Final Well Report

Well 35/11-11

PL 090

HYDRO

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NORSK HYDRO

FINAL WELL REPORT

WELL 35/11-11

NOVEMBER 1998

LIST OF CONTENTS, WELL 35/11-11

PREFACE

License PL 090 was awarded to the Norsk Hydro/Statoil/Mobil group in 1984 with Mobil as the operator. Norsk Hydro took over the ownership 31.07.95.

The licensees' percentage share of the block is as follows:

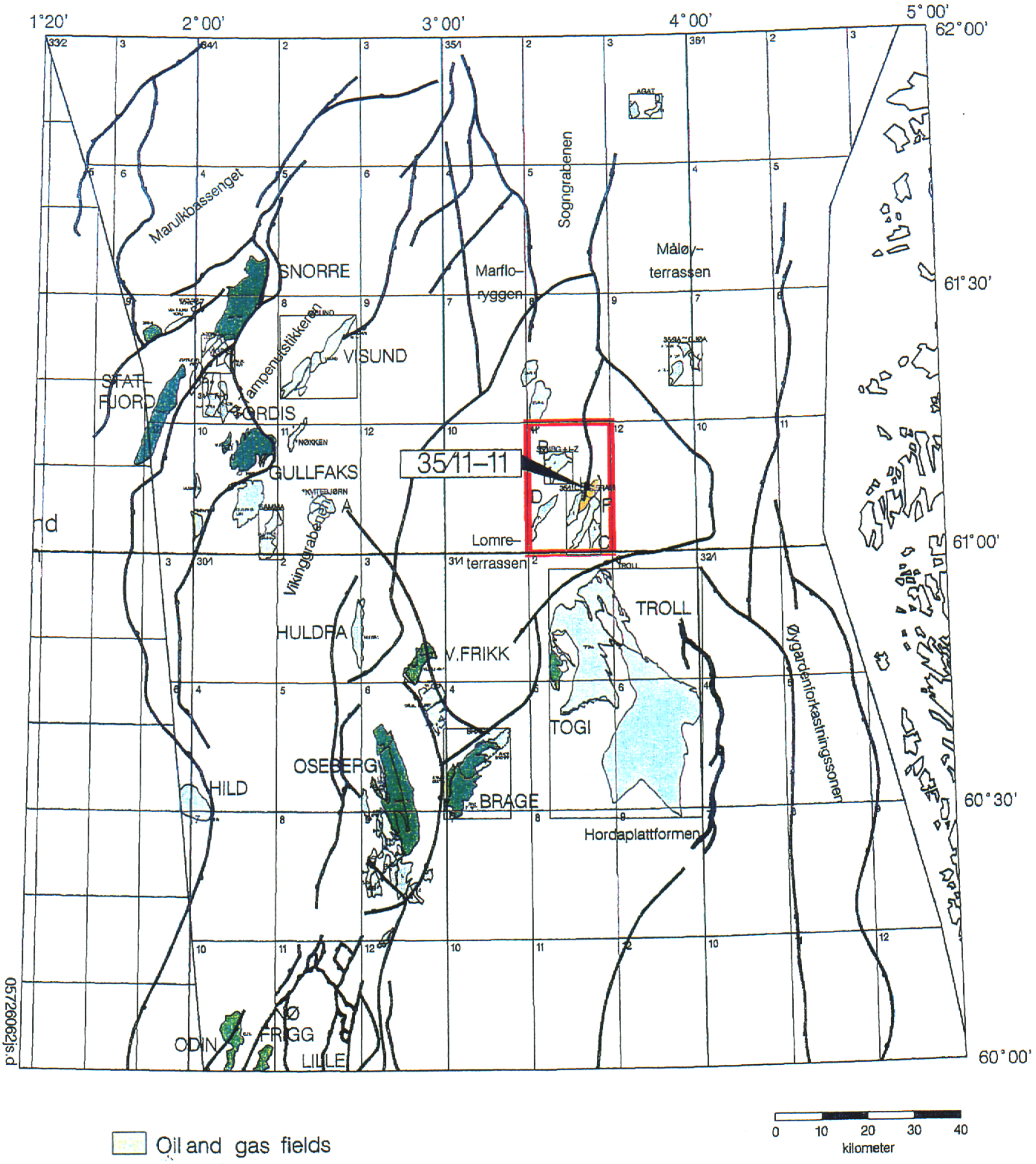
Den Norske Stats Oljeselskap a.s. (Statoil)	50%
Norsk Hydro a.s. (operator)	25%
Mobil .	25%

The well was drilled by Norsk Hydro ASA, on behalf of the group, during 1998 (see Location Map, page II) of.

All depths in this report are in mMD RKB (RKB elevation is 23.5m) unless otherwise stated.

2 WELL SUMMARY

2.1 Location map



SUMMARY OF WELL DATA	
LOCATION:	61° 06' 31.19"N 03° 33' 49.08" E 6 775 182.7mN 530 381.6mE ED-50, UTM Zone 31, CM 3°E
OPERATOR: RIG: CONTRACTOR:	Norsk Hydro a.s Transocean Leader Transocean
KB ELEVATION (to MSL): WATER DEPTH (MSL):	23.5 m 359 m
START OF OPERATIONS: WELL SPUDDED: REACHED TD ON: COMPLETED: STATUS: FORMATION AT TD:	14.04.98 16.04.98 11.05.98 23.05.97 Permanently plugged and abandoned, dry well Dunlin
TD DRILLER (mRKB): TD LOGGER (mRKB):	3225m 3225m
DRILLING DEPTHS:	36" to 444.0 m 17 1/2" to 1245.0 m 12 1/4" to 2550m 8 1/2" to 3225m
CASING DEPTHS:	30" at 444.0 m 13 3/8" at 1245.0 m

SECTION A

GEOLOGY

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1 OBJECTIVES

The main objective for well 35/11-11 was to test the eastward extension of the Oxfordian Turbidites which were assumed to be present in the H-East compartment (Figure 3.1-1 & 3.1-2). Oil and gas were encountered in the discovery well 35/11-8 S and the extention toward the south was confirmed by the drilling of well 35/11-9, which encountered good reservoir quality and pressure communication between the two wells.

The main objectives of the well was to:

- Test the presence- and type of hydrocarbons in the Oxfordian Turbidites in the H-East structure in order to prove additional oil volumes to increase the robustness of the Fram project.

- Define both the gas-oil contact and the oil-water contact within the good reservoir quality sand. The first priority was the identification of the GOC.

- Test the presence and the quality of the Oxfordian Turbidites in a proximal position to the east. Secure full coverage of cores for sedimentological analysis, reservoir quality and production properties.

- Test the presence of hydrocarbons in the Brent Group as the secondary objective of the well. (However, according to the current model, the Brent Group were supoused to be penetrated in a downflank position and most likely be water bearing).

- Secure core data from the Brent Group (Etive Formation) as the basis for sedimentological models, reservoir quality and production properties.

- Obtain core data from Heimdal sands to assess the reservoir- and production properties as a source for make-up water. This interval were supoused to be penetrated close to a high amplitude reflector and the presence of hydrocarbons could not be excluded.

2 RESULTS

A total of 119 m gross Upper Jurassic reservoir sequence was penetrated in well 35/11-11 on the H East Structure. All massive sands have been interpreted as three individual turbidite deposits of Kimmeridgian/Volgian, Oxfordian and Callovian age respectively. All reservoirs in the Upper Jurassic main target were found waterbearing and not in pressure communication with the H Structure.

The well did also test the Brent Group in a downflank position as a secondary objective. The Ness and Etive Formations were poor developed with no shows of hydrocarbons. The main conclusion is that all prognosed reservoir intervals were waterbearing and well 35/11-11 is classified as a dry hole.

3 BIOSTRATIGRAPHY

The biostratigraphical evaluation of Well 35/11-11 was carried out by GeoStrat.

The analyses were based on studies of lithology, micropaleontology, palynology, which were made on ditch cutting samples (DCS), sidewall cores (SWC) and conventional core chips covering the interval 1260 to 3225 m RKB.

Table 3.1 on the next page shows a summarised chronostratigraphic and lithostratigraphic subdivision of the well. Further details may be found in the GeoStrat Report; "Norsk Hydro 35/11-11 Biostratigraphy of the Interval 1260m - 3225m."

At the boundary between the Early Paleocene and Late Maastricthian a hiatus is detected. Some major breaks are detected in the Early Cretaceous; between the Late Albian and the Late Aptian as well as between the Late Aptian and the Early Barremian and between the Early Barremian and the Ryazanian. In the Jurassic two major breaks are detected; between Late Kimmeridgian and Middle Oxfordian and between the Aalenian and intra Early Toarcian.

Biostratigraphical tops

Age	mRKB MD
Intra Middle Eocene	1260
Early Eocene	1 320
Late Paleocene	1 550
Early Paleocene	1 830
Late Maastrichtian	1 914
Early Maastrichtian	1 980
Late Campanian	2 040
Early Campanian - Late Santonian	2 060
Early Santonian - Late Turonian	2 200
Middle - Early Turonian	2 280
Cenomanian	2 343
Late Albian	2 420
Late Aptian	2 457
Early Barremian	2 462
Late Ryazanian	2 469
Late Volgian	2 475
latest Middle Volgian	2 485
Middle Volgian - Early? Volgian	2 505
intra Early Volgian - ?Kimmeridgian	2550.5
Middle Oxfordian	2 569
Early Oxfordian	2628.57
Late? Callovian	2638.3
intra Late - Middle Callovian	2 680
Early Callovian	2 795
Late - Middle Bathonian	2 885
Middle Bathonian	2 995
Bathonian? - ? Bajocian	3 005
Early Bajocian	3 055
Aalenian	3 120
Intra Early Toarcian - ?Late Pliensbachian	3 190
TD	3 225

4 LITHOSTRATIGRAPHY

All depths are in mMD RKB (RKB is 23.5m).

This summary is compiled predominantly from ditch cuttings descriptions.
No sidewall cores were taken in this well. A total of 9 conventional cores were cut between the interval from 2550.5m to 3104m in the well, see Table 6.1.
Wireline and MWD logs were used to aid lithological interpretation and the placement of formation boundaries.

The well was drilled with returns to seabed from the seafloor at 382 m to 1253 m before setting 13 3/8" casing at 1245m. Lithology interpretation through this interval is based on MWD logs and drilling parameters. The first drill cuttings samples were taken at 1243 m.

4.1 Nordland Group 382.5 - 763 m MD RKB

382.5 - 667m MD RKB

This interval was drilled with returns to seabed and is interpreted to consist of clay with sand beds at 537 and 542m. Presence of boulders was experienced at 427m depth while running the 30". Had to pull out the casing and made a wiper trip with hole opener. Scratches on the hole opener were observed.

Age: Undifferentiated Quaternary and Tertiary

Utsira Formation 667 - 763 m MD RKB

The Utsira Formation was drilled with returns to seabed and interpreted to consist predominantly of sand (based on MWD data).

Age: Undifferentiated Tertiary

4.2 Hordaland Group 763 - 1466 m MD RKB

From 763 to 1253m MD RKB, the interval was drilled with returns to seabed and comprises claystone (based on MWD data). Below 1253m MD RKB, the interval was drilled using a water based mud system with full returns to surface.

1253 - 1420m MD RKB

This interval comprises massive claystone

Claystone: greenish grey to dark greenish grey, olive grey, soft to firm, subblocky, non calcareous, rare micropyrite.

1420 - 1463m MD RKB

This section comprises of claystones

Claystone: moderate brown, soft to firm, blocky, non - slightly calcareous, silty, rare micromicaceous, rare micropyritic.

Claystone: greenish grey to dark greenish grey, olive grey, soft to firm, subblocky, non calcareous, rare micropyrite.

Age: Undifferentiated Tertiary

4.3 Rogaland Group 1466 - 1914 m MD RKB

The Rogaland Group consists of the Balder, Sele, Lista and Ty/Våle Formations.

Balder Formation 1466 - 1523 m MD RKB

This formation comprises claystone and minor tuff

Claystone: medium grey - medium dark grey, olive grey, soft - firm, blocky, non calcareous, slightly silty, trace micromicaceous.

Tuff: light grey - medium light grey, dark yellowish brown - greyish brown, medium grey, soft - firm, blocky, slightly silty, black speckled, non calcareous.

Age: Early Eocene

Sele Formation 1523 - 1582 m MD RKB

This section consists of claystone

Claystone: medium grey - dark medium grey, olive grey, soft - firm, minor - moderate hard, blocky, slightly silty, non calcareous, trace micromicaceous

Age: Early Eocene - Late Paleocene

Lista 1 Formation 1582 - 1624 m MD RKB

This formation comprises of a main upper claystone section overlying the Heimdal member sandstone's with basal claystone

Claystone:	medium grey - light olive grey, brownish grey, soft - firm, blocky - subblocky, non calcareous, occasionally silty, rare micromicaceous, rare micropyrite, rare carbonaceous material.
Age:	Late Paleocene

Heimdal 1624 - 1679 m MD RKB

This interval consists of a massive sand package

Sandstone:	clear - translucent quartz, predominantly fine - medium, rare coarse, subangular - subrounded, well sorted, as lose grains, non - locally traces of calcite cement, trace mica, rare - trace glauconite, rare pyrite.
Age:	Late Paleocene

Lista 2 Formation 1679 - 1770 m MD RKB

This interval comprises varicoloured claystone.

Claystone:	varicoloured; very light grey-light grey, medium grey-dark grey, moderate brown, dark green grey, becoming predominantly olive grey-medium dark grey, firm-moderately hard, blocky, non calcareous, slightly silty, rare micromica, rare carbonaceous material.
Age:	Late Paleocene

Våle Formation 1770 - 1825 m MD RKB

This formation comprises claystone.

Claystone:	olive grey-medium dark grey, firm to soft, blocky, non-slightly calcareous, rare micropyrite, rare carbonaceous material, rare glauconite, slightly silty
Age:	Late Paleocene

Ty Formation 1825 - 1914 m MD RKB

This formation comprises sandstone and minor limestone stringers

Sandstone: clear Quartz, fine - coarse, predominantly medium, subangular - subrounded, moderate sorted, as lose grains, no visible cement, trace glauconite, rare mica.

Limestone: white - light grey, soft, subblocky, cryptocrystalline, abundant glauconite.

Age: Late Paleocene - Early Paleocene

4.4 Shetland Group 1914 - 2420 m MD RKB

The Shetland Group consists of the Jorsalfare, Kyrre and Svarte Formations.

Jorsalfare Formation 1914 - 2056 m MD RKB

This section comprises claystone with interbedded limestone stringers benches

Limestone: white - light grey, locally pinkish grey, soft - firm, locally silty - very fine sandy, subblocky, glauconitic, generally cryptocrystalline

Claystone: medium grey - olive grey, minor moderate brown, soft - firm, blocky - occasionally platy, slightly - very silty occasionally grading to siltstone, slightly - very calcareous occasionally grading to argillaceous limestone, glauconitic, trace pyrite

Age: Late Maastrichtian - Late Campanian

Kyrre Formation 2056 - 2343 m MD RKB

This formation consists of claystone and limestone stringers with trace of dolomite

Claystone: medium grey - medium dark grey, soft - firm, blocky, non - very calcareous locally grading to argillaceous limestone, silty locally very silty grading to siltstone, locally very fine sandy, rare glauconite, rare - locally trace pyrite

Claystone: medium grey - medium dark grey, dark greenish grey - greenish grey, light olive grey - olive grey occasionally moderate brown, soft - firm, occasionally moderate hard,

	subblocky - blocky, occasionally platy, slightly calcareous, occasionally silty, trace glauconite, trace pyrite
Limestone:	white - very light grey, soft - firm, blocky, locally silty - very fine sandy, glauconite, cryptocrystalline
Dolomite:	dark yellowish brown - brownish grey, blocky - subplaty, very hard, cryptocrystalline
Age:	Late Campanian - Early Turonian

Svarte Formation 2343 - 2420 m MD RKB

This interval comprises limestone interbedded with claystone

Limestone:	white - light grey, pale yellow brown, soft - firm, occasionally argillaceous, glauconite, microcrystalline
Limestone:	light grey - medium light grey, pinkish grey, subblocky - blocky, argillaceous - very argillaceous grading to marl, locally very sandy, trace micropyrite to pyrite, trace glauconite.
Claystone:	medium dark grey - olive grey, dark greenish grey - brown grey, becoming predominantly grey black, occasionally blue grey, subblocky - blocky, soft - firm occasionally moderate hard, calcareous - very calcareous grading to marl, slightly silty, rare - trace micromicaceous, rare - trace micropyritic, rare glauconite, r carbonaceous
Age:	Cenomanian

4.5 Cromer Knoll Group 2420 - 2469 m MD RKB

The Cromer Knoll Group consists of Rødby Formation.

Rødby Formation 2420 - 2469 m MD RKB

This interval comprises claystone and limestone

Claystone:	medium dark grey - dark grey, soft, blocky - subblocky, occasionally moderate hard, calcareous - very calcareous, locally grading marl, silty, micromicaceous
Claystone:	brown grey - medium dark grey, soft - firm, blocky - platy, slightly silty, calcareous, micromicaceous, micropyritic

Limestone: light grey - medium light grey, pinkish grey, subblocky - blocky, argillaceous - very argillaceous grading to marl, locally very sandy, trace micropyrite to pyrite, trace glauconite.

Age: Late Albian - Early Barremian

4.6 Viking Group 2469 - 3005 m MD RKB

The Viking Group consists of the Draupne and Heather formations

Draupne Formation 2469 - 2540 m MD RKB

This interval comprises mainly claystone.

Claystone: brown grey-brown black-olive grey, becoming predominantly brown black, firm to moderately hard, generally blocky-subblocky, occasionally subfissile, slightly silty, non-slightly calcareous, also slightly sandy with traces of micropyrite and carbonaceous pyritized laminae, traces micro micaceous.

Age: Late Ryazanian - Early? Volgian

Heather "C" Formation 2540 - 2569 m MD RKB

This interval comprises sandstone (Kimmerian turbidites ?) and claystone.

Sandstone: medium grey-medium dark grey, clear - translucent quartz, generally very fine-very coarse, predominantly medium-coarse, poorly sorted, friable-moderately hard, very argillaceous/kaolinitic matrix, weak silica cemented and calcite cement, traces of mica and traces micropyrite coated quartz grains, traces micropyrite, rare micaceous, rare bioturbated, rare carbonaceous, locally claystone lamina, generally no visible porosity.

Claystone: medium dark grey-dark grey, moderately hard-hard, blocky-subfissile, silty, sandy, non calcareous, abundant micropyrite, very carbonaceous, abundant carbonaceous fragments. micaceous.

Age: Early? Volgian - ? Kimmeridgian

Oxfordian Turbidites 2569 - 2616 m MD RKB

This interval comprises mainly of sandstone

Sandstone:	light grey, clear - translucent quartz, milky white & smoky quartz, very fine- coarse, predominantly medium, locally pebbly, subangular-subrounded, poorly sorted, friable-moderately hard, argillaceous/kaolinitic matrix, weak silica cemented, locally slightly calcareous, traces micropyrite, rare micaceous, rare carbonaceous, no visible porosity.
Age:	? Kimmeridgian - Middle Oxfordian

Heather "B" Formation 2616 - 2683 m MD RKB

This interval comprises siltstone and minor claystone

Siltstone:	dark grey, becoming olive grey-dusky yellow brown, hard-very hard, blocky-subfissile, micromicaceous-micaceous, carbonaceous, micropyritic, locally calcareous, very fine sandy.
Claystone:	medium grey - medium dark grey, firm - moderate hard, blocky, slightly calcareous-calcareous, slightly micromicaceous.
Age:	Early Kimmeridgian - Middle Oxfordian

Callovian Turbidites 2683-2727 m MD RKB

This interval comprises of sandstones occasionally interbedded with siltstones

Sandstone:	light olive grey-medium light grey, quartz, clear to translucent, fine-coarse, becoming fine-medium, subangular-subrounded, predominantly subangular, poorly to moderately sorted, hard, cemented with silica, trace to locally rare mica, traces argillaceous/kaolinitic matrix, fair visible porosity.
Siltstone:	dusky yellow brown, hard, sub fissile, non-occasionally calcareous, trace carbonaceous material/fragments, argellaceous-very fine sand in lamina.
Age:	Middle Oxfordian - Middle Callovian

Heather "A" Formation 2727 - 3005 m MD RKB

This interval comprises of siltstones

Siltstone:	dusky yellow brown, hard, sub fissile, non-slighthly calcareous, micromicaceous-very micromicaceous, trace carbonaceous, trace micropyrite, trace pyrite, argillaceous-very fine sandy.
Limestone:	white - light grey, occasionally pale yellowish brown, firm, occasionally moderate hard, blocky, occasionally argillaceous streaks, microcrystalline - cryptocrystalline.
Age:	Middle Callovian - Middle Bathonian

4.7 Brent Group 3005 - 3177 m MD RKB

Brent Group in this well is represented by Tarbert, Ness, Etive, Rannoch and Oseberg Formations

Tarbert Formation 3005 -3008 m MD RKB

This interval coprises sandstone

Sandstone:	clear to translucent quartz, fine-medium, subangular-subrounded, well sorted, weak silica cement, predominantly as loose grains

Ness Formation 3008 - 3077 m MD RKB

This interval comprises claystone and sandstone coal seams

Claystone:	dusky yellow brown, becoming medium grey - medium dark grey, firm, blocky-subfissile, non-slightly calcareous, micromicaceous, traces carbonaceous
Sandstone:	clear to translucent quartz, fine-medium, subangular-subrounded, well sorted, weak silica cement, predominantly as loose grains
Coal:	black, blocky, brittle, argillaceous, waxy
Age:	Middle Bathonian - Early Bajocian

Etive Formation 3077 - 3085 m MD RKB

This formation consists of sandstone.

Sandstone: light grey-medium light grey, quartz, clear to translucent, very fine-fine, predominantly fine, subangular, well sorted, hard, cemented with silica, locally calcite cement, locally Mica lamina, rare carbonaceous, no visible porosity.

Age: Early Bajocian

Rannoch Formation 3085 - 3119 m MD RKB

This formation consists of sandstone and siltstone.

Sandstone: light grey-medium light grey, quartz, clear to translucent, very fine-fine, predominantly fine, subangular, well sorted, hard, cemented with silica, locally calcite cement, locally Mica lamina, rare carbonaceous, no visible porosity.

Siltstone: medium grey, firm, blocky, non calcareous, carbonaceous, micromicaceous, very fine sandy

Age: Early Bajocian

Oseberg Formation 3119 - 3177 m MD RKB

Oseberg Formation in this well mainly consists of sandstone with minor siltstone.

Sandstone: light grey-medium light grey, quartz, clear to translucent, very fine-coarse, occasionally very coarse, subangular-subrounded, predominantly subangular, poorly sorted, predominantly as loose grains, else hard, cemented with silica, traces-20% kaolinitic matrix and calcareous cement matrix, no visible porosity, trace Mica, rare pyrite.

Siltstone: brown grey-medium dark grey, firm , blocky, non calcareous, trace carbonaceous, micromicaceous, rare to abundant micropyritic in part, argillaceous-very argillaceous grading to claystone in part

Age: Early Bajocian - Aalenian

4.8 Dunlin Group 3177 - 3225 m MD RKB (well TD)

The well TD was set in Dunlin Group and comprises mainly siltstone with sandstone beddings which are described as same as in the Oseberg Formation above.

Sandstone:	light grey-medium light grey, quartz, clear to translucent, very fine-coarse, occasionally very coarse, subangular-subrounded, predominantly subangular, poorly sorted, predominantly as loose grains, else hard, cemented with silica, traces-20% kaolinitic matrix and calcareous cement matrix, no visible porosity, trace Mica, rare pyrite.
Siltstone:	brown grey-medium dark grey, firm , blocky, non calcareous, trace carbonaceous, micromicaceous, rare to abundant micropyritic in part, argillaceous-very argillaceous grading to claystone in part
Age:	Aalenian - Late Pliensbachian

5 HYDROCARBON SHOWS

The evaluation of hydrocarbon shows at the wellsite was carried out in a conventional manner. A standard (Baker Hughes Inteq) hydrocarbon total gas detector system together with a gas chromatograph for automatic and continuous gas analysis, recorded as ppm by volume of C1 through nC4, were operational below 1243m down to the TD of the well at 3225m.

Hydrocarbon shows on ditch cuttings, cores and sidewall cores were evaluated according to procedures described in Norsk Hydro's "Wellsite Geologist's Manual".

5.1 Gas Record

122 - 1250 m:

This interval was drilled with returns to sea bed.

1250 - 3225 m:

5.2 Oil stain and fluorescence

A summary of the observed shows is given in Table 5.1 below:

INTERVAL (mRKB)	SOURCE	LITHOLOGY	SHOWS DESCRIPTION
2540-2550.5	Cuttings	Sandstone	no pet od, no dir fluor,slo blmg bl wh cut fluor,no vis cut, wk bl wh fluor res,no vis res
2550.5-2570	Core	Sandstone	v fnt pet od, no O stn, no-ptchy yel dir fluor, slo blmg bl wh cut fluor,no vis cut, yel wh-bl wh fluor res,no vis res
2570-2595	Core	Sandstone	v fnt pet od, no O stn, v dull wk yel orng dir fluor, dull wk bl wh slo blmg/strmg cut fluor,no vis cut, bl-bl wh fluor res,no vis res
2595-2620	Core	Sandstone	fnt pet od, no O stn, no dir fluor, slo strmg, loc inst dull bl-bl wh cut fluor,no vis cut, pr-fr dull yel fluor res,no vis res
2620-2646	Core	Siltstone	fnt-no pet od, no O stn, no dir fluor, slo-mod fst strmg bl wh cut fluor, no vis cut, pr-fr dull yel fluor res,no vis res
2696-2729	Core	Sandstone	no-wk pet od, no O stn, no dir fluor, mod fst-inst blmg wk bl wh cut fluor, no vis cut, wk pl yel-bl wh ring fluor res, no vis res
3085-3002	Core	Sandstone	no-v wk pet od, no O stn, no dir fluor, v dull slo strmg bl wh cut fluor, no vis cut, dull yel fluor res,no vis res

Table 5.1. Shows summary

6 CORING

6.1 Conventional cores

A total of 9 cores were cut. A summary of the cores is presented in the Table 6.1 below and the core descriptions can be found in Appendix I.

No	C: Cut(m) R: Recovery(m)	Rec. %	Lithology	Formations
1	C: 2550.5-2552.0 R: 2550.5-2551.0	33.3	Claystone/Sandstone	Draupne
2	C: 2552.0-2570.0 R: 2552.0- 2569.37	96.5	Sandstone	Draupne-Heather
3	C: 2570.0-2597.5 R: 2570.0-2597.04	98.3	Sandstone/Siltstone	Heather
4	C: 2597.5-2621.0 R: 2597.5-2620.0	95.7	Sandstone/Siltstone	Heather
5	C: 2621.0-2638.3 R: 2621.0-2338.3	100	Siltstone/Sandstone	Heather
6	C: 2638.3-2648.0 R: 2638.3-2646.95	89.2	Siltstone	Heather
7	C: 2695.5-2723.0 R: 2695.5-2721.0	92.7	Sandstone/Siltstone	Heather
8	C: 2723.0-2767.5 R: 2723.0-2767,42	99.8	Siltstone/Sandstone	Heather
9	C: 3085.0-3104:0 R: 3085.0-3102.3	91	Sandstone/Siltstone	Rannoch

Table 6.1: Conventional cores

6.2 Sidewall cores

No side-wall cores were taken in this well.

7 LOGGING

7.1 Wireline logs

The following table is a summary of wireline logs run in the well and shows log type, date run, logged intervals and run number for each log.

Logs	Date	Logged interval (mRKB)	Run
HALS/TLD/HGNS/DSI/AMS	12.05.98	3225-1245	1A
MDT/GR/AMS	13-14.05.98	1626.5-3167.5	1A
VSP/GR	14.05.98	3150-1250	1A
FMS/NGT/AMS	15-16.05.98	3175-2450	1A

Table 7.1: Wireline logs

7.2 MWD logs

A MWD service (Baker Hughes Inteq) yielding gamma ray, resistivity and survey measurements was run in the following section:

1250-3225

Detailed MWD results can be found in the report "End of Well Report, MWD, for Norsk Hydro, Well 35/11-11."

7.3 Bottom hole temperatures from wireline logs

The table below gives a summary of the bottom hole temperatures measured from wireline logs.

Log suite	Run	Depth (mRKB)	Temp °C	Time since circ.	Circ. time
HALS/TLD/HGNS/ DSI/AMS	1A	3195	105	12 hrs	3 hrs 30 min
MDT/GR	1A	3167	100.7	15 hrs 15min	1 hr 5 min
VSP/GR	1A	3150	112	27 hrs	1 hr 5 min
FMS/NGT	1A	3162	103.3	7 hrs 15 min	2 hrs 25 min

Table 7.2: Bottom hole temperatures from logs

8 PETROPHYSICAL RESULTS

The objectives of well 35/11-11 were to test the presence and type of hydrocarbons in the Oxfordian Turbidites in the H-East Structure in order to prove additional oil volumes. The aim was to both identify the gas-oil contact and the oil-water contact within the good reservoir quality sand. First priority was the identification of the GOC. A secondary objective was to secure core data from the Brent Group (Etive Formation) as the basis for sedimentological models, reservoir quality and production properties.

Well 35/11-11 proved to be dry, i.e. water bearing.

The petrophysical evaluation is based on log and core data.

The log quality is considered to be good.

The water gradients interpreted in the four reservoirs of well 35/11-11 (See Figure 8.1 - 8.2) proved that there is no pressure communication with well 35/11-8S and the H-Structure, neither in the Upper Jurassic Turbidites nor in the Brent Group.

In the Kimmeridge Turbidite 16 metres of net sand has been interpreted, while there is 29 metres of net sand in the Oxfordian Turbidite. A net-gross ratio of 0.56 and 0.62 is to be found in the Kimmeridge and Oxfordian Turbidites respectively. Average porosity is 23.8 and 23.7 in the two mentioned reservoirs, while average permeability is 3513 mD and 655 mD.

There is 34 metres of net reservoir sand in an Callovian Turbidite, strategraphically straight below the Heather_B Formation. The net-gross ratio is 0.78 and average porosity and permeability is 18.3 % and 371 mD.

In the Brent Group there are 5.6, 5.6 and 6.3 metres of net reservoir sands in the Ness, Etive and Rannoch Formations respectively. Core 9, in the Brent Group, was only recovered in the Rannoch Formation and the average permeability here was just 2 mD. In the Ness Formation the net-gross ratio is 0.08, so this Formation is regarded as a non-reservoir. The Rannoch Formation has also very poor reservoir quality.

The Etive Formation has a net-gross ratio of 0.70 and the average porosity is 20.2 %. There is 37.4 metres of net reservoir sand interpreted in the Oseberg Formation. The net-gross ratio is 0.41 and the average porosity is 16.4 %.

