



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 1/12/2015

Invoice #: 45110

API#: 05-123-40845

Foreman: JASON KELEHER

Customer: Anadarko Petroleum Corporation

Well Name: HUNZIKER 28N-28HZ

County: Weld

State: Colorado

Sec: 28

Twp: 2N

Range: 67W

Consultant: ELLIS

Rig Name & Number: AE 10

Distance To Location: 21

Units On Location: 4031-3107, 4022-3213

Time Requested: 1030

Time Arrived On Location: 1000

Time Left Location: 1630

## WELL DATA

Casing Size OD (in) : 9.625  
Casing Weight (lb) : 36.00  
Casing Depth (ft) : 1,309  
Total Depth (ft) : 1325  
Open Hole Diameter (in.) : 13.50  
Conductor Length (ft) : 46  
Conductor ID : 15.25  
Shoe Joint Length (ft) : 43  
Landing Joint (ft) : 5

Max Rate: 6  
Max Pressure: 1500

## 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: 15.0  
Fluid Ahead (bbls): 30.0  
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup

30 BBL WATER W/ DYE IN 2ND 10

Casing ID

8.921

Casing Grade

J-55 only used

## Calculated Results

**cuft of Shoe** 18.77 cuft  
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

**cuft of Conductor** 35.10 cuft  
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)

**cuft of Casing** 710.12 cuft  
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

**Total Slurry Volume** 764.00 cuft  
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

**bbls of Slurry** 136.07 bbls  
(Total Slurry Volume) X (.1781)

**Sacks Needed** 513 sk  
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

**Mix Water** 91.32 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42

**Displacement:** 98.28 bbls  
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

## Pressure of cement in annulus

**Hydrostatic Pressure:** 966.00 PSI

## Pressure of the fluids inside casing

**Displacement:** 545.97 psi

**Shoe Joint:** 31.91 psi

**Total** 577.88 psi

**Differential Pressure:** 388.12 psi

**Collapse PSI:** 2020.00 psi

**Burst PSI:** 3520.00 psi

**Total Water Needed:** 239.60 bbls

X *Ellis*  
Authorization To Proceed  
AES Rig 10

Customers hereby acknowledges and specifically agrees to the terms and condition on this work order, including, without limitation, the provisions on this work order.



**Bison Oil Well Cementing  
Single Cement Surface Pipe**

Customer  
Well Name

Anadarko Petroleum Corporation  
HUNZIKER 28N-28HZ

INVOICE #  
LOCATION  
FOREMAN  
Date

45110  
Weld  
JASON KELEHER  
1/12/2015

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**DESCRIPTION OF JOB EVENTS**

|                |       | Displace 1 |      |      | Displace 2 |      |     | Displace 3 |      |     | Displace 4 |      |     | Displace 5 |      |     |
|----------------|-------|------------|------|------|------------|------|-----|------------|------|-----|------------|------|-----|------------|------|-----|
|                |       | BBLs       | Time | PSI  | BBLs       | Time | PSI | BBLs       | Time | PSI | BBLs       | Time | PSI | BBLs       | Time | PSI |
| Safety Meeting | 1315  |            |      |      |            |      |     |            |      |     |            |      |     |            |      |     |
| MIRU           | 1010  |            |      |      |            |      |     |            |      |     |            |      |     |            |      |     |
| CIRCULATE      | 1410  | 0          | 1456 | 0    | 0          |      |     | 0          |      |     | 0          |      |     | 0          |      |     |
| Drop Plug      |       | 10         | 1458 | 70   | 10         |      |     | 10         |      |     | 10         |      |     | 10         |      |     |
| 1456           |       | 20         | 1500 | 70   | 20         |      |     | 20         |      |     | 20         |      |     | 20         |      |     |
|                |       | 30         | 1502 | 70   | 30         |      |     | 30         |      |     | 30         |      |     | 30         |      |     |
|                |       | 40         | 1504 | 80   | 40         |      |     | 40         |      |     | 40         |      |     | 40         |      |     |
| M & P          |       | 50         | 1507 | 200  | 50         |      |     | 50         |      |     | 50         |      |     | 50         |      |     |
| Time           | Sacks | 60         | 1509 | 240  | 60         |      |     | 60         |      |     | 60         |      |     | 60         |      |     |
| 1419-1454      | 513   | 70         | 1514 | 270  | 70         |      |     | 70         |      |     | 70         |      |     | 70         |      |     |
|                |       | 80         | 1517 | 340  | 80         |      |     | 80         |      |     | 80         |      |     | 80         |      |     |
|                |       | 90         | 1522 | 360  | 90         |      |     | 90         |      |     | 90         |      |     | 90         |      |     |
|                |       | 100        | 1524 | 360  | 100        |      |     | 100        |      |     | 100        |      |     | 100        |      |     |
|                |       | 110        | BUMP | 1310 | 110        |      |     | 110        |      |     | 110        |      |     | 110        |      |     |
| % Excess       | 15%   | 120        |      |      | 120        |      |     | 120        |      |     | 120        |      |     | 120        |      |     |
| Mixed bbls     | 91.3  | 130        |      |      | 130        |      |     | 130        |      |     | 130        |      |     | 130        |      |     |
| Total Sacks    | 513   | 140        |      |      | 140        |      |     | 140        |      |     | 140        |      |     | 140        |      |     |
| bbl Returns    | 15    | 150        |      |      | 150        |      |     | 150        |      |     | 150        |      |     | 150        |      |     |
| Water Temp     | 44    |            |      |      |            |      |     |            |      |     |            |      |     |            |      |     |

Notes:

PERFORMED PRESSURE TEST TO 2000 PSI AT 1408, PUMPED 30 BBL WATER WITH DYE IN 2ND 10 AT 1410, MIXED AND PUMPED 513 SKS AT 14.2, 136.1 BBL AT 1419, SHUT DOWN AT 1454, STARTED DISPLACEMENT AT 1454, PLUG LANDED AT 360 PSI AT 1524 AND PRESSURED UP TO 1310, HELD FOR 2 MINUTES AND RELEASED TO CHECK FLOATS, GOT .75 BBL BACK, FLOATS HELD, PRESSURED BACK UP TO 1000 PSI FOR 2 MINUTES AND RELEASED

X AES Rig 10  
Work Performed

X \_\_\_\_\_  
Title

X \_\_\_\_\_  
Date



# HUNZIKER 28N-28HZ SURFACE

