

Well no : 15/12-05

Operator : STATOIL

Coordinates : 58 04 53.36 N  
01 54 53.24 E

UTM coord. : 6438443 N  
435998 E

Licence no : 38

Permit no : 507

Rig : ROSS ISLE

Rig type : SEMI-SUB.

Contractor : ROSS DRILLING CO. A/S

Bottom hole temperature : deg.C

Elev. KB : 22 M

Spud. date : 86.03.12

Water depth : 84 M

Compl. date : 86.05.04

Total depth : 3105 M

Spud. class : WILDCAT

Form. at TD : TRIASSIC

Compl. class : P&A. OIL DISCOVERY

Prod. form : E.JURASSIC

Seisloca : ST 8503 - 109 SP. 306

## LICENSEES

50.000000 ESSO NORGE A.S  
50.000000 DEN NORSKE STATS OLJESELSKAP A.S

## CASING AND LEAK-OFF TESTS

| Type       | Casing diam. | Depth below KB | Hole diam. | Hole depth below KB | Lot mud eqv. g/cm <sup>3</sup> |
|------------|--------------|----------------|------------|---------------------|--------------------------------|
| CONDUCTOR  | 30           | 217.0          | 36         | 217.0               | .                              |
| SURF.COND. | 20           | 597.0          | 26         | 618.0               | 1.37                           |
| INTERM.    | 13 3/8       | 1608.0         | 17 1/2     | 1625.0              | 1.72                           |
| INTERM.    | 9 5/8        | 2875.0         | 12 1/4     | 2892.0              | 2.18                           |
| LINER      | 7            | 3149.0         | 8 1/2      | 3150.0              | .                              |

## CONVENTIONAL CORES

| Core no. | Intervals cored meters | Recovery |       | Series |
|----------|------------------------|----------|-------|--------|
|          |                        | M        | %     |        |
| 1        | 2892.0 - 2904.0        | 12.0     | 100.0 |        |
| 2        | 2910.5 - 2938.5        | 27.0     | 100.0 |        |
| 3        | 2939.0 - 2967.0        | 28.0     | 100.0 |        |

## MUD PROPERTIES

| Depth below KB meter | Mud weight g/cm <sup>3</sup> | Viscosity | Mud type    |
|----------------------|------------------------------|-----------|-------------|
| 217.000              | 1.10                         | 6.0       | WATER BASED |
| 618.000              | 1.16                         | 7.0       | WATER BASED |
| 1068.000             | 1.10                         | 54.0      | WATER BASED |
| 1337.000             | 1.11                         | 52.0      | WATER BASED |
| 1600.000             | 1.57                         | 20.0      | WATER BASED |
| 1622.000             | 1.18                         | 52.0      | WATER BASED |
| 1768.000             | 1.22                         | 60.0      | WATER BASED |
| 2223.000             | 1.27                         | 65.0      | WATER BASED |
| 2876.000             | 1.57                         | 30.0      | WATER BASED |
| 2885.000             | 1.35                         | 19.0      | WATER BASED |

|          |      |      |             |
|----------|------|------|-------------|
| 2889.000 | 1.57 | 30.0 | WATER BASED |
| 3150.000 | 1.35 | 19.0 | WATER BASED |

## DRILL STEM TEST

### INTERVALS AND PRESSURES

| Test no | interval meter      | Choke size | Pressure (PSI) |        |        |
|---------|---------------------|------------|----------------|--------|--------|
|         |                     |            | WHP            | BTHP   | FFP    |
| 1.0     | 2926.000 - 2936.000 | 15.9       | 652.7          | 4804.8 | 3822.1 |

Test temperature: 127 °C

### RECOVERY

| Test no. | Oil Sm <sup>3</sup> /d | Gas Sm <sup>3</sup> /d | Oil grav. g/cm <sup>3</sup> | Gas grav. rel. air | GOR m <sup>3</sup> /m <sup>3</sup> |
|----------|------------------------|------------------------|-----------------------------|--------------------|------------------------------------|
| 1.0      | 504                    | 35700                  | 0.909                       | 0.795              | 71                                 |

## DRILL BIT CUTTINGS AND WET SAMPLES

| SAMPLE TYPE | INTERVAL BELOW KB | NUMBER OF SAMPLES |
|-------------|-------------------|-------------------|
| Cutting     | 220-3496          | 450               |
| Wet Samples | 240-3150          | 400               |

