



Bison Oil Well Cementing  
1547 Gaylord Street  
Denver, CO 80206

FIELD INVOICE #

666037

FIELD INVOICE

WELL NO. AND FARM	COUNTY	STATE	DATE	Contractor
Jaguar 3N-14HZ	Weld	Colorado	11/25/2016	Extreme 24
CHARGE TO	WELL LOCATION			
Anadarko Petroleum Corporation	Section	TWP	RANGE	
PO Box 4995	23	1N	67W	
The Woodlands, TX 77387	DELIVERED TO	LOCATION 1		CODE
	CR. 21 & CR.6	Greeley		
	SHIPPED VIA			CODE
	3215/3214/3102	Fort Lupton		
	TYPE AND PURPOSE OF JOB	LOCATION 3		CODE
		Greeley		
	SURFACE	WELL TYPE		CODE

ITEM	DESCRIPTION	UNITS		UNIT PRICE	AMOUNT
		QTY.	MEAS.		
PUMP CHARGE					
SURFACE		1			
MILLEAGE CHARGE					
Pickup		68			
Truck/Equipment		68			
Truck/Equipment		68			
Truck/Equipment		68			
CEMENT CHARGE:					
BFN III		878			
ADDITIVES CHARGE:					
Dye Hot Pink		16	oz		
Sugar			lb		
FLOAT EQUIPMENT:	JAGUAR 3N-14HZ RIG X24 ANASTACIO DURAN / JASON LAUB USER ID MIP721 AFE: 2111322.DRL GL CODE 80812090 DATE: 11.25.16 SIGNATURE:				
OTHER CHARGES:					

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%.

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: 11/25/2016  
Invoice #: 666037  
API#: 05-123-42625  
Foreman: Nick

Customer: Anadarko Petroleum Corporation  
Well Name: Jaguar 3N-14HZ


County: Weld  
State: Colorado  
Sec: 23  
Twp: 1N  
Range: 67W  
Consultant: Rick Duran  
Rig Name & Number: Extreme 24  
Distance To Location: 34 miles  
Units On Location: 4023,3104,4022,3215,4020,3214  
Time Requested: 10:30  
Time Arrived On Location: 10:05  
Time Left Location:

## WELL DATA

Casing Size OD (in) : 9.625  
Casing Weight (lb) : 36.00  
Casing Depth (ft.) : 2,261  
Total Depth (ft) : 2273  
Open Hole Diameter (in.) : 13.50  
Conductor Length (ft) : 90  
Conductor ID : 15.25  
Shoe Joint Length (ft) : 44  
Landing Joint (ft) : 0  
Max Rate: 8  
Max Pressure: 2000

## Cement Data

Cement Name: BFN III  
Cement Density (lb/gal) : 14.2  
Cement Yield (cuft) : 1.49  
Gallons Per Sack: 7.48  
% Excess: 15%  
Displacement Fluid lb/gal: 8.3  
BBL to Pit: 0.0  
Fluid Ahead (bbls): 30.0  
H2O Wash Up (bbls): 20.0  
Spacer Ahead Makeup  
Dye in the second 10 bbl

Casing ID	8.921	Casing Grade	J-55 only used
<b>Calculated Results</b>		<b>Displacement: 171.39 bbls</b>	
<b>cuft of Shoe 19.10 cuft</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 68.68 cuft</b> (Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)		<b>Pressure of cement in annulus</b>	
<b>cuft of Casing 1220.19 cuft</b> (Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)		<b>Hydrostatic Pressure: 1667.94 PSI</b>	
<b>Total Slurry Volume 1307.97 cuft</b> (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)		<b>Pressure of the fluids inside casing</b>	
<b>bbls of Slurry 232.95 bbls</b> (Total Slurry Volume) X (.1781)		<b>Displacement: 955.93 psi</b>	
<b>Sacks Needed 878 sk</b> (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)		<b>Shoe Joint: 32.46 psi</b>	
<b>Mix Water 156.34 bbls</b> (Sacks Needed) X (Gallons Per Sack) ÷ 42		<b>Total 988.39 psi</b>	
		<b>Differential Pressure: 679.55 psi</b>	
		<b>Collapse PSI: 2020.00 psi</b>	
		<b>Burst PSI: 3520.00 psi</b>	
		<b>Total Water Needed: 377.73 bbls</b>	
 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.			





Anadarko Petroleum Corporation  
Jaguar 3N-14HZ

666037  
Weld  
Nick  
11/25/2016

Date \_\_\_\_\_

# Jaguar 3N-14HZ

