

# HALLIBURTON

iCem<sup>®</sup> Service

**SRC ENERGY INC-EBUS**

United States of America, COLORADO

Date: Wednesday, May 30, 2018

**Harvesters State 5C-16-M Production**

Job Date: Thursday, May 17, 2018

Sincerely,

**Bryce Hinsch**

## 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 **Harvesters State 5C-16-M** 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 24 bbls of cement 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*

<b>Sold To #:</b> 359915		<b>Ship To #:</b> 3858946		<b>Quote #:</b>		<b>Sales Order #:</b> 0904850432				
<b>Customer:</b> SRC ENERGY INC-EBUS				<b>Customer Rep:</b> Tony						
<b>Well Name:</b> HARVESTERS STATE			<b>Well #:</b> 5C-16-M		<b>API/UWI #:</b> 05-123-46371-00					
<b>Field:</b> WATTENBERG		<b>City (SAP):</b> LUCERNE		<b>County/Parish:</b> WELD		<b>State:</b> COLORADO				
<b>Legal Description:</b> SW NE-15-6N-66W-1733FNL-2334FEL										
<b>Contractor:</b> Precision				<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> Bryan Kraft						
<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>		15094ft		<b>Job Depth TVD</b>		7247ft				
<b>Water Depth</b>				<b>Wk Ht Above Floor</b>		4ft				
<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	1836	0	1836
Casing	0	5.5	4.778	20	BTC	P-110	0	15094	0	7247
Open Hole Section			8.5				1836	15108	1836	7247
<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>						<b>Top Plug</b>	5.5	1	WF	
<b>Float Shoe</b>	5.5	1	WF	15094		<b>Bottom Plug</b>	5.5	1	WF	
<b>Float Collar</b>	5.5	1	WF	15045		<b>SSR plug set</b>				
<b>Insert Float</b>						<b>Plug Container</b>	5.5	1	HES	
<b>Stage Tool</b>						<b>Centralizers</b>				
<b>Fluid Data</b>										
<b>Stage/Plug #: 1</b>										
<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 ft3/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>	
1	Spacer	TUNED SPACER III	40	bbl	11.5	3.8	23.8	4	1407	
147.42 lbm/bbl		<b>BARITE, BULK (100003681)</b>								
35.10 gal/bbl		<b>FRESH WATER</b>								
0.50 gal/bbl		<b>MUSOL A, 330 GAL TOTE - (790828)</b>								

0.50 gal/bbl		<b>DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)</b>							
<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 ft3/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>
2	Lead	ELASTICEM (TM) SYSTEM	1052	sack	13.2	1.57	7.54	8	7932
0.15 %		<b>FE-2 (100001615)</b>							
0.30 %		<b>SCR-100 (100003749)</b>							
7.54 Gal		<b>FRESH WATER</b>							
<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 ft3/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>
3	Tail	NEOCER TM	986	sack	13.2	2.04	9.75	8	9614
9.71 Gal		<b>FRESH WATER</b>							
0.08 %		<b>SCR-100 (100003749)</b>							
<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 ft3/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>
4	Displacement	FRESH WATER	334	bbl	8.33			6	14028
<b>Cement Left In Pipe</b>	<b>Amount</b>	0 ft			<b>Reason</b>			<b>Wet Shoe Joint</b>	
Mix Water:	pH 7	Mix Water Chloride:	<300 ppm			Mix Water Temperature:	75 °F		
Cement Temperature:	N/A	Plug Displaced by:	8.33lb/gal Fresh Water			Disp. Temperature:	75 °F		
Plug Bumped?	Yes	Bump Pressure:	2600 psi			Floats Held?	Yes		
Cement Returns:	24 bbl	Returns Density:	N/A			Returns Temperature:	N/A		
<b>Comment:</b> The plug bumped @ calculated displacement @ 2600 PSI, shutdown for 1 minute @ 3100 PSI. The sleeve opened @ 5112 PSI and pumped a 6 BBL wet shoe. The floats held and received 2.5 BBLS back to the truck. Total of 24 BBLS cement returned to surface.									

## 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	5/17/2018	10:00:00	USER				CREW CALLED OUT AT 10:00 5/17/2018, REQUESTED ON LOCATION 12:00 5/17/2018. CREW PICKED UP CEMENT, CHEMICALS (20 GAL MUSOL A, 20 GAL DUAL SPACER B, 10 GAL D-AIR, 20 GAL CLA-WEB, 20 GAL MICROMATRIX, 3LBS BE-3), 200 LBS OF SUGAR, AND PLUG CONTAINER FROM FORT LUPTON, CO. BULK 660: 10897881/11764052, BULK 660 BACK UP AIR: 10867098/11338213, PUMP 12644845/11826999.
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	5/17/2018	10:15:00	USER				DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW.
Event	3	Summit Crew Leave Location	Crew Leave Location	5/17/2018	10:30:00	USER				STARTED JOURNEY MANAGEMENT FROM PREVIOUS JOBS LOCATION.
Event	4	Arrive at Location from Service Center	Arrive at Location	5/17/2018	11:45:00	USER				END JOURNEY MANAGEMENT. MEET WITH CO. MAN TO DISCUSS JOB; SURFACE CASING: 36# 9.625" @ 1836', 5.5" CASING: 20# @ 15094', 49' SHOE JOINT, 8.5" OPEN HOLE, TVD @ 7247', 9.8 PPG WELL FLUID, FRESH WATER

