

HALLIBURTON

iCem[®] Service

CONFLUENCE DJ LLC-EBUS

Ft. Lupton District, COLORADO

SILVERTON 5-7-3L

Job Date: Wednesday, March 04, 2020

Sincerely,

Andrew McIntosh

Legal Notice

Disclaimer:

All information in this report is provided subject to the terms and conditions which govern the services provided by Halliburton. Halliburton personnel use their best efforts in gathering information and their best judgment in interpreting it, but any interpretation, research, analysis or recommendation furnished by Halliburton are opinions based upon inferences from measurements and empirical relationships and assumptions, which inferences and empirical relationships and assumptions are not infallible, and with respect to which professionals in the industry may differ. iCem 3D Displacement results are used to understand how fluids intermix during a cement job. Simulation and 3D displacement results are not intended as and should not be used as a replacement for bond logs in determining top of cement. Current 3D model calculations are known to model more volume than the input volume for standard cases due to known calculation improvements required. For rotational cases, the modeled volume will be impacted by the same calculations impacting the standard cases, as well as additional constraints imposed to make the calculation time required operationally feasible. Therefore, until further notice, 3D displacement results should not be used for replacement of a bond log, or used as an identifier of top of cement. HALLIBURTON IS UNABLE TO GUARANTEE THE ACCURACY OF ANY CHART INTERPRETATION, RESEARCH ANALYSIS, OR JOB RECOMMENDATION and any interpretation or recommendation is not for use of or reliance upon by any third party. The customer has full responsibility for any of its decisions which are based on the information provided in this report.

Table of Contents

1.0 Cementing Job Summary 4

 1.1 Executive Summary4

2.0 Real-Time Job Summary 7

 2.1 Job Event Log7

3.0 Attachments..... 10

 3.1 CONFLUENCE SILVERTON 5-7-3L SURFACE-Custom Results.png10

1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Silverton 5-7-3L** 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 40 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 #: 375989		Ship To #: 3917473		Quote #:		Sales Order #: 0906357234					
Customer: CONFLUENCE DJ LLC-EBUS				Customer Rep: BRYAN							
Well Name: SILVERTON			Well #: 5-7-3L			API/UWI #: 05-123-48435-00					
Field: WATTENBERG		City (SAP): KERSEY		County/Parish: WELD		State: COLORADO					
Legal Description: NW SW-4-4N-63W-2698FSL-255FWL											
Contractor: ENSIGN DRLG				Rig/Platform Name/Num: ENSIGN 122							
Job BOM: 7521 7521											
Well Type: HORIZONTAL OIL											
Sales Person: HALAMERICA/H171328				Srv Supervisor: Lance Carpenter							
Job											
Formation Name											
Formation Depth (MD)		Top		Bottom							
Form Type				BHST							
Job depth MD		1580		Job Depth TVD	1580						
Water Depth				Wk Ht Above Floor	4						
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	1580	0		
Open Hole Section			13.5				0	1590			
Tools and Accessories											
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make		
Guide Shoe	9.625			1580		Top Plug	9.625	1	HES		
Float Shoe	9.625					Bottom Plug	9.625		HES		
Float Collar	9.625			1536		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	Mud Flush III (Powder)	Mud Flush III			40	bbl	8.4			8	
42 gal/bbl		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
2	12.5# SwiftCem	SWIFTCM (TM) SYSTEM	275	sack	12.5	2.16		8	12.28
12.28 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	13.5# SwiftCem	SWIFTCM (TM) SYSTEM	195	sack	13.5	1.74		8	9.16
9.16 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
4	Displacement fluid		119	bbl	8.3			8	
Cement Left In Pipe		Amount	40 ft		Reason			Shoe Joint	
Mix Water:		pH 7	Mix Water Chloride:		500 ppm		Mix Water Temperature:		58 °F
Cement Temperature:		## °F °C	Plug Displaced by:		8.34 lb/gal Water		Disp. Temperature:		## °F °C
Plug Bumped?		Yes	Bump Pressure:		484 psi		Floats Held?		Yes
Cement Returns:		20 bbl	Returns Density:		## lb/gal kg/m3		Returns Temperature:		## °F °C
Comment JOB PERFORMED AS DESIGNED. NO ACCIDENT, INJURY OR SPILL. MUD FLUSH SPACER PUMPED FIRST. CEMENT SLURRY VOLUMES VERIFIED WITH MIX WATER GALLONS AND DENSITY VERIFIED WITH PRESSURIZED MUD BALANCE. DROPPED TOP PLUG BEFORE DISPLACEMENT. ALL SPACER TO SURFACE AND 20 BBL CEMENT. BUMPED PLUG AT 3 BPM WITH 484 PSI. TOOK TO 1154 PSI AND HELD FOR A FEW MINUTES. FLOATS HELD WITH 1 BBL BACK. TOP OF TAIL – 925' TOP OF LEAD – SURFACE WITH 20 BBL BACK SPACER – ALL 40 BBL 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)	Pump Stg Tot (bbl)	Comments
Event	1	Check Floats	Call Out	3/3/2020	23:00:00	USER					CALLOUT. CREW STAYED ON LOCATION FROM PREVIOUS JOB. ON LOCATION TIME 0500
Event	2	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	3/4/2020	04:30:00	USER					CREW HAS PRE RIG UP SAFETY MEETING DISCUSSING RIG OPERATIONS, LIGHTING, COLD WEATHER, SLIPS TRIPS FALLS, LINE OF FIRE, PINCH POINTS, COMMUNICATION AND BEGIN SPOTTING EQUIPMENT AND RIGGING UP LINES
Event	3	Casing on Bottom	Casing on Bottom	3/4/2020	06:30:00	USER	3.00	8.38	0.00	61.80	CASING ON BOTTOM. CREW FINISHES RIGGING UP LINES AND RIG BEGINS CIRCULATING
Event	4	Pre-Job Safety Meeting	Pre-Job Safety Meeting	3/4/2020	06:40:00	USER	4.00	8.33	0.00	61.80	CREW, RIG CREW AND CUSTOMER REP HAVE PRE JOB SAFETY MEETING DISCUSSING MUSTER AREAS, CONTIGENCIES, EMERGENCY PROCEDURES, ROLES, RED ZONES, STOP WORK AUTHORITY, LINE OF FIRE, TUGGER OPERATIONS, PINCH POINTS, 3 POINTS OF CONTACT AND THE JOB PROCEEDURE

