

HALLIBURTON

iCem[®] Service

SYNERGY OIL & GAS LP

Date: Thursday, December 20, 2018

SRC Bost Farm 41N-8A-L Foam Production

Job Date: Thursday, December 20, 2018

Sincerely,

Bryce Hinsch

Legal Notice

Disclaimer:

All information in this report is provided subject to the terms and conditions which govern the services provided by Halliburton. Halliburton personnel use their best efforts in gathering information and their best judgment in interpreting it, but any interpretation, research, analysis or recommendation furnished by Halliburton are opinions based upon inferences from measurements and empirical relationships and assumptions, which inferences and empirical relationships and assumptions are not infallible, and with respect to which professionals in the industry may differ. iCem 3D Displacement results are used to understand how fluids intermix during a cement job. Simulation and 3D displacement results are not intended as and should not be used as a replacement for bond logs in determining top of cement. Current 3D model calculations are known to model more volume than the input volume for standard cases due to known calculation improvements required. For rotational cases, the modeled volume will be impacted by the same calculations impacting the standard cases, as well as additional constraints imposed to make the calculation time required operationally feasible. Therefore, until further notice, 3D displacement results should not be used for replacement of a bond log, or used as an identifier of top of cement. HALLIBURTON IS UNABLE TO GUARANTEE THE ACCURACY OF ANY CHART INTERPRETATION, RESEARCH ANALYSIS, OR JOB RECOMMENDATION and any interpretation or recommendation is not for use of or reliance upon by any third party. The customer has full responsibility for any of its decisions which are based on the information provided in this report.

Table of Contents

1.0	Cementing Job Summary	4
1.1	Executive Summary	4
2.0	Real-Time Job Summary	8
2.1	Job Event Log	8
3.0	Attachments.....	12
3.1	SRC Bost Farm 41N-8A-L Foam Production Job Chart.....	12

1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Bost Farm 41N-8A-L cement foam production** casing job. A pre-job safety meeting was held before the job where details of the job were discussed, potential safety hazards were reviewed, and environmental compliance procedures were outlined.

Approximately 12 bbls of spacer were returned to surface.

Halliburton maintains a continuous quality improvement process and appreciates any comments or suggestions that you may have. Halliburton again thanks you for the opportunity to perform service work on this well. We hope to be your solutions provider for future projects.

Respectfully,

Halliburton Fort Lupton

The Road to Excellence Starts with Safety

Sold To #: 359915	Ship To #: 3902193	Quote #: 0022525649	Sales Order #: 0905353170
Customer: SRC ENERGY INC-EBUS		Customer Rep: Lovel Young	
Well Name: BOST FARM		Well #: 41N-8A-L	API/UWI #: 05-123-47699-00
Field: WATTENBERG	City (SAP): GREELEY	County/Parish: WELD	State: COLORADO
Legal Description: SW NW-7-5N-66W-1437FNL-940FWL			
Contractor: PRECISION DRLG		Rig/Platform Name/Num: PRECISION 462	
Job BOM: 14143 14143			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA\HB41307		Srvc Supervisor: Steven Markovich	

Job

Formation Name			
Formation Depth (MD)	Top		Bottom
Form Type	BHST		
Job depth MD	17497ft	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	1807		1807
Casing		5.5	4.778	20	TXP-BTC	P110IC	0	17497	0	0
Open Hole Section			8.5				1807	17515	0	1807

Tools and Accessories

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	5.5			17497	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	Tuned Spacer III	Tuned Spacer III	40	bbl	11.5	3.84				
36.09 gal/bbl		FRESH WATER								
0.50 gal/bbl		DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)								
145.18 lbm/bbl		BARITE, BULK (100003681)								

0.50 gal/bbl		MUSOL(R) A, 5 GAL PAIL (100064220)								
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	
2	HalCem	HALCEM (TM) SYSTEM	528	sack	15.6	1.18		6	5.2	
5.08 Gal		FRESH WATER								
2.50 %		FOAMER 1026, TOTE (102166506)								
0.30 %		SCR-742, 50 LB BAG (102027729)								
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	
3	HalSeal	HALSEAL (TM) SYSTEM	770	sack	15.6	1.18		6	5.2	
2.50 %		FOAMER 1026, TOTE (102166506)								
5.08 Gal		FRESH WATER								
0.30 %		SCR-742, 50 LB BAG (102027729)								
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	
4	NeoCem	NeoCem TM	1075	sack	13.2	2.06		6	9.83	
0.09 %		SCR-100 (100003749)								
9.83 Gal		FRESH WATER								
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	
5	MMCR Displacement	MMCR Displacement	20	bbl	8.34					
0.20 gal/bbl		MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)								
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	
6	Water	Water	294.4	bbl	8.33					
1 gal/Mgal		CLA-WEB - BULK (101985043)								
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	
7	MMCR Displacement	MMCR Displacement	70	bbl	8.34					

