

# HALLIBURTON

iCem<sup>®</sup> Service

## **SRC ENERGY INC-EBUS**

Date: Wednesday, May 16, 2018

## **Harvesters State 31N-16B-M Production**

Job Date: Thursday, May 10, 2018

Sincerely,

**Julia Nichols**

## 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 31N-16B-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 29 barrels 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]**

## HALLIBURTON

## Cementing Job Summary

### The Road to Excellence Starts with Safety

Sold To #: 359915		Ship To #: 3858848		Quote #:		Sales Order #: 0904839020				
Customer: SRC ENERGY INC-EBUS				Customer Rep: Buddy Davis						
Well Name: HARVESTERS STATE		Well #: 31N-16B-M		API/UWI #: 05-123-46369-00						
Field: WATTENBERG	City (SAP): LUCERNE	County/Parish: WELD		State: COLORADO						
Legal Description: SW NE-15-6N-68W-1713FNL-2334FEL										
Contractor: Precision				Rig/Platform Name/Num: Precision 462						
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HB41307				Srvc Supervisor: Adam Covington						
Job										
Formation Name										
Formation Depth (MD)	Top		Bottom							
Form Type			BHST							
Job depth MD	14883ft		Job Depth TVD							
Water Depth			Wk Ht Above Floor							
Perforation Depth (MD)	From		To							
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	1826	0	0
Casing	0	5.5	4.778	20	BTC	P-110	0	14883	0	7055
Open Hole Section			8.5				1826	14895	0	0
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5			14883		Top Plug	5.5	1		
Float Shoe	5.5					Bottom Plug	5.5	1		
Float Collar	5.5					SSR plug set	5.5		HES	
Insert Float	5.5					Plug Container	5.5	1	HES	
Stage Tool	5.5					Centralizers	5.5	217		
Fluid Data										
Stage/Plug #: 1										
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	3.8		4		
147.42 lbm/bbl		BARITE, BULK (100003681)								
35.10 gal/bbl		FRESH WATER								
0.50 gal/bbl		MUSOL A, 330 GAL TOTE - (790828)								
0.50 gal/bbl		DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)								

last updated on 5/16/2018 10:39:10 AM

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## 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
2	ElastiCem LEAD	ELASTICEM (TM) SYSTEM	1028	sack	13.2	1.57		8	7.54
0.15 %		FE-2 (100001615)							
0.30 %		SCR-100 (100003749)							
7.54 Gal		FRESH WATER							
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
9.71 Gal		FRESH WATER							
0.08 %		SCR-100 (100003749)							
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	Water	Water	329	bbl	8.33			10	
Cement Left In Pipe		Amount	50 ft		Reason			Shoe Joint	
Comment 29 bbls of cement back to surface. 6121' is the estimated top of tail. 70 degree water, 7 ph, 0 Chlorides. 2.5 bbls back to the truck when checking floats.									

