

# HALLIBURTON

iCem<sup>®</sup> Service

**SRC Energy**

Date: Wednesday, May 16, 2018

**Harvesters State 4N-16A-M Production**

Job Date: Sunday, May 06, 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 **Harvesters State** 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 26 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 Ft. Lupton**

*The Road to Excellence Starts with Safety*

<b>Sold To #:</b> 359915		<b>Ship To #:</b> 3858713		<b>Quote #:</b>		<b>Sales Order #:</b> 0904832251				
<b>Customer:</b> SRC ENERGY INC-EBUS				<b>Customer Rep:</b> Steve Wilson						
<b>Well Name:</b> HARVESTERS STATE			<b>Well #:</b> 4N-16A-M			<b>API/UWI #:</b> 05-123-46362-00				
<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-1673FNL-2333FEL										
<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>Srvc Supervisor:</b> Luke Kosakewich						
<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>		14855ft				<b>Job Depth TVD</b>		6,957ft		
<b>Water Depth</b>						<b>Wk Ht Above Floor</b>				
<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	1825	0	1825
Casing	0	5.5	4.778	20	BTC	P-110	0	14844	0	6957
Open Hole Section			8.5				1825	14855	1825	6957
<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	Weatherford	
<b>Float Shoe</b>	5.5	1	Weatherford	14844		<b>Bottom Plug</b>	5.5	1	Weatherford	
<b>Float Collar</b>	5.5	1	Weatherford	14794		<b>SSR plug set</b>				
<b>Wet Shoe Sub</b>	5.5	1	Weatherford	14735		<b>Plug Container</b>	5.5	1	HES	
<b>Stage Tool</b>	5.5					<b>Centralizers</b>	5.5	222		
<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	Tuned Spacer III	Tuned Spacer III	40	bbl	11.5	3.8		5		
<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	ElastiCem LEAD	ELASTICEM (TM) SYSTEM		1016	sack	13.2	1.57		8	7.54
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		987	sack	13.2	2.04		8	9.77
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	
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 and Biocide		237	bbl	8.33			9	
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		70	bbl	8.34			5	
Cement Left In Pipe		Amount	49 ft			Reason			Shoe Joint	
Comment There were full returns throughout the job. Halliburton bumped the plug 500 psi. over 2,900 psi. at 4 bpm and held for 5 minutes. Finale pressure was 3,400 psi. Got 40 bbls. of spacer and 26 bbls. of cement to surface. Pressured up to 5,100 psi. to shift the sleeve. Pumped 6 bbls. of fresh water for a wet shoe. Bled off pressure to check floats and floats held. Got 2.5 bbls. of fluid back to the truck. Estimated TOT is 6,114’.										

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DS Pump Press (psi)	Comb Pump Rate (bbl/min)	DH Density (ppg)	Comments
Event	1	Call Out	Call Out	5/5/2018	22:00:00	USER				Crew was called out at 22:00 for an on location time of 03:00.
Event	2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	5/6/2018	01:00:00	USER				Crew held a pre journey safety meeting and JSA.
Event	3	Depart Shop for Location	Depart Shop for Location	5/6/2018	01:10:00	USER				Started journey management with dispatch and left location.
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	5/6/2018	02:00:00	USER				Crew performed a site assessment, safety meeting and hazard hunt on location. Checked in with the customer and discussed the job procedures, rig up and well bore schematics to calculate the job. The rig was running casing.
Event	5	Other	Other	5/6/2018	02:15:00	USER				
Event	6	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	5/6/2018	02:20:00	USER				The crew held a pre rig up safety meeting and JSA.
Event	7	Rig-Up Equipment	Rig-Up Equipment	5/6/2018	02:25:00	USER				The crew rigged up all lines, hoses and equipment for the job.
Event	8	Safety Meeting	Safety Meeting	5/6/2018	05:30:00	USER	12.00	0.00	0.00	All personnel on location held a pre cement job safety meeting and JSA.
Event	9	Start Job	Start Job	5/6/2018	06:22:02	COM5	13.00	0.00	8.09	Pumped 3 bbls. of fresh water at 3 bpm. to fill lines and establish circulation.

