002	**0.20%**	**0 - 15%**

Blank Conc. (mg/L - mg/Kg)	Concentration	Detection Limit
Gasoline Range C5 - C10	**ND**	**0.2**
Diesel Range C10 - C28	**ND**	**0.1**
Total Petroleum Hydrocarbons	**ND**	**0.2**

Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Accept. Range
Gasoline Range C5 - C10	**771**	**768**	**0.4%**	**0 - 30%**
Diesel Range C10 - C28	**202**	**202**	**0.0%**	**0 - 30%**

Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept. Range
Gasoline Range C5 - C10	**771**	**250**	**1,020**	**99.9%**	**75 - 125%**
Diesel Range C10 - C28	**202**	**250**	**451**	**99.8%**	**75 - 125%**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **QA/QC for samples 23181 - 23183, 23186, 23203 - 23206, 23145.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8021
AROMATIC VOLATILE ORGANICS

Client:	N/A	Project #:	N/A
Sample ID:	07-01-BTEX QA/QC	Date Reported:	07-01-02
Laboratory Number:	23181	Date Sampled:	N/A
Sample Matrix:	Soil	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	07-01-02
Condition:	N/A	Analysis:	BTEX

Calibration and Detection Limits (ug/L)	I-Cal RF:	C-Cal RF:	%Diff. Accept. Range 0 - 15%	Blank Conc	Detect. Limit
Benzene	2.6914E-002	2.6995E-002	0.3%	ND	0.2
Toluene	3.3709E-002	3.3777E-002	0.2%	ND	0.2
Ethylbenzene	5.8262E-002	5.8438E-002	0.3%	ND	0.2
p,m-Xylene	7.1891E-002	7.2107E-002	0.3%	ND	0.2
o-Xylene	5.4522E-002	5.4631E-002	0.2%	ND	0.1

Duplicate Conc. (ug/Kg)	Sample	Duplicate	%Diff.	Accept Range	Detect. Limit
Benzene	20.4	20.5	0.5%	0 - 30%	1.8
Toluene	106	106	0.0%	0 - 30%	1.7
Ethylbenzene	116	117	0.5%	0 - 30%	1.5
p,m-Xylene	558	562	0.6%	0 - 30%	2.2
o-Xylene	109	110	1.1%	0 - 30%	1.0

Spike Conc. (ug/Kg)	Sample	Amount Spiked	Spiked Sample	% Recovery	Accept Range
Benzene	20.4	50.0	70.3	99.9%	39 - 150
Toluene	106	50.0	156	100.0%	46 - 148
Ethylbenzene	116	50.0	166	100.0%	32 - 160
p,m-Xylene	558	100	658	100.0%	46 - 148
o-Xylene	109	50.0	159	100.0%	46 - 148

ND - Parameter not detected at the stated detection limit.

References: Method 5030B, Purge-and-Trap, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.
Method 8021B, Aromatic and Halogenated Volatiles by Gas Chromatography Using Photoionization and/or Electrolytic Conductivity Detectors, SW-846, USEPA December 1996.

Comments: **QA/QC for samples 23181 - 23183, 23186, 23203.**

Analyst

Review

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ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA METHOD 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Client:	Blagg / BP	Project #:	94034-010
Sample ID:	BH 1 @ 14'	Date Reported:	03-18-03
Laboratory Number:	25038	Date Sampled:	03-11-03
Chain of Custody No:	10684	Date Received:	03-12-03
Sample Matrix:	Soil	Date Extracted:	03-13-03
Preservative:	Cool	Date Analyzed:	03-14-03
Condition:	Cool and Intact	Analysis Requested:	8015 TPH

Parameter	Concentration (mg/Kg)	Det. Limit (mg/Kg)
Gasoline Range (C5 - C10)	217	0.2
Diesel Range (C10 - C28)	280	0.1
Total Petroleum Hydrocarbons	497	0.2

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **GCU #188 Production Tank Pit Grab Sample.**

Christine M Walters
Analyst

Review

5796 U.S. Highway 64 • Farmington, NM 87401 • Tel 505 • 632 • 0615 • Fax 505 • 632 • 1865

612 E. Murray Drive
Farmington, NM 87401

Off: (505) 327-1072

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P.O. Box 2606
Farmington, NM 87499

Fax: (505) 327-1496

ANALYTICAL REPORT

Date: *26-Mar-03*

CLIENT: Blagg Engineering
Work Order: 0303006
Project: BP - GCU #188 Production Tank Pit
Lab ID: 0303006-001A

Client Sample Info: BP - GCU #188 Production Tank
Client Sample ID: BH1 @ 14ft.
Collection Date: 3/11/2003 10:50:00 AM
Matrix: SOIL

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
DIESEL RANGE ORGANICS		**SW8015B**				Analyst: **JEM**
T/R Hydrocarbons: C10-C28	2230	25.0		mg/Kg	1	3/25/2003
GASOLINE RANGE ORGANICS		**SW8015B**				Analyst: **HNR**
T/R Hydrocarbons: C6-C10	1170	180		mg/Kg	1000	3/22/2003

Qualifiers:

ND - Not Detected at the Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above Upper Quantitation Limit - UQL

Hall Environmental Analysis Laboratory

Date: *20-Mar-03*

CLIENT:	Blagg Engineering	**Client Sample ID:**	#188 BH1@14' Prod. T. Pit
Lab Order:	0303077	**Collection Date:**	3/11/2003 10:50:00 AM
Project:	GCU Lease		
Lab ID:	0303077-01	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE						Analyst: **JMP**
Diesel Range Organics (DRO)	1700	50		mg/Kg	10	3/18/2003 9:36:27 PM
Motor Oil Range Organics (MRO)	690	500		mg/Kg	10	3/18/2003 9:36:27 PM
Surr: DNOP	107	60-124		%REC	1	3/17/2003 8:58:27 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **NB**
Gasoline Range Organics (GRO)	1000	250		mg/Kg	50	3/17/2003 10:54:50 AM
Surr: BFB	112	74-118		%REC	50	3/17/2003 10:54:50 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

CHAIN OF CUSTODY RECORD

10684

Client / Project Name	Project Location	ANALYSIS / PARAMETERS
BLAGG / BP	GCU #188	
Sampler: NJV	Client No. 94034-010	

Sample No./ Identification	Sample Date	Sample Time	Lab Number	Sample Matrix	No. of Containers	TPH (8015B)						Remarks
												PRESERVED COOL
												GRAB SAMPLE
BH 1 @ 14'	3/11/03	1050	25038	SOIL	1	✓						PRODUCTION TANK PIT

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Nelson VJ	3/12/03	0823	Mistie M Wolter	3/12/03	8:23
Relinquished by: (Signature)			Received by: (Signature)		
Relinquished by: (Signature)			Received by: (Signature)		

ENVIROTECH INC.

5796 U.S. Highway 64
Farmington, New Mexico 87401
(505) 632-0615

Sample Receipt	Y	N	N/A
Received Intact	✓		
Cool - Ice/Blue Ice	✓		

CHAIN-OF-CUSTODY RECORD

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

Client: BLAGG ENGINEERING, INC. / BP AMERICA PROD. CO.

Address: P.O. BOX 87 BLOOMFIELD, NM 87413

Phone #: 505-632-1199

Fax #: 505-632-3903

Project Name: GCU LEASE

Project #:

Project Manager: JEFF BLAGG

Sampler: NELSON VELEZ

Samples Cold?: ☒ Yes ☐ No 10.0

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HCl	HEAL No.
3/11/03	1050	SOIL	#188 BH1 @ 14' PRODUCTION TANK PIT	1			030771

ANALYSIS REQUEST

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

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)	Remarks:
3/12/03	0730	Nelson Velez	3/12/03 1617	
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)	

CHAIN OF CUSTODY RECORD

12459

Date: 3/11/03

Page: 1 of 1

ON SITE TECHNOLOGIES, LTD.

612 E. Murray Dr. • P.O. Box 2606 • Farmington, NM 87499
LAB: (505) 325-5667 • FAX: (505) 327-1496

Purchase Order No.: | Project No.

SEND INVOICE TO
Name: Jeff Blagg
Company: Blagg Engr. | Dept.
Address:
City, State, Zip:

REPORT RESULTS TO
Name: Nelson Velez | Title:
Company: Same
Mailing Address:
City, State, Zip:
Telephone No.: 632-1199 | Telefax No.: 632-3903

PROJECT LOCATION:
BP- Gas = 188 Production Tank Pit

SAMPLER'S SIGNATURE: Nelson Velez

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	SAMPLE PRES.	Number of Containers	ANALYSIS REQUESTED: TPH (8015B)	LAB ID
Pit @ 14'	3/11/03	1050	Soil	Cool	1	1	72454-001

Relinquished by: Nelson Velez | Date/Time: 3/11/03
Relinquished by: | Date/Time: 0805
Relinquished by: | Date/Time

Received by: J Monroe | Date/Time: 3/12/03 8:45
Received by: | Date/Time
Received by: | Date/Time

Method of Shipment:

Rush | 24-48 Hours | 10 Working Days | By Date

Special Instructions / Remarks:

Authorized by: _____ Date _____
(Client Signature Must Accompany Request)

Distribution: White - On Site Yellow - LAB Pink - Sampler Goldenrod - Client

ENVIROTECH LABS

PRACTICAL SOLUTIONS FOR A BETTER TOMORROW

EPA Method 8015 Modified
Nonhalogenated Volatile Organics
Total Petroleum Hydrocarbons

Quality Assurance Report

Client:	QA/QC	Project #:	N/A
Sample ID:	03-14-TPH QA/QC	Date Reported:	03-18-03
Laboratory Number:	25037	Date Sampled:	N/A
Sample Matrix:	Methylene Chloride	Date Received:	N/A
Preservative:	N/A	Date Analyzed:	03-14-03
Condition:	N/A	Analysis Requested:	TPH

	I-Cal Date	I-Cal RF:	C-Cal RF:	% Difference	Accept. Range
Gasoline Range C5 - C10	04-25-02	2.7355E-002	2.7328E-002	**0.10%**	**0 - 15%**
Diesel Range C10 - C28	04-25-02	2.4557E-002	2.4508E-002	**0.20%**	**0 - 15%**

Blank Conc. (mg/L - mg/Kg)	Concentration	Detection Limit
Gasoline Range C5 - C10	**ND**	**0.2**
Diesel Range C10 - C28	**ND**	**0.1**
Total Petroleum Hydrocarbons	**ND**	**0.2**

Duplicate Conc. (mg/Kg)	Sample	Duplicate	% Difference	Accept. Range
Gasoline Range C5 - C10	**ND**	**ND**	**0.0%**	**0 - 30%**
Diesel Range C10 - C28	**ND**	**ND**	**0.0%**	**0 - 30%**

Spike Conc. (mg/Kg)	Sample	Spike Added	Spike Result	% Recovery	Accept. Range
Gasoline Range C5 - C10	**ND**	**250**	**250**	**100%**	**75 - 125%**
Diesel Range C10 - C28	**ND**	**250**	**250**	**100%**	**75 - 125%**

ND - Parameter not detected at the stated detection limit.

