

WELL SUMMARY

The well 7/12-2 was drilled using the semisubmersible drilling rig "Norskald". A thirty inch conductor and 20" surface casing were run and cemented without any difficulties. Gumbo problems were encountered drilling the 17½" hole, with 15½ rig hours lost cleaning out the flowlines, possum belly and shale-shakers. The 13 3/8" csg. was run and cemented, and 12 1/4" hole was then drilled to 9 5/8" csg. point. This string of casing was cemented in two stages, one stage cemented at the 13 3/8" csg. shoe.

The 8½" hole was then drilled to 11,108 ft. where oil-bearing Upper Jurassic sands were encountered. Then 362 ft. of cores were cut, with 352 ft. recovery. The hole was drilled to 12,060 ft. and after logging, a 7" liner was hung from 9,737 ft. to 12,057 ft.

Four zones were perforated and tested in 6 DST runs. The perforations were cemented, the well plugged, and temporarily abandoned installing a corrosion cap over the wellhead. The anchors were pulled, and following the rig departure a location marker buoy was installed at the wellhead.

DST SUMMARY - TABLE / WELL: 7/12-2

| TEST RESULTS \ DST TEST NO. | 1 | 1A | 2 | 3 | 3A | 4 |
|--------------------------------|-------------|----------------------------|----------------------------|--------------|----------------------------|----------------------------|
| | FEET | METERS | | | | |
| Perforated Intervals (M) | 11,944- 954 | 3,640.5-43.5 | 3,525-32 | 3,426.5-38.7 | As No. 3 | 3,383.7-3,393 |
| Perforated Intervals (FT) | 11,976- 986 | 3,650 -53 | 11,565-588 | 11,242 -282 | As No. 3 | 11,102 - 132 |
| No. of Flow Periods | 3 | 4 | 4 | 1 | 2 | 1 |
| Length of ----"----(hrs/min) | 2/39 | 16/24 | 7/12 | - | 7/18 | 7/33 |
| Recovery Oil (bbls) | .07-.12 | 4 | 20 | Oil Samples | Gas/Oil Samples | - |
| Mud (bbls) | 1-3 | 3 | 3 | - | For PVT-Tests etc. | - |
| Water (bbls) | - | 1-2 | - | - | | |
| Fluid Analysis Api-Gravity | 40 | 41.3 | 37.7 | 40.2 | 40.2 | 41.0 |
| Gas-Gravity | - | .805 | - | .748 | .751 | .817 |
| GOR | - | - | 400 | 570 | 600 | - |
| Inflow Rates BOPD/WHP | 36 | 15 | 149 | 5000/645 | 7120/2050 | 600 |
| -----"----- | | | | | 5550/1920 | |
| Choke Size(in) | | | | 1 | 0.5 | |
| Formation Pressure (psi/ppg) | 7,375/11.9 | 7,180/11.6 _{1.39} | 7,111/11.9 _{1.42} | - | 7,079/12.2 _{1.45} | 6,996/12.2 _{1.45} |
| -----"----- Temperature (°F) | (294) | - | (294) | - | 295 | (294) |
| -----"----- Capacity Kh(Mdft) | 2 | .27 | 95 | - | 41400 | 190 |
| -----"----- ko(Md) | | .005 | 4 | | 1030 | 6 |
| -----"----- Damage Skin (s) | - | - | 21 | - | 35 | 23 |
| -----"----- ΔP(psi) | | | 21.00 | | 300 | 3650 |
| -----"----- % of DD | | | 73 | | 79 | 78 |
| Prod. Index(BOPD/psi)As tested | 0.008 | 0.001 | 0.05 | - | 16 | 0.12 |
| No Damage | | | 0.18 | | 84 | 0.55 |
| Radius of Investigation (FT.) | - | - | 80 | - | 600/1300 | 125 |

Comments:

DST No. 1 - Tight Formation, some oil samples to surface when circulating out.
 DST No. 1A- Tight Form. Some very salty water (128,000 ppm) circulated out. Lower pressure than expected.
 DST No. 3 - Mechanical misrun. F.F.Hydrospring test valve opened, then partly closed. APR CIRCULATING VALVE opened prematurely. Test aborted.
 DST No. 3A- Two flow rates are recorded due to slip joint failure. Most reliable form. temp. from this test.

CONOCO NORWAY INC., Et. Al. WELL NO. 7/12-2

SUMMARY OF DST RESULTS

DST No. 1 Perfs: 3640.5-43.5m; 3650-53m; And 3656.5-65.5m FDC Run 3.

Valve open for three flow periods a total of 159 minutes.

Recovery: 1 - 3 Bbls Rathole mud with no shows formation fluids on reverse out. About 3 - 5 gallons of clean oil found in drill collars immediately below the downhole valve. Downhole sampler contained mostly mud with a scum of oil.

