

*The Road to Excellence Starts with Safety*

Sold To #: 345242	Ship To #: 3919052	Quote #:	Sales Order #: 0905642643
Customer: NOBLE ENERGY INC-EBUS		Customer Rep: TOMMY	
Well Name: VOGLER STATE		Well #: D21-790	API/UWI #: 05-123-48561-00
Field: WATTENBERG	City (SAP): KEENESBURG	County/Parish: WELD	State: COLORADO
Legal Description: SE SE-21-3N-64W-865FSL-548FEL			
Contractor: H & P DRLG		Rig/Platform Name/Num: H & P 517	
Job BOM: 7523 7523			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA/HB70026		Srvc Supervisor: Lance Carpenter	

**Job**

<b>Formation Name</b>			
<b>Formation Depth (MD)</b>	<b>Top</b>		<b>Bottom</b>
<b>Form Type</b>			<b>BHST</b>
<b>Job depth MD</b>	17672ft		<b>Job Depth TVD</b> 6800
<b>Water Depth</b>			<b>Wk Ht Above Floor</b> 4
<b>Perforation Depth (MD)</b>	<b>From</b>		<b>To</b>

**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	1963	0	1963
Casing		5.5	4.892	20			0	17643	0	6800
Open Hole Section			8.5				1950	17660	0	6800

**Tools and Accessories**

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	5.5				Top Plug	5.5	1	
Float Shoe	5.5				Bottom Plug	5.5	2	
Float Collar	5.5			17595	SSR plug set	5.5		
Insert Float	5.5				Plug Container	5.5		
Stage Tool	5.5				Centralizers	5.5		

**Fluid Data**

<b>Stage/Plug #: 1</b>										
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
1	11.5 lb/gal Tuned Spacer III	Tuned Spacer III	80	bbl	11.5	3.8	23.5	4		
34.70 gal/bbl		<b>FRESH WATER</b>								
0.60 gal/bbl		<b>MUSOL(R) A, 5 GAL PAIL (100064220)</b>								

147.62 lbm/bbl	<b>BARITE, BULK (100003681)</b>
0.60 gal/bbl	<b>DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)</b>
2.50 lbm/bbl	<b>FE-2 (100001615)</b>

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	ElastiCem	ELASTICEM (TM) SYSTEM	140	sack	13.2	1.68	8.04	6	8.04
8.04 Gal		<b>FRESH WATER</b>							
0.95 %		<b>SCR-100 (100003749)</b>							

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	429	sack	13.2	1.68	8.06	6	8.06
0.45 %		<b>SCR-100 (100003749)</b>							
8.06 Gal		<b>FRESH WATER</b>							

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	449.8	bbl	13.2	2.04	9.75	6	9.75
9.75 Gal		<b>FRESH WATER</b>							
0.08 %		<b>SCR-100 (100003749)</b>							

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	390	bbl	8.33				

<b>Cement Left In Pipe</b>	<b>Amount</b>	ft 46	<b>Reason</b>	<b>Shoe Joint</b>	
Mix Water:	pH 7	Mix Water Chloride:	100 ppm	Mix Water Temperature:	65 F
Cement Temperature:		Plug Displaced by:	8.34 lb/gal	Disp. Temperature:	
Plug Bumped?	Yes	Bump Pressure:	1860psi	Floats Held?	Yes
Cement Returns:		Returns Density:	## lb/gal kg/m3	Returns Temperature:	## °F °C

**Comment**

JOB WENT WELL CEMENT WEIGHED AND SCALED THROUGHOUT JOB PUMPED FULL DISPALCEMENT 390BBLS WITH MMCR AND BIOCIDE THROUGHOUT CAUGHT CEMENT AT 22BBLS AWAY SLOWED RATE TO 3BPM AT 360BBLS AWAY FINAL CIRCULATING PRESSURE WAS 1860PSI BUMPED PLUG AND TOOK 500PSI OVER HELD FOR 5 MIN CASING TEST CHECKED FLOATS, FLOATS HELD AND GOT 4.5 BBLS BACK.

