

# HALLIBURTON

iCem<sup>®</sup> Service

**VERDAD OIL & GAS**

**Helen 24-4H Production**

Sincerely,  
**Meghan Jacobs**

## 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 **Helen 24-4H** 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 30bbbls 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]**

## HALLIBURTON

## Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 380688		Ship To #: 3878749		Quote #:		Sales Order #: 0904882408				
Customer: VERDAD RESOURCES LLC				Customer Rep: Bob Beecherl						
Well Name: HELEN		Well #: 24-4H		API/UWI #: 05-123-46830-00						
Field: WATTENBERG		City (SAP): KEENESBURG		County/Parish: WELD		State: COLORADO				
Legal Description: SE SW-24-2N-64W-1243FSL-2072FWL										
Contractor: XTREME DRLG				Rig/Platform Name/Num: XTREME 24						
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HX38199				Srv Supervisor: Nicholas Roles						
Job										
Job depth MD		16683ft		Job Depth TVD		6800ft				
				Wk Ht Above Floor		2ft				
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	LTC	J-55	0	1757		1757
Casing		5.5	4.778	20	TXP-BTC	P-110	0	16683		6800
Open Hole Section			8.5				1757	16721	1757	6800
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5			16683		Top Plug	5.5	1	WFT	
WS Sub	5.5			16598		Bottom Plug	5.5	1	WFT	
Float Collar	5.5						5.5			
	5.5					Plug Container	5.5	1	HES	
	5.5					Centralizers	5.5			
Fluid Data										
Stage/Plug #: 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	11.5 lb/gal Tuned Spacer III	Tuned Spacer III	40	bbl	11.5	3.79		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	1030	sack	13.2	1.57		8	7.55	
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	

last updated on 5/31/2018 3:36:24 PM

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## HALLIBURTON

*Cementing Job Summary*

3	NeoCem	NeoCem TM	1210	sack	13.2	2.04		8	9.75
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	Displacement Fluid	Displacement Fluid	368	bbl	8.4			10	
Cement Left In Pipe		Amount	0 ft		Reason			Wet Shoe	
Mix Water:		pH 06	Mix Water Chloride:		0 ppm		Mix Water Temperature:		65 °F °C
Cement Temperature:		68 °F °C	Plug Displaced by:		8.33 lb/gal kg/m3		Disp. Temperature:		65 °F °C
Plug Bumped?		Yes	Bump Pressure:		3050 psi MPa		Floats Held?		Yes
Cement Returns:		30 bbl m3	Returns Density:		## lb/gal kg/m3		Returns Temperature:		## °F °C
Comment Got 30bbls cement to surface. Estimated TOT-5898'									

