

Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 345242	Ship To #: 3919129	Quote #:	Sales Order #: 0905952677
Customer: NOBLE ENERGY INC-EBUS		Customer Rep: JIM TURNER	
Well Name: GUTTERSEN		Well #: D25-753	API/UWI #: 05-123-48628-00
Field: WATTENBERG	City (SAP): KEENESBURG	County/Parish: WELD	State: COLORADO
Legal Description: SE NW-25-3N-64W-1427FNL-1982FWL			
Contractor: H & P DRLG		Rig/Platform Name/Num: H & P 321	
Job BOM: 7523 7523			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA\HB31357		Srvc Supervisor: Nikolaus Kornafel	
Job			

Formation Name			
Formation Depth (MD)	Top		Bottom
Form Type			BHST 230 degF
Job depth MD	17739ft		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	0	9.625	8.921	36			0	1918	0	0
Casing	0	5.5	4.892	17			0	17739	0	0
Open Hole Section			8.5				1918	17758	0	0

Tools and Accessories									
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make
Guide Shoe	5.5	1		17739		Top Plug	5.5	1	HES
Float Shoe	5.5					Bottom Plug	5.5	2	HES
Float Collar	5.5	1		17693					
Insert Float	5.5					Plug Container	5.5		HES
Stage Tool	5.5					Centralizers	5.5	194	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	SPACER	SBM FDP-C1337-18 CEMENT SPACER SYS	120	bbl	11.5	3.75	23.2	6	4,168
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

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2	CAP CEMENT	ELASTICEM (TM) SYSTEM	140	sack	13.2	1.68	8.03	8	1,124
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	LEAD CEMENT	ELASTICEM (TM) SYSTEM	479	sack	13.2	1.67	8.04	8	3,851
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	TAIL CEMENT	NeoCem TM	1216	sack	13.2	2.04	9.79	8	11,904
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	20	bbbl	8.33			10	
0.50 gal/bbbl		MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)							
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	390	bbbl	8.33			8	
Cement Left In Pipe		Amount	46 ft			Reason			Shoe Joint
Mix Water:		pH 7	Mix Water Chloride: 0 ppm			Mix Water Temperature: 67 °F			
Cement Temperature:		N/A	Plug Displaced by: 8.33 lb/gal			Disp. Temperature: 67 °F			
Plug Bumped?		Yes	Bump Pressure: 1,960 psi			Floats Held? Yes			
Cement Returns:		0 bbl	Returns Density: N/A			Returns Temperature: N/A			
Comment : Pumped 120 barrels of 11.5 LB/GAL Tuned Spacer with 70 gal dual spacer, 70 gal musol, 20 gal D-Air, Pumped 140 SKS/42BBLS 13.2 LB/GAL ElastiCem, Pumped 479 SKS/142BBLS 13.2 LB/GAL ElastiCem with Super CBL at 8 BBL/MIN 480 PSI, Pumped 1216 SKS/442 BBLS 13.2 LB/GAL NeoCem. Dropped the top plug and displaced with 410 bbbls of fresh water at 9 bbbls/min. bumped the plug at 1960 psi and brought pressure to 2,450 psi for a 5 min casing test. Bled off pressure to check floats and floats held. 4.5 bbbl back.									

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	9/12/2019	18:00:00	USER	CREW CALLED OUT AT 18:00, REQUESTED ON LOCATION 00:00. CREW PICKED UP CEMENT, CHEMICALS, AND PLUG CONTAINER FROM FT. LUPTON, CO. BULK 660 10866493, BULK 660 10867521, AND PUMP 11826999.
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	9/12/2019	21:45:00	USER	CREW DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW.
Event	3	Crew Leave Yard	Crew Leave Yard	9/12/2019	22:00:00	USER	STARTED JOURNEY MANAGEMENT.
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	9/12/2019	23:00:00	USER	END JOURNEY MANAGEMENT. MEET WITH CO. MAN TO DISCUSS JOB; SURFACE CASING- 9.625" 36 LB/FT @ 1,918, 5.5" CASING: 17 LB/FT TOTAL 17,739', 8.5 OH HOLE 17,758' SHOE TRAC- 46', TVD- 6,770'. PUMP FRESH WATER DISPLACEMENT 410 BBLs. CASING LANDED @ 04:45 09/13/2019. RIG CIRCULATED BOTTOMS UP.

Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	9/12/2019	23:15:00	USER	HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH LOCATION, RIG UP, AND WEATHER.
Event	6	Rig-Up Equipment	Rig-Up Equipment	9/12/2019	23:30:00	USER	CREW STAGED EQUIPMENT AND RIGGED UP BULK, IRON AND WATER HOSES TO PERFORM JOB. AFTER RIGGING UP IT WAS DISCOVERED UPON PRIME UP THAT NEITHER THE RECIRC OR DOWNHOLE DENSOMETER WAS READING DENSITY. CALLED FOR A BACKUP PUMP WHILE TRYING TO TROUBLE SHOOT THE ISSUE. BACK UP PUMP ARRIVED AT 07:15 AND WE STARTED TO RIG IT IN TO PUMP THE JOB.
Event	7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	9/13/2019	07:45:00	USER	SAFETY MEETING WITH HALLIBURTON, AND RIG PERSONNEL. CREW COMMUNICATED POTENTIAL SAFETY HAZARDS, AND JOB DETAILS.
Event	8	Start Job	Start Job	9/13/2019	08:14:07	COM11	BEGIN RECORDING JOB DATA.
Event	9	Prime Pumps	Prime Pumps	9/13/2019	08:14:43	COM11	PRIME PUMPS
Event	10	Drop Bottom Plug	Drop Bottom Plug	9/13/2019	08:24:46	COM11	BOTTOM PLUG DROPPED, WITNESSED BY COMPANY MAN
Event	11	Pump Spacer 1	Pump Spacer 1	9/13/2019	08:24:57	COM11	PUMP 120 BBLS OF SPACER @ 11.5 LB/GAL, 3.75 FT3/SK, 23.2 GAL/SK 10