Oil Analysis: Sweet, dark black. Gravity estimated to be about 40° API at 60° F.

Inflow Rate: Maximum estimated inflow rate = 36 BPD.

Formation Pressure: 7375 psig ± 60 psi
P Grad = 0.619 psi/ft or 11.9 ppg Equiv.

Temperature: 294° F (Not Formation Temperature).

Formation Capacity: $K_{oh} = 2$ md-ft (Ballpark Estimate).

Formation Damage: Negligible.

Productivity Index: 0.008 BOPD/Psi

Comment: "Tombstone" !! But does contain some oil.

DST No. 1-A Retest of above perforations with a different test string.

Valve open for four flow periods and a total of 16 hours 24 minutes.

Recovery: Reversed 4 Bbls clean oil, 25 Bbls water cushion, 3 Bbls well conditioned mud, 1-2 barrels of contaminated formation water, and about 3 bbls of rathole mud. The drill collars immediately below the valve contained about one barrel of formation water of which we were able to catch about 2 gallons.

Fluid Analysis:

Gas - Measured gravity of 0.805. Has very strong aromatic smell (guessed to be toluene).
 $C_1=57.3\%$, $C_2=19.9\%$, $C_3=14.3\%$, $C_4=6.9\%$, $C_5=1.5\%$
No H₂S or CO₂ detected.

Oil - Gravity = 41.3° API at 60° F. Sweet, dark black, slight "toluene" smell. Pour point less than 36° F.

Water - From D.C. below valve:
Chlorides = 128,000ppm
Calcium > 10,000 ppm (limit of rig measurement)
Ph = 6.0
Resistivity: 0.065 at 65° F filtered.
0.062 at 65° F unfiltered

Inflow Rates: Oil = 6-7 BOPD }
Water = 4-5 BWPD } Max. total possible = 15 BPD

Formation Pressure: 7180 psi ± 50 psi
P Grad = 0.602 psi/ft. about 11.6 ppg Equiv.

Temperatures: No Measurement.

Formation Capacity: $K_{oh} = 0.27$ md-ft } In presence of water
 $K_o = 0.005$ md }
 $K_{wh} = 0.15$ md-ft } In presence of oil
 $K_w = 0.003$ md }

Formation Damage: Negligible.

Productivity Index: 0.001 BOPD/psi

Comment: Finding water in the test string was a surprise because of the very low inflow rates. The significantly lower pressure from DST No. 1 is difficult to explain. At this point in time, I believe it is real although we are rechecking gauge calibrations and other aspects. It may just be telling us that we depleted the very tight fracture system known to exist in the bottom cored interval.

DST No. 2 Perfs: 3525-3532 m FDC Run 3.

Valve open for four flow periods and a total of 7 hours 10 minutes.

Recovery: Reversed 120 barrels water cushion, 20 barrels oil and 3 barrels rathole mud.
Downhole Sampler - Press = 850 psig; Gas = 1.92 cu.ft.
Oil = 800 cc (clean and mud emulsion).
GOR ≈ 400 SCF/Bbl (Probably Low)
No shows water or sand.

Fluid Analysis: 1
Gas - Only traces reached the surface but it does burn
Oil - Sweet dark black. Gravity 37.7° API at 60° F.
(May have contained some mud filtrate as an emulsion)
Pourpoint less than 35° F.

Average Inflow Rate: 149 BOPD.

Formation Pressure: 7111 psig ± 35 psi.
P Grad = 0.618 psi/ft or 11.9 ppg equiv.

Temperature: 295° F (Not formation temp.)

Formation Capacity: $K_{oh} = 95$ md-ft
 $K_o = 4$ md

Formation Damage and other Restrictions Below Gauges:
S=+21 $\Delta P_{skin} = 2100$ psi % of D.D.=73%.

Productivity Index: 0.05 BOPD/psi as tested
0.18 BOPD/psi no damage

Radius of Investigation: About 80 feet.

Comment: All indications are test was contained to the interval perforated or essentially so.

DST No. 3 Perfs: 3426,5 - 3438,7 m FDC Run 3.

Test was a mechanical misrun. The Halliburton full-flow hydrospring was open fully for the initial flow period during which calculated inflow rates in the range of 15,000 - 20,000 BOPD were achieved. Valve only partially closed for the initial buildup and remained so as a major downhole restriction for the rest of the test. Test was automatically terminated when a reversing valve failed, which necessitated killing the well.

Recovery: Flowed oil at the surface on 1" choke at a stabilized rate of 5000 BOPD and a wellhead pressure of 645 psig. GOR = 570 scf/bbl. No shows water or sand.

Fluid Analysis:

Gas - Gravity = 0.748 measured. H₂S and CO₂ Nil.
C₁=76.1%, C₂=15.8%, C₃=5.1%, C₄=2.5%, C₅=0.5%
Oil - Gravity = 40.2° API at 60° F. Sweet dark black.
Pourpoint less than 36° F.