## SHALLOW GAS

| Interval below KB | REMARKS |
|-------------------|---------|
|                   |         |

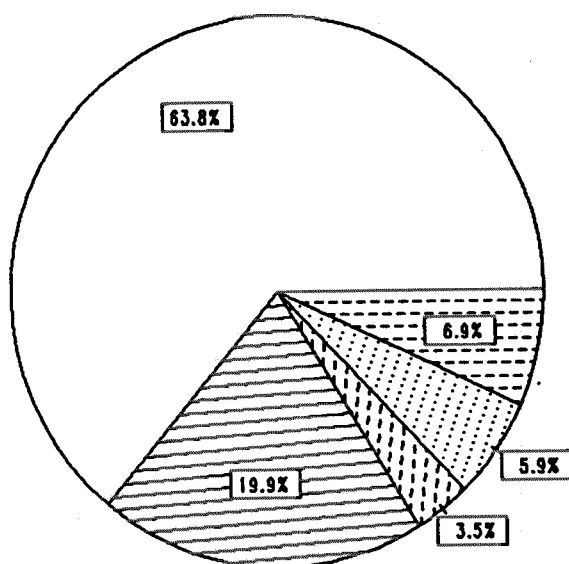
## AVAILABLE LOGS

| LOG TYPE              | INTERVALS           | 1/200 | 1/500  | Div. |
|-----------------------|---------------------|-------|--------|------|
| DIFL LS BHC AC GR CAL | 217.000 - 617.000   | X     | X      |      |
| DIFL LS BHC AC GR CAL | 597.200 - 1619.000  | X     | X      |      |
| DIFL LS BHC AC GR CAL | 1607.000 - 2888.000 | X     | X      |      |
| DIFL LS BHC AC GR CAL | 2875.000 - 3150.500 | X     | X      |      |
| CDL                   | 217.000 - 1600.000  | X     | X      |      |
| CDL CNL GR            | 2875.000 - 3150.000 | X     | X      |      |
| MLL                   | 2875.000 - 3174.000 | X     | X      |      |
| SHDT/COMPUTED 4-ARM   | 2876.000 - 3149.500 | X     |        |      |
| CDM/SHDT              | 2876.000 - 3149.000 | X     |        |      |
| CDM AP/SHDT STRATADIP | 2876.000 - 3149.000 |       | 1:40   |      |
| FMT HP CRYSTAL GAUGE  | 2119.000 - 3009.000 | X     | X      |      |
| FMT                   | 2933.000 - 2950.000 | X     | X      |      |
| ACBL VDL              | 100.000 - 3100.000  | X     |        |      |
| PRESS. EVAL. LOG      | 105.500 - 3150.000  |       | 1:5000 |      |

|                             |                    |          |
|-----------------------------|--------------------|----------|
| MUD LOG                     | 105.500 - 3150.000 |          |
| VELOCITY                    | 228.000 - 2877.000 | X        |
| (VSP.Synthetic seismogram   | 10-20cm/s          | 15 stk.) |
| (Two-way travel time, 10-20 | cm/s               | 2 stk.)  |

# DAILY DRILLING REPORT SYSTEM

Main operations for well : 0015/12 - 05



- DRILLING
- FORMATION EVAL
- INTERRUPTION
- MOVING
- PLUG & ABANDON

Total : 1344.00 hours

| Main operation | Minutes | Hours  | % of total |
|----------------|---------|--------|------------|
| DRILLING       | 51450   | 857.50 | 63.80      |
| FORMATION EVAL | 16050   | 267.50 | 19.90      |
| INTERRUPTION   | 2790    | 46.50  | 3.46       |
| MOVING         | 4770    | 79.50  | 5.92       |
| PLUG & ABANDON | 5580    | 93.00  | 6.92       |

MAIN OPERATIONS FOR WELL : 0015 / 12 - 05

MAIN OPERATION : DRILLING

| Sub operations  | Minutes      | Hrs           | % of total    |
|-----------------|--------------|---------------|---------------|
| BOP ACTIVITIES  | 1140         | 19.00         | 2.22          |
| BOP/WELLHEAD EQ | 3150         | 52.50         | 6.12          |
| CASING          | 8760         | 146.00        | 17.03         |
| CIRC/COND       | 3180         | 53.00         | 6.18          |
| DRILL           | 19950        | 332.50        | 38.78         |
| OTHER           | 210          | 3.50          | 0.41          |
| REAM            | 1890         | 31.50         | 3.67          |
| SURVEY          | 390          | 6.50          | 0.76          |
| TRIP            | 10320        | 172.00        | 20.06         |
| UNDERREAM       | 1680         | 28.00         | 3.27          |
| WAIT            | 780          | 13.00         | 1.52          |
| <b>Total</b>    | <b>51450</b> | <b>857.50</b> | <b>100.00</b> |

