

# HALLIBURTON

iCem<sup>®</sup> Service

## **EXTRACTION OIL & GAS**

Ft. Lupton District, COLORADO

Date: Friday, July 05, 2019

## **INTERCHANGE B S22-30-14N Surface**

Job Date: Thursday, June 13, 2019

Sincerely,  
**Tyler Hill**

## Legal Notice

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### Disclaimer:

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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 **Interchange B S22-30-14N** 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 45 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**

*The Road to Excellence Starts with Safety*

<b>Sold To #:</b> 369404		<b>Ship To #:</b> 3901284		<b>Quote #:</b>		<b>Sales Order #:</b> 0905767314					
<b>Customer:</b> EXTRACTION OIL & GAS -				<b>Customer Rep:</b> MANNY							
<b>Well Name:</b> INTERCHANGE B			<b>Well #:</b> S22-30-14N		<b>API/UWI #:</b> 05-014-20779-00						
<b>Field:</b> WATTENBERG		<b>City (SAP):</b> BROOMFIELD		<b>County/Parish:</b> BROOMFIELD		<b>State:</b> COLORADO					
<b>Legal Description:</b> NE SW-10-1S-68W-2196FSL-1671FWL											
<b>Contractor:</b> PATTERSON-UTI ENERGY				<b>Rig/Platform Name/Num:</b> PATTERSON 901							
<b>Job BOM:</b> 7521 7521											
<b>Well Type:</b> HORIZONTAL OIL											
<b>Sales Person:</b> HALAMERICA\HX38199				<b>Srv Supervisor:</b> Lance Carpenter							
<b>Job</b>											
<b>Formation Name</b>											
<b>Formation Depth (MD)</b>		<b>Top</b>		<b>Bottom</b>							
<b>Form Type</b>					<b>BHST</b>						
<b>Job depth MD</b>		1656ft			<b>Job Depth TVD</b>		1656				
<b>Water Depth</b>					<b>Wk Ht Above Floor</b>		4				
<b>Perforation Depth (MD)</b>		<b>From</b>		<b>To</b>							
<b>Well Data</b>											
<b>Description</b>	<b>New / Used</b>	<b>Size in</b>	<b>ID in</b>	<b>Weight lbm/ft</b>	<b>Thread</b>	<b>Grade</b>	<b>Top MD ft</b>	<b>Bottom MD ft</b>	<b>Top TVD ft</b>	<b>Bottom TVD ft</b>	
Surface Casing		9.625		36			0	1656	0	1656	
<b>Tools and Accessories</b>											
<b>Type</b>	<b>Size in</b>	<b>Qty</b>	<b>Make</b>	<b>Depth ft</b>		<b>Type</b>	<b>Size in</b>	<b>Qty</b>	<b>Make</b>		
Guide Shoe	9.625					Top Plug	9.625	1	HES		
Float Shoe	9.625			1656		Bottom Plug	9.625		HES		
Float Collar	9.625					SSR plug set	9.625		HES		
Insert Float	9.625					Plug Container	9.625	1	HES		
Stage Tool	9.625					Centralizers	9.625				
<b>Fluid Data</b>											
<b>Stage/Plug #: 1</b>											
<b>Fluid #</b>	<b>Stage Type</b>	<b>Fluid Name</b>			<b>Qty</b>	<b>Qty UoM</b>	<b>Mixing Density lbm/gal</b>	<b>Yield ft3/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>
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	SWIFTCM (TM) SYSTEM	550	sack	13.5	1.74	9.2	5	9.2
9.20 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	125	bbl	8.33				
Cement Left In Pipe		Amount	47ft		Reason			Shoe Joint	
Mix Water:		7	Mix Water Chloride:		200ppm		Mix Water Temperature:		75 °F °C
Cement Temperature:		## °F °C	Plug Displaced by:		8.34 lb/gal		Disp. Temperature:		## °F °C
Plug Bumped?		Yes	Bump Pressure:		545psi		Floats Held?		Yes
Cement Returns:		## bbl m3	Returns Density:		## lb/gal kg/m3		Returns Temperature:		## °F °C
<b>Comment</b>  JOB CALLED OUT AT 1530 FOR ON LOCATION AT 2030. FINAL BULK TRUCK NOT LOADED UNTIL 2300. ARRIVED ON LOCATION AT 2350. JOB WENT WELL, CEMENT WAS WEIGHED AND VERRIFIED ON SCALES THROUGHOUT JOB. PUMPED 125 BBLS OF DISPLACEMENT WATER HAD CEMENT RETURN TO SURFACE AT 80 BBLS AWAY. BUMPED PLUG AND TOOK 500 PSI OVER FINAL CIRCULATING PRESSURE 545PSI. FLOATS HELD AND GOT .5 BBL BACK.  45BBLS BACK TO SURFACE									

