Final Well Report

Well: 35/11-9

Licence 090

HYDRO

STATOIL

Mobil

E&P Division

HYDRO

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NORSK HYDRO

FINAL WELL REPORT

WELL 35/11-9

NOVEMBER 1997

LIST OF CONTENTS, WELL 35/11-9

INTRODUCTION:

PREFACE

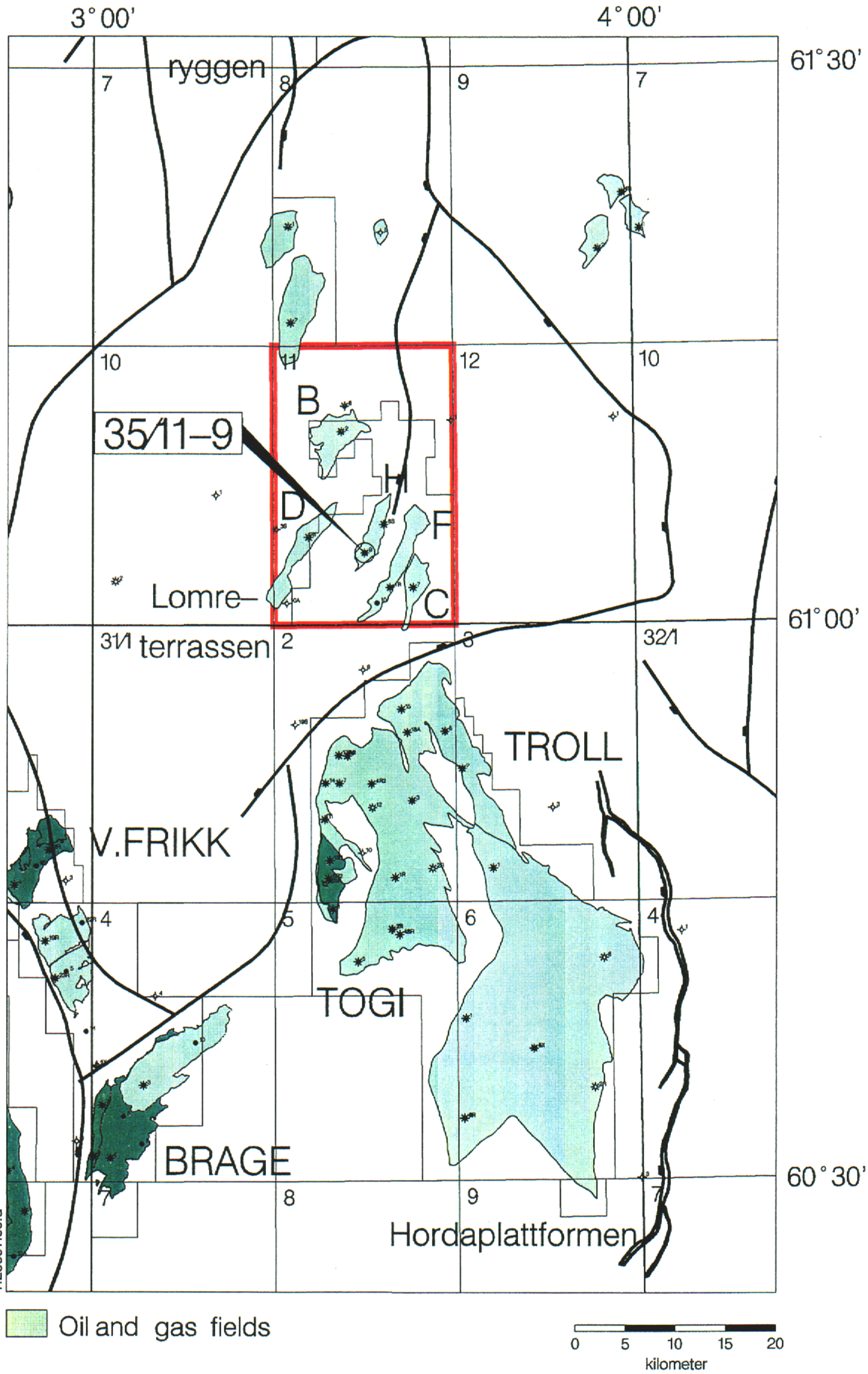
License PL 090 was awarded to the Norsk Hydro/Statoil/Mobil group in 1984 with Mobil as the operator. Norsk Hydro took over the ownership 31.07.95.

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 1997 (see Location Map, page II) of.

All depths in this report are in mMD RKB (RKB elevation is 29m) unless otherwise stated.



Location map, well 35/11-9

SUMMARY OF WELL DATA

SUMMARY OF WELL DATA	
LOCATION:	61° 03' 54.23"N 03° 30' 06.95" E 6 770 298.9mN 527 093.0mE ED-50, UTM Zone 31, CM 3°E
OPERATOR: RIG: CONTRACTOR:	Norsk Hydro a.s West Delta Smedvig
KB ELEVATION (to MSL): WATER DEPTH (MSL):	29.0 m 357 m
START OF OPERATIONS: WELL SPUDDED: REACHED TD ON: COMPLETED: STATUS: FORMATION AT TD:	07.02.97 02.03.97 18.04.97 03.05.97 Permanently plugged and abandoned oil well Heather
TD DRILLER (mRKB): TD LOGGER (mRKB):	2830m 2820m
DRILLING DEPTHS:	36" to 447.0 m 17 1/2" to 1250.0 m 12 1/4" to 2325.0m 8 1/2" to 2830m
CASING DEPTHS:	30" at 447.0 m 13 3/8" to 1243.0m

SECTION A

GEOLOGY

LIST OF CONTENTS SECTION A

SECTION A: LIST OF FIGURES, TABLES AND APPENDICES

1 OBJECTIVES

Well 35/11-9 was designed to obtain information about the reservoir properties, contacts and possible oil and gas resources in the "Early Oxfordian Turbidite" sequence in the H-structure where hydrocarbons have been discovered in well 35/11-8S, as well as to test the lateral continuity and cementation of the turbidite sequence. In addition to the Early Oxfordian Turbidite reservoir, a thicker Sognefjord Formation equivalent lead was identified.

The objectives of the well were to:

- Delineate the oil and gas discovery in well 35/11-8S to ensure an economic foundation for a stand-alone development of the Fram area.
- Test the geological model/lateral continuity and cementation of the Early Oxfordian Turbidite sequence.
- Test the reservoir properties in a thin, Bouma type turbidite sequence.
- Confirm the oil-water contact; primary objective, and the gas-oil contact; secondary objective.
- Secure an optimal seismic tie and verify the depth conversion.
- Test possible hydrocarbons in a thicker Sognefjord Formation equivalent lead.