## 2.0 Real-Time Job Summary

## 2.1 Job Event Log

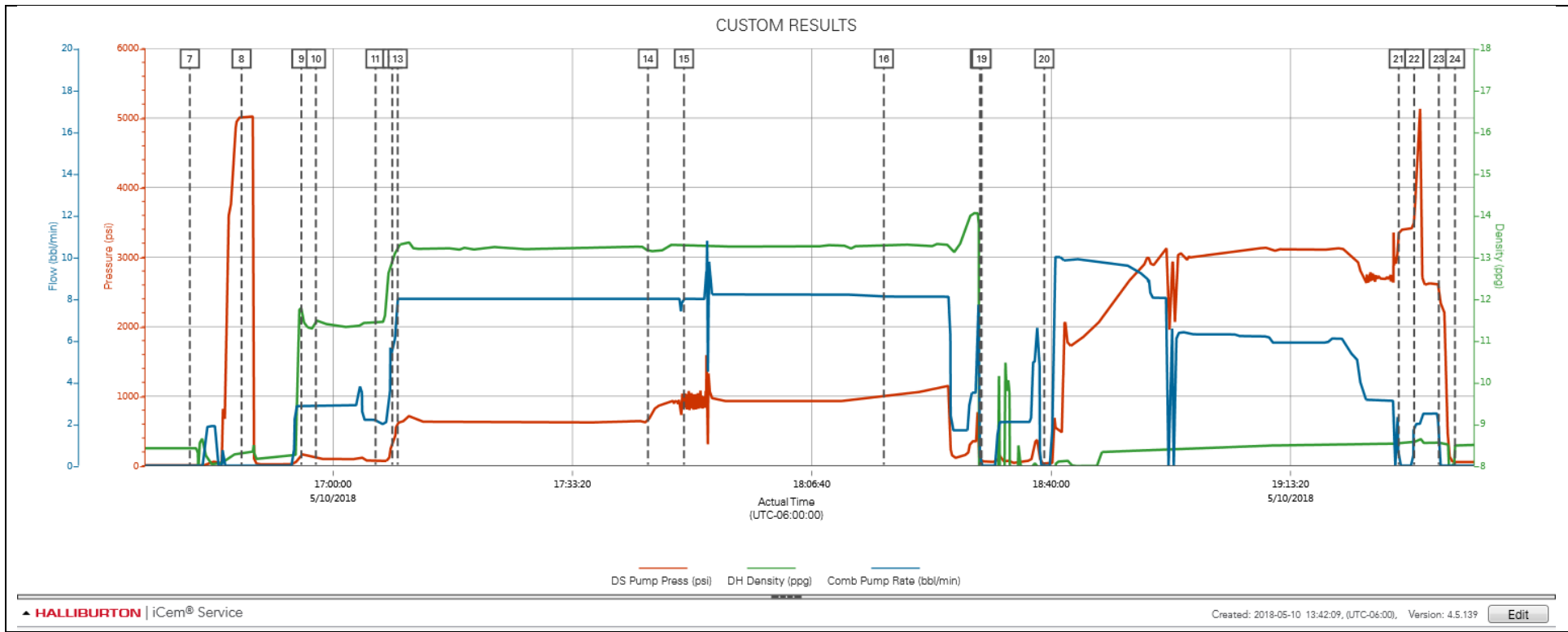
Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Comments
Event	1	Call Out	Call Out	5/10/2018	07:30:00	USER				CALLED OUT BY SERVICE COORDINATOR FOR O/L AT 1300
Event	2	Pre-Convoy Safety Meeting	Depart Shop for Location	5/10/2018	11:00:00	USER				HELD MEETING WITH ALL PERSONNEL IN CONVOY TO DISCUSS DIRECTIONS AND HAZARDS ASSOCIATED WITH DRIVING, ALL FIT TO DRIVE.
Event	3	Depart Shop for Location	Depart Shop for Location	5/10/2018	11:10:00	USER				JOURNEY MANAGEMENT PRIOR TO DEPARTURE
Event	4	Arrive At Loc	Arrive At Loc	5/10/2018	12:00:00	USER				UPON ARRIVAL MET WITH COMPANY MAN TO DISCUSS JOB DETAILS AND CALCULATIONS, PERFORMED HAZARD HUNT AND SITE ASSESSMENT.
Event	5	Safety Meeting - Pre Rig-Up	Safety Meeting - Pre Rig-Up	5/10/2018	12:10:00	USER				DISCUSSED RIGGING UP HAZARDS AND PROCEDURE ACCORDING TO HMS.
Event	6	Safety Meeting - Pre Job	Safety Meeting - Pre Job	5/10/2018	16:20:00	USER	10.00	8.41	0.00	HELD SAFETY MEETING WITH ALL JOB ASSOCIATED PERSONNEL TO DISCUSS JOB PROCEDURE, HAZARDS AND STOP WORK AUTHORITY. Water test- PH-6, Chlor-0, Temp-65. Cement temp-70.
Event	7	Start Job	Start Job	5/10/2018	16:40:04	COM4	11.00	8.42	0.00	FILL LINES WITH 3 BBLS OF FRESH WATER. 2 BPM. 50 PSI.
Event	8	Test Lines	Test Lines	5/10/2018	16:47:15	COM4	5014.00	8.31	0.00	PERFORMED A 5000 PSI PRESSURE TEST AFTER PERFORMING A 500 PSI KICK OUT TEST AND A 5TH GEAR STALL. HELD FOR 3 MINUTES. NO LEAKS.
Event	9	Pump Spacer 1	Pump Spacer 1	5/10/2018	16:55:36	COM4	166.00	11.79	2.90	PUMPED 40 BBLS OF 11.5#, 3.8y, 23.8wr TUNED SPACER III WITH 20 GALLONS OF MUSOL A, 20 GALLONS OF DUEL SPACER B AND 10 GALLONS OF D AIR. 3 BPM 140 PSI.
Event	10	Check Weight	Check Weight	5/10/2018	16:57:37	USER	116.00	11.49	2.90	CHECKED WEIGHT OF SPACER WITH PRESSURIZED MUD SCALES. CEMENT WEIGHED UP AT 11.5#
Event	11	Drop Bottom Plug	Drop Bottom Plug	5/10/2018	17:05:55	COM4	65.00	11.46	2.20	DROPPED NON HALLIBURTON 5.5" BOTTOM PLUG. ADAM COVINGTON DROPPED DRILLER WITNESSED. DROPPED ON THE FLY AS PER CO. MAN.

