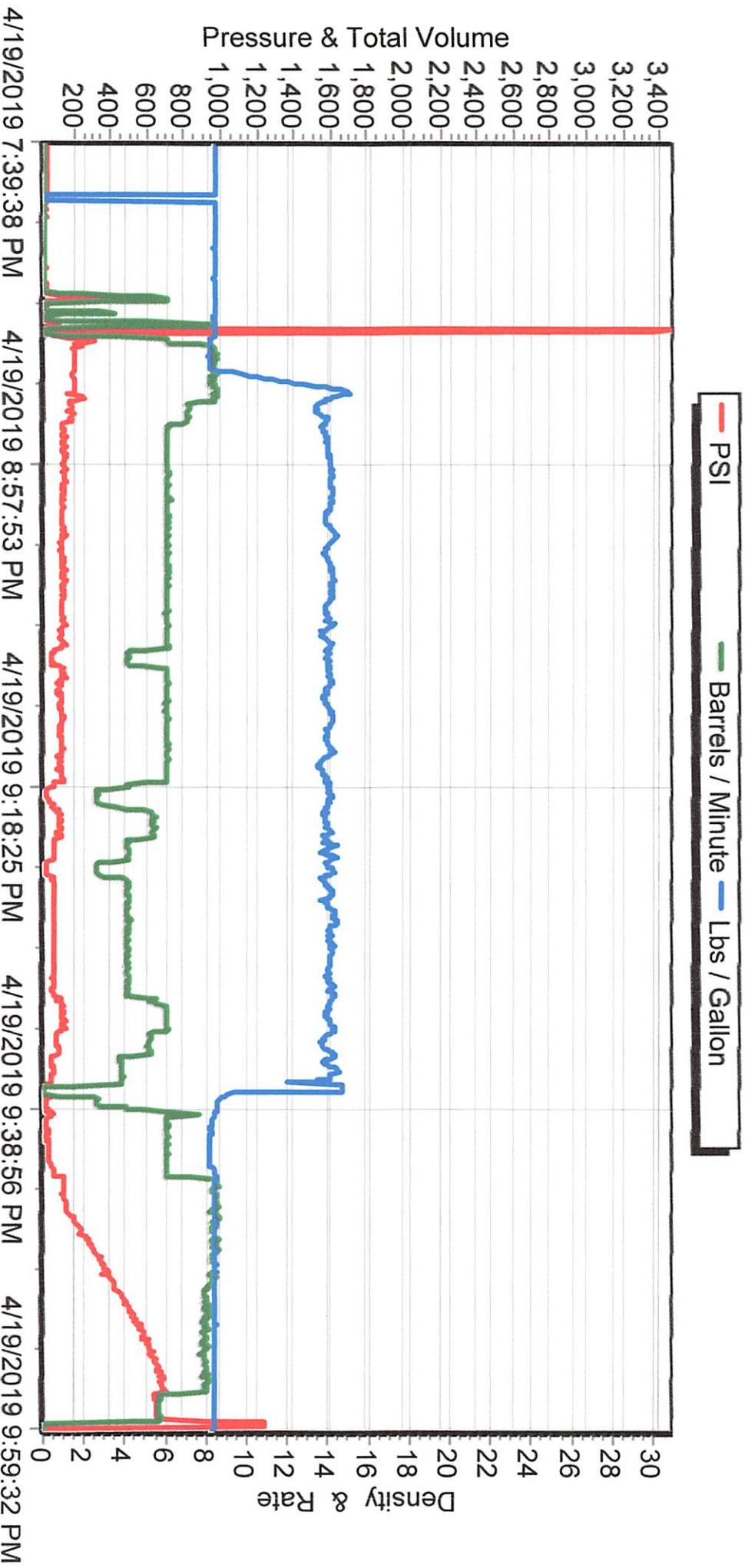




# MC 3-2HZ





# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 4/19/2019  
 Invoice # 606470  
 API# 05-123-49759  
 Foreman: Nick Vigil

**Customer:** Anadarko Petroleum Corporation  
**Well Name:** MC 3-2HZ

County: Weld Consultant: Brian  
 State: Colorado Rig Name & Number: Cartel 88  
 Distance To Location: 38 Miles  
 Sec: 8 Units On Location: 4045/4044/4030/4023  
 Twp: 1N Time Requested: ~~21:00~~ 19:00  
 Range: 65W Time Arrived On Location: ~~20:00~~ 18:00  
 Time Left Location: \_\_\_\_\_

WELL DATA	Cement Data
Casing Size OD (in) : <u>9.625</u>	Cement Name: <u>BFN III</u>
Casing Weight (lb) : <u>36.00</u>	Cement Density (lb/gal) : <u>14.2</u>
Casing Depth (ft.) : <u>1,849</u>	Cement Yield (cuft) : <u>1.49</u>
Total Depth (ft) : <u>1859</u>	Gallons Per Sack: <u>7.48</u>
Open Hole Diameter (in.) : <u>13.50</u>	% Excess: <u>15%</u>
Conductor Length (ft) : <u>80</u>	Displacement Fluid lb/gal: <u>8.3</u>
Conductor ID : <u>19.125</u>	BBL to Pit:
Shoe Joint Length (ft) : <u>40</u>	Fluid Ahead (bbls): <u>30.0</u>
Landing Joint (ft) : <u>10</u>	H2O Wash Up (bbls): <u>10.0</u>
Max Rate: <u>8</u>	Spacer Ahead Makeup
Max Pressure: <u>2000</u>	Dye in second 10 bbl

Calculated Results	Pressure of cement in annulus
Casing ID <u>8.921</u> Casing Grade <u>J-55 only used</u>	Displacement: <u>140.62</u> bbls
cuft of Shoe <u>17.36</u> cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
cuft of Conductor <u>119.17</u> cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Pressure of cement in annulus
cuft of Casing <u>994.25</u> cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Hydrostatic Pressure: <u>1364.01</u> PSI
Total Slurry Volume <u>1130.78</u> cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Pressure of the fluids inside casing
bbls of Slurry <u>201.39</u> bbls (Total Slurry Volume) X (.1781)	Displacement: <u>780.01</u> psi
Sacks Needed <u>759</u> sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Shoe Joint: <u>29.51</u> psi
Mix Water <u>135.16</u> bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Total <u>809.51</u> psi
	Differential Pressure: <u>554.49</u> psi
	Collapse PSI: <u>2020.00</u> psi
	Burst PSI: <u>3520.00</u> psi
	Total Water Needed: <u>315.78</u> bbls

X [Signature]  
 Authorization To Proceed