## 2.0 Real-Time Job Summary

## 2.1 Job Event Log

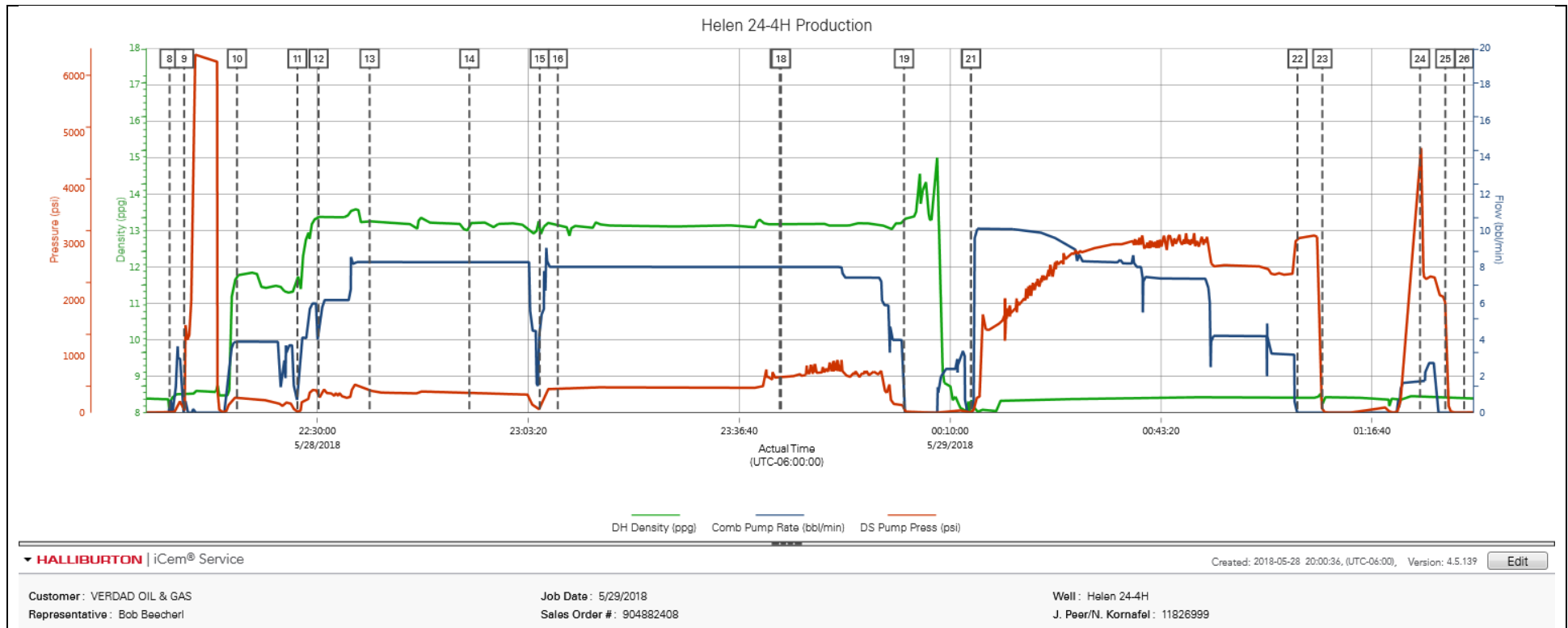
Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	DS Pump Press (psi)	Comments
Event	1	Call Out	Call Out	5/28/2018	13:00:00	USER				Called out by Service Coordinator for O/L at 1900
Event	2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	5/28/2018	16:45:00	USER				Held meeting with all personnel in convoy to discuss directions and hazards associated with drive, all fit to drive.
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	5/28/2018	17:00:00	USER				Journey Management prior to departure
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	5/28/2018	18:00:00	USER				Upon arrival met with company man to discuss job details and calculations, performed hazard hunt and site assessment. Rig crew was fighting to get casing to bottom, had 20ft to land and ended up taking out the landing joint and mandrel leaving us 28ft short of anticipated bottom. Orig. 16711' Actual.-16683'
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	5/28/2018	18:15:00	USER				Discussed rigging up hazards and procedure according to HMS.
Event	6	Other	Other	5/28/2018	19:00:00	USER				Water test- PH-6, Chlor-0, Temp-85.
Event	7	Safety Meeting - Pre Job	Safety Meeting - Pre Job	5/28/2018	21:30:00	USER	8.40	0.00	-4.00	Held safety meeting with all job associated personnel to discuss job procedure, hazards and stop work authority.
Event	8	Start Job	Start Job	5/28/2018	22:06:39	COM4	8.20	0.10	-1.00	TD-16721', TP-16683' 5.5" 20#, WS Sub-16598', TVD-6800', OH-8.5", SURF-1757' 9.625" 36#, MUD-9.7#
Event	9	Test Lines	Test Lines	5/28/2018	22:08:57	COM4	8.50	0.00	49.00	Pumped 5bbls 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 6000psi. Pressure stabilized and held with no leaks
Event	10	Pump Spacer 1	Pump Spacer 1	5/28/2018	22:17:18	COM4	11.73	3.90	267.00	Pumped 40bbls 11.5# 3.8y 23.8g/s Tuned Spacer III with 25g Musol A, 25g Dual Spacer B and 10g D-Air at 4bpm 260psi.

