

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-141
Revised October 10, 2003

Submit 2 Copies to appropriate
District Office in accordance
with Rule 116 on back
side of form

Release Notification and Corrective Action

30-045-11566

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company	BP America Production Company	Contact	Jeff Peace
Address	200 Energy Court, Farmington, NM 87401	Telephone No.	(505) 326-9479
Facility Name	GCU No. 201	Facility Type	Active gas well - API No. 3004511566

Surface Owner: Federal (BLM)	Mineral Owner	Lease No. SF078905
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
M	12	28.0N	12.0W	1190	South	340	West	San Juan

Latitude 36.672602 Longitude -108.070322

NATURE OF RELEASE

Type of Release: Produced fluids	Volume of Release: >5 <25 bbl	Volume Recovered: 0
Source of Release: Below-grade Tank (BGT)	Date and Hour of Occurrence: Unknown	Date and Hour of Discovery: 03/29/11 - 11:00am
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

RCVD JAN 5 '12

OIL CONS. DIV.
DIST. 3

If a Watercourse was Impacted, Describe Fully.*

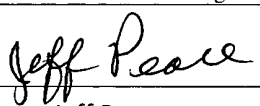
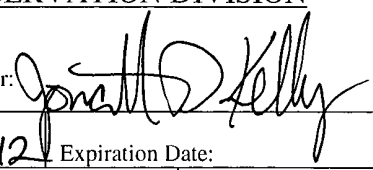
Describe Cause of Problem and Remedial Action Taken.*

BP construction crew was to conduct site equipment modifications in September 2010. During preparation for the removal of the existing BGT, lost integrity of its bottom was discovered. Impacted soils were observed beneath BGT being replaced. Gas well shut in and no further production of gas or fluid by-products occurred up to the present time. March 2011, environmental drilling was conducted to establish vertical and lateral extent of impacts.

Describe Area Affected and Cleanup Action Taken.*

Area affected appears to be directly below BGT to a depth of approximately (~) 27 feet below grade (areal dimensions ~15 X 15 feet). Excavation of impacted soils completed by 12/05/2011. Approximately 300 cubic yards of soil removed and transported to BP Crouch Mesa Facility. Fertilizer applied to excavation bottom. CLOSURE REQUESTED.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	OIL CONSERVATION DIVISION	
Printed Name: Jeff Peace	Approved by District Supervisor: 	
Title: Environmental Advisor	Approval Date: 1/10/2012	Expiration Date:
E-mail Address: Peace.Jeffrey@bp.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: January 3, 2012	Phone: (505) 326-9479	

* Attach Additional Sheets If Necessary

nJK 1201026048

GCU #201 BGT RELEASE CLEAN UP

REMEDIATION PLAN

- 1) HAVE RECEIVED NMOCD VERBAL APPROVAL FOR LIMITED SOIL REMOVAL AND IN-SITU REMEDIATION OF DEEPER IMPACTED SOILS
- 2) EXCAVATE 15' x 15' x 20-25' DEEP AREA @ BGT LOCATION (~ 200 - 225 CUBIC YARDS)
- 3) CONTACT NMOCD AZTEC TO INSPECT REMEDIATION EXCAVATION
- 4) APPLY H2O2 AND/OR UREA FERTILIZER AT BASE OF EXCAVATION
- 5) BACKFILL EXCAVATION WITH CLEAN FILL MATERIAL
(MAY REQUIRE COMPACTION ASSURANCE PRIOR TO BGT INSTALLATION)

BGT REPLACEMENT

- 1) NEW BGT IS TO BE PLACED AT SITE PER BP APPROVED PROCEDURE AND MOC
- 2) SUBMIT NEW PERMIT FOR 95 DW/DB USING SAME GPS COORDINATES
- 3) COMPLETE BGT SET UP (PIPING CONNECTIONS, BERM, FENCING, ETC.)

SITING AND HYDRO-GEOLOGICAL REPORT FOR GALLEGOS CANYON UNIT 201

Siting Criteria 19.15.17.10 NMAC

Depth to groundwater at the site is estimated to be greater than 100 feet. This estimation is based on data from Stone and others (1983), and depth to groundwater data obtained from water wells permitted by the New Mexico State Engineer's Office (OSE, Figure 1). Local topography and proximity to adjacent water features are also considered. A topographic map of the site is provided as Figure 2 and demonstrates that the below grade tank (BGT) is not within 300 feet of any continuously flowing watercourse or within 200 feet of any other significant watercourse, lakebed, sinkhole or playa lake as measured from the ordinary high water mark. Figure 3 demonstrates that the GBT is not within 300 feet of a permanent residence, school, hospital, institution or church. Figure 4 demonstrates, based on a search of the OSE database and USGS topographic maps, that the BGT is not within a municipal boundary or a defined municipal freshwater well field. Figure 6 demonstrates that the BGT is not within 500 feet of a wetland. Figure 7 demonstrates that the BGT is not in an area overlying a subsurface mine. The BGT is not located in an unstable area. Figure 8 demonstrates that the BGT is not within the mapped FEMA 100-year floodplain.

Local Geology and Hydrology

This particular site is located south of the San Juan River. Topography is dominated by the main channel of the San Juan River, its floodplain and terrace deposits. Moving away from the San Juan River, eroded surfaces of the Nacimiento Formation form slopes that are capped by the resistant sandstones of the San Jose Formation.

Regional Geology and Hydrology

The San Juan Basin is situated in the Navajo section of the Colorado Plateau and is characterized by broad open valleys, mesas, buttes and hogbacks. Away from major valleys and canyons topographic relief is generally low. Native vegetation is sparse and shrubby. Drainage is mainly by the San Juan River, the only permanent stream in the Navajo Section of the Colorado Plateau. The San Juan River is a tributary of the Colorado River. Major tributaries include the Animas, Chaco and La Plata Rivers. Flow of the San Juan River across the basin is regulated by the Navajo Dam, located about 30 miles northeast of Farmington, New Mexico. The climate is arid to semiarid with an average annual precipitation of 8 to 10 inches. Soils within the basin consist of weathered parent rock derived from predominantly physical means mostly from eolian depositional system with fluvial having a lesser impact.