References: Method 8015B, Nonhalogenated Volatile Organics, Test Methods for Evaluating Solid Waste, SW-846, USEPA, December 1996.

Comments: **QA/QC for samples 25037 - 25039, 25043 - 25047.**

Analyst Christine M Walters

Review

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Hall Environmental Analysis Laboratory

Date: *20-Mar-03*

CLIENT: Blagg Engineering
Project: GCU Lease
Lab Order: 0303077

CASE NARRATIVE

Analytical Comments for METHOD 8015GRO_S, SAMPLE 0303077-02a: High surrogate due to matrix interference.

Hall Environmental Analysis Laboratory

Date: *20-Mar-03*

CLIENT: Blagg Engineering
Work Order: 0303077
Project: GCU Lease

QC SUMMARY REPORT
Method Blank

Sample ID **MB-3265** Batch ID: **3265** Test Code: **SW8015** Units: **mg/Kg** Analysis Date **3/17/2003 4:01:20 PM** Prep Date **3/14/2003**
Client ID: Run ID: **FID(17A)_030317A** SeqNo: **174234**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	5.0									
Motor Oil Range Organics (MRO)	ND	50									
Surr: DNOP	10.52	0	10	0	105	60	124	0			

Sample ID **MB-3259** Batch ID: **3259** Test Code: **SW8015** Units: **mg/Kg** Analysis Date **3/14/2003 7:48:09 PM** Prep Date **3/13/2003**
Client ID: Run ID: **PIDFID_030314A** SeqNo: **173999**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	1.59	5.0									J
Surr: BFB	906.5	0	1000	0	90.6	74	118	0			

Sample ID **MB-3259** Batch ID: **3259** Test Code: **SW8021** Units: **mg/Kg** Analysis Date **3/14/2003 7:48:09 PM** Prep Date **3/13/2003**
Client ID: Run ID: **PIDFID_030314A** SeqNo: **174021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.025	0	0	0	0	0	0			
Toluene	ND	0.025	0	0	0	0	0	0			
Ethylbenzene	ND	0.025	0	0	0	0	0	0			
Xylenes, Total	ND	0.025	0	0	0	0	0	0			
Surr: 4-Bromofluorobenzene	0.9143	0	1	0	91.4	74	118	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

1

Hall Environmental Analysis Laboratory

Date: *20-Mar-03*

CLIENT: Blagg Engineering
Work Order: 0303077
Project: GCU Lease

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID **LCS-3265** Batch ID: **3265** Test Code: **SW8015** Units: **mg/Kg** Analysis Date **3/17/2003 4:30:54 PM** Prep Date **3/14/2003**
Client ID: Run ID: **FID(17A)_030317A** SeqNo: **174235**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54.06	5.0	50	0	108	67.4	117	0			

Sample ID **LCSD-3265** Batch ID: **3265** Test Code: **SW8015** Units: **mg/Kg** Analysis Date **3/17/2003 5:00:29 PM** Prep Date **3/14/2003**
Client ID: Run ID: **FID(17A)_030317A** SeqNo: **174237**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	58.41	5.0	50	0	117	67.4	117	54.06	7.72	17.4	

Sample ID **GRO Std 2.5ug** Batch ID: **3259** Test Code: **SW8015** Units: **mg/Kg** Analysis Date **3/14/2003 9:02:22 AM** Prep Date
Client ID: Run ID: **PIDFID_030314A** SeqNo: **174011**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25.04	5.0	25	0	100	85.8	111	0			

Sample ID **GRO Std 2.5ug** Batch ID: **3259** Test Code: **SW8015** Units: **mg/Kg** Analysis Date **3/14/2003 11:24:17 PM** Prep Date
Client ID: Run ID: **PIDFID_030314A** SeqNo: **174020**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25.53	5.0	25	0	102	85.8	111	25.04	1.94	11.6	

Sample ID **GRO Std 2.5ug** Batch ID: **3259** Test Code: **SW8015** Units: **mg/Kg** Analysis Date **3/17/2003 9:48:53 AM** Prep Date
Client ID: Run ID: **PIDFID_030317A** SeqNo: **174270**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25.2	5.0	25	0.0288	101	85.8	111	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Blagg Engineering
Work Order: 0303077
Project: GCU Lease

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

Sample ID **GRO Std 2.5ug** Batch ID: **3259** Test Code: **SW8015** Units: **mg/Kg** Analysis Date **3/17/2003 3:48:41 PM** Prep Date
Client ID: Run ID: **PIDFID_030317A** SeqNo: **174275**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25	0.0288	99.9	85.8	111	25.2	0.797	11.6	

Sample ID **BTEX Std 100ng** Batch ID: **3259** Test Code: **SW8021** Units: **mg/Kg** Analysis Date **3/14/2003 6:46:09 PM** Prep Date
Client ID: Run ID: **PIDFID_030314A** SeqNo: **174032**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1.062	0.025	1	0	106	77	122	0			
Toluene	1.03	0.025	1	0	103	81	115	0			
Ethylbenzene	1.08	0.025	1	0	108	84	117	0			
Xylenes, Total	3.192	0.025	3	0	106	84	116	0			

Sample ID **BTEX Std 100ng** Batch ID: **3259** Test Code: **SW8021** Units: **mg/Kg** Analysis Date **3/14/2003 11:55:10 PM** Prep Date
Client ID: Run ID: **PIDFID_030314A** SeqNo: **174043**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1.043	0.025	1	0	104	77	122	1.062	1.83	27	
Toluene	1.012	0.025	1	0	101	81	115	1.03	1.76	19	
Ethylbenzene	1.05	0.025	1	0	105	84	117	1.08	2.76	10	
Xylenes, Total	3.133	0.025	3	0	104	84	116	3.192	1.88	13	

Sample ID **BTEX Std 100ng** Batch ID: **3259** Test Code: **SW8021** Units: **mg/Kg** Analysis Date **3/17/2003 2:46:34 PM** Prep Date
Client ID: Run ID: **PIDFID_030317A** SeqNo: **174245**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1.045	0.025	1	0	105	77	122	0			
Toluene	1.013	0.025	1	0	101	81	115	0			
Ethylbenzene	1.05	0.025	1	0	105	84	117	0			
Xylenes, Total	3.102	0.025	3	0	103	84	116	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Blagg Engineering
Work Order: 0303077
Project: GCU Lease

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

Sample ID **BTEX Std 100ng** Batch ID: **3259** Test Code: **SW8021** Units: **mg/Kg** Analysis Date **3/17/2003 3:17:33 PM** Prep Date

Client ID: Run ID: **PIDFID_030317A** SeqNo: **174255**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1.075	0.025	1	0	108	77	122	1.045	2.82	27	
Toluene	1.051	0.025	1	0	105	81	115	1.013	3.76	19	
Ethylbenzene	1.092	0.025	1	0	109	84	117	1.05	3.91	10	
Xylenes, Total	3.227	0.025	3	0	108	84	116	3.102	3.94	13	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name **BLAGG** Date and Time Receive **3/12/03**

Work Order Number **0303077** Received by AT

Checklist completed by _____ 3/12/03
Signature Date

Matrix: Carrier name: Greyhound

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑	
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑	
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 - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Container/Temp Blank temperature?	**10°**	*4° C ± 2 Acceptable*		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMER. PROD. CO.

CHAIN-OF-CUSTODY # : 12162

GCU # 188 - PROD. TANK PIT
UNIT J, SEC. 30, T29N, R12W

LABORATORY (S) USED : iina ba

Date : March 14, 2003

Filename : 03-14-03.WK4

SAMPLER : N J V

PROJECT MANAGER : N J V

WELL #	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	VOLUME PURGED (gal.)	FREE PRODUCT (ft)
MW - 2	-	-	13.93	17.50	1545	7.47	2,300	3.50	-

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:

1.25 " well diameter = 0.19 gallons per foot of water (or 24 oz.).

2 bails per foot - small teflon bailer.

3 bails per foot - 3 / 4 " teflon bailer.

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

4.00 " well diameter = 1.95 gallons per foot of water.

Comments or note well diameter if not standard 2 ".

Excellent recovery , wisp of sheen observed within disposal bucket during purging , collected BTEX only .

Top of casing MW # 2 ~ @ grade .

612 E. Murray Drive
Farmington, NM 87401

Off: (505) 327-1072

iiná bá

P.O. Box 2606
Farmington, NM 87499

Fax: (505) 327-1496

ANALYTICAL REPORT

Date: *26-Mar-03*

CLIENT: Blagg Engineering
Work Order: 0303014
Project: BP - GCU #188
Lab ID: 0303014-001A

Client Sample Info: BP - GCU #188
Client Sample ID: MW #2
Collection Date: 3/14/2003 3:45:00 PM
Matrix: AQUEOUS

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
AROMATIC VOLATILES BY GC/PID		**SW8021B**				Analyst: **JEM**
Benzene	23	2.5		µg/L	5	3/21/2003
Ethylbenzene	220	2.5		µg/L	5	3/21/2003
m,p-Xylene	610	5.0		µg/L	5	3/21/2003
o-Xylene	280	2.5		µg/L	5	3/21/2003
Toluene	8.0	2.5		µg/L	5	3/21/2003

Qualifiers:

ND - Not Detected at the Practical Quantitation Limit
J - Analyte detected below Practical Quantitation Limit
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted precision limits
E - Value above Upper Quantitation Limit - UQL

12162

CHAIN OF CUSTODY RECORD

ON SITE TECHNOLOGIES, LTD.

612 E. Murray Dr. • P.O. Box 2606 • Farmington, NM 87499
LAB: (505) 325-5667 • FAX: (505) 327-1496

Date: 3/14/03

Page: 1 of 1

Purchase Order No.:	Project No.		
SEND INVOICE TO: Name	JEFF BLAGG	REPORT RESULTS TO: Name	NELSON VELEZ
Company	BLAGG ENGR. Dept.	Company	SAME
Address		Mailing Address	
City, State, Zip		City, State, Zip	
		Telephone No.	632-1199 Telefax No. 632-3903

PROJECT LOCATION: SP - GCU #188

SAMPLER'S SIGNATURE: Nelson Vel

SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	SAMPLE PRES.	Number of Containers	ANALYSIS REQUESTED: BTEX (8021B)	LAB ID
MW # 3	3/14/03	1545	WATER	HCl & Cool	3	✓	M303014-001A

Relinquished by: Nelson Vel	Date/Time 3/17/03	Received by: J Moore	Date/Time 3/17/03 8:30
Relinquished by:	Date/Time 0827	Received by:	Date/Time
Relinquished by:	Date/Time	Received by:	Date/Time

Method of Shipment:

Rush | 24-48 Hours | 10 Working Days | By Date

Authorized by: _____ Date _____
(Client Signature Must Accompany Request)

Special Instructions / Remarks:

Distribution: White - On Site Yellow - LAB Pink - Sampler Goldenrod - Client

iiná bá, Ltd.

