

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., 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

OIL CONS. DIV DIST. 3

JAN 08 2016

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company: BP	Contact: Steve Moskal	
Address: 200 Energy Court, Farmington, NM 87401	Telephone No.: 505-326-9497	
Facility Name: Boyd Gas Com 001	Facility Type: Natural gas well	
Surface Owner: Fee	Mineral Owner: Fee	API No. 3004510851

LOCATION OF RELEASE

Unit Letter M	Section 8	Township 31N	Range 10W	Feet from the 1,090	North/South Line South	Feet from the 1,040	East/West Line West	County: San Juan
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Latitude 36.90877°

Longitude -107.9115°

NATURE OF RELEASE

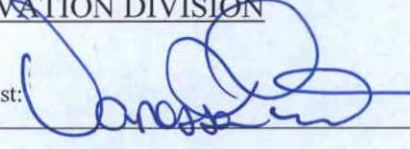
Type of Release: condensate and produced water	Volume of Release: Unknown	Volume Recovered: none
Source of Release: Confirmed corrosion of a 300 bbl production tank	Date and Hour of Occurrence: Unknown	Date and Hour of Discovery: December 18, 2012
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? A phone call to Brandon Powell	
By Whom? Courtney Cochran of BP	Date and Hour: 12/19/2012 at 9:00 AM	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* Soil impacts found during the closure of a double wall/bottom BGT. Impacts found in vicinity of BGT with hydrocarbon odor present. Groundwater was observed at 5' below grade at the BGT. Excavation of impacted soils for offsite treatment and installation of groundwater monitoring wells to determine impacts to groundwater.

Describe Area Affected and Cleanup Action Taken.* The impacted soil was excavated and soils were transported off site for landfarm treatment. The excavation was an irregular shape which measured approximately 120'x145'x up to 13' in depth at the maximum extents with approximately 3,380 cubic yards of soil removed from the site. Final extents of the impacts were identified and removed with no remaining soil impacts left on site. Three groundwater monitoring wells were installed, purged and sampled along the perimeter of the excavation extents with no identified impacts to groundwater. Final laboratory results are attached for both soil and groundwater samples collected during site remediation.

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: Steve Moskal	Approved by Environmental Specialist: 	
Title: Field Environmental Coordinator	Approval Date: <u>2/16/2016</u>	Expiration Date:
E-mail Address: steven.moskal@bp.com	Conditions of Approval:	Attached ☐
Date: December 22, 2015	Phone: 505-326-9497	

* Attach Additional Sheets If Necessary

NSK1302030908

170

BP America: Boyd GC 1
(M) Sec 8 – T31N – R10W
API: 30-045-10851
San Juan County, New Mexico

Impact Remediation Summary Data

- A) Summary Record of Impact Remediation
- B) Google Overhead View of Soil Excavation Area
- C) Monitor Well Location Map, Sampling Notes & Lab Reports
- D) GeoProbe Investigation Location Map and Lab Reports
- E) Soil Remediation Closure Lab Reports
- F) NMOCD Form C-138

BP America: Boyd GC 1
(M) Sec 8 – T31N – R10W
API: 30-045-10851
San Juan County, New Mexico

Summary Record of Impact Remediation

February 21, 2013 Soils impacted with hydrocarbons encountered during flow line utility work immediately southeast of wellhead. Test holes advanced with backhoe determined impacts present in SE corner area of fenced location.

Site Closure Standard Determined at 100 ppm TPH based on estimated depth to groundwater at less than 25 feet from ground surface.

March 6, 2013 Conduct Geoprobe investigation of impact. Advance 8 probe points to estimate limits of impact. Four (4) points advanced within fenced location and four (4) points advanced outside of fenced location. Preliminary estimate of impact area determined soil impacts were limited in area and primarily on wellpad within fenced location. Investigation observed by NMOCD personnel.

January 19, 2015 Initiate removal of soil impacts using trackhoe.

Conduct sampling of excavation in area south east of wellhead for lab testing of TPH (U.S EPA Method 8015B, BTEX Method 8021, Chloride Method 300).

Sample ID 1: 5-Point Base @ 8'	TPH = 39.0 mg/Kg, BTEX = ND, Chloride = 166 mg/Kg
Sample ID 2: 5-Point South Sidewall 3'-6'	TPH = 45.8 mg/Kg, BTEX = ND, Chloride = 857 mg/Kg

January 20, 2015 Morning: Conduct sampling of excavation in expanded area south east of wellhead for lab testing.

Sample ID 3: 3-Point South Sidewall 2'-8'	TPH = ND, BTEX = 0.14 mg/Kg, Chloride = 315 mg/Kg
Sample ID 4: 5-Point Base @ 5'	TPH = 47.1 mg/Kg, BTEX = ND, Chloride = 337 mg/Kg

Afternoon: Conduct NMOCD witnessed sampling of excavation in expanded area south east of wellhead for lab testing.

Sample ID 5: East Base 5-Point @ 5'	TPH = 35.9 mg/Kg, BTEX = ND, Chloride = 272 mg/Kg
Sample ID 6: East Wall 5-Point 2'-4'	TPH = 46.4 mg/Kg, BTEX = ND, Chloride = 362 mg/Kg
Sample ID 7: East Center Base 6-Point @8'	TPH = 141.4 mg/Kg, BTEX = ND, Chloride = 104 mg/Kg

(Note: This Sample ID 7 area subsequently excavated to below water table)

January 21, 2015 Conduct sampling of excavation in expanded area south of wellhead for lab testing.

Sample ID 8: 8-Pt. Grab @-6'@39' S of Well	TPH = 392.5 mg/Kg, BTEX = 0.62 mg/Kg, Chloride = 31.1 mg/Kg
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(Note: This Sample ID 8 area subsequently excavated to below water table)

January 22, 2015 Conduct NMOCD witnessed sampling of excavation in area south and west of wellhead for lab testing.

Sample ID 9: Base 7-Point @ 7'	TPH = ND, BTEX = ND, Chloride = 223 mg/Kg
Sample ID 10: N Wall W of Well 5-pt 2'-5'	TPH = ND, BTEX = ND, Chloride = 394 mg/Kg
Sample ID 11: West Wall 5-pt 2'-5'	TPH = ND, BTEX = ND, Chloride = 585 mg/Kg

January 23, 2015 Conduct sampling of excavation in area south of fenced location on private property for lab testing.

Sample ID 12: South Base 5-Point @ -7'	TPH = 127.2 mg/Kg, BTEX = 0.60 mg/Kg, Chloride = 42.4 mg/Kg (Note: This Sample ID 12 area subsequently excavated to below water table)
Sample ID 13: South Sidewall 5-pt 2'-5'	TPH = ND, BTEX = ND, Chloride = 566 mg/Kg

January 27, 2015 Conduct NMOCD witnessed sampling of excavation in area immediately east of wellhead for lab testing:

Sample ID 14: Wall E. of Wellhead 5-pt 2'-5'	TPH = ND , BTEX = 0.45 mg/Kg, Chloride = 767 mg/Kg
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January 29, 2015 Morning: Conduct sampling of excavation in area between wellhead and entrance gate on east end of location, and south of Enterprise Pipeline, for lab testing.

Sample ID 15: SW Gate #1 Base 5-Point @ 6'	TPH = ND, BTEX = ND, Chloride = 205 mg/Kg
Sample ID 16: SW Gate #2 Base 5-Point @ 6'	TPH = ND, BTEX = ND, Chloride = 399 mg/Kg
Sample ID 17: SW Gate #3 Base 5-Point @ 6'	TPH = ND, BTEX = ND, Chloride = 616 mg/Kg

Afternoon: Conduct sampling of excavation in area between wellhead and entrance gate on east end of location, and both below and north of Enterprise Pipeline, for lab testing.

Sample ID 18: Gate East Wall 5-Point @ 2'-5'	TPH = ND, BTEX = ND, Chloride = 220 mg/Kg
Sample ID 19: Gate 1 Sub-Pipe 5-Point @ 6'	TPH = ND, BTEX = ND, Chloride = 196 mg/Kg
Sample ID 20: Gate 1 N Wall 5-Point @ 2'-5'	TPH = ND, BTEX = ND, Chloride = 285 mg/Kg
Sample ID 21: Gate 2/3 N Wall 5-Point @ 2'-5'	TPH = ND, BTEX = ND, Chloride = 944 mg/Kg
Sample ID 22: Gate 2/3 Sub-Pipe 5-Point @ 6'	TPH = ND, BTEX = ND, Chloride = 603 mg/Kg
Sample ID 23: Gate 3 W Wall 5-Point @ 2'-5'	TPH = ND, BTEX = ND, Chloride = 656 mg/Kg

February 3, 2015 Conduct sampling of excavation in gas tap area at NE corner of fenced location for lab testing:

Sample ID 24: Gas Tap N Wall 5-pt 2'-7'	TPH = ND , BTEX = 0.14mg/Kg, Chloride = 237 mg/Kg
Sample ID 25: Gas Tap E Wall 5-pt 2'-7'	TPH = ND , BTEX = ND, Chloride = 226 mg/Kg
Sample ID 26: Gas Tap S Wall 5-pt 2'-7'	TPH = ND , BTEX = ND, Chloride = 44.2 mg/Kg
Sample ID 27: Gas Tap W Wall 5-pt 2'-7'	TPH = ND , BTEX = ND, Chloride = 600 mg/Kg

February 4, 2015 Conduct sampling of excavation in outside of fenced location east of meter house for lab testing:

Sample ID 28: Meter House E Wall 5-pt 2'-9'	TPH=32.7 mg/Kg,BTEX=0.74mg/Kg,Chloride = 24mg/Kg
Sample ID 29: Meter House S Wall 5-pt 2'-9'	TPH = ND , BTEX = ND, Chloride = 45.6 mg/Kg
Sample ID 30: Meter House N Wall 5-pt 2'-9'	TPH = ND , BTEX = ND, Chloride = 24.2 mg/Kg

Excavation of all impacted soils completed. Total volume transported to JFJ Landfarm = 3,830 CY.

June 2, 2015: Install 3 groundwater monitor wells in remediated impact zone to evaluate water quality.

June 16, 2015: Survey relative monitor well tops for future gradient calculations.

June 17, 2015: Purge and develop monitor wells to remove sediment.

June 18, 2015: Sample monitor wells for laboratory testing of BTEX and general water quality. Sample on-site produced water from low-profile tank for qualitative comparison to groundwater parameters.

June 30, 2015: Receive laboratory test reports on monitor well water quality. BTEX below NMOCD closure standards in all wells.

BP America: Boyd GC 1

(M) Sec 8 – T31N – R10W

API: 30-045-10851

San Juan County, New Mexico

Monitor Well Location Map, Sampling Notes and Lab Reports

BP - Boyd GC 001

Unit M, Sec. 8, T31N, R10W

API #: 30045

Imagery Date: 03/15/2015

TW #1

MW #3

WELL HEAD

MW #1

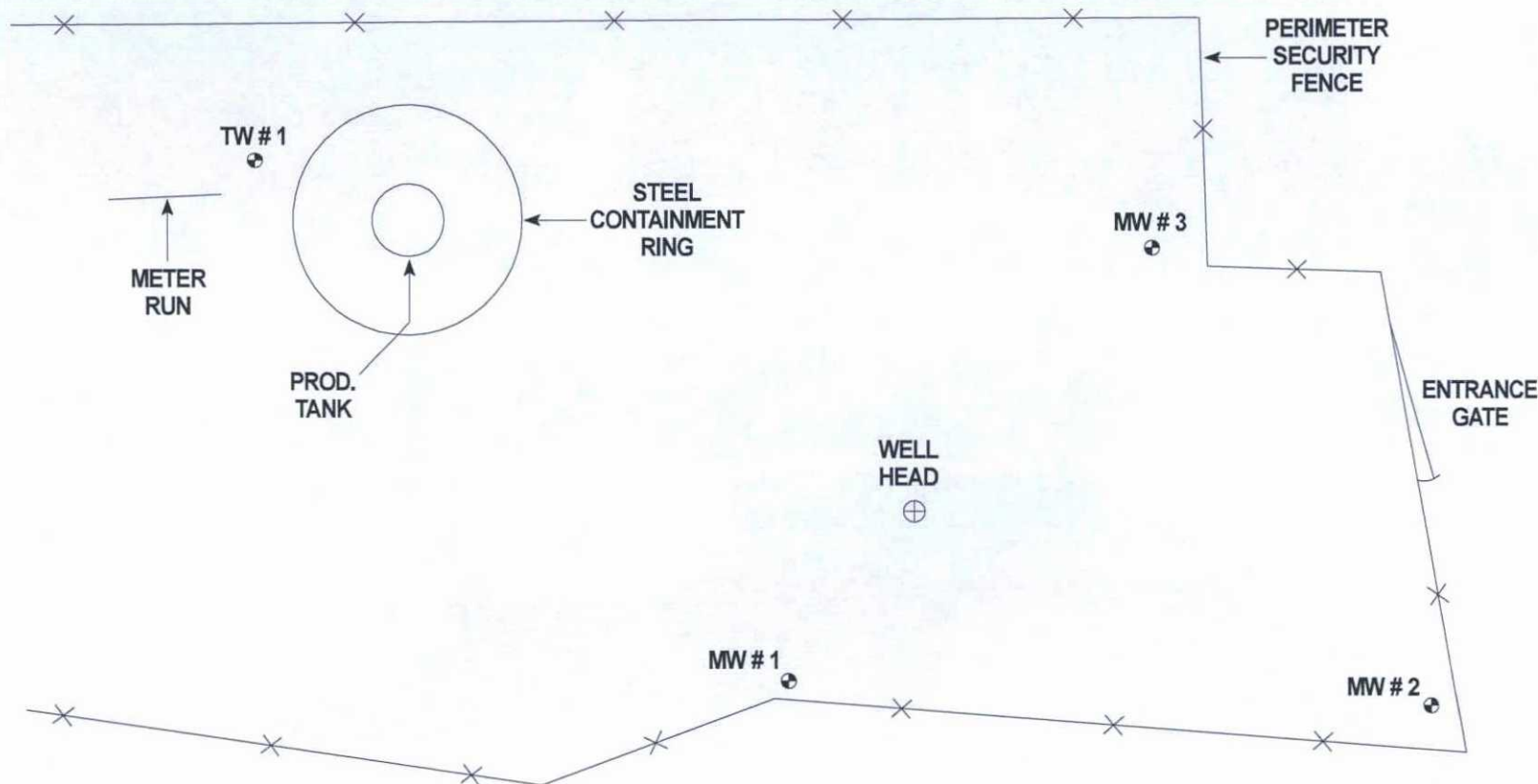
MW #2

Google earth

90 ft



FIGURE 1



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

0 30 60 FT.

FILENAME: BOYD GC 1 - SM 2015-06-18

BP AMERICA PRODUCTION CO.

BOYD GC #1

SW/4 SW/4 SEC. 8, T31N, R10W

SAN JUAN COUNTY, NEW MEXICO

B LAGG ENGINEERING, I NC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

PROJECT: INVESTIGATION

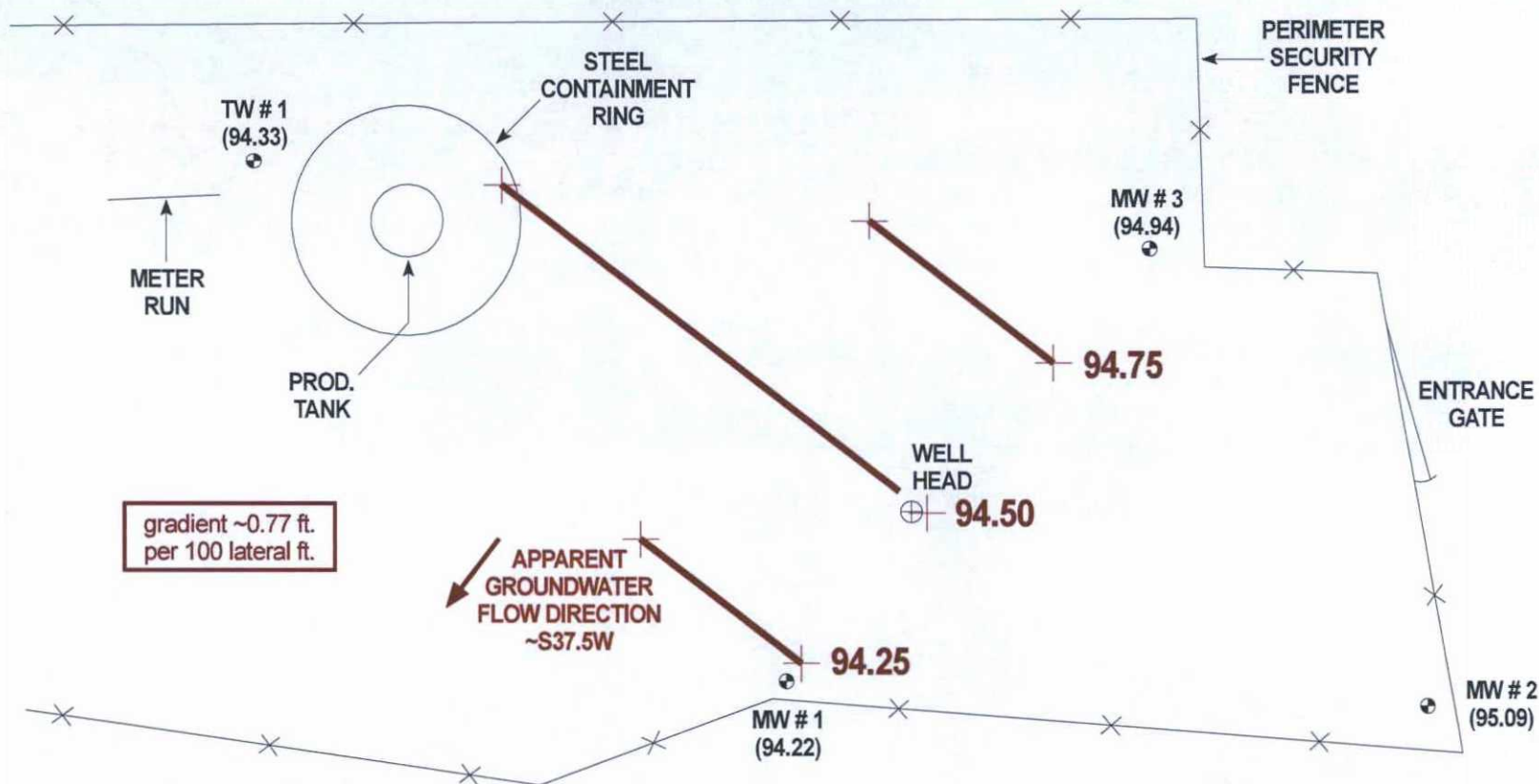
DRAFTED: 2015-06-23

DRAWN BY: NJV

**SITE
MAP**

JUNE 2015

FIGURE 2 (2nd 1/4, 2015)



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

0 30 60 FT.

WELL HEAD		Top of Well Elevation
FLANGE		(100.00)
MW #1		(101.09)
MW #2		(100.70)
MW #3		(98.84)
MW #4		(100.72)
MW #4 (51.06)		Groundwater Elevation as of 05/26/15.

FILENAME: BOYD GC 1 - GM 2015-06-18

BP AMERICA PRODUCTION CO.

BOYD GC #1

SW/4 SW/4 SEC. 8, T31N, R10W

SAN JUAN COUNTY, NEW MEXICO

B LAGG ENGINEERING, INC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

PROJECT: INVESTIGATION

DRAFTED: 2015-06-23

DRAWN BY: NJV

GROUNDWATER

GRADIENT

MAP

JUNE 2015

BLAGG ENGINEERING, INC.

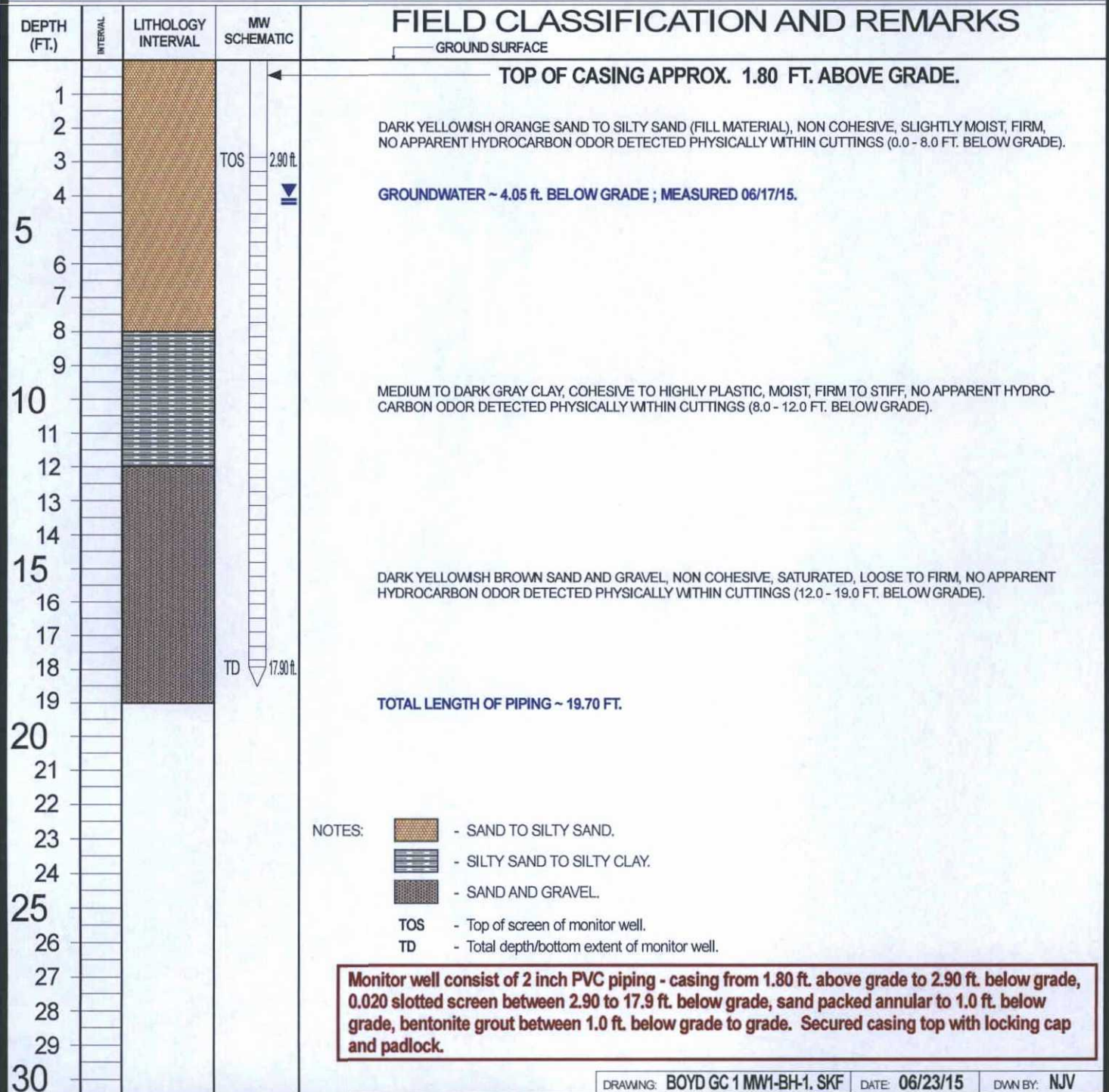
P.O. BOX 87
BLOOMFIELD, NM 87413
(505) 632-1199

MW # 1

BORE / TEST HOLE REPORT

CLIENT: **BP AMERICA PRODUCTION CO.**
LOCATION NAME: **BOYD GC # 1** API: 3004510851 UNIT M, SEC. 8, T31N, R10W
CONTRACTOR: **BLAGG ENGINEERING, INC. / KYVEK ENERGY SERVICES, INC.**
EQUIPMENT USED: **MOBILE DRILL RIG (CME 75) - HOLLOW STEM AUGER**
BORING LOCATION: **34.7 FEET, S36.5W FROM WELL HEAD.**

BORING #..... **BH - 1**
MW#..... **1**
PAGE #..... **1**
DATE STARTED **06/02/15**
DATE FINISHED **06/02/15**
OPERATOR..... **KP**
LOGGED BY..... **NJV**



BLAGG ENGINEERING, INC.

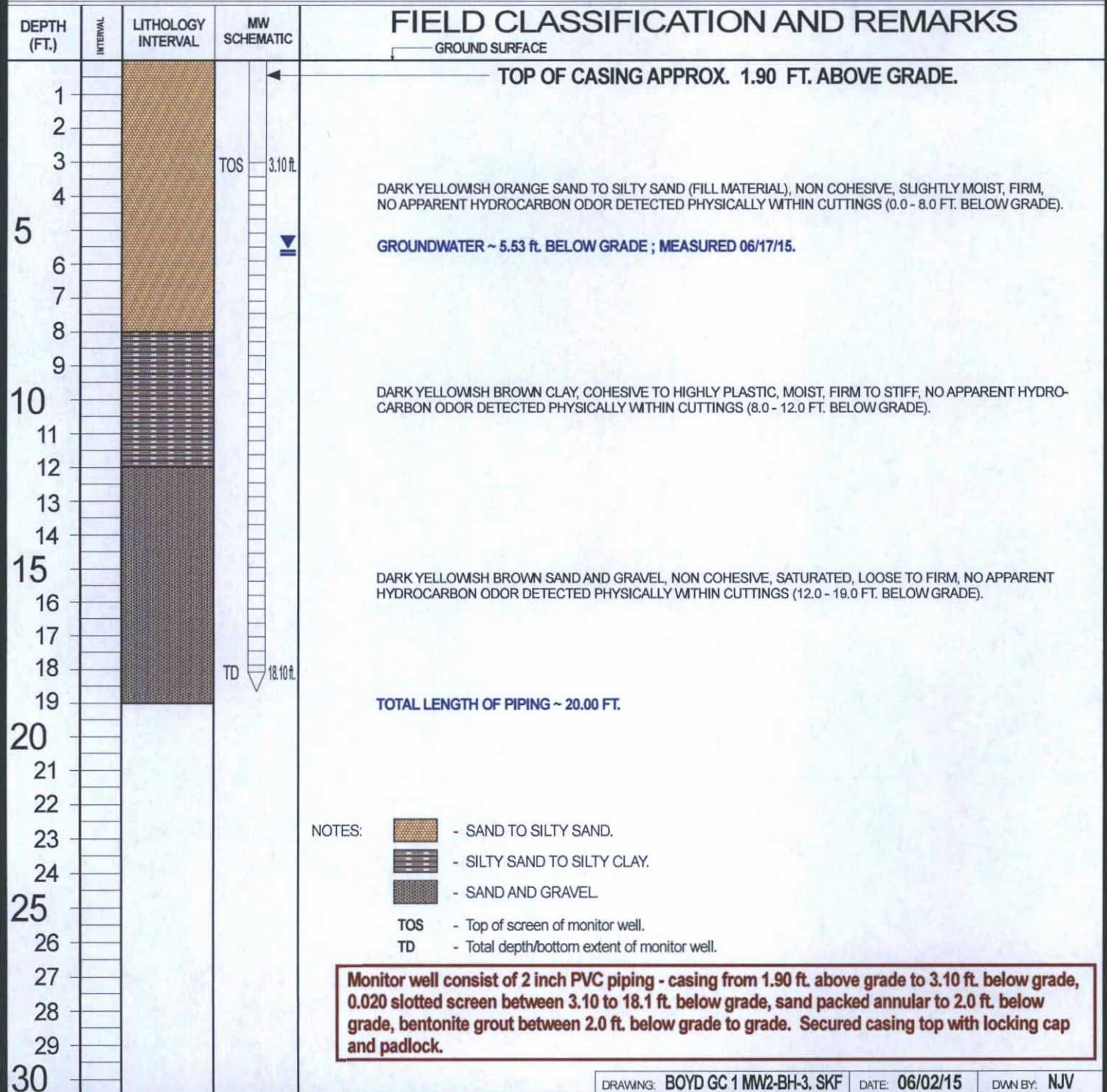
P.O. BOX 87
BLOOMFIELD, NM 87413
(505) 632-1199

MW#2

BORE / TEST HOLE REPORT

CLIENT: BP AMERICA PRODUCTION CO.
LOCATION NAME: BOYD GC #1 API: 3004510851 UNIT M, SEC. 8, T31N, R10W
CONTRACTOR: BLAGG ENGINEERING, INC. / KYVEK ENERGY SERVICES, INC.
EQUIPMENT USED: MOBILE DRILL RIG (CME 75) - HOLLOW STEM AUGER
BORING LOCATION: 90.5 FEET, S69.5E FROM WELL HEAD.

