



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 10/12/2014
Invoice #: 65015
API#: 05-123-36982
Foreman: Lee Sharp

Customer: EnCana Oil & Gas (USA) Inc.

Well Name: Billings 3B-18H

County: Weld
State: Colorado

Sec: 18
Twp: 3N
Range: 68W

Consultant: Mike
Rig Name & Number: Patterson 326
Distance To Location: 22
Units On Location: 4020-3212;4031-3106
Time Requested: 1:30
Time Arrived On Location: 23:48
Time Left Location:

WELL DATA

Casing Size OD (in): 9.625
Casing Weight (lb): 40.63
Casing Depth (ft): 871
Total Depth (ft): 885
Open Hole Diameter (in.): 12.25
Conductor Length (ft): 155
Conductor ID: 15.25
Shoe Joint Length (ft): 47
Landing Joint (ft): 0

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: 26.0
Fluid Ahead (bbls): 30.0
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup
10F+10D+10F= 30bbl

Casing ID

8.799

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 19.83 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 118.29 cuft
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 336.13 cuft
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 474.25 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 84.46 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 373 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 52.37 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 61.94 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 687.37 PSI

Pressure of the fluids inside casing

Displacement: 355.11 psi

Shoe Joint: 37.08 psi

Total 392.19 psi

Differential Pressure: 295.18 psi

Collapse PSI: #N/A psi

Burst PSI: #N/A psi

Total Water Needed: 164.31 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.
Billings 3B-18H

INVOICE #
LOCATION
FOREMAN
Date

65015
Weld
Lee Sharp
10/12/2014

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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	12:18															
MIRU	11:45															
CIRCULATE	12:39	0	1:15		0			0			0			0		
Drop Plug		10	1:18	50	10			10			10			10		
1:15		20	1:21	110	20			20			20			20		
		30	1:25	220	30			30			30			30		
		40	1:29	310	40			40			40			40		
M & P		50	1:32	350	50			50			50			50		
Time	Sacks	60	1:34	350	60			60			60			60		
12:53-1:09	373	70	1:38	land	70			70			70			70		
		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	52.37	130			130			130			130			130		
Total Sacks	373	140			140			140			140			140		
bbl Returns	26	150			150			150			150			150		
Water Temp	55															

Notes:

Job completed with no issues. Plug landed on calculated, final lift 370psi; casing pressure test @ 1:40-1:45 1510 psi end 1520 psi

X
Work Performed

X
Title

X
Date