

# HALLIBURTON

iCem<sup>®</sup> Service

**SRC ENERGY COMPANY**

**Harvesters State 4N-16C-M 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 **Harvesters State 4N-16C-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 23bbls of spacer 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]**

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## Cementing Job Summary

*The Road to Excellence Starts with Safety*

Sold To #: 359915	Ship To #: 3859010	Quote #:	Sales Order #: 0904807393							
Customer: SRC ENERGY INC-EBUS		Customer Rep: TONY PERSHALL								
Well Name: HARVESTERS STATE	Well #: 4N-16C-M	API/UWI #: 05-123-46358-00								
Field: WATTENBERG	City (SAP): LUCERNE	County/Parish: WELD	State: COLORADO							
Legal Description: SW NE-15-6N-66W-1653FNL-2333FEL										
Contractor: Precision		Rig/Platform Name/Num: Precision 462								
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HB41307		Srv Supervisor: Vitali Neverdasov								
Job										
Formation Name										
Formation Depth (MD)	Top	Bottom								
Form Type	BHST									
Job depth MD	15045ft	Job Depth TVD	7140							
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	1835	0	1835
Casing	0	5.5	4.778	20	BTC	P-110	0	15045	0	7140
Open Hole Section			8.5				1835	15057	1835	7140
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5					Top Plug	5.5	1	WHED	
Float Shoe	5.5	1	N/A	15045		Bottom Plug	5.5	1	WHED	
Float Collar	5.5	1	N/A	14996		SSR plug set	5.5	0		
Insert Float	5.5					Plug Container	5.5	1	HES	
Stage Tool	5.5					Centralizers	5.5	223	N/A	
Fluid Data										
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	3.8		6		
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)								

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## 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	1044	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	986	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	
0.2220 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	312	bbl	8.33			8	
1 gal/bbl		CLA-WEB - BULK (101985043)							
Cement Left In Pipe		Amount	0 ft		Reason: WET SHOE			Shoe Joint	
Comment : ESTIMATED TOT @ 6266'. 23 BBLS OF SPACER BACK TO SURFACE.									

## 2.0 Real-Time Job Summary

## 2.1 Job Event Log

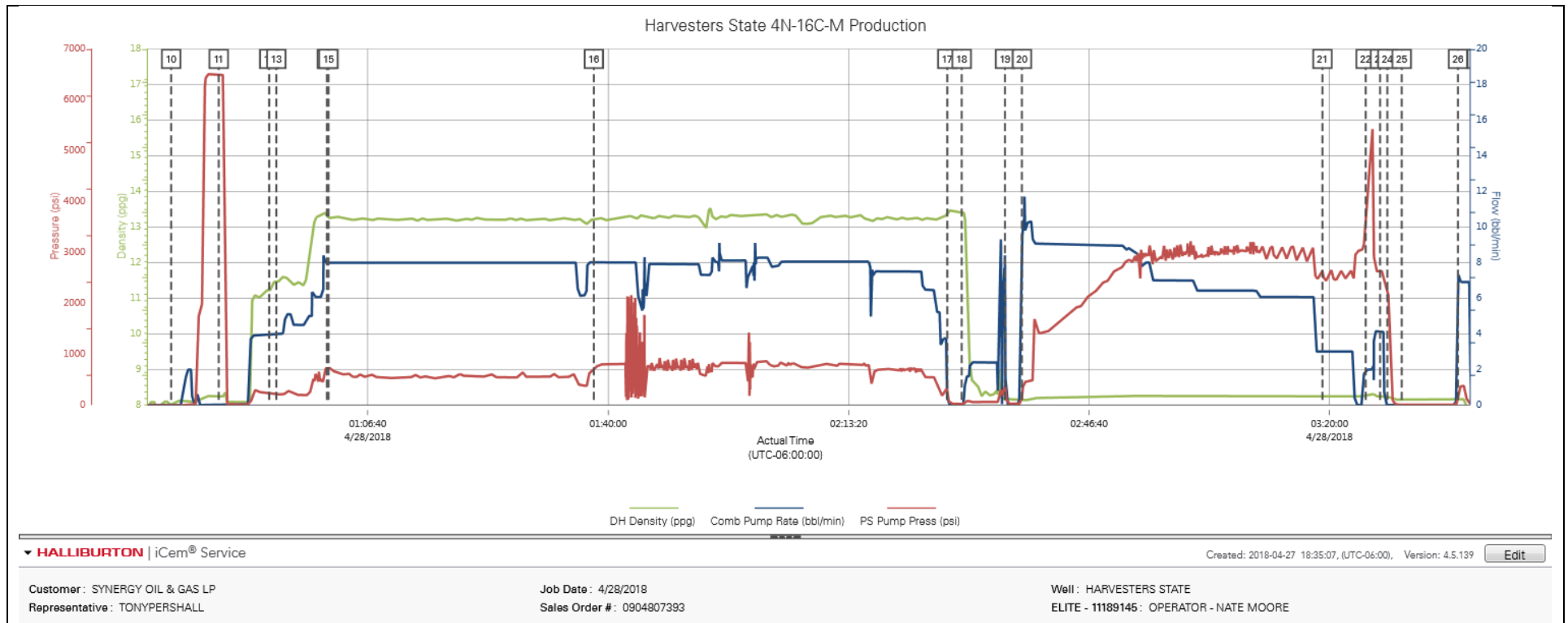
Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	Comments
Event	1	Call Out	Call Out	4/27/2018	15:30:00	USER				For Location @ 21:00
Event	2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	4/27/2018	19:45:00	USER				Journey management meeting held prior to departure
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	4/27/2018	20:02:00	USER				Called Journey
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	4/27/2018	20:51:00	USER				39 MILES. Discussed numbers and job procedures with Customer. RIG IS RUNNING CASING.
Event	5	Safety Meeting - Pre Rig-Up	Safety Meeting - Pre Rig-Up	4/27/2018	21:15:00	USER				JSA to discuss the hazards of rig-up
Event	6	Rig-Up Equipment	Rig-Up Equipment	4/27/2018	21:20:00	USER				Rig-up all surface lines and equipment up to the Buffer zone
Event	7	Casing on Bottom	Casing on Bottom	4/27/2018	21:50:00	USER				CASING LANDED.
Event	8	Circulate Well	Circulate Well	4/27/2018	22:20:00	USER				RIG UP PLUG CONTAINER AND MANIFOLD FOR RIG TO CIRCULATE.
Event	9	Pre-Job Safety Meeting	Pre-Job Safety Meeting	4/28/2018	00:02:00	USER	8.07	0.00	-4.00	With all essential personnel, to discuss the hazards of pumping the job, and pump schedule.
Event	10	Start Job	Start Job	4/28/2018	00:39:24	COM4	8.00	0.00	-7.00	
Event	11	Test Lines	Test Lines	4/28/2018	00:46:00	USER	8.24	0.00	6488.00	Load line with 2 bbls of water. Test lines @ 6555 psi
Event	12	Drop Bottom Plug	Drop Bottom Plug	4/28/2018	00:53:00	USER	11.24	3.90	229.00	Pre-loaded bottom plug in plug container.
Event	13	Pump Spacer	Pump Spacer	4/28/2018	00:54:00	USER	11.46	4.00	220.00	BATCH/ WEIGH/PUMP 40 BBLS OF TUNED SPACER WITH SURFACTANS @ 11.5 PPG
Event	14	Pump Lead Cement	Pump Lead Cement	4/28/2018	01:01:00	USER	13.39	8.00	718.00	BATCH/ WEIGHT/ PUMP 1044 SKS (291.9 BBLS) OF ELASTICEM @ 13.2 PPG.
Event	15	Check Weight	Check Weight	4/28/2018	01:01:14	COM4	13.24	8.00	727.00	