BORING #..... BH-3
MW#..... 2
PAGE #..... 2
DATE STARTED 06/02/15
DATE FINISHED 06/02/15
OPERATOR..... KP
LOGGED BY..... NJV



BLAGG ENGINEERING, INC.

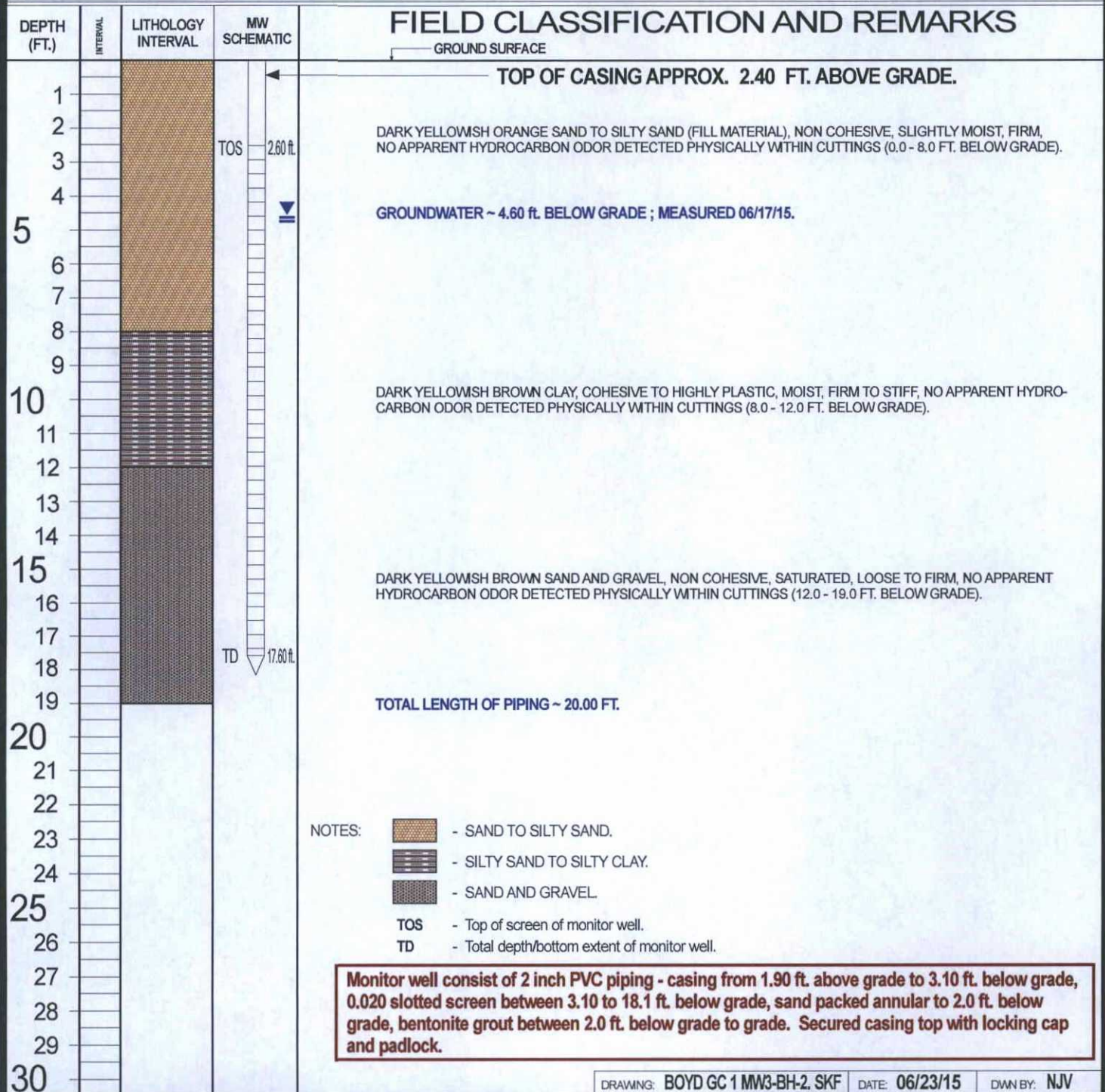
P.O. BOX 87
BLOOMFIELD, NM 87413
(505) 632-1199

MW# 3

BORE / TEST HOLE REPORT

CLIENT: **BP AMERICA PRODUCTION CO.**
LOCATION NAME: **BOYD GC # 1** API: 3004510851 UNIT M, SEC. 8, T31N, R10W
CONTRACTOR: **BLAGG ENGINEERING, INC. / KYVEK ENERGY SERVICES, INC.**
EQUIPMENT USED: **MOBILE DRILL RIG (CME 75) - HOLLOW STEM AUGER**
BORING LOCATION: **58.4 FEET, N42E FROM WELL HEAD.**

BORING #..... **BH-2**
MW #..... **3**
PAGE #..... **3**
DATE STARTED **06/02/15**
DATE FINISHED **06/02/15**
OPERATOR..... **KP**
LOGGED BY..... **NJV**



BLAGG ENGINEERING, INC.

MONITOR WELL DEVELOPMENT & / OR SAMPLING DATA

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

CHAIN-OF-CUSTODY # :

N / A

BOYD GC #1
UNIT M, SEC. 8, T31N, R10W

LABORATORY (S) USED :

HALL ENVIRONMENTAL

Date : June 18, 2015

DEVELOPER / SAMPLER : N J V

Filename : Boyd GC 1 mw log 2015-06-18.xls

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.)
1	99.95	94.22	5.73	19.70	0900	7.18	1,100	15.6	4.00
2	102.32	95.09	7.23	20.00	1100	6.87	1,300	16.7	4.50
3	101.91	94.94	6.97	20.00	1000	6.99	1,200	18.1	4.00
TW 1	101.66	94.33	7.33	10.00	1130	-	-	-	-

INSTRUMENT CALIBRATIONS =

DATE & TIME =

4.01/7.00/10.00	2,800
06/18/15	0700

NOTES : Volume of water purged from well prior to sampling: $V = \pi \times r^2 \times h \times 7.48 \text{ gal./ft}^3 \times 3 \text{ (wellbores)}$.
(i.e. 2" MW $r = (1/12) \text{ ft.}$ $h = 1 \text{ ft.}$) (i.e. 4" MW $r = (2/12) \text{ ft.}$ $h = 1 \text{ ft.}$)

Ideally a minimum of three (3) wellbore volumes: 2.00" well diameter = 0.49 gal./ft. of water.

Comments or note well diameter if not standard 2".

Monitor wells MW #1, MW #2, & MW #3 installed on June 2, 2015, surveyed on June 16, 2015, & initially developed on June 17, 2015.

Excellent recovery in MW #1, #2, & #3. Collected samples for BTEX per US EPA Method 8021B and cation/anion balance from MW #1, #2, & #3. Purged well using 2 inch submersible electrical pump, new/clear vinyl tubing, and with brass adjustable flow valve attachment added near sampling end of tubing. Collected cation/anion balance sample from low profile above-grade tank produced water.

Top of casing MW #1 ~ 1.80 ft., MW #2 ~ 1.90 ft., MW #3 ~ 2.40 ft., TW #1 ~ 3.00 ft. above grade.

on-site	9:00 AM	temp	69 F
off-site	11:45 AM	temp	85 F
sky cond.	Sunny		
wind speed	0 - 10	direct.	E - SE



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

June 30, 2015

Nelson Velez
Blagg Engineering
P. O. Box 87
Bloomfield, NM 87413
TEL: (505) 320-3489
FAX (505) 632-3903

RE: BOYD GC #1

OrderNo.: 1506916

Dear Nelson Velez:

Hall Environmental Analysis Laboratory received 4 sample(s) on 6/19/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order 1506916

Date Reported: 6/30/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: MW #1

Project: BOYD GC #1

Collection Date: 6/18/2015 9:00:00 AM

Lab ID: 1506916-001

Matrix: AQUEOUS

Received Date: 6/19/2015 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.51	0.10		mg/L	1	6/23/2015 7:36:26 PM	R27048
Chloride	28	10		mg/L	20	6/20/2015 12:15:21 AM	R26991
Nitrogen, Nitrate (As N)	0.14	0.10		mg/L	1	6/19/2015 11:38:06 PM	R26991
Sulfate	280	10		mg/L	20	6/23/2015 7:48:51 PM	R27048
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	750	100	*	mg/L	1	6/24/2015 1:27:00 PM	19880
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	1.1	1.0		µg/L	1	6/26/2015 10:46:33 AM	R27129
Toluene	3.3	1.0		µg/L	1	6/26/2015 10:46:33 AM	R27129
Ethylbenzene	ND	1.0		µg/L	1	6/26/2015 10:46:33 AM	R27129
Xylenes, Total	3.0	2.0		µg/L	1	6/26/2015 10:46:33 AM	R27129
Surr: 4-Bromofluorobenzene	91.2	80-120		%REC	1	6/26/2015 10:46:33 AM	R27129

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 1 of 8
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Analytical Report

Lab Order 1506916

Date Reported: 6/30/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: MW #2

Project: BOYD GC #1

Collection Date: 6/18/2015 11:00:00 AM

Lab ID: 1506916-002

Matrix: AQUEOUS

Received Date: 6/19/2015 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.67	0.10		mg/L	1	6/23/2015 8:01:15 PM	R27048
Chloride	21	10		mg/L	20	6/20/2015 1:05:00 AM	R26991
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	6/20/2015 12:52:35 AM	R26991
Sulfate	430	10		mg/L	20	6/23/2015 8:13:40 PM	R27048
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	932	40.0	*	mg/L	1	6/24/2015 1:27:00 PM	19880
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	1.0		µg/L	1	6/25/2015 7:39:12 PM	R27099
Toluene	2.6	1.0		µg/L	1	6/25/2015 7:39:12 PM	R27099
Ethylbenzene	ND	1.0		µg/L	1	6/25/2015 7:39:12 PM	R27099
Xylenes, Total	2.8	2.0		µg/L	1	6/25/2015 7:39:12 PM	R27099
Surr: 4-Bromofluorobenzene	87.3	80-120		%REC	1	6/25/2015 7:39:12 PM	R27099

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 2 of 8
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.**Analytical Report**Lab Order **1506916**

Date Reported: 6/30/2015

CLIENT: Blagg Engineering**Client Sample ID:** MW #3**Project:** BOYD GC #1**Collection Date:** 6/18/2015 10:00:00 AM**Lab ID:** 1506916-003**Matrix:** AQUEOUS**Received Date:** 6/19/2015 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	0.50	0.10		mg/L	1	6/25/2015 4:27:05 AM	R27080
Chloride	24	10		mg/L	20	6/20/2015 1:29:49 AM	R26991
Nitrogen, Nitrate (As N)	0.15	0.10		mg/L	1	6/20/2015 1:17:24 AM	R26991
Sulfate	300	10		mg/L	20	6/25/2015 4:39:30 AM	R27080
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	746	40.0	*	mg/L	1	6/24/2015 1:27:00 PM	19880
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	1.1	1.0		µg/L	1	6/25/2015 8:07:58 PM	R27099
Toluene	3.6	1.0		µg/L	1	6/25/2015 8:07:58 PM	R27099
Ethylbenzene	ND	1.0		µg/L	1	6/25/2015 8:07:58 PM	R27099
Xylenes, Total	3.6	2.0		µg/L	1	6/25/2015 8:07:58 PM	R27099
Surr: 4-Bromofluorobenzene	87.9	80-120		%REC	1	6/25/2015 8:07:58 PM	R27099

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 3 of 8
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit	
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	Spike Recovery outside accepted recovery limits			

Hall Environmental Analysis Laboratory, Inc.**Analytical Report**Lab Order **1506916**

Date Reported: 6/30/2015

CLIENT: Blagg Engineering**Client Sample ID:** LP AGT Produced Water**Project:** BOYD GC #1**Collection Date:** 6/18/2015 11:30:00 AM**Lab ID:** 1506916-004**Matrix:** AQUEOUS**Received Date:** 6/19/2015 7:20:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Fluoride	ND	0.50		mg/L	5	6/25/2015 4:51:54 AM	R27080
Chloride	ND	2.5		mg/L	5	6/20/2015 1:42:14 AM	R26991
Nitrogen, Nitrate (As N)	ND	0.50		mg/L	5	6/20/2015 1:42:14 AM	R26991
Sulfate	ND	2.5		mg/L	5	6/25/2015 4:51:54 AM	R27080
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	25.0	20.0		mg/L	1	6/25/2015 9:39:00 PM	19913

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506916

30-Jun-15

Client: Blagg Engineering

Project: BOYD GC #1

Sample ID	MB	SampType	MBLK	TestCode	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R26991	RunNo:	26991					
Prep Date:		Analysis Date:	6/19/2015	SeqNo:	806025	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID	LCS	SampType	LCS	TestCode	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R26991	RunNo:	26991					
Prep Date:		Analysis Date:	6/19/2015	SeqNo:	806026	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.9	0.50	5.000	0	98.3	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	102	90	110			

Sample ID	MB	SampType	MBLK	TestCode	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R26991	RunNo:	26991					
Prep Date:		Analysis Date:	6/19/2015	SeqNo:	806085	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID	LCS	SampType	LCS	TestCode	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R26991	RunNo:	26991					
Prep Date:		Analysis Date:	6/19/2015	SeqNo:	806086	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	5.0	0.50	5.000	0	101	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	105	90	110			

Sample ID	MB	SampType	MBLK	TestCode	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R27048	RunNo:	27048					
Prep Date:		Analysis Date:	6/23/2015	SeqNo:	808046	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Sulfate	ND	0.50								

Sample ID	LCS	SampType	LCS	TestCode	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R27048	RunNo:	27048					
Prep Date:		Analysis Date:	6/23/2015	SeqNo:	808047	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506916

30-Jun-15

Client: Blagg Engineering

Project: BOYD GC #1

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R27048	RunNo:	27048					
Prep Date:		Analysis Date:	6/23/2015	SeqNo:	808047	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.48	0.10	0.5000	0	96.9	90	110			
Sulfate	9.6	0.50	10.00	0	95.9	90	110			

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R27080	RunNo:	27080					
Prep Date:		Analysis Date:	6/24/2015	SeqNo:	809485	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Sulfate	ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R27080	RunNo:	27080					
Prep Date:		Analysis Date:	6/24/2015	SeqNo:	809486	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.53	0.10	0.5000	0	105	90	110			
Sulfate	10	0.50	10.00	0	99.7	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506916

30-Jun-15

Client: Blagg Engineering

Project: BOYD GC #1

Sample ID	5ML RB	SampType: MBLK			TestCode: EPA Method 8021B: Volatiles					
Client ID:	PBW	Batch ID: R27099			RunNo: 27099					
Prep Date:		Analysis Date: 6/25/2015			SeqNo: 810156		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
Surr: 4-Bromofluorobenzene	18		20.00		89.4	80	120			

Sample ID	100NG BTEX LCS	SampType: LCS			TestCode: EPA Method 8021B: Volatiles					
Client ID:	LCSW	Batch ID: R27099			RunNo: 27099					
Prep Date:		Analysis Date: 6/25/2015			SeqNo: 810159		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	108	80	120			
Toluene	22	1.0	20.00	0	108	80	120			
Ethylbenzene	22	1.0	20.00	0	110	80	120			
Xylenes, Total	65	2.0	60.00	0	109	80	120			
Surr: 4-Bromofluorobenzene	20		20.00		98.7	80	120			

Sample ID	5ML RB	SampType: MBLK			TestCode: EPA Method 8021B: Volatiles					
Client ID:	PBW	Batch ID: R27129			RunNo: 27129					
Prep Date:		Analysis Date: 6/26/2015			SeqNo: 811420		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
Surr: 4-Bromofluorobenzene	18		20.00		89.2	80	120			

Sample ID	100NG BTEX LCS	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSW	Batch ID:	R27129	RunNo:	27129					
Prep Date:		Analysis Date:	6/26/2015	SeqNo:	811421	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	103	80	120			
Toluene	21	1.0	20.00	0	104	80	120			
Ethylbenzene	21	1.0	20.00	0	107	80	120			
Xylenes, Total	64	2.0	60.00	0	106	80	120			
Surr: 4-Bromofluorobenzene	19		20.00		92.7	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1506916

30-Jun-15

Client: Blagg Engineering

Project: BOYD GC #1

Sample ID	MB-19880	SampType	MBLK	TestCode	SM2540C MOD: Total Dissolved Solids					
Client ID	PBW	Batch ID	19880	RunNo	27051					
Prep Date	6/23/2015	Analysis Date	6/24/2015	SeqNo	808149	Units	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-19880	SampType	LCS	TestCode	SM2540C MOD: Total Dissolved Solids					
Client ID	LCSW	Batch ID	19880	RunNo	27051					
Prep Date	6/23/2015	Analysis Date	6/24/2015	SeqNo	808150	Units	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1000	20.0	1000	0	101	80	120			

Sample ID	MB-19913	SampType	MBLK	TestCode	SM2540C MOD: Total Dissolved Solids					
Client ID	PBW	Batch ID	19913	RunNo	27098					
Prep Date	6/24/2015	Analysis Date	6/25/2015	SeqNo	810028	Units	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-19913	SampType	LCS	TestCode	SM2540C MOD: Total Dissolved Solids					
Client ID	LCSW	Batch ID	19913	RunNo	27098					
Prep Date	6/24/2015	Analysis Date	6/25/2015	SeqNo	810029	Units	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	999	20.0	1000	0	99.9	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **BLAGG**

Work Order Number: **1506916**

RcptNo: 1

Received by/date:

AG

06/19/15

Logged By: **Ashley Gallegos**

6/19/2015 7:20:00 AM

AG

Completed By: **Ashley Gallegos**

6/19/2015 7:35:06 AM

AG

Reviewed By:

[Signature]

06/19/15

Chain of Custody

1. Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

2. Is Chain of Custody complete?

Yes ☒

No ☐

Not Present ☐

3. How was the sample delivered?

Courier

Log In

4. Was an attempt made to cool the samples?

Yes ☒

No ☐

NA ☐

5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C

Yes ☒

No ☐

NA ☐

6. Sample(s) in proper container(s)?

Yes ☒

No ☐

7. Sufficient sample volume for indicated test(s)?

Yes ☒

No ☐

8. Are samples (except VOA and ONG) properly preserved?

Yes ☒

No ☐

9. Was preservative added to bottles?

Yes ☐

No ☒

NA ☐

10. VOA vials have zero headspace?

Yes ☒

No ☐

No VOA Vials ☐

11. Were any sample containers received broken?

Yes ☐

No ☒

of preserved
bottles checked
for pH:

10

12. Does paperwork match bottle labels?

Yes ☒

No ☐

(Note discrepancies on chain of custody)

13. Are matrices correctly identified on Chain of Custody?

Yes ☒

No ☐

Adjusted?

NO

14. Is it clear what analyses were requested?

Yes ☒

No ☐

15. Were all holding times able to be met?

Yes ☒

No ☐

Checked by:

[Signature]

(If no, notify customer for authorization.)

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?

Yes ☐

No ☐

NA ☒

Person Notified:

Date

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.4	Good	Yes			

Chain-of-Custody Record

Turn-Around Time:

☒ Standard ☐ Rush

Project Name:

BOYD GC # 1

Project #:

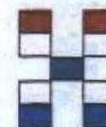
Project Manager:

NELSON VELEZ

Sampler: NELSON VELEZ

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.4



**HALL ENVIRONMENTAL
ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Client: **BLAGG ENGR. / 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)

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX (8021B)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH (8310 or 8270SIMS)	RCRA 8 Metals	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Cation / Anion Balance	Grab sample	5 pt. composite sample	Air Bubbles (Y or N)
6/18/15	0900	WATER	MW #1	40 ml VOA - 2	HCl & Cool	-001	✓												✓	✓	
6/18/15	0900	WATER	MW #1	500 ml - 1	Cool	-001												✓	✓		
6/18/15	1100	WATER	MW #2	40 ml VOA - 2	HCl & Cool	-002	✓												✓	✓	
6/18/15	1100	WATER	MW #2	500 ml - 1	Cool	-002												✓	✓		
6/18/15	1000	WATER	MW #3	40 ml VOA - 2	HCl & Cool	-003	✓												✓	✓	
6/18/15	1000	WATER	MW #3	500 ml - 1	Cool	-003												✓	✓		
6/18/15	1130	WATER	LP AGT PRODUCED WATER	250 ml - 2	Cool	-004												✓	✓		

Date: 6/18/15 Time: 1700 Relinquished by: [Signature]

Received by: [Signature] Date: 6/19/15 Time: 0720

Remarks: Report F, Cl, NO₃, SO₄, & TDS only for A/C balance.

