



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 9/20/2018

Invoice # 200336

API#

Foreman: KirkKallhoff

Customer: Anadarko Petroleum Corporation

Well Name: castle pines 19-3hz

County: Weld

State: Colorado

Sec: 23

Twp: 2N

Range: 66W

Consultant: levi

Rig Name & Number: Cartel 88

Distance To Location: 25

Units On Location: 4028/4033/4024

Time Requested: 830 pm

Time Arrived On Location: 600 pm

Time Left Location: 12:30 pm

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.) : 1,875	Cement Yield (cuft) : 1.48
Total Depth (ft) : 1885	Gallons Per Sack: 7.40
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) : 40	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 with Die in 2nd 10

Casing ID 8.921 Casing Grade J-55 only used

Calculated Results	Displacement: 142.48 bbls
cuft of Shoe 17.36 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: 1383.19 PSI
cuft of Casing 965.00 cuft (Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Pressure of the fluids inside casing Displacement: 791.22 psi Shoe Joint: 29.51 PSI Total 820.73 psi
Total Slurry Volume 1043.41 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Differential Pressure: 562.46 psi
bbls of Slurry 185.83 bbls (Total Slurry Volume) X (.1781)	Collapse PSI: 2020.00 psi
Sacks Needed 705 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Burst PSI: 3520.00 psi
Mix Water 124.22 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Total Water Needed: 306.69 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.

SERIES 2000

