

# HALLIBURTON

iCem<sup>®</sup> Service

## **EXTRACTION OIL & GAS-EBUS**

**Rinn Valley West 18N-25-09N**

Surface Casing

Job Date: Wednesday, June 03, 2020

Sincerely,

**Nathaniel Moore**

## 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 Rinn Valley West 18N-25-09N surface casing. 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 15 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> 3895003		<b>Quote #:</b>		<b>Sales Order #:</b> 0906538724					
<b>Customer:</b> EXTRACTION OIL & GAS-EBUS					<b>Customer Rep:</b> Blaine Dunlavy						
<b>Well Name:</b> RINN VALLEY WEST			<b>Well #:</b> 18N-20-09N			<b>API/UWI #:</b> 05-123-47472-00					
<b>Field:</b> WATTENBERG		<b>City (SAP):</b> FIRESTONE		<b>County/Parish:</b> WELD			<b>State:</b> COLORADO				
<b>Legal Description:</b> SE SE-18-2N-68W-212FSL-869FEL											
<b>Contractor:</b> ENSIGN DRLG					<b>Rig/Platform Name/Num:</b> ENSIGN 147						
<b>Job BOM:</b> 7521 7521											
<b>Well Type:</b> HORIZONTAL OIL											
<b>Sales Person:</b> HALAMERICA\HX41066					<b>Srvc Supervisor:</b> Nathaniel Moore						
<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>		1610ft			<b>Job Depth TVD</b>			1610			
<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>	
Open Hole Section			13.5				0	1610	0	1610	
Casing	0	9.625	8.921	36			0	1610	0	1610	
<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>Top Plug</b>	9.625	1	HES			
<b>Float Shoe</b>	9.625			1610							
<b>Float Collar</b>	9.625			1566							
					<b>Plug Container</b>	9.625	1	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	Water with dye	Water with dye			10	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	
2	SwiftCem	SWIFTCEM (TM) SYSTEM	525	sack	13.5	1.74		8	9.17	
9.17 Gal		FRESH WATER								
0.1250 lbm		POLY-E-FLAKE (101216940)								
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	Displacement	Displacement	121	bbl	8.34					
Cement Left In Pipe		Amount	44 ft		Reason			Shoe Joint		
Mix Water:		pH 7	Mix Water Chloride:		<300ppm		Mix Water Temperature:			70 °F
Cement Temperature:		80 °F	Plug Displaced by:		Water		Disp. Temperature:			70 °F
Plug Bumped?		Yes	Bump Pressure:		450 to 1050 psi		Floats Held?			Yes
Cement Returns:		15 bbl	Returns Density:		13.5 lb/gal		Returns Temperature:			
Comment										

