



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 3/18/2015
Invoice # 80060
API#
Foreman: kirk kallhoff

Customer: Anadarko Petroleum Corporation
Well Name: cheese 37n-28hz

County: Weld
State: Colorado
Sec: 28
Twp: 3n
Range: 65w

Consultant: randy
Rig Name & Number: advanced 10
Distance To Location: 10
Units On Location: 4038-3103/4034-3211
Time Requested: 330 am
Time Arrived On Location: 200 am
Time Left Location: 6:30 am

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 36.00
Casing Depth (ft.) : 1,168
Total Depth (ft) : 1186
Open Hole Diameter (in.) : 13.50
Conductor Length (ft) : 40
Conductor ID : 16
Shoe Joint Length (ft) : 44
Landing Joint (ft) : 8

Max Rate:
Max Pressure:

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:
Fluid Ahead (bbls): 30.0
H2O Wash Up (bbls): 10.0

Spacer Ahead Makeup

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 19.10 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 35.64 cuft
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 661.54 cuft
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 716.28 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 127.57 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 481 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 85.61 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 87.51 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 861.63 PSI

Pressure of the fluids inside casing

Displacement: 484.65 psi

Shoe Joint: 32.46 psi

Total 517.11 psi

Differential Pressure: 344.53 psi

Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 213.13 bbls

x *Randy Case*
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
cheese 37n-28hz

INVOICE #
LOCATION
FOREMAN
Date

80060
Weld
kirk kallhoff
3/18/2015

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

| Safety Meeting | | Displace 1 | | | Displace 2 | | | Displace 3 | | | Displace 4 | | | Displace 5 | | |
|----------------|-------|------------|-------|-----|------------|------|-----|------------|------|-----|------------|------|-----|------------|------|-----|
| MIRU | | BBLS | Time | PSI | BBLS | Time | PSI | BBLS | Time | PSI | BBLS | Time | PSI | BBLS | Time | PSI |
| CIRCULATE | 430am | 0 | 533am | 10 | 0 | | | 0 | | | 0 | | | 0 | | |
| Drop Plug | 340am | 10 | 535am | 70 | 10 | | | 10 | | | 10 | | | 10 | | |
| 533 am | 456am | 20 | 537am | 90 | 20 | | | 20 | | | 20 | | | 20 | | |
| | | 30 | 539am | 110 | 30 | | | 30 | | | 30 | | | 30 | | |
| | | 40 | 550am | 170 | 40 | | | 40 | | | 40 | | | 40 | | |
| M & P | | 50 | 552am | 230 | 50 | | | 50 | | | 50 | | | 50 | | |
| Time | Sacks | 60 | 554am | 300 | 60 | | | 60 | | | 60 | | | 60 | | |
| 503 am | 480 | 70 | 556am | 360 | 70 | | | 70 | | | 70 | | | 70 | | |
| 530 am stop | | 80 | 558am | 360 | 80 | | | 80 | | | 80 | | | 80 | | |
| | | 90 | | | 90 | | | 90 | | | 90 | | | 90 | | |
| | | 100 | | | 100 | | | 100 | | | 100 | | | 100 | | |
| | | 110 | | | 110 | | | 110 | | | 110 | | | 110 | | |
| % Excess | 20% | 120 | | | 120 | | | 120 | | | 120 | | | 120 | | |
| Mixed bbls | 85.5 | 130 | | | 130 | | | 130 | | | 130 | | | 130 | | |
| Total Sacks | 480 | 140 | | | 140 | | | 140 | | | 140 | | | 140 | | |
| bbl Returns | 11 | 150 | | | 150 | | | 150 | | | 150 | | | 150 | | |
| Water Temp | | | | | | | | | | | | | | | | |

Notes:

bumped plug at 602 am 860 psi

floats held

X

Work Preformed

[Signature]

X

Title

X

Date

3-18-15

M/D TOTCO 2000 SERIES

