



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 2/11/2018

Invoice # 666274

API# 05-123-46108

Foreman: Nick Vigil

Customer: Anadarko Petroleum Corporation

Well Name: Azul 13-33HZ

County: Weld

State: Colorado

Sec: 13

Twp: 1N

Range: 66W

Consultant: Brian/Levi

Rig Name & Number: Cartel 88

Distance To Location: 37 Miles

Units On Location: 4023/4039/4041

Time Requested: 5:30

Time Arrived On Location: 5:10

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.) : 1,888	Cement Yield (cuft) : 1.49
Total Depth (ft) : 1897	Gallons Per Sack: 7.48
Open Hole Diameter (in.) : 13.50	% Excess: 5%
Conductor Length (ft) : 80	Displacement Fluid lb/gal: 8.3
Conductor ID : 15.25	BBL to Pit:
Shoe Joint Length (ft) : 43	Fluid Ahead (bbls): 30.0
Landing Joint (ft) : 10	H2O Wash Up (bbls): 20.0
Max Rate: 8	Spacer Ahead Makeup
Max Pressure: 2000	Dye in second 10 bbl

Casing ID 8.921 Casing Grade J-55 only used

Calculated Results	Displacement: 143.41 bbls
cuft of Shoe 18.66 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
cuft of Conductor 61.05 cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Pressure of cement in annulus
cuft of Casing 927.80 cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Hydrostatic Pressure: 1392.78 PSI
Total Slurry Volume 1007.52 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Pressure of the fluids inside casing
bbls of Slurry 179.44 bbls (Total Slurry Volume) X (.1781)	Displacement: 795.53 psi
Sacks Needed 676 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Shoe Joint: 31.72 psi
Mix Water 120.43 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Total 827.25 psi
	Differential Pressure: 565.53 psi
	Collapse PSI: 2020.00 psi
	Burst PSI: 3520.00 psi
	Total Water Needed: 313.83 bbls

X Authorization To Proceed

AZUI 13-33HZ

