

# HALLIBURTON

iCem<sup>®</sup> Service

**SRC ENERGY INC-EBUS**

**Bost Farm 40N-8B-L Production**

Sincerely,  
**Meghan Jacobs**

## Legal Notice

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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 **Bost Farm 40N-8B-L cement 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 15 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**

## HALLIBURTON

## Cementing Job Summary

*The Road to Excellence Starts with Safety*

Sold To #: 359915		Ship To #: 0003902146		Quote #:		Sales Order #: 0905379248					
Customer: SRC ENERGY INC-EBUS				Customer Rep: Buddy Davis/Steve Wilson							
Well Name: BOST FARM			Well #: 40N-8B-L			API/UWI #: 05-123-47701-00					
Field: WATTENBERG		City (SAP): GREELEY		County/Parish: WELD		State: COLORADO					
Legal Description: SW NW-7-5N-66W-1477FNL-939FWL											
Contractor: PRECISION DRLG				Rig/Platform Name/Num: PRECISION 462							
Job BOM: 14143 14143											
Well Type: HORIZONTAL OIL											
Sales Person: HALAMERICA\HB41307				Srvs Supervisor: Kamereon White							
<b>Job</b>											
Formation Name											
Formation Depth (MD)		Top			Bottom						
Form Type											
BHST											
Job depth MD		17,560ft			Job Depth TVD		7224				
Water Depth											
Wk Ht Above Floor 5											
Perforation Depth (MD)		From			To						
<b>Well Data</b>											
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	1837		1837	
Casing		5.5	4.778	20	TXP-BTC	P110IC	0	17546	0	7224	
Open Hole Section			8.5				1837	17560	1837	7224	
<b>Tools and Accessories</b>											
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make		
Wet Shoe	5.5	1	WTHR	17,441		Top Plug	5.5	1	WTHR		
Float Shoe	5.5	1	WTHR	17,546		Bottom Plug	5.5	1	WTHR		
Float Collar	5.5	1	WTHR								
						Plug Container	5.5	1	HES		
						Centralizers	5.5	253	HES		
<b>Fluid Data</b>											
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	24	5	
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			545	sack	15.6	1.18		5	5.2

## HALLIBURTON

## Cementing Job Summary

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	795	sack	15.6	1.18		5	5.2	
4	NeoCem	NeoCem TM	1080	sack	13.2	2.06		8	9.83	
5	MMCR Displacement	MMCR Displacement	20	bbl	8.34					
6	Water	Water	295	bbl	8.33					
7	MMCR Displacement	MMCR Displacement	70	bbl	8.34					
Cement Left In Pipe		Amount	40 ft		Reason			Shoe Joint		
Mix Water:		pH 7	Mix Water Chloride:		< 800 ppm		Mix Water Temperature:			52 °F
Plug Bumped?		Yes	Plug Displaced by:		8.33 lb/gal		Bump Pressure:			3500 Psi
			Returns Density:		11.5 PPG TS III		Floats Held?			Yes
Comment										

