

# Bison Well Cementing Single Cement Surface Pipe

Customer: Encana Oil & Gas (USA) Inc.		Well Name: DATE 4B-20H-0264	
County: Weld		State: Colorado	
Sec: 20		Twp: 2N	
Range: 64W		Time Requested: 2100	
Time Arrived On Location: 1930		Time Left Location: 1730	
Rig Name & Number: H&P 278		Units On Location: 4031-3106/ 4020-3212	
Distance To Location: 22		Rig Name & Number: H&P 278	
Consultant: RANDY		Rig Name & Number: H&P 278	
Date: 8/24/2014		Invoice #: 45024	
API#: 05-123-39724		Foreman: JASON KELEHER	

WELL DATA	
Casing Size OD (in) :	9.625
Casing Weight (lb) :	40.00
Casing Depth (ft) :	1,049
Total Depth (ft) :	1092
Open Hole Diameter (in.) :	12.25
Conductor Length (ft) :	140
Conductor ID :	15.25
Shoe Joint Length (ft) :	43
Landing Joint (ft) :	29
Max Rate:	7
Max Pressure:	2500

Cement Data	
Cement Name:	BFN III
Cement Density (lb/gal) :	15.2
Cement Yield (cuft) :	1.27
Gallons Per Sack:	5.89
% Excess:	18%
Displacement Fluid lb/gal:	8.3
BBL to Pit:	19.0
Fluid Ahead (bbls):	30.0
H2O Wash Up (bbls):	20.0
Spacer Ahead Makeup	30BBL H2O W/KCL, Dye in 2nd 10

Casing ID	8.835
Casing Grade	J-55 only used

Calculated Results	
Cuft of Shoe	18.48 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)	
Cuft of Conductor	106.84 cuft
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)	
Cuft of Casing	335.74 cuft
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	
Total Slurry Volume	461.07 cuft
(Cuft of Shoe) + (Cuft of Conductor) + (Cuft of Casing)	
bbls of Slurry	82.12 bbls
(Total Slurry Volume) X (.1781)	
Sacks Needed	363 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	
Mix Water	50.91 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42	

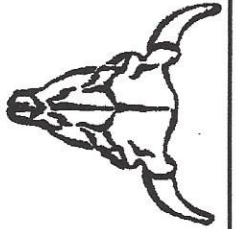
Pressure of the fluids inside casing	
Displacement:	78.43 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	
Pressure of cement in annulus	
Hydrostatic Pressure:	827.91 PSI
Displacement:	433.38 psi
Shoe Joint:	34.28 psi
Total	467.66 psi
Differential Pressure:	360.25 psi
Collapse PSI:	2570.00 psi
Burst PSI:	3950.00 psi
Total Water Needed:	179.34 bbls

X

Authorization To Proceed

Customers hereby acknowledge 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.  
DALE 4B-20H-0264

INVOICE #  
LOCATION  
FOREMAN  
Date

45024  
Weld  
JASON KELEHER  
8/24/2014

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**DESCRIPTION OF JOB EVENTS**

Safety Meeting	1500	Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
	1330	BLS	Time	PSI	BLS	Time	PSI	BLS	Time	PSI	BLS	Time	PSI	BLS	Time	PSI
MIRU	1525	0	1550	0	0			0			0			0		
CIRCULATE		10	1552	40	10			10			10			10		
Drop Plug		20	1555	20	20			20			20			20		
1549		30	1557	60	30			30			30			30		
		40	1601	260	40			40			40			40		
M & P		50	1603	440	50			50			50			50		
Time	Sacks	60	1604	500	60			60			60			60		
1531-1547	363	70	1606	500	70			70			70			70		
		80	1610	470	80			80			80			80		
		90	BUMP	1020	90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
% Excess	18%	120			120			120			120			120		
Mixed bbls	50.9	130			130			130			130			130		
Total Sacks	363	140			140			140			140			140		
bbl Returns	19	150			150			150			150			150		
Water Temp	68															

Notes:

The day

PRESSURE TESTED TO 2000 PSI AT 1522, PUMPED 30 BBL WATER 2ND 10 HAVING DYE AT 1625, MIXED AND PUMPED 363 SKS AT 15.2, 82.1 BBL AT 1531

SHUT DOWN AT 1547, DROPPED PLUG AT 1549, STARTED DISPLACEMENT AT 1550, PUMPED 78.4 BBL LANDING AT 470 PSI AND PRESSURED UP TO 1020

PSI AT 1610, RELEASED PRESSURE AFTER HOLDING FOR 3 MINUTES AND CHECK FLOATS GOT .5 BBL BACK, REPRESSURED WELL AT 1616 TO 1500 PSI FOR

15 MINUTES AND RELEASED

X  
Work Performed  
X  
Title  
X  
Date