

# HALLIBURTON

iCem<sup>®</sup> Service

## **SYNERGY RESOURCES CORPORATION**

Date: Thursday, October 19, 2017

## **FALKEN 32N-9B-L PRODUCTION**

Job Date: Monday, October 02, 2017

Sincerely,

**JULIA NICHOLS**

## Legal Notice

---

### Disclaimer:

All information in this report is provided subject to the terms and conditions which govern the services provided by Halliburton. Halliburton personnel use their best efforts in gathering information and their best judgment in interpreting it, but any interpretation, research, analysis or recommendation furnished by Halliburton are opinions based upon inferences from measurements and empirical relationships and assumptions, which inferences and empirical relationships and assumptions are not infallible, and with respect to which professionals in the industry may differ. Accordingly, HALLIBURTON IS UNABLE TO GUARANTEE THE ACCURACY OF ANY CHART INTERPRETATION, RESEARCH ANALYSIS, OR JOB RECOMMENDATION and any interpretation or recommendation is not for use of or reliance upon by any third party. The customer has full responsibility for any of its decisions which are based on the information provided in this report.

## Table of Contents

---

1.0	Cementing Job Summary .....	4
1.1	Executive Summary .....	4
2.0	Real-Time Job Summary .....	7
2.1	Job Event Log .....	7
3.0	Attachments.....	10
3.1	Custom Results – Job Chart with Events .....	10
3.2	Custom Results – Job Chart without Events.....	11

## 1.0 Cementing Job Summary

---

### 1.1 Executive Summary

---

Halliburton appreciates the opportunity to perform the cementing services on the **FALKEN 32N-9B-L 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 80 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 #: 3815790		Quote #:		Sales Order #: 0904333096				
Customer: SRC ENERGY INC-EBUS				Customer Rep:						
Well Name: FALKEN			Well #: 32N-9B-L			API/UWI #: 05-123-45103-00				
Field: WATTENBERG		City (SAP): GREELEY		County/Parish: WELD		State: COLORADO				
Legal Description: NE SE-11-8N-86W-1889FSL-278FEL										
Contractor: PRECISION DRLG				Rig/Platform Name/Num: PRECISION 562						
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA/HB41307				Srvc Supervisor:						
<b>Job</b>										
Formation Name										
Formation Depth (MD)		Top 1850		Bottom		18909				
Form Type										
BHST										
Job depth MD		18895ft		Job Depth TVD		7090				
Water Depth										
Wk Ht Above Floor 4										
Perforation Depth (MD)		From		To						
<b>Well Data</b>										
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	0	0
Casing		5.5	4.778	20		P-110	0	18895	0	0
Open Hole Section			8.5				1850	18909	6570	7090
<b>Tools and Accessories</b>										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5			18895		Top Plug	5.5		HES	
Float Shoe	5.5					Bottom Plug	5.5		HES	
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		HES	
<b>Fluid Data</b>										
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)								
36.09 gal/bbl		FRESH WATER								
0.50 gal/bbl		DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003685)								
0.50 gal/bbl		MUSOL A, 330 GAL TOTE - (790828)								

**HALLIBURTON**

*Cementing Job Summary*

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
2	ElastiCem	ELASTICEM (TM) SYSTEM	1037	sack	13.2	1.57		8	7.52	
0.4250 %		SCR-742, 50 LB BAG (102027729)								
7.52 Gal		FRESH WATER								
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
3	NeoCem	NeoCem TM	1436	sack	13.2	2.09		7.5	10.08	
10.08 Gal		FRESH WATER								
0.30 %		SCR-100 (100003749)								
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
4	MMCR Displacement	MMCR Displacement	20	bbl	8.34			8		
0.50 gal/bbl		MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)								
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
5	Water	Water	400.5	bbl	8.33			7		
Cement Left In Pipe		Amount	52 ft		Reason			Shoe Joint		
Mix Water:		pH 7	Mix Water Chloride:		200 ppm		Mix Water Temperature:			80 °F °C
Cement Temperature:		## °F °C	Plug Displaced by:		8.34 lb/gal kg/m <sup>3</sup> XXXX		Disp. Temperature:			## °F °C
Plug Bumped?		Yes	Bump Pressure:		2400-3200 psi MPa		Floats Held?			Yes
Cement Returns:		80 bbl m <sup>3</sup>	Returns Density:		## lb/gal kg/m <sup>3</sup>		Returns Temperature:			## °F °C
<b>Comment</b> BUMPED PLUG @ CALCULATED DISPLACEMENT, FLOATS HELD WITH 3 ½ BBLs BACK, RUPTURED WET SHOE SYSTEM @ 4200 PSI, PUMPED ADD 6 BBLs AND CHECK FLOATS AGAIN AND 3 BBLs BACK.FULL RETURNS THOUGHOUT THE JOB 40 BBLs OF SPACER AND 80 BBLs OF CEMENT RETURNS TO SURFACE										