										DISPLACEMENT. CASING LANDED @ 13:30 5/17/2018.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	5/17/2018	12:00:00	USER				HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH LOCATION, RIG UP AND WEATHER.
Event	6	Rig-Up Equipment	Rig-Up Equipment	5/17/2018	12:15:00	USER				CREW STAGED EQUIPMENT AND RIGGED UP BULK, IRON, AND WATER HOSES TO PERFORM JOB.
Event	7	Safety Meeting - Pre Job	Safety Meeting - Pre Job	5/17/2018	15:00:00	USER	8.29	0.00	0.00	MEETING WITH HALLIBURTON AND RIG PERSONNEL. COMMUNICATED POTENTIAL SAFETY HAZARDS AND JOB DETAILS.
Event	8	Start Job	Start Job	5/17/2018	15:42:30	COM5	0.00	0.00	-9.00	BEGIN RECORDING JOB DATA.
Event	9	Test Lines	Test Lines	5/17/2018	15:45:26	COM5	8.05	0.20	8.00	PRESSURE TESTED IRON TO 6000 PSI. KICKOUTS SET @ 500 PSI, KICKED OUT @ 1800 PSI, 5TH GEAR STALL OUT @ 1850 PSI.
Event	10	Pump Spacer 1	Pump Tuned Spacer @ 11.5 ppg	5/17/2018	15:56:15	COM5	10.14	3.10	147.00	PUMP 40 BBLS OF TUNED SPACER @ 11.5 LB/GAL, 3.8 YIELD, 23.8 GAL/SKS, ADDED 20 GAL MUSOL A, 20 GAL DUAL SPACER B, 10 GAL D-AIR, DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	11	Drop Bottom Plug	Drop Bottom Plug	5/17/2018	16:07:33	USER	11.87	3.30	104.00	PLUG LEFT CONTAINER.
Event	12	Pump Lead Cement	Pump Lead Cement @ 13.2 ppg	5/17/2018	16:09:06	COM5	13.12	3.30	114.00	PUMP 1052 SKS OF ELASTICEM @ 13.2 LB/GAL, 1.57 YIELD, 7.54 GAL/SK,



										294 BBLS, CALCULATED TOL @ SURFACE, DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	13	Pump Tail Cement	Pump Tail Cement @ 13.2 ppg	5/17/2018	16:52:44	COM5	13.25	8.00	295.00	PUMP 986 SKS OF NEOCEM @ 13.2 LB/GAL, 2.04 YIELD, 9.75 GAL/SK, 358 BBLS, CALCULATED TOT @ 6344', DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	14	Shutdown	Shutdown	5/17/2018	17:44:58	USER	1.11	0.70	37.00	SHUTDOWN TO WASH PUMPS AND LINES / DROP TOP PLUG.
Event	15	Drop Top Plug	Drop Top Plug	5/17/2018	17:55:32	USER	8.13	0.00	3.00	DROP TOP PLUG, VERIFIED BY COMPANY MAN.
Event	16	Pump Displacement	Pump Fresh Water Displacement	5/17/2018	17:56:48	COM5	8.36	0.00	-1.00	BEGIN CALCULATED DISPLACEMENT OF 334 BBLS WITH FRESH WATER. FIRST 10 BBLS WITH 5 GAL MICROMATRIX, CLA-WEB, AND BE-3, REST OF DISPLACEMENT WITH 20 GAL CLA-WEB AND 3 LBS BE-3. LAST 70 BBLS ADDED 15 GAL MMCR.
Event	17	Cement Returns to Surface	Cement Returns to Surface	5/17/2018	18:34:06	USER	8.43	7.80	2990.00	CEMENT RETURNS TO SURFACE @ 310 BBLS INTO DISPLACEMENT. TOTAL OF 24 BBLS CEMENT TO SURFACE.
Event	18	Bump Plug	Bump Plug	5/17/2018	18:38:39	USER	8.42	5.50	2636.00	PLUG BUMPED AT CALCULATED DISPLACEMENT. FINAL CIRCULATING PRESSURE OF 2600 PSI.
Event	19	Shutdown	Shutdown	5/17/2018	18:38:51	USER	8.44	0.00	3167.00	SHUTDOWN FOR 1 MINUTE @ 3100 PSI

Event	20	Other	Open Sleeve	5/17/2018	18:41:13	USER	8.50	1.50	5030.00	SLEEVE OPENED @ 5112 PSI.
Event	21	Pump Displacement	Pump Wet Shoe	5/17/2018	18:41:21	USER	8.52	4.10	3065.00	PUMP 6 BBLS FRESH WATER FOR WET SHOE.
Event	22	Check Floats	Check Floats	5/17/2018	18:43:55	USER	8.43	0.00	2005.00	RELEASED PRESSURE, FLOATS HELD, 2.5 BBLS BACK.
Event	23	End Job	End Job	5/17/2018	18:45:21	COM5	8.42	0.00	9.00	STOP RECORDING JOB DATA.
Event	24	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	5/17/2018	18:50:00	USER	8.41	0.00	11.00	DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES.
Event	25	Rig-Down Completed	Rig-Down Completed	5/17/2018	20:00:00	USER				ALL HALLIBURTON ITEMS WERE STOWED FOR TRAVEL, AND LOCATION WAS CLEAN.
Event	26	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	5/17/2018	20:15:00	USER				DISCUSSED ROUTES HAZARDS AND COMMUNICATION WITH CREW.
Event	27	Depart Location	Depart Location	5/17/2018	20:30:00	USER				THANK YOU FOR USING HALLIBURTON - BRYAN KRAFT AND CREW.

## 3.0 Attachments

### 3.1 SRC Energy Harvesters State 5C-16-M Production Job Chart

