



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 3/12/2018  
 Invoice # 900279  
 API# 05-123-46262  
 Foreman: Corey Barras

**Customer:** Anadarko Petroleum Corporation  
**Well Name:** Quarter Circle 24-9 HZ

County: Weld Consultant: Matt  
 State: Colorado Rig Name & Number: Cartel 88  
 Distance To Location: 33  
 Sec: 24 Units On Location: 4027-3103/4030-3213/4024-3201  
 Twp: 1N Time Requested: 1800  
 Range: 67W Time Arrived On Location: 1715  
 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>1,874</u>	Cement Yield (cuft) : <u>1.48</u>
Total Depth (ft) : <u>1884</u>	Gallons Per Sack: <u>7.40</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>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>8</u>	Spacer Ahead Makeup
Max Pressure: <u>2000</u>	<u>30 bbl with Die in 2nd 10</u>

Calculated Results	Displacement: <u>142.63 bbls</u>
<b>cuft of Shoe</b> <u>19.10</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>61.05</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>964.46</u> <b>cuft</b> (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length )	<b>Hydrostatic Pressure:</b> <u>1382.45 PSI</u>
<b>Total Slurry Volume</b> <u>1044.61</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>186.04</u> <b>bbls</b> (Total Slurry Volume) X (.1781)	<b>Displacement:</b> <u>789.06 psi</u>
<b>Sacks Needed</b> <u>706</u> <b>sk</b> (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	<b>Shoe Joint:</b> <u>32.46 PSI</u>
<b>Mix Water</b> <u>124.36</u> <b>bbls</b> (Sacks Needed) X (Gallons Per Sack) ÷ 42	<b>Total</b> <u>821.52 psi</u>
	<b>Differential Pressure:</b> <u>560.93 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>316.99 bbls</u>

X [Signature]  
 Authorization To Proceed



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

Customer  
Well Name

Anadarko Petroleum Corporation  
Quarter Circle 24-9 HZ

INVOICE #  
LOCATION  
FOREMAN  
Date

900279  
Weld  
Corey Barras  
3/12/2018

Treatment Report Page 2

**DESCRIPTION OF JOB EVENTS**

Amount Pumped		Event	Description	Rate	BBLs	Pressure
% Excess	10%	1715	What rig is doing upon Bison Arrival			
Mixed bbls	124.36	1730	JSA			
Total Sacks	706					
bbl Returns	17	1845	Safety Meeting			
Water Temp	54	1930	Start Job			
		1932	Pressure Test			
Notes:						
		1934	Spacer Ahead		6	30
		1940	Lead Cement		7	186
			2nd 10 with die			150
			14.2 ppg			110
		2010	Shutdown			
		2011	Drop Plug			
			Preloaded in plug container			
		2013	Start Displacement		7	90
		2037	Bump Plug		2	142
			500 over final lift (1180 PSI)			540
		2039	Floats Held			
		2042	End Job			
			Held for 2 MIN with .5 bll back			
		2045	Rig Down			
		2115	Leave Location			

X [Signature]  
Work Performed

X Co. Man  
Title

X 3-12-18  
Date

# Quarter Circle 24-9 HZ