2 RESULTS

The well 35/11-9 was drilled with the main objective to delineate the oil and gas discovery made in well 35/11-8 S on the H-structure. Oil was encountered in a 79 m thick Upper Jurassic sandstone sequence preliminary named as "Early Oxfordian Turbidites". The well was permanently plugged and abandoned.

The main results were:

- Top Early Oxfordian Turbidite was encountered at 2653m. From 2653 to 2688, 30m net pay oil reservoir showed an oil saturation of 76% and the average porosity was calculated to 22.1%.

- MDT pressure measurements gave an oil-water contact at 2687m which is slightly deeper than the oil-water contact in well 35/11-8 S. The top reservoir was, as prognosed, penetrated below the expected gas-oil contact for the structure. However, the main conclusion is that within the range of uncertainties there are pressure communication both in the oil and the gas zones.

- The prognosed "lead" related to the "Sognefjord Formation" on the structure was negative due to the lack of reservoir sand in this interval.

- The well was drilled to 2830m and terminated in the Heather Formation.

3 BIOSTRATIGRAPHY

The analyses were based on studies of lithology, micropaleontology and palynology, which were made on ditch cutting samples and conventinal core chips covering the interval 1260m - 2830m, T.D.

Table 3.1 on the next page shows summarized chronostratigraphic subdivision of the well. Further details may be found in " Well 35/11-9 Biostratigraphy Interval 1260 - 2830m (TD) (Stratlab, September 1997).

GEOCHRONOLOGY

Age		Depths (m)
Tertiary	Middle Eocene (Bartonian)	1260-1280
	Middle Eocene (Lutetian)	1280-1400
	Early Eocene (Ypresian)	1420-1590
	Late Paleocene (Thanetian)	1600-1890
	Early Paleocene (Danian)	1900-1970
	----------------unconformity----------------------------	1973,5 (log)
Cretaceous	Late Maastrichtian	1980-2060
	Early Maastrichtian	2080
	-----------------unconformity----------------------------	2093 (log)
	Early Campanian	2100-2300
	-----------------unconformity----------------------------	2303 (log)
	Middle-Early Cenomanian	2310-2380
	-----------------unconformity----------------------------	2381 (log)
	Ryazanian	condensed
	-----------------unconformity----------------------------	2383 (log)
Jurassic	Late Volgian	2390-2440
	Mid Volgian	2450-2460
	late Early Volgian	2470
	------------------unconformity----------------------------	
	?Mid-Late Kimmeridgian	2480-2565
	Early Kimmeridgian	2567-2590
	Late Oxfordian	2600-2620
	Mid Oxfordian	2630-2655,2
	Early Oxfordian	2655,2-2731
	------------------unconformity----------------------------	
	Late Callovian	2738-2770
	?Mid Callovian	2780-2790
	Early-Callovian	2790-2830 (TD)

Table 3.1

COMMENTS:

The interval 2390-2480m is rather poorly defined, due to abundant cavings from Cretaceous. The Ryazanian is here interpreted to be present as condensed between 2390 and 2390m.

An alternative interpretation could be that there is a Ryazanian-Late Volgian to ca. 2430m, due to a large part of assemblage being of that affinity.

The difference between the consultants and this interpretation in the interval 2480-2565m is difference in criteria for top Late Kimmeridgian.

4 LITHOSTRATIGRAPHY

All depths are in mMD RKB (RKB is 29m).

This summary is compiled predominantly from ditch cuttings descriptions.
No sidewall cores were taken in this well. A total of three conventional cores were cut in the interval from 2638m to 2743m 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 386 m to 1250 m before setting 13 3/8" casing at 1243m. 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 386 - 783.5 m MD RKB

386 - 725 m MD RKB

This interval was drilled with returns to seabed and is interpreted to consist of clay with sand beds at 531 and 540m.

Age: Undifferentiated Quaternary and Tertiary

725 - 767 m MD RKB

This interval was drilled with returns to seabed and interpreted to consist of sand with a minor claystone bed at its base (based on MWD data).

Age: Undifferentiated Tertiary

Utsira Formation 767 - 783 m MD RKB

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

Age: Undifferentiated Tertiary

4.2 Hordaland Group 783 - 1534 m MD RKB

From 783 to 1250m MD RKB, the interval was drilled with returns to seabed and comprises claystone (based on MWD data). Below 1250m MD RKB, the interval was drilled using a water based mud system with full returns to surface.

1250 - 1340m MD RKB

This interval comprises massive claystone

Claystone:	Varicoloured, grey brown - dark green grey - olive grey, are soft to firm, have blocky and subblocky fracture, are locally calcareous, generally micromicaceous and glauconitic

1340 - 1440m MD RKB

This section comprises of claystone with calcdolomite stringers

Claystone:	pale greenish grey, locally purple grey, firm with either a platey or tabular fracture, traces of glauconite with rare, phosphate nodules, traces of pyrite occasioanlly as infill material to foram chambers
Dolomite:	hard creamy white calcdolomite mudstones with a blocky fracture, and occasional very hard translucent orange crystalline dolomites

1440 - 1500m MD RKB

This interval consists of claystones and silty claystone

Claystone:	pale greenish grey, firm, platey and tabular fractures with traces of glauconite
Silty Claystone:	medium brownish grey, soft or firm, very silty with an earthy texture, organic debris and micromica, slightly calcareous with occasional pyrite nodules

1500 - 1534m MD RKB

This section comprises silty Claystone.

Silty Claystone:	red brown, firm, subfissile and earthy, micromicaceous and slightly calcareous

Age: Undifferentiatied Tertiary

4.3 Rogaland Group 1534 - 1972.5 m MD RKB

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

Balder Formation 1534 - 1583.5 m MD RKB

This formation comprises tuffaceous claystones and siltstones

Claystone:	tuffaceous varicoloured blue green, green and purple browns coloration, firm but locally hard with a waxy lustre, micromicaceous with an earthy texture, felspathic groundmass with ashy inclusions, locally abundant glauconitic and slightly calcareous
Siltstone:	tuffaceous green brown, green grey and locally red brown coloration, firm and argillaceous with localised white ashy matrix and vitreous inclusions, glauconitic, felspathic, micromicaceous, calcareous and slightly pyritic
Age:	Early Eocene

Sele Formation 1583.5 - 1646 m MD RKB

This section consists of silty claystones

Claystone:	greyish brown and occasionally light green grey or red brown, firm and flaky with an earthy texture, very silty, slightly calcareous, micropyritic, felspathic, micromicaceous with traces of glauconite
Age:	Early Eocene - Late Paleocene

Lista 1 Formation 1646 - 1715 m MD RKB

This formation comprises of a main upper claystone section overlying the Heimdal member sandstones with basal claystone and limestone stringers

Claystone:	varicoloured, predominantly medium olive grey, brown and green grey, soft or firm, blocky fracture, waxy lustre, slightly silty and rarely calcareous.
Limestone:	greenish white to creamy white, firm mudstone, locally crystalline and commonly glauconitic
Age:	Late Paleocene

Heimdal **1715 - 1784 m MD RKB**

This interval consists of a massive upper sand package and a 30m basal section interbedded with minor claystones.

