



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 10/9/2017
 Invoice #: 666212
 API#: 05-123-45152
 Foreman: Nick Vigil

Customer: Anadarko Petroleum Corporation
 Well Name: Robin 9-12HZ

County: Weld
 State: Colorado
 Sec: 9
 Twp: 1N
 Range: 65W

Consultant: Levi
 Rig Name & Number: Cartel 88
 Distance To Location: 39 Miles
 Units On Location: 4040/4024/4039
 Time Requested: 18:30
 Time Arrived On Location: 17:45
 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.) : 1,865	Cement Yield (cuft) : 1.49
Total Depth (ft) : 1875	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) : 44	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	Pressure of cement in annulus
Casing ID: 8.921	Casing Grade: J-55 only used
Displacement: 141.55 bbls	(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
cuft of Shoe 19.10 cuft	Pressure of cement in annulus
(Casing ID Squared) X (.005454) X (Shoe Joint ft)	Hydrostatic Pressure: 1375.81 PSI
cuft of Conductor 61.05 cuft	Pressure of the fluids inside casing
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Displacement: 785.18 psi
cuft of Casing 1003.24 cuft	Shoe Joint: 32.46 psi
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Total 817.64 psi
Total Slurry Volume 1083.39 cuft	Differential Pressure: 558.17 psi
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Collapse PSI: 2020.00 psi
bbls of Slurry 192.95 bbls	Burst PSI: 3520.00 psi
(Total Slurry Volume) X (.1781)	Total Water Needed: 321.05 bbls
Sacks Needed 727 sk	
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	
Mix Water 129.49 bbls	
(Sacks Needed) X (Gallons Per Sack) ÷ 42	

X *Li Kulloroff*
 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.

Robin 9-12HZ

