

# HALLIBURTON

iCem® Service

**VERDAD RESOURCES LLC**

Ft. Lupton District, CO

**Sonic Star 1101-16H**

Production Casing

Job Date: Monday, August 23, 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

---

1.0    Cementing Job Summary .....4

    1.1    Executive Summary ..... 4

2.0    Real-Time Job Summary .....7

    2.1    Job Event Log ..... 7

3.0    Attachments.....9

    3.1    Job Chart..... 9

## 1.0 Cementing Job Summary

---

### 1.1 Executive Summary

---

Halliburton appreciates the opportunity to perform the cementing services on the Sonic Star 1101-16H 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 35 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*

<b>Sold To #:</b> 380688		<b>Ship To #:</b> 3928231		<b>Quote #:</b>		<b>Sales Order #:</b> 0907335857				
<b>Customer:</b> VERDAD RESOURCES LLC-EBUS						<b>Customer Rep:</b> JASON HANSEN				
<b>Well Name:</b> SONIC STAR			<b>Well #:</b> 1101-16H			<b>API/UWI #:</b> 05-123-49003-00				
<b>Field:</b>		<b>City (SAP):</b> KEOTA		<b>County/Parish:</b> WELD		<b>State:</b> COLORADO				
<b>Legal Description:</b> SE SE-11-8N-60W-468FSL-230FEL										
<b>Contractor:</b> PRECISION DRLG					<b>Rig/Platform Name/Num:</b> PRECISION 464					
<b>Job BOM:</b> 7523 7523										
<b>Well Type:</b> HORIZONTAL OIL										
<b>Sales Person:</b> HALAMERICA\HX41066					<b>Srvc Supervisor:</b> Michael Loughran					
<b>Job</b>										
<b>Job depth MD</b>		19005ft		<b>Job Depth TVD</b>		6167				
<b>Well Data</b>										
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	1948	0	1948
Casing		5.5	4.892	20			0	18966.8	0	6167
Open Hole Section			8.5				1948	19005	1948	6167
<b>Tools and Accessories</b>										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Float Shoe	5.5		HES	18966.8		Top Plug	5.5	1	HES	
Float Collar	5.5		HES	18921.09		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		6		
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	Lead Cement	ELASTICEM™ SYSTEM	1373	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	
3	Tail Cement	NeoCem™	1242	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	
4	Displacement	MMCR Displacement	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	
5	Displacement	Biocide Water	379.6	bbl	8.34					
Cement Left In Pipe		Amount	45.71 ft		Reason			Shoe Joint		
Mix Water:		pH 7	Mix Water Chloride:		LESS 200 ppm		Mix Water Temperature:		66 °F	
Cement Temperature:			Plug Displaced by:		8.33 lb/gal		Disp. Temperature:			
Plug Bumped?		Yes	Bump Pressure:		3130 psi		Floats Held?		Yes	
Cement Returns:			Returns Density:				Returns Temperature:			
Comment PRE JOB CALCS TOTC=8040' TOC=0'										