BILL DIRECTLY TO BP:

Jeff Peace, 200 Energy Court, Farmington, NM 87401

Paykey: ZEVH01REME

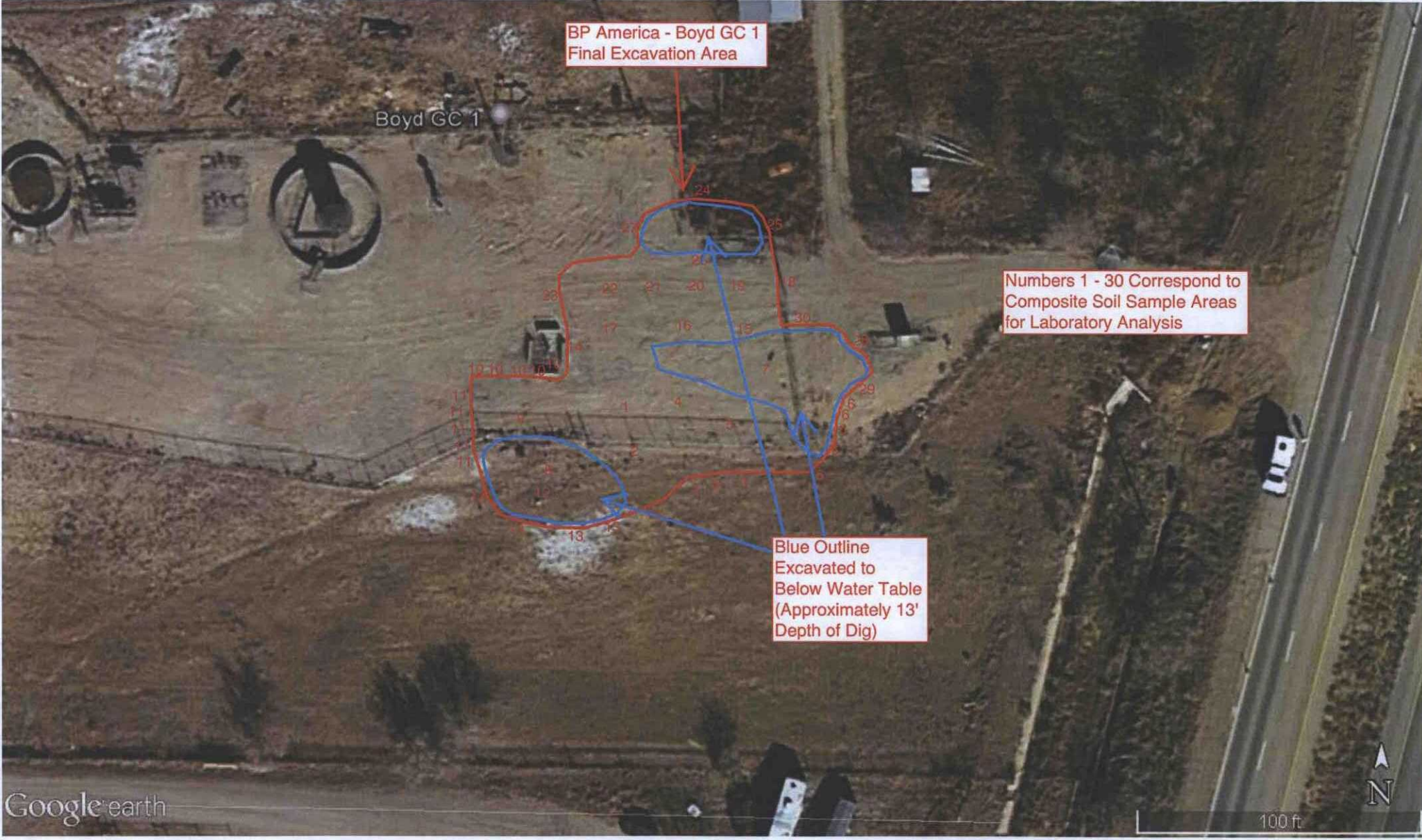
BP America: Boyd GC 1

(M) Sec 8 – T31N – R10W

API: 30-045-10851

San Juan County, New Mexico

GeoProbe Investigation Location Map and Lab Reports



BP America - Boyd GC 1
Final Excavation Area

Boyd GC 1

Numbers 1 - 30 Correspond to
Composite Soil Sample Areas
for Laboratory Analysis

Blue Outline
Excavated to
Below Water Table
(Approximately 13'
Depth of Dig)

BP - Boyd GC 1
March 6, 2013 Geoprobe
Investigation Sampling Points

Boyd GC 1 WH

BH-5

BH-4

BH-3

BH-2

BH-1

BH-6

BH-7

BH-8

© 2013 Google

Google earth

120 ft

Imagery Date: 6/10/2011 lat: 36.908955° lon: -107.910604° elev: 5799 ft eye alt: 6312 ft



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

March 01, 2013

Jeff Blagg

Blagg Engineering

P. O. Box 87

Bloomfield, NM 87413

TEL: (505) 320-1183

FAX (505) 632-3903

RE: BOYD GC #1

OrderNo.: 1302851

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 1 sample(s) on 2/26/2013 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1302851

Date Reported: 3/1/2013

CLIENT: Blagg Engineering

Project: BOYD GC #1

Lab ID: 1302851-001

Matrix: SOIL

Client Sample ID: T.H.-SE Of W.H. @2.5' (Release

Collection Date: 2/21/2013 2:05:00 PM

Received Date: 2/26/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: MMD
Diesel Range Organics (DRO)	64000	950		mg/Kg	100	3/1/2013 9:50:30 AM
Surr: DNOP	0	72.4-120	S	%REC	100	3/1/2013 9:50:30 AM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	5300	500		mg/Kg	100	2/27/2013 5:02:33 PM
Surr: BFB	158	84-116	S	%REC	100	2/27/2013 5:02:33 PM
EPA METHOD 8021B: VOLATILES						Analyst: NSB
Benzene	64	5.0		mg/Kg	100	2/27/2013 5:02:33 PM
Toluene	260	5.0		mg/Kg	100	2/27/2013 5:02:33 PM
Ethylbenzene	38	5.0		mg/Kg	100	2/27/2013 5:02:33 PM
Xylenes, Total	370	9.9		mg/Kg	100	2/27/2013 5:02:33 PM
Surr: 4-Bromofluorobenzene	115	80-120		%REC	100	2/27/2013 5:02:33 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1302851

01-Mar-13

Client: Blagg Engineering

Project: BOYD GC #1

Sample ID	MB-6265	SampType:	MBLK	TestCode:	EPA Method 8015B: Diesel Range Organics					
Client ID:	PBS	Batch ID:	6265	RunNo:	8892					
Prep Date:	2/27/2013	Analysis Date:	2/28/2013	SeqNo:	254079	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	11		10.00		109	72.4	120			

Sample ID	LCS-6265		SampType: LCS		TestCode: EPA Method 8015B: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 6265		RunNo: 8892					
Prep Date:	2/27/2013		Analysis Date: 2/28/2013		SeqNo: 254112		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	103	47.4	122			
Surr: DNOP	5.9		5.000		117	72.4	120			

Sample ID	1302844-003AMS		SampType: MS		TestCode: EPA Method 8015B: Diesel Range Organics					
Client ID:	BatchQC		Batch ID: 6265		RunNo: 8892					
Prep Date:	2/27/2013		Analysis Date: 2/28/2013		SeqNo: 254355		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	56	10	51.23	0	109	12.6	148			
Surr: DNOP	5.6		5.123		109	72.4	120			

Sample ID	1302844-003AMSD		SampType: MSD		TestCode: EPA Method 8015B: Diesel Range Organics					
Client ID:	BatchQC		Batch ID: 6265		RunNo: 8892					
Prep Date:	2/27/2013		Analysis Date: 2/28/2013		SeqNo: 254472		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	9.7	48.54	0	104	12.6	148	10.2	22.5	
Surr: DNOP	6.0		4.854		123	72.4	120	0	0	S

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1302851

01-Mar-13

Client: Blagg Engineering

Project: BOYD GC #1

Sample ID	MB-6247	SampType:	MBLK	TestCode:	EPA Method 8015B: Gasoline Range					
Client ID:	PBS	Batch ID:	6247	RunNo:	8875					
Prep Date:	2/26/2013	Analysis Date:	2/27/2013	SeqNo:	253914	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1100		1000		107	84	116			

Sample ID	LCS-6247		SampType:	LCS		TestCode:	EPA Method 8015B: Gasoline Range				
Client ID:	LCSS		Batch ID:	6247		RunNo:	8875				
Prep Date:	2/26/2013		Analysis Date:	2/27/2013		SeqNo:	253915		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	29	5.0	25.00	0	115	62.6	136				
Surr: BFB	1200		1000		115	84	116				

Sample ID	1302842-001AMS		SampType: MS		TestCode: EPA Method 8015B: Gasoline Range					
Client ID:	BatchQC		Batch ID: 6247		RunNo: 8875					
Prep Date:	2/26/2013		Analysis Date: 2/27/2013		SeqNo: 253917		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	49	4.9	24.61	29.69	78.8	70	130			
Surr: BFB	2600		984.3		262	84	116			S

Sample ID	1302842-001AMSD		SampType: MSD		TestCode: EPA Method 8015B: Gasoline Range					
Client ID:	BatchQC		Batch ID: 6247		RunNo: 8875					
Prep Date:	2/26/2013		Analysis Date: 2/27/2013		SeqNo: 253918		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	56	4.9	24.61	29.69	105	70	130	12.5	22.1	
Surr: BFB	2700		984.3		269	84	116	0	0	S

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1302851

01-Mar-13

Client: Blagg Engineering

Project: BOYD GC #1

Sample ID	MB-6247		SampType:	MBLK		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	PBS		Batch ID:	6247		RunNo:	8875			
Prep Date:	2/26/2013		Analysis Date:	2/27/2013		SeqNo:	253934		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		107	80	120			

Sample ID	LCS-6247		SampType:	LCS		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	LCSS		Batch ID:	6247		RunNo:	8875			
Prep Date:	2/26/2013		Analysis Date:	2/27/2013		SeqNo:	253935		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.050	1.000	0	92.3	80	120			
Toluene	0.92	0.050	1.000	0	91.8	80	120			
Ethylbenzene	0.92	0.050	1.000	0	91.9	80	120			
Xylenes, Total	2.8	0.10	3.000	0	92.9	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		110	80	120			

Sample ID	1302844-001AMS		SampType:	MS		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	BatchQC		Batch ID:	6247		RunNo:	8875			
Prep Date:	2/26/2013		Analysis Date:	2/27/2013		SeqNo:	253938		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.049	0.9852	0	107	67.2	113			
Toluene	1.0	0.049	0.9852	0.004008	106	62.1	116			
Ethylbenzene	1.1	0.049	0.9852	0.01148	107	67.9	127			
Xylenes, Total	3.2	0.099	2.956	0.09455	106	60.6	134			
Surr: 4-Bromofluorobenzene	1.2		0.9852		117	80	120			

Sample ID	1302844-001AMSD		SampType:	MSD		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	BatchQC		Batch ID:	6247		RunNo:	8875			
Prep Date:	2/26/2013		Analysis Date:	2/27/2013		SeqNo:	253939		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.047	0.9390	0	111	67.2	113	0.725	14.3	
Toluene	1.1	0.047	0.9390	0.004008	112	62.1	116	0.489	15.9	
Ethylbenzene	1.1	0.047	0.9390	0.01148	115	67.9	127	2.21	14.4	
Xylenes, Total	3.3	0.094	2.817	0.09455	113	60.6	134	1.77	12.6	
Surr: 4-Bromofluorobenzene	1.1		0.9390		114	80	120	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87105
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **BLAGG** Work Order Number: 1302851
Received by/date: *Jim 02/20/13*
Logged By: **Ashley Gallegos** 2/26/2013 10:00:00 AM *AG*
Completed By: **Ashley Gallegos** 2/26/2013 11:59:51 AM *AG*
Reviewed By: *AG 02/26/13*

Chain of Custody

1. Were seals intact? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Coolers are present? (see 19. for cooler specific information) Yes ☒ No ☐ NA ☐
5. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
6. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
7. Sample(s) in proper container(s)? Yes ☒ No ☐
8. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
9. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
10. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
11. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
12. Were any sample containers received broken? Yes ☐ No ☒
13. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
14. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
15. Is it clear what analyses were requested? Yes ☒ No ☐
16. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH: _____
(<2 or >12 unless noted)
Adjusted? _____
Checked by: _____

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: _____ Date: _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

18. Additional remarks:

19. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.9	Good	Not Present			

Chain-of-Custody Record

Client: **BLAGG ENGR. / 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

BOYD GC # 1

Project #:

Project Manager:

NELSON VELEZ

Sampler: NELSON VELEZ

On Ice: ☒ Yes ☐ No

Sample Temperature: 19

[illegible]

Date:	Time:	Relinquished by:
-------	-------	------------------

Received by:

Date	Time
------	------

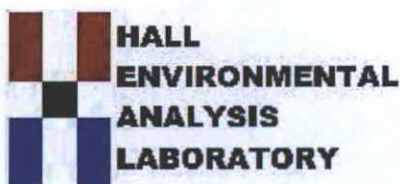
Remarks:	TPH (8015B) - GRO & DRO ONLY.
----------	-------------------------------

BILL DIRECTLY TO BP:

Jeff Peace, 200 Energy Court, Farmington, NM 87401

Work Order: N1534915 Paykey: ZEVH01BGT2

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 noted on the analytical report.



*Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com*

March 12, 2013

Jeff Blagg

Blagg Engineering

P. O. Box 87

Bloomfield, NM 87413

TEL: (505) 320-1183

FAX

RE: BOYD GC 1

OrderNo.: 1303284

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 4 sample(s) on 3/7/2013 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 1303284

Date Reported: 3/12/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: BH-3@10'

Project: BOYD GC 1

Collection Date: 3/6/2013 11:25:00 AM

Lab ID: 1303284-001

Matrix: SOIL

Received Date: 3/7/2013 9:56:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: MMD
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	3/11/2013 10:11:59 PM
Surr: DNOP	97.2	72.4-120		%REC	1	3/11/2013 10:11:59 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/8/2013 12:25:59 PM
Surr: BFB	108	84-116		%REC	1	3/8/2013 12:25:59 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.048		mg/Kg	1	3/8/2013 12:25:59 PM
Toluene	ND	0.048		mg/Kg	1	3/8/2013 12:25:59 PM
Ethylbenzene	ND	0.048		mg/Kg	1	3/8/2013 12:25:59 PM
Xylenes, Total	ND	0.095		mg/Kg	1	3/8/2013 12:25:59 PM
Surr: 4-Bromofluorobenzene	107	80-120		%REC	1	3/8/2013 12:25:59 PM
EPA METHOD 300.0: ANIONS						Analyst: JRR
Chloride	66	30		mg/Kg	20	3/8/2013 11:50:30 AM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1303284

Date Reported: 3/12/2013

CLIENT: Blagg Engineering

Client Sample ID: BH-4@10.5'

Project: BOYD GC 1

Collection Date: 3/6/2013 12:11:00 PM

Lab ID: 1303284-002

Matrix: SOIL

Received Date: 3/7/2013 9:56:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: MMD
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	3/11/2013 10:39:12 PM
Surr: DNOP	102	72.4-120		%REC	1	3/11/2013 10:39:12 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/8/2013 12:54:43 PM
Surr: BFB	107	84-116		%REC	1	3/8/2013 12:54:43 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.047		mg/Kg	1	3/8/2013 12:54:43 PM
Toluene	ND	0.047		mg/Kg	1	3/8/2013 12:54:43 PM
Ethylbenzene	ND	0.047		mg/Kg	1	3/8/2013 12:54:43 PM
Xylenes, Total	ND	0.094		mg/Kg	1	3/8/2013 12:54:43 PM
Surr: 4-Bromofluorobenzene	106	80-120		%REC	1	3/8/2013 12:54:43 PM
EPA METHOD 300.0: ANIONS						Analyst: JRR
Chloride	130	30		mg/Kg	20	3/8/2013 12:40:09 PM

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

Analytical Report

Lab Order 1303284

Date Reported: 3/12/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: BH-6@10'-11'

Project: BOYD GC 1

Collection Date: 3/6/2013 1:50:00 PM

Lab ID: 1303284-003

Matrix: SOIL

Received Date: 3/7/2013 9:56:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: MMD
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	3/11/2013 11:06:28 PM
Surr: DNOP	97.2	72.4-120		%REC	1	3/11/2013 11:06:28 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/8/2013 1:23:22 PM
Surr: BFB	111	84-116		%REC	1	3/8/2013 1:23:22 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.047		mg/Kg	1	3/8/2013 1:23:22 PM
Toluene	ND	0.047		mg/Kg	1	3/8/2013 1:23:22 PM
Ethylbenzene	ND	0.047		mg/Kg	1	3/8/2013 1:23:22 PM
Xylenes, Total	ND	0.093		mg/Kg	1	3/8/2013 1:23:22 PM
Surr: 4-Bromofluorobenzene	108	80-120		%REC	1	3/8/2013 1:23:22 PM
EPA METHOD 300.0: ANIONS						Analyst: JRR
Chloride	59	30		mg/Kg	20	3/8/2013 1:04:58 PM

Qualifiers: * Value exceeds Maximum Contaminant Level.
 E Value above quantitation range
 J Analyte detected below quantitation limits
 P Sample pH greater than 2
 RL Reporting Detection Limit

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

Analytical Report

Lab Order 1303284

Date Reported: 3/12/2013

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: BH-7@11'

Project: BOYD GC 1

Collection Date: 3/6/2013 2:25:00 PM

Lab ID: 1303284-004

Matrix: SOIL

Received Date: 3/7/2013 9:56:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: MMD
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	3/11/2013 11:33:28 PM
Surr: DNOP	95.8	72.4-120		%REC	1	3/11/2013 11:33:28 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/8/2013 1:52:12 PM
Surr: BFB	138	84-116	S	%REC	1	3/8/2013 1:52:12 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.047		mg/Kg	1	3/8/2013 1:52:12 PM
Toluene	ND	0.047		mg/Kg	1	3/8/2013 1:52:12 PM
Ethylbenzene	ND	0.047		mg/Kg	1	3/8/2013 1:52:12 PM
Xylenes, Total	ND	0.094		mg/Kg	1	3/8/2013 1:52:12 PM
Surr: 4-Bromofluorobenzene	109	80-120		%REC	1	3/8/2013 1:52:12 PM
EPA METHOD 300.0: ANIONS						Analyst: JRR
Chloride	73	30		mg/Kg	20	3/8/2013 1:29:48 PM

Qualifiers: * Value exceeds Maximum Contaminant Level.
 E Value above quantitation range
 J Analyte detected below quantitation limits
 P Sample pH greater than 2
 RL Reporting Detection Limit

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1303284

12-Mar-13

Client: Blagg Engineering

Project: BOYD GC 1

Sample ID	MB-6389		SampType: MBLK		TestCode: EPA Method 300.0: Anions					
Client ID:	PBS		Batch ID: 6389		RunNo: 9087					
Prep Date:	3/8/2013		Analysis Date: 3/8/2013		SeqNo: 258707		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-6389		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSS		Batch ID: 6389		RunNo: 9087					
Prep Date:	3/8/2013		Analysis Date: 3/8/2013		SeqNo: 258708		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	97.5	90	110			

Sample ID	1303229-001AMS		SampType: MS		TestCode: EPA Method 300.0: Anions					
Client ID:	BatchQC		Batch ID: 6389		RunNo: 9087					
Prep Date:	3/8/2013		Analysis Date: 3/8/2013		SeqNo: 258710		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	7.5	15.00	2.286	83.7	64.4	117			

Sample ID	1303229-001AMSD		SampType: MSD		TestCode: EPA Method 300.0: Anions					
Client ID:	BatchQC		Batch ID: 6389		RunNo: 9087					
Prep Date:	3/8/2013		Analysis Date: 3/8/2013		SeqNo: 258711		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	7.5	15.00	2.286	83.9	64.4	117	0.162	20	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH greater than 2
RL Reporting Detection Limit

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1303284

12-Mar-13

Client: Blagg Engineering

Project: BOYD GC 1

Sample ID	MB-6372		SampType:	MBLK		TestCode:	EPA Method 8015B: Diesel Range Organics				
Client ID:	PBS		Batch ID:	6372		RunNo:	8961				
Prep Date:	3/7/2013		Analysis Date:	3/7/2013		SeqNo:	257472		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	ND	10									
Surr: DNOP	10		10.00		101	72.4	120				

Sample ID	LCS-6372		SampType: LCS		TestCode: EPA Method 8015B: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 6372		RunNo: 8961					
Prep Date:	3/7/2013		Analysis Date: 3/7/2013		SeqNo: 257610		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.00	0	97.7	47.4	122			
Surr: DNOP	5.3		5.000		105	72.4	120			

Sample ID	1303336-001AMS		SampType: MS		TestCode: EPA Method 8015B: Diesel Range Organics					
Client ID:	BatchQC		Batch ID: 6403		RunNo: 9099					
Prep Date:	3/8/2013		Analysis Date: 3/12/2013		SeqNo: 259283		Units: %REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.0		4.873		102	72.4	120			

Sample ID	1303336-001AMSD		SampType:	MSD		TestCode:	EPA Method 8015B: Diesel Range Organics				
Client ID:	BatchQC		Batch ID:	6403		RunNo:	9099				
Prep Date:	3/8/2013		Analysis Date:	3/12/2013		SeqNo:	259284		Units: %REC		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Surr: DNOP	5.5		5.176		106	72.4	120	0	0		

Sample ID	1303229-001AMSD		SampType:	MSD		TestCode:	EPA Method 8015B: Diesel Range Organics				
Client ID:	BatchQC		Batch ID:	6372		RunNo:	9099				
Prep Date:	3/7/2013		Analysis Date:	3/11/2013		SeqNo:	259583		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	120	10	50.66	76.59	81.6	12.6	148	16.3	22.5		
Surr: DNOP	5.0		5.066		99.5	72.4	120	0	0		

Sample ID	1303229-001AMS		SampType: MS		TestCode: EPA Method 8015B: Diesel Range Organics					
Client ID:	BatchQC		Batch ID: 6372		RunNo: 9099					
Prep Date:	3/7/2013		Analysis Date: 3/11/2013		SeqNo: 259584		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	100	9.7	48.69	76.59	48.5	12.6	148			
Surr: DNOP	4.9		4.869		100	72.4	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH greater than 2
RL Reporting Detection Limit

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1303284

12-Mar-13

Client: Blagg Engineering

Project: BOYD GC 1

Sample ID	MB-6381	SampType:	MBLK		TestCode:	EPA Method 8015B: Gasoline Range				
Client ID:	PBS	Batch ID:	6381		RunNo:	9092				
Prep Date:	3/7/2013	Analysis Date:	3/8/2013		SeqNo:	258935	Units:	mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1100		1000		109	84	116			

Sample ID	LCS-6381		SampType: LCS		TestCode: EPA Method 8015B: Gasoline Range					
Client ID:	LCSS		Batch ID: 6381		RunNo: 9092					
Prep Date:	3/7/2013		Analysis Date: 3/8/2013		SeqNo: 258939		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	25.00	0	107	62.6	136			
Surr: BFB	1100		1000		114	84	116			

Sample ID	1303284-002AMS		SampType: MS		TestCode: EPA Method 8015B: Gasoline Range					
Client ID:	BH-4@10.5'		Batch ID: 6381		RunNo: 9092					
Prep Date:	3/7/2013		Analysis Date: 3/8/2013		SeqNo: 258961		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	4.9	24.30	0	114	70	130			
Surr: BFB	1200		971.8		127	84	116			S

Sample ID	1303284-002AMSD		SampType:	MSD		TestCode:	EPA Method 8015B: Gasoline Range				
Client ID:	BH-4@10.5'		Batch ID:	6381		RunNo:	9092				
Prep Date:	3/7/2013		Analysis Date:	3/8/2013		SeqNo:	258962		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	32	4.8	24.22	0	133	70	130	14.6	22.1	S	
Surr: BFB	1200		969.0		125	84	116	0	0	S	

Qualifiers:

- | | |
|--|--|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit |
| P Sample pH greater than 2 | R RPD outside accepted recovery limits |
| RL Reporting Detection Limit | S Spike Recovery outside accepted recovery limits |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1303284

12-Mar-13

Client: Blagg Engineering

Project: BOYD GC 1

Sample ID	MB-6381		SampType:	MBLK		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	PBS		Batch ID:	6381		RunNo:	9092			
Prep Date:	3/7/2013		Analysis Date:	3/8/2013		SeqNo:	258989		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		108	80	120			

Sample ID	LCS-6381		SampType:	LCS		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	LCSS		Batch ID:	6381		RunNo:	9092			
Prep Date:	3/7/2013		Analysis Date:	3/8/2013		SeqNo:	258993		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.050	1.000	0	87.7	80	120			
Toluene	0.89	0.050	1.000	0	88.8	80	120			
Ethylbenzene	0.91	0.050	1.000	0	90.7	80	120			
Xylenes, Total	2.7	0.10	3.000	0	89.8	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		112	80	120			

Sample ID	1303284-001AMS		SampType:	MS		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	BH-3@10'		Batch ID:	6381		RunNo:	9092			
Prep Date:	3/7/2013		Analysis Date:	3/8/2013		SeqNo:	259004		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.047	0.9416	0	93.1	67.2	113			
Toluene	0.89	0.047	0.9416	0	94.1	62.1	116			
Ethylbenzene	0.90	0.047	0.9416	0	96.1	67.9	127			
Xylenes, Total	2.7	0.094	2.825	0	95.4	60.6	134			
Surr: 4-Bromofluorobenzene	1.1		0.9416		117	80	120			

Sample ID	1303284-001AMSD		SampType:	MSD		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	BH-3@10'		Batch ID:	6381		RunNo:	9092			
Prep Date:	3/7/2013		Analysis Date:	3/8/2013		SeqNo:	259006		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.047	0.9398	0	94.9	67.2	113	1.66	14.3	
Toluene	0.89	0.047	0.9398	0	95.1	62.1	116	0.772	15.9	
Ethylbenzene	0.91	0.047	0.9398	0	96.9	67.9	127	0.640	14.4	
Xylenes, Total	2.8	0.094	2.820	0	98.4	60.6	134	2.94	12.6	
Surr: 4-Bromofluorobenzene	1.1		0.9398		116	80	120	0	0	

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH greater than 2
RL Reporting Detection Limit

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



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87105
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **BLAGG** Work Order Number: 1303284
Received by/date: ALH 03/07/13
Logged By: **Lindsay Mangin** 3/7/2013 9:56:00 AM *[Signature]*
Completed By: **Lindsay Mangin** 3/7/2013 10:11:04 AM *[Signature]*
Reviewed By: *[Signature]* 03/17/13

Chain of Custody

1. Were seals intact? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Coolers are present? (see 19. for cooler specific information) Yes ☒ No ☐ NA ☐
5. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
6. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
7. Sample(s) in proper container(s)? Yes ☒ No ☐
8. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
9. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
10. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
11. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
12. Were any sample containers received broken? Yes ☐ No ☒
13. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
14. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
15. Is it clear what analyses were requested? Yes ☒ No ☐
16. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH:
(<2 or >12 unless noted)
Adjusted? _____
Checked by: _____

Special Handling (if applicable)

17. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:	_____	Date:	_____
By Whom:	_____	Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:	_____		
Client Instructions:	_____		

18. Additional remarks:

19. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.2	Good	Yes			

Client: BLAGG ENGINEERING INC.

BP America

Mailing Address: P.O. Box 87

BLOOMFIELD NM 07413

Phone #: 505-632-1199

email or Fax#:

QA/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other☐ EDD (Type) _____

Turn-Around Time:

By WED
2/13/2013

☐ Standard ☒ Rush

Project Name:

BORD GC I

Project #:

Project Manager:

J. Blagg

Sampler: J. Blase

On Ice: ☒ Yes ☐ No

Sample Temperature: 17

[illegible]

Date: 11/6/13	Time: 1530	Relinquished by: Jill Blagg
Date:	Time:	Relinquished by:

Received by:	Date	Time
Christine White	3/6/13	1536
Received by:	Date	Time

Remarks:
BILL BP: PAKKEV ZEVHO1BGTZ

Date:	Time:	Relinquished by:
3/6/13	1757	Christ Waelen

Received by: [Signature] Date 03/07/13 Time 0956

CONTACT: Jeff Pearce

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.

BP America Production Co.

Boyd GC # 1 Preliminary Release Investigation (Conducted on 03/06/2013)

Bore Hole GPS Coordinates

BH #	Latitude	Longitude
1	36.908911°	-107.910658°
2	36.908909°	-107.911097°
3	36.908947°	-107.911136°
4	36.909113°	-107.910864°
5	36.909119°	-107.911009°
6	36.908874°	-107.910939°
7	36.908874°	-107.910771°
8	36.908828°	-107.910772°

Well head recorded as:

36.908985°

-107.911010°

BP America: Boyd GC 1

(M) Sec 8 – T31N – R10W

API: 30-045-10851

San Juan County, New Mexico

Soil Remediation Lab Reports



Analytical Report

Report Summary

Client: BP America Production Co.
Chain Of Custody Number: 17707
Samples Received: 1/19/2015 1:47:00PM
Job Number: 03143-0424
Work Order: P501052
Project Name/Location: Boyd GC 1

Entire Report Reviewed By:

A handwritten signature in black ink, appearing to read 'Tim Cain', is written over a horizontal line.

Date: 1/21/15

Tim Cain, Laboratory Manager

The results in this report apply to the samples submitted to Envirotech's Analytical Laboratory and were analyzed in accordance with the chain of custody document supplied by you, the client, and as such are for your exclusive use only. The results in this report are based on the sample as received unless otherwise noted. Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc. If you have any questions regarding this analytical report, please don't hesitate to contact Envirotech's Laboratory Staff.



BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
21-Jan-15 12:56

Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
1-5pt Base @ 8'	P501052-01A	Soil	01/19/15	01/19/15	Glass Jar, 4 oz.
2-5pt South Sidewall 3'-6'	P501052-02A	Soil	01/19/15	01/19/15	Glass Jar, 4 oz.

