



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 7/1/2014
Invoice #: 25014
API#: 05-123-37491
Foreman: Calvin Reimers

Customer: EnCana Oil & Gas (USA) Inc.

Well Name: Zisch 3D-6H-M368

County: Weld
State: Colorado
Sec: 22
Twp: 2N
Range: 68W

Consultant: Dave
Rig Name & Number: Ensign 124
Distance To Location: 29 Miles
Units On Location: 4023-3104/4020-3212
Time Requested: 200pm
Time Arrived On Location: 100pm
Time Left Location: 5:45pm

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 40.00
Casing Depth (ft) : 820
Total Depth (ft) : 850
Open Hole Diameter (in.) : 12.25
Conductor Length (ft) : 82
Conductor ID : 16
Shoe Joint Length (ft) : 40
Landing Joint (ft) : 22

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: 50%
Displacement Fluid lb/gal: 8.3
BBL to Pit: 30
Fluid Ahead (bbls): 30.0
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

Calculated Results

cuft of Shoe 17.15 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 73.06 cuft
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 346.81 cuft
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 437.02 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 77.83 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 344 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 48.26 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 60.80 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 647.67 PSI

Pressure of the fluids inside casing

Displacement: 336.30 psi

Shoe Joint: 31.81 psi

Total 368.12 psi

Differential Pressure: 279.55 psi

Collapse PSI: 2570.00 psi

Burst PSI: 3950.00 psi

Total Water Needed: 159.05 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.
Zisch 3D-6H-M368

INVOICE #
LOCATION
FOREMAN
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25014
Weld
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DESCRIPTION OF JOB EVENTS

Safety Meeting MIRU CIRCULATE Drop Plug 436pm M & P Time Sacks 419pm 433pm % Excess Mixed bbls Total Sacks bbl Returns Water Temp	349pm 300pm 413pm	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
		0	437pm	80	0			0			0			0		
		10	440pm	40	10			10			10			10		
		20	441pm	180	20			20			20			20		
		30	443pm	300	30			30			30			30		
		40	445pm	350	40			40			40			40		
		50	447pm	400	50			50			50			50		
		60	451pm	370	60			60			60			60		
		70	Bump	880	70			70			70			70		
		80			80			80			80			80		
		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
		120			120			120			120			120		
		130			130			130			130			130		
		140			140			140			140			140		
		150			150			150			150			150		

Notes:

The day

1/2 bbl Back on Bleed off

Did not do casing psi test the bop flange was leaking

X

Work Preformed

X

Title

X

Date