0.20 gal/bbl		MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)		
Cement Left In Pipe	Amount	0 ft	Reason	Wet Shoe
Mix Water:	pH 7	Mix Water Chloride:	<200 ppm	Mix Water Temperature: 60 °F °C
<p>Comment 170 gallons of Foamer 1026 used. The N2 unit started with 169,700 scf and ended with 101,000. Total N2 used for the job was 68,700 scf (39,518 scf for foam cement and 29,182 scf during conditioning and cool down) Pump 384 bbls of fresh water displacement, 10 gallons of MMCR in first 20 bbls and 10 gallons in last 70 bbls. 20 gallons of Cla-Web and 3 lbs of Be-3 used throughout. Returns diverted at 372 bbls into displacement to three-sided tank. Density on returns was 11.2ppg prior to diverting. 12 bbls of spacer returned to surface</p> <p>Bump plug at 2990 psi brought up to 3600 psi to ensure seat before continuing on to shear the wet shoe sub. Sheared wet shoe sub at 5908psi, pumped 6 bbls wet shoe at 4bbl/min. Opened release line to check floats, after 5bbls back floats held. Company mand requested we pump that back in plus 2 bbls for a total of 7bbls back in. Checked floats again and after 4.5bbls back float held. Estimated Top of Cap Cement 561', Estimated Top of Lead Cement 3068' and Estimated Top of Tail Cement 7870'.</p>				

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Truck 1 Pressure (psi)	Truck 1 Density (ppg)	Pump Stg Tot (bbl)	Foamer Rate (gpm)	N2 Pressure (psi)	Comments
Event	1	Call Out	Call Out	12/19/2018	23:00:00	USER						Job called out at 2300 with an on location time of 0500
Event	2	Crew Leave Yard	Crew Leave Yard	12/20/2018	03:00:00	USER						JSA with HES crew on directions and road hazards on the way to location
Event	3	Arrive at Location from Service Center	Arrive at Location from Service Center	12/20/2018	05:00:00	USER						Arrive on location, rig had a few joints left to run
Event	4	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	12/20/2018	05:15:00	USER						JSA and hazard hunt with HES crew
Event	5	Rig-Up Equipment	Rig-Up Equipment	12/20/2018	05:25:00	USER						Began to rig-up equipment and lines while rig was circulating
Event	6	Safety Meeting	Safety Meeting	12/20/2018	08:30:00	USER	38.00	8.58	13.50	0.0	66.25	Safety meeting held with all personnel on location to discuss job hazards and procedure. Hazards of foam operations as well as contingencies were discussed in detail
Event	7	Start Job	Start Job	12/20/2018	09:24:53	COM12	19.00	9.28		0.1	57.19	TD 17515' TP 17497' 5 1/2" 20# WSS 17394.5' OH 8.5" PC 1807' 9 5/8" 36# TVD 7143' MW 10.2
Event	8	Drop Bottom Plug	Drop Bottom Plug	12/20/2018	09:46:47	COM11	55.00	10.79	4.20	0.1	40.07	Bottom plug dropped, witnessed by company man
Event	9	Pump Spacer 1	Pump Spacer 1	12/20/2018	09:47:00	COM11	56.00	10.79	4.20	0.1	37.05	Pump 40 bbls of 11.5ppg Tuned Spacer III, 3.84 yield, 20 gallons each of Musol A and Dual B added on the fly, 10 gallons D-Air 3000L used