## 2.0 Real-Time Job Summary

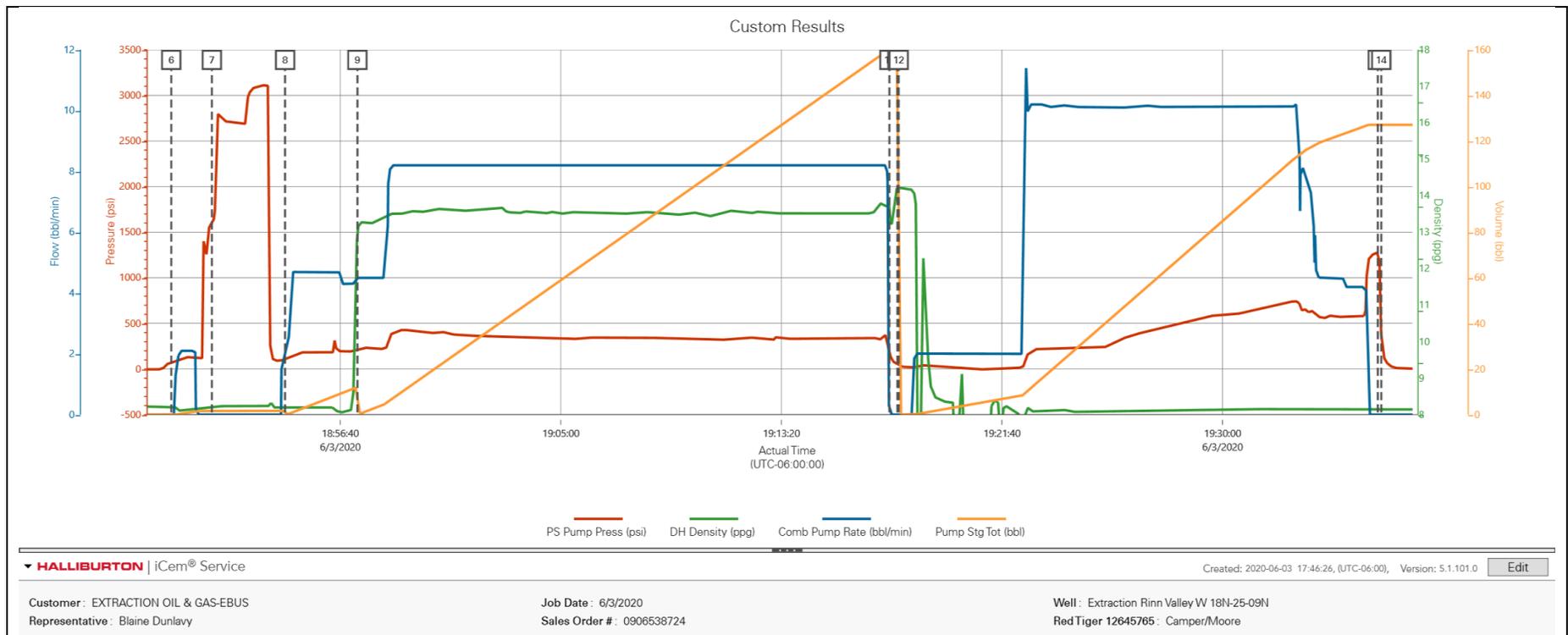
### 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	PS Pump Press <i>(psi)</i>	DH Density <i>(ppg)</i>	Comb Pump Rate <i>(bbl/min)</i>	Pump Stg Tot <i>(bbl)</i>	Comments
Event	1	Call Out	Call Out	6/3/2020	12:00:00	USER					Ready to pump at 1800
Event	2	Arrive At Loc	Arrive At Loc	6/3/2020	16:00:00	USER					End journey management. Meet with company representative to discuss job: Surface Casing: 13.5" hole to 1610'. 9 5/8" 36# casing to 1610'. FC at 1566'. 8.5 ppg water based well fluid.
Event	3	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	6/3/2020	18:00:00	USER	1.00	8.18	0.00	10.00	Hazard hunt. Discussed possible hazards associated with location, rig up, job performance, and weather.
Event	4	Rig-Up Completed	Rig-Up Completed	6/3/2020	18:20:00	USER	1.00	8.20	0.00	10.00	Rigged up complete / Rigged up to a edge of red zone
Event	5	Pre-Job Safety Meeting	Pre-Job Safety Meeting	6/3/2020	18:30:00	USER	0.00	8.20	0.00	10.00	Meeting with Halliburton and rig personnel. Communicated potential safety hazard and job details.
Event	6	Start Job	Start Job	6/3/2020	18:50:17	COM5	76.00	8.21	0.00	0.00	Fill lines 2 bbl water
Event	7	Test Lines	Test Lines	6/3/2020	18:51:49	COM5	1619.00	8.22	0.00	1.60	500 psi kickout test and 3000 psi pressure test
Event	8	Pump Spacer 1	Pump Spacer 1	6/3/2020	18:54:35	COM5	113.00	8.20	1.90	1.80	10 bbl dyed water
Event	9	Pump Lead Cement	Pump Lead Cement	6/3/2020	18:57:19	COM5	218.00	12.96	4.50	12.10	525 sks/162 bbl SwiftCem 13.5 ppf 1.74 ft3/sk 9.17 gal/sk

Event	10	Shutdown	Shutdown	6/3/2020	19:17:25	COM5	181.00	13.74	0.00	160.00	Washup on top of the plug
Event	11	Drop Top Plug	Drop Top Plug	6/3/2020	19:17:43	COM5	43.00	14.23	0.00	160.00	HES Top plug witnessed by company rep
Event	12	Pump Displacement	Pump Displacement	6/3/2020	19:17:46	COM5	37.00	14.23	0.00	0.00	121 bbl water displacement
Event	13	Bump Plug	Bump Plug	6/3/2020	19:35:52	USER	1280.00	8.17	0.00	127.10	450 psi final pump pressure. Pressured up to 1050 psi.
Event	14	End Job	End Job	6/3/2020	19:36:00	COM5	382.00	8.18	0.00	127.10	Check Floats. 0.5 bbl back. Floats held
Event	15	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	6/3/2020	20:00:00	USER					Discussed possible hazards associated with weather, location and rigging down iron and hoses.
Event	16	Rig-Down Completed	Rig-Down Completed	6/3/2020	20:30:00	USER					All Halliburton items were secured for travel.

## 3.0 Attachments

### 3.1 Job Chart



3.2 Recorded Data