Sandstone: clear and translucent medium to very fine grained, poorly sorted, angular to subrounded quartz grains, friable or weakly cemented with calcite, an argillaceous matrix and local ly abundant glauconite with rare mica flakes and pyrite

Claystone: dark green to brownish and olive grey, firm and generally non calcareous

Age: Late Paleocene

Lista 2 Formation **1784 - 1855.5 m MD RKB**

Claystone: medium grey, brownish grey becoming predominantly olive grey, dark green grey, soft to firm, blocky, non calcareous, non to slightly silty, rare micropyrite, rare micromica, rare to traces glauconite.

Limestone: greenish white to creamy white, firm mudstone, locally crystalline and commonly glauconitic

Age: Late Paleocene

Våle Formation **1855.5 - 1910 m MD RKB**

This formation comprises claystone

Claystone: medium brownish grey, firm to soft, hydrophilic with earthy texture, very silty, calcareous, micromicaceous and felspathic, traces of glauconite with an occasional pyrite framboid.

Age: Late Paleocene - Early Paleocene

Ty Formation **1910 - 1972.5 m MD RKB**

This formation comprises claystones

Claystone: medium brownish grey, occasionally light green grey, firm, hydrophilic with earthy texture, silty, micromicaceous and

	felspathic, calcareous, traces of glauconite with an occasional pyrite framboid.
Claystone:	medium grey, firm, blocky, slightly silty, calcareous to very calcareous, traces of organic material, micromicaceous, traces of glauconite
Age:	Early Paleocene

4.4 Shetland Group 1972.5 - 2381 m MD RKB

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

Jorsalfare Formation 1972.5 - 2093 m MD RKB

This section comprises interbedded limestone and claystone

Limestone:	off white to creamy white, soft and firm, brittle and fragile chalky mudstone
Claystone:	purple red, brownish grey, firm, subblocky fracture, calcareous with abundant glauconitic and phosphatic pellets
Marl:	medium light grey to medium grey, soft, subblocky - amorphous, locally silty to very fine sandy, rare micropyrite, grading to very calcareous claystone
Age:	Late Maastrichtian - Early Maastrichtian

Kyrre Formation 2093 - 2303 m MD RKB

This formation consists of claystone and limestone stringers

Claystone:	medium brown, green grey and olive grey, soft and firm, slightly calcareous but locally marly, occasional pyrite framboids and glauconite pellets
Limestone:	off white to creamy white, soft and firm, brittle and fragile chalky mudstone
Limestone:	grey orange pink, soft to moderate hard, brittle, microcrystalline, locally sparitic
Age:	Early Campanian

Svarte Formation 2303 - 2381 m MD RKB

This interval comprises of a main upper limestone unit with minor basal sandstones and a lower claystone unit

Limestone:	pale yellow and milky white, also light olive grey, firm brittle and crumbly, argillaceous, laminated, crystalline and microcrystalline, micropyrite and microglauconite
Sandstone:	light brown with clear and translucent quartz, it is moderately sorted with fine to very fine but occasionally medium to coarse, angular and subangular grains, it is predominantly loose but locally has aggregates of calcite cemented material, there are traces of glauconite and occasional pyrite nodules.
Claystone:	brownish black to olive or dark grey, firm, it is subfissile with an elongated platey or flaky fracture, locally slightly calcareous with traces of micropyrite
Age:	Middle Cenomanian - Early Cenomanian

4.5 Cromer Knoll Group 2381 - 2389 m MD RKB

The Cromer Knoll Group consists of the Rødby Formation.

Rødby Formation 2381 - 2389 m MD RKB

This interval comprises of claystone

Claystone:	grey black to olive black, occasional dark green grey to olive grey or green grey, firm to moderate hard, blocky, slightly calcareous with traces of sand grains and micropyrite
Age:	Ryazanian

4.6 Viking Group 2389 - 2830 m MD RKB

The Viking Group consists of the Draupne, Sognefjord, and Heather, formations

Draupne Formation 2389 - 2538.5 m MD RKB

This interval comprises claystone

Claystone:	olive black to greyish black, firm to moderately hard, generally blocky fracture but occasionally subfissile and platey, silty and slightly calcareous, also slightly sandy with traces of micropyrite and carbonaceous pyritized laminae. The basal 10m section of this section is very felspathic, micro micaceous and slightly glauconitic.
Age:	Late Volgian - Late kimmeridgian

Heather "C" Formation 2538.5 - 2556 m MD RKB

This interval comprises siltstone

Siltstone:	brownish grey to olive black firm to hard, subfissile and platey, has an earthy and friable texture, is micromicaceous, very carbonaceous, pyritic, slightly calcareous
Age:	Late Kimmeridgian

Sognefjord Formation 2556 - 2580 m MD RKB

This interval comprises of siltstone and silty sandstone

Siltstone:	medium brownish grey, firm to hard, platey and subfissile earthy and friable, very carbonaceous, very micaceous, pyritic
Silty sandstone:	light brownish grey, occasionally light green grey, light brown oil stain in places, very fine to fine, commonly medium to coarse, rounded and subrounded, poorly sorted, pitted quartz grains with bituminous tarry interstitial residues, argillaceous matrix, generally loose and friable with no visual porosity, very carbonaceous and pyritic, very silty
Age:	Late Kimmeridgian - Early Kimmeridgian

Heather "B" Formation 2580 - 2653 m MD RKB

This interval comprises siltstone and sandy siltstone

Siltstone: medium brown to olive brown, hard, brittle, friable, earthy texture, platey fracture, very micaceous, carbonaceous, pyritic, locally calcareous, very sandy.

Sandstone: light brown to orange brown, clear or translucent quartz, fine to very fine, occasionally medium, moderately sorted, very silty with an argillaceous matrix, silica and calcite cement, traces of mica and pyrite, no visual porosity.

Age: Early Kimmeridgian - Middle Oxfordian

Intra Heather Early Oxfordian Turbites 2653-2733 m MD RKB

This interval comprises of sandstones occasionally interbedded with siltstones

Sandstone: brown grey to light grey, quartz, clear to translucent, predominantly medium commonly fine to medium occasionally fine to coarse becoming coarser towards base, predominantly sub angular occasionally sub rounded, spherical to sub spherical occasionally sub elongated, well to moderately sorted, moderately hard to firm, moderately well cemented with silica, rare thin horizons well cemented with calcite, trace to locally common mica, occasional lithic clasts, occasional carbonaceous rarely coaly inclusions. Generally moderate visible porosity commonly good rarely poor to nil.

Siltstone: dark grey, moderately hard, platey to sub fissile, non calcareous, micromicaceous.

