



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 2/4/2018  
 Invoice # 200238  
 API# \_\_\_\_\_  
 Foreman: Kirk Kallhoff

**Customer:** Anadarko Petroleum Corporation  
**Well Name:** azul 13-24hz

County: Weld Consultant: bryan  
 State: Colorado Rig Name & Number: CARTEL 88  
 Distance To Location: 37  
 Sec: 13 Units On Location: 4028/4041/4020  
 Twp: 1n Time Requested: 130 pm  
 Range: 66w Time Arrived On Location: 1200 pm  
 Time Left Location: 2:30pm

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>1,907</u>	Cement Yield (cuft) :	<u>1.48</u>
Total Depth (ft) :	<u>1917</u>	Gallons Per Sack:	<u>7.48</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>15.5</u>	BBL to Pit:	
Shoe Joint Length (ft) :	<u>44</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>	<b>Spacer Ahead Makeup</b>	
Max Pressure:	<u>2000</u>	<b>30 BBL WATER, DYE IN 2ND 10</b>	

Calculated Results	Displacement:	144.64 bbls
Casing ID <u>8.921</u> Casing Grade <u>J-55 only used</u>	<small>(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)</small>	
<b>cuft of Shoe</b> <u>19.10</u> <b>cuft</b> <small>(Casing ID Squared) X (.005454) X (Shoe Joint ft)</small>	<b>Pressure of cement in annulus</b>	
<b>cuft of Conductor</b> <u>64.40</u> <b>cuft</b> <small>(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)</small>	<b>Hydrostatic Pressure:</b> <u>1406.79 PSI</u>	
<b>cuft of Casing</b> <u>937.55</u> <b>cuft</b> <small>(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length )</small>	<b>Pressure of the fluids inside casing</b>	
<b>Total Slurry Volume</b> <u>1021.06</u> <b>cuft</b> <small>(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)</small>	<b>Displacement:</b> <u>803.29 psi</u>	
<b>bbls of Slurry</b> <u>181.85</u> <b>bbls</b> <small>(Total Slurry Volume) X (.1781)</small>	<b>Shoe Joint:</b> <u>32.46 psi</u>	
<b>Sacks Needed</b> <u>690</u> <b>sk</b> <small>(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)</small>	<b>Total</b> <u>835.75 psi</u>	
<b>Mix Water</b> <u>122.87</u> <b>bbls</b> <small>(Sacks Needed) X (Gallons Per Sack) ÷ 42</small>	<b>Differential Pressure:</b> <u>571.04 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>307.51 bbls</u>	

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.



# SERIES 2000

PSI      Barrels / Minute      Barrels      Lbs / Gallon      Stage Volume

