

# HALLIBURTON

iCem<sup>®</sup> Service

## **EXTRACTION OIL & GAS**

Date: Tuesday, October 03, 2017

### **Leonard 7N Production**

Job Date: Wednesday, September 27, 2017

Sincerely,  
**Bryce Hinsch**

## 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 **Leonard 7N 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 51 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*

Sold To #: 369404	Ship To #: 3809578	Quote #:	Sales Order #: 0904325491
Customer: EXTRACTION OIL & GAS		Customer Rep: Hans Cary	
Well Name: LEONARD		Well #: 7N	API/UWI #: 05-123-45052-00
Field: WATTENBERG	City (SAP): FIRESTONE	County/Parish: WELD	State: COLORADO
Legal Description: NW SW-21-2N-67W-1796FSL-494FWL			
Contractor: CYCLONE		Rig/Platform Name/Num: CYCLONE 37	
Job BOM: 7523 7523			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA\HX38199		Srvc Supervisor: Bradley Hinkle	

**Job**

Formation Name			
Formation Depth (MD)	Top		Bottom
Form Type	BHST		
Job depth MD	12180ft	Job Depth TVD	7518ft
Water Depth		Wk Ht Above Floor	
Perforation Depth (MD)	From		To

**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	0	9.625	8.921	36			0	1590	0	1580
Casing	0	5.5	4.778	20			0	12180	0	7518
Open Hole Section			8.5				1590	12184	1580	7518

**Tools and Accessories**

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	12180	Bottom Plug	5.5		HES
Float Collar	5.5	2	KLX	12175	SSR plug set	5.5		HES
Insert Float	5.5				Plug Container	5.5	1	HES
Stage Tool	5.5				Centralizers	5.5		HES

**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	Spacer	Tuned Spacer III	50	bbl	11.5	3.73		4		

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
2	ElastiCem	ELASTICEM (TM) SYSTEM	2000	sack	13.2	1.57		8	7.53	
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
3	Displacement	Fresh Water	269	bbl	8.33			9		
<b>Cement Left In Pipe</b>										
<b>Amount</b>		0 ft			<b>Reason</b>			<b>Wet Shoe by Design</b>		
Mix Water:	pH 6	Mix Water Chloride:	0 ppm			Mix Water Temperature:	58 °F			
Cement Temperature:	67 °F	Plug Displaced by:	## lb/gal kg/m <sup>3</sup> XXXX			Disp. Temperature:	## °F °C			
Plug Bumped?	Yes	Bump Pressure:	2300 psi			Floats Held?	Yes			
Cement Returns:	51 bbl	Returns Density:	## lb/gal kg/m <sup>3</sup>			Returns Temperature:	## °F °C			
<b>Comment</b> 50 bbls Tuned Spacer and 51 bbls cement to surface.										

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density <i>(ppg)</i>	Comb Pump Rate <i>(bbl/min)</i>	DS Pump Press <i>(psi)</i>	Comments
Event	1	Call Out	Call Out	9/26/2017	23:00:00	USER				Crew called for an on location of 0330 on 9/27/2017. Crew was Bradley Hinkle, James Bunnell, Alaa Almallallah and Sarmad Aljabur.
Event	2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	9/27/2017	01:00:00	USER				Pre-journey safety meeting.
Event	3	Arrive at Location from Service Center	Arrive at Location from Service Center	9/27/2017	01:30:00	USER				Sign in, perform a site assessment and pre rig-up safety meeting. Approximately 6000 feet of casing to run.
Event	4	Other	Job Numbers	9/27/2017	01:45:00	USER				TD: 12184. TP: 12180. FC: 12175. TVD: 7518. 5.5" 20# casing inside of a 8.5" OH. 9.625" 36# surface casing set at 1580. Mud weight at 9.7 ppg.
Event	5	Safety Meeting - Pre Job	Safety Meeting - Pre Job	9/27/2017	05:45:00	USER	8.49	0.00	1.00	Pre-job safety meeting with all personnel on location.
Event	6	Start Job	Start Job	9/27/2017	06:19:27	COM4	8.49	0.00	1.00	
Event	7	Test Lines	Test Lines	9/27/2017	06:34:34	COM4	8.52	0.00	39.00	Pressure test lines with a 500 PSI electronic kick-out test.
Event	8	Pump Spacer 1	Pump Spacer 1	9/27/2017	06:39:52	COM4	8.51	0.00	2.00	Pump 50 bbls Tuned Spacer mixed at 11.5 ppg with surfactants added throughout. Density verified