Age: Early Oxfordian

Heather A Formation 2733-2830m RKB (TD)

This interval comprises siltstone with minor claystone and increasingly common limestone stringers towards base.

Siltstone: grey brown, firm becoming soft, hackly becoming sub blocky generally non calcareous locally becoming calcareous, carbonaceous to very carbonaceous, abundant very fine sand commonly grading to very silty sandstone, occasional glauconite, occasional micromica.

Limestone: off white to very pale orange, soft, argillaceous, occasional carbonaceous laminae.

Age: Late Callovian - Early Callovian

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.

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

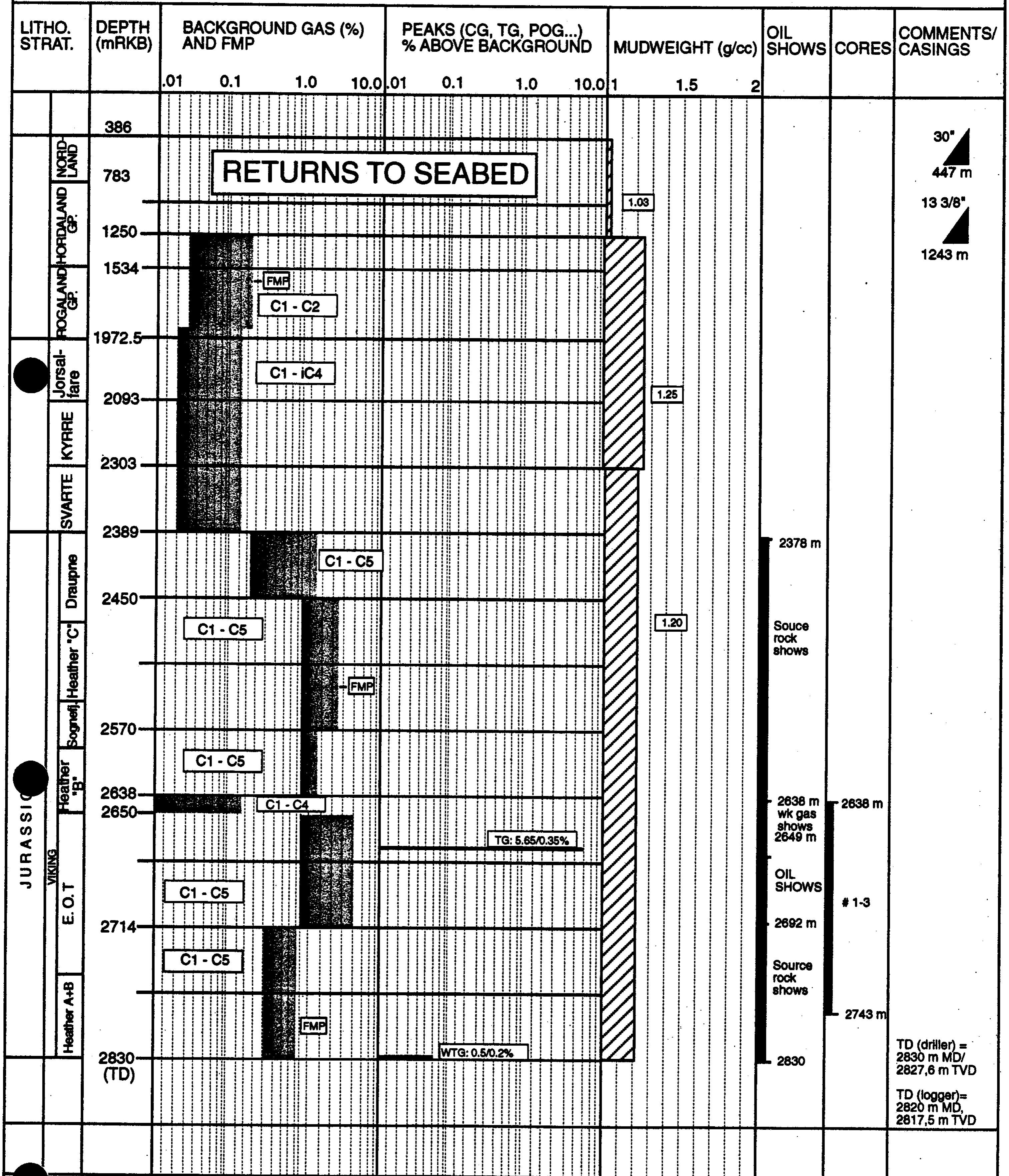
122 - 1250 m:

This interval was drilled with returns to sea bed.

1250 - 2830 m:

The gas summary for the well is presented in the Figure 5.1 on the next page.

GAS SUMMARY WELL: 35/11-9



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

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
2378-2570	Cuttings	Claystone	no dir flu,strmg wh bl cut fluor,no vis cut,yel/wh fluor res,no vis res
2570-2638	Cuttings	Sliltstone	no dir flu,slw strmg crm wh-bl wh cut fluor,no vis cut,yel/gn fluor res.Tr lt brn vis res
2638-2649	Core	Siltstone	no dir fluor,slo strmg crm wh cut fluor,tr brn vis cut,yel/gn fluor res,Tr brn vis res
2649-2658	Core	Sandstone	yel wh-straw yel dir fluor,inst flash cut,v fst strmg mlky wh cut fluor,lt gn/brn fluor res,Tr brn vis res
2658-2681	Core	Sandstone	fnt-mod pet od,no oil stn, uni brt strw yel-yel gn dir fluor,inst flash-slo blmg brt yel cut fluor,no vis cut,brt yel fluor res,pl brn vis res
2681-2692	Core	Sandstone	as above with distinct decrease in colour intensities
2692-2830	Core and cuttings	Sandstone and siltstone	no od, no oil stn, no dir fluor, dull pl bl wh slo blmg cut fluor,no vis cut,pl yel fluor res,no vis res

Table 5.1. Shows summary

6 CORING

6.1 Conventional cores

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

No	C: Cut(m) R: Recovery(m)	Rec. %	Lithology	Formations
1	C:2638-2666.3 R:2638-2666.3	100	Siltstone\Sandstone	Heather B\Intra Heather EOT
2	2666.3-2714.2 2666.3-2714.2	100	Sandstone\Siltstone	Intra Heather EOT
3	2714.2-2743 2714.2-2740.95	92.3	Sandstone\Siltstone	Intra Heather EOT Heather A+B

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
DLL\MSFL\LDL\CNL\NGT\SP\AMS	18-19/04/97	2820-1180	1A
MDT\GR	21-23/04/97	2731-2565	1A
FMI\DSI\GR\ACTS	23.04.97	2795-1225	1A
VSP\GR	23-24.04.97	2320-1820	1A
VSP\GR	24-25.04.97	2810-2260 2140-620	1B

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:

1250-2830m

Detailed MWD results can be found in the report "End of Well Report, MWD, for Norsk Hydro, Well 35/11-9."

