

# HALLIBURTON

iCem<sup>®</sup> Service

**EXTRACTION OIL & GAS**

**AD FED Dairy 20W-25-16 Production**

Sincerely,  
**Meghan Jacobs**

## 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 **AD Fed Dairy 20W-25-16** 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 55 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> 369404		<b>Ship To #:</b> 3841629		<b>Quote #:</b>		<b>Sales Order #:</b> 0905891715				
<b>Customer:</b> EXTRACTION OIL & GAS-EBUS				<b>Customer Rep:</b> MIKE TORRES						
<b>Well Name:</b> AD FED DAIRY			<b>Well #:</b> 20W-25-16			<b>API/UWI #:</b> 05-123-45937-00				
<b>Field:</b> WATTENBERG		<b>City (SAP):</b> GREELEY		<b>County/Parish:</b> WELD		<b>State:</b> COLORADO				
<b>Legal Description:</b> NW SW-21-5N-65W-1876FSL-367FWL										
<b>Contractor:</b> ENSIGN DRLG				<b>Rig/Platform Name/Num:</b> ENSIGN 147						
<b>Job BOM:</b> 7523 7523										
<b>Well Type:</b> HORIZONTAL OIL										
<b>Sales Person:</b> HALAMERICA\HX38199				<b>Srv Supervisor:</b> Vitali Neverdasov						
<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>		19746ft		<b>Job Depth TVD</b>		7138				
<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	0	9.625	8.921	36			0	1608	0	1608
Casing	0	5.5	4.892	17			0	19746	0	7138
Open Hole Section			8.75				1610	19756	1608	7138
<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>	
<b>Guide Shoe</b>	5.5					<b>Top Plug</b>	5.5	1	CITADEL	
<b>Float Shoe</b>	5.5	1	NA	19746		<b>Bottom Plug</b>	5.5	1	CITADEL	
<b>Float Collar</b>	5.5	1	NA	19741		<b>SSR plug set</b>	5.5			
<b>Insert Float</b>	5.5					<b>Plug Container</b>	5.5	1	HES	
<b>Stage Tool</b>	5.5					<b>Centralizers</b>	5.5			
<b>Fluid Data</b>										
<b>Stage/Plug #:</b> 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	FDP-C1337-18	SBM FDP-C1337-18 CEMENT SPACER SYS		50	bbl	12.5	2.74		5.5	
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	ElastiCem	ELASTICEM (TM) SYSTEM		590	sack	13.2	1.59		7.5	7.92
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	GasStop	ELASTICEM (TM) SYSTEM		615	sack	13.2	1.59		8	7.89
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	13.2# ElastiCem	ELASTICEM (TM) SYSTEM		2145	sack	13.2	1.59		8	7.89
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	MMCR Displacement	MMCR Displacement		20	bbl	8.33			8	
0.50 gal/bbl		MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)								
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	Displacement		438	bbl	8.33			8	
Cement Left In Pipe		Amount	0 ft			Reason			WET SHOE	
Comment: 55 BBLS OF CEMENT BACK TO SURFACE. ESTIMATED TOP OF LATEX CEMENT @ 2443'. TOP OF TAIL @ 6314'.										

