



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 1/14/2018

Invoice # 200224

API#

Foreman: Kirk Kallhoff

Customer: Anadarko Petroleum Corporation

Well Name: hammer 3-1hz

County: Weld
State: Colorado

Sec: 3
Twp: 1n
Range: 68w

Consultant: levi
Rig Name & Number: CARTEL 88
Distance To Location: 38
Units On Location: 4028/4035/4030
Time Requested: 1030 am
Time Arrived On Location: 930 am
Time Left Location: 3:30pm

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.) :	1,850	Cement Yield (cuft) :	1.48
Total Depth (ft) :	1860	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 :	15.5	BBL to Pit:	
Shoe Joint Length (ft) :	39	Fluid Ahead (bbls):	30.0
Landing Joint (ft) :	8	H2O Wash Up (bbls):	10.0
Max Rate:	8	Spacer Ahead Makeup	
Max Pressure:	2000	30 BBL WATER, DYE IN 2ND 10	

Calculated Results		Displacement: 140.62 bbls	
cuft of Shoe 16.93 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 64.40 cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)		Pressure of cement in annulus	
cuft of Casing 951.56 cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)		Hydrostatic Pressure: 1364.75 PSI	
Total Slurry Volume 1032.89 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)		Pressure of the fluids inside casing	
bbls of Slurry 183.96 bbls (Total Slurry Volume) X (.1781)		Displacement: 780.87 psi	
Sacks Needed 698 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)		Shoe Joint: 28.77 psi	
Mix Water 124.29 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42		Total 809.64 psi	
		Differential Pressure: 555.11 psi	
		Collapse PSI: 2020.00 psi	
		Burst PSI: 3520.00 psi	
		Total Water Needed: 304.92 bbls	

Kirk Kallhoff
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.

SERIES 2000

