

Analytical Report

Report Summary

Client: BP America Production Co.

Samples Received: 6/26/2020

Job Number: 03143-0424

Work Order: P006088

Project Name/Location: Bradenhead

Report Reviewed By:



Date: 7/6/20

Walter Hinchman, Laboratory Director



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

Project Name: Bradenhead
Project Number: 03143-0424
Project Manager: Sabre Beebe

Reported:
07/06/20 09:50

Sample Summary

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Howell 2 API#3004509703 Intermediate	P006088-01A	Aqueous	06/25/20	06/26/20	Poly 500mL

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

 Project Name: Bradenhead
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 Project Manager: Sabre Beebe

Reported:
 07/06/20 09:50

**Howell 2 API#3004509703 Intermediate
 P006088-01 (Water)**

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Wet Chemistry by 9050A/2510B	uS/cm	uS/cm				Batch: 2027003
Specific Conductance (@ 25 C)	11700	10.0	1	06/29/20	06/29/20	
Wet Chem/Gravimetric by SM2540C	mg/L	mg/L				Batch: 2026018
Total Dissolved Solids	9390	25.0	1	06/26/20	06/30/20	
Wet Chemistry by 9040C/4500H+B	pH Units	pH Units				Batch: 2027008
pH @25°C	11.4		1	06/30/20 08:03	06/30/20 13:01	H5
Wet Chemistry by SM2320B	mg/L	mg/L				Batch: 2027011
Total Alkalinity (as CaCO ₃ at pH 4.5)	272	10.0	1	06/30/20	06/30/20	
Dissolved Metals by EPA 6010C	N/A	N/A				Batch: 2027002
Sodium Absorption Ratio	64.2		1	06/29/20	06/29/20	
Calcium	147	10.0	10	06/26/20	06/29/20	
Iron	ND	20.0	10	06/26/20	06/29/20	
Magnesium	ND	10.0	10	06/26/20	06/29/20	
Potassium	30.6	10.0	10	06/26/20	06/29/20	
Sodium	2830	100	50	06/26/20	06/29/20	
Anions by EPA 300.0/9056A	mg/L	mg/L				Batch: 2026031
Fluoride	ND	5.00	20	06/26/20	06/29/20	
Chloride	166	40.0	20	06/26/20	06/29/20	
Nitrite-N	ND	5.00	20	06/26/20 09:49	06/29/20 16:24	H4
Nitrate-N	ND	5.00	20	06/26/20 09:49	06/29/20 16:24	H4
o-Phosphate-P	ND	5.00	20	06/26/20 09:49	06/29/20 16:24	H4
Sulfate	6190	40.0	20	06/26/20	06/29/20	

BP America Production Co.	Project Name:	Bradenhead	Reported: 07/06/20 09:50
PO Box 22024	Project Number:	03143-0424	
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Wet Chemistry by 9050A/2510B - Quality Control

Analyte	Result	Reporting Limit	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
	uS/cm	uS/cm		uS/cm					

Blank (2027003-BLK1)

Prepared & Analyzed: 06/29/20 1

Specific Conductance (@ 25 C)

ND

10.0

LCS (2027003-BS1)

Prepared & Analyzed: 06/29/20 1

Specific Conductance (@ 25 C)

1420

10.0

1410

101

98-102

Duplicate (2027003-DUP1)
Source: P006074-02

Prepared & Analyzed: 06/29/20 1

Specific Conductance (@ 25 C)

150

10.0

154

2.57

20

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Wet Chem/Gravimetric by SM2540C - Quality Control

Analyte	Result mg/L	Reporting Limit mg/L	Spike Level	Source Result mg/L	%REC	%REC Limits	RPD	RPD Limit	Notes
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Blank (2026018-BLK1)

Prepared: 06/25/20 1 Analyzed: 06/30/20 1

Total Dissolved Solids	ND	10.0							
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LCS (2026018-BS1)

Prepared: 06/25/20 1 Analyzed: 06/30/20 1

Total Dissolved Solids	114	10.0	100		114	55-134			
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LCS Dup (2026018-BSD1)

Prepared: 06/25/20 1 Analyzed: 06/30/20 1

Total Dissolved Solids	115	10.0	100		115	55-134	0.873	5	
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Tulsa OK, 74121-2024	Project Manager:	Sabre Beebe	07/06/20 09:50

Wet Chemistry by 9040C/4500H+B - Quality Control

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

LCS (2027008-BS1)

Prepared: 06/30/20 0 Analyzed: 06/30/20 1

pH	8.00	8.00	100	98.75-101.25
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Duplicate (2027008-DUP1)
Source: P006074-01