## 2.0 Real-Time Job Summary

## 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comb Pump Rate (bbl/min)	DH Density (ppg)	DS Pump Press (psi)	Comments
Event	1	Call Out	Call Out	8/10/2019	09:00:00	USER				ON LOCATION @ 16:00
Event	2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	8/10/2019	14:00:00	USER				HELD JSA PRIOR LEAVING THE YARD
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	8/10/2019	14:15:00	USER				
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	8/10/2019	15:05:00	USER				28 MILES. DISCUSS NUMBERS AND PROCEDURE WITH CUSTOMER. RIG IS RUNNING CASING.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	8/10/2019	15:15:00	USER				JSA PRIOR SPOTTING EQUIPMENT AND RIGGING UP
Event	6	Other	SPOT TRUCKS	8/10/2019	15:20:00	USER				SPOT TRUCKS
Event	7	Other	RIG UP	8/10/2019	15:30:00	USER				RIG UP ALL SURFACE LINES TO THE BUFFER ZONE
Event	8	Casing on Bottom	Casing on Bottom	8/10/2019	17:00:00	USER				CASING LANDED
Event	9	Other	RIG UP CEMENT HEAD AND MANIFOLD	8/10/2019	17:15:00	USER				RIG UP CEMENT HEAD AND MANIFOLD FOR RIG TO CIRCULATE.
Event	10	Other	RIG IS CIRCULATING	8/10/2019	17:25:00	USER				RIG IS CIRCULATING 10 BPM 1100 PSI.
Event	11	Pre-Job Safety Meeting	Pre-Job Safety Meeting	8/10/2019	20:02:00	USER	0.00	9.42	-1.00	DISCUSS HAZARDS AND JOB PROCEDURE WITH ALL PERSONAL INVOLVED
Event	12	Drop Bottom Plug	Drop Bottom Plug	8/10/2019	20:20:00	USER	0.00	9.42	0.00	CUSTOMER DROP BOTTOM PLUG
Event	13	Start Job	Start Job	8/10/2019	20:48:57	COM4	0.00	9.40	4963.00	
Event	14	Pressure Test	Pressure Test	8/10/2019	20:51:00	USER	0.00	9.42	4722.00	LOAD LINE AND TEST TO 4780 PSI
Event	15	Pump Spacer	Pump Spacer	8/10/2019	20:55:00	USER	4.10	13.59	663.00	BATCH/ WEIGHT/ PUMP 50 BBLS OF FDP SPACER @ 12.5 PPG.

Event	16	Check Weight	Check Weight	8/10/2019	21:03:31	COM4	5.50	12.76	663.00	
Event	17	Pump Lead Cement	Pump LEAD 1 Cement	8/10/2019	21:04:00	USER	5.50	13.05	629.00	BATCH/ WEIGHT/PUMP 590 SKS (167.1 BBLS) OF ELASTICEM @ 13.2 PPG.
Event	18	Pump Lead Cement	Pump LEAD 2 Cement	8/10/2019	21:29:00	USER	6.00	13.20	411.00	WEIGHT/ PUMP 615 SKS (174.2 BBLS) OF GASSTOP CEMENT USING LATEX @ 13.2 PPG.
Event	19	Check Weight	Check Weight	8/10/2019	21:31:38	COM4	6.00	13.27	448.00	
Event	20	Pump Tail Cement	Pump Tail Cement	8/10/2019	21:54:00	USER	7.90	13.18	660.00	WEIGHT/ PUMP 2145 SKS (607.4 BBLS) OF ELASTICEM @ 13.2 PPG.
Event	21	Check Weight	Check Weight	8/10/2019	22:06:53	COM4	7.80	12.99	564.00	
Event	22	Shutdown	Shutdown	8/10/2019	23:24:00	USER	2.40	12.88	83.00	FINISHED PUMPING CEMENT
Event	23	Clean Lines	Clean Lines	8/10/2019	23:27:00	USER	0.00	12.90	14.00	BLOW DOWN AND WASH PUMPS AND LINES.
Event	24	Drop Top Plug	Drop Top Plug	8/10/2019	23:35:00	USER	5.40	1.68	12.00	CUSTOMER DROP TOP PLUG.
Event	25	Pump Displacement	Pump Displacement	8/10/2019	23:40:00	USER	0.00	7.39	-1.00	458 BBLS OF FRESH WATER DISPLACEMENT. FIRST 20 BBLS WITH MMCR.
Event	26	Bump Plug	Bump Plug	8/11/2019	00:51:00	USER	0.00	8.46	2805.00	BUMP PLUG @ 2800
Event	27	Check Floats	Check Floats	8/11/2019	00:57:00	USER	0.00	8.42	228.00	SHUTDOWN, CHECK FLOATS, FLOATS HELD. 3 BBLS BACK
Event	28	End Job	End Job	8/11/2019	00:59:19	COM4	0.00	8.44	1.00	
Event	29	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	8/11/2019	01:00:00	USER	0.00	8.45	1.00	HELD JSA PRIOR TO RIG DOWN



## 3.0 Attachments

### 3.1 AD FED DAIRY 20W-25-16 Production – Job Chart

