



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 7/2/2015
Invoice #: 90011
API#: 05-123-41514
Foreman: Nick

Customer: Noble Energy Inc.
Well Name: Wells Ranch State A36-649

County: Weld
State: Colorado
Sec: 31
Twp: 6N
Range: 63W

Consultant: Shane Herd
Rig Name & Number: H&P 273
Distance To Location: 60
Units On Location: 4027/3107/4022/3213
Time Requested: 0:30
Time Arrived On Location: 23:33
Time Left Location: 3:30

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 36.00
Casing Depth (ft) : 846
Total Depth (ft) : 854
Open Hole Diameter (in.) : 13.50
Conductor Length (ft) : 100
Conductor ID : 15.25
Shoe Joint Length (ft) : 44
Landing Joint (ft) : 29

Max Rate: 6
Max Pressure: 1500

Cement Data

Cement Name: BFN III
Cement Density (lb/gal) : 14.2
Cement Yield (cuft) : 1.49
Gallons Per Sack: 7.48
% Excess: 10%
Displacement Fluid lb/gal: 8.3
BBL to Pit: 20.0
Fluid Ahead (bbls): 50.0
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup
DYE IN SECOND 10 BBL

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 19.10 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)
cuft of Conductor 76.31 cuft
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)
cuft of Casing 286.35 cuft
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)
Total Slurry Volume 494.00 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)
bbls of Slurry 88.00 bbls
(Total Slurry Volume) X (.1781)
Sacks Needed 332 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)
Mix Water 59.13 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 62.00 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 624.09 PSI

Pressure of the fluids inside casing

Displacement: 345.81 psi

Shoe Joint: 32.46 psi

Total 378.27 psi

Differential Pressure: 245.83 psi

Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 191.13 bbls

X

Authorization To Proceed

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

