



Bison Oil Well Cementing Single Cement Surface Pipe


Date: 3/19/2017
 Invoice #: 666094
 API#: 05-123-44171
 Foreman: Nick

Customer: Anadarko Petroleum Corporation
Well Name: S.S. Minnow 14N2-14HZ

County: Weld
 State: Colorado
 Sec: 35
 Twp: 3N
 Range: 67W
 Consultant: Brian/Matt
 Rig Name & Number: WMO 252
 Distance To Location: 23 Miles
 Units On Location: 4023/4020/4019
 Time Requested: 18:00
 Time Arrived On Location: 17:30
 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.) : 2,328	Cement Yield (cuft) : 1.49
Total Depth (ft) : 2337	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:
Shoe Joint Length (ft) : 45	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 the second 10 bbl

Calculated Results	Pressure of cement in annulus
cuft of Shoe 19.53 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	Displacement: 177.27 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: 1717.37 PSI
cuft of Casing 1263.46 cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Pressure of the fluids inside casing
Total Slurry Volume 1344.05 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Displacement: 984.39 psi
bbls of Slurry 239.37 bbls (Total Slurry Volume) X (.1781)	Shoe Joint: 33.20 psi
Sacks Needed 902 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Total 1017.58 psi
Mix Water 160.65 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Differential Pressure: 699.78 psi
	Collapse PSI: 2020.00 psi
	Burst PSI: 3520.00 psi
	Total Water Needed: 387.92 bbls


 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.

S.S. Minnow 14N2-14HZ