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

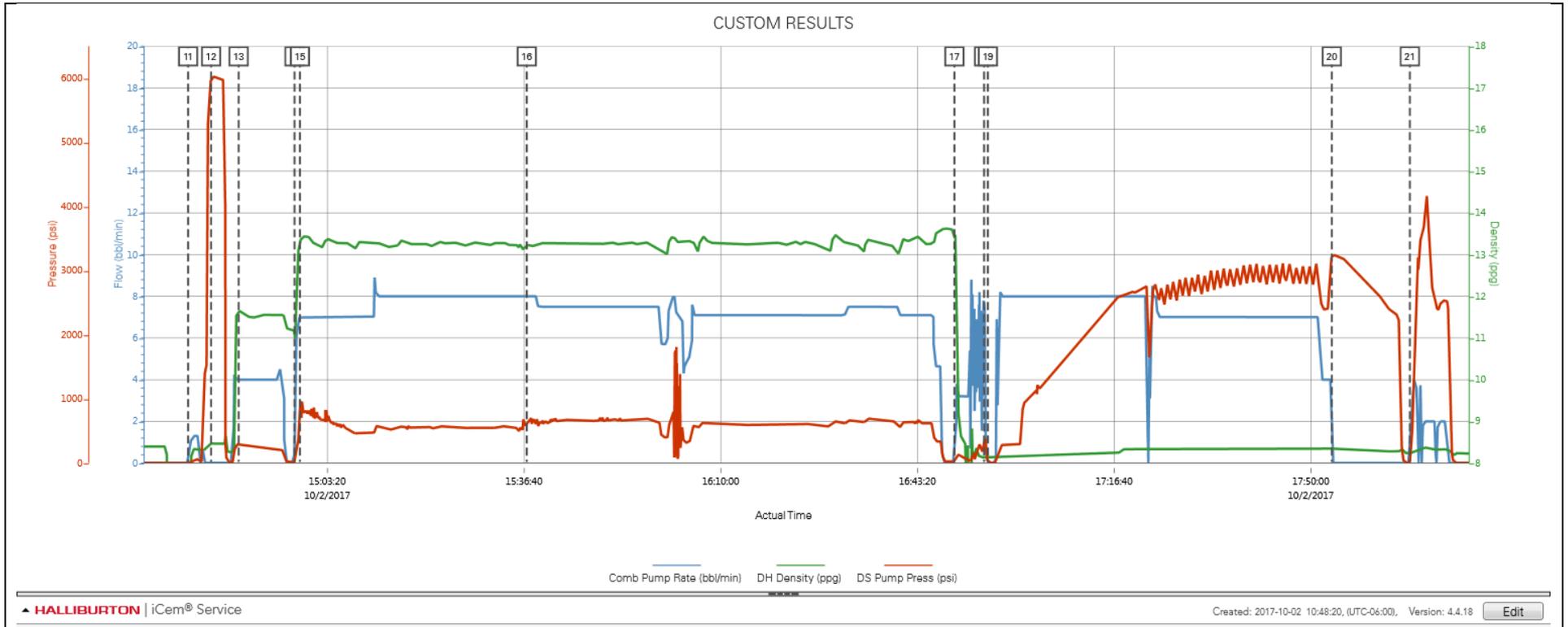
Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comb Pump Rate (bbl/min)	DH Density (ppg)	DS Pump Press (psi)	Comments
Event	1	Call Out	Call Out	10/2/2017	03:30:00	USER				CALLED OUT FROM FT. LUPTON, COLORADO
Event	2	Depart from Service Center or Other Site	Depart from Service Center or Other Site	10/2/2017	07:00:00	USER				LEAVE YARD AFTER SAFTEY MEETING
Event	3	Arrive at Location from Service Center	Arrive at Location from Service Center	10/2/2017	08:45:00	USER				ARRIVED ON LOCATION AND TALKED TO COMPANY MAN ABOUT JOB FIGURES AND THE SPOTTING OF OUR EQUIPMENT
Event	4	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	10/2/2017	09:00:00	USER				ASSESSED LOCATION AN TOOK WATER SAMPLE
Event	5	Rig-Up Equipment	Rig-Up Equipment	10/2/2017	09:15:00	USER				SPOTTED EQUIPMENT AND RIGGED UP TO FLOOR RIG IS RUNNING CASING
Event	6	Other	Other	10/2/2017	09:30:00	USER				Water test=pH: 7____, Cl: _200____, temp __60__degrees Tannin-Lignin: __NEG.____; Sulfate: 200_____
Event	7	Other	Other	10/2/2017	09:45:00	USER				Rig Circulation: ____ bbls Circulation Rate: ____ bbl/min Mud Density _10.2__ lb/gal Mud YP/PV: _____
Event	8	Other	Other	10/2/2017	10:00:00	USER				Spacer: __40__ bbl TOS __0__ Lead Cement: __290__ bbl, 1037____ sks, TOC_0____ Tail Cement: 534____ bbl, 1436____ sks, TOC _5832____ Displacement: _416__ bbICMT left in Pipe_1____ Reason __SHOE____
Event	9	Other	Other	10/2/2017	10:30:00	USER				TD: 18909____, TP _18895____, SJ: _52____, OH: 8.5____, Casing: Size/Weight/Grade: 5.5/20#/P110_____, Previous Casing Shoe: _1850____
Event	10	Rig-Up Completed	Rig-Up Completed	10/2/2017	14:15:00	USER	0.00	8.39	0.00	RIG UP COMPLETE SAFETY MEETING WITH RIG HANDS AND HALLIBURTON ABOUT THE DANGERS OF OUR EQUIPMENT AND WENT OVER JOB FIGURES. READY TO TEST LINES