Date: *26-Mar-03*

CLIENT: Blagg Engineering
Work Order: 0303014
Project: BP - GCU #188

ANALYTICAL QC SUMMARY REPORT

TestCode: BTEX_W

Sample ID	MB_030321	SampType:	MBLK	TestCode:	BTEX_W	Units:	µg/L	Prep Date:	3/21/2003	Run ID:	GC-1_030321A
Client ID:	ZZZZZ	Batch ID:	R4310	TestNo:	SW8021B			Analysis Date:	3/21/2003	SeqNo:	62899

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.50									
Ethylbenzene	ND	0.50									
m,p-Xylene	ND	1.0									
o-Xylene	ND	0.50									
Toluene	0.1007	0.50									J

Sample ID	LCS_030321	SampType:	LCS	TestCode:	BTEX_W	Units:	µg/L	Prep Date:	3/21/2003	Run ID:	GC-1_030321A
Client ID:	ZZZZZ	Batch ID:	R4310	TestNo:	SW8021B			Analysis Date:	3/21/2003	SeqNo:	62898

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	36.76	0.50	40	0	91.9	88	110	0	0		
Ethylbenzene	36.81	0.50	40	0	92	90	110	0	0		
m,p-Xylene	75.35	1.0	80	0	94.2	86	110	0	0		
o-Xylene	38.11	0.50	40	0	95.3	89	110	0	0		
Toluene	37.29	0.50	40	0.1007	93	87	110	0	0		

Sample ID	0303010-009AMS	SampType:	MS	TestCode:	BTEX_W	Units:	µg/L	Prep Date:	3/21/2003	Run ID:	GC-1_030321A
Client ID:	ZZZZZ	Batch ID:	R4310	TestNo:	SW8021B			Analysis Date:	3/21/2003	SeqNo:	62900

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	779.1	10	800	5.968	96.6	84	106	0	0		
Ethylbenzene	866.5	10	800	94.07	96.6	84	111	0	0		
m,p-Xylene	1583	20	1600	7.744	98.5	80	118	0	0		
o-Xylene	794.7	10	800	2.008	99.1	83	108	0	0		
Toluene	787.5	10	800	4.582	97.9	86	105	0	0		

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Blagg Engineering
Work Order: 0303014
Project: BP - GCU #188

ANALYTICAL QC SUMMARY REPORT

TestCode: BTEX_W

Sample ID 0303010-009AMSD	SampType: MSD	TestCode: BTEX_W	Units: µg/L	Prep Date: 3/21/2003	Run ID: GC-1_030321A
Client ID: ZZZZZ	Batch ID: R4310	TestNo: SW8021B		Analysis Date: 3/21/2003	SeqNo: 62901

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	744.8	10	800	5.968	92.4	80	106	779.1	4.50	5	
Ethylbenzene	829.3	10	800	94.07	91.9	82	108	866.5	4.38	5	
m,p-Xylene	1516	20	1600	7.744	94.3	80	113	1583	4.33	5	
o-Xylene	764.1	10	800	2.008	95.3	82	105	794.7	3.93	4	
Toluene	754.1	10	800	4.582	93.7	83	105	787.5	4.34	5	

Sample ID CCV1_030321	SampType: CCV	TestCode: BTEX_W	Units: µg/L	Prep Date: 3/21/2003	Run ID: GC-1_030321A
Client ID: ZZZZZ	Batch ID: R4310	TestNo: SW8021B		Analysis Date: 3/21/2003	SeqNo: 62893

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	18.91	0.50	20	0	94.6	85	115	0	0		
Ethylbenzene	18.95	0.50	20	0	94.8	85	115	0	0		
m,p-Xylene	38.31	1.0	40	0	95.8	85	115	0	0		
o-Xylene	19.52	0.50	20	0	97.6	85	115	0	0		
Toluene	19.06	0.50	20	0	95.3	85	115	0	0		

Sample ID CCV2_030321	SampType: CCV	TestCode: BTEX_W	Units: µg/L	Prep Date: 3/21/2003	Run ID: GC-1_030321A
Client ID: ZZZZZ	Batch ID: R4310	TestNo: SW8021B		Analysis Date: 3/21/2003	SeqNo: 62894

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	38.22	0.50	40	0	95.5	85	115	0	0		
Ethylbenzene	37.92	0.50	40	0	94.8	85	115	0	0		
m,p-Xylene	77.23	1.0	80	0	96.5	85	115	0	0		
o-Xylene	38.93	0.50	40	0	97.3	85	115	0	0		
Toluene	38.43	0.50	40	0	96.1	85	115	0	0		

Sample ID CCV3_030321	SampType: CCV	TestCode: BTEX_W	Units: µg/L	Prep Date: 3/21/2003	Run ID: GC-1_030321A
Client ID: ZZZZZ	Batch ID: R4310	TestNo: SW8021B		Analysis Date: 3/21/2003	SeqNo: 62895

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	18.14	0.50	20	0	90.7	85	115	0	0		

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Blagg Engineering
Work Order: 0303014
Project: BP - GCU #188

ANALYTICAL QC SUMMARY REPORT

TestCode: BTEX_W

Sample ID	CCV3_030321	SampType:	CCV	TestCode:	BTEX_W	Units:	µg/L	Prep Date:	3/21/2003	Run ID:	GC-1_030321A
Client ID:	ZZZZZ	Batch ID:	R4310	TestNo:	SW8021B			Analysis Date:	3/21/2003	SeqNo:	62895

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	18.26	0.50	20	0	91.3	85	115	0	0		
m,p-Xylene	36.67	1.0	40	0	91.7	85	115	0	0		
o-Xylene	18.66	0.50	20	0	93.3	85	115	0	0		
Toluene	18.17	0.50	20	0	90.9	85	115	0	0		

Sample ID	CCV4_030321	SampType:	CCV	TestCode:	BTEX_W	Units:	µg/L	Prep Date:	3/21/2003	Run ID:	GC-1_030321A
Client ID:	ZZZZZ	Batch ID:	R4310	TestNo:	SW8021B			Analysis Date:	3/21/2003	SeqNo:	62896

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.6	0.50	20	0	98	85	115	0	0		
Ethylbenzene	19.9	0.50	20	0	99.5	85	115	0	0		
m,p-Xylene	40.6	1.0	40	0	102	85	115	0	0		
o-Xylene	20.42	0.50	20	0	102	85	115	0	0		
Toluene	19.83	0.50	20	0	99.1	85	115	0	0		

Sample ID	CCV5_030321	SampType:	CCV	TestCode:	BTEX_W	Units:	µg/L	Prep Date:	3/21/2003	Run ID:	GC-1_030321A
Client ID:	ZZZZZ	Batch ID:	R4310	TestNo:	SW8021B			Analysis Date:	3/21/2003	SeqNo:	62897

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.19	0.50	20	0	96	85	115	0	0		
Ethylbenzene	19.86	0.50	20	0	99.3	85	115	0	0		
m,p-Xylene	39.42	1.0	40	0	98.5	85	115	0	0		
o-Xylene	19.78	0.50	20	0	98.9	85	115	0	0		
Toluene	19.29	0.50	20	0	96.5	85	115	0	0		

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

iiná bá, Ltd.

Date: 26-Mar-03

CLIENT: Blagg Engineering
Work Order: 0303014
Project: BP - GCU #188
Test No: SW8021B **Matrix:** W

QC SUMMARY REPORT
SURROGATE RECOVERIES

Sample ID	14FBZ	4BCBZ	FLBZ
0303010-009AMS	104	108	105
0303010-009AMSD	105	112	103
0303014-001A	99.1	108	102
CCV1_030321	106	105	103
CCV2_030321	104	107	104
CCV3_030321	105	116	104
CCV4_030321	106	105	105
CCV5_030321	106	103	103
LCS_030321	106	105	103
MB_030321	105	103	104

Acronym		Surrogate	QC Limits
14FBZ	=	1,4-Difluorobenzene	70-130
4BCBZ	=	4-Bromochlorobenzene	70-130
FLBZ	=	Fluorobenzene	70-130

*** Surrogate recovery outside acceptance limits**

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iiná bá, Ltd.

Date: *26-Mar-03*

CLIENT: Blagg Engineering
Work Order: 0303006
Project: BP - GCU #188 Production Tank Pit

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015DR2_S

Sample ID	MBLK_030325	SampType:	MBLK	TestCode:	8015DR2_S	Units:	mg/Kg	Prep Date:	3/17/2003	Run ID:	GC-2_030325A
Client ID:	ZZZZZ	Batch ID:	R4321	TestNo:	SW8015B			Analysis Date:	3/25/2003	SeqNo:	63003

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
T/R Hydrocarbons: C10-C28	ND	25.0									

Sample ID	LCS_030325	SampType:	LCS	TestCode:	8015DR2_S	Units:	mg/Kg	Prep Date:	3/17/2003	Run ID:	GC-2_030325A
Client ID:	ZZZZZ	Batch ID:	R4321	TestNo:	SW8015B			Analysis Date:	3/25/2003	SeqNo:	63004

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
T/R Hydrocarbons: C10-C28	433.3	25.0	501	0	86.5	70	123	0	0		

Sample ID	0303007-001AMS	SampType:	MS	TestCode:	8015DR2_S	Units:	mg/Kg	Prep Date:	3/17/2003	Run ID:	GC-2_030325A
Client ID:	ZZZZZ	Batch ID:	R4321	TestNo:	SW8015B			Analysis Date:	3/25/2003	SeqNo:	63008

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
T/R Hydrocarbons: C10-C28	887.3	25.0	501	305.2	116	63	135	0	0		

Sample ID	0303006-001AD	SampType:	DUP	TestCode:	8015DR2_S	Units:	mg/Kg	Prep Date:	3/17/2003	Run ID:	GC-2_030325A
Client ID:	BH1 @ 14ft.	Batch ID:	R4321	TestNo:	SW8015B			Analysis Date:	3/25/2003	SeqNo:	63006

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
T/R Hydrocarbons: C10-C28	2162	25.0	0	0	0	0	0	2227	2.98	32	

Sample ID	CCV1_030325	SampType:	CCV	TestCode:	8015DR2_S	Units:	mg/Kg	Prep Date:	3/17/2003	Run ID:	GC-2_030325A
Client ID:	ZZZZZ	Batch ID:	R4321	TestNo:	SW8015B			Analysis Date:	3/25/2003	SeqNo:	63009

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
T/R Hydrocarbons: C10-C28	470.5	25.0	501	0	93.9	85	115	0	0		

