



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 12/30/2014
Invoice #: 25116
API#: 05-123-39772
Foreman: Calvin Reimers

Customer: EnCana Oil & Gas (USA) Inc.
Well Name: Newnam 2H-32H-C264

County: Weld
State: Colorado
Sec: 32
Twp: 2N
Range: 64W
Consultant: Mike / Charlie
Rig Name & Number: Ensign 124
Distance To Location: 23 Miles
Units On Location: 4023-3104/4020-3212
Time Requested: 400am
Time Arrived On Location: 320am
Time Left Location: 1215pm

WELL DATA	Cement Data
Casing Size OD (in) : 9.625	Cement Name: BFN III
Casing Weight (lb) : 40.00	Cement Density (lb/gal) : 15.2
Casing Depth (ft.) : 1,041	Cement Yield (cuft) : 1.27
Total Depth (ft) : 1053	Gallons Per Sack: 5.89
Open Hole Diameter (in.) : 12.25	% Excess: 43%
Conductor Length (ft) : 125	Displacement Fluid lb/gal: 8.3
Conductor ID : 16	BBL to Pit: 28.0
Shoe Joint Length (ft) : 47	Fluid Ahead (bbls): 30.0
Landing Joint (ft) : 17	H2O Wash Up (bbls): 20.0
Max Rate: 7	Spacer Ahead Makeup
Max Pressure: 2500	30bbls H2O+Dye in 2nd 10bbls

Casing ID 8.835	Casing Grade J-55 only used
Calculated Results	Displacement: 76.73 bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
cuft of Shoe 19.81 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	Pressure of cement in annulus
cuft of Conductor 111.37 cuft (Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Hydrostatic Pressure: 822.11 PSI
cuft of Casing 410.30 cuft (Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Pressure of the fluids inside casing
Total Slurry Volume 541.49 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Displacement: 428.87 psi
bbls of Slurry 96.44 bbls (Total Slurry Volume) X (.1781)	Shoe Joint: 36.75 psi
Sacks Needed 426 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Total 465.61 psi
Mix Water 59.79 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Differential Pressure: 356.49 psi
	Collapse PSI: 2570.00 psi
	Burst PSI: 3950.00 psi
	Total Water Needed: 186.52 bbls

x *Michael Roane*
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.
Newnam 2H-32H-C264

INVOICE #
LOCATION
FOREMAN
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25116
Weld
Calvin Reimers
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DESCRIPTION OF JOB EVENTS

Safety Meeting MIRU CIRCULATE Drop Plug 1049am M & P Time 1030am 1046am % Excess Mixed bbls Total Sacks bbl Returns Water Temp	947am 725am 1024am 1049am M & P Time Sacks 426 426 28 79.1	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	1050am	40	0			0			0			0		
		10	1053am	20	10			10			10			10		
		20	1055am	110	20			20			20			20		
		30	1057am	220	30			30			30			30		
		40	1059am	350	40			40			40			40		
		50	1100am	390	50			50			50			50		
		60	1102am	440	60			60			60			60		
		70	1105am	390	70			70			70			70		
		80	1117am	370	80			80			80			80		
		90	Bump	870	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

x Minil Rosen
Work Performed

x Comany m
Title

x 12-30-14
Date