



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 7/20/2014

Invoice # 35003

API#

Foreman: Kirk Kallhoff

Customer: EnCana Oil & Gas (USA) Inc.

Well Name: grant hurt 1c-14h

County: Weld

State: Colorado

Sec: 14

Twp: 2n

Range: 68w

Consultant: mike

Rig Name & Number: patterson 326

Distance To Location: 25

Units On Location: 4023-3104/4020-3212

Time Requested: 300 pm

Time Arrived On Location: 230 pm

Time Left Location: 5:30 pm

WELL DATA

Casing Size OD (in) : 9.625

Casing Weight (lb) : 36.00

Casing Depth (ft.) : 820

Total Depth (ft) : 875

Open Hole Diameter (in.) : 12.25

Conductor Length (ft) : 100

Conductor ID : 16

Shoe Joint Length (ft) : 44

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): 20.0

Spacer Ahead Makeup

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 19.10 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 338.23 cuft

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

Total Slurry Volume 446.43 cuft

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

bbls of Slurry 79.51 bbls

(Total Slurry Volume) X (.1781)

Sacks Needed 352 sk

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

Mix Water 49.30 bbls

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

Displacement: 62.70 bbls

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

Pressure of cement in annulus

Hydrostatic Pressure: 647.47 PSI

Pressure of the fluids inside casing

Displacement: 334.60 psi

Shoe Joint: 34.74 psi

Total 369.34 psi

Differential Pressure: 278.13 psi

Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 161.99 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.
grant hurt 1c-14h

INVOICE #
LOCATION
FOREMAN
Date

35003
Weld
Kirk Kallhoff
7/20/2014

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 | 350pm | | | | | | | | | | | | | | | |
| MIRU | 245pm | | | | | | | | | | | | | | | |
| CIRCULATE | 404pm | 0 | 431pm | 10 | 0 | | | 0 | | | 0 | | | 0 | | |
| Drop Plug | | 10 | 433pm | 80 | 10 | | | 10 | | | 10 | | | 10 | | |
| 431pm | | 20 | 435pm | 100 | 20 | | | 20 | | | 20 | | | 20 | | |
| | | 30 | 437pm | 180 | 30 | | | 30 | | | 30 | | | 30 | | |
| | | 40 | 439pm | 240 | 40 | | | 40 | | | 40 | | | 40 | | |
| M & P | | 50 | 442pm | 280 | 50 | | | 50 | | | 50 | | | 50 | | |
| Time | Sacks | 60 | 446pm | 300 | 60 | | | 60 | | | 60 | | | 60 | | |
| 410 pm | 352 | 70 | | | 70 | | | 70 | | | 70 | | | 70 | | |
| 427 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 | 49.4 | 130 | | | 130 | | | 130 | | | 130 | | | 130 | | |
| Total Sacks | 352 | 140 | | | 140 | | | 140 | | | 140 | | | 140 | | |
| bbl Returns | 12 | 150 | | | 150 | | | 150 | | | 150 | | | 150 | | |
| Water Temp | | | | | | | | | | | | | | | | |

Notes:

bumped plug at 449 pm 730 psi 79.5 bbls slurry

X
Work Performed

X
Title

X
Date

7-20-14