

## Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 345242		Ship To #: 3919053		Quote #:		Sales Order #: 0906383597				
Customer: NOBLE ENERGY INC-EBUS				Customer Rep: Gary						
Well Name: VOGLER STATE			Well #: D33-718		API/UWI #: 05-123-48569-00					
Field: WATTENBERG		City (SAP): KEENESBURG		County/Parish: WELD		State: COLORADO				
Legal Description: SE SE-21-3N-64W-1015FSL-586FEL										
Contractor: AKITA DRLG				Rig/Platform Name/Num: AKITA 522						
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HB31357				Srvc Supervisor: Michael Loughran						
Job										
Formation Name										
Formation Depth (MD)		Top		Bottom						
Form Type				BHST						
Job depth MD		17324ft		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	1939	0	1939
Casing		5.5	4.892	17			0	17313.5	0	6842
Open Hole Section			8.5				1939	17324	1939	6842
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5					Top Plug	5.5	2	HES	
Float Shoe	5.5			17313.5		Bottom Plug	5.5	2	HES	
Float Collar	5.5			17298.7		SSR plug set	5.5			
Insert Float	5.5					Plug Container	5.5	1	HES	
Stage Tool	5.5					Centralizers	5.5			
Fluid Data										
Stage/Plug #: 1										

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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	3.87		8	
0.25 gal/bbl		<b>D-AIR 3000L, 5 GAL PAIL (101007444)</b>							
1 lbm/bbl		<b>FE-2, 2000 LB BAG - (1005549)</b>							
3.50 lbm/bbl		<b>SEM-94P, 35 LB SACK - (1023987)</b>							
3.50 lbm/bbl		<b>SEM-93P, 35 LB SACK - (1023977)</b>							
145.2420 lbm/bbl		<b>BARITE, BULK (100003681)</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	1.65		8	8.4
0.30 %		<b>SCR-100, 1200 LB BAG - (1126328)</b>							
8.40 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
3	ElastiCem w/ SCBL	ELASTICEM (TM) SYSTEM	496	sack	13.2	1.67		8	8.05
0.18 %		<b>SCR-100, 1200 LB BAG - (1126328)</b>							
8.05 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	1152	sack	13.2	2.04		8	9.79
0.08 %		<b>SCR-100, 1200 LB BAG - (1126328)</b>							
0.08 %		<b>FE-2, 2000 LB BAG - (1005549)</b>							
9.79 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
5	Displacement	Displacement	402	bbl	8.33			8	

Cement Left In Pipe		Amount	0 ft		Reason			Wet Shoe Joint	

## *Cementing Job Summary*

Mix Water:	pH 7	Mix Water Chloride:	Less 200 ppm	Mix Water Temperature:	60 °F
Cement Temperature:		Plug Displaced by:	8.33 lb/gal	Disp. Temperature:	
Plug Bumped?	Yes	Bump Pressure:	psi	Floats Held?	Yes
Cement Returns:		Returns Density:		Returns Temperature:	
Comment					

