



Bison Oil Well Cementing Tail & Lead

Date: 7/20/2018
 Invoice # 900327
 API# 05-123-46761
 Foreman: Corey Barras

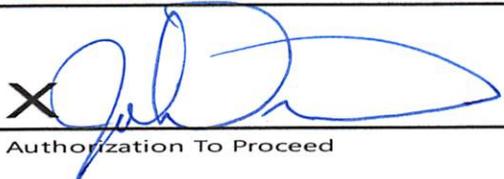
Customer: Noble Energy Inc.
 Well Name: Hurley H26-743

County: Weld Consultant: Matt Rosales
 State: Colorado Rig Name & Number: H&P 517
 Distance To Location: 23
 Units On Location: 4027/3103-4039/3214-4030/3215
 Sec: 8 Time Requested: 1300
 Twp: 5N Time Arrived On Location: 1230
 Range: 62W Time Left Location: _____

WELL DATA	Cement Data
Casing Size (in) : <u>9.625</u> Casing Weight (lb) : <u>36</u> Casing Depth (ft.) : <u>1,947</u> Total Depth (ft) : <u>1957</u> Open Hole Diameter (in) : <u>13.50</u> Conductor Length (ft) : <u>80</u> Conductor ID : <u>15.15</u> Shoe Joint Length (ft) : <u>44</u> Landing Joint (ft) : <u>6</u> Sacks of Tail Requested : <u>100</u> HOC Tail (ft): <u>0</u> <small>One or the other, cannot have quantity in both</small> Max Rate: <u>8</u> Max Pressure: <u>2500</u>	Lead Cement Name: BFN III Cement Density (lb/gal) : 13.5 Cement Yield (cuft) : 1.68 Gallons Per Sack 8.90 % Excess 15% Tail Type III Cement Name: Cement Density (lb/gal) : 15.2 Cement Yield (cuft) : 1.27 Gallons Per Sack: 5.80 % Excess: 0% Fluid Ahead (bbls) 30.0 H2O Wash Up (bbls) 20.0 Spacer Ahead Makeup 30 BBL ahead with Die in 2nd 10

Casing ID 8.921 Casing Grade J-55 only used

Lead Calculated Results	Tail Calculated Results
HOC of Lead 1640.22 ft	Tail Cement Volume In Ann 127.00 cuft (HOC Tail) X (OH Ann)
Volume of Lead Cement 801.62 cuft	Total Volume of Tail Cement 107.90 Cuft (HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)
HOC of Lead X Open Hole Ann	bbbls of Tail Cement 22.62 bbbls (HOC of Tail) X (OH Ann) + (Cement Yield) X (Shoe Joint Ann) X (.1781) X (% Excess)
Volume of Conductor 59.72 cuft (Conductor ID Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	HOC Tail 220.78 ft (Tail Cement Volume) ÷ (OH Ann)
Total Volume of Lead Cement 861.35 cuft (cuft of Lead Cement) + (Cuft of Conductor)	Sacks of Tail Cement 100.00 sk (Total Volume of Tail Cement) ÷ (Cement Yield)
bbbls of Lead Cement 176.42 bbbls (Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)	bbbls of Tail Mix Water 13.81 bbbls (Sacks of Tail Cement X Gallons Per Sack) ÷ 42
Sacks of Lead Cement 589.61 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Pressure of cement in annulus
bbbls of Lead Mix Water 124.94 bbbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Hydrostatic Pressure 585.23 PSI
Displacement 147.57 bbbls (Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)	Collapse PSI: 2020.00 psi
Total Water Needed: 336.32 bbbls	Burst PSI: 3520.00 psi


 X _____
 Authorization To Proceed

Customers hereby acknowledges and specifically agrees to the terms and condition on this work order, including, without limitation, the provisions on this work order.



**Bison Oil Well Cementing
Two Cement Surface Pipe**

Date
INVOICE #
LOCATION
FOREMAN

7/20/2018
900327
Weld
Corey Barras

Customer
Well Name

Noble Energy Inc.
Hurley H26-743

Treatment Report Page 2

Amount Pumped	Time	Event	Description	Rate	BBLs	Pressure
Lead mixed bbls 124.94	1230	ARRIVE ON LOCATION	ASSESS LOCATION			
Lead % Excess 15%	1345	JSA	Bison/SPOT EQUIPMENT IN			
Lead Sacks 589	1430	JSA	Bison and Rig Crew			
	1506	PRESSURE TEST	PRESSURE TEST TO 1500 PSI			1500
	1508	SPACER AHEAD	WATER S.	7	30	180
Tail mixed bbls 13.81	1515	LEAD CEMENT	CEMENT MIXED AT 13.5 PPC PG.	7	176	200
Tail % Excess 0%	1543	TAIL CEMENT	CEMENT MIXED AT 15.2 PPC PG.	4	22.6	160
Tail Sacks 100	1552	SHUT DOWN				
	1554	DROP PLUG	PLUG PRELOADED			
Total Sacks 689	1557	DISPLACEMENT	RIG DISPLACE	7	147	440
Water Temp 58	1620	Bump Plug				1080
bbl Returns 43	1621	Casing TEST	Held for 15 Min.			
	1632	Check Floats	FLOATS I held 2.5 BBL Back			
Notes:	1700	RIG DOWN	PRE RIG DOWN MEETING			
Montered well for	1730	Leave Location				
20 Min. No top out						
Needed						

X 
Work Preformed

X _____
Title

X _____
Date

Hurley H26-743

