

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS-EBUS

Date: Wednesday, October 03, 2018

VT-Glenmere C1-16-18 Surface

Job Date: Monday, May 21, 2018

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 7

2.1 Job Event Log7

3.0 Attachments..... 10

3.1 Extraction VT-Glenmere C1-16-18 Surface Job Chart.....10

1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **VT-Glenmere C1-16-18** 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.

No cement was 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 #: 3786956		Quote #:		Sales Order #: 0904869262					
Customer: EXTRACTION OIL & GAS -				Customer Rep: Shawn McIntyre							
Well Name: VT-GLENMERE			Well #: C1-16-18		API/UWI #: 05-123-44424-00						
Field: WATTENBERG		City (SAP): GREELEY		County/Parish: WELD		State: COLORADO					
Legal Description: SW NW-15-5N-65W-1877FNL-697FWL											
Contractor: Shawn McIntyre				Rig/Platform Name/Num: Cartel 88							
Job BOM: 7521 7521											
Well Type: HORIZONTAL OIL											
Sales Person: HALAMERICA\HX38199				Srv Supervisor: Adam Covington							
Job											
Formation Name											
Formation Depth (MD)		Top		Bottom							
Form Type					BHST						
Job depth MD		1553ft			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	8 RD	J-55	0	1553	0	0	
Open Hole Section			13.5				0	1554	0	0	
Tools and Accessories											
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make		
Guide Shoe	9.625					Top Plug	9.625	1	HES		
Float Shoe	9.625			1511		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		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			50	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	SWIFTCEN (TM) SYSTEM	575	sack	13.5	1.74		8	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	117	bbl	8.33			8		
Cement Left In Pipe		Amount	44 ft		Reason			Shoe Joint		
Mix Water:		pH 7	Mix Water Chloride:			0 ppm		Mix Water Temperature:		65°F
Cement Temperature:		65 °F	Plug Displaced by:			8.33 lb/gal		Disp. Temperature:		65 °F
Plug Bumped?		Yes	Bump Pressure:			480 psi		Floats Held?		Yes
Cement Returns:		0 bbl	Returns Density:			8.33 lb/gal		Returns Temperature:		## °F °C
Comment TD 1554', TP 1553, 42' SHOE, 13.5" OH, WATER TEMP 65 DEGREES, 0 CHLORIDES, 7 PH, 0 SULFATES. NO CEMENT TO SURFACE AND AS A RESULT, BLM WILL BE TAGGING AND FIGURING OUT WHAT THEY NEED TO DO TO BRING CEMENT TO SURFACE. FLOATS HELD, ONE BBL BACK TO TRUCK. .										

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)	Comb Pump Total (bbl)	Comments
Event	1	Call Out	Call Out	5/20/2018	06:00:00	USER					CALLED OUT BY SERVICE COORDINATOR FOR O/L AT 1130
Event	2	Pre-Convoy Safety Meeting	Depart Shop for Location	5/20/2018	09:00:00	USER					HELD MEETING WITH ALL PERSONNEL IN CONVOY TO DISCUSS DIRECTIONS AND HAZARDS ASSOCIATED WITH DRIVING, ALL FIT TO DRIVE.
Event	3	Depart Shop for Location	Depart Shop for Location	5/20/2018	09:30:00	USER					JOURNEY MANAGEMENT PRIOR TO DEPARTURE
Event	4	Arrive At Loc	Arrive At Loc	5/20/2018	10:30:00	USER					UPON ARRIVAL MET WITH COMPANY MAN TO DISCUSS JOB DETAILS AND CALCULATIONS, PERFORMED HAZARD HUNT AND SITE ASSESSMENT.
Event	5	Safety Meeting - Pre Rig-Up	Safety Meeting - Pre Rig-Up	5/20/2018	10:45:00	USER					DISCUSSED RIGGING UP HAZARDS AND PROCEDURE ACCORDING TO HMS.
Event	6	Safety Meeting - Pre Job	Safety Meeting - Pre Job	5/20/2018	21:30:00	USER	-4.00	8.39	0.00	0.00	HELD SAFETY MEETING WITH ALL JOB ASSOCIATED PERSONNEL TO DISCUSS JOB PROCEDURE, HAZARDS AND STOP WORK AUTHORITY. Water test-PH-6, Chlor-0, Temp-65. Cement temp-70.
Event	7	Start Job	Start Job	5/20/2018	21:45:34	COM4	-4.00	8.19	0.00	0.00	FILLED LINES WITH 3 BBLS OF FRESH WATER. 2 BPM