For more details regarding the petrophysical interpretations, refer to Norsk Hydro Report: "Formation Evaluation Report, Well 35/11-11, November 1998".

Formation	Depth Interval [m]	Net Res [m]	N / G	Porosity [%]	Permeability [mD] *
Kim. Turb	2540-2569	16.1	0.56	23.8	3513
Oxf. Turb	2569-2616	29.0	0.62	23.7	655
Callovian Turb.	2683-2727	34.2	0.78	18.3	371
Ness	3008-3077	5.6	0.08	19.1	-
Etive	3077-3085	5.6	0.70	20.2	-
Rannoch	3085-3119	6.3	0.19	17.1	2
Oseberg	3119-3177	37.4	0.41	16.4	-

DISCRIMINATION CRITERIA (INCLUSIVE) FOR NET RES AND NET PAY				
Criteria	*Min*	*Max*	*Net Res*	*Net Pay*
Shale content	0.00	0.40	Yes	Yes
Log porosity, Phie Upper Jurassic. Turb. Brent Group	 *0.09* *0.12***	1.00	Yes	Yes
Water saturation, Swe	0.00	0.60	No	Yes

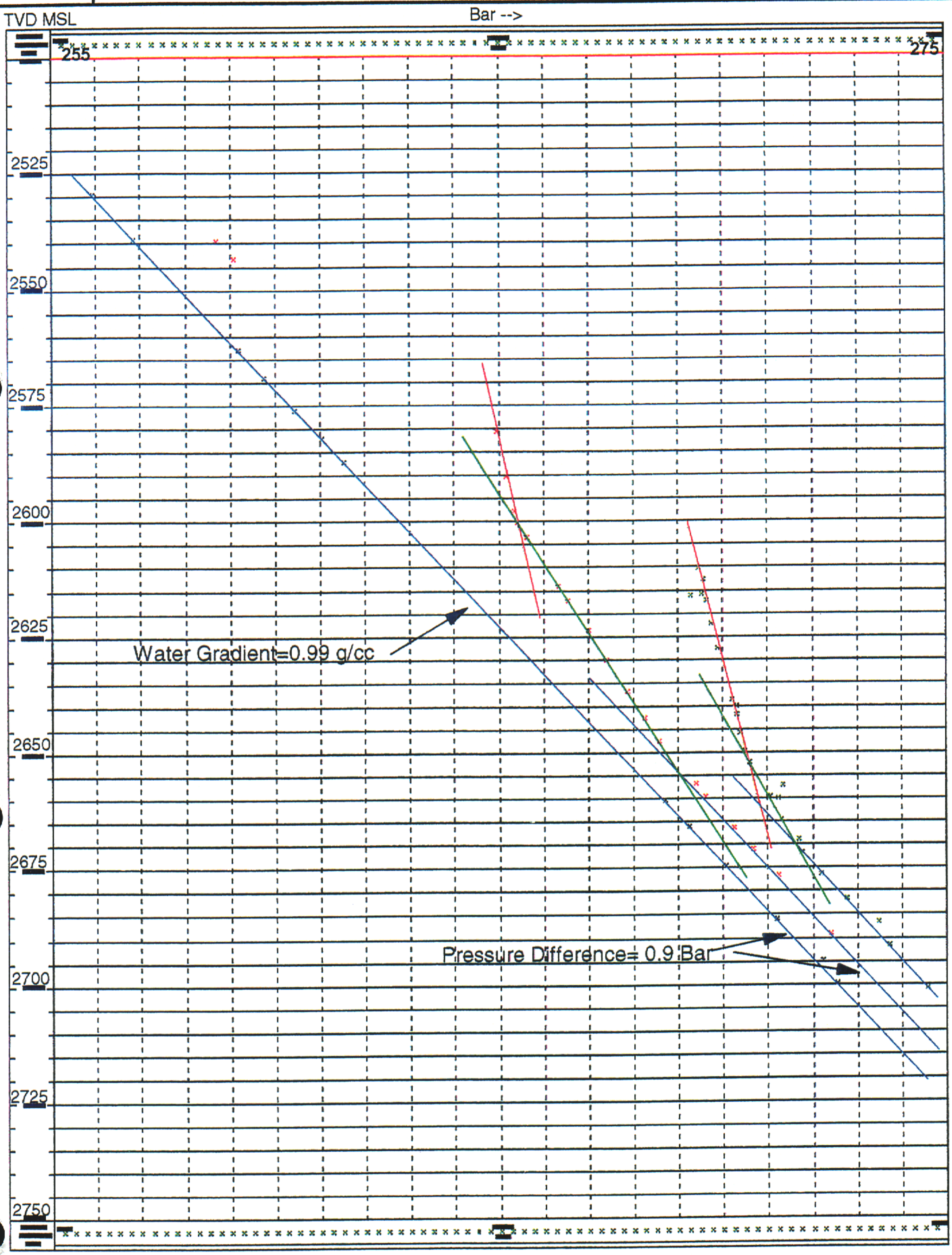
Table 8: Petrophysical summary

** Horizontal Klinkenberg-corrected permeability, arithmetic average.*
*** Because of limited core data, the industry standard of 12 % has been applied.*

fig 1

35/11-8S, Oxfordian Turbidite: Red crosses
35/11-4, Brent Group: Green crosses
35/11-11, Kim., Oxf. and Callovian Turbidites: Black crosses

Figure 8.1



WELL NAME: 35/11-11

Brent Group

Figure 8.2

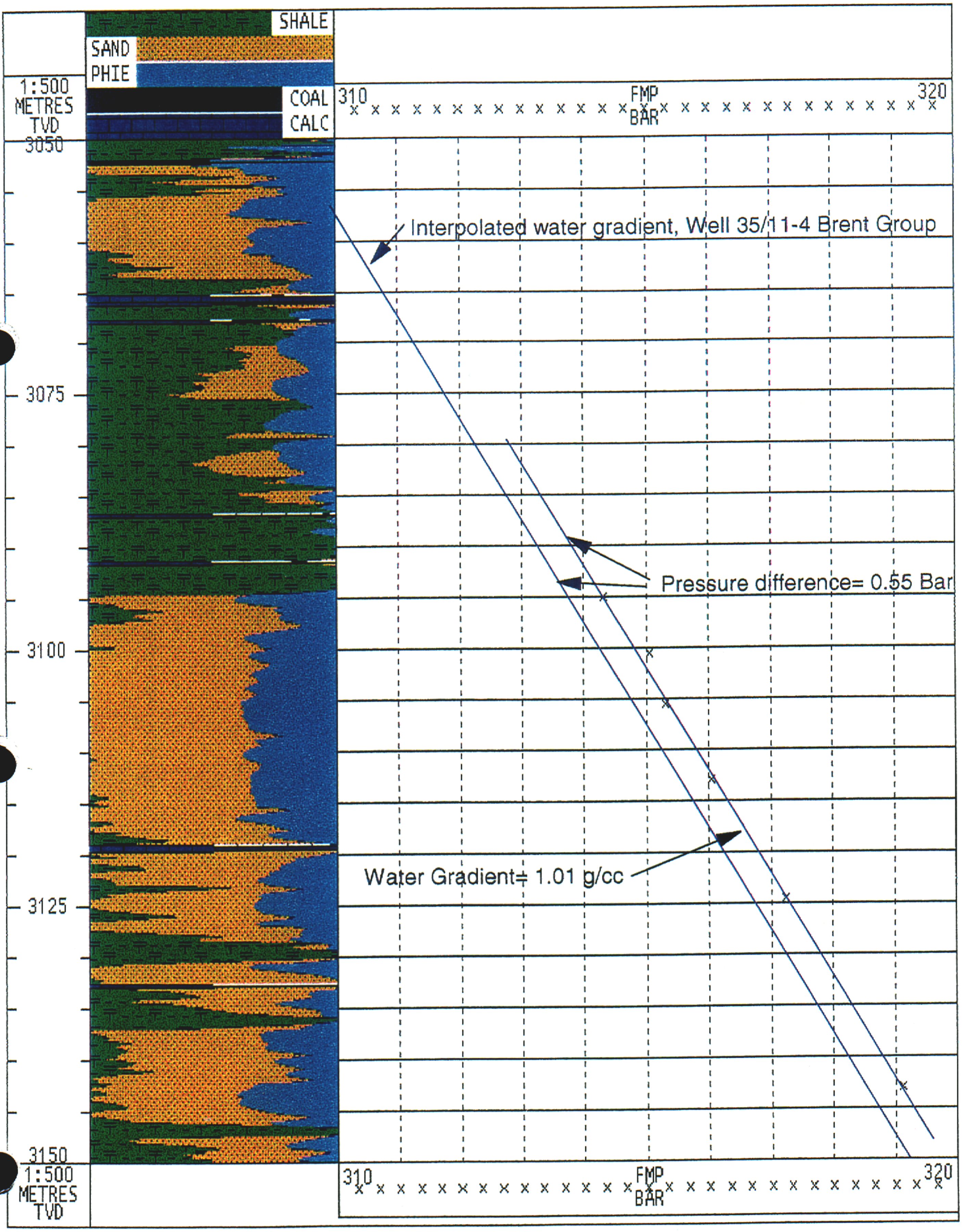


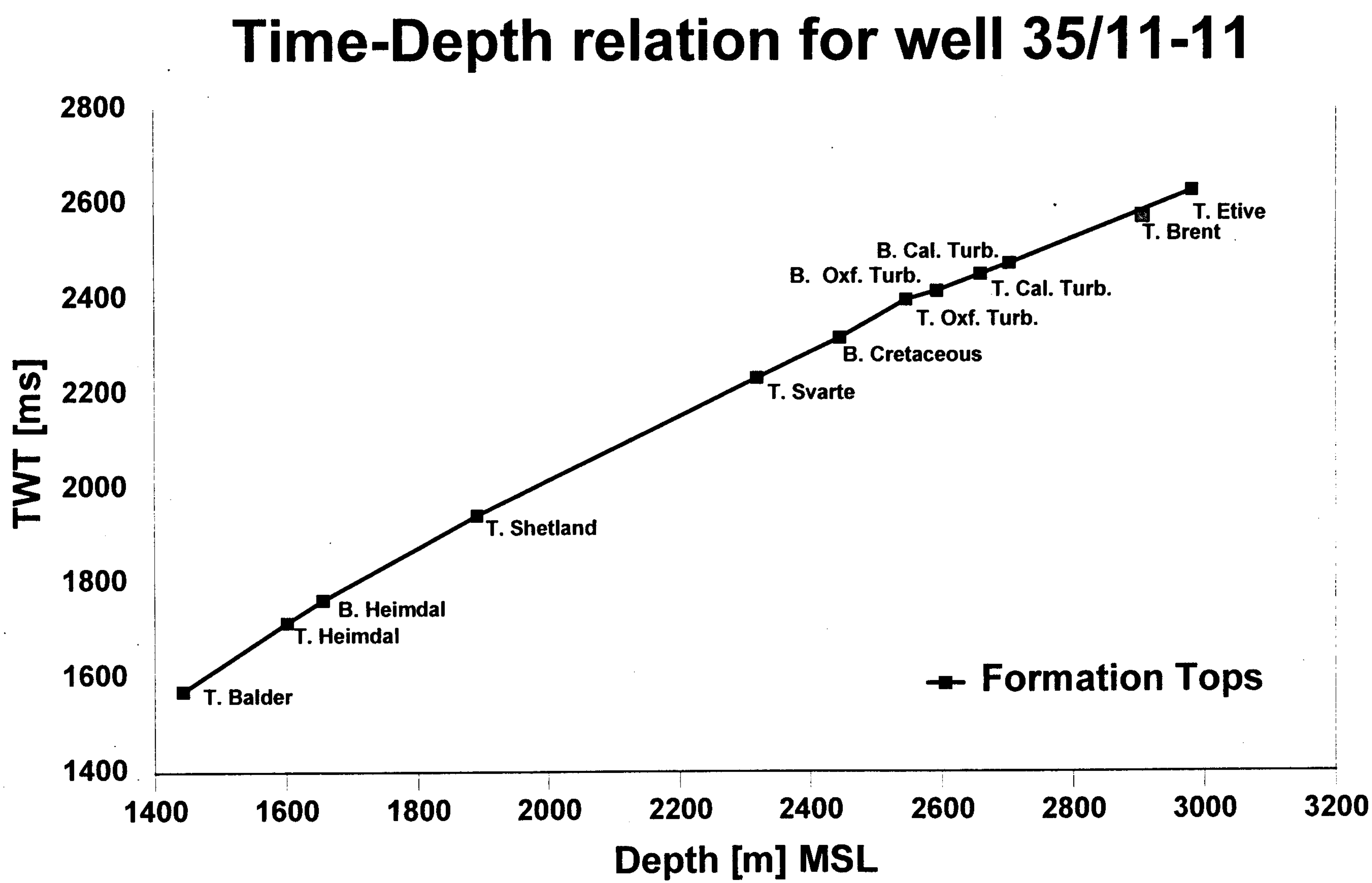
fig 2

9 GEOPHYSICAL RESULTS

The prognosed versus actual times and depths to well 35/11-11 are shown in Table 1.1, while the actual time-depth relations are represented in Figure 1. All reflectors from Top Shetland and below have been interpreted on the reprocessed survey MN920196. In addition, Top Balder Formation was verified with minor adjustments from previous work on MN9201, while Top and Base Intra Lista Sandstone (referred to as Heimdal Formation) were interpreted on random lines which tie the wells 35/11-9, -8S and -11. There are no actual time picks at the seabed and Top Dunlin Gp. because no calibrated sonic exists at these levels.
After correcting the prognosed times (seismic times), a seismic shift of about - 6ms are observed when comparing them with the actual times from the calibrated sonic log.
The geophysical prognosed depths are all within the expected uncertainties, except the Base Oxfordian Turbidites. The interpretation of the Top and Base Oxfordian Turbidites was based on a geological model where the thickness of the Oxfordian Turbidites was assumed to be constant across the fault separating the H-East from the H Structure. However, the cores showed that the interval interpreted as Oxfordian Turbidites was two turbidite sequences separated by the Heather B Formation. The first turbidite sequence was deposited during Callovian time, while the second turbidite sequence was deposited during Oxfordian time. The significant deviation at Base Oxfordian Turbidite is a result of a wrong seismic pick prior to drilling, where the interpreted Base Oxfordian Turbidites turned out to be Base Callovian Turbidite.
Reflectors above Base Cretaceous Unconformity are depth converted from MSL with average velocities taken from the wells 35/11-8S and -9. The Base Cretaceous Unconformity are depth converted by using calibrated stacking velocities from the reprocessed MN920196 survey. All reflectors below Base Cretaceous are depth converted by using interval velocities from Base Cretaceous and down to the respective horizon.

FORMATION TOPS	PROGNOSED TWT	PROGNOSED MSL	UNCER. (m)	ACTUAL TWT	ACTUAL MSL	DEV. PROGN.
Seabed	472	360	+/- 1	-	359	-2
Top Utsira	-	746	+/- 15	-	-	-
Top Balder	1606	1436	+/- 40	-	1443	6
Top Sele	-	1487	+/- 45	-	1500	13
Top Lista (I)	-	1537	+/- 45	-	1559	22
Top Heimdal	1708	1593	+/- 45	-	1601	7
Base Heimdal	1769	1671	+/- 45	-	1656	-16
Top Lista (II)	-	-	-	-	1656	-
Top Våle	-	1727	-	-	-	-
Top Ty	-	1777	-	-	1801	25
T. Shetland/Jorsalf.	1934	1878	+/- 30	-	1891	13
Top Kyrre	-	2052	-	-	2033	-19
Top Svarte	2243	2306	+/- 30	2234	2320	14
Top Rødby	-	-	-	-	2397	
Base Cretaceous	2324	2445	+/- 40	2318	2446	1
Top Kim. Turb.	-	2500	-	2370	2517	17
T.Oxf.Turb	2404	2553	+/- 60	2398	2546	-8
B.Oxf.Turb.	-	-		2416	2593	-
Top Heather (B)	-	2682	-	-	2593	21
T. Cal. Turb.	-	-	-	2451	2660	-
B. Cal. Turb.	2481	2682	+/- 40	2474	2704	22
Top Brent	2619	2940	+/- 80	2627	2982	42
Top Ness	-	2951	-	-	2985	34
Top Etive	2675	3037	+/- 80	2670	3054	17
Top Rannoch	-	3066	-	-	3062	-5
Top Oseberg	-	3101	-	-	3096	-5
Top Dunlin	2726	3143	+/- 80	-	3154	11

Table 9.1: Geophysical summary



Time-Depth relation for well 35/11-11
TWT [ms]
2800
2600
2400
2200
2000
1800
1600
1400
1400
1600
1800
2000
2200
2400
2600
2800
3000
3200
Depth [m] MSL
T. Balder
T. Heimdal
B. Heimdal
T. Shetland
T. Svarte
B. Cretaceous
T. Oxf. Turb.
B. Oxf. Turb.
T. Cal. Turb.
B. Cal. Turb.
T. Brent
T. Etive
Formation Tops

Time depth fig

10 POST SITE SURVEY REPORT 35/11-11

WELL DATA:

1	**Distance from rig floor to sea level:**	23.5 m
2	**Water depth (MSL):**	359 m
3a	**Setting depth for conductor (m RKB):**	445 m
3b	**Leak Off / Formation Integrity Test (g/cc):**	N/A
4a	**Setting depth for casing on which BOP mounted:**	1245 m
4b	**Formation Integrity Test (g/cc):**	1.63 sg EMW

5 **Depth (m RKB & two way time) to formation/section/layer tops:**

Base Pleistocene:	538.5 m / 664 ms
Top L. Miocene.:	763 m / 869 ms
Top Oligocene.:	794.5 m / 897 ms
Top M. Eocene:	1260 m (First Dated Sample)

6 **Depth interval (m RKB & Two Way Time) and age of sand bodies shallower than 1000 m under the seabed. Note which layers if any contain gas:**

Note: The well was drilled with returns to seabed to 1253 m RKB, therefore no gas records were collected within the interpreted interval:

Pleistocene layers:	No well defined layers
Pliocene layers:	538.5-542.5 m / 664-667.5 ms, 667-711m / 778-820 ms 714-748 m / 823 - 852 ms, 750-763 m / 854 - 869 ms
L. Miocene layers:	None

The depths to the sand layers observed below the Late Miocene were not prognosed.

7 **By what means is the presence of gas proven:** N/A

8 **Composition and origin of gas:** N/A

9 **Describe all measurements taken in gas bearing layers:** N/A

SEISMIC DATA:

10 Given depth (m RKB & ms Two Way Time) of unconformities at the well location:

Base Pleistocene:	538.5 m / 664 ms
Top L. Miocene.:	763 m / 869 ms
Top Oligocene.:	794.5 m / 897 ms
Top M. Eocene:	1260 m (First Dated Sample)

11 Given depth and extent of sand layers (communication, continuity, truncation etc.):

Note: The well was drilled with returns to seabed to 1253 m RKB, therefore no gas records were collected within the interpreted interval.

Pleistocene layers: No well-defined layers

Pliocene layers:
538.5-542.5 m / 664-667.5 ms: good continuity and communication
667-711m / 778-820 ms: good continuity and communication, part of prograding fan system.
714-748 m / 823-852 ms: good continuity and communication, part of prograding fan system.
750 - 763 m / 854 - 869 ms: good continuity and communication,part of prograding fan system.

L. Miocene layers: None

The depths to the sand layers observed below the original seismic pick of the Base Utsira Formation were not prognosed.

12 Given depth and extent of any gas blanking ("gass-skygging"), seismic anomalies etc.:

Amplitude anomalies have been mapped at several levels across the area, but caution was only advised at the following level (m RKB and Two Way Time):

R7c 762.5 m (866 ms): at location : Prognosed

No gas was encountered during drilling.

13 Note any indication of gas originating from deeper levels. Give description in cases where gas comes from deeper layers: N/A

14 How does the interpretation of the site survey correspond to the well data with respect to:

- **shallow gas:** Shallow gas indications were identified at the planned location and possible shallow gas was predicted due to no seismic control with existing wells in the area. No indications of shallow gas were encountered during drilling, however a water-saturated sand, under pressure, was encountered at this level (see Drilling DPR).

- **sand bodies:** The Pliocene sand interval which was observed was not predicted. Sand intervals extended from 667 m (778 ms) to 711 m (820 ms), 714 m (823 ms) to 748 m (852 ms) and 750 m (854 ms) to 763 m (869 ms).

  The predicted Utsira Formation sand was not found (see below for further details).

- **unconformities:** Base Pleistocene was observed at 538.5 m (664 ms), as predicted. The Late Miocene unit (Utsira Fm. lateral equivalent) was well defined, the top being at 763 m (869 ms), 5.5 m shallower than predicted. Top Oligocene was predicted at 797.5 m (897 ms) and encountered at 794.5 m, 3 m shallower than expected.

- **correlation to nearby wells:** The seismic correlation to tie wells in the area are generally good. All correlations between seismic picks and observed values were within the uncertainty limits.

- **Utsira Formation lateral equivalent :** The Utsira Formation is defined as a massive sand unit. However, in the locality of the Well, the seismostratigraphic Utsira Formation actually represents the distal deposits of the Late Miocene basin, which are clay dominated. *I sensu strictu* the unit cannot be correlated to the Utsira Formation, but can be referred to as a laterally equivalent unit.

INTERPRETATION RESULTS

LEGEND:

Correlation of seismic event with log event (Seismic pick in site survey report)

Revised seismic pick (Based on log results)

DRILLING RESULTS

35/11-11

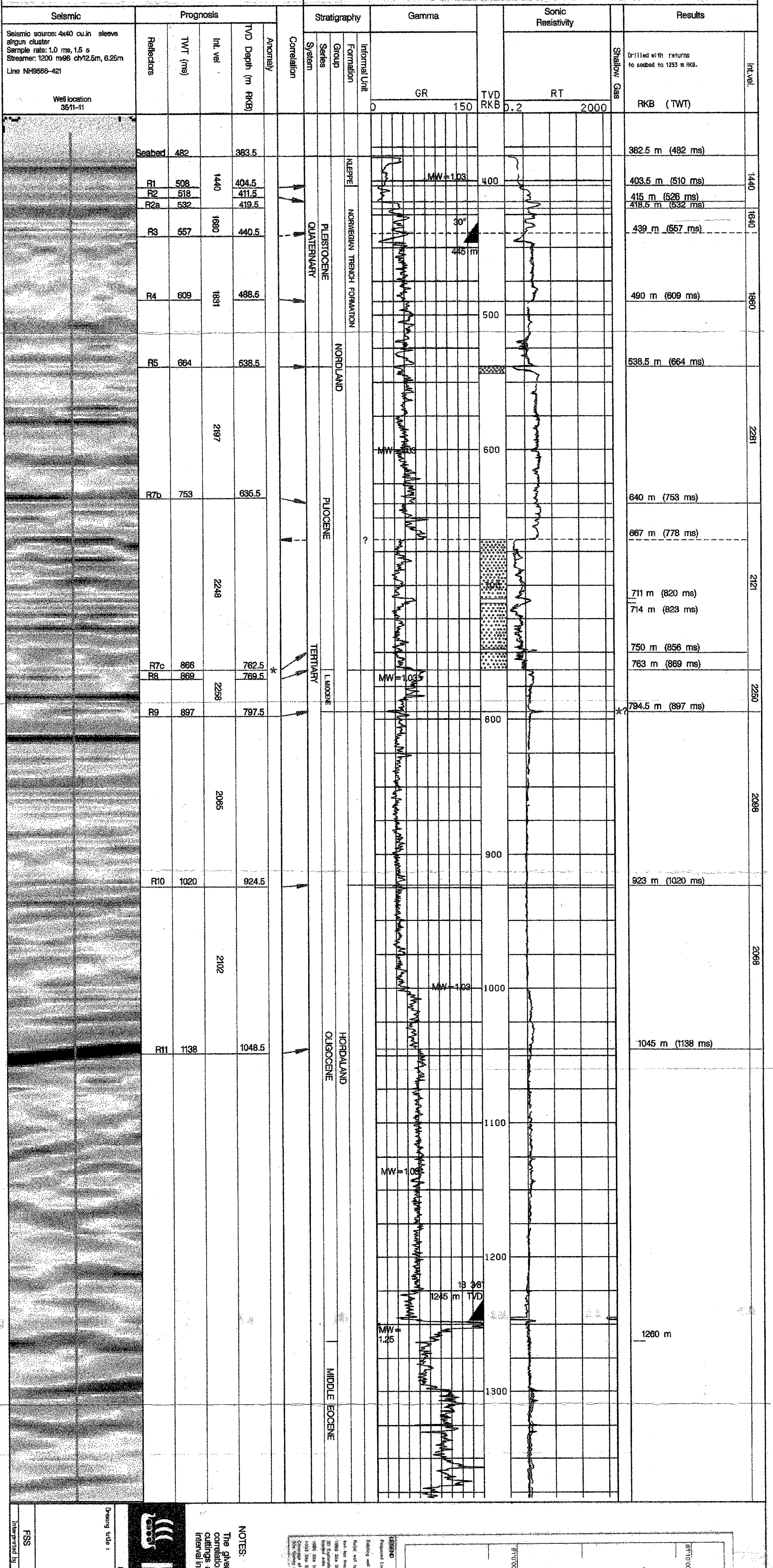
COORDINATES:
Geographic:
61 °06' 31.19" N – 3 °33' 49.08" E

UTM:
6775 182.7 mN – 530 381.6 mE
ED50, Zone 31 (CM 3° E).

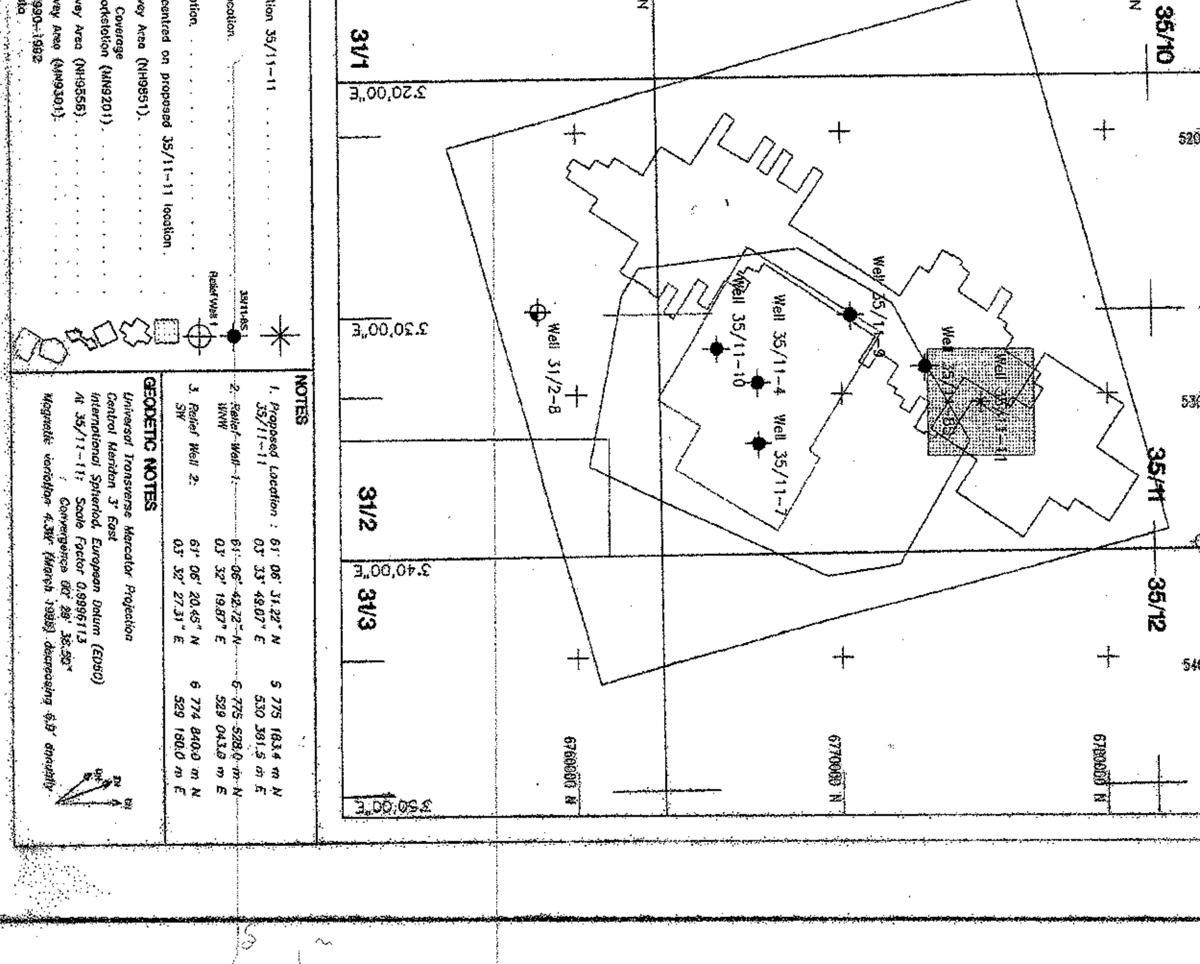
RIG: TRANSOCEAN LEADER — RKB: 23.5 m

SPUD DATE: 16.04.98: 1700 hrs
COMPLETION DATE: 23.05.98 : 1115hrs

LEGEND:
– Clay/claystone
– Silt/Siltstone
– Sand/sandstone
– Limestone
– Cement plug



NOTES:
The given stratigraphy is based on seismic correlation to other wells as no datings or cuttings are available from the investigated interval in Well 35/11-11. * No gas observed.



HYDRO

Marine Surveys Section — Exploration and Production Division

Drawing title: Post site survey for well 35/11-11
Comparison between predicted lithology, stratigraphy, shallow gas and obtained drilling results

Scale 1:2000

Interpreted by	Drawn by	Checked by	Date	File no.	Rev.
FSS	FSS/KB	KB/PF	23.07.1998	3511111.dgn	0

File name: j:\fman\log\351111.dgn

11 STANDARD AND SPECIAL STUDIES

- **Norsk Hydro,1998:** Standard core description, Well 35/11-11.
- **Norsk Hydro,1997:** Reservoir geochemistry of well 35/11-11.
- **Norsk Hydro,1998:** Formation evaluation report 35/11-11.
- **Reslab,1998:** Core photographs, well 35/11-11, scale 1:4, white light - core 1-9.
- **Geostrat,1998:** Well 35/11-11 Biostratigraphy.
- **Stratigraphical Laboratory,1998**: Biostratigraphy, core analysis.
- **Baker Hughes Inteq,1998:** End of Well Report, measurement while drilling, well 35/11-11.
- **Baker Hughes Inteq,1998:** End of Well Report, mud logging, well 35/11-11.
- **Read Well Services,1998:** VSP Report, 35/11-11.