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	DS Pump Press (psi)	Comments
Event	1	Call Out	Call Out	1/1/2019	15:00:00	USER				Crew called out and was requested to be on location @ 21:00 .
Event	2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	1/1/2019	20:15:00	USER				Crew discussed the route of travel and supervisor called in a journey.
Event	3	Crew Leave Yard	Crew Leave Yard	1/1/2019	20:30:00	USER				Crew left the yard
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	1/1/2019	21:30:00	USER				Crew arrived on location and the rig was circulating.
Event	5	Safety Meeting - Assessment of Location	Safety Meeting - Assessment of Location	1/1/2019	21:50:00	USER				Spotting in trucks and supervisor met with the customer and got the well information. TD-17560' TP-17,546' FC-17498' Cas-5.5" 20 # P110 PC-9.625" 36# Set @ 1837' Mud Weight-10.2 ppg OBM, Wet Shoe- 6 Bbls TVD-7224' OH-8.5."
Event	6	Safety Meeting - Pre Rig-Up	Safety Meeting - Pre Rig-Up	1/1/2019	22:00:00	USER				Discussed rig up procedure and signed the JSA.
Event	7	Rig-Up Equipment	Rig-Up Equipment	1/1/2019	22:15:00	USER				Rigged up all HES equipment and lines.
Event	8	Rig-Up Completed	Rig-Up Completed	1/2/2019	00:00:00	USER				All HES equipment and lines rigged up safely.
Event	9	Comment	Comment	1/2/2019	02:20:00	USER	0.04	0.00	-54.00	Picked up Commander Head onto cat walk
Event	10	Comment	Comment	1/2/2019	02:30:00	USER	0.03	0.00	-54.00	Made up on the Top Drive, torqued to 30,000lbs
Event	11	Comment	Comment	1/2/2019	02:46:00	USER	0.03	0.00	-54.00	torqued commander head to casing, 18,000lbs
Event	12	Comment	Comment	1/2/2019	03:15:00	USER	0.03	0.00	-54.00	floor was rigged up for the rig to circulate, rig circulated at 10bbl/min, 2060psi circulating pressure, 160,000lb hook load,
Event	13	Pre-Job Safety Meeting	Pre-Job Safety Meeting	1/2/2019	03:30:00	USER	0.04	0.00	-54.00	Discussed the job procedure and pressures with all personnel involved with the cement job.

