



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 4/19/2015
Invoice #: 80032
API#: 05-123-40631
Foreman: Calvin Reimers

Customer: Noble Energy Inc.
Well Name: Christine LC 27-765

County: Weld
State: Colorado
Sec: 34
Twp: 9N
Range: 59W

Consultant:
Rig Name & Number: H&P 326
Distance To Location: 66 Miles
Units On Location: 4023-3104/4020-3212
Time Requested: 1030pm
Time Arrived On Location: 1010pm
Time Left Location: 145am

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 36.00
Casing Depth (ft.) : 634
Total Depth (ft) : 673
Open Hole Diameter (in.) : 13.50
Conductor Length (ft) : 100
Conductor ID : 16
Shoe Joint Length (ft) : 45
Landing Joint (ft) : 34

Max Rate: 7
Max Pressure: 2500

Cement Data

Cement Name: BFN III
Cement Density (lb/gal) : 14.2
Cement Yield (cuft) : 1.49
Gallons Per Sack: 7.48
% Excess: 25%
Displacement Fluid lb/gal: 8.3
BBL to Pit: 13.0
Fluid Ahead (bbls): 40.0
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup
40bbls With Dye in 2nd 10bbls

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 19.67 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 89.10 cuft
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 325.98 cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 434.74 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 77.43 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 292 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 51.96 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 48.09 bbls

(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 467.40 PSI

Pressure of the fluids inside casing

Displacement: 253.65 psi

Shoe Joint: 33.43 psi

Total 287.08 psi

Differential Pressure: 180.32 psi

Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 160.05 bbls

Mary Stapleton
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 Single Cement Surface Pipe

Customer
Well Name

Noble Energy Inc.
Christine LC 27-765

INVOICE #
LOCATION
FOREMAN
Date

80032

Weld

Calvin Reimers

4/19/2015

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

[illegible]

Work Performed

X	Title
1	1. The first title
2	2. The second title
3	3. The third title
4	4. The fourth title
5	5. The fifth title
6	6. The sixth title
7	7. The seventh title
8	8. The eighth title
9	9. The ninth title
10	10. The tenth title

Date _____