Event	11	Prime Pumps	Prime Pumps	10/2/2017	14:39:45	COM4	0.00	0.00	0.00	FLOD LINES WITH 2 BBLS
Event	12	Test Lines	Test Lines	10/2/2017	14:43:38	COM4	0.00	8.47	5990.00	LOW TEST TO 500 PSI, HIGH PRESSURE TO 6000 PSI
Event	13	Pump Spacer 1	Pump Spacer 1	10/2/2017	14:48:19	COM4	4.00	11.69	278.00	TUNED SPACER W/ SURFACTANTS, @ 11.5 PPG, PUMPED @ 4 BPM @ 280 PSI
Event	14	Drop Bottom Plug	Drop Bottom Plug	10/2/2017	14:57:46	USER	0.70	11.18	5.00	WEATHERFORD BOTTOM PLUG
Event	15	Pump Cement	Pump Cement	10/2/2017	14:58:42	COM4	7.00	13.32	787.00	ELASTICEM, 1037 SKS @ 13.2 PPG, YEILD @ 1.57, GAL/SK @ 7.52, 1628.09 FT3, 290 BBLS, 186 BBLS OF WATER TO MIX, PUMPED @ 8 BPM @ 583 PSI, HOL-5832, TOL 0
Event	16	Pump Tail Cement	Pump Tail Cement	10/2/2017	15:37:07	COM4	8.00	13.24	600.00	NEOCEM, 1432 SKS @ 13.2 PPG, YEILD @ 2.09, GAL/SK @ 10.08, 3001.21 FT3, 534 BBLS, 345 BBLS OF WATER TO MIX, PUMPED @ 7.5 BPM @ 654 PSI, HOT- 13063, TOT- 5832 FT
Event	17	Clean Lines	Clean Lines	10/2/2017	16:49:36	COM4	0.80	13.37	32.00	
Event	18	Drop Top Plug	Drop Top Plug	10/2/2017	16:54:38	COM4	7.30	8.15	356.00	WEATHERFORD TOP PLUG
Event	19	Pump Displacement	Pump Displacement	10/2/2017	16:55:16	COM4	0.00	8.15	24.00	FRESH WATER FIRST 20 BBL MMCR, THE REST CLAYWEB AND BIOCID, PUMPED @ 7 BPM @ 2700 PSI, FULL RETURNS THOUGHOUT THE JOB, 40 BBLSOF SPACER RETURNS TO SURFACE, AND 80 BBLS OF CEMENT RETURNS TO SURFACE
Event	20	Bump Plug	Bump Plug	10/2/2017	17:53:33	COM4	0.00	8.35	3223.00	BUMPED PLUG @ 2400 PSI TOOK TO 3200 PSI AND HELD FOR 10 MIN. CHECKED FLOATS, FLOATS HELD 3 1/2 BBLS BACK
Event	21	Other	Other	10/2/2017	18:06:46	COM4	1.00	8.25	16.00	RUPTURED PLUG FOR WETSHOE SYSTEM, PUMP 7 BBLS TO RUPTURE PLUG, RUPTURED @ 4300 PSI, THEN PUMPED AN ADDITIONAL 6 BBLS @ 2 BPM @ 2100 PSI, CHECKED FLOATS AGAIN AND 3 BBLS BACK TO THE TRUCK.
Event	22	End Job	End Job	10/2/2017	18:27:05	COM4				
Event	23	Safety Meeting - Pre Rig-Down	Safety Meeting - Pre Rig-Down	10/2/2017	18:30:00	USER				SAFETY MEETING OVER RIGGING DOWN
Event	24	Rig-Down Equipment	Rig-Down Equipment	10/2/2017	19:00:00	USER				RIG DOWN EQUIPMENT AND HOSES
Event	25	Rig-Down Completed	Rig-Down Completed	10/2/2017	20:00:00	USER				RIG DOWN COMPLETE

Event	26	Safety Meeting - Departing Location	Safety Meeting - Departing Location	10/2/2017	20:15:00	USER	SAFETY MEETING OVER DEPARTURE AND JOURNEY HOME
Event	27	Depart Location for Home	Depart Location for Home	10/2/2017	20:30:00	USER	LEAVE LOCATION, THANKS FOR CALLING ROBERT DAVIS AND CREW

3.0 Attachments

3.1 Custom Results – Job Chart with Events



3.2 Custom Results – Job Chart without Events