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Ph (505) 632-0615 Fx (505) 632-1865

Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com
laboratory@envirotech-inc.com



BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
21-Jan-15 12:56

1-5pt Base @ 8'
P501052-01 (Solid)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Volatile Organics by EPA 8021										
Benzene	ND	0.10	mg/kg	1		1504002	01/19/15	01/20/15	EPA 8021B	
Toluene	ND	0.10	mg/kg	1		1504002	01/19/15	01/20/15	EPA 8021B	
Ethylbenzene	ND	0.10	mg/kg	1		1504002	01/19/15	01/20/15	EPA 8021B	
p,m-Xylene	ND	0.20	mg/kg	1		1504002	01/19/15	01/20/15	EPA 8021B	
o-Xylene	ND	0.10	mg/kg	1		1504002	01/19/15	01/20/15	EPA 8021B	
Total Xylenes	ND	0.10	mg/kg	1		1504002	01/19/15	01/20/15	EPA 8021B	
Total BTEX	ND	0.10	mg/kg	1		1504002	01/19/15	01/20/15	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		119 %		50-150		1504002	01/19/15	01/20/15	EPA 8021B	
Nonhalogenated Organics by 8015										
Gasoline Range Organics (C6-C10)	ND	9.98	mg/kg	1		1504002	01/19/15	01/20/15	EPA 8015D	
Diesel Range Organics (C10-C28)	39.0	34.9	mg/kg	1		1504001	01/19/15	01/20/15	EPA 8015D	
Surrogate: o-Terphenyl		105 %		50-200		1504001	01/19/15	01/20/15	EPA 8015D	
Surrogate: 4-Bromochlorobenzene-FID		120 %		50-150		1504002	01/19/15	01/20/15	EPA 8015D	
Cation/Anion Analysis										
Chloride	166	9.83	mg/kg	1		1504004	01/19/15	01/19/15	EPA 300.0	

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Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
21-Jan-15 12:56

2-5pt South Sidewall 3'-6'
P501052-02 (Solid)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Volatile Organics by EPA 8021										
Benzene	ND	0.10	mg/kg	1		1504002	01/19/15	01/20/15	EPA 8021B	
Toluene	ND	0.10	mg/kg	1		1504002	01/19/15	01/20/15	EPA 8021B	
Ethylbenzene	ND	0.10	mg/kg	1		1504002	01/19/15	01/20/15	EPA 8021B	
p,m-Xylene	ND	0.20	mg/kg	1		1504002	01/19/15	01/20/15	EPA 8021B	
o-Xylene	ND	0.10	mg/kg	1		1504002	01/19/15	01/20/15	EPA 8021B	
Total Xylenes	ND	0.10	mg/kg	1		1504002	01/19/15	01/20/15	EPA 8021B	
Total BTEX	ND	0.10	mg/kg	1		1504002	01/19/15	01/20/15	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		117 %		50-150		1504002	01/19/15	01/20/15	EPA 8021B	
Nonhalogenated Organics by 8015										
Gasoline Range Organics (C6-C10)	ND	9.98	mg/kg	1		1504002	01/19/15	01/20/15	EPA 8015D	
Diesel Range Organics (C10-C28)	45.8	35.0	mg/kg	1		1504001	01/19/15	01/20/15	EPA 8015D	
Surrogate: o-Terphenyl		119 %		50-200		1504001	01/19/15	01/20/15	EPA 8015D	
Surrogate: 4-Bromochlorobenzene-FID		107 %		50-150		1504002	01/19/15	01/20/15	EPA 8015D	
Cation/Anion Analysis										
Chloride	857	9.88	mg/kg	1		1504004	01/19/15	01/19/15	EPA 300.0	

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envirotech-inc.com
laboratory@envirotech-inc.com



BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
21-Jan-15 12:56

Volatile Organics by EPA 8021 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 1504002 - Purge and Trap EPA 5030A

Blank (1504002-BLK1)

Prepared & Analyzed: 19-Jan-15

Benzene	ND	0.10	mg/kg							
Toluene	ND	0.10	"							
Ethylbenzene	ND	0.10	"							
p,m-Xylene	ND	0.20	"							
o-Xylene	ND	0.10	"							
Total Xylenes	ND	0.10	"							
Total BTEX	ND	0.10	"							
Surrogate: 4-Bromochlorobenzene-PID	0.449		"	0.399		113	50-150			

LCS (1504002-BS1)

Prepared & Analyzed: 19-Jan-15

Benzene	18.2	0.10	mg/kg	19.9		91.3	75-125			
Toluene	18.8	0.10	"	19.9		94.3	70-125			
Ethylbenzene	19.1	0.10	"	19.9		95.7	75-125			
p,m-Xylene	38.8	0.20	"	39.8		97.5	80-125			
o-Xylene	19.2	0.10	"	19.9		96.5	75-125			
Surrogate: 4-Bromochlorobenzene-PID	0.474		"	0.398		119	50-150			

Matrix Spike (1504002-MS1)

Source: P501039-01

Prepared & Analyzed: 19-Jan-15

Benzene	18.7	0.10	mg/kg	19.9	ND	93.6	75-125			
Toluene	19.1	0.10	"	19.9	ND	95.9	70-125			
Ethylbenzene	19.5	0.10	"	19.9	ND	97.8	75-125			
p,m-Xylene	40.3	0.20	"	39.9	0.52	99.8	80-125			
o-Xylene	19.6	0.10	"	19.9	0.11	97.7	75-125			
Surrogate: 4-Bromochlorobenzene-PID	0.464		"	0.399		116	50-150			

Matrix Spike Dup (1504002-MSD1)

Source: P501039-01

Prepared & Analyzed: 19-Jan-15

Benzene	18.0	0.10	mg/kg	20.0	ND	90.0	75-125	3.64	15	
Toluene	18.7	0.10	"	20.0	ND	93.6	70-125	2.19	15	
Ethylbenzene	19.0	0.10	"	20.0	ND	94.9	75-125	2.83	15	
p,m-Xylene	39.2	0.20	"	40.0	0.52	96.7	80-125	2.96	15	
o-Xylene	19.3	0.10	"	20.0	0.11	95.9	75-125	1.65	15	
Surrogate: 4-Bromochlorobenzene-PID	0.480		"	0.400		120	50-150			

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Ph (970) 259-0615 Fr (800) 362-1879

envirotech-inc.com
laboratory@envirotech-inc.com



BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
21-Jan-15 12:56

Nonhalogenated Organics by 8015 - Quality Control
Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Batch 1504001 - DRO Extraction EPA 3550M									
Blank (1504001-BLK1)				Prepared & Analyzed: 19-Jan-15					
Diesel Range Organics (C10-C28)	ND	24.9	mg/kg						
Surrogate: o-Terphenyl	46.2		"	39.9		116	50-200		
LCS (1504001-BS1)				Prepared & Analyzed: 19-Jan-15					
Diesel Range Organics (C10-C28)	543	25.0	mg/kg	499		109	38-132		
Surrogate: o-Terphenyl	45.8		"	39.9		115	50-200		
Matrix Spike (1504001-MS1)				Source: P501039-01		Prepared & Analyzed: 19-Jan-15			
Diesel Range Organics (C10-C28)	704	25.0	mg/kg	499	94.2	122	38-132		
Surrogate: o-Terphenyl	46.4		"	39.9		116	50-200		
Matrix Spike Dup (1504001-MSD1)				Source: P501039-01		Prepared & Analyzed: 19-Jan-15			
Diesel Range Organics (C10-C28)	686	25.0	mg/kg	500	94.2	118	38-132	2.55	20
Surrogate: o-Terphenyl	46.0		"	40.0		115	50-200		

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envirotech-inc.com
laboratory@envirotech-inc.com



BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
21-Jan-15 12:56

Nonhalogenated Organics by 8015 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1504002 - Purge and Trap EPA 5030A										
Blank (1504002-BLK1)				Prepared & Analyzed: 19-Jan-15						
Gasoline Range Organics (C6-C10)	ND	9.98	mg/kg							
Surrogate: 4-Bromochlorobenzene-FID	0.409		"	0.399		103	50-150			
LCS (1504002-BS1)				Prepared & Analyzed: 19-Jan-15						
Gasoline Range Organics (C6-C10)	270	9.96	mg/kg	291		92.9	80-120			
Surrogate: 4-Bromochlorobenzene-FID	0.432		"	0.398		108	50-150			
Matrix Spike (1504002-MS1)				Source: P501039-01		Prepared & Analyzed: 19-Jan-15				
Gasoline Range Organics (C6-C10)	304	9.97	mg/kg	291	32.4	93.4	75-125			
Surrogate: 4-Bromochlorobenzene-FID	0.432		"	0.399		108	50-150			
Matrix Spike Dup (1504002-MSD1)				Source: P501039-01		Prepared & Analyzed: 19-Jan-15				
Gasoline Range Organics (C6-C10)	292	9.99	mg/kg	292	32.4	88.8	75-125	4.29	15	
Surrogate: 4-Bromochlorobenzene-FID	0.449		"	0.400		112	50-150			

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
21-Jan-15 12:56

Cation/Anion Analysis - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1504004 - Anion Extraction EPA 300.0										
Blank (1504004-BLK1)				Prepared & Analyzed: 19-Jan-15						
Chloride	ND	9.90	mg/kg							
LCS (1504004-BS1)				Prepared & Analyzed: 19-Jan-15						
Chloride	466	9.88	mg/kg	494		94.4	90-110			
Matrix Spike (1504004-MS1)				Source: P501039-01 Prepared & Analyzed: 19-Jan-15						
Chloride	620	9.86	mg/kg	493	140	97.4	80-120			
Matrix Spike Dup (1504004-MSD1)				Source: P501039-01 Prepared & Analyzed: 19-Jan-15						
Chloride	617	9.81	mg/kg	491	140	97.1	80-120	0.580	20	

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
21-Jan-15 12:56

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference

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Page 10 of 10



Analytical Report

Report Summary

Client: BP America Production Co.
Chain Of Custody Number: 17710
Samples Received: 1/20/2015 9:57:00AM
Job Number: 03143-0424
Work Order: P501053
Project Name/Location: Boyd GC 1

Entire Report Reviewed By:

A handwritten signature in black ink, appearing to read 'Tim Cain', is written over a horizontal line.

Date: 1/22/15

Tim Cain, Laboratory Manager

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
22-Jan-15 11:46

Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
3-3pt South Sidewall 2'-5'	P501053-01A	Soil	01/20/15	01/20/15	Glass Jar, 4 oz.
4-5pt Base @ 5'	P501053-02A	Soil	01/20/15	01/20/15	Glass Jar, 4 oz.

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
22-Jan-15 11:46

3-3pt South Sidewall 2'-5'
P501053-01 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.10	mg/kg	1	1504013	01/20/15	01/21/15	EPA 8021B	
Toluene	ND	0.10	mg/kg	1	1504013	01/20/15	01/21/15	EPA 8021B	
Ethylbenzene	ND	0.10	mg/kg	1	1504013	01/20/15	01/21/15	EPA 8021B	
p,m-Xylene	ND	0.20	mg/kg	1	1504013	01/20/15	01/21/15	EPA 8021B	
o-Xylene	0.14	0.10	mg/kg	1	1504013	01/20/15	01/21/15	EPA 8021B	
Total Xylenes	0.14	0.10	mg/kg	1	1504013	01/20/15	01/21/15	EPA 8021B	
Total BTEX	0.14	0.10	mg/kg	1	1504013	01/20/15	01/21/15	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		111 %		50-150	1504013	01/20/15	01/21/15	EPA 8021B	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	10.0	mg/kg	1	1504013	01/20/15	01/21/15	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	34.9	mg/kg	1	1504012	01/20/15	01/21/15	EPA 8015D	
Surrogate: o-Terphenyl		121 %		50-200	1504012	01/20/15	01/21/15	EPA 8015D	
Surrogate: 4-Bromochlorobenzene-FID		99.5 %		50-150	1504013	01/20/15	01/21/15	EPA 8015D	
Cation/Anion Analysis									
Chloride	315	9.97	mg/kg	1	1504015	01/21/15	01/21/15	EPA 300.0	

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
22-Jan-15 11:46

4-5pt Base @ 5'
P501053-02 (Solid)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Volatile Organics by EPA 8021										
Benzene	ND	0.10	mg/kg	1		1504013	01/20/15	01/21/15	EPA 8021B	
Toluene	ND	0.10	mg/kg	1		1504013	01/20/15	01/21/15	EPA 8021B	
Ethylbenzene	ND	0.10	mg/kg	1		1504013	01/20/15	01/21/15	EPA 8021B	
p,m-Xylene	ND	0.20	mg/kg	1		1504013	01/20/15	01/21/15	EPA 8021B	
o-Xylene	ND	0.10	mg/kg	1		1504013	01/20/15	01/21/15	EPA 8021B	
Total Xylenes	ND	0.10	mg/kg	1		1504013	01/20/15	01/21/15	EPA 8021B	
Total BTEX	ND	0.10	mg/kg	1		1504013	01/20/15	01/21/15	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		111 %		50-150		1504013	01/20/15	01/21/15	EPA 8021B	
Nonhalogenated Organics by 8015										
Gasoline Range Organics (C6-C10)	ND	9.99	mg/kg	1		1504013	01/20/15	01/21/15	EPA 8015D	
Diesel Range Organics (C10-C28)	47.1	39.9	mg/kg	2		1504012	01/20/15	01/21/15	EPA 8015D	
Surrogate: o-Terphenyl		157 %		50-200		1504012	01/20/15	01/21/15	EPA 8015D	
Surrogate: 4-Bromochlorobenzene-FID		99.1 %		50-150		1504013	01/20/15	01/21/15	EPA 8015D	
Cation/Anion Analysis										
Chloride	337	9.88	mg/kg	1		1504015	01/21/15	01/21/15	EPA 300.0	

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
22-Jan-15 11:46

Volatile Organics by EPA 8021 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1504013 - Purge and Trap EPA 5030A

Blank (1504013-BLK1)

Prepared: 20-Jan-15 Analyzed: 21-Jan-15

Benzene	ND	0.10	mg/kg							
Toluene	ND	0.10	"							
Ethylbenzene	ND	0.10	"							
p,m-Xylene	ND	0.20	"							
o-Xylene	ND	0.10	"							
Total Xylenes	ND	0.10	"							
Total BTEX	ND	0.10	"							

Surrogate: 4-Bromochlorobenzene-PID 0.451 " 0.400 113 50-150

LCS (1504013-BS1)

Prepared: 20-Jan-15 Analyzed: 21-Jan-15

Benzene	17.9	0.10	mg/kg	20.0		89.8	75-125			
Toluene	18.6	0.10	"	20.0		92.8	70-125			
Ethylbenzene	19.0	0.10	"	20.0		95.3	75-125			
p,m-Xylene	38.7	0.20	"	40.0		96.9	80-125			
o-Xylene	19.0	0.10	"	20.0		95.1	75-125			

Surrogate: 4-Bromochlorobenzene-PID 0.471 " 0.400 118 50-150

Matrix Spike (1504013-MS1)

Source: P501038-01

Prepared: 20-Jan-15 Analyzed: 21-Jan-15

Benzene	18.4	0.10	mg/kg	20.0	ND	92.3	75-125			
Toluene	18.9	0.10	"	20.0	ND	94.6	70-125			
Ethylbenzene	19.5	0.10	"	20.0	ND	97.4	75-125			
p,m-Xylene	39.5	0.20	"	40.0	ND	98.7	80-125			
o-Xylene	19.3	0.10	"	20.0	0.17	95.8	75-125			

Surrogate: 4-Bromochlorobenzene-PID 0.465 " 0.400 116 50-150

Matrix Spike Dup (1504013-MSD1)

Source: P501038-01

Prepared: 20-Jan-15 Analyzed: 21-Jan-15

Benzene	17.0	0.10	mg/kg	20.0	ND	85.1	75-125	8.15	15	
Toluene	17.9	0.10	"	20.0	ND	89.5	70-125	5.62	15	
Ethylbenzene	18.5	0.10	"	20.0	ND	92.7	75-125	5.02	15	
p,m-Xylene	38.1	0.20	"	39.9	ND	95.3	80-125	3.65	15	
o-Xylene	19.4	0.10	"	20.0	0.17	96.4	75-125	0.554	15	

Surrogate: 4-Bromochlorobenzene-PID 0.513 " 0.399 128 50-150

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
22-Jan-15 11:46

Nonhalogenated Organics by 8015 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1504012 - DRO Extraction EPA 3550M										
Blank (1504012-BLK1)				Prepared: 20-Jan-15 Analyzed: 21-Jan-15						
Diesel Range Organics (C10-C28)	ND	29.9	mg/kg							
Surrogate: o-Terphenyl	45.7		"	39.9		114	50-200			
LCS (1504012-BS1)				Prepared: 20-Jan-15 Analyzed: 21-Jan-15						
Diesel Range Organics (C10-C28)	563	29.9	mg/kg	499		113	38-132			
Surrogate: o-Terphenyl	44.7		"	39.9		112	50-200			
Matrix Spike (1504012-MS1)				Source: P501042-01		Prepared: 20-Jan-15 Analyzed: 21-Jan-15				
Diesel Range Organics (C10-C28)	595	29.9	mg/kg	498	ND	119	38-132			
Surrogate: o-Terphenyl	50.9		"	39.9		128	50-200			
Matrix Spike Dup (1504012-MSD1)				Source: P501042-01		Prepared: 20-Jan-15 Analyzed: 21-Jan-15				
Diesel Range Organics (C10-C28)	490	30.0	mg/kg	500	ND	98.0	38-132	19.5	20	
Surrogate: o-Terphenyl	43.7		"	40.0		109	50-200			

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
22-Jan-15 11:46

Nonhalogenated Organics by 8015 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1504013 - Purge and Trap EPA 5030A										
Blank (1504013-BLK1)				Prepared: 20-Jan-15 Analyzed: 21-Jan-15						
Gasoline Range Organics (C6-C10)	ND	10.0	mg/kg							
Surrogate: 4-Bromochlorobenzene-FID	0.406		"	0.400		102	50-150			
LCS (1504013-BS1)				Prepared: 20-Jan-15 Analyzed: 21-Jan-15						
Gasoline Range Organics (C6-C10)	266	9.99	mg/kg	292		91.1	80-120			
Surrogate: 4-Bromochlorobenzene-FID	0.410		"	0.400		103	50-150			
Matrix Spike (1504013-MS1)				Source: P501038-01		Prepared: 20-Jan-15 Analyzed: 21-Jan-15				
Gasoline Range Organics (C6-C10)	276	9.99	mg/kg	292	13.7	89.9	75-125			
Surrogate: 4-Bromochlorobenzene-FID	0.427		"	0.400		107	50-150			
Matrix Spike Dup (1504013-MSD1)				Source: P501038-01		Prepared: 20-Jan-15 Analyzed: 21-Jan-15				
Gasoline Range Organics (C6-C10)	277	9.98	mg/kg	292	13.7	90.3	75-125	0.349	15	
Surrogate: 4-Bromochlorobenzene-FID	0.475		"	0.399		119	50-150			

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
22-Jan-15 11:46

Cation/Anion Analysis - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1504015 - Anion Extraction EPA 300.0										
Blank (1504015-BLK1)				Prepared & Analyzed: 21-Jan-15						
Chloride	ND	9.98	mg/kg							
LCS (1504015-BS1)				Prepared & Analyzed: 21-Jan-15						
Chloride	469	9.89	mg/kg	494		94.9	90-110			
Matrix Spike (1504015-MS1)				Source: P501053-01 Prepared & Analyzed: 21-Jan-15						
Chloride	835	10.0	mg/kg	500	315	104	80-120			
Matrix Spike Dup (1504015-MSD1)				Source: P501053-01 Prepared & Analyzed: 21-Jan-15						
Chloride	829	9.89	mg/kg	494	315	104	80-120	0.783	20	

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
22-Jan-15 11:46

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference

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17710

SA [REDACTED] 2176-0000-0001-575912



Analytical Report

Report Summary

Client: BP America Production Co.
Chain Of Custody Number: 17711
Samples Received: 1/20/2015 4:14:00PM
Job Number: 03143-0424
Work Order: P501058
Project Name/Location: Boyd GC 1

Entire Report Reviewed By:

A handwritten signature in black ink, appearing to read 'Tim Cain', is written over a horizontal line.

Date: 1/22/15

Tim Cain, Laboratory Manager

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
22-Jan-15 11:50

Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
5-East Base 5-pt @ 5'	P501058-01A	Soil	01/20/15	01/20/15	Glass Jar, 4 oz.
6-East Wall 5-pt @ 2'-4'	P501058-02A	Soil	01/20/15	01/20/15	Glass Jar, 4 oz.
7-East Center Base 6-pt @ 8'	P501058-03A	Soil	01/20/15	01/20/15	Glass Jar, 4 oz.

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
22-Jan-15 11:50

5-East Base 5-pt @ 5'
P501058-01 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.10	mg/kg	1	1504013	01/21/15	01/21/15	EPA 8021B	
Toluene	ND	0.10	mg/kg	1	1504013	01/21/15	01/21/15	EPA 8021B	
Ethylbenzene	ND	0.10	mg/kg	1	1504013	01/21/15	01/21/15	EPA 8021B	
p,m-Xylene	ND	0.20	mg/kg	1	1504013	01/21/15	01/21/15	EPA 8021B	
o-Xylene	ND	0.10	mg/kg	1	1504013	01/21/15	01/21/15	EPA 8021B	
Total Xylenes	ND	0.10	mg/kg	1	1504013	01/21/15	01/21/15	EPA 8021B	
Total BTEX	ND	0.10	mg/kg	1	1504013	01/21/15	01/21/15	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		117 %	50-150		1504013	01/21/15	01/21/15	EPA 8021B	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	10.0	mg/kg	1	1504013	01/21/15	01/21/15	EPA 8015D	
Diesel Range Organics (C10-C28)	35.9	34.9	mg/kg	1	1504012	01/21/15	01/21/15	EPA 8015D	
Surrogate: o-Terphenyl		114 %	50-200		1504012	01/21/15	01/21/15	EPA 8015D	
Surrogate: 4-Bromochlorobenzene-FID		105 %	50-150		1504013	01/21/15	01/21/15	EPA 8015D	
Cation/Anion Analysis									
Chloride	272	9.98	mg/kg	1	1504015	01/21/15	01/21/15	EPA 300.0	

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
22-Jan-15 11:50

6-East Wall 5-pt @ 2'-4'
P501058-02 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.10	mg/kg	1	1504013	01/21/15	01/21/15	EPA 8021B	
Toluene	ND	0.10	mg/kg	1	1504013	01/21/15	01/21/15	EPA 8021B	
Ethylbenzene	ND	0.10	mg/kg	1	1504013	01/21/15	01/21/15	EPA 8021B	
p,m-Xylene	ND	0.20	mg/kg	1	1504013	01/21/15	01/21/15	EPA 8021B	
o-Xylene	ND	0.10	mg/kg	1	1504013	01/21/15	01/21/15	EPA 8021B	
Total Xylenes	ND	0.10	mg/kg	1	1504013	01/21/15	01/21/15	EPA 8021B	
Total BTEX	ND	0.10	mg/kg	1	1504013	01/21/15	01/21/15	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		116 %		50-150	1504013	01/21/15	01/21/15	EPA 8021B	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	9.98	mg/kg	1	1504013	01/21/15	01/21/15	EPA 8015D	
Diesel Range Organics (C10-C28)	46.4	35.0	mg/kg	1	1504012	01/21/15	01/21/15	EPA 8015D	
<i>Surrogate: o-Terphenyl</i>		126 %		50-200	1504012	01/21/15	01/21/15	EPA 8015D	
<i>Surrogate: 4-Bromochlorobenzene-FID</i>		104 %		50-150	1504013	01/21/15	01/21/15	EPA 8015D	
Cation/Anion Analysis									
Chloride	362	9.94	mg/kg	1	1504015	01/21/15	01/21/15	EPA 300.0	

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laboratory@envirotech-inc.com



BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
22-Jan-15 11:50

7-East Center Base 6-pt @ 8'
P501058-03 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.10	mg/kg	1	1504013	01/21/15	01/21/15	EPA 8021B	
Toluene	ND	0.10	mg/kg	1	1504013	01/21/15	01/21/15	EPA 8021B	
Ethylbenzene	ND	0.10	mg/kg	1	1504013	01/21/15	01/21/15	EPA 8021B	
p,m-Xylene	ND	0.20	mg/kg	1	1504013	01/21/15	01/21/15	EPA 8021B	
o-Xylene	ND	0.10	mg/kg	1	1504013	01/21/15	01/21/15	EPA 8021B	
Total Xylenes	ND	0.10	mg/kg	1	1504013	01/21/15	01/21/15	EPA 8021B	
Total BTEX	ND	0.10	mg/kg	1	1504013	01/21/15	01/21/15	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		117 %		50-150	1504013	01/21/15	01/21/15	EPA 8021B	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	21.4	9.99	mg/kg	1	1504013	01/21/15	01/21/15	EPA 8015D	
Diesel Range Organics (C10-C28)	120	34.9	mg/kg	1	1504012	01/21/15	01/21/15	EPA 8015D	
Surrogate: o-Terphenyl		117 %		50-200	1504012	01/21/15	01/21/15	EPA 8015D	
Surrogate: 4-Bromochlorobenzene-FID		107 %		50-150	1504013	01/21/15	01/21/15	EPA 8015D	
Cation/Anion Analysis									
Chloride	104	9.94	mg/kg	1	1504015	01/21/15	01/21/15	EPA 300.0	

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
22-Jan-15 11:50

Volatile Organics by EPA 8021 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1504013 - Purge and Trap EPA 5030A

Blank (1504013-BLK1)

Prepared: 20-Jan-15 Analyzed: 21-Jan-15

Benzene	ND	0.10	mg/kg							
Toluene	ND	0.10	"							
Ethylbenzene	ND	0.10	"							
p,m-Xylene	ND	0.20	"							
o-Xylene	ND	0.10	"							
Total Xylenes	ND	0.10	"							
Total BTEX	ND	0.10	"							

Surrogate: 4-Bromochlorobenzene-PID 0.451 " 0.400 113 50-150

LCS (1504013-BS1)

Prepared: 20-Jan-15 Analyzed: 21-Jan-15

Benzene	17.9	0.10	mg/kg	20.0		89.8	75-125			
Toluene	18.6	0.10	"	20.0		92.8	70-125			
Ethylbenzene	19.0	0.10	"	20.0		95.3	75-125			
p,m-Xylene	38.7	0.20	"	40.0		96.9	80-125			
o-Xylene	19.0	0.10	"	20.0		95.1	75-125			

Surrogate: 4-Bromochlorobenzene-PID 0.471 " 0.400 118 50-150

Matrix Spike (1504013-MS1)