MAIN OPERATION : FORMATION EVAL

| Sub operations | Minutes      | Hrs           | % of total    |
|----------------|--------------|---------------|---------------|
| CIRC SAMPLES   | 270          | 4.50          | 1.68          |
| CIRC/COND      | 270          | 4.50          | 1.68          |
| CORE           | 870          | 14.50         | 5.42          |
| DST            | 6030         | 100.50        | 37.57         |
| LOG            | 5460         | 91.00         | 34.02         |
| TRIP           | 3150         | 52.50         | 19.63         |
| <b>Total</b>   | <b>16050</b> | <b>267.50</b> | <b>100.00</b> |

MAIN OPERATION : INTERRUPTION

| Sub operations | Minutes     | Hrs          | % of total    |
|----------------|-------------|--------------|---------------|
| FISH           | 1080        | 18.00        | 38.71         |
| MAINTAIN/REP   | 390         | 6.50         | 13.98         |
| WAIT           | 1320        | 22.00        | 47.31         |
| <b>Total</b>   | <b>2790</b> | <b>46.50</b> | <b>100.00</b> |

MAIN OPERATION : MOVING

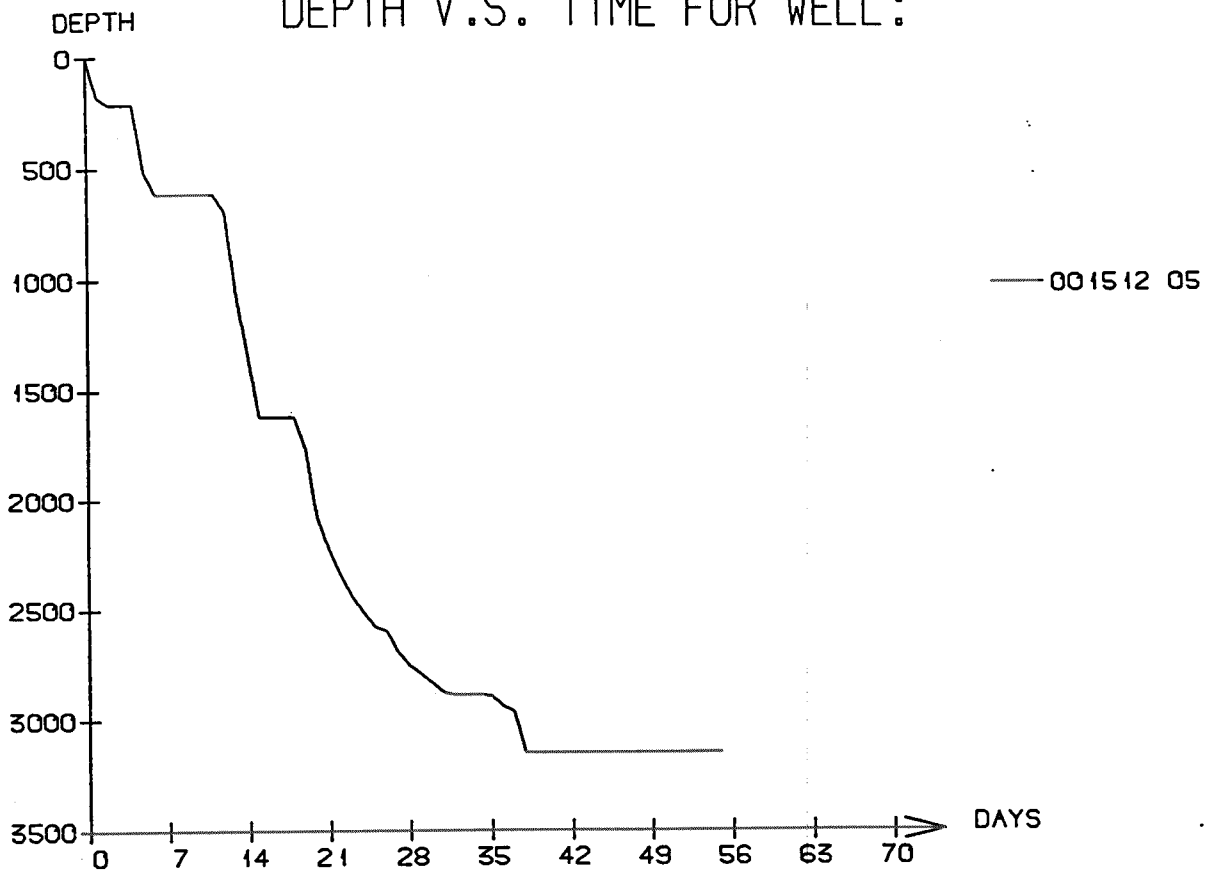
| Sub operations | Minutes     | Hrs          | % of total    |
|----------------|-------------|--------------|---------------|
| ANCHOR         | 3030        | 50.50        | 63.52         |
| TRANSIT        | 1740        | 29.00        | 36.48         |
| <b>Total</b>   | <b>4770</b> | <b>79.50</b> | <b>100.00</b> |

