



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 9/26/2018  
 Invoice # 200341  
 API# \_\_\_\_\_  
 Foreman: KirkKallhoff

**Customer:** Anadarko Petroleum Corporation  
**Well Name:** castle pines 19-11hz

County: Weld Consultant: bryan  
 State: Colorado Rig Name & Number: Cartel 88  
 Distance To Location: 25  
 Sec: 23 Units On Location: 4028/4030/4032  
 Twp: 2N Time Requested: 1200 pm  
 Range: 66W Time Arrived On Location: 930 am  
 Time Left Location: 3:30 pm

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>1,831</u>	Cement Yield (cuft) : <u>1.48</u>
Total Depth (ft) : <u>1841</u>	Gallons Per Sack: <u>7.40</u>
Open Hole Diameter (in.) : <u>13.50</u>	% Excess: <u>10%</u>
Conductor Length (ft) : <u>80</u>	Displacement Fluid lb/gal: <u>8.3</u>
Conductor ID : <u>15.25</u>	BBL to Pit:
Shoe Joint Length (ft) : <u>40</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>	<u>30 bbl with Die in 2nd 10</u>

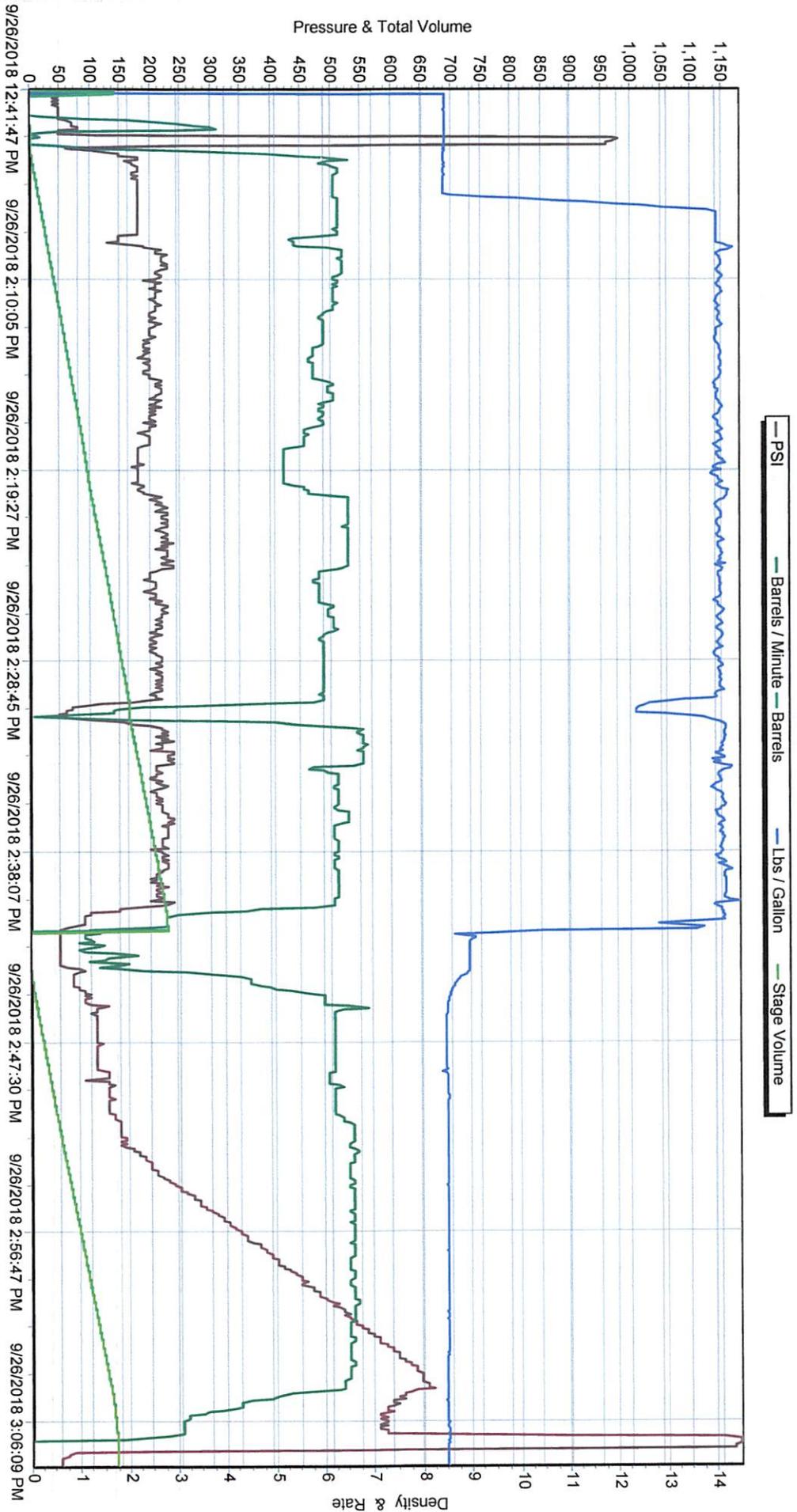
Calculated Results	Displacement: <u>139.08 bbls</u>
<b>cuft of Shoe</b> <u>17.36 cuft</u> (Casing ID Squared) X (.005454) X (Shoe Joint ft)	(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
<b>cuft of Conductor</b> <u>61.05 cuft</u> (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	<b>Pressure of cement in annulus</b>
<b>cuft of Casing</b> <u>941.34 cuft</u> (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length )	<b>Hydrostatic Pressure:</b> <u>1350.73 PSI</u>
<b>Total Slurry Volume</b> <u>1019.75 cuft</u> (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	<b>Pressure of the fluids inside casing</b>
<b>bbls of Slurry</b> <u>181.62 bbls</u> (Total Slurry Volume) X (.1781)	<b>Displacement:</b> <u>772.25 psi</u>
<b>Sacks Needed</b> <u>689 sk</u> (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	<b>Shoe Joint:</b> <u>29.51 PSI</u>
<b>Mix Water</b> <u>121.40 bbls</u> (Sacks Needed) X (Gallons Per Sack) ÷ 42	<b>Total</b> <u>801.75 psi</u>
	<b>Differential Pressure:</b> <u>548.98 psi</u>
	<b>Collapse PSI:</b> <u>2020.00 psi</u>
	<b>Burst PSI:</b> <u>3520.00 psi</u>
	<b>Total Water Needed:</b> <u>300.48 bbls</u>

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 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.



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