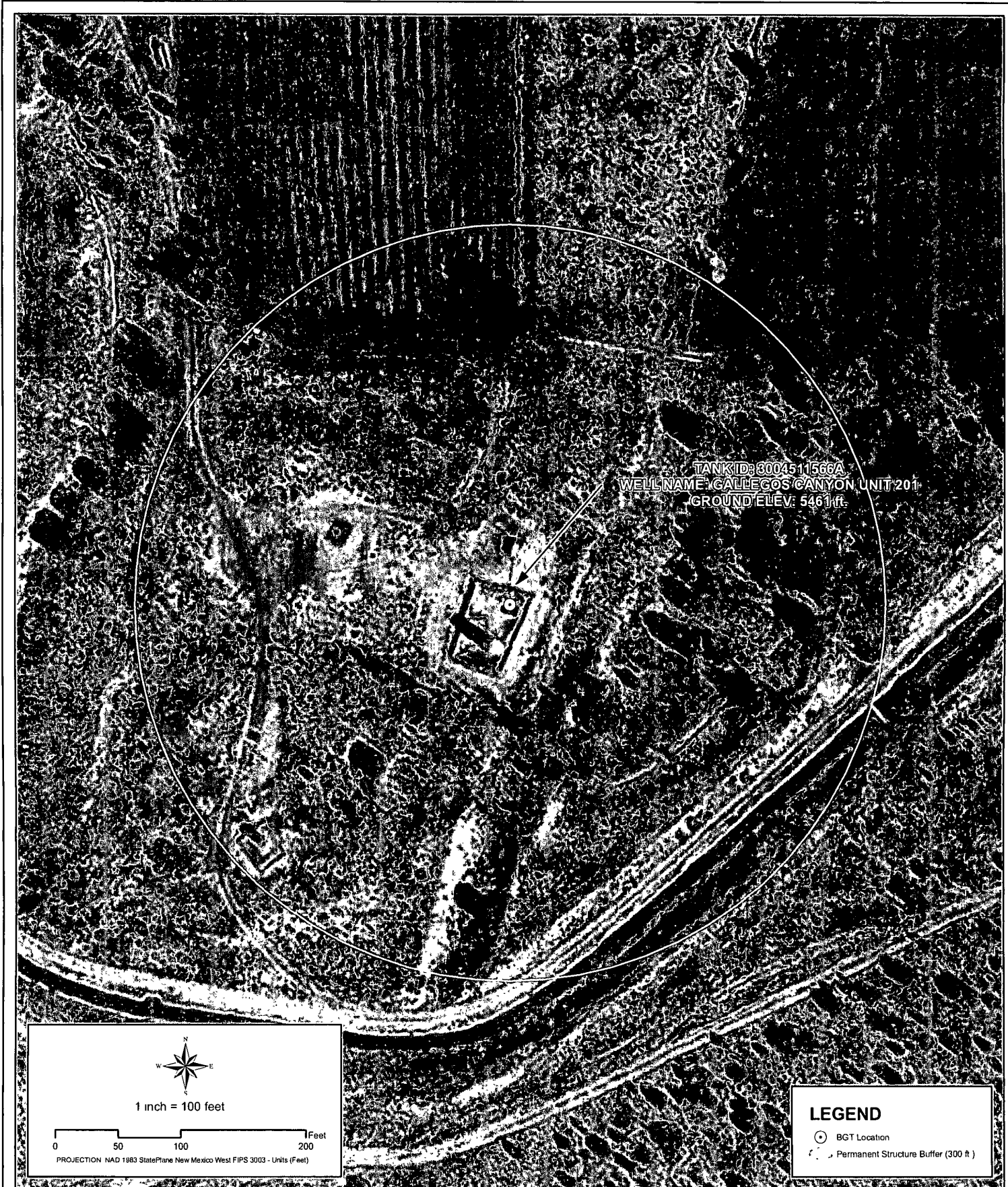
Cretaceous and Tertiary sandstones, as well as Quaternary Alluvial deposits, serve as the primary aquifers in the San Juan Basin (Stone et al., 1983). The predominant geologic formation this close to the San Juan River is Quaternary alluvium. Alluvial valley fill consists of gravel, sand, silt and clay (Stone et al., 1983). In the valleys of the San Juan River and its tributaries, the alluvium does not exceed 100 feet in thickness. Terrace deposits consist of boulder gravel resting on benches cut into the Tertiary bedrock of the area. Numerous shallow wells produce water from valley fill for stock and domestic uses along the river and transmissivities are

generally high. Much of the water in the valley fill of the San Juan River comes from drainage of irrigated lands, as well as from underlying and adjacent bedrock units.

References

Circular 154—Guidebook to coal geology of northwest New Mexico By E. C. Beaumont, J. W. Shomaker, W. J. Stone, and others, 1976

Stone, et al., 1983, Hydrogeology and Water Resources of the San Juan Basin, New Mexico, Socorro, New Mexico Bureau of Mines and Mineral Resources Hydrologic Report 6, 70 p



Creation Date: 6/8/2010
File Path: X:\BPLTE_Inspections\UNREPORTED\MXD\3004511566A.mxd