MAIN OPERATION : PLUG & ABANDON

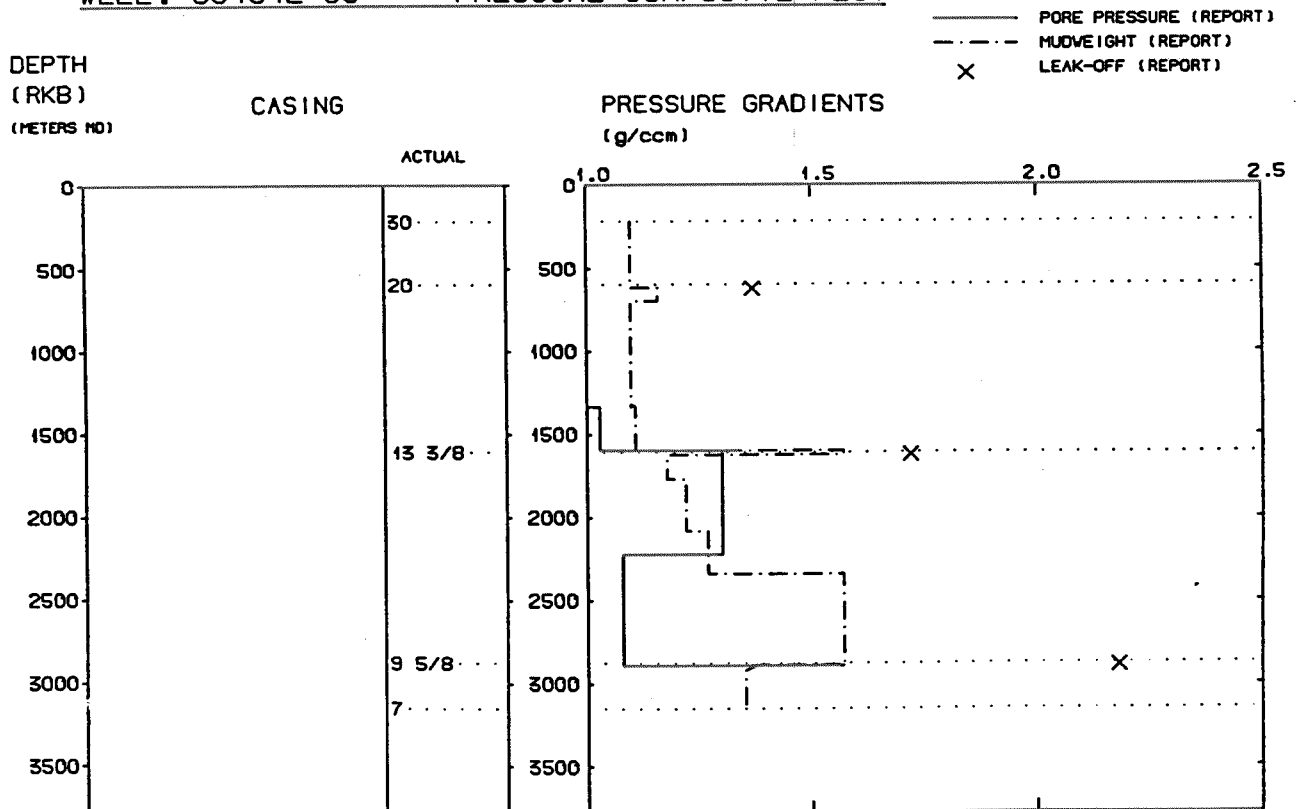
| Sub operations  | Minutes     | Hrs          | % of total    |
|-----------------|-------------|--------------|---------------|
| CEMENT PLUG     | 240         | 4.00         | 4.30          |
| CIRC/COND       | 240         | 4.00         | 4.30          |
| CUT             | 510         | 8.50         | 9.14          |
| EQUIP RECOVERY  | 1080        | 18.00        | 19.35         |
| MECHANICAL PLUG | 270         | 4.50         | 4.84          |
| OTHER           | 90          | 1.50         | 1.61          |
| PERFORATE       | 300         | 5.00         | 5.38          |
| SQUEEZE         | 30          | 0.50         | 0.54          |
| TRIP            | 2820        | 47.00        | 50.54         |
| <b>Total</b>    | <b>5580</b> | <b>93.00</b> | <b>100.00</b> |