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Blagg Engineering
Work Order: 0303006
Project: BP - GCU #188 Production Tank Pit

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015DR2_S

Sample ID	CCV2_030325	SampType:	CCV	TestCode:	8015DR2_S	Units:	mg/Kg	Prep Date:	3/17/2003	Run ID:	GC-2_030325A
Client ID:	ZZZZZ	Batch ID:	R4321	TestNo:	SW8015B			Analysis Date:	3/25/2003	SeqNo:	63010

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
T/R Hydrocarbons: C10-C28	441.4	25.0	501	0	88.1	85	115	0	0		

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Blagg Engineering
Work Order: 0303006
Project: BP - GCU #188 Production Tank Pit

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GRO_S

Sample ID	MB_030322	SampType:	MBLK	TestCode:	8015GRO_S	Units:	mg/Kg	Prep Date:	3/22/2003	Run ID:	GC-1B_030322A	
Client ID:	ZZZZZ	Batch ID:	R4308	TestNo:	SW8015B			Analysis Date:	3/22/2003	SeqNo:	62809	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
T/R Hydrocarbons: C6-C10		2.482	4.50									J

Sample ID	LCS_030322	SampType:	LCS	TestCode:	8015GRO_S	Units:	mg/Kg	Prep Date:	3/22/2003	Run ID:	GC-1B_030322A	
Client ID:	ZZZZZ	Batch ID:	R4308	TestNo:	SW8015B			Analysis Date:	3/22/2003	SeqNo:	62811	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
T/R Hydrocarbons: C6-C10		48.61	4.50	45	2.482	103	68	123	0	0		

Sample ID	0303007-001AMS	SampType:	MS	TestCode:	8015GRO_S	Units:	mg/Kg	Prep Date:	3/22/2003	Run ID:	GC-1B_030322A	
Client ID:	ZZZZZ	Batch ID:	R4308	TestNo:	SW8015B			Analysis Date:	3/22/2003	SeqNo:	62814	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
T/R Hydrocarbons: C6-C10		3383	180	1800	1617	98.1	74	111	0	0		

Sample ID	0303007-001AMSD	SampType:	MSD	TestCode:	8015GRO_S	Units:	mg/Kg	Prep Date:	3/22/2003	Run ID:	GC-1B_030322A	
Client ID:	ZZZZZ	Batch ID:	R4308	TestNo:	SW8015B			Analysis Date:	3/22/2003	SeqNo:	62815	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
T/R Hydrocarbons: C6-C10		3421	180	1800	1617	100	70	112	3383	1.13	12	

Sample ID	CCV1_030322	SampType:	CCV	TestCode:	8015GRO_S	Units:	mg/Kg	Prep Date:	3/22/2003	Run ID:	GC-1B_030322A	
Client ID:	ZZZZZ	Batch ID:	R4308	TestNo:	SW8015B			Analysis Date:	3/22/2003	SeqNo:	62810	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
T/R Hydrocarbons: C6-C10		1.977	0.180	1.8	0	110	85	115	0	0		

Sample ID	CCV2_030322	SampType:	CCV	TestCode:	8015GRO_S	Units:	mg/Kg	Prep Date:	3/22/2003	Run ID:	GC-1B_030322A	
Client ID:	ZZZZZ	Batch ID:	R4308	TestNo:	SW8015B			Analysis Date:	3/22/2003	SeqNo:	62816	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Blagg Engineering
Work Order: 0303006
Project: BP - GCU #188 Production Tank Pit

ANALYTICAL QC SUMMARY REPORT

TestCode: 8015GRO_S

Sample ID	CCV2_030322	SampType:	CCV	TestCode:	8015GRO_S	Units:	mg/Kg	Prep Date:	3/22/2003	Run ID:	GC-1B_030322A
Client ID:	ZZZZZ	Batch ID:	R4308	TestNo:	SW8015B			Analysis Date:	3/22/2003	SeqNo:	62816

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
T/R Hydrocarbons: C6-C10	1.945	0.180	1.8	0	108	85	115	0	0		

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

iiná bá, Ltd.

Date: 26-Mar-03

CLIENT: Blagg Engineering
Work Order: 0303006
Project: BP - GCU #188 Production Tank Pi
Test No: SW8015B **Matrix:** S

QC SUMMARY REPORT
SURROGATE RECOVERIES

Sample ID	OT	TFT
0303006-001A	116	109
0303006-001AD	112	
0303007-001AMS	85.8	103
0303007-001AMSD		103
CCV1_030322		95.2
CCV1_030325	102	
CCV2_030322		93.7
CCV2_030325	101	
LCS_030322		96.9
LCS_030325	75.7	
MB_030322		94.6
MBLK_030325	43.0	

Acronym		Surrogate	QC Limits
OT	=	o-Terphenyl	25-165
TFT	=	Trifluorotoluene	73-133

*** Surrogate recovery outside acceptance limits**

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iiná bá, Ltd.

Sample Receipt Checklist

Client Name: **BLA1002** Date and Time Received: **3/12/2003**

Work Order Number: **0303006** Received by: JEM

Checklist completed by: Heidi R (Signature) 3/12/03 (Date) Reviewed by: jem (Initials) 3/13/03 (Date)

Matrix: Carrier name: Courier

Shipping container/cooler in good condition?	Yes ✓	No	Not Present
Custody seals intact on shippping container/cooler?	Yes	No	Not Present ✓
Custody seals intact on sample bottles?	Yes	No	Not Present ✓
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	
Container/Temp Blank temperature in compliance?	Yes ✓	No	
Water - VOA vials have zero headspace?	No VOA vials submitted ✓	Yes	No
Water - pH acceptable upon receipt?	Yes ✓	No	

Adjusted? Checked by:

Any No and/or NA (not applicable) response must be detailed in the comments section below.

Client contacted: Date contacted: Person contacted:

Contacted by: Regarding:

Comments:

Corrective Action:

iiná bá, Ltd.

Sample Receipt Checklist

Client Name: **BLA1002** Date and Time Received: **3/17/2003**

Work Order Number: **0303014** Received by: JEM

Checklist completed by: J Moore 3/17/03 (Signature / Date) Reviewed by: JE 3/17/03 (Initials / Date)

Matrix: Carrier name: Nelson Velez

Shipping container/cooler in good condition?	Yes ✓	No	Not Present
Custody seals intact on shippping container/cooler?	Yes	No	Not Present ✓
Custody seals intact on sample bottles?	Yes	No	Not Present ✓
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	
Container/Temp Blank temperature in compliance?	Yes ✓	No	
Water - VOA vials have zero headspace?	No VOA vials submitted	Yes ✓	No
Water - pH acceptable upon receipt?	Yes ✓	No	

Adjusted? _____ Checked by: _____

Any No and/or NA (not applicable) response must be detailed in the comments section below.

Client contacted: Date contacted: Person contacted:

Contacted by: Regarding:

Comments:

Corrective Action:

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : N / A

GCU # 188 - PROD. TANK PIT
UNIT J, SEC. 30, T29N, R12W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : **May 29, 2003**

SAMPLER : N J V

Filename : **05-29-03.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)	VOLUME PURGED (gal.)	FREE PRODUCT (ft)
MW - 2	-	-	13.78	17.50	0935	6.93	2,300	1.75	-
					INSTRUMENT CALIBRATIONS =	7.00	2,800		
					DATE & TIME =	05/29/03	06:55		

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:

1.25 " well diameter = 0.19 gallons per foot of water (or 24 oz.).

2 bails per foot - small teflon bailer.

3 bails per foot - 3 / 4 " teflon bailer.

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

4.00 " well diameter = 1.95 gallons per foot of water.

Comments or note well diameter if not standard 2 ".

Excellent recovery , wisp of sheen observed within disposal bucket during purging , collected BTEX only .

Top of casing MW # 2 ~ @ grade .

Hall Environmental Analysis Laboratory

Date: *05-Jun-03*

CLIENT:	Blagg Engineering	**Client Sample ID:**	GCU#188 MW#2
Lab Order:	0305215	**Collection Date:**	5/29/2003 9:35:00 AM
Project:	GCU Lease		
Lab ID:	0305215-04	**Matrix:**	AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	10	2.5		µg/L	5	6/3/2003 11:22:43 AM
Toluene	18	2.5		µg/L	5	6/3/2003 11:22:43 AM
Ethylbenzene	23	2.5		µg/L	5	6/3/2003 11:22:43 AM
Xylenes, Total	180	2.5		µg/L	5	6/3/2003 11:22:43 AM
Surr: 4-Bromofluorobenzene	103	74-118		%REC	5	6/3/2003 11:22:43 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

CHAIN-OF-CUSTODY RECORD

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

Client: BLAGG ENER. / BP AMERICA

Project Name: GCU LEASE

Address: P.O. BOX 87
BLOOMFIELD, NM 87413

Project #:

Project Manager: JEFF BLAGG

Phone #: 505-632-1199

Fax #: 505-632-3903

Sampler: NELSON VELEZ

Samples Cold?: 2.3 ☒ Yes ☐ No

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HCl	HEAL No.	BTEX + ~~MTBE + TMB's~~ (8021B)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B MOD (Gas/Diesel)	TPH (Method 418.1)	Volatiles Full List (8021)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Cations (Na, K, Ca, Mg)	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260 (VOA)	8270 (Semi-VOA)			Air Bubbles or Headspace (Y or N)
							0305215	(BTEX)																
5/29/03	0935	WATER	GCU #188 MW #2	2-40 ml	✓		4	✓																

Date: 5/30/03 Time: 0700 Relinquished By: (Signature) Nelson Vel

Received By: (Signature) 5/30/03 1643

Date: Time: Relinquished By: (Signature)

Received By: (Signature)

Remarks:

Hall Environmental Analysis Laboratory

Date: *05-Jun-03*

CLIENT: Blagg Engineering
Work Order: 0305215
Project: GCU Lease

QC SUMMARY REPORT
Method Blank

Sample ID **Reagent Blank 5m** Batch ID: **R8430** Test Code: **SW8021** Units: **µg/L** Analysis Date **6/2/2003 9:34:55 AM** Prep Date

Client ID: Run ID: **PIDFID_030602A** SeqNo: **190827**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.50									
Toluene	ND	0.50									
Ethylbenzene	ND	0.50									
Xylenes, Total	ND	0.50									
Surr: 4-Bromofluorobenzene	21.07	0	20	0	105	74	118	0			

Sample ID **Reagent Blank 5m** Batch ID: **R8442** Test Code: **SW8021** Units: **µg/L** Analysis Date **6/3/2003 8:47:01 AM** Prep Date

Client ID: Run ID: **PIDFID_030603A** SeqNo: **191050**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.50									
Toluene	ND	0.50									
Ethylbenzene	ND	0.50									
Xylenes, Total	ND	0.50									
Surr: 4-Bromofluorobenzene	19.87	0	20	0	99.3	74	118	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: *05-Jun-03*