Prepared: 06/30/20 0 Analyzed: 06/30/20 1

pH	9.10	9.11	0.110	20
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Tulsa OK, 74121-2024	Project Manager:	Sabre Beebe	07/06/20 09:50

Wet Chemistry by SM2320B - Quality Control

Analyte	Result mg/L	Reporting Limit mg/L	Spike Level	Source Result mg/L	%REC	%REC Limits	RPD	RPD Limit	Notes
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LCS (2027011-BS1)

Prepared & Analyzed: 06/30/20 1

Total Alkalinity (as CaCO ₃ at pH 4.5)	274	10.0	250		110	70-130			
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LCS Dup (2027011-BSD1)

Prepared & Analyzed: 06/30/20 1

Total Alkalinity (as CaCO ₃ at pH 4.5)	270	10.0	250		108	70-130	1.47	20	
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BP America Production Co.	Project Name: Bradenhead	
PO Box 22024	Project Number: 03143-0424	Reported:
Tulsa OK, 74121-2024	Project Manager: Sabre Beebe	07/06/20 09:50

Dissolved Metals by EPA 6010C - Quality Control

Analyte	Result	Reporting Limit	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
	mg/L	mg/L		mg/L					

Blank (2026032-BLK1)

Prepared: 06/26/20 1 Analyzed: 06/29/20 1

Calcium	ND	1.00
Iron	ND	2.00
Magnesium	ND	1.00
Potassium	ND	1.00
Sodium	ND	2.00

LCS (2026032-BS1)

Prepared: 06/26/20 1 Analyzed: 06/29/20 1

Calcium	51.3	1.00	50.0	103	80-120
Iron	102	2.00	100	102	80-120
Magnesium	49.3	1.00	50.0	98.7	80-120
Potassium	5.02	1.00	5.00	100	80-120
Sodium	18.1	2.00	20.0	90.5	80-120

Matrix Spike (2026032-MS1)

Source: P006074-01

Prepared: 06/26/20 1 Analyzed: 06/29/20 1

Calcium	55.5	1.00	50.0	1.51	108	75-125
Iron	112	2.00	100	2.05	110	75-125
Magnesium	50.7	1.00	50.0	ND	101	75-125
Potassium	5.72	1.00	5.00	ND	114	75-125
Sodium	93.3	2.00	20.0	70.8	113	75-125

Matrix Spike Dup (2026032-MSD1)

Source: P006074-01

Prepared: 06/26/20 1 Analyzed: 06/29/20 1

Calcium	52.5	1.00	50.0	1.51	102	75-125	5.43	20
Iron	108	2.00	100	2.05	106	75-125	3.00	20
Magnesium	50.6	1.00	50.0	ND	101	75-125	0.296	20
Potassium	5.95	1.00	5.00	ND	119	75-125	3.86	20
Sodium	93.6	2.00	20.0	70.8	114	75-125	0.278	20

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Anions by EPA 300.0/9056A - Quality Control

Analyte	Result	Reporting Limit	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
	mg/L	mg/L		mg/L					

Blank (2026031-BLK1)

Prepared: 06/26/20 0 Analyzed: 06/29/20 1

Fluoride	ND	0.250
Chloride	ND	2.00
Nitrite-N	ND	0.250
Nitrate-N	ND	0.250
o-Phosphate-P	ND	0.250
Sulfate	ND	2.00

LCS (2026031-BS1)

Prepared: 06/26/20 0 Analyzed: 06/29/20 1

Fluoride	2.65	0.250	2.50	106	90-110
Chloride	25.1	2.00	25.0	100	90-110
Nitrite-N	2.50	0.250	2.50	99.9	90-110
Nitrate-N	2.62	0.250	2.50	105	90-110
o-Phosphate-P	13.0	0.250	12.5	104	90-110
Sulfate	25.2	2.00	25.0	101	90-110

LCS Dup (2026031-BS1)

Prepared: 06/26/20 0 Analyzed: 06/29/20 1

Fluoride	2.65	0.250	2.50	106	90-110	0.0754	20
Chloride	25.1	2.00	25.0	101	90-110	0.0716	20
Nitrite-N	2.56	0.250	2.50	102	90-110	2.53	20
Nitrate-N	2.62	0.250	2.50	105	90-110	0.00	20
o-Phosphate-P	13.0	0.250	12.5	104	90-110	0.0693	20
Sulfate	25.0	2.00	25.0	100	90-110	0.665	20

QC Summary Report Comment:

Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.

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Notes and Definitions

H5 pH is specified to be performed in the field within 15 minutes of sampling. The sample was performed as quickly as possible.

H4 Initial analysis was within holding time. Re-analysis was past holding time.

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

RPD Relative Percent Difference

** Methods marked with ** are non-accredited methods.

Soil data is reported on an "as received" weight basis, unless reported otherwise.



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