Source: P501038-01

Prepared: 20-Jan-15 Analyzed: 21-Jan-15

Benzene	18.4	0.10	mg/kg	20.0	ND	92.3	75-125			
Toluene	18.9	0.10	"	20.0	ND	94.6	70-125			
Ethylbenzene	19.5	0.10	"	20.0	ND	97.4	75-125			
p,m-Xylene	39.5	0.20	"	40.0	ND	98.7	80-125			
o-Xylene	19.3	0.10	"	20.0	0.17	95.8	75-125			

Surrogate: 4-Bromochlorobenzene-PID 0.465 " 0.400 116 50-150

Matrix Spike Dup (1504013-MSD1)

Source: P501038-01

Prepared: 20-Jan-15 Analyzed: 21-Jan-15

Benzene	17.0	0.10	mg/kg	20.0	ND	85.1	75-125	8.15	15	
Toluene	17.9	0.10	"	20.0	ND	89.5	70-125	5.62	15	
Ethylbenzene	18.5	0.10	"	20.0	ND	92.7	75-125	5.02	15	
p,m-Xylene	38.1	0.20	"	39.9	ND	95.3	80-125	3.65	15	
o-Xylene	19.4	0.10	"	20.0	0.17	96.4	75-125	0.554	15	

Surrogate: 4-Bromochlorobenzene-PID 0.513 " 0.399 128 50-150

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
22-Jan-15 11:50

Nonhalogenated Organics by 8015 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1504012 - DRO Extraction EPA 3550M										
Blank (1504012-BLK1)				Prepared: 20-Jan-15 Analyzed: 21-Jan-15						
Diesel Range Organics (C10-C28)	ND	29.9	mg/kg							
Surrogate: o-Terphenyl	45.7		"	39.9		114	50-200			
LCS (1504012-BS1)				Prepared: 20-Jan-15 Analyzed: 21-Jan-15						
Diesel Range Organics (C10-C28)	563	29.9	mg/kg	499		113	38-132			
Surrogate: o-Terphenyl	44.7		"	39.9		112	50-200			
Matrix Spike (1504012-MS1)				Source: P501042-01 Prepared: 20-Jan-15 Analyzed: 21-Jan-15						
Diesel Range Organics (C10-C28)	595	29.9	mg/kg	498	ND	119	38-132			
Surrogate: o-Terphenyl	50.9		"	39.9		128	50-200			
Matrix Spike Dup (1504012-MSD1)				Source: P501042-01 Prepared: 20-Jan-15 Analyzed: 21-Jan-15						
Diesel Range Organics (C10-C28)	490	30.0	mg/kg	500	ND	98.0	38-132	19.5	20	
Surrogate: o-Terphenyl	43.7		"	40.0		109	50-200			

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
22-Jan-15 11:50

Nonhalogenated Organics by 8015 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1504013 - Purge and Trap EPA 5030A										
Blank (1504013-BLK1)				Prepared: 20-Jan-15 Analyzed: 21-Jan-15						
Gasoline Range Organics (C6-C10)	ND	10.0	mg/kg							
Surrogate: 4-Bromochlorobenzene-FID	0.406		"	0.400		102	50-150			
LCS (1504013-BS1)				Prepared: 20-Jan-15 Analyzed: 21-Jan-15						
Gasoline Range Organics (C6-C10)	266	9.99	mg/kg	292		91.1	80-120			
Surrogate: 4-Bromochlorobenzene-FID	0.410		"	0.400		103	50-150			
Matrix Spike (1504013-MS1)				Source: P501038-01 Prepared: 20-Jan-15 Analyzed: 21-Jan-15						
Gasoline Range Organics (C6-C10)	276	9.99	mg/kg	292	13.7	89.9	75-125			
Surrogate: 4-Bromochlorobenzene-FID	0.427		"	0.400		107	50-150			
Matrix Spike Dup (1504013-MSD1)				Source: P501038-01 Prepared: 20-Jan-15 Analyzed: 21-Jan-15						
Gasoline Range Organics (C6-C10)	277	9.98	mg/kg	292	13.7	90.3	75-125	0.349	15	
Surrogate: 4-Bromochlorobenzene-FID	0.475		"	0.399		119	50-150			

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
22-Jan-15 11:50

Cation/Anion Analysis - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1504015 - Anion Extraction EPA 300.0										
Blank (1504015-BLK1)				Prepared & Analyzed: 21-Jan-15						
Chloride	ND	9.98	mg/kg							
LCS (1504015-BS1)				Prepared & Analyzed: 21-Jan-15						
Chloride	469	9.89	mg/kg	494		94.9	90-110			
Matrix Spike (1504015-MS1)				Source: P501053-01 Prepared & Analyzed: 21-Jan-15						
Chloride	835	10.0	mg/kg	500	315	104	80-120			
Matrix Spike Dup (1504015-MSD1)				Source: P501053-01 Prepared & Analyzed: 21-Jan-15						
Chloride	829	9.89	mg/kg	494	315	104	80-120	0.783	20	

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
22-Jan-15 11:50

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference

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Analytical Report

Report Summary

Client: BP America Production Co.
Chain Of Custody Number: 17720
Samples Received: 1/21/2015 3:49:00PM
Job Number: 03143-0424
Work Order: P501061
Project Name/Location: Boyd GC 1

Entire Report Reviewed By:

A handwritten signature in black ink, appearing to read 'Tim Cain', is written over a horizontal line.

Date: 1/23/15

Tim Cain, Laboratory Manager

The results in this report apply to the samples submitted to Envirotech's Analytical Laboratory and were analyzed in accordance with the chain of custody document supplied by you, the client, and as such are for your exclusive use only. The results in this report are based on the sample as received unless otherwise noted. Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc. If you have any questions regarding this analytical report, please don't hesitate to contact Envirotech's Laboratory Staff.



BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
23-Jan-15 13:55

Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
8-Grab @-6'@ 39' South of Wellhead	P501061-01A	Soil	01/21/15	01/21/15	Glass Jar, 4 oz.

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
23-Jan-15 13:55

8-Grab @-6'@ 39' South of Wellhead
P501061-01 (Solid)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Volatile Organics by EPA 8021										
Benzene	ND	0.10	mg/kg	1		1504020	01/21/15	01/22/15	EPA 8021B	
Toluene	ND	0.10	mg/kg	1		1504020	01/21/15	01/22/15	EPA 8021B	
Ethylbenzene	0.62	0.10	mg/kg	1		1504020	01/21/15	01/22/15	EPA 8021B	
p,m-Xylene	ND	0.20	mg/kg	1		1504020	01/21/15	01/22/15	EPA 8021B	
o-Xylene	ND	0.10	mg/kg	1		1504020	01/21/15	01/22/15	EPA 8021B	
Total Xylenes	ND	0.10	mg/kg	1		1504020	01/21/15	01/22/15	EPA 8021B	
Total BTEX	0.62	0.10	mg/kg	1		1504020	01/21/15	01/22/15	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		123 %		50-150		1504020	01/21/15	01/22/15	EPA 8021B	
Nonhalogenated Organics by 8015										
Gasoline Range Organics (C6-C10)	58.5	9.97	mg/kg	1		1504020	01/21/15	01/22/15	EPA 8015D	
Diesel Range Organics (C10-C28)	334	30.0	mg/kg	1		1504019	01/21/15	01/22/15	EPA 8015D	
Surrogate: o-Terphenyl		106 %		50-200		1504019	01/21/15	01/22/15	EPA 8015D	
Surrogate: 4-Bromochlorobenzene-FID		152 %		50-150		1504020	01/21/15	01/22/15	EPA 8015D	Surr1
Cation/Anion Analysis										
Chloride	31.1	9.88	mg/kg	1		1504021	01/22/15	01/22/15	EPA 300.0	

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PO Box 22024
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Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
23-Jan-15 13:55

Volatile Organics by EPA 8021 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1504020 - Purge and Trap EPA 5030A

Blank (1504020-BLK1)

Prepared: 21-Jan-15 Analyzed: 22-Jan-15

Benzene	ND	0.10	mg/kg							
Toluene	ND	0.10	"							
Ethylbenzene	ND	0.10	"							
p,m-Xylene	ND	0.20	"							
o-Xylene	ND	0.10	"							
Total Xylenes	ND	0.10	"							
Total BTEX	ND	0.10	"							

Surrogate: 4-Bromochlorobenzene-PID 0.445 " 0.399 111 50-150

LCS (1504020-BS1)

Prepared: 21-Jan-15 Analyzed: 22-Jan-15

Benzene	18.2	0.10	mg/kg	20.0		91.3	75-125			
Toluene	18.8	0.10	"	20.0		94.2	70-125			
Ethylbenzene	19.3	0.10	"	20.0		96.8	75-125			
p,m-Xylene	39.2	0.20	"	39.9		98.2	80-125			
o-Xylene	19.2	0.10	"	20.0		96.3	75-125			

Surrogate: 4-Bromochlorobenzene-PID 0.460 " 0.399 115 50-150

Matrix Spike (1504020-MS1)

Source: P501044-01

Prepared: 21-Jan-15 Analyzed: 22-Jan-15

Benzene	18.5	0.10	mg/kg	20.0	ND	92.7	75-125			
Toluene	19.8	0.10	"	20.0	0.31	97.5	70-125			
Ethylbenzene	20.3	0.10	"	20.0	0.86	97.2	75-125			
p,m-Xylene	46.0	0.20	"	40.0	8.47	93.9	80-125			
o-Xylene	21.7	0.10	"	20.0	2.20	97.7	75-125			

Surrogate: 4-Bromochlorobenzene-PID 0.472 " 0.400 118 50-150

Matrix Spike Dup (1504020-MSD1)

Source: P501044-01

Prepared: 21-Jan-15 Analyzed: 22-Jan-15

Benzene	18.5	0.10	mg/kg	20.0	ND	92.5	75-125	0.329	15	
Toluene	19.4	0.10	"	20.0	0.31	95.4	70-125	2.22	15	
Ethylbenzene	19.9	0.10	"	20.0	0.86	95.1	75-125	2.19	15	
p,m-Xylene	44.3	0.20	"	40.0	8.47	89.7	80-125	3.77	15	
o-Xylene	21.1	0.10	"	20.0	2.20	94.6	75-125	2.89	15	

Surrogate: 4-Bromochlorobenzene-PID 0.470 " 0.400 118 50-150

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envirotech-inc.com

laboratory@envirotech-inc.com



BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
23-Jan-15 13:55

Nonhalogenated Organics by 8015 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1504019 - DRO Extraction EPA 3550M										
Blank (1504019-BLK1)				Prepared: 21-Jan-15 Analyzed: 22-Jan-15						
Diesel Range Organics (C10-C28)	ND	29.9	mg/kg							
Surrogate: o-Terphenyl	44.0		"	39.9		110	50-200			
LCS (1504019-BS1)				Prepared: 21-Jan-15 Analyzed: 22-Jan-15						
Diesel Range Organics (C10-C28)	491	30.0	mg/kg	500		98.3	38-132			
Surrogate: o-Terphenyl	43.5		"	40.0		109	50-200			
Matrix Spike (1504019-MS1)				Source: P501044-01 Prepared: 21-Jan-15 Analyzed: 22-Jan-15						
Diesel Range Organics (C10-C28)	795	30.0	mg/kg	499	318	95.6	38-132			
Surrogate: o-Terphenyl	45.5		"	39.9		114	50-200			
Matrix Spike Dup (1504019-MSD1)				Source: P501044-01 Prepared: 21-Jan-15 Analyzed: 22-Jan-15						
Diesel Range Organics (C10-C28)	753	30.0	mg/kg	499	318	87.2	38-132	5.37	20	
Surrogate: o-Terphenyl	42.7		"	40.0		107	50-200			

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
23-Jan-15 13:55

Nonhalogenated Organics by 8015 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Batch 1504020 - Purge and Trap EPA 5030A									
Blank (1504020-BLK1)				Prepared: 21-Jan-15 Analyzed: 22-Jan-15					
Gasoline Range Organics (C6-C10)	ND	9.98	mg/kg						
Surrogate: 4-Bromochlorobenzene-FID	0.411		"	0.399		103 50-150			
LCS (1504020-BS1)				Prepared: 21-Jan-15 Analyzed: 22-Jan-15					
Gasoline Range Organics (C6-C10)	269	9.98	mg/kg	291		92.3 80-120			
Surrogate: 4-Bromochlorobenzene-FID	0.413		"	0.399		103 50-150			
Matrix Spike (1504020-MS1)				Source: P501044-01 Prepared: 21-Jan-15 Analyzed: 22-Jan-15					
Gasoline Range Organics (C6-C10)	397	10.0	mg/kg	292	154	83.3 75-125			
Surrogate: 4-Bromochlorobenzene-FID	0.447		"	0.400		112 50-150			
Matrix Spike Dup (1504020-MSD1)				Source: P501044-01 Prepared: 21-Jan-15 Analyzed: 22-Jan-15					
Gasoline Range Organics (C6-C10)	373	9.99	mg/kg	292	154	75.0 75-125	6.34	15	
Surrogate: 4-Bromochlorobenzene-FID	0.441		"	0.400		110 50-150			

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Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
23-Jan-15 13:55

Cation/Anion Analysis - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1504021 - Anion Extraction EPA 300.0										
Blank (1504021-BLK1)				Prepared & Analyzed: 22-Jan-15						
Chloride	ND	9.95	mg/kg							
LCS (1504021-BS1)				Prepared & Analyzed: 22-Jan-15						
Chloride	466	9.86	mg/kg	493		94.4	90-110			
Matrix Spike (1504021-MS1)				Source: P501061-01 Prepared & Analyzed: 22-Jan-15						
Chloride	495	9.97	mg/kg	498	31.1	93.0	80-120			
Matrix Spike Dup (1504021-MSD1)				Source: P501061-01 Prepared & Analyzed: 22-Jan-15						
Chloride	498	9.94	mg/kg	497	31.1	94.0	80-120	0.710	20	

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Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
23-Jan-15 13:55

Notes and Definitions

Surr1 Surrogate recovery was above acceptable limits.
DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference

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Analytical Report

Report Summary

Client: BP America Production Co.
Chain Of Custody Number: 17713
Samples Received: 1/22/2015 4:16:00PM
Job Number: 03143-0424
Work Order: P501063
Project Name/Location: Boyd GC 1

Entire Report Reviewed By:

A handwritten signature in black ink, appearing to read 'Tim Cain', is written over a horizontal line.

Date: 1/26/15

Tim Cain, Laboratory Manager

The results in this report apply to the samples submitted to Envirotech's Analytical Laboratory and were analyzed in accordance with the chain of custody document supplied by you, the client, and as such are for your exclusive use only. The results in this report are based on the sample as received unless otherwise noted. Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc. If you have any questions regarding this analytical report, please don't hesitate to contact Envirotech's Laboratory Staff.



BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
26-Jan-15 12:31

Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
9-Base 7-pt @-7'	P501063-01A	Soil	01/22/15	01/22/15	Glass Jar, 4 oz.
10- N. Wall W. of Well 5-pt 2'-5'	P501063-02A	Soil	01/22/15	01/22/15	Glass Jar, 4 oz.
11- West Wall 5-pt 2'-5'	P501063-03A	Soil	01/22/15	01/22/15	Glass Jar, 4 oz.

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BP America Production Co.
PO Box 22024
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Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
26-Jan-15 12:31

9-Base 7-pt @-7'
P501063-01 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.10	mg/kg	1	1504026	01/23/15	01/23/15	EPA 8021B	
Toluene	ND	0.10	mg/kg	1	1504026	01/23/15	01/23/15	EPA 8021B	
Ethylbenzene	ND	0.10	mg/kg	1	1504026	01/23/15	01/23/15	EPA 8021B	
p,m-Xylene	ND	0.20	mg/kg	1	1504026	01/23/15	01/23/15	EPA 8021B	
o-Xylene	ND	0.10	mg/kg	1	1504026	01/23/15	01/23/15	EPA 8021B	
Total Xylenes	ND	0.10	mg/kg	1	1504026	01/23/15	01/23/15	EPA 8021B	
Total BTEX	ND	0.10	mg/kg	1	1504026	01/23/15	01/23/15	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		116 %		50-150	1504026	01/23/15	01/23/15	EPA 8021B	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	9.97	mg/kg	1	1504026	01/23/15	01/23/15	EPA 8015D	
<i>Surrogate: 4-Bromochlorobenzene-FID</i>		104 %		50-150	1504026	01/23/15	01/23/15	EPA 8015D	
Cation/Anion Analysis									
Chloride	223	9.88	mg/kg	1	1504027	01/23/15	01/23/15	EPA 300.0	

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BP America Production Co.
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Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
26-Jan-15 12:31

9-Base 7-pt @-7'
P501063-01 (Solid)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Nonhalogenated Organics by 8015										
Diesel Range Organics (C10-C28)	ND	34.9	mg/kg	1		1504025	01/23/15	01/24/15	EPA 8015D	
Surrogate: o-Terphenyl		105 %		50-200		1504025	01/23/15	01/24/15	EPA 8015D	

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BP America Production Co.
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Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
26-Jan-15 12:31

10- N. Wall W. of Well 5-pt 2'-5'
P501063-02 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.10	mg/kg	1	1504026	01/23/15	01/23/15	EPA 8021B	
Toluene	ND	0.10	mg/kg	1	1504026	01/23/15	01/23/15	EPA 8021B	
Ethylbenzene	ND	0.10	mg/kg	1	1504026	01/23/15	01/23/15	EPA 8021B	
p,m-Xylene	ND	0.20	mg/kg	1	1504026	01/23/15	01/23/15	EPA 8021B	
o-Xylene	ND	0.10	mg/kg	1	1504026	01/23/15	01/23/15	EPA 8021B	
Total Xylenes	ND	0.10	mg/kg	1	1504026	01/23/15	01/23/15	EPA 8021B	
Total BTEX	ND	0.10	mg/kg	1	1504026	01/23/15	01/23/15	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		117 %		50-150	1504026	01/23/15	01/23/15	EPA 8021B	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	9.97	mg/kg	1	1504026	01/23/15	01/23/15	EPA 8015D	
Surrogate: 4-Bromochlorobenzene-FID		107 %		50-150	1504026	01/23/15	01/23/15	EPA 8015D	
Cation/Anion Analysis									
Chloride	394	9.82	mg/kg	1	1504027	01/23/15	01/23/15	EPA 300.0	

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
26-Jan-15 12:31

10- N. Wall W. of Well 5-pt 2'-5'
P501063-02 (Solid)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Nonhalogenated Organics by 8015										
Diesel Range Organics (C10-C28)	ND	34.9	mg/kg	1		1504025	01/23/15	01/24/15	EPA 8015D	
Surrogate: o-Terphenyl		107 %		50-200		1504025	01/23/15	01/24/15	EPA 8015D	

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BP America Production Co.
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Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
26-Jan-15 12:31

11- West Wall 5-pt 2'-5'
P501063-03 (Solid)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Volatile Organics by EPA 8021										
Benzene	ND	0.10	mg/kg	1		1504026	01/23/15	01/23/15	EPA 8021B	
Toluene	ND	0.10	mg/kg	1		1504026	01/23/15	01/23/15	EPA 8021B	
Ethylbenzene	ND	0.10	mg/kg	1		1504026	01/23/15	01/23/15	EPA 8021B	
p,m-Xylene	ND	0.20	mg/kg	1		1504026	01/23/15	01/23/15	EPA 8021B	
o-Xylene	ND	0.10	mg/kg	1		1504026	01/23/15	01/23/15	EPA 8021B	
Total Xylenes	ND	0.10	mg/kg	1		1504026	01/23/15	01/23/15	EPA 8021B	
Total BTEX	ND	0.10	mg/kg	1		1504026	01/23/15	01/23/15	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		116 %		50-150		1504026	01/23/15	01/23/15	EPA 8021B	
Nonhalogenated Organics by 8015										
Gasoline Range Organics (C6-C10)	ND	9.97	mg/kg	1		1504026	01/23/15	01/23/15	EPA 8015D	
Surrogate: 4-Bromochlorobenzene-FID		104 %		50-150		1504026	01/23/15	01/23/15	EPA 8015D	
Cation/Anion Analysis										
Chloride	585	9.84	mg/kg	1		1504027	01/23/15	01/23/15	EPA 300.0	

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Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
26-Jan-15 12:31

11- West Wall 5-pt 2'-5'
P501063-03 (Solid)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Nonhalogenated Organics by 8015										
Diesel Range Organics (C10-C28)	ND	34.9	mg/kg	1		1504025	01/23/15	01/24/15	EPA 8015D	
Surrogate: o-Terphenyl		110 %		50-200		1504025	01/23/15	01/24/15	EPA 8015D	

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Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
26-Jan-15 12:31

Volatile Organics by EPA 8021 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1504026 - Purge and Trap EPA 5030A

Blank (1504026-BLK1)

Prepared & Analyzed: 23-Jan-15

Benzene	ND	0.10	mg/kg							
Toluene	ND	0.10	"							
Ethylbenzene	ND	0.10	"							
p,m-Xylene	ND	0.20	"							
o-Xylene	ND	0.10	"							
Total Xylenes	ND	0.10	"							
Total BTEX	ND	0.10	"							
Surrogate: 4-Bromochlorobenzene-PID	0.473		"	0.400		118	50-150			

LCS (1504026-BS1)

Prepared & Analyzed: 23-Jan-15

Benzene	18.3	0.10	mg/kg	20.0		91.3	75-125			
Toluene	19.0	0.10	"	20.0		95.3	70-125			
Ethylbenzene	19.3	0.10	"	20.0		96.7	75-125			
p,m-Xylene	39.2	0.20	"	40.0		98.2	80-125			
o-Xylene	19.1	0.10	"	20.0		95.7	75-125			
Surrogate: 4-Bromochlorobenzene-PID	0.450		"	0.400		113	50-150			

Matrix Spike (1504026-MS1)

Source: P501062-01

Prepared & Analyzed: 23-Jan-15

Benzene	18.5	0.10	mg/kg	20.0	ND	92.6	75-125			
Toluene	19.3	0.10	"	20.0	ND	96.7	70-125			
Ethylbenzene	19.6	0.10	"	20.0	ND	98.3	75-125			
p,m-Xylene	39.9	0.20	"	40.0	ND	99.8	80-125			
o-Xylene	19.5	0.10	"	20.0	ND	97.7	75-125			
Surrogate: 4-Bromochlorobenzene-PID	0.451		"	0.400		113	50-150			

Matrix Spike Dup (1504026-MSD1)

Source: P501062-01

Prepared & Analyzed: 23-Jan-15

Benzene	18.5	0.10	mg/kg	20.0	ND	92.6	75-125	0.0121	15	
Toluene	19.3	0.10	"	20.0	ND	96.5	70-125	0.0957	15	
Ethylbenzene	19.6	0.10	"	20.0	ND	98.1	75-125	0.0943	15	
p,m-Xylene	39.9	0.20	"	40.0	ND	99.8	80-125	0.0101	15	
o-Xylene	19.5	0.10	"	20.0	ND	97.6	75-125	0.0552	15	
Surrogate: 4-Bromochlorobenzene-PID	0.454		"	0.400		114	50-150			

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BP America Production Co.
PO Box 22024
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Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
26-Jan-15 12:31

Nonhalogenated Organics by 8015 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1504025 - DRO Extraction EPA 3550M										
Blank (1504025-BLK2)				Prepared: 23-Jan-15 Analyzed: 24-Jan-15						
Diesel Range Organics (C10-C28)	ND	24.9	mg/kg							
Surrogate: o-Terphenyl	44.4		"	39.9		111	50-200			
LCS (1504025-BS2)				Prepared: 23-Jan-15 Analyzed: 24-Jan-15						
Diesel Range Organics (C10-C28)	455	24.9	mg/kg	498		91.2	38-132			
Surrogate: o-Terphenyl	42.5		"	39.9		107	50-200			
Matrix Spike (1504025-MS2)				Source: P501062-01 Prepared: 23-Jan-15 Analyzed: 24-Jan-15						
Diesel Range Organics (C10-C28)	467	34.9	mg/kg	499	99.9	73.5	38-132			
Surrogate: o-Terphenyl	46.6		"	39.9		117	50-200			
Matrix Spike Dup (1504025-MSD2)				Source: P501062-01 Prepared: 23-Jan-15 Analyzed: 24-Jan-15						
Diesel Range Organics (C10-C28)	486	35.0	mg/kg	500	99.9	77.3	38-132	4.00	20	
Surrogate: o-Terphenyl	48.8		"	40.0		122	50-200			

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Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
26-Jan-15 12:31

Nonhalogenated Organics by 8015 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1504026 - Purge and Trap EPA 5030A										
Blank (1504026-BLK1)				Prepared & Analyzed: 23-Jan-15						
Gasoline Range Organics (C6-C10)	ND	9.99	mg/kg							
Surrogate: 4-Bromochlorobenzene-FID	0.424		"	0.400		106	50-150			
LCS (1504026-BS1)				Prepared & Analyzed: 23-Jan-15						
Gasoline Range Organics (C6-C10)	269	9.99	mg/kg	292		92.1	80-120			
Surrogate: 4-Bromochlorobenzene-FID	0.406		"	0.400		102	50-150			
Matrix Spike (1504026-MS1)				Source: P501062-01		Prepared & Analyzed: 23-Jan-15				
Gasoline Range Organics (C6-C10)	272	9.99	mg/kg	292	ND	93.4	75-125			
Surrogate: 4-Bromochlorobenzene-FID	0.403		"	0.400		101	50-150			
Matrix Spike Dup (1504026-MSD1)				Source: P501062-01		Prepared & Analyzed: 23-Jan-15				
Gasoline Range Organics (C6-C10)	272	9.99	mg/kg	292	ND	93.3	75-125	0.0154	15	
Surrogate: 4-Bromochlorobenzene-FID	0.409		"	0.400		102	50-150			

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Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
26-Jan-15 12:31

Cation/Anion Analysis - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1504027 - Anion Extraction EPA 300.0										
Blank (1504027-BLK1)				Prepared & Analyzed: 23-Jan-15						
Chloride	ND	9.94	mg/kg							
LCS (1504027-BS1)				Prepared & Analyzed: 23-Jan-15						
Chloride	470	9.86	mg/kg	493		95.4	90-110			
Matrix Spike (1504027-MS1)				Prepared & Analyzed: 23-Jan-15						
Chloride	477	9.85	mg/kg	492	223	51.7	80-120			SPK1
Matrix Spike Dup (1504027-MSD1)				Prepared & Analyzed: 23-Jan-15						
Chloride	479	9.90	mg/kg	495	223	51.7	80-120	0.327	20	SPK1

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
26-Jan-15 12:31

Notes and Definitions

SPK1 The spike recovery for this QC sample is outside of control limits.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

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17713

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Analytical Report

Report Summary

Client: BP America Production Co.
Chain Of Custody Number: 17727
Samples Received: 1/23/2015 2:24:00PM
Job Number: 03143-0424
Work Order: P501066
Project Name/Location: Boyd GC 1

Entire Report Reviewed By:

A handwritten signature in black ink, appearing to read 'Tim Cain', is written over a horizontal line.