Event	16	Pump Tail Cement	Pump Tail Cement	4/28/2018	01:38:00	USER	13.18	8.00	721.00	WEIGH/ PUMP 986 SKS (358.2 BBLS) OF NEOCEM @ 13.2 PPG
Event	17	Shutdown	Shutdown	4/28/2018	02:27:00	USER	13.34	0.00	173.00	Finished pumping cement
Event	18	Clean Lines	Clean Lines	4/28/2018	02:29:00	USER	13.43	0.00	15.00	Wash pumps and lines
Event	19	Drop Top Plug	Drop Top Plug	4/28/2018	02:35:00	USER	8.18	8.40	397.00	Pre-loaded top plug in plug container.
Event	20	Pump Displacement	Pump Displacement - Start	4/28/2018	02:37:21	USER	8.15	7.20	146.00	332.6 bbls fresh water. FIRST 20 BBLS WITH 5 GAL MMCR. LAST 70 BBLS WITH MMCR.
Event	21	Slow Rate	Slow Rate	4/28/2018	03:19:00	USER	8.26	3.00	2636.00	SLOW RATE TO 3 BPM
Event	22	Bump Plug	Bump Plug	4/28/2018	03:25:00	USER	8.26	2.00	3660.00	BUMP PLUG @ 3032. 500 psi over final circulating pressure of 2470 psi
Event	23	Pump Water	Pump Water	4/28/2018	03:27:00	USER	8.25	4.10	2615.00	PRESSURE UP/ BURST @ 5407 psi, AND PUMP 6 BBLS WET SHOE.
Event	24	Shutdown	Shutdown	4/28/2018	03:28:00	USER	8.24	0.00	2181.00	
Event	25	Check Floats	Check Floats	4/28/2018	03:30:00	USER	8.15	0.00	5.00	Floats held. 2 bbls back
Event	26	End Job	End Job	4/28/2018	03:37:48	COM4	8.16	3.20	61.00	
Event	27	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	4/28/2018	03:40:25	USER	0.06	0.00	11.00	JSA to discuss the hazards of rig-down



## 3.0 Attachments

### 3.1 Harvesters State 4N-16C-M Production – Job Chart with Events



## 3.2 Harvesters State 4N-16C-M Production – Job Chart without Events

