



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 3/20/2015  
Invoice # 80159  
API#  
Foreman: Lee Sharp

Customer: EnCana Oil & Gas (USA) Inc.  
Well Name: Sprague 31-9H

County: Weld  
State: Colorado  
Sec: 9  
Twp: 2N  
Range: 67W

Consultant: Robert  
Rig Name & Number: Paterson 272  
Distance To Location: 18  
Units On Location: 4027-3106 / 4020- 3203  
Time Requested: 19:00  
Time Arrived On Location: 18:35  
Time Left Location:

## WELL DATA

Casing Size OD (in) : 9.625  
Casing Weight (lb) : 36.00  
Casing Depth (ft) : 862  
Total Depth (ft) : 879  
Open Hole Diameter (in.) : 12.25  
Conductor Length (ft) : 115  
Conductor ID : 15.25  
Shoe Joint Length (ft) : 44  
Landing Joint (ft) : 0  
Max Rate: 6  
Max Pressure: 1200

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

Spacer Ahead Makeup

10+10D+10

Casing ID

8.921

Casing Grade

J-55 only used

## Calculated Results

cuft of Shoe 19.15 cuft  
(Casing ID Squared) X (.005454) X (Shoe Joint ft)  
cuft of Conductor 87.76 cuft  
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)  
cuft of Casing 350.71 cuft  
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)  
Total Slurry Volume 457.62 cuft  
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)  
bbls of Slurry 81.50 bbls  
(Total Slurry Volume) X (.1781)  
Sacks Needed 360 sk  
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)  
Mix Water 50.53 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 63.19 bbls  
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

## Pressure of cement in annulus

Hydrostatic Pressure: 680.28 PSI

## Pressure of the fluids inside casing

Displacement: 352.46 psi

Shoe Joint: 34.85 psi

Total 387.30 psi

Differential Pressure: 292.98 psi

Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 163.73 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.  
Sprague 31-9H

INVOICE #  
LOCATION  
FOREMAN  
Date

80159  
Weld  
Lee Sharp  
3/20/2015

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**DESCRIPTION OF JOB EVENTS**

		Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
Safety Meeting	19:27	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI
MIRU	19:00															
CIRCULATE	19:49	0	20:14		0			0			0			0		
Drop Plug		10	20:17	70	10			10			10			10		
20:14		20	20:19	100	20			20			20			20		
		30	20:21	160	30			30			30			30		
		40	20:23	300	40			40			40			40		
M & P		50	20:25	340	50			50			50			50		
Time	Sacks	60	20:27	310	60			60			60			60		
19:54-20:11	360	70	20:28	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		
		120			120			120			120			120		
% Excess	50%	130			130			130			130			130		
Mixed bbls	50.5	140			140			140			140			140		
Total Sacks	360	150			150			150			150			150		
bbl Returns	27															
Water Temp	50															

Notes:

The day

Job Completed with no issues

plug land on calculated

Casing test begin at 20:29 1020psi ended at 20:33 1010psi

Floats checked and held with 1/4 bbl return

X

Work Performed

X

Title

Supervisor

X

Date

3/20/15