



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 11/16/2014  
 Invoice # 35069  
 API# \_\_\_\_\_  
 Foreman: Kirk Kallhoff

**Customer:** Anadarko Petroleum Corporation  
**Well Name:** rissler state 4n-36hz

County: Weld  
 State: Colorado  
 Sec: 36  
 Twp: 4n  
 Range: 66w

Consultant: toby  
 Rig Name & Number: major 42  
 Distance To Location: 5  
 Units On Location: 4030-3103/4024-3203  
 Time Requested: 900 pm  
 Time Arrived On Location: 900 pm  
 Time Left Location: 3:30 pm

## WELL DATA

Casing Size OD (in) : 9.625  
 Casing Weight (lb) : 36.00  
 Casing Depth (ft.) : 1,153  
 Total Depth (ft) : 1171  
 Open Hole Diameter (in.) : 13.50  
 Conductor Length (ft) : \_\_\_\_\_  
 Conductor ID : \_\_\_\_\_  
 Shoe Joint Length (ft) : 40  
 Landing Joint (ft) : 8

Max Rate: \_\_\_\_\_  
 Max Pressure: \_\_\_\_\_

## Cement Data

Cement Name: BFN III  
 Cement Density (lb/gal) : 14.2  
 Cement Yield (cuft) : 1.49  
 Gallons Per Sack: 7.48  
 % Excess: 17%  
 Displacement Fluid lb/gal: 8.3  
 BBL to Pit: \_\_\_\_\_  
 Fluid Ahead (bbls): 30.0  
 H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup

