





# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 10/10/2019  
 Invoice # 900417  
 API# 05-069-50512  
 Foreman: Corey Barras

**Customer:** Anadarko Petroleum Corporation  
**Well Name:** Mae J 8-9HZ

County: Weld Consultant: Tyler  
 State: Colorado Rig Name & Number: CARTEL 88  
 Sec: 25 Distance To Location: 39  
 Twp: 5n Units On Location: 4028/3103-4024/3214-4044/3205  
 Range: 68w Time Requested: 1400  
 Time Arrived On Location: 1330  
 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>1,919</u>	Cement Yield (cuft) : <u>1.48</u>
Total Depth (ft) : <u>1930</u>	Gallons Per Sack: <u>7.48</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>42</u>	Fluid Ahead (bbls): <u>30.0</u>
Landing Joint (ft) : <u>8</u>	H2O Wash Up (bbls): <u>20.0</u>
Max Rate: <u>8</u>	Spacer Ahead Makeup
Max Pressure: <u>2000</u>	<u>30 BBL WATER, DYE IN 2ND 10</u>

Calculated Results	Pressure of cement in annulus
Casing ID <u>8.921</u> Casing Grade <u>J-55 only used</u>	<b>Displacement: <u>145.73 bbls</u></b> (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
<b>cuft of Shoe <u>18.23</u> cuft</b> (Casing ID Squared) X (.005454) X (Shoe Joint ft)	<b>Pressure of cement in annulus</b>
<b>cuft of Conductor <u>61.05</u> cuft</b> (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	<b>Hydrostatic Pressure: <u>1415.65 PSI</u></b>
<b>cuft of Casing <u>988.65</u> cuft</b> (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length )	<b>Pressure of the fluids inside casing</b>
<b>Total Slurry Volume <u>1067.93</u> cuft</b> (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	<b>Displacement: <u>809.33 psi</u></b>
<b>bbls of Slurry <u>190.20</u> bbls</b> (Total Slurry Volume) X (.1781)	<b>Shoe Joint: <u>30.98 psi</u></b>
<b>Sacks Needed <u>722</u> sk</b> (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	<b>Total <u>840.31 psi</u></b>
<b>Mix Water <u>128.51</u> bbls</b> (Sacks Needed) X (Gallons Per Sack) ÷ 42	<b>Differential Pressure: <u>575.34 psi</u></b>
	<b>Collapse PSI: <u>2020.00 psi</u></b>
	<b>Burst PSI: <u>3520.00 psi</u></b>
	<b>Total Water Needed: <u>324.24 bbls</u></b>

X [Signature]  
 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.

# Mae J 8-9HZ

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

