

# HALLIBURTON

iCem<sup>®</sup> Service

## EXTRACTION OIL & GAS-EBUS

**Alma West 26W-20-03 Production**

Job Date: Friday, December 09, 2022

Sincerely,

**Meghan Van Zyl**

## Legal Notice

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### Disclaimer:

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Table of Contents

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Cementing Job Summary .....4  
    Executive Summary..... 4  
Real-Time Job Summary.....7  
    Job Event Log ..... 7  
Attachments..... 10  
    Real Time iCem Job Chart..... 10

## 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 **Alma West 26W-20-03** 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 50 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> 324725		<b>Ship To #:</b> 324725		<b>Quote #:</b>		<b>Sales Order #:</b> 0908277457	
<b>Customer:</b> EXTRACTION OIL & GAS-EBUS				<b>Customer Rep:</b> Jose Torres			
<b>Well Name:</b> ALMA WEST			<b>Well #:</b> 26W-20-03		<b>API/UWI #:</b> 05-001-10022		
<b>Field:</b>		<b>City (SAP):</b> WATTENBERG		<b>County/Parish:</b> ADAMS		<b>State:</b> COLORADO	
<b>Legal Description:</b>							
<b>Contractor:</b> PATTERSON-UTI ENERGY				<b>Rig/Platform Name/Num:</b> PATTERSON 572			
<b>Job BOM:</b> 7523 7523							
<b>Well Type:</b> OIL & GAS WELL							
<b>Sales Person:</b> HALAMERICA\HX41066				<b>Srvc Supervisor:</b> Steven Markovich			
<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>	18782ft		<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>

**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	1639	0	0
Casing	0	5.5	4.778	20			0	18782	0	0
Open Hole Section			8.5				1639	18785	0	0

**Tools and Accessories**

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	5.5			18782	Top Plug	5.5		HES
Float Shoe	5.5				Bottom Plug	5.5		HES
Float Collar	5.5				SSR plug set	5.5		HES
Insert Float	5.5				Plug Container	5.5		HES
Stage Tool	5.5				Centralizers	5.5		HES

**Fluid Data**

<b>Stage/Plug #: 1</b>									
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
1	Tuned Prime Cement Spacer	TUNED PRIME CEMENT SPACER SYS	50	bbl	11.5	3.74	23.64	6	1775
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
2	ElastiCem	SBM CEM ELASTICEM™ SYS	555	sack	13	1.66	8.23	8	4567

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	IsoBond(tm)	SBM CEM FDP-C1371 SYS	810	sack	13	1.55	7.14	8	5783
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	ElastiCem	SBM CEM ELASTICEM™ SYS	1560	sack	13.2	1.59	7.78	8	12137
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	MMCR Displacement	MMCR Displacement	436	bbl	8.33			9.33	18312
<b>Comment</b> 1013bbbls mix water total used.									

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

Seq No.	Activity	Date	Time	Dwnhole Density (ppg)	Cmb Pump Rate (bbl/min)	Pump A Pressure (psi)	Cmb Stg Total (bbl)	Comments
1	Check Floats	12/8/2022	18:00:00					Job called out with an on location time of 0400.
2	Pre-Convoy Safety Meeting	12/9/2022	01:00:00					JSA with HES crew on driving safety and route to rig.
3	Arrive at Location from Service Center	12/9/2022	01:30:00					Arrived on location, rig running casing. 6000' to run.
4	Pre-Rig Up Safety Meeting	12/9/2022	02:00:00					JSA and hazard hunt with HES crew.
5	Rig-Up Equipment	12/9/2022	02:30:00					Rig up HES lines and equipment.
6	Pre-Job Safety Meeting	12/9/2022	07:30:00	0.00	0.00	-5.09	0.97	JSA with HES and rig crew on job safety and procedure.
7	Start Job	12/9/2022	08:03:04	8.44	0.00	-0.42	0.00	TD 18785' TP 18782' FC 18777' 5 1/2" 17# Production Casing, 8 1/2" Open Hole, 9 5/8" 36# Surface Casing set at 1639', TVD 7810', Mud# 9.5ppg. Estimated Top of Tail Cement 7957', Estimated Top of Lead Cement 2477'.
8	Drop Bottom Plug	12/9/2022	08:03:16	8.44	0.00	0.01	0.00	Plug pre-loaded into HES head. Plug loaded and dropped in front of Company rep.
9	Test Lines	12/9/2022	08:06:17	8.28	0.00	140.93	4.08	Set kick outs to 500psi and verify low pressure kick outs, then bring pressure up to 6000psi and hold.
10	Check Weight	12/9/2022	08:15:45	8.06	0.00	78.03	4.13	Weight verified by pressurized scales.
11	Pump Spacer	12/9/2022	08:17:13	8.04	0.00	77.84	0.00	Pump 50bbbls of 11.5ppg 3.74yield Tuned Prime Spacer. Pumped at 5bbl/min 500psi