APPENDIX I

CORE DESCRIPTIONS

CORE REPORT

HYDRO

WELL: 35/11-11 | DATE: 01.-02.05.98 | GEOL: S. Eriksson/B. Kjellin | SCALE: 1:200

CORE NO: 1 | FROM: 2550.5 m | TO: 2552 m | CORED: 1.5 m | REC: 0.5* m 33.3%

Depth m RKB	Rec.	Lith.	Grain Size (cly sl vf f m c vc)	Lithological Description	Flu (tr m g)	Cut (tr m g)	Shows description
2550				**Clst:** gry blk-olv blk, blky-sbfis, hd - v hd, slily slty- slty/ vf sdy, non calc, micorpyr, micromic, carb, Mic, w/Sst Len: lt gry, clr-trnsl Qtz, vf-v crs, pred m-crs, sbrndd-sbang, mod-pr srt, sil cmt, v arg/kao, Tr micropyr cotd Qtz gn, Tr carb, r Mic, n.v.p.			on **Sst:** v fnt pet od, no 0 stn, ptchy yel dir Fluor, slo blmg bl wh Fluor cut, no vis cut, yel wh - bl wh Fluor resd, no vis resd.
2555				**Sst:** m lt gry-m gry, clr-trnsl Qtz, vf-crs, pred f-m, mod srt, sbrndd-sbang, sil cmt, arg/kao mtx, Tr micropyr cotd Qtz gn, r Mic, w/Clyst lam: m dk gry, v carb, micropyr, Tr micromic, n.v.p.			

* only 10 cm described, rest stuck in shoe.
~5 cm pice Clst and 5 cm pice Sst

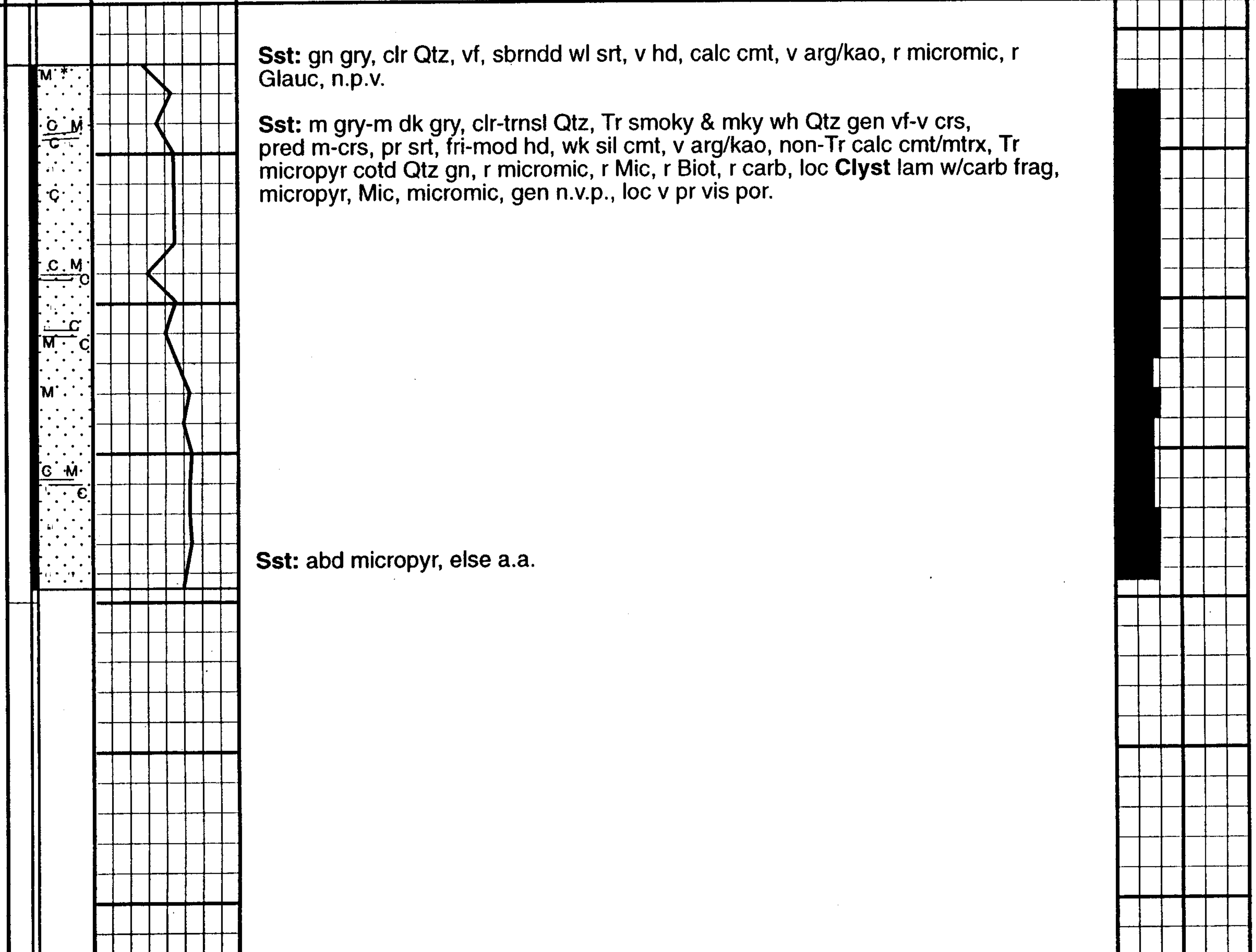
HYDRO

CORE REPORT

WELL: 35/11-11 | DATE: 02.05.98 | GEOL: S. Eriksson/B. Kjellin | SCALE: 1:200

CORE NO: 2 | FROM: 2552 m | TO: 2570 m | CORED: 18 m | REC: 17.37 m 96.5%

Depth m RKB	Rec.	Lith.	Grain Size (cly sl vf f m c vc)	Lithological Description	Flu (tr m g)	Cut (tr m g)	Shows description
2552				**Sst:** gn gry, clr Qtz, vf, sbrndd wl srt, v hd, calc cmt, v arg/kao, r micromic, r Glauc, n.p.v.			
2555				**Sst:** m gry-m dk gry, clr-trnsl Qtz, Tr smoky & mky wh Qtz gen vf-v crs, pred m-crs, pr srt, fri-mod hd, wk sil cmt, v arg/kao, non-Tr calc cmt/mtrx, Tr micropyr cotd Qtz gn, r micromic, r Mic, r Biot, r carb, loc **Clyst** lam w/carb frag, micropyr, Mic, micromic, gen n.v.p., loc v pr vis por.			v fnt pet od, no 0 stn, no dir Fluor, slo blmg bl wh Fluor cut, no vis cut, yel wh-bl wh Fluor res, no vis res.
2560							
2565							
2570				**Sst:** abd micropyr, else a.a.			



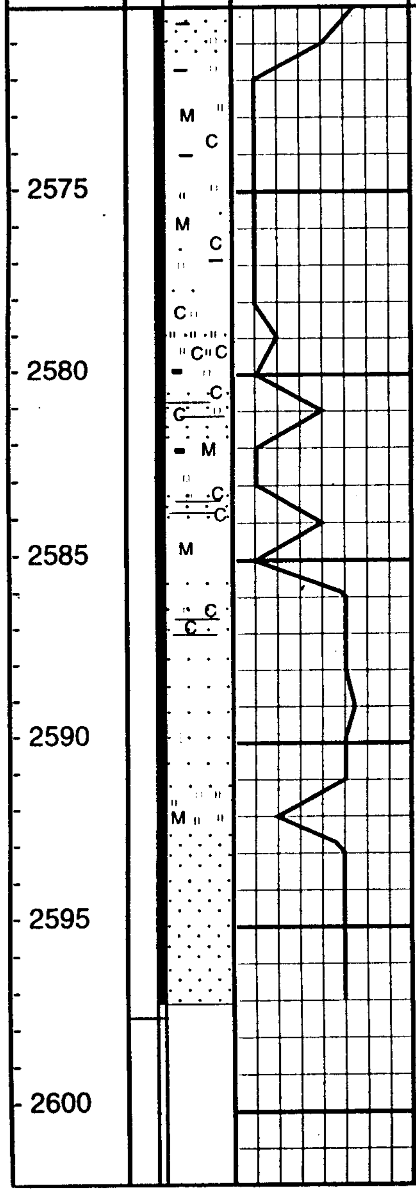
CORE REPORT

HYDRO

WELL: 35/11-11 | **DATE:** 03.05.98 | **GEOL:** Eriksson/Kjellin | **SCALE:** 1:200

CORE NO: 3 | **FROM:** 2570 m | **TO:** 2597.5 m | **CORED:** 27.5 m | **REC:** 27.04 m 98.3%

Depth m RKB	Rec.	Lith.	Grain Size (cly sl vf f m c vc)



Lithological Description

Sst: m dk gry-dk gry, clr-trnsl Qtz, vf-crs, pred m-crs, sbrndd-sbang, pr srt, mod hd, sil cmt, arg/kao mtrx, Tr micropyr cotd Qtz gr, Tr micropyr mtrx, carb frags, n.v.p.

Clst: m dk gry-dk gry, blky-sbfis, mod hd-hd, slty, sdy, non calc, abd micropyr, abd carb, carb frag, Mic, loc grad **Slst/vf Sst.**

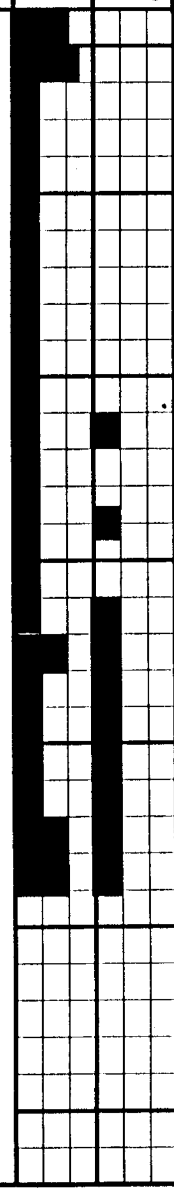
Slst: m gry-brn gry, blky-sbfis, vf sdy, v arg, non calc, mod hd-hd, abd carb, abd carb frag, abd micropyr, abd Mic

Sst: lt gry, clr Qtz, f, Tr m, sbrndd-sbang, wl srt, mod hd-hd, sil cmt, arg/kao matrx, Tr carb, r Mic, r micropyr, lam w/Clst: v carb, slty, Mic, micropyr, n.v.p.

Clst: m dk gry, blky, hd-v hd, non calc, slily slty, micromic-Mic r carb.

Sst: lt gry, clr-trnsl, mky wh & smky Qtz, vf-crs, pred m, sbrndd-sbang, pr srt, fri-mod hd, wk sil cmt, arg/kao mtrx, loc v slily calc, r Mic, r micropyr, r carb, n.v.p.

Flu (tr m g) / Cut (tr m g)



Shows description

a.a.

On **Clst:**
no-v fnt pet od, no dir Fluor, slo strmg, bl wh Fluor cut, no vis cut, yel wh-bri yel wh Fluor res, lt yel brn vis res.

On **Sst**: v fnt pet od, no 0 stn, v dull wk yel orng dir Fluor, dull wk bl wh slo strmg blmg Fluor cut, no vis cut, bl-bl wh Fluor res, no vis res.

v wk bl dir Fluor, else a.a.

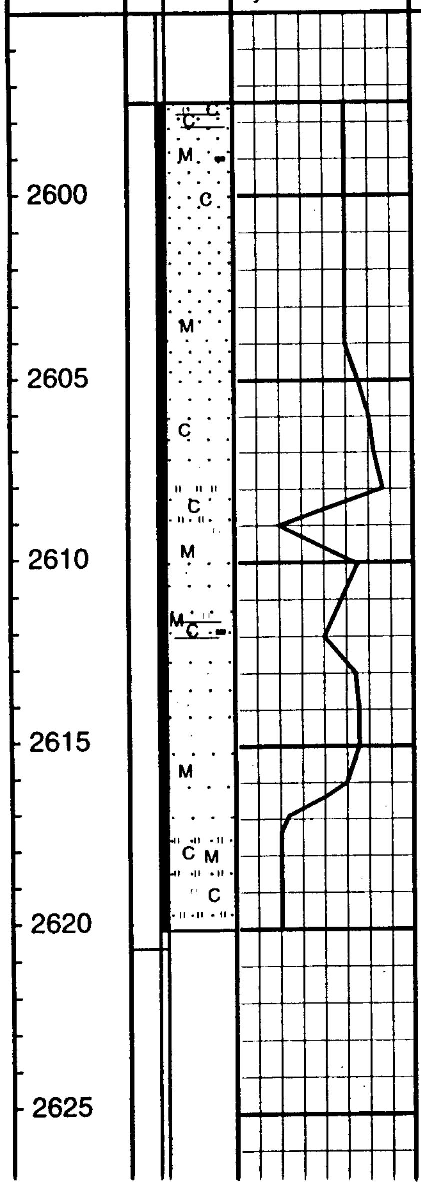
CORE REPORT

HYDRO

WELL: 35/11-11 | **DATE:** 04.05.98 | **GEOL:** Eriksson/Kjellin | **SCALE:** 1:200

CORE NO: 4 | **FROM:** 2597.5 m | **TO:** 2621 m | **CORED:** 23.5 m | **REC:** 22.5 m 95.7%

Depth m RKB	Rec.	Lith.	Grain Size (cly sl vf f m c vc)	Lithological Description	Flu (tr m g)	Cut (tr m g)	Shows description



Sst: lt gry, clr-trnsl, mky wh, smky Qtz, f-m, pred m, Tr crs, sbrndd-sbang, mod srt. fri-mod hd, wk sil cmt, gen non calc, loc v slily calc, arg/kao mtrx, Tr Mic, loc Lam w/**Clst:** v carb, carb frag, Mic, micropyr, n.v.p.

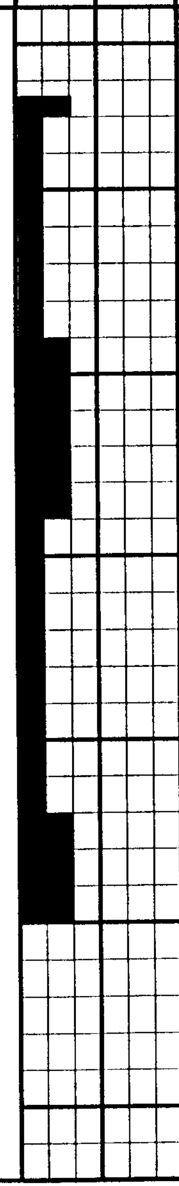
Sst: vf-v crs, pr srt, else a.a.

Sltst: dk gry, blky-sbfis, hd-v hd, vf sdy, non calc, micromic, carb, Tr micropyr-micropyr.

Sst: f-m, pred f, wl srt, fri, else a.a.

Sst: vf-v crs, Tr pbl-pbl, else as for 2603 m

Sltst: as for 2609 m



On **Sst:**
Fnt pet od, no 0 stn, no dir Fluor, slo strmg loc inst dull bl wh-bl wh Fluor cut, no vis cut, pr-fair dull yel Fluor res, no vis res.

On **Sltst:**
Fair-mod yel wh Fluor res, else as for **Sst.**

HYDRO

CORE REPORT

WELL: 35/11-11 | DATE: 05.05.98 | GEOL: Eriksson/Kjellin | SCALE: 1:200

CORE NO: 5 | FROM: 2621 m | TO: 2638.3 m | CORED: 17.3 m | REC: 17.3 m 100%

Depth m RKB	Rec.	Lith.	Grain Size cly sl vf f m c vc	Lithological Description	Flu tr m g	Cut tr m g	Shows description
2625 2630 2635				**Sltst:** dk gry, blky-sbfis, hd-v hd, vf sdy, loc grd vf **sst**, non calc, micromic-Mic, carb, r-Tr micropyr **Sst:** lt gry, clr-trnsl, smky Qtz, vf-m pred f, sbrndd-sbang, mod-wl srt, hd-v hd, sil cmt, arg mtrx, carb, Tr Mic, r micropyr, n.v.p.			wk-no pet od, no 0 stn, no dir Fluor, slo even dull bl wh Fluor cut, no vis cut, pr-fair dull yel Fluor res, Tr-pr lt brn vis res.

CORE REPORT

HYDRO

WELL: 35/11-11	DATE: 05.05.98	GEOL: Eriksson/Kjellin	SCALE: 1:200

CORE NO: 6	FROM: 2638.3 m	TO: 2648 m	CORED: 10.3 m	REC: 8.65 m	89.2%

Depth m RKB	Rec.	Lith.	Grain Size (cly sl vf f m c vc)	Lithological Description	Flu (tr m g)	Cut (tr m g)	Shows description
2640				**Sltst:** dk gry, blky-sbfis, hd-v hd, arg-v arg, vf sdy, v slily calc, micropyr, carb, carb frag, micromic - Mic			no pet od, no dir Fluor slo-mod fst strmg bl wh Fluor, no vis cut, dull yel-bri yel Fluor res, lt yel brn vis res.
2645				**Sltst:** m gry-m dk gry, v arg, v calc-calc, abd Chlor, r Qtz pbl, else a.a.			
				Sltst: as for 2638 m			
2650							

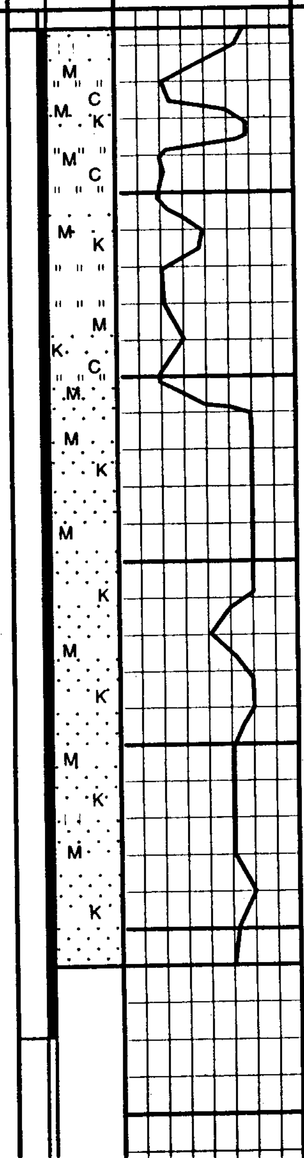
CORE REPORT

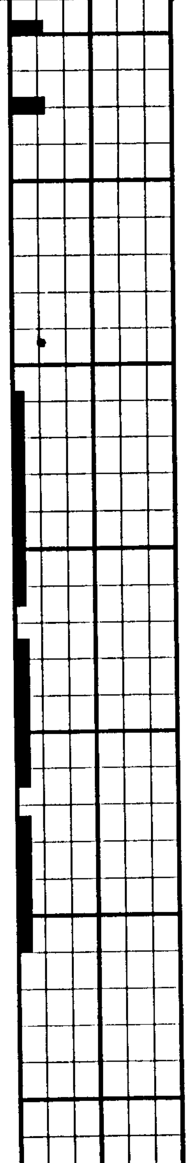
HYDRO

WELL: 35/11-11 **DATE:** 07.05.98 **GEOL:** Godvik/Eriksson **SCALE:** 1:200

CORE NO: 7 **FROM:** 2695.5 m **TO:** 2723 m **CORED:** 27.5 m **REC:** 25.5 m 92.7%

Depth m RKB	Rec.	Lith.	Grain Size (cly sl vf f m c vc)	Lithological Description	Flu (tr m g)	Cut (tr m g)	Shows description
				Sst: m lt gry-m gry, clr-trnsl Qtz, vf-crs, occ pud m, sbang-sbrnd, pud sbang, mod - pr srt, mod hd - fri, sil Cmt, Tr Mic, Tr kaol/arg Mtrx, fr vis Por.			No-wk pet od, no 0 Stn, no dir Fluor, mod fast blmg wk bl wh/fluor cut, no vis cut, wk pl yel wh ring fluor Res, no vis Res.
2700				**Sltst:** dusky yel brn, hd, lam, slily calc, v mic-micromic, Tr carb Mat - occ Lam of carb Mat, arg, I.P. sdy grad vf **Sst.**			
2705				**Sst:** lt olv gry-m lt gry, cbr-trnsl Qtz, f-crs, pud m-crs, sbang-sbrnd, pud sbang, pr srt, hd, sil Cmt, Tr-r Mic, Tr Kaol/arg Mtrx, tr vis Por.			No-wk pet od, no 0 Stn, no dir Fluor, inst blmg v wk bl wh fluor cut, no vis cut, v wk bl wh ring fluor Res, no vis Res.
2710							
2715				**Sst:** vf-m, else a/a			
2720							





HYDRO

CORE REPORT

WELL: 35/11-11 | DATE: 08.05.98 | GEOL: Godvik/Erisson | SCALE: 1:200

CORE NO: 8 | FROM: 2723 m | TO: 2767.5 m | CORED: 44.5 m | REC: 44.42 m 99.8%

Depth m RKB	Rec.	Lith.	Grain Size cly sl vf f m c vc	Lithological Description	Flu tr m g	Cut tr m g	Shows description
2725		M K M K		**Sst:** lt olv gry-m lt gry, clr-trnsl Qtz, vf-m, I.P. vf-crs, sbang-sbrnd, pud sbang, pr-mod srt, mod hd-fri, I.P. v hd, sil Cmt, I.P. calc Cmt, Tr Mic, Tr kaol/arg Mtrx, no-fr vis Por.			No-wk pet od, no 0 stn, no dir Fluor, fast-slo blmg wk bl wh fluor cut, no vis cut, v wk bl wh ring fluor Res, no vis Res.
2730		M		**Sltst:** dusky yel brn, hd, lam, non-calc, v mic-micromic, Tr carb Mat/Frag, arg-vf sdy occ in Lam			
2735		M C					
2740		M C					
2745		M C					
2750							

HYDRO

CORE REPORT

WELL: 35/11-11 DATE: 08.05.98 GEOL: Godvik/Eriksson SCALE: 1:200

CORE NO: 8 FROM: 2723 m TO: 2767.5 m CORED: 44.5 m REC: 44.42 m 99.8%

Depth m RKB	Rec.	Lith.	Grain Size cly sl vf f m c vc	Lithological Description	Flu tr m g	Cut tr m g	Shows description
		M C M C M C M C M C		**Sltst:** dusky yel brn, hd, lam, non calc, v mic-micromic, Tr carb Mat/Frag, arg-vf sdy occ in Lam.			
2755							
2760							
2765							

CORE REPORT

HYDRO

WELL: 35/11-11 | DATE: 10-11-05.98 | GEOL: Eriksson/Godvik | SCALE: 1:200

CORE NO: 9 | FROM: 3085 m | TO: 3104 m | CORED: 19 m | REC: 17.3 m 91%

Depth m RKB	Rec.	Lith.	Grain Size cly sl vf f m c vc	Lithological Description	Flu tr m g	Cut tr m g	Shows description
				Sst: m lt gry, vf-v crs, pred m, sbrndd-sbang, pr srt, mod hd, sil cmt, arg/kao mtrx, Tr Mic-Mic, Tr carb, no-v pr vis por. Sltst: brn blk, vf sdy, non calc, v carb, v micromic-Mic.			no - v wk pet od, no 0 stn, no dir Fluor, v dull slo strmg bl wh Fluor cut, no vis cut, dull yel wh Fluor res, no vis res
3090				**Sst:** lt gry-m lt gry, clr-trnsl Qtz, vf-f, pred f, sband, wl srt, hd, gen sil cmt, loc calc cmt, arg/kao mtrx, Mic, loc Mic Lam, r carb. n.v.p.			
3095							
3100							
3105							
2620							
2625							

APPENDIX II

WELL SUMMARY

GEOLOGICAL WELL SUMMARY

MDT RESULTS

WELL SUMMARY

Coord: 61°06' 31.19"N UTM: 6 775 182.7 mN 03°33' 49.08"E 530 381.6 mE **Zone:** ED-50 UTM Zone 31 CM 3° E **Line:** MN920196 In line: 3530, x-line: 1149 **Rig:** Transocean Leader **Waterdepth:** 359 m MSL **KB:** 23.5 m **Stopped in:** Dunlin Group, Jurassic	**On location:** 14.04.98 **Spudded:** 16.04.98 **At TD:** 11.05.98 **Completed:** 23.05.98 **TD Driller:** 3225m **TD Logger:** 3225m **Wireline Logging:** Schlumberger **Mudlogging:** BHI	**WELL:** **35/11-11** **COUNTRY:** **Norway**

OPERATOR: NORSK HYDRO LICENCE 209 OWNED BY: HYDRO / STATOIL / SHELL / ESSO

TARGETS: Paleocene

Primary: Oxfordian Turbidites

Secondary: Heimdal Formation

Third: Etive Formation

Results:

Dry well. Permanantly plugged and abandoned.

CASING

30"	at 443.5 mRKB
13 3/8"	at 1245 mRKB

GAS RECORD

382.5 - 1245m: returns to seabed
1245 - 2150m: 0 - 0.17% C1
2150 - 2390m: 0.6-0.15m%,C1,trC2
2390 - 2470m: 0.1 -0-42 %, C1-C3
2470 - 2550m: 0.42-1.87 %, C1-nC4
2550 - 2648m: 0-0.22 %, C1-nC4 (Coring)
2648 - 2695.5m: 0.7-0.29 %, C1-nC4
2695.5 -2767.5m: 0.7-0.17%,C1-nC4 (Coring)
2767.5- 3085.5m : 0.3-0.94%,C1-nC4
3085.5- 3104m: 0.10-0.16%,C1-nC4 (Coring)
3104 - 3225m: 0.07-0.21%,C1-nC4

CORES

Core # 1
C:2550.5-2552m
R:2550.5-2551m
33.3%

Core # 2
C: 2552-2570m
R: 2552-2569.37m
96.5%

Core # 3
C: 2570-2597.5m
R: 2570-2597.04m
98.3%

Core # 4
C: 2597.5-2621m
R: 2597.5-2620m
95.7%

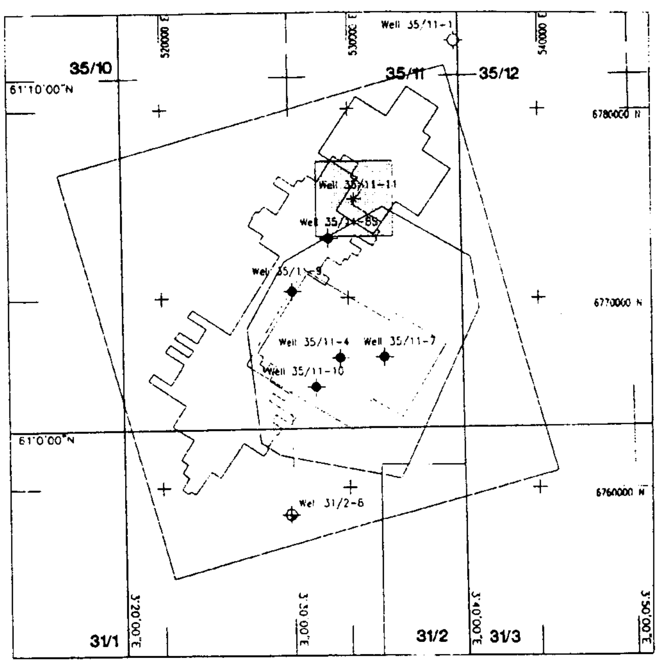
Core # 5
C: 2621-2638.3m
R: 2621-2338.3m
100%

Core # 6
C: 2638.3-2648m
R: 2638.3-2646.95m
89.2%

Core # 7
C: 2695.5-2723m
R: 2695.5-2721m
92.7%

Core # 8
C: 2723-2767.5m
R: 2723-2767,42m
99.8%

Core # 9
C: 3085.0-3104:0
R: 3085.0-3102.3
91%



LOGS

HALS/TLD/HGNS/DSI/ACTS	1A	3225 - 1245m
MDT/GR/ACTS	1A	1626.5 - 3167.5m
FMS/NGT/ACTS	1A	3175 - 2450m
VSP/GR	1A	3150 - 1250m

OIL SHOWS

2378-2830m: Residual HC shows on sandstones and siltstones.

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GEOLOGICAL WELL SUMMARY

HYDRO

DEPTH m MD RKB	LITHO SECTION	SYSTEM	SERIES/STAGE	GROUP	FORMATION	DESCRIPTION	SHOWS

Located on: 61° 06' 31.19"N 03° 33' 49.08"E

Water depth: 382.5 m RKB

WELL 35/11-11

Depth scale: 50, 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800, 850, 900, 950, 1000, 1050, 1100, 1150, 1200, 1250

System: TERTIARY
Series/Stage: QUATERNARY
Group: NORDLAND; HORDALAND
Formation: Utsira (667 m – 763 m)

30" casing: 443.5 m

Returns to seabed 382.5 - 1245 m

667 m

763 m

13 3/8" casing: 1245 m

Depth scale: 1300, 1350, 1400, 1450, 1500, 1550, 1600, 1650, 1700, 1750, 1800, 1850, 1900, 1950, 2000, 2050, 2100, 2150, 2200, 2250, 2300, 2350, 2400, 2450, 2500

System: TERTIARY; CRETACEOUS; JUR.
Group: HORDALAND; ROGALAND; SHETLAND; CK; VIKING
Formation: Balder; Sele; Lista; Heim.; Lista 2; Våle; Ty; Jorsalfare; Kyrre; Svarte; Rødby; Heather

Clst: gn gry-dk gn gry, olv gry, non calc,

Clst: mod brn, non-slily calc, r micromic.

Clst: gn gry-dk gn gry

1466 m

Clst: m gry-m dk gry, olv gry, non calc, slily slty

1523 m

Clst: a.a.

1582 m

Clst: m gry-lt olv gry, brn gry, non calc, occ slty

1624 m

Sst: clr-trnsl Qtz, f-m, r crs, sbang-sbrndd, wl srt, non-loc Tr calc cmt, Tr Mic, r-Tr Glauc, r Pyr.

1679 m

Clst: varicol, bcm pred olv gry-m dk gry, non calc, slily slty.

1770 m

1825 m

Sst: Clr Qtz, f-crs, pred m, sbang-sbrndd, mod srt, Tr Glauc, r Mic.

Ls: wh-lt gry, erptoxln, abdt Glauc.

1914 m

Ls: wh-lt gry, Loc pk gry, loc slty-vf sdy, Glauc, crptoxln

Clst: m gry-olv gry, slily-v slty, occ grad slst, slily-v calc occ grad arg LS.

2056 m

Clst: m gry-m dk gry, non-v calc loc grad arg

Ls, slty, loc v slty grad

Slst, Loc vf sdy.

Clst: m gry-m dk gry, dk gn gry-gn gry, lt olv gry-olv gry, slily calc, occ slty

2343 m

Ls: wh-lt gry, pl yel brn, occ arg, microxln.

Ls: lt gry-m lt gry, pk gry, arg-v arg grad

Mrl, loc v sdy.

Clst: m dk gry-olv gry dk gn gry-brn gry, calc- v calc grad Mrl.