											16 PSI.
Event	8	Test Lines	Test Lines	5/20/2018	21:51:42	COM4	4.00	8.40	0.00	2.90	PRESSURE TESTED TO 3000 PSI. AFTER A 500 PSI KICKOUT TEST AND A 5TH GEAR STALL. COULDN'T GET PRESSURE TO HOLD. HAD TO SWAP 1" LOTORQ VALVES ON RELEASE LINE TO GET PRESSURE TO HOLD.
Event	9	Test Lines	Test Lines	5/20/2018	22:41:20	COM4	41.00	8.42	0.00	29.10	PRESSURE TESTED LINES TO 3000 PSI AGAIN AND HELD FOR 2 MINUTES. OPERATOR INDICATED THAT IT WAS FALLING AT 3 PSI A SECOND.
Event	10	Pump Spacer 1	Pump Spacer 1	5/20/2018	22:45:13	COM4	4.00	8.40	0.00	29.10	PUMPED 10 BBLS OF FRESH WATER SPACER AT 3.5 BPM. 160 PSI. FULL RETURNS.
Event	11	Pump Spacer 2	Pump Spacer 2	5/20/2018	22:48:59	COM4	63.00	8.39	2.80	39.10	PUMPED 10 BBL OF DYE WATER SPACER AT 3.5 BPM, 160 PSI. FULL RETURNS.
Event	12	Pump Cement	Pump Cement	5/20/2018	22:57:01	COM4	5.00	8.42	0.00	51.90	PUMPED 178 BBLS (575 SKS) OF 13.5#, 1.74y, 9.2wr. 8 BPM, 290 PSI. FULL RETURNS.
Event	13	Drop Top Plug	Drop Top Plug	5/20/2018	23:27:32	COM4	0.00	18.26	0.00	241.70	DROPPED HALLIBURTON 9 5/8" TOP PLUG DRILLER WITNESSED ADAM COVINGTON DROP PLUG.
Event	14	Pump Displacement	Pump Displacement	5/20/2018	23:30:28	COM4	5.00	14.82	0.00	241.70	PUMPED 117 BBLS OF FRESH WATER DISPLACEMENT AT 8 BPM TO START THEN SLOWED TO 6 BPM. BUMPED AT 3 BPM. FULL RETURNS. STARTED TO SEE TRACES OF CEMENT AT THE TIME OF THE PLUG

											BEING BUMPED, BUT NO CEMENT TO SURFACE.
Event	15	Bump Plug	Bump Plug	5/20/2018	23:53:52	COM4	944.00	8.11	0.00	363.40	PLUG BUMPED. FCP WAS 480 PSI. BUMP PRESSURE WAS 980 PSI.
Event	16	Other	Other	5/20/2018	23:57:21	COM4	1608.00	8.12	0.00	363.70	5 MIN CASING PRESSURE TEST TO 1500 PSI. NO LEAKS.
Event	17	Check Floats	Check Floats	5/21/2018	00:02:34	USER	1616.00	8.12	0.00	363.70	CHECKED FLOATS AFTER PRESSURE TEST. GOT 1 BBL OF WATER BACK TO TRUCK. FLOATS HELD.
Event	18	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	5/21/2018	00:15:00	USER	0.00	8.11	0.00	383.70	DISCUSSED RIGGING DOWN HAZARDS AND PROCEDURE ACCORDING TO HMS.
Event	19	End Job	End Job	5/21/2018	00:44:24	COM4	-1.00	0.11	0.00	402.40	TD 1554', TP 1553, 42' SHOE, 13.5" OH, WATER TEMP 65 DEGREES, 0 CHLORIDES, 7 PH, 0 SULFATES. NO CEMENT TO SURFACE AND AS A RESULT, BLM WILL BE TAGGING AND FIGURING OUT WHAT THEY NEED TO DO TO BRING CEMENT TO SURFACE.
Event	20	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	5/21/2018	02:00:00	USER					HELD MEETING WITH ALL HES EMPLOYEES IN CONVOY TO DISCUSS DIRECTIONS AND HAZARDS ASSOCIATED WITH DRIVING, ALL FIT TO DRIVE.
Event	21	Depart Location	Depart Location	5/21/2018	02:30:00	USER					PRE JOURNEY MANAGEMENT PRIOR TO DEPARTURE.

3.0 Attachments

3.1 Extraction VT-Glenmere C1-16-18 Surface Job Chart

