

HALLIBURTON

## Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 345242	Ship To #: 3628245	Quote #:	Sales Order #: 0902933929							
Customer: NOBLE ENERGY INC E-BUSINESS		Customer Rep: Noble								
Well Name: MOSER STATE	Well #: H22-785	API/UWI #: 05-123-40734-00								
Field: WATTENBERG	City (SAP): HUDSON	County/Parish: WELD	State: COLORADO							
Legal Description: SW SW-22-3N-65W-420FSL-979FWL										
Contractor: H & P DRLG		Rig/Platform Name/Num: H & P 273								
Job BOM: 7525										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HB45834		Srvc Supervisor: Mark Turner								
Job										
Formation Name										
Formation Depth (MD)	Top	Bottom								
Form Type		BHST	230 degF							
Job depth MD	11773ft	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
Drill Pipe	3	4	3.34	14	BTC	P-110	0	7197	0	4115
Casing	3	7	6.276	26	BTC	P-110	0	7425	0	7002
Casing	3	4.5	4	11.6	BTC	P-110	7197	11769	4115	7002
Open Hole Section			6.125		BTC		7425	11773	4115	7002
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	4.5			11769		Top Plug	4.5		HES	
Float Shoe	4.5					Bottom Plug	4.5		HES	
Float Collar	4.5					SSR plug set	4.5		HES	
Insert Float	4.5					Plug Container	4.5		HES	
Stage Tool	4.5					Centralizers	4.5		HES	
Miscellaneous Materials										
Gelling Agt	Conc		Surfactant	Conc		Acid Type		Qty	Conc	
Treatment Fld	Conc		Inhibitor	Conc		Sand Type		Size	Qty	
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	60	bbl	11.5	3.86		5		
145.18 lbm/bbl		BARITE, BULK (100003681)								
36.09 gal/bbl		FRESH WATER								

last updated on 11/25/2015 4:05:17 PM

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iCem® Service

(v. 4.2.393)

Created: Tuesday, December 01, 2015

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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																									
2	Expandacem B2	EXPANDACEM (TM) SYSTEM	150	sack	13.8	1.64		5	7.58																									
3	Expandacem B2	EXPANDACEM (TM) SYSTEM	190	sack	13.8	1.65		5	7.59																									
7.59 Gal		FRESH WATER																																
4	MMCR Displacement Water	MMCR Displacement Water	20	bbl	8.33			5																										
0.50 gal/bbl		MICRO MATRIX CEMENT RETARDER, 1 GAL PAIL (100003780)																																
5	Water Displacement	Water Displacement	112.5	bbl	8.33			5																										
<table border="1"> <tr> <td>Cement Left In Pipe</td> <td>Amount</td> <td>42 ft</td> <td>Reason</td> <td>Shoe Joint</td> </tr> <tr> <td>Mix Water pH</td> <td>##</td> <td>Mix Water Chloride</td> <td>##124 ppm</td> <td>Mix Water Temperature</td> </tr> <tr> <td>Cement Temperature</td> <td>## °F °C</td> <td>Plug Displaced by</td> <td>##8.33 lb/gal</td> <td>Disp. Temperature</td> </tr> <tr> <td>Plug Bumped?</td> <td>Yes</td> <td>Bump Pressure</td> <td>###3250 psi</td> <td>Floats Held?</td> </tr> <tr> <td>Cement Returns</td> <td>## bbl m3</td> <td>Returns Density</td> <td>## lb/gal kg/m3</td> <td>Returns Temperature</td> </tr> </table>										Cement Left In Pipe	Amount	42 ft	Reason	Shoe Joint	Mix Water pH	##	Mix Water Chloride	##124 ppm	Mix Water Temperature	Cement Temperature	## °F °C	Plug Displaced by	##8.33 lb/gal	Disp. Temperature	Plug Bumped?	Yes	Bump Pressure	###3250 psi	Floats Held?	Cement Returns	## bbl m3	Returns Density	## lb/gal kg/m3	Returns Temperature
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Comment																																		

