

# HALLIBURTON

iCem<sup>®</sup> Service

## **EXTRACTION OIL & GAS**

United States of America, COLORADO

Date: Monday, April 24, 2017

### **RBF 11 Production**

Job Date: Saturday, April 15, 2017

Sincerely,

**Bryce Hinsch**

## 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 **RBF 11** 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 60 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]**

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## Cementing Job Summary

*The Road to Excellence Starts with Safety*

Sold To #: 369404		Ship To #: 3788376		Quote #:		Sales Order #: 0903966151					
Customer: EXTRACTION OIL & GAS				Customer Rep: Shane Hackford							
Well Name: RBF		Well #: 11		API/UWI#: 05-123-4444-00							
Field: WATTENBERG		City (SAP): WINDSOR		County/Parish: WELD		State: COLORADO					
Legal Description: SE NE-22-6N-67W-2090FNL-150FEL											
Contractor: PATTERSON-UTI ENERGY				Rig/Platform Name/Num: PATTERSON346							
Job BOM: 7523											
Well Type: HORIZONTAL OIL											
Sales Person: HALAMERICA\HX38199				Srv Supervisor: Michael Loughran							
<b>Job</b>											
Formation Name											
Formation Depth (MD)		Top			Bottom						
Form Type											
BHST											
Job depth MD		16618ft			Job Depth TVD		6900				
Water Depth											
Wk Ht Above Floor											
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		J-55	0	1593	0	1593	
Casing		5.5	4.778	20		P-110	0	16618	0	6900	
Open Hole Section			8.5				1593	16630	0	6900	
<b>Tools and Accessories</b>											
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make		
Guide Shoe	5.5					Top Plug	5.5		KLX		
Float Shoe	5.5			16618		Bottom Plug	5.5				
Float Collar	5.5			16614		SSR plug set	5.5				
Insert Float	5.5					Plug Container	5.5				
Stage Tool	5.5					Centralizers	5.5				
<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	11.5 lb/gal Tuned Spacer III	Tuned Spacer III			50	bbl	11.5	3.74		4	
149.34 lbm/bbl		BARITE, BULK (100003681)									
35.40 gal/bbl		FRESH WATER									
0.30 gal/bbl		MUSOL A, 330 GAL TOTE - (790828)									
0.30 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 ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
2	ElastiCem Lead	ELASTICEM (TM) SYSTEM	390	sack	13.2	1.57		5	7.53	
	0.45 %	SCR-100 (100003749)								
	7.50 Gal	FRESH WATER								
3	ElastiCem Tail	ELASTICEM (TM) SYSTEM	2285	sack	13.2	1.57		8	7.53	
	0.40 %	SCR-100 (100003749)								
	7.50 Gal	FRESH WATER								
4	Displacement	Displacement	367	bbl	8.34			10		
Cement Left In Pipe		Amount	0 ft		Reason			5 bbl wet shoe		
Mix Water:		pH 7	Mix Water Chloride:	0 ppm	Mix Water Temperature:		62°F			
Comment 60 bbls cement 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	4/14/2017	06:30:00	USER				Callout for on loc. time 1700
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	4/14/2017	11:00:00	USER				Discuss route, Safe driving, start JM
Event	3	Crew Leave Yard	Crew Leave Yard	4/14/2017	11:30:00	USER				
Event	4	Arrive At Loc	Arrive At Loc	4/14/2017	12:45:00	USER				Meet with customer to discuss job. Rig running casing, 5.5" 20# p110 at 16618', Float collar at 16614', TD at 16630', TVD 6900', 9.625" 36# J55Surf casing at 1593', 9.2# OBM
Event	5	Safety Meeting - Assessment of Location	Safety Meeting - Assessment of Location	4/14/2017	12:50:00	USER				hazard hunt, discuss where to spot trucks
Event	6	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	4/14/2017	12:55:00	USER				JSA safe rig up
Event	7	Rig-Up Equipment	Rig-Up Equipment	4/14/2017	13:10:00	USER				rig up all surface lines and iron to buffer zone
Event	8	Pre-Job Safety Meeting	Pre-Job Safety Meeting	4/14/2017	22:15:00	USER	0.00	8.52	-3.00	With all associated personnel. Discuss hazards of our equipment, iron, pressure
Event	9	Start Job	Start Job	4/14/2017	22:36:40	COM1				Begin recording data,
Event	10	Pressure Test	Pressure Test	4/14/2017	22:41:32	USER	0.00	8.32	-2.00	HMS pressure test 4500 psi
Event	11	Pump Spacer 1	Pump Spacer 1	4/14/2017	22:49:43	COM1	3.90	11.60	317.00	11.5 ppg, 15 gal Musol, 15 gal Dual Spacer B, 10 gal D-Air

Event	12	Pump Lead Cement	Pump Lead Cement	4/14/2017	23:04:03	COM1				390 sacks ElastiCem, 109.05 bbls, 13.2 ppg, 1.57 Yield, 7.53 gal/sack
Event	13	Pump Tail Cement	Pump Tail Cement	4/14/2017	23:26:08	COM1				2285 sacks, 638.92 bbls, 13.2 ppg, 1.57 yield, 7.53 gal/sack
Event	14	Shutdown	Shutdown	4/15/2017	00:59:11	COM1				
Event	15	Drop Top Plug	Drop Top Plug	4/15/2017	01:01:17	COM1	0.00	19.11	-4.00	KLX
Event	16	Clean Lines	Clean Lines	4/15/2017	01:03:42	USER	0.00	19.22	-3.00	Clean pumps and lines to wash up tank
Event	17	Pump Displacement	Pump Displacement	4/15/2017	01:08:05	COM1				367 bbls Fresh water
Event	18	Other	Other	4/15/2017	01:37:58	COM1				Spacer returns to surface @ 257 bbls into displacement
Event	19	Other	Other	4/15/2017	01:43:59	COM1				Cement returns to surface at 307 bbls into displacement
Event	20	Bump Plug	Bump Plug	4/15/2017	01:50:37	USER	5.00	8.42	2328.00	Bump plug at 5 bbl min, 2400 psi, pressure up to 3660 psi, Pump 5 bbl wet shoe
Event	21	Check Floats	Check Floats	4/15/2017	01:55:04	USER	0.00	8.40	936.00	Release pressure, 2.5 bbls back
Event	22	Bump Plug	Bump Plug	4/15/2017	02:02:57	USER	0.00	8.39	60.00	Customer request re bump plug to 1800 psi, check floats, floats held, 2 bbls back
Event	23	End Job	End Job	4/15/2017	02:16:52	COM1				Stop recording data
Event	24	Post-Job Safety Meeting (Pre Rig-Down)	Post-Job Safety Meeting (Pre Rig-Down)	4/15/2017	02:30:00	USER	2.00	8.56	16.00	JSA safe rig down
Event	25	Rig Down Lines	Rig Down Lines	4/15/2017	02:35:00	USER	2.00	8.54	14.00	
Event	26	Crew Leave Location	Crew Leave Location	4/15/2017	04:00:00	USER				Start JM. Thanks for choosing Halliburton!

3.0 Attachments

3.1 Extraction Oil RBF 11 Production Job Chart.png