Date: 1/27/15

Tim Cain, Laboratory Manager

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
27-Jan-15 11:00

Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
12-South Base 5-pt @ ~7'	P501066-01A	Soil	01/23/15	01/23/15	Glass Jar, 4 oz.
13- South Sidewall 5-pt 2'-5'	P501066-02A	Soil	01/23/15	01/23/15	Glass Jar, 4 oz.

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
27-Jan-15 11:00

12-South Base 5-pt @ -7'
P501066-01 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.10	mg/kg	1	1505002	01/26/15	01/26/15	EPA 8021B	
Toluene	ND	0.10	mg/kg	1	1505002	01/26/15	01/26/15	EPA 8021B	
Ethylbenzene	0.17	0.10	mg/kg	1	1505002	01/26/15	01/26/15	EPA 8021B	
p,m-Xylene	0.22	0.20	mg/kg	1	1505002	01/26/15	01/26/15	EPA 8021B	
o-Xylene	0.21	0.10	mg/kg	1	1505002	01/26/15	01/26/15	EPA 8021B	
Total Xylenes	0.43	0.10	mg/kg	1	1505002	01/26/15	01/26/15	EPA 8021B	
Total BTEX	0.60	0.10	mg/kg	1	1505002	01/26/15	01/26/15	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		113 %	50-150		1505002	01/26/15	01/26/15	EPA 8021B	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	18.2	9.99	mg/kg	1	1505002	01/26/15	01/26/15	EPA 8015D	
Diesel Range Organics (C10-C28)	109	34.9	mg/kg	1	1505001	01/26/15	01/26/15	EPA 8015D	
Surrogate: o-Terphenyl		108 %	50-200		1505001	01/26/15	01/26/15	EPA 8015D	
Surrogate: 4-Bromochlorobenzene-FID		104 %	50-150		1505002	01/26/15	01/26/15	EPA 8015D	
Cation/Anion Analysis									
Chloride	42.4	9.93	mg/kg	1	1505003	01/26/15	01/26/15	EPA 300.0	

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
27-Jan-15 11:00

13- South Sidewall 5-pt 2'-5'
P501066-02 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.10	mg/kg	1	1505002	01/26/15	01/26/15	EPA 8021B	
Toluene	ND	0.10	mg/kg	1	1505002	01/26/15	01/26/15	EPA 8021B	
Ethylbenzene	ND	0.10	mg/kg	1	1505002	01/26/15	01/26/15	EPA 8021B	
p,m-Xylene	ND	0.20	mg/kg	1	1505002	01/26/15	01/26/15	EPA 8021B	
o-Xylene	ND	0.10	mg/kg	1	1505002	01/26/15	01/26/15	EPA 8021B	
Total Xylenes	ND	0.10	mg/kg	1	1505002	01/26/15	01/26/15	EPA 8021B	
Total BTEX	ND	0.10	mg/kg	1	1505002	01/26/15	01/26/15	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		115 %	50-150		1505002	01/26/15	01/26/15	EPA 8021B	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	9.98	mg/kg	1	1505002	01/26/15	01/26/15	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	35.0	mg/kg	1	1505001	01/26/15	01/26/15	EPA 8015D	
<i>Surrogate: o-Terphenyl</i>		105 %	50-200		1505001	01/26/15	01/26/15	EPA 8015D	
<i>Surrogate: 4-Bromochlorobenzene-FID</i>		103 %	50-150		1505002	01/26/15	01/26/15	EPA 8015D	
Cation/Anion Analysis									
Chloride	566	9.86	mg/kg	1	1505003	01/26/15	01/26/15	EPA 300.0	

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
27-Jan-15 11:00

Volatile Organics by EPA 8021 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1505002 - Purge and Trap EPA 5030A

Blank (1505002-BLK1)

Prepared & Analyzed: 26-Jan-15

Benzene	ND	0.10	mg/kg							
Toluene	ND	0.10	"							
Ethylbenzene	ND	0.10	"							
p,m-Xylene	ND	0.20	"							
o-Xylene	ND	0.10	"							
Total Xylenes	ND	0.10	"							
Total BTEX	ND	0.10	"							

Surrogate: 4-Bromochlorobenzene-PID 0.467 " 0.399 117 50-150

LCS (1505002-BS1)

Prepared & Analyzed: 26-Jan-15

Benzene	17.1	0.10	mg/kg	19.9		85.6	75-125			
Toluene	17.5	0.10	"	19.9		88.1	70-125			
Ethylbenzene	18.1	0.10	"	19.9		90.6	75-125			
p,m-Xylene	36.6	0.20	"	39.8		91.9	80-125			
o-Xylene	17.9	0.10	"	19.9		90.0	75-125			

Surrogate: 4-Bromochlorobenzene-PID 0.474 " 0.398 119 50-150

Matrix Spike (1505002-MS1)

Source: P501066-01

Prepared & Analyzed: 26-Jan-15

Benzene	19.5	0.10	mg/kg	19.9	ND	97.6	75-125			
Toluene	20.2	0.10	"	19.9	ND	101	70-125			
Ethylbenzene	20.8	0.10	"	19.9	0.17	103	75-125			
p,m-Xylene	42.2	0.20	"	39.9	0.22	105	80-125			
o-Xylene	20.6	0.10	"	19.9	0.21	102	75-125			

Surrogate: 4-Bromochlorobenzene-PID 0.457 " 0.399 115 50-150

Matrix Spike Dup (1505002-MSD1)

Source: P501066-01

Prepared & Analyzed: 26-Jan-15

Benzene	18.2	0.10	mg/kg	20.0	ND	91.3	75-125	6.65	15	
Toluene	18.9	0.10	"	20.0	ND	94.5	70-125	6.93	15	
Ethylbenzene	19.4	0.10	"	20.0	0.17	96.5	75-125	6.67	15	
p,m-Xylene	39.5	0.20	"	39.9	0.22	98.3	80-125	6.67	15	
o-Xylene	19.3	0.10	"	20.0	0.21	95.7	75-125	6.41	15	

Surrogate: 4-Bromochlorobenzene-PID 0.468 " 0.399 117 50-150

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
27-Jan-15 11:00

Nonhalogenated Organics by 8015 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1505001 - DRO Extraction EPA 3550M										
Blank (1505001-BLK1)				Prepared & Analyzed: 26-Jan-15						
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg							
Surrogate: o-Terphenyl	38.9		"	39.9		97.5	50-200			
LCS (1505001-BS1)				Prepared & Analyzed: 26-Jan-15						
Diesel Range Organics (C10-C28)	538	25.0	mg/kg	500		108	38-132			
Surrogate: o-Terphenyl	48.4		"	40.0		121	50-200			
Matrix Spike (1505001-MS1)				Source: P501066-01		Prepared & Analyzed: 26-Jan-15				
Diesel Range Organics (C10-C28)	600	34.9	mg/kg	499	109	98.5	38-132			
Surrogate: o-Terphenyl	60.7		"	39.9		152	50-200			
Matrix Spike Dup (1505001-MSD1)				Source: P501066-01		Prepared & Analyzed: 26-Jan-15				
Diesel Range Organics (C10-C28)	653	35.0	mg/kg	500	109	109	38-132	8.34	20	
Surrogate: o-Terphenyl	44.3		"	40.0		111	50-200			

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
27-Jan-15 11:00

Nonhalogenated Organics by 8015 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1505002 - Purge and Trap EPA 5030A										
Blank (1505002-BLK1)				Prepared & Analyzed: 26-Jan-15						
Gasoline Range Organics (C6-C10)	ND	9.97	mg/kg							
Surrogate: 4-Bromochlorobenzene-FID	0.420		"	0.399		105	50-150			
LCS (1505002-BS1)				Prepared & Analyzed: 26-Jan-15						
Gasoline Range Organics (C6-C10)	250	9.96	mg/kg	291		85.9	80-120			
Surrogate: 4-Bromochlorobenzene-FID	0.427		"	0.398		107	50-150			
Matrix Spike (1505002-MS1)				Source: P501066-01		Prepared & Analyzed: 26-Jan-15				
Gasoline Range Organics (C6-C10)	288	9.97	mg/kg	291	18.2	92.7	75-125			
Surrogate: 4-Bromochlorobenzene-FID	0.411		"	0.399		103	50-150			
Matrix Spike Dup (1505002-MSD1)				Source: P501066-01		Prepared & Analyzed: 26-Jan-15				
Gasoline Range Organics (C6-C10)	277	9.98	mg/kg	291	18.2	89.0	75-125	3.77	15	
Surrogate: 4-Bromochlorobenzene-FID	0.428		"	0.399		107	50-150			

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PO Box 22024
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Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
27-Jan-15 11:00

Cation/Anion Analysis - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1505003 - Anion Extraction EPA 300.0										
Blank (1505003-BLK1)				Prepared & Analyzed: 26-Jan-15						
Chloride	ND	9.88	mg/kg							
LCS (1505003-BS1)				Prepared & Analyzed: 26-Jan-15						
Chloride	475	9.81	mg/kg	491		96.7	90-110			
Matrix Spike (1505003-MS1)				Source: P501066-01 Prepared & Analyzed: 26-Jan-15						
Chloride	520	9.86	mg/kg	493	42.4	96.8	80-120			
Matrix Spike Dup (1505003-MSD1)				Source: P501066-01 Prepared & Analyzed: 26-Jan-15						
Chloride	522	9.99	mg/kg	499	42.4	96.1	80-120	0.469	20	

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
27-Jan-15 11:00

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference

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17727

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Analytical Report

Report Summary

Client: BP America Production Co.
Chain Of Custody Number: 17722
Samples Received: 1/27/2015 11:23:00AM
Job Number: 03143-0424
Work Order: P501071
Project Name/Location: Boyd GC 1

Entire Report Reviewed By:

A handwritten signature in black ink, appearing to read 'Tim Cain', is written over a horizontal line.

Date: 1/29/15

Tim Cain, Laboratory Manager

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
29-Jan-15 13:12

Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Wall East of Wellhead 5-pt 2'-5'	P501071-01A	Soil	01/27/15	01/27/15	Glass Jar, 4 oz.

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
29-Jan-15 13:12

Wall East of Wellhead 5-pt 2'-5'
P501071-01 (Solid)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Volatile Organics by EPA 8021										
Benzene	ND	0.10	mg/kg	1		1505016	01/27/15	01/28/15	EPA 8021B	
Toluene	ND	0.10	mg/kg	1		1505016	01/27/15	01/28/15	EPA 8021B	
Ethylbenzene	ND	0.10	mg/kg	1		1505016	01/27/15	01/28/15	EPA 8021B	
p,m-Xylene	0.23	0.20	mg/kg	1		1505016	01/27/15	01/28/15	EPA 8021B	
o-Xylene	0.22	0.10	mg/kg	1		1505016	01/27/15	01/28/15	EPA 8021B	
Total Xylenes	0.45	0.10	mg/kg	1		1505016	01/27/15	01/28/15	EPA 8021B	
Total BTEX	0.45	0.10	mg/kg	1		1505016	01/27/15	01/28/15	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		111 %		50-150		1505016	01/27/15	01/28/15	EPA 8021B	
Nonhalogenated Organics by 8015										
Gasoline Range Organics (C6-C10)	ND	10.0	mg/kg	1		1505016	01/27/15	01/28/15	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	30.0	mg/kg	1		1505015	01/27/15	01/28/15	EPA 8015D	
Surrogate: o-Terphenyl		104 %		50-200		1505015	01/27/15	01/28/15	EPA 8015D	
Surrogate: 4-Bromochlorobenzene-FID		99.9 %		50-150		1505016	01/27/15	01/28/15	EPA 8015D	
Cation/Anion Analysis										
Chloride	767	9.91	mg/kg	1		1505013	01/27/15	01/27/15	EPA 300.0	

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
29-Jan-15 13:12

Volatile Organics by EPA 8021 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1505016 - Purge and Trap EPA 5030A

Blank (1505016-BLK1)

Prepared: 27-Jan-15 Analyzed: 28-Jan-15

Benzene	ND	0.10	mg/kg							
Toluene	ND	0.10	"							
Ethylbenzene	ND	0.10	"							
p,m-Xylene	ND	0.20	"							
o-Xylene	ND	0.10	"							
Total Xylenes	ND	0.10	"							
Total BTEX	ND	0.10	"							

Surrogate: 4-Bromochlorobenzene-PID 0.413 " 0.400 103 50-150

LCS (1505016-BS1)

Prepared: 27-Jan-15 Analyzed: 28-Jan-15

Benzene	17.3	0.10	mg/kg	20.0		86.5	75-125			
Toluene	18.2	0.10	"	20.0		91.3	70-125			
Ethylbenzene	18.6	0.10	"	20.0		92.9	75-125			
p,m-Xylene	37.4	0.20	"	40.0		93.7	80-125			
o-Xylene	18.3	0.10	"	20.0		91.4	75-125			

Surrogate: 4-Bromochlorobenzene-PID 0.435 " 0.400 109 50-150

Matrix Spike (1505016-MS1)

Source: P501067-01

Prepared: 27-Jan-15 Analyzed: 28-Jan-15

Benzene	16.8	0.10	mg/kg	20.0	ND	84.0	75-125			
Toluene	19.2	0.10	"	20.0	1.79	86.9	70-125			
Ethylbenzene	21.4	0.10	"	20.0	2.63	94.1	75-125			
p,m-Xylene	45.0	0.20	"	40.0	11.4	84.0	80-125			
o-Xylene	19.8	0.10	"	20.0	6.17	68.0	75-125			SPK1

Surrogate: 4-Bromochlorobenzene-PID 0.486 " 0.400 121 50-150

Matrix Spike Dup (1505016-MSD1)

Source: P501067-01

Prepared: 27-Jan-15 Analyzed: 28-Jan-15

Benzene	17.5	0.10	mg/kg	20.0	ND	88.0	75-125	4.37	15	
Toluene	20.0	0.10	"	20.0	1.79	91.5	70-125	4.51	15	
Ethylbenzene	22.5	0.10	"	20.0	2.63	99.4	75-125	4.67	15	
p,m-Xylene	46.9	0.20	"	39.9	11.4	88.8	80-125	4.05	15	
o-Xylene	21.0	0.10	"	20.0	6.17	74.6	75-125	6.25	15	SPK1

Surrogate: 4-Bromochlorobenzene-PID 0.484 " 0.399 121 50-150

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laboratory@envirotech-inc.com



BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
29-Jan-15 13:12

Nonhalogenated Organics by 8015 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1505015 - DRO Extraction EPA 3550M										
Blank (1505015-BLK1)				Prepared: 27-Jan-15 Analyzed: 28-Jan-15						
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg							
Surrogate: o-Terphenyl	36.2		"	40.0		90.5	50-200			
LCS (1505015-BS1)				Prepared: 27-Jan-15 Analyzed: 28-Jan-15						
Diesel Range Organics (C10-C28)	411	24.9	mg/kg	498		82.4	38-132			
Surrogate: o-Terphenyl	37.5		"	39.9		94.0	50-200			
Matrix Spike (1505015-MS1)				Source: P501067-01		Prepared: 27-Jan-15 Analyzed: 28-Jan-15				
Diesel Range Organics (C10-C28)	1910	30.0	mg/kg	499	1260	131	38-132			
Surrogate: o-Terphenyl	43.3		"	40.0		108	50-200			
Matrix Spike Dup (1505015-MSD1)				Source: P501067-01		Prepared: 27-Jan-15 Analyzed: 28-Jan-15				
Diesel Range Organics (C10-C28)	1960	30.0	mg/kg	500	1260	140	38-132	2.39	20	SPK1
Surrogate: o-Terphenyl	42.0		"	40.0		105	50-200			

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BP America Production Co.
PO Box 22024
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Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
29-Jan-15 13:12

Nonhalogenated Organics by 8015 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1505016 - Purge and Trap EPA 5030A										
Blank (1505016-BLK1)				Prepared: 27-Jan-15 Analyzed: 28-Jan-15						
Gasoline Range Organics (C6-C10)	ND	9.99	mg/kg							
Surrogate: 4-Bromochlorobenzene-FID	0.375		"	0.400		93.8	50-150			
LCS (1505016-BS1)				Prepared: 27-Jan-15 Analyzed: 28-Jan-15						
Gasoline Range Organics (C6-C10)	251	9.99	mg/kg	292		86.2	80-120			
Surrogate: 4-Bromochlorobenzene-FID	0.391		"	0.400		97.9	50-150			
Matrix Spike (1505016-MS1)				Source: P501067-01		Prepared: 27-Jan-15 Analyzed: 28-Jan-15				
Gasoline Range Organics (C6-C10)	576	10.0	mg/kg	292	358	74.6	75-125			SPK1
Surrogate: 4-Bromochlorobenzene-FID	0.544		"	0.400		136	50-150			
Matrix Spike Dup (1505016-MSD1)				Source: P501067-01		Prepared: 27-Jan-15 Analyzed: 28-Jan-15				
Gasoline Range Organics (C6-C10)	597	9.98	mg/kg	291	358	81.9	75-125	3.54	15	
Surrogate: 4-Bromochlorobenzene-FID	0.580		"	0.399		145	50-150			

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
29-Jan-15 13:12

Cation/Anion Analysis - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1505013 - Anion Extraction EPA 300.0										
Blank (1505013-BLK1)				Prepared & Analyzed: 27-Jan-15						
Chloride	ND	9.99	mg/kg							
LCS (1505013-BS1)				Prepared & Analyzed: 27-Jan-15						
Chloride	483	9.90	mg/kg	495		97.7	90-110			
Matrix Spike (1505013-MS1)				Source: P501068-01 Prepared & Analyzed: 27-Jan-15						
Chloride	917	9.82	mg/kg	491	394	106	80-120			
Matrix Spike Dup (1505013-MSD1)				Source: P501068-01 Prepared & Analyzed: 27-Jan-15						
Chloride	909	9.91	mg/kg	495	394	104	80-120	0.902	20	

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BP America Production Co.
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Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
29-Jan-15 13:12

Notes and Definitions

SPK1 The spike recovery for this QC sample is outside of control limits.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

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CHAIN OF CUSTODY RECORD

17722

Client: BP AMERICA		Project Name / Location: Box 6C 1			ANALYSIS / PARAMETERS																
Email results to: JEFF PEACE JEFF BLAGG NELSON VELEZ		Sampler Name: JEFF BLAGG																			
Client Phone No.: 505-320-1183		Client No.: 03143-0424																			
Sample No./ Identification	Sample Date	Sample Time	Lab No.	No./Volume of Containers	Preservative			TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	RCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	CO Table 910-1	TPH (418.1)	CHLORIDE			Sample Cool	Sample Intact
					HNO ₃	HCl															
WALL EAST OF wellhead 5-pb 2'-5'	1/27/15	0918	P501071-01	1 x 4oz				X	X								X			Y	Y
Relinquished by: (Signature) <i>Jeff Blagg</i>					Date 1/27/15	Time 1123	Received by: (Signature) <i>[Signature]</i>					Date 1/27/15	Time 1123								
Relinquished by: (Signature) <i>[Signature]</i>							Received by: (Signature)														
Sample Matrix Soil ☒ Solid ☐ Sludge ☐ Aqueous ☐ Other ☐																					
☐ Sample(s) dropped off after hours to secure drop off area.																					



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Analytical Laboratory

NMOCPS COS

7.3



Analytical Report

Report Summary

Client: BP America Production Co.
Chain Of Custody Number: 17723
Samples Received: 1/29/2015 1:30:00PM
Job Number: 03143-0424
Work Order: P501078
Project Name/Location: Boyd GC 1

Entire Report Reviewed By:

A handwritten signature in black ink, appearing to read 'Tim Cain', is written over a horizontal line.

Date: 2/2/15

Tim Cain, Laboratory Manager

The results in this report apply to the samples submitted to Envirotech's Analytical Laboratory and were analyzed in accordance with the chain of custody document supplied by you, the client, and as such are for your exclusive use only. The results in this report are based on the sample as received unless otherwise noted. Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc. If you have any questions regarding this analytical report, please don't hesitate to contact Envirotech's Laboratory Staff.



BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
02-Feb-15 12:23

Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
SW Gate #1 Base 5-pt @ 6'	P501078-01A	Soil	01/29/15	01/29/15	Glass Jar, 4 oz.
SW Gate #2 Base 5-pt @ 6'	P501078-02A	Soil	01/29/15	01/29/15	Glass Jar, 4 oz.
SW Gate #3 Base 5-pt @ 6'	P501078-03A	Soil	01/29/15	01/29/15	Glass Jar, 4 oz.

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
02-Feb-15 12:23

SW Gate #1 Base 5-pt @ 6'
P501078-01 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.10	mg/kg	1	1505020	01/29/15	01/30/15	EPA 8021B	
Toluene	ND	0.10	mg/kg	1	1505020	01/29/15	01/30/15	EPA 8021B	
Ethylbenzene	ND	0.10	mg/kg	1	1505020	01/29/15	01/30/15	EPA 8021B	
p,m-Xylene	ND	0.20	mg/kg	1	1505020	01/29/15	01/30/15	EPA 8021B	
o-Xylene	ND	0.10	mg/kg	1	1505020	01/29/15	01/30/15	EPA 8021B	
Total Xylenes	ND	0.10	mg/kg	1	1505020	01/29/15	01/30/15	EPA 8021B	
Total BTEX	ND	0.10	mg/kg	1	1505020	01/29/15	01/30/15	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		114 %		50-150	1505020	01/29/15	01/30/15	EPA 8021B	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	9.96	mg/kg	1	1505020	01/29/15	01/30/15	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	35.0	mg/kg	1	1505019	01/29/15	01/30/15	EPA 8015D	
<i>Surrogate: o-Terphenyl</i>		109 %		50-200	1505019	01/29/15	01/30/15	EPA 8015D	
<i>Surrogate: 4-Bromochlorobenzene-FID</i>		101 %		50-150	1505020	01/29/15	01/30/15	EPA 8015D	
Cation/Anion Analysis									
Chloride	205	9.98	mg/kg	1	1505022	01/30/15	01/30/15	EPA 300.0	

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Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
02-Feb-15 12:23

SW Gate #2 Base 5-pt @ 6'
P501078-02 (Solid)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Volatile Organics by EPA 8021										
Benzene	ND	0.10	mg/kg	1		1505020	01/29/15	01/30/15	EPA 8021B	
Toluene	ND	0.10	mg/kg	1		1505020	01/29/15	01/30/15	EPA 8021B	
Ethylbenzene	ND	0.10	mg/kg	1		1505020	01/29/15	01/30/15	EPA 8021B	
p,m-Xylene	ND	0.20	mg/kg	1		1505020	01/29/15	01/30/15	EPA 8021B	
o-Xylene	ND	0.10	mg/kg	1		1505020	01/29/15	01/30/15	EPA 8021B	
Total Xylenes	ND	0.10	mg/kg	1		1505020	01/29/15	01/30/15	EPA 8021B	
Total BTEX	ND	0.10	mg/kg	1		1505020	01/29/15	01/30/15	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		114 %		50-150		1505020	01/29/15	01/30/15	EPA 8021B	
Nonhalogenated Organics by 8015										
Gasoline Range Organics (C6-C10)	ND	9.99	mg/kg	1		1505020	01/29/15	01/30/15	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	34.9	mg/kg	1		1505019	01/29/15	01/30/15	EPA 8015D	
Surrogate: o-Terphenyl		112 %		50-200		1505019	01/29/15	01/30/15	EPA 8015D	
Surrogate: 4-Bromochlorobenzene-FID		102 %		50-150		1505020	01/29/15	01/30/15	EPA 8015D	
Cation/Anion Analysis										
Chloride	399	9.95	mg/kg	1		1505022	01/30/15	01/30/15	EPA 300.0	

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BP America Production Co.
PO Box 22024
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Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
02-Feb-15 12:23

SW Gate #3 Base 5-pt @ 6'
P501078-03 (Solid)

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Volatile Organics by EPA 8021									
Benzene	ND	0.10	mg/kg	1	1505020	01/29/15	01/30/15	EPA 8021B	
Toluene	ND	0.10	mg/kg	1	1505020	01/29/15	01/30/15	EPA 8021B	
Ethylbenzene	ND	0.10	mg/kg	1	1505020	01/29/15	01/30/15	EPA 8021B	
p,m-Xylene	ND	0.20	mg/kg	1	1505020	01/29/15	01/30/15	EPA 8021B	
o-Xylene	ND	0.10	mg/kg	1	1505020	01/29/15	01/30/15	EPA 8021B	
Total Xylenes	ND	0.10	mg/kg	1	1505020	01/29/15	01/30/15	EPA 8021B	
Total BTEX	ND	0.10	mg/kg	1	1505020	01/29/15	01/30/15	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		116 %		50-150	1505020	01/29/15	01/30/15	EPA 8021B	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	9.98	mg/kg	1	1505020	01/29/15	01/30/15	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	35.0	mg/kg	1	1505019	01/29/15	01/30/15	EPA 8015D	
Surrogate: o-Terphenyl		123 %		50-200	1505019	01/29/15	01/30/15	EPA 8015D	
Surrogate: 4-Bromochlorobenzene-FID		103 %		50-150	1505020	01/29/15	01/30/15	EPA 8015D	
Cation/Anion Analysis									
Chloride	616	9.90	mg/kg	1	1505022	01/30/15	01/30/15	EPA 300.0	

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Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
02-Feb-15 12:23

Volatile Organics by EPA 8021 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1505020 - Purge and Trap EPA 5030A

Blank (1505020-BLK1)

Prepared: 28-Jan-15 Analyzed: 30-Jan-15

Benzene	ND	0.10	mg/kg							
Toluene	ND	0.10	"							
Ethylbenzene	ND	0.10	"							
p,m-Xylene	ND	0.20	"							
o-Xylene	ND	0.10	"							
Total Xylenes	ND	0.10	"							
Total BTEX	ND	0.10	"							
Surrogate: 4-Bromochlorobenzene-PID	0.441		"	0.400		110	50-150			

LCS (1505020-BS1)