2420 m

2469 m

GEOLOGICAL WELL SUMMARY

HYDRO

Located on: 61° 06' 31.19"N 03° 33' 49.08"E

Water depth: 382.5 m RKB

WELL 35/11-11

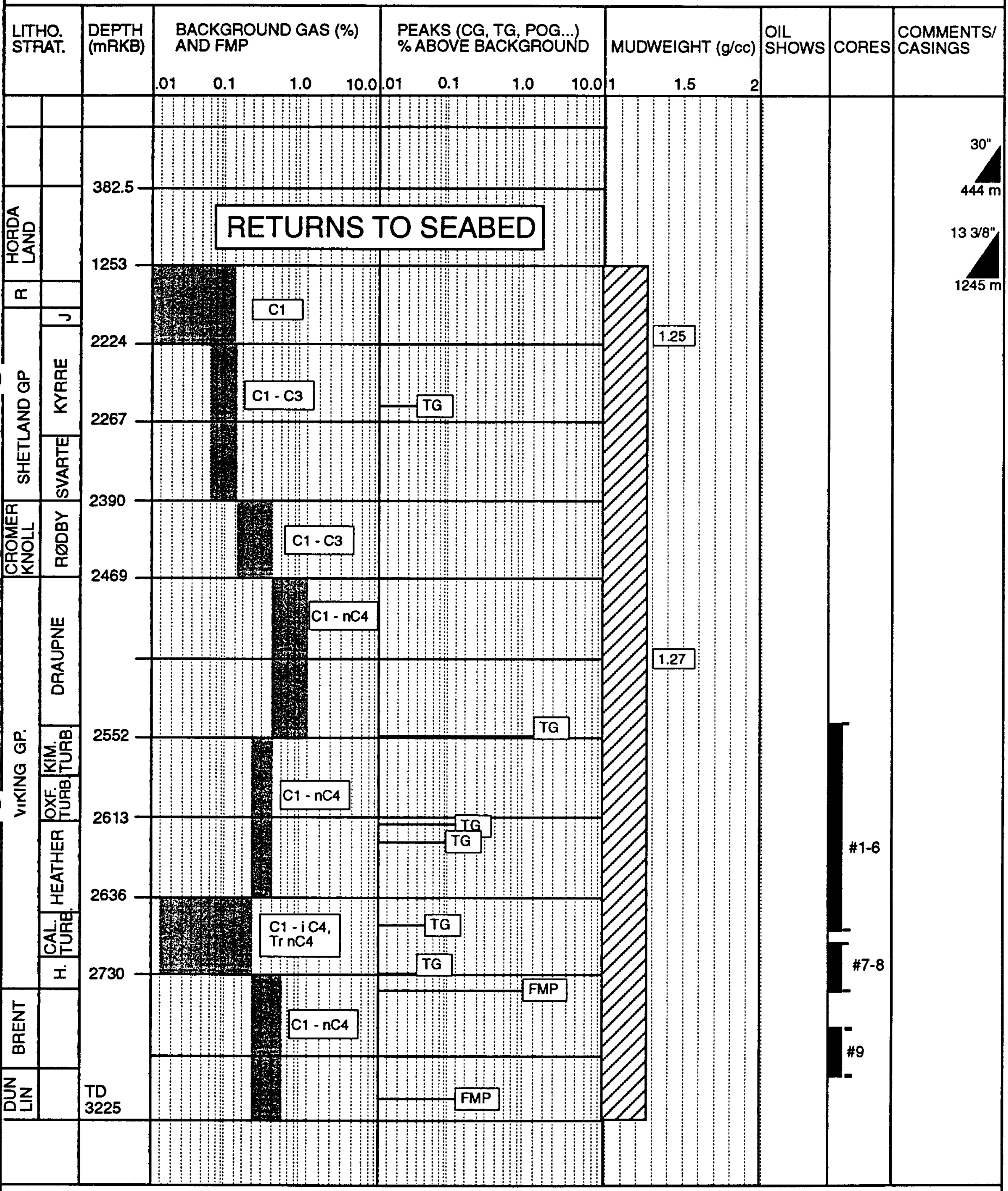
DEPTH m MD RKB	SYSTEM	GROUP	FORMATION	DESCRIPTION
2469 m	JURASSIC	VIKING	Draupne	Clst: brn gry-brn blk-olv gry, non-slily calc, slily slty, slily sdy.
2540 m			Heat.	Sst: m gry-m dk gry, vf-v crs, pred m-crs.
2569 m			Ox. Turb.	Sst: lt gry, vf-crs, pred m, loc pbly, arg/kao mtx
2616 m			Heather	Sltst: dk gry, olv gry-yel brn. Clst: m gry-m dk gry.
2683 m			Cal. Turb.	Sst: lt olv gry-m lt gry, f-crs, sil cmt
2727 m			Heather	Slst: dusky yel brn-brn blk, non-slily calc, micromic-v micromic, carb. Ls: wh-lt gry, occ pl yel brn, occ arg, micro-crpxln,
3005m				
3008 m		BRENT	Ness	Sst: clr-trnsl. Qtz, f-m, wl srt, wk sil cmt
3077 m				Sst: loc calc cmt
3085 m				
3119 m			Oseberg	Sst: lt gry-m lt gry, clr-trnsl Qtz, f-crs occ v crs.
3177 m		DUN	Drake	Sltst: brn gry-m dk gry, non calc, micro-mic, r-abd micropyr i.p., arg-v arg grdClst i.p. Sst: a.a.
3225 m				

SHOWS

Depth scale (m MD RKB): 2500, 2550, 2600, 2650, 2700, 2750, 2800, 2850, 2900, 2950, 3000, 3050, 3100, 3150, 3200, 3250, 3300, 3350, 3400, 3450, 3500, 3550, 3600, 3650, 3700

Scale: 3750, 3800, 3850, 3900, 3950, 4000, 4050, 4100, 4150, 4200, 4250, 4300, 4350, 4400, 4450, 4500, 4550, 4600, 4650, 4700, 4750, 4800, 4850, 4900, 4950

GAS SUMMARY WELL: 35/11-11



NOTE: NOT TO SCALE

CG=CONNECTION GAS, TG=TRIP GAS, WTG=WIPER TRIP GAS, POG=PUMP OFF GAS, SWG=SWABBED GAS, FMP=FORMATION GAS PEAK

FORMATION PRESSURE WORKSHEET

Well Name : 35/11-11 **Rig :** Transocean Leader **Date :** 13.05.98

Pressure Units : Bars **RKB-MSL :** 23.5 m. **MSL-SBed:** 359m m. **Witnessed by :** S.S.Gahlla/J.Godvik

Run No./ Test No. 1A	Depth mMD RKB	Depth mTVD RKB	Initial Hydrostatic Pressure CQG	Initial Hydrostatic Pressure Strain	Formation Pressure CQG	Formation Pressure Strain	Final Hydrostatic Pressure CQG	Final Hydrostatic Pressure Strain	Time hh:mm Set	Time hh:mm Retract	Formation Pressure sg EMD	Test Temp degC	Good Data? Y/N	Sample Information Main Fluid Type	Sample Information HC Gravity g/cc	Sample Information Sample Vol, cc	Remarks Mobility [mD/cp]
1	1626.5		210.74	210.89	167.40	167.59	210.74	210.93	23:46	23:52	1.049	49.6	Y			20	
2	1643.0		212.87	213.06	169.04	169.23	212.87	213.05	00:00	00:05	1.048	50.6	Y			20	2046.3
3	1657.5		214.75	214.93	170.49	170.68	214.75	214.93	00:10	00:15	1.048	52.6	Y			20	2084.9
4	1665.5		215.78	215.95	171.29	171.46	215.77	215.94	00:20	00:23	1.048	53.4	Y			20	3742.2
5	1675.0		216.99	217.15	172.23	172.40	216.98	217.15	00:30	00:33	1.048	53.6	Y			20	
6	2553.5		329.58	329.58	255.91	255.93	329.56	329.58	01:40	01:44	1.021	65.6	Y			20	507.5
7	2563.0		330.79	330.80	256.85	256.85	330.77	330.79	01:51	01:54	1.021	68.1	Y			20	1284.7
8	2587.0		333.86	333.87	259.18	259.20	333.83	333.87	02:02	02:05	1.021	71.3	Y			20	504.8
9	2593.0		334.60	334.64	259.77	259.80	334.57	334.63	02:10	02:13	1.021	73.5	Y			20	240.5
10	2600.0		335.49	335.53	260.44	260.50	335.48	335.53	02:18	02:21	1.021	75.6	Y			20	153.0
11	2606.0		336.25	336.31	261.03	261.09	336.23	336.29	02:24	02:28	1.021	76.6	Y			20	283.6
12	2611.0		336.88	336.95	261.52	261.58	336.88	336.94	02:33	02:36	1.021	77.5	Y			20	327.4
13	2684.4		346.20	346.26	268.70	268.75	346.18	346.24	02:45	02:48	1.020	79.4	Y			20	40.7
14	2690.0		346.90	346.96	269.25	269.31	346.87	346.93	02:54	02:58	1.020	80.4	Y			20	11.2
15	2698.5		347.96	348.02	270.07	270.12	347.94	348.00	03:03	03:06	1.020	81.8	Y			20	62.8
16	2710.0		349.42	349.49	271.19	271.25	349.40	349.47	03:12	03:14	1.020	83.2	Y			20	10.7
17	2719.0		350.57	350.64	272.21	272.32	350.50	350.62	03:19	03:39	1.020	85.0	N			5	0.8 / supercharged
18	2724.0		351.16	351.26	272.56	272.65	351.13	351.23	03:45	03:49	1.020	85.5	Y			20	17.6

NB: Fmtn Press sg calculated from RKB

FORMATION PRESSURE WORKSHEET

Well Name : 35/11-11 | **Rig :** Transocean Leader | **Date :** 13.05.98

Pressure Units : Bars | **RKB-MSL :** 23.5 m. | **MSL-SBed:** 359m m. | **Witnessed by :** S.S.Gahlla/J.Godvik

Run No./ Test No.	Depth	Depth	Initial Hydrostatic Pressure		Formation Pressure		Final Hydrostatic Pressure		Time hh:mm		Formation Pressure	Test Temp	Good Data?	Sample Information			Remarks
1A	mMD RKB	mTVD RKB	CQG	Strain	CQG	Strain	CQG	Strain	Set	Retract	sg EMD	degC	Y/N	Main Fluid Type	HC Gravity g/cc	Sample Vol, cc	Mobility [mD/cp]
19	3081.7		396.71	396.63			396.65	396.60	04:20	04:23		90.8	N			20	Very Tight
20	3085.5		397.15	397.12			397.15	397.12	04:26	04:29		94.5	N			20	Very Tight
21	3119.5		401.54	401.52	314.32	314.35	401.48	401.51	04:40	04:44	1.027	95.8	Y			20	25.2
22	3125.0		402.21	402.23	315.04	315.06	402.16	402.19	04:47	04:56	1.027	97.3	N			5	0.8, supercharge
23	3130.0		402.79	402.81	315.31	315.32	402.76	402.80	05:01	05:04	1.027	98.6	Y			20	26.7
24	3137.5		403.74	403.76	316.05	316.07	403.72	403.75	05.09	05:12	1.027	99.2	Y			20	22.6
25	3149.0		405.23	405.27	317.23	317.27	405.22	405.23	05:17	05:20	1.027	99.9	Y			20	15.3
26	3167.5		407.63	407.67	319.12	319.16	407.64	407.62	05:28	05:31	1.027	100.7	Y			20	4.2

NB: Fmtn Press sg calculated from RKB

LIST OF CONTENT

SUMMARY OF OPERATIONS

The rig "Transocean Leader" left location 34/7-29 on the 14-04-1998 at 08:25 hrs, and arrived on location 35/11-11 on the 14-04-1998 at 21:30 hrs.

1.1 Anchor handling

All anchors where set and pre-tension performed in 34.5 hours. Had some delay due to twist on chain no. 4 and also had to rerun some of the anchors.

1.2 36" hole section

Well 35/11-11 was spudded on the 16-04-1998 at 17:00 hrs. The 36" hole was drilled from 382.4 m TVD RKB to 443.5 m TVD RKB with 17 1/2" milled tooth bit and a two step 36" hole opener due to boulder predictions. No boulders were reported.

The hole was displaced to 1.20 sg mud before the 30" conductor was run.
Met resistanse at 427 m and had to pull the conductor. Cleaned the well and displaced the hole to 1.5 sg mud. Managed to work and wash the casing down from 427 m to setting depth at 443.5 m.

1.3 17 1/2" hole section

Drilled out the 30" shoe track with a 24" bit from 441 m to 444 m.

Made up MWD-tool, drilled 8 1/2" pilot hole from 444 m to 1253 m due to risk of shallow gas. A Smith tri-cone bit (MFDGH) was used. No gas reported.
Opened up 8 1/2" pilot hole with 17 1/2" Smith tri-cone bit (MSDGH ODQC) from 444m to 1253 m TD.
Had several tight spots while pulling out of hole to run casing. Backreamed out of hole from 1156 m to 1048 m. Made a wipertrip and displaced the hole to 1.20 sg mud.
Ran and cemented the 13 3/8" casing with the shoe at 1245 m TVD RKB.

Ran the BOP and made pressure test - no good test. Leak in seal on yellow conduit line isolation valve. Changed seal and ran BOP - all tests OK.

1.4 12 1/4" hole section

Drilled through cement and into new formationwith a 12 1/4" HC tri-cone bit (MX-C09DDT) from 1192 m to 1258 m. Displaced formation to 1.25 sg mud and made a LOT, EMW measured to be 1.63 sg. Continued drilling 12 1/4" section to 2550.5 m TVD RKB. Surveyed with MWD in all of the section.

1.5 8 1/2" section

Made up 8 1/2" coring head and started coring from 2550.5 m to 2648 m TVD RKB, took 6 cores.
Had some problems cutting the 1st core, the rest was OK. Cored interval logged with MWD.
Drilled 8 1/2" hole from 2648 m to 2695.5 m TVD RKB. Observed drilling break.
Took two more cores from 2695.5 m to 2767.5 m.
MWD-tool failed when drilling from 2767.5 m to 2780 m. Changed MWD-tool and continued drilling to 3085 m TVD RKB. Took last core from 3085 m to 3104 m TVD RKB.

Core no.	Core interval (m)	Core barrel size (ft)	Cored length (m)	Bit	Recovery (%)
1	2550.5 - 2552	70'	1.5	FC264LI	33.3
2	2552 - 2570	70'	18	FC264LI	96.5
3	2570 - 2597.5	100'	27.5	FC264LI	98.39
4	2597.5 - 2621	100'	23.5	FC264LI	96
5	2621 - 2638.5	100'	17.5	FC264LI	100
6	2638.5 - 2648	100'	9.5	FC284RLI	89.2
7	2695.5 - 2723	100'	27.5	FC284RLI	92.7
8	2723 - 2767,5	190'	44.5	FC284RLI	99.8
9	3085 - 3104	190'	19	FC284RLI	91

Total meters cored was 188.5 m, recovered 180.8 m (95.9%).
Continued drilling 8 1/2" hole from 3104 m to 3224 m TVD RKB (3225 m MD RKB).
Circulated and wiped the hole clean.

1.6 Logging

The following logs were run at TD:

Logs	Interval	Date	Coments
PEX/DSI	3225 - 382.4 m	12.05.1998	
FMI/NGT	3225 - 3205 m	13.05.1998	Got stuck at 3205 m, broke weak point. Recovered the fish, fish was damaged.
MDT	1626.5 - 3167.5 m	13-14.05.1998	26 pressure points in the interval.
VSP	3150 - 382.4 m	14.05.1998	Trouble shot due to transmission failure and noise while logging.
FMS/NGT	3175 - 2450 m	15-16.05.1998	Could not pass 2575 m. Pulled up and circulated the hole clean befor logging.

The logging operation was completed with 43 hours downtime (20 hrs fishing and 18 hrs wiper trip).

1.7 Permanent plug and abandonment.

Made up and racked cement stand, ran in hole with a 3 1/2" drillpipe to 375 m and 5" drillpipe from 375 m to 3225 m MD RKB.
Cement plugs set from 3225 - 2440 m, 1967 - 1520 m and 1347 - 1120 m. Pulled out of hole with cement stinger, ran into the hole with 12 1/4" bit. Tagged and load tested the cement at 1120 m to 10 tons. Pressure tested the cement to 108 bar/10 min.

A 13 3/8" bridge plug was attempted set at 650 m, could not set weight on the plug. Pulled defect plug and set new bridge plug at 650 m. The plug was load tested to 5 tons and pressure tested to 108 bar for 10 min. Set a cement plug from 650 - 450 m. Pulled the BOP and cut the 30"x20" casing at 387.5 m. The casings were retirieved and the anchors were pulled. The rig left location 35/11-11 on the 24th of May 1998 at 00:00

DAILY REPORT ON WELL 35/11-11

Daily report no : 1 **Date:** 1998-04-14

Midnight depth : m MD **Estimated PP:** sg **Mud weight:** 0.00 sg

Stop time	Description
21:30	Rig on location 500m zone. 35/11-11.
23:59	Prepared to take turns out of anchor chain no 4. Pennant passed to Normand Jarl at 2225 hrs. Pay out 90 m at 2250 hrs. Anchor no 4 on deck. Remove twists from chain.

Daily report no : 2 **Date:** 1998-04-15

Midnight depth : m MD **Estimated PP:** sg **Mud weight:** 0.00 sg

Stop time	Description
13:30	Continued to run anchors
23:59	Completed ballasting the rig at 19:25 hrs. Meanwhile continued anchor handling operations.

Daily report no : 3 **Date:** 1998-04-16

Midnight depth : 445 m MD **Estimated PP:** 1.03 sg **Mud weight:** 1.20 sg

Stop time	Description
08:00	#8 anchor on N Drott deck, reran #8 and on bottom at 0224 hours. Pretensioned anchors at 0325 hours and completed extensioning at 0812 hours. Preliminary rig position: 61.06'31.42"N, 003.33'39.03"E.
15:30	Made up bottomhole assembly and heavy weight drillpipe.
16:00	Repaired the Elmago gearshifter
17:00	Ran in and tagged the seabed at 382,4 m RKB, 358,9 MSL. Placed marker buoys 4 m aft and forward. Placed transponder 20 m forward.
23:59	Drilled 17 1/2"/26"/36" hole from 382 m to 17 1/2" TD at 445 m, 36" TD at 443.5 m. Swept the hole with 8 m3 mud every 15 m.

Daily report no : 4 **Date:** 1998-04-17

Midnight depth : 445 m MD **Estimated PP:** 1.03 sg **Mud weight:** 1.03 sg

Stop time	Description
00:30	Pumped high viscous pill to clean hole.
01:00	Pulled out of the hole to 392 m.
01:30	The man-rider travel line caught in the travel block. Cleared the broken line.
02:00	Ran in the hole to 445 m. The hole was good. No fill. Displaced the hole to 1.2 sg mud.
03:30	Pulled out of the hole to run 30" casing.
04:30	Held safety meeting. Rigged up the casing running equipment.
07:00	Picked up and tested the 30" shoe. Ran 5 joints of 30" casing.
10:00	Made up and ran 2 7/8" x 5" cement stinger into 30" casing. Made up the running tool in the guide base and filled with seawater.
12:00	Ran the 30" casing on the 5" landing string, 30" hang-up with the shoe at 427 m.
13:30	Attempted to wash and work the 30" casing pass obstruction at 427 m. No go.
15:00	Pulled the 30" casing out of the hole. Landed the PGB off on the moonpool flat cart.
16:00	Secured the PGB on the flat cart, released the running tool and laid out the 2 7/8" stinger.
19:30	Ran in the hole with 17 1/2" bit - 26/36" hole opener to resistance at 435 m. Washed to bottom at 445 m. No resistance at 427 m. Pumped high viscous pill to clean the well - 25 m3.
20:00	Pulled out to 402 m - no drag. Ran in the hole and worked the pipe 4 times across 427 m. No restriction. Ran into 445 m.
20:30	Displaced the hole to 1.5 sg mud.
21:30	Pulled out of the hole to run the 30" casing.
22:30	Made up and ran the 2 7/8" x 5" cement stinger into the 30" casing. Made up the running tool to the wellhead housing, filled with seawater and closed the valves on the running tool.
23:59	Ran the 30" casing on the landing string, stabbed into the hole and continued running to resistance at 427 m.

Daily report no : 5 **Date:** 1998-04-18

Midnight depth : 445 m MD **Estimated PP:** sg **Mud weight:** 1.03 sg

Stop time	Description
02:30	Washed and worked the 30" casing string down to setting depth at 443,5 m. Worked string to correct PGB heading. Checked the bullseye.
04:00	Pumped 25 m3 seawater spacer. Pumped 2 m3 dyed seawater. Pressure tested cement lines to 200 bar. Cemented 30" casing. Cement in place at 03:43 hrs.
10:00	Waited on cement. ROV checked bullseye.

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Daily report no : 5 **Date:** 1998-04-18
Midnight depth : 445 m MD **Estimated PP:** sg **Mud weight:** 1.03 sg

Stop time	Description
11:00	Released the 30" running tool. Tagged the cement with the stinger at the seabed level. ROV checked the bullseyes.
13:00	Pulled out of the hole. Laid out the 30" running tool, 2 7/8" stinger and cement stand.
14:30	Adjusted alignment on the top drive main sharft.
16:00	Made up bottom hole assembly no 3, 24" bit.
16:30	Ran in the hole to the seabed at 382 m.
17:00	Ran in the hole and tagged the cement (hard) at 441 m
18:00	Drilled the cement with seawater and high viscous pill to 444 m.
18:30	Pulled out of the hole to seabed.
19:00	Pulled out of the hole to the bottom hole assembly.
20:00	Pulled out of the hole with the bottom hole assembly.
20:30	Made up the 8 1/2" bottom hole assembly.
22:00	Made up the MWD tool, loaded the programme to MWD.
23:59	Made up the 8 1/2" bottom hole assembly.

Daily report no : 6 **Date:** 1998-04-19
Midnight depth : 1105 m MD **Estimated PP:** 1.01 sg **Mud weight:** 1.03 sg

Stop time	Description
01:00	Made up the 8 1/2" bottom hole assembly.
01:30	Ran in the hole to 382 m, TRIPOH to 382 m. Tan in the hole to 444 m.
23:59	Drilled the 8 1/2" pilot hole from 444 m to 1105 m. From 700 m to 820 m drilled with reduced ROP of 40 mph due to mud requirement. 5 m3 high viscous pill pumped on the run every 15 m. Surveyed as required with MWD tool.

Daily report no : 7 **Date:** 1998-04-20
Midnight depth : 1253 m MD **Estimated PP:** 1.01 sg **Mud weight:** 1.03 sg

Stop time	Description
04:30	Drilled the 8 1/2" pilot hole from 1105 m to 1253 m. Pumped 5 m3 hi viscosity pill every 15 m. Surveyed as required with MWD tool.
05:00	Displaced hole to 1,20 sg inhibited mud.
06:30	Pulled out of hole from 1253 m to 444 m. Hole clean, no overpull.
07:00	Pulled out of hole to 382 m. Jetted PGB clean.
07:30	Pulled out of hole to bottom hole assembly.
09:00	Pulled out with bottom hole assembly. Laid down bit and stab.
10:00	Downloaded MWD tool. Stand back same.
11:00	M/U cement head and racked back.
13:30	M/U 18 3/4" wellhead housing, loaded cement plugs. M/U running tool.
14:30	Attempted to lay out wellhead housing, bent handling pup joint in process. Picked up 2 joints of drillpipe.
16:00	Corrected wrong spaceout of cement plugs in 18 3/4" wellhead housing. Racked same in derrick.
17:30	Attempted to brake 17 1/2" bit off hole-opener. Not able to brake bit due to pore bit breaker. Laid down bit and bit breaker.
18:00	Programmed 8" MWD tool.
20:30	Made up an ran in hole with 17 1/2" bottom hole assembly.
21:00	Ran in hole to 444 m.
21:30	Serviced top drive.
23:59	Opened up 8 1/2" pilot hole with 17 1/2" bit from 444 m to 576 m. Pumped sweep 5 m3 every 15 m. Surveyed as required.

Daily report no : 8 **Date:** 1998-04-21
Midnight depth : 1253 m MD **Estimated PP:** 1.03 sg **Mud weight:** 1.03 sg

Stop time	Description
21:00	Continued to open up 8 1/2" pilot hole with 17 1/2" bit from 576 m to 1253 m.
22:00	Pumped 10 m3 high viscous mud around and spotted 20 m3 mud on bottom.
22:30	Performed a wiper trip and pulled out to a resistance at 1156 m. Maximum overpull was 30 mT.
23:30	Backreamed out of tight hole from 1156 m to 1048 m.
23:59	Continued the wiper trip. Pulled out of the hole from 1048 m to 900 m.

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Daily report no : 9 **Date:** 1998-04-22

Midnight depth : 1253 m MD **Estimated PP:** 1.01 sg **Mud weight:** 1.03 sg

Stop time	Description
02:30	Continued wiper trip out to 444m. Worked trough tight spot at 506m. Ran in to hole to resistance at 1215m.
05:00	Bit taking weight at 1215m-40MT. Had hard reaming from 1215m to total depth at 1253m.
06:00	Circulated 15m3 high viscosity pill out of the hole.
06:30	Displaced hole with 155m3 1,20 sg inhibited mud.
08:00	Pulled out of hole to 30" shoe at 444m, had maximum overpull at 1077m, 1058m and 845m. Worked through spots.
09:00	Pulled out of hole to PGB at 382m, jetted PGB clean of cuttings.
10:00	Pulled out of hole and racked back bootom hole assembly.
11:30	Rigged up to run casing. Held safety meeting.
22:00	Made up 13 3/8" shoe and collar joints, tested same. Ran 69 joints of 13 3/8" 68#, N-80 buttress. Worked through tight spots at 494m and 705m.
23:30	Changed elevator, picked up and made up to casing string the 18 3/4" wellhead housing. Made up service valves and filled void with seawater.
23:59	Continued to run in hole with 13 3/8" casing on 5" landing string.

Daily report no : 10 **Date:** 1998-04-23

Midnight depth : 1253 m MD **Estimated PP:** 1.01 sg **Mud weight:** 1.03 sg

Stop time	Description
01:30	Continued to run 13 3/8" casing on landing string to 1233m. Had 25MT drag. Connected to top drive and washed to bottom at 1245m.
02:00	Landed the casing string and engaged 25MT overpull-OK. Continued to pump 70m3 seawater.
04:30	Pumped 2 m3 dyed seawater with cement unit. Pressuretested cementlines to 205 bar for 5 minutes-OK. Mixed and pumped 134 m3, 1.44 sg cement. Dropped dart and shared same with 80 bar.
05:30	Continued to displace with rigpumps. Maximum pumprate 4000 LPM. Displaced total of 68,5 m3, inclusive 1/2 shoetrack. Did not bump top plug. Cement in place at 0515 hours. Checked for backflow-no back flow.
07:30	Released the 13 3/8" casing running tool and laid out same.
15:00	Observed large amounts of cuttings on top of PGB. Ran in hole with openended drillpipe to PGB at 381m and flushed same free of cuttings. Pulled out of hole.
15:30	Laid out cement head.
18:30	Rigged up to run BOP and riser. Held safety meeting.
21:00	Picked up booster joint, 50' and 60' riser to prepare for attaching to the BOP stack.
23:59	Skidded BOP into position. Made up booster joint to BOP stack. Installed mux cables.

Daily report no : 11 **Date:** 1998-04-24

Midnight depth : 1253 m MD **Estimated PP:** 1.01 sg **Mud weight:** 1.25 sg

Stop time	Description
01:00	Picked up BOP stack, retracted transporter and installed guidelines.
02:00	Ran BOP stack on riser, in water at 0120 hours. Pressuretested choke and kill lines to 345 bar-good test. Attempted to test the conduit lines-no test.
07:00	Pulled 60' riser joint, tested 50' riser joint conduit lines-no test. Laid down 60' riser joint. Pulled the BOP stack to surface, removed guidelines and set stack on transporter.
18:00	Nippled down booster joint from BOP stack. Made test flange up to booster joint and nippled same up to BOP. Attempted to test-no test. Found bad seals on yellow conduit line isolation valve. Changed seals and tested line to 276bar-good test
22:00	Nippled up booster joint, 50' and 60' joints to BOP stack, attached MUX cables and picked up the stack. Installed guidelines, retracted BOP transporter and lowered the BOP stack into the water at 2100 hours. Picked up and made up 60' joints
23:59	Ran in hole with BOP stack, 60' joint and tested choke, kill and conduit lines to 345 bar-good test.

Daily report no : 12 **Date:** 1998-04-25

Midnight depth : 1253 m MD **Estimated PP:** 1.01 sg **Mud weight:** 1.25 sg

Stop time	Description
11:00	Continued to run BOP stack on marine riser.
12:00	Pressure tested choke and kill lines to 345 bar. Tested conduit lines to 345 bar-pressure tests good.
14:30	Picked up slip joint, ran same and attached MUX cables. Made up landing joint.
8:00	Made up MUX cable-choke, kill and booster line goosenecks, picked up and latched rucker load ring.
21:00	Rigged up MUX cable-saddles. Tested choke, kill and service lines to 345 bar-good test.
23:00	Landed BOP stack at 2200 hours with 20MT. Latched and locked connector. 25MT overpull test OK. Opened and stroked out slip joint inner barrel. Tested down kill line 13 3/8" casing to 351 bar for 10 minutes-good test.
23:59	Laid out landing joint. Picked up and installed diverter element.

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Daily report no : 13 **Date:** 1998-04-26
Midnight depth : 1253 m MD **Estimated PP:** 1.08 sg **Mud weight:** 1.25 sg

Stop time	Description
01:00	Continued installing diverter, connected hoses and laid down running tool.
03:00	Laid out riser and BOP handling equipment. Picked up bails and installed top drive torque wrench.
04:00	Made up and racked back EDP hang off tool.
05:00	Laid down 6 1/2" MWD tool and non magnetic drillcollar.
06:00	Laid down 17 1/2" bottom hole assembly.
07:00	Retrieved data from MWD memory and programmed same.
09:30	Made up new 12 1/4" bottom hole assembly and ran in hole.
10:00	Ran in hole from 280m to 640m.
11:00	Function tested BOP and diverter.
17:00	Ran in hole to 1142m, picking up new drillpipe.
17:30	Washed down from 1142m. Tagged top of cement at 1192m.
18:00	Performed kill and choke drill. Took SCR with seawater up chokeline.
18:30	Displaced choke, kill and booster lines to 1,25sg mud.
22:30	Drilled cement from 1192m. Drilled float collar at 1233m and float shoe at 1245m. Cleaned out rathole to 1253m.
23:30	Displaced the hole to mud. Pumped 15m3 bentonite high viscosity pill followed by 15m3 of drillwater and 1,25sg mud. Meanwhile drilled virgin formation to 1258m.
23:59	Had mud at surface and closed in system. Continued to circulate and condition to even mud weight.

