

# HALLIBURTON

iCem<sup>®</sup> Service

## **EXTRACTION OIL & GAS**

Date: Friday, April 20, 2018

## **Hergert South 35W-15-5N PRODUCTION**

Job Date: Thursday, April 12, 2018

Sincerely,

**Julia Nichols**

## 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 **HERGERT SOUTH 35W-15-5N** 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 60 barrels 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]**

## HALLIBURTON

## Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 389404	Ship To #: 3840278	Quote #:	Sales Order #: 0904770697							
Customer: EXTRACTION OIL & GAS		Customer Rep: Hans								
Well Name: HERGERT SOUTH	Well #: 35W-15-5N	API/UWI #: 05-123-45901-00								
Field: WATTENBERG	City (SAP): SEVERANCE	County/Parish: WELD	State: COLORADO							
Legal Description: NE SE-35-7N-87W-2272FSL-647FEL										
Contractor: PATTERSON-UTI ENERGY		Rig/Platform Name/Num: PATTERSON 348								
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HX38199		Srv Supervisor: Thomas Haas								
<b>Job</b>										
Formation Name										
Formation Depth (MD)	Top	Bottom								
Form Type	BHST									
Job depth MD	14817ft	Job Depth TVD	6936							
Water Depth		Wk Ht Above Floor	5FT							
Perforation Depth (MD)	From	To								
<b>Well Data</b>										
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	New	9.625	8.921	36		J-55	0	1556	0	1556
Casing	New	5.5	4.778	20		P-110	0	14817	0	6936
Open Hole Section			8.5				1556	14843	1556	6936
<b>Tools and Accessories</b>										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5					Top Plug	5.5	1	KLX	
Float Shoe	5.5	1	KLX	14817		Bottom Plug	5.5			
Float Collar	5.5	1	KLX	14812		SSR plug set	5.5			
Insert Float	5.5					Plug Container	5.5	1	HES	
Stage Tool	5.5					Centralizers	5.5			
<b>Fluid Data</b>										
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	50	bbl	11.5	3.73	23.4	6	1755	
149.34 lbm/bbl		BARITE, BULK (100003681)								
35 gal/bbl		FRESH WATER								
0.50 gal/bbl		MUSOL A, 330 GAL TOTE - (790828)								
0.50 gal/bbl		DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)								

last updated on 4/20/2018 2:17:03 PM

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## HALLIBURTON

*Cementing Job Summary*

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
2	ElastiCem	ELASTICEM (TM) SYSTEM	2375	sack	13.2	1.57	7.53	5	17884
17884 Gal		FRESH WATER							
0.40 %		SCR-100 (100003749)							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
3	Displacement	Displacement	328	bbl	8.33				
Cement Left In Pipe		Amount	0			Reason 5BBL Wet Shoe			Shoe Joint 5FT
Mix Water:		pH 7	Mix Water Chloride: <300ppm			Mix Water Temperature: 80°F			
Cement Temperature:		N/A	Plug Displaced by: 8.33 lb/gal			Disp. Temperature: 80 °F			
Plug Bumped?		Yes	Bump Pressure: N/A			Floats Held? Yes			
Cement Returns:		60 bbl	Returns Density: N/A			Returns Temperature: N/A			
Comment: Pumped calculated displacement, did not see plug bump shut down at @ 2380 psi, pumped 5 bbl wet shoe, 60 bbl cement back to surface, checked floats, floats held. 2 bbls back to the truck.									