Prepared: 28-Jan-15 Analyzed: 29-Jan-15

Benzene	16.7	0.10	mg/kg	20.0		83.6	75-125			
Toluene	17.7	0.10	"	20.0		88.8	70-125			
Ethylbenzene	18.2	0.10	"	20.0		90.9	75-125			
p,m-Xylene	36.7	0.20	"	40.0		92.0	80-125			
o-Xylene	18.0	0.10	"	20.0		90.0	75-125			
Surrogate: 4-Bromochlorobenzene-PID	0.450		"	0.400		113	50-150			

Matrix Spike (1505020-MS1)

Source: P501073-01

Prepared: 28-Jan-15 Analyzed: 29-Jan-15

Benzene	17.6	0.10	mg/kg	19.9	ND	88.2	75-125			
Toluene	18.7	0.10	"	19.9	ND	93.7	70-125			
Ethylbenzene	19.2	0.10	"	19.9	ND	96.3	75-125			
p,m-Xylene	38.8	0.20	"	39.9	0.21	96.9	80-125			
o-Xylene	19.0	0.10	"	19.9	0.19	94.3	75-125			
Surrogate: 4-Bromochlorobenzene-PID	0.451		"	0.399		113	50-150			

Matrix Spike Dup (1505020-MSD1)

Source: P501073-01

Prepared: 28-Jan-15 Analyzed: 29-Jan-15

Benzene	18.2	0.10	mg/kg	20.0	ND	91.0	75-125	3.19	15	
Toluene	19.2	0.10	"	20.0	ND	96.2	70-125	2.77	15	
Ethylbenzene	19.8	0.10	"	20.0	ND	99.3	75-125	3.13	15	
p,m-Xylene	40.0	0.20	"	39.9	0.21	99.6	80-125	2.90	15	
o-Xylene	19.6	0.10	"	20.0	0.19	97.2	75-125	3.13	15	
Surrogate: 4-Bromochlorobenzene-PID	0.445		"	0.399		112	50-150			

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PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
02-Feb-15 12:23

Nonhalogenated Organics by 8015 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1505019 - DRO Extraction EPA 3550M										
Blank (1505019-BLK1)				Prepared & Analyzed: 28-Jan-15						
Diesel Range Organics (C10-C28)	ND	24.9	mg/kg							
Surrogate: o-Terphenyl	47.7		"	39.9		120	50-200			
LCS (1505019-BS1)				Prepared & Analyzed: 28-Jan-15						
Diesel Range Organics (C10-C28)	474	24.9	mg/kg	499		95.2	38-132			
Surrogate: o-Terphenyl	45.6		"	39.9		114	50-200			
Matrix Spike (1505019-MS1)				Source: P501073-01		Prepared & Analyzed: 28-Jan-15				
Diesel Range Organics (C10-C28)	677	30.0	mg/kg	500	31.6	129	38-132			SPK1
Surrogate: o-Terphenyl	52.8		"	40.0		132	50-200			
Matrix Spike Dup (1505019-MSD1)				Source: P501073-01		Prepared & Analyzed: 28-Jan-15				
Diesel Range Organics (C10-C28)	559	29.9	mg/kg	498	31.6	106	38-132	19.1	20	
Surrogate: o-Terphenyl	49.7		"	39.9		125	50-200			

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Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
02-Feb-15 12:23

Nonhalogenated Organics by 8015 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1505020 - Purge and Trap EPA 5030A										
Blank (1505020-BLK1)				Prepared: 28-Jan-15 Analyzed: 30-Jan-15						
Gasoline Range Organics (C6-C10)	ND	9.99	mg/kg							
Surrogate: 4-Bromochlorobenzene-FID	0.392		"	0.400		98.2	50-150			
LCS (1505020-BS1)				Prepared: 28-Jan-15 Analyzed: 29-Jan-15						
Gasoline Range Organics (C6-C10)	252	9.99	mg/kg	292		86.4	80-120			
Surrogate: 4-Bromochlorobenzene-FID	0.404		"	0.400		101	50-150			
Matrix Spike (1505020-MS1)				Source: P501073-01		Prepared: 28-Jan-15 Analyzed: 29-Jan-15				
Gasoline Range Organics (C6-C10)	266	9.97	mg/kg	291	ND	91.3	75-125			
Surrogate: 4-Bromochlorobenzene-FID	0.406		"	0.399		102	50-150			
Matrix Spike Dup (1505020-MSD1)				Source: P501073-01		Prepared: 28-Jan-15 Analyzed: 29-Jan-15				
Gasoline Range Organics (C6-C10)	273	9.98	mg/kg	291	ND	93.5	75-125	2.54	15	
Surrogate: 4-Bromochlorobenzene-FID	0.400		"	0.399		100	50-150			

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
02-Feb-15 12:23

Cation/Anion Analysis - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1505022 - Anion Extraction EPA 300.0										
Blank (1505022-BLK1)				Prepared & Analyzed: 30-Jan-15						
Chloride	ND	9.94	mg/kg							
LCS (1505022-BS1)				Prepared & Analyzed: 30-Jan-15						
Chloride	470	9.83	mg/kg	491		95.6	90-110			
Matrix Spike (1505022-MS1)				Source: P501078-01 Prepared & Analyzed: 30-Jan-15						
Chloride	678	9.92	mg/kg	496	205	95.4	80-120			
Matrix Spike Dup (1505022-MSD1)				Source: P501078-01 Prepared & Analyzed: 30-Jan-15						
Chloride	667	9.86	mg/kg	493	205	93.7	80-120	1.60	20	

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BP America Production Co.
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Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
02-Feb-15 12:23

Notes and Definitions

SPK1 The spike recovery for this QC sample is outside of control limits.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

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17723

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Analytical Report

Report Summary

Client: BP America Production Co.
Chain Of Custody Number: 17724
Samples Received: 1/30/2015 9:40:00AM
Job Number: 03143-0424
Work Order: P501082
Project Name/Location: Boyd GC 1

Entire Report Reviewed By:

A handwritten signature in black ink, appearing to read 'Tim Cain', is written over a horizontal line.

Date: 2/3/15

Tim Cain, Laboratory Manager

The results in this report apply to the samples submitted to Envirotech's Analytical Laboratory and were analyzed in accordance with the chain of custody document supplied by you, the client, and as such are for your exclusive use only. The results in this report are based on the sample as received unless otherwise noted. Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc. If you have any questions regarding this analytical report, please don't hesitate to contact Envirotech's Laboratory Staff.



BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
03-Feb-15 12:42

Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Gate East Wall 5-pt 2'-5'	P501082-01A	Soil	01/29/15	01/30/15	Glass Jar, 4 oz.
Gate 1 Sub Pipe 5-pt @6'	P501082-02A	Soil	01/29/15	01/30/15	Glass Jar, 4 oz.
Gate 1 North Wall 5-pt 2'-5'	P501082-03A	Soil	01/29/15	01/30/15	Glass Jar, 4 oz.
Gate 2/3 North Wall 5-pt 2'-5'	P501082-04A	Soil	01/29/15	01/30/15	Glass Jar, 4 oz.
Gate 2-3 Sub Pipe 5-pt @ 6'	P501082-05A	Soil	01/29/15	01/30/15	Glass Jar, 4 oz.
Gate 3 West Wall 5-pt 2'-5'	P501082-06A	Soil	01/29/15	01/30/15	Glass Jar, 4 oz.

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
03-Feb-15 12:42

Gate East Wall 5-pt 2'-5'
P501082-01 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.10	mg/kg	1	1506002	02/02/15	02/02/15	EPA 8021B	
Toluene	ND	0.10	mg/kg	1	1506002	02/02/15	02/02/15	EPA 8021B	
Ethylbenzene	ND	0.10	mg/kg	1	1506002	02/02/15	02/02/15	EPA 8021B	
p,m-Xylene	ND	0.20	mg/kg	1	1506002	02/02/15	02/02/15	EPA 8021B	
o-Xylene	ND	0.10	mg/kg	1	1506002	02/02/15	02/02/15	EPA 8021B	
Total Xylenes	ND	0.10	mg/kg	1	1506002	02/02/15	02/02/15	EPA 8021B	
Total BTEX	ND	0.10	mg/kg	1	1506002	02/02/15	02/02/15	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		111 %	50-150		1506002	02/02/15	02/02/15	EPA 8021B	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	9.99	mg/kg	1	1506002	02/02/15	02/02/15	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	34.9	mg/kg	1	1506001	02/02/15	02/02/15	EPA 8015D	
<i>Surrogate: o-Terphenyl</i>		117 %	50-200		1506001	02/02/15	02/02/15	EPA 8015D	
<i>Surrogate: 4-Bromochlorobenzene-FID</i>		100 %	50-150		1506002	02/02/15	02/02/15	EPA 8015D	
Cation/Anion Analysis									
Chloride	220	9.84	mg/kg	1	1506004	02/02/15	02/02/15	EPA 300.0	

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laboratory@envirotech-inc.com



BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
03-Feb-15 12:42

Gate 1 Sub Pipe 5-pt @6'
P501082-02 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.10	mg/kg	1	1506002	02/02/15	02/02/15	EPA 8021B	
Toluene	ND	0.10	mg/kg	1	1506002	02/02/15	02/02/15	EPA 8021B	
Ethylbenzene	ND	0.10	mg/kg	1	1506002	02/02/15	02/02/15	EPA 8021B	
p,m-Xylene	ND	0.20	mg/kg	1	1506002	02/02/15	02/02/15	EPA 8021B	
o-Xylene	ND	0.10	mg/kg	1	1506002	02/02/15	02/02/15	EPA 8021B	
Total Xylenes	ND	0.10	mg/kg	1	1506002	02/02/15	02/02/15	EPA 8021B	
Total BTEX	ND	0.10	mg/kg	1	1506002	02/02/15	02/02/15	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		112 %	50-150		1506002	02/02/15	02/02/15	EPA 8021B	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	9.98	mg/kg	1	1506002	02/02/15	02/02/15	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	35.0	mg/kg	1	1506001	02/02/15	02/02/15	EPA 8015D	
<i>Surrogate: o-Terphenyl</i>		111 %	50-200		1506001	02/02/15	02/02/15	EPA 8015D	
<i>Surrogate: 4-Bromochlorobenzene-FID</i>		102 %	50-150		1506002	02/02/15	02/02/15	EPA 8015D	
Cation/Anion Analysis									
Chloride	196	9.87	mg/kg	1	1506004	02/02/15	02/02/15	EPA 300.0	

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
03-Feb-15 12:42

Gate 1 North Wall 5-pt 2'-5'
P501082-03 (Solid)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Volatile Organics by EPA 8021										
Benzene	ND	0.10	mg/kg	1		1506002	02/01/15	02/02/15	EPA 8021B	
Toluene	ND	0.10	mg/kg	1		1506002	02/01/15	02/02/15	EPA 8021B	
Ethylbenzene	ND	0.10	mg/kg	1		1506002	02/01/15	02/02/15	EPA 8021B	
p,m-Xylene	ND	0.20	mg/kg	1		1506002	02/01/15	02/02/15	EPA 8021B	
o-Xylene	ND	0.10	mg/kg	1		1506002	02/01/15	02/02/15	EPA 8021B	
Total Xylenes	ND	0.10	mg/kg	1		1506002	02/01/15	02/02/15	EPA 8021B	
Total BTEX	ND	0.10	mg/kg	1		1506002	02/01/15	02/02/15	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		112 %		50-150		1506002	02/01/15	02/02/15	EPA 8021B	
Nonhalogenated Organics by 8015										
Gasoline Range Organics (C6-C10)	ND	9.97	mg/kg	1		1506002	02/01/15	02/02/15	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	34.9	mg/kg	1		1506001	02/02/15	02/02/15	EPA 8015D	
Surrogate: o-Terphenyl		106 %		50-200		1506001	02/02/15	02/02/15	EPA 8015D	
Surrogate: 4-Bromochlorobenzene-FID		101 %		50-150		1506002	02/01/15	02/02/15	EPA 8015D	
Cation/Anion Analysis										
Chloride	285	9.95	mg/kg	1		1506004	02/02/15	02/02/15	EPA 300.0	

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BP America Production Co.
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Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
03-Feb-15 12:42

Gate 2/3 North Wall 5-pt 2'-5'
P501082-04 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.10	mg/kg	1	1506002	02/01/15	02/02/15	EPA 8021B	
Toluene	ND	0.10	mg/kg	1	1506002	02/01/15	02/02/15	EPA 8021B	
Ethylbenzene	ND	0.10	mg/kg	1	1506002	02/01/15	02/02/15	EPA 8021B	
p,m-Xylene	ND	0.20	mg/kg	1	1506002	02/01/15	02/02/15	EPA 8021B	
o-Xylene	ND	0.10	mg/kg	1	1506002	02/01/15	02/02/15	EPA 8021B	
Total Xylenes	ND	0.10	mg/kg	1	1506002	02/01/15	02/02/15	EPA 8021B	
Total BTEX	ND	0.10	mg/kg	1	1506002	02/01/15	02/02/15	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		115 %		50-150	1506002	02/01/15	02/02/15	EPA 8021B	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	9.98	mg/kg	1	1506002	02/01/15	02/02/15	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	35.0	mg/kg	1	1506001	02/02/15	02/02/15	EPA 8015D	
Surrogate: o-Terphenyl		113 %		50-200	1506001	02/02/15	02/02/15	EPA 8015D	
Surrogate: 4-Bromochlorobenzene-FID		103 %		50-150	1506002	02/01/15	02/02/15	EPA 8015D	
Cation/Anion Analysis									
Chloride	944	9.97	mg/kg	1	1506004	02/02/15	02/02/15	EPA 300.0	

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PO Box 22024
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Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
03-Feb-15 12:42

Gate 2-3 Sub Pipe 5-pt @ 6'
P501082-05 (Solid)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Volatile Organics by EPA 8021										
Benzene	ND	0.10	mg/kg	1		1506002	02/01/15	02/02/15	EPA 8021B	
Toluene	ND	0.10	mg/kg	1		1506002	02/01/15	02/02/15	EPA 8021B	
Ethylbenzene	ND	0.10	mg/kg	1		1506002	02/01/15	02/02/15	EPA 8021B	
p,m-Xylene	ND	0.20	mg/kg	1		1506002	02/01/15	02/02/15	EPA 8021B	
o-Xylene	ND	0.10	mg/kg	1		1506002	02/01/15	02/02/15	EPA 8021B	
Total Xylenes	ND	0.10	mg/kg	1		1506002	02/01/15	02/02/15	EPA 8021B	
Total BTEX	ND	0.10	mg/kg	1		1506002	02/01/15	02/02/15	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		107 %		50-150		1506002	02/01/15	02/02/15	EPA 8021B	
Nonhalogenated Organics by 8015										
Gasoline Range Organics (C6-C10)	ND	9.99	mg/kg	1		1506002	02/01/15	02/02/15	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	34.9	mg/kg	1		1506001	02/02/15	02/02/15	EPA 8015D	
Surrogate: o-Terphenyl		111 %		50-200		1506001	02/02/15	02/02/15	EPA 8015D	
Surrogate: 4-Bromochlorobenzene-FID		96.5 %		50-150		1506002	02/01/15	02/02/15	EPA 8015D	
Cation/Anion Analysis										
Chloride	603	9.95	mg/kg	1		1506004	02/02/15	02/02/15	EPA 300.0	

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BP America Production Co.
PO Box 22024
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Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
03-Feb-15 12:42

Gate 3 West Wall 5-pt 2'-5'
P501082-06 (Solid)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Volatile Organics by EPA 8021										
Benzene	ND	0.10	mg/kg	1		1506002	02/01/15	02/02/15	EPA 8021B	
Toluene	ND	0.10	mg/kg	1		1506002	02/01/15	02/02/15	EPA 8021B	
Ethylbenzene	ND	0.10	mg/kg	1		1506002	02/01/15	02/02/15	EPA 8021B	
p,m-Xylene	ND	0.20	mg/kg	1		1506002	02/01/15	02/02/15	EPA 8021B	
o-Xylene	ND	0.10	mg/kg	1		1506002	02/01/15	02/02/15	EPA 8021B	
Total Xylenes	ND	0.10	mg/kg	1		1506002	02/01/15	02/02/15	EPA 8021B	
Total BTEX	ND	0.10	mg/kg	1		1506002	02/01/15	02/02/15	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		110 %		50-150		1506002	02/01/15	02/02/15	EPA 8021B	
Nonhalogenated Organics by 8015										
Gasoline Range Organics (C6-C10)	ND	9.99	mg/kg	1		1506002	02/01/15	02/02/15	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	35.0	mg/kg	1		1506001	02/02/15	02/02/15	EPA 8015D	
Surrogate: o-Terphenyl		108 %		50-200		1506001	02/02/15	02/02/15	EPA 8015D	
Surrogate: 4-Bromochlorobenzene-FID		98.4 %		50-150		1506002	02/01/15	02/02/15	EPA 8015D	
Cation/Anion Analysis										
Chloride	656	9.90	mg/kg	1		1506004	02/02/15	02/02/15	EPA 300.0	

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
03-Feb-15 12:42

Volatile Organics by EPA 8021 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 1506002 - Purge and Trap EPA 5030A

Blank (1506002-BLK1)

Prepared: 01-Feb-15 Analyzed: 02-Feb-15

Benzene	ND	0.10	mg/kg							
Toluene	ND	0.10	"							
Ethylbenzene	ND	0.10	"							
p,m-Xylene	ND	0.20	"							
o-Xylene	ND	0.10	"							
Total Xylenes	ND	0.10	"							
Total BTEX	ND	0.10	"							
Surrogate: 4-Bromochlorobenzene-PID	0.444		"	0.399		111	50-150			

LCS (1506002-BS1)

Prepared: 01-Feb-15 Analyzed: 02-Feb-15

Benzene	17.6	0.10	mg/kg	19.9		88.1	75-125			
Toluene	18.6	0.10	"	19.9		93.3	70-125			
Ethylbenzene	19.2	0.10	"	19.9		96.5	75-125			
p,m-Xylene	38.7	0.20	"	39.9		97.1	80-125			
o-Xylene	18.8	0.10	"	19.9		94.3	75-125			
Surrogate: 4-Bromochlorobenzene-PID	0.428		"	0.399		107	50-150			

Matrix Spike (1506002-MS1)

Source: P501083-01

Prepared: 01-Feb-15 Analyzed: 02-Feb-15

Benzene	17.9	0.10	mg/kg	20.0	ND	89.6	75-125			
Toluene	19.2	0.10	"	20.0	ND	96.1	70-125			
Ethylbenzene	19.9	0.10	"	20.0	ND	99.4	75-125			
p,m-Xylene	40.2	0.20	"	40.0	0.21	100	80-125			
o-Xylene	19.7	0.10	"	20.0	0.19	97.6	75-125			
Surrogate: 4-Bromochlorobenzene-PID	0.437		"	0.400		109	50-150			

Matrix Spike Dup (1506002-MSD1)

Source: P501083-01

Prepared: 01-Feb-15 Analyzed: 02-Feb-15

Benzene	18.7	0.10	mg/kg	20.0	ND	93.5	75-125	4.25	15	
Toluene	19.8	0.10	"	20.0	ND	99.2	70-125	3.17	15	
Ethylbenzene	20.4	0.10	"	20.0	ND	102	75-125	2.80	15	
p,m-Xylene	41.3	0.20	"	40.0	0.21	103	80-125	2.75	15	
o-Xylene	20.5	0.10	"	20.0	0.19	101	75-125	3.80	15	
Surrogate: 4-Bromochlorobenzene-PID	0.462		"	0.400		116	50-150			

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laboratory@envirotech-inc.com



BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
03-Feb-15 12:42

Nonhalogenated Organics by 8015 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1506001 - DRO Extraction EPA 3550M										
Blank (1506001-BLK1)				Prepared: 01-Feb-15 Analyzed: 02-Feb-15						
Diesel Range Organics (C10-C28)	ND	25.0	mg/kg							
Surrogate: o-Terphenyl	49.8		"	40.0		125	50-200			
LCS (1506001-BS1)				Prepared: 01-Feb-15 Analyzed: 02-Feb-15						
Diesel Range Organics (C10-C28)	498	25.0	mg/kg	500		99.6	38-132			
Surrogate: o-Terphenyl	47.6		"	40.0		119	50-200			
Matrix Spike (1506001-MS1)				Source: P501083-01		Prepared: 01-Feb-15 Analyzed: 02-Feb-15				
Diesel Range Organics (C10-C28)	481	25.0	mg/kg	500	ND	96.3	38-132			
Surrogate: o-Terphenyl	46.0		"	40.0		115	50-200			
Matrix Spike Dup (1506001-MSD1)				Source: P501083-01		Prepared: 01-Feb-15 Analyzed: 02-Feb-15				
Diesel Range Organics (C10-C28)	475	25.0	mg/kg	500	ND	95.1	38-132	1.26	20	
Surrogate: o-Terphenyl	45.8		"	40.0		115	50-200			

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Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
03-Feb-15 12:42

Nonhalogenated Organics by 8015 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1506002 - Purge and Trap EPA 5030A										
Blank (1506002-BLK1)				Prepared: 01-Feb-15 Analyzed: 02-Feb-15						
Gasoline Range Organics (C6-C10)	ND	9.98	mg/kg							
Surrogate: 4-Bromochlorobenzene-FID	0.400		"	0.399		100	50-150			
LCS (1506002-BS1)				Prepared: 01-Feb-15 Analyzed: 02-Feb-15						
Gasoline Range Organics (C6-C10)	263	9.96	mg/kg	291		90.5	80-120			
Surrogate: 4-Bromochlorobenzene-FID	0.386		"	0.399		96.9	50-150			
Matrix Spike (1506002-MS1)				Source: P501083-01		Prepared: 01-Feb-15 Analyzed: 02-Feb-15				
Gasoline Range Organics (C6-C10)	272	9.99	mg/kg	292	ND	93.3	75-125			
Surrogate: 4-Bromochlorobenzene-FID	0.390		"	0.400		97.6	50-150			
Matrix Spike Dup (1506002-MSD1)				Source: P501083-01		Prepared: 01-Feb-15 Analyzed: 02-Feb-15				
Gasoline Range Organics (C6-C10)	283	10.0	mg/kg	292	ND	97.1	75-125	4.01	15	
Surrogate: 4-Bromochlorobenzene-FID	0.415		"	0.400		104	50-150			

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
03-Feb-15 12:42

Cation/Anion Analysis - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1506004 - Anion Extraction EPA 300.0										
Blank (1506004-BLK1)				Prepared & Analyzed: 02-Feb-15						
Chloride	ND	9.93	mg/kg							
LCS (1506004-BS1)				Prepared & Analyzed: 02-Feb-15						
Chloride	466	9.81	mg/kg	491		95.0	90-110			
Matrix Spike (1506004-MS1)				Source: P501082-01		Prepared & Analyzed: 02-Feb-15				
Chloride	691	9.85	mg/kg	492	220	95.5	80-120			
Matrix Spike Dup (1506004-MSD1)				Source: P501082-01		Prepared & Analyzed: 02-Feb-15				
Chloride	700	9.92	mg/kg	496	220	96.7	80-120	1.30	20	

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Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
03-Feb-15 12:42

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference

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Analytical Report

Report Summary

Client: BP America Production Co.
Chain Of Custody Number: 17982
Samples Received: 2/3/2015 3:28:00PM
Job Number: 03143-0424
Work Order: P502001
Project Name/Location: Boyd GC 1

Entire Report Reviewed By:

A handwritten signature in black ink, appearing to read 'Tim Cain', is written over a horizontal line.

Tim Cain, Laboratory Manager

Date: 2/5/15

The results in this report apply to the samples submitted to Envirotech's Analytical Laboratory and were analyzed in accordance with the chain of custody document supplied by you, the client, and as such are for your exclusive use only. The results in this report are based on the sample as received unless otherwise noted. Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc. If you have any questions regarding this analytical report, please don't hesitate to contact Envirotech's Laboratory Staff.



BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
05-Feb-15 11:26

Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Gas Tap N. Wall 5-pt 2'-7'	P502001-01A	Soil	02/03/15	02/03/15	Glass Jar, 4 oz.
Gas Tap E. Wall 5-pt 2'-7'	P502001-02A	Soil	02/03/15	02/03/15	Glass Jar, 4 oz.
Gas Tap S. Wall 5-pt 2'-7'	P502001-03A	Soil	02/03/15	02/03/15	Glass Jar, 4 oz.
Gas Tap W. Wall 5-pt 2'-7'	P502001-04A	Soil	02/03/15	02/03/15	Glass Jar, 4 oz.