												as well. Pumped at 4 bbls/min at 400 psi
Event	10	Pump Lead Cement	Pump Lead Cement	12/20/2018	10:05:09	COM11	63.00	10.54	0.00	0.0	64.24	Pump 111 bbls (528 sacks) of unfoamed cap cement at 15.6ppg, 1.18 yield. Pumped at 5 bbls/min at 600 psi. Top of cap cement at ~561'
Event	11	Check Weight	Check Weight	12/20/2018	10:08:14	COM11	763.00	15.67	9.90	3.0	70.28	Weight verified by pressurized mud scale.
Event	12	Pump Cement	Pump Foam Cement	12/20/2018	10:29:48	COM11	1047.00	15.67	0.00	3.0	2524.00	Pump 162 bbls (770 sacks) foamed lead cement at 15.6ppg, 1.18 yield. Foamed down to 13.2ppg. Pumped at 5 bbls/min at 1400 psi. Top of foam cement at ~3068'
Event	13	Check Weight	Check Weight	12/20/2018	10:32:24	COM11	1146.00	15.69	12.90	3.1	2718.32	Weight verified by pressurized mud scale.
Event	14	Comment	Comment	12/20/2018	10:47:34	USER	1416.00	15.68	88.50	3.1	4124.90	170 gallons of Foamer 1026 used. The N2 unit started with 169,700 scf and ended with 101,000. Total N2 used for the job was 68,700 scf (39,518 scf for foam cement and 29,182 scf during conditioning and cool down)
Event	15	Pump Tail Cement	Pump Tail Cement	12/20/2018	11:02:43	COM11	1172.00	14.57	163.90	3.1	2728.39	Pumped 395 bbls (1078 sacks) tail cement at 13.2ppg, 2.057 yield. 5 gallons of D-Air 3000L used. Pumped at 8 bbls/min at 1500 psi. Top of tail cement at ~7870'
Event	16	Check Weight	Check Weight	12/20/2018	11:03:07	COM11	1053.00	14.05	1.90	3.1	2671.00	Weight verified by pressurized mud scale.

Event	17	Check Weight	Check Weight	12/20/2018	11:07:14	COM11	675.00	13.14	21.70	0.0	-3.22	Weight verified by pressurized mud scale.
Event	18	Shutdown	Shutdown	12/20/2018	11:57:06	COM11	160.00	9.30	431.10	0.0	-8.26	Shutdown to wash pumps and lines, annulars closed
Event	19	Clean Lines	Clean Lines	12/20/2018	11:58:18	COM11	34.00	0.93	432.00	0.0	-6.24	Wash pumps and lines
Event	20	Drop Top Plug	Drop Top Plug	12/20/2018	12:06:04	COM11	38.00	8.36	450.40	0.0	-7.25	Drop top plug, witnessed by company man
Event	21	Pump Displacement	Pump Displacement	12/20/2018	12:06:10	COM11	38.00	8.36	450.40	0.0	-6.24	Pump 384 bbls of fresh water displacement, 10 gallons and MMCR in first 20 bbls and 10 gallons in last 70 bbls. 20 gallons of Cla-Web and 3 lbs of Be-3 used throughout. Returns diverted at 372 bbls into displacement to three-sided tank. Density on returns was 11.2ppg prior to diverting. 12 bbls of spacer returned to surface
Event	22	Bump Plug	Bump Plug	12/20/2018	12:56:32	COM11	3624.00	8.34	394.20	0.0	-3.22	Bump plug at 2990 psi brought up to 3600 psi to ensure seat before continuing on to shear the wet shoe sub
Event	23	Comment	Shear Wet Shoe Sub	12/20/2018	12:58:02	USER	5810.00	8.39	397.00	0.0	-4.23	Sheared wet shoe sub at 5908psi, pumped 6 bbls wet shoe
Event	24	Check Floats	Check Floats	12/20/2018	13:02:26	USER	2953.00	8.31	403.80	0.0	-3.22	Floats held, 5 bbls back to truck
Event	25	Comment	Comment	12/20/2018	13:09:16	USER	324.00	8.30	403.80	0.0	-4.23	7 more bbls pumped for wet shoe
Event	26	Check Floats	Check Floats	12/20/2018	13:13:30	USER	3247.00	8.38	410.80	0.0	-3.22	Floats held a second time. 4.5 bbls back to the truck

Event	27	End Job	End Job	12/20/2018	13:16:22	COM11	33.00	8.32	0.0	-3.22	Thank you from Steve Markovich and crew
Event	28	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	12/20/2018	13:20:00	USER					Rig down safety meeting held with HES crew on location prior to rigging down equipment and lines

3.0 Attachments

3.1 SRC Bost Farm 41N-8A-L Foam Production Job Chart

