



**Bison Oil Well Cementing
Tail & Lead**

Date: 6/1/2018
 Invoice #: 300146
 API#: 05-123-46767
 Foreman: JASON KELEHER

Customer: Noble Energy Inc.
 Well Name: HURLEY H26-762

County: Weld
 State: Colorado
 Sec: 26
 Twp: 3N
 Range: 65W

Consultant: GARY
 Rig Name & Number: H&P 517
 Distance To Location: 23
 Units On Location: 4044-3107,4032-3203
 Time Requested: 1830
 Time Arrived On Location: 1730
 Time Left Location: 2300

WELL DATA	Cement Data
Casing Size (in) : 9.625 Casing Weight (lb) : 36 Casing Depth (ft.) : 1,925 Total Depth (ft) : 1935 Open Hole Diameter (in) : 13.50 Conductor Length (ft) : 80 Conductor ID : 15.25 Shoe Joint Length (ft) : 44 Landing Joint (ft) : 5 Sacks of Tail Requested : 100 HOC Tail (ft) : 0 One or the other, cannot have quantity in both Max Rate: 8 Max Pressure: 1500	Lead Cement Name: Cement Density (lb/gal) : 13.5 Cement Yield (cuft) : 1.7 Gallons Per Sack : 9.00 % Excess : 15% Tail Cement Name: Cement Density (lb/gal) : 15.2 Cement Yield (cuft) : 1.27 Gallons Per Sack : 5.89 % Excess : 0% Fluid Ahead (bbls) : 30.0 H2O Wash Up (bbls) : 20.0 Spacer Ahead Makeup 30BBL WATER DYE IN 2ND 10

Lead Calculated Results	Tail Calculated Results
HOC of Lead 1704.31 ft	Tail Cement Volume In Ann 107.80 cuft
Casing Depth - HOC Tail	(HOC Tail) X (OH Ann)
Volume of Lead Cement 912.87 cuft	Total Volume of Tail Cement 127.00 Cuft
HOC of Lead X Open Hole Ann	(HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)
Volume of Conductor 60.64 cuft	bbls of Tail Cement 22.62 bbls
(Conductor ID Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	(HOC of Tail) X (OH Ann) + (Cement Yield) X (Shoe Joint Ann) X (.1781) X (% Excess)
Total Volume of Lead Cement 973.45 cuft	HOC Tail 220.69 ft
(cuft of Lead Cement) + (Cuft of Conductor)	(Tail Cement Volume) ÷ (OH Ann)
bbls of Lead Cement 173.40 bbls	Sacks of Tail Cement 100.00 sk
(Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)	(Total Volume of Tail Cement) ÷ (Cement Yield)
Sacks of Lead Cement 573.00 sk	bbls of Tail Mix Water 14.02 bbls
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	(Sacks of Tail Cement X Gallons Per Sack) ÷ 42
bbls of Lead Mix Water 122.79 bbls	Pressure of cement in annulus
(Sacks Needed) X (Gallons Per Sack) ÷ 42	Hydrostatic Pressure 585.23 PSI
Displacement 145.70 bbls	
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)	Collapse PSI: 2020.00 psi
Total Water Needed: 332.51 bbls	Burst PSI: 3520.00 psi

X Authorization To Proceed



Bison Oil Well Cementing Tail & Lead

Cementing Customer Satisfaction Survey

Service Date	6/1/2018
Well Name	HURLEY H26-762
County	Weld
State	Colorado
SEC	26
TWP	3N
RNG	65W

Invoice Number	300146
API #	05-123-46767
Job Type	Two Cement
Company Name	Noble Energy Inc.

Customer Representative: CHRIS

Supervisor Name: JASON KELEHER

Employee Name (Including Supervisor)
JASON
JESSE
CHRIS
AMANDA

Exposure Hours (Per Employee)
5.5
5.5
5.5
5.5
22

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
3	Personnel -	Did our personnel perform to your satisfaction?
2	Equipment -	Did our equipment perform to your satisfaction?
3	Job Design -	Did we perform the job to the agreed upon design?
1	Product/Material -	Did our products and materials perform as you expected?
1	Health & Safety -	Did we perform in a safe and careful manner (Pre/post mtgs, PPE, TSMR, etc..)?
1	Environmental -	Did we perform in an environmentally sound manner (spills, leaks, cleanup, etc..)?
1	Timeliness -	Was job performed as scheduled (On time to site, accessible to customers, completed when expected)?
1	Condition/Appearance -	Did the equipment condition and appearance meet your expectations?
1	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:

1/2 HR NPT due to motor problems

THE INFORMATION HEREIN IS CORRECT -

X 
Customer Representative's Signature

DATE: 6-1-18

HURLEY H26-762 SURFACE

