



Bison Oil Well Cementing  
1547 Gaylord Street  
Denver, CO 80206

FIELD INVOICE #

90014

FIELD INVOICE

WELL NO. AND FARM	COUNTY	STATE	DATE	Contractor	
Tedford 30 C-28HZ	Weld	Colorado	7/14/2015	Noble 2	
CHARGE TO	WELL LOCATION				
Anadarko Petroleum Corporation	Section	TWP	RANGE		
PO Box 4995	28	2N	66W		
The Woodlands, TX 77387	DELIVERED TO	LOCATION 1 CODE			
	cr. 16 & cr. 29	Shop			
	SHIPPED VIA	LOCATION 2 CODE			
	4024/3210/4027/3106/3105/3204	cr. 16 & cr. 29			
	TYPE AND PURPOSE OF JOB	LOCATION 3 CODE			
	SURFACE	Shop			
		WELL TYPE CODE			
		Oil			
ITEM	DESCRIPTION	UNITS		UNIT PRICE	AMOUNT
		QTY.	MEAS.		
PUMP CHARGE					
	SURFACE	1			
MILEAGE CHARGE					
	Pickup	40	mile		
	Truck/Equipment	40	mile		
	Truck/Equipment	40	mile		
CEMENT CHARGE:					
	BFN III	756	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 is a  
to an A

**TEDFORD 30C-28HZ**  
**FRANK KINNEY**  
**CONSULTANT:**  
**AFE#2107810.DRL**  
**GL CODE: 800**

**NOBLE 2**  
**USER ID: CU0741**  
**DATE: 07-14-15**  
**12090**

Customer or Agent

ade. Computed at a single monthly rate of 1 1/2% which is equal

TAX

SUBJECT TO CORRECTION

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: 7/14/2015

Invoice # 90014

API# 05-123-41791

Supervisor Nick

Customer: Anadarko Petroleum Corporation

Well Name: Tedford 30 C-28HZ

County: Weld

State: Colorado

Sec: 28

Twp: 2N

Range: 66W

Consultant: Chris

Rig Name & Number: Noble 2

Distance To Location: 20

Units On Location: 024/3210/4027/3106/3105/320

Time Requested: 0:00

Time Arrived On Location: 22:15

Time Left Location: 2:45

## WELL DATA

Casing Size OD (in) : 9.625  
Casing Weight (lb) : 36.00  
Casing Depth (ft.) : 1,878  
Total Depth (ft) : 1888  
Open Hole Diameter (in.) : 13.50  
Conductor Length (ft) : 40  
Conductor ID : 15.25  
Shoe Joint Length (ft) : 43  
Landing Joint (ft) : 10

Max Rate: 6  
Max Pressure: 1750

## 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: 13.0  
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 18.66 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 1077.94 cuft

(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length )

Total Slurry Volume 1127.13 cuft

(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 200.74 bbls

(Total Slurry Volume) X (.1781)

Sacks Needed 756 sk

(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 134.72 bbls

(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 142.63 bbls

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

## Pressure of cement in annulus

Hydrostatic Pressure: 1385.40 PSI

## Pressure of the fluids inside casing

Displacement: 791.22 psi

Shoe Joint: 31.72 psi

Total 822.94 psi

Differential Pressure: 562.46 psi

Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 327.36 bbls

X   
Authentication 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.



Date \_\_\_\_\_

# Tedford 30C-28HZ

