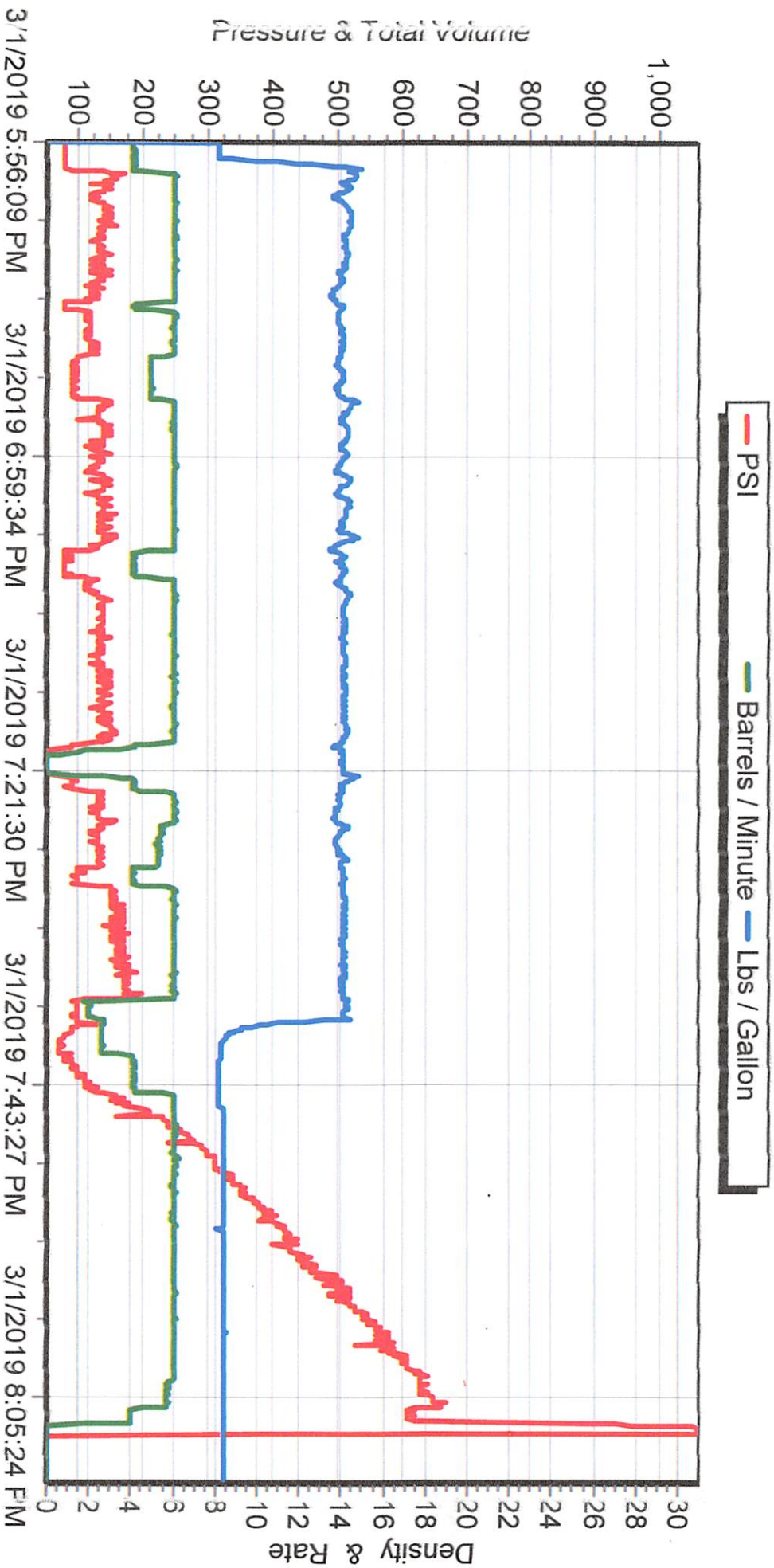


Date \_\_\_\_\_

# Ranger 7-19HZ







# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 3/1/2019  
Invoice #: 606443  
API#: 05-123-49356  
Foreman: Nick Vigil

Customer: Anadarko Petroleum Corporation  
Well Name: Ranger 7-19HZ

County: Weld  
State: Colorado  
Sec: 8  
Twp: 1N  
Range: 05W

Consultant: Dave  
Rig Name & Number: Cartel 88  
Distance To Location: 36 Miles  
Units On Location: 4045/4044/4030/4023  
Time Requested: 18:00  
Time Arrived On Location: 17:30  
Time Left Location:

## WELL DATA

Casing Size OD (in): 9.625  
Casing Weight (lb): 36.00  
Casing Depth (ft): 1,871  
Total Depth (ft): 1881  
Open Hole Diameter (in.): 13.50  
Conductor Length (ft): 80  
Conductor ID: 15.25  
Shoe Joint Length (ft): 42  
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: 150%  
Displacement Fluid lb/gal: 8.3  
BBL to Pit: 0.0  
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** 18.23 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** 2188.29 cuft  
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

**Total Slurry Volume** 2267.57 cuft  
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

**bbls of Slurry** 403.85 bbls  
(Total Slurry Volume) X (.1781)

**Sacks Needed** 1522 sk  
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

**Mix Water** 271.04 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42

**Displacement:** 142.17 bbls

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

## Pressure of cement in annulus

**Hydrostatic Pressure:** 1380.24 PSI

## Pressure of the fluids inside casing

**Displacement:** 788.63 psi

**Shoe Joint:** 30.98 psi

**Total** 819.61 psi

**Differential Pressure:** 560.62 psi

**Collapse PSI:** 2020.00 psi

**Burst PSI:** 3520.00 psi

**Total Water Needed:** 453.21 bbls

X   
Authorization To Proceed