



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 8/20/2014  
Invoice #: 25038  
API#: 05-123-39726-00  
Foreman: Calvin Reimers

Customer: EnCana Oil & Gas (USA) Inc.  
Well Name: Dale 4G-20H-0264

County: Weld  
State: Colorado  
Sec: 20  
Twp: 2N  
Range: 64W

Consultant: Randy  
Rig Name & Number: H&P 278  
Distance To Location: 22 Miles  
Units On Location: 4034-3104/4024-3203  
Time Requested: 1030am  
Time Arrived On Location: 930am  
Time Left Location: 7:00pm

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.) : 1,080	Cement Yield (cuft) : 1.27
Total Depth (ft) : 1120	Gallons Per Sack: 5.89
Open Hole Diameter (in.) : 12.25	% Excess: 15%
Conductor Length (ft) : 118	Displacement Fluid lb/gal: 8.3
Conductor ID : 16	BBL to Pit: 24
Shoe Joint Length (ft) : 45	Fluid Ahead (bbls): 30.0
Landing Joint (ft) : 29	H2O Wash Up (bbls): 20.0
Max Rate: 7	Spacer Ahead Makeup
Max Pressure: 2500	30 bbls H2O+Dye in 2nd 10 bbls

Casing ID	8.835	Casing Grade	J-55 only used
<b>Calculated Results</b>		<b>Displacement: 80.70 bbls</b>	
cuft of Shoe 19.10 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)		(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	
cuft of Conductor 105.13 cuft (Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)		<b>Pressure of cement in annulus</b>	
cuft of Casing 347.52 cuft (Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)		<b>Hydrostatic Pressure: 852.76 PSI</b>	
Total Slurry Volume 471.75 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)		<b>Pressure of the fluids inside casing</b>	
bbls of Slurry 84.02 bbls (Total Slurry Volume) X (.1781)		<b>Displacement: 446.33 psi</b>	
Sacks Needed 371 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)		<b>Shoe Joint: 35.42 psi</b>	
Mix Water 52.09 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42		<b>Total 481.75 psi</b>	
		<b>Differential Pressure: 371.01 psi</b>	
		<b>Collapse PSI: 2570.00 psi</b>	
		<b>Burst PSI: 3950.00 psi</b>	
		<b>Total Water Needed: 182.80 bbls</b>	

X Randy Burke  
Authorization To Proceed



**Bison Oil well Cementing**  
**Single Cement Surface Pipe**

Customer  
Well Name

EnCana Oil & Gas (USA) Inc.  
Dale 4G-20H-0264

INVOICE #  
LOCATION  
FOREMAN  
Date

25038  
Weld  
Calvin Reimers  
8/20/2014

Treatment Report Page 2

**DESCRIPTION OF JOB EVENTS**

Safety Meeting MIRU CIRCULATE Drop Plug 521pm M & P Time Sacks 502pm 518pm % Excess Mixed bbls Total Sacks bbl Returns Water Temp	414pm	Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
	325pm	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI
	456pm	0	522pm	90	0			0			0			0		
		10	525pm	40	10			10			10			10		
		20	526pm	50	20			20			20			20		
		30	528pm	140	30			30			30			30		
		40	530pm	340	40			40			40			40		
		50	532pm	420	50			50			50			50		
		60	534pm	470	60			60			60			60		
		70	535pm	530	70			70			70			70		
		80	540pm	470	80			80			80			80		
		90	Bump	970	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

Casing PSI Test 543pm 1550psi to 558pm 1570psi

X Randy Bunk  
Work Performed

X \_\_\_\_\_  
Title

X \_\_\_\_\_  
Date