GALLONS D-AIR. DENSITY VERIFIED BY PRESSURIZED MUD SCALES. PUMP RATE 6 BBL/MIN @ 190 PSI.

Event	12	Drop Bottom Plug	Drop Bottom Plug	9/13/2019	08:53:29	COM11	BOTTOM PLUG DROPPED, WITNESSED BY COMPANY
Event	13	Check Weight	Check Weight	9/13/2019	08:57:06	COM11	DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	14	Pump Cement	Pump Cement	9/13/2019	08:59:10	COM11	PUMPED 140 SKS OF ELASTICEM LEAD CEMENT @ 13.2 LB/GAL, 1.68 FT3/SK, 8.03 GAL/SK. 42 BBL, TOL @ 2,393. DENSITY VERIFIED BY PRESSURIZED MUD SCALES. PUMP RATE 8 BBL/MIN @ 497 PSI.
Event	15	Pump Lead Cement	Pump Lead Cement	9/13/2019	09:04:33	COM11	PUMPED 479 SKS OF ELASTICEM LEAD CEMENT @ 13.2 LB/GAL, 1.67 FT3/SK, 8.04 GAL/SK. 142 BBL, TOL @ 3,419. DENSITY VERIFIED BY PRESSURIZED MUD SCALES. PUMP RATE 8 BBL/MIN @ 680 PSI.
Event	16	Check Weight	Check Weight	9/13/2019	09:06:25	COM11	DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	17	Pump Tail Cement	Pump Tail Cement	9/13/2019	09:23:57	COM11	PUMPED 1,216 SKS OF ECONOCEM TAIL CEMENT @ 13.2 LB/GAL, 2.04 FT3/SK, 9.79 GAL/SK, BBL. TOT CALCULATED @ 6,911. DENSITY VERIFIED BY PRESSURIZED MUD SCALES. PUMP RATE 8 BBL/MIN @ 550 PSI.
Event	18	Check Weight	Check Weight	9/13/2019	09:24:52	COM11	DENSITY VERIFIED BY PRESSURIZED MUD SCALES.

Event	19	Check Weight	Check Weight	9/13/2019	09:49:23	COM11	DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	20	Shutdown	Shutdown	9/13/2019	10:20:22	COM11	SHUTDOWN TO WASH PUMPS AND LINES.
Event	21	Drop Top Plug	Drop Top Plug	9/13/2019	10:33:37	COM11	TOP PLUG DROPPED, WITNESSED BY COMPANY MAN.
Event	22	Pump Displacement	Pump Displacement	9/13/2019	10:33:43	COM11	BEGIN CALCULATED DISPLACEMENT OF 410 BBLS WITH FRESH WATER. 10 GAL OF MMCR IN THE FIRST 20 BBLS AND 20 GAL OF BIOCIDES THROUGHOUT THE REST.
Event	23	Displ Reached Cement	Displ Reached Cement	9/13/2019	10:40:55	COM11	CAUGHT CEMENT @ 40 BBLS INTO DISPLACEMENT. 6 BBLS OF CEMENT RETURNED TO SURFACE.
Event	24	Bump Plug	Bump Plug	9/13/2019	11:37:34	COM11	PLUG BUMPED AT CALCULATED DISPLACEMENT. 1,960 PSI PRESSURED UP TO 2,450 PSI AND HELD FOR A 5 MINUTE TEST.
Event	25	Other	Other	9/13/2019	11:40:11	COM11	RELEASED PRESSURE, FLOATS HELD, 4.5 BBLS BACK.
Event	26	End Job	End Job	9/13/2019	11:42:41	COM11	STOP RECORDING JOB DATA.
Event	27	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	9/13/2019	11:45:00	USER	DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES.

Event	28	Rig-Down Completed	Rig-Down Completed	9/13/2019	13:00:00	USER	ALL HALLIBURTON ITEMS WERE STOWED FOR TRAVEL, AND LOCATION WAS CLEAN.
Event	29	Safety Meeting - Departing Location	Safety Meeting - Departing Location	9/13/2019	13:30:00	USER	CREW DISCUSSED ROUTES HAZARDS AND COMMUNICATION WITH CREW.
Event	30	Crew Leave Location	Crew Leave Location	9/13/2019	13:35:00	USER	THANK YOU FOR USING HALLIBURTON – NICK KORNAFEL AND CREW.

3.0 Attachments

3.1 Job Chart

