



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 3/5/2014

Invoice # 12072

API# 05-123-37985

Foreman: Calvin Reimers

Customer: Noble

Well Name: Sater CC 18-72-1HN

County: Weld

State: Colorado

Sec: 18

Twp: 4N

Range: 63W

Consultant: Steve / Mike

Rig Name & Number: H&P 315

Distance To Location: 22 Miles

Units On Location: 3104/3204

Time Requested: 245am

Time Arrived On Location: 145am

Time Left Location: 945am

WELL DATA

Casing Size OD (in.) : 9.625
Casing Weight (lb) : 36.00
Casing Depth (ft.) : 645
Total Depth (ft) : 674
Open Hole Diameter (in.) : 13.75
Conductor Length (ft) : 100
Conductor ID : 16
Shoe Joint Length (ft) : 44
Landing Joint (ft) : 31

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: 20%
Displacement Fluid lb/gal: 8.3
BBL to Pit: 3.0
Fluid Ahead (bbls): 50.0
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup
50bbls H2O+Dye in 2nd 10bbls

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 18.89 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 286.61 cuft
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 394.59 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 84.33 bbls
(Total Slurry Volume) X (.1781) X (% Excess Cement)

Sacks Needed 373 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 52.29 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 48.91 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 509.29 PSI

Pressure of the fluids inside casing

Displacement: 259.35 psi

Shoe Joint: 34.36 psi

Total 293.71 psi

Differential Pressure: 215.59 psi

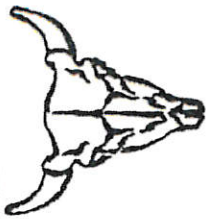
Collapse PSI: #N/A psi

Burst PSI: #N/A psi

Total Water Needed: 171.19 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.



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INVOICE # 12072
LOCATION Weld
FOREMAN Calvin Reimers
Date 3/5/2014

Customer Noble
Well Name Sater CC 18-72-1HN

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DESCRIPTION OF JOB EVENTS

	Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
	BBS	Time	PSI	BBS	Time	PSI	BBS	Time	PSI	BBS	Time	PSI	BBS	Time	PSI
Safety Meeting	634am			0	831am	50	0			0			0		
MIRU	540am			10	835am	50	10			10			10		
CIRCULATE	754am			20	837am	80	20			20			20		
Drop Plug				30	839am	170	30			30			30		
830am				40	841am	210	40			40			40		
				50	846am	210	50			50			50		
M & P				60	Bump	430	60			60			60		
Time		Sacks		70			70			70			70		
802am		373		80			80			80			80		
825am				90			90			90			90		
				100			100			100			100		
				110			110			110			110		
% Excess		20%		120			120			120			120		
Mixed bbls		52.29		130			130			130			130		
Total Sacks		373		140			140			140			140		
bbl Returns		3		150			150			150			150		
Water Temp		37													

Notes:

The day

Float Held

1/2 bbl back on bleed off

Casing PSI Test 847am 1055psi to 903am 1068psi

X *Steve D...*

X *Noble W.S.S.*

X *3/5/14*

Work Performed

Title

Date