

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS-EBUS

Date: Friday, May 03, 2019

Coyote Trails 33W-15-4N Production

Job Date: Saturday, April 13, 2019

Sincerely,

Bryce Hinsch

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 8

 2.1 Job Event Log8

3.0 Attachments..... 12

 3.1 Extraction Coyote Trails 33W-15-4N Production Chart.....12

1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Coyote Trails 33W-15-4N** cement **production** 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 70 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 #: 3912707		Quote #:		Sales Order #: 0905620424				
Customer: EXTRACTION OIL & GAS-EBUS				Customer Rep: Colby Hansen						
Well Name: COYOTE TRAILS			Well #: 33W-15-4N		API/UWI #: 05-123-48254-00					
Field: WATTENBERG		City (SAP): ERIE		County/Parish: WELD		State: COLORADO				
Legal Description: SW SE-28-1N-68W-1200FSL-2355FEL										
Contractor: ENSIGN DRLG				Rig/Platform Name/Num: ENSIGN 147						
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HX38199				Srv Supervisor: Thomas Haas						
Job										
Formation Name										
Formation Depth (MD)		Top		Bottom						
Form Type				BHST						
Job depth MD		15948ft		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	1623	0	1623
Casing	0	5.5	4.892	17			0	15948	0	15948
Open Hole Section			8.5				1623	15955	1623	8028
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
						Top Plug	5.5	1	NCS	
Float Shoe	5.5	1	NCS	15948		Bottom Plug	5.5	1	NCS	
Float Collar	5.5	1	NCS	159344						
						Plug Container	5.5	1	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	FDP-C1337-18	SBM FDP-C1337-18 CEMENT SPACER SYS	60	bbl	12.5	2.73	16.6	8	2048	
5 lbm/bbl		SEM-94P, 35 LB SACK - (1023987)								
205.68 lbm/bbl		BARITE, BULK (100003681)								

5 lbm/bbl		SEM-93P, 35 LB SACK - (1023977)							
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	ElastiCem	ELASTICEM (TM) SYSTEM	585	sack	13.2	1.6	7.75	8	4534
0.75 %		SCR-100 (100003749)							
7.75 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	GasStop	ELASTICEM (TM) SYSTEM	615	sack	13.2	1.6	7.7	8	4736
0.75 %		SCR-100 (100003749)							
5.10 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	13.2# ElastiCem	ELASTICEM (TM) SYSTEM	1400	sack	13.2	1.57	7.66	8	10724
7.66 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
5	MMCR Displacement	MMCR Displacement	20	bbl	8.33			8	
0.50 gal/bbl		MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)							
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
6	Displacement	Displacement	350	bbl	8.33			8	
Cement Left In Pipe		Amount	N/A		Reason			Shoe Joint	
Mix Water:	pH 7	Mix Water Chloride:	<300 ppm			Mix Water Temperature:	68 °F		
Cement Temperature:	N/A	Plug Displaced by:	8.33 lb/gal F.W.			Disp. Temperature:	57 °F		
Plug Bumped?	Yes	Bump Pressure:	psi			Floats Held?	Yes		
Cement Returns:	70 bbl	Returns Density:	N/A			Returns Temperature:	N/A		

Comment Plug bumped at calculated displacement, final circulating pressure of 2300 psi, wet shoe disk burst at 3680 psi , pumped a 5 bbl wet shoe, floats held, received 2.5 bbl back. 70 bbl of cement to 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	4/13/2019	07:00:00	USER					CREW CALLED OUT AT 7:00 4/13/2019, REQUESTED ON LOCATION 13:00 4/13/2019. CREW PICKED UP CEMENT, CHEMICALS (20 GAL D-AIR, 1538 GAL FDP LATEX, 10 GAL MMCR), 100 LBS SUGAR, AND PLUG CONTAINER FROM FORT LUPTON, CO. BULK 660: 111062210/10866484 Bulk 660: 10989685/10866493 SOFT SIDE: 12113644/12051659 PUMP ELITE: 11897034/11645460.
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	4/13/2019	11:45:00	USER					DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW
Event	3	Crew Leave Yard	Crew Leave Yard	4/13/2019	12:00:00	USER					STARTED JOURNEY MANAGEMENT.
Event	4	Arrive At Loc	Arrive At Loc	4/13/2019	12:30:00	USER					END JOURNEY MANAGEMENT. MEET WITH CO. MAN TO DISCUSS JOB; SURFACE CASING: 9.625" 36# @ 1623', CASING: 5.5" 17# @ 115948', 14' SHOE JOINT, 8.5" OPEN HOLE, TVD @ 8042', 10.2 PPG WELL FLUID, FRESH WATER DISPLACEMENT.

Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	4/13/2019	12:40:00	USER						HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH LOCATION, RIG UP AND WEATHER.
Event	6	Rig-Up Equipment	Rig-Up Equipment	4/13/2019	12:50:00	USER						CREW STAGED EQUIPMENT AND RIGGED UP BULK, IRON, AND WATER HOSES TO PERFORM JOB.
Event	7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	4/13/2019	16:00:00	USER	8.45	0.00	-232.00	0.00		MEETING WITH HALLIBURTON AND RIG PERSONNEL. COMMUNICATED POTENTIAL SAFETY HAZARDS AND JOB DETAILS.
Event	8	Start Job	Start Job	4/13/2019	16:28:46	COM4	6.05	0.00	-7.00	0.00		START JOB DATA RECORDING.
Event	9	Drop Bottom Plug	Drop Bottom Plug	4/13/2019	16:29:29	USER	10.18	2.10	379.00	0.60		PLUG LEFT PLUG CONTAINER, VERIFIED BY COMPANY MAN.
Event	10	Test Lines	Test Lines	4/13/2019	16:30:28	COM4	8.73	0.00	201.00	1.50		PRESSURE TESTED LINES TO 5000 PSI, 500 PSI KICK OUT AT 900 PSI, 5TH GEAR STALL AT 1830 PSI.
Event	11	Pump Spacer 1	Pump Spacer 1	4/13/2019	16:33:49	COM4	9.04	0.00	17.00	0.00		PUMP 60 BBLS OF FDP SPACER @ 12.5 LB/GAL, ADDED 5 GAL D-AIR, DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	12	Pump Cap Cement	Pump Cap Cement	4/13/2019	16:45:59	COM4	13.03	5.30	349.00	0.00		PUMP 585 SKS OF ELASTICEM @ 13.2 LB/GAL, 1.6 YIELD, 7.75 GAL/SK, 166.7 BBLS, CALCULATED TOC @ SURFACE, DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	13	Pump Lead Cement	Pump Lead Cement	4/13/2019	17:07:04	COM4	13.12	8.30	497.00	174.10		PUMP 615 SKS OF GASSTOP

											@ 13.2 LB/GAL, 1.6 YIELD, 7.7 GAL/SK, 175.3 BBLS, CALCULATED TOL 2053', MIX WATER MIXED WITH 1538 GAL OF LATEX AND 20 GAL D-AIR, DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	14	Pump Tail Cement	Pump Tail Cement	4/13/2019	17:30:45	COM4	13.12	8.30	607.00	0.10	PUMP 1400 SKS OF ELASTICEM @ 13.2 LB/GAL, 1.57 YIELD, 7.66 GAL/SK, 391.5 BBLS, CALCULATED TOT @ 6352', DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	15	Cement At Bottom	Cement At Bottom	4/13/2019	17:34:14	USER	13.19	8.30	1296.00	25.70	BOTTOM PLUG LANDED AND RUPTURED AT 2100 PSI.
Event	16	Shutdown	Shutdown	4/13/2019	18:20:39	USER	13.38	5.90	343.00	389.80	SHUTDOWN TO CLEAN PUMPS/LINES AND DROP TOP PLUG.
Event	17	Drop Top Plug	Drop Top Plug	4/13/2019	18:27:04	COM4	-0.44	0.00	0.00	401.90	PLUG LEFT PLUG CONTAINER, VERIFIED BY COMPANY MAN.
Event	18	Pump Displacement	Pump Displacement	4/13/2019	18:27:09	COM4	-0.44	0.00	1.00	0.00	BEGIN PUMPING CALCULATED DISPLACEMENT OF 370 BBL FRESH WATER, 10 GAL OF MMCR ADDED TO THE FIRST 20 BBL.
Event	19	Cement Returns to Surface	Cement Returns to Surface	4/13/2019	19:26:39	USER	8.10	2.90	2465.00	310.20	CEMENT RETURNED TO SURFACE 300 BBL INTO DISPLACEMENT, 70 BBL OF CEMENT TO SURFACE.
Event	20	Bump Plug	Bump Plug	4/13/2019	19:51:46	COM4	8.11	0.00	2645.00	376.70	PLUG BUMPED AT CALCULATED DISPLACEMENT, FINAL

											CIRCULATING PRESSURE OF 2300 PSI.
Event	21	Other	Rupture Disk	4/13/2019	19:55:21	USER	8.14	0.00	3431.00	377.50	PRESSURE UP TO RUPTURE WET SHOE DISK, DISK BURST AT 3680 PSI.
Event	22	Other	Wet Shoe	4/13/2019	19:56:44	USER	8.10	1.70	2425.00	378.20	PUMP A 5 BBL WET SHOE.
Event	23	Other	Check Floats	4/13/2019	19:59:12	USER	8.09	1.70	2353.00	382.50	RELEASED PRESSURE BACK TO THE TRUCK, FLOATS HELD, RECIEVED 2.5 BBL BACK.
Event	24	End Job	End Job	4/13/2019	20:00:29	COM4	8.04	0.00	17.00	0.00	END JOB DATA RECORDING.
Event	25	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	4/13/2019	20:10:00	USER	8.04	7.10	180.00	9.20	DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES.
Event	26	Rig-Down Completed	Rig-Down Completed	4/13/2019	21:20:00	USER					ALL HALLIBURTON ITEMS WERE STOWED FOR TRAVEL.
Event	27	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	4/13/2019	22:20:00	USER					DISCUSSED ROUTES HAZARDS AND COMMUNICATION WITH CREW.
Event	28	Crew Leave Location	Crew Leave Location	4/13/2019	23:30:00	USER					THANK YOU FOR USING HALLIBURTON - THOMAS HAAS AND CREW.

3.0 Attachments

3.1 Extraction Coyote Trails 33W-15-4N Production Chart