Casing ID

8.921

Casing Grade

J-55 only used

## Calculated Results

**cuft of Shoe** 17.36 **cuft**  
 (Casing ID Squared) X (.005454) X (Shoe Joint ft)

**cuft of Conductor** 0.00 **cuft**  
 (Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)

**cuft of Casing** 659.30 **cuft**  
 (Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

**Total Slurry Volume** 676.66 **cuft**  
 (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

**bbls of Slurry** 120.51 **bbls**  
 (Total Slurry Volume) X (.1781)

**Sacks Needed** 454 **sk**  
 (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

**Mix Water** 80.88 **bbls**  
 (Sacks Needed) X (Gallons Per Sack) ÷ 42

**Displacement:** 86.66 **bbls**  
 (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

## Pressure of cement in annulus

**Hydrostatic Pressure:** 850.57 **PSI**

## Pressure of the fluids inside casing

**Displacement:** 479.90 **psi**

**Shoe Joint:** 29.51 **psi**

**Total** 509.41 **psi**

**Differential Pressure:** 341.16 **psi**

**Collapse PSI:** 2020.00 **psi**

**Burst PSI:** 3520.00 **psi**

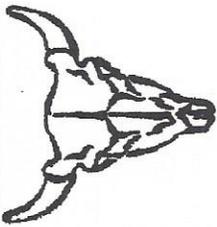
**Total Water Needed:** 217.54 **bbls**

X

*[Signature]*

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

35069  
Weld  
Kirk Kallhoff  
11/17/2014

Customer  
Well Name

Anadarko Petroleum Corporation  
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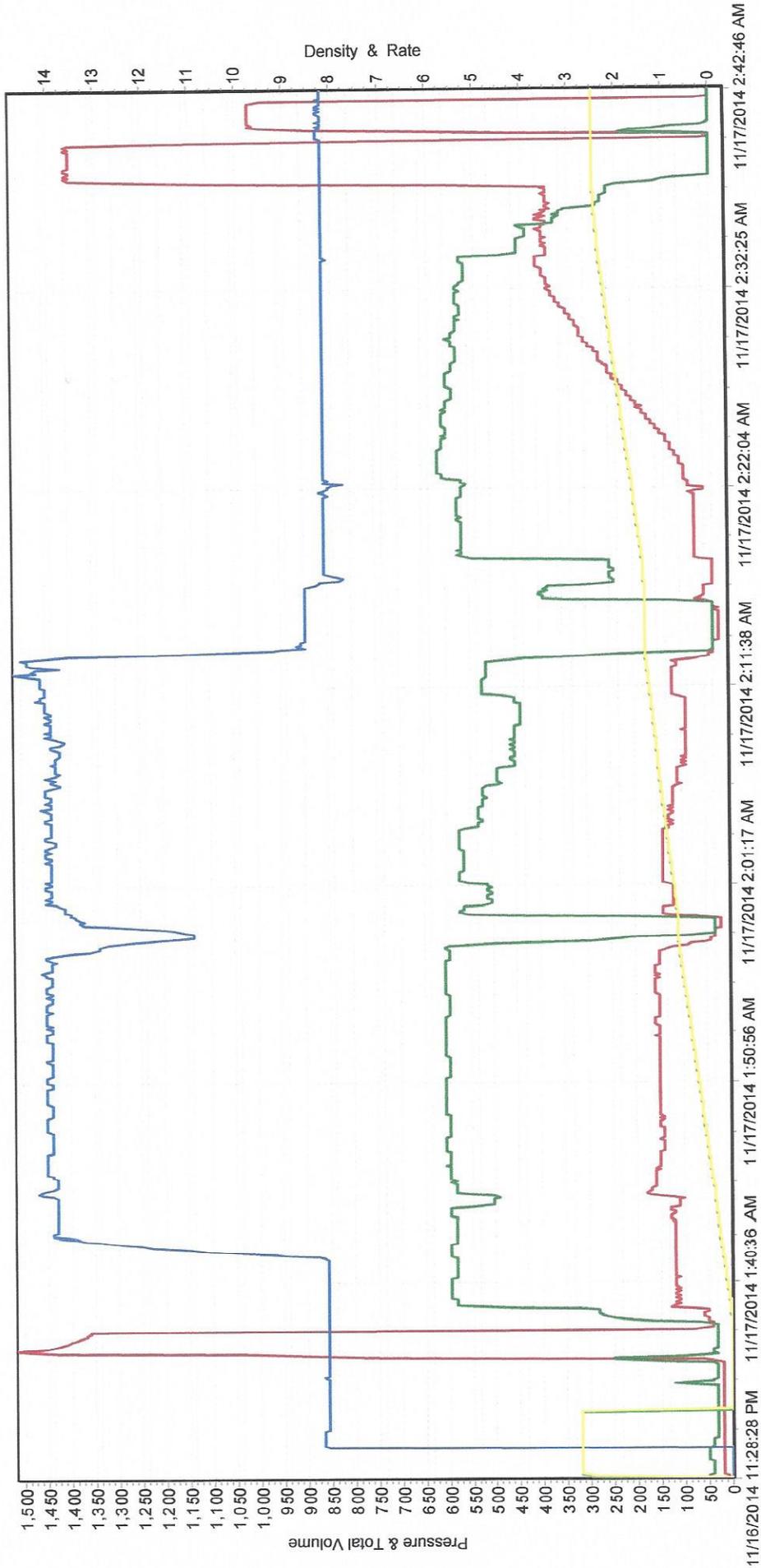
**DESCRIPTION OF JOB EVENTS**

	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
Safety Meeting	0	216am	10	0			0			0			0		
MIRU	10	219am	70	10			10			10			10		
CIRCULATE	20	221am	70	20			20			20			20		
Drop Plug	30	223am	100	30			30			30			30		
216 am	40	225am	170	40			40			40			40		
M & P	50	227am	250	50			50			50			50		
Time	60	229am	310	60			60			60			60		
144 am	70	231am	370	70			70			70			70		
213 am stop	80	233am	380	80			80			80			80		
	90			90			90			90			90		
	100			100			100			100			100		
	110			110			110			110			110		
	120			120			120			120			120		
% Excess	130			130			130			130			130		
Mixed bbls	140			140			140			140			140		
Total Sacks	150			150			150			150			150		
bbl Returns															
Water Temp															

Notes:  
 bumped plug at 237 am 1400 psi at 87.6 bbls  
 120.5 bbls slurry  
 floats held

# M/D TOTCO 2000 SERIES

— PSI — Barrels / Minute — Barrels — Lbs / Gallon — Stage Volume



## Release and Indemnification

Customer acknowledges and assumes the risks associated with oil well drilling, cementing and acidizing, including, without limitation, destabilization, loss of production, contamination, fracturing and loss of well control. Customer agrees to release Bison Oil Well Cementing, Inc., Bison Energy Services, Inc., its agents, employees and assigns, from any and all liability for any and all damages whatsoever to property of any kind owned by, in the possession of, or leased by customer and those persons or entities customer has the ability to bind by contract. Customer also agrees to indemnify and hold harmless Bison Oil Well Cementing, Inc., Bison Energy Services, Inc., its agents, employees and assigns, from and against any and all liability, claims, costs, expenses, attorneys fees and damages whatsoever for claims, costs, expenses, attorneys fees and damages whatsoever for personal injury, illness, death, property damage and loss resulting from: loss or reduction of production, destabilization loss of oil well control, failure of or contamination by acid stimulation, hydraulic fracturing, cementing, pumping services, incompatible fluid or other processes to stimulate, complete or end production, and/or any other condition. Customer's release, indemnity and hold harmless obligation shall apply even if the liability and claims are caused by the sole, concurrent, active or passive negligence, fault, or strict liability of Bison Oil Well Cementing, Inc. and/or Bison Energy Services, Inc. or any defect in the data, products, supplies, materials or equipment furnished by Bison Oil Well Cementing, Inc. whether in the design, manufacturing, maintenance, or marketing thereof of from failure to warn of such defect. In the event that any portion of this release and indemnity is found by a court of competent jurisdiction to be inoperable or unenforceable, the remaining portions and provisions shall apply, and customer agrees that the contract price herein shall be the limit of Bison Oil Well Cementing, Inc.'s liability, if any.