



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 2/5/2017
 Invoice #: 666070
 API#: 05-123-42456
 Foreman: Nick

Customer: Anadarko Petroleum Corporation
Well Name: Guest 29N-25HZ

County: Weld
 State: Colorado
 Sec: 13
 Twp: 2N
 Range: 65W

Consultant: Sean/Lane
 Rig Name & Number: WMO 252
 Distance To Location: 34 Miles
 Units On Location: 4020/4030/4032
 Time Requested: 18:30
 Time Arrived On Location: 18:20
 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.) : 1,844	Cement Yield (cuft) : 1.49
Total Depth (ft) : 1857	Gallons Per Sack: 7.48
Open Hole Diameter (in.) : 13.50	% Excess: 15%
Conductor Length (ft) : 80	Displacement Fluid lb/gal: 8.3
Conductor ID : 15.25	BBL to Pit: 0.0
Shoe Joint Length (ft) : 44	Fluid Ahead (bbls): 30.0
Landing Joint (ft) : 0	H2O Wash Up (bbls): 20.0
Max Rate: 8	Spacer Ahead Makeup
Max Pressure: 2000	Dye in the second 10 bbl

Calculated Results	Pressure of cement in annulus
cuft of Shoe 19.10 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	Displacement: 139.15 bbls (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)	Hydrostatic Pressure: 1360.32 PSI
cuft of Casing 991.44 cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Pressure of the fluids inside casing
Total Slurry Volume 1071.59 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Displacement: 776.13 psi
bbls of Slurry 190.85 bbls (Total Slurry Volume) X (.1781)	Shoe Joint: 32.46 psi
Sacks Needed 719 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Total 808.58 psi
Mix Water 128.08 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Differential Pressure: 551.73 psi
	Collapse PSI: 2020.00 psi
	Burst PSI: 3520.00 psi
	Total Water Needed: 317.24 bbls

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.

Guest 29N-25HZ

— PSI — Barrels / Minute — Lbs / Gallon — Stage Volume