## 2.0 Real-Time Job Summary

## 2.1 Job Event Log

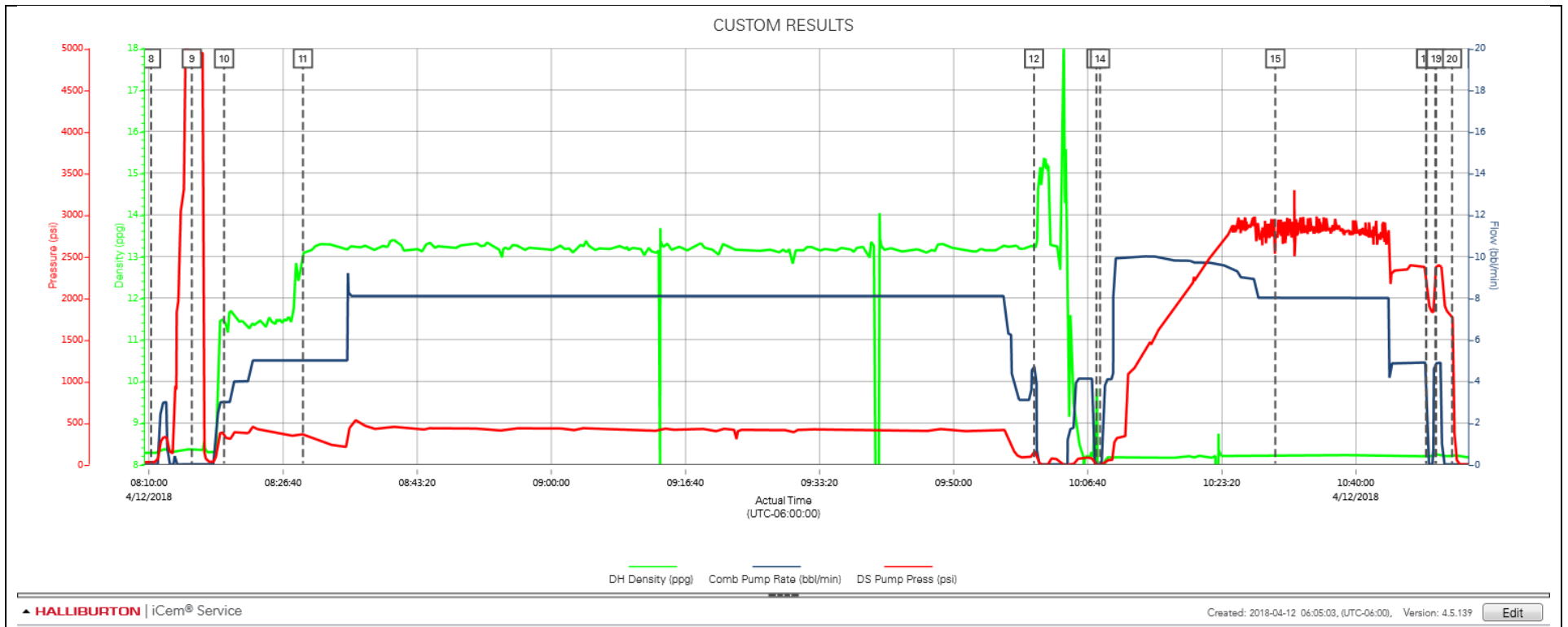
Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	DS Pump Press (psi)	Comb Pump Rate (bbl/min)	Comments
Event	1	Call Out	Call Out	4/11/2018	21:30:00	USER				CREW CALLED OUT AT 21:30 4/11/2018, REQUESTED ON LOCATION 5:30 4/12/2018. CREW PICKED UP CEMENT, CHEMICALS (25 GAL MUSOL, 25 GAL DUAL SPACER B, 10 GAL D-AIR), 100 LBS SUGAR, AND PLUG CONTAINER FROM FORT LUPTON, CO. BULK 660: 11027125/10867096 Bulk 660: 11062210/11527037 PUMP ELITE: 12644847/11512092
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	4/12/2018	01:45:00	USER				DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW
Event	3	Crew Leave Yard	Crew Leave Yard	4/12/2018	02:00:00	USER				STARTED JOURNEY MANAGEMENT.
Event	4	Arrive At Loc	Arrive At Loc	4/12/2018	03:00:00	USER				END JOURNEY MANAGEMENT. MEET WITH CO. MAN TO DISCUSS JOB; SURFACE CASING: 9.625" 36# @ 1556', CASING: 5.5" 20# @ 14817', 5' SHOE JOINT, 8.5" OPEN HOLE, TVD @ 6936', 9.7 PPG WELL FLUID, FRESH WATER DISPLACEMENT.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	4/12/2018	04:00:00	USER				HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH LOCATION, RIG UP AND WEATHER.
Event	6	Rig-Up Equipment	Rig-Up Equipment	4/12/2018	04:15:00	USER				CREW STAGED EQUIPMENT AND RIGGED UP BULK, IRON, AND WATER HOSES TO PERFORM JOB.
Event	7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	4/12/2018	07:35:00	USER	8.30	27.00	0.00	MEETING WITH HALLIBURTON AND RIG PERSONNEL. COMMUNICATED POTENTIAL SAFETY HAZARDS AND JOB DETAILS.
Event	8	Start Job	Start Job	4/12/2018	08:10:16	COM4	8.32	24.00	0.00	BEGIN RECORDING JOB DATA
Event	9	Test Lines	Test Lines	4/12/2018	08:15:19	COM4	8.36	4961.00	0.00	PRESSURE TESTED IRON TO 4500 PSI. KICKOUTS SET @ 500 PSI, KICKED OUT @ 400 PSI, 5TH GEAR STALL OUT @ 2100 PSI.
Event	10	Pump Spacer 1	Pump Spacer 1	4/12/2018	08:19:20	COM4	11.50	332.00	3.00	PUMP 50 BBLS OF TUNED SPACER @ 11.5 LB/GAL, DENSITY VERIFIED BY PRESSURIZED MUD SCALES. ADDED 25 GAL