Event	10	Test Lines	Test Lines	5/6/2018	06:26:34	COM5	39.00	0.00	8.10	Pressure tested lines to 6,000 psi. with a 500 psi. electronic kick out test.
Event	11	Pump Spacer 1	Pump Spacer 1	5/6/2018	06:33:50	COM5	20.00	0.00	8.08	Pumped 40 bbls. of Tuned Spacer III with surfactants mixed at 11.5 ppg., Yield: 3.8 ft3/sks, 23.8 gal/sks. Density was verified by pressurized scales.
Event	12	Drop Bottom Plug	Drop Bottom Plug	5/6/2018	06:41:15	COM5	403.00	4.60	12.07	Dropped the bottom plug which was witnessed by the customer.
Event	13	Pump Lead Cement	Pump Lead Cement	5/6/2018	06:42:12	COM5	448.00	4.60	13.13	Pumped 284 bbls. (1,016 sks.) of Elasticem mixed at 13.2 ppg., Yield: 1.57 ft3/sks, 7.54 gal/sks. Density was verified by pressurized scales.
Event	14	Pump Tail Cement	Pump Tail Cement	5/6/2018	07:19:08	COM5	687.00	8.00	13.34	Pumped 359 bbls. (987 sks.) of Neocem mixed at 13.2 ppg. Yield: 2.04 ft3/sks, 9.77 gal/sks. Density was verified by pressurized scales.
Event	15	Shutdown	Shutdown	5/6/2018	08:04:21	COM5	151.00	0.00	13.22	Shutdown and washed pumps and lines until clean.
Event	16	Drop Top Plug	Drop Top Plug	5/6/2018	08:13:51	COM5	13.00	0.00	0.26	Dropped the top plug, which was witnessed by the customer.
Event	17	Pump Displacement	Pump Displacement	5/6/2018	08:13:55	COM5	13.00	0.00	0.24	Pumped 326.8 bbls. of fresh water with MMCR in the first 20 bbls. and last 70 bbls. Biocide and Clayweb was added throughout the rest of displacement.
Event	18	Shutdown	Shutdown	5/6/2018	09:02:05	USER	2356.00	0.00	8.18	Lost prime on 4 X 4 centrifugal pump. Shutdown to reprime the 4



										X 4 pump.
Event	19	Resume	Resume	5/6/2018	09:05:05	USER	2363.00	0.90	8.18	Resumed the rest of displacement.
Event	20	Bump Plug	Bump Plug	5/6/2018	09:10:08	COM5	3505.00	0.00	8.21	Bumped the plug 500 psi. over 2,900 psi. at 3 bpm. Finale pressure was 3,500 psi. Held pressure for 5 minutes. Pressure held. Circulated 40 bbls. of Tuned III spacer, and 26 bbls. of cement to surface.
Event	21	Pressure Up Well	Pressure Up Well	5/6/2018	09:14:53	COM5	3605.00	0.00	8.21	P
Event	22	Check Floats	Check Floats	5/6/2018	09:16:54	USER	2827.00	4.70	8.17	Bled off pressure to check floats. Floats held. Got 2.5 bbls. of fluid back to the truck.
Event	23	End Job	End Job	5/6/2018	09:19:57	COM5	11.00	0.00	8.10	Washed and blew down all pumps and lines until clean and dry.
Event	24	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	5/6/2018	09:30:00	USER	34.00	1.40	8.15	Halliburton cement crew held a pre rig down safety meeting and JSA.
Event	25	Rig-Down Equipment	Rig-Down Equipment	5/6/2018	09:45:00	USER	28.00	2.10	8.14	Rigged down all lines, hoses and equipment.
Event	26	Depart Location Safety Meeting	Depart Location Safety Meeting	5/6/2018	11:00:00	USER				Held a pre journey safety meeting with the crew.
Event	27	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	5/6/2018	11:15:00	USER				Started journey management with dispatch and left location.

3.0 Attachments

3.1 Harvesters State 4N-16A-M Production.png

