



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 7/8/2015

Invoice # 80609

API# 05-123-41793

Foreman: JASON KELEHER

Customer: Anadarko Petroleum Corporation

Well Name: TEDFORD 28N-28HZ

County: WELD

State: Colorado

Sec: 28

Twp: 2N

Range: 66W

Consultant: CHRIS

Rig Name & Number: NOBLE 2

Distance To Location: 19

Units On Location: 4031-3106/ 4034-3211

Time Requested: 600

Time Arrived On Location: 430

Time Left Location: 1100

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 36.00
Casing Depth (ft) : 1,867
Total Depth (ft) : 1876
Open Hole Diameter (in.) : 13.50
Conductor Length (ft) : 47
Conductor ID : 15.25
Shoe Joint Length (ft) : 43
Landing Joint (ft) : 7

Max Rate: 6

Max Pressure: 1000

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: 21.0

Fluid Ahead (bbls): 30.0

H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup

30BBL WATER/ DYE IN 2ND 10

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 18.58 cuft

(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 35.87 cuft

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

cuft of Casing 1067.39 cuft

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

Total Slurry Volume 1121.83 cuft

(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 199.80 bbls

(Total Slurry Volume) X (.1781)

Sacks Needed 753 sk

(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 134.09 bbls

(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 141.57 bbls

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

Pressure of cement in annulus

Hydrostatic Pressure: 1377.29 PSI

Pressure of the fluids inside casing

Displacement: 786.56 psi

Shoe Joint: 31.57 psi

Total 818.13 psi

Differential Pressure: 559.15 psi

Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 325.66 bbls

X *San M...*
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.

X 7/8/15
Date

TEDFORD 28N-28HZ SURFACE