Total time used 1344.00 hrs

# DEPTH V.S. TIME FOR WELL:



## WELL: 001512 05      PRESSURE COMPOSITE PLOT



## Well History 15/12-5.

### GENERAL:

Well 15/12-5 was drilled on the Beta-Central structure on block 15/12, and was designed to test the hydrocarbon accumulation in different levels. Primary objective was the Jurassic Sst. Secondary objective was the Frigg Fm sand and fractured Sst of Cretaceous age. Seismic anomalies indicated shallow gas.

The Upper Jurassic Sst, Ula Fm, was expected to come in at 2830 m, and the Upper Cretaceous Hod Fm at 2590 m.

Prognosed TD: was 3100 m RKB in Sst of Triassic age.

### OPERATIONS:

Wildcat well 15/12-5 was spudded 12 March 1986 by Ross Offshore semi-submersible rig Ross Isle, and completed 4 May 1986 at a depth of 3150 m RKB in Triassic rocks. Drilling proceeded without significant problems. Indications of shallow gas was not encountered.

Top Cretaceous came in at 2457 m RKB, and Jurassic at 2842 m RKB. Top reservoir was encountered at 2817 m RKB with good shows. The OWC came in at 2941 m RKB, 28 m below that of well 15/12-4. This is probably due to a flow barrier caused by the fault system with a maximum throw of approx. 100 m, that separates the Bete-West and Beta-Central structures. Due to RFT measurements and FIT tests, Statoil decided to go for "sole risk" testing, since Esso denied to participate in the testing program.

### TESTING:

One DST-test was performed in the interval 2927 - 2937 m RKB.

# GEOLOGICAL TOPS

WELL: 15/12-5

Depth m (RKB)

|                           |        |
|---------------------------|--------|
| <i>Nordland Group</i>     | 105.5  |
| <i>Utsira Fm.</i>         | 1024.0 |
| <br>                      |        |
| <i>Hordaland Group</i>    | 1247.0 |
| <br>                      |        |
| <i>Rogaland Group</i>     | 2276.0 |
| <i>Balder Fm.</i>         | 2276.0 |
| <i>Sele Fm.</i>           | 2291.0 |
| <i>Lista Fm.</i>          | 2325.0 |
| <i>Maureen Fm.</i>        | 2418.0 |
| <br>                      |        |
| <i>Shetland Group</i>     | 2439.0 |
| <i>Ekofisk Fm.</i>        | 2439.0 |
| <i>Tor Fm.</i>            | 2457.0 |
| <i>Hod Fm.</i>            | 2615.0 |
| <i>Blodøks Fm.</i>        | 2740.0 |
| <br>                      |        |
| <i>Cromer Knoll Group</i> | 2792.0 |
| <i>Rødby Fm.</i>          | 2792.0 |
| <i>Sola Fm.</i>           | 2827.0 |
| <br>                      |        |
| <i>Viking Group</i>       | 2841.0 |
| <i>Draupne Fm.</i>        | 2841.0 |
| <i>Heather Fm.</i>        | 2888.0 |
| <br>                      |        |
| <i>Vestland Group</i>     | 2918.0 |
| <i>Hugin Fm.</i>          | 2918.0 |
| <br>                      |        |
| <i>Triassic Group</i>     | 3077.0 |
| <i>Skagerak Fm.</i>       | 3077.0 |
| <br>                      |        |
| <i>T.D.</i>               | 3150.0 |