



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 7/13/2015
 Invoice #: 80613
 API#: 05-123-41792
 Foreman: JASON KELEHER

Customer: Anadarko Petroleum Corporation
 Well Name: TEDFORD 4N-28HZ

County: Weld
 State: Colorado
 Sec: 28
 Twp: 2N
 Range: 66W

Consultant: CHRIS
 Rig Name & Number: NOBLE 2
 Distance To Location: 19
 Units On Location: 4031-3106/ 4034-3203
 Time Requested: 2100
 Time Arrived On Location: 1900
 Time Left Location: 215

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.) : 1,867	Cement Yield (cuft) : 1.49
Total Depth (ft) : 1885	Gallons Per Sack: 7.48
Open Hole Diameter (in.) : 13.50	% Excess: 20%
Conductor Length (ft) : 47	Displacement Fluid lb/gal: 8.3
Conductor ID : 15.25	BBL to Pit: 16.0
Shoe Joint Length (ft) : 40	Fluid Ahead (bbls): 30.0
Landing Joint (ft) : 7	H2O Wash Up (bbls): 20.0
Max Rate: 6	Spacer Ahead Makeup
Max Pressure: 1250	30BBL WATER/ DYE IN 2ND 10

Casing ID: 8.921 Casing Grade: J-55 only used

Calculated Results	Pressure of cement in annulus
cuft of Shoe 17.42 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	Displacement: 141.77 bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
cuft of Conductor 35.87 cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Hydrostatic Pressure: 1377.29 PSI
cuft of Casing 1067.39 cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Pressure of the fluids inside casing
Total Slurry Volume 1120.68 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Displacement: 787.71 psi
bbls of Slurry 199.59 bbls (Total Slurry Volume) X (.1781)	Shoe Joint: 29.61 psi
Sacks Needed 752 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Total 817.32 psi
Mix Water 133.95 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Differential Pressure: 559.97 psi
	Collapse PSI: 2020.00 psi
	Burst PSI: 3520.00 psi
	Total Water Needed: 325.72 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.

TEDFORD 4N-28HZ SURFACE