Event	11	Drop Bottom Plug	Drop Bottom Plug	5/28/2018	22:26:51	COM4	11.73	0.70	14.00	Dropped by HES supervisor, witnessed by company man.
Event	12	Pump Lead Cement	Pump Lead Cement	5/28/2018	22:30:12	COM4	13.38	4.40	241.00	Pumped 1030sk or 288bbls 13.2# 1.57y 7.55g/s Elasticem at 8bpm 400psi.
Event	13	Check Weight	Check Weight	5/28/2018	22:38:15	COM4	13.26	8.20	417.00	Weight verified with pressurized mud scales.
Event	14	Check Weight	Check Weight	5/28/2018	22:54:01	COM4	13.21	8.20	338.00	Weight verified with pressurized mud scales.
Event	15	Pump Tail Cement	Pump Tail Cement	5/28/2018	23:05:08	COM4	12.96	5.40	82.00	Pumped 1210sk or 440bbls 13.2# 2.04y 9.75g/s Neocem at 8bpm 475psi.
Event	16	Check Weight	Check Weight	5/28/2018	23:08:00	COM4	13.16	8.00	439.00	Weight verified with pressurized mud scales.
Event	17	Check Weight	Check Weight	5/28/2018	23:43:04	COM4	13.18	8.00	644.00	Weight verified with pressurized mud scales.
Event	18	Check Weight	Check Weight	5/28/2018	23:43:16	COM4	13.19	8.00	649.00	Weight verified with pressurized mud scales.
Event	19	Shutdown	Shutdown	5/29/2018	00:02:43	COM4	13.33	0.00	55.00	Pumped 5bbls fresh water to clean through pumps and lines.
Event	20	Drop Top Plug	Drop Top Plug	5/29/2018	00:13:16	COM4	8.36	0.00	1.00	Dropped by HES supervisor, witnessed by company man.
Event	21	Pump Displacement	Pump Displacement	5/29/2018	00:13:19	COM4	8.35	0.00	1.00	Pumped 368bbls fresh water with 5g MMCR in first 20bbls.
Event	22	Bump Plug	Bump Plug	5/29/2018	01:04:54	COM4	8.42	0.00	3106.00	Slowed down to 3bpm at 345bbls away, final circulating pressure-2500psi, bump pressure-3050psi.
Event	23	Other	Other	5/29/2018	01:08:49	COM4	8.24	0.00	53.00	Released pressure and got 4bbls back to pump. Floats held. Waited 10min to be sure floats were holding and pressure didn't build.
Event	24	Pressure Up Well	Pressure Up Well	5/29/2018	01:24:16	USER	8.44	1.70	4509.00	Pumped fresh water to sheer at 4700psi, continued to pump 5bbls fresh water at 3bpm 2450psi.
Event	25	Check Floats	Check Floats	5/29/2018	01:28:16	USER	8.40	0.00	1878.00	Released pressure and got 2.75bbls back to pump. Floats held.
Event	26	End Job	End Job	5/29/2018	01:31:14	COM4				Got 30bbls cement to surface. Estimated TOT-5898'
Event	27	Safety Meeting - Pre Rig-Down	Safety Meeting - Pre Rig-Down	5/29/2018	01:35:00	USER				All HSE present. Discussed red zone areas and trapped pressure hazards. Watch for suspended loads and rig down procedures, including hand placement, lifting techniques, and swing radius.
Event	28	Pre-Convoy Safety	Pre-Convoy Safety	5/29/2018	02:45:00	USER				All HSE present and fit to drive. Aware of directions and

		Meeting	Meeting				hazards.
Event	29	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	5/29/2018	03:00:00	USER	Pre journey management prior to departure.

## 3.0 Attachments

### 3.1 Helen 24-4H Production – Job Chart with Events



## 3.2 Helen 24-4H Production – Job Chart without Events

