



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 8/13/2017  
 Invoice #: 666183  
 API#: 05-125-42732  
 Foreman: Nick Vigil

Customer: Bill Barrett Corp.  
 Well Name: Anschutz Equus Farms 4-62-29-2532CS

County: Weld  
 State: Colorado  
 Sec: 28  
 Twp: 4N  
 Range: 62W

Consultant: Casey  
 Rig Name & Number: WMO 344  
 Distance To Location: 25  
 Units On Location: 4023,4044  
 Time Requested: 18:30  
 Time Arrived On Location: 17:20  
 Time Left Location:

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.) : 792	Cement Yield (cuft) : 1.49
Total Depth (ft) : 791	Gallons Per Sack: 7.48
Open Hole Diameter (in.) : 12.25	% Excess: 40%
Conductor Length (ft) : 0	Displacement Fluid lb/gal: 8.3
Conductor ID : 0	BBL to Pit: 0.0
Shoe Joint Length (ft) : 40	Fluid Ahead (bbls): 20.0
Landing Joint (ft) : 0	H2O Wash Up (bbls): 20.0
Max Rate:	Spacer Ahead Makeup
Max Pressure:	Dye in 1st 10 bbl.

Calculated Results	Pressure of cement in annulus
Casing ID: 8.921	Casing Grade: J-55 only used
<b>Displacement: 58.14 bbls</b>	
<b>cuft of Shoe 17.36 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 0.00 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 347.25 cuft</b> (Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	<b>Hydrostatic Pressure: 584.26 PSI</b>
<b>Total Slurry Volume 364.61 cuft</b> (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	<b>Pressure of the fluids inside casing</b>
<b>bbls of Slurry 64.94 bbls</b> (Total Slurry Volume) X (.1781)	<b>Displacement: 324.25 psi</b>
<b>Sacks Needed 245 sk</b> (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	<b>Shoe Joint: 29.51 psi</b>
<b>Mix Water 43.58 bbls</b> (Sacks Needed) X (Gallons Per Sack) ÷ 42	<b>Total 353.76 psi</b>
	<b>Differential Pressure: 230.50 psi</b>
	<b>Collapse PSI: 2020.00 psi</b>
	<b>Burst PSI: 3520.00 psi</b>
	<b>Total Water Needed: 141.72 bbls</b>

X   
 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.

