



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 1/7/2015

Invoice # 35101

API#

Foreman: Kirk Kallhoff

Customer: EnCana Oil & Gas (USA) Inc.

Well Name: file 3h-32h

County: Weld

State: Colorado

Sec: 32

Twp: 2n

Range: 68w

Consultant: norman

Rig Name & Number: paterson 326

Distance To Location: 30

Units On Location: 4030-3103/4032-3211

Time Requested: 100 pm

Time Arrived On Location: 1230 pm

Time Left Location: 6:00 pm

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 40.00
Casing Depth (ft) : 806
Total Depth (ft) : 860
Open Hole Diameter (in.) : 12.25
Conductor Length (ft) : 100
Conductor ID : 16
Shoe Joint Length (ft) : 42
Landing Joint (ft) : 35

Max Rate:

Max Pressure:

Cement Data

Cement Name: BFN III

Cement Density (lb/gal) : 15.2

Cement Yield (cuft) : 1.27

Gallons Per Sack: 5.89

% Excess: 50%

Displacement Fluid lb/gal: 8.3

BBL to Pit:

Fluid Ahead (bbls): 30.0

H2O Wash Up (bbls): 10.0

Spacer Ahead Makeup

Casing ID

8.835

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 17.88 cuft

(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 89.10 cuft

(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 331.66 cuft

(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 438.63 cuft

(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 78.12 bbls

(Total Slurry Volume) X (.1781)

Sacks Needed 345 sk

(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 48.44 bbls

(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 60.58 bbls

(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 636.42 PSI

Pressure of the fluids inside casing

Displacement: 329.42 psi

Shoe Joint: 33.16 psi

Total 362.59 psi

Differential Pressure: 273.83 psi

Collapse PSI: 2570.00 psi

Burst PSI: 3950.00 psi

Total Water Needed: 149.02 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.



**Bison Oil Well Cementing
Single Cement Surface Pipe**

Customer
Well Name

EnCana Oil & Gas (USA) Inc.
file 3h-32h

INVOICE #
LOCATION
FOREMAN
Date

35101
Weld
Kirk Kallhoff
1/7/2015

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

| | | Displace 1 | | | Displace 2 | | | Displace 3 | | | Displace 4 | | | Displace 5 | | |
|----------------|-------|------------|-------|-----|------------|------|-----|------------|------|-----|------------|------|-----|------------|------|-----|
| | | BBLS | Time | PSI | BBLS | Time | PSI | BBLS | Time | PSI | BBLS | Time | PSI | BBLS | Time | PSI |
| Safety Meeting | 414pm | | | | | | | | | | | | | | | |
| MIRU | 330pm | | | | | | | | | | | | | | | |
| CIRCULATE | 433pm | 0 | 504pm | 10 | 0 | | | 0 | | | 0 | | | 0 | | |
| Drop Plug | | 10 | 507pm | 100 | 10 | | | 10 | | | 10 | | | 10 | | |
| 504 pm | | 20 | 509pm | 190 | 20 | | | 20 | | | 20 | | | 20 | | |
| | | 30 | 511pm | 270 | 30 | | | 30 | | | 30 | | | 30 | | |
| | | 40 | 514pm | 330 | 40 | | | 40 | | | 40 | | | 40 | | |
| M & P | | 50 | 516pm | 410 | 50 | | | 50 | | | 50 | | | 50 | | |
| Time | Sacks | 60 | 519pm | 350 | 60 | | | 60 | | | 60 | | | 60 | | |
| 440 pm | 345 | 70 | | | 70 | | | 70 | | | 70 | | | 70 | | |
| 501 pm stop | | 80 | | | 80 | | | 80 | | | 80 | | | 80 | | |
| | | 90 | | | 90 | | | 90 | | | 90 | | | 90 | | |
| | | 100 | | | 100 | | | 100 | | | 100 | | | 100 | | |
| | | 110 | | | 110 | | | 110 | | | 110 | | | 110 | | |
| % Excess | 50% | 120 | | | 120 | | | 120 | | | 120 | | | 120 | | |
| Mixed bbls | 48.4 | 130 | | | 130 | | | 130 | | | 130 | | | 130 | | |
| Total Sacks | 345 | 140 | | | 140 | | | 140 | | | 140 | | | 140 | | |
| bbl Returns | 14 | 150 | | | 150 | | | 150 | | | 150 | | | 150 | | |
| Water Temp | | | | | | | | | | | | | | | | |

Notes:

plug did not bump

floats held

X

Work Performed

X

Title

X

Date