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BP America Production Co.
PO Box 22024
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Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
05-Feb-15 11:26

Gas Tap N. Wall 5-pt 2'-7'
P502001-01 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.10	mg/kg	1	1506010	02/04/15	02/04/15	EPA 8021B	
Toluene	ND	0.10	mg/kg	1	1506010	02/04/15	02/04/15	EPA 8021B	
Ethylbenzene	ND	0.10	mg/kg	1	1506010	02/04/15	02/04/15	EPA 8021B	
p,m-Xylene	ND	0.20	mg/kg	1	1506010	02/04/15	02/04/15	EPA 8021B	
o-Xylene	0.15	0.10	mg/kg	1	1506010	02/04/15	02/04/15	EPA 8021B	
Total Xylenes	0.15	0.10	mg/kg	1	1506010	02/04/15	02/04/15	EPA 8021B	
Total BTEX	0.15	0.10	mg/kg	1	1506010	02/04/15	02/04/15	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		112 %		50-150	1506010	02/04/15	02/04/15	EPA 8021B	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	10.0	mg/kg	1	1506010	02/04/15	02/04/15	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	30.0	mg/kg	1	1506009	02/04/15	02/04/15	EPA 8015D	
<i>Surrogate: o-Terphenyl</i>		92.0 %		50-200	1506009	02/04/15	02/04/15	EPA 8015D	
<i>Surrogate: 4-Bromochlorobenzene-FID</i>		100 %		50-150	1506010	02/04/15	02/04/15	EPA 8015D	
Cation/Anion Analysis									
Chloride	237	9.82	mg/kg	1	1506011	02/04/15	02/04/15	EPA 300.0	

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BP America Production Co.
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Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
05-Feb-15 11:26

Gas Tap E. Wall 5-pt 2'-7'
P502001-02 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.10	mg/kg	1	1506010	02/04/15	02/04/15	EPA 8021B	
Toluene	ND	0.10	mg/kg	1	1506010	02/04/15	02/04/15	EPA 8021B	
Ethylbenzene	ND	0.10	mg/kg	1	1506010	02/04/15	02/04/15	EPA 8021B	
p,m-Xylene	ND	0.20	mg/kg	1	1506010	02/04/15	02/04/15	EPA 8021B	
o-Xylene	ND	0.10	mg/kg	1	1506010	02/04/15	02/04/15	EPA 8021B	
Total Xylenes	ND	0.10	mg/kg	1	1506010	02/04/15	02/04/15	EPA 8021B	
Total BTEX	ND	0.10	mg/kg	1	1506010	02/04/15	02/04/15	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		114 %		50-150	1506010	02/04/15	02/04/15	EPA 8021B	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	9.98	mg/kg	1	1506010	02/04/15	02/04/15	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	30.0	mg/kg	1	1506009	02/04/15	02/04/15	EPA 8015D	
Surrogate: o-Terphenyl		100 %		50-200	1506009	02/04/15	02/04/15	EPA 8015D	
Surrogate: 4-Bromochlorobenzene-FID		102 %		50-150	1506010	02/04/15	02/04/15	EPA 8015D	
Cation/Anion Analysis									
Chloride	226	9.98	mg/kg	1	1506011	02/04/15	02/04/15	EPA 300.0	

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
05-Feb-15 11:26

Gas Tap S. Wall 5-pt 2'-7'
P502001-03 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.10	mg/kg	1	1506010	02/04/15	02/04/15	EPA 8021B	
Toluene	ND	0.10	mg/kg	1	1506010	02/04/15	02/04/15	EPA 8021B	
Ethylbenzene	ND	0.10	mg/kg	1	1506010	02/04/15	02/04/15	EPA 8021B	
p,m-Xylene	ND	0.20	mg/kg	1	1506010	02/04/15	02/04/15	EPA 8021B	
o-Xylene	ND	0.10	mg/kg	1	1506010	02/04/15	02/04/15	EPA 8021B	
Total Xylenes	ND	0.10	mg/kg	1	1506010	02/04/15	02/04/15	EPA 8021B	
Total BTEX	ND	0.10	mg/kg	1	1506010	02/04/15	02/04/15	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		109 %		50-150	1506010	02/04/15	02/04/15	EPA 8021B	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	10.0	mg/kg	1	1506010	02/04/15	02/04/15	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	40.0	mg/kg	2	1506009	02/04/15	02/04/15	EPA 8015D	
Surrogate: o-Terphenyl		82.8 %		50-200	1506009	02/04/15	02/04/15	EPA 8015D	
Surrogate: 4-Bromochlorobenzene-FID		97.8 %		50-150	1506010	02/04/15	02/04/15	EPA 8015D	
Cation/Anion Analysis									
Chloride	44.2	9.85	mg/kg	1	1506011	02/04/15	02/04/15	EPA 300.0	

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PO Box 22024
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Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
05-Feb-15 11:26

Gas Tap W. Wall 5-pt 2'-7'
P502001-04 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.10	mg/kg	1	1506010	02/04/15	02/04/15	EPA 8021B	
Toluene	ND	0.10	mg/kg	1	1506010	02/04/15	02/04/15	EPA 8021B	
Ethylbenzene	ND	0.10	mg/kg	1	1506010	02/04/15	02/04/15	EPA 8021B	
p,m-Xylene	ND	0.20	mg/kg	1	1506010	02/04/15	02/04/15	EPA 8021B	
o-Xylene	ND	0.10	mg/kg	1	1506010	02/04/15	02/04/15	EPA 8021B	
Total Xylenes	ND	0.10	mg/kg	1	1506010	02/04/15	02/04/15	EPA 8021B	
Total BTEX	ND	0.10	mg/kg	1	1506010	02/04/15	02/04/15	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		114 %		50-150	1506010	02/04/15	02/04/15	EPA 8021B	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	9.99	mg/kg	1	1506010	02/04/15	02/04/15	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	35.0	mg/kg	1	1506009	02/04/15	02/04/15	EPA 8015D	
Surrogate: o-Terphenyl		93.8 %		50-200	1506009	02/04/15	02/04/15	EPA 8015D	
Surrogate: 4-Bromochlorobenzene-FID		102 %		50-150	1506010	02/04/15	02/04/15	EPA 8015D	
Cation/Anion Analysis									
Chloride	600	9.83	mg/kg	1	1506011	02/04/15	02/04/15	EPA 300.0	

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PO Box 22024
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Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
05-Feb-15 11:26

Volatile Organics by EPA 8021 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1506010 - Purge and Trap EPA 5030A

Blank (1506010-BLK1)

Prepared & Analyzed: 04-Feb-15

Benzene	ND	0.10	mg/kg							
Toluene	ND	0.10	"							
Ethylbenzene	ND	0.10	"							
p,m-Xylene	ND	0.20	"							
o-Xylene	ND	0.10	"							
Total Xylenes	ND	0.10	"							
Total BTEX	ND	0.10	"							
Surrogate: 4-Bromochlorobenzene-PID	0.449		"	0.399		113	50-150			

LCS (1506010-BS1)

Prepared & Analyzed: 04-Feb-15

Benzene	16.6	0.10	mg/kg	20.0		83.2	75-125			
Toluene	17.8	0.10	"	20.0		89.1	70-125			
Ethylbenzene	18.5	0.10	"	20.0		92.6	75-125			
p,m-Xylene	37.4	0.20	"	40.0		93.4	80-125			
o-Xylene	18.4	0.10	"	20.0		91.9	75-125			
Surrogate: 4-Bromochlorobenzene-PID	0.456		"	0.400		114	50-150			

Matrix Spike (1506010-MS1)

Source: P502001-01

Prepared & Analyzed: 04-Feb-15

Benzene	17.5	0.10	mg/kg	19.9	ND	87.7	75-125			
Toluene	19.0	0.10	"	19.9	ND	95.5	70-125			
Ethylbenzene	19.7	0.10	"	19.9	ND	98.9	75-125			
p,m-Xylene	39.9	0.20	"	39.9	ND	100	80-125			
o-Xylene	19.5	0.10	"	19.9	0.15	97.3	75-125			
Surrogate: 4-Bromochlorobenzene-PID	0.442		"	0.399		111	50-150			

Matrix Spike Dup (1506010-MSD1)

Source: P502001-01

Prepared & Analyzed: 04-Feb-15

Benzene	17.1	0.10	mg/kg	19.9	ND	85.8	75-125	2.30	15	
Toluene	18.4	0.10	"	19.9	ND	92.4	70-125	3.25	15	
Ethylbenzene	19.2	0.10	"	19.9	ND	96.2	75-125	2.79	15	
p,m-Xylene	38.6	0.20	"	39.8	ND	97.0	80-125	3.18	15	
o-Xylene	19.0	0.10	"	19.9	0.15	94.6	75-125	2.82	15	
Surrogate: 4-Bromochlorobenzene-PID	0.436		"	0.398		109	50-150			

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
05-Feb-15 11:26

Nonhalogenated Organics by 8015 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1506009 - DRO Extraction EPA 3550M										
Blank (1506009-BLK1)				Prepared & Analyzed: 04-Feb-15						
Diesel Range Organics (C10-C28)	ND	25.1	mg/kg							
Surrogate: o-Terphenyl	43.0		"	40.1		107	50-200			
LCS (1506009-BS1)				Prepared & Analyzed: 04-Feb-15						
Diesel Range Organics (C10-C28)	480	25.0	mg/kg	501		95.9	38-132			
Surrogate: o-Terphenyl	41.9		"	40.1		105	50-200			
Matrix Spike (1506009-MS1)				Source: P502001-01		Prepared & Analyzed: 04-Feb-15				
Diesel Range Organics (C10-C28)	467	30.0	mg/kg	500	ND	93.4	38-132			
Surrogate: o-Terphenyl	44.0		"	40.0		110	50-200			
Matrix Spike Dup (1506009-MSD1)				Source: P502001-01		Prepared & Analyzed: 04-Feb-15				
Diesel Range Organics (C10-C28)	454	24.9	mg/kg	498	ND	91.0	38-132	2.87	20	
Surrogate: o-Terphenyl	38.0		"	39.9		95.4	50-200			

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
05-Feb-15 11:26

Nonhalogenated Organics by 8015 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1506010 - Purge and Trap EPA 5030A										
Blank (1506010-BLK1)				Prepared & Analyzed: 04-Feb-15						
Gasoline Range Organics (C6-C10)	ND	9.97	mg/kg							
Surrogate: 4-Bromochlorobenzene-FID	0.404		"	0.399		101	50-150			
LCS (1506010-BS1)				Prepared & Analyzed: 04-Feb-15						
Gasoline Range Organics (C6-C10)	254	10.0	mg/kg	292		87.0	80-120			
Surrogate: 4-Bromochlorobenzene-FID	0.409		"	0.400		102	50-150			
Matrix Spike (1506010-MS1)				Source: P502001-01		Prepared & Analyzed: 04-Feb-15				
Gasoline Range Organics (C6-C10)	269	9.96	mg/kg	291	ND	92.6	75-125			
Surrogate: 4-Bromochlorobenzene-FID	0.396		"	0.399		99.4	50-150			
Matrix Spike Dup (1506010-MSD1)				Source: P502001-01		Prepared & Analyzed: 04-Feb-15				
Gasoline Range Organics (C6-C10)	261	9.96	mg/kg	291	ND	89.7	75-125	3.23	15	
Surrogate: 4-Bromochlorobenzene-FID	0.391		"	0.398		98.1	50-150			

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
05-Feb-15 11:26

Cation/Anion Analysis - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1506011 - Anion Extraction EPA 300.0										
Blank (1506011-BLK1)				Prepared & Analyzed: 04-Feb-15						
Chloride	ND	9.89	mg/kg							
LCS (1506011-BS1)				Prepared & Analyzed: 04-Feb-15						
Chloride	475	9.91	mg/kg	496		95.9	90-110			
Matrix Spike (1506011-MS1)				Source: P502001-01 Prepared & Analyzed: 04-Feb-15						
Chloride	748	9.93	mg/kg	496	237	103	80-120			
Matrix Spike Dup (1506011-MSD1)				Source: P502001-01 Prepared & Analyzed: 04-Feb-15						
Chloride	744	9.89	mg/kg	495	237	102	80-120	0.611	20	

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
05-Feb-15 11:26

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference

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Analytical Report

Report Summary

Client: BP America Production Co.
Chain Of Custody Number: 17738
Samples Received: 2/4/2015 10:20:00AM
Job Number: 03143-0424
Work Order: P502007
Project Name/Location: Boyd GC 1

Entire Report Reviewed By:

A handwritten signature in black ink, appearing to read 'Tim Cain', is written over a horizontal line.

Date: 2/6/15

Tim Cain, Laboratory Manager

The results in this report apply to the samples submitted to Envirotech's Analytical Laboratory and were analyzed in accordance with the chain of custody document supplied by you, the client, and as such are for your exclusive use only. The results in this report are based on the sample as received unless otherwise noted. Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc. If you have any questions regarding this analytical report, please don't hesitate to contact Envirotech's Laboratory Staff.



BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
06-Feb-15 11:02

Analytical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Meter House E. Wall 5-pt 2'-9'	P502007-01A	Soil	02/04/15	02/04/15	Glass Jar, 4 oz.
Meter House S. Wall 5-pt 2'-9'	P502007-02A	Soil	02/04/15	02/04/15	Glass Jar, 4 oz.
Meter House N. Wall 5-pt 2'-9'	P502007-03A	Soil	02/04/15	02/04/15	Glass Jar, 4 oz.

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
06-Feb-15 11:02

Meter House E. Wall 5-pt 2'-9'
P502007-01 (Solid)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Volatile Organics by EPA 8021										
Benzene	ND	0.10	mg/kg	1		1506010	02/04/15	02/05/15	EPA 8021B	
Toluene	ND	0.10	mg/kg	1		1506010	02/04/15	02/05/15	EPA 8021B	
Ethylbenzene	ND	0.10	mg/kg	1		1506010	02/04/15	02/05/15	EPA 8021B	
p,m-Xylene	0.58	0.20	mg/kg	1		1506010	02/04/15	02/05/15	EPA 8021B	
o-Xylene	0.16	0.10	mg/kg	1		1506010	02/04/15	02/05/15	EPA 8021B	
Total Xylenes	0.74	0.10	mg/kg	1		1506010	02/04/15	02/05/15	EPA 8021B	
Total BTEX	0.74	0.10	mg/kg	1		1506010	02/04/15	02/05/15	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		112 %		50-150		1506010	02/04/15	02/05/15	EPA 8021B	
Nonhalogenated Organics by 8015										
Gasoline Range Organics (C6-C10)	32.7	9.99	mg/kg	1		1506010	02/04/15	02/05/15	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	35.0	mg/kg	1		1506009	02/04/15	02/05/15	EPA 8015D	
Surrogate: o-Terphenyl		85.2 %		50-200		1506009	02/04/15	02/05/15	EPA 8015D	
Surrogate: 4-Bromochlorobenzene-FID		105 %		50-150		1506010	02/04/15	02/05/15	EPA 8015D	
Cation/Anion Analysis										
Chloride	24.0	9.86	mg/kg	1		1506012	02/05/15	02/05/15	EPA 300.0	

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
06-Feb-15 11:02

Meter House S. Wall 5-pt 2'-9'
P502007-02 (Solid)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Volatile Organics by EPA 8021										
Benzene	ND	0.10	mg/kg	1		1506010	02/04/15	02/05/15	EPA 8021B	
Toluene	ND	0.10	mg/kg	1		1506010	02/04/15	02/05/15	EPA 8021B	
Ethylbenzene	ND	0.10	mg/kg	1		1506010	02/04/15	02/05/15	EPA 8021B	
p,m-Xylene	ND	0.20	mg/kg	1		1506010	02/04/15	02/05/15	EPA 8021B	
o-Xylene	ND	0.10	mg/kg	1		1506010	02/04/15	02/05/15	EPA 8021B	
Total Xylenes	ND	0.10	mg/kg	1		1506010	02/04/15	02/05/15	EPA 8021B	
Total BTEX	ND	0.10	mg/kg	1		1506010	02/04/15	02/05/15	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		113 %		50-150		1506010	02/04/15	02/05/15	EPA 8021B	
Nonhalogenated Organics by 8015										
Gasoline Range Organics (C6-C10)	ND	10.0	mg/kg	1		1506010	02/04/15	02/05/15	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	35.0	mg/kg	1		1506009	02/04/15	02/05/15	EPA 8015D	
Surrogate: o-Terphenyl		88.6 %		50-200		1506009	02/04/15	02/05/15	EPA 8015D	
Surrogate: 4-Bromochlorobenzene-FID		102 %		50-150		1506010	02/04/15	02/05/15	EPA 8015D	
Cation/Anion Analysis										
Chloride	45.6	9.87	mg/kg	1		1506012	02/05/15	02/05/15	EPA 300.0	

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
06-Feb-15 11:02

Meter House N. Wall 5-pt 2'-9'
P502007-03 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.10	mg/kg	1	1506010	02/04/15	02/05/15	EPA 8021B	
Toluene	ND	0.10	mg/kg	1	1506010	02/04/15	02/05/15	EPA 8021B	
Ethylbenzene	ND	0.10	mg/kg	1	1506010	02/04/15	02/05/15	EPA 8021B	
p,m-Xylene	ND	0.20	mg/kg	1	1506010	02/04/15	02/05/15	EPA 8021B	
o-Xylene	ND	0.10	mg/kg	1	1506010	02/04/15	02/05/15	EPA 8021B	
Total Xylenes	ND	0.10	mg/kg	1	1506010	02/04/15	02/05/15	EPA 8021B	
Total BTEX	ND	0.10	mg/kg	1	1506010	02/04/15	02/05/15	EPA 8021B	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		114 %		50-150	1506010	02/04/15	02/05/15	EPA 8021B	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	9.99	mg/kg	1	1506010	02/04/15	02/05/15	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	35.0	mg/kg	1	1506009	02/04/15	02/05/15	EPA 8015D	
<i>Surrogate: o-Terphenyl</i>		93.3 %		50-200	1506009	02/04/15	02/05/15	EPA 8015D	
<i>Surrogate: 4-Bromochlorobenzene-FID</i>		102 %		50-150	1506010	02/04/15	02/05/15	EPA 8015D	
Cation/Anion Analysis									
Chloride	24.2	9.99	mg/kg	1	1506012	02/05/15	02/05/15	EPA 300.0	

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laboratory@envirotech-inc.com



BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
06-Feb-15 11:02

Volatile Organics by EPA 8021 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1506010 - Purge and Trap EPA 5030A

Blank (1506010-BLK1)

Prepared & Analyzed: 04-Feb-15

Benzene	ND	0.10	mg/kg							
Toluene	ND	0.10	"							
Ethylbenzene	ND	0.10	"							
p,m-Xylene	ND	0.20	"							
o-Xylene	ND	0.10	"							
Total Xylenes	ND	0.10	"							
Total BTEX	ND	0.10	"							

Surrogate: 4-Bromochlorobenzene-PID 0.449 " 0.399 113 50-150

LCS (1506010-BS1)

Prepared & Analyzed: 04-Feb-15

Benzene	16.6	0.10	mg/kg	20.0		83.2	75-125			
Toluene	17.8	0.10	"	20.0		89.1	70-125			
Ethylbenzene	18.5	0.10	"	20.0		92.6	75-125			
p,m-Xylene	37.4	0.20	"	40.0		93.4	80-125			
o-Xylene	18.4	0.10	"	20.0		91.9	75-125			

Surrogate: 4-Bromochlorobenzene-PID 0.456 " 0.400 114 50-150

Matrix Spike (1506010-MS1)

Source: P502001-01

Prepared & Analyzed: 04-Feb-15

Benzene	17.5	0.10	mg/kg	19.9	ND	87.7	75-125			
Toluene	19.0	0.10	"	19.9	ND	95.5	70-125			
Ethylbenzene	19.7	0.10	"	19.9	ND	98.9	75-125			
p,m-Xylene	39.9	0.20	"	39.9	ND	100	80-125			
o-Xylene	19.5	0.10	"	19.9	0.15	97.3	75-125			

Surrogate: 4-Bromochlorobenzene-PID 0.442 " 0.399 111 50-150

Matrix Spike Dup (1506010-MSD1)

Source: P502001-01

Prepared & Analyzed: 04-Feb-15

Benzene	17.1	0.10	mg/kg	19.9	ND	85.8	75-125	2.30	15	
Toluene	18.4	0.10	"	19.9	ND	92.4	70-125	3.25	15	
Ethylbenzene	19.2	0.10	"	19.9	ND	96.2	75-125	2.79	15	
p,m-Xylene	38.6	0.20	"	39.8	ND	97.0	80-125	3.18	15	
o-Xylene	19.0	0.10	"	19.9	0.15	94.6	75-125	2.82	15	

Surrogate: 4-Bromochlorobenzene-PID 0.436 " 0.398 109 50-150

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
06-Feb-15 11:02

Nonhalogenated Organics by 8015 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1506009 - DRO Extraction EPA 3550M										
Blank (1506009-BLK1)				Prepared & Analyzed: 04-Feb-15						
Diesel Range Organics (C10-C28)	ND	25.1	mg/kg							
Surrogate: o-Terphenyl	43.0		"	40.1		107	50-200			
LCS (1506009-BS1)				Prepared & Analyzed: 04-Feb-15						
Diesel Range Organics (C10-C28)	480	25.0	mg/kg	501		95.9	38-132			
Surrogate: o-Terphenyl	41.9		"	40.1		105	50-200			
Matrix Spike (1506009-MS1)				Source: P502001-01		Prepared & Analyzed: 04-Feb-15				
Diesel Range Organics (C10-C28)	467	30.0	mg/kg	500	ND	93.4	38-132			
Surrogate: o-Terphenyl	44.0		"	40.0		110	50-200			
Matrix Spike Dup (1506009-MSD1)				Source: P502001-01		Prepared & Analyzed: 04-Feb-15				
Diesel Range Organics (C10-C28)	454	24.9	mg/kg	498	ND	91.0	38-132	2.87	20	
Surrogate: o-Terphenyl	38.0		"	39.9		95.4	50-200			

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Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
06-Feb-15 11:02

Nonhalogenated Organics by 8015 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1506010 - Purge and Trap EPA 5030A										
Blank (1506010-BLK1)				Prepared & Analyzed: 04-Feb-15						
Gasoline Range Organics (C6-C10)	ND	9.97	mg/kg							
Surrogate: 4-Bromochlorobenzene-FID	0.404		"	0.399		101	50-150			
LCS (1506010-BS1)				Prepared & Analyzed: 04-Feb-15						
Gasoline Range Organics (C6-C10)	254	10.0	mg/kg	292		87.0	80-120			
Surrogate: 4-Bromochlorobenzene-FID	0.409		"	0.400		102	50-150			
Matrix Spike (1506010-MS1)				Source: P502001-01		Prepared & Analyzed: 04-Feb-15				
Gasoline Range Organics (C6-C10)	269	9.96	mg/kg	291	ND	92.6	75-125			
Surrogate: 4-Bromochlorobenzene-FID	0.396		"	0.399		99.4	50-150			
Matrix Spike Dup (1506010-MSD1)				Source: P502001-01		Prepared & Analyzed: 04-Feb-15				
Gasoline Range Organics (C6-C10)	261	9.96	mg/kg	291	ND	89.7	75-125	3.23	15	
Surrogate: 4-Bromochlorobenzene-FID	0.391		"	0.398		98.1	50-150			

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
06-Feb-15 11:02

Cation/Anion Analysis - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1506012 - Anion Extraction EPA 300.0										
Blank (1506012-BLK1)				Prepared & Analyzed: 05-Feb-15						
Chloride	ND	9.94	mg/kg							
LCS (1506012-BS1)				Prepared & Analyzed: 05-Feb-15						
Chloride	466	9.86	mg/kg	493		94.6	90-110			
Matrix Spike (1506012-MS1)				Source: P502007-01		Prepared & Analyzed: 05-Feb-15				
Chloride	504	9.97	mg/kg	498	24.0	96.4	80-120			
Matrix Spike Dup (1506012-MSD1)				Source: P502007-01		Prepared & Analyzed: 05-Feb-15				
Chloride	502	9.90	mg/kg	495	24.0	96.5	80-120	0.518	20	

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BP America Production Co.
PO Box 22024
Tulsa OK, 74121-2024

Project Name: Boyd GC 1
Project Number: 03143-0424
Project Manager: BP America Production Co.

Reported:
06-Feb-15 11:02

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference

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laboratory@envirotech-inc.com

CHAIN OF CUSTODY RECORD

17738

Client: BP AMERICA		Project Name / Location: Boxd GC 1		ANALYSIS / PARAMETERS																
Email results to: JEFF BEACE		Sampler Name: J. Blagg																		
Client Phone No.: 505-320-1183		Client No.: 03143-0424																		
Sample No./ Identification	Sample Date	Sample Time	Lab No.	No./Volume of Containers	Preservative		TPH (Method 8015)	BTEX (Method 8021)	VOC (Method 8260)	PCRA 8 Metals	Cation / Anion	RCI	TCLP with H/P	CO Table 910-1	TPH (418.1)	CHLORIDE			Sample Cool	Sample Intact
					HNO ₃	HCl														
METER House E. wall 5-pt 2'-9"	3/4/2015	0855	P502007-01	1 x 4oz			x	x								x			✓	✓
METER House S. wall 5-pt 2'-9"	"	0901	-02	"			x	x								x			✓	✓
METER House N. wall 5-pt 2'-9"	"	0905	-03	"			x	x								x			✓	✓
RUSH ASAP Bill BP Parker: ZEVHOIREME																				
Relinquished by: (Signature) <i>[Signature]</i>				Date 3/4/2015	Time 1020	Received by: (Signature) <i>[Signature]</i>				Date 2/4/15	Time 1020									
Relinquished by: (Signature) <i>[Signature]</i>						Received by: (Signature) <i>[Signature]</i>														
Sample Matrix Soil ☒ Solid ☐ Sludge ☐ Aqueous ☐ Other ☐																				
☐ Sample(s) dropped off after hours to secure drop off area.																				
				 9.0 8.1 7.8																
5795 US Highway 64 • Farmington, NM 87401 • 505-632-0615 • Three Springs • 65 Mercado Street, Suite 115, Durango, CO 81301 • laboratory@envirotech-inc.com																				

san juan reproduction 578-129

BP America: Boyd GC 1

(M) Sec 8 – T31N – R10W

API: 30-045-10851

San Juan County, New Mexico

Soil Remediation NMOCD Form C-138

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
720 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

Solids

Form C-138
Revised March 12, 2007

*Surface Waste Management Facility Operator
and Generator shall maintain and make this
documentation available for Division inspection.

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. Generator Name and Address:	2/5/15-510cy 2/4/15-370cy 1/28/15-800cy 1/27/15-400cy 1/24/15-400cy 1/23/15-370cy
BP America Production Co. * 200 Energy Court * Farmington, NM 87401	
2. Originating Site: Boyd Gas Com 1 - SW/4 Section 8, T31N, R10W	
3. Location of Material (Street Address, City, State or ULSTR): Boyd Gas Com 1 - SW/4 Section 8, T31N, R10W	
or Physical Address: 200 Energy Court, Farmington, NM 87401	1/22/15-440cy 1/21/15-200cy 1/20/15-330cy
4. Source and Description of Waste: Hydrocarbon impacted soil due to condensate release	
Estimated Volume 500 yd ³ / bbls Known Volume (to be entered by the operator at the end of the haul) 300 yd ³ bbls	2/16/15-480cy
5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS	
I, Jeff Peace, representative or authorized agent for BP America Production Company do hereby	
Generator Signature	
certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification)	
☒ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed exempt waste. Operator Use Only: Waste Acceptance Frequency ☒ Monthly ☐ Weekly ☐ Per Load	
☐ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous (check the appropriate items)	
☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☒ Process Knowledge ☐ Other (Provide description in)	
GENERATOR 19.1536.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS	
I, Jeff Peace, representative for BP America do hereby certify that	
Representative/Agent Signature	
representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that results have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.	
6. Transporter: F&M	

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: JFJ Landfarm) / Industrial Ecosystem, Inc. Permit No. NM 01-0010B

Address of Facility: # 49 CR 3150 Aztec, NM 87410

Method of Treatment and/or Disposal:

☐ Evaporation ☐ Injection ☐ Treating Plant ☒ Landfarm ☐ Landfill ☐ Other

Waste Acceptance Status:

☒ APPROVED

☐ DENIED (Must Be Maintained As Permanent Record)

PRINT NAME: K Selph

TITLE: Clerk DATE: 1/19/15

SIGNATURE: K Selph
Surface Waste Management Facility Authorized Agent

TELEPHON 505-632-1782 FAX NO.: 505-632-1876 or 505-334-1003

CL-200
PH-8