



Bison Oil Well Cementing Tail & Lead

Date: 7/28/2018

Invoice # 900328

API# 05-123-46977

Foreman: Corey Barras

Customer: Noble Energy Inc.

Well Name: Emmy State H25-751

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: 2200
Time Arrived On Location: 2130
Time Left Location: _____

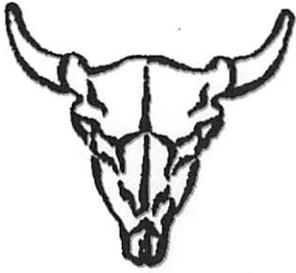
WELL DATA	Cement Data
<p>Casing Size (in) : <u>9.625</u> Casing Weight (lb) : <u>36</u> Casing Depth (ft.) : <u>1,927</u> Total Depth (ft) : <u>1937</u> Open Hole Diameter (in) : <u>13.50</u> Conductor Length (ft) : <u>80</u> Conductor ID : <u>15.15</u> Shoe Joint Length (ft) : <u>44</u> Landing Joint (ft) : <u>5</u></p> <p>Sacks of Tail Requested <u>100</u> HOC Tail (ft): <u>0</u></p> <p>One or the other, cannot have quantity in both</p> <p>Max Rate: <u>8</u> Max Pressure: <u>2500</u></p>	<p>Lead</p> <p>Cement Name: BFN III Cement Density (lb/gal) : 13.5 Cement Yield (cuft) : 1.68 Gallons Per Sack 8.90 % Excess 15%</p> <p>Tail Type III</p> <p>Cement Name: Cement Density (lb/gal) : 15.2 Cement Yield (cuft) : 1.27 Gallons Per Sack: 5.80 % Excess: 0%</p> <p>Fluid Ahead (bbls) 30.0 H2O Wash Up (bbls) 20.0</p> <p>Spacer Ahead Makeup 30 BBL ahead with Die in 2nd 10</p>

Casing ID 8.921 Casing Grade J-55 only used

Lead Calculated Results	Tail Calculated Results
HOC of Lead 1621.22 ft	Tail Cement Volume In Ann 127.00 cuft (HOC Tail) X (OH Ann)
Volume of Lead Cement 792.34 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	bbls of Tail Cement 22.62 bbls (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 852.06 cuft (cuft of Lead Cement) + (Cuft of Conductor)	Sacks of Tail Cement 100.00 sk (Total Volume of Tail Cement) ÷ (Cement Yield)
bbls of Lead Cement 174.52 bbls (Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)	bbls of Tail Mix Water 13.81 bbls (Sacks of Tail Cement X Gallons Per Sack) ÷ 42
Sacks of Lead Cement 583.26 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Pressure of cement in annulus
bbls of Lead Mix Water 123.59 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Hydrostatic Pressure 585.23 PSI
Displacement 145.94 bbls (Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)	Collapse PSI: 2020.00 psi Burst PSI: 3520.00 psi
Total Water Needed: 333.35 bbls	

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.
Emmy State H25-751

Date
INVOICE #
LOCATION
FOREMAN

7/28/2018
900328
Weld
Corey Barras

Treatment Report Page 2

Amount Pumped	Time	Event	Description	Rate	BBLs	Pressure
Lead mixed bbls 123.59	2130	ARRIVE ON LOCATION	ASSESS LOCATION			
Lead % Excess 15%	2300	JSA	Bison/SPOT EQUIPMENT IN			
Lead Sacks 583	1205 235	JSA	Bison and Rig Crew			
	1207 237	PRESSURE TEST	PRESSURE TEST TO 1500 PSI			1500
	1210 240	SPACER AHEAD	WATER S.	6	30	180
Tail mixed bbls 13.81	1216 245	LEAD CEMENT	CEMENT MIXED AT 13.5 PPC PG. See Notes	6	174	190
Tail % Excess 0%	320	TAIL CEMENT	CEMENT MIXED AT 15.2 PPC PG.	6	22.6	210
Tail Sacks 100	326	SHUT DOWN				
	328	DROP PLUG	PLUG PRELOADED			
Total Sacks 683	330	DISPLACEMENT	RIG DISPLACE	7	145	540
Water Temp 58	352	Bump Plug				1065
bbl Returns 44	353	Casing TEST	Held for 15 Min.			
	408	Check Floats	FLOATS I held 2.5 BBL Back			
Notes:	445	RIG DOWN				
Monered well for	515	Leave Location				
20 Min. No top out						
Needed						
Pump Truck went						
Down Called for Another						
After 35 BBL of Cement						
Pumped /Rig Rolled Hole						
and Bison Started						
Cement Job over						

X _____
Work Preformed

X _____
Title

X _____
Date



Bison Oil Well Cementing Tail & Lead

Cementing Customer Satisfaction Survey

Service Date	7/28/2018
Well Name	Emmy State H25-751
County	Weld
State	Colorado
SEC	8
TWP	5N
RNG	62W

Invoice Number	900328
API #	05-123-46977
Job Type	Two Cement
Company Name	Noble Energy Inc.

Customer Representative Supervisor Name J Corey Barras

Employee Name (Including Supervisor)
Corey B
Monte B.
Chris W.
Terry R.
Kirk / Dave S.

Exposure Hours (Per Employee)
8
8
8
8
8
40

Total Exposure Hours

Did we encounter any problems on this job? Yes No

To Be Completed By Customer

Rating/Description

- 5 - Superior Performance (Established new quality/performance standards)
 - 4 - Exceeded Expectation (Provided more than what was required/expected)
 - 3 - Met Expectations (Did what was expected)
 - 2 - Below Expectations (Job problems/failures occurred - *Recovery made)
 - 1 - Poor Performance (Job problems/failures occurred - *Some recovery made)
- *Recovery: resolved issue(s) on jobsite in a timely and professional manner

RATING	CATEGORY	CUSTOMER SATISFACTION RATING
_____	Personnel -	Did our personnel perform to your satisfaction?
_____	Equipment -	Did our equipment perform to your satisfaction?
_____	Job Design -	Did we perform the job to the agreed upon design?
_____	Product/Material -	Did our products and materials perform as you expected?
_____	Health & Safety -	Did we perform in a safe and careful manner (Pre/post mtgs, PPE, TSMR, etc..)?
_____	Environmental -	Did we perform in an environmentally sound manner (spills, leaks, cleanup, etc..)?
_____	Timeliness -	Was job performed as scheduled (On time to site, accessible to customers, completed when expected)?
_____	Condition/Appearance -	Did the equipment condition and appearance meet your expectations?
_____	Communication -	How well did our personnel communicate during mobilization, rig up and job execution?

Please Circle:

- | | | |
|-----|----|--|
| Yes | No | Did an accident or injury occur? |
| Yes | No | Did an injury requiring medical treatment occur? |
| Yes | No | Did a first-aid injury occur? |
| Yes | No | Did a vehicle accident occur? |
| Yes | No | Was a post-job safety meeting held? |

Please Circle:

- | | | |
|-----|----|--------------------------------------|
| Yes | No | Was a pre-job safety meeting held? |
| Yes | No | Was a job safety analysis completed? |
| Yes | No | Were emergency services discussed? |
| Yes | No | Did environmental incident occur? |
| Yes | No | Did any near misses occur? |

Additional Comments:

THE INFORMATION HEREIN IS CORRECT -

X

Customer Representative's Signature

DATE: _____

Any additional Customer Comments or HSE concerns should be described on the back of this form

Emmy State H25-751

