

*The Road to Excellence Starts with Safety*

<b>Sold To #:</b> 345242	<b>Ship To #:</b> 3944161	<b>Quote #:</b>	<b>Sales Order #:</b> 0905722667
<b>Customer:</b> NOBLE ENERGY INC-EBUS		<b>Customer Rep:</b> Jim Turner	
<b>Well Name:</b> STARS FEDERAL		<b>Well #:</b> LD17-740	<b>API/UWI #:</b> 05-123-49607-00
<b>Field:</b> WATTENBERG	<b>City (SAP):</b> RAYMER	<b>County/Parish:</b> WELD	<b>State:</b> COLORADO
<b>Legal Description:</b> SW SE-5-9N-58W-380FSL-1470FEL			
<b>Contractor:</b> H & P DRLG		<b>Rig/Platform Name/Num:</b> H & P 321	
<b>Job BOM:</b> 7523 7523			
<b>Well Type:</b> HORIZONTAL OIL			
<b>Sales Person:</b> HALAMERICA/HB31357		<b>Srvc Supervisor:</b> Prince Perez	

**Job**

<b>Formation Depth (MD)</b>	<b>Top</b>	0'	<b>Bottom</b>	16,556'
<b>Form Type</b>			<b>BHST</b>	230 degF
<b>Job depth MD</b>	16,536'		<b>Job Depth TVD</b>	5,870'
<b>Water Depth</b>			<b>Wk Ht Above Floor</b>	5'

**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	1958	0	1958
Casing	0	5.5	4.778	20			0	16536	0	5870
Open Hole Section			8.5				1958	16556	0	5870
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**Tools and Accessories**

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	5.5	1		16,536	Top Plug	5.5	1	HES
Float Shoe	5.5				Bottom Plug	5.5	2	HES
Float Collar	5.5	1		16,489	SSR plug set	5.5		
Insert Float	5.5				Plug Container	5.5	0	HES
Stage Tool	5.5				Centralizers	5.5	184	HES

**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	Spacer	Tuned Spacer III	120	bbl	11.5	3.79	23.5	5	4,178

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
2	Cap	ELASTICEM (TM) SYSTEM	140	sack	13.2	1.676	8.07	8	1,130
3	Lead	ELASTICEM (TM) SYSTEM	352	sack	13.2	1.677	8.08	8	8.08
4	Tail	NeoCem TM	1,179	sack	13.2	2.04	9.75	8	11,495
5	Displacement	Displacement	382.6	bbl	8.33				

  

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Cement Left In Pipe	Amount	Reason	Shoe Joint
Mix Water: pH 7	46 ft	Mix Water Chloride: <300 ppm	63 °F
Cement Temperature: ## °F		Plug Displaced by: 8.33 lb/gal	63 °F
Plug Bumped? Yes		Bump Pressure: 2,090 psi	Floats Held? Yes
Cement Returns: 0 bbl		Returns Density: ## lb/gal	Returns Temperature: ## °F

  

**Comment**

Pumped 120 bbls of Tuned Spacer III with 75 gallons of Dual B, 75 gallons of Musol A, and 20 gallons of Dair.

Pumped 42 bbls of the Elasticem Cap.

Pumped 105 bbls of Elasticem with SCBL.

Pumped 428 bbls of Neocem.

Pumped 382.6 bbls of fresh water displacement with MMCR in the first 20 bbls and Aldacide throughout.

5 bbls back on the floats.

1 bbl back on spacer.

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	6/3/2019	06:00:00	USER	CREW CALLED OUT AT 06:00, REQUESTED ON LOCATION 10:00. CREW PICKED UP CEMENT, CHEMICALS, AND PLUG CONTAINER FROM FT. LUPTON, CO. BULK 660, 11566182, 10867521, AND PUMP 11189145.
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	6/3/2019	07:20:00	USER	CREW DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW.
Event	3	Crew Leave Shop	Crew Leave Shop	6/3/2019	07:30:00	USER	STARTED JOURNEY MANAGEMENT.
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	6/3/2019	08:30:00	USER	END JOURNEY MANAGEMENT. MEET WITH CO. MAN TO DISCUSS JOB; SURFACE CASING- 9/58" 36 LB/FT @ 1,958', 5.5" CASING: 17 LB/FT TOTAL 16,535.6', 8 1/2" HOLE, TD 16,556', 46.5' SHOE TRAC, TVD-5,870'. PUMP FRESH WATER DISPLACEMENT. CASING LANDED @ 18:30 6/3/2019.

Event	5	Safety Meeting - Assessment of Location	Safety Meeting - Assessment of Location	6/3/2019	08:40:00	USER	HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH LOCATION, RIG UP AND WEATHER.
Event	6	Rig-Up Equipment	Rig-Up Equipment	6/3/2019	08:50:00	USER	RIG UP BULK AND MIXING EQUIPMENT.
Event	7	Rig-Up Completed	Rig-Up Completed	6/3/2019	19:10:00	USER	
Event	8	Pre-Job Safety Meeting	Pre-Job Safety Meeting	6/3/2019	19:30:00	USER	MEETING WITH HALLIBURTON AND RIG PERSONNEL. COMMUNICATED POTENTIAL SAFETY HAZARDS AND JOB DETAILS.
Event	9	Start Job	Start Job	6/3/2019	20:06:21	COM4	BEGIN RECORDING JOB DATA.
Event	10	Test Lines	Test Lines	6/3/2019	20:14:48	COM4	PRESSURE TESTED IRON TO 4,700 PSI. KICKOUTS SET @ 500 PSI, KICKED OUT @ 1,080 PSI, 5TH GEAR STALL OUT @ 1,700 PSI. 4,700 PRESSURE TEST KICKED OUT @ 4,770 PSI
Event	11	Test Lines	Test Lines	6/3/2019	20:21:52	COM4	PRESSURE TESTED THE IBOP TO 2,500 PSI. KICKED OUT @ 2,200 PSI.

