

# HALLIBURTON

iCem<sup>®</sup> Service

**SRC ENERGY INC-EBUS**

**Sanford 32N-30C-M**

Sincerely,

**Alexandria Dionigi**

## 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 **Sanford 32N-30C-M 5.5" 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 30 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> 3953473	<b>Quote #:</b>	<b>Sales Order #:</b> 0905744147
<b>Customer:</b> SRC ENERGY INC-EBUS		<b>Customer Rep:</b> Tony Pershall	
<b>Well Name:</b> SANFORD	<b>Well #:</b> 32N-30B-M	<b>API/UWI #:</b> 05-123-49930-00	
<b>Field:</b> WATTENBERG	<b>City (SAP):</b> GREELEY	<b>County/Parish:</b> WELD	<b>State:</b> COLORADO
<b>Legal Description:</b> NE NW-29-5N-66W-871FNL-2392FWL			
<b>Contractor:</b> PRECISION DRLG		<b>Rig/Platform Name/Number:</b> PRECISION 462	
<b>Job BOM:</b> 7523 7523			
<b>Well Type:</b> HORIZONTAL OIL			
<b>Sales Person:</b> HALAMERICA\HB41307		<b>Service Supervisor:</b> Nicholas Roles	

**Job**

<b>Formation Name</b>	
<b>Formation Depth (MD)</b>	<b>Top</b> <input type="text"/> <b>Bottom</b> <input type="text"/>
<b>Form Type</b>	BHST
<b>Job depth MD</b>	15698ft
<b>Water Depth</b>	<b>Wk Ht Above Floor</b> <input type="text"/>
<b>Perforation Depth (MD)</b>	<b>From</b> <input type="text"/> <b>To</b> <input type="text"/>

**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	1850		1850
Casing		5.5	4.778	20		P110IC	0	15698		7296
Open Hole Section			8.5				1850	7903	1850	7296
Open Hole Section			8.5				7903	15713	0	0

**Tools and Accessories**

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	5.5			15698	Top Plug	5.5	1	
Float Shoe	5.5				Bottom Plug	5.5	1	
Float Collar	5.5			15592	SSR plug set	5.5		HES
Insert Float	5.5				Plug Container	5.5	1	HES
Stage Tool	5.5				Centralizers	5.5		HES

**Fluid Data**

<b>Stage/Plug #: 1</b>										
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 Prime Cement Spacer	SBM FDP-C1337-18 CEMENT SPACER SYS	80	bbl	11.5	3.84		6		
		146.19 lbm/bbl BARITE, BULK (100003681)								
		0.50 gal/bbl DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)								
		0.25 gal/bbl D-AIR 3000L, 5 GAL PAIL (101007444)								
		1 lbm/bbl FE-2 (100001615)								

0.50 gal/bbl		MUSOL(R) A, 5 GAL PAIL (100064220)							
<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/mi n</b>	<b>Total Mix Fluid Gal</b>
2	Gasstop B1	GASSTOP (TM) SYSTEM	1269	sack	13.2	1.54		6	7.66
5.26 Gal		FRESH WATER							
0.25 lbm		POLY-E-FLAKE (101216940)							
0.50 %		SCR-100 (100003749)							
<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/mi n</b>	<b>Total Mix Fluid Gal</b>
3	NeoCem	NeoCem TM	870	sack	13.2	2.05		8	9.79
9.75 Gal		FRESH WATER							
0.08 %		SCR-100 (100003749)							
<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/mi n</b>	<b>Total Mix Fluid Gal</b>
4	MMCR Displacement	MMCR Displacement	40	bbl	8.34			10	
0.50 gal/bbl		MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)							
<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/mi n</b>	<b>Total Mix Fluid Gal</b>
5	Water	Water	236	bbl	8.33			10	
1 gal/Mgal		CLA-WEB - BULK (101985043)							
<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/mi n</b>	<b>Total Mix Fluid Gal</b>
6	MMCR Displacement	MMCR Displacement	70	bbl	8.34			10	
0.50 gal/bbl		D-AIR 3000L, 5 GAL PAIL (101007444)							
<b>Cement Left In Pipe</b>	<b>Amount</b>	0 ft			<b>Reason</b>			Wet Shoe	
<b>Mix Water:</b>	pH 7	<b>Mix Water Chloride:</b>	0 ppm		<b>Mix Water Temperature:</b>			60 °F °C	
<b>Cement Temperature:</b>	66 °F °C	<b>Plug Displaced by:</b>	8.33 lb/gal		<b>Disp. Temperature:</b>			60 °F °C	
<b>Plug Bumped?</b>	Yes	<b>Bump Pressure:</b>	psi MPa		<b>Floats Held?</b>			Yes	
<b>Cement Returns:</b>	30 bbl	<b>Returns Density:</b>	## lb/gal kg/m3		<b>Returns Temperature:</b>			## °F °C	
<b>Comment</b> Got 30bbls cement to surface. Estimated TOT-7903'									