Daily report no : 14 **Date:** 1998-04-27
Midnight depth : 1891 m MD **Estimated PP:** 1.08 sg **Mud weight:** 1.25 sg

Stop time	Description
00:30	Continued conditioning mud to even mudweight 1,25sg.
01:30	Tested lines to 100 bar. Performed leak-off test with 1,25sg mud pumping down pipe and annulus. Maximum surface pressure 49 bar, leak-off pressure 47 bar. Equivalent mud weight 1,63 bar. Pumped 250 litre, bled back 160.
09:30	Drilled 12 1/4" hole from 1258m to 1528m.
10:00	Circulated while correlating the sulphate readings.
11:00	Continued drilling hole from 1528m to 1566m.
13:00	Circulated while adding tracer to the mud system.
23:59	Drilled 12 1/4" hole from 1566m to 1891m. Surveyed with MWD as required.

Daily report no : 15 **Date:** 1998-04-28
Midnight depth : 2177 m MD **Estimated PP:** 1.08 sg **Mud weight:** 1.25 sg

Stop time	Description
23:59	Drilled 12 1/4" hole from 1891m to 2177m. Surveyed as required with MWD tool.

Daily report no : 16 **Date:** 1998-04-29
Midnight depth : 2267 m MD **Estimated PP:** 1.08 sg **Mud weight:** 1.27 sg

Stop time	Description
08:00	Drilled 12 1/4" hole form 2177m to 2265m.
09:30	Circulated hole clean.
12:30	Pulled out of the hole to 1245m.
13:30	Pulled out of the hole to 200m.
14:30	Racked bottom hole assembly in derrick, broke out bit and made up new bit.
15:30	Dumped MWD data.
16:00	Ran in the hole with 12 1/4" bottom hole assembly to 200m.
19:30	Ran in the hole 1245m.
22:30	Ran in the hole to 2265m.
23:30	Drilled 12 1/4" hole from 2265m to 2267m.
23:59	Circulated hole clean.

Daily report no : 17 **Date:** 1998-04-30
Midnight depth : 2504 m MD **Estimated PP:** 1.08 sg **Mud weight:** 1.27 sg

Stop time	Description
23:59	Drilled 12 1/4" hole from 2267m to 2504 m.

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Daily report no :	18	**Date:**	1998-05-01		
Midnight depth :	2552 m MD	**Estimated PP:**	1.08 sg	**Mud weight:**	1.27 sg

Stop time	Description
03:30	Drilled the 12 1/4" hole from 2504 m to 2550,5 m.
05:30	Circulated the hole clean.
09:00	Pulled out of the hole to 1245 m.
10:30	Pulled out of the hole. Laid down the bit.
11:30	Dumped MWD data and laid out same.
13:30	Made up 8 1/2" core head and barrel.
14:00	Made up BHA and ran in the hole to 200 m.
15:30	Ran in the hole with core head to 1245 m.
16:30	Slipped and cut the drilling line.
19:30	Ran in the hole to 2550 m.
22:00	Circulated bottoms up.
22:30	Dropped the ball.
23:59	Cut the core from 2550.5 m to 2552 m.

Daily report no :	19	**Date:**	1998-05-02		
Midnight depth :	2570 m MD	**Estimated PP:**	1.08 sg	**Mud weight:**	1.26 sg

Stop time	Description
01:30	Attempted to cut core.
03:00	Pulled out of the hole to 1245 m.
04:00	Pulled out of the hole to 200 m.
05:00	Pulled out of the hole.
05:30	Laid out inner core barrel.
06:30	Made up inner barrel (60 ft.)
07:30	Ran in the hole to 200 m.
09:00	Ran in the hole to 1245 m.
10:30	Ran in the hole to 2552 m.
11:00	Dropped the ball and circulated same down.
13:00	Cur core #2 from 2552 m to 2570 m.
14:00	Circulated until gas <0.25 %.
17:30	Pulled out of the hole to 1245 m.
19:00	Pulled out of the hole.
20:00	Laid out inner core barrel and bit.
21:00	Made up inner core barrel (90 ft) and a new core head.
22:00	Ran in the hole to 200 m.
22:30	Ran in the hole to 1245 m.
23:59	Ran in the hole to 1780 m.

Daily report no :	20	**Date:**	1998-05-03		
Midnight depth :	2605 m MD	**Estimated PP:**	1.08 sg	**Mud weight:**	1.27 sg

Stop time	Description
01:30	Ran in the hole to 2570 m.
02:00	Dropped ball and circulated same down.
10:30	Cut core #3 from 2570 m to 2597.5 m.
15:00	Pulled out of the hole to 1245 m.
16:00	Pulled out of the hole.
17:30	Laid out the inner core barrel and bit.
18:00	Serviced the top drive.
19:30	Made up inner core barrel and bit.
20:00	Ran in the hole to 200 m.
21:00	Ran in the hole to 1245 m.
23:00	Ran in the hole to 2597,5 m.
23:30	Dropped the ball and circulated same down.
23:59	Cut core #4 from 2597.5 m to 2605 m.

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Daily report no : 21 **Date:** 1998-05-04
Midnight depth : 2636 m MD **Estimated PP:** 1.08 sg **Mud weight:** 1.28 sg

Stop time	Description
04:30	Cut core #4 from 2605m to 2621m.
06:30	Pulled out of hole to 1245m.
08:00	Pulled out of hole to 200m.
09:00	Pulled out of hole.
10:00	Laid out inner core barrel.
11:00	Made up inner core barrel and inspected corehead.
12:00	Ran in hole to 200m.
12:30	Ran in hole to 1245m.
15:00	Ran in hole to 2621m.
23:59	Cut core #5 from 2621m to 2636m.

Daily report no : 22 **Date:** 1998-05-05
Midnight depth : 2648 m MD **Estimated PP:** 1.08 sg **Mud weight:** 1.28 sg

Stop time	Description
04:00	Cut core #5 from 2636m to 2638,5m.
06:00	Pulled out of hole to 1245m.
07:30	Pulled out of hole to 200m.
08:00	Pulled out of hole.
09:00	Laid out inner core barrel.
11:00	Made up inner core barrel and changed core head. Changed thruster bearings on outer barrel.
13:00	Ran in hole to 1245m.
15:30	Ran in hole to 2638m.
16:00	Dropped ball and circulated same down.
23:59	Cut core #6 from 2638,3m to 2648m.

Daily report no : 23 **Date:** 1998-05-06
Midnight depth : 2648 m MD **Estimated PP:** 1.08 sg **Mud weight:** 1.27 sg

Stop time	Description
00:30	Circulated, flowchecked and pumped slug.
02:30	Pulled out of hole to 1245m.
05:30	Flowchecked and continued to pull out of hole.
06:30	Held Safe Job Analysis. Recovered 8,7m of core #6 (89,7%).
07:00	Serviced the core barrel. Made up new inner barrel. Backed off core head #3. Racked back core barrel in derrick.
08:30	Picked up MWD/MPR assembly. Changed out to new MPR.
09:30	Made up new bit. Ran in the hole with bottom hole assembly.
10:30	Ran in the hole to 1245m.
12:00	Continued to run in the hole. Washed down from 2523m to 2550m.
16:00	Logged cored interval with MWD from 2550m to 2648m.
18:30	Drilled 8 1/2" hole from 2648m to 2695,5m. Observed drilling break.
21:00	Circulated bottoms up for sample. Continued to circulate hole clean. Flowchecked and pumped slug.
23:00	Pulled out of hole to casing shoe.
23:59	Flowchecked and continued to pull out of hole.

Daily report no : 24 **Date:** 1998-05-07
Midnight depth : 2723 m MD **Estimated PP:** 1.08 sg **Mud weight:** 1.27 sg

Stop time	Description
01:00	Pulled out of hole with 8 1/2" bottom hole assembly.
01:30	Picked up and made up core head #3 rerun 2 and core barrel for core #7.
02:30	Ran in the hole with bottom hole assembly.
04:00	Ran in the hole to 1245m.
06:30	Ran in the hole to 2668m.
07:00	Washed down last stand to 2695m. Dropped ball and circulated the same down. Took SCR.
10:00	Cut core #7 from 2695,5m to 2723m (filled barrel).
10:30	Circulated, flowchecked and pumped slug.
12:30	Pulled out of the hole to 1245m.
14:00	Pulled out of the hole to 250m.

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Daily report no : 24 **Date:** 1998-05-07
Midnight depth : 2723 m MD **Estimated PP:** 1.08 sg **Mud weight:** 1.27 sg

Stop time	Description
14:30	Pulled out of the hole with bottom hole assembly.
16:00	Recovered 92,7% of core #7.
18:00	Made up 180' core barrel.
19:00	Ran in the hole with bottom hole assembly.
20:00	Ran in the hole to 1000m.
21:30	Function tested the BOP. Took SCR and flushed kill and choke lines.
22:00	Ran in the hole to 1245m.
23:59	Continued to run in in open hole.

Daily report no : 25 **Date:** 1998-05-08
Midnight depth : 2768 m MD **Estimated PP:** 1.08 sg **Mud weight:** 1.26 sg

Stop time	Description
01:00	Washed down from 2692 m to 2723 m. Dropped the ball and circulated to seat same.
09:00	Cut core #8 from 2723 m to 2767,5 m. Pulled due to slow ROP: 1.3 m MPH.
10:30	Circulated and flowchecked.
12:30	Pumped slug. Pulled out of the hole to 1245 m.
14:00	Pulled out of the hole to the bottom hole assembly.
15:00	Pulled out of the hole with the bottom hole assembly.
17:00	Recovered core #8: 99,8 % recovery. CH-grading: 1-2-CT-M-X-I-PN-PR.
18:00	Laid out 3 sections of core barrel. Backed off core head and dressed a new 90' core barrel. Set same back in the derrick.
19:00	Made up bit # 10 RR1. Downloaded and initialized the MWD.
19:30	Ran in the hole with the bottom hole assembly.
21:00	Ran in the hole to the 13 3/8" casing shoe.
23:30	Ran in the hole to 2685 m.
23:59	MWD logged the core section from 2685 m to 2700 m.

Daily report no : 26 **Date:** 1998-05-09
Midnight depth : 2967 m MD **Estimated PP:** 1.08 sg **Mud weight:** 1.27 sg

Stop time	Description
02:30	Continued MWD-logging cored interval from 2700 m to 2760 m (bit depth). MWD failed.
03:00	Ran in the hole to TD 2767,5 m and drilled to 2780 m. MWD still not pulsing.
03:30	Circulated 10 min - flowchecked. Pumped slug.
05:30	Pulled out of the hole to the casing shoe.
06:00	Flowchecked and continued to pull out of the hole.
07:00	Pulled out of the hole with the bottom hole assembly.
09:00	Downloaded MWD/MPR. Changed out MWD collar. Surface testet same.
09:30	Ran in the hole with the bottom hole assembly.
10:30	Ran in the hole with 5" drillpipe to the 13 3/8" shoe.
12:00	Cut and slipped 33 m drilling line.
12:30	Serviced and lubricated the TDS and traveller block.
14:00	Ran in the hole to 2780 m.
23:59	Drilled the 8 1/2" hole from 2780 m to 2967 m.

Daily report no : 27 **Date:** 1998-05-10
Midnight depth : 3100 m MD **Estimated PP:** 1.08 sg **Mud weight:** 1.29 sg

Stop time	Description
03:30	Drilled the 8 1/2" hole from 2967 m to 3025 m.
05:00	Circulated bottoms up for sample. Drilling breake & high resistivity.
08:00	Drilled from 3025 m to 3085 m.
10:00	Circulated bottoms up for sample.
10:30	Flowchecked and pumped slug.
13:00	Pulled out of the hole to the 13 3/8" casing shoe.
14:00	Pulled out of the hole to 250 m.
15:00	Pulled out of the hole with the bottom hole assembly. Broke off the bit and racked back MWD/MPR in the derrick. Bit grading: 10 RR HTC - G 445 XL A3 0-1-NO-T-X-I-NO-CD.
16:30	Made up core head and 150' core barrel.

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Daily report no : 27 **Date:** 1998-05-10
Midnight depth : 3100 m MD **Estimated PP:** 1.08 sg **Mud weight:** 1.29 sg

Stop time	Description
17:00	Ran in the hole with the bottom hole assembly.
18:00	Ran in the hole to the 13 3/8" casing shoe.
18:30	Services the top drive and travelling block.
19:00	Repaired/adjusted TDS IBOP actuator arm/piston assembly.
22:00	Ran in the hole to 3075 m. No OH problem.
22:30	Washed and light reamed from 3075 m to 3085 m.
23:00	Dropped the ball and circulated down. Took SCR.
23:59	Cut core #9 from 3085 to 3100 m.

Daily report no : 28 **Date:** 1998-05-11
Midnight depth : 3225 m MD **Estimated PP:** 1.10 sg **Mud weight:** 1.27 sg

Stop time	Description
00:30	Cut core #9 from 3100 m to 3104 m. The core jammed.
01:00	Flowchecked and pumped slug.
04:00	Pulled out of the hole to the 13 3/8" casing shoe.
05:00	Pulled out of the hole to 270 m.
06:00	Pulled out of the hole, BHA.
07:30	Recovered core #9. Recovery: 91 %, 17,5 m.
10:30	Broke out the core head and laid down the core barrel.
11:00	Made up the 8 1/2" bit - 10 RR3 HTC-G445xLA3. Downloaded and initialized MWD/MPR.
12:00	Ran in the hole with the bottom hole assembly.
13:00	Ran in the hole to the 13 3/8" shoe.
14:30	Ran in the hole to 3080 m.
15:30	Logged the cored interval with the MWD/MPR from 3080 m to 3104 m.
23:30	Drilled 8 1/2" hole from 3104 m to 3225 m.
23:59	Circulated the well.

Daily report no : 29 **Date:** 1998-05-12
Midnight depth : 3225 m MD **Estimated PP:** 1.10 sg **Mud weight:** 1.27 sg

Stop time	Description
02:00	Circulated the hole clean.
02:30	Flowchewcked and pulled wet to 3100 m. Max overpull 12 t. Wiped clean.
03:00	Pumped slug.
05:00	Pulled out of the hole to the 13 3/8" casing shoe. The hole was clean with no overpull.
06:00	Pulled out of the hole to 250 m.
07:00	Pulled out of the hole with the bottom hole assembly. Broke off the bit. Bit grading 2-2-NO-X-I-NO-TD
07:30	Downloaded the MWD/MPR.
08:00	Rigged up the electric wireline and prepared for log run #1.
22:30	Ran in the hole with log #1 PEX/DSI. Logged from TD 3225 m to seabed.
23:00	Laid down the logging tools.
23:59	Rigged up log #2 FMI/NGT.

Daily report no : 30 **Date:** 1998-05-13
Midnight depth : 3225 m MD **Estimated PP:** 1.10 sg **Mud weight:** 1.27 sg

Stop time	Description
00:30	Riggede up for log #2 FMI/NGT.
02:30	Ran in the hole with log #2 FMI/NGT to TD at 3225 m. Got stuck at 3205 m while logging out.
04:00	Attempted to free the tool string. Broke weak point with max allowable tension, 10400 lb. Top fish at 3190 m.
06:00	Pulled out of the hole with the wireline.
06:30	Rigged down the wireline equipment.
07:00	Made up and ran in with the 3 1/2" overshot with 5 3/4" guide and spiral grapple to catch 2.31" fishint neck on LFH-Q cable head.
08:30	Ran in to the 13 3/8" casing shoe on 5" drillpipe.
12:30	Ran in the hole from the 13 3/8" casing shoe to 3181 m.
14:00	Washed down from 3181 m and tagged the fish at 3206 m. Worked down to 3210,5 m.
14:30	Flowchecked and pumped slug.

DAILY REPORT ON WELL 35/11-11

Daily report no : 30 **Date:** 1998-05-13

Midnight depth : 3225 m MD **Estimated PP:** 1.10 sg **Mud weight:** 1.27 sg

Stop time	Description
18:00	Pulled out of the hole from 3210,5 m to the 13 3/8" casing shoe.
21:00	Pulled out of the hole from the 13 3/8" casing shoe. Recovered the fish, which was damaged. Broke out the overshot.
21:30	Rigged up the wireline equipment.
22:30	Made up log #3, MDT.
23:30	Ran in the hole with log #3, MDT to 1626,5 m.
23:59	Logged with the MDT.

Daily report no : 31 **Date:** 1998-05-14

Midnight depth : 3225 m MD **Estimated PP:** 1.03 sg **Mud weight:** 1.27 sg

Stop time	Description
05:30	Logged with the MDT. A total of 26 pressure points from 1626,5 m to 3167,5 m.
07:00	Pulled out of the hole with log #3 MDT.
08:00	Rigged down the MDT tools.
09:30	Rigged up log #4 VSP.
15:00	Ran in the hole with log #4 VSP.
17:00	Trouble shoot due to transmission failure and noise while logging.
21:00	Logged with the VSP.
21:30	Pulled out of the hole with the VSP.
22:00	Laid out the VSP tool.
22:30	Rigged up log #5 FMS/NGT.
23:59	Troubleshot on FMS/NGT.

Daily report no : 32 **Date:** 1998-05-15

Midnight depth : 3225 m MD **Estimated PP:** 1.03 sg **Mud weight:** 1.28 sg

Stop time	Description
02:30	Ran in the hole with log #5 FMS/NGT.
04:00	Pulled out of the hole with log #5.
04:30	Rigged down the wireline equipment.
05:00	Laid down the MWD, 8 1/2" non magnetic stab and 1 x 6 1/2" drillcollar.
06:00	Made up and ran in with the wipertrip assembly.
07:30	Ran in the hole to the 9 5/8" casing shoe at 1245 m.
12:00	Ran in the hole from 1245 m to 3225 m.
13:30	Circulated the hole clean.
14:00	Flowchecked and pumped slug.
17:00	Pulled out of the hole from 3225 m to 1245 m.
18:00	Flowchecked in the 13 3/8" casing shoe. Pulled out of the hole from 1245 m.
19:00	Pulled out with the bottom hole assembly. Broke off the bit.
19:30	Rigged up wireline equipment.
21:00	Ran in the hole with log #5 FMS/NGT.
23:59	Logged with log #5 FMS/NGT.

Daily report no : 33 **Date:** 1998-05-16

Midnight depth : 3225 m MD **Estimated PP:** 1.03 sg **Mud weight:** 1.29 sg

Stop time	Description
00:30	Logged with log #5 FMS/NGT.
01:30	Pulled out of the hole with log #5.
02:00	Rigged down the wireline equipment.
03:00	Made up and racked the cement stand.
04:00	Ran in the hole while picking up the 3 1/2" drillpipe.
04:30	Trace fault on purge air for top drive.
17:00	Ran in the hole while picking up 3 1/2" drillpipe to 375 m.
12:00	Ran in the hole on 5" drillpipe from 375 m to 3225 m.
14:00	Circulated and conditioned the mud.
16:00	Pressure tested the surface lines to 100 bar. Set the cement plug from 3225 m to 2975 m.
17:00	Pulled out of the cement plug from 3225 m to 2975 m.
19:00	Circulated out excess cement.

DAILY REPORT ON WELL 35/11-11

Daily report no : 33 **Date:** 1998-05-16

Midnight depth : 3225 m MD **Estimated PP:** 1.03 sg **Mud weight:** 1.29 sg

Stop time	Description
20:30	Set a cement plug from 2975 m to 2780 m.
21:00	Pulled out of the cement plug from 2975 m to 2780 m.
22:30	Circulated out excess cement. Observed 30 bar pressure loss.
23:59	Investigated the 30 bar pressure loss.

Daily report no : 34 **Date:** 1998-05-17

Midnight depth : 3225 m MD **Estimated PP:** 1.03 sg **Mud weight:** 1.31 sg

Stop time	Description
05:30	Pulled out of the hole to check for washout in the drill pipe.
07:00	Ran in the hole with the 3 1/2" drill pipe.
09:00	Drifted the 5" drill pipe in the derrick.
14:30	Ran in the hole on 5" drill pipe from 375 m. Tagged the top of the cement at 2789 m.
16:00	Set a cement plug from 2789 m to 2610 m.
18:30	Pulled back from 2789 m to 2610 m.
19:00	Circulated out excess cement.
20:30	Set a cement plug from 2610 m to 2440 m.
21:00	Pulled back from 2610 m to 2340 m.
22:30	Circulated out excess cement.
23:00	Dropped and circulated the dart down. Pumped slug.
23:59	Pulled out of the hole from 2340 m.

Daily report no : 35 **Date:** 1998-05-18

Midnight depth : 3225 m MD **Estimated PP:** 1.03 sg **Mud weight:** 1.32 sg

Stop time	Description
03:00	Pulled out of the hole.
03:30	Drifted the 3 1/2" drill pipe to 2 3/8".
07:00	Made up a Parabow and ran in the hole on 3 12" and 5" drillpipe to 1970 m.
09:00	Set the Parabow.
10:30	Set a cement plug from 1967 m to 1745 m.
11:30	Pulled back from 1967 m to 1745 m.
12:30	Circulated out excess cement.
14:00	Set a cement plug from 1745 m to 1520 m.
15:00	Pulled back from 1745 m to 1520 m.
16:30	Circulated out excess cement.
17:00	Flowchecked and pumped slug.
23:59	Pulled out of the hole from 1520 m.

Daily report no : 36 **Date:** 1998-05-19

Midnight depth : 3225 m MD **Estimated PP:** 1.03 sg **Mud weight:** 1.33 sg

Stop time	Description
00:30	Laid down the Parabow running tool.
02:30	Made up a new Parabow and ran in the hole on 3 1/2" and 5" drill pipe to 1350 m.
03:00	Set the Parabow at 1350 m.
04:30	Picked up the cement stand. Set a cement plug from 1347 m to 1145 m.
05:00	Pulled out from 1347 m to 1125 m.
06:00	Circulated out excess cement.
06:30	Dropped and pumped down a dart.
19:30	Pulled out of the hole laying down pipe.
22:00	Made up 12 1/4" bit and ran in the hole. Tagged the top of the cement at 1120 m. Set down 10 ton on the cement plug.
23:00	Pressure tested the cement plug to 108 bar for 10 minutes. (70 bar above leak-off pressure at 13 3/8" casing shoe.)
23:59	Pulled out of the hole from 1120 m.

DAILY REPORT ON WELL 35/11-11

Daily report no : 37 **Date:** 1998-05-20
Midnight depth : 3225 m MD **Estimated PP:** 1.03 sg **Mud weight:** 1.33 sg

Stop time	Description
03:00	Pulled out of the hole laying down pipe.
05:00	Made up a bridgeplug and ran in the hole to 650 m. Set the bridgeplug. It was not possible to set weight on the plug.
06:00	Attempted to pressure test the bridgeplug.
07:00	Pulled out and laid down the bridgeplug runningtool.
10:00	Made up a new bridgeplug and ran in the hole to 650 m. Set the bridgeplug at 650 m.
10:30	Pressure tested the the bridgeplug to 108 bar for 10 min.
11:30	Pumped slug and pulled out of the hole. Laid down the bridgeplug running tool.
12:30	Ran in the hole with 5" open ended drill pipe to 650 m.
13:30	Set a cement plug from 650 m to 450 m.
14:00	Pulle out from 650 m to 400 m.
14:30	Reverce circulated out excess cement.
15:30	Displaced the hole to seawater.
16:30	Flushed the BOP and surface lines. Function tested the rams and the annular.
18:00	Pulled out of the hole and laid down excess drill pipe.
18:30	Laid out the cement stand.
19:30	Made up the wearbushing retrieving tool and jet tool. Ran in the hole to 380 m.
20:00	Jetted the BOP stack.
21:00	Engaged the wear bushing retrieving tool. Released the wear bushing and pulled out. Laid down the wear bushing and retrieaving tool.
21:30	Flushed port and starboard overboard lines.
23:59	Rigged up and prepared for pulling the BOP stack.

Daily report no : 38 **Date:** 1998-05-21
Midnight depth : 3225 m MD **Estimated PP:** 1.03 sg **Mud weight:** 1.33 sg

Stop time	Description
01:30	Pulled the diverter. Installed the hydraulic riser running tool.
02:00	Troubleshoot and repair aft catwalk machine due to low oil alarm.
03:00	Continued to prepare to pull the riser and BOP.
16:00	Unlatched the BOP connector and pulled the riser and BOP.
17:00	Repaired a hydraulic hose and fittings on the riser running tool.
20:00	Continued pulling the riser and BOP.
20:30	Repaired a Quick Fit connection on the hydraulic running tool.
23:59	Continued pulling the riser and BOP

Daily report no : 39 **Date:** 1998-05-22
Midnight depth : 3225 m MD **Estimated PP:** sg **Mud weight:** 1.33 sg

Stop time	Description
03:00	Pulled the riser and the BOP.
06:00	Rigged down the riser and the BOP running equipment.
08:00	Picked up the 20"x30" cutting assembly and tested the same.
09:30	Ran in with the cutting assembly mto 375 m.
10:00	Stabbed into the 18 3/4" housing.
12:00	Cut the 20"x30" casing at 387,5 m.
12:30	Latched the most tool to the 12 3/4" housing and pulled the 20"x30" housing free with 40 ton overpull.
14:00	Pulled out of the hole with the 20"x30" housing and the retrievable guide base.
15:00	Secured the guide base. Released and laid out the Most tool.
18:00	Made up the 18 3/4" housing running tool. Engaged the running tool and released the 20"x30" housing from the guide base. Laid down the same. Cleared the rig floor.
23:59	Deballasted the rig.

Daily report no : 40 **Date:** 1998-05-23
Midnight depth : m MD **Estimated PP:** sg **Mud weight:** 1.33 sg

Stop time	Description
11:00	Pulled the anchors. #3 deliver pennant 00:06/ on bolster 03:25, #7 00:20/04:25, #6 01:50/04:10, #2 03:49/06:50, #5 04:46/07:00, #1 07:10/09:43, #8 07:45/09:30, #4 /11:15 hrs.
23:59	No activity on well 35/11-11.

TIME DISTRIBUTION

Well: 35/11-11 **PO:** 1 **Start date:** 1980-01-01 **Stop date:** 1998-11-20 **Rig:** TRANSOCEAN LEADER **Depth:** 3225.0 m MD

Main Operation: All

Section: 36"

Operations	Hours	%	Hours	%	Acc. total
DRILLING					
BHA HANDLING/TESTING	7.5	0.81			
TRIPPING IN OPEN HOLE	2.5	0.27			
DRILLING	7.0	0.76			
CIRC. AND COND. MUD/HOLE	0.5	0.05			
WIPER TRIP	1.0	0.11			
CASING HANDLING/TESTING	4.0	0.43			
RUNNING CASING IN OPEN HOLE	7.0	0.76			
PRIMARY CEMENTING	10.5	1.13			
Sum.			40.0	4.32	40.0
DOWNTIME DRILLING					
EQUIPMENT FAILURE AND REPAIR	2.5	0.27			
OTHER	4.0	0.43			
WIPER TRIP	8.0	0.86			
Sum.			14.5	1.57	54.5

Section: 17 1/2"

Operations	Hours	%	Hours	%	Acc. total
DRILLING					
BHA HANDLING/TESTING	15.0	1.62			
MWD HANDLING/TESTING/SURVEYING	3.5	0.38			
TRIPPING IN CASED HOLE	11.5	1.24			
TRIPPING IN OPEN HOLE	4.0	0.43			
DRILLING	27.0	2.92			
OPENING HOLE	23.5	2.54			
OTHER	1.0	0.11			
REAMING	3.5	0.38			
CIRC. AND COND. MUD/HOLE	3.5	0.38			
WIPER TRIP	3.5	0.38			
CASING HANDLING/TESTING	4.0	0.43			
RUNNING CASING IN OPEN HOLE	14.0	1.51			
DRILLING OUT OF CASING	4.5	0.49			
PRIMARY CEMENTING	8.5	0.92			
BOP HANDLING	12.5	1.35			
BOP RUNNING/RETRIEVING	27.0	2.92			
BOP TESTING	2.0	0.22			
Sum.			168.5	18.21	223.0
DOWNTIME DRILLING					
EQUIPMENT FAILURE AND REPAIR	24.0	2.59			
OTHER	7.5	0.81			
Sum.			31.5	3.40	254.5

Section: 12 1/4"

Operations	Hours	%	Hours	%	Acc. total
DRILLING					
BHA HANDLING/TESTING	1.5	0.16			
MWD HANDLING/TESTING/SURVEYING	2.0	0.22			
TRIPPING IN CASED HOLE	4.5	0.49			
TRIPPING IN OPEN HOLE	11.0	1.19			
DRILLING	80.5	8.70			
CIRC. AND COND. MUD/HOLE	5.5	0.59			
FORMATION STRENGTH TESTING	1.5	0.16			
Sum.			106.5	11.51	361.0

TIME DISTRIBUTION

Well: 35/11-11 **PO:** 1 **Start date:** 1980-01-01 **Stop date:** 1998-11-20 **Rig:** TRANSOCEAN LEADER **Depth:** 3225.0 m MD

Main Operation: All

Section: 12 1/4"

Operations	Hours	%	Hours	%	Acc. total
DOWNTIME DRILLING					
OTHER	2.5	0.27			
Sum.			2.5	0.27	363.5

Section: 8 1/2"

Operations	Hours	%	Hours	%	Acc. total
DRILLING					
BHA HANDLING/TESTING	6.5	0.70			
MWD HANDLING/TESTING/SURVEYING	2.5	0.27			
TRIPPING IN CASED HOLE	6.5	0.70			
TRIPPING IN OPEN HOLE	15.5	1.67			
DRILLING	29.0	3.13			
OTHER	0.5	0.05			
CIRC. AND COND. MUD/HOLE	3.5	0.38			
SLIP AND CUT DRILLING LINE	1.5	0.16			
Sum.			65.5	7.08	429.0
FORMATION EVALUATION MWD					
LOGGING WITH MWD	8.0	0.86			
OTHER	0.5	0.05			
Sum.			8.5	0.92	437.5
FORMATION EVALUATION LOGGING					
LOGGING	41.5	4.48			
LOGGING EQUIPMENT HANDLING/TESTING	5.5	0.59			
Sum.			47.0	5.08	484.5
FORMATION EVALUATION CORING					
BHA HANDLING/TESTING	11.5	1.24			
CIRCULATING FOR SAMPLE	6.0	0.65			
TRIPPING IN CASED HOLE	24.5	2.65			
CORING EQUIPMENT/CORE HANDLING	28.0	3.03			
TRIPPING IN OPEN HOLE	42.0	4.54			
OTHER	2.5	0.27			
CORING	53.0	5.73			
CIRC. AND COND. MUD/HOLE	10.0	1.08			
SLIP AND CUT DRILLING LINE	1.0	0.11			
Sum.			178.5	19.29	663.0
DOWNTIME DRILLING					
EQUIPMENT FAILURE AND REPAIR	9.0	0.97			
Sum.			9.0	0.97	672.0
DOWNTIME FORM. EVAL. LOGGING					
EQUIPMENT FAILURE AND REPAIR	3.5	0.38			
STICKING/GOING STUCK WITH EQUIPMENT	1.5	0.16			
FISHING	20.0	2.16			
WIPER TRIP	18.0	1.94			
Sum.			43.0	4.65	715.0
DOWNTIME FORM. EVAL. CORING					
EQUIPMENT FAILURE AND REPAIR	0.5	0.05			
Sum.			0.5	0.05	715.5