Created by: PRW
Reviewed by: AGH



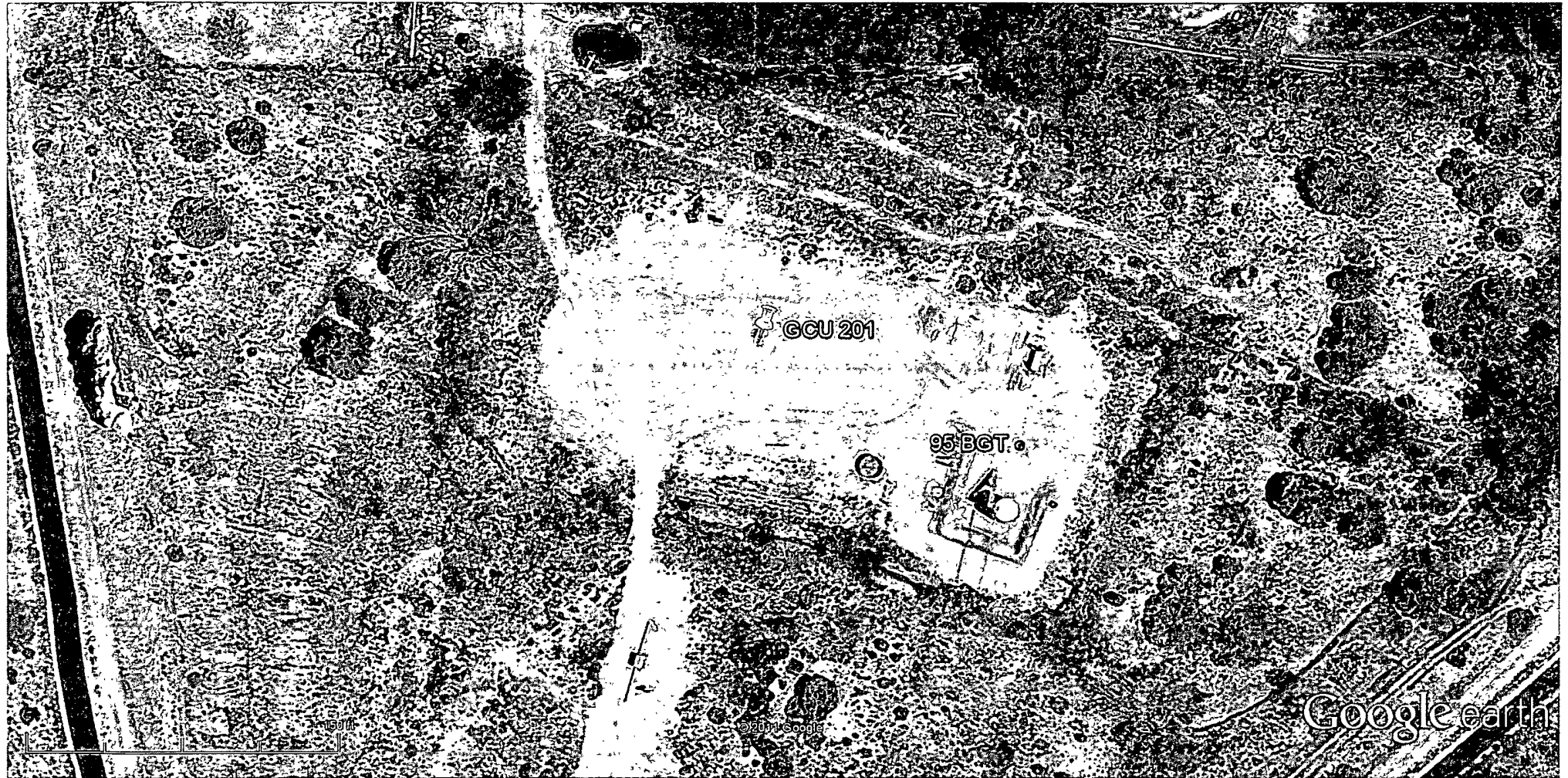
PROXIMITY TO PERMANENT STRUCTURE

WELL NAME: GALLEGOS CANYON UNIT 201

API NUMBER: 3004511566 TANK ID: 3004511566A

SECTION 12, TOWNSHIP 28.0N, RANGE 12W, P.M. NM23

FIGURE
3



GCU # 201

Jnit M, Sec. 12, T28N, R12W

\PI #: 300-45-11566

feet
meters

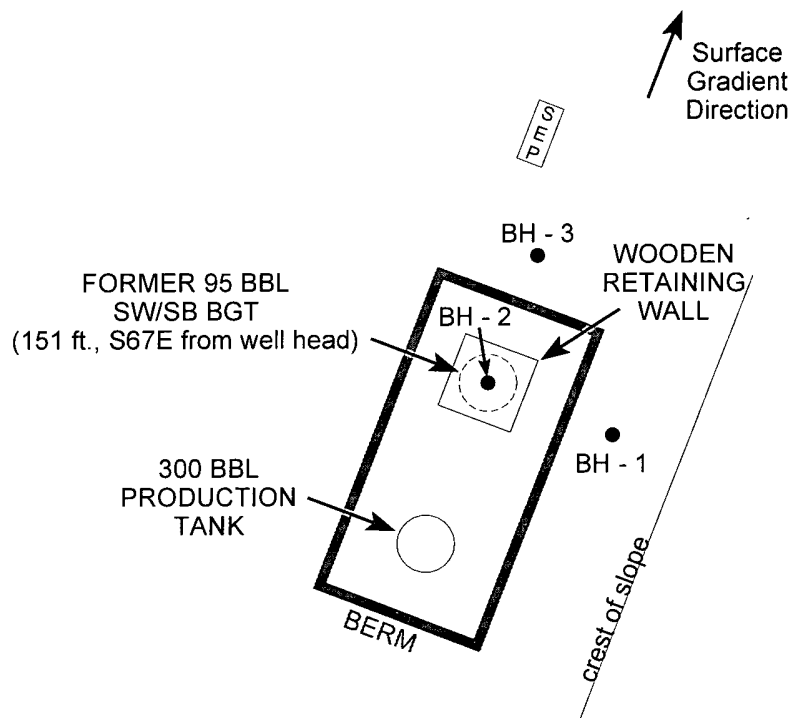


36.672602°N / 108.070322°W or
36° 40' 21.37"N / 108° 4' 13.16"W

FIGURE 1



WELL
HEAD
⊕



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

0 40 80 FT.

BP AMERICA PRODUCTION CO.

GCU # 201

SW/4 SW/4 SEC. 12, T28N, R12W

SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE (505) 632-1199

PROJECT: RELEASE INVESTIGATION

DRAWN BY: NJV

FILENAME: GCU 201 Site Map 03-25-11.SKF

REVISED: 03-25-11

SITE
MAP

03/2011

BLAGG ENGINEERING, INC.

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

BH - 1

BORE / TEST HOLE REPORT

CLIENT: BP AMERICA PRODUCTION CO.
LOCATION NAME: GCU # 201 UNIT M, SEC. 12, T28N, R12W
CONTRACTOR: BLAGG ENGINEERING, INC. / KYVEK ENERGY SERVICES, INC.
EQUIPMENT USED: MOBILE DRILL RIG (CME 75) - HOLLOW STEM AUGER
BORING LOCATION: 28 FEET, S75E FROM BH - 2 (BGT CENTER).

BORING #..... BH - 1
MW #..... NA
PAGE #..... 1
DATE STARTED 03/11/11
DATE FINISHED 03/11/11
OPERATOR..... KP
LOGGED BY..... JCB

DEPTH (FT.)	INTERVAL	LITHOLOGY INTERVAL	SAMPLE INTERVAL	SAMPLE TIME	FIELD OVM (ppm)	BLOW COUNT PER 6" & RECOVERY	FIELD CLASSIFICATION AND REMARKS
							GROUND SURFACE
2							
4							
6							
8							
10			10.00	0940	0.0	5-5-5	DARK YELLOWISH ORANGE SAND, NON COHESIVE, DRY TO SLIGHTLY MOIST, FIRM, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (0 0 - 20 0 FT. BELOW GRADE)
12			11.50				
14			15.00	0945	0.0	5-5-4	
16			16.50				
18							
20			20.00	0952	0.0	4-7-10	
22			21.50				DARK YELLOWISH BROWN SILTY SAND, SLIGHTLY COHESIVE, MOIST, FIRM TO BECOMING DENSE AT 22 - 23 FT., NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (20 0 - 25 0 FT. BELOW GRADE)
24			25.00	1003	0.9	15 - 50/6"	
26			26.00				DARK YELLOWISH BROWN SILTY CLAY TO CLAY PHASING INTO SANDSTONE, COHESIVE, SLIGHTLY MOIST, FIRM TO COARSELY DENSE, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (25.0 - 27 0 FT. BELOW GRADE)
28							
30			30.00	1017	0.3	50/7.5"	DARK YELLOWISH ORANGE SANDSTONE, VERY DENSE, COARSE, WELL CONSOLIDATED, DRY TO SLIGHTLY MOIST, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (27 0 - 30.0 FT. BELOW GRADE)
32			30.63				
34							
36							
38							
40							
42							
44							
46							
48							
50							
52							
54							
56							
58							
60							

NOTES:



- SAND



- SILTY SAND.



- SILT CLAY TO CLAY.



- SANDSTONE

OVM

- Organic vapor meter or photoionization detector (PID).

ppm

- parts per million or milligram per kilogram (mg/Kg)

OVM CALIBRATION:

51.0 ppm; RF = 0.52
(RF = response factor).
100 ppm calibration gas
- isobutylene.
Date - 03/11/11.
Time - 1037.

DRAWING GCU 201 BH-1, SKF

DATE 03/11/11

DWN BY. NJV

Hall Environmental Analysis Laboratory, Inc.

Date: 25-Mar-11

CLIENT: Blagg Engineering
Lab Order: 1103560
Project: GCU 201
Lab ID: 1103560-01

Client Sample ID: BH #1 @ 30"
Collection Date: 3/11/2011 10:17:00 AM
Date Received: 3/15/2011
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	3/17/2011 6:23:36 PM
Surr: DNOP	92.4	81.8-129		%REC	1	3/17/2011 6:23:36 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: DAM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/18/2011 10:10:20 PM
Surr: BFB	91.9	89.7-125		%REC	1	3/18/2011 10:10:20 PM
EPA METHOD 8021B: VOLATILES						Analyst: DAM
Benzene	ND	0.050		mg/Kg	1	3/18/2011 10:10:20 PM
Toluene	ND	0.050		mg/Kg	1	3/18/2011 10:10:20 PM
Ethylbenzene	ND	0.050		mg/Kg	1	3/18/2011 10:10:20 PM
Xylenes, Total	ND	0.10		mg/Kg	1	3/18/2011 10:10:20 PM
Surr: 4-Bromofluorobenzene	102	85.3-139		%REC	1	3/18/2011 10:10:20 PM
EPA METHOD 300.0: ANIONS						Analyst: SRM
Chloride	2.2	1.5		mg/Kg	1	3/22/2011 2:51:31 PM

Qualifiers:

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

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

BLAGG ENGINEERING, INC.

