## NMOCD REC'D 10/12/20

# **Analytical Report**

### **Report Summary**

Client: BP America Production Co. Samples Received: 6/29/2020 Job Number: 03143-0424

Work Order: P006091

Project Name/Location: Bradenhead

Report Reviewed By:	Walter Himfunn	Date:	7/7/20	
,	Walter Hinchman, Laboratory Director	_		



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BP America Production Co. PO Box 22024

Tulsa OK, 74121-2024

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

Sabre Beebe

Reported: 07/07/20 12:05

## **Sample Summary**

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Heath G -C K1 #3004522197	P006091-01A	Aqueous	06/26/20	06/29/20	Poly 500mL





BP America Production Co. Project Name: Bradenhead PO Box 22024 Project Number: 03143-0424 Reported: Tulsa OK, 74121-2024 07/07/20 12:05 Project Manager: Sabre Beebe

### Heath G -C K1 #3004522197 P006091-01 (Water)

		Reporting					
Analyte	Result	Limit	Dilution	Prepared	Analyzed	Notes	
Wet Chem/Gravimetric by SM2540C	mg/L	mg/L				Batch:	2026018
Total Dissolved Solids	10300	50.0	1	06/30/20	07/01/20		
Wet Chemistry by 9040C/4500H+B	pH Units	pH Units				Batch:	2027008
рН @25°C	11.2		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 CaCO3 at pH 4.5)	337	10.0	1	06/30/20	06/30/20		
Wet Chemistry by 9050A/2510B	uS/cm	uS/cm				Batch:	2027003
Specific Conductance (@ 25 C)	13700	10.0	1	06/29/20	06/29/20		
Dissolved Metals by EPA 6010C	mg/L	mg/L				Batch:	2027007
Calcium	6.36	1.00	1	06/30/20	06/30/20		
Iron	ND	2.00	1	06/30/20	06/30/20		
Magnesium	ND	1.00	1	06/30/20	06/30/20		
Potassium	13.9	1.00	1	06/30/20	06/30/20		
Sodium	3490	100	50	06/30/20	07/01/20		
Sodium Absorption Ratio	381		1	07/01/20	07/01/20		
Anions by EPA 300.0/9056A	mg/L	mg/L				Batch:	2027004
Fluoride	ND	5.00	20	06/29/20	06/29/20		
Chloride	ND	40.0	20	06/29/20	06/29/20		
Nitrite-N	ND	5.00	20	06/29/20 14:18	06/29/20 18:46		H1
Nitrate-N	ND	5.00	20	06/29/20 14:18	06/29/20 18:46		H1
o-Phosphate-P	ND	5.00	20	06/29/20 14:18	06/29/20 18:46		H1
Sulfate	6960	40.0	20	06/29/20	06/29/20		





BP America Production Co. Project Name: Bradenhead PO Box 22024 03143-0424 Project Number: Reported: Tulsa OK, 74121-2024 07/07/20 12:05 Project Manager: Sabre Beebe

Wet Chem/Gravime	etric by SM25	40C - Quality	v Control

Analyte	Result	Reporting Limit	Spike Level	Source Result	REC	REC Limits	RPD	RPD Limit	Notes
	mg/L	mg/L	mg/L	mg/L	%	%	%	%	
Blank (2026018-BLK1)							Prepared	: 06/25/20 1 A	Analyzed: 06/30/20 1
Total Dissolved Solids	ND	10.0							
LCS (2026018-BS1)							Prepared	: 06/25/20 1 A	Analyzed: 06/30/20 1
Total Dissolved Solids	114	10.0	100		114	55-134			
LCS Dup (2026018-BSD1)							Prepared	: 06/25/20 1 A	Analyzed: 06/30/20 1
Total Dissolved Solids	115	10.0	100		115	55-134	0.873	5	



BP America Production Co. Project Name: Bradenhead PO Box 22024 03143-0424 Project Number: Reported: Tulsa OK, 74121-2024 07/07/20 12:05 Project Manager: Sabre Beebe

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	pH Units	%	%	%	%	

LCS (2027008-BS1)					Prepared	l: 06/30/20 0 Analyzed: 06/	30/20 1
pH	8.00	8.00	100	98.75-101.25			_
<b>Duplicate (2027008-DUP1)</b>			Source:	P006074-01	Prepared	l: 06/30/20 0 Analyzed: 06/	30/20 1
pH	9.10	9.11			0.110	20	



BP America Production Co. Project Name: Bradenhead PO Box 22024 03143-0424 Project Number: Reported: Tulsa OK, 74121-2024 07/07/20 12:05 Project Manager: Sabre Beebe

Wet Chemistry by	SM2320B -	Quality (	Control
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Analyte	Result	Reporting Limit	Spike Level	Source Result	REC	REC Limits	RPD	RPD Limit	Notes	
	mg/L	mg/L	mg/L	mg/L	%	%	%	%		

LCS (2027011-BS1)						Prepared	& Analyzed: 06/30/20 1
Total Alkalinity (as CaCO3 at pH 4.5)	274	10.0	250	110	70-130		
LCS Dup (2027011-BSD1)						Prepared	& Analyzed: 06/30/20 1
Total Alkalinity (as CaCO3 at pH 4.5)	270	10.0	250	108	70-130	1.47	20



ND

Specific Conductance (@ 25 C)

BP America Production Co. Project Name: Bradenhead PO Box 22024 Project Number: 03143-0424 Reported: 07/07/20 12:05 Tulsa OK, 74121-2024 Project Manager: Sabre Beebe

Wet Chemistry by 9050A/2510B - Quality Control

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

Blank (2027003-BLK1) Prepared & Analyzed: 06/29/20 1

LCS (2027003-BS1) Prepared & Analyzed: 06/29/20 1

10.0

1420 1410 101 98-102 Specific Conductance (@ 25 C) 10.0

**Duplicate (2027003-DUP1)** Source: P006074-02 Prepared & Analyzed: 06/29/20 1 154 2.57 20 Specific Conductance (@ 25 C) 150 10.0



BP America Production Co.