Event	12	Check Weight	Check Weight	5/10/2018	17:08:15	COM4	327.00	12.91	5.60	CHECKED WEIGHT OF CEMENT WITH PRESSURIZED MUD SCALES. CEMENT WEIGHED UP AT 13.2#
Event	13	Pump Lead Cement	Pump Lead Cement	5/10/2018	17:09:00	COM4	630.00	13.23	8.00	PUMPED 287.4 BBLS (1028 SKS) OF 13.2#, 1.57y, 7.54wr ELASTICEM LEAD CEMENT AT 8 BPM 650 PSI.
Event	14	Pump Tail Cement	Pump Tail Cement	5/10/2018	17:43:51	COM4	648.00	13.17	8.00	PUMPED 358.6 BBLS (987 SKS) OF 13.2#, 2.04y, 9.77wr NEOCEM TAIL AT 8 BPM 920 PSI.
Event	15	Check Weight	Check Weight	5/10/2018	17:48:52	COM4	937.00	13.29	8.00	CHECKED WEIGHT OF CEMENT WITH PRESSURIZED MUD SCALES. CEMENT WEIGHED UP AT 13.2#
Event	16	Check Weight	Check Weight	5/10/2018	18:16:41	COM4	991.00	13.28	8.10	CHECKED WEIGHT OF CEMENT WITH PRESSURIZED MUD SCALES. CEMENT WEIGHED UP AT 13.2#
Event	17	Shutdown	Shutdown	5/10/2018	18:30:04	COM4	91.00	3.12	0.90	SHUTDOWN TO WASH PUMPS AND LINES.
Event	18	Clean Lines	Clean Lines	5/10/2018	18:30:13	COM4	76.00	2.44	0.00	WASH PUMPS IN LINES TO GET READY FOR DISPLACEMENT.
Event	19	Drop Top Plug	Drop Top Plug	5/10/2018	18:30:18	COM4	71.00	1.27	0.00	ADAM COVINGTON DROPPED A NON HALLIBURTON 5.5" TOP PLUG. CO. MAN WITNESSED.
Event	20	Pump Displacement	Pump Displacement	5/10/2018	18:39:02	COM4	28.00	-0.16	0.00	PUMPED 329 BBLS OF BE3 AND CLAWEB WATER. WITH THE FIRST 10 AND LAST 70 BBLS HAVING MMCR IN IT. AT 10 BPM 1718 PSI. HAD TO SLOW RATE A FEW TIMES TO KEEP MAX PRESSURE UNDER 3500 PSI. GOT CEMENT BACK AT 300 BBLS AWAY. 29 BBLS OF CEMENT BACK TO SURFACE.
Event	21	Bump Plug	Bump Plug	5/10/2018	19:28:23	COM4	3315.00	8.55	0.00	SLOWED RATE TO 3 BPM AND BUMPED PLUG. FCP 2700 PSI AND TOOK TO 3420 PSI. HELD FOR A COUPLE MINUTES.
Event	22	Other	Other	5/10/2018	19:30:32	COM4	3517.00	8.57	2.00	STARTED TO PUMP TO PRESSURE UP ON SLEEVE. SLEEVE OPENED UP AT 5230 PSI AT 2 BPM. AS SOON AS IT SHIFTED WE PUMPED A 6 BBL WET SHOE AT 2.5 BPM AT 2640 PSI.
Event	23	Other	Other	5/10/2018	19:33:58	COM4	2538.00	8.55	0.00	bled pressure back to the truck to check floats. GOT 2.5 BBLS BACK TO THE TRUCK. FLOATS HELD.
Event	24	End Job	End Job	5/10/2018	19:36:13	COM4	53.00	8.50	0.00	ESTIMATED TOP OF TAIL CEMENT IS AT 6121' 29 BBLS OF CEMENT BACK TO SURFACE. WATER WAS 70 DEGREES, 7 PH, 1 ON THE CHLORIDE.
Event	25	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	5/10/2018	19:50:00	USER	56.00	8.51	0.00	DISCUSSED RIGGING DOWN HAZARDS AND PROCEDURE ACCORDING TO HMS.
Event	26	Pre-Convoy Safety	Pre-Convoy Safety	5/10/2018	21:20:00	USER				HELD MEETING WITH ALL HES EMPLOYEES IN CONVOY TO

		Meeting	Meeting				DISCUSS DIRECTIONS AND HAZARDS ASSOCIATED WITH DRIVING, ALL FIT TO DRIVE.
Event	27	Depart Location	Depart Location	5/10/2018	21:30:00	USER	PRE JOURNEY MANAGEMENT PRIOR TO DEPARTURE.

3.0 Attachments

3.1 CUSTOM RESULTS – JOB CHART WITH EVENTS



## 3.2 CUSTOM RESULTS – JOB CHART WITHOUT EVENTS