Event	12	Pump Spacer 1	Pump Spacer 1	6/3/2019	20:25:23	COM4	PUMP 120 BBLs OF TUNED SPACER III @ 11.5 LB/GAL, 3.79 CUFT/SK, 23.5 GALL/SK. 20 GALS D-AIR, 75 GALLONS OF DUAL B, 75 GALLONS OF MUSOL A. HOS CALCULATED @ 2,476.5'. 5 BBLs CALCULATED TO RETURN TO SURFACE. DENSITY VERIFIED BY PRESSURIZED MUD SCALES. PUMP RATE 5 BBLs/MIN @ 210 PSI.
Event	13	Pump Cap Cement	Pump Cap Cement	6/3/2019	21:02:58	COM4	PUMPED 140 SKS OF ELASTICEM @ 13.2 LB/GAL, 1.67 FT3/SK, 8.07 GAL/SK. 41.6 BBLs. HOC CALCULATED @ 1,020.6'. TOC CALCULATED @ 2,476.5'. DENSITY VERIFIED BY PRESSURIZED MUD SCALES. PUMP RATE 6 BBLs/MIN @ 500 PSI
Event	14	Pump Lead Cement	Pump Lead Cement	6/3/2019	21:11:43	COM4	PUMPED 352 SKS OF ELASTICEM W/SCBL @ 13.2 LB/GAL, 1.67 FT3/SK, 8.08 GAL/SK. 104.7 BBLs. HOL CALCULATED @ 2,565.9', TOL CALCULATED @ 3,497.1'. DENSITY VERIFIED BY PRESSURIZED MUD SCALES. PUMP RATE 8 BBLs/MIN @ 420 PSI
Event	15	Pump Tail Cement	Pump Tail Cement	6/3/2019	21:37:17	COM4	PUMP 1,179 SKS OF NEOCEM @ 13.2 LB/GAL, 2.04 FT3/SK, 9.75 GAL/SK, 428.4 BBLs. HOT CALCULATED @ 10,472.6', TOT CALCULATED @ 6,063'. DENSITY VERIFIED BY PRESSURIZED MUD SCALES. PUMP RATE 8 BBLs/MIN @ 850 PSI.
Event	16	Shutdown	Shutdown	6/3/2019	22:35:27	COM4	SHUTDOWN TO WASH LINES.
Event	17	Drop Top Plug	Drop Top Plug	6/3/2019	22:49:15	COM4	PLUG LEFT CONTAINER, VERIFIED BY CO. MAN.

Event	18	Pump Displacement	Pump Displacement	6/3/2019	22:49:18	COM4	BEGIN CALCULATED DISPLACEMENT OF 382.6 BBLS WITH FRESH WATER. MMCR IN THE FIRST 20 BBLS AND ALDACIDE THROUGHOUT. PUMP RATE 9 BPM @ 2,470 PSI. CAUGHT CEMENT @ 50 BBLS INTO DISPLACEMENT. SPACER TO SURFACE @ 382 BBLS INTO DISPLACEMENT. 1 BBLS OF TUNED SPACER TO SURFACE. SLOW RATE TO 6 BPM @ 360 BBLS INTO DISPLACEMENT.
Event	19	Bump Plug	Bump Plug	6/3/2019	23:37:02	COM4	PLUG BUMPED AT CALCULATED DISPLACEMENT. 2,016 PSI PRESSURED 500 PSI OVER BUMP. SHUTDOWN FOR 5 MINUTES.
Event	20	Check Floats	Check Floats	6/3/2019	23:44:22	USER	RELEASED PRESSURE, FLOATS HELD, 5 BBLS BACK.
Event	21	End Job	End Job	6/3/2019	23:47:19	COM4	STOP RECORDING JOB DATA.
Event	22	Post-Job Safety Meeting (Pre Rig-Down)	Post-Job Safety Meeting (Pre Rig-Down)	6/3/2019	23:50:00	USER	DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES.
Event	23	Rig-Down Equipment	Rig-Down Equipment	6/4/2019	00:00:00	USER	RIG DOWN BULK AND MIXING EQUIPMENT.
Event	24	Rig-Down Completed	Rig-Down Completed	6/4/2019	01:40:00	USER	
Event	25	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	6/4/2019	01:50:00	USER	CREW DISCUSSED ROUTES HAZARDS AND COMMUNICATION WITH CREW.
Event	26	Crew Leave Location	Crew Leave Location	6/4/2019	02:00:00	USER	THANK YOU FOR USING HALLIBURTON – PRINCE PEREZ AND CREW.

3.0 Attachments

3.1 Job Chart

