



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 3/11/2017
Invoice #: 900060
API#: 05-123-44120
Foreman: Matthew J. Rosales

Customer: Anadarko Petroleum Corporation

Well Name: Chica 31C-23HZ

County: Weld
State: Colorado
Sec: NWNW35
Twp: 3N
Range: 67W
Consultant: MATT
Rig Name & Number: WM 252
Distance To Location: 23
Units On Location: 4027/3103,4020/3212,4033/3214
Time Requested: 530
Time Arrived On Location: 400
Time Left Location:

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 36.00
Casing Depth (ft.) : 2,331
Total Depth (ft) : 2321
Open Hole Diameter (in.) : 13.50
Conductor Length (ft) : 80
Conductor ID : 15.25
Shoe Joint Length (ft) : 43
Landing Joint (ft) : 15
Max Rate: 8
Max Pressure: 2000

Cement Data

Cement Name: BFN III
Cement Density (lb/gal) : 14.2
Cement Yield (cuft) : 1.48
Gallons Per Sack: 7.49
% Excess: 15%
Displacement Fluid lb/gal: 8.3
BBL to the Pit: 16.0
Fluid Ahead (bbls): 30.0
H2O Wash Up (bbls): 20.0
Spacer Ahead Makeup
30 BBL WATER DYE IN 2ND 10

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 18.66 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 1134.00 cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)
Total Slurry Volume 1305.00 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)
bbls of Slurry 235.60 bbls
(Total Slurry Volume) X (.1781)
Sacks Needed 888 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)
Mix Water 158.36 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 178.04 bbls

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

Pressure of cement in annulus

Hydrostatic Pressure: 1719.58 PSI

Pressure of the fluids inside casing

Displacement: 986.54 psi

Shoe Joint: 31.72 psi

Total 1018.26 psi

Differential Pressure: 701.32 psi

Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 386.40 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.



Anadarko Petroleum Corporation
Chica 31C-23HZ

900060
Weld
Matthew J. Rosales
3/11/2017

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

X _____
Signature

x 3-11-17
Date

Bison Oil Well Cementing INC.
Chica 31C-23hz

— PSI — Barrels / Minute — Lbs / Gallon

