

The Road to Excellence Starts with Safety

Sold To #: 345242	Ship To #: 3912353	Quote #:	Sales Order #: 0905691620
Customer: NOBLE ENERGY INC-EBUS		Customer Rep: Charles Collver	
Well Name: WELLS RANCH STATE		Well #: AA36-643	API/UWI #: 05-123-48165-00
Field: WATTENBERG	City (SAP): GILL	County/Parish: WELD	State: COLORADO
Legal Description: NW SW-32-6N-62W-2084FSL-817FWL			
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	16893ft		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	1937	0	0
Casing	0	5.5	4.778	20			0	16893	0	6573
Open Hole Section			8.5				1937	3506	1937	3506
Open Hole Section			8.5				3506	16893	3506	6573

Tools and Accessories

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	5.5	1		16893	Top Plug	5.5	1	HES
Float Shoe	5.5				Bottom Plug	5.5	1	HES
Float Collar	5.5	1		16847	SSR plug set	5.5		
Insert Float	5.5				Plug Container	5.5		
Stage Tool	5.5				Centralizers	5.5	187	HES

Fluid Data

Stage/Plug #: 1

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
1	Tuned Spacer	Tuned Spacer III	120	bbl	11.5	3.79	23.5	5	4,177

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
2	Cap Cement	ELASTICEM (TM) SYSTEM	140	sack	13.2	1.68	8.04	8	1,125	
3	Lead Cement	ELASTICEM (TM) SYSTEM	452	sack	13.2	1.68	8.06	8	3,643	
4	Tail Cement	NeoCem TM	1134	sack	13.2	2.04	9.75	8	11,056	
5	Displacement	Displacement	391	bbl	8.33					
Cement Left In Pipe		Amount	46 ft		Reason			Shoe Joint		
Mix Water:		pH 7	Mix Water Chloride:		0 ppm		Mix Water Temperature:			60 °F
Cement Temperature:		N/A	Plug Displaced by:		8.33 lb/gal		Disp. Temperature:			60 °F
Plug Bumped?		Yes	Bump Pressure:		2400 psi		Floats Held?			Yes
Cement Returns:		0 bbl	Returns Density:		N/A		Returns Temperature:			N/A
<p>Comment AFTER THE RIG FINISHED CIRCULATING WE DROPPED A BOTTOM PLUG AND THEN PUMPED 120 BBLs OF SPACER AND THEN SHUTDOWN TO DROP ANOTHER BOTTOM PLUG THEN FOLLOWED THAT WITH 42 BBLs OF CAP CEMENT FOLLOWED BY 136 BBLs OF LEAD CEMENT FOLLOWED BY 412 BBLs OF TAIL CEMENT. DROPPED THE TOP PLUG AND THEN DISPLACED WITH 391 BBLs OF FRESH WATER WITH MMCR IN THE FIRST 20 BBLs AND 15 GAL OF BIOCIDES THROUGHOUT THE REST OF DISPLACEMENT. BUMPED PLUG, RELEASED PRESSURE BACK AND GOT 4.5 BBLs BACK. FLOATS HELD.</p>										

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density <i>(ppg)</i>	Comb Pump Rate <i>(bbl/min)</i>	Pump Stg Tot <i>(bbl)</i>	DS Pump Press <i>(psi)</i>	Comments
Event	1	Call Out	Call Out	5/14/2019	05:00:00	USER					CREW CALLED OUT AT 05:00, REQUESTED ON LOCATION 11:00. CREW PICKED UP CEMENT, CHEMICALS, AND PLUG CONTAINER FROM FT. LUPTON, CO.
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	5/14/2019	10:20:00	USER					CREW DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW.
Event	3	Crew Leave Yard	Crew Leave Yard	5/14/2019	10:45:00	USER					STARTED JOURNEY MANAGEMENT.
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	5/14/2019	12:10:00	USER					END JOURNEY MANAGEMENT. MEET WITH CO. MAN TO DISCUSS JOB; SURFACE CASING- 9.625" 36 LB/FT @ 1,937, 5.5" CASING: 17 LB/FT TOTAL 16892', 8.5" HOLE, SHOE TRAC- 46.4', TVD- 6,576'. PUMP FRESH WATER DISPLACEMENT 391 BBLS. CASING LANDED @ 14:00 05/14/2019. RIG CIRCULATED 2 BOTTOMS UP.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	5/14/2019	12:30:00	USER					HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH