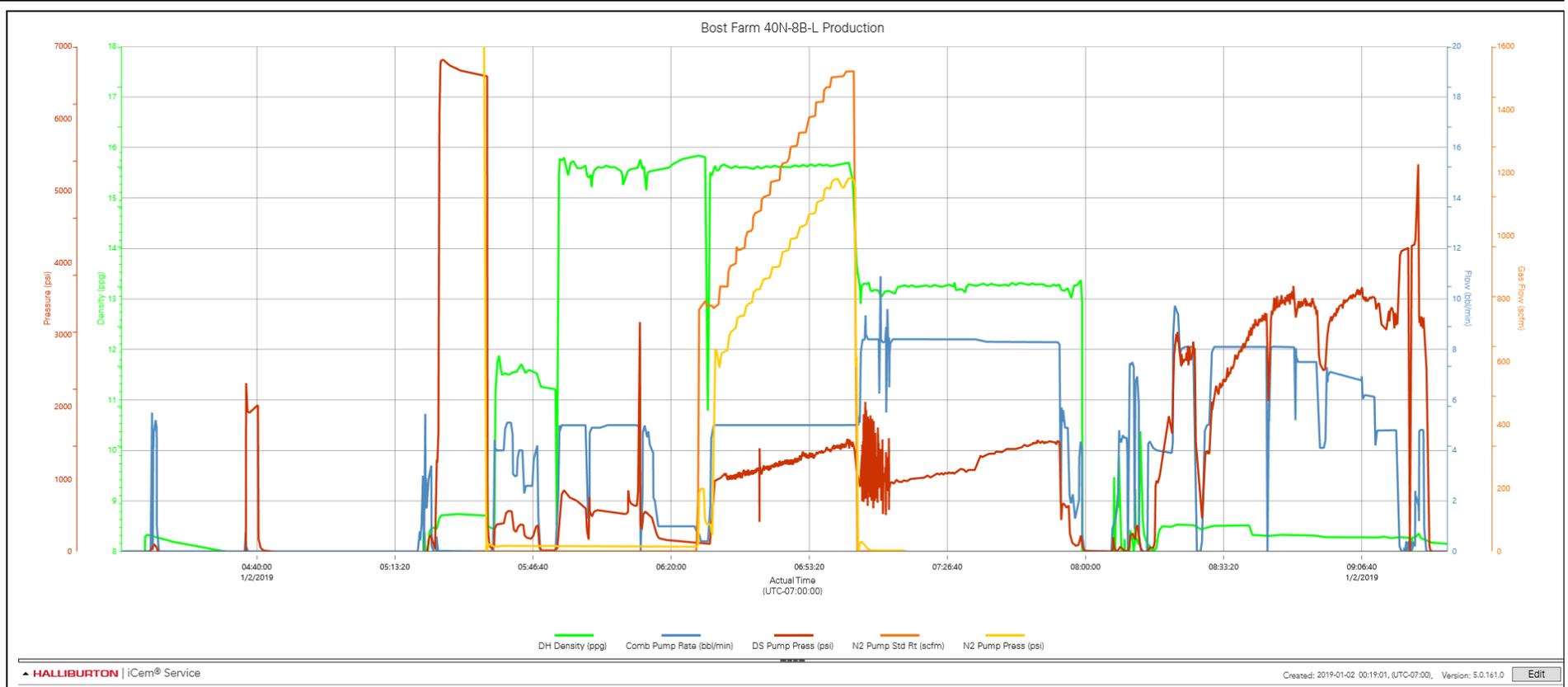
Event	14	Start Job	Start Job	1/2/2019	04:14:19	COM11	8.30	0.00	6.00	
Event	15	Prime Pumps	Prime Pumps	1/2/2019	04:14:26	COM9	8.33	0.00	10.00	
Event	16	Check Weight	Check Weight	1/2/2019	04:19:38	COM9	8.20	0.00	-45.00	Batch up tub of Tuned Spacer 11.5ppg, Weight verified by pressurized mud scale.
Event	17	Other	Other	1/2/2019	04:37:11	COM9	7.92	0.00	-44.00	attempted to fill, HPVT was frozen, used steam to thaw out iron
Event	18	Other	Other	1/2/2019	05:19:15	COM9	1.07	0.00	-26.00	fill lines, 3bbl fresh water, 3bbl/min 240psi,
Event	19	Test Lines	Test Lines	1/2/2019	05:24:32	COM9	8.72	0.00	6824.00	Tested the lines to 500 psi to test the EKO's They worked so we performed a high psi test to 7000 psi and held for N2 to perform their pressure test.
Event	20	Test Lines	Test Lines	1/2/2019	05:25:00	USER	8.72	0.00	6816.00	N2 Crew performed 10,000 psi pressure test, engineers had com ports switched and did not record N2 pressure at this time
Event	21	Drop Bottom Plug	Drop Bottom Plug	1/2/2019	05:36:04	COM9	8.46	0.00	86.00	Customer and Halliburton Rep witnessed the bottom plug being dropped
Event	22	Pump Spacer 1	Pump Spacer 1	1/2/2019	05:36:54	COM9	8.46	0.00	29.00	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	23	Shutdown	Shutdown	1/2/2019	05:48:01	COM9	11.54	0.00	174.00	Shutdown to mix up first tub of Cap cement
Event	24	Check Weight	Check Weight	1/2/2019	05:50:37	COM9	11.23	0.00	17.00	Weight verified by pressurized mud scale.
Event	25	Pump Cap Cement	Pump Cap Cement	1/2/2019	05:52:15	COM9	11.21	0.60	17.00	Pump 114.80bbls(545sks) of cap cement at 15.6ppg, 1.182 ft3/sk, 5.195 gal/sk, 5bbl/min 720psi
Event	26	Check Weight	Check Weight	1/2/2019	06:01:15	COM9	15.57	4.90	548.00	Weight verified by pressurized mud scale.
Event	27	Pressure Up	Pressure Up	1/2/2019	06:12:00	USER	15.61	5.00	825.00	Shut in N2 manifold bypass and pressure increased because of frozen check valve
Event	28	Slow Rate	Shutdown	1/2/2019	06:15:41	USER	15.58	2.20	432.00	Foam manifold bypass froze, slowed down to thaw
Event	29	Check Weight	Check Weight	1/2/2019	06:28:36	COM9	13.09	0.40	106.00	Weight verified by pressurized mud scale.
Event	30	Pump Foam Cement	Pump Foam Cement	1/2/2019	06:29:32	COM9	15.42	4.20	230.00	Pump 167 bbls (795 sacks) foamed lead cement at 15.6ppg, 1.18 yield. Foamed down to 13.2ppg. Pumped at 5 bbls/min, 1230 psi

