

# HALLIBURTON

iCem<sup>®</sup> Service

## **SRC Energy**

Date: Thursday, December 27, 2018

## **Bost Farm 8C-8-L Production**

Job Date: Thursday, December 27, 2018

Sincerely,  
**Tyler Hill**

## Legal Notice

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### Disclaimer:

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## 1.0 Cementing Job Summary

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### 1.1 Executive Summary

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Halliburton appreciates the opportunity to perform the cementing services on the cement 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 10 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 Ft. Lupton**

*The Road to Excellence Starts with Safety*

<b>Sold To #:</b> 359915	<b>Ship To #:</b> 0003902146	<b>Quote #:</b> 0022528724	<b>Sales Order #:</b> 0905369647
<b>Customer:</b> SRC ENERGY INC-EBUS		<b>Customer Rep:</b> Buddy Davis/Steve Wilson	
<b>Well Name:</b> BOST FARM		<b>Well #:</b> 8C-8-L	<b>API/UWI #:</b> 05-123-47696-00
<b>Field:</b> WATTENBERG	<b>City (SAP):</b> GREELEY	<b>County/Parish:</b> WELD	<b>State:</b> COLORADO
<b>Legal Description:</b> SW NW-7-5N-66W-1477FNL-939FWL			
<b>Contractor:</b> PRECISION DRLG		<b>Rig/Platform Name/Num:</b> PRECISION 462	
<b>Job BOM:</b> 14143 14143			
<b>Well Type:</b> HORIZONTAL OIL			
<b>Sales Person:</b> HALAMERICA\HB41307		<b>Srvc Supervisor:</b> Kamereon White	

**Job**

<b>Formation Name</b>			
<b>Formation Depth (MD)</b>	<b>Top</b>	<b>Bottom</b>	
<b>Form Type</b>	BHST		
<b>Job depth MD</b>	17780ft	<b>Job Depth TVD</b>	7378
<b>Water Depth</b>		<b>Wk Ht Above Floor</b>	5
<b>Perforation Depth (MD)</b>	<b>From</b>	<b>To</b>	

**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	1830		1830
Casing		5.5	4.778	20	TXP-BTC	P110IC	0	17763	0	7378
Open Hole Section			8.5				1830	17763	1830	7378

**Tools and Accessories**

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Wet Shoe	5.5	1	WTHR	17,658	Top Plug	5.5	1	WTHR
Float Shoe	5.5	1	WTHR	17,763	Bottom Plug	5.5	1	WTHR
Float Collar	5.5	1	WTHR	17,715				
					Plug Container	5.5	1	HES
					Centralizers	5.5	258	HES

**Fluid Data**

<b>Stage/Plug #: 1</b>										
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
1	Tuned Spacer III	Tuned Spacer III	40	bbl	11.5	3.84	24			

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	535	sack	15.6	1.18		5	5.33
3	HalSeal	HALSEAL (TM) SYSTEM	819	sack	15.6	1.02		5	5.33
4	NeoCem	NeoCem TM	1075	sack	13.2	2.06		8	9.83
5	MMCR Displacement	MMCR Displacement	20	bbl	8.34				
6	Water	Water	300	bbl	8.33				
7	MMCR Displacement	MMCR Displacement	70	bbl	8.34				

0				
Cement Left In Pipe	Amount	40 ft	Reason	Shoe Joint
Mix Water:	pH 7	Mix Water Chloride:	< 800 ppm	Mix Water Temperature:
		Plug Displaced by:	8.33 lb/gal	78 °F
Plug Bumped?	Yes	Bump Pressure:	3270 Psi	Floats Held?
		Returns Density:	11.5 PPG TS III	Yes
Comment				

