



# Bison Oil Well Cementing Tail & Lead

Date: 7/11/2018  
 Invoice #: 900323  
 API#: 05-123-467763  
 Foreman: Corey Barras

Customer: Noble Energy Inc.  
 Well Name: Hurley H26-730

County: Weld  
 State: Colorado  
 Sec: 8  
 Twp: 5N  
 Range: 62W

Consultant: Matt Rosales  
 Rig Name & Number: H&P 517  
 Distance To Location: 23  
 Units On Location: 4027/3103-4039/3214-4030/3215  
 Time Requested: 500  
 Time Arrived On Location: 345  
 Time Left Location:

WELL DATA	Cement Data
Casing Size (in) : 9.625 Casing Weight (lb) : 36 Casing Depth (ft.) : 1,941 Total Depth (ft) : 1951 Open Hole Diameter (in) : 13.50 Conductor Length (ft) : 80 Conductor ID : 15.15 Shoe Joint Length (ft) : 40 Landing Joint (ft) : 6  Sacks of Tail Requested : 100 HOC Tail (ft): 0 <small>One or the other, cannot have quantity in both</small>  Max Rate: 8 Max Pressure: 2500	<b>Lead</b> Cement Name: BFN III Cement Density (lb/gal) : 13.5 Cement Yield (cuft) : 1.68 Gallons Per Sack : 8.90 % Excess : 15%  <b>Tail Type III</b> 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  <b>Spacer Ahead Makeup</b> 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 : 1630.67 ft	Tail Cement Volume In Ann : 127.00 cuft (HOC Tail) X (OH Ann)
Volume of Lead Cement : 796.96 cuft HOC of Lead X Open Hole Ann	Total Volume of Tail Cement : 109.64 Cuft (HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)
Volume of Conductor : 59.72 cuft (Conductor ID Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	bbls of Tail Cement : 22.62 bbls (HOC of Tail) X (OH Ann) + (Cement Yield) X (Shoe Joint Ann) X (.1781) X (% Excess)
Total Volume of Lead Cement : 856.68 cuft (cuft of Lead Cement) + (Cuft of Conductor)	HOC Tail : 224.33 ft (Tail Cement Volume) ÷ (OH Ann)
bbls of Lead Cement : 175.46 bbls (Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)	Sacks of Tail Cement : 100.00 sk (Total Volume of Tail Cement) ÷ (Cement Yield)
Sacks of Lead Cement : 586.42 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	bbls of Tail Mix Water : 13.81 bbls (Sacks of Tail Cement X Gallons Per Sack) ÷ 42
bbls of Lead Mix Water : 124.26 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Pressure of cement in annulus
Displacement : 147.41 bbls (Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)	Hydrostatic Pressure : 585.23 PSI
Total Water Needed: 335.49 bbls	Collapse PSI: 2020.00 psi Burst PSI: 3520.00 psi

*Max Stadelman*  
 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**

Customer  
Well Name

Noble Energy Inc.
Hurley H26-730

Date  
INVOICE #  
LOCATION  
FOREMAN

7/11/2018
900323
Weld
Corey Barras

Treatment Report Page 2

Amount Pumped	Time	Event	Description	Rate	BBLs	Pressure
Lead mixed bbls 124.26	345	ARRIVE ON LOCATION	ASSESS LOCATION			
Lead % Excess 15%	515	JSA	Bison/SPOT EQUIPMENT IN			
Lead Sacks 586	600	JSA	Bison and Rig Crew			
	602	PRESSURE TEST	PRESSURE TEST TO 1500 PSI			1500
	604	SPACER AHEAD	WATER S.	7	30	140
Tail mixed bbls 13.81	610	LEAD CEMENT	CEMENT MIXED AT 13.5 PPC PG.	6	175	120
Tail % Excess 0%	643	TAIL CEMENT	CEMENT MIXED AT 15.2 PPC PG.	5	22.6	90
Tail Sacks 100	650	SHUT DOWN				
	652	DROP PLUG	PLUG PRELOADED			
Total Sacks 686	655	DISPLACEMENT	RIG DISPLACE	7	147	430
Water Temp 58	720	Bump Plug				1075
bbl Returns 36	720	Casing TEST	Held for 15 Min.			
	740	Check Floats	FLOATS I held 1.5 BBL Back			
Notes:	810	RIG DOWN	PRE RIG DOWN MEETING			
Montered well for 15 Min. No top out Needed	830	Leave Location				

x Amy Steptun  
Work Performed

x WSS  
Title

x 4-11-18  
Date

# Hurley H26-730

