



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 6/17/2014
Invoice #: 25013
API#: 05-123-38864
Foreman: Calvin Reimers

Customer: Noble Energy Inc.
Well Name: Seneca E 15-72-1HN

County: Weld
State: Colorado

Sec: 14
Twp: 6N
Range: 65W

Consultant: Roger
Rig Name & Number: PD 829
Distance To Location: 18 Miles
Units On Location: 4023-3104/4020-3212
Time Requested: 500pm
Time Arrived On Location: 340pm
Time Left Location: 645pm

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 36.00
Casing Depth (ft) : 639
Total Depth (ft) : 665
Open Hole Diameter (in.) : 13.75
Conductor Length (ft) : 100
Conductor ID : 16
Shoe Joint Length (ft) : 43
Landing Joint (ft) : 18

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: 30%
Displacement Fluid lb/gal: 8.3
BBL to Pit: 12.0
Fluid Ahead (bbls): 40.0
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup
10bbls H2O+KCL+Dye in 2nd 10bbls

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 18.82 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 89.10 cuft
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 368.49 cuft
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 476.41 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 84.85 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 375 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 52.61 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 47.44 bbls

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

Pressure of cement in annulus

Hydrostatic Pressure: 504.55 PSI

Pressure of the fluids inside casing

Displacement: 256.82 psi

Shoe Joint: 34.24 psi

Total 291.07 psi

Differential Pressure: 213.49 psi

Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 160.05 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

Noble Energy Inc.
Seneca E 15-72-1HN

INVOICE #
LOCATION
FOREMAN
Date

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DESCRIPTION OF JOB EVENTS

Safety Meeting MIRU CIRCULATE Drop Plug 531pm M & P Time Sacks 512pm 529pm % Excess Mixed bbls Total Sacks bbl Returns Water Temp	435pm 350pm 504pm	Displace 1			Displace 2			Displace 3			Displace 4	
		BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time
		0	532pm	80	0			0			0	
		10	535pm	120	10			10			10	
		20	537pm	190	20			20			20	
		30	538pm	260	30			30			30	
		40	540pm	260	40			40			40	
		50	544pm	240	50			50			50	
		60	Bump	440	60			60			60	
		70			70			70			70	
		80			80			80			80	
		90			90			90			90	
		100			100			100			100	
		110			110			110			110	
		120			120			120			120	
		130			130			130			130	
		140			140			140			140	
		150			150			150			150	

Notes:

The day

1/2 bbl Back on Bleed off

Casing PSI Test 544pm 1050psi to 559pm 1100psi

X

Work Preformed

X

Title