## 2.0 Real-Time Job Summary

## 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Pass-Side Pump Pressure (psi)	Downhole Density (ppg)	Combined Pump Rate (bbl/min)	Comments
Event	1	Call Out	Call Out	11/24/2015	17:30:00	USER				
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	11/24/2015	22:20:00	USER				Discussed route, driving safety and hazards.
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	11/24/2015	22:30:00	USER				
Event	4	Arrive At Loc	Arrive At Loc	11/24/2015	23:20:00	USER				Met with company man. Rig having well control issues.
Event	5	Running In Hole	Running In Hole	11/24/2015	23:21:00	USER				
Event	6	Other	Well Information	11/24/2015	23:45:00	USER				TD- 11773', TVD- 7002, ST- 44.68', Lin- 4.5", 11.6# 7197' to 11769', Prev Cas- 7", 26#, 7425', DP- 4", 14# 5343.72', HW- 4", 29#, 1829.81', Tools- 23', 2.25 ID, OH- 6.125", WF- 10.4#, Water PH 7-, Iron- 0, Sulf-<200, Temp- 70, Chlor- 124, WBM- 10.4#, YP- 6, PV- 6, Gels- 4/12/19
Event	7	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	11/25/2015	06:00:00	USER				Did site assessment, discussed safety and hazards.
Event	8	Circulate Well	Circulate Well	11/25/2015	06:10:00	USER				Rig circulating @ 3 bbls/min @ 570 psi Rig circulated 1030 bbls.
Event	9	Rig-Up Equipment	Rig-Up Equipment	11/25/2015	06:15:00	USER				Rigged up iron, water and to backside.
Event	10	Rig-Up Completed	Rig-Up Completed	11/25/2015	08:00:00	USER				
Event	11	Pre-Job Safety Meeting	Pre-Job Safety Meeting	11/25/2015	11:30:00	USER				Discussed job procedures, safety and hazards.
Event	12	Start Job	Start Job	11/25/2015	12:28:06	COM5				

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Event	13	Test Lines	Test Lines	11/25/2015	12:38:11	COM5	5211.00	8.88	0.00	Tested lines to 4800 psi. Had good test.
Event	14	Pump Spacer 1	Pump Spacer 1	11/25/2015	12:44:44	COM5	2.00	8.72	0.00	Pumped 60 bbls of 11.5# Tuned Spacer @ 5 bbls/min., 1304 psi.
Event	15	Pump Lead Cement	Pump Lead Cement	11/25/2015	13:04:21	COM5	1181.00	14.02	5.00	Pumped 44 bbls of 13.8# Lead cement @ 5 bbls/min., 1100 psi.
Event	16	Pump Tail Cement	Pump Tail Cement	11/25/2015	13:11:53	COM5	505.00	13.58	3.50	Pumped 57 bbls of 13.8# Tail cement @ 5 bbls/min., 1160 psi.
Event	17	Shutdown	Shutdown	11/25/2015	13:26:43	COM5	133.00	13.71	0.00	
Event	18	Clean Lines	Clean Lines	11/25/2015	13:31:17	COM5	2.00	24.15	0.00	
Event	19	Drop Top Plug	Drop Top Plug	11/25/2015	13:35:53	COM5				Weatherford hand released Top plug. Company man was present to witness.
Event	20	Pump Displacement	Pump Displacement	11/25/2015	13:35:57	COM5				Puumped 132.5 bbls of 8.33# fresh water Calculated was 140 bbls. Slowed to 2 bbls/min with 60 away to pick up wiper. Picked up wiper @ 65 bbls gone, pressure of 2740. Pumped @ 5 bbls/min, pressure range of 778 to 2600 psi.
Event	21	Bump Plug	Bump Plug	11/25/2015	14:08:27	COM5				Bumped plug @ 132.5 bbls gone. Pressure went from 2250 to 3250.
Event	22	Check Floats	Check Floats	11/25/2015	14:09:27	USER	2608.00	7.73	0.00	Floats held. Got 1.5 bbls back.
Event	23	Other	Other	11/25/2015	14:14:33	COM5				Put 1000 psi on drill string.
Event	24	Pressure Up Well	Pressure Up Well	11/25/2015	14:37:25	COM5	2154.00	7.73	0.00	Pressured up to 2200 psi for 10 minute backside test. Had good test.
Event	25	Other	Other	11/25/2015	14:54:56	COM5				Put 1000 psi on drill string.
Event	26	Clean Hole	Clean Hole	11/25/2015	14:58:07	COM5				Cleaned hole with 250 bbls of fresh water. Got 60 bbls of Spacer to surface and 19 bbls of cement to surface.

Event	27	End Job	End Job	11/25/2015	15:43:22	COM5	
Event	28	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	11/25/2015	16:00:00	USER	Discussed job performance, safety and hazards.
Event	29	Rig-Down Equipment	Rig-Down Equipment	11/25/2015	16:10:00	USER	
Event	30	Rig-Down Completed	Rig-Down Completed	11/25/2015	17:00:00	USER	
Event	31	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	11/25/2015	17:10:00	USER	Discussed route, safety and hazards.
Event	32	Depart Location	Depart Location	11/25/2015	17:15:00	USER	
Event	33	Other	Other	11/25/2015	17:20:00	USER	Returned 100# of Sugar to bulk plant.