

The Road to Excellence Starts with Safety

Sold To #: 345242	Ship To #: 3887441	Quote #:	Sales Order #: 0905875020
Customer: NOBLE ENERGY INC-EBUS		Customer Rep: Charles Culver	
Well Name: SLW RANCH STATE		Well #: BB07-685	API/UWI #: 05-123-47107-00
Field: WATTENBERG	City (SAP): GILL	County/Parish: WELD	State: COLORADO
Legal Description: 7-5N-63W-1505FNL-800FWL			
Contractor: H & P DRLG		Rig/Platform Name/Num: H & P 517	
Job BOM: 7523 7523			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA/HB31357		Srvc Supervisor: Nicholas Cummins	

Job

Formation Name	
Formation Depth (MD)	Top 1954ft Bottom 17018.4ft
Form Type	BHST 230 degF
Job depth MD	17019ft Job Depth TVD 6590ft
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	1954	0	1954
Casing		5.5	4.892	17			0	17019	0	6591
Open Hole Section			8.5				1954	17032	1954	6591

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	17019	Bottom Plug	5.5	2	HES
Float Collar	5.5	1	HES	16972	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	3.75	8	4176

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	140	sack	13.2	1.71	8.31	8	1165

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
3	ElastiCem w/ SCBL	ELASTICEM (TM) SYSTEM	473	sack	13.2	1.71	8.32	8	3935
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
4	NeoCem NT1	NeoCem TM	408	Bbl	13.2	2.08	10.18	8	11208
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
5	Displacement	Displacement	394	bbl	8.33				
Cement Left In Pipe	Amount	47 ft			Reason			Shoe Joint	
Mix Water:	pH 7	Mix Water Chloride:	<400 ppm		Mix Water Temperature:	71 °F			
Cement Temperature:	N/A	Plug Displaced by:	8.33 lb/gal		Disp. Temperature:	71 °F			
Plug Bumped?	Yes	Bump Pressure:	2500 psi		Floats Held?	Yes			
Cement Returns:	0 bbl	Returns Density:	N/A		Returns Temperature:	N/A			
Comment									
120 bbls Spacer									
43 bbls Cap									
144 bbls Lead									
408 bbls Tail									
394 bbls Displacement first 20 MMCR/ biocide throughout till last 50 bbls									
Plug Bumped 2,500 psi, Floats Held									
Estimated top of Lead 2,435'									
Estimated top of Tail 7,018'									

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	8/2/2019	21:00:00	USER	The crew was called out on 8/3/19 at 2100. The customer requested HES on location at 0200 on 8/3/19.
Event	2	Depart from Service Center or Other Site	Depart from Service Center or Other Site	8/3/2019	00:00:00	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	8/3/2019	01:00:00	USER	The crew arrived on location safely. The rig was still running casing. The supervisor met with the Company man and received numbers. TD 17,032', TP 17,018.4' 5 1/2" 17# P-110, FC 16,971.7', PC 1,954' 9 5/8" 36# J-55, TVD 6,590', OH 8 1/2", Mud 9.5 ppg.
Event	4	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	8/3/2019	07:05:00	USER	Crew discussed all potential hazards on location.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	8/3/2019	07:20:00	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	8/3/2019	07:30:00	USER	The crew rigged up all HES equipment and lines.
Event	7	Rig-Up Completed	Rig-Up Completed	8/3/2019	09:00:00	USER	Rig up completed, no one got hurt.
Event	8	Safety Meeting - Pre Job	Safety Meeting - Pre Job	8/3/2019	10:00:00	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	8/3/2019	10:15:02	COM1	Started recording data from Elite 11189151.
Event	10	Drop Bottom Plug	Drop Bottom Plug	8/3/2019	10:30:05	COM1	Company man loaded bottom plug.
Event	11	Other	Fill Lines	8/3/2019	10:30:30	COM1	Filled lines with 3 bbl of water, pressure was at 110 psi.
Event	12	Test Lines	Test Lines	8/3/2019	10:32:21	COM1	Pressure tested all HES lines to 4,700 psi. The pressure test passed. Then pressure tested the rigs IBOP to 2,500 psi. The pressure test passed
Event	13	Pump Spacer 1	Pump Spacer 1	8/3/2019	10:42:00	COM1	Pumped 120 bbls of spacer with surfactants at 8 bpm. Pressure was at 350 psi. 11.5 ppg 3.75 yield 23.2 gal/sk. We verified density using pressurized scales.
Event	14	Shutdown	Shutdown	8/3/2019	11:07:32	COM1	Shutdown to load bottom plug.

Event	15	Drop Bottom Plug	Drop Bottom Plug	8/3/2019	11:12:00	USER	Company man loaded bottom plug.
Event	16	Pump Cap Cement	Pump Cap Cement	8/3/2019	11:14:51	COM1	We pumped 43 bbls (140 sks) of cap cement at 8 bpm. Pressure was at 560 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	8/3/2019	11:22:29	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	8/3/2019	11:41:31	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	8/3/2019	12:34:58	COM1	Shutdown and aligned valves to pump to wash up tank. Pumped 15 bbls of fresh water to wash pumps and lines.
Event	20	Drop Top Plug	Drop Top Plug	8/3/2019	12:48:01	COM1	Company man loaded top plug.
Event	21	Pump Displacement	Pump Displacement	8/3/2019	12:48:05	COM1	Pumped the calculated displacement of 394 bbls at 9 bpm. We adjusted rate to 3 bpm the last 20 bbls. With MMCR in the first 20 bbls and Biocide throughout until the last 50 bbls.

Event	22	Bump Plug	Bump Plug	8/3/2019	13:37:46	COM1	Bumped the plug calculated. Final circulating pressure was 1,800 psi. Pressured up to 2,500 psi before shutting down.
Event	23	Other	Check Floats	8/3/2019	13:41:47	COM1	Bled pressure back to the truck. 5 bbls back, Floats held.
Event	24	End Job	End Job	8/3/2019	13:44:43	COM1	Cement job complete. Stopped recording data from Elite 11189151. Estimated top of Lead 2,435'. Estimated top of Tail 7,018'.
Event	25	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	8/3/2019	13:45:00	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	26	Rig-Down Equipment	Rig-Down Equipment	8/3/2019	13:55:00	USER	The crew rigged down all HES equipment and lines.
Event	27	Rig-Down Completed	Rig-Down Completed	8/3/2019	14:45:00	USER	Rig down completed no one got hurt.
Event	28	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	8/3/2019	15:10:00	USER	The crew held a pre journey safety meeting discussing the route and potential hazards while driving The supervisor called in a journey.
Event	29	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	8/3/2019	15:20:00	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

