

Bison Oil Well Cementing Single Cement Surface Pipe

Date: 10/19/2014
 Invoice # 35058
 API# _____
 Foreman: Kirk Kallhoff

Customer: EnCana Oil & Gas (USA) Inc.
Well Name: grant elmquist 2c-14h-c268

County: Weld
 State: Colorado
 Sec: 14
 Twp: 2n
 Range: 68w

Consultant: dennis
 Rig Name & Number: ensign 135
 Distance To Location: 22
 Units On Location: 4030-3103/3106-3212
 Time Requested: 830 am
 Time Arrived On Location: 715 am
 Time Left Location: _____

WELL DATA

Casing Size OD (in) : 9.625
 Casing Weight (lb) : 40.00
 Casing Depth (ft.) : 840
 Total Depth (ft) : 868
 Open Hole Diameter (in.) : 12.25
 Conductor Length (ft) : 100
 Conductor ID : 16
 Shoe Joint Length (ft) : 44
 Landing Joint (ft) : 18
 Max Rate: _____
 Max Pressure: _____

Cement Data

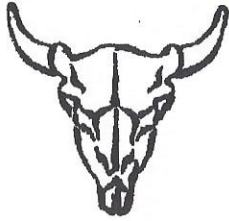
Cement Name: BFN III
 Cement Density (lb/gal) : 15.2
 Cement Yield (cuft) : 1.27
 Gallons Per Sack: 5.89
 % Excess: 50%
 Displacement Fluid lb/gal: 8.3
 BBL to Pit: _____
 Fluid Ahead (bbls): 30.0
 H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup

Casing ID	8.835	Casing Grade	J-55 only used
Calculated Results		Displacement: <u>61.72 bbls</u>	
cuft of Shoe <u>18.73</u> cuft		(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	
(Casing ID Squared) X (.005454) X (Shoe Joint ft)		Pressure of cement in annulus	
cuft of Conductor <u>89.10</u> cuft		Hydrostatic Pressure: <u>663.26 PSI</u>	
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)		Pressure of the fluids inside casing	
cuft of Casing <u>347.63</u> cuft		Displacement: <u>343.22 psi</u>	
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)		Shoe Joint: <u>34.74 psi</u>	
Total Slurry Volume <u>455.46</u> cuft		Total <u>377.96 psi</u>	
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)		Differential Pressure: <u>285.30 psi</u>	
bbls of Slurry <u>81.12</u> bbls		Collapse PSI: <u>2570.00 psi</u>	
(Total Slurry Volume) X (.1781)		Burst PSI: <u>3950.00 psi</u>	
Sacks Needed <u>359</u> sk		Total Water Needed: <u>162.01 bbls</u>	
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)			
Mix Water <u>50.29</u> bbls			
(Sacks Needed) X (Gallons Per Sack) ÷ 42			

X Dennis Eplund
 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.
grant elmquist 2c-14h-c268

INVOICE #
LOCATION
FOREMAN
Date

35058
Weld
Kirk Kallhoff
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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	853am															
MIRU	820am															
CIRCULATE	911am	0	939am	10	0			0			0			0		
Drop Plug		10	942am	70	10			10			10			10		
939 am		20	944am	140	20			20			20			20		
		30	946am	260	30			30			30			30		
		40	948am	320	40			40			40			40		
M & P		50	950am	380	50			50			50			50		
Time	Sacks	60	954am	360	60			60			60			60		
918 am	359	70			70			70			70			70		
936 am stop		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	50.4	130			130			130			130			130		
Total Sacks	359	140			140			140			140			140		
bbl Returns	14	150			150			150			150			150		
Water Temp																

Notes:

bumped plug at 955 am 560 psi 81.1 bbls slurry

casing test 1500 psi 15 min

X Dennis Phoe
Work Performed

X EnCana Rep
Title

X 10-19-14
Date