



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 6/25/2015
 Invoice #: 80602
 API#: 05-123-41493
 Foreman: JASON KELEHER

Customer: Anadarko Petroleum Corporation
Well Name: ENGLISH FARMS 34N-9HZ

County: Weld
 State: Colorado
 Sec: 8
 Twp: 1N
 Range: 65W
 Consultant: CODY
 Rig Name & Number: NOBLE 2
 Distance To Location: 20
 Units On Location: 4031-3106/ 3105-3204
 Time Requested: 1930
 Time Arrived On Location: 1800
 Time Left Location: 2130

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.) : 1,828	Cement Yield (cuft) : 1.49
Total Depth (ft) : 1838	Gallons Per Sack: 7.48
Open Hole Diameter (in.) : 13.50	% Excess: 10%
Conductor Length (ft) : 47	Displacement Fluid lb/gal: 8.3
Conductor ID : 15.25	BBL to Pit: 29.0
Shoe Joint Length (ft) : 38	Fluid Ahead (bbls): 30.0
Landing Joint (ft) : 7	H2O Wash Up (bbls): 20.0
Max Rate: 6	Spacer Ahead Makeup
Max Pressure: 1000	30BBL WATER/ DYE IN 2ND 10

Calculated Results	Pressure of cement in annulus
cuft of Shoe 16.50 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	Displacement: 138.92 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: 1348.52 PSI
cuft of Casing 957.47 cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Pressure of the fluids inside casing
Total Slurry Volume 1009.84 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Displacement: 771.81 psi Shoe Joint: 28.05 psi Total: 799.85 psi
bbls of Slurry 179.85 bbls (Total Slurry Volume) X (.1781)	Differential Pressure: 548.66 psi
Sacks Needed 678 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Collapse PSI: 2020.00 psi Burst PSI: 3520.00 psi
Mix Water 120.70 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Total Water Needed: 309.62 bbls

X *Jason Keleher*
 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.

ENGLISH FARMS 34N-9HZ SURFACE