Section: 0.0

Operations	Hours	%	Hours	%	Acc. total
MOBILIZATION					
MOORING; RUNNING ANCHORS	34.5	3.73			

TIME DISTRIBUTION

Well: 35/11-11 **PO:** 1 **Start date:** 1980-01-01 **Stop date:** 1998-11-20 **Rig:** TRANSOCEAN LEADER **Depth:** 3225.0 m MD

Main Operation: All

Section: 0.0

Operations	Hours	%	Hours	%	Acc. total
MOBILIZATION					
MOORING; PULLING ANCHORS	17.0	1.84			
Sum.			51.5	5.56	767.0
PLUG AND ABANDONMENT					
TRIPPING IN CASED HOLE	13.0	1.40			
OTHER	2.0	0.22			
WELLHEAD EQUIPMENT INSTALLATION	9.0	0.97			
CIRC. AND COND. MUD/HOLE	3.5	0.38			
TRIPPING FOR CEMENT JOB	37.0	4.00			
BOP RUNNING/RETRIEVING	30.5	3.30			
WELLHEAD EQUIPMENT HANDLING	5.0	0.54			
SET CEMENT PLUG	33.0	3.57			
SET MECHANICAL PLUG	3.5	0.38			
Sum.			136.5	14.75	903.5
DOWNTIME PLUG AND ABANDONMENT					
EQUIPMENT FAILURE AND REPAIR	7.5	0.81			
OTHER	14.5	1.57			
Sum.			22.0	2.38	925.5
Reported time (100.0 % of well total 925.5 hours) :					925.5

Downtimereport

Well	Rep	#	Hrs	Date	Downtime Type	Short Description	Responsible Contractor	Nsfi Type	Equipment Type	Service Type
35/11-11	1.		0.5	1998-04-16	Equipment fail	Repaired elmago gearshifter	TRANSOCE	Drawworks and	DRILL FLOOR EQUIP	DRILLING CO
	2.		0.5	1998-04-17	Equipment fail	The man-rider travel line caught in the travel block. Cleared the broken line.	TO BE NAM	Other Hoisting E	HOISTING EQUIPME	RIG UTILITIE
	3.		12.0	1998-04-17	Other	Attempted to wash and work the 30" casing pass obstruction at 427 m. No go.	NORSK HYD			
	4.		1.5	1998-04-18	Equipment fail	Adjusted alignment on the top drivce main sharft.	TO BE NAM	Miscellaneous e	MISCELLANEOUS EQ	LINERHANGE
	5.		1.0	1998-04-20	Equipment fail	Attempted to l	NORSK HYD	Drillpipe	DRILLSTRING/DOW	DRILLING CO
	6.		1.5	1998-04-20	Equipment fail	Wrong spaceout of cement plugs in 18 3/4" wellhead housing.	NORSK HYD	Cement: Head	SERVICE EQUIPMEN	CEMENTING
	7.		1.5	1998-04-20	Equipment fail	Not able to brake bit due to pore bit breaker.	SMITH INTE	Bit	DRILLSTRING/DOW	DRILLING CO
	8.		7.5	1998-04-23	Other	Observed large amounts of cuttings on top of PGB.	NORSK HYD			
	10.		0.5	1998-04-27	Other	Circulated while correlating the sulphate readings.	NORSK HYD			
	11.		2.0	1998-04-27	Other	Circulated while adding tracer to the mud system.	NORSK HYD			
	12.		9.0	1998-05-09	Equipment fail	Circulated 10 min - flowchecked. Pumped slug.	BAKER HUG	MWD/LWD	DRILLSTRING/DOW	MWD/LWD
	13.		0.5	1998-05-10	Equipment fail	Repaired/adjusted TDS IBOP actuator arm/piston assembly.	TRANSOCE	Other Well Contr	WELLCONTROL EQ	CORING
	14.		21.5	1998-05-13	Other	Attempted to free the tool string. Broke weak point with max allowable tension,	NORSK HYD			
	15.		2.0	1998-05-14	Equipment fail	Trouble shot due to transmission failure and noise while logging.	NORSK HYD	Electric Logging	SERVICE EQUIPMEN	VSP
	16.		1.5	1998-05-14	Equipment fail	Troubleshot on FMS/NGT.	SCHLUMBE	Electric Logging	SERVICE EQUIPMEN	ELECTRIC LO
	17.		18.0	1998-05-15	Other	Pulled out of the hole with log #5.	NORSK HYD			
	18.		0.5	1998-05-16	Equipment fail	Trace fault on purge air for top drive.	TRANSOCE	Top Drive	HOISTING EQUIPME	DRILLING CO
	19.		14.5	1998-05-17	Other	Pulled out of the hole to check for washout in the drill pipe. No washout found	NORSK HYD			
	20.		5.0	1998-05-20	Equipment fail	Attempted to pressure test the bridgeplug.	BJ SERVICE	Permanent pack	SERVICE EQUIPMEN	CEMENTING
	21.		0.5	1998-05-21	Equipment fail	Troubleshoot and repair aft catwalk machine due to low oil alarm.	TRANSOCE	BOP Transport	MATERIAL HANDLIN	DRILLING CO
	22.		1.5	1998-05-21	Equipment fail	Repaired a hydraulic hose and fittedngs on the riser running tool	TRANSOCE	Riser System (in	WELLCONTROL EQ	DRILLING CO
			103.0							

HOLE DEVIATION

Well: 35/11-11 **Reference point:** RKB ; 23.5 m ABOVE MSL
Waterdepth: 360.0 m **Vertical to:** 382.3 m
Utm zone: 31 **Central Median:** 3' E **Horizontal datum:** ED50
Template Centre Coordinates, UTM: **North :** m, **East:** m
Wellhead Coordinates, UTM: **North :** 6775183.5 m, **East:** 530381.5 m
Official Surveys: Y **Track :**
Coordinates are measured from the wellhead centre.

Depth MD [m]	Incli-nation [Deg]	Direc-tion [Deg]	Tool Type	#	Depth TVD [m]	Coordinates North [m]	Coordinates East [m]	Vert. Sect [m]	Dogleg D/30m	Build D/30m	Turn D/30m
382.4	0.00	0.00	MWD		382.4	0.00	0.00	0.0	0.00	0.00	0.00
385.0	0.28	158.90	MWD		385.0	-0.01	0.00	0.0	3.23	3.23	999.99
393.0	0.11	273.06	MWD		393.0	-0.02	0.00	0.0	1.28	-0.64	428.10
405.0	0.25	184.22	MWD		405.0	-0.05	-0.01	0.1	0.68	0.35	-222.10
425.0	0.76	302.01	MWD		425.0	-0.02	-0.13	0.1	1.36	0.77	176.69
436.0	1.02	286.45	MWD		436.0	0.04	-0.28	0.3	0.96	0.71	-42.44
473.0	1.70	279.10	MWD		473.0	0.22	-1.14	1.2	0.57	0.55	-5.96
501.0	1.30	282.80	MWD		501.0	0.36	-1.86	1.9	0.44	-0.43	3.96
531.0	1.10	282.50	MWD		531.0	0.50	-2.47	2.5	0.20	-0.20	-0.30
561.0	0.90	284.80	MWD		561.0	0.62	-2.98	3.0	0.20	-0.20	2.30
654.0	0.90	266.80	MWD		654.0	0.77	-4.42	4.5	0.09	0.00	-5.81
743.0	0.30	264.50	MWD		743.0	0.70	-5.35	5.4	0.20	-0.20	-0.78
803.0	0.60	3.10	MWD		802.9	1.00	-5.49	5.6	0.35	0.15	49.30
832.0	0.50	5.70	MWD		831.9	1.28	-5.47	5.6	0.11	-0.10	2.69
890.0	0.70	13.00	MWD		889.9	1.88	-5.36	5.7	0.11	0.10	3.78
979.0	0.30	41.40	MWD		978.9	2.58	-5.09	5.7	0.15	-0.13	9.57
1009.0	0.20	81.48	MWD		1008.9	2.65	-4.98	5.6	0.20	-0.10	40.08
1098.0	0.30	76.10	MWD		1097.9	2.73	-4.60	5.3	0.03	0.03	-1.81
1186.0	0.20	124.10	MWD		1185.9	2.70	-4.25	5.0	0.08	-0.03	16.36
1242.0	0.50	97.50	MWD		1241.9	2.61	-3.93	4.7	0.18	0.16	-14.25
1280.0	0.80	118.70	MWD		1279.9	2.46	-3.53	4.3	0.30	0.24	16.74
1310.0	0.70	123.40	MWD		1309.9	2.26	-3.19	3.9	0.12	-0.10	4.70
1339.0	0.70	126.30	MWD		1338.9	2.06	-2.90	3.6	0.04	0.00	3.00
1369.0	0.80	126.60	MWD		1368.9	1.82	-2.59	3.2	0.10	0.10	0.30
1398.0	0.90	118.90	MWD		1397.9	1.59	-2.23	2.7	0.16	0.10	-7.97
1427.0	0.70	116.30	MWD		1426.9	1.41	-1.87	2.3	0.21	-0.21	-2.69
1457.0	0.80	100.00	MWD		1456.9	1.29	-1.50	2.0	0.23	0.10	-16.30
1488.0	0.90	86.30	MWD		1487.9	1.27	-1.04	1.6	0.22	0.10	-13.26
1515.0	0.90	83.50	MWD		1514.9	1.30	-0.62	1.4	0.05	0.00	-3.11
1546.0	0.70	90.30	MWD		1545.9	1.33	-0.19	1.3	0.21	-0.19	6.58
1575.0	0.80	86.70	MWD		1574.9	1.34	0.19	1.4	0.11	0.10	-3.72
1635.0	0.80	67.50	MWD		1634.9	1.53	1.00	1.8	0.13	0.00	-9.60
1723.0	1.20	49.80	MWD		1722.9	2.35	2.27	3.3	0.17	0.14	-6.03
1783.0	1.20	16.90	MWD		1782.9	3.36	2.93	4.5	0.34	0.00	-16.45
1841.0	0.30	315.50	MWD		1840.9	4.05	3.00	5.0	0.56	-0.47	-31.76
1930.0	1.20	275.60	MWD		1929.9	4.31	1.91	4.7	0.33	0.30	-13.45
1960.0	1.10	277.50	MWD		1959.9	4.38	1.31	4.6	0.11	-0.10	1.90

HOLE DEVIATION

Vell: 35/11-11 Reference point: RKB ; 23.5 m ABOVE MSL
Waterdepth: 360.0 m Vertical to: 382.3 m
Utm zone: 31 Central Median: 3' E Horizontal datum: ED50

Template Centre Coordinates, UTM: North : m, East: m

Wellhead Coordinates, UTM: North : 6775183.5 m, East: 530381.5 m

Official Surveys: Y Track :

Coordinates are measured from the wellhead centre.

Depth MD [m]	Incli-nation [Deg]	Direc-tion [Deg]	Tool Type	#	Depth TVD [m]	Coordinates North [m]	Coordinates East [m]	Vert. Sect [m]	Dogleg D/30m	Build D/30m	Turn D/30m
2048.0	0.50	274.40	MWD		2047.8	4.52	0.09	4.5	0.20	-0.20	-1.06
2137.0	0.30	234.10	MWD		2136.8	4.41	-0.48	4.4	0.11	-0.07	-13.58
2226.0	0.20	153.90	MWD		2225.8	4.13	-0.60	4.2	0.11	-0.03	-27.03
2255.0	0.60	131.90	MWD		2254.8	3.99	-0.47	4.0	0.44	0.41	-22.76
2314.0	2.40	129.00	MWD		2313.8	3.00	0.72	3.1	0.92	0.92	-1.47
2344.0	2.20	127.90	MWD		2343.8	2.25	1.66	2.8	0.20	-0.20	-1.10
2373.0	2.10	137.00	MWD		2372.8	1.52	2.47	2.9	0.37	-0.10	9.41
2402.0	2.50	152.00	MWD		2401.8	0.58	3.12	3.2	0.74	0.41	15.52
2462.0	2.20	162.80	MWD		2461.7	-1.68	4.08	4.4	0.27	-0.15	5.40
2521.0	3.20	193.20	MWD		2520.6	-4.36	4.04	5.9	0.87	0.51	15.46
2660.0	2.90	204.10	MWD		2659.4	-11.35	1.72	11.5	0.14	-0.06	2.35
2808.0	2.30	212.50	MWD		2807.3	-17.27	-1.41	17.3	0.14	-0.12	1.70
2896.0	2.50	225.40	MWD		2895.2	-20.11	-3.72	20.5	0.20	0.07	4.40
2985.0	2.80	224.40	MWD		2984.1	-23.03	-6.63	24.0	0.10	0.10	-0.34
3074.0	2.60	223.10	MWD		3073.0	-26.05	-9.53	27.7	0.07	-0.07	-0.44
3162.0	3.00	242.30	MWD		3160.9	-28.58	-12.93	31.4	0.35	0.14	6.55
3215.0	3.50	248.90	MWD		3213.8	-29.81	-15.67	33.7	0.35	0.28	3.74

MAIN CONSUMPTION OF CASING/TUBING ON WELL 35/11-11

Size	Casing string	Grade	Weight [kg/m]	Weight [lb/ft]	Threads type	Length [m]	No. of joints
30"	CONDUCTOR	X-52	460.86	309.70	SL-60	62.5	5
13 3/8"	SURFACE	N-80	101.19	68.00	BUTTRESS	854.0	67

TOTAL CONSUMPTION OF CEMENT ADDITIVES ON WELL 35/11-11

Section	Cement/Additive	Unit	Total Amount Used
36"	ACCELERATOR: LIQUID CACL2	l	2303.00
	API CLASS G	MT	70.00
	SPECIAL ADDITIVE: DEFOAMER	l	80.00
17 1/2"	RETARDER: LIQUID LIGNOSULFONATE UP TO 93 DEGC	l	107.00
	RETARDER: HIGH TEMP. BETWEEN 93 AND 149 DEGC	l	847.00
	EXTENDER: LIQUID LODENSE	l	3664.00
	FLUORECEIN	l	1.00
	API CLASS G	MT	105.00
	SPECIAL ADDITIVE: DEFOAMER	l	170.00
12 1/4"	GW-22 VISCOSIFIER	kg	25.00
	ACCELERATOR: LIQUID CACL2	l	470.00
	API CLASS G	MT	121.00
	SPACER ADDITIVE: MCS-G	l	552.00
	FLUID-LOSS ADDITIVE: BETWEEN 38 AND 177 DEGC	l	4612.00
	SPECIAL ADDITIVE: DEFOAMER	l	669.00
	SPECIAL ADDITIVE: MICROBLOCK, ANTI GAS MIGRATION	l	6848.00
	SPACER ADDITIVE: CAUSTIC SODA POWDER	kg	6.00
	RETARDER: LIQUID LIGNOSULFONATE UP TO 93 DEGC	l	618.00
	DISPERSANT: CD-31L LIQUID	l	651.00
8 1/2"	RETARDER: LIQUID LIGNOSULFONATE UP TO 93 DEGC	l	211.00
	DISPERSANT: CD-31L LIQUID	l	244.00
	SPECIAL ADDITIVE: SILICA FLUOR, TEMP. TO 204 DEGC	kg	8050.00
	SPACER ADDITIVE: MCS-G	l	1608.00
	SPECIAL ADDITIVE: DEFOAMER	l	275.00
	API CLASS G	MT	23.95
	FLUID-LOSS ADDITIVE: BETWEEN 38 AND 177 DEGC	l	1827.00
	GW-22 VISCOSIFIER	kg	75.00
	SPECIAL ADDITIVE: MICROBLOCK, ANTI GAS MIGRATION	l	2960.00
	SPACER ADDITIVE: CAUSTIC SODA POWDER	kg	12.50
	WEIGHT MATERIAL: BARITE	kg	0.00
	SPACER ADDITIVE: CAUSTIC SODA LIQUID	l	6.50

BITRECORD FOR WELL 35/11-11

Bit No	RR	Type	Size (in)	Manu-fact-urer	Trade name	Serial no.	IADC code	Nozzles diameter (../32in)	Flow area (in2)	BHA no.	Depth out (m MD)	Bit meter (m)	Rot. hours (hrs)	ROP (m/hr)	Rotation min/max) (rpm)	Total bit revol.	Weight min/max (kN)	Flow min/max (l/min)	Pump min/max (bar)	Cutting Structure I - O -DC- L - B	Gauge 1/16 (in)	Other Remarks	Pull Cause
		MITO	17.50	SDBS	SS44GLTJ4	697818	135M	18,18,18,20	1.052	1	444	62	7.70	8.1		11145				2 - 2 - WT - A - E	1	NO	TD
		HO	36.00	REDB	STANDARD HO	RB 1543		12,12,12,12,12,12	1.325	1	444	62	7.70	8.1		11145				3 - 4 - WT - A - 3	1	NO	
	1	MITO	17.50	SDBS	SS44GLTJ4	697818	135M	18,18,18	0.746	2	444	9		0.0						2 - 2 - WT - A - E	1	NO	TD
	1	HO	36.00	REDB	STANDARD HO	RB 1543		12,12,12,12,12,12	1.325	2	444	9		0.0						3 - 4 - WT - A - 3	1	NO	
		MITO	24.00	SDBS	SS33SGJ4	692030	115M	18,20,20,20	1.169	3	444	3	1.10	2.7		3054				1 - 1 - NO - A - E	I	NO	TD
		MITO	8.50	SMIT	MFDGH	LF 7034	137	12,18,18	0.607	4	1253	809	25.30	32.0		168751				5 - 6 - ER - C - E	2	WT	TD
4		MITO	17.50	SMIT	MSDGHODQC	LG 3980	135	14,16,20,20	0.960	5	1253	809	14.70	55.0	130/170	244592	1/22		200/230	2 - 3 - WT - G - E	1	NO	TD
5		ISRT	12.25	HTC	MXC09DDT	T39YG	437	14,18,20,20	1.012	6	2265	1012	38.00	26.6	102/147	320000	4/25	3300/3866	204/296	2 - 6 - BT - M - E	I	CT	HR
		ISRT	12.25	SMIT	10M	LK 1080	435	15,16,20,20	0.983	7	2551	286	25.20	11.3		213718	20/25			1 - 2 - BT - M - E	I	CT	CP
		CORE	8.50	SDBS	FC264LI	7980162	243	17,17,17,17,17,17	1.330	8	2552	2	1.10	1.4	75/80	8000	10/14			2 - 1 - CT - N - X	I	PN	PR
		CORE	8.50	SDBS	FC264LI	7980162	243	17,17,17,17,17,17	1.330	9	2570	18	1.70	10.6	75/80	7754	2/6			6 - 6 - BT - A - F	I	CT	TD
		CORE	8.50	SDBS	FC264LI	7980313	243	17,17,17,17,17,17	1.330	10	2598	28		0.0						1 - 2 - BT - M - X	I	PN	TD
		CORE	8.50	SDBS	FC264LI	7980313	243	17,17,17,17,17,17	1.330	11	2621	24	4.70	5.0		22988				1 - 2 - BT - M - X	I	PN	CJ
		CORE	8.50	SDBS	FC264LI	7980313	243	17,17,17,17,17,17	1.330	12	2638	17	12.30	1.4	70/100	59840	10/14			2 - 2 - BT - M - X	I	PN	PR
		CORE	8.50	SDBS	FC284RLI	7971193	M231	16,16,16,16,16,16	1.571	13	2648	10		0.0						1 - 2 - CT - M - X	I	PN	PR
		PDC	8.50	HTC	G445XLA3	1402525	M332	15,15,15,15	0.690	14	2696	48	2.30	20.7	120/160	19986			230/260	0 - 0 - NO - A - X	I	NO	CP
		CORE	8.50	SDBS	FC284RLI	7971193	M231	17,17,17,17,17,17	1.773	15	2723	28	2.70	10.2		13931				1 - 2 - CT - M - X	I	PN	NC
		CORE	8.50	SDBS	FC284RLI	7971193	M231	17,17,17,17,17,17	1.773	16	2759	36		0.0									
10	1	PDC	8.50	HTC	G445XLA3	1602525	M332		0.000	17	3085	2835		0.0									

BOTTOM HOLE ASSEMBLIES USED ON WELL 35/11-11

BHA no. 1: No. / Element / OD(in) / Length(m) Depth In: 382 m MD Out: 444 m MD

1	SS44GLTJ4	17.5	0.44	2	STANDARD HO	36.0	2.07
3	BIT SUB	9.719	0.91	4	X-OVER	8.25	1.13
5	OTHER	8.25	4.92	6	MWD	8.25	10.89
7	SAVER SUB	8.25	0.58	8	NON MAG. COLLAR	7.875	7.82
9	DRILL COLLAR STEEL	8.25	9.23	10	DRILL COLLAR STEEL	8.25	9.06
11	DRILL COLLAR STEEL	8.25	8.92	12	DRILL COLLAR STEEL	8.25	9.25
13	DRILL COLLAR STEEL	8.25	9.41	14	DRILL COLLAR STEEL	8.25	9.30
15	JAR	8.0	9.56	16	DRILL COLLAR STEEL	8.25	9.29
17	DRILL COLLAR STEEL	8.25	9.22	18	DRILL COLLAR STEEL	8.25	9.30
19	DRILL COLLAR STEEL	8.25	9.14	20	DRILL COLLAR STEEL	8.25	9.30
21	X-OVER	8.0	1.10	22	HWDP	5.0	136.91

Reason pulled: TOTAL DEPTH/CASING DEPT Sum: 277.75

BHA no. 2: No. / Element / OD(in) / Length(m) Depth In: 435 m MD Out: 444 m MD

1	SS44GLTJ4	17.5	0.44	2	STANDARD HO	36.0	2.07
3	BIT SUB	9.719	0.91	4	X-OVER	8.25	1.13
6	MWD	8.25	10.89	7	SAVER SUB	8.25	0.58
8	NON MAG. COLLAR	7.875	7.82	9	DRILL COLLAR STEEL	8.25	9.23
10	DRILL COLLAR STEEL	8.25	9.06	11	DRILL COLLAR STEEL	8.25	8.92
12	DRILL COLLAR STEEL	8.25	9.25	13	DRILL COLLAR STEEL	8.25	9.41
14	DRILL COLLAR STEEL	8.25	9.30	15	JAR	8.0	9.56
16	DRILL COLLAR STEEL	8.25	9.29	17	DRILL COLLAR STEEL	8.25	9.22
18	DRILL COLLAR STEEL	8.25	9.30	19	DRILL COLLAR STEEL	8.25	9.14
20	DRILL COLLAR STEEL	8.25	9.30	21	X-OVER	8.0	1.10
22	HWDP	5.0	136.91				

Reason pulled: TOTAL DEPTH/CASING DEPT Sum: 272.83

BHA no. 3: No. / Element / OD(in) / Length(m) Depth In: 441 m MD Out: 444 m MD

1	SS33SGJ4	24.0	0.58	2	BIT SUB	9.531	1.22
3	DRILL COLLAR STEEL	8.25	55.17	4	JAR	8.0	9.56
5	DRILL COLLAR STEEL	8.0	46.25	6	X-OVER	8.0	1.11
7	HWDP	5.0	136.91				

Reason pulled: TOTAL DEPTH/CASING DEPT Sum: 250.80

HA no. 4: No. / Element / OD(in) / Length(m) Depth In: 444 m MD Out: 1253 m MD

1	MFDGH	8.5	0.24	2	BIT SUB	6.5	1.19
3	MWD	6.75	16.93	4	NON MAG. STAB	8.5	1.80
5	NON MAG. COLLAR	6.5	8.38	6	X-OVER	6.5	0.89
7	DRILL COLLAR STEEL	6.5	53.06	8	X-OVER	6.5	0.40
9	JAR	6.5	9.81	10	DRILL COLLAR STEEL	6.5	18.00
11	HWDP	5.0	136.91				

Reason pulled: TOTAL DEPTH/CASING DEPT Sum: 247.61

BHA no. 5: No. / Element / OD(in) / Length(m) Depth In: 444 m MD Out: 1253 m MD

1	MSDGHODQC	17.5	0.44	2	BIT SUB	9.719	0.91
3	MWD	8.25	17.52	4	X-OVER	9.5	0.82
5	NON MAG. STAB	17.5	2.46	6	X-OVER	9.375	0.98
7	NON MAG. COLLAR	7.875	7.82	8	DRILL COLLAR STEEL	8.25	82.91
9	JAR	8.0	9.56	10	DRILL COLLAR STEEL	8.25	18.51
11	X-OVER	8.0	1.11				

'eason pulled: TOTAL DEPTH/CASING DEPT Sum: 143.04

Norsk Hydro

1998-11-20

BOTTOM HOLE ASSEMBLIES USED ON WELL 35/11-11

BHA no. 6: No. / Element / OD(in) / Length(m) Depth In: 1253 m MD Out: 2265 m MD

1	MXC09DDT	12.25	0.33	2	BIT SUB	8.0	0.92
3	MWD	8.25	17.26	4	NON MAG. STAB	12.25	2.23
5	NON MAG. COLLAR	7.875	7.82	6	NON MAG. STAB	12.25	2.23
7	DRILL COLLAR STEEL	8.25	55.17	8	JAR	8.0	9.56
9	DRILL COLLAR STEEL	8.25	18.51	10	X-OVER	8.0	1.11
11	HWDP	5.0	82.04				

Reason pulled: HOURS Sum: 197.18

BHA no. 7: No. / Element / OD(in) / Length(m) Depth In: 2265 m MD Out: 2551 m MD

1	10M	12.25	0.33	2	BIT SUB	8.0	0.92
3	SAVER SUB	8.25	0.92	4	MWD	8.25	15.81
5	SAVER SUB	8.25	0.58	6	NON MAG. STAB	12.25	2.23
7	NON MAG. COLLAR	7.875	7.82	8	NON MAG. STAB	12.25	2.23
9	DRILL COLLAR STEEL	8.25	55.17	10	JAR	8.0	9.56
11	DRILL COLLAR STEEL	8.25	18.51	12	X-OVER	8.0	1.11
13	HWDP	5.0	82.04				

Reason pulled: CORE POINT Sum: 197.23

BHA no. 8: No. / Element / OD(in) / Length(m) Depth In: 2551 m MD Out: 2552 m MD

1	FC264LI	8.5	0.37	2	CORE BARREL	6.75	21.30
3	X-OVER	8.25	0.35	4	X-OVER	8.25	0.92
5	FLOAT SUB	8.0	0.92	6	NON MAG. STAB	12.25	2.23
7	NON MAG. COLLAR	7.875	7.82	8	NON MAG. STAB	12.25	2.23
9	DRILL COLLAR STEEL	8.25	55.17	10	JAR	8.0	9.56
11	DRILL COLLAR STEEL	8.25	18.51	12	X-OVER	8.0	1.11
13	HWDP	5.0	82.04				

Reason pulled: PENETRATION RATE Sum: 202.53

BHA no. 9: No. / Element / OD(in) / Length(m) Depth In: 2552 m MD Out: 2570 m MD

1	FC264LI	8.5	0.37	2	CORE BARREL	6.75	21.30
3	X-OVER	8.25	0.35	4	X-OVER	8.25	0.92
5	FLOAT SUB	8.0	0.92	6	NON MAG. COLLAR	7.875	7.82
7	NON MAG. STAB	12.25	2.23	8	DRILL COLLAR STEEL	8.25	55.17
9	JAR	8.0	9.56	10	DRILL COLLAR STEEL	8.25	18.51
11	X-OVER	8.0	1.11	12	HWDP	5.0	82.04

Reason pulled: TOTAL DEPTH/CASING DEPT Sum: 200.30

BHA no. 10: No. / Element / OD(in) / Length(m) Depth In: 2570 m MD Out: 2598 m MD

1	FC264LI	8.5	0.37	2	CORE BARREL	6.75	30.45
3	JAR	6.5	9.81	4	DRILL COLLAR STEEL	6.5	18.00
5	X-OVER	8.25	0.35	6	X-OVER	8.25	0.92
7	FLOAT SUB	8.0	0.92	8	NON MAG. STAB	12.25	2.23
9	DRILL COLLAR STEEL	8.25	55.17	10	X-OVER	8.0	1.11
11	HWDP	5.0	82.04				

Reason pulled: TOTAL DEPTH/CASING DEPT Sum: 201.37

BHA no. 11: No. / Element / OD(in) / Length(m) Depth In: 2598 m MD Out: 2621 m MD

1	FC264LI	8.5	0.36	2	CORE BARREL	6.75	30.45
3	FLOAT SUB	6.37	0.83	4	X-OVER	6.5	0.89
5	DRILL COLLAR STEEL	6.25	53.06	6	X-OVER	6.53	0.40
7	JAR	6.5	9.81	8	DRILL COLLAR STEEL	6.5	18.00
9	HWDP	5.0	136.91				

Reason pulled: CORE JAMMED Sum: 250.71

BOTTOM HOLE ASSEMBLIES USED ON WELL 35/11-11

BHA no. 12: No. / Element / OD(in) / Length(m) Depth In: 2621 m MD Out: 2638 m MD

1	FC264LI	8.5	0.36	2	CORE BARREL	6.75	30.45
3	FLOAT SUB	6.37	0.83	4	X-OVER	6.5	0.89
5	DRILL COLLAR STEEL	6.25	53.06	6	X-OVER	6.53	0.40
7	JAR	6.5	9.81	8	DRILL COLLAR STEEL	6.5	18.00
9	HWDP	5.0	136.91				

Reason pulled: PENETRATION RATE Sum: 250.71

BHA no. 13: No. / Element / OD(in) / Length(m) Depth In: 2638 m MD Out: 2648 m MD

1	FC284RLI	8.5	0.36	2	CORE BARREL	6.75	30.45
3	FLOAT SUB	6.37	0.83	4	X-OVER	6.5	0.89
5	DRILL COLLAR STEEL	6.25	53.06	6	X-OVER	6.53	0.40
7	JAR	6.5	9.81	8	DRILL COLLAR STEEL	6.5	18.00
9	HWDP	5.0	136.91				

Reason pulled: PENETRATION RATE Sum: 250.71

BHA no. 14: No. / Element / OD(in) / Length(m) Depth In: 2648 m MD Out: 2696 m MD

