



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 4/9/2015

Invoice # 80124

API# 05-123-41309

Foreman: JASON KELEHER

Customer: Anadarko Petroleum Corporation

Well Name: BANE 2N3-9HZ

County: Weld

State: Colorado

Sec: 9

Twp: 1N

Range: 65W

Consultant: BRYAN

Rig Name & Number: ADVANCED 10

Distance To Location: 26

Units On Location: 4031-3107/ 4030-3203

Time Requested: 100

Time Arrived On Location: 2330

Time Left Location: 400

WELL DATA

Casing Size OD (in) : 9.625

Casing Weight (lb) : 36.00

Casing Depth (ft.) : 1,577

Total Depth (ft) : 1592

Open Hole Diameter (in.) : 13.50

Conductor Length (ft) : 40

Conductor ID : 15.25

Shoe Joint Length (ft) : 44

Landing Joint (ft) : 5

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: 26.0

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 19.01 cuft

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

cuft of Conductor 30.53 cuft

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

cuft of Casing 901.45 cuft

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

Total Slurry Volume 950.99 cuft

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

bbls of Slurry 169.37 bbls

(Total Slurry Volume) X (.1781)

Sacks Needed 638 sk

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

Mix Water 113.67 bbls

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

Displacement: 118.92 bbls

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

Pressure of cement in annulus

Hydrostatic Pressure: 1163.40 PSI

Pressure of the fluids inside casing

Displacement: 661.12 psi

Shoe Joint: 32.30 psi

Total 693.43 psi

Differential Pressure: 469.98 psi

Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 282.59 bbls

X Bryan Brown
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.

4/9/15

BANE 2N3-9HZ SURFACE

