

*The Road to Excellence Starts with Safety*

Sold To #: 345242	Ship To #: 3885366	Quote #:	Sales Order #: 0905828762
Customer: NOBLE ENERGY INC-EBUS		Customer Rep: John Drahota	
Well Name: SLW RANCH STATE		Well #: BB07-660	API/UWI #: 05-123-47007-00
Field: WATTENBERG	City (SAP): GILL	County/Parish: WELD	State: COLORADO
Legal Description: 7-5N-63W-1595FNL-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: Steven Markovich	

**Job**

Formation Name			
Formation Depth (MD)	Top		Bottom
Form Type		BHST	230 degF
Job depth MD	17024ft	Job Depth TVD	
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		9.625	8.921	36			0	1937	0	0
Casing		5.5	4.892	17			0	17024	0	0
Open Hole Section			8.5				1937	17038	0	0

**Tools and Accessories**

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	5.5			17024	Top Plug	5.5		HES
Float Shoe	5.5				Bottom Plug	5.5		HES
Float Collar	5.5				SSR plug set	5.5		HES
Insert Float	5.5				Plug Container	5.5		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 ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
1	11.5 lb/gal Tuned Spacer III	Tuned Spacer III	120	bbl	11.5	3.79			
36.09 gal/bbl		<b>FRESH WATER</b>							
1 lbm/bbl		<b>FE-2 (100001615)</b>							

148.31 lbm/bbl	<b>BARITE, BULK (100003681)</b>
0.60 gal/bbl	<b>DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)</b>
0.60 gal/bbl	<b>MUSOL(R) A, 5 GAL PAIL (100064220)</b>

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	1.68		6	8.04
8.06 Gal		<b>FRESH WATER</b>							
0.95 %		<b>SCR-100 (100003749)</b>							

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
3	ElastiCem w/ SCBL	ELASTICEM (TM) SYSTEM	482	sack	13.2	1.68		6	8.06
0.60 %		<b>SCR-100 (100003749)</b>							
8.06 Gal		<b>FRESH WATER</b>							

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	NeoCem NT1	NeoCem TM	1128	sack	13.2	2.04		6	9.71
0.08 %		<b>FE-2 (100001615)</b>							
9.71 Gal		<b>FRESH WATER</b>							
0.08 %		<b>SCR-100 (100003749)</b>							

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
5	Displacement	Displacement	394	bbl	8.33				

<b>Cement Left In Pipe</b>	<b>Amount</b>	47 ft	<b>Reason</b>	<b>Shoe Joint</b>
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<b>Mix Water:</b>	pH 07	<b>Mix Water Chloride:</b>	00 ppm	<b>Mix Water Temperature:</b>	89 °F °C
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**Comment** Pump 394bbbls of H2O. First 20bbbls with MMCR then 374bbbls with Biocide. Pumped at 10bbl/min and slowed rate to 3bbl/min at 365bbbls away to bump plug. Bumped plug at 394bbbls away, final lift pressure was 1749psi. Brought pressure 500psi over and held for 5 min casing test, After 5 mins pressure was 2313psi. Opened release line to check floats and after 4bbbls back floats held. Estimated Top of Tail Cement 7005'. Estimated Top of Lead Cement 3471', Estimated Top of Cap Cement 2444'.