1	G445XLA3	8.5	0.32	2	BIT SUB	6.5	1.20
3	SAVER SUB	6.75	0.82	4	MWD	6.75	16.15
5	NON MAG. STAB	8.5	1.81	6	NON MAG. COLLAR	6.5	8.80
7	X-OVER	6.5	0.89	8	DRILL COLLAR STEEL	6.25	53.06
9	X-OVER	6.53	0.40	10	JAR	6.5	0.40
11	DRILL COLLAR STEEL	6.5	18.00	12	HWDP	5.0	136.91

Reason pulled: CORE POINT Sum: 238.76

BHA no. 15: No. / Element / OD(in) / Length(m) Depth In: 2696 m MD Out: 2723 m MD

1	FC284RLI	8.5	0.36	2	CORE BARREL	6.75	30.45
3	FLOAT SUB	6.37	0.83	4	X-OVER	6.5	0.89
5	DRILL COLLAR STEEL	6.25	53.06	6	X-OVER	6.53	0.40
7	JAR	6.5	9.81	8	DRILL COLLAR STEEL	6.5	18.00
9	HWDP	5.0	136.91				

Reason pulled: NEW CORE/FULL BARREL Sum: 250.71

BHA no. 16: No. / Element / OD(in) / Length(m) Depth In: 2723 m MD Out: 2759 m MD

1	FC284RLI	8.5	0.36	2	CORE BARREL	6.75	57.88
3	FLOAT SUB	6.37	0.83	4	X-OVER	6.5	0.89
5	DRILL COLLAR STEEL	6.25	53.06	6	X-OVER	6.53	0.40
7	JAR	6.5	9.81	8	DRILL COLLAR STEEL	6.5	18.00
9	HWDP	5.0	136.91				

Reason pulled: Sum: 278.14

BHA no. 17: No. / Element / OD(in) / Length(m) Depth In: 250 m MD Out: 3085 m MD

1	G445XLA3	8.5	0.32	2	BIT SUB	6.5	1.20
3	SAVER SUB	6.75	0.82	4	OTHER	6.75	5.07
5	MWD	6.75	11.08	6	NON MAG. STAB	8.5	1.81
7	NON MAG. COLLAR	6.5	8.80	8	X-OVER	6.5	0.89
9	DRILL COLLAR STEEL	6.75	53.06	10	X-OVER	6.53	0.40
11	JAR	6.5	9.81	12	DRILL COLLAR STEEL	6.5	18.00
13	HWDP	5.0	136.91				

Reason pulled: Sum: 248.17

BOTTOM HOLE ASSEMBLIES USED ON WELL 35/11-11

BHA no. 18: No. / Element / OD(in) / Length(m) Depth In: 250 m MD

1	G445XLA3	8.5	0.32	2	BIT SUB	6.5	1.20
3	SAVER SUB	6.75	0.82	4	OTHER	6.75	5.07
5	MWD	6.75	11.08	6	NON MAG. STAB	8.5	1.81
7	NON MAG. COLLAR	6.5	8.80	8	X-OVER	6.5	0.89
9	DRILL COLLAR STEEL	6.75	53.06	10	X-OVER	6.53	0.40
11	JAR	6.5	9.81	12	DRILL COLLAR STEEL	6.5	18.00
13	HWDP	5.0	136.91				

Reason pulled: Sum: 248.17

BHA no. 19: No. / Element / OD(in) / Length(m)

1	FC284RLI	8.5	0.36	2	CORE BARREL	6.75	48.73
3	FLOAT SUB	6.37	0.83	4	X-OVER	6.5	0.89
5	DRILL COLLAR STEEL	6.25	53.06	6	X-OVER	6.53	0.40
7	JAR	6.5	9.81	8	DRILL COLLAR STEEL	6.5	18.00
9	HWDP	5.0	136.91				

Reason pulled: Sum: 268.99

BHA no. 20: No. / Element / OD(in) / Length(m) Depth In: 250 m MD

1	11J	8.5	0.32	2	BIT SUB	6.5	1.20
3	SAVER SUB	6.75	0.82	4	OTHER	6.75	5.07
5	MWD	6.75	11.08	6	NON MAG. STAB	8.5	1.81
7	NON MAG. COLLAR	6.5	8.80	8	X-OVER	6.5	0.89
9	DRILL COLLAR STEEL	6.75	53.06	10	X-OVER	6.53	0.40
11	JAR	6.5	9.81	12	DRILL COLLAR STEEL	6.5	18.00
13	HWDP	5.0	136.91				

Reason pulled: Sum: 248.17

BHA no. 21: No. / Element / OD(in) / Length(m) Depth In: 0 m MD

1	G445XLA3	8.5	0.32	2	BIT SUB	6.5	1.20
3	X-OVER	6.5	0.89	4	DRILL COLLAR STEEL	6.25	53.06
5	X-OVER	6.531	0.40	6	JAR	6.5	9.81
7	DRILL COLLAR STEEL	6.5	18.00	8	HWDP	5.0	136.91
9	DRILL PIPE	5.0					

Reason pulled: Sum: 220.59

BHA no. 22: No. / Element / OD(in) / Length(m) Depth In: 1120 m MD

1	TB810	12.25	0.33	2	BIT SUB	8.0	0.92
3	X-OVER	8.0	1.03	4	HWDP	5.0	136.91
5	DRILL PIPE	5.0					

Reason pulled: Sum: 139.19

BHA no. 23: No. / Element / OD(in) / Length(m) Depth In: 375 m MD

1	BULL NOZE	8.0	0.71	2	EXTERNAL CUTTER	12.0	1.90
3	DOWNHOLE MOTOR	9.5	8.83	4	DRILL COLLAR STEEL	8.25	55.17
5	X-OVER	8.0	1.03	6	HWDP	5.0	136.91

Reason pulled: Sum: 204.55

DAILY MUD PROPERTIES:RHEOLOGY PARAMETERS FOR WELL 35/11-11

Hole section : 0.0 — **WATER BASED SYSTEM**

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann 600	Fann 300	Fann 200	Fann 100	Fann 60	Fann 30	Fann 6	Fann 3	Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]
1998-04-16 13:00	345	345	SPUD MUD	110.0	1.20		47	32	24	17	0	0	7	6		15.0	8.1	3.5	4.5

Hole section : 36" — **WATER BASED SYSTEM**

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann 600	Fann 300	Fann 200	Fann 100	Fann 60	Fann 30	Fann 6	Fann 3	Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]
1998-04-17	445	445	SPUD MUD	110.0	1.03						0	0							

Hole section : 17 1/2" — **WATER BASED SYSTEM**

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann 600	Fann 300	Fann 200	Fann 100	Fann 60	Fann 30	Fann 6	Fann 3	Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]
1998-04-18 23:00	445	445	SPUD MUD	110.0	1.03						0	0							
1998-04-19 23:00	1105	1105	SPUD MUD	110.0	1.03	0.0	47	35	27	22	0	0	11	8	50.0	12.0	11.0	4.0	6.0
1998-04-20 23:00	1253	1253	SPUD MUD	110.0	1.03	0.0	46	35	27	21	0	0	10	8	50.0	11.0	11.5	5.0	6.0
1998-04-21 23:00	1253	1253	SPUD MUD	110.0	1.03	0.0	47	36	26	21	0	0	11	8	50.0	11.0	12.0	5.0	6.0
1998-04-22 23:00	1253	1253	SPUD MUD	110.0	1.03	0.0	47	36	26	21	0	0	11	8	50.0	11.0	12.0	5.0	6.0
1998-04-23 23:00	1253	1253	SPUD MUD	110.0	1.03	0.0	47	36	26	21	0	0	11	8	50.0	11.0	12.0	5.0	6.0
1998-04-24 23:00	1253	1253	SPUD MUD	110.0	1.25	0.0	74	49	36	22	0	0	10	8	50.0	25.0	12.0	4.0	5.0
1998-04-25 23:00	1253	1253	SPUD MUD	95.0	1.25	0.0	74	49	36	22	0	0	10	8	50.0	25.0	12.0	4.0	5.0

Hole section : 12 1/4" — **WATER BASED SYSTEM**

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann 600	Fann 300	Fann 200	Fann 100	Fann 60	Fann 30	Fann 6	Fann 3	Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]
1998-04-26 23:00	1258	1258	AQUACOL KCL/POL	90.0	1.25	0.0	74	49	36	22	0	0	10	8	50.0	25.0	11.0	4.0	5.0
1998-04-27 04:30	1891	1891	FRESH WATER	86.0	1.25		72	50	37	25	0	0	10	8	19.0	22.0	14.0	5.0	7.0
1998-04-27 15:00	1891	1891	FRESH WATER	85.0	1.25		78	53	40	26	0	0	11	8	20.0	25.0	14.0	5.0	8.0
1998-04-27 23:00	1891	1891	FRESH WATER	81.0	1.25		82	56	42	27	0	0	10	8	20.0	26.0	14.0	5.0	8.0
1998-04-28 15:00	2177	2177	FRESH WATER	83.0	1.26		0	0	0	0	0	0	0	0	28.0	25.0	14.0	6.0	8.0
1998-04-28 22:30	2177	2177	FRESH WATER	82.0	1.25		81	56	45	31	0	0	9	7	29.0	25.0	15.5	6.0	8.0
1998-04-28 23:00	1953	1953	AQUACOL KCL/POL	81.0	1.25	29.0	87	59	47	30	0	0	8	6	50.0	28.0	15.5	5.0	8.0
1998-04-29 23:00	2222	2222	AQUACOL KCL/POL	82.0	1.25	30.0	87	60	47	32	0	0	10	7	50.0	27.0	16.5	6.0	9.0
1998-04-29 23:20	2267	2267	FRESH WATER	90.0	1.27		90	60	50	34	0	0	10	7	22.0	30.0	14.0	4.5	9.5

DAILY MUD PROPERTIES:RHEOLOGY PARAMETERS FOR WELL 35/11-11

Hole section : 12 1/4" WATER BASED SYSTEM

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann Readings 600	300	200	100	60	30	6	3	Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]
1998-04-30 14:00	2505	2505	FRESH WATER	90.0	1.26		0	0	0	0	0	0	0	0	32.0	30.0	18.5	6.0	10.0
1998-04-30 22:00	2505	2505	FRESH WATER	89.0	1.26		94	65	52	36	0	0	10	8	33.0	29.0	17.0	5.0	8.0
1998-04-30 23:00	2326	2326	AQUACOL KCL/POL	82.0	1.27	29.0	86	58	46	31	0	0	9	7	50.0	28.0	15.0	5.0	8.0
1998-05-01 04:15	2552	2552	FRESH WATER	90.0	1.26		95	66	53	37	0	0	10	8	34.0	29.0	18.5	5.0	7.5

Hole section : 8 1/2" WATER BASED SYSTEM

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann Readings 600	300	200	100	60	30	6	3	Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]
1998-05-01 23:00	2552	2552	FRESH WATER	99.0	1.27		100	69	53	38	0	0	10	8	23.0	31.0	18.0	5.0	7.5
1998-05-02 21:00	2570	2570	FRESH WATER	110.0	1.26		99	70	56	38	0	0	11	9		29.0	20.5	5.0	8.0
1998-05-02 23:00	2570	2570	AQUACOL KCL/POL	90.0	1.26	21.0	99	70	56	38	0	0	11	9	50.0	29.0	20.5	5.0	8.0
1998-05-03 05:20	2605	2605	FRESH WATER	100.0	1.26		93	64	51	35	0	0	10	8	20.0	29.0	17.5	5.0	7.5
1998-05-03 11:30	2605	2605	FRESH WATER	94.0	1.26		93	64	50	35	0	0	10	8	21.0	29.0	17.5	5.0	8.0
1998-05-03 23:00	2605	2605	FRESH WATER	98.0	1.27		93	64	50	34	0	0	10	8	20.0	29.0	17.5	5.0	7.5
1998-05-04 18:00	2636	2635	FRESH WATER	96.0	1.29		0	0	0	0	0	0	0	0	20.0	29.0	17.0	5.0	7.5
1998-05-04 22:00	2636	2635	FRESH WATER	95.0	1.29		92	62	50	34	0	0	10	8	20.0	30.0	15.0	5.0	7.5
1998-05-04 23:00	2622	2621	AQUACOL KCL/POL	96.0	1.28	21.0	92	63	49	34	0	0	10	8	50.0	29.0	17.0	5.0	7.5
1998-05-05 04:00	2648	2647	FRESH WATER	100.0	1.28		87	60	46	33	0	0	9	7	20.0	27.0	16.5	4.5	7.0
1998-05-05 17:00	2648	2647	FRESH WATER	109.0	1.28		87	59	46	31	0	0	10	7	17.0	28.0	15.5	4.5	6.5
1998-05-05 23:00	2648	2647	FRESH WATER	105.0	1.28		88	60	46	32	0	0	9	7	19.0	28.0	15.0	4.5	6.5
1998-05-06 16:20	2696	2695	FRESH WATER	92.0	1.27		92	63	50	34	0	0	10	8	21.0	29.0	17.0	5.0	8.0
1998-05-06 23:00	2696	2695	FRESH WATER	96.0	1.27		95	66	52	36	0	0	9	7		29.0	18.5	4.0	7.0
1998-05-07 10:00	2723	2722	FRESH WATER	91.0	1.27		96	66	53	37	0	0	10	8	19.0	30.0	18.0	4.5	7.0
1998-05-07 23:00	2723	2722	FRESH WATER	100.0	1.27		97	66	53	36	0	0	9	8	24.0	31.0	17.5	4.5	7.0
1998-05-08 23:00	2767	2766	AQUACOL KCL/POL	119.0	1.26	19.0	97	67	54	36	0	0	9	8	50.0	30.0	18.0	4.0	7.0
1998-05-09 23:00	2967	2966	AQUACOL KCL/POL	102.0	1.27	19.0	93	65	52	36	0	0	9	7	50.0	28.0	18.0	4.0	7.0
1998-05-10 23:00	3104	3103	AQUACOL KCL/POL	110.0	1.29	25.0	99	70	56	39	0	0	9	8	50.0	29.0	20.5	4.0	7.0
1998-05-11 23:00	3225	3224	AQUACOL KCL/POL	102.0	1.27	0.0	102	72	57	40	0	0	10	8	50.0	30.0	20.0	4.0	7.0
1998-05-12 23:00	3225	3224	AQUACOL KCL/POL	102.0	1.27	30.0	102	72	57	40	0	0	10	8	50.0	30.0	20.0	4.0	7.0
1998-05-13 23:00	3225	3224	AQUACOL KCL/POL	102.0	1.27	0.0	102	72	57	40	0	0	10	8	50.0	30.0	20.0	4.0	7.0
1998-05-14 23:00	3225	3224	AQUACOL KCL/POL	102.0	1.27	0.0	102	72	57	40	0	0	10	8	50.0	30.0	21.0	4.0	7.0
1998-05-15 23:00	3225	3224	AQUACOL KCL/POL	120.0	1.28	0.0	101	71	58	40	0	0	10	8	50.0	30.0	20.5	4.0	7.0
1998-05-16 23:00	2975	2974	AQUACOL KCL/POL	122.0	1.29	0.0	104	72	59	41	0	0	11	8	50.0	32.0	19.0	4.0	8.0

DAILY MUD PROPERTIES:RHEOLOGY PARAMETERS FOR WELL 35/11-11

Hole section : 12 1/4" **WATER BASED SYSTEM**

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann Readings 600	300	200	100	60	30	6	3	Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]
1998-05-17 23:00	2440	2440	AQUACOL KCL/POI	98.0	1.31	0.0	95	63	49	32	0	0	7	5	50.0	32.0	15.5	4.0	10.0
1998-05-18 23:00	1520	1520	AQUACOL KCL/POI	102.0	1.32	0.0	93	61	47	30	0	0	7	5	50.0	32.0	14.5	4.0	10.0

Hole section : 17 1/2" **WATER BASED SYSTEM**

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann Readings 600	300	200	100	60	30	6	3	Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]
1998-05-19 22:00	1145	1145	TEST FLUID		1.33		92	60	49	32	0	0	6	5		32.0	14.0	3.0	8.0
1998-05-20 22:00	450	450	KCL/POLYMER	90.0	1.33		90	58	48	31	0	0	6	5		32.0	13.0	3.0	8.0

Norsk Hydro

DAILY MUD PROPERTIES : OTHER PARAMETERS FOR WELL 35/11-11

Hole section : 0.0 — **WATER BASED SYSTEM**

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Dens [sg]	Filtrate API [ml]	Filtrate HPHT [ml]	Filtcake API [mm]	Filtcake HPHT [mm]	HPHT Press/Temp [bar/DegC]	pH	Alcalinity Pm [ml]	Alcalinity Pf [ml]	Mf [ml]	Inhib Chem [Kg/m3]	K+ [mg/l]	CL- [mg/l]	Ca++ [mg/l]	Mg++	Tot hard [mg/l]	Percentage Solid [%]	Percentage Oil [%]	Percentage Sand [%]	CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
1998-04-16 13:00	345	345	SPUD MUD	1.20	4.0		1		/					90		65000									

Hole section : 36" — **WATER BASED SYSTEM**

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Dens [sg]	Filtrate API [ml]	Filtrate HPHT [ml]	Filtcake API [mm]	Filtcake HPHT [mm]	HPHT Press/Temp [bar/DegC]	pH	Alcalinity Pm [ml]	Alcalinity Pf [ml]	Mf [ml]	Inhib Chem [Kg/m3]	K+ [mg/l]	CL- [mg/l]	Ca++ [mg/l]	Mg++	Tot hard [mg/l]	Percentage Solid [%]	Percentage Oil [%]	Percentage Sand [%]	CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
1998-04-17	445	445	SPUD MUD	1.03					/																

Hole section : 17 1/2" — **WATER BASED SYSTEM**

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Dens [sg]	Filtrate API [ml]	Filtrate HPHT [ml]	Filtcake API [mm]	Filtcake HPHT [mm]	HPHT Press/Temp [bar/DegC]	pH	Alcalinity Pm [ml]	Alcalinity Pf [ml]	Mf [ml]	Inhib Chem [Kg/m3]	K+ [mg/l]	CL- [mg/l]	Ca++ [mg/l]	Mg++	Tot hard [mg/l]	Percentage Solid [%]	Percentage Oil [%]	Percentage Sand [%]	CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
1998-04-18 23:00	445	445	SPUD MUD	1.03					/																
1998-04-19 23:00	1105	1105	SPUD MUD	1.03	0.0	0.0	0	0	0 / 0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0.0	0.0	0.0	0	0.0	0
1998-04-20 23:00	1253	1253	SPUD MUD	1.03	0.0	0.0	0	0	0 / 0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0.0	0.0	0.0	0	0.0	0
1998-04-21 23:00	1253	1253	SPUD MUD	1.03	0.0	0.0	0	0	0 / 0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0.0	0.0	0.0	0	0.0	0
1998-04-22 23:00	1253	1253	SPUD MUD	1.03	0.0	0.0	0	0	0 / 0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0.0	0.0	0.0	0	0.0	0
1998-04-23 23:00	1253	1253	SPUD MUD	1.03	0.0	0.0	0	0	0 / 0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0.0	0.0	0.0	0	0.0	0
1998-04-24 23:00	1253	1253	SPUD MUD	1.25	2.8	9.2	1	1	34 / 120	8.7	0.0	0.1	0.8	0	0	72000	400	0	400	5.5	0.0	0.1	0	0.0	1
1998-04-25 23:00	1253	1253	SPUD MUD	1.25	2.8	9.2	1	1	34 / 120	8.7	0.0	0.1	0.8	0	0	72000	400	0	400	5.5	0.0	0.1	0	0.0	1

Hole section : 12 1/4" — **WATER BASED SYSTEM**

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Dens [sg]	Filtrate API [ml]	Filtrate HPHT [ml]	Filtcake API [mm]	Filtcake HPHT [mm]	HPHT Press/Temp [bar/DegC]	pH	Alcalinity Pm [ml]	Alcalinity Pf [ml]	Mf [ml]	Inhib Chem [Kg/m3]	K+ [mg/l]	CL- [mg/l]	Ca++ [mg/l]	Mg++	Tot hard [mg/l]	Percentage Solid [%]	Percentage Oil [%]	Percentage Sand [%]	CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
1998-04-26 23:00	1258	1258	AQUACOL KCL/P(	1.25	2.8	9.2	1	1	34 / 120	8.7	0.1	0.1	0.8	0	0	72000	400	0	400	11.0	3.5	0.1	0	0.0	1
1998-04-27 04:30	1891	1891	FRESH WATER	1.25	2.0	9.0	1	1	35 / 100	9.2	0.2	0.1	0.8	165					600	11.5		0.2			14
1998-04-27 15:00	1891	1891	FRESH WATER	1.25	2.2	9.4	1	1	35 / 100	9.1	0.2	0.1	0.8	160					620	12.0		0.3			32
1998-04-27 23:00	1891	1891	FRESH WATER	1.25	2.2	9.4	1	1	35 / 100	8.6	0.1	0.1	0.7	165		78000	480		480	12.0		0.3			41
1998-04-28 15:00	2177	2177	FRESH WATER	1.26	2.4	9.4	1	1	35 / 100	8.2	0.1	0.0	0.6	158					640	7.2		0.3			81
1998-04-28 22:30	2177	2177	FRESH WATER	1.25	2.4	9.4	1	1	35 / 100	8.4	0.1	0.0	0.6	162	82000	77000	620		620	12.5		0.3			70
1998-04-28 23:00	1953	1953	AQUACOL KCL/P(	1.25	2.4	9.2	1	1	34 / 120	8.6	0.1	0.1	0.7	0	82000	77000	600	0	600	6.1	0.0	0.4	11	2.4	2
1998-04-29 23:00	2222	2222	AQUACOL KCL/P(	1.25	2.4	8.8	1	1	34 / 120	8.1	0.1	0.0	0.8	0	87000	77500	600	0	600	6.6	0.0	0.2	11	2.4	3
1998-04-29 23:20	2267	2267	FRESH WATER	1.27	2.5	8.9	1	1	35 / 100	8.1	0.1		0.8	167	87000	77500	650		650	12.5		0.2			43
1998-04-30 14:00	2505	2505	FRESH WATER	1.26	2.4	8.8	1	1	35 / 100	8.2	0.1	0.0	0.8	169					640	6.9		0.2			82
1998-04-30 22:00	2505	2505	FRESH WATER	1.26	2.4	8.8	1	1	35 / 100	8.3	0.1	0.0	0.8	168	88000	80000	350		610	13.0		0.2			82

DAILY MUD PROPERTIES : OTHER PARAMETERS FOR WELL 35/11-11

Hole section : 12 1/4" **WATER BASED SYSTEM**

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Dens [sg]	Filtrate API [ml]	Filtrate HPHT [ml]	Filtcake API [mm]	Filtcake HPHT [mm]	HPHT Press/Temp [bar/DegC]	pH	Alcalinity Pm [ml]	Alcalinity Pf [ml]	Alcalinity Mf [ml]	Inhib Chem [Kg/m3]	K+ [mg/l]	CL- [mg/l]	Ca++ [mg/l]	Mg++	Tot hard [mg/l]	Percentage Solid [%]	Percentage Oil [%]	Percentage Sand [%]	CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
1998-04-30 23:00	2326	2326	AQUACOL KCL/P(	1.27	2.4	8.8	1	1	34/ 120	8.0	0.1	0.0	0.6	0	88000	80000	600	0	600	7.0	0.0	0.2	11	2.4	3
1998-05-01 04:15	2552	2552	FRESH WATER	1.26	2.6	9.0	1	1	35/ 100	8.7	0.1	0.1	0.6	167					640	7.0		0.3			84

Hole section : 8 1/2" **WATER BASED SYSTEM**

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Dens [sg]	Filtrate API [ml]	Filtrate HPHT [ml]	Filtcake API [mm]	Filtcake HPHT [mm]	HPHT Press/Temp [bar/DegC]	pH	Alcalinity Pm [ml]	Alcalinity Pf [ml]	Alcalinity Mf [ml]	Inhib Chem [Kg/m3]	K+ [mg/l]	CL- [mg/l]	Ca++ [mg/l]	Mg++	Tot hard [mg/l]	Percentage Solid [%]	Percentage Oil [%]	Percentage Sand [%]	CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
1998-05-01 23:00	2552	2552	FRESH WATER	1.27	2.6	9.0	1	1	35/ 100	8.5	0.1	0.0	0.5	167	87000	80000	520		630	13.5		0.3			92
1998-05-02 21:00	2570	2570	FRESH WATER	1.26	2.5	9.0	1	1	35/ 100	8.3	0.1	0.0	0.6	167	87000	80000	320	170	600	13.0		0.2			82
1998-05-02 23:00	2570	2570	AQUACOL KCL/P(	1.26	2.6	9.0	1	1	34/ 120	8.3	0.1	0.0	0.6	0	87000	80000	320	170	600	6.9	0.0	0.2	25	2.4	3
1998-05-03 05:20	2605	2605	FRESH WATER	1.26	2.7	9.1	1	1	35/ 100	8.3	0.1	0.0	0.6	166					610	7.6		0.3			103
1998-05-03 11:30	2605	2605	FRESH WATER	1.26	2.6	9.0	1	1	35/ 100	8.3	0.1	0.0	0.6	164					600	7.5		0.2			100
1998-05-03 23:00	2605	2605	FRESH WATER	1.27	2.6	9.0	1	1	35/ 100	8.3	0.1	0.0	0.6	164	86000	79000	370	158	620	14.0		0.3			114
1998-05-04 18:00	2636	2635	FRESH WATER	1.29	2.8	9.0	1	1	35/ 100	8.2	0.1	0.0	0.6	163					600	8.5		0.3			106
1998-05-04 22:00	2636	2635	FRESH WATER	1.29	2.6	9.0	1	1	35/ 100	8.2	0.1	0.0	0.7	164	85000	79000	320	164	620	14.5		0.3			108
1998-05-04 23:00	2622	2621	AQUACOL KCL/P(	1.28	2.6	9.0	1	1	34/ 120	8.3	0.1	0.0	0.6	0	85000	79000	370	164	640	8.1	0.0	0.3	35	2.4	4
1998-05-05 04:00	2648	2647	FRESH WATER	1.28	2.5	8.9	1	1	35/ 100	8.2	0.1	0.0	0.6	165					650	8.1		0.3			97
1998-05-05 17:00	2648	2647	FRESH WATER	1.28	2.6	9.0	1	1	35/ 100	8.2	0.1	0.0	0.6	167					640	8.1		0.3			96
1998-05-05 23:00	2648	2647	FRESH WATER	1.28	2.5	9.0	1	1	35/ 100	8.2	0.1	0.0	0.6	167	86000	79000	400	170	700	13.5		0.3			70
1998-05-06 16:20	2696	2695	FRESH WATER	1.27	2.5	8.9	1	1	35/ 100	8.3	0.1	0.1	0.7	168					600	6.9		0.3			57
1998-05-06 23:00	2696	2695	FRESH WATER	1.27	2.5	8.9	1	1	35/ 100	9.0	1.0	0.2	1.2	164	87000	87000	240	176	400	6.9		0.3			75
1998-05-07 10:00	2723	2722	FRESH WATER	1.27	2.5	8.8	1	1	35/ 100	8.9	0.9	0.1	1.0	165					450	7.1		0.3			83
1998-05-07 23:00	2723	2722	FRESH WATER	1.27	2.5	9.0	1	1	35/ 100	8.8	0.8	0.2	0.9	165	86000	87000	240	122	430	6.9		0.3			67
1998-05-08 23:00	2767	2766	AQUACOL KCL/P(	1.26	2.5	9.0	1	1	34/ 120	8.7	0.8	0.1	0.7	161	85000	82000	280	134	460	7.8	0.0	0.3	34	2.4	123
1998-05-09 23:00	2967	2966	AQUACOL KCL/P(	1.27	2.6	9.0	1	1	34/ 120	8.3	0.4	0.1	0.9	168	84000	78000	200	109	480	8.1	0.0	0.3	36	2.4	116
1998-05-10 23:00	3104	3103	AQUACOL KCL/P(	1.29	2.6	9.0	1	1	34/ 120	8.2	0.1	0.1	0.7	169	90000	78000	240	158	460	8.4	0.0	0.3	40	2.4	122
1998-05-11 23:00	3225	3224	AQUACOL KCL/P(	1.27	2.6	9.0	1	1	34/ 120	8.2	0.1	0.1	0.9	167	88000	80000	320	134	600	8.5	0.0	0.3	34	2.4	138
1998-05-12 23:00	3225	3224	AQUACOL KCL/P(	1.27	2.6	9.0	1	1	34/ 120	8.2	0.1	0.1	0.9	167	87000	80000	280	109	460	8.5	0.0	0.3	42	2.4	138
1998-05-13 23:00	3225	3224	AQUACOL KCL/P(	1.27	2.6	9.0	1	1	34/ 120	8.2	0.1	0.1	0.9	167	86000	80000	280	109	460	8.5	0.0	0.3	42	2.4	138
1998-05-14 23:00	3225	3224	AQUACOL KCL/P(	1.27	2.6	9.0	1	1	34/ 120	8.2	0.1	0.1	0.9	167	86000	80000	280	109	460	8.5	0.0	0.3	42	2.4	138
1998-05-15 23:00	3225	3224	AQUACOL KCL/P(	1.28	2.6	9.0	1	1	34/ 120	8.1	0.1	0.1	1.0	162	84000	80000	260	109	440	8.7	0.0	0.3	40	2.4	135
1998-05-16 23:00	2975	2974	AQUACOL KCL/P(	1.29	2.8	9.6	1	1	34/ 120	10.8	1.5	1.0	1.3	158	82000	80000	300	109	480	9.1	0.0	0.3	40	2.4	138

