



Bison Oil Well Cementing
1547 Gaylord Street
Denver, CO 80206

FIELD INVOICE #

90043

FIELD INVOICE

WELL NO. AND FARM		COUNTY	STATE	DATE	Contractor
Thermo 38N-33HZ		Weld	Colorado	9/26/2015	Noble 2
CHARGE TO		WELL LOCATION			
Anadarko Petroleum Corporation		Section	TWP	RANGE	
PO Box 4995		33	2N	66W	
The Woodlands, TX 77387		DELIVERED TO		LOCATION 1	CODE
		cr. 31 & cr. 16		Greeley	
		SHIPPED VIA		LOCATION 2	CODE
		4024/3210/4007/3106/3105/3204		cr. 31 & cr. 16	
		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	50	mile		
	Truck/Equipment	50	mile		
	Truck/Equipment	50	mile		
CEMENT CHARGE:					
	BFN III	755	sack		
ADDITIVES CHARGE:					
	Red Dye	16	oz		
FLOAT EQUIPMENT:					
	RUBBER PLUG - 9 5/8"				
OTHER CHARGES:					
	DATA ACQUISITION FEE	1			
	Containment	1			
	Wait Time	3.5	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%.

SUB TOTAL

TAX 2.90%

TOTAL

SUBJECT TO CORRECTION

THERMO 38N-33HZ NOBLE 2
FRANK KINNEY USER ID: CU0741
CONSULTANT: *Chula*
AFE# 2111702 DATE: *9-26-15*
GL CODE: 800 *12090*

[Signature]
Bison Oil Well Cementing, Inc. Representative

Custom... 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: 9/26/2015

Invoice # 90043

API# 05-123-42097

Supervisor Nick

Customer: Anadarko Petroleum Corporation

Well Name: Thermo 38N-33HZ

County: Weld

State: Colorado

Sec: 33

Twp: 2N

Range: 66W

Consultant: Sean/Chris

Rig Name & Number: Noble 2

Distance To Location: 25

Units On Location: 024/3210/4007/3106/3105/320

Time Requested: 8:30

Time Arrived On Location: 7:30

Time Left Location: 16:00

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 36.00
Casing Depth (ft) : 1,874
Total Depth (ft) : 1884
Open Hole Diameter (in.) : 13.50
Conductor Length (ft) : 40
Conductor ID : 15.25
Shoe Joint Length (ft) : 44
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: 14.0
Fluid Ahead (bbls): 50.0
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 19.29 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 1075.60 cuft
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 1125.41 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 200.44 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 755 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 134.52 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 142.21 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 1382.45 PSI

Pressure of the fluids inside casing

Displacement: 788.87 psi

Shoe Joint: 32.79 psi

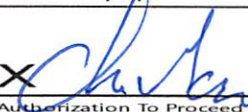
Total 821.66 psi

Differential Pressure: 560.79 psi

Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 346.73 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.



Customer
Well Name

Anadarko Petroleum Corporation
Thermo 38N-33HZ

INVOICE #
LOCATION
Supervisor
Date

90043
Weld
Nick
9/26/2015

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

[illegible]

X
Title

X
Date

Thermo 38N-33HZ

