



Bison Oil Well Cementing Tail & Lead

Date: 1/20/2014
 Invoice # 12811
 API# 05-123-37785
 Foreman: Calvin Reimers

Customer: Encana
 Well Name: Lochbuie 2F-31H

County: Weld
 State: Colorado
 Sec: 31
 Twp: 1N
 Range: 65W

Consultant: Nate
 Rig Name & Number: H&P 522
 Distance To Location: 26 Miles
 Units On Location: 3106/3212
 Time Requested: 130am
 Time Arrived On Location: 1215am
 Time Left Location: 6:45 am

WELL DATA

Casing Size (in) : 9.625
 Casing Weight (lb) : 40
 Casing Depth (ft) : 1,472
 Total Depth (ft) : 1509
 Open Hole Diameter (in) : 12.25
 Conductor Length (ft) : 84
 Conductor ID : 16
 Shoe Joint Length (ft) : 44
 Landing Joint (ft) : 34

Sacks of Tail Requested 120
 HOC Tail (ft): 0

One or the other, cannot have quantity in both

Max Rate: 7
 Max Pressure: 2500

Cement Data

Lead

Cement Name: [REDACTED]
 Cement Density (lb/gal) : 13.1
 Cement Yield (cuft) : 1.69
 Gallons Per Sack : 8.64
 % Excess : 60%

Tail

Cement Name: [REDACTED]
 Cement Density (lb/gal) : 15.2
 Cement Yield (cuft) : 1.27
 Gallons Per Sack: 5.89
 % Excess: 0%

Fluid Ahead (bbls) 110.8
 H2O Wash Up (bbls) 20.0

Spacer Ahead Makeup

30bbls H2O+KCL+Dye in 2nd 10bbls

Casing ID

8.835

Casing Grade

J-55 only used

Lead Calculated Results

HOC of Lead 928.08 ft
 Casing Depth - HOC Tail
 Volume of Lead Cement 290.66 cuft
 HOC of Lead X Open Hole Ann
 Volume of Conductor 74.84 cuft
 (Conductor ID Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)
 Total Volume of Lead Cement 365.50 cuft
 (cuft of Lead Cement) + (Cuft of Conductor)
 bbls of Lead Cement 104.15 bbls
 (Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)
 Sacks of Lead Cement 346.03 sk
 (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)
 bbls of Lead Mix Water 71.18 bbls
 (Sacks Needed) X (Gallons Per Sack) ÷ 42
 Displacement 110.77 bbls
 (Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)
 Total Water Needed: 201.95 bbls

Tail Calculated Results

Tail Cement Volume In Ann 152.40 cuft
 (HOC Tail) X (OH Ann)
 Total Volume of Tail Cement 133.49 Cuft
 (HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)
 bbls of Tail Cement 27.14 bbls
 (HOC of Tail) X (OH Ann) + (Cement Yield) X (Shoe Joint Ann) X (.1781) X (% Excess)
 HOC Tail 426.23 ft
 (Tail Cement Volume) ÷ (OH Ann)
 Sacks of Tail Cement 120.00 sk
 (Total Volume of Tail Cement) ÷ (Cement Yield)
 bbls of Tail Mix Water 16.83 bbls
 (Sacks of Tail Cement X Gallons Per Sack) ÷ 42
 Pressure of cement in annulus
 Hydrostatic Pressure 1001.70 PSI
 Collapse PSI: 2570.00 psi
 Burst PSI: 3950.00 psi

X Nate Curley
 Authorization To Proceed