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comb Pump Rate <i>(bbl/min)</i>	DH Density <i>(ppg)</i>	DS Pump Press <i>(psi)</i>	Pump Stg Tot <i>(bbl)</i>	Comments
Event	1	Call Out	Call Out	6/5/2019	01:00:00	USER					Called out by Service Coordinator for O/L at 0700
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	6/5/2019	05:15:00	USER					Held meeting with all personnel in convoy to discuss directions and hazards associated with drive, all fit to drive.
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	6/5/2019	05:30:00	USER					Journey Management prior to departure
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	6/5/2019	06:15:00	USER					Upon arrival met with company man to discuss job details and calculations, performed hazard hunt and site assessment.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	6/5/2019	06:30:00	USER					Discussed rigging up hazards and procedure according to HMS.
Event	6	Other	Other	6/5/2019	07:30:00	USER					Water test- PH-6, Chlor-0, Temp-65. Cement temp-70.
Event	7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	6/5/2019	10:15:00	USER	0.00	8.21	4.00	71.70	Held safety meeting with all job associated personnel to discuss job procedure, hazards and stop work authority.
Event	8	Start Job	Start Job	6/5/2019	10:39:44	COM4	0.00	7.72	3.00	0.00	TD-15713', TP-15698' 5.5" 20#, WS Sub-15592', TVD-7298', OH-8.5", SURF-1850' 9.625" 36#, MUD-10#
Event	9	Test Lines	Test Lines	6/5/2019	10:41:19	COM4	0.00	8.35	76.00	3.10	Pumped 5bbls fresh water to fill lines, closed manifold and performed 500psi k/o function test, proceeded to perform 5th gear stall at 1452psi, continued to bring pressure up to

											6000psi. Pressure stabilized and held with no leaks
Event	10	Drop Bottom Plug	Drop Bottom Plug	6/5/2019	11:00:32	COM4	0.00	8.38	11.00	4.10	Dropped by HES supervisor, witnessed by company man.
Event	11	Pump Spacer	Pump Spacer	6/5/2019	11:01:19	USER	3.20	9.04	238.00	5.00	Pumped 80bbls 11.5# 3.84y 23.9g/s Tuned Prime Spacer with 40g Musol A, 40g Dual Spacer B and 5g D-Air at 6bpm 300psi.
Event	12	Pump Lead Cement	Pump Lead Cement	6/5/2019	11:15:59	COM4	5.90	12.01	216.00	0.00	Pumped 1269sks or 348bbls 13.2# 1.54y 7.66g/s Gasstop at 8bpm 450psi.
Event	13	Check Weight	Check Weight	6/5/2019	11:18:07	COM4	6.00	13.23	276.00	12.80	Weight verified with pressurized mud scales.
Event	14	Check Weight	Check Weight	6/5/2019	11:43:44	COM4	8.00	13.29	545.00	155.90	Weight verified with pressurized mud scales.
Event	15	Check Weight	Check Weight	6/5/2019	11:51:50	COM4	8.00	13.16	589.00	220.60	Weight verified with pressurized mud scales.
Event	16	Check Weight	Check Weight	6/5/2019	11:59:17	COM4	8.00	13.28	605.00	280.10	Weight verified with pressurized mud scales.
Event	17	Pump Tail Cement	Pump Tail Cement	6/5/2019	12:14:44	COM4	8.00	13.18	551.00	403.40	Pumped 870sks or 318bbls 13.2# 2.05y 9.79g/s Neocem at 8bpm 580psi.
Event	18	Check Weight	Check Weight	6/5/2019	12:38:23	COM4	6.60	13.12	473.00	45.30	Weight verified with pressurized mud scales.
Event	19	Shutdown	Shutdown	6/5/2019	13:23:56	COM4	0.00	13.22	166.00	363.90	Pumped 5bbls fresh water to clean through pumps and lines.
Event	20	Drop Top Plug	Drop Top Plug	6/5/2019	13:33:45	COM4	0.00	8.18	7.00	387.00	Dropped by HES supervisor, witnessed by company man.
Event	21	Pump Displacement	Pump Displacement	6/5/2019	13:33:49	COM4	0.00	8.17	7.00	387.00	Pumped 346bbls fresh water with 5g MMCR in first 40bbls, 5g MMCR in the last 70bbls, 20g clayweb and 3# biocide throughout.
Event	22	Bump Plug	Bump Plug	6/5/2019	14:43:26	COM4	0.00	8.15	2919.00	363.40	Slowed down to 3bpm at 325bbls away, final circulating pressure-2350psi, bump pressure-2900psi.

Event	23	Pressure Up Well	Pressure Up Well	6/5/2019	14:43:47	COM4	0.30	8.15	2908.00	363.40	Pumped fresh water to shear at 4900psi, continued to pump 6bbls fresh water at 3bpm 2150psi.
Event	24	Other	Other	6/5/2019	14:49:52	COM4	0.00	8.13	2093.00	376.00	Released pressure and got 2.5bbls back to pump. Floats held.
Event	25	End Job	End Job	6/5/2019	14:51:19	COM4	0.00	8.12	0.00	0.00	Got 30bbls cement to surface. Estimated TOT-7903'
Event	26	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	6/5/2019	14:55:00	USER					Discussed rigging down hazards and procedure according to HMS with all HES personnel
Event	27	Safety Meeting - Departing Location	Safety Meeting - Departing Location	6/5/2019	16:45:00	USER					Held meeting with all personnel in convoy to discuss directions and hazards associated with drive, all fit to drive.
Event	28	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	6/5/2019	17:00:00	USER					Pre journey management prior to departure.

## 3.0 Attachments

### 3.1 Sanford 32N-30B-M-Custom Results (1).png

