



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 1/16/2018
 Invoice # 900239
 API# 05-123-45113
 Foreman: Corey Barras

Customer: Anadarko Petroleum Corporation
Well Name: Hammer 3-3HZ

County: Weld Consultant: Matt
 State: Colorado Rig Name & Number: Cartel 88
 Distance To Location: 38
 Sec: 3 Units On Location: 1027-3103/4020-3214/4024-320
 Twp: 1N Time Requested: 300
 Range: 68W Time Arrived On Location: 210
 Time Left Location: _____

| WELL DATA | | Cement Data | |
|----------------------------|--------------|----------------------------|----------------|
| Casing Size OD (in) : | <u>9.625</u> | Cement Name: | <u>BFN III</u> |
| Casing Weight (lb) : | <u>36.00</u> | Cement Density (lb/gal) : | <u>14.2</u> |
| Casing Depth (ft.) : | <u>1,872</u> | Cement Yield (cuft) : | <u>1.48</u> |
| Total Depth (ft) : | <u>1882</u> | Gallons Per Sack: | <u>7.40</u> |
| Open Hole Diameter (in.) : | <u>13.50</u> | % Excess: | <u>5%</u> |
| Conductor Length (ft) : | <u>80</u> | Displacement Fluid lb/gal: | <u>8.3</u> |
| Conductor ID : | <u>15.25</u> | BBL to Pit: | |
| Shoe Joint Length (ft) : | <u>44</u> | Fluid Ahead (bbls): | <u>30.0</u> |
| Landing Joint (ft) : | <u>15</u> | H2O Wash Up (bbls): | <u>20.0</u> |
| Max Rate: | <u>8</u> | Spacer Ahead Makeup | |
| Max Pressure: | <u>2000</u> | 30 bbl with Die in 2nd 10 | |

| Calculated Results | | Displacement: 142.48 bbls | |
|---|--|--|--|
| cuft of Shoe 19.10 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft) | | (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint) | |
| cuft of Conductor 61.05 cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft) | | Pressure of cement in annulus | |
| cuft of Casing 919.59 cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length) | | Hydrostatic Pressure: 1380.97 PSI | |
| Total Slurry Volume 999.74 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing) | | Pressure of the fluids inside casing | |
| bbls of Slurry 178.05 bbls (Total Slurry Volume) X (.1781) | | Displacement: 788.20 psi | |
| Sacks Needed 676 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement) | | Shoe Joint: 32.46 psi | |
| Mix Water 119.02 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42 | | Total 820.66 psi | |
| | | Differential Pressure: 560.32 psi | |
| | | Collapse PSI: 2020.00 psi | |
| | | Burst PSI: 3520.00 psi | |
| | | Total Water Needed: 311.50 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.



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

Customer
Well Name

Anadarko Petroleum Corporation
Hammer 3-3HZ

INVOICE #
LOCATION
FOREMAN
Date

900239
Weld
Corey Barras
1/16/2018

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

| Amount Pumped | | Event | Description | Rate | BBLs | Pressure |
|---------------|--------|-------|--------------------------------------|------|------|----------|
| % Excess | 5% | 215 | What rig is doing upon Bison Arrival | | | |
| Mixed bbls | 119.02 | 220 | JSA | | | |
| Total Sacks | 676 | | | | | |
| bbl Returns | 7 | 545 | Safety Meeting | | | |
| Water Temp | 49 | 635 | Start Job | | | |
| | | 637 | Pressure Test | | | |
| Notes: | | | | | | |
| | | 639 | Spacer Ahead | | | |
| | | 644 | Lead Cement | | | |
| | | | 2nd 10 with die | 6 | 30 | 90 |
| | | | 14.2 ppg | 8 | 178 | 180 |
| | | 714 | Shutdown | | | |
| | | 716 | Drop Plug | | | |
| | | | Preloaded in plug container | | | |
| | | 718 | Start Displacement | | | |
| | | 740 | Bump Plug | | | |
| | | | 500 over final lift (1090 PSI) | 7 | 90 | 360 |
| | | | | 2 | 142 | 550 |
| | | 742 | Floats Held | | | |
| | | 745 | End Job | | | |
| | | | Held for 2 MIN with .5 bll back | | | |
| | | 755 | Rig Down | | | |
| | | 830 | Leave Location | | | |

X *[Signature]*
Work Performed

X APC
Title

X
Date