TOP OF TAIL 6663

TOP OF LEAD 3137

TOP OF CAP 2522

## 1.0 Real-Time Job Summary

### 1.1 Job Event Log

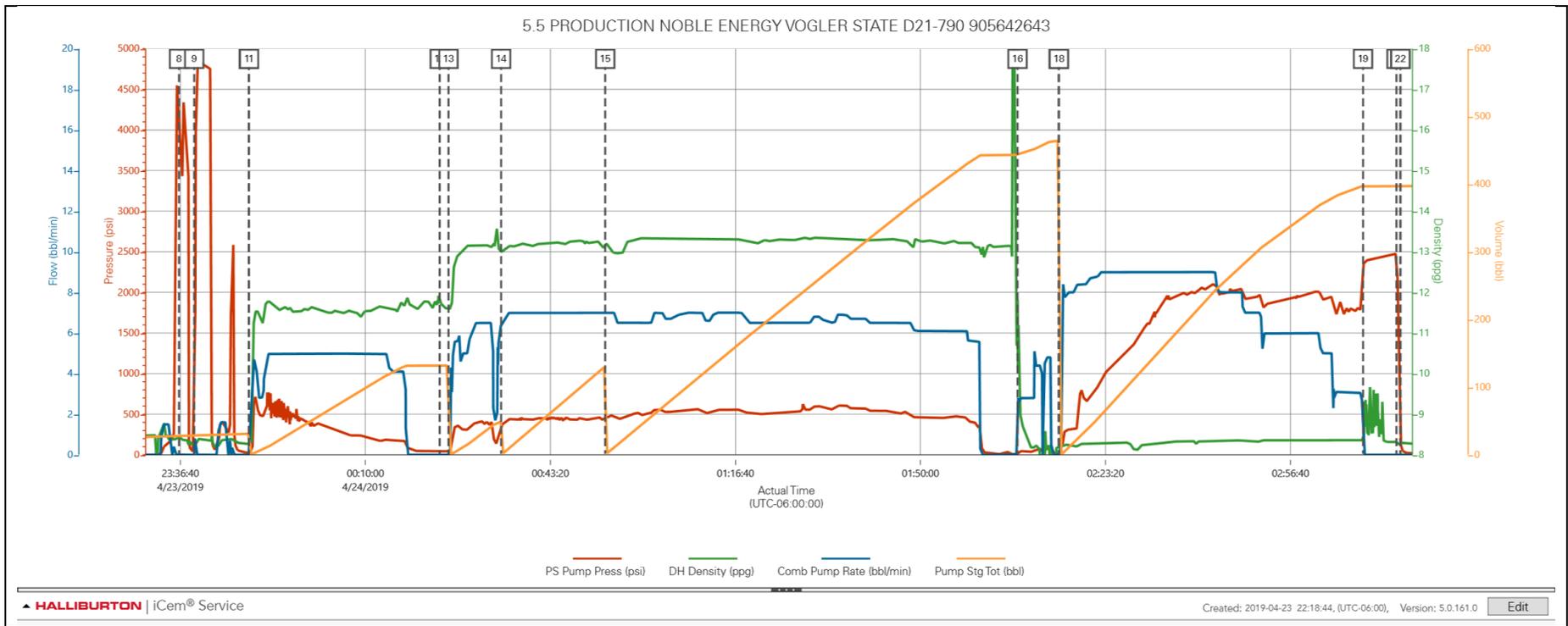
Type	Seq. No.	Activity	Graph Label	Date	Time	Source	PS Pump Press <i>(psi)</i>	DH Density <i>(ppg)</i>	Comb Pump Rate <i>(bbl/min)</i>	Pump Stg Tot <i>(bbl)</i>	Comments
Event	1	Drop Bottom Plug	Call Out	4/23/2019	08:00:00	USER					CREW WAS CALLED OUT FOR JOB
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	4/23/2019	12:30:00	USER					HAD PRE CONVOY SAFETY MEETING WITH CREW AND DISCUSSED TRAVEL PLANS AND SAFE FOLLOWING DISTANCE.
Event	3	Arrive At Loc	Arrive At Loc	4/23/2019	13:30:00	USER					ARRIVED ON LOCATION. RIG WAS STILL RUNNING CASING WITH 4000' TO GO.
Event	4	Safety Meeting - Pre Rig-Up	Safety Meeting - Pre Rig-Up	4/23/2019	18:00:00	USER					HAD SAFETY MEETING WITH HES CREW AND DISCUSSED USING A SPOTTER WHILE BACKING, TEAM LIFT, LINE OF FIRE AND GOOD COMMUNICATION.
Event	5	Casing on Bottom	Casing on Bottom	4/23/2019	22:00:00	USER					CREW HAD CASING ON BOTTOM AND HES STARTED MIXING UP RETARTED WATER IN BATCH MIXER.
Event	6	Safety Meeting	Safety Meeting	4/23/2019	23:00:00	USER	-7.00	8.48	0.00	25.90	HAD SAFETY MEETING WITH HES AND RIG CREW AND DISCUSSED SLIP, TRIPS AND FALLS, MUSTER AREA, CALLING OUT HAMMER SWINGS, ONE PERSON GIVING TUGGER OPERATOR HAND SIGNALS. FOOTING PLACEMENT AND S.W.A