Project Name:
Bradenhead

PO Box 22024
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03143-0424
Reported:
Tulsa OK, 74121-2024
Project Manager:
Sabre Beebe
07/07/20 12:05

Dissolved	Metals by	EPA 6010C -	<b>Ouality Control</b>

Dissolved Metals by EPA 6010C - Quality Control													
		Reporting	Spike	Source		REC		RPD					
Analyte	Result	Limit	Level	Result	REC	Limits	RPD	Limit	Notes				
	mg/L	mg/L	mg/L	mg/L	%	%	%	%					
Blank (2027007-BLK1)							Prepared	: 06/30/20 0 A	analyzed: 06/30/20 1				
Calcium	ND	1.00											
Iron	ND	2.00											
Magnesium	ND	1.00											
Potassium	ND	1.00											
Sodium	ND	2.00											
LCS (2027007-BS1)							Prepared	: 06/30/20 0 A	analyzed: 06/30/20 1				
Calcium	51.3	1.00	50.0		103	80-120							
Iron	100	2.00	100		100	80-120							
Magnesium	51.5	1.00	50.0		103	80-120							
Potassium	5.25	1.00	5.00		105	80-120							
Sodium	18.8	2.00	20.0		94.2	80-120							
Matrix Spike (2027007-MS1)					Source: P	006092-01	Prepared	: 06/30/20 0 A	analyzed: 06/30/20 1				
Calcium	191	5.00	50.0	122	139	75-125			M2				
Iron	111	10.0	100	ND	111	75-125							
Magnesium	74.0	5.00	50.0	23.4	101	75-125							
Potassium	33.4	5.00	5.00	27.7	114	75-125							
Sodium	207	10.0	20.0	185	110	75-125							
Matrix Spike Dup (2027007-MSD1)					Source: P	006092-01	Prepared	: 06/30/20 0 A	analyzed: 06/30/20 1				
Calcium	195	5.00	50.0	122	146	75-125	1.92	20	M2				
Iron	116	10.0	100	ND	116	75-125	4.15	20					
Magnesium	76.3	5.00	50.0	23.4	106	75-125	3.06	20					
Potassium	34.7	5.00	5.00	27.7	139	75-125	3.69	20	M2				





BP America Production Co.

Project Name:

Bradenhead

PO Box 22024

Project Number:

03143-0424

Reported:

Tulsa OK, 74121-2024

Project Manager:

Sabre Beebe

07/07/20 12:05

Anions by I	EPA 300.0/9056	A - Quality	Control
I XIII OHS DY I	DI / I DUU.U/ JUJU.	is - Quanty	Control

		Reporting	Spike	Source		REC		RPD	
Analyte	Result	Limit	Level	Result	REC	Limits	RPD	Limit	Notes
	mg/L	mg/L	mg/L	mg/L	%	%	%	%	
Blank (2027004-BLK1)							Prepared	& 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 (2027004-BS1)							Prepared	& Analyzed:	06/29/20 1
Fluoride	2.61	0.250	2.50		104	90-110			
Chloride	24.8	2.00	25.0		99.4	90-110			
Nitrite-N	2.51	0.250	2.50		101	90-110			
Nitrate-N	2.59	0.250	2.50		104	90-110			
o-Phosphate-P	12.8	0.250	12.5		103	90-110			
Sulfate	24.9	2.00	25.0		99.5	90-110			
LCS Dup (2027004-BSD1)							Prepared	& Analyzed:	06/29/20 1
Fluoride	2.60	0.250	2.50		104	90-110	0.308	20	
Chloride	24.8	2.00	25.0		99.2	90-110	0.193	20	
Nitrite-N	2.56	0.250	2.50		102	90-110	1.81	20	
Nitrate-N	2.58	0.250	2.50		103	90-110	0.387	20	
o-Phosphate-P	12.8	0.250	12.5		102	90-110	0.140	20	
Sulfate	24.8	2.00	25.0		99.2	90-110	0.302	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 my differ slightly.

(C)



BP America Production Co. Project Name: Bradenhead PO Box 22024 Project Number: 03143-0424 Reported: Tulsa OK, 74121-2024 Project Manager: 07/07/20 12:05 Sabre Beebe

#### **Notes and Definitions**

M2 Matrix spike recovery was outside quality control limits. The associated LCS spike recovery was acceptable.

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

H1 Sample was received past holding time and analyzed per client request.

Analyte NOT DETECTED at or above the reporting limit ND

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.



Client: 1	3P.							-	Bill To		No.			La	b U	se Or	lv	i salahan		T	AT		PA Progr	am
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Note: Sample	s are discard	ed 30 days af	ter results ar	e reported ur	less other	arrange	ements are	made. Hazar	dous samples will l	be returned to	lient o													
only to those	samples rece	eived by the l	aboratory wi	th this COC.	The liability	of the	laboratory	is limited to t	he amount paid fo	or on the report		(113)	Poseu	o at	ane ch	ciii ex	ense.	ine re	port fo	or the a	analysi	or the abo	ve samples is	applicable



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