



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 1/1/2015

Invoice # 35098

API#

Foreman: Kirk Kallhoff

Customer: EnCana Oil & Gas (USA) Inc.

Well Name: sprague 3aa-9h-n267

County: Weld

State: Colorado

Sec:

Twp:

Range:

Consultant: satch

Rig Name & Number: paterson 272

Distance To Location: 17

Units On Location: 4030-3103/4020-3212

Time Requested: 1230 am

Time Arrived On Location: 1100 pm

Time Left Location: 7:30 am

## WELL DATA

Casing Size OD (in) : 9.625  
Casing Weight (lb) : 40.00  
Casing Depth (ft) : 845  
Total Depth (ft) : 879  
Open Hole Diameter (in.) : 12.25  
Conductor Length (ft) : 153  
Conductor ID : 16  
Shoe Joint Length (ft) : 44  
Landing Joint (ft) : 35

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: 40%  
Displacement Fluid lb/gal: 8.3  
BBL to Pit:  
Fluid Ahead (bbls): 30.0  
H2O Wash Up (bbls): 10.0

Spacer Ahead Makeup

Casing ID

8.835

Casing Grade

J-55 only used

## Calculated Results

**cuft of Shoe** 18.73 cuft  
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

**cuft of Conductor** 136.32 cuft  
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)

**cuft of Casing** 303.41 cuft  
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

**Total Slurry Volume** 458.46 cuft  
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

**bbls of Slurry** 81.65 bbls  
(Total Slurry Volume) X (.1781)

**Sacks Needed** 361 sk  
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

**Mix Water** 50.62 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42

**Displacement:** 63.39 bbls  
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

## Pressure of cement in annulus

**Hydrostatic Pressure:** 667.21 PSI

## Pressure of the fluids inside casing

**Displacement:** 345.38 psi

**Shoe Joint:** 34.74 psi

**Total** 380.12 psi

**Differential Pressure:** 287.09 psi

**Collapse PSI:** 2570.00 psi

**Burst PSI:** 3950.00 psi

**Total Water Needed:** 154.01 bbls

*Satch Bowe*

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 3aa-9h-n267

INVOICE #  
LOCATION  
FOREMAN  
Date

35098  
Weld  
Kirk Kallhoff  
1/2/2015

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**DESCRIPTION OF JOB EVENTS**

Safety Meeting		Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
MIRU		BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI
CIRCULATE	455am	0	620am	10	0			0			0			0		
Drop Plug	400am	10	622am	80	10			10			10			10		
620 am	550am	20	625am	120	20			20			20			20		
		30	627am	200	30			30			30			30		
		40	629am	270	40			40			40			40		
M & P		50	632am	300	50			50			50			50		
Time	Sacks	60	637am	340	60			60			60			60		
559 am	361	70			70			70			70			70		
616 am stop		80			80			80			80			80		
		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
% Excess	40%	120			120			120			120			120		
Mixed bbls	50.6	130			130			130			130			130		
Total Sacks	361	140			140			140			140			140		
bbl Returns	26	150			150			150			150			150		
Water Temp	80															

Notes:

bumped plug at 640 am 500 psi

floats held

x Francis Bowe  
Work Performed

x \_\_\_\_\_  
Title

x 1-2-15  
Date