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DS Pump Press <i>(psi)</i>	Pump Stg Tot <i>(bbl)</i>	Comb Pump Rate <i>(bbl/min)</i>	DH Density <i>(ppg)</i>	N2 Pump Press <i>(psi)</i>	Comments
Event	1	Call Out	Call Out	12/26/2018	18:20:00	USER						Crew called out and was requested to be on location @ 012:00 RTP By 01:00 am.
Event	2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	12/26/2018	22:20:00	USER						Crew discussed the route of travel and supervisor called in a journey.
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	12/26/2018	22:25:00	USER						Crew left the yard.
Event	4	Arrive at Location from Service Center	Depart from Service Center or Other Site	12/26/2018	23:40:00	USER						Crew arrived on location and the rig was running casing.
Event	5	Safety Meeting - Assessment of Location	Safety Meeting - Assessment of Location	12/26/2018	23:50:00	USER						Spotting in trucks and supervisor met with the customer and got the well information. TD-17780' TP-17,763' FC-17915' Cas-5.5" 20 # P110 PC-9.625" 36# Set @ 1830' Mud Weight-9.8 ppg OBM, Wet Shoe- 6 Bbls TVD-7378' OH-8.5."
Event	6	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	12/26/2018	23:55:55	USER						Discussed rig up procedure and signed the JSA.
Event	7	Rig-Up Equipment	Rig-Up Equipment	12/27/2018	00:20:00	USER						Rigged up all HES equipment and lines.
Event	8	Rig-Up Completed	Rig-Up Completed	12/27/2018	00:45:00	USER						All HES equipment and lines rigged up safely.
Event	9	Casing on Bottom	Casing on Bottom	12/27/2018	03:15:00	USER						Casing on Bottom with the landing Joint.

Event	10	Pre-Job Safety Meeting	Pre-Job Safety Meeting	12/27/2018	06:00:00	USER	-3.00	1.40	0.00	0.04	-1.01	Discussed the job procedure and pressures with all personnel involved with the cement job.
Event	11	Start Job	Start Job	12/27/2018	07:24:24	COM12	402.00	9.40	10.50	8.49	-6.04	
Event	12	Check Weight	Check Weight	12/27/2018	07:35:01	COM12	4.00	10.50	0.00	8.40	-2.01	Batch up tub of Tuned Spacer 11.5ppg, Weight verified by pressurized mud scale.
Event	13	Drop Bottom Plug	Drop Bottom Plug	12/27/2018	07:41:08	COM12	155.00	14.80	1.00	8.78	-3.02	Customer and Halliburton Rep witnessed the bottom plug being loaded and was sent before we filled the lines to pressure test.
Event	14	Test Lines	Test Lines	12/27/2018	07:42:01	COM12	119.00	15.00	0.00	8.75	0.00	Tested the lines to 500 psi to test the EKO's They worked so we performed a high psi test to 8000 psi and held for N2 to perform their pressure test.
Event	15	Test Lines	Test Lines	12/27/2018	07:50:27	USER	7694.00	0.00	0.00	8.80	9068.79	Pressure test nitrogen lines to 9000 psi, 1000 psi over cement lines
Event	16	Pump Spacer 1	Pump Spacer	12/27/2018	07:56:25	COM12	28.00	0.00	0.00	8.59	-16.11	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.
Event	17	Shutdown	Shutdown	12/27/2018	08:07:43	COM12	129.00	39.70	0.00	10.50	-11.08	Shutdown to mix up first tub of Cap cement
Event	18	Pump Cement	Pump Cement	12/27/2018	08:07:47	COM12	101.00	0.00	0.00	9.82	-11.08	Pump 112 bbls (535 sacks) of unfoamed cap cement at 15.6ppg, 1.18 yield.
Event	19	Check Weight	Check Weight	12/27/2018	08:11:23	COM12	22.00	0.00	0.00	9.27	-12.08	Weight verified by

