Bison Oil Well Cementing
Single Cement Surface Pipe

Date: 9/8/2014
Invoice # 55023
API#
Foreman: monte

Customer: Encana
Well Name: Drieth 4f-6h-136b

County: Weld
State: Colorado

Sec: 6
Twp: 3n
Range: 68w

Consultant: roy
Rig Name & Number: h&p 522
Distance To Location: 26.3
Units On Location: 4028-3201 4017-3211
Time Requested: 4:00am
Time Arrived On Location: 3:15am
Time Left Location: 6:20

WELL DATA

Casing Size OD (in) :	9.625
Casing Weight (lb) :	40.00
Casing Depth (ft.) :	854
Total Depth (ft) :	864
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:	40%
Displacement Fluid lb/gal:	8.3
BBL to Pit:	
Fluid Ahead (bbls):	20.0
H20 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 326.21 cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 435.79 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 77.61 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 343 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 48.12 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 64.30 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

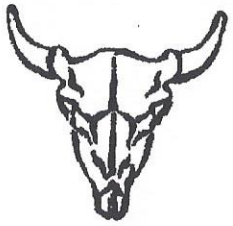
Hydrostatic Pressure: 674.32 PSI

Pressure of the fluids inside casing

Displacement:	348.83 psi
Shoe Joint:	35.53 psi
Total	384.36 psi
Differential Pressure:	289.96 psi
Collapse PSI:	2570.00 psi
Burst PSI:	3950.00 psi
Total Water Needed:	152.42 bbls

x Roy Hm
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	Encana
Well Name	Drieth 4f-6h-136b

INVOICE #	55023
LOCATION	Weld
FOREMAN	monte
Date	9/8/2014

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

		Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
Safety Meeting	4:05	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI
MIRU	3:30	0	5:02	0	0			0			0			0		
CIRCULATE	4:35	10	5:04	70	10			10			10			10		
Drop Plug		20	5:06	120	20			20			20			20		
5:00		30	5:08	180	30			30			30			30		
		40	5:10	290	40			40			40			40		
M & P		50	5:12	330	50			50			50			50		
Time	**Sacks**	~~60~~ 59	5:14	1040	60			60			60			60		
4:37-4:55	343	70			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	40%	120			120			120			120			120		
Mixed bbls	48.12	130			130			130			130			130		
Total Sacks	343	140			140			140			140			140		
bbl Returns	20	150			150			150			150			150		
Water Temp	58															

Notes:

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

mix and pump 343 sks at 40 % excess. drop plug and displace 64.30 bbls h2o

cassing test 1500 lb for 15 min

X Ray Arm
Work Preformed

X
Title

X 9-8-2014
Date