Event	31	Pump Tail Cement	Pump Tail Cement	1/2/2019	07:05:06	COM9	13.39	5.00	1023.00	Pumped 397 bbls (1080 sacks) tail cement at 13.2ppg, 2.057 yield. 8bbl/min, 1210psi
Event	32	Check Weight	Check Weight	1/2/2019	07:05:54	COM9	13.24	8.40	1288.00	density verified with pressurized mud scale
Event	33	Shutdown	Shutdown	1/2/2019	07:59:16	COM9	3.49	0.00	64.00	Shutdown to wash up pumps and lines, annular closed
Event	34	Clean Lines	Clean Lines	1/2/2019	08:00:00	USER	0.70	0.00	1.00	Clean lines and wash up pump
Event	35	Drop Top Plug	Drop Top Plug	1/2/2019	08:14:34	COM9	8.20	0.00	-21.00	Customer witnessed HES employee drop top plug
Event	36	Pump Displacement	Pump Displacement	1/2/2019	08:14:43	COM9	8.18	0.00	-23.00	Pump 385 bbls displace. 10 gal. MMCR in first 20 bbls, 10 gal. MMCR in last 70bbls
Event	37	Displ Reached Cement	Displ Reached Cement	1/2/2019	08:17:04	COM9	8.06	4.00	1005.00	At 60bbls away we caught the plug
Event	38	Shutdown	Shutdown	1/2/2019	08:26:26	COM9	8.53	0.00	2097.00	Company rep wanted to shut down because there were no returns, got returns immediately before shutting down.
Event	39	Pump Displacement	Pump Displacement	1/2/2019	08:28:03	COM9	8.43	0.00	457.00	Upon company reps. approval we slowly began to increase rate until 8bbl/min was reached
Event	40	Comment	Comment	1/2/2019	08:30:00	USER	8.49	5.60	1388.00	176 gallons of Foamer 1026 used. The N2 unit started with 216,600 scf and ended with 96,600. Total N2 used for the job was 120,000 scf (44,903 scf for foam cement and 75,097 scf during conditioning and cool down)
Event	41	Bump Plug	Bump Plug	1/2/2019	09:15:47	COM9	8.30	0.20	4013.00	bump plug @ calculated displacement, final circulating pressure was 3500psi, took 500psi over to 4000psi, held for 3 minutes
Event	42	Other	Other	1/2/2019	09:19:24	COM9	8.27	0.40	4254.00	Pressured up to shift the wet shoe sub at 2bbl/min, shifted at 5400psi
Event	43	Other	Other	1/2/2019	09:20:24	COM9	8.35	1.60	3852.00	Pumped 6bbl wet shoe at 5bbl/min, pressure was at 3300psi
Event	44	Other	Other	1/2/2019	09:21:58	COM9	8.24	0.00	2740.00	floats held, got 3.5bbls back to the truck
Event	45	End Job	End Job	1/2/2019	09:23:45	COM9				cement job completed, 15bbls of spacer were returned to surface, calculated TOTC 7815', TOLC 3722', TOCC 1042"
Event	46	Post-Job Safety Meeting (Pre Rig-Down)	Post-Job Safety Meeting (Pre Rig-Down)	1/2/2019	09:30:00	USER	8.16	10.60	359.00	Discussed job and delegated tasks for rig down procedure
Event	47	Rig Down Lines	Rig Down Lines	1/2/2019	09:40:00	USER				EE's began to rig down all HES lines and equipment

Event	48	Rig-Down Completed	Rig-Down Completed	1/2/2019	10:30:00	USER	All HES lines and equipment were rigged down without incident, EE's staged at Exit to location in preparation for journey
Event	49	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	1/2/2019	11:00:00	USER	Kameron White and crew would like to thank you for your business and choosing Halliburton Cement, please give us a call if you have any questions or concerns



3.2 Bost Farm 40N-8B-L Production – Job Chart without Events



3.3 Bost Farm 40N-8B-L Production – Job Chart without Nitrogen

