

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS

Date: Monday, November 27, 2017

CS-Longmeadow 2-1-13 Production

Job Date: Wednesday, October 11, 2017

Sincerely,
Bryce Hinsch

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1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **CS-Longmeadow 2-1-13** 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 19 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

Sold To #: 369404	Ship To #: 3706565	Quote #:	Sales Order #: 0904352889
Customer: EXTRACTION OIL & GAS		Customer Rep: Kalyn Holgate	
Well Name: CS-LONGMEADOW		Well #: 2-1-13	API/UWI #: 05-123-42475-00
Field: WATTENBERG	City (SAP): GREELEY	County/Parish: WELD	State: COLORADO
Legal Description: SW SE-36-6N-66W-338FSL-1824FEL			
Contractor: PATTERSON-UTI ENERGY		Rig/Platform Name/Num: PATTERSON 341	
Job BOM: 7523 7523			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA/HX38199		Srvc Supervisor: Nicholas Roles	

Job

Formation Name			
Formation Depth (MD)	Top		Bottom
Form Type	BHST		
Job depth MD	20537ft		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			0	1587	0	1587
Casing		5.5	4.67	23			0	20537	0	6965
Open Hole Section			8.75				1587	11800	1587	6965
Open Hole Section			8.5				11800	20550	0	0

Tools and Accessories

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	5.5				Top Plug	5.5		HES
Float Shoe	5.5			20537	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

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	11.5 lb/gal Tuned Spacer III	Tuned Spacer III	50	bbl	11.5	3.73		5		
0.50 gal/bbl		MUSOL A, 330 GAL TOTE - (790828)								

149.34 lbm/bbl		BARITE, BULK (100003681)								
35 gal/bbl		FRESH WATER								
0.50 gal/bbl		DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)								
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	3250	sack	13.2	1.57		8	7.54	
7.54 Gal		FRESH WATER								
0.25 %		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	
3	Displacement	Displacement	435	bbl	8.33			10		
Cement Left In Pipe		Amount	0ft	Reason				Wet Shoe		
Comment Got 19bbbls cement to surface										

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density <i>(ppg)</i>	Comb Pump Rate <i>(bbl/min)</i>	DS Pump Press <i>(psi)</i>	Comments
Event	1	Call Out	Call Out	10/11/2017	00:00:00	USER				Called out by Service Coordinator for O/L at 0600
Event	2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	10/11/2017	03:45:00	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	10/11/2017	04:00:00	USER				Journey Management prior to departure
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	10/11/2017	05:00:00	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	10/11/2017	05:15:00	USER				Discussed rigging up hazards and procedure according to HMS.
Event	6	Other	Other	10/11/2017	05:30:00	USER				Water test- PH-6, Chlor-0, Temp-65. Cement temp-70.
Event	7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	10/11/2017	07:30:00	USER	8.55	0.00	-215.00	Held safety meeting with all job associated personnel to discuss job procedure, hazards and stop work authority.
Event	8	Start Job	Start Job	10/11/2017	08:00:58	COM4	8.55	0.00	-216.00	TD-8.75" 11,800', 8.5" 11,800-20550', TP-20537' 5.5" 23#, FC-20532', TVD-6965', SURF-1587' 9.625" 36#, MUD 9.2.#

Event	9	Test Lines	Test Lines	10/11/2017	08:03:58	COM4	8.70	0.00	-72.00	Pumped 5bbbls fresh water to fill lines at 2bpm 110psi, shut manifold, and performed 500psi k/o function test, followed with 5th gear stall at 1753psi, proceeded to bring pressure to 4500psi, held well and no leaks.
Event	10	Pump Spacer 1	Pump Spacer 1	10/11/2017	08:09:30	COM4	8.66	0.00	-198.00	Pumped 50bbbls of 11.5# 3.78y 23.8g/s Tuned Spacer III with 25g Musol A, 25g Dual Spacer B and 10g D-air at 5bpm 350psi.
Event	11	Check Weight	Check weight	10/11/2017	08:21:04	COM4	11.52	5.00	135.00	Weight verified with pressurized mud scales.
Event	12	Pump Cement	Pump Cement	10/11/2017	08:24:32	COM4	13.14	8.30	694.00	Pumped 3250sks or 908.8bbbls of 13.2# 1.57y 7.53g/s Elasticem at 8bpm 498psi.
Event	13	Check Weight	Check weight	10/11/2017	08:27:22	COM4	13.30	7.30	456.00	Weight verified with pressurized mud scales.
Event	14	Check Weight	Check weight	10/11/2017	08:35:26	COM4	13.17	8.10	262.00	Weight verified with pressurized mud scales.
Event	15	Check Weight	Check weight	10/11/2017	09:46:29	COM4	13.15	7.90	254.00	Weight verified with pressurized mud scales.
Event	16	Drop Top Plug	Drop Top Plug	10/11/2017	10:40:07	COM4	8.31	0.00	-172.00	Dropped by KLX tool hand, witnessed by company man and HES supervisor.
Event	17	Pump Displacement	Pump Displacement	10/11/2017	10:40:18	COM4	8.31	0.00	-180.00	Pumped 433bbbls fresh water at 10bpm-3200psi. with 2.5gMMCR in first 10bbbls.
Event	18	Bump Plug	Bump Plug	10/11/2017	11:30:31	COM4	8.32	0.00	2278.00	Slowed down at 400bbbls away to 5bpm, final circulating pressure-

										2310psi. Bump pressure-2740psi.
Event	19	Check Floats	Check Floats	10/11/2017	11:31:13	USER	8.30	0.00	1882.00	Released pressure and got 3.5bbbls back. Floats held.
Event	20	End Job	End Job	10/11/2017	11:33:33	COM4	8.24	0.00	-209.00	Got 19bbbls cement to surface.
Event	21	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	10/11/2017	11:45:00	USER				Discussed rigging down hazards and procedure according to HMS.
Event	22	Depart Location Safety Meeting	Depart Location Safety Meeting	10/11/2017	13:30:00	USER				Held meeting with all personnel in convoy to discuss directions and hazards associated with drive, all fit to drive.
Event	23	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	10/11/2017	14:30:00	USER				Pre journey management prior to departure.

3.0 Attachments

3.1 Extraction CS-Longmeadow 2-1-13 Production Job Chart

