

# HALLIBURTON

iCem<sup>®</sup> Service

**SRC ENERGY INC-EBUS**

**Bost Farm 12C-11-L Production**

Sincerely,  
**Meghan Jacobs**

## 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 **Bost Farm 12C-11-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.

**Lost returns 220bbls into displacement; bumped plug and floats held.**

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*

<b>Sold To #:</b> 359915		<b>Ship To #:</b> 3982026		<b>Quote #:</b>		<b>Sales Order #:</b> 0905989897					
<b>Customer:</b> SRC ENERGY INC-EBUS						<b>Customer Rep:</b> LOVEL					
<b>Well Name:</b> BOST FARM				<b>Well #:</b> 12C-11-L		<b>API/UWI #:</b> 05-123-50261-00					
<b>Field:</b> WATTENBERG		<b>City (SAP):</b> MILLIKEN		<b>County/Parish:</b> WELD		<b>State:</b> COLORADO					
<b>Legal Description:</b> NW SW-7-5N-66W-2666FSL-1134FWL											
<b>Contractor:</b> PRECISION DRLG					<b>Rig/Platform Name/Num:</b> PRECISION 462						
<b>Job BOM:</b> 7523 7523											
<b>Well Type:</b> HORIZONTAL OIL											
<b>Sales Person:</b> HALAMERICA\HB41307					<b>Srv Supervisor:</b> Lance Carpenter						
<b>Job</b>											
<b>Formation Name</b>											
<b>Formation Depth (MD)</b>		<b>Top</b>				<b>Bottom</b>					
<b>Form Type</b>					<b>BHST</b>						
<b>Job depth MD</b>		17914			<b>Job Depth TVD</b>	7103					
<b>Water Depth</b>					<b>Wk Ht Above Floor</b>	4					
<b>Perforation Depth (MD)</b>		<b>From</b>				<b>To</b>					
<b>Well Data</b>											
<b>Description</b>	<b>New / Used</b>	<b>Size in</b>	<b>ID in</b>	<b>Weight lbm/ft</b>	<b>Thread</b>	<b>Grade</b>	<b>Top MD ft</b>	<b>Bottom MD ft</b>	<b>Top TVD ft</b>	<b>Bottom TVD ft</b>	
Casing		9.625	8.921	36	LTC	J-55	0	1827		1827	
Casing		5.5	4.778	20	TXP-BTC	P110IC	0	17914		7103	
Open Hole Section			8.5				1827	17934	1827	7103	
<b>Tools and Accessories</b>											
<b>Type</b>	<b>Size in</b>	<b>Qty</b>	<b>Make</b>	<b>Depth ft</b>		<b>Type</b>	<b>Size in</b>	<b>Qty</b>	<b>Make</b>		
<b>Guide Shoe</b>	5.5					<b>Top Plug</b>	5.5	1			
<b>Float Shoe</b>	5.5			17914		<b>Bottom Plug</b>	5.5	1			
<b>Float Collar</b>	5.5			17808		<b>SSR plug set</b>	5.5		HES		
<b>Insert Float</b>	5.5					<b>Plug Container</b>	5.5	1	HES		
<b>Stage Tool</b>	5.5					<b>Centralizers</b>	5.5		HES		
<b>Fluid Data</b>											
<b>Stage/Plug #:</b> 1											
<b>Fluid #</b>	<b>Stage Type</b>	<b>Fluid Name</b>			<b>Qty</b>	<b>Qty UoM</b>	<b>Mixing Density lbm/gal</b>	<b>Yield ft<sup>3</sup>/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>

1	Tuned Prime Cement Spacer Base - RKS/SE	TUNED PRIME CEMENT SPACER SYS	80	bbl	12.5	2.79	16.6		
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	ElastiCem	ELASTICEM (TM) SYSTEM	1212	sack	13.2	1.57		8	7.52
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	NeoCem	NeoCem TM	419	BBL	13.2	2.04		8	9.79
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	MMCR Displacement	MMCR Displacement	20	bbl	8.34			8	
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 ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
5	Water	Water	305	bbl	8.33			8	
1.6020 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
6	MMCR Displacement	MMCR Displacement	90	bbl	8.34			8	
0.2140 gal/bbl		MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)							
Cement Left In Pipe		Amount	106 ft		Reason			Shoe Joint	
Mix Water:		pH 7	Mix Water Chloride:		200 ppm		Mix Water Temperature:		72 °F
Cement Temperature:		## °F °C	Plug Displaced by:		8.34 lb/gal Water		Disp. Temperature:		72 °F
Plug Bumped?		No	Bump Pressure:		2680 psi		Floats Held?		Yes
Cement Returns:		## bbl m3	Returns Density:		## lb/gal kg/m3		Returns Temperature:		## °F °C

