



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 8/23/2014

Invoice # 45022

API# 05-123-39730

Foreman: JASON KELEHER

Customer: EnCana Oil & Gas (USA) Inc.

Well Name: DALE 4D-20H-0264

County: Weld

State: Colorado

Sec: 20

Twp: 2N

Range: 64W

Consultant: JOE

Rig Name & Number: H&P 278

Distance To Location: 22

Units On Location: 4031-3106/ 4020-3212

Time Requested: 300

Time Arrived On Location: 130

Time Left Location: 600

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 40.00
Casing Depth (ft) : 1,046
Total Depth (ft) : 1087
Open Hole Diameter (in.) : 12.25
Conductor Length (ft) : 140
Conductor ID : 15.25
Shoe Joint Length (ft) : 46
Landing Joint (ft) : 29

Max Rate: 7

Max Pressure: 2500

Cement Data

Cement Name: BFN III
Cement Density (lb/gal) : 15.2
Cement Yield (cuft) : 1.27
Gallons Per Sack: 5.89
% Excess: 17%
Displacement Fluid lb/gal: 8.3
BBL to Pit: 20.0
Fluid Ahead (bbls): 30.0
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup

30BBL H2O W/KCL, Dye in 2nd 10

Casing ID

8.835

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 19.72 cuft

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

cuft of Conductor 106.84 cuft

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

cuft of Casing 332.77 cuft

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

Total Slurry Volume 459.33 cuft

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

bbls of Slurry 81.81 bbls

(Total Slurry Volume) X (.1781)

Sacks Needed 362 sk

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

Mix Water 50.72 bbls

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

Displacement: 78.00 bbls

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

Pressure of cement in annulus

Hydrostatic Pressure: 825.80 PSI

Pressure of the fluids inside casing

Displacement: 430.97 psi

Shoe Joint: 36.58 psi

Total 467.56 psi

Differential Pressure: 358.25 psi

Collapse PSI: 2570.00 psi

Burst PSI: 3950.00 psi

Total Water Needed: 178.72 bbls

X *Randy Bunde*
Authorized 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.
DALE 4D-20H-0264

INVOICE #
LOCATION
FOREMAN
Date

45022
Weld
JASON KELEHER
8/23/2014

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	330															
MIRU	300															
CIRCULATE	404	0	431	0	0			0			0			0		
Drop Plug		10	433	70	10			10			10			10		
431		20	436	50	20			20			20			20		
		30	438	70	30			30			30			30		
		40	442	200	40			40			40			40		
M & P		50	444	470	50			50			50			50		
Time	Sacks	60	446	560	60			60			60			60		
0411-0428	362	70	448	560	70			70			70			70		
		80	453	480	80			80			80			80		
		90	BUMP	1040	90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
% Excess	17%	120			120			120			120			120		
Mixed bbls	50.7	130			130			130			130			130		
Total Sacks	362	140			140			140			140			140		
bbl Returns	20	150			150			150			150			150		
Water Temp	68															

Notes:

The day

PRESSURE TESTED TO 2000 PSI AT 0400, PUMPED 30 BBL WATER 2ND 10 HAVING DYE AT 0404, MIXED AND PUMPED 362 SKS AT 15.2, 81.8 BBL AT 0411

SHUT DOWN AT 0428, DROPPED PLUG AT 0431, STARTED DISPLACEMENT AT 0431, PUMPED 78 BBL LANDING AT 480 PSI AND PRESSURED UP TO 1040

PSI AT 0453, RELEASED PRESSURE AFTER HOLDING FOR 2 MINUTES AND CHECK FLOATS GOT .5 BBL BACK, REPRESSURED WELL AT 0459 TO 1500 PSI FOR

15 MINUTES AND RELEASED

X Randy Baker
Work Performed

X _____
Title

X _____
Date