											8	pressurized mud scale.
Event	20	Pump Cap Cement	Pump Cap Cement	12/27/2018	08:13:22	COM12	22.00	0.00	0.00	9.25	-13.09	
Event	21	Check Weight	Check Weight	12/27/2018	08:15:13	COM12	660.00	7.10	5.00	15.93	-15.10	Weight verified by pressurized mud scale.
Event	22	Shutdown	Shutdown	12/27/2018	08:19:25	USER	428.00	27.90	4.20	15.15	-14.10	Shutdown due to bulk delivery issue
Event	23	Check Weight	Check Weight	12/27/2018	08:27:09	COM12	268.00	37.60	3.10	15.27	-12.08	Weight verified by pressurized mud scale.
Event	24	Check Weight	Check Weight	12/27/2018	08:37:06	COM12	222.00	74.90	2.60	15.19	2.01	Weight verified by pressurized mud scale.
Event	25	Pump Foam Cement	Pump Foam Cement	12/27/2018	08:56:50	COM12	289.00	0.00	3.90	15.24	0.00	Pump 162 bbls (819 sacks) foamed lead cement at 15.6ppg, 1.18 yield. Foamed down to 13.2ppg. Pumped at 5 bbls/min
Event	26	Check Weight	Check Weight	12/27/2018	08:57:48	COM12	450.00	4.50	5.00	15.60	40.27	Weight verified by pressurized mud scale.
Event	27	Pump Tail Cement	Pump Tail Cement	12/27/2018	09:28:34	COM12	862.00	157.60	5.00	13.26	3827.08	Pumped 393.8 bbls (1075 sacks) tail cement at 13.2ppg, 2.057 yield. 5 gallons of D-Air 3000L used.
Event	28	Check Weight	Check Weight	12/27/2018	09:30:03	COM12	1158.00	10.70	8.40	13.15	3783.78	Weight verified by pressurized mud scale.
Event	29	Shutdown	Shutdown	12/27/2018	10:19:33	COM12	138.00	402.40	0.00	13.27		Shutdown to wash pumps and lines, annular closed
Event	30	Clean Lines	Clean Lines	12/27/2018	10:21:11	COM12	33.00	402.40	0.00	13.06		Wash pumps and lines
Event	31	Drop Top Plug	Drop Top Plug	12/27/2018	10:30:48	COM12	15.00	419.30	0.00	7.99		Drop top plug, witnessed by company man
Event	32	Pump Displacement	Pump Displacement	12/27/2018	10:31:00	COM12	14.00	419.30	0.00	7.99		Pump 390 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. 10 bbls of spacer returned to surface

Event	33	Displ Reached Cement	Displ Reached Cement	12/27/2018	10:46:55	COM12						
Event	34	Comment	Comment	12/27/2018	11:30:13	USER	3527.00	359.30	7.60	8.34		182.5 gallons of Foamer 1026 used. The N2 unit started with 86,000 scf and ended with 34,377. Total N2 used for the job was 68,700 scf (41,623 scf for foam cement and 10,000 scf during conditioning and cool down)
Event	35	Bump Plug	Bump Plug	12/27/2018	11:41:15	COM12	2708.00	410.80	0.00	8.27		
Event	36	Other	Other	12/27/2018	11:43:17	COM12	2853.00	410.80	0.00	8.26		Pressure up to Burst wet shoe sub
Event	37	Other	Other	12/27/2018	11:45:08	COM12	2973.00	414.90	5.00	8.32		Shoe burst at 5300 psi
Event	38	Other	Other	12/27/2018	11:46:33	COM12	2091.00	420.10	0.00	8.28		Pumped 6bbls wet shoe. Checked floats, 3bbls back.
Event	39	End Job	End Job	12/27/2018	11:51:35	COM12						Cement Job Complete Calculated TOPS- TOP Of Cap-466' Top Of Foam Cement 2990' Top of Tail Cement 8100'.
Event	41	Rig Down Lines	Rig Down Lines	12/27/2018	11:55:00	USER						Rigged down all HES equipment and lines.
Event	42	Rig-Down Completed	Rig-Down Completed	12/27/2018	12:30:00	USER						Rig down completed no one

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				8				got hurt.
Event	43	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	12/27/2018	14:00:00	USER		The crew held a pre journey safety meeting discussing the route and potential hazards while driving. The supervisor called in a journey.

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3.0 Attachments

3.1 SRC - Bost Farm 8C-8-L-Custom Results.png

