

# HALLIBURTON

iCem<sup>®</sup> Service

## **VERDAD RESOURCES LLC**

**County Line 3107-12H Production**

Job Date: Sunday, January 23, 2022

Sincerely,

**Meghan Van Zyl**

## Legal Notice

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### Disclaimer:

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## 1.0 Cementing Job Summary

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### 1.1 Executive Summary

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Halliburton appreciates the opportunity to perform the cementing services on the **County Line 3107-12H** 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 45 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**

<b>Sold To #:</b> 380688		<b>Ship To #:</b> 9051836		<b>Quote #:</b>		<b>Sales Order #:</b> 0907636099				
<b>Customer:</b> VERDAD RESOURCES LLC-EBUS					<b>Customer Rep:</b> Joe Madsen					
<b>Well Name:</b> COUNTY LINE			<b>Well #:</b> 3107-12H			<b>API/UWI #:</b> 05-123-51174-00				
<b>Field:</b> WATTENBERG		<b>City (SAP):</b> LOCHBUIE		<b>County/Parish:</b> WELD			<b>State:</b> COLORADO			
<b>Legal Description:</b> SW SE-31-1N-65W-340FSL-1925FEL										
<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>Srv Supervisor:</b> Nicholas Roles					
<b>Job</b>										
<b>Formation Name</b>										
<b>Formation Depth (MD)</b>		<b>Top</b>				<b>Bottom</b>				
<b>Form Type</b>				<b>BHST</b>						
<b>Job depth MD</b>		17358ft		<b>Job Depth TVD</b>						
<b>Water Depth</b>				<b>Wk Ht Above Floor</b>						
<b>Perforation Depth (MD)</b>		<b>From</b>		<b>To</b>						
<b>Well Data</b>										
<b>Description</b>	<b>New / Used</b>	<b>Size in</b>	<b>ID in</b>	<b>Weight lbm/ft</b>	<b>Thread</b>	<b>Grade</b>	<b>Top MD ft</b>	<b>Bottom MD ft</b>	<b>Top TVD ft</b>	<b>Bottom TVD ft</b>
Casing		9.625	8.921	36			0	1736	0	1736
Casing		5.5	4.778	20			0	17358	0	7500
Open Hole Section			8.5				1736	17374	1736	7500
<b>Tools and Accessories</b>										
<b>Type</b>	<b>Size in</b>	<b>Qty</b>	<b>Make</b>	<b>Depth ft</b>		<b>Type</b>	<b>Size in</b>	<b>Qty</b>	<b>Make</b>	
Guide Shoe	5.5					Top Plug	5.5	1	HES	
Float Shoe	5.5			17358		Bottom Plug	5.5	1	HES	
Float Collar	5.5			17309		SSR plug set	5.5		HES	
Insert Float	5.5					Plug Container	5.5	1	HES	
Stage Tool	5.5					Centralizers	5.5		HES	
<b>Fluid Data</b>										
<b>Stage/Plug #: 1</b>										
<b>Fluid #</b>	<b>Stage Type</b>	<b>Fluid Name</b>	<b>Qty</b>	<b>Qty UoM</b>	<b>Mixing Density lbm/gal</b>	<b>Yield ft<sup>3</sup>/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>	
1	Tuned Prime	TUNED PRIME CEMENT SPACER SYS	100	bbl	11.5	3.94		6		

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
2	ElastiCem	ELASTICEM (TM) SYSTEM	1255	sack	13.2	1.6		9	7.66	
0.37 %		SCR-100, 1200 LB BAG - (1126328)								
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
3	NeoCem	NeoCem TM	1130	sack	13.2	2.02		9	9.71	
0.06 %		SCR-100, 1200 LB BAG - (1126328)								
9.71 Gal		FRESH WATER								
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
4	MMCR Displacement	MMCR Displacement	40	bbl	8.34			10		
0.20 gal/bbl		MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)								
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
5	Displacement		344	bbl	8.34			10		
Cement Left In Pipe		Amount	42 ft			Reason		Shoe Joint		
Mix Water:		pH 7	Mix Water Chloride:			>3000 ppm		Mix Water Temperature:		65 °F °C
Cement Temperature:		## °F °C	Plug Displaced by:			8.33 lb/gal		Disp. Temperature:		65 °F °C
Plug Bumped?		Yes	Bump Pressure:			3350 psi MPa		Floats Held?		Yes
Cement Returns:		45 bbl m3	Returns Density:			## lb/gal kg/m3		Returns Temperature:		## °F °C
<b>Comment</b> Got 45bbls cement to surface. Estimated TOT-7407'.										

