



Bison Oil Well Cementing  
1547 Gaylord Street  
Denver, CO 80206

FIELD INVOICE #  
80540

**FIELD INVOICE**

WELL NO. AND FARM	COUNTY	STATE	DATE	Contractor
cook 28n-16hz	Weld	Colorado	10/8/2015	noble 2
CHARGE TO	WELL LOCATION			
Anadarko Petroleum Corporation	Section	TWP	RANGE	
	33	2n	66w	
PO Box 4995	DELIVERED TO	LOCATION 1		CODE
	41-22	shop		
The Woodlands, TX 77387	SHIPPED VIA	LOCATION 2		CODE
	4029-3106/4035-3203	41-22		
	TYPE AND PURPOSE OF JOB		LOCATION 3	CODE
	SURFACE		shop	
			WELL TYPE	CODE
			gas	

ITEM	DESCRIPTION	UNITS		UNIT PRICE	AMOUNT
		QTY.	MEAS.		
<b>PUMP CHARGE</b>					
SURFACE		1	ea		
<b>MILLEAGE CHARGE</b>					
Pickup		60	mile		
Truck/Equipment		60	mile		
Truck/Equipment		60	mile		
Truck/Equipment		60	mile		
<b>CEMENT CHARGE:</b>					
BFN III		755	sacks		
<b>ADDITIVES CHARGE:</b>					
KCL		3	qt		
Liquid Dye Rhodamine		15	oz		
Sugar			lbs		
<b>FLOAT EQUIPMENT:</b>					
<b>OTHER CHARGES:</b>					
DATA ACQUISITION FEE		1	ea		
Containment		1	ea		
Wait Time		1	hr		

If this account is not paid within 30 days of invoice date a FINANCE CHARGE will be made. Computed at a single monthly rate of 1 1/2% which is equal to an ANNUAL PERCENTAGE RATE OF 18%.

TAX

*Hayden Stone*  
Customer or Agent

COOK 28N-16HZ NOBLE 2  
FRANK KINNEY USER ID: CU0741  
CONSULTANT: *Hayden Stone*  
AFE# 2111716 DATE: *10-8-15*  
GL CODE: 80012090

SUBJECT TO CORRECTION

*[Signature]*  
Bison Oil Well Cementing, Inc. Representative

Customers hereby acknowledges and specifically agrees to the terms and conditions on this work order, including, without limitation, the provisions on the reverse hereof which include the release and indemnity.



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 10/7/2015

Invoice # 80540

API#

Foreman: Kirk Kallhoff

**Customer:** Anadarko Petroleum Corporation

**Well Name:** cook 28n-16hz

County: Weld

State: Colorado

Sec: 33

Twp: 2n

Range: 66w

Consultant: hayden

Rig Name & Number: noble 2

Distance To Location: 30

Units On Location: 4029-3106/4035-3203

Time Requested: 800 pm

Time Arrived On Location: 630 pm

Time Left Location: 1:00 pm

WELL DATA		Cement Data	
Casing Size OD (in) :	9.625	Cement Name:	BFN III
Casing Weight (lb) :	36.00	Cement Density (lb/gal) :	14.2
Casing Depth (ft.) :	1,877	Cement Yield (cuft) :	1.49
Total Depth (ft) :	1887	Gallons Per Sack:	7.48
Open Hole Diameter (in.) :	13.50	% Excess:	20%
Conductor Length (ft) :	40	Displacement Fluid lb/gal:	8.3
Conductor ID :	15.25	BBL to Pit:	
Shoe Joint Length (ft) :	41	Fluid Ahead (bbls):	50.0
Landing Joint (ft) :	10	H2O Wash Up (bbls):	10.0
Max Rate:		Spacer Ahead Makeup	
Max Pressure:			

Calculated Results		Pressure of cement in annulus	
<b>cuft of Shoe</b>	<b>17.80 cuft</b>	<b>Displacement:</b>	<b>142.71 bbls</b>
(Casing ID Squared) X (.005454) X (Shoe Joint ft)		(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	
<b>cuft of Conductor</b>	<b>30.53 cuft</b>	<b>Hydrostatic Pressure:</b>	<b>1384.66 PSI</b>
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)		<b>Pressure of the fluids inside casing</b>	
<b>cuft of Casing</b>	<b>1077.36 cuft</b>	<b>Displacement:</b>	<b>791.65 psi</b>
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)		<b>Shoe Joint:</b>	<b>30.25 psi</b>
<b>Total Slurry Volume</b>	<b>1125.68 cuft</b>	<b>Total</b>	<b>821.89 psi</b>
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)		<b>Differential Pressure:</b>	<b>562.77 psi</b>
<b>bbls of Slurry</b>	<b>200.48 bbls</b>	<b>Collapse PSI:</b>	<b>2020.00 psi</b>
(Total Slurry Volume) X (.1781)		<b>Burst PSI:</b>	<b>3520.00 psi</b>
<b>Sacks Needed</b>	<b>755 sk</b>	<b>Total Water Needed:</b>	<b>337.26 bbls</b>
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)			
<b>Mix Water</b>	<b>134.55 bbls</b>		
(Sacks Needed) X (Gallons Per Sack) ÷ 42			

X *Hayden St*  
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.



# M/D TOTCO 2000 SERIES

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