DAILY MUD PROPERTIES : OTHER PARAMETERS FOR WELL 35/11-11

Hole section : 12 1/4" **WATER BASED SYSTEM**

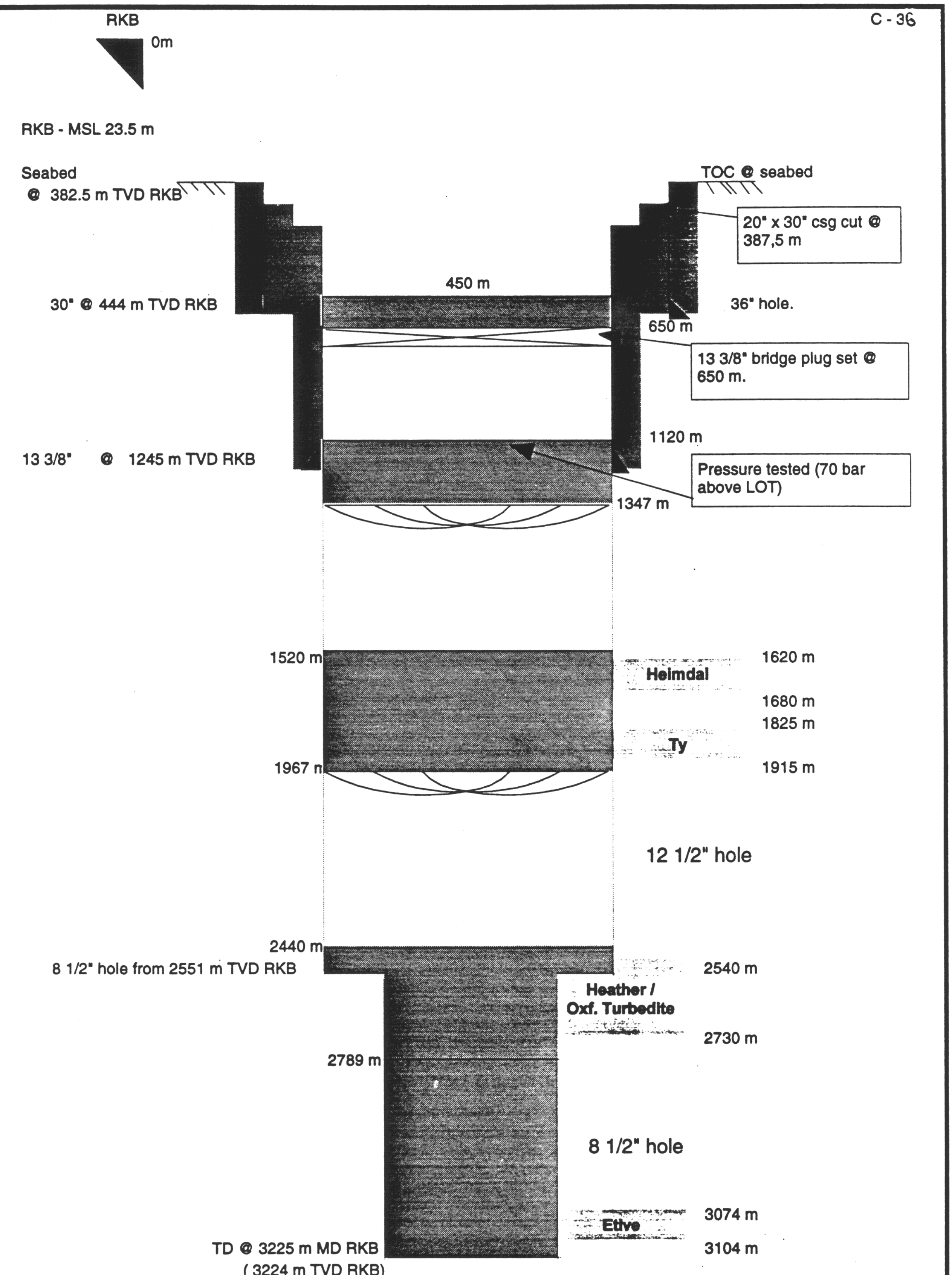
Date	Depth [m] MD	Depth [m] TVD	Mud Type	Dens [sg]	Filtrate API [ml]	Filtrate HPHT [ml]	Filtcake API [mm]	Filtcake HPHT [mm]	HPHT Press/Temp [bar/DegC]	pH	Alcalinity Pm [ml]	Alcalinity Pf [ml]	Alcalinity Mf [ml]	Inhib Chem [Kg/m3]	K+ [mg/l]	CL- [mg/l]	Ca++ [mg/l]	Mg++	Tot hard [mg/l]	Percentage Solid [%]	Percentage Oil [%]	Percentage Sand [%]	CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
1998-05-17 23:00	2440	2440	AQUACOL KCL/P(	1.31	3.6	11.0	1	2	34 / 120	12.3	17.0	0.3	3.0	0	78000	78000	280	243	680	10.2	0.0	0.3	140	2.4	6
1998-05-18 23:00	1520	1520	AQUACOL KCL/P(	1.32	3.8	12.0	1	2	34 / 120	12.5	18.0	0.9	3.0	0	78000	78000	280	243	680	10.6	0.0	0.3	140	2.4	6

Hole section : 17 1/2" **WATER BASED SYSTEM**

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Dens [sg]	Filtrate API [ml]	Filtrate HPHT [ml]	Filtcake API [mm]	Filtcake HPHT [mm]	HPHT Press/Temp [bar/DegC]	pH	Alcalinity Pm [ml]	Alcalinity Pf [ml]	Alcalinity Mf [ml]	Inhib Chem [Kg/m3]	K+ [mg/l]	CL- [mg/l]	Ca++ [mg/l]	Mg++	Tot hard [mg/l]	Percentage Solid [%]	Percentage Oil [%]	Percentage Sand [%]	CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
1998-05-19 22:00	1145	1145	TEST FLUID	1.33	5.0		2		/		18.0	1.0	2.6	145		78000			880	16.0		0.3			5
1998-05-20 22:00	450	450	KCL/POLYMER	1.33	5.6		1		/		10.0	8.0	1.6	135					680						

TOTAL CONSUMPTION OF MUD ADDITIVES ON WELL 35/11-11

Section	Product/ Additive	Unit	Total Amount Used
36"	ANTISOL FL30	kg	792.00
	BARITE	kg	32000.00
	GLYDRIL MC	l	192.00
	KCL	kg	10312.00
	XANTHAN GUM	kg	1117.00
17 1/2"	ANTISOL FL30	kg	2196.00
	BARITE	kg	72000.00
	BENTONITE	kg	18000.00
	GLYDRIL MC	l	707.00
	KCL	kg	28594.00
	LIME	kg	20.00
	SODA ASH	kg	100.00
	XANTHAN GUM	kg	2848.00
12 1/4"	AQUAPAC REG/LV	kg	1613.00
	BACL2	l	110.00
	BARITE	kg	34000.00
	BENTONITE	kg	7000.00
	FLOWZAN	kg	24.00
	GLYDRIL MC	l	2144.00
	KCL	kg	23349.00
	LIME	kg	27.00
	SODA ASH	kg	32.00
	XANTHAN GUM	kg	985.00
8 1/2"	AQUAPAC REG/LV	kg	3377.00
	BACL2	l	437.00
	BARITE	kg	94500.00
	FLOWZAN	kg	469.00
	GLYDRIL MC	l	7673.00
	KCL	kg	40284.00
	LIME	kg	188.00
	SODA ASH	kg	198.00



Well Programme 35/11-11	Fig: C-1 Revision: 01E Date:12.05.98	**WELL SCHEMATIC**

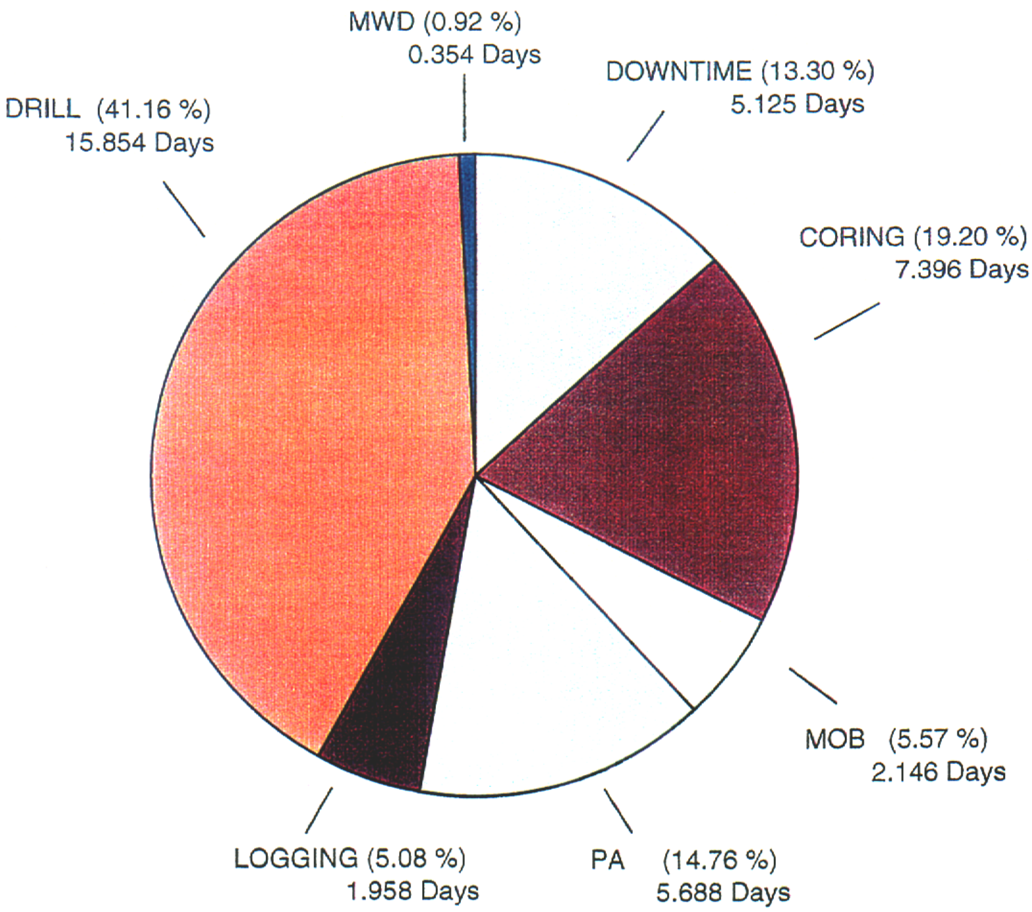
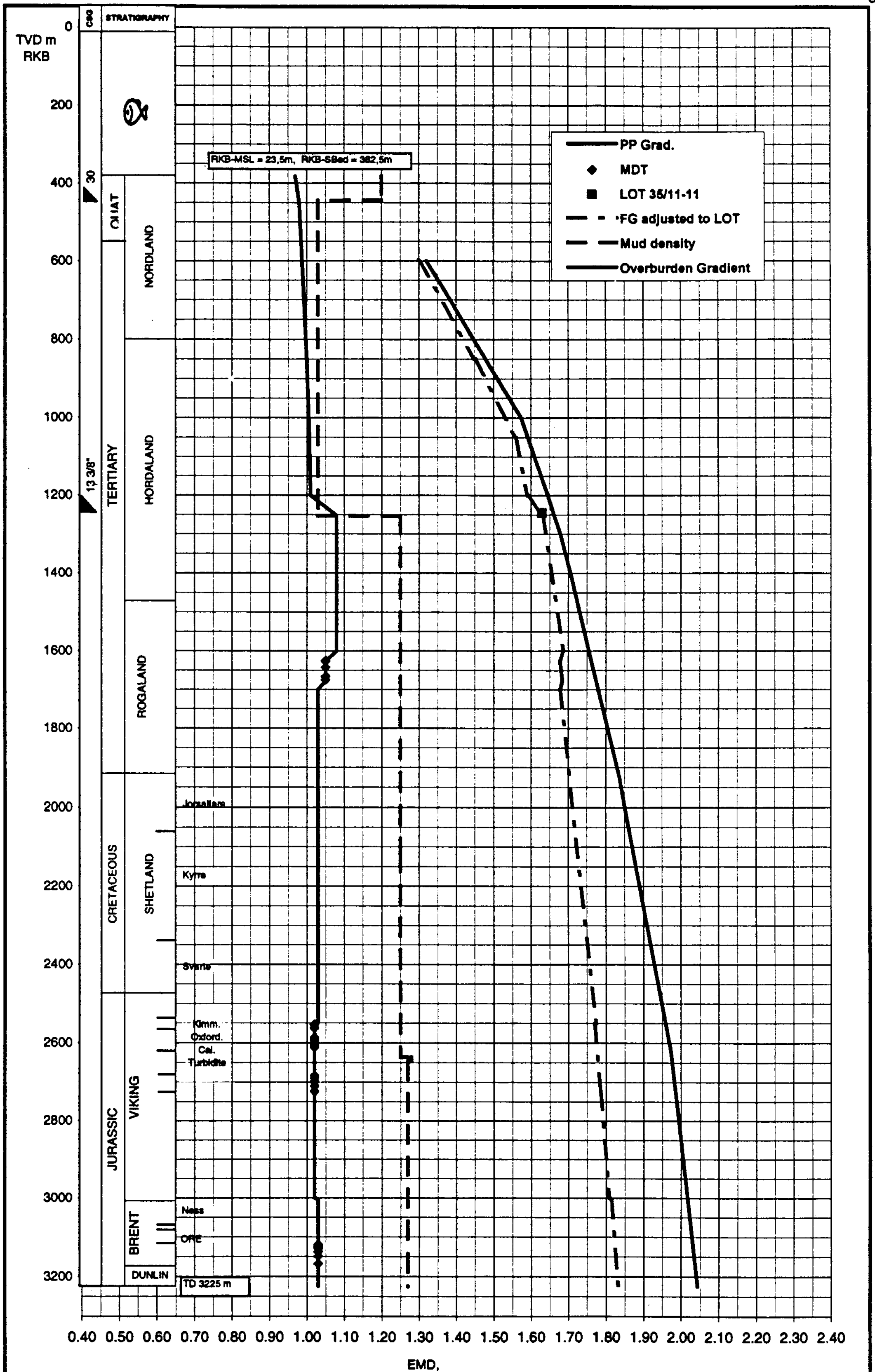
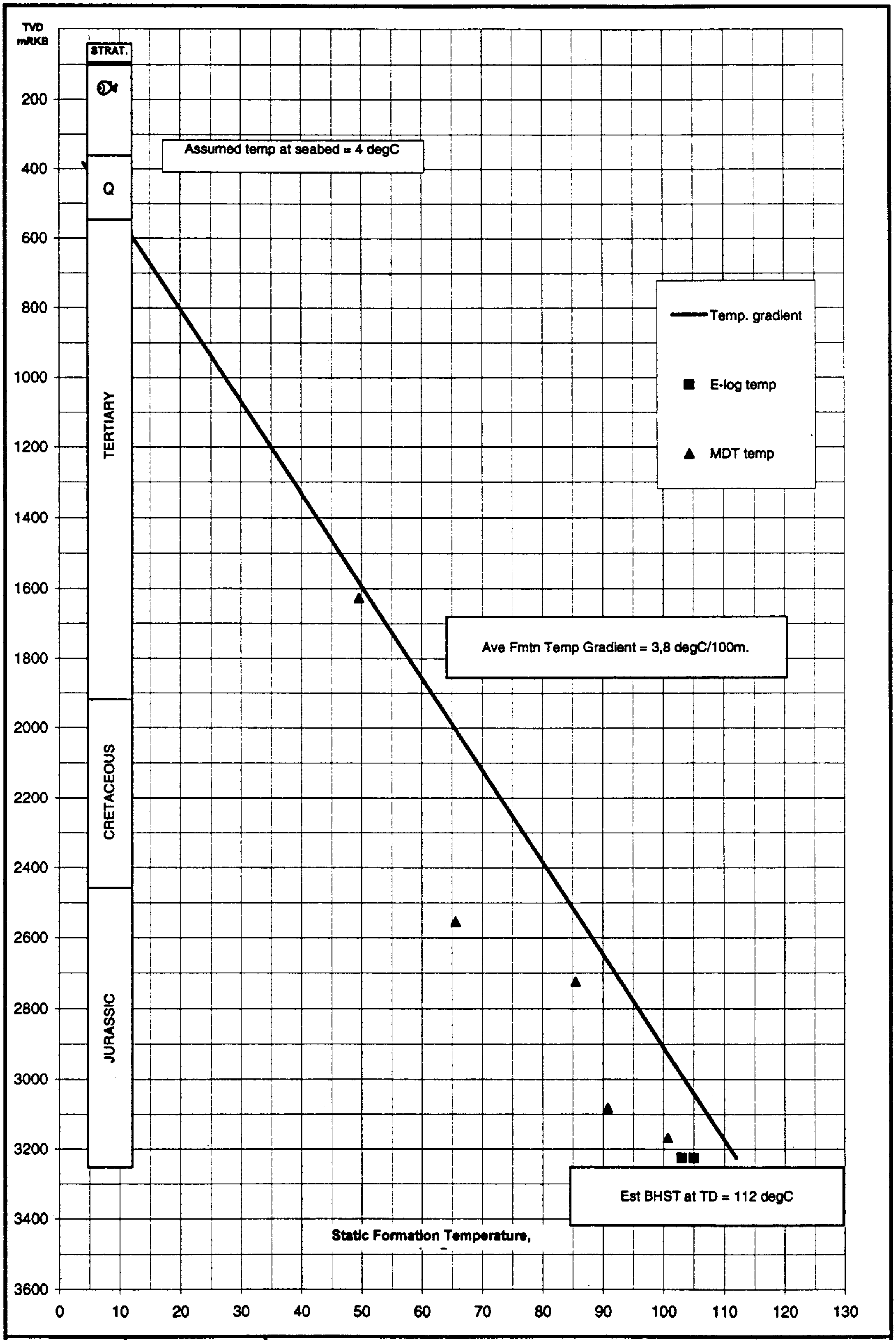


Fig. C - 2		**Time Distribution** **35/11-11**	**HYDRO**

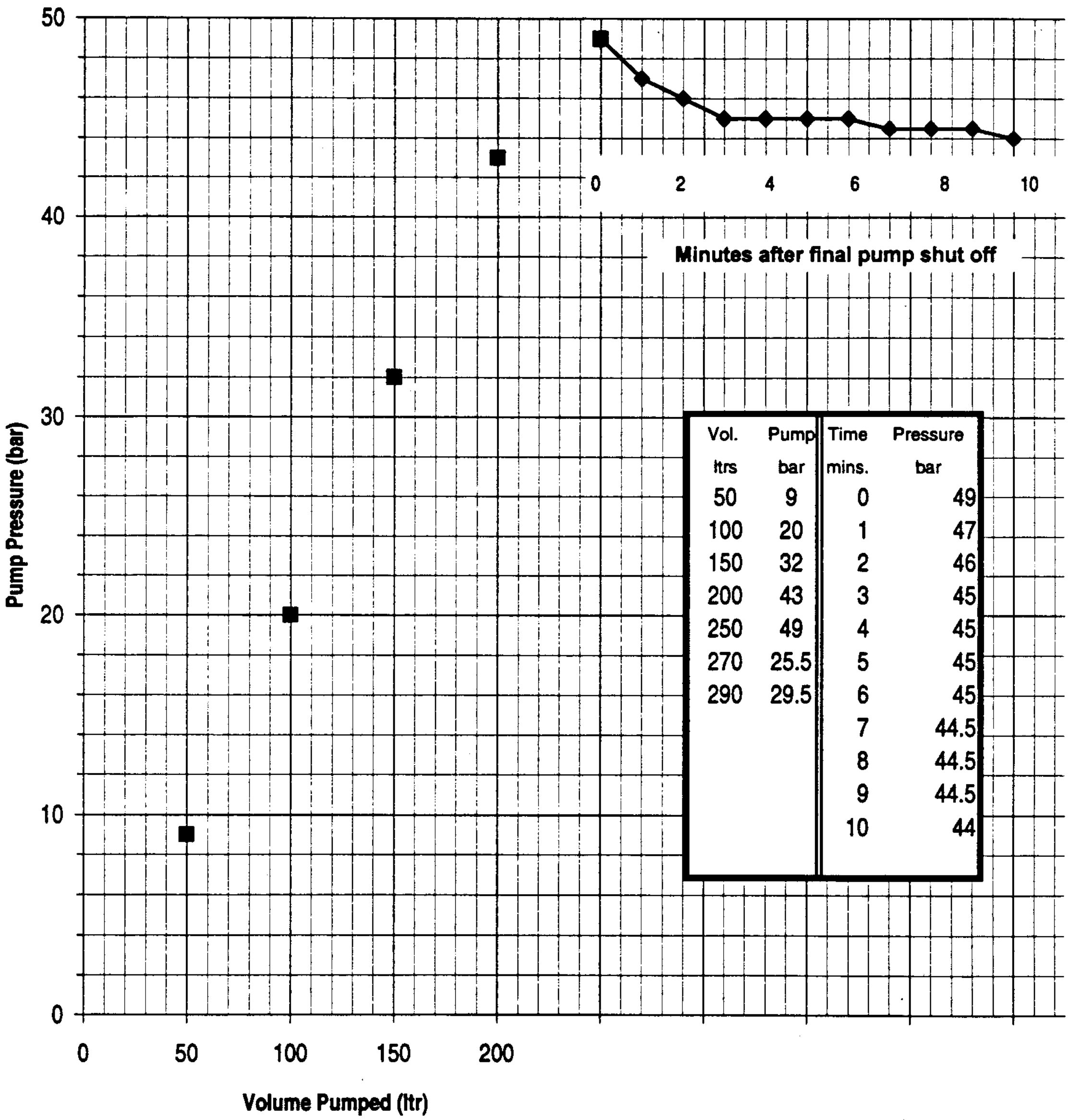


Final Well Report 35/11-11	Figure: C - 3 Rev 01	Final pore pressure, mud density, fracture- and overburden gradients	HYDRO



Final Well Report 35/11-11	Fig.: C - 4	Final Formation Temperature Gradient

Well 35/11-11		Test type - ELOT/LOT/F LOT		Test date 1998-04-27	
Rig T.O.Leader	Airgap(m) 24	Water depth (m) 359	Csg OD (in 13 3/8	Hole angle (deg) 0 °	
Csg Shoe (mMD/mTVD) 1245 / 1245		OH depth, (mMD/mTVD 1256 / 1256		Lithology Clst	
Mud Properties	Dens (sg) 1.25	API WL(ml/30mir 0	PV (cp) 0	YP (Pa) 0	Gels (Pa) 0
Pump Rate (l/min) 50		Vol pumped (l) 250		Vol bled back (l) 0	
Leakoff Pressure (bar) 43		Max pressure (bar) 0		Propagation press. (bar)	
Test result (sg EMD) 1.60		Comments			



Vol. ltrs	Pump bar	Time mins.	Pressure bar
50	9	0	49
100	20	1	47
150	32	2	46
200	43	3	45
250	49	4	45
270	25.5	5	45
290	29.5	6	45
		7	44.5
		8	44.5
		9	44.5
		10	44

Final Well Report 35/11-11	Fig. C - 5	Formation Strength Test Report

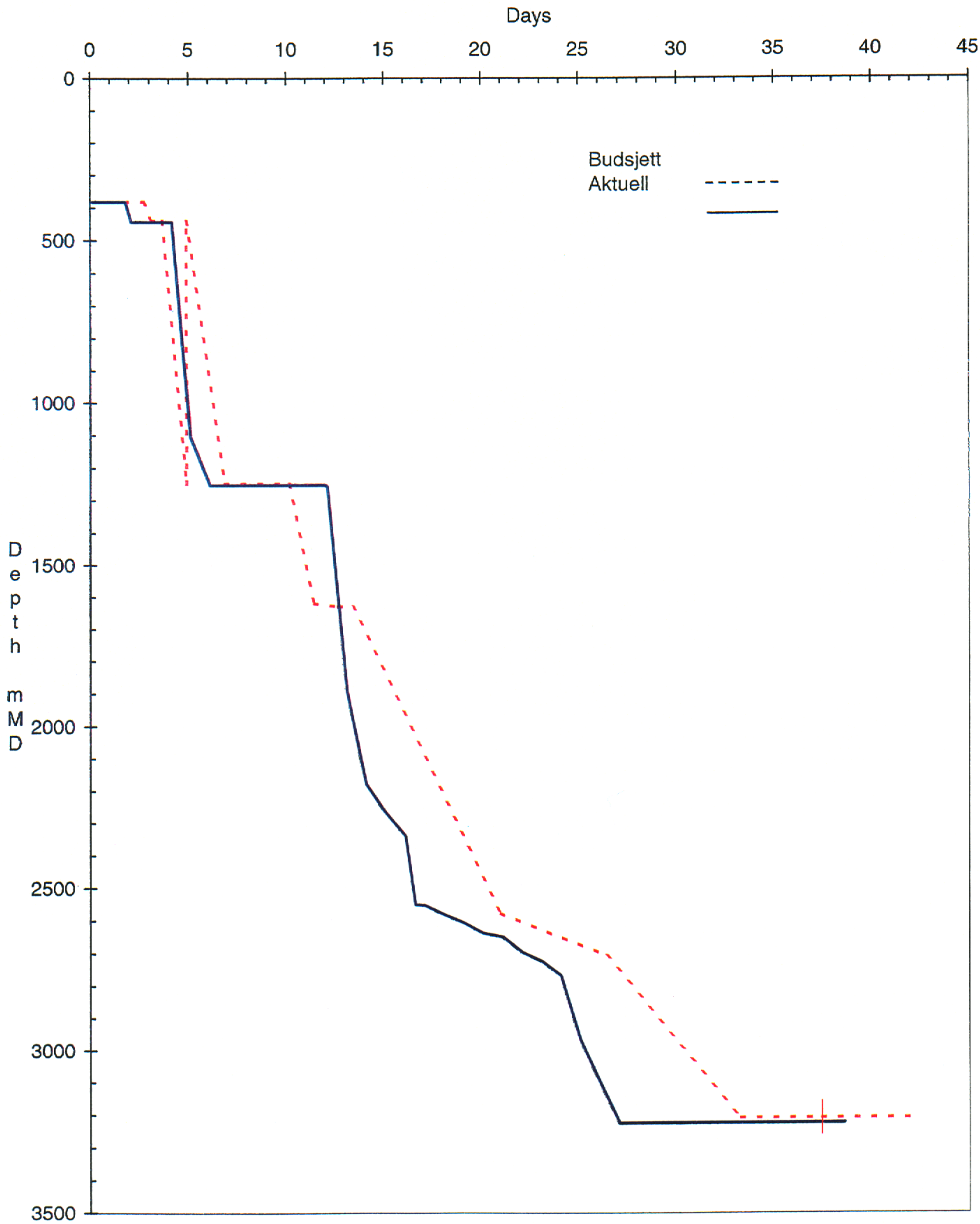


Fig. C-6	Drilling Curves Well 35/11-11	HYDRO

Completion Log

Scale 1:500

35/11-11

KB Elevation:	23.5 m	Country:	Norway
Water Depth:	382.5 m	Licence:	PL090
Total Depth (Driller):	3225 m	Owners:	Norsk Hydro, Statoil, Shell, Esso
Total Depth (Logger):	3225 m	Field	Fram
		Platform:	Transocean Leader
Date Spudded:	16.04.98		
Reached TD:	11.05.98	Drilling Contractor:	Transocean
Completed:	23.05.98	Mudlogging Company:	Baker Huges Inteq
Well Classific.:			
Prepared by:	S.Eriksson	Logging Company:	Schlumberger
Date:	23.11.98	MWD Company:	Baker Huges Inteq
		Geologists:	S.S.G., S.E., B.K., A.K., J.G.

Coordinates (UTM)

Slot: 6 777 182.7 mN 530 381.6 mE

TD

Casing Records	FIT/LOT	Comments
30" at 443.5 m RKB 13 3/8" at 1245 m RKB	1.63 sg EMW at 1248 m RKB	Drilled with returns to seabed from 382.5 m to 1245 m RKB. Dry well. Permanent plugged and abandoned.

Logs Run

MWD Logs	Hole section	Interval	Run no.	Wireline Logs	Hole section	Interval	Run no.
MWD		1250-3225		HALS/TLD/HGNS/ DSI/ACTS		3225-1245	1A
				MDT/GR/ACTS		1626-3167	1A
				FMS/NGT/ACTS		3150-1250	1A

Pressure Tests (RFT/MDT) Date:

No.	Depth m MD RKB	Depth m TVD RKB	Form. pressure

Legend

FORMATION PRESS

Well Name : 35/11-11 Rig : Transocean Leader

Pressure Units : Bars RKB-MSL : 23.5 m. MSL-Sbed: 359m m.

Run No./ Test No. 1A	Depth mMD RKB	Depth mTVD RKB	Initial Hydrostatic Pressure CQG	Initial Hydrostatic Pressure Strain	Formation Pressure CQG	Formation Pressure Strain	Final Hydrostatic Pressure CQG	Final Hydrostatic Pressure Strain	Time hh:mm Set	Time hh:mm Ret
1	1628.5		210.74	210.89	167.40	167.59	210.74	210.93	23:46	[illegible]
2	1643.0		212.87	213.06	169.04	169.23	212.87	213.05	00:00	[illegible]
3	1657.5		214.75	214.93	170.49	170.68	214.75	214.93	00:10	[illegible]
4	1665.5		215.78	215.95	171.29	171.46	215.77	215.94	00:20	[illegible]
5	1675.0		216.99	217.16	172.23	172.40	216.98	217.16	00:30	[illegible]
6	2553.5		329.58	329.58	255.91	255.93	329.56	329.58	01:40	[illegible]
7	2563.0		330.79	330.80	256.85	256.86	330.77	330.79	01:51	[illegible]
8	2587.0		333.86	333.87	259.18	259.20	333.83	333.87	02:02	[illegible]
9	2593.0		334.60	334.64	259.77	259.80	334.57	334.63	02:10	[illegible]
10	2600.0		335.49	335.53	260.44	260.50	335.48	335.53	02:18	[illegible]
11	2606.0		336.25	336.31	261.03	261.08	[illegible]	336.29	02:24	[illegible]
12	2611.0		336.88	336.95	261.52	261.56	336.86	336.94	02:33	[illegible]
13	2684.4		346.20	346.26	268.70	268.75	346.18	346.24	02:45	[illegible]
14	2690.0		346.90	346.96	269.25	269.31	346.87	346.93	[illegible]	[illegible]
15	2698.5		347.96	348.02	270.07	270.12	347.94	348.00	03:03	[illegible]
16	2710.0		349.42	349.48	271.19	271.26	349.40	349.47	03:12	[illegible]
17	2719.0		350.57	350.64	272.21	272.32	350.50	350.62	03:19	[illegible]
18	2724.0		351.16	351.26	[illegible]	272.65	[illegible]	[illegible]	03:45	[illegible]

MDT1A_1.WK4

FORMATION PRESSUR

Pressure Units : Bars RKB-MSL : 23.5 m. MSL-Sbed: 359m m.

Run No./ Test No. 1A	Depth mMD RKB	Depth mTVD RKB	Initial Hydrostatic Pressure CQG	Initial Hydrostatic Pressure Strain	Formation Pressure CQG	Formation Pressure Strain	Final Hydrostatic Pressure CQG	Final Hydrostatic Pressure Strain	Time hh:mm Set	Time hh:mm Retract
19	3081.7		396.71	396.63			396.66	396.60	04:20	04:23
20	3085.5		397.15	397.12			397.15	397.12	04:26	04:29
21	3119.5		401.54	401.52	314.32	314.35	401.48	401.51	04:40	04:44
22	3125.0		402.21	402.23	315.04	315.06	402.16	402.19	04:47	04:50
23	3130.0		402.79	402.81	315.31	315.52	402.76	402.80	05:01	05:04
24	3137.5		403.74	403.76	316.05	316.07	403.72	403.75	05:09	05:12
25	3149.0		405.23	405.27	317.23	317.27	405.22	405.23	05:17	05:20
26	3167.5		407.63	407.67	319.12	319.16	407.64	407.62	05:28	05:31

Mdt1a_2.wk4