



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 9/5/2017  
 Invoice # 200163  
 API# \_\_\_\_\_  
 Foreman: Kirk Kallhoff

Customer: Anadarko Petroleum Corporation  
 Well Name: wagner 28n-w10hz

County: Weld Consultant: m.att  
 State: Colorado Rig Name & Number: cartel 88  
 Distance To Location: 34  
 Sec: 14 Units On Location: 4028/4039/4030  
 Twp: 1 n Time Requested: 400 pm  
 Range: 67w Time Arrived On Location: 200 pm  
 Time Left Location: 7:30pm

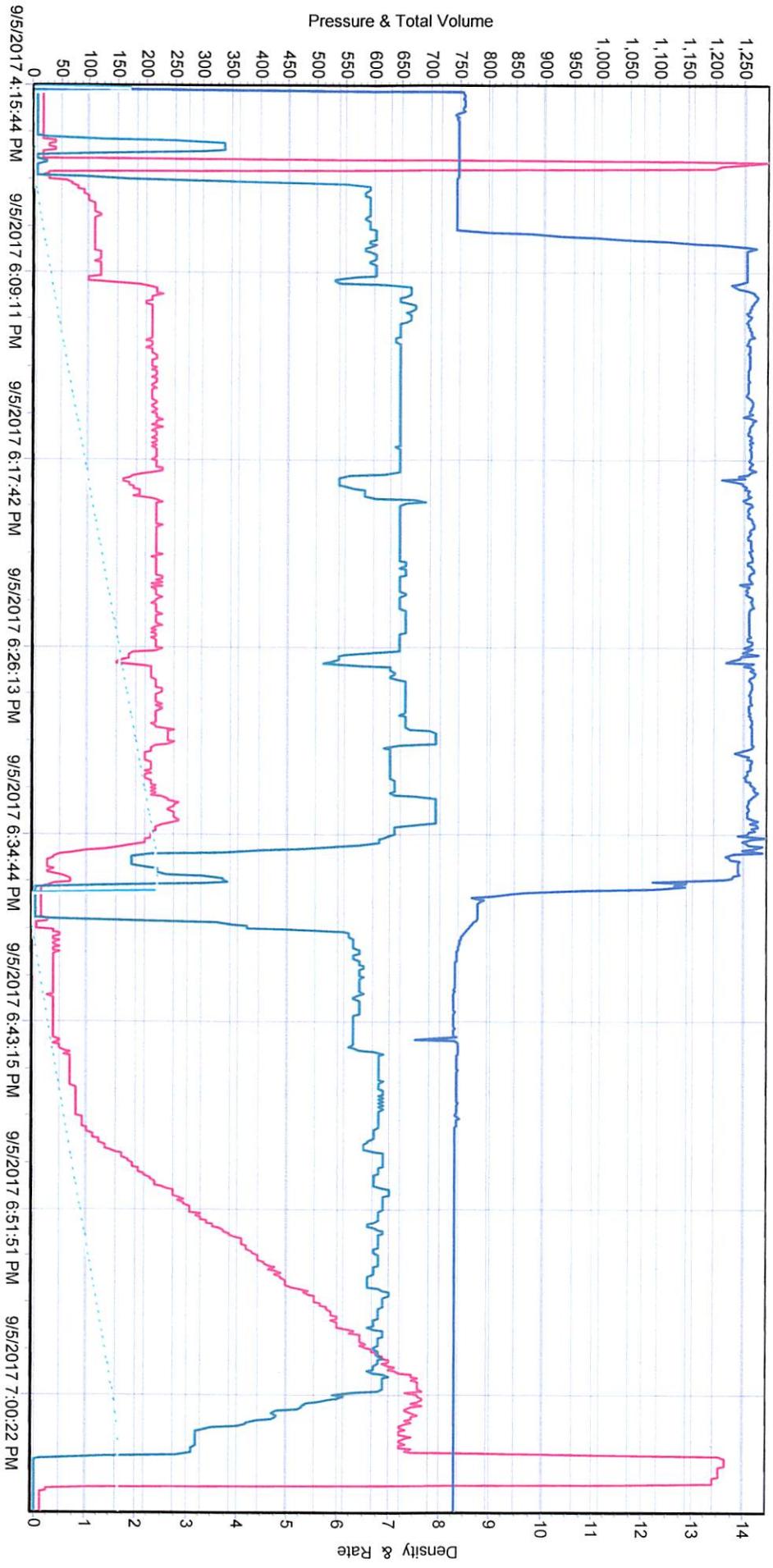
WELL DATA	Cement Data
Casing Size OD (in) : <u>9.625</u>	Cement Name: <u>BFN III</u>
Casing Weight (lb) : <u>36.00</u>	Cement Density (lb/gal) : <u>14.2</u>
Casing Depth (ft.) : <u>1,857</u>	Cement Yield (cuft) : <u>1.49</u>
Total Depth (ft) : <u>1867</u>	Gallons Per Sack: <u>7.40</u>
Open Hole Diameter (in.) : <u>13.50</u>	% Excess: <u>5%</u>
Conductor Length (ft) : <u>80</u>	Displacement Fluid lb/gal: <u>8.3</u>
Conductor ID : <u>15.6</u>	BBL to Pit:
Shoe Joint Length (ft) : <u>41</u>	Fluid Ahead (bbls): <u>30.0</u>
Landing Joint (ft) : <u>8</u>	H2O Wash Up (bbls): <u>10.0</u>
Max Rate: <u>8</u>	Spacer Ahead Makeup
Max Pressure: <u>2000</u>	

Calculated Results	Displacement: <u>141.01 bbls</u>
cuft of Shoe <u>17.80</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>65.76</u> cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Pressure of cement in annulus
cuft of Casing <u>911.90</u> cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Hydrostatic Pressure: <u>1369.91 PSI</u>
Total Slurry Volume <u>995.45</u> cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Pressure of the fluids inside casing
bbls of Slurry <u>177.29</u> bbls (Total Slurry Volume) X (.1781)	Displacement: <u>783.02 psi</u>
Sacks Needed <u>668</u> sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Shoe Joint: <u>30.25 psi</u>
Mix Water <u>117.71</u> bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Total <u>813.27 psi</u>
	Differential Pressure: <u>556.64 psi</u>
	Collapse PSI: <u>2020.00 psi</u>
	Burst PSI: <u>3520.00 psi</u>
	Total Water Needed: <u>298.72 bbls</u>

X [Signature]  
 Authorization to Proceed



# SERIES 2000



— PSI — Barrels / Minute — Barrels — Lbs / Gallon — Stage Volume