CLIENT: Blagg Engineering
Work Order: 0305215
Project: GCU Lease

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID **BTEX Std 100ng** Batch ID: **R8430** Test Code: **SW8021** Units: **µg/L** Analysis Date **6/2/2003 8:54:19 PM** Prep Date

Client ID: Run ID: **PIDFID_030602A** SeqNo: **190886**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.02	0.50	20	0	100	81.3	121	0			
Toluene	20.35	0.50	20	0	102	84.9	118	0			
Ethylbenzene	20.23	0.50	20	0	101	53.8	149	0			
Xylenes, Total	61.24	0.50	60	0	102	83.1	122	0			

Sample ID **BTEX Std 100ng** Batch ID: **R8430** Test Code: **SW8021** Units: **µg/L** Analysis Date **6/2/2003 10:32:32 PM** Prep Date

Client ID: Run ID: **PIDFID_030602A** SeqNo: **190887**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.44	0.50	20	0	107	81.3	121	20.02	6.82	27	
Toluene	21.21	0.50	20	0	106	84.9	118	20.35	4.14	19	
Ethylbenzene	21.34	0.50	20	0	107	53.8	149	20.23	5.33	10	
Xylenes, Total	63.89	0.50	60	0	106	83.1	122	61.24	4.22	13	

Sample ID **BTEX Std 87.5ng** Batch ID: **R8442** Test Code: **SW8021** Units: **µg/L** Analysis Date **6/3/2003 9:51:05 AM** Prep Date

Client ID: Run ID: **PIDFID_030603A** SeqNo: **191064**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.05	0.50	20	0	95.3	81.3	121	0			
Toluene	18.9	0.50	20	0	94.5	84.9	118	0			
Ethylbenzene	18.89	0.50	20	0	94.5	53.8	149	0			
Xylenes, Total	56.74	0.50	60	0	94.6	83.1	122	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name **BLAGG** Date and Time Receive

Work Order Number **0305215** Received by AMG

Checklist completed by Signature 5/30/03 Date

Matrix: Carrier name: Greyhound

Shipping container/cooler in good condition?	Yes	☑	No	☐	Not Present	☐
Custody seals intact on shippping container/cooler?	Yes	☐	No	☐	Not Present	☑
Custody seals intact on sample bottles?	Yes	☐	No	☐	Not Present	☑
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 - pH acceptable upon receipt?	Yes	☐	No	☐	N/A	☑

Container/Temp Blank temperature? **23°** *4° C ± 2 Acceptable*

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : N / A

GCU # 188 - PROD. TANK PIT
UNIT J, SEC. 30, T29N, R12W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : **August 18, 2003**

SAMPLER : N J V

Filename : **08-18-03.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 - 2	-	-	13.88	17.50	1020	6.86	3,000	21.1	1.75
					INSTRUMENT CALIBRATIONS =	7.00	2,800		
					DATE & TIME =	08/18/03	0815		

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, wisp of sheen observed within disposal bucket during purging, collected BTEX only.

Top of casing MW # 2 ~ @ grade.

Hall Environmental Analysis Laboratory

Date: *28-Aug-03*

CLIENT:	Blagg Engineering	**Lab Order:**	0308148
Project:	GCU Lease		

Lab ID:	0308148-03	**Collection Date:**	8/18/2003 10:20:00 AM
Client Sample ID:	#188 - MW #2	**Matrix:**	AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	15	2.5		µg/L	5	8/25/2003 3:07:23 PM
Toluene	ND	2.5		µg/L	5	8/25/2003 3:07:23 PM
Ethylbenzene	37	2.5		µg/L	5	8/25/2003 3:07:23 PM
Xylenes, Total	220	2.5		µg/L	5	8/25/2003 3:07:23 PM
Surr: 4-Bromofluorobenzene	139	74-118	S	%REC	5	8/25/2003 3:07:23 PM

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range

CHAIN-OF-CUSTODY RECORD

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

Client: BLAGG ENGR. / BP AMERICA PROD. CO.

Address: P.O. BOX 87
BLOOMFIELD, NM 87413

Phone #: (505) 632-1199

Fax #: (505) 632-3903

Project Name: GCU LEASE

Project #:

Project Manager: NELSON VELEZ

Sampler: NELSON VELEZ

Samples Cold?: ☑ Yes ☐ No 6.0°

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative: $HgCl_2$	Preservative: HCl	Preservative:	HEAL No.
8/18/03	1020	WATER	#188-MW #2	2-40ml	✓			-3

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

Date	Time	Relinquished By: (Signature)	Received By: (Signature)	Date	Time
8/19/03	0935			8/20/03	0840

Remarks:

Hall Environmental Analysis Laboratory

Date: *28-Aug-03*

CLIENT: Blagg Engineering
Work Order: 0308148
Project: GCU Lease

QC SUMMARY REPORT
Method Blank

Sample ID **Reagent Blank 5m** Batch ID: **R9343** Test Code: **SW8021** Units: **µg/L** Analysis Date **8/25/2003 9:16:56 AM** Prep Date

Client ID: Run ID: **PIDFID_030825A** SeqNo: **210719**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.50									
Toluene	ND	0.50									
Ethylbenzene	ND	0.50									
Xylenes, Total	ND	0.50									
Surr: 4-Bromofluorobenzene	21.19	0	20	0	106	74	118	0			

Sample ID **Reagent Blank 5m** Batch ID: **R9362** Test Code: **SW8021** Units: **µg/L** Analysis Date **8/26/2003 9:30:49 AM** Prep Date

Client ID: Run ID: **PIDFID_030826A** SeqNo: **211096**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.50									
Toluene	ND	0.50									
Ethylbenzene	ND	0.50									
Xylenes, Total	ND	0.50									
Surr: 4-Bromofluorobenzene	19.81	0	20	0	99.1	74	118	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

I

Hall Environmental Analysis Laboratory

Date: *28-Aug-03*

CLIENT: Blagg Engineering
Work Order: 0308148
Project: GCU Lease

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID **BTEX Std 100ng** Batch ID: **R9343** Test Code: **SW8021** Units: **µg/L** Analysis Date **8/25/2003 6:45:46 PM** Prep Date

Client ID: Run ID: **PIDFID_030825A** SeqNo: **210771**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.11	0.50	20	0	101	81.3	121	0			
Toluene	19.96	0.50	20	0	99.8	84.9	118	0			
Ethylbenzene	19.3	0.50	20	0	96.5	53.8	149	0			
Xylenes, Total	59.57	0.50	60	0	99.3	83.1	122	0			

Sample ID **BTEX Std 100ng** Batch ID: **R9343** Test Code: **SW8021** Units: **µg/L** Analysis Date **8/26/2003 1:53:40 AM** Prep Date

Client ID: Run ID: **PIDFID_030825A** SeqNo: **210773**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.82	0.50	20	0	104	81.3	121	20.11	3.47	27	
Toluene	20.92	0.50	20	0	105	84.9	118	19.96	4.70	19	
Ethylbenzene	20.17	0.50	20	0	101	53.8	149	19.3	4.38	10	
Xylenes, Total	61.91	0.50	60	0	103	83.1	122	59.57	3.85	13	

Sample ID **BTEX Std 100ng** Batch ID: **R9362** Test Code: **SW8021** Units: **µg/L** Analysis Date **8/26/2003 7:19:17 PM** Prep Date

Client ID: Run ID: **PIDFID_030826A** SeqNo: **211140**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.6	0.50	20	0	103	81.3	121	0			
Toluene	20.95	0.50	20	0	105	84.9	118	0			
Ethylbenzene	19.98	0.50	20	0	99.9	53.8	149	0			
Xylenes, Total	61.52	0.50	60	0	103	83.1	122	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

1

CLIENT: Blagg Engineering
Work Order: 0308148
Project: GCU Lease

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

Sample ID **BTEX Std 100ng** Batch ID: **R9362** Test Code: **SW8021** Units: **µg/L** Analysis Date **8/27/2003 3:35:46 AM** Prep Date

Client ID: Run ID: **PIDFID_030826A** SeqNo: **211141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.6	0.50	20	0	108	81.3	121	20.6	4.74	27	
Toluene	21.2	0.50	20	0	106	84.9	118	20.95	1.15	19	
Ethylbenzene	20.39	0.50	20	0	102	53.8	149	19.98	2.02	10	
Xylenes, Total	61.32	0.50	60	0	102	83.1	122	61.52	0.332	13	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name **BLAGG** Date and Time Receive **8/20/03**

Work Order Number **0308148** Received by **AT**

Checklist completed by _____ _____
Signature Date

Matrix: Carrier name: Greyhound

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
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 - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
Container/Temp Blank temperature?	6°	*4° C ± 2 Acceptable*	

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

Hall Environmental Analysis Laboratory

Date: *28-Aug-03*

CLIENT: Blagg Engineering
Project: GCU Lease
Lab Order: 0308148

CASE NARRATIVE

Analytical Comments for METHOD 8021BTEX_W, SAMPLE 0308148-02a: Elevated surrogate due to matrix interference. Analytical Comments for METHOD 8021BTEX_W, SAMPLE 0308148-03a: Elevated surrogate due to matrix interference.

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : N / A

GCU # 188 - PROD. TANK PIT
UNIT J, SEC. 30, T29N, R12W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : November 18, 2003

SAMPLER : N J V

Filename : 11-18-03.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 - 2	-	-	13.45	17.50	1350	6.86	2,700	15.3	2.00
					INSTRUMENT CALIBRATIONS =	7.00	2,800		
					DATE & TIME =	11/18/03	1340		

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 , wisp of sheen observed within disposal bucket during purging , collected BTEX only .

Top of casing MW # 2 ~ @ grade .

