

HALLIBURTON

iCem® Service

VERDAD RESOURCES LLC

Ft. Lupton District, COLORADO

KBL 1930-09H

Production Casing

Job Date: Wednesday, August 04, 2021

Sincerely,

MIKE LOUGHRAN

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

Cementing Job Summary **Error! Bookmark not defined.**
 Executive Summary **Error! Bookmark not defined.**
Real-Time Job Summary **Error! Bookmark not defined.**
 Job Event Log..... **Error! Bookmark not defined.**
Attachments.....9
 KBL 1930-09H-Custom Results.png..... **Error! Bookmark not defined.**

1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the KBL 1930-09H 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 22 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 #: 380688		Ship To #: 9032723		Quote #:		Sales Order #: 0907305922	
Customer: VERDAD RESOURCES LLC-EBUS				Customer Rep: Jason Hansen			
Well Name: KBL			Well #: 1930-09H			API/UWI #: 05-123-50882-00	
Field: WATTENBERG		City (SAP): KEENESBURG		County/Parish: WELD		State: COLORADO	
Legal Description: NW SE-19-2N-63W-1806FSL-2051FEL							
Contractor: PRECISION DRLG				Rig/Platform Name/Num: PRECISION 464			
Job BOM: 7523 7523							
Well Type: HORIZONTAL OIL							
Sales Person: HALAMERICA\HX41066				Srvc Supervisor: Michael Loughran			

Job

Job depth MD	15206ft	Job Depth TVD	
---------------------	---------	----------------------	--

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	1818	0	1818
Casing		5.5	4.892	17			0	14623	0	7629
Open Hole Section			8.5				1824	14638	1824	7629

Tools and Accessories

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Float Shoe	5.5			14623	Top Plug	5.5	1	HES
Float Collar	5.5			14552	Bottom Plug	5.5	1	HES
					Plug Container	5.5	1	HES
					Centralizers	5.5		

Fluid Data										
Stage #: 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	Spacer	TUNED PRIME SPACER	100	bbl	11.5	3.71				
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	Cap Cement	ELASTICEM™ SYSTEM	300	sack	13.2	1.6		8	7.65	
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	Lead Cement	ELASTICEM™ SYSTEM	880	sack	13.2	1.6		8	7.66	
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	Tail Cement	NeoCem™	866	sack	13.2	2.02		8	9.71	
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	Displacement	MMCR Water	40	bbl	8.34					
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	Biocide Water	297.6	bbl	8.34					
Cement Left In Pipe			Amount	71 ft			Reason	Shoe Joint		
Comment										

