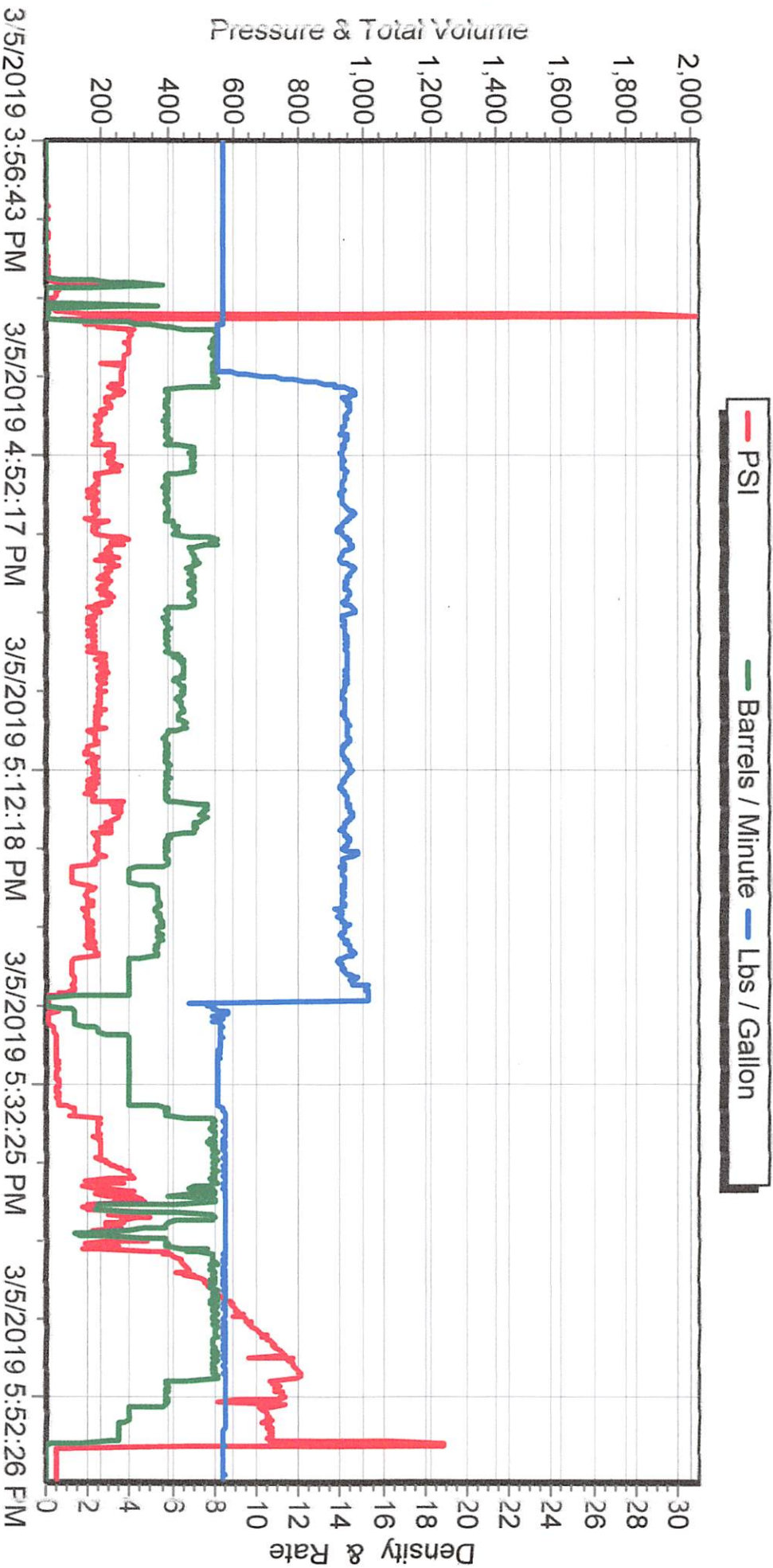


Date _____

JDB 15-2HZ





Bison Oil Well Cementing Single Cement Surface Pipe

Date: 3/5/2019
Invoice #: 606445
API#: 05-123-49221
Foreman: Nick Vigil

Customer: Anadarko Petroleum Corporation

Well Name: JDB 15-2HZ

County: Weld
State: Colorado

Sec: 8
Twp: 1N
Range: 03W

Consultant: Brett
Rig Name & Number: Cartel 88
Distance To Location: 34 Miles
Units On Location: 4045/4044/4030/4023
Time Requested: 13:00
Time Arrived On Location: 12:05
Time Left Location:

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 36.00
Casing Depth (ft) : 1,911
Total Depth (ft) : 1921
Open Hole Diameter (in.) : 13.50
Conductor Length (ft) : 80
Conductor ID : 15.25
Shoe Joint Length (ft) : 43
Landing Joint (ft) : 10

Max Rate: 8
Max Pressure: 2000

Cement Data

Cement Name: BFN III
Cement Density (lb/gal) : 14.2
Cement Yield (cuft) : 1.49
Gallons Per Sack: 7.48
% Excess: 10%
Displacement Fluid lb/gal: 8.3
BBL to Pit:
Fluid Ahead (bbls): 30.0
H2O Wash Up (bbls): 10.0

Spacer Ahead Makeup
Dye in second 10 bbl

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

Total Slurry Volume 1064.07 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 189.51 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 714 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 127.18 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 145.18 bbls

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

Pressure of cement in annulus

Hydrostatic Pressure: 1409.74 PSI

Pressure of the fluids inside casing

Displacement: 805.45 psi

Shoe Joint: 31.72 psi

Total 837.17 psi

Differential Pressure: 572.58 psi

Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 312.37 bbls

X

Authorization To Proceed