



Bison Oil Well Cementing
 1547 Gaylord Street
 Denver, CO 80206

FIELD INVOICE #
 80648

FIELD INVOICE

WELL NO. AND FARM WILSON RANCH 12C-27HZ		COUNTY Weld	STATE Colorado	DATE 11/7/2015	Contractor NOBLE 2
CHARGE TO Anadarko Petroleum Corporation		WELL LOCATION			
PO Box 4995		Section 26	TWP 4N	RANGE 68W	
The Woodlands, TX 77387		DELIVERED TO CR 38 & EAST FRONTAGE RD		LOCATION 1 SHOP	CODE
		SHIPPED VIA 4028-3102/ 4034-3203		LOCATION 2 38 & E. FRONT	CODE
		TYPE AND PURPOSE OF JOB SURFACE		LOCATION 3 SHOP	CODE
				WELL TYPE	CODE

ITEM	DESCRIPTION	UNITS		UNIT PRICE	AMOUNT
		QTY.	MEAS.		
PUMP CHARGE					
SURFACE		1	ea		
MILLEAGE CHARGE					
Pickup		70	ea		
Truck/Equipment		70	ea		
Truck/Equipment		70	ea		
Truck/Equipment		70	ea		
CEMENT CHARGE:					
TYPE 3 NEAT		715	sack		
ADDITIVES CHARGE:					
Liquid Dye Rhodamine		32	oz		
FLOAT EQUIPMENT:	WILSON RANCH 12C-27HZ NOBLE 2				
	FRANK KINNEY USER ID: CU0741				
	CONSULTANT: <i>BBW Bryan Brown</i>				
	AFE#2097552 DATE: <i>11/7/15</i>				
	GL CODE: 800 <i>12090</i>				
OTHER CHARGES:					
DATA ACQUISITION FEE		1	ea		
Containment		1	ea		

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

SUBJECT TO CORRECTION

BBW Bryan Brown
 Customer or Agent

[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: 11/7/2015
 Invoice #: 80648
 API#: 05-123-41313
 Foreman: JASON KELEHER

Customer: Anadarko Petroleum Corporation
 Well Name: WILSON RANCH 12C-27HZ

County: Weld
 State: Colorado
 Sec: 26
 Twp: 4N
 Range: 68W

Consultant: BRYAN
 Rig Name & Number: NOBLE 2
 Distance To Location: 35
 Units On Location: 4028-3102/ 4034-3203
 Time Requested: 100
 Time Arrived On Location: 2330
 Time Left Location: 530

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.) : 1,848	Cement Yield (cuft) : 1.49
Total Depth (ft) : 1857	Gallons Per Sack: 7.48
Open Hole Diameter (in.) : 13.50	% Excess: 15%
Conductor Length (ft) : 40	Displacement Fluid lb/gal: 8.3
Conductor ID : 15.25	BBL to Pit: 29.0
Shoe Joint Length (ft) : 45	Fluid Ahead (bbls): 30.0
Landing Joint (ft) : 7	H2O Wash Up (bbls): 20.0
Max Rate: 7	Spacer Ahead Makeup
Max Pressure: 1250	30BBL WATER/ DYE IN 2ND 10

Casing ID: 8.921 Casing Grade: J-55 only used

Calculated Results	Pressure of cement in annulus
cuft of Shoe 19.65 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	Displacement: 139.87 bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
cuft of Conductor 30.53 cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Hydrostatic Pressure: 1362.90 PSI
cuft of Casing 1015.89 cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Pressure of the fluids inside casing
Total Slurry Volume 1066.06 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Displacement: 777.08 psi
bbls of Slurry 189.87 bbls (Total Slurry Volume) X (.1781)	Shoe Joint: 33.40 psi
Sacks Needed 715 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Total 810.49 psi
Mix Water 127.42 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Differential Pressure: 552.41 psi
	Collapse PSI: 2020.00 psi
	Burst PSI: 3520.00 psi
	Total Water Needed: 317.29 bbls

X Bryan Brown
 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.

WILSON RANCH 12C-27HZ SURFACE

