

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS-EBUS

Interchange B S22-30-18N Surface

Sincerely,
Meghan Jacobs

Legal Notice

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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 B S22-30-18N** 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 #: 3901326		Quote #:		Sales Order #: 0905979729					
Customer: EXTRACTION OIL & GAS -				Customer Rep: EXTRACTION REP							
Well Name: INTERCHANGE B			Well #: S22-30-18N			API/UWI #: 05-014-20781-00					
Field: WATTENBERG		City (SAP): BROOMFIELD		County/Parish: BROOMFIELD		State: COLORADO					
Legal Description: NE SW-10-1S-68W-2213FSL-1741FWL											
Contractor: ENSIGN DRLG				Rig/Platform Name/Num: ENSIGN 147							
Job BOM: 7521 7521											
Well Type: HORIZONTAL OIL											
Sales Person: HALAMERICA\HX38199				Srv Supervisor: Kyle Bath							
Job											
Formation Name											
Formation Depth (MD)		Top		Bottom							
Form Type					BHST						
Job depth MD		1666ft			Job Depth TVD		1666 ft				
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		36			0	1666	0	1666	
OH		13.5					0	1671	0	1671	
Tools and Accessories											
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make		
Guide Shoe	9.625			1666		Top Plug	9.625		HES		
Float Shoe	9.625					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				

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	550	sack	13.5	1.74		5	9.17	
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	125	bbl	8.33					
Cement Left In Pipe		Amount	42 ft		Reason			Shoe Joint		
Mix Water:		pH 7	Mix Water Chloride:			0 ppm		Mix Water Temperature:		65 °F
Cement Temperature:		## °F °C	Plug Displaced by:			8.4 lb/gal		Disp. Temperature:		65 °F
Plug Bumped?		Yes	Bump Pressure:			500 psi		Floats Held?		Yes
Cement Returns:		20 bbl	Returns Density:			## lb/gal kg/m3		Returns Temperature:		## °F °C
Comment RECEIVED 20 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)	DS Pump Press (psi)	DH Density (ppg)	Comments
Event	1	Check Floats	Call Out	9/14/2019	19:00:00	USER				CREW CALLED OUT
Event	2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	9/14/2019	22:30:00	USER				DISCUSS ROUTE AND HAZARDS
Event	3	Crew Leave Yard	Crew Leave Yard	9/14/2019	23:00:00	USER				CREW DEPART YARD
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	9/15/2019	00:05:00	USER				ARRIVE ON LOCATION, RIG DRILLING UPON HES ARRIVAL, RECIEVED NUMBERS FROM CO REP TD 1671, TP 1666, SJ 43.75, CSG 9 5/8 36#, PREV CSG 16" @ 108, HOLE 13.5, MUD 8.4
Event	5	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	9/15/2019	00:15:00	USER				DISCUSS LOCATION HAZARDS AND HOW TO MITIGATE THEM, WATER TEST TEMP 65, PH 7, CHLORIDES 0
Event	6	Safety Meeting - Pre Rig-Up	Safety Meeting - Pre Rig-Up	9/15/2019	00:25:00	USER				DISCUSS HAZARDS AND WAYS TO MITIGATE THEM
Event	7	Safety Meeting - Pre Job	Safety Meeting - Pre Job	9/15/2019	01:05:00	USER	0.00	-11.00	8.46	PRE JOB SAFETY MEETING WITH RIG CREW AND CO REP
Event	8	Start Job	Start Job	9/15/2019	01:37:05	COM4	0.00	-14.00	8.52	START RECORDING DATA
Event	9	Test Lines	Test Lines	9/15/2019	01:39:54	COM4	0.00	105.00	8.51	TEST LINES TO 3400 PSI
Event	10	Pump Spacer 1	Pump Spacer 1	9/15/2019	01:45:00	COM4	0.10	57.00	8.52	PUMP 10 BBLS FRESH WATER SPACER W/RED DYE 2 BPM 25 PSI
Event	11	Check Weight	Check Weight	9/15/2019	01:50:03	COM4	1.50	102.00	8.46	
Event	12	Pump Lead Cement	Pump Lead Cement	9/15/2019	01:50:46	COM4	1.50	98.00	8.44	MIX AND PUMP 550 SKS 170 BBLS CEMENT 13.5 PPG, 1.74 FT3/SK, 9.17 GAL/SK 8 BPM 370 PSI, CALCULATED TOC SURFACE
Event	13	Drop Top Plug	Drop Top Plug	9/15/2019	02:21:01	COM4	0.00	-19.00	0.54	LAUNCH TOP PLUG

Event	14	Pump Displacement	Pump Displacement	9/15/2019	02:21:07	COM4	0.00	-19.00	0.42	PUMP 125 BBLS FRESH WATER DISPLACEMENT 10 BPM 460 PSI, RECIEVED 20 BBLS CEMENT TO SURFACE
Event	15	Bump Plug	Bump Plug	9/15/2019	02:39:45	COM4	3.00	490.00	8.14	BUMP PLUG AT 500 PSI TOOK TO 850 PSI
Event	16	Check Floats	Check Floats	9/15/2019	02:41:13	USER	0.00	840.00	8.18	FLOATS HELD TOOK 1 BBL BACK
Event	17	End Job	End Job	9/15/2019	02:41:51	COM4	0.00	-3.00	8.12	STOP RECORDING DATA
Event	18	Safety Meeting - Pre Rig-Down	Safety Meeting - Pre Rig-Down	9/15/2019	02:45:00	USER	0.00	-13.00	-0.21	DISCUSS HAZARDS AND WAYS TO MITIGATE THEM
Event	19	Depart Location Safety Meeting	Depart Location Safety Meeting	9/15/2019	03:50:00	USER				DISCUSS HAZARDS AND ROUTE
Event	20	Crew Leave Location	Crew Leave Location	9/15/2019	04:15:00	USER				THANK YOU FOR USING HALLIBURTON, KYLE BATH AND CREW

3.0 Attachments

3.1 Interchange B S22-30-18N Surface – Job Chart

