

HALLIBURTON

iCem[®] Service

BP AMERICA PROD CO-SORAC/NAG EBIZ

For: Luke Walker

Date: Tuesday, October 03, 2017

E. Sauls Creek 26 #1-2, Production

BP, E.Sauls Creek 26 #1-2, Production

Job Date: Saturday, September 23, 2017

Sincerely,

Jacob Ayers

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The Road to Excellence Starts with Safety

Sold To #: 358135	Ship To #: 3797502	Quote #: 0022339177	Sales Order #: 0904316888
Customer: BP AMERICA PROD CO - NAG-EBUS		Customer Rep: Luke Walker	
Well Name: EAST SAULS CREEK 26	Well #: 1-2	API/UWI #: 05-067-10000-00	
Field: IGNACIO-BLANCO	City (SAP): BAYFIELD	County/Parish: LA PLATA	State: COLORADO
Legal Description: SW NE-27-35N-6W-1552FNL-1623FEL			
Contractor: AZTEC WELL SERVICING CO		Rig/Platform Name/Num: AZTEC 507	
Job BOM: 7523 7523			
Well Type: COAL DE-GAS			
Sales Person: HALAMERICA\HB41307		Srv Supervisor: Jacob Ayers	

Job

Formation Name			
Formation Depth (MD)	Top		Bottom
Form Type		BHST	145 degF
Job depth MD	8086ft	Job Depth TVD	
Water Depth		Wk Ht Above Floor	
Perforation Depth (MD)	From	To	

Well Data

Description	New / Used	Size in	ID in	Weight lbm/ft	Thread	Grade	Top MD ft	Bottom MD ft	Top TVD ft	Bottom TVD ft
Casing		9.625	8.921	36	LTC	J-55	0	2796		
Casing		5.5	4.892	17	BTC	P-110	0	8086		
Open Hole Section			8.75				2800	8086		

Tools and Accessories

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	5.5			8086	Top Plug	5.5		HES
Float Shoe	5.5				Bottom Plug	5.5		HES
Float Collar	5.5				SSR plug set	5.5		HES
Insert Float	5.5				Plug Container	5.5		HES
Stage Tool	5.5				Centralizers	5.5		HES

Fluid Data

Stage/Plug #: 1

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
1	11.5 lb/gal Tuned Spacer III	Tuned Spacer III	50	bbl	11.5	3.73			
150.82 lbm/bbl			BAROID 41 - 50 LB BAG(478095)						
36.09 gal/bbl			FRESH WATER						
1 lbm/bbl			D-AIR 5000, 50 LB SACK (102068797)						

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
2	Lead Cement	HALCEM (TM) SYSTEM	320	sack	12.3	1.96		5	10.36
2.50 lbm		KOL-SEAL, BULK (100064233)							
0.30 %		HR-5, 50 LB SK (100005050)							
0.1250 lbm		POLY-E-FLAKE (101216940)							
10.36 Gal		FRESH WATER							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
3	Tail Cement	EXTENDACEM (TM) SYSTEM	1335	sack	13.3	1.36		5	6
0.1250 lbm		POLY-E-FLAKE (101216940)							
6 Gal		FRESH WATER							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
4	Displacement	Displacement	40	bbl	8.33				
0.25 gal/bbl		MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
5	Displacement	Displacement	145	bbl	8.33				
Cement Left In Pipe		Amount	86 ft		Reason			Shoe Joint	
Mix Water:		pH 7	Mix Water Chloride:		643 ppm		Mix Water Temperature:		60°F °C
Sulfates:		>400	Bump Pressure:		900 psi MPa		Floats Held?		Yes
Plug Bumped?		Yes	Cement Returns:		50 bbl m3				
Comment									

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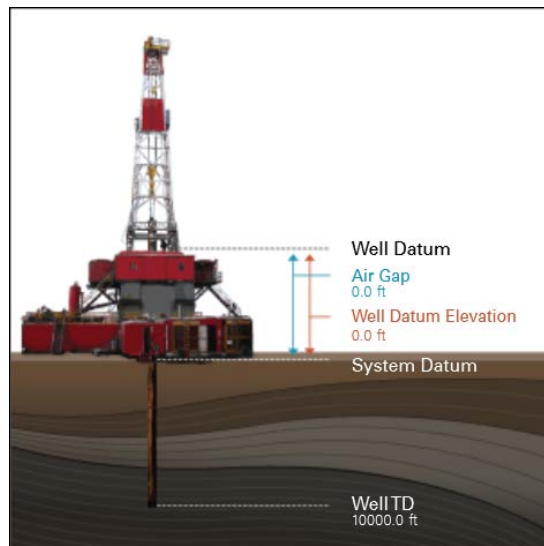
 3.2 BP, E.Sauls Creek 26 #1-2,Production -Custom Results (1).png8

