



Bison Oil Well Cementing Single Cement Surface Pipe

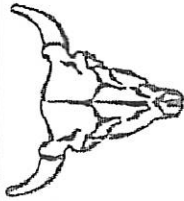
Date: 6/10/2014
Invoice #: 12037
API#:
Foreman: Kirk Kallhoff

Customer: Noble
Well Name: wells ranch ae30-64-1 bhna

County: weld
State: Colorado
Sec: 29
Twp: 6n
Range: 62w
Consultant: kevin
Rig Name & Number: h&p277
Distance To Location: 30
Units On Location: 3103-3205
Time Requested: 800pm
Time Arrived On Location: 700pm
Time Left Location: 11:00pm

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) :	608	Cement Yield (cuft) :	1.27
Total Depth (ft) :	644	Gallons Per Sack:	5.89
Open Hole Diameter (in.) :	13.75	% Excess:	30%
Conductor Length (ft) :	100	Displacement Fluid lb/gal:	8.3
Conductor ID :	16	BBL to Pit:	
Shoe Joint Length (ft) :	45	Fluid Ahead (bbls):	40.0
Landing Joint (ft) :	30	H2O Wash Up (bbls):	20.0
Max Rate:		Spacer Ahead Makeup	
Max Pressure:			

Casing ID	8.921	Casing Grade	I-55 only used
Calculated Results		Displacement: 45.88 bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	
cuft of Shoe	19.32 cuft	Pressure of cement in annulus	
(Casing ID Squared) X (.005454) X (Shoe Joint ft)		Hydrostatic Pressure:	480.08 PSI
cuft of Conductor	89.10 cuft	Pressure of the fluids inside casing	
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)		Displacement:	242.97 psi
cuft of Casing	347.29 cuft	Shoe Joint:	35.14 psi
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)		Total	278.11 psi
Total Slurry Volume	455.71 cuft	Differential Pressure:	201.97 psi
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)		Collapse PSI:	2020.00 psi
bbls of Slurry	81.16 bbls	Burst PSI:	3520.00 psi
(Total Slurry Volume) X (.1781)		Total Water Needed:	156.20 bbls
Sacks Needed	359 sk		
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)			
Mix Water	50.32 bbls		
(Sacks Needed) X (Gallons Per Sack) ÷ 42			
 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

INVOICE #
LOCATION
FOREMAN
Date

12037
weld
Kirk Kallhoff
6/10/2014

Customer
Well Name

Noble
wells ranch ae30-64-1 hna

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DESCRIPTION OF JOB EVENTS

	Safety Meeting MIRU CIRCULATE Drop Plug 939 pm M & P Time 917 pm 936 pm stop % Excess Mixed bbls Total Sacks bbl Returns Water Temp	842pm 810pm 909pm 371 371 3%	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
			0	939pm	10	0			0			0			0		
			10	942pm	100	10			10			10			10		
			20	944pm	170	20			20			20			20		
			30	946pm	230	30			30			30			30		
			40	948pm	270	40			40			40			40		
			50			50			50			50			50		
			60			60			60			60			60		
			70			70			70			70			70		
			80			80			80			80			80		
			90			90			90			90			90		
			100			100			100			100			100		
			110			110			110			110			110		
			120			120			120			120			120		
			130			130			130			130			130		
			140			140			140			140			140		
			150			150			150			150			150		

Notes:

bumped plug at 951 pm 510 psi
casing test 1000 psi for 15 min

83.9 bbls slurry

X *Kirk Kallhoff*
Work Performed

X *JLS*
Title

X 6-10-14
Date