



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 6/14/2014

Invoice # 25011

API# 05-123-38003-00

Foreman: Calvin Reimers

Customer: EnCana Oil & Gas (USA) Inc.

Well Name: Jillson East Rinn 3H-22H-N268

County: Weld

State: Colorado

Sec: 22

Twp: 2N

Range: 68W

Consultant: Curt/Jim

Rig Name & Number: H&P 278

Distance To Location: 25 Miles

Units On Location: 4023-3104/4017-3211

Time Requested: 700am

Time Arrived On Location: 605am

Time Left Location: 3:30 pm

WELL DATA	Cement Data
Casing Size OD (in) : 9.625	Cement Name: BFN III
Casing Weight (lb) : 40.00	Cement Density (lb/gal) : 15.2
Casing Depth (ft) : 834	Cement Yield (cuft) : 1.27
Total Depth (ft) : 880	Gallons Per Sack: 5.89
Open Hole Diameter (in.) : 12.25	% Excess: 50%
Conductor Length (ft) : 82	Displacement Fluid lb/gal: 8.3
Conductor ID : 16	BBL to Pit: 15
Shoe Joint Length (ft) : 46	Fluid Ahead (bbls): 30.0
Landing Joint (ft) : 29	H2O Wash Up (bbls): 20.0
Max Rate: 7	Spacer Ahead Makeup
Max Pressure: 2500	30bbls H2O+KCL+Dye in 2nd 10bbls

Calculated Results	Pressure of cement in annulus
cuft of Shoe 19.75 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	Displacement: 61.90 bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
cuft of Conductor 73.06 cuft (Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Hydrostatic Pressure: 658.16 PSI
cuft of Casing 353.05 cuft (Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Pressure of the fluids inside casing
Total Slurry Volume 445.85 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Displacement: 339.40 psi Shoe Joint: 36.62 psi Total: 376.03 psi
bbls of Slurry 79.41 bbls (Total Slurry Volume) X (.1781)	Differential Pressure: 282.13 psi
Sacks Needed 351 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Collapse PSI: 2570.00 psi Burst PSI: 3950.00 psi
Mix Water 49.23 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Total Water Needed: 161.13 bbls

[Signature]
 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.