Event	5	Start Job	Start Job	3/4/2020	07:09:48	COM4	1.00	8.20	0.00	61.80	START JOB
Event	6	Test Lines	Test Lines	3/4/2020	07:14:49	COM4	2654.00	8.61	0.00	64.90	FILL LINES WITH 3 BBL WATER. PRESSURE TEST HES LINES TO 2500 PSI. TEST GOOD
Event	7	Pump Spacer 1	Pump Spacer 1	3/4/2020	07:18:48	COM4	88.00	8.36	3.00	0.00	PUMP 40 BBL MUD FLUSH SPACER WITH RED DYE AND D-AIR
Event	8	Pump Lead Cement	Pump Lead Cement	3/4/2020	07:32:51	COM4	70.00	8.94	3.00	42.60	PUMP 106 BBL SWIFTCCEM LEAD 12.5# 2.16 YIELD 12.28 GAL 275 SACKS
Event	9	Pump Tail Cement	Pump Tail Cement	3/4/2020	07:49:15	COM4	183.00	12.48	6.30	0.10	PUMP 61 BBL SWIFTCCEM TAIL 13.5# 1.74 YIELD 9.16 GAL 195 SACKS
Event	10	Comment	Comment	3/4/2020	08:00:01	USER	185.00	13.36	2.90	68.20	SHUTDOWN
Event	11	Drop Top Plug	Drop Top Plug	3/4/2020	08:05:29	COM4	10.00	33.47	0.00	68.20	DROP TOP PLUG
Event	12	Pump Displacement	Pump Displacement	3/4/2020	08:05:32	COM4	10.00	33.18	0.00	0.00	PUMP 119 BBL WATER DISPLACEMENT WASHING UP ON TOP OF THE PLUG
Event	13	Bump Plug	Bump Plug	3/4/2020	08:26:24	COM4	1158.00	8.21	0.00	121.30	BUMP PLUG AT 3 BPM WITH 484 PSI. TOOK TO 1154 PSI AND HELD FOR A FEW MINUTES
Event	14	Check Floats	Check Floats	3/4/2020	08:28:12	USER	1157.00	8.21	0.00	121.30	CHECK FLOATS. FLOATS HELD WITH 1 BBL BACK
Event	15	Post-Job Safety Meeting (Pre Rig-Down)	Post-Job Safety Meeting (Pre Rig-Down)	3/4/2020	08:30:00	USER					CREW HAS PRE RIG DOWN SAFETY MEETING DISCUSSING TEAM LIFTING, RIG OPERATIONS, LINE OF FIRE, PINCH POINTS, SLIPS TRIPS FALLS, COMMUNICATION AND BEGIN RIGGING DOWN

Event	16	Depart Location	Depart Location	3/4/2020	10:30:00	USER	CREW IS RIGGED DOWN AND READY TO DEPART
-------	----	-----------------	-----------------	----------	----------	------	--

3.0 Attachments

3.1 CONFLUENCE SILVERTON 5-7-3L SURFACE-Custom Results.png