## 2.0 Real-Time Job Summary

## 2.1 Job Event Log

Seq No.	Activity	Graph Label	Date	Time	DH Density (ppg)	Comb Pump Rate (bbl/min)	DS Pump Press (psi)	Pump Stg Tot (bbl)	Comments
1	Call Out	Call Out	1/22/2022	20:00:00					Called out by service coordinator for OL time of 0300.
2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	1/22/2022	22:15:00					Discuss all hazards associated with journey, directions to destination, complete journey management if needed, and ensure all convoy is fit for duty.
3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	1/22/2022	22:30:00					Depart from service center or other job site.
4	Arrive at Location from Service Center	Arrive at Location from Service Center	1/22/2022	23:15:00					Upon arrival to location, signed in with onsite safety personnel. Met with company man and discussed job specific requirements and specifications.
5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	1/23/2022	04:00:00					Held pre rig up JSA for hazards, hazard hunt with crew, and discussed plan for spotting equipment and rigging up lines for job. Discussed muster points and closest emergency location as well as coordinates.
6	Rig-Up Equipment	Rig-Up Equipment	1/23/2022	04:15:00					Begin rig up with crew.
7	Rig-Up Completed	Rig-Up Completed	1/23/2022	05:00:00					Complete rig up for job to nearest point before red zone.
8	Other	Other	1/23/2022	05:15:00	0.00	0.00	86.00	0.00	Mix water test results- PH-7, Chlo-0, Temp-65F.

9	Safety Meeting - Pre Job	Safety Meeting - Pre Job	1/23/2022	06:00:00	0.00	0.00	0.00	0.00	Held job specific hazards as well as confirming job procedure with co man and rest of crew associated with job.
10	Start Job	Start Job	1/23/2022	06:41:20	8.03	0.00	-2.00	1.60	TD-17394', TP-17358' 5.5" 20#, FC-17309', TVD-7500', OH-8.5", SURF-1780' 9.625" 36#, MUD-9.6#
11	Test Lines	Test Lines	1/23/2022	06:42:32	8.30	0.00	128.00	3.10	Pumped 3bbls fresh water to fill lines, closed manifold and performed 500psi k/o function test, proceeded to perform 5th gear stall at 1452psi, continued to bring pressure up to 4500psi. Pressure stabilized and held with no leaks
12	Pump Spacer 1	Pump Spacer 1	1/23/2022	06:51:29	8.19	0.00	-3.00	0.00	Pumped 100bbls 11.5# 3.94y 24.7g/s Tuned Prime 10g D-Air at 6bpm 225psi.
13	Check Weight	Check Weight	1/23/2022	06:54:04	11.82	6.40	238.00	12.00	Weight verified with pressurized mud scales.
14	Check Weight	Check Weight	1/23/2022	06:56:03	11.80	4.50	42.00	21.20	Weight verified with pressurized mud scales.
15	Drop Bottom Plug	Drop Bottom Plug	1/23/2022	07:08:43	12.26	3.70	5.00	93.50	Dropped by HES supervisor, witnessed by company man.
16	Pump Lead Cement	Pump Lead Cement	1/23/2022	07:08:46	12.38	3.70	7.00	93.70	Pumped 1255sks or 358bbls 13.2# 1.6y 7.66g/s Elasticem w/ CBL at 9bpm 520psi.
17	Check Weight	Check Weight	1/23/2022	07:10:58	13.18	6.20	145.00	13.20	Weight verified with pressurized mud scales.
18	Pump Tail Cement	Pump Tail Cement	1/23/2022	07:51:15	13.05	9.10	298.00	0.10	Pumped 1130sks or 406.5bbls 13.2# 2.02y 9.71g/s Neocem at 9bpm 575psi.
19	Check Weight	Check Weight	1/23/2022	07:53:38	13.16	9.10	458.00	21.80	Weight verified with pressurized mud scales.
20	Shutdown	Shutdown	1/23/2022	08:38:00	13.22	0.00	18.00	416.00	Pumped 5bbls fresh water to clean through pumps and lines.
21	Drop Top Plug	Drop Top Plug	1/23/2022	08:47:19	8.21	0.00	-57.00	432.20	Dropped by HES supervisor, witnessed by company man.



22	Pump Displacement	Pump Displacement	1/23/2022	08:47:21	8.21	0.00	-57.00	432.20	Pumped 384bbls fresh water with 20g MMCR in first 40bbls and 3lbs BE-3 and 10gal MCMX throughout.
23	Bump Plug	Bump Plug	1/23/2022	09:58:54	8.31	0.00	3388.00	382.20	Slowed down to 4bpm at 365bbls away, final circulating pressure-2770psi, bump pressure-3300psi.
24	Other	Other	1/23/2022	10:04:09	8.29	0.00	3513.00	382.20	Held pressure for 5min., continued to released pressure and got 4.5bbls back to pump. Floats held.
25	End Job	End Job	1/23/2022	10:05:49	8.12	0.00	-45.00	382.20	Got 45bbls cement to surface. Estimated TOT-7407'.
26	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	1/23/2022	10:10:00	8.21	0.00	-59.00	0.00	Held safety meeting with crew prior to rig down, discussed possibility of trapped pressure, swing radius, slips trips and falls, pinch points and risks associated with rig down.
27	Rig Down Lines	Rig Down Lines	1/23/2022	10:20:00					Begin rig down
28	Rig-Down Completed	Rig-Down Completed	1/23/2022	11:15:00					Rig down complete with no injuries, spills or damage to equipment.
29	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	1/23/2022	11:15:00					Held safety meeting with convoy, discussed trip hazards, directions and all crew fit for duty prior to departure.
30	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	1/23/2022	11:30:00					Depart location, if applicable journey will be submitted.

3.0 Attachments

3.1 Real Time iCem Job Chart