										MUSOL, 25 GAL DUAL SPACER B, AND 10 GAL D-AIR TO SPACER.
Event	11	Pump Cement	Pump Cement	4/12/2018	08:29:08	COM4	13.08	371.00	5.00	PUMP 2375 SKS OF ELASTICEM @ 13.2 LB/GAL, 1.57 YIELD, 7.53 GAL/SK, 664 BBLS, TOC @ SURFACE, DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	12	Shutdown	Shutdown	4/12/2018	10:00:00	USER	13.23	160.00	4.70	SHUTDOWN TO WASH PUMPS AND LINES, DROP TOP PLUG.
Event	13	Drop Top Plug	Drop Top Plug	4/12/2018	10:07:45	COM4	8.96	-4.00	0.00	PLUG LEFT CONTAINER, VERIFIED BY CO. MAN. AND TOOL HAND.
Event	14	Pump Displacement	Pump Displacement	4/12/2018	10:08:13	COM4	0.06	-13.00	0.00	BEGIN CALCULATED DISPLACEMENT OF 328 BBLS WITH FRESH WATER.
Event	15	Cement Returns to Surface	Cement Returns to Surface	4/12/2018	10:30:00	USER	8.22	2724.00	8.00	CEMENT RETURNS TO SURFACE @ 268 BBLS INTO DISPLACEMENT. TOTAL AMOUNT OF 60 BBLS OF CEMENT TO SURFACE.
Event	16	Shutdown	Shutdown	4/12/2018	10:48:43	USER	8.21	2384.00	4.90	SHUTDOWN FOR 1 MINUTE @ 2700 PSI.
Event	17	Bump Plug	Bump Plug	4/12/2018	10:48:46	USER	8.21	2376.00	4.90	FINAL CIRCULATING PRESSURE OF 2380 PSI.
Event	18	Other	RUPTURE DISK	4/12/2018	10:49:54	USER	8.30	2299.00	4.80	DISC BURST @ 2700 PSI
Event	19	Pump Displacement	Pump 5BBL WET SHOE	4/12/2018	10:49:59	USER	8.25	2385.00	4.80	PUMP 5 BBL WET SHOE.
Event	20	Check Floats	Check Floats	4/12/2018	10:51:58	USER	8.20	1799.00	0.00	RELEASED PRESSURE, FLOATS HELD, 2 BBLS BACK.
Event	21	End Job	End Job	4/12/2018	10:55:11	COM4	8.21	-4.00	0.00	STOP RECORDING JOB DATA
Event	22	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	4/12/2018	10:57:09	USER	8.19	-6.00	0.00	DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES.
Event	23	Rig-Down Completed	Rig-Down Completed	4/12/2018	12:15:00	USER				ALL HALLIBURTON ITEMS WERE STOWED FOR TRAVEL.
Event	24	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	4/12/2018	12:20:00	USER				DISCUSSED ROUTES HAZARDS AND COMMUNICATION WITH CREW.
Event	25	Crew Leave Location	Crew Leave Location	4/12/2018	12:25:00	USER				THANK YOU FOR USING HALLIBURTON - THOMAS HAAS AND CREW.



## 3.0 Attachments

### 3.1 CUSTOM RESULTS – JOB CHART WITH EVENTS



3.2 CUSTOM RESULTS – JOB CHART WITHOUT EVENTS

