



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 3/19/2015
 Invoice #: 80158
 API#
 Foreman: Lee Sharp

Customer: EnCana Oil & Gas (USA) Inc.
 Well Name: Sprague 3G-9H

County: Weld
 State: Colorado
 Consultant: Robert
 Rig Name & Number: Paterson 272
 Distance To Location: 18
 Sec: 9
 Twp: 2N
 Range: 67W
 Units On Location: 4027-3106 /4020- 3203
 Time Requested: 6:30
 Time Arrived On Location: 5:30
 Time Left Location:

WELL DATA		Cement Data	
Casing Size OD (in) :	9.625	Cement Name:	BFN III
Casing Weight (lb) :	36.00	Cement Density (lb/gal) :	15.2
Casing Depth (ft.) :	848	Cement Yield (cuft) :	1.27
Total Depth (ft) :	865	Gallons Per Sack:	5.89
Open Hole Diameter (in.) :	12.25	% Excess:	50%
Conductor Length (ft) :	115	Displacement Fluid lb/gal:	8.3
Conductor ID :	15.25	BBL to Pit:	
Shoe Joint Length (ft) :	42	Fluid Ahead (bbls):	30.0
Landing Joint (ft) :	0	H2O Wash Up (bbls):	20.0
Max Rate:	6	Spacer Ahead Makeup	
Max Pressure:	1200		10+10D+10

Casing ID: 8.921 Casing Grade: J-55 only used

Calculated Results			Displacement: 62.33 bbls	
cuft of Shoe	18.01	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	87.76	cuft	Hydrostatic Pressure:	669.38 PSI
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)			Pressure of the fluids inside casing	
cuft of Casing	344.22	cuft	Displacement:	347.64 psi
[Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)			Shoe Joint:	32.77 psi
Total Slurry Volume	449.99	cuft	Total	380.40 psi
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)			Differential Pressure:	288.97 psi
bbls of Slurry	80.14	bbls	Collapse PSI:	2020.00 psi
(Total Slurry Volume) X (.1781)			Burst PSI:	3520.00 psi
Sacks Needed	354	sk	Total Water Needed:	162.02 bbls
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)				
Mix Water	49.69	bbls		
(Sacks Needed) X (Gallons Per Sack) ÷ 42				

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 Oil & Gas (USA) Inc.
Sprague 3G-9H

INVOICE #
LOCATION
FOREMAN
Date

80158
Weld
Lee Sharp
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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	19:30															
MIRU	17:45															
CIRCULATE	19:46	0	20:10		0			0			0			0		
Drop Plug		10	20:12	100	10			10			10			10		
20:10		20	20:15	140	20			20			20			20		
		30	20:18	200	30			30			30			30		
		40	20:20	300	40			40			40			40		
M & P		50	20:21	340	50			50			50			50		
Time	Sacks	60	20:24	350	60			60			60			60		
19:52-20:06	354	70	20:25	Land	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	50%	120			120			120			120			120		
Mixed bbls	49.7	130			130			130			130			130		
Total Sacks	354	140			140			140			140			140		
bbl Returns	26	150			150			150			150			150		
Water Temp	50															

Notes:

The day

Job Completed with no issues

plug land on calculated

Casing test begin at 20:26 1020psi ended at 20:33 1020psi

Floats checked and held with 1/4 bbl return

X *Robert Engel*
Work Performed

X *Rij Supersari*
Title

3/19/15
Date