

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS-EBUS

Ft. Lupton District, CO

Date: Wednesday, September 25, 2019

Interchange A S22-30-10C Surface

Job Date: Wednesday, September 24, 2019

Sincerely,

Bryce Hinsch

Legal Notice

Disclaimer:

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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.....	9
3.1	Interchange A S22-30-10C.png	9

1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Interchange A S22-30-10C** 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 20 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 #: 3901322	Quote #:	Sales Order #: 0905995018
Customer: EXTRACTION OIL & GAS -		Customer Rep: Hans Cary	
Well Name: INTERCHANGE A		Well #: S22-30-10C	API/UWI #: 05-014-20760-00
Field: WATTENBERG	City (SAP): BROOMFIELD	County/Parish: BROOMFIELD	State: COLORADO
Legal Description: SW NW-10-1S-68W-2263FNL-1165FWL			
Contractor: ENSIGN DRLG		Rig/Platform Name/Num: ENSIGN 147	
Job BOM: 7521 7521			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA/HX38199		Srvc Supervisor: Michael Loughran	

Job

Formation Name			
Formation Depth (MD)	Top		Bottom
Form Type	BHST		
Job depth MD	1641ft	Job Depth TVD	1641
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	1641	0	1641
OH		13.5					0	1646	0	1646

Tools and Accessories

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	9.625				Top Plug	9.625		HES
Float Shoe	9.625			1641	Bottom Plug	9.625		HES
Float Collar	9.625				SSR plug set	9.625		HES
Insert Float	9.625				Plug Container	9.625		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 ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
2	SwiftCem	SWIFTCEM (TM) SYSTEM	550	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 ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
3	Fresh Water	Fresh Water	123.7	bbl	8.33			10	

Cement Left In Pipe	Amount	Reason			Shoe Joint
	41 ft				
Mix Water:	pH 7	Mix Water Chloride:	Less 200 ppm	Mix Water Temperature:	63 °F
Cement Temperature:		Plug Displaced by:	8.33 lb/gal	Disp. Temperature:	
Plug Bumped?	Yes	Bump Pressure:	1140 psi	Floats Held?	Yes
Cement Returns:		Returns Density:		Returns Temperature:	

Comment Good returns throughout entire job, Floats held. 1 bbl back to pump truck. 20 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 <i>(ppg)</i>	Comb Pump Rate <i>(bbl/min)</i>	DS Pump Press <i>(psi)</i>	Pump Stg Tot <i>(bbl)</i>	Comments
Event	1	Call Out	Call Out	9/24/2019	14:00:00	USER					Crew called out for on location time of 2200 hrs. 9/24/2019
Event	2	Crew Leave Yard	Crew Leave Yard	9/24/2019	17:30:00	USER					Crew leaves yard
Event	3	Arrive At Loc	Arrive At Loc	9/24/2019	19:30:00	USER					Arrive at location, Rig Pulling, Meet with customer, TP 1641 36# P-J55, TD 1646, 13.50 Hole, FC 1601, PC 108' 16", WF 8.4 WBM, Top plug provided by HES, Water 63 Deg., PH 7, Chlorides and sulfates less than 200 ppm
Event	4	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	9/24/2019	19:35:00	USER					Pre rig up safety meeting
Event	5	Rig-Up Equipment	Rig-Up Equipment	9/24/2019	19:40:00	USER					Rig up all service lines and iron to buffer zone
Event	6	Pre-Job Safety Meeting	Pre-Job Safety Meeting	9/24/2019	22:00:00	USER	8.31	0.00	-7.00	37.90	Discuss job procedures, Discuss job hazards and hazards of Halliburton Equipment.
Event	7	Start Job	Start Job	9/24/2019	22:22:16	COM4	8.33	0.00	-8.00	0.00	Begin recording data
Event	8	Test Lines	Test Lines	9/24/2019	22:31:03	COM4	8.33	0.00	1126.00	3.20	Test lines 4000 psi
Event	9	Pump Spacer 1	Pump Spacer 1	9/24/2019	22:34:36	COM4	8.30	0.00	30.00	0.00	10 bbl. Fresh water w/Red Dye

Event	10	Pump Lead Cement	Pump Lead Cement	9/24/2019	22:39:55	COM4	8.27	2.00	95.00	0.00	550 sacks SwiftCem, 170.44 bbl., 13.5 ppg, 1.74 yield, 9.17 gal/sack
Event	11	Shutdown	Shutdown	9/24/2019	23:03:10	COM4	-0.11	0.00	21.00	172.30	Shutdown
Event	12	Drop Top Plug	Drop Top Plug	9/24/2019	23:03:20	COM4	-0.11	0.00	10.00	172.30	Verified by CM
Event	13	Pump Displacement	Pump Displacement	9/24/2019	23:03:55	COM4	10.23	1.70	4.00	172.40	123.7 fresh water displace
Event	14	Bump Plug	Bump Plug	9/24/2019	23:25:45	COM4	8.23	0.00	1132.00	126.50	Fcp 480 psi@ 3 bpm, Bump pressure 1140, Floats held, 1 bbl. back. 20 bbl. cement to surface. Top cement=Surface
Event	15	End Job	End Job	9/24/2019	23:27:04	COM4	8.20	0.00	3.00	126.50	Stop recording data
Event	16	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	9/24/2019	23:30:00	USER					JSA safe Rig-Down
Event	17	Rig-Down Equipment	Rig-Down Equipment	9/24/2019	23:35:00	USER					Rig down equipment
Event	18	Crew Leave Location	Crew Leave Location	9/24/2019	23:59:00	USER					Thanks for choosing Halliburton Energy Services!

3.0 Attachments

3.1 Interchange A S22-30-10C.png