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

BH - 2

BORE / TEST HOLE REPORT

CLIENT: **BP AMERICA PRODUCTION CO.**
LOCATION NAME: **GCU # 201** UNIT M, SEC. 12, T28N, R12W
CONTRACTOR: **BLAGG ENGINEERING, INC. / KYVEK ENERGY SERVICES, INC.**
EQUIPMENT USED: **MOBILE DRILL RIG (CME 75) - HOLLOW STEM AUGER**
BORING LOCATION: **BGT CENTER : 151 FEET, S67E FROM WELL HEAD.**

BORING #..... **BH - 2**
MW #..... **NA**
PAGE #..... **2**
DATE STARTED **03/11/11**
DATE FINISHED **03/11/11**
OPERATOR..... **KP**
LOGGED BY..... **JCB**

DEPTH (FT.)	INTERVAL	LITHOLOGY INTERVAL	SAMPLE INTERVAL	SAMPLE TIME	FIELD OVM (ppm)	BLOW COUNT PER 6" & RECOVERY	FIELD CLASSIFICATION AND REMARKS
							GROUND SURFACE
2							DARK YELLOWISH ORANGE SAND (BACKFILL), NON COHESIVE, DRY TO SLIGHTLY MOIST, FIRM, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (0 0 - 5 0 FT. BELOW GRADE)
4							
6							
8							
10			10.00 11.50	1056	257	2/18"	SAME AS ABOVE EXCEPT OLIVE GRAY PHASING INTO DARK GRAY, STRONG APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (5 0 - 14 FT. BELOW GRADE)
12							
14			15.00 16.50	1101	779	3-2-3	DARK GRAY SILTY SAND, SLIGHTLY COHESIVE, SLIGHTLY MOIST TO MOIST, FIRM TO STIFF, STRONG APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (14 0 - 18 0 FT. BELOW GRADE).
16							
18			20.00 21.50	1107	311	2-4-2	DARK GRAY SAND, NON COHESIVE, SLIGHTLY MOIST, FIRM TO DENSE, STRONG APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (18.0 - 23 0 FT. BELOW GRADE)
20							
22			25.00 26.00	1115	300	15/6" - 25/6"	DARK GRAY TO BLACK SILT, COHESIVE, SLIGHTLY MOIST, STIFF TO DENSE, STRONG APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (23 0 - 30 0 FT. BELOW GRADE)
24							
26			30.00 30.50	1125	2.4	50/6"	MOTTLED DARK GRAY/DARK YELLOWISH BROWN SAND, NON COHESIVE, SLIGHTLY MOIST, DENSE, SLIGHT APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (30 0 - 33 0 FT. BELOW GRADE).
28							
30			35.00 35.33	1147	1.2	50/4"	DARK YELLOWISH ORANGE SANDSTONE, VERY DENSE, COARSE, WELL CONSOLIDATED, SLIGHTLY FRIABLE, DRY TO SLIGHTLY MOIST, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (33 0 - 37 0 FT. BELOW GRADE)
32			37.00 37.33	1201	2.4	50/4"	
34							
36							
38							
40							
42							
44							
46							
48							
50							
52							
54							
56							
58							
60							

NOTES:



- SAND.



- SILTY SAND.



- VERY STIFF SILT.



- DENSE SAND.



- SANDSTONE.

OVM
ppm

- Organic vapor meter or photoionization detector (PID)
- parts per million or milligram per kilogram (mg/Kg).

OVM CALIBRATION:

51.0 ppm; RF = 0.52
(RF = response factor).
100 ppm calibration gas
- isobutylene.
Date - 03/11/11.
Time - 1037.

DRAWING: **GCU 201 BH-2. SKF**

DATE **03/11/11**

DWN BY **NJV**

Hall Environmental Analysis Laboratory, Inc.

Date: 25-Mar-11

CLIENT: Blagg Engineering
Lab Order: 1103560
Project: GCU 201
Lab ID: 1103560-02

Client Sample ID: BH #2 @ 20'
Collection Date: 3/11/2011 11:07:00 AM
Date Received: 3/15/2011
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	7800	100		mg/Kg	10	3/17/2011 11:30:03 PM
Surr: DNOP	0	81.8-129	S	%REC	10	3/17/2011 11:30:03 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: DAM
Gasoline Range Organics (GRO)	1200	100		mg/Kg	20	3/18/2011 10:40:20 PM
Surr: BFB	628	89.7-125	S	%REC	20	3/18/2011 10:40:20 PM
EPA METHOD 8021B: VOLATILES						Analyst: DAM
Benzene	ND	1.0		mg/Kg	20	3/18/2011 10:40:20 PM
Toluene	2.9	1.0		mg/Kg	20	3/18/2011 10:40:20 PM
Ethylbenzene	2.2	1.0		mg/Kg	20	3/18/2011 10:40:20 PM
Xylenes, Total	45	2.0		mg/Kg	20	3/18/2011 10:40:20 PM
Surr: 4-Bromofluorobenzene	139	85.3-139	S	%REC	20	3/18/2011 10:40:20 PM
EPA METHOD 300.0: ANIONS						Analyst: SRM
Chloride	19	7.5		mg/Kg	5	3/22/2011 3:08:56 PM

Qualifiers:

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

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

Hall Environmental Analysis Laboratory, Inc.

Date: 25-Mar-11

CLIENT: Blagg Engineering
Lab Order: 1103560
Project: GCU 201
Lab ID: 1103560-03

Client Sample ID: BH #2 @ 25'
Collection Date: 3/11/2011 11:15:00 AM
Date Received: 3/15/2011
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	1300	100		mg/Kg	10	3/18/2011 12:03:54 AM
Surr: DNOP	0	81.8-129	S	%REC	10	3/18/2011 12:03:54 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: DAM
Gasoline Range Organics (GRO)	150	100		mg/Kg	20	3/18/2011 11:10:24 PM
Surr: BFB	177	89.7-125	S	%REC	20	3/18/2011 11:10:24 PM
EPA METHOD 8021B: VOLATILES						Analyst: DAM
Benzene	ND	1.0		mg/Kg	20	3/18/2011 11:10:24 PM
Toluene	ND	1.0		mg/Kg	20	3/18/2011 11:10:24 PM
Ethylbenzene	ND	1.0		mg/Kg	20	3/18/2011 11:10:24 PM
Xylenes, Total	5.7	2.0		mg/Kg	20	3/18/2011 11:10:24 PM
Surr: 4-Bromofluorobenzene	123	85.3-139		%REC	20	3/18/2011 11:10:24 PM
EPA METHOD 300.0: ANIONS						Analyst: SRM
Chloride	31	1.5		mg/Kg	1	3/22/2011 4:01:09 PM

Qualifiers:

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

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

Hall Environmental Analysis Laboratory, Inc.

