



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 3/10/2018

Invoice #: 666291

API#: 05-123-46253

Foreman: Nick Vigil

Customer: Anadarko Petroleum Corporation

Well Name: Quarter Circle 24-6HZ

County: Weld

State: Colorado

Sec: 13

Twp: 1N

Range: 66W

Consultant: Bryan

Rig Name & Number: Cartel 88

Distance To Location: 33 Miles

Units On Location: 4023/4024/4035

Time Requested: 21:00

Time Arrived On Location: 19:50

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.) : 1,869	Cement Yield (cuft) : 1.49
Total Depth (ft) : 1879	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:
Shoe Joint Length (ft) : 42	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

Calculated Results	Displacement: 142.02 bbls
cuft of Shoe 18.23 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 Hydrostatic Pressure: 1378.76 PSI
cuft of Casing 961.77 cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Pressure of the fluids inside casing Displacement: 787.77 psi Shoe Joint: 30.98 psi Total 818.75 psi
Total Slurry Volume 1041.05 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Differential Pressure: 560.01 psi
bbls of Slurry 185.41 bbls (Total Slurry Volume) X (.1781)	Collapse PSI: 2020.00 psi Burst PSI: 3520.00 psi
Sacks Needed 699 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Total Water Needed: 316.45 bbls
Mix Water 124.43 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	

X Authorization To Proceed

Quarter Circle 24-6HZ

— PSI — Barrels / Minute — Lbs / Gallon