## 2.0 Real-Time Job Summary

## 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	PS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Comments
Event	1	Call Out	Call Out	6/12/2019	15:00:00	USER				CREW CALLED OUT FOR ON LOCATION, BULK TRUCKS HAD NOT BEEN LOADED YET.
Event	2	Crew Leave Yard	Crew Leave Yard	6/12/2019	23:10:00	USER				AFTER CHECKING CORRECT CEMENT VOLUMES WERE LOADED AND EQUIPMENT WAS RUNNING. CREW HAD PRE CONVOY SAFETY MEETING AND DISCUSSED SAFE FOLLOWING DISTANCE WHILE DRIVING, WILF LIFE AND ROUTE TO LOCATION.
Event	3	Arrive at Rig	Arrive at Rig	6/12/2019	23:50:00	USER				CREW ARRIVED ON LOCATION RIG WAS ON BOTTOM READY TO PUMP.
Event	4	Safety Meeting - Pre Rig-Up	Safety Meeting - Pre Rig-Up	6/13/2019	00:00:00	USER				CREW HAD PRE RIG UP SAFETY MEETING AND DISCUSSED 40FT BUFFER ZONE, PINCH POINTS, TEAM CARRY, SLIP, TRIPS AND FALLS AND GOOD COMMUNICATION.
Event	5	Pressure Test	Pressure Test	6/13/2019	01:00:20	USER	3660.50	8.43	0.00	PRESSURE TESTED LINES TO 3500PSI
Event	6	Pump Spacer	Pump Spacer	6/13/2019	01:04:10	USER	109.94	8.37	4.07	PUMPED SPACER 10BBLs OF WATER WITH RED DYE.
Event	7	Pump Cement	Pump Cement	6/13/2019	01:07:06	USER	64.77	8.32	4.05	PUMPED 170 BBLs OF (SWIFTCM) CEMENT 13.5

										PPG 1.74 YIELD 9.2 GAL 550SKS
Event	8	Drop Top Plug	Drop Top Plug	6/13/2019	01:36:27	USER	29.95	8.66	4.03	DROPPED TOP PLUG WITH COMPANY MAN ON RIG FLOOR.
Event	9	Pump Displacement	Pump Displacement	6/13/2019	01:36:35	USER	25.25	8.45	4.03	PUMPED 125 BBLS OF DISPLACEMENT WATER 8.34PPG
Event	10	Bump Plug	Bump Plug	6/13/2019	02:00:48	USER	982.29	8.49	0.64	SLOWED RATE AT 110 BBLS AWAY TO 3BPM TO BUMP PLUG, TOOK 500PSI OVER FINAL CIRCULATING PRESSURE 545PSI HELD PRESSURE FOR 5 MINS
Event	11	Check Floats	Check Floats	6/13/2019	02:01:59	USER	853.37	8.51	0.00	FLOATS HELD AND GOT .5 BBL BACK
Event	12	End Job	End Job	6/13/2019	02:02:25	USER	21.48	8.44	0.00	END JOB
Event	13	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	6/13/2019	02:10:00	USER				HAD PRE RIG DOWN SAFETY MEETING WITH CREW AND DISCUSSED PINCH POINTS, TEAM CARRY, CALLING OUT HAMMER SWINGS, FOOTING PLACEMENT AND THREE POINTS OF CONTACT.
Event	14	Crew Leave Location	Crew Leave Location	6/13/2019	03:00:00	USER				HAD PRE CONVOY SAFETY MEETING WITH CREW AND DISCUSSED SAFE FOLLOWING DISTANCE, WILD LIFE, AND ROUTE BACK TO YARD.

## 3.0 Attachments

### 3.1 INTERCHANGE B S22-30-14N Surface.png