Hall Environmental Analysis Laboratory

Date: *01-Dec-03*

CLIENT: Blagg Engineering
Project: GCU Lease

Lab Order: 0311145

Lab ID: 0311145-03 **Collection Date:** 11/18/2003 1:50:00 PM
Client Sample ID: GCU#188 MW#2 **Matrix:** AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	31	5.0		µg/L	10	11/30/2003 6:32:44 PM
Toluene	ND	5.0		µg/L	10	11/30/2003 6:32:44 PM
Ethylbenzene	74	5.0		µg/L	10	11/30/2003 6:32:44 PM
Xylenes, Total	470	5.0		µg/L	10	11/30/2003 6:32:44 PM
Surr: 4-Bromofluorobenzene	128	74-118	S	%REC	10	11/30/2003 6:32:44 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

CHAIN-OF-CUSTODY RECORD

Accreditation Applied:
NELAC ☐ USACE ☐
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 ENER. / BP AMERICA

Project Name: GCU LEASE

Address: P.O. BOX 87
BLOOMFIELD, NM 87413

Project #:

Project Manager: NJV

Phone #: (505) 632-1199

Sampler: NJV

Fax #: (505) 632-3903

Sample Temperature: 3°

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative H_gCl_2	Preservative HNO_3	HEAL No.
							031145
11/18/03	1350	WATER	GCU #188 MW #2	2-40ml	✓		3

ANALYSIS REQUEST

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

Date: 11/19/03 Time: 0930 Relinquished By: (Signature)

Date: Time: Relinquished By: (Signature)

Remarks: Gonzales 11/19/03 1702

Remarks:

Hall Environmental Analysis Laboratory

Date: *01-Dec-03*

CLIENT: Blagg Engineering
Work Order: 0311145
Project: GCU Lease

QC SUMMARY REPORT
Method Blank

Sample ID **Reagent Blank 5m** Batch ID: **R10208** Test Code: **SW8021** Units: **µg/L** Analysis Date **11/30/2003 1:57:24 PM** Prep Date

Client ID: Run ID: **PIDFID_031130A** SeqNo: **229168**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.50									
Toluene	ND	0.50									
Ethylbenzene	ND	0.50									
Xylenes, Total	ND	0.50									
Surr: 4-Bromofluorobenzene	19.59	0	20	0	97.9	74	118	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: *01-Dec-03*

CLIENT: Blagg Engineering
Work Order: 0311145
Project: GCU Lease

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID **BTEX Std 100ng** Batch ID: **R10208** Test Code: **SW8021** Units: **µg/L** Analysis Date **11/30/2003 2:58:49 PM** Prep Date

Client ID: Run ID: **PIDFID_031130A** SeqNo: **229186**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	22.23	0.50	20	0	111	81.3	121	0			
Toluene	21.34	0.50	20	0	107	84.9	118	0			
Ethylbenzene	20.48	0.50	20	0	102	53.8	149	0			
Xylenes, Total	62.37	0.50	60	0	104	83.1	122	0			

Sample ID **BTEX Std 100ng** Batch ID: **R10208** Test Code: **SW8021** Units: **µg/L** Analysis Date **12/1/2003 1:09:48 AM** Prep Date

Client ID: Run ID: **PIDFID_031130A** SeqNo: **229189**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.38	0.50	20	0	107	81.3	121	22.23	3.91	27	
Toluene	19.81	0.50	20	0	99.0	84.9	118	21.34	7.44	19	
Ethylbenzene	19.28	0.50	20	0	96.4	53.8	149	20.48	6.05	10	
Xylenes, Total	59.67	0.50	60	0	99.5	83.1	122	62.37	4.42	13	

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

/

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name BLAGG | Date and Time Received:

Work Order Number 0311145 | Received by AMG

Checklist completed by A Gonzales 11/19/03
Signature Date

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	☑	of
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 - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑			

Container/Temp Blank temperature? 3° *4° C ± 2 Acceptable* If given sufficient time to cool.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____

Hall Environmental Analysis Laboratory

Date: *01-Dec-03*

CLIENT: Blagg Engineering
Project: GCU Lease
Lab Order: 0311145

CASE NARRATIVE

Analytical Comments for METHOD 8021BTEX_W, SAMPLE 0311145-03a: High surrogate due to matrix interference.

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT: BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY #: N / A

GCU # 188 - PROD. TANK PIT
UNIT J, SEC. 30, T29N, R12W

LABORATORY (S) USED: HALL ENVIRONMENTAL

Date : **March 29, 2004**

SAMPLER: N J V

Filename : **03-29-04.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 - 2	-	-	13.59	17.50	1340	6.86	2,600	21.5	2.00
					INSTRUMENT CALIBRATIONS =	7.00	2,800		
					DATE & TIME =	03/27/04	0800		

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, wisp of sheen observed within disposal bucket during purging, collected BTEX only.

Top of casing MW # 2 ~ @ grade.

Hall Environmental Analysis Laboratory

Date: *05-Apr-04*

CLIENT: Blagg Engineering
Project: GCU Lease
Lab Order: 0403245

Lab ID: 0403245-01
Collection Date: 3/29/2004 1:40:00 PM
Client Sample ID: MW #2 GCU#188
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	11	1.0		µg/L	2	4/1/2004 10:17:23 AM
Toluene	ND	1.0		µg/L	2	4/1/2004 10:17:23 AM
Ethylbenzene	24	1.0		µg/L	2	4/1/2004 10:17:23 AM
Xylenes, Total	180	1.0		µg/L	2	4/1/2004 10:17:23 AM
Surr: 4-Bromofluorobenzene	100	74-118		%REC	2	4/1/2004 10:17:23 AM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

CHAIN-OF-CUSTODY RECORD

Accreditation Applied:
NELAC ☐ USACE ☐
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

Address: P.O. BOX 87
BLOOMFIELD, NM 87413

Phone #: 505-632-1199

Fax #: 505-632-3903 nr

Project Name: GCU LEASE

Project #: nr

Project Manager: NJV

Sampler: NJV

Sample Temperature: 2°C

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	HEAL No.	(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)
3/29/04	1340	WATER	MW #2 - GCU #188	2-40ml	✓			0403245-1	✓														

Date: 3/30/04 Time: 0730 Relinquished By: (Signature) _____ Received By: (Signature) _____ Date: 3/31/04 Time: 0859

Date: _____ Time: _____ Relinquished By: (Signature) _____ Received By: (Signature) _____

Remarks:

Hall Environmental Analysis Laboratory

Date: *05-Apr-04*

CLIENT: Blagg Engineering
Work Order: 0403245
Project: GCU Lease

QC SUMMARY REPORT
Method Blank

Sample ID **Reagent Blank 5m** Batch ID: **R11468** Test Code: **SW8021** Units: **µg/L** Analysis Date **3/31/2004 9:11:45 AM** Prep Date

Client ID: Run ID: **PIDFID_040331A** SeqNo: **262858**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.50									
Toluene	ND	0.50									
Ethylbenzene	ND	0.50									
Xylenes, Total	ND	0.50									
Surr: 4-Bromofluorobenzene	19.99	0	20	0	100	74	118	0			

Sample ID **Reagent Blank 5m** Batch ID: **R11486** Test Code: **SW8021** Units: **µg/L** Analysis Date **4/1/2004 8:07:11 AM** Prep Date

Client ID: Run ID: **PIDFID_040401A** SeqNo: **263233**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.50									
Toluene	ND	0.50									
Ethylbenzene	ND	0.50									
Xylenes, Total	ND	0.50									
Surr: 4-Bromofluorobenzene	19.87	0	20	0	99.4	74	118	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

1

Hall Environmental Analysis Laboratory

Date: *05-Apr-04*

CLIENT: Blagg Engineering
Work Order: 0403245
Project: GCU Lease

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID **0403245-02aMS** Batch ID: **R11468** Test Code: **SW8021** Units: **µg/L** Analysis Date **3/31/2004 3:49:15 PM** Prep Date
Client ID: **MW #3 GCU #93** Run ID: **PIDFID_040331A** SeqNo: **262882**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	24.65	0.50	20	4.406	101	77	122	0			
Toluene	21.48	0.50	20	0.8648	103	81	115	0			
Ethylbenzene	28.14	0.50	20	8.107	100	84	117	0			
Xylenes, Total	65.74	0.50	60	2.973	105	84	116	0			

Sample ID **0403245-02aMSD** Batch ID: **R11468** Test Code: **SW8021** Units: **µg/L** Analysis Date **3/31/2004 4:19:44 PM** Prep Date
Client ID: **MW #3 GCU #93** Run ID: **PIDFID_040331A** SeqNo: **262890**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	24.82	0.50	20	4.406	102	77	122	24.65	0.685	27	
Toluene	21.76	0.50	20	0.8648	104	81	115	21.48	1.29	19	
Ethylbenzene	28.03	0.50	20	8.107	99.6	84	117	28.14	0.394	10	
Xylenes, Total	66.6	0.50	60	2.973	106	84	116	65.74	1.29	13	

3 / 5

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

1

Hall Environmental Analysis Laboratory

Date: *05-Apr-04*

CLIENT: Blagg Engineering
Work Order: 0403245
Project: GCU Lease

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID **BTEX STD 100ng** Batch ID: **R11468** Test Code: **SW8021** Units: **µg/L** Analysis Date **3/31/2004 5:50:52 PM** Prep Date

Client ID: Run ID: **PIDFID_040331A** SeqNo: **262902**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.26	0.50	20	0	106	81.3	121	0			
Toluene	21.15	0.50	20	0	106	84.9	118	0			
Ethylbenzene	20.82	0.50	20	0	104	53.8	149	0			
Xylenes, Total	64.37	0.50	60	0	107	83.1	122	0			

Sample ID **BTEX STD 100ng** Batch ID: **R11486** Test Code: **SW8021** Units: **µg/L** Analysis Date **4/1/2004 8:02:09 PM** Prep Date

Client ID: Run ID: **PIDFID_040401A** SeqNo: **263246**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.13	0.50	20	0	101	81.3	121	0			
Toluene	19.5	0.50	20	0	97.5	84.9	118	0			
Ethylbenzene	19.15	0.50	20	0	95.7	53.8	149	0			
Xylenes, Total	57.7	0.50	60	0	96.2	83.1	122	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

I

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name BLAGG | Date and Time Received: 3/31/2004

Work Order Number 0403245 | Received by AT

Checklist completed by _____ 3/31/04
Signature | Date

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 - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	

Container/Temp Blank temperature? **2°** *4° C ± 2 Acceptable* If given sufficient time to cool.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : N / A

GCU # 188 - PROD. TANK PIT
UNIT J, SEC. 30, T29N, R12W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : **June 23, 2004**

SAMPLER : N J V

Filename : **06-23-04.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 - 2	-	-	13.68	17.50	0910	6.78	2,800	19.3	2.00
					INSTRUMENT CALIBRATIONS =	7.00	2,800		
					DATE & TIME =	06/23/04	0900		

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, wisp of sheen observed within disposal bucket during purging, collected BTEX only.

Top of casing MW # 2 ~ @ grade.

