

## Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 345242		Ship To #: 3919166		Quote #:		Sales Order #: 0906360079	
Customer: NOBLE ENERGY INC-EBUS				Customer Rep: Jim			
Well Name: GUTTERSEN			Well #: D34-779			API/UWI #: 05-123-48551-00	
Field: WATTENBERG		City (SAP): KEENESBURG		County/Parish: WELD			State: COLORADO
Legal Description: SE SW-22-3N-64W-1015FSL-1440FWL							
Contractor: H & P DRLG				Rig/Platform Name/Num: H & P 321			
Job BOM: 7523 7523							
Well Type: HORIZONTAL OIL							
Sales Person: HALAMERICA\HB31357				Srv Supervisor: James Bunnell			

### Job

Formation Name				
Formation Depth (MD)	Top		Bottom	
Form Type			BHST	
Job depth MD	17537ft		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	1955	0	1955
Casing		5.5	4.892	17			0	17537	0	6917
Open Hole Section			8.5				1955	17551	1955	6917

### Tools and Accessories

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	5.5			17536	Top Plug	5.5		HES
Float Shoe	5.5				Bottom Plug	5.5		HES
Float Collar	5.5			17489	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 ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
1	Tuned Prime Spacer	SBM FDP-C1337-18 CEMENT SPACER SYS	20	bbl	11.5	3.87	24.42		

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
---------	------------	------------	-----	---------	------------------------	----------------	---------------	--------------	---------------------

## Cementing Job Summary

2	ElastiCem	ELASTICEM (TM) SYSTEM	140	sack	13.2	1.65	8.4	6	1176
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	504	sack	13.2	1.67	8.05	8	4057
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	1173	sack	13.2	2.04	9.79	8	11483
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	MMCR Displacement	MMCR Displacement	20	bbl	8.34				
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
6	Displacement	Displacement	385	bbl	8.33				
Cement Left In Pipe		Amount	47 ft		Reason			Shoe Joint	
Mix Water:		pH 7	Mix Water Chloride: 300 ppm			Mix Water Temperature:		70 °F °C	
Cement Temperature:		°F °C	Plug Displaced by: 8.33 lb/gal			Disp. Temperature:		70 °F °C	
Plug Bumped?		Yes	Bump Pressure: 2800 psi MPa			Floats Held?		Yes	
Cement Returns:		0 bbl	Returns Density: lb/gal kg/m3			Returns Temperature:		°F °C	
Comment Halliburton pumped 120bbbls tuned prime spacer followed by 41bbbls cap cement, 150bbbls lead, 426bbbls tail cement. Displaced with 20bbbls MMCR water followed by 385bbbls fresh water. Bumped plug 500psi over final circulating psi held for five minutes checked floats 4.5bbbls back floats held.									

## 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	3/13/2020	02:00:00	USER	CREW CALLED OUT AT 0200, REQUESTED ON LOCATION 0900. CREW PICKED UP CEMENT, CHEMICALS, AND PLUG CONTAINER FROM FT. LUPTON, CO. PUMP 11189145.
Event	2	Depart from Service Center or Other Site	Depart from Service Center or Other Site	3/13/2020	03:00:00	USER	CREW DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW.
Event	3	Arrive at Location from Service Center	Arrive at Location from Service Center	3/13/2020	06:30:00	USER	With all equipment and materials.
Event	4	Other	Other	3/13/2020	07:00:00	USER	SURFACE CASING- 9.625" 36 LB/FT @ 1955', 5.5" CASING: 17 LB/FT TOTAL 17536', 8.5" HOLE 1955-17551, 47' SHOE TRAC, TVD- 6917'. Water tested good PH 7 Chlorides less than 400
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	3/13/2020	14:00:00	USER	HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH LOCATION, RIG UP, AND WEATHER.
Event	6	Rig-Up Completed	Rig-Up Completed	3/13/2020	15:30:00	USER	CREW STAGED EQUIPMENT AND RIGGED UP BULK, IRON AND WATER HOSES TO PERFORM JOB.
Event	7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	3/13/2020	16:00:00	USER	SAFETY MEETING WITH HALLIBURTON, AND RIG PERSONNEL. CREW COMMUNICATED POTENTIAL SAFETY HAZARDS, AND JOB DETAILS
Event	8	Start Job	Start Job	3/13/2020	16:45:21	COM4	Start recording data.
Event	9	Test Lines	Test Lines	3/13/2020	16:48:55	COM4	Tested to 4300psi
Event	10	Pump Spacer 1	Pump Spacer 1	3/13/2020	16:58:32	COM4	120bbls tuned prime spacer 11.5ppg 3.87yd 24.42gl/sk verified with pressurized scales. 7bbls return to surface.
Event	11	Check Weight	Check Weight	3/13/2020	16:58:57	COM4	
Event	12	Pump Cap Cement	Pump Cap Cement	3/13/2020	17:25:44	COM4	140sks 41bbls 13.2ppg 1.65yd 8.4gl/sk verified with pressurized scales. TOC 2415'
Event	13	Check Weight	Check Weight	3/13/2020	17:28:00	COM4	
Event	14	Pump Lead Cement	Pump Lead Cement	3/13/2020	17:33:05	COM4	504sks 150bbls 13.2ppg 1.67yd 8.05gl/sk verified with pressurized scales. TOL 3419'
Event	15	Check Weight	Check Weight	3/13/2020	17:36:33	COM4	

Event	16	Pump Tail Cement	Pump Tail Cement	3/13/2020	17:53:51	COM4	1173sks 426bbls 13.2ppg 2.04yd 9.79gl/sk verified with pressurized scales. TOT 7095'
Event	17	Check Weight	Check Weight	3/13/2020	18:34:41	COM4	
Event	18	Shutdown	Shutdown	3/13/2020	18:49:18	COM4	Drop bottom plug wash pumps and lines.
Event	19	Pump Displacement	Pump Displacement	3/13/2020	19:01:38	COM4	405bbls fresh water MMCR in first 20 bbls.
Event	20	Shutdown	Shutdown	3/13/2020	19:30:32	COM4	At 200 away to replace packer cup on CRT
Event	21	Bump Plug	Bump Plug	3/13/2020	20:12:30	USER	Bumped plug 500psi over final circulating psi held for 5 min checked floats 4.5 bbls back floats held. 2800psi
Event	22	End Job	End Job	3/13/2020	20:19:23	COM4	Stop recording data.
Event	23	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	3/13/2020	20:25:00	USER	DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES.
Event	24	Rig-Down Completed	Rig-Down Completed	3/13/2020	21:59:00	USER	ALL HALLIBURTON ITEMS WERE STOWED FOR TRAVEL, AND LOCATION WAS CLEAN.
Event	25	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	3/13/2020	22:00:00	USER	CREW DISCUSSED ROUTES HAZARDS AND COMMUNICATION WITH CREW.
Event	26	Other	Other	3/13/2020	22:30:00	USER	Thank you from Halliburton and crew.

## 3.0 Attachments

### 3.1 Job Chart