Date: 25-Mar-11

CLIENT: Blagg Engineering
Lab Order: 1103560
Project: GCU 201
Lab ID: 1103560-04

Client Sample ID: BH #2 @ 30'
Collection Date: 3/11/2011 11:25:00 AM
Date Received: 3/15/2011
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	3/17/2011 6:57:26 PM
Surr: DNOP	96.4	81.8-129		%REC	1	3/17/2011 6:57:26 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: DAM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/18/2011 11:40:25 PM
Surr: BFB	119	89.7-125		%REC	1	3/18/2011 11:40:25 PM
EPA METHOD 8021B: VOLATILES						Analyst: DAM
Benzene	ND	0.050		mg/Kg	1	3/18/2011 11:40:25 PM
Toluene	ND	0.050		mg/Kg	1	3/18/2011 11:40:25 PM
Ethylbenzene	ND	0.050		mg/Kg	1	3/18/2011 11:40:25 PM
Xylenes, Total	ND	0.10		mg/Kg	1	3/18/2011 11:40:25 PM
Surr: 4-Bromofluorobenzene	105	85.3-139		%REC	1	3/18/2011 11:40:25 PM
EPA METHOD 300.0: ANIONS						Analyst: SRM
Chloride	34	1.5		mg/Kg	1	3/22/2011 4:18:34 PM

Qualifiers:

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

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

Hall Environmental Analysis Laboratory, Inc.

Date: 25-Mar-11

CLIENT: Blagg Engineering
Lab Order: 1103560
Project: GCU 201
Lab ID: 1103560-05

Client Sample ID: BH #2 @ 35'
Collection Date: 3/11/2011 11:47:00 AM
Date Received: 3/15/2011
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	3/17/2011 7:31:20 PM
Surr: DNOP	97.0	81.8-129		%REC	1	3/17/2011 7:31:20 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: DAM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/19/2011 12:10:27 AM
Surr: BFB	112	89.7-125		%REC	1	3/19/2011 12:10:27 AM
EPA METHOD 8021B: VOLATILES						Analyst: DAM
Benzene	ND	0.050		mg/Kg	1	3/19/2011 12:10:27 AM
Toluene	ND	0.050		mg/Kg	1	3/19/2011 12:10:27 AM
Ethylbenzene	ND	0.050		mg/Kg	1	3/19/2011 12:10:27 AM
Xylenes, Total	ND	0.10		mg/Kg	1	3/19/2011 12:10:27 AM
Surr: 4-Bromofluorobenzene	110	85.3-139		%REC	1	3/19/2011 12:10:27 AM
EPA METHOD 300.0: ANIONS						Analyst: SRM
Chloride	15	1.5		mg/Kg	1	3/22/2011 4:35:58 PM

Qualifiers:

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

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

BLAGG ENGINEERING, INC.

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

BH - 3

BORE / TEST HOLE REPORT

CLIENT: BP AMERICA PRODUCTION CO.
LOCATION NAME: GCU # 201 UNIT M, SEC. 12, T28N, R12W
CONTRACTOR: BLAGG ENGINEERING, INC. / KYVEK ENERGY SERVICES, INC.
EQUIPMENT USED: MOBILE DRILL RIG (CME 75) - HOLLOW STEM AUGER
BORING LOCATION: 22.5 FEET, N20E FROM BH - 2 (BGT CENTER).

BORING #..... BH - 3
MW #..... NA
PAGE #..... 3
DATE STARTED ..03/11/11
DATE FINISHED ..03/11/11
OPERATOR..... KP
LOGGED BY..... JCB

DEPTH (FT.)	INTERVAL	LITHOLOGY INTERVAL	SAMPLE INTERVAL	SAMPLE TIME	FIELD OVM (ppm)	BLOW COUNT PER 6" & RECOVERY	FIELD CLASSIFICATION AND REMARKS
							GROUND SURFACE
2							
4							
6							
8							
10			10.00 11.50	1314	0.0	3-3-3	DARK YELLOWISH ORANGE SAND, NON COHESIVE, DRY TO SLIGHTLY MOIST, FIRM, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (0 0 - 20 0 FT. BELOW GRADE).
12							
14			15.00 16.50	1320	0.0	3-5-6	
16							
18							
20			20.00 20.50	1330	274	25/6"	SAME AS ABOVE EXCEPT LIGHT GRAY COLOR, STRONG APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (20 0 - 22 0 FT. BELOW GRADE)
22							
24			25.00 25.75	1342	0.0	25/6" - 25/3"	SAME AS ABOVE EXCEPT MOTTLED GRAY AND BLACK STREAKS, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (20.0 - 22 0 FT. BELOW GRADE).
26							
28							
30			30.00 30.58	1404	3.0	50/7"	DARK YELLOWISH ORANGE SANDSTONE, VERY DENSE, COARSE, WELL CONSOLIDATED, DRY TO SLIGHTLY MOIST, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY WITHIN CUTTINGS (27 0 - 30 0 FT. BELOW GRADE)
32							
34							
36							
38							
40							
42							
44							
46							
48							
50							
52							
54							
56							
58							
60							

NOTES.



- SAND



- SANDSTONE.

OVM

- Organic vapor meter or photoionization detector (PID).

ppm

- parts per million or milligram per kilogram (mg/Kg)

OVM CALIBRATION:

51.0 ppm, RF = 0.52
(RF = response factor).
100 ppm calibration gas
- isobutylene.
Date - 03/11/11.
Time - 1037.

DRAWING: GCU 201 BH-3, SKF

DATE 03/11/11

DWN BY NJV

Hall Environmental Analysis Laboratory, Inc.

Date: 25-Mar-11

CLIENT: Blagg Engineering**Client Sample ID:** BH #3 @ 30'**Lab Order:** 1103560**Collection Date:** 3/11/2011 2:04:00 PM**Project:** GCU 201**Date Received:** 3/15/2011**Lab ID:** 1103560-06**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	3/17/2011 8:39:38 PM
Surr: DNOP	94.1	81.8-129		%REC	1	3/17/2011 8:39:38 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: DAM
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/19/2011 12:40:36 AM
Surr: BFB	97.3	89.7-125		%REC	1	3/19/2011 12:40:36 AM
EPA METHOD 8021B: VOLATILES						Analyst: DAM
Benzene	ND	0.050		mg/Kg	1	3/19/2011 12:40:36 AM
Toluene	ND	0.050		mg/Kg	1	3/19/2011 12:40:36 AM
Ethylbenzene	ND	0.050		mg/Kg	1	3/19/2011 12:40:36 AM
Xylenes, Total	ND	0.10		mg/Kg	1	3/19/2011 12:40:36 AM
Surr: 4-Bromofluorobenzene	102	85.3-139		%REC	1	3/19/2011 12:40:36 AM
EPA METHOD 300.0: ANIONS						Analyst: SRM
Chloride	14	1.5		mg/Kg	1	3/22/2011 4:53:23 PM

Qualifiers:

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

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

Client: BLAGG ENGINEERING
BP AMERICA
Mailing Address: P.O. Box 87
BLOOMFIELD, NM 87413
Phone #: 505-632-1199
email or Fax#:
QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other _____
☐ EDD (Type)

☐ Standard ☒ Rush 5 DAYS

GCU 201

Project Manager:

JEFF BLAGG

Sampler: JEFF BLAGG

On Ice: ☒ Yes ☐ No

Sample Temperature 26

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Container	Preservative	
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100	100	