Hall Environmental Analysis Laboratory

Date: *07-Jul-04*

CLIENT: Blagg Engineering
Project: GCU Lease
Lab Order: 0406245

Lab ID: 0406245-01
Client Sample ID: MW#2-GCU#188
Collection Date: 6/23/2004 9:10:00 AM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	12	2.5		µg/L	5	7/2/2004 11:15:00 PM
Toluene	ND	2.5		µg/L	5	7/2/2004 11:15:00 PM
Ethylbenzene	27	2.5		µg/L	5	7/2/2004 11:15:00 PM
Xylenes, Total	170	2.5		µg/L	5	7/2/2004 11:15:00 PM
Surr: 4-Bromofluorobenzene	96.5	74-118		%REC	5	7/2/2004 11:15:00 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

CHAIN-OF-CUSTODY RECORD

Accreditation Applied:
NELAC ☐ USACE ☐
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 / BP AMERICA

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

Phone #: 505-632-1199

Fax #: 505-632-3903

Project Name: GCU LEASE

Project #:

Project Manager: NJV

Sampler: NJV

Sample Temperature: 2°

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	HEAL No.	(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)
6/23/04	0910	WATER	MW #2-GCU #188	2-40ml	✓		0406245-1	✓															

Date: 6/24/04 Time: 0600 Relinquished By: (Signature) Nelson Velez

Received By: (Signature) 6/24/04 1705

Date: Time: Relinquished By: (Signature)

Received By: (Signature)

Remarks:

Hall Environmental Analysis Laboratory

Date: *07-Jul-04*

CLIENT: Blagg Engineering
Work Order: 0406245
Project: GCU Lease

QC SUMMARY REPORT
Method Blank

Sample ID **Reagent Blank 5m** Batch ID: **R12337** Test Code: **SW8021** Units: **µg/L** Analysis Date **7/2/2004 10:11:05 AM** Prep Date

Client ID: Run ID: **PIDFID_040702A** SeqNo: **283891**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.5									
Toluene	ND	0.5									
Ethylbenzene	ND	0.5									
Xylenes, Total	ND	0.5									
Surr: 4-Bromofluorobenzene	19.72	0	20	0	98.6	74	118	0			

2/4

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

1

Hall Environmental Analysis Laboratory

Date: *07-Jul-04*

CLIENT: Blagg Engineering
Work Order: 0406245
Project: GCU Lease

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID **BTEX std 100ng** Batch ID: **R12337** Test Code: **SW8021** Units: **µg/L** Analysis Date **7/2/2004 11:11:40 AM** Prep Date

Client ID: Run ID: **PIDFID_040702A** SeqNo: **283917**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.22	0.5	20	0	101	81.3	121	0			
Toluene	19.3	0.5	20	0	96.5	84.9	118	0			
Ethylbenzene	18.75	0.5	20	0	93.8	53.8	149	0			
Xylenes, Total	55.59	0.5	60	0	92.7	83.1	122	0			

3 / 4

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

1

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name BLAGG | Date and Time Received: 6/24/2004

Work Order Number 0406245 | Received by AT

Checklist completed by _____ 6/24/04
Signature | Date

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 - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Container/Temp Blank temperature?	**2°**	*4° C ± 2 Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : N / A

GCU # 188 - PROD. TANK PIT
UNIT J, SEC. 30, T29N, R12W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : December 22, 2004

SAMPLER : N J V

Filename : 12-22-04.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 - 2	-	-	12.87	17.50	0915	N/A	N/A	N/A	2.25
					INSTRUMENT CALIBRATIONS =				
					DATE & TIME =				

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 , wisp of sheen observed within disposal bucket during purging , collected BTEX only .

Top of casing MW # 2 ~ @ grade .

Hall Environmental Analysis Laboratory

Date: *03-Jan-05*

CLIENT: Blagg Engineering
Project: GCU Lease

Lab Order: 0412231

Lab ID: 0412231-01
Client Sample ID: MW #2-GCU #188

Collection Date: 12/22/2004 9:15:00 AM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8260: VOLATILES SHORT LIST						Analyst: KTM
Benzene	18	1.0		µg/L	1	12/28/2004
Toluene	ND	1.0		µg/L	1	12/28/2004
Ethylbenzene	71	1.0		µg/L	1	12/28/2004
Xylenes, Total	520	5.0		µg/L	5	12/29/2004
Surr: 4-Bromofluorobenzene	105	76.2-122		%REC	1	12/28/2004

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

CHAIN-OF-CUSTODY RECORD

Accreditation Applied:
NELAC ☐ USACE ☐
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 ENER. / BP AMERICA
Address: P.O. BOX 87
BLFD, NM 87413
Phone #: 505-632-1199
Fax #: 505-632-3903

Project Name: GCU LEASE
Project #:
Project Manager: NJV
Sampler: NJV
Sample Temperature: 4°

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	Preservative	HEAL No.	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)
12/22/04	0915	WATER	MW #2 - GCU #188	2-40ml	✓			0412231-1	✓															

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)	Remarks:
12/23/04	0830		12/23/04	
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)	
			16:50	

Hall Environmental Analysis Laboratory

Date: *03-Jan-05*

CLIENT: Blagg Engineering
Work Order: 0412231
Project: GCU Lease

QC SUMMARY REPORT
Method Blank

Sample ID **5mL rb** Batch ID: **R14158** Test Code: **SW8260B** Units: **µg/L** Analysis Date **12/28/2004** Prep Date

Client ID: Run ID: **THOR_041228A** SeqNo: **329216**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1									
Toluene	ND	1									
Ethylbenzene	ND	1									
Xylenes, Total	ND	1									
Surr: 4-Bromofluorobenzene	9.466	0	10	0	94.7	76.2	122	0			

Sample ID **5mL rb** Batch ID: **R14177** Test Code: **SW8260B** Units: **µg/L** Analysis Date **12/29/2004** Prep Date

Client ID: Run ID: **THOR_041229A** SeqNo: **329660**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1									
Toluene	ND	1									
Ethylbenzene	ND	1									
Xylenes, Total	ND	1									
Surr: 4-Bromofluorobenzene	9.58	0	10	0	95.8	76.2	122	0			

3 / 5

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Blagg Engineering
Work Order: 0412231
Project: GCU Lease

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID **100ng lcs** Batch ID: **R14158** Test Code: **SW8260B** Units: **µg/L** Analysis Date **12/28/2004** Prep Date

Client ID: Run ID: **THOR_041228A** SeqNo: **329219**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	23.06	1	20	0	115	76.6	123	0			
Toluene	21.54	1	20	0	108	77	121	0			

Sample ID **100ng lcs** Batch ID: **R14177** Test Code: **SW8260B** Units: **µg/L** Analysis Date **12/29/2004** Prep Date

Client ID: Run ID: **THOR_041229A** SeqNo: **329664**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	22.19	1	20	0	111	76.6	123	0			
Toluene	21.01	1	20	0	105	77	121	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name BLAGG | Date and Time Received: 12/23/2004

Work Order Number 0412231 | Received by AT

Checklist completed by _____ 12/23/04
Signature | Date

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 - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Container/Temp Blank temperature?	4°	*4° C ± 2 Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : N / A

GCU # 188 - PROD. TANK PIT
UNIT J, SEC. 30, T29N, R12W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : March 28, 2005

SAMPLER : N J V

Filename : 03-28-05.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 - 2	-	-	12.86	17.50	1600	6.79	2,300	17.0	2.25
					INSTRUMENT CALIBRATIONS =	7.00	2,800		
					DATE & TIME =	03/28/05	1255		

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, wisp of sheen observed within disposal bucket during purging, collected BTEX only.

Top of casing MW # 2 ~ @ grade.

Hall Environmental Analysis Laboratory

Date: *04-Apr-05*

CLIENT: Blagg Engineering
Project: GCU Lease

Lab Order: 0503265

Lab ID: 0503265-01
Client Sample ID: MW#2 GCU #188

Collection Date: 3/28/2005 4:00:00 PM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	9.3	2.5		µg/L	5	4/1/2005 11:11:41 AM
Toluene	15	2.5		µg/L	5	4/1/2005 11:11:41 AM
Ethylbenzene	42	2.5		µg/L	5	4/1/2005 11:11:41 AM
Xylenes, Total	220	2.5		µg/L	5	4/1/2005 11:11:41 AM
Surr: 4-Bromofluorobenzene	103	83.3-121		%REC	5	4/1/2005 11:11:41 AM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

CHAIN-OF-CUSTODY RECORD

Accreditation Applied:
NELAC ☐ USACE ☐
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: GCU LEASE

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

Project #: NV

Project Manager: NJV

Phone #: 505-632-1199

Sampler: NJV

Fax #: 505-632-3903

Sample Temperature: 5°C

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	HEAL No.	(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)
3/28/05	1600	WATER	MW #2 - GCU #188	2-40ml	✓			0503265-1	✓															

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)
3/29/05	0915		3/29/05 1715
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)

Remarks:

Hall Environmental Analysis Laboratory

Date: *04-Apr-05*

CLIENT: Blagg Engineering
Work Order: 0503265
Project: GCU Lease

QC SUMMARY REPORT
Method Blank

Sample ID Reagent Blank 5m Batch ID: R14984 Test Code: SW8021 Units: µg/L Analysis Date 4/1/2005 9:03:48 AM Prep Date

Client ID: Run ID: PIDFID_050401A SeqNo: 346595

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.5									
Toluene	ND	0.5									
Ethylbenzene	ND	0.5									
Xylenes, Total	ND	0.5									
Surr: 4-Bromofluorobenzene	19.48	0	20	0	97.5	83.3	121	0			

2 / 5

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

1

CLIENT: Blagg Engineering
Work Order: 0503265
Project: GCU Lease

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID 0503265-02a ms	Batch ID: R14984	Test Code: SW8021	Units: µg/L	Analysis Date 4/1/2005 5:45:26 PM	Prep Date
Client ID: MW#2 GCU #194		Run ID: PIDFID_050401A		SeqNo: 348625	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.18	0.5	20	0.4414	104	88.7	114	0			
Toluene	20.37	0.5	20	0.2268	101	89.3	112	0			
Ethylbenzene	23.46	0.5	20	1.487	110	88.6	113	0			
Xylenes, Total	64.53	0.5	60	2.118	104	89.4	112	0			
Surr: 4-Bromofluorobenzene	24.97	0	24	0	104	83.3	121	0			

Sample ID 0503265-02a msd	Batch ID: R14984	Test Code: SW8021	Units: µg/L	Analysis Date 4/1/2005 6:15:44 PM	Prep Date
Client ID: MW#2 GCU #194		Run ID: PIDFID_050401A		SeqNo: 348631	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.65	0.5	20	0.4414	101	88.7	114	21.18	2.56	27	
Toluene	20.75	0.5	20	0.2268	103	89.3	112	20.37	1.84	19	
Ethylbenzene	23.19	0.5	20	1.487	109	88.6	113	23.46	1.17	10	
Xylenes, Total	61.73	0.5	60	2.118	99.3	89.4	112	64.53	4.44	13	
Surr: 4-Bromofluorobenzene	25.22	0	24	0	105	83.3	121	24.97	0.989	0	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

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Hall Environmental Analysis Laboratory

Date: *04-Apr-05*

CLIENT: Blagg Engineering
Work Order: 0503265
Project: GCU Lease

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID BTEX lcs 100ng | Batch ID: R14984 | Test Code: SW8021 | Units: µg/L | Analysis Date 4/1/2005 5:15:08 PM | Prep Date
Client ID: | Run ID: PIDFID_050401A | SeqNo: 348644

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	19.81	0.5	20	0	99.0	88.7	114	0			
Toluene	20.39	0.5	20	0	102	89.3	112	0			
Ethylbenzene	20.77	0.5	20	0	104	88.6	113	0			
Xylenes, Total	59.76	0.5	60	0	99.6	89.4	112	0			

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Qualifiers: ND - Not Detected at the Reporting Limit | S - Spike Recovery outside accepted recovery limits | B - Analyte detected in the associated Method Blank
J - Analyte detected below quantitation limits | R - RPD outside accepted recovery limits

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Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name BLAGG | Date and Time Received: 3/29/2005

Work Order Number 0503265 | Received by AT

Checklist completed by _____ 3/29/05
Signature | Date

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 - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Container/Temp Blank temperature?	5°	*4° C ± 2 Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

_____

_____

_____

_____

Corrective Action _____

_____

_____

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : N / A

GCU # 188 - PROD. TANK PIT
UNIT J, SEC. 30, T29N, R12W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : June 23, 2005

SAMPLER : N J V

Filename : 06-23-05.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 - 2	-	-	12.60	17.50	1440	6.72	2,300	24.3	2.50
					INSTRUMENT CALIBRATIONS =	7.00	2,800		
					DATE & TIME =	06/23/05	0630		

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 , wisp of sheen observed within disposal bucket during purging , collected BTEX only .