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
DLL\MSFL\LDL\CNL\NGT\SP\AMS	1A	2.820	81	11:35	1:45
MDT\GR	1A	2.564	83	3:30	9:30
FMI\DSI\GR\ACTS	1A	2.795	95	43:50	3:30

Table 7.2: Bottom hole temperatures from logs

8 PETROPHYSICAL RESULTS

The main objectives of this petrophysical analysis were to test the reservoir properties (N/G ratio) in a thin (Bouma type) turbidite sequence and to confirm the OWC (primary) and GOC (secondary) from well 35/11-8S. Secondary objective was to test possible hydrocarbons in a thicker Sognefjord Formation Equivalent (lead, called 'Early Oxfordian Turbidite')

The petrophysical evaluation was based on log data and core data.

The log quality is considered good over the reservoir section.

Three cores were cut in the Early Oxfordian Turbidite, covering the oil and part of the water zone (the gas zone was not penetrated).

In the Early Oxfordian Turbidite both MDT oil and water samples were obtained.

In the Early Oxfordian Turbidite, MDT pressure gradients determined the FWL at 2658 m TVD MSL (2688 m MD RKB). From the pressure gradients an oil gradient of 0.69 g/cc was determined (See **Figure 8.1**). This corresponds with the PVT analysis of the oil sample from the Early Oxfordian Turbidite, of 690.5 kg/m^3, when corrected to in-situ conditions.

The interval summary of the Early Oxfordian Turbidite is presented in **Table 8.1**.

The sensitivity of the average petrophysical output parameters to cut-offs were found. The net-to-gross value increases gradually with increasing shale cut-off. The zone averages proved to be pretty insensitive to different porosity cut-offs.

In the Early Oxfordian Turbidite 30 m of net pay oil has been interpreted. The pay section has an average log porosity of 22.1%, while it is 21.3 % over the net reservoir section. The average water saturation yields 0.245 (pay zone).

Core plugs show the following arithmetic averages of the horizontal permeability in the Early Oxfordian Turbidite: 471 mD over the total reservoir section and 504 mD over the net pay oil column.

For more details regarding the petrophysical interpretations, refer to Norsk Hydro report "Formation Evaluation Report, well 35/11-9".

ZONE AVERAGES							
Zone	*Interval* [m MD RKB]	*Net res [m]*	*N/G*	*Porosity* [%]	*Net pay [m]*	*Sw [Frac]*	*KHC* [mD]*
Oil	2653-2688	30.4	0.845	22.1	29.9	0.245	503.7
Water	2688-2733	38.4	0.854	20.7	-	-	441.8
Total	2653-2733	68.9	0.861	21.3	29.9	0.245	471.4

* *Horizontal Klinkenberg-corrected permeability, arithmetic average.*

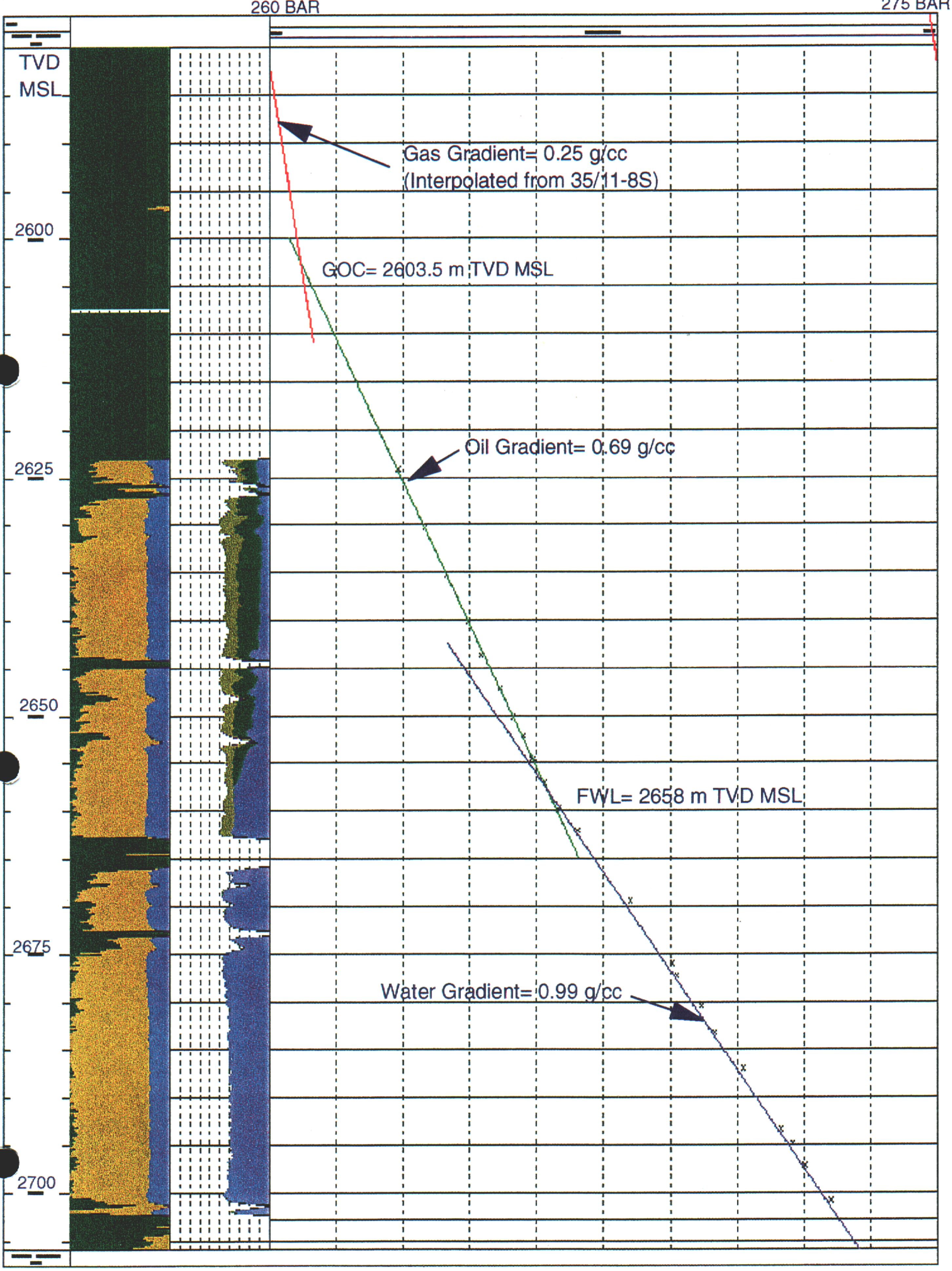
DISCRIMINATION CRITERIA (INCLUSIVE) FOR NET RES AND NET PAY				
Criteria	Min	Max	Net Res	Net Pay
Shale content	0.00	0.40	Yes	Yes
Log porosity	0.12	1.00	Yes	Yes
Water saturation	0.00	0.60	No	Yes

Table 8.1 PETROPHYSICAL summary

FIGURE 8.1

WELL NAME: 35/11-9

Depth grid is 5 metres



9 GEOPHYSICAL RESULTS

Well 35/11-9 showed results in agreement with the geological model for the Oxfordian Turbidites and the contacts found in well 35/11-8 S.