Type and #	Type	
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		411
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4-2-4	cool	
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102 A 1	300 =	
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18	11	
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14	15	
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11	12	

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[illegible]

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[illegible]

Received by: _____ D

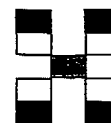
Chapter 10

Received by: _____

100 - 200

TVI should be:

contracted to other accredited laboratories. This



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

	X	X	X	X	X	BTEX + MTBE + TMB's (8021)
						BTEX + MTBE + TPH (Gas only)
	X	X	X	X	X	TPH Method 8015B (Gas/Diesel)
						TPH (Method 418.1)
						EDB (Method 504.1)
						8310 (PNA or PAH)
						RCRA 8 Metals
						Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)
						8081 Pesticides / 8082 PCB's
						8260B (VOA)
						8270 (Semi-VOA)
	X	X	X	X	X	<i>CHLORIDE</i>
						Air Bubbles (Y or N)

Date:	Time:	Relinquished by:	Received by:	Date	Time
3/4/11	1330	Jeff Begg	Christine Walter	3/14/11	1330
Date:	Time:	Relinquished by:	Received by:	Date	Time
4/11	1510	Christine Walter	W. Wheeler	3/15/11	1245

Remarks: GRO + DRO ON 8015
DIRECT BILL TO BP

QA/QC SUMMARY REPORT

Client: Blagg Engineering
Project: GCU 201

Work Order: 1103560

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 300.0: Anions											
Sample ID: MB-26058		MBLK				Batch ID: 26058		Analysis Date: 3/22/2011 9:47:43 AM			
Chloride	ND	mg/Kg	1.5								
Sample ID: LCS-26058		LCS				Batch ID: 26058		Analysis Date: 3/22/2011 10:05:08 AM			
Chloride	13.88	mg/Kg	1.5	15	0	92.5	90	110			
Method: EPA Method 8015B: Diesel Range Organics											
Sample ID: MB-25991		MBLK				Batch ID: 25991		Analysis Date: 3/17/2011 9:11:59 AM			
Diesel Range Organics (DRO)	ND	mg/Kg	10								
Sample ID: LCS-25991		LCS				Batch ID: 25991		Analysis Date: 3/17/2011 9:46:08 AM			
Diesel Range Organics (DRO)	50.57	mg/Kg	10	50	0	101	66.2	120			
Sample ID: LCSD-25991		LCSD				Batch ID: 25991		Analysis Date: 3/17/2011 10:20:00 AM			
Diesel Range Organics (DRO)	51.60	mg/Kg	10	50	0	103	66.2	120	2.02	14.3	
Method: EPA Method 8015B: Gasoline Range											
Sample ID: 1103660-01AMSD		MSD				Batch ID: 25985		Analysis Date: 3/19/2011 3:10:50 AM			
Gasoline Range Organics (GRO)	23.20	mg/Kg	5.0	25	0	92.8	57.7	165	0.866	15.5	
Sample ID: MB-25985		MBLK				Batch ID: 25985		Analysis Date: 3/18/2011 7:09:43 PM			
Gasoline Range Organics (GRO)	ND	mg/Kg	5.0								
Sample ID: LCS-25985		LCS				Batch ID: 25985		Analysis Date: 3/18/2011 6:39:46 PM			
Gasoline Range Organics (GRO)	23.99	mg/Kg	5.0	25	0	96.0	88.8	124			
Sample ID: 1103660-01AMS		MS				Batch ID: 25985		Analysis Date: 3/19/2011 2:40:46 AM			
Gasoline Range Organics (GRO)	23.00	mg/Kg	5.0	25	0	92.0	57.7	165			
Method: EPA Method 8021B: Volatiles											
Sample ID: 1103660-01AMSD		MSD				Batch ID: 25985		Analysis Date: 3/18/2011 5:38:12 PM			
Benzene	0.9568	mg/Kg	0.050	1	0	95.7	67.2	113	2.78	14.3	
Toluene	0.9160	mg/Kg	0.050	1	0	91.6	62.1	116	3.33	15.9	
Ethylbenzene	0.9946	mg/Kg	0.050	1	0	99.5	67.9	127	4.36	14.4	
Xylenes, Total	3.086	mg/Kg	0.10	3	0	103	60.6	134	2.85	12.6	
Sample ID: MB-25985		MBLK				Batch ID: 25985		Analysis Date: 3/18/2011 7:09:43 PM			
Benzene	ND	mg/Kg	0.050								
Toluene	ND	mg/Kg	0.050								
Ethylbenzene	ND	mg/Kg	0.050								
Xylenes, Total	ND	mg/Kg	0.10								
Sample ID: LCS-25985		LCS				Batch ID: 25985		Analysis Date: 3/18/2011 6:09:37 PM			
Benzene	1.007	mg/Kg	0.050	1	0	101	83.3	107			
Toluene	0.9544	mg/Kg	0.050	1	0.006	94.8	74.3	115			
Ethylbenzene	1.017	mg/Kg	0.050	1	0	102	80.9	122			
Xylenes, Total	3.203	mg/Kg	0.10	3	0	107	85.2	123			
Sample ID: 1103660-01AMS		MS				Batch ID: 25985		Analysis Date: 3/18/2011 5:08:11 PM			
Benzene	0.9306	mg/Kg	0.050	1	0	93.1	67.2	113			
Toluene	0.8860	mg/Kg	0.050	1	0	88.6	62.1	116			
Ethylbenzene	0.9522	mg/Kg	0.050	1	0	95.2	67.9	127			
Xylenes, Total	2.999	mg/Kg	0.10	3	0	100	60.6	134			

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.**Date:** 25-Mar-11**CLIENT:** Blagg Engineering**Project:** GCU 201**Lab Order:** 1103560**CASE NARRATIVE**

"S" flags denote that the surrogate was not recoverable due to sample dilution or matrix interferences.

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name **BLAGG**

Date Received:

3/15/2011

Work Order Number **1103560**

Received by:

MMG

Checklist completed by:

M. Miller
Signature

3/15/11
Date

Sample ID labels checked by:

MMG
Initials

Matrix:

Carrier name: **FedEx**

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☒

No ☐

Not Present ☐

Not Shipped ☐

Custody seals intact on sample bottles?

Yes ☐

No ☐

N/A ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Water - VOA vials have zero headspace?

No VOA vials submitted ☒

Yes ☐

No ☐

Water - Preservation labels on bottle and cap match?

Yes ☐

No ☐

N/A ☒

Water - pH acceptable upon receipt?

Yes ☐

No ☐

N/A ☒

Number of preserved
bottles checked for
pH:

<2 >12 unless noted
below.

Container/Temp Blank temperature?

2.4°

<6° C Acceptable

If given sufficient time to cool.

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

FIGURE 2



WELL HEAD ⊕

EXCAVATION PERIMETER
APPROX. 20 FT. X 20 FT.
X 23 FT. 300 CUBIC YARDS
REMOVED AND TRANSPORTED
TO BP CROUCH MESA FACILITY

FORMER 95 BBL
SW/SB BGT
(151 ft., S67E from well head)

BH - 3

BH - 2

BH - 1

FORMER 300 BBL
PRODUCTION
TANK LOCATION

Surface
Gradient
Direction

crest of slope

BORING LOGS & BELOW-GRADE TANK LOCATIONS ARE ONLY AS ACCURATE AS THE INSTRUMENTS USED IN OBTAINING THE FOOTAGE & BEARING FROM THE WELL HEAD (TAPE MEASURE, LASER RANGE FINDER, & BRUNTON COMPASS). ALL OTHER STRUCTURES DISPLAYED ON THIS MAP ARE SOLELY FOR REFERENCE AND MAY NOT BE TO SCALE. MAGNETIC DECLINATION USED ~ 10° E

0 40 80 FT.