1.0 Job Design

1.1 Overview

Job Type	Primary Cement Job
Injection Path	Casing/Conventional
Foam Job	No

Well Snapshot



Simulations Performed

1.2 Pump Schedule

Description	Stage No.	Density (ppg)	Rate (bbl/min)	Yield (ft ³ /sack)	Water Req. (gal/sack)	Volume (bbl)	Bulk Cement (sacks)	Duration (min)
Int Mud	1	9.20	4.00			0.00		0.00
Tuned Spacer	2	11.50	5.00			40.00		8.00
Hal Light 2363951/1	3	12.30	7.00	1.9522	10.358	111.27	320.00	15.90
Liner with less 1015 2384008/1	4-1	13.30	7.00	1.3598	6.005	323.31	1335.00	51.20
Shutdown	4-2			1.3598	6.005		0.00	10.00
Top Plug/Start Displacement								
Fresh Water	5-1	8.33	7.00			40.00		5.71
Fresh Water	5-2	8.33	6.00			40.00		6.67
Fresh Water	5-3	8.33	5.00			85.00		17.00
Fresh Water	5-4	8.33	2.50			36.46		14.58
Total:						676.04		124.05

*Pump schedule may include additional rows for displacement if "Automatic Rate Adjustment" was enabled and ECDs approached the fracture gradient.

2.0 Real-Time Job Summary

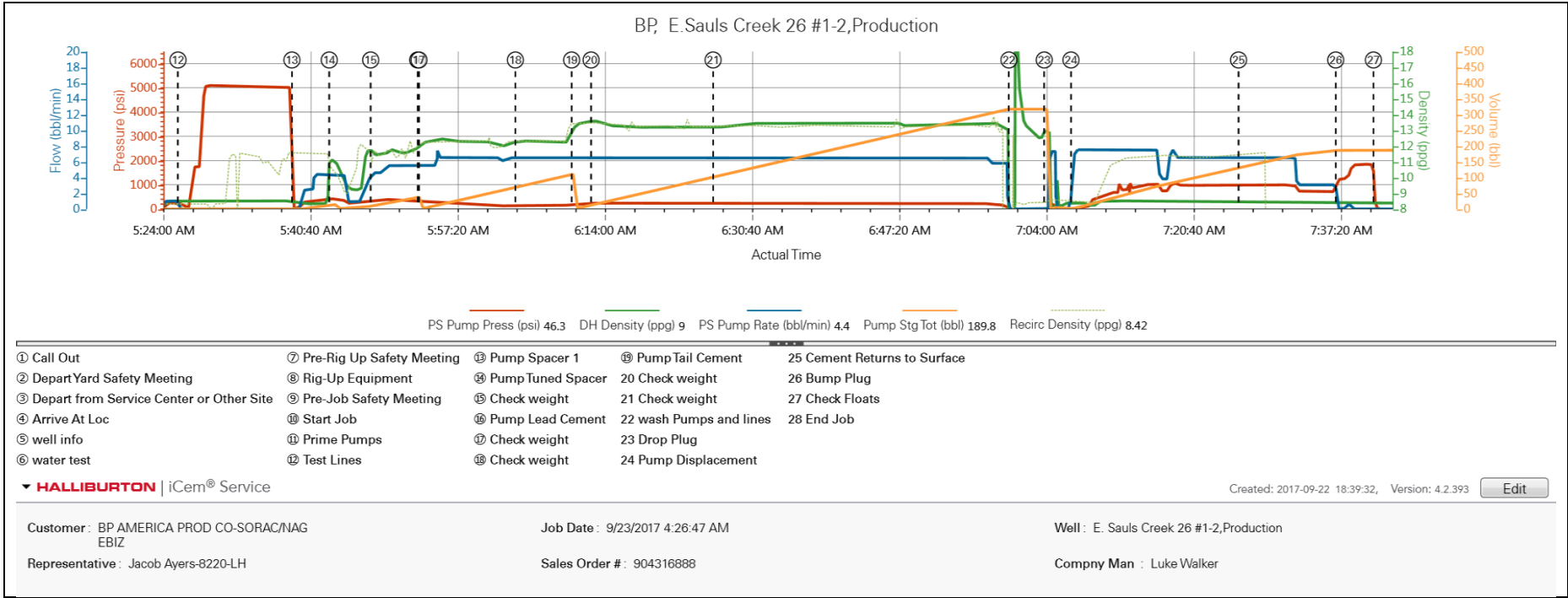
2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	PS Pump Press (psi)	DH Density (ppg)	PS Pump Rate (bbl/min)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	Call Out	9/22/2017	12:00:00	USER					Job Called out @ 1200
Event	2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	9/22/2017	13:30:00	USER					Depart yard safety meeting with crew @1330
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	9/22/2017	13:45:00	USER					Departed from yard @ 1345
Event	4	Arrive At Loc	Arrive At Loc	9/22/2017	17:00:00	USER					Arrived on location @ 1700 rig was running in casing
Event	5	Other	well info	9/22/2017	19:00:00	USER					OH- 8 3/4" 8112' intermediate 9 5/8" 36# @ 2796' production- 5.5 buttress 17# 8086' SJ-86' mud wt.9.6#
Event	6	Other	water test	9/22/2017	20:00:00	USER					PH- 6.5 Chlorides- 683 Sulfates- >400 temp -69
Event	7	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	9/23/2017	00:30:00	USER					Pre rig up meeting with crew
Event	8	Rig-Up Equipment	Rig-Up Equipment	9/23/2017	01:00:00	USER					Rigged up Halliburton a 2" iron, water hoses and mud hoses
Event	9	Pre-Job Safety Meeting	Pre-Job Safety Meeting	9/23/2017	02:30:00	USER					Pre job safety meeting with all affected personnel on location
Event	10	Start Job	Start Job	9/23/2017	04:53:22	COM5					
Event	11	Prime Pumps	Prime Pumps	9/23/2017	05:23:22	COM5	-17.70	9.40	0.00	0.0	Prime pumps
Event	12	Test Lines	Test Lines	9/23/2017	05:25:55	COM5					Test pumps and lines to 5000psi

