



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 8/6/2015
Invoice #: 80514
API#:
Foreman: Kirk Kallhoff

Customer: Noble Energy Inc.

Well Name: brecken Id 28-727

County: Weld
State: Colorado
Sec: 17
Twp: 5n
Range: 63w

Consultant: dave
Rig Name & Number: H&P 273
Distance To Location:
Units On Location: 4029-3106/4020-3211
Time Requested: 1000 am
Time Arrived On Location: 845 am
Time Left Location: 4:00pm

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 36.00
Casing Depth (ft) : 1,080
Total Depth (ft) : 1125
Open Hole Diameter (in.) : 13.50
Conductor Length (ft) : 100
Conductor ID : 16
Shoe Joint Length (ft) : 41
Landing Joint (ft) : 35

Max Rate:

Max Pressure:

Cement Data

Cement Name: BFN III
Cement Density (lb/gal) : 14.2
Cement Yield (cuft) : 1.49
Gallons Per Sack: 7.48
% Excess: 20%
Displacement Fluid lb/gal: 8.3
BBL to Pit:
Fluid Ahead (bbls): 30.0
H2O Wash Up (bbls): 10.0

Spacer Ahead Makeup

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 17.80 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 574.75 cuft
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)
Total Slurry Volume 681.64 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)
bbls of Slurry 121.40 bbls
(Total Slurry Volume) X (.1781)
Sacks Needed 457 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)
Mix Water 81.47 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 83.03 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 796.72 PSI

Pressure of the fluids inside casing

Displacement: 448.00 psi

Shoe Joint: 30.25 psi

Total 478.24 psi

Differential Pressure: 318.47 psi

Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 204.50 bbls

X
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.



INVOICE #
LOCATION
FOREMAN
Date

80514
Weld
Kirk Kallhoff
8/6/2015

Customer
Well Name

Noble Energy Inc.
brecken Id 28-727

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DESCRIPTION OF JOB EVENTS

[illegible]

1. De la

X-20-247

x 2-6-15

Work Preformed