



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 4/18/2014

Invoice # 12141

API# 05123 90 700 000

Foreman: LEE SHARP

Customer: ENCANA

Well Name: EDITH ANN- DUCKWORTH 4F-21H

County: WELD

State: Colorado

Sec: 21

Twp: 2N

Range: 68W

Consultant: LENARD

Rig Name & Number: PATTERSON 272

Distance To Location: 26

Units On Location: 4027-3106; 4018-3203

Time Requested: 6:00 AM

Time Arrived On Location: 5:22 AM

Time Left Location:

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 40.00
Casing Depth (ft.) : 923
Total Depth (ft) : 930
Open Hole Diameter (in.) : 12.25
Conductor Length (ft) : 100
Conductor ID : 15.5
Shoe Joint Length (ft) : 46
Landing Joint (ft) : 40

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: 35%
Displacement Fluid lb/gal: 8.3
BBL to Pit: 22.0
Fluid Ahead (bbls): 30.0
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup

30BBL KCL10FR, 10 DYE, 10 FR

Casing ID

8.835

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 19.58 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 257.75 cuft
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 357.84 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 86.29 bbls
(Total Slurry Volume) X (.1781) X (% Excess Cement)

Sacks Needed 382 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 53.50 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 69.53 bbls

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

Pressure of cement in annulus

Hydrostatic Pressure: 728.80 PSI

Pressure of the fluids inside casing

Displacement: 378.15 psi

Shoe Joint: 36.32 psi

Total 414.47 psi

Differential Pressure: 314.33 psi

Collapse PSI: #N/A psi

Burst PSI: #N/A psi

Total Water Needed: 173.03 bbls

X Leonard Clark 4-18-14
Authorization To Proceed



**Bison Oil Well Cementing
Single Cement Surface Pipe**

Customer
Well Name

ENCANA
EDITH ANN- DUCKWORTH 4F-21H

INVOICE #
LOCATION
FOREMAN
Date

12141
WELD
LEE SHARP
4/18/2014

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

Safety Meeting		Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
MIRU	7:20	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI
CIRCULATE	8:00	0	8:56		0			0			0			0		
Drop Plug	8:22	10	8:58	100	10			10			10			10		
8:25		20	9:01	110	20			20			20			20		
		30	9:03	220	30			30			30			30		
		40	9:04	340	40			40			40			40		
M & P		50	9:06	430	50			50			50			50		
Time	Sacks	60	9:08	460	60			60			60			60		
8:32	382	70	9:12	900	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	36%	120			120			120			120			120		
Mixed bbls	53.6	130			130			130			130			130		
Total Sacks	382	140			140			140			140			140		
bbl Returns	17	150			150			150			150			150		
Water Temp	60															

Notes:

The day JOB COMPLETED WITH NO ISSUES

X

Work Performed

X

Title

X

Date