## 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	3/17/2020	04:30:00	USER	Crew called out for on location time of 1130 hrs. 3/17/2020
Event	2	Crew Leave Yard	Crew Leave Yard	3/17/2020	08:30:00	USER	Crew leaves yard
Event	3	Arrive At Loc	Arrive At Loc	3/17/2020	09:45:00	USER	Arrive at location, Rig on bottom/circulating, Meet with customer, TP 17315.5 17# P-110, TD 17324, 8.50 Hole, FC 17298.7, TVD 6842, PC 1939' 9.625 J-55 36#, WF 9.8 OBM, Top and Bottom plug provided by customer, Water 60 Deg., PH 7, Chlorides and sulfates less than 200 ppm
Event	4	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	3/17/2020	09:50:00	USER	Pre rig up safety meeting
Event	5	Rig-Up Equipment	Rig-Up Equipment	3/17/2020	10:00:00	USER	Rig up all service lines and iron to buffer zone
Event	6	Pre-Job Safety Meeting	Pre-Job Safety Meeting	3/17/2020	13:00:00	USER	Discuss job procedures, Discuss job hazards and hazards of Halliburton Equipment.
Event	7	Start Job	Start Job	3/17/2020	13:25:13	COM5	Begin recording data
Event	8	Drop Bottom Plug	Drop Bottom Plug	3/17/2020	13:25:34	COM5	750 plug verified by Gary
Event	9	Test Lines	Test Lines	3/17/2020	13:27:16	COM5	Test lines to 4500 psi
Event	10	Pump Spacer 1	Pump Spacer 1	3/17/2020	13:36:04	COM5	120 bbl. Tuned Prime Spacer, 11.5 ppg, 3.87 yield, 24.42 gal/sack. D-Air
Event	11	Shutdown	Shutdown	3/17/2020	13:56:20	COM5	Shutdown
Event	12	Drop Bottom Plug	Drop Bottom Plug	3/17/2020	14:03:34	COM5	750 psi bottom plug verified by Gary
Event	13	Pump Cap Cement	Pump Cap Cement	3/17/2020	14:03:39	COM5	140 sacks ElastiCem Cap cement. 41.14 bbl. 13.2 ppg, 1.65 yield, 8.4 gal/sack
Event	14	Pump Lead Cement	Pump Lead Cement	3/17/2020	14:09:44	COM5	496 sacks ElastiCem Lead cement. 147.52 bbl. 13.2 ppg, 1.67 yield, 8.05 gal/sack
Event	15	Pump Tail Cement	Pump Tail Cement	3/17/2020	14:30:09	COM5	1152 sacks NeoCem Tail cement. 418.55 bbl. 13.2 ppg, 2.04 yield, 8.05 gal/sack
Event	16	Shutdown	Shutdown	3/17/2020	14:53:59	USER	Shutdown to troubleshoot hydraulic leak inside control stand. Leak fixed.
Event	17	Resume	Resume	3/17/2020	15:06:44	USER	Resume pumping. Total time down = 13 min.

Event	18	Shutdown	Shutdown	3/17/2020	15:42:27	COM5	Shutdown to wash pumps and lines per Noble wet shoe procedure.
Event	19	Drop Top Plug	Drop Top Plug	3/17/2020	15:54:23	COM5	Drop 1500-psi top plug. Verified by Gary
Event	20	Pump Displacement	Pump Displacement	3/17/2020	15:54:36	COM5	Pump 3 bbl. w/MMCR water
Event	21	Drop Top Plug	Drop Top Plug	3/17/2020	15:57:39	COM5	Drop 3000-psi top plug. Verified by Gary
Event	22	Bump Plug	Bump Plug	3/17/2020	16:45:49	COM5	Bump 2580 psi. Final circ pressure 2150 @ 3 bbl./min
Event	23	Check Floats	Check Floats	3/17/2020	16:50:08	USER	4.5 bbl. back. floats hold
Event	24	Pressure Up Well	Pressure Up Well	3/17/2020	16:52:06	COM5	Pressure up to pump 5 bbl. wet shoe. Disc ruptures at 3415 psi. Pump 5 bbl. after pressure drop.
Event	25	Bump Plug	Bump Plug	3/17/2020	16:56:13	COM5	Bump second top plug. Bump pressure
Event	26	Check Floats	Check Floats	3/17/2020	16:58:33	COM5	Check floats. 7 bbl. back. Floats hold
Event	27	End Job	End Job	3/17/2020	17:01:27	COM5	Stop recording data. Approx. 7 bbl. spacer to surface. TOTC=7063, TOLC= 3447, TOCC=2439
Event	28	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	3/17/2020	17:02:03	USER	JSA safe Rig-Down
Event	29	Rig-Down Equipment	Rig-Down Equipment	3/17/2020	17:05:00	USER	Rig down equipment
Event	30	Crew Leave Location	Crew Leave Location	3/17/2020	18:45:00	USER	Thanks for choosing Halliburton Energy Services!

3.0 Attachments

3.1 Job Chart