Real-Time Job Summary

1.2 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comments
Event	1	Check Floats	Call Out	7/19/2019	11:30:00	USER	Job called out with an on location time of 1730.
Event	2	Crew Leave Yard	Crew Leave Yard	7/19/2019	15:45:00	USER	JSA with HES crew on driving safety and route to rig.
Event	3	Assessment Of Location Safety Meeting	Arrive at Location from Service Center	7/19/2019	17:15:00	USER	Arrived on location, rig still running casing. 2000' to run.
Event	4	Assessment Of Location Safety Meeting	Assessment of Location Safety Meeting	7/19/2019	17:30:00	USER	JSA and hazard hunt with HES crew.
Event	5	Safety Meeting	Safety Meeting	7/19/2019	21:30:00	USER	JSA with HES and rig crew on job procedure and safety.
Event	6	Start Job	Start Job	7/19/2019	21:46:38	COM4	TD 17038' TP 17024' FC 16977' Alpha Sleeve 16889' 5 1/2" 17# Production Casing, 8 1/2" Open hole, 9 5/8" 36# Surface Casing set at 1937, TVD 6600', Mud# 9.5ppg.
Event	7	Drop Bottom Plug	Drop Bottom Plug	7/19/2019	21:53:58	COM4	Plug loaded into the casing by company rep and pushed down by the CRT.
Event	8	Check Weight	Check Weight	7/19/2019	21:54:25	COM4	Weight verified by pressurized scales.

Event	9	Test Lines	Test Lines	7/19/2019	21:54:46	COM4	Set kick outs to 500psi and check low pressure kick outs. Increase pressure to 5000psi and hold. Then repeat to 2500psi on the rigs IBOP.
Event	10	Check Weight	Check Weight	7/19/2019	21:55:57	COM4	Weight verified by pressurized scales.
Event	11	Pump Spacer 1	Pump Spacer 1	7/19/2019	22:05:25	COM4	Pump 120bbls of 11.5ppg 3.79yield Tuned Prime. Added 70 gallons of musol and dual b on the fly. Pumped at 5bbl/min 308psi.
Event	12	Check Weight	Check Weight	7/19/2019	22:41:47	COM4	Weight verified by pressurized scales.
Event	13	Pump Cement	Pump Cement	7/19/2019	22:45:04	COM4	Pump 42bbls (140sks) of 13.2ppg 1.68yield Cap Cement. Pumped at 8bbl/min 691psi.
Event	14	Pump Lead Cement	Pump Lead Cement	7/19/2019	22:50:42	COM4	Pump 144bbls (482sks) of 13.2ppg 1.68yield Lead Cement. Pumped at 8bbl/min 741psi.
Event	15	Check Weight	Check Weight	7/19/2019	22:51:48	COM4	Weight verified by pressurized scales.
Event	16	Pump Tail Cement	Pump Tail Cement	7/19/2019	23:09:55	COM4	Pump 410bbls (1128sks) of 13.2ppg 2.04yield Tail Cement. Pumped at 8bbl/min 840psi.
Event	17	Check Weight	Check Weight	7/19/2019	23:30:18	COM4	Weight verified by pressurized scales.
Event	18	Shutdown	Shutdown	7/20/2019	00:03:55	COM4	Shutdown and clean pumps and lines.
Event	19	Drop Top Plug	Drop Top Plug	7/20/2019	00:23:34	COM4	Plug loaded into the casing by company rep. Pushed down by the CRT.

Event	20	Pump Displacement	Pump Displacement	7/20/2019	00:23:37	COM4	Pump 394bbbls of H2O. First 20bbbls with MMCR then 374bbbls with Biocide. Pumped at 10bbbl/min and slowed rate to 3bbbl/min at 365bbbls away to bump plug.
Event	21	Displ Reached Cement	Displ Reached Cement	7/20/2019	00:29:42	COM4	
Event	22	Bump Plug	Bump Plug	7/20/2019	01:08:17	COM4	Bumped plug at 394bbbls away, final lift pressure was 1749psi. Brought pressure 500psi over and held for 5 mins for casing test, After 5 mins pressure was 2313psi.
Event	23	Check Floats	Check Floats	7/20/2019	01:14:40	USER	After 5 min casing test, opened release line to check floats and after 4bbbls back floats held.
Event	24	End Job	End Job	7/20/2019	01:17:28	COM4	Thank you, Steve Markovich and crew.

## 2.0 Attachments

### 2.1 Operator Stephen Sandstrom Elite 11368474-Custom Results.png