Event	7	Start Job	Start Job	4/23/2019	23:24:31	COM8	-3.00	8.48	0.00	25.90	START JOB
Event	8	Test Lines	Test Lines	4/23/2019	23:36:26	COM8	4124.00	8.42	0.00	28.50	TESTED HES LINES TO 4500PSI
Event	9	Test Lines	Test Lines	4/23/2019	23:39:10	COM8	39.00	8.24	0.00	28.50	LINED UP TO RIGS VALVE AND TESTED TO 2500PSI
Event	10	Drop Bottom Plug	Drop Bottom Plug	4/23/2019	23:49:00	USER	25.00	8.30	0.00	31.10	DROP BOTTOM PLUG WITH COMPANY MAN ON RIG FLOOR.
Event	11	Pump Spacer 1	Pump Spacer 1	4/23/2019	23:49:03	COM8	25.00	8.28	0.00	31.10	PUMPED 120BBLS OF TUNED SPACER 11.5PPG 3.8 YIELD 23.5 GAL
Event	12	Drop Bottom Plug	Drop Bottom Plug	4/24/2019	00:23:24	USER	44.00	11.74	0.00	131.90	DROP BOTTOM PLUG WITH COMPANY MAN ON RIG FLOOR.
Event	13	Pump Cement	Pump Cement	4/24/2019	00:24:59	COM8	45.00	11.58	0.00	131.90	PUMPED 41BBLS OF ELASTICEM CAP 13.2PPG 1.68 YIELD 8.04 GAL
Event	14	Pump Lead Cement	Pump Lead Cement	4/24/2019	00:34:28	COM8	344.00	13.01	6.60	49.60	PUMPED 128BBLS OF ELASTICEM LEAD 13.2PPG 1.68 YIELD 8.06 GAL
Event	15	Pump Tail Cement	Pump Tail Cement	4/24/2019	00:53:13	COM8	437.00	13.22	7.00	130.70	PUMPED 449BBLS OF NEOCEM TAIL 13.2PPG 2.04 YIELD 9.75 GAL
Event	16	Clean Lines	Clean Lines	4/24/2019	02:07:30	COM8	8.00	11.76	1.30	443.30	RIG BLEW DOWN IRON BACK TO THE WASH UP TANK AND HES WASHED PUMPS AND LINES.
Event	17	Drop Top Plug	Drop Top Plug	4/24/2019	02:14:55	COM8	6.00	8.19	0.00	464.00	DROP TOP PLUG WITH COMPANY MAN ON RIG FLOOR.
Event	18	Pump Displacement	Pump Displacement	4/24/2019	02:14:58	COM8	6.00	8.20	0.00	464.00	PUMPED 390BBLS OF DISPLACEMENT WITH MMCR IN THE FIRST 20BBLS AND BIOCID

											THROUGHOUT CAUGHT AT CEMENT 22BBL AWAY. SLOWED RATE TO 3BPM AT 360BBL AWAY.
Event	19	Bump Plug	Bump Plug	4/24/2019	03:09:45	COM8	2333.00	8.38	0.00	397.20	BUMPED PLUG AT 3BPM FINAL CIRCULATING PRESSURE WAS 1860PSI BROUGHT 500 OVER AND HELD FOR 5 MIN CASING TEST.
Event	20	Check Floats	Check Floats	4/24/2019	03:15:46	USER	2456.00	8.31	0.00	397.20	CHECKED FLOATS, FLOATS HELD AND GOT 4.5 BBL BACK.
Event	21	Safety Meeting - Pre Rig-Down	Safety Meeting - Pre Rig-Down	4/24/2019	03:16:29	USER	182.00	8.32	0.00	397.20	HAD RIG DOWN SAFETY MEETING WITH CREW AND DISCUSSED SAFE RIG DOWN PROCEDURES INCLUDING TEAM CARRY, SLIP TRIPS AND FALLS. FOOTING PLACEMENT. LINE OF FIRE AND HAVING GOOD COMMUNICATION WHILE BRING IRON DOWN FROM RIG FLOOR.
Event	22	End Job	End Job	4/24/2019	03:16:29	USER	182.00	8.32	0.00	397.20	END JOB
Event	23	Call Out	Crew Leave Location	4/24/2019	05:00:00	USER					HAD PRE CONVOY SAFETY MEETING WITH CREW AND DISCUSSED SAFE ROUTE AND SAFE FOLLOWING DISTANCES WHILE DRIVING. CREW LEFT LOCATION.

## 2.0 Attachments

### 2.1 Case 2-Custom Results 2.png



2.2 Case 2-Custom Results.png

