



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 9/3/2015  
 Invoice # 80441  
 API# 05-123-41978  
 Foreman: Calvin Reimers

**Customer:** Anadarko Petroleum Corporation  
**Well Name:** Meguire 3N-16HZ

County: Weld Consultant: Sean / Chris  
 State: Colorado Rig Name & Number: Noble 2  
 Distance To Location: 28 Miles  
 Sec: 21 Units On Location: 4023-3104/4033-3203  
 Twp: 2N Time Requested: 1200am  
 Range: 65W Time Arrived On Location: 920pm  
 Time Left Location: 6:00 Am

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>1,839</u>	Cement Yield (cuft) :	<u>1.49</u>
Total Depth (ft) :	<u>1855</u>	Gallons Per Sack:	<u>7.48</u>
Open Hole Diameter (in.) :	<u>13.50</u>	% Excess:	<u>15%</u>
Conductor Length (ft) :	<u>40</u>	Displacement Fluid lb/gal:	<u>8.3</u>
Conductor ID :	<u>15.25</u>	BBL to Pit:	<u>23</u>
Shoe Joint Length (ft) :	<u>44</u>	Fluid Ahead (bbls):	<u>30.0</u>
Landing Joint (ft) :	<u>10</u>	H2O Wash Up (bbls):	<u>15.0</u>
Max Rate:	<u>6</u>	<b>Spacer Ahead Makeup</b>	
Max Pressure:	<u>1750</u>	<b>30 bbls With Dye in 2nd 10 bbls</b>	

Casing ID 8.921 Casing Grade J-55 only used

Calculated Results	Displacement: <u>139.51 bbls</u>
<b>cuft of Shoe</b> <u>19.28</u> <b>cuft</b> (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>30.53</u> <b>cuft</b> (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>1011.09</u> <b>cuft</b> (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length )	<b>Hydrostatic Pressure:</b> <u>1356.61 PSI</u>
<b>Total Slurry Volume</b> <u>1060.90</u> <b>cuft</b> (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	<b>Pressure of the fluids inside casing</b>
<b>bbls of Slurry</b> <u>188.95</u> <b>bbls</b> (Total Slurry Volume) X (.1781)	<b>Displacement:</b> <u>773.77 psi</u>
<b>Sacks Needed</b> <u>712</u> <b>sk</b> (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	<b>Shoe Joint:</b> <u>32.78 psi</u>
<b>Mix Water</b> <u>126.81</u> <b>bbls</b> (Sacks Needed) X (Gallons Per Sack) ÷ 42	<b>Total</b> <u>806.55 psi</u>
	<b>Differential Pressure:</b> <u>550.06 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>311.31 bbls</u>

X Calvin Reimers  
 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.



# SERIES 2000

PSI      Barrels / Minute   Barrels      Lbs / Gallon      Stage Volume

