



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 4/13/2017  
 Invoice # 900079  
 API# 05-123-44407  
 Foreman: Corey B.

**Customer:** Anadarko Petroleum Corporation  
**Well Name:** BUTTERBALL 25N2-34HZ

County: Weld Consultant: Matt  
 State: Colorado Rig Name & Number: 252  
 Distance To Location: 36  
 Sec: 10 Units On Location: 1027-3103/4020-3212/4019-321  
 Twp: 2N Time Requested: 1100  
 Range: 67W Time Arrived On Location: 1015  
 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>1,842</u>	Cement Yield (cuft) : <u>1.48</u>
Total Depth (ft) : <u>1852</u>	Gallons Per Sack: <u>7.49</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>15.25</u>	BBL to Pit:
Shoe Joint Length (ft) : <u>44</u>	Fluid Ahead (bbls): <u>30.0</u>
Landing Joint (ft) : <u>15</u>	H2O Wash Up (bbls): <u>20.0</u>
Max Rate: <u>8bm</u>	Spacer Ahead Makeup
Max Pressure: <u>2000</u>	<u>30 bbl /2nd 10 BBL with Die</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>140.16 bbls</u></b> <small>(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)</small>
<b>cuft of Shoe <u>19.10 cuft</u></b> <small>(Casing ID Squared) X (.005454) X (Shoe Joint ft)</small>	<b>Pressure of cement in annulus</b>
<b>cuft of Conductor <u>61.05 cuft</u></b> <small>(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)</small>	<b>Hydrostatic Pressure: <u>1358.84 PSI</u></b>
<b>cuft of Casing <u>990.31 cuft</u></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 <u>1070.46 cuft</u></b> <small>(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)</small>	<b>Displacement: <u>775.26 psi</u></b>
<b>bbls of Slurry <u>190.65 bbls</u></b> <small>(Total Slurry Volume) X (.1781)</small>	<b>Shoe Joint: <u>32.46 psi</u></b>
<b>Sacks Needed <u>723 sk</u></b> <small>(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)</small>	<b>Total <u>807.72 psi</u></b>
<b>Mix Water <u>128.99 bbls</u></b> <small>(Sacks Needed) X (Gallons Per Sack) ÷ 42</small>	<b>Differential Pressure: <u>551.12 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>319.15 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.



**Bison Oil Well Cementing  
Single Cement Surface Pipe**

Customer  
Well Name

Anadarko Petroleum Corporation
BUTTERBALL 25N2-34HZ

INVOICE #  
LOCATION  
FOREMAN  
Date

900079
Weld
Corey B.
4/13/2017

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**DESCRIPTION OF JOB EVENTS**

Amount Pumped	Time/Date	Event	Description	Rate	BBLs	Pressure
% Excess 15%						
Mixed bbls 128.99						
Total Sacks 723	615	What rig is doing upon Bison Arrival	Running Casing			
bbl Returns 23	620	JSA	Bison Crew			
Water Temp 63	630	Rig up				
	935	Safety Meeting	Bison and Rig crew			
Notes:	1008	Start Job				
	1010	Pressure Test				
	1012	Spacer Ahead	2nd 10 with die	4	30	90
	1017	Lead Cement	14.2 ppg	6	190	130
	1052	Shutdown				
	1024	Drop Plug	Preloaded in plug container			
	1056	Start Displacement		7	90	400
	1118	Bump Plug	500 psi over final lift (1120psi)	2	139	540
	1120	Floats Held	Held for 3 min			
	1121	End Job				
	1125	Rig Down				
	1200	Leave Location				

X Bryan Brown  
Work Performed

X Co-Man  
Title

X 4-13-17  
Date

# Butterball 25N234HZ-