The prognosed times and depths are shown in Table 1.1 together with the actual times and depths from the well. All reflectors from top Balder and below have been interpreted on the reprocessed survey MN920196. Top Hordaland Fm. has been taken from the previous survey MN9201, and top Utsira was based on the site survey. The lack of actual time picks for the seabed, top Utsira Fm. and top Hordaland Fm. are due to the fact that no calibrated sonic exists at these levels.

The geophysical prognosed depths are all within the expected uncertainties. The difference between prognosed depths and actual depths show a trend where the depths to the reflectors down to top Shetland Group are overestimated while the depths from top Shetland Gp. and below are underestimated except top Sognefjord Fm.

All reflectors below base Cretaceous are depth converted from base Cretaceous. If base Cretaceous is corrected to its actual depth, then the prognosed top Sognefjord is 21 m too deep, while top and base Oxfordian Turbidite are 5 and 11 meters to shallow. This shows that top Sognefjord needs a further explanation while top and base Oxfordian Turbidite are fairly close to their actual depth.

The interpretations at base Cretaceous and top Sognefjord are not changed after the well, so the difference between the prognosed and the actual depth at top Sognefjord must be due to the depth conversion.

Top Sognefjord was depth converted using a constant velocity taken from well 35/11-8 S. The velocity used is too high since the depth prognosis is 21 m below the actual depth. All the wells in the Fram area show that the interval velocity between base Cretaceousare and top Sognefjord decreases with increasing Draupne thickness. Since the Draupne thickness is smaller in 35/11-8 S than in 35/11-9 the interval velocity is higher in 35/11-8 S than in 35/11-9, and therefore the prognosed top Sognefjord depth was overestimated.

Location: Well 35/11-9				Spud location [m] UTM: 527092.97 E 6770299.00 N TD location [m] UTM: 527092.21 E 6770304.65 N			
Formation tops	**Time [ms] TWT**			**Depth [m] TVD MSL**			
	Prognosis	Actual	Result	Prognosis	Uncertainty	Actual	Result
Seabed	483				+ -1	357	
Top Utsira Fm.	882			755	+ -25	738	-17
Top Hordaland Fm.	889			777	+ -25	754	-23
Top Balder Fm.	1654	1628	-26	1525	+ -25	1505	-20
Top Shetland Gp.	1981	1992	+11	1919	+ -30	1943.5	+24.5
Top Svarte Fm.	2214	2224	+10	2244	+ -45	2274	+30
Top Draupne Fm.	2264	2274	+10	2352	+ -30	2360	+ 8
Top Sognefjord Fm.	2403	2402	- 1	2540	+ -30	2527	-13
Top Oxf. Turb.	2452	2457	+ 5	2611	+ -30	2624	+13
Base Oxf. Turb.	2498	2505	+ 7	2685	+ -30	2704	+19

Table 9.1: Geophysical summary

10 POST SITE SURVEY REPORT 35/11-9

WELL DATA:

1	**Distance from rig floor to sea level:**	29 m
2	**Water depth (MSL):**	357 m
3a	**Setting depth for conductor (m RKB):**	447 m
3b	**Leak Off / Formation Integrity Test (g/cc):**	N/A
4a	**Setting depth for casing on which BOP mounted:**	1254 m
4b	**Leak Off / Formation Integrity Test (g/cc):**	1.84 sg EMW
5	**Depth (m RKB & two way time) to formation/section/ layer tops:**	542 m/ 656 ms

Base Pleistocene:	Top Utsira Fm.:	767 m/ 860 ms
Base Utsira Fm.:	783 m/ 882 ms	

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 logs in the upper part of Pleistocene are poor and sand layers are not reliably resolved (36" hole).

Pleistocene layers / intervals: 405-448 m/512-556 ms, 530-542 m/656-645 ms.

Pliocene layers: 725-764 m/820-816 ms,

L. Miocene layers: 767-769 m/820-823 ms, 774-783 m/830-882 ms.

Oligocene layers: 1063-1064 m/1157-1158 ms, 1065-1066m/ 1159-1160 ms.

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 & Two Way Time) of unconformities at the well location:

Base Pleistocene:	542 m/ 656 ms
Top Utsira Fm.:	767 m/ 820 ms
Base Utsira Fm.:	783 m/ 882 ms
Mid Oligocene Unconformity:	1089.5 m/ 1178 ms

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

405-448 m: Pleistocene sand layers and pockets expected to have low to medium continuity.
530-542 m: Pleistocene sand layer expected to have high continuity.
725-764 m: This interval with Pliocene sand layers is regional with increasing thickness towards the northeast. The interval is absent in the wells in the southern part of Block 35/11.
767-783 m: The Utsira sands thin to the east and south, with increasing fines content, such as the thin clay found at the top of the unit from 769 - 774 m.
1063-1064 m: Oligocene sand string, expected to have low continuity.
1065-1066 m: Oligocene sand string, expected to have low continuity.

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

Amplitude anomalies have been mapped at three levels (m RKB and Two Way Time):

417 m (524 ms): More than 500 m from planned spud location
446 m (555 ms): 250 m to NW
477 m (583 ms): More than 500 m from planned spud location

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:** No shallow gas indications were identified at the planned location and no shallow gas was predicted. No indications of shallow gas were encountered during drilling.

-sand bodies: The Pleistocene interval predicting sand rich clay and sand pockets was encountered between 405 m and 448 m, as opposed to 409 m to 449 m, therefore 4 m shallower than predicted. **sand bodies:** The Pleistocene interval predicting sand rich clay and sand pockets was encountered between 405 m and 448 m, as opposed to 409 m to 449 m, therefore 4 m shallower than predicted. The basal Pleistocene sand was encountered at 530 m, 5 m shallower than predicted. The Pliocene sand interval at 725 m was encountered 5 m shallower than predicted. The Top Utsira Fm. was encountered at 767 m, 17 m shallower than predicted. The base Utsira Fm. was encountered at 783 m, 23 m shallower than predicted The great deviation for the Utsira Formation is caused by an error in the seismic pick.

The depths to the sand layers observed below the Utsira Fm. were not prognosed.