**Comment** THE JOB MIXED WELL ONCE STARTED. NO ACCIDENT, INJURY OR SPILL. THERE WAS SOME CONCERN ABOUT THE PREVIOUS FEW JOBS SO IT WAS DECIDED TO LAUNCH THE BOTTOM PLUG AFTER 25 BBL OF SPACER. SPACER AND CEMENT VOLUMES CHECKED WITH MIX WATER AND SCALED. PRESSURE CLIMB AFTER BOTTOM PLUG LANDED FOLLOWED BY ERATIC PRESSURES. RATE ADJUSTED THROUGHOUT TAIL TO MINIMIZE THIS. TOP PLUG DROPPED BEFORE DISPLACEMENT. PRESSURE NOTICED ON PUMP WHEN VALVES OPEN TO BEGIN DISPLACEMENT AND INSTANTLY WHEN ENGAGED PUMPS. WALKED RATE DOWN TO KEEP UNDER 3400 PSI THEN AT 220 BBL AWAY PRESSURE FELL 600 PSI. STARTED PICKING UP RATE BUT NO RETURNS SO SLOWED TO 6 BPM PER CUSTOMER REQUEST. NO RETURNS AFTER THIS POINT IN THE JOB. RECOMMENDED SLOWING DOWN MORE. BUMPED PLUG AT 2680 PSI, TOOK TO 3000 PSI. PRESSURE DROPPED QUICKLY. DECIDED TO OPEN WET SHOE SUB BUT PRESSURE MAINTAINED AT 3200 PSI. PUMPED CALCULATED DISPLACMENT VOLUME PLUS 6 BBL WET SHOE. CHECKED FLOATS AND GOT 3 BBL BACK. FLOATS HELD

## 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)	Comb Pump Rate (bbl/min)	Comments
Event	1	Call Out	Call Out	9/26/2019	13:30:00	USER				CREW CALLED OUT. ON LOCATION 1930
Event	2	Depart Shop for Location	Depart Shop for Location	9/26/2019	17:30:00	USER				CREW HAS VERIFIED MATERIALS AND EQUIPMENT FOR THE JOB. CREW HAS JOURNEY MANAGEMENT SAFETY MEETING DISCUSSING ROUTE, CONVOY ORDER, FOLLOWING DISTANCE, HAZARDS, CONSTRUCTION, COMMUNICATION AND DEPARTS FOR LOCATION
Event	3	Arrive At Loc	Arrive At Loc	9/26/2019	18:15:00	USER				CREW ARRIVES ON LOCATION. RIG RIH CASING 15900'. CREW HAS SITE ASSESSMENT SAFETY MEETING DISCUSSING EQUIPMENT LAYOUT, HAZARDS, RED ZONES, SIMOPS AND BEGIN SPOTTING EQUIPMENT AND RIGGING UP AFTER PRE RIG UP SAFETY MEETING WHERE LINE OF FIRE, SLIPS TRIPS FALLS, TEAM LIFTING, PINCH POINTS, PPE WERE DISCUSSED
Event	4	Casing on Bottom	Arrive At Loc	9/26/2019	21:15:00	USER				CASING ON BOTTOM. CASING CREW BEGINS RIGGING DOWN AND RIG BEGINS CIRCULATION
Event	5	Safety Meeting	Safety Meeting	9/26/2019	23:15:00	USER	5.00	10.01	0.00	RIG CIRCULATED 10 BPM AT 1400 PSI. SOME GAS BUT UNDER 500 UNITS AFTER SAFETY MEETING. CREW, RIG CREW AND CUSTOMER REP DISCUSSED MUSTER AREAS, STOP WORK, COMMUNICATION, PRESSURE, RED ZONES, CONTINGENCIES, ROLES, 3 POINTS OF CONTACT, HAZARDS AND THE JOB PROCEEDURE
Event	6	Comment	Start Job	9/26/2019	23:40:57	COM6	4.00	10.02	0.00	START JOB
Event	7	Test Lines	Test Lines	9/27/2019	00:01:19	COM6	4.00	10.04	0.00	FILL HES LINES WITH 3 BBL WATER. PRESSURE TEST HES LINES TO 6500 PSI. HELD FOR A FEW MINUTES, TEST GOOD
Event	8	Pump Spacer 1	Pump Spacer 1	9/27/2019	00:09:28	COM6	30.00	8.55	0.00	PUMP 80 BBL TUNED PRIME SPACER 12.5# 2.79 YIELD 16.6 GAL