12	Pump Cap Cement	12/9/2022	08:26:20	12.07	5.05	240.61	0.04	Pump 164bbbls (555sks) of 13ppg 1.66yield Cap Cement. Pumped at 8bbl/min 700psi.
13	Check Weight	12/9/2022	08:44:22	12.93	7.91	642.15	119.13	Weight verified by pressurized scales.
14	Pump Lead Cement	12/9/2022	08:50:45	12.73	7.90	577.42	0.13	Pump 223.6bbbls (810sks) of 13ppg 1.55yield Lead Cement. Pumped at 8bbl/min 950psi.
15	Check Weight	12/9/2022	09:00:09	12.99	8.00	911.75	73.06	Weight verified by pressurized scales.
16	Check Weight	12/9/2022	09:16:00	12.94	7.94	923.36	199.04	Weight verified by pressurized scales.
17	Pump Tail Cement	12/9/2022	09:20:17	12.81	5.60	434.39	0.05	Pump 441.76bbbls (1560sks) of 13.2ppg 1.59yield Tail Cement. Pumped at 8bbl/min 800psi.
18	Check Weight	12/9/2022	09:22:53	13.19	8.05	706.98	20.44	Weight verified by pressurized scales.
19	Check Weight	12/9/2022	09:38:38	13.05	7.53	567.19	141.12	Weight verified by pressurized scales.
20	Check Weight	12/9/2022	10:01:53	13.05	7.60	560.49	316.55	Weight verified by pressurized scales.
21	Shutdown	12/9/2022	10:23:53	13.26	3.68	196.77	464.90	Shutdown and clean pumps and lines.
22	Drop Top Plug	12/9/2022	10:34:20	7.85	0.00	-10.95	479.07	Plug pre-loaded into HES head. Plug loaded and dropped in front of company rep.
23	Pump Displacement	12/9/2022	10:34:31	7.86	0.00	-7.81	0.00	Pump 435.6bbbls of H2O. First 20bbbls with MMCR. Pumped at 10bbl/min and slowed rate with pressure increase. Spacer to surface at 335bbbls away, Cement to surface at 385bbbls away, bringing 50bbbls of Cement to surface.
24	Bump Plug	12/9/2022	11:31:22	8.30	3.91	2761.86	440.04	Bumped plug at calculated displacement. Final lift pressure was 2761psi.
25	Check Floats	12/9/2022	11:32:16	8.35	0.00	3205.35	440.54	Pressure got up to 3205psi when we checked floats. After 5 bbls back floats held.
26	End Job	12/9/2022	11:35:00	8.12	0.00	0.04	0.00	Thank you, Steven Markovich and crew.

27	Safety Meeting	12/9/2022	12:00:00	8.10	9.53	332.01	55.62	Pre rig-down JSA with HES crew.
28	Rig-Down Equipment	12/9/2022	12:45:00					Rig down HES lines and equipment.
29	Crew Leave Location	12/9/2022	14:00:00					

3.0 Attachments

3.1 Real Time iCem Job Chart