- **unconformities:** Base Pleistocene was observed at 542 m (656 ms) 4 m shallower than predicted. - **unconformities:** Base Pleistocene was observed at 542 m (656 ms) 4 m shallower than predicted. - **unconformities:** Base Pleistocene was observed at 542 m (656 ms) 4 m shallower than predicted. The Top Utsira Fm. was observed at 767 m (860 ms) and predicted at 784 m (882 ms). The Base Utsira Fm. was predicted at 806 m (905 ms) and observed at 783 m (882ms). The mid Oligocene unconformity was predicted at 1080 m (1178 ms), and observed at 1089.5 m (1178 ms).

- **correlation to nearby wells:** The seismic correlation to tie wells 35/11-4, 35/11-7 and 35/11-8S is good for the Base Pleistocene and the mid Oligocene unconformity. The seismic correlation to the Top Utsira Formation reflector is variable due to the presence of a very strong reflector at the base of the Pliocene sand interval which obscures the reflector. The correlation between the completed well logs and the seismic data (2D and 3D) is also variable for the same reason. The deviation between the prognosed and observed depths for the Base Utsira Fm. is caused by a wrong seismic pick.

11 STANDARD AND SPECIAL STUDIES

- **Norsk Hydro,1997:** Standard core description, Well 35/11-9.
- **Norsk Hydro,1997:** Reservoir geochemistry well 35/11-9.
- **Norsk Hydro,1997:** Reservoir quality well 35/11-9.
- **Norsk Hydro,1997:** Formation evaluation report 35/11-9.
- **Norsk Hydro,1997:** MDT Formation pressure and sampling report well 35/11-9.
- **Reslab,1997:** Conventional core analysis well 35/11-9.
- **Stratigraphical Laboratory,1997:** Well 35/11-9 Biostratigraphy, interval 1260 - 2830 m.
- **Norsk Hydro,1997:** Final VSP report well 35/11-9.
- **Norsk Hydro,1997:** Well 35/11-9 MDT Water analysis.
- **Norsk Hydro,1997:** Well 35/11-9 MDT Oil samples, transfer and PVT analysis.
- **Baker Hughes Inteq,1997:** End of Well Report, measurement while drilling, well 35/11-9.
- **Read Well Services,1997:** VSP Report, 35/11-9.

APPENDIX I

CORE DESCRIPTIONS

CORE REPORT

HYDRO

WELL: **35/11-9** DATE: 15.04.97 GEOL: T.H. Watts SCALE: 1:200

CORE NO: 1 FROM: 2638 m TO: 2666.3 m CORED: 28.3 m REC: 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
2640				**Sltst:** m-dk gry, hd, wl cmtd, fis, lam, v Mic/Micromic, v carb, fspr, abd vf sd, plt rem, sl dol			No dir fluor, slo strmg crm wh cut fluor, faint brn vis cut, m gn/yel res fluor, lt brn vis resd
2645		M M C		**Mic Sltst:** m - dk gry, hd, fis, abd musc Mic + Micromic, carb clasts + plt deb, sl sdy Tr fspr w/lams			
				Sandy Sltst: m - dk gry - brn dk gry, hd, abd vf sd, mic, fspr, sl dol carb			
				Sltst: m dk gry, hd, fis, mic carb, sl pyr, plt rem, Tr sd, fspr, sl dol			
2650				**Sdy Sltst:** dk brn gry-m bru, hd, sbfis-mass, v mic, carb, interlam w/Sst: lt brn hd, vf-vrs, wl cmt w/dol, mic, fspr, Tr arg mtrx, no vis por			Patchy dull brt straw yel dir fluor, v slw strmg yel wh cut fluor, no vis cut, wh resd fluor, no vis res - lt brn res
				Sltst: m-dk gry, hd, sbfis, v mic, carb, fspr, calc/dol vf sd			
				Laminated Sst: pl yel brn, frm-hd, fri, mic lams, f-vf, ang-sbang, fspr, sil cmt mod-pr vis por			
2655				**Sst:** pl yel, loc m gry, O stn trnsl gts, frm, fri, f occ vf, wl srt, ang occ sbang-sbrndd, musc mic, fspr (Kao), loc mic lams, wk sil cmt, Tr slty mtrx, v gd vis por			Med straw yel dir fluor, fst strmg mky wh cut fluor, no vis cut, crm wh res fluor, gn/yel vis res
2660		C					
		C		**Sst:** pl yel brn-pl gn brn, O stn, trnsl-op qtz, frm - hd, fri, vf - crs, ang - sbrndd, pr srt, Mic, sil cmt, r calc cmt, fspr (Kao) occ arg clasts, abd carb mat w/plt deb, gd vis por			
2665		C					Straw yel dir fluor inst flash cut, slo-mod strmg mky wh cut fluor no vis cut, ? wh res fluor gn/ yel vis res,-lt brn res

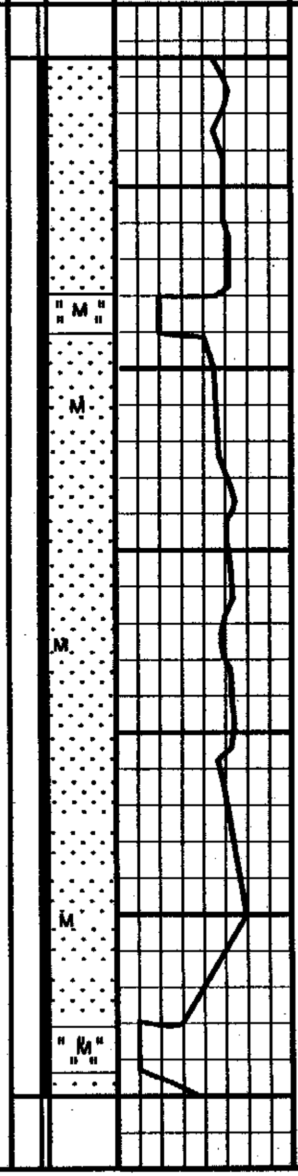
CORE REPORT

HYDRO

WELL: **35/11-9** DATE: 16.04.97 GEOL: Anderson/Eriksson/Pedersen SCALE: 1:200

CORE NO: 2 FROM: 2666.3 m TO: 2714.2 m CORED: 47.9 m REC: 47.9 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
2666.3				**Sst:** lt gry, Qtz, trnsl-clr occ op, pred m occ f-crs, gen sbang-occ sbrndd, spher occ sb spher mod hd, cmt w/sil, occ carb, occ Mic, mod - gd vis por			Fnt-mod pet od. No oil stn, uni brt yel/gn dir fluor, slo brt yel strmg occ inst cut fluor, no vis cut, brt pl yel fluor res, pl yel brn vis res.
2670							
				Slst: dk gry, mod hd, plty, com vf sd, non calc, micromic.			
2675							
				Sst: at 2677 m hd, wl cmt w/sil			
2680				**Sst:** lt gry brn-lt gry, Qtz, clr-trnsl, f-m r crs, sbang- sbrndd, sb spher, wl srt, mod hd, occ frm, cmt w/sil, Tr Mica, Mod vis por.			Below 2681 m. Cut fluorscence is less intense. (Pos top of transition zone)
2685							
2690							
				Slst: dk gry, mod hd, sb fis-plty, non calc, occ vf sd, Micromic.			No shows below 2692 m OWC between 2692 - 2695 m
2695							

