



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 1/11/2015  
 Invoice #: 72063  
 API#: 05-123-3805200  
 Foreman: AARON CARRASCO

**Customer:** EnCana Oil & Gas (USA) Inc.

**Well Name:** FILE 3D-32H

County: WELD  
 State: Colorado  
 Sec: 32  
 Twp: 2N  
 Range: 68W

Consultant: ROBERT  
 Rig Name & Number: PATTERSON #326  
 Distance To Location: 28 MILES  
 Units On Location: 3101 4029-  
 Time Requested: 11PM  
 Time Arrived On Location: 9PM  
 Time Left Location:

WELL DATA		Cement Data	
Casing Size OD (in) :	9.625	Cement Name:	BFN III
Casing Weight (lb) :	36.00	Cement Density (lb/gal) :	15.2
Casing Depth (ft.) :	801	Cement Yield (cuft) :	1.27
Total Depth (ft) :	844	Gallons Per Sack:	5.89
Open Hole Diameter (in.) :	12.25	% Excess:	50%
Conductor Length (ft) :	110	Displacement Fluid lb/gal:	5.0
Conductor ID :	15.6	BBL to Pit:	
Shoe Joint Length (ft) :	44	Fluid Ahead (bbls):	30.0
Landing Joint (ft) :	35	H2O Wash Up (bbls):	20.0
Max Rate:	5	Spacer Ahead Makeup	
Max Pressure:	1000	10 FRESH-10DYE-10 FRESH	

Calculated Results	Displacement:	61.23 bbls
<b>cuft of Shoe</b> 19.10 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	
<b>cuft of Conductor</b> 90.42 cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	<b>Pressure of cement in annulus</b> <b>Hydrostatic Pressure:</b> 632.47 PSI	
<b>cuft of Casing</b> 94.85 cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length )	<b>Pressure of the fluids inside casing</b> <b>Displacement:</b> #N/A psi <b>Shoe Joint:</b> 34.74 psi <b>Total</b> #N/A psi	
<b>Total Slurry Volume</b> 434.13 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	<b>Differential Pressure:</b> #N/A psi	
<b>bbls of Slurry</b> 77.32 bbls (Total Slurry Volume) X (.1781)	<b>Collapse PSI:</b> 2020.00 psi <b>Burst PSI:</b> 3520.00 psi	
<b>Sacks Needed</b> 342 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	<b>Total Water Needed:</b> 159.17 bbls	
<b>Mix Water</b> 47.94 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42		

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.



EnCana Oil Well Cementing  
Single Cement Surface Pipe

Customer  
Well Name

EnCana Oil & Gas (USA) Inc.  
FILE 3D-32H

INVOICE #  
LOCATION  
FOREMAN  
Date

72003  
WELD  
AARON CARRASCO  
1/11/2015

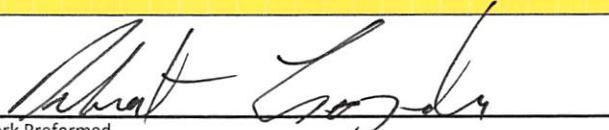
Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

		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
Safety Meeting	11:15PM															
MIRU	9PM															
CIRCULATE	11:22PM	0	12PM	0	0			0			0			0		
Drop Plug		10	12:06AM	40	10			10			10			10		
12PM		20	12:19AM	100	20			20			20			20		
		30	12:22AM	180	30			30			30			30		
		40	12:26AM	220	40			40			40			40		
M & P		50	12:30AM	300	50			50			50			50		
Time	Sacks	60	12:37AM	370	60			60			60			60		
11:33PM	342	63	12:39AM	1000	70			70			70			70		
		80			80			80			80			80		
		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
% Excess	50%	120			120			120			120			120		
Mixed bbls	48	130			130			130			130			130		
Total Sacks	342	140			140			140			140			140		
bbl Returns		150			150			150			150			150		
Water Temp	47															

Notes:

MIRU HAD SAFETY MEETING PRESS TESTED TO 1000 PSI THEN PUMPED SPACER 10BLS FRESH H2O 10 BLS OF H2O WITH BLUE DYE  
WENT IN TO MIX MIXED & PUMPED 342 SKS OF CEMENT @ 15.2 LBS/GAL DROPED PLUG DISP 62 BLS BUMPED PLUG @1000 PSI & HELD IT  
FOR 5 MINS

X   
Work Performed

X   
Title

X 1/13/15  
Date