



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 9/28/2018  
Invoice # 300198  
API# 05-123-47724  
Foreman: JASON KELEHER

Customer: Anadarko Petroleum Corporation  
Well Name: CASTLE PINE 19-14HZ

County: Weld  
State: Colorado  
Sec: 19  
Twp: 2N  
Range: 66W  
Consultant: LEVI  
Rig Name & Number: CARTEL 88  
Distance To Location: 25  
Units On Location: 1028-3106,4039-3214,4035-3215  
Time Requested: 1530  
Time Arrived On Location: 1430  
Time Left Location: 1900

WELL DATA	Cement Data
Casing Size OD (in) : 9.625	Cement Name: BFN III
Casing Weight (lb) : 36.00	Cement Density (lb/gal) : 14.2
Casing Depth (ft.) : 1,863	Cement Yield (cuft) : 1.48
Total Depth (ft) : 1873	Gallons Per Sack: 7.48
Open Hole Diameter (in.) : 13.50	% Excess: 10%
Conductor Length (ft) : 80	Displacement Fluid lb/gal: 8.3
Conductor ID : 15.25	BBL to Pit: 13.0
Shoe Joint Length (ft) : 42	Fluid Ahead (bbls): 30.0
Landing Joint (ft) : 5	H2O Wash Up (bbls): 10.0
Max Rate: 8	Spacer Ahead Makeup
Max Pressure: 2000	30 BBL WATER, DYE IN 2ND 10

Casing ID 8.921	Casing Grade J-55 only used
<b>Calculated Results</b>	<b>Displacement: 141.13 bbls</b>
<b>cuft of Shoe 18.40 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 61.05 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 958.49 cuft</b> (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length )	<b>Hydrostatic Pressure: 1374.25 PSI</b>
<b>Total Slurry Volume 1037.94 cuft</b> (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	<b>Pressure of the fluids inside casing</b>
<b>bbls of Slurry 184.86 bbls</b> (Total Slurry Volume) X (.1781)	<b>Displacement: 784.96 psi</b>
<b>Sacks Needed 701 sk</b> (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	<b>Shoe Joint: 31.28 psi</b>
<b>Mix Water 124.90 bbls</b> (Sacks Needed) X (Gallons Per Sack) ÷ 42	<b>Total 816.24 psi</b>
	<b>Differential Pressure: 558.01 psi</b>
	<b>Collapse PSI: 2020.00 psi</b>
	<b>Burst PSI: 3520.00 psi</b>
	<b>Total Water Needed: 306.03 bbls</b>

X   
Authorization To Proceed

Date \_\_\_\_\_