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

Seq. No.	Activity	Date	Time	Dwnhole Density (ppg)	Cmb Pump Rate (gpm)	Pump A Pressure (psi)	Cmb Stg Total (bbl)	Comments
1	Call Out	8/22/2021	23:30:00					CREW CALLED OUT AT 2330 HRS. ON 8/22/2021
2	Pre-Convoy Safety Meeting	8/23/2021	02:45:00					CREW DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW.
3	Crew Leave Yard	8/23/2021	03:05:00					CREW LEAVES YARD
4	Arrive At Loc	8/23/2021	05:15:00					MEET WITH CUSTOMER. 18966.80' 20# P-110, TD 19005', F/C 18921.09', 8.5" HOLE, TVD 6167', SURFACE CASING 1948' 40# J55, WF 9.5# RIG CIRCULATES 8/850 PSI. WATER 66.5 DEGREES, PH 7, CHLORIDES LESS 200 PPM. HES TOP AND BOTTOM PLUG
5	Pre-Rig Up Safety Meeting	8/23/2021	05:30:00					HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH LOCATION, RIG UP, AND WEATHER.
6	Rig-Up Equipment	8/23/2021	05:40:00					CREW STAGED EQUIPMENT AND RIGGED UP BULK, IRON AND WATER HOSES TO PERFORM JOB.
7	Pre-Job Safety Meeting	8/23/2021	09:25:00	7.94	0.0	23.27	42.97	SAFETY MEETING WITH HALLIBURTON, AND RIG PERSONNEL. CREW COMMUNICATED POTENTIAL SAFETY HAZARDS, AND JOB DETAILS.
8	Start Job	8/23/2021	09:48:21	7.93	0.0	29.46	42.97	BEGIN RECORDING DATA
9	Test Lines	8/23/2021	10:04:50	8.35	0.0	35.77	4.49	TEST LINES 4900 PSI
10	Pump Spacer 1	8/23/2021	10:10:22	8.36	0.0	29.98	0.00	100 BBLS TUNED PRIME SPACER11.5 PPG, 3.71 YIELD, 23.58 GAL/SACK
11	Shutdown	8/23/2021	10:26:57	12.21	0.0	71.09	93.65	SHUTDOWN
12	Drop Bottom Plug	8/23/2021	10:27:52	21.21	0.0	20.28	0.00	BOTTOM PLUG VERIFIED BY JASON
13	Pump Lead Cement	8/23/2021	10:29:50	12.29	103.0	36.98	0.04	1373 SACKS ELASTICEM LEAD CEMENT. 391.25 BBLS, 13.2 PPG, 1.6 YIELD, 7.66 GAL/SACK
14	Pump Tail Cement	8/23/2021	11:19:50	13.25	333.3	222.31	0.27	1242 SACKS NEOCEM TAIL CEMENT. 446.82 BBLS. 13.2 PPG, 2.02 YIELD, 9.71 GAL/SACK. USED 40 GALLONS D-AIR TOTAL JOB
15	Shutdown	8/23/2021	12:16:13	13.25	0.0	261.45	432.66	SHUTDOWN
16	Clean Lines	8/23/2021	12:23:54	13.30	0.0	46.30	0.00	WASH PUMPS AND LINES

17	Drop Top Plug	8/23/2021	12:31:39	0.75	0.0	16.51	0.00	TOP PLUG VERIFIED BY JASON
18	Pump Displacement	8/23/2021	12:31:47	1.13	0.0	16.50	0.00	419.6 BBLS FRESH WATER DISPLACEMENT. 1ST 40 BBLS HAS 20 GALLONS MICRO MATRIX RETARDER. 5 LBS BE-3, 10 GALLONS MC-MX 820-6
19	Bump Plug	8/23/2021	13:48:37	9.55	0.0	3187.89	0.00	FCP 2550 PSI AT 3 BPM, BUMP PRESSURE 3130 PSI,
20	Other	8/23/2021	13:53:30	9.38	0.0	818.42	0.00	CHECK FLOATS. FLOATS HOLD, 4.5 BBLS BACK TO PUMP TRUCK. CEMENT TO SURFACE AT 385 BBLS INTO DISPLACEMENT. APPROX 35 BBLS CEMENT TO SURFACE. PRE-JOB TOPS, TOTC=8040', TOC=0'
21	End Job	8/23/2021	13:55:24	9.32	0.0	33.30	0.00	STOP RECORDING DATA
22	Pre-Rig Down Safety Meeting	8/23/2021	14:20:00					DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES.
23	Rig-Down Equipment	8/23/2021	14:30:00					RIG DOWN BULK AND MIXING EQUIPMENT
24	Rig-Down Completed	8/23/2021	15:40:00					ALL HALLIBURTON ITEMS WERE STOWED FOR TRAVEL, AND LOCATION WAS CLEAN.
25	Crew Leave Location	8/23/2021	16:30:00					THANK YOU FOR USING HALLIBURTON – MIKE LOUGHRAN AND CREW.



3.0 Attachments

3.1 Job Chart