DST No. 3-A Retest of Above Perfs with Different Test String.

Valve open for two flow periods a total of 7 hours 18 minutes.

Recovery: Flowed oil at the surface on a ½" choke at two stabilized rates. The two rate periods are separated by the partial closure downhole of the slip joint safety valve.

First Rate = 7120 BOPD at WHFP = 2050 psig
Second Rate = 5550 BOPD at WHFP = 1920 psig
GOR = 600 scf/bbl.

Fluid Analysis:

Gas - Gravity = 0.751 CO₂ = Nil.
C₁=73.8%, C₂=14.7%, C₃=7.7%, C₄=3.2%, C₅=0.6%.
Possible H₂S. Trace found at end of test by Rig Chromatigraph but unconfirmed by MSA sniffer.
Oil - Gravity = 40.2° API at 60° F average. (Varied about 1° API throughout test). Sweet, dark black. Pourpoint less than 36° F.

Formation Pressure: 7079 psig ± 10 psi
P Grad = 0.632 psi/ft or 12.2 ppg Equiv.

Formation Temperature: 295° F (Most representative of all tests)
T Grad = 2.32° F/100 ft.

Formation Capacity: K_oh = 41,400 md-ft
K_o = 1030 md if h=40ft
K_o = 207 md if h=200 ft

Formation Damage and Other Restrictions Below the Gauge:
S=135 ΔP_{skin} = 300 psi % of D.D. = 79%.

Productivity Index: 16 BOPD/psi as tested
84 BOPD/psi no damage

Note: The no-damage index is probably unrealistic but it does indicate P.I.'s in the range of 40-50 BOPD/psi could be achieved with proper muds and completions.

Radius of Investigation: 600-1300 ft depending on assumed h.

Comment: Comparison of the test oil perms with the core air perms indicates we were testing about all of the high permeability interval. That is, the very tight streaks on either side of the perforations do not appear to contain the test. In this case, the high formation damage calculation simply reflects the area of spherical-like flow near the wellbore and not necessarily reduced permeability in the normal connotation of damage.

DST No. 4 Perfs: 3383,7 - 3393 m FDC Run 3.

Valve open for one flow for 7 hours 33 minutes, 3 hours and 18 mins to surface water cushion. Flowed oil and gas at surface. Well started heading before separator rates could be established. No shows sand or water.

Average Flow Rate: 600 BOPD. GOR estimated to be in same range as DST No. 3 and 3-A based on color and character of burner flame prior to heading.

Fluid Analysis:

Gas - Gravity = 0.817 calculated. CO₂ and H₂S Nil.
C₁=57.8%, C₂=16.4%, C₃=10.3%, C₄=4.5%, C₅=1.0%
Oil - Gravity = 41.0° API at 60° F. Sweet, dark black.
Pourpoint less than 36° F.

Formation Pressure: 6996 psig ± 35 psi
P Grad = 0.633 psi/ft or 12.2 ppg equiv.

Temperature: 294° F (Not formation)

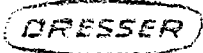
Formation Capacity: K_{oh} = 190 md-ft
K_c = 6 md

Formation Damage and Other Restrictions Below the Gauges:
S=+23 ΔP_{skin} = 3650 psi % of D.D. = 78%.

Productivity Index: 0.12 BOPD/psi as tested
0.55 BOPD/psi no damage

Radius of Investigation: 125 ft.

Comment: All indications are that test was contained to the perforated interval or nearly so. At least the effects of the high permeability interval about 30 feet deeper are not evident.



DRESSER NORWAY A.S.
MAGCOBAR

BP Norway, 7/12-2, Reentry

TOTAL MATERIAL CONSUMPTION

| <u>PRODUCT</u> | <u>UNIT SIZE</u> | <u>QUANTITY</u> | <u>UNIT COST</u> | <u>TOTAL COST</u> |
|----------------|------------------|-----------------|------------------|---------------------|
| Barite | m.t. | 359 | \$ 148.90 | \$ 53 455.10 |
| Bentonite | m.t. | 28 | \$ 405.56 | \$ 11 355.68 |
| Caustic Soda | 25 kg/sx | 60 | \$ 22.05 | \$ 1 323.00 |
| Soda Ash | 40 kg/sx | 15 | \$ 22.81 | \$ 342.15 |
| CMC HV | 25 kg/sx | 66 | \$ 68.30 | \$ 4 507.80 |
| Spersene | 25 kg/sx | 215 | \$ 21.90 | \$ 4 708.50 |
| Staflo | 25 kg/sx | 1 | \$ 198.50 | \$ 198.50 |
| SAPP | kg/sx | 10 | \$ 93.31 | \$ 933.10 |
| Lime | 40 kg/sx | 8 | \$ 10.30 | \$ 82.40 |
| XP-20 | 25 lb/sx | 30 | \$ 33.76 | \$ 1 012.80 |
| Dowcide G | 50 kg/sx | 3 | \$ 243.50 | \$ 730.50 |
| Magco 101 | 55 gal/drm | 8 | \$ 618.50 | \$ 4 948.00 |
| | | | TOTAL | \$ 83 597.53 |

Mud transfered from 7/12-4 Abandonment

Total 450 Bbls at \$ 22.13 per Bbl

= \$ 9 960.73

TOTAL COST

\$ 93 558.26

Mud made 1146 Bbls

As mud which was in the hole had to be treated, it is impossible to work out a cost per bbl.