BP AMERICA PRODUCTION CO.

GCU # 201

SW/4 SW/4 SEC. 12, T28N, R12W

SAN JUAN COUNTY, NEW MEXICO

BLAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE. (505) 632-1199

PROJECT: REMEDIATION

DRAWN BY: NJV

FILENAME: GCU 201 Excav Map 12-05-11.SKF

REVISED: 12-20-11

EXCAVATION
MAP

12/11

Hall Environmental Analysis Laboratory, Inc.

Date: 27-Dec-11

Analytical Report

CLIENT: Blagg Engineering

Client Sample ID: East @ -22'

Lab Order: 1112502

Collection Date: 12/2/2011 11:17:00 AM

Project: GCU 201

Date Received: 12/9/2011

Lab ID: 1112502-01

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	12/13/2011 10:29:41 AM
Surr: DNOP	94.4	77.4-131		%REC	1	12/13/2011 10:29:41 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/13/2011 12:56:04 PM
Surr: BFB	99.6	69.7-121		%REC	1	12/13/2011 12:56:04 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.050		mg/Kg	1	12/13/2011 12:56:04 PM
Toluene	ND	0.050		mg/Kg	1	12/13/2011 12:56:04 PM
Ethylbenzene	ND	0.050		mg/Kg	1	12/13/2011 12:56:04 PM
Xylenes, Total	ND	0.099		mg/Kg	1	12/13/2011 12:56:04 PM
Surr: 4-Bromofluorobenzene	102	80-120		%REC	1	12/13/2011 12:56:04 PM
EPA METHOD 300.0: ANIONS						Analyst: BRM
Chloride	17	7.5		mg/Kg	5	12/16/2011 12:35:34 AM

Qualifiers:

* Value exceeds Maximum Contaminant Level

E Estimated value

J Analyte detected below quantitation limits

NC Non-Chlorinated

PQL Practical Quantitation Limit

B Analyte detected in the associated Method Blank

H Holding times for preparation or analysis exceeded

MCL Maximum Contaminant Level

ND Not Detected at the Reporting Limit

S Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Date: 27-Dec-11

Analytical Report**CLIENT:** Blagg Engineering**Client Sample ID:** North @ -22'**Lab Order:** 1112502**Collection Date:** 12/2/2011 11:18:00 AM**Project:** GCU 201**Date Received:** 12/9/2011**Lab ID:** 1112502-02**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	12/13/2011 12:12:51 PM
Surr: DNOP	94.6	77.4-131		%REC	1	12/13/2011 12:12:51 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/13/2011 1:26:16 PM
Surr: BFB	75.9	69.7-121		%REC	1	12/13/2011 1:26:16 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.049		mg/Kg	1	12/13/2011 1:26:16 PM
Toluene	ND	0.049		mg/Kg	1	12/13/2011 1:26:16 PM
Ethylbenzene	ND	0.049		mg/Kg	1	12/13/2011 1:26:16 PM
Xylenes, Total	ND	0.097		mg/Kg	1	12/13/2011 1:26:16 PM
Surr: 4-Bromofluorobenzene	76.6	80-120	S	%REC	1	12/13/2011 1:26:16 PM
EPA METHOD 300.0: ANIONS						Analyst: BRM
Chloride	7.7	7.5		mg/Kg	5	12/16/2011 1:10:23 AM

Qualifiers:

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

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

Hall Environmental Analysis Laboratory, Inc.

Date: 27-Dec-11

Analytical Report

CLIENT: Blagg Engineering
Lab Order: 1112502
Project: GCU 201
Lab ID: 1112502-03

Client Sample ID: South @ -22'
Collection Date: 12/2/2011 11:19:00 AM
Date Received: 12/9/2011
Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/13/2011 12:47:31 PM
Surr: DNOP	98.9	77.4-131		%REC	1	12/13/2011 12:47:31 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/13/2011 1:56:20 PM
Surr: BFB	98.1	69.7-121		%REC	1	12/13/2011 1:56:20 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.048		mg/Kg	1	12/13/2011 1:56:20 PM
Toluene	ND	0.048		mg/Kg	1	12/13/2011 1:56:20 PM
Ethylbenzene	ND	0.048		mg/Kg	1	12/13/2011 1:56:20 PM
Xylenes, Total	ND	0.095		mg/Kg	1	12/13/2011 1:56:20 PM
Surr. 4-Bromofluorobenzene	98.9	80-120		%REC	1	12/13/2011 1:56:20 PM
EPA METHOD 300.0: ANIONS						Analyst: BRM
Chloride	14	7.5		mg/Kg	5	12/16/2011 2:20:01 AM

Qualifiers:

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

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

Hall Environmental Analysis Laboratory, Inc.**Date:** 27-Dec-11**Analytical Report****CLIENT:** Blagg Engineering**Client Sample ID:** West @ -22'**Lab Order:** 1112502**Collection Date:** 12/2/2011 11:20:00 AM**Project:** GCU 201**Date Received:** 12/9/2011**Lab ID:** 1112502-04**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/13/2011 1:24:14 PM
Surr: DNOP	94.8	77.4-131		%REC	1	12/13/2011 1:24:14 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/13/2011 2:26:35 PM
Surr: BFB	98.1	69.7-121		%REC	1	12/13/2011 2:26:35 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.049		mg/Kg	1	12/13/2011 2:26:35 PM
Toluene	ND	0.049		mg/Kg	1	12/13/2011 2:26:35 PM
Ethylbenzene	ND	0.049		mg/Kg	1	12/13/2011 2:26:35 PM
Xylenes, Total	ND	0.097		mg/Kg	1	12/13/2011 2:26:35 PM
Surr: 4-Bromofluorobenzene	99.6	80-120		%REC	1	12/13/2011 2:26:35 PM
EPA METHOD 300.0: ANIONS						Analyst: BRM
Chloride	16	7.5		mg/Kg	5	12/16/2011 11:14:16 AM

Qualifiers:

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

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

Hall Environmental Analysis Laboratory, Inc.

Date: 27-Dec-11

Analytical Report**CLIENT:** Blagg Engineering**Client Sample ID:** Center @ -22'**Lab Order:** 1112502**Collection Date:** 12/2/2011 11:21:00 AM**Project:** GCU 201**Date Received:** 12/9/2011**Lab ID:** 1112502-05**Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: JB
Diesel Range Organics (DRO)	33	9.9		mg/Kg	1	12/13/2011 1:58:37 PM
Surr: DNOP	103	77.4-131		%REC	1	12/13/2011 1:58:37 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/13/2011 2:56:54 PM
Surr: BFB	97.8	69.7-121		%REC	1	12/13/2011 2:56:54 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.048		mg/Kg	1	12/13/2011 2:56:54 PM
Toluene	ND	0.048		mg/Kg	1	12/13/2011 2:56:54 PM
Ethylbenzene	ND	0.048		mg/Kg	1	12/13/2011 2:56:54 PM
Xylenes, Total	ND	0.096		mg/Kg	1	12/13/2011 2:56:54 PM
Surr: 4-Bromofluorobenzene	101	80-120		%REC	1	12/13/2011 2:56:54 PM
EPA METHOD 300.0: ANIONS						Analyst: BRM
Chloride	18	7.5		mg/Kg	5	12/16/2011 12:23:54 PM

Qualifiers:

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

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

Client: BLAG ENGINEERING INC.

