



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 12/16/2017

Invoice # 666245

API# 05-123-45715

Supervisor: Nick Vigil

Customer: Bill Barrett Corp.

Well Name: Anschutz-Williams 5-61-27-3225B

County: Weld

State: Colorado

Sec: 27

Twp: 5N

Range: 61W

Consultant: Curtis

Rig Name & Number: Cade 24

Distance To Location: 35

Units On Location: 4023,4040

Time Requested: 7:00

Time Arrived On Location: 6:00

Time Left Location: 10:15

WELL DATA

Casing Size OD (in) : 9.625

Casing Weight (lb) : 36.00

Casing Depth (ft.) : 842

Total Depth (ft) : 842

Open Hole Diameter (in.) : 13.50

Conductor Length (ft) : 80

Conductor ID : 15.25

Shoe Joint Length (ft) : 45

Landing Joint (ft) : 0

Max Rate: 8

Max Pressure: 2500

Cement Data

Cement Name: BFN III

Cement Density (lb/gal) : 14.2

Cement Yield (cuft) : 1.49

Gallons Per Sack: 7.48

% Excess: 22%

Displacement Fluid lb/gal: 8.3

BBL to Pit: 15.0

Fluid Ahead (bbls): 20.0

H2O Wash Up (bbls): 10.0

Spacer Ahead Makeup

h2o dye in 1st 10

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 19.53 cuft

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

cuft of Conductor 61.05 cuft

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

cuft of Casing 456.73 cuft

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

Total Slurry Volume 537.31 cuft

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

bbls of Slurry 95.70 bbls

(Total Slurry Volume) X (.1781)

Sacks Needed 361 sk

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

Mix Water 64.22 bbls

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

Displacement: 61.92 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: 345.38 psi

Shoe Joint: 33.20 psi

Total 378.57 psi

Differential Pressure: 245.52 psi

Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 156.15 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

666245
Weld
Nick Vigil
12/16/201

Customer
Well Name

Bill Barrett Corp.
Anschultz Williams 5-61-27-3225B

DESCRIPTION OF JOB EVENTS

Treatment Report Page 2

[illegible]