



Bison Oil Well Cementing Single Cement Surface Pipe

Invoice # 12754
API#
Foreman: Kirk Kallhoff

Customer: encana
Well Name: state 3c-16h

County: Weld County
State: Colorado
Sec: 16
Twp: 3N
Range: 68W

Consultant: eric
Rig Name & Number: h&p 278
Distance To Location:
Units On Location: 3103-3212
Time Requested: 1100 pm
Time Arrived On Location: 930 pm
Time Left Location: 1:00 am

WELL DATA

Casing Size OD (in) : 9.6250
Casing Weight (lb) : 40
Casing Depth (ft.) : 849
Total Depth (ft) : 890
Open Hole Diameter (in.) : 12.25
Conductor Length (ft) : 100
Conductor ID : 15.5
Shoe Joint Length (ft) : 42
Landing Joint (ft) : 28

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: 30%
Displacement Fluid lb/gal: 8.3
BBL to Pit:
Fluid Ahead (bbls):
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup

Casing ID

8.835

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 17.88 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 80.51 cuft
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 234.57 cuft
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 332.96 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 77.09 bbls
(Total Slurry Volume) X (.1781) X (% Excess Cement)

Sacks Needed 341 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 47.80 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 63.31 bbls

(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 670.37 PSI

Pressure of the fluids inside casing

Displacement: 347.96 psi

Shoe Joint: 33.16 psi

Total 381.13 psi

Differential Pressure: 289.24 psi

Collapse PSI: 2570.00 psi

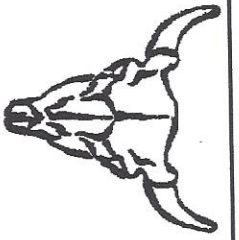
Burst PSI: 3950.00 psi

Total Water Needed: 67.80 bbls

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.



Bison Oil Well Cementing
Single Cement Surface Pipe

Customer
Well Name

encana
state 3c-16h

INVOICE #
LOCATION
FOREMAN

12754
Weld County
Kirk Kallhoff

DESCRIPTION OF JOB EVENTS

Treatment Report Page 2

Safety Meeting	1137	Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
	1053	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI
MIRU	1209	0	1237	20	0			0			0			0		
CIRCULATE		10	1239	50	10			10			10			10		
Drop Plug		20	1241	70	20			20			20			20		
		30	1243	160	30			30			30			30		
		40	1246	250	40			40			40			40		
		50	1248	310	50			50			50			50		
M & P		60	1254	310	60			60			60			60		
Time	Sacks	70			70			70			70			70		
1215 am	341	80			80			80			80			80		
1234 stop		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
% Excess	30%	120			120			120			120			120		
Mixed bbls	47.8	130			130			130			130			130		
Total Sacks	341	140			140			140			140			140		
		150			150			150			150			150		
bbl Returns	21															

Notes:

bumped plug at 1256 am 520 psi

X

X CO MAN - ENCANA

X 10.22.13

Work Performed

Title

Date