											LOCATION, RIG UP, AND WEATHER.
Event	6	Rig-Up Equipment	Rig-Up Equipment	5/14/2019	12:45:00	USER					CREW STAGED EQUIPMENT AND RIGGED UP BULK, IRON AND WATER HOSES TO PERFORM JOB.
Event	7	Rig-Up Completed	Rig-Up Completed	5/14/2019	14:15:00	USER					
Event	8	Pre-Job Safety Meeting	Pre-Job Safety Meeting	5/14/2019	15:45:00	USER	7.96	0.00	9.30	-2.00	SAFETY MEETING WITH HALLIBURTON, AND RIG PERSONNEL. CREW COMMUNICATED POTENTIAL SAFETY HAZARDS, AND JOB DETAILS.
Event	9	Start Job	Start Job	5/14/2019	16:11:51	COM4	7.97	0.00	0.00	-2.00	BEGIN RECORDING JOB DATA.
Event	10	Drop Bottom Plug	Drop Bottom Plug	5/14/2019	16:20:00	USER	7.84	0.00	0.00	3.00	PLUG LEFT LANDING JOINT. VERIFIED BY COMPANY MAN.
Event	11	Test Lines	Test Lines	5/14/2019	16:23:02	COM4	8.36	0.00	3.00	134.00	PRESSURE TESTED IRON TO 4500 psi. KICKOUTS SET @ 500 PSI, KICKED OUT @ 500 PSI, 5TH GEAR STALL OUT @ 1900 PSI. PRESSURE TESTED IBOP TO 2500 PSI.
Event	12	Pump Spacer 1	Pump Spacer 1	5/14/2019	16:31:57	COM4	8.42	0.00	4.40	22.00	PUMP 120 BBLS OF TUNED SPACER @ 11.5 LB/GAL, ADDED 70 GAL MUSOL A, 70 GAL DUAL SPACER B, 20 GAL D-AIR, DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	13	Check Weight	Check Weight	5/14/2019	16:37:23	COM4	11.39	3.90	13.40	288.00	DENSITY VERIFIED BY PRESSURIZED MUD SCALES.

Event	14	Drop Bottom Plug	Drop Bottom Plug	5/14/2019	16:56:39	COM4	11.54	7.90	118.40	342.00	PLUG LEFT LANDING JOINT. VERIFIED BY COMPANY MAN.
Event	15	Pump Lead Cement	Pump Lead Cement	5/14/2019	16:59:14	COM4	12.40	0.00	0.00	16.00	PUMP 140 SKS OF ELASTICEM @ 13.2 LB/GAL, 1.68 YIELD, 8.04 GAL/SK, 41.9 BBLS, CALCULATED TOC @ 2480', DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	16	Check Weight	Check Weight	5/14/2019	17:02:17	COM4	13.52	4.60	8.00	232.00	DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	17	Pump Cement	Pump Cement	5/14/2019	17:08:48	COM4	13.76	5.00	0.00	303.00	PUMP 452 SKS OF ELASTICEM @ 13.2 LB/GAL, 1.68 YIELD, 8.06 GAL/SK, 135 BBLS, CALCULATED TOL @ 3506', DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	18	Check Weight	Check Weight	5/14/2019	17:12:07	COM4	13.30	3.60	9.30	187.00	DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	19	Check Weight	Check Weight	5/14/2019	17:25:29	COM4	13.09	8.00	91.50	526.00	DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	20	Pump Tail Cement	Pump Tail Cement	5/14/2019	17:32:31	COM4	12.99	8.00	0.10	521.00	PUMP 1134 SKS OF NEOCEM @ 13.2 LB/GAL, 2.04 YIELD, 9.75 GAL/SK, 412 BBLS, CALCULATED TOT @ 6821', DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	21	Check Weight	Check Weight	5/14/2019	17:34:04	COM4	13.17	8.00	12.40	655.00	DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	22	Check Weight	Check Weight	5/14/2019	17:52:11	COM4	13.19	8.00	156.90	679.00	DENSITY VERIFIED BY PRESSURIZED MUD SCALES.

Event	23	Check Weight	Check Weight	5/14/2019	17:54:43	COM4	13.15	8.00	177.10	683.00	DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	24	Check Weight	Check Weight	5/14/2019	18:08:06	COM4	13.23	8.00	283.70	963.00	DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	25	Shutdown	Shutdown	5/14/2019	18:31:04	COM4	12.98	0.00	428.70	114.00	SHUTDOWN TO WASH PUMPS AND LINES
Event	26	Drop Top Plug	Drop Top Plug	5/14/2019	18:39:42	COM4	4.48	0.00	439.70	7.00	TOP PLUG DROPPED, WITNESSED BY COMPANY MAN
Event	27	Pump Displacement	Pump Displacement	5/14/2019	18:39:46	COM4	5.49	0.00	439.70	5.00	BEGIN CALCULATED DISPLACEMENT OF 391 BBLs WITH FRESH WATER MMCR IN THE FIRST 20 BBLs AND BIOCIDES FOLLOWED THROUGH OUT. 385 BBLs INTO DISPLACEMENT SPACER BACK TO SURFACE.
Event	28	Bump Plug	Bump Plug	5/14/2019	19:38:21	COM4	8.30	0.00	398.50	2379.00	PLUG BUMPED AT CALCULATED DISPLACEMENT.
Event	29	Other	Other	5/14/2019	19:41:16	COM4	8.23	0.00	398.60	13.00	RELEASED PRESSURE BACK TO THE TRUCK, FLOATS HELD, 4.5 BBL BACK.
Event	30	End Job	End Job	5/14/2019	19:43:21	COM4	8.24	0.00	0.00	-3.00	END JOB DATA RECORDING.
Event	31	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	5/14/2019	20:00:00	USER					DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES.
Event	32	Rig-Down Equipment	Rig-Down Equipment	5/14/2019	20:30:00	USER					ALL HALLIBURTON ITEMS WERE STOWED FOR TRAVEL, AND LOCATION WAS CLEAN.

Event	33	Rig-Down Completed	Safety Meeting - Departing Location	5/14/2019	21:30:00	USER	CREW DISCUSSED ROUTES HAZARDS AND COMMUNICATION WITH CREW.
Event	34	Crew Leave Location	Crew Leave Location	5/14/2019	22:30:00	USER	THANK YOU FOR USING HALLIBURTON – NICK KORNAFEL AND CREW.

3.0 Attachments

3.1 Job Chart

