

## Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 345242	Ship To #: 3887568	Quote #: 0022605902	Sales Order #: 0905862357
Customer: NOBLE ENERGY INC-EBUS		Customer Rep: Chris Ewing	
Well Name: SLW RANCH STATE		Well #: BB07-678	API/UWI #: 05-123-47108-00
Field: WATTENBERG	City (SAP): GILL	County/Parish: WELD	State: COLORADO
Legal Description: 7-5N-63W-1528FNL-800FWL			
Contractor: H & P DRLG		Rig/Platform Name/Num: H & P 517	
Job BOM: 7523 7523			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA\HB31357		Srv Supervisor: Nicholas Cummins	

### Job

Formation Name				
Formation Depth (MD)	Top	1945ft	Bottom	17010ft
Form Type			BHST	230 degF
Job depth MD	16997ft		Job Depth TVD	6630ft
Water Depth			Wk Ht Above Floor	4ft
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		9.625	8.921	36			0	1945	0	1945
Casing		5.5	4.892	17			0	16997	0	6630
Open Hole Section			8.5				1945	17010	1945	6662

### Tools and Accessories

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	5.5				Top Plug	5.5	1	HES
Float Shoe	5.5	1	HES	16997	Bottom Plug	5.5	2	HES
Float Collar	5.5	1	HES	16950	SSR plug set	5.5		
Insert Float	5.5				Plug Container	5.5		
Stage Tool	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	Tuned Prime Spacer	SBM FDP-C1337-18 CEMENT SPACER SYS	120	bbl	11.5	3.75	23.2	6.5	4176	

  

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## Cementing Job Summary

2	ElastiCem	ELASTICEM (TM) SYSTEM	140	sack	13.2	1.71	8.31	8	1165	
<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>	
3	ElastiCem w/ SCBL	ELASTICEM (TM) SYSTEM	473	sack	13.2	1.71	8.32	8	3935	
<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>	
4	NeoCem NT1	NeoCem TM	408	bbls	13.2	2.08	10.18	8	11208	
<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>	
5	Displacement	Displacement	394	bbl	8.33					
<b>Cement Left In Pipe</b>		<b>Amount</b>	46.5 ft		<b>Reason</b>			<b>Shoe Joint</b>		
Mix Water:		pH 7	Mix Water Chloride: <400 ppm			Mix Water Temperature: 69 °F				
Cement Temperature:		N/A	Plug Displaced by: 8.33 lb/gal			Disp. Temperature: 69 °F				
Plug Bumped?		No	Bump Pressure: N/A			Floats Held? Yes				
Cement Returns:		## bbl	Returns Density: N/A			Returns Temperature: N/A				
<b>Comment</b>										
120 bbls Spacer										
43 bbls Cap										
144 bbls Lead										
408 bbls Tail										
394 bbls Displacement first 20 MMCR/ biocide throughout till last 50 bbls										
Due to rig issues no Top plug was ran.										
Estimated top of Spacer 148'										
Estimated top of Lead 2,781'										
Estimated top of Tail 6,996'										

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comments
Event	1	Call Out	Call Out	7/28/2019	13:30:00	USER	The crew was called out on 7/28/19 at 1330. The customer requested HES on location at 1930 on 7/28/19.
Event	2	Depart from Service Center or Other Site	Depart from Service Center or Other Site	7/28/2019	17:30:00	USER	The crew held a pre journey safety meeting discussing the route and potential hazards while driving. The supervisor called in a journey. The crew departed service center.
Event	3	Arrive at Location from Service Center	Arrive at Location from Service Center	7/28/2019	18:40:00	USER	The crew arrived on location safely. The rig was still running casing. The supervisor met with the Company man and received numbers. TD 17,010', TP 16,996.4' 5 1/2" 17# P-110, FC 16,949.9', PC 1,944.3' 9 5/8" 36# J-55, TVD 6,630', OH 8 1/2", Mud 9.4 ppg.
Event	4	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	7/28/2019	20:00:00	USER	Crew discussed all potential hazards on location.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	7/28/2019	20:10:00	USER	Crew held a safety meeting discussing the rig up procedure. Also all potential hazards associated with rigging up all HES equipment and lines.