Top of casing MW # 2 ~ @ grade .

Hall Environmental Analysis Laboratory

Date: *28-Jun-05*

CLIENT:	Blagg Engineering	**Lab Order:**	0506242
Project:	GCU Lease		

Lab ID: 0506242-02 **Collection Date:** 6/23/2005 2:40:00 PM

Client Sample ID: GCU #188-MW#2 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **KTM**
Benzene	6.3	2.5		µg/L	5	6/28/2005 1:03:40 AM
Toluene	12	2.5		µg/L	5	6/28/2005 1:03:40 AM
Ethylbenzene	29	2.5		µg/L	5	6/28/2005 1:03:40 AM
Xylenes, Total	120	2.5		µg/L	5	6/28/2005 1:03:40 AM
Surr: 4-Bromofluorobenzene	104	83.3-121		%REC	5	6/28/2005 1:03:40 AM

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

CHAIN-OF-CUSTODY RECORD

Accreditation Applied:
NELAC ☐ USACE ☐
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 ENER. / BP AMERICA

Project Name: GCU LEASE

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

Project #: NV

Project Manager: NV

Phone #: 632-1199

Sampler: NV

Fax #: 632-3903

Sample Temperature: 2.0

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	HEAL No.	(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)
							0506252													
5/23/05	1440	WATER	GCU #188 - MW #2	2-40ml	✓		-2	✓												

Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)	Remarks:
5/24/05	0835		5/24/05	
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)	
			1650	

Hall Environmental Analysis Laboratory

Date: *28-Jun-05*

CLIENT: Blagg Engineering
Work Order: 0506242
Project: GCU Lease

QC SUMMARY REPORT
Method Blank

Sample ID **Reagent Blank 5m** Batch ID: **R15814** Test Code: **SW8021** Units: µg/L Analysis Date **6/27/2005 10:15:08 AM** Prep Date

Client ID: Run ID: **PIDFID_050627A** SeqNo: **374760**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.5									
Toluene	ND	0.5									
Ethylbenzene	ND	0.5									
Xylenes, Total	ND	0.5									
Surr: 4-Bromofluorobenzene	20.22	0	20	0	101	83.3	121	0			

2 / 5

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: *28-Jun-05*

CLIENT: Blagg Engineering
Work Order: 0506242
Project: GCU Lease

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID **0506242-01a ms** Batch ID: **R15814** Test Code: **SW8021** Units: **µg/L** Analysis Date **6/28/2005 1:34:27 AM** Prep Date

Client ID: **GCU #214-MW#2R** Run ID: **PIDFID_050627A** SeqNo: **374789**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	47.23	0.5	20	25.65	108	88.7	114	0			
Toluene	20.1	0.5	20	1.041	95.3	89.3	112	0			
Ethylbenzene	21.9	0.5	20	1.897	100	88.6	113	0			
Xylenes, Total	62.75	0.5	60	3.276	99.1	89.4	112	0			
Surr: 4-Bromofluorobenzene	25.09	0	24	0	105	83.3	121	0			

Sample ID **0506242-01a msd** Batch ID: **R15814** Test Code: **SW8021** Units: **µg/L** Analysis Date **6/28/2005 2:05:14 AM** Prep Date

Client ID: **GCU #214-MW#2R** Run ID: **PIDFID_050627A** SeqNo: **374790**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	45.69	0.5	20	25.65	100	88.7	114	47.23	3.33	27	
Toluene	19.63	0.5	20	1.041	93.0	89.3	112	20.1	2.34	19	
Ethylbenzene	21.23	0.5	20	1.897	96.7	88.6	113	21.9	3.09	10	
Xylenes, Total	61.06	0.5	60	3.276	96.3	89.4	112	62.75	2.73	13	
Surr: 4-Bromofluorobenzene	24.57	0	24	0	102	83.3	121	25.09	2.07	0	

3 / 5

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Date: *28-Jun-05*

CLIENT: Blagg Engineering
Work Order: 0506242
Project: GCU Lease

QC SUMMARY REPORT
Laboratory Control Spike - generic

Sample ID **BTEX LCS 2.5ug** Batch ID: **R15814** Test Code: **SW8021** Units: **µg/L** Analysis Date **6/27/2005 1:55:44 PM** *Prep Date*

Client ID: Run ID: **PIDFID_050627A** SeqNo: **374788**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.24	0.5	20	0	101	88.7	114	0			
Toluene	20.39	0.5	20	0	102	89.3	112	0			
Ethylbenzene	20.51	0.5	20	0	103	88.6	113	0			
Xylenes, Total	61.44	0.5	60	0	102	89.4	112	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name **BLAGG** Date and Time Received:

Work Order Number **0506242** Received by AMG

Checklist completed by Signature 6/24/05 Date

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 - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Container/Temp Blank temperature?	2°	*4° C ± 2 Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : N / A

GCU # 188 - PROD. TANK PIT
UNIT J, SEC. 30, T29N, R12W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : **Sept. 21, 2005**

SAMPLER : N J V

Filename : **09-21-05.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 - 2	-	-	13.31	17.50	0905	6.65	2,300	19.2	2.00
					INSTRUMENT CALIBRATIONS =	7.00	2,800		
					DATE & TIME =	09/20/05	0845		

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, wisp of sheen observed within disposal bucket during purging, collected BTEX only.

Top of casing MW # 2 ~ @ grade.

Hall Environmental Analysis Laboratory

Date: *28-Sep-05*

CLIENT: Blagg Engineering
Lab Order: 0509223
Project: GCU #188
Lab ID: 0509223-01

Client Sample ID: MW#2
Collection Date: 9/21/2005 9:05:00 AM
Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Methyl tert-butyl ether (MTBE)	ND	13		µg/L	5	9/23/2005 6:00:30 PM
Benzene	9.0	2.5		µg/L	5	9/23/2005 6:00:30 PM
Toluene	7.7	2.5		µg/L	5	9/23/2005 6:00:30 PM
Ethylbenzene	18	2.5		µg/L	5	9/23/2005 6:00:30 PM
1,2,4-Trimethylbenzene	35	2.5		µg/L	5	9/23/2005 6:00:30 PM
1,3,5-Trimethylbenzene	8.6	2.5		µg/L	5	9/23/2005 6:00:30 PM
Xylenes, Total	190	2.5		µg/L	5	9/23/2005 6:00:30 PM
Surr: 4-Bromofluorobenzene	103	82.2-119		%REC	5	9/23/2005 6:00:30 PM

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

CHAIN-OF-CUSTODY RECORD

Accreditation Applied:
NELAC ☐ USACE ☐
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: GCU #188
Address: P.O. BOX 87 BLFD. NM 87413
Project #: NV
Project Manager: NV
Phone #: 505-632-1199
Sampler: NV
Fax #:
Sample Temperature: 3°

ANALYSIS REQUEST

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	Preservative	HEAL No.
9/21/05	0905	WATER	MW #2	2-40ml	✓			0509223-1

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)	
9/21/05	0905	Nelson Velez	D Schlegel	9/21/05 @ 1700
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)	

Remarks:

Hall Environmental Analysis Laboratory

Date: *28-Sep-05*

CLIENT: Blagg Engineering
Work Order: 0509223
Project: GCU #188

QC SUMMARY REPORT
Method Blank

Sample ID **Reagent Blank 5m** Batch ID: **R16759** Test Code: **SW8021** Units: **µg/L** Analysis Date **9/23/2005 9:37:19 AM** Prep Date

Client ID: Run ID: **PIDFID_050923A** SeqNo: **403397**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	2.5									
Benzene	ND	0.5									
Toluene	ND	0.5									
Ethylbenzene	ND	0.5									
1,2,4-Trimethylbenzene	ND	0.5									
1,3,5-Trimethylbenzene	ND	0.5									
Xylenes, Total	ND	0.5									
Surr: 4-Bromofluorobenzene	18.66	0	20	0	93.3	82.2	119	0			

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Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

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Hall Environmental Analysis Laboratory

Date: *28-Sep-05*

CLIENT: Blagg Engineering
Work Order: 0509223
Project: GCU #188

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID **BTEX lcs 100ng** Batch ID: **R16759** Test Code: **SW8021** Units: **µg/L** Analysis Date **9/23/2005 10:09:01 PM** Prep Date

Client ID: Run ID: **PIDFID_050923A** SeqNo: **403402**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	23.97	2.5	20	0	120	64.5	133	0			
Benzene	18.83	0.5	20	0	94.1	88.5	114	0			
Toluene	19.17	0.5	20	0	95.9	87.2	114	0			
Ethylbenzene	19.35	0.5	20	0	96.7	88.6	113	0			
1,2,4-Trimethylbenzene	19.13	0.5	20	0	95.7	83.8	114	0			
1,3,5-Trimethylbenzene	18.83	0.5	20	0	94.1	82.8	114	0			
Xylenes, Total	39.79	0.5	40	0	99.5	83.3	114	0			

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Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

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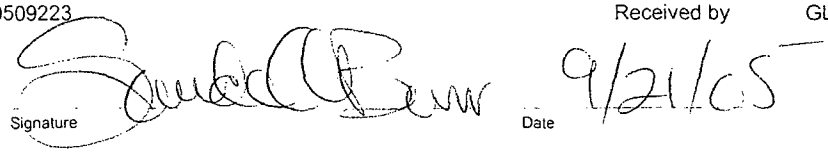
Hall Environmental Analysis Laboratory

Sample Receipt Checklist

Client Name BLAGG | Date and Time Received: 9/21/2005

Work Order Number 0509223 | Received by GLS

Checklist completed by  Signature | Date 9/21/05

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 - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Container/Temp Blank temperature?	3°	*4° C ± 2 Acceptable* *If given sufficient time to cool.*		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____