

# HALLIBURTON

iCem<sup>®</sup> Service

## EXTRACTION OIL & GAS

Date: Friday, March 04, 2016

### **Westwind #4**

Surface

Job Date: Tuesday, March 01, 2016

Sincerely,  
Lauren Roberts

## Legal Notice

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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 **Westwind #4** cement **Surface** 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.

**13 bbls. of cement 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 [Ft. Lupton]**

*The Road to Excellence Starts with Safety*

<b>Sold To #:</b> 369404		<b>Ship To #:</b> 3642709		<b>Quote #:</b>		<b>Sales Order #:</b> 0903152970					
<b>Customer:</b> EXTRACTION OIL & GAS -						<b>Customer Rep:</b> Extraction					
<b>Well Name:</b> WESTWIND			<b>Well #:</b> 4			<b>API/UWI #:</b> 05-123-41012-00					
<b>Field:</b> WATTENBERG		<b>City (SAP):</b> WINDSOR		<b>County/Parish:</b> WELD		<b>State:</b> COLORADO					
<b>Legal Description:</b> SW L2-7-6N-67W-1046FSL-252FWL											
<b>Contractor:</b> PATTERSON-UTI ENERGY				<b>Rig/Platform Name/Num:</b> PATTERSON 346							
<b>Job BOM:</b> 7521											
<b>Well Type:</b> HORIZONTAL OIL											
<b>Sales Person:</b> HALAMERICA\HB71271				<b>Srv Supervisor:</b> Vaughn Oteri							
<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>		1564ft		<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	1564	0	1564	
Open Hole Section			13.5				0	1566	0	1566	
<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	9.625					Top Plug	9.625	1	HES		
Float Shoe	9.625			1564		Bottom Plug	9.625		HES		
Float Collar	9.625			1520		SSR plug set	9.625		HES		
Insert Float	9.625					Plug Container	9.625	1	HES		
Stage Tool	9.625					Centralizers	9.625		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 ft3/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>
1	Fresh Water	Fresh Water/red dye			20	bbl	8.33				

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		540	sack	13.5	1.74		6	9.2
9.19 Gal		FRESH WATER								
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	Water	Water		117.5	bbl	9				
Cement Left In Pipe		Amount	42 ft			Reason			Shoe Joint	
Comment 13bbl of cement back to surface										

## 2.0 Real-Time Job Summary

## 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	PS Pump Press (psi)	DH Density (ppg)	PS Pump Rate (bbl/min)	Comments
Event	1	Call Out	Call Out	3/1/2016	05:00:00	USER				Call out from ARC hub
Event	2	Arrive At Loc	Arrive At Loc	3/1/2016	10:30:00	USER				Met with company rep to discuss job process and concerns
Event	3	Prime Pumps	Prime Pumps	3/1/2016	11:34:41	COM4	42.00	8.40	0.00	Primed pumps with fresh water
Event	4	Other	Well info	3/1/2016	11:35:03	USER	44.00	8.38	1.10	TD 1564 TP1562 FC1520 9.625 36# MUD 8.4 OH 13.5
Event	5	Other	Water info	3/1/2016	11:35:05	USER	44.00	8.38	1.10	Temp 50 CI 0 pH 7
Event	6	Test Lines	Test Lines	3/1/2016	12:03:56	COM4	3987.00	8.31	0.00	Pressure test pumps and lines found no leaks and pressure held well
Event	7	Pump Spacer 1	Pump Spacer 1	3/1/2016	12:06:08	COM4	15.00	8.25	0.00	Pumped 20bbl of water with red tracer dye 4.5bpm 66psi
Event	8	Check Weight	Check weight	3/1/2016	12:09:33	COM4	35.00	8.20	2.00	Confirm weight on scales
Event	9	Pump Cement	Pump Cement	3/1/2016	12:14:42	COM4	72.00	13.83	4.50	Mixed 540sks or 167bbl of 13.5ppg Y1.74 G/SK9.19 SwiftCem at 8.0bpm 132psi
Event	10	Shutdown	Shutdown	3/1/2016	12:38:16	COM4	31.00	14.21	0.00	
Event	11	Drop Top Plug	Drop Top Plug	3/1/2016	12:41:13	COM4	-1.00	13.36	0.00	Released plug witnessed by company rep
Event	12	Pump Displacement	Pump Displacement	3/1/2016	12:41:31	COM4	-1.00	13.12	0.00	Pumped 117.5bbl of fresh water to displace cement
Event	13	Pressure Up Well	Pressure Up Well	3/1/2016	12:59:26	COM4	1472.00	8.02	0.00	Pressure up well for 5min at 1500psi
Event	14	Other	Other	3/1/2016	13:04:55	COM4	1562.00	8.08	0.00	Released pressure back to pump truck to check floats , floats held good .5bbl back
Event	15	End Job	End Job	3/1/2016	13:10:41	COM4	0.00	8.18	0.00	13bbl of cement back to surface

3.0 Attachments

3.1 Case 1-Custom Results.png





