



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 3/6/2014  
Invoice # 12124  
API# 05-123-XXXX-0000  
Foreman: LEE

Customer: H&P 522  
Well Name: VOGAL MCOY 2A 5H E267

County: WELD  
State: Colorado

Sec: 5  
Twp: 2N  
Range: 67W

Consultant: NATE  
Rig Name & Number: H&P 522  
Distance To Location: 60  
Units On Location: 4027-3106:  
Time Requested: 23:00  
Time Arrived On Location: 23:09  
Time Left Location:

## WELL DATA

Casing Size OD (in) : 9.6250  
Casing Weight (lb) : 40  
Casing Depth (ft.) : 813  
Total Depth (ft) : 862  
Open Hole Diameter (in.) : 12.25  
Conductor Length (ft) : 100  
Conductor ID : 15.5  
Shoe Joint Length (ft) : 40  
Landing Joint (ft) : 38

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: 50%  
Displacement Fluid lb/gal: 8.3  
BBL to Pit:  
Fluid Ahead (bbls):  
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup  
40 BBL DIE 2ND 10

Casing ID

8.835

Casing Grade

J-55 only used

## Calculated Results

**cuft of Shoe** 16.91 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** 223.30 cuft  
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

**Total Slurry Volume** 320.72 cuft  
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

**bbls of Slurry** 85.68 bbls  
(Total Slurry Volume) X (.1781) X (% Excess Cement)

**Sacks Needed** 379 sk  
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

**Mix Water** 53.12 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42

**Displacement:** 61.48 bbls

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

## Pressure of cement in annulus

**Hydrostatic Pressure:** 641.94 PSI

## Pressure of the fluids inside casing

**Displacement:** 333.42 psi

**Shoe Joint:** 31.37 psi

**Total** 364.79 psi

**Differential Pressure:** 277.15 psi

**Collapse PSI:** 2570.00 psi

**Burst PSI:** 3950.00 psi

**Total Water Needed:** 73.12 bbls

x *Note Custer*  
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

H&P 522  
VOGAL MCOY 2A 5H E267

INVOICE #  
LOCATION  
FOREMAN  
Date

12124  
WELD  
LEE  
3/6/2014

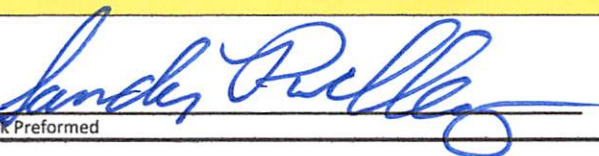
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**DESCRIPTION OF JOB EVENTS**

Safety Meeting		3:00	Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
MIRU		3:40	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI
CIRCULATE		4:30	0	5:32	90	0			0			0			0		
Drop Plug			10	5:33	140	10			10			10			10		
5:32			20	5:35	220	20			20			20			20		
			30	5:37	300	30			30			30			30		
			40	5:38	320	40			40			40			40		
M & P			50	5:40	380	50			50			50			50		
Time	Sacks		60	5:42	280	60			60			60			60		
4:52	389		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		
% Excess	50%		120			120			120			120			120		
Mixed bbls	53		130			130			130			130			130		
Total Sacks	378		140			140			140			140			140		
			150			150			150			150			150		
bbl Returns	30																

Notes:

The day-- JOB WENT WITHOUT ISSUE, RIGS FLOATS DID NOT HOLD SO HEAD WAS CLOSED IN AND LEFT WITH RIG @6:30

X   
Work Performed

X \_\_\_\_\_  
Title

X 3-7-14  
Date