										by pressurized scales.
Event	9	Pump Cement	Pump Cement	9/27/2017	06:56:18	COM4	12.73	5.70	181.00	Pump 559 bbls (2000 sack) ElastiCem mixed at 13.2 ppg. Density verified by pressurized scales.
Event	10	Check Weight	Check Weight	9/27/2017	07:55:43	COM4				Cement weighed at 13.2 ppg.
Event	11	Shutdown	Shutdown	9/27/2017	08:15:19	COM4	13.68	0.00	32.00	
Event	12	Clean Lines	Clean Lines	9/27/2017	08:17:38	COM4	21.24	0.00	-3.00	Blow down lines from rig to tank and then wash pumps and lines until clean.
Event	13	Drop Top Plug	Drop Top Plug	9/27/2017	08:25:01	COM4				Top plug loaded directly through cement head. Witnessed by customer and KLX tool hand.
Event	14	Pump Displacement	Pump Displacement	9/27/2017	08:25:05	COM4				Pump 269 bbls fresh water. Good returns throughout. 50 bbls Tuned Spacer and 51 bbls cement to surface.
Event	15	Comment	Comment	9/27/2017	08:28:36	USER	8.29	0.00	62.00	Cement head leaking. Shutdown, bled off pressure and tightened back up.
Event	16	Bump Plug	Bump Plug	9/27/2017	08:59:33	USER	8.38	4.90	2409.00	Bump plug at 2300 PSI and increased to 2800 PSI. Held for a minute.
Event	17	Comment	Comment	9/27/2017	09:01:36	USER	8.51	2.20	2414.00	Pressure up to burst plug at 2 bbls/ minute. Plug burst at 3743 PSI and pump 5 bbls fresh water for a wet shoe at 5 bbls/ minute.
Event	18	Check Floats	Check Floats	9/27/2017	09:02:40	USER	8.38	4.70	2387.00	Floats held. 2 bbls back.
Event	19	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	9/27/2017	09:04:00	USER	8.33	0.00	21.00	Pre-rig down safety meeting.
Event	20	End Job	End Job	9/27/2017	09:04:10	COM4	8.33	0.00	11.00	

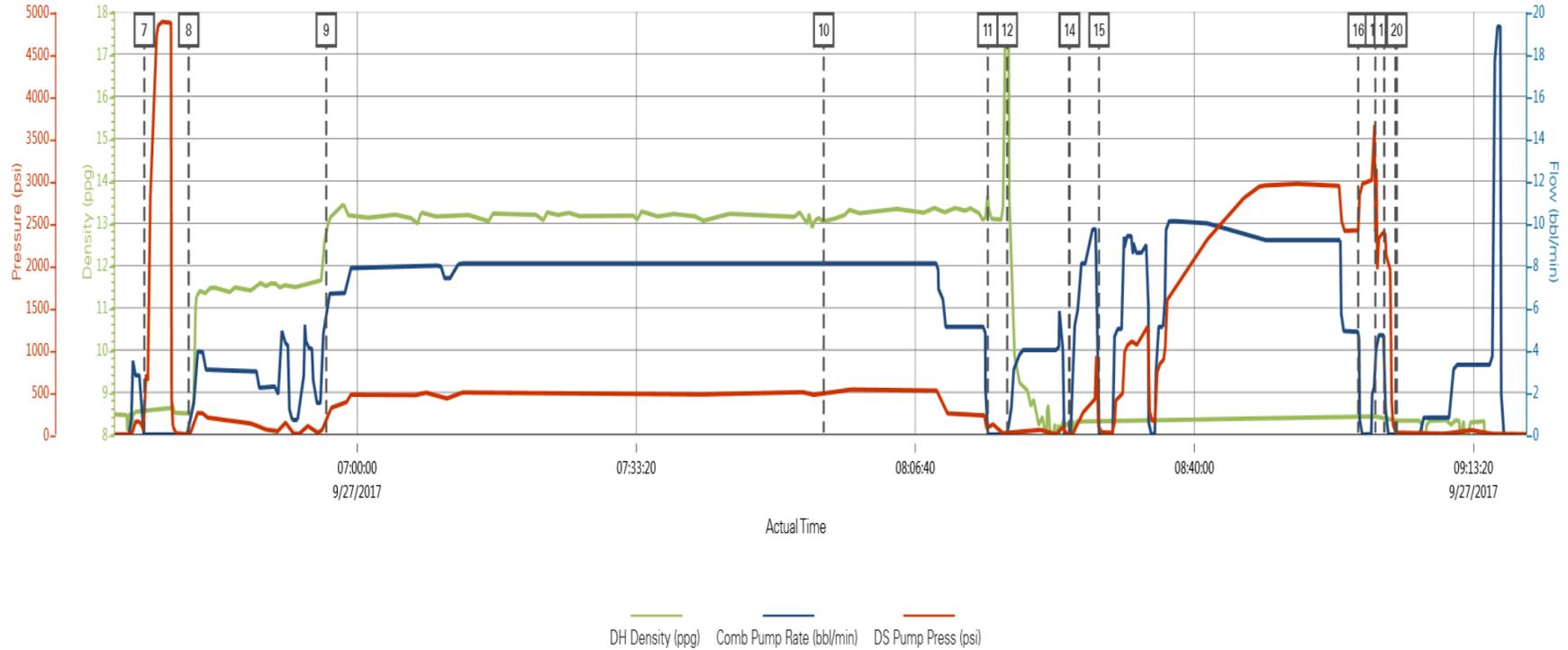
Event	21	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	9/27/2017	10:30:00	USER	Pre-journey safety meeting.
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3.0 Attachments

3.1 Extraction Leonard 7N Production Job Chart

Extraction Leonard 7N Production



DH Density (ppg) Comb Pump Rate (bbbl/min) DS Pump Press (psi)

▼ **HALLIBURTON** | iCem® Service

Created: 2017-09-27 05:40:54, (UTC-06:00), Version: 4.4.18

Edit

Customer: EXTRACTION OIL & GAS  
 Representative: Brad Hinkle

Job Date: 9/27/2017  
 Sales Order #: 904325491

Well: EXTRACTION LEONARD 7N  
 Pump Truck: 11826999 - James Bunnell