

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS-EBUS

Ft. Lupton District, CO

Date: Thursday, September 26, 2019

Interchange A S22-30-12N Surface

Job Date: Thursday, September 25, 2019

Sincerely,

Bryce Hinsch

Legal Notice

Disclaimer:

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1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Interchange A S22-30-12N** cement **surface** 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 35 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 #: 3901335		Quote #:		Sales Order #: 0905996300					
Customer: EXTRACTION OIL & GAS -				Customer Rep: Colby Hanson							
Well Name: INTERCHANGE A			Well #: S22-30-12N		API/UWI #: 05-014-20765-00						
Field: WATTENBERG		City (SAP): BROOMFIELD		County/Parish: BROOMFIELD		State: COLORADO					
Legal Description: SW NW-10-1S-68W-2231FNL-1182FWL											
Contractor: ENSIGN DRLG				Rig/Platform Name/Num: ENSIGN 147							
Job BOM: 7521 7521											
Well Type: HORIZONTAL OIL											
Sales Person: HALAMERICA\HX38199				Srv Supervisor: Michael Loughran							
Job											
Formation Name											
Formation Depth (MD)		Top		Bottom							
Form Type				BHST							
Job depth MD		1628ft		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	0	9.625	8.921	36			0	1628	0	1628	
OH		13.5					0	1633	0	1633	
Tools and Accessories											
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make		
Guide Shoe	9.625					Top Plug	9.625	1	HES		
Float Shoe	9.625			1628		Bottom Plug	9.625		HES		
Float Collar	9.625			1588		SSR plug set	9.625		HES		
Insert Float	9.625					Plug Container	9.625	1	HES		
Stage Tool	9.625					Centralizers	9.625		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	Red Dye Spacer	Red Dye Spacer			10	bbl	8.33			3	

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	SwiftCem	SWIFTCEM (TM) SYSTEM	600	sack	13.5	1.74		8	9.17
9.17 Gal		FRESH WATER							
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	Fresh Water	Fresh Water	122.7	bbl	8.33			10	
Cement Left In Pipe		Amount	40 ft		Reason			Shoe Joint	
Mix Water:		pH 7	Mix Water Chloride:		Less 200 ppm		Mix Water Temperature:		60 °F
Cement Temperature:			Plug Displaced by:		8.33 lb/gal		Disp. Temperature:		
Plug Bumped?		Yes	Bump Pressure:		1000 psi		Floats Held?		Yes
Cement Returns:			Returns Density:				Returns Temperature:		
Comment Good returns throughout job, Blup bumped, Floats hold, 1 bbl back to pump truck. 35 bbl cement to surface. Top Cement = 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)	DS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	Call Out	9/25/2019	13:00:00	USER					Crew called out for on location time of 1900 hrs. 9/25/2019
Event	2	Crew Leave Yard	Crew Leave Yard	9/25/2019	17:00:00	USER					Crew Leaves Yard
Event	3	Arrive At Loc	Arrive At Loc	9/25/2019	18:00:00	USER					Arrive at location, Rig Drilling, Meet with customer, TP 1627 36# J55, TD 1633, 13.5 Hole, FC 1588, TVD 1628, PC 108' 16", WF 8.4 WBM, Top Plug By HES, Water 60 Deg., PH 7, Chlorides and sulfates less than 200 ppm
Event	4	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	9/25/2019	18:10:00	USER					Pre rig up safety meeting
Event	5	Rig-Up Equipment	Rig-Up Equipment	9/25/2019	18:15:00	USER					Rig up all service lines and iron to buffer zone
Event	6	Pre-Job Safety Meeting	Pre-Job Safety Meeting	9/25/2019	22:40:00	USER	8.29	0.00	-2.00	0.00	Discuss job procedures, Discuss job hazards and hazards of Halliburton Equipment.
Event	7	Start Job	Start Job	9/25/2019	22:50:48	COM6	8.29	0.00	-2.00	0.00	Begin recording data
Event	8	Test Lines	Test Lines	9/25/2019	22:53:38	COM6	8.31	0.00	39.00	2.50	Pressure test to 3800 psi
Event	9	Pump Spacer 1	Pump Spacer 1	9/25/2019	22:57:55	COM6	8.29	0.00	37.00	0.00	10 bbl. fresh water spacer w/ 1/2 bottle red dye

Event	10	Pump Cement	Pump Cement	9/25/2019	23:03:28	COM6	8.26	1.90	64.00	10.10	600 sacks SwiftCem, 185.94 bbl., 13.5#, 1.74 yield, 9.17 Gal/sack
Event	11	Shutdown	Shutdown	9/25/2019	23:30:40	COM6	13.53	1.70	29.00	195.00	Shutdown
Event	12	Drop Top Plug	Drop Top Plug	9/25/2019	23:31:20	COM6	13.68	0.00	8.00	195.40	Verified by CM
Event	13	Pump Displacement	Pump Displacement	9/25/2019	23:31:46	COM6	13.01	1.70	18.00	0.00	122.7 bbl. fresh water displace
Event	14	Bump Plug	Bump Plug	9/25/2019	23:49:39	COM6	8.32	0.00	1123.00	125.10	FCP 500 psi @ 3 bpm, Bump pressure 1000 psi. Floats hold, 1 bbl. back to pump truck. 35 bbl. cement to surface. Top of Cement = Surface
Event	15	End Job	End Job	9/25/2019	23:51:46	COM6	8.29	0.00	4.00	125.10	Stop recording data
Event	16	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	9/25/2019	23:52:00	USER	8.29	0.00	5.00	125.10	JSA safe Rig-Down
Event	17	Rig-Down Equipment	Rig-Down Equipment	9/25/2019	23:59:00	USER					Rig down equipment
Event	18	Crew Leave Location	Crew Leave Location	9/26/2019	00:22:54	USER					Thanks for choosing Halliburton Energy Services!

3.0 Attachments

3.1 Interchange A S22-30-12N.png