Event	9	Drop Bottom Plug	Drop Bottom Plug	9/27/2019	00:16:20	COM6	358.00	12.63	6.00	DROPPED BOTTOM PLUG 25 BBL INTO DISPLACEMENT AS RECOMMENDED BY ENGINEERS
Event	10	Pump Lead Cement	Pump Lead Cement	9/27/2019	00:25:04	COM6	178.00	12.65	6.10	PUMP 339 BBL ELASTICEM LEAD 13.2# 1.57 YIELD 7.52 GAL 1212 SACKS.
Event	11	Pump Tail Cement	Pump Tail Cement	9/27/2019	01:15:39	COM6	223.00	13.06	6.00	PUMP 418 BBL NEOCEM TAIL 13.2# 2.04 YIELD 9.79 GAL 1151 SACKS. NOTICED ERATIC PRESSURE AFTER BOTTOM PLUG LANDED AND THROUGHOUT TAIL. BOTTOM PLUG LANDED AS TAIL CEMENT STARTED. ADJUSTED RATES TO MINIMIZE PRESSURE SPIKES
Event	12	Shutdown	Shutdown	9/27/2019	02:24:07	USER	23.00	13.04	0.00	SHUTDOWN. WASH PUMPS AND LINES TO THE PIT THROUGH MANIFOLD ON THE RIG FLOOR
Event	13	Drop Top Plug	Drop Top Plug	9/27/2019	02:32:29	COM6	24.00	8.13	0.00	DROP TOP PLUG
Event	14	Pump Displacement	Pump Displacement	9/27/2019	02:32:33	COM6	27.00	8.12	0.00	PUMP 395 BBL WATER DISPLACEMENT. FIRST 20 BBL MMCR THEN BE-3 AND CLAYWEB THROUGHOUT WITH THE LAST 70 BBL MMCR
Event	15	Comment	Comment	9/27/2019	02:59:11	USER	3380.00	8.26	6.80	AT 220 BBL AWAY PRESSURE DROPPED ABOUT 600 PSI. WE STARTED PICKING RATE BACK UP TO 8 BPM WHILE CHECKING ON RETURNS. RETURNS STOPPED. SLOWED RATE BACK DOWN TO 6 BPM AS PER CUSTOMER REP AND FINISHED DISPALCEMENT WITHOUT RETURNS. RECOMMENDED SLOWING DOWN MORE. TOP OF SPACER AT 3916' AND TOP OF CEMENT 5878' CALCULATED WHEN LOST RETURNS.
Event	16	Bump Plug	Bump Plug	9/27/2019	03:34:33	COM6	2933.00	8.23	0.00	BUMP PLUG. FINAL CIRCULATING PRESSURE 4 BPM AT 2680 PSI. TOOK TO 3000 PSI AND PRESSURE FELL BACK
Event	17	Comment	Comment	9/27/2019	03:49:26	USER	2608.00	8.21	0.00	TALKED WITH CUSTOMER REP AND DECIDED TO PRESSURE UP TO OPEN WET SHOE SUB. PUMPED BUT PRESSURE MAINTAINED AROUND 3200 PSI AT 2 BPM. PUMPED CALCULATED DISPLACEMENT PLUG 6 BBL WET SHOE BUT NO INDICATION THAT WET SHOE OPENED. CHECKED FLOATS, FLOATS HELD 3 BBL BACK
Event	18	Safety Meeting	Safety Meeting	9/27/2019	04:00:00	USER	12.00	8.13	0.00	CREW HAS PRE RIG DOWN SAFETY MEETING DISCUSSING SLIPS TRIPS FALLS, LINE OF FIRE, PINCH POINTS, TEAM LIFTING, SIMOPS, RED ZONES AND BEGIN RIGGING DOWN EQUIPMENT

Event	19	Depart Location	Depart Location	9/27/2019	06:00:00	USER
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CREW IS RIGGED DOWN AND READY TO DEPART. CREW HAS JOURNEY MANAGEMENT SAFETY MEETING DISCUSSING ROUTE, FIT FOR DUTY, HOURS OF SERVICE, CONVOY ORDER, FOLLOWING DISTANCE, WALK AROUNDS AND DEPARTS FROM LOCATION

## 3.0 Attachments

### 3.1 Bost Farm 12C-11-L Production – Job Chart

