



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 2/2/2015  
 Invoice # 35118  
 API# \_\_\_\_\_  
 Foreman: kirk kallhoff

**Customer:** Anadarko Petroleum Corporation  
**Well Name:** griswald 2c-11hz

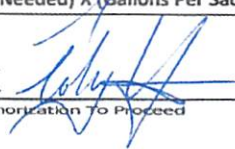
County: Weld  
 State: Colorado  
 Sec: 11  
 Twp: 4n  
 Range: 65w

Consultant: toby  
 Rig Name & Number: advanced 10  
 Distance To Location: 30  
 Units On Location: 4038-3103/4024-3203  
 Time Requested: 500 pm  
 Time Arrived On Location: 315 pm  
 Time Left Location: 7:15 pm

WELL DATA	
Casing Size OD (in) :	9.625
Casing Weight (lb) :	36.00
Casing Depth (ft.) :	1,718
Total Depth (ft) :	1732
Open Hole Diameter (in.) :	13.50
Conductor Length (ft) :	47
Conductor ID :	16
Shoe Joint Length (ft) :	39
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:	15%
Displacement Fluid lb/gal:	8.3
BBL to Pit:	
Fluid Ahead (bbls):	30.0
H2O Wash Up (bbls):	10.0
Spacer Ahead Makeup	

Calculated Results	Displacement: <b>130.42 bbls</b> (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	
<b>cuft of Shoe</b> <b>16.93 cuft</b> (Casing ID Squared) X (.005454) X (Shoe Joint ft)	<b>Pressure of cement in annulus</b>	
<b>cuft of Conductor</b> <b>41.88 cuft</b> (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)		<b>Hydrostatic Pressure: 1267.37 PSI</b>
<b>cuft of Casing</b> <b>939.17 cuft</b> (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length )	<b>Pressure of the fluids inside casing</b>	
<b>Total Slurry Volume</b> <b>997.97 cuft</b> (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)		<b>Displacement: 723.95 psi</b>
<b>bbls of Slurry</b> <b>177.74 bbls</b> (Total Slurry Volume) X (.1781)		<b>Shoe Joint: 28.77 psi</b>
<b>Sacks Needed</b> <b>670 sk</b> (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	<b>Total 752.72 psi</b>	
<b>Mix Water</b> <b>119.28 bbls</b> (Sacks Needed) X (Gallons Per Sack) ÷ 42	<b>Differential Pressure: 514.65 psi</b>	
	<b>Collapse PSI: 2020.00 psi</b>	
	<b>Burst PSI: 3520.00 psi</b>	
	<b>Total Water Needed: 289.70 bbls</b>	

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

Anadarko Petroleum Corporation  
griswald 2c-11hz

INVOICE #  
LOCATION  
FOREMAN  
Date

35118  
Weld  
kirk kallhoff  
2/2/2015

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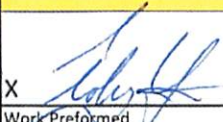
**DESCRIPTION OF JOB EVENTS**

		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	437pm															
MIRU	330pm															
CIRCULATE	457pm	0	556pm	10	0			0			0			0		
Drop Plug		10	559pm	50	10			10			10			10		
556 pm		20	601pm	50	20			20			20			20		
		30	603pm	70	30			30			30			30		
		40	605pm	130	40			40			40			40		
M & P		50	607pm	200	50			50			50			50		
Time	Sacks	60	610pm	270	60			60			60			60		
504 pm	670	70	612pm	340	70			70			70			70		
553 pm stop		80	614pm	400	80			80			80			80		
		90	616pm	460	90			90			90			90		
		100	619pm	550	100			100			100			100		
		110	621pm	600	110			110			110			110		
% Excess	15%	120	623pm	630	120			120			120			120		
Mixed bbls	119.4	130	628pm	620	130			130			130			130		
Total Sacks	670	140			140			140			140			140		
bbl Returns	24	150			150			150			150			150		
Water Temp																

Notes:

bumped plug at 628 pm 1540 psi

floats held

X   
Work Performed

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

X 2-2-15  
Date