2.0 Real-Time Job Summary

2.1 Job Event Log

Seq. No.	Activity	Date	Time	DH Density (ppg)	Comb Pump Rate (bbl/min)	DS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
1	Call Out	8/3/2021	20:00:00					CREW CALLED OUT AT 2000 HRS. REQUESTED ON LOCATION 0200 HRS. 8/4/2021
2	Arrive At Loc	8/4/2021	01:40:00					MEET WITH CO. MAN TO DISCUSS JOB. 17# P-110 14623', TD 14638', TVD 7629', F/C 14552', 9.625" 36# 1824', HOLE 8.5", MUD 9.4#, MAX PRESSURE 3400 PSI, WATER 67 DEGREES, PH7, CHLORIDES LESS 200 PPM.
3	Pre-Rig Up Safety Meeting	8/4/2021	05:00:00					HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH LOCATION, RIG UP, AND WEATHER.
4	Rig-Up Equipment	8/4/2021	05:10:00					CREW STAGED EQUIPMENT AND RIGGED UP BULK, IRON AND WATER HOSES TO PERFORM JOB.
5	Pre-Job Safety Meeting	8/4/2021	07:00:00	8.32	0.00	34.00	43.90	SAFETY MEETING WITH HALLIBURTON, AND RIG PERSONNEL. CREW COMMUNICATED POTENTIAL SAFETY HAZARDS, AND JOB DETAILS.
6	Start Job	8/4/2021	07:26:02	8.31	0.00	35.00	0.00	BEGIN RECORDING DATA-RIG CIRCULATES 9 BPM/820 PSI
7	Prime Pumps	8/4/2021	07:49:16	8.38	0.00	33.00	0.00	FILL LINES
8	Test Lines	8/4/2021	07:55:19	8.37	0.00	4951.00	3.40	TEST LINES TO 5000 PSI
9	Pump Spacer 1	8/4/2021	07:59:45	8.25	0.00	37.00	3.40	100 BBL TUNED PRIME SPACER_11.5 PPG_3.71 YIELD_23.58 GAL/SACK_ADD D-AIR ON FLY
10	Shutdown	8/4/2021	08:16:21	12.89	0.00	86.00	94.10	SHUTDOWN TO DROP PLUG
11	Drop Bottom Plug	8/4/2021	08:17:53	12.57	0.00	36.00	0.00	BOTTOM PLUG VERIFIED BY DRILLER
12	Pump Cement	8/4/2021	08:18:33	12.51	1.70	40.00	0.00	300 SACKS ELASTICEM CAP CEMENT W/O CBL_85.49 BBL_13.2 PPG_1.6 YIELD_7.65 GAL/SACK_ADD D-AIR ON FLY
13	Pump Lead Cement	8/4/2021	08:33:43	13.08	5.70	237.00	0.00	880 SACKS ELASTICEM TM SYSTEM LEAD CEMENT_250.76 BBLS_13.2 PPG_1.6 YIELD_7.66 GAL/SACK_ADD D-AIR ON FLY
14	Pump Tail Cement	8/4/2021	09:05:35	13.26	8.50	524.00	0.10	866 SACKS NEOCEM TM TAIL CEMENT_311.55 BBLS_13.2 PPG_2.02 YIELD_9.71 GAL/SACK_ MIX D-AIR ON FLY
15	Shutdown	8/4/2021	09:43:34	13.62	0.00	49.00	0.00	SHUTDOWN
16	Clean Lines	8/4/2021	09:46:29	13.27	0.00	45.00	0.00	CLEAN PUMPS AND LINES
17	Drop Top Plug	8/4/2021	09:53:15	8.24	0.00	50.00	0.00	TOP PLUG VERIFIED BY JASON

18	Pump Displacement	8/4/2021	09:55:19	8.20	0.00	40.00	0.00	337.6 BBLS FRESH WATER DISPLACEMENT. 1ST 40 BBLS HAVE 20 GALLONS MICRO MATRIX CEMENT RETARDER. 3 LBS BE-3_5 GALLONS MC MX 820-6 THROUGHOUT DISPLACEMENT.
19	Bump Plug	8/4/2021	10:41:04	8.25	0.00	3543.00	0.00	FCP 2850 PSI @ 4 BPM _ BUMP PRESSURE 3500 PSI _ SEE CEMENT AT 315 INTO DISPLACEMENT _ APPROX 22 BBLS CEMENT TO SURFACE. PRE-JOB CALCULATIONS_ TOTC=7027'_ TOLC=1021'_ TOC=0'
20	Other	8/4/2021	10:46:41	8.24	0.00	3652.00	0.00	CHECK FLOATS_FLOATS HOLD_4.5 BBLS BACK TO PUMP TRUCK
21	End Job	8/4/2021	10:48:53	8.24	0.00	34.00	0.00	STOP RECORDING DATA
22	Pre-Rig Down Safety Meeting	8/4/2021	11:15:00					DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES.
23	Rig-Down Equipment	8/4/2021	11:20:00					RIG DOWN BULK AND MIXING EQUIPMENT
24	Rig-Down Completed	8/4/2021	12:00:00					ALL HALLIBURTON ITEMS WERE STOWED FOR TRAVEL, AND LOCATION WAS CLEAN.
25	Crew Leave Location	8/4/2021	12:30:00					THANK YOU FOR USING HALLIBURTON – MIKE LOUGHRAN AND CREW.

3.0 Attachments

3.1 Job Chart

