



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 8/24/2015
Invoice #: 80522
API#:
Foreman: Kirk Kallhoff

Customer: Noble Energy Inc.
Well Name: greyson Id 28-780

County: Weld
State: Colorado
Sec: 17
Twp: 5n
Range: 63w
Consultant: bo
Rig Name & Number: H&P 343
Distance To Location:
Units On Location: 4029-3106/4035-3211
Time Requested: 500 pm
Time Arrived On Location: 345 pm
Time Left Location: 8:00pm

WELL DATA	Cement Data
Casing Size OD (in) : 9.625	Cement Name: BFN III
Casing Weight (lb) : 36.00	Cement Density (lb/gal) : 14.2
Casing Depth (ft) : 1,124	Cement Yield (cuft) : 1.49
Total Depth (ft) : 1129	Gallons Per Sack: 7.48
Open Hole Diameter (in.) : 13.50	% Excess: 20%
Conductor Length (ft) : 100	Displacement Fluid lb/gal: 8.3
Conductor ID : 16	BBL to Pit:
Shoe Joint Length (ft) : 41	Fluid Ahead (bbls): 30.0
Landing Joint (ft) : 35	H2O Wash Up (bbls): 10.0
Max Rate:	Spacer Ahead Makeup
Max Pressure:	

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 600.55 cuft (Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length) Total Slurry Volume 707.44 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing) bbls of Slurry 126.00 bbls (Total Slurry Volume) X (.1781) Sacks Needed 475 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement) Mix Water 84.56 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Displacement: 86.43 bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint) Pressure of cement in annulus Hydrostatic Pressure: 829.17 PSI Pressure of the fluids inside casing Displacement: 466.97 psi Shoe Joint: 30.25 psi Total 497.21 psi Differential Pressure: 331.96 psi Collapse PSI: 2020.00 psi Burst PSI: 3520.00 psi Total Water Needed: 210.99 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

Customer
Well Name

Noble Energy Inc.
greyson Id 28-780

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DESCRIPTION OF JOB EVENTS

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8-24-15