



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 4/28/2017  
 Invoice # 200077  
 API# \_\_\_\_\_  
 Foreman: Kirk Kallhoff

**Customer:** Anadarko Petroleum Corporation

**Well Name:** butterball 24n2-34hz

County: Weld  
 State: Colorado  
 Sec: 10  
 Twp: 2n  
 Range: 67w

Consultant: lane  
 Rig Name & Number: wmo 252  
 Distance To Location: 26  
 Units On Location: 4028/4030/4033  
 Time Requested: 230 pm  
 Time Arrived On Location: 100 pm  
 Time Left Location: 6:15 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>1,830</u>	Cement Yield (cuft) : <u>1.49</u>
Total Depth (ft) : <u>1855</u>	Gallons Per Sack: <u>7.40</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>15.6</u>	BBL to Pit:
Shoe Joint Length (ft) : <u>42</u>	Fluid Ahead (bbls): <u>30.0</u>
Landing Joint (ft) : <u>15</u>	H2O Wash Up (bbls): <u>10.0</u>
Max Rate: <u>8</u>	<b>Spacer Ahead Makeup</b>
Max Pressure: <u>2000</u>	

Calculated Results	Pressure of cement in annulus
<b>Displacement:</b> <u>139.39 bbls</u> (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	<b>Hydrostatic Pressure:</b> <u>1349.99 PSI</u>
<b>cuft of Shoe</b> <u>18.23 cuft</u> (Casing ID Squared) X (.005454) X (Shoe Joint ft)	<b>Pressure of the fluids inside casing</b>
<b>cuft of Conductor</b> <u>65.76 cuft</u> (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	<b>Displacement:</b> <u>770.95 psi</u>
<b>cuft of Casing</b> <u>983.57 cuft</u> (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length )	<b>Shoe Joint:</b> <u>30.98 psi</u>
<b>Total Slurry Volume</b> <u>1067.56 cuft</u> (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	<b>Total</b> <u>801.94 psi</u>
<b>bbls of Slurry</b> <u>190.13 bbls</u> (Total Slurry Volume) X (.1781)	<b>Differential Pressure:</b> <u>548.06 psi</u>
<b>Sacks Needed</b> <u>716 sk</u> (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	<b>Collapse PSI:</b> <u>2020.00 psi</u>
<b>Mix Water</b> <u>126.24 bbls</u> (Sacks Needed) X (Gallons Per Sack) ÷ 42	<b>Burst PSI:</b> <u>3520.00 psi</u>
	<b>Total Water Needed:</b> <u>305.62 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.



# SERIES 2000