BP AMERICA

Mailing Address: P.O. Box 87

BLOOMFIELD, NM 87413

Phone #: 505-632-1199

email or Fax#: _____

QA/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Sample Temperature 3.4

[illegible]

Date:	Time:	Relinquished by:	Received by:	Date	Time
2/2/2011	1619	JM Begg	Christine Wooten	12/7/2011	1619
Date:	Time:	Relinquished by:	Received by:	Date	Time
12/8/11	1620	Christine Wooten	Christine Wooten	12/9/11	1625

Remarks: GRO & DRO ON 8015 WORKORDER: N1351877 PAYEE: ZPEACTDENV CONTACT: JEFF PEACE

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

CLIENT: Blagg Engineering

Project: GCU 201

Lab Order: 1112502

CASE NARRATIVE

Analytical Comments for METHOD 8015DRO_S, SAMPLE 1112503-04A: DNOP not recovered due to dilution

QA/QC SUMMARY REPORT

Client: Blagg Engineering
Project: GCU 201

Work Order: 1112502

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 300.0: Anions											
Sample ID: 1112502-04AMSD		<i>MSD</i>									
Chloride	28.02	mg/Kg	7.5	15	15.86	81.1	74.6	118	1.44	20	
Sample ID: MB-29745		<i>MBLK</i>									
Chloride	ND	mg/Kg	1.5								
Sample ID: MB-29754		<i>MBLK</i>									
Chloride	ND	mg/Kg	1.5								
Sample ID: LCS-29745		<i>LCS</i>									
Chloride	13.88	mg/Kg	1.5	15	0	92.5	90	110			
Sample ID: LCS-29754		<i>LCS</i>									
Chloride	14.14	mg/Kg	1.5	15	0	94.2	90	110			
Sample ID: 1112502-04AMS		<i>MS</i>									
Chloride	28.43	mg/Kg	7.5	15	15.86	83.8	74.6	118			
Method: EPA Method 8015B: Diesel Range Organics											
Sample ID: 1112502-01AMSD		<i>MSD</i>									
Diesel Range Organics (DRO)	52.32	mg/Kg	9.7	48.59	4 112	99.2	57.2	146	4.70	26.7	
Sample ID: MB-29714		<i>MBLK</i>									
Diesel Range Organics (DRO)	ND	mg/Kg	10								
Sample ID: LCS-29714		<i>LCS</i>									
Diesel Range Organics (DRO)	50.31	mg/Kg	10	50	7.484	85.6	62.7	139			
Sample ID: 1112502-01AMS		<i>MS</i>									
Diesel Range Organics (DRO)	54.84	mg/Kg	10	51.81	4 112	97.9	57.2	146			
Method: EPA Method 8015B: Gasoline Range											
Sample ID: MB-29709		<i>MBLK</i>									
Gasoline Range Organics (GRO)	ND	mg/Kg	5.0								
Sample ID: LCS-29709		<i>LCS</i>									
Gasoline Range Organics (GRO)	28.38	mg/Kg	5.0	25	0	114	86.4	132			

Qualifiers:

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

QA/QC SUMMARY REPORT

Client: Blagg Engineering
Project: GCU 201

Work Order: 1112502

Analyte	Result	Units	PQL	SPK Va	SPK ref	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Method: EPA Method 8021B: Volatiles

Sample ID: 1112502-01AMSD

MSD

Batch ID: 29709 Analysis Date: 12/13/2011 11:00:52 PM

Benzene	1.064	mg/Kg	0.049	0.983	0	108	67.2	113	1.29	14.3	
Toluene	1.045	mg/Kg	0.049	0.983	0.0068	106	62.1	116	2.13	15.9	
Ethylbenzene	1.118	mg/Kg	0.049	0.983	0	114	67.9	127	0.546	14.4	
Xylenes, Total	3.484	mg/Kg	0.098	2.95	0	118	60.6	134	2.49	12.6	

Sample ID: MB-29709

MBLK

Batch ID: 29709 Analysis Date: 12/13/2011 12:25:40 PM

Benzene	ND	mg/Kg	0.050								
Toluene	ND	mg/Kg	0.050								
Ethylbenzene	ND	mg/Kg	0.050								
Xylenes, Total	ND	mg/Kg	0.10								

Sample ID: LCS-29709

LCS

Batch ID: 29709 Analysis Date: 12/13/2011 11:55:26 AM

Benzene	1.011	mg/Kg	0.050	1	0	101	80	120			
Toluene	0.9786	mg/Kg	0.050	1	0.0054	97.3	80	120			
Ethylbenzene	1.051	mg/Kg	0.050	1	0.0083	104	80	120			
Xylenes, Total	3.258	mg/Kg	0.10	3	0	109	80	120			

Sample ID: 1112502-01AMS

MS

Batch ID: 29709 Analysis Date: 12/13/2011 10:30:33 PM

Benzene	1.050	mg/Kg	0.050	0.992	0	106	67.2	113			
Toluene	1.023	mg/Kg	0.050	0.992	0.0068	102	62.1	116			
Ethylbenzene	1.112	mg/Kg	0.050	0.992	0	112	67.9	127			
Xylenes, Total	3.399	mg/Kg	0.099	2.976	0	114	60.6	134			

Qualifiers:

E Estimated value
J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit

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

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name **BLAGG**

Date Received:

12/9/2011

Work Order Number **1112502**

Received by: **LNH**

Checklist completed by:

Signature

Date

Sample ID labels checked by:

Initials

Matrix:

Carrier name **Courier**

Shipping container/cooler in good condition?

Yes ☒

No ☐

Not Present ☐

Custody seals intact on shipping container/cooler?

Yes ☒

No ☐

Not Present ☐

Not Shipped ☐

Custody seals intact on sample bottles?

Yes ☐

No ☐

N/A ☒

Chain of custody present?

Yes ☒

No ☐

Chain of custody signed when relinquished and received?

Yes ☒

No ☐

Chain of custody agrees with sample labels?

Yes ☒

No ☐

Samples in proper container/bottle?

Yes ☒

No ☐

Sample containers intact?

Yes ☒

No ☐

Sufficient sample volume for indicated test?

Yes ☒

No ☐

All samples received within holding time?

Yes ☒

No ☐

Water - VOA vials have zero headspace?

No VOA vials submitted ☒

Yes ☐

No ☐

Water - Preservation labels on bottle and cap match?

Yes ☐

No ☐

N/A ☒

Water - pH acceptable upon receipt?

Yes ☐

No ☐

N/A ☒

Container/Temp Blank temperature?

3.4°

<6° C Acceptable

If given sufficient time to cool.

Number of preserved
bottles checked for
pH:

**<2 >12 unless noted
below.**

COMMENTS:

Client contacted

Date contacted:

Person contacted

Contacted by:

Regarding:

Comments:

Corrective Action