COST BASED ON MAGCOBAR'S CURRENT PRICE LIST.

DAILY MATERIALS CONSUMPTION

WELL 7/12-2

PAGE 1

| DATE | DEPTH | BARITE | BENTONITE | CAUSTIC | SODA ASH | CMC HV | SPERSENE | STAFLO | SAPP | LIME | XP-20 | | | | DAILY MUD COST | REMARKS |
|-------|-------|--------|-----------|---------|----------|--------|----------|--------|------|------|-------|--|--|--|----------------|-----------------------------------|
| 22.03 | - | | | | | | | | | | | | | | | Arrived on location. Set anchors. |
| 23.03 | - | 44 | 7 | | 5 | 5 | | | | | | | | | | |
| 24.03 | - | | | | | | | | | | | | | | | |
| 25.03 | - | | | | | | | | | | | | | | | |
| 26.03 | - | | | | | | | | | | | | | | | |
| 27.03 | - | | | | | | | | | | | | | | | |
| 28.03 | - | | | | | | | | | | | | | | | |
| 29.03 | - | | | | | | | | | | | | | | | |
| 30.03 | - | | | | | | | | | | | | | | | |
| 31.03 | - | | | | | | | | | | | | | | | |
| 01.04 | - | 4 | | 13 | | | 15 | 1 | | | | | | | | |
| 02.04 | 1210 | 50 | | | | | | | | | | | | | | |
| 03.04 | 2333 | 50 | 9 | 11 | | 3 | 28 | | | | | | | | | |
| 04.04 | 2969 | 63 | | | | | 8 | | | | | | | | | |
| 05.04 | 3306 | 4 | | | 3 | 7 | 7 | | 10 | 4 | | | | | | |
| 06.04 | 3306 | | | | | | | | | | | | | | | |
| 07.04 | 3411 | 4 | | | 3 | | 20 | | | | | | | | | |
| 08.04 | 3414 | | | 2 | 2 | | 4 | | | 4 | | | | | | |
| 09.04 | 3476 | 20 | | 2 | | | 3 | | | | | | | | | |
| 10.04 | 3476 | 12 | 4 | 15 | 1 | 5 | 31 | | | | | | | | | |
| 11.04 | 3515 | 4 | | | | | | | | | | | | | | |
| 12.04 | 3516 | 4 | | | | 9 | | | | | | | | | | |
| 13.04 | 3516 | | | | | | | | | | | | | | | |
| 14.04 | 3516 | 4 | | | | 5 | 23 | | | | | | | | | |
| 15.04 | 3512 | | | | | | | | | | | | | | | |
| 16.04 | 3512 | | | | | | | | | | | | | | | |
| 17.04 | 3512 | 20 | | | | | | | | | | | | | | |
| 18.04 | 3512 | 11 | | 13 | | 20 | 61 | | | | 30 | | | | | |
| 19.04 | 3512 | | | | | | | | | | | | | | | |
| 20.04 | 3512 | | | | | | | | | | | | | | | |
| 21.04 | 3512 | | | | | | | | | | | | | | | |

DAILY MATERIALS CONSUMPTION

WELL 7/12-2

PAGE 2

| DATE | DEPTH | BARITE | BENTONITE | CAUSTIC | SODA ASH | SPERSENE | CMC HV | XC POLY | DOWCIDE G | MAGCO 101 | | | | | | DAILY MUD COST | REMARKS |
|-------|-------|--------|-----------|---------|----------|----------|--------|---------|--------------|--------------|--|--|--|--|--|-------------------|---------|
| 22.04 | 3512 | 25 | 5 | 4 | 1 | 15 | 12 | | | | | | | | | | |
| 23.04 | 3512 | 15 | 3 | | | | | | | | | | | | | | |
| 24.04 | 3512 | | | | | | | | | | | | | | | | |
| 25.04 | 3512 | 10 | | | | | | | | | | | | | | | |
| 26.04 | 3512 | | | | | | | 3 | 3 | 8 | | | | | | | |
| 27.04 | 3512 | 15 | | | | | | | | | | | | | | | |
| 28.04 | 0 | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |

- 40 -