

# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 9/8/2014

Invoice # 55024

API#

Foreman: monte

Customer: Encana

Well Name: Drieth 4e-6h-136b

County: Weld

State: Colorado

Sec: 6

Twp: 3n

Range: 68w

Consultant: kevin

Rig Name & Number: h&p 522

Distance To Location: 26.3

Units On Location: 4028-3201 4017-3211

Time Requested: 4:00pm

Time Arrived On Location: 3:50pm

Time Left Location: 10:30pm

## WELL DATA

Casing Size OD (in) : 9.625  
Casing Weight (lb) : 40.00  
Casing Depth (ft) : 827  
Total Depth (ft) : 865  
Open Hole Diameter (in.) : 12.25  
Conductor Length (ft) : 110  
Conductor ID : 15.6  
Shoe Joint Length (ft) : 45  
Landing Joint (ft) : 39

Max Rate: 5  
Max Pressure: 2000

## Cement Data

Cement Name: BFN III  
Cement Density (lb/gal) : 15.2  
Cement Yield (cuft) : 1.27  
Gallons Per Sack: 5.89  
% Excess: 25%  
Displacement Fluid lb/gal: 8.3  
BBL to Pit:  
Fluid Ahead (bbls): 20.0  
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup

10 fresh 10 dye

Casing ID

8.835

Casing Grade

J-55 only used

## Calculated Results

**cuft of Shoe** 19.16 cuft  
(Casing ID Squared) X (.005454) X (Shoe Joint ft)  
**cuft of Conductor** 90.42 cuft  
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)  
**cuft of Casing** 280.69 cuft  
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)  
**Total Slurry Volume** 390.27 cuft  
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)  
**bbls of Slurry** 69.51 bbls  
(Total Slurry Volume) X (.1781)  
**Sacks Needed** 307 sk  
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)  
**Mix Water** 43.09 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42

**Displacement:** 62.25 bbls  
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

## Pressure of cement in annulus

**Hydrostatic Pressure:** 653.00 PSI

## Pressure of the fluids inside casing

**Displacement:** 337.18 psi

**Shoe Joint:** 35.53 psi

**Total** 372.72 psi

**Differential Pressure:** 280.28 psi

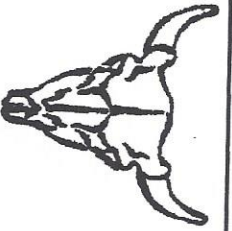
**Collapse PSI:** 2570.00 psi

**Burst PSI:** 3950.00 psi

**Total Water Needed:** 145.35 bbls

X *Kevin Boyer*  
Authorization To Proceed

Customers hereby acknowledge and specifically agree 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  
Drieth 4e-6h-136b

INVOICE #  
LOCATION  
FOREMAN  
Date

55024  
Weld  
monte  
9/8/2014

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**DESCRIPTION OF JOB EVENTS**

Safety Meeting	4:25	Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
	3:50	BLS	Time	PSI	BLS	Time	PSI	BLS	Time	PSI	BLS	Time	PSI	BLS	Time	PSI
MIRU	4:44	0	5:08	0	0			0			0			0		
CIRCULATE		10	5:10	20	10			10			10			10		
Drop Plug		20	5:12	70	20			20			20			20		
		30	5:14	140	30			30			30			30		
		40	5:18	250	40			40			40			40		
		50	5:22	200	50			50			50			50		
M & P		60	5:28	320	60			60			60			60		
Time	Sacks	60	5:29	520	70			70			70			70		
4:46-5:05	307	80			80			80			80			80		
		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
% Excess	25%	120			120			120			120			120		
Mixed bbls	43.09	130			130			130			130			130		
Total Sacks	307	140			140			140			140			140		
bbl Returns	15	150			150			150			150			150		
Water Temp	63															

Notes:

Safety Meeting, miru, pressure test per company man circulate 20 bbls ahead with dye in 2nd 10,

mix and pump 307 sks at 25 % excess. drop plug and displace 62.28 bbls h2o

X

Work Performed

X

Title *Ken Berger*

X

Date *9-8-14*