Event	13	Pump Spacer 1	Pump Spacer 1	9/23/2017	05:38:49	COM5	-11.70	8.39	0.00	0.0	Pump 10 bbl fresh water spacer
Event	14	Pump Spacer	Pump Tuned Spacer	9/23/2017	05:43:03	USER	479.30	11.16	4.40	12.4	Pump 50 bbl tuned spacer @ 11.5# 3.73 yield 24 gal/sks
Event	15	Check Weight	Check weight	9/23/2017	05:47:44	COM5	348.30	11.44	4.60	10.1	
Event	16	Pump Lead Cement	Pump Lead Cement	9/23/2017	05:53:03	COM5					320 sks@12.3# 1.95 yield 10.36 wrq = 111.4bbl cmt 78 bbl mix water
Event	17	Check Weight	Check weight	9/23/2017	05:53:12	COM5					
Event	18	Check Weight	Check weight	9/23/2017	06:04:07	COM5					
Event	19	Pump Tail Cement	Pump Tail Cement	9/23/2017	06:10:29	COM5					1335 sks@13.3# 1.3 yield 6 wrq = 323 bbl cmt 192bbl mix water
Event	20	Check Weight	Check weight	9/23/2017	06:12:41	COM5	239.30	13.56	6.50	14.4	
Event	21	Check Weight	Check weight	9/23/2017	06:26:30	COM5					
Event	22	Other	wash Pumps and lines	9/23/2017	07:00:00	USER	-18.70	-2.01	0.00	316.8	Wash pumps and lines
Event	23	Drop Plug	Drop Plug	9/23/2017	07:04:00	USER	-22.70	12.99	0.00	316.8	Drop baker dart plug
Event	24	Pump Displacement	Pump Displacement	9/23/2017	07:07:01	COM5	0.30	8.30	5.40	1.2	Calculated 185 bbl to land plug
Event	25	Cement Returns to Surface	Cement Returns to Surface	9/23/2017	07:26:00	USER	979.30	8.47	6.50	131.8	Calculated 60 bbl of cmt back. 50 bbl of good cmt actually returned to surface
Event	26	Bump Plug	Bump Plug	9/23/2017	07:37:00	USER	1218.30	8.45	0.00	186.0	Calculated 800psi to land plug. plug landed @ 950 psi took it 900 psi over to 1800 psi
Event	27	Check Floats	Check Floats	9/23/2017	07:41:16	USER	74.30	8.41	0.00	186.4	Check floats, floats held 1 bbl back
Event	28	End Job	End Job	9/23/2017	07:47:33	COM5					

3.0 Attachments

3.1 BP, E.Sauls Creek 26 #1-2,Production -Custom Results.png



3.2 BP, E.Sauls Creek 26 #1-2,Production -Custom Results (1).png

