



Bison Oil Well Cementing  
1547 Gaylord Street  
Denver, CO 80206

FIELD INVOICE #

90049

FIELD INVOICE

WELL NO. AND FARM		COUNTY	STATE	DATE	Contractor
Cook 26G-16HZ		Weld	Colorado	10/23/2015	Noble 2
CHARGE TO		WELL LOCATION			
Anadarko Petroleum Corporation		Section	TWP	RANGE	
PO Box 4995		16	2N	65W	
The Woodlands, TX 77387		DELIVERED TO		LOCATION 1	CODE
		cr. 41 & cr. 22		Greeley	
		SHIPPED VIA		LOCATION 2	CODE
		4024/3210/4007/3106/3105/3204		cr. 41 & cr.22	
		TYPE AND PURPOSE OF JOB		LOCATION 3	CODE
		SURFACE		Greeley	
				WELL TYPE	CODE
				Oil	
ITEM	DESCRIPTION	UNITS		UNIT PRICE	AMOUNT
		QTY.	MEAS.		
PUMP CHARGE					
SURFACE		1			\$ -
MILLEAGE CHARGE					
Pickup		60	mile		
Truck/Equipment		60	mile		
Truck/Equipment		60	mile		
CEMENT CHARGE:					
BFN III		775	sack		
ADDITIVES CHARGE:					
Red Dye		16	oz		
FLOAT EQUIPMENT:					
RUBBER PLUG - 9 5/8"					
OTHER CHARGES:					
DATA ACQUISITION FEE		1			
Containment		1			
Wait Time		0	hour		

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

COOK 26G-16HZ NOBLE 2  
FRANK KINNEY USER ID: CU0741  
CONSULTANT: Sean Giddings  
AFE# 2111710 DATE: 10/23/15  
GL CODE: 800/2090

SUBJECT TO CORRECTION

Customer or Agent

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: 10/23/2015  
Invoice # 90049  
API# 05-123-42237  
Supervisor Nick

Customer: Anadarko Petroleum Corporation  
Well Name: Cook 26G-16HZ

County: Weld  
State: Colorado  
Sec: 16  
Twp: 2N  
Range: 65W

Consultant: Chris  
Rig Name & Number: Noble 2  
Distance To Location: 30  
Units On Location: 024/3210/4007/3106/3105/320  
Time Requested: 3:30  
Time Arrived On Location: 2:25  
Time Left Location: 7:30

## WELL DATA

Casing Size OD (in) : 9.625  
Casing Weight (lb) : 36.00  
Casing Depth (ft.) : 1,927  
Total Depth (ft) : 1937  
Open Hole Diameter (in.) : 13.50  
Conductor Length (ft) : 40  
Conductor ID : 15.25  
Shoe Joint Length (ft) : 42  
Landing Joint (ft) : 10  
  
Max Rate: 7  
Max Pressure: 1250

## Cement Data

Cement Name: BFN III  
Cement Density (lb/gal) : 14.2  
Cement Yield (cuft) : 1.49  
Gallons Per Sack: 7.48  
% Excess: 20%  
Displacement Fluid lb/gal: 8.3  
BBL to Pit: 31.0  
Fluid Ahead (bbls): 30.0  
H2O Wash Up (bbls): 20.0  
  
Spacer Ahead Makeup  
30 bbl dye in second 10

Casing ID

8.921

Casing Grade

J-55 only used

## Calculated Results

**cuft of Shoe** 18.23 cuft  
(Casing ID Squared) X (.005454) X (Shoe Joint ft)  
**cuft of Conductor** 30.53 cuft  
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)  
**cuft of Casing** 1106.68 cuft  
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)  
**Total Slurry Volume** 1155.43 cuft  
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)  
**bbls of Slurry** 205.78 bbls  
(Total Slurry Volume) X (.1781)  
**Sacks Needed** 775 sk  
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)  
**Mix Water** 138.11 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42

**Displacement:** 146.50 bbls  
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

## Pressure of cement in annulus

**Hydrostatic Pressure:** 1421.55 PSI

## Pressure of the fluids inside casing

**Displacement:** 812.78 psi  
**Shoe Joint:** 30.98 psi  
**Total** 843.76 psi  
**Differential Pressure:** 577.79 psi

**Collapse PSI:** 2020.00 psi  
**Burst PSI:** 3520.00 psi

**Total Water Needed:** 334.60 bbls

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.



X 10/22/15  
Date

# Cook 26G-16HZ