Event	6	Rig-Up Equipment	Rig-Up Equipment	7/28/2019	20:18:00	USER	The crew rigged up all HES equipment and lines.
Event	7	Rig-Up Completed	Rig-Up Completed	7/28/2019	21:30:00	USER	Rig up completed, no one got hurt.
Event	8	Safety Meeting - Pre Job	Safety Meeting - Pre Job	7/28/2019	23:40:00	USER	The crew and all personal involved with cement job discussed all potential hazards associated with job. Followed by the job procedure to ensure everyone understood the plan of action
Event	9	Start Job	Start Job	7/28/2019	23:58:04	COM1	Started recording data from Elite 11189151.
Event	10	Drop Bottom Plug	Drop Bottom Plug	7/28/2019	23:58:17	COM1	Company man loaded bottom plug.
Event	11	Other	Fill Lines	7/28/2019	23:58:21	USER	Filled lines with 3 bbl of water, pressure was at 110 psi.
Event	12	Test Lines	Test Lines	7/29/2019	00:01:06	USER	Pressure tested all HES lines to 4,700 psi. The pressure test passed.
Event	13	Test Lines	Test Lines	7/29/2019	00:06:34	COM1	Pressure tested the rigs IBOP to 2,500 psi. The pressure test passed
Event	14	Pump Spacer 1	Pump Spacer 1	7/29/2019	00:09:46	COM1	Pumped 120 bbls of spacer with surfactants at 6.5 bpm. Pressure was at 221 psi. 11.5 ppg 3.75 yield 23.2 gal/sk. We verified density using pressurized scales.
Event	15	Drop Bottom Plug	Drop Bottom Plug	7/29/2019	00:40:08	USER	Shutdown and company man loaded bottom plug.

Event	16	Pump Cap Cement	Pump Cap Cement	7/29/2019	00:43:35	COM1	We pumped 43 bbls (140 sks) of cap cement at 8 bpm. Pressure was at 600 psi. 13.2 ppg 1.71 yield 8.31 gal/sk. We verified density using pressurized scales.
Event	17	Pump Lead Cement	Pump Lead Cement	7/29/2019	00:49:58	COM1	We pumped 144 bbls (473 sks) of lead cement at 8 bpm. Pressure was at 625 psi. 13.2 ppg 1.71 yield 8.32 gal/sk. We verified density using pressurized scales.
Event	18	Pump Tail Cement	Pump Tail Cement	7/29/2019	01:08:57	COM1	We pumped 408 bbls (1,101 sks) of Tail cement at 8 bpm. Pressure was at 753 psi. 13.2 ppg 2.04 yield 9.75 gal/sk. We verified density using pressurized scales.
Event	19	Shutdown	Shutdown	7/29/2019	02:02:42	COM1	Shutdown and aligned valves to pump to wash up tank. Pumped 15 bbls of fresh water to wash pumps and lines.
Event	20	Pump Displacement	Pump Displacement	7/29/2019	02:16:01	COM1	No bottom plug was ran due to the rig having issues and not being able to load it.. Pumped the calculated displacement of 394 bbls at 10 bpm. With MMCR in the first 20 bbls and Biocide throughout until the last 50 bbls.
Event	21	Other	Check Floats	7/29/2019	03:02:58	COM1	Shutdown after calculated displace was met. Final circulating pressure was 1,800 psi. Checked floats after 5 mins floats held , 4.5 bbls back.

Event	22	End Job	End Job	7/29/2019	03:19:44	COM1	Cement job complete. Estimated top of spacer 148'. Estimated top of Lead 2,781'. Estimated top of Tail 6,996'.
Event	23	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	7/29/2019	03:20:00	USER	Crew held a safety meeting discussing the rig down procedure. Also all potential hazards associated with rigging down all HES equipment and lines.
Event	24	Rig-Down Equipment	Rig-Down Equipment	7/29/2019	03:30:00	USER	The crew rigged down all HES equipment and lines.
Event	25	Rig-Down Completed	Rig-Down Completed	7/29/2019	04:20:00	USER	Rig down completed no one got hurt.
Event	26	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	7/29/2019	04:50:00	USER	The crew held a pre journey safety meeting discussing the route and potential hazards while driving The supervisor called in a journey.
Event	27	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	7/29/2019	05:00:00	USER	Nick Cummins and crew would like to thank you for your business, and choosing Halliburton Cement! Please feel free to call if you have any questions.

## 3.0 Attachments

### 3.1 Job Chart