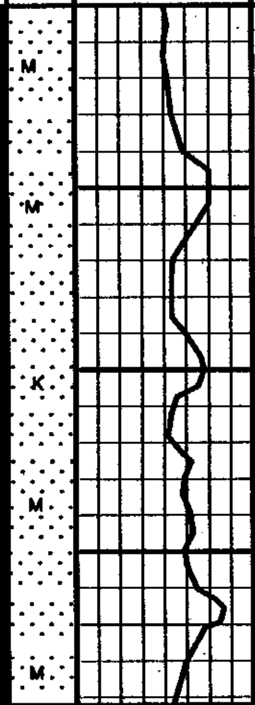


CORE REPORT

WELL: **35/11-9** DATE: 16.04.97 GEOL: Anderson/Eriksson/Pedersen SCALE: 1:200

CORE NO: 2 FROM: 2695 m TO: 2714.20 m CORED: 47.9 m REC: 47.9 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
2700				**Sst:** lt gry, Qtz, clr-trnsl, gen f-m, sbang-sbrndd, wl srt, mod hd, cmt w sil, Tr MicroMic, mod vis por.			No shows
2705							
2710				**Sst:** lt gry, Qtz, clr-trnsl, f-crs, sbang, sb spher-sb elong, mod srt, mod hd, cmt w/sil, occ lithic frag, Tr Mic, mod vis por.			No shows
2714.20							



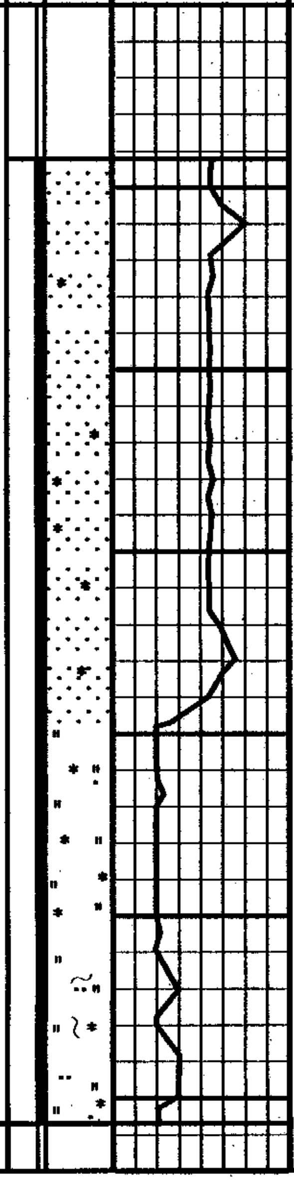
CORE REPORT

HYDRO

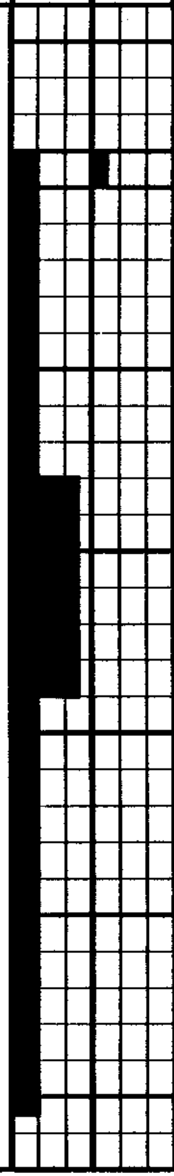
WELL: 35/11-9 DATE: 17.04.97 GEOL: T. Pedersen SCALE: 1:200

CORE NO: 3 FROM: 2714.20 m TO: 2740.95 m CORED: 26.75 m REC: 26.75 m 92.3%

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



Flu (tr m g) | Cut (tr m g)



Depth m RKB	Lithological Description	Shows description
2715	**Sst:** lt-m dk gry, clr-trnsl Qtz, occ mky wh, vf - v crs, dom f-m, sbang-sbrndd, mod srt, Tr Clyst-Sltst clast, Tr Micropyr, cotd,. P., Tr Kao Mtrx, Tr sil cmt, r -Tr calc cmt, r - Tr carb Mat, pr vis por	no dir Fluor w/mnr yel brt spots, slo v wk wh-bl wh strmg cut fluor, no vis cut, yel-wh res fluor, no vis res
2720	**Sst:** lt-m dk gry, dk gry I.P., clr-trnsl Qtz, occ mky wh, f-v crs, dom f-m, sbang-sbrndd, mod srt, arg & Kao Mtrx, gd Tr calc cmt, gd Tr clyst-sltst clast, Tr Pyr, r Tr carb Mat, pr vis por	
2725	**Sst:** wh-lt gry, clr-trnsl, Qtz, f-crs, dom f-m, mod srt, calc cmt & Kao Mtrx, Tr Clyst clasts, Tr Musc, gd-f-vis por	no dir Fluor, pr vis wh bl strmg cut fluor, no vis cut, bl-wh mky wh res fluor, no vis res
		no dir Fluor, strmg bl-wh cut fluor, no vis cut, wk bl wh res fluor, no vis res
2730	**Sltst:** gry blk-blk, hd, flk, brit, shaly, non calc, v arg, v gd Tr Musc, Tr lt brn Qtz Gr I.P., Tr carb Mat	no dir Fluor, brt bl-wh slw strmg/ blmg cut fluor, no vis cut, brt yel/gn wh res ring, no vis res
2735	**Sltst w/inbd sst & md draping:** Sltst a.a w/lt gry-wh sst intbd, clr-trnsl Qtz, vf-f, wl srt, calc cmt & Kao Mtrx, pr vis por, w/m brn - brn gry md draping, Tr Musc	no dir Fluor, yel/bl wh fst strmg/ olmg cut fluor, no vis cut, dull wh res fluor, no vis res.
	Sdy llst: brn-brn gry, v hd, vf sdy, m-crs Gr I.P., abd Musc, Tr carb Mat, r Tr Fspr, calc	
2740	**Mic Sltst:** gry blk-blk, hd, mass, f lk, splint, abd Mic, v calc I.P., Tr vf-f Sd Gr	

APPENDIX II

WELL SUMMARY

GEOLOGICAL WELL SUMMARY

MDT RESULTS

WELL SUMMARY:

Coord: 61° 03' 54.23"N 03° 30' 06.95"E **UTM:** 6 770 298.9 mN 527 093.0 mE **Zone:** ED-50 UTM ZONE 31 **Line:** CM 03° E **Rig:** West Delta **Waterdepth:** 357 m **Stopped in:** Heather	**On location:** 07.02.97 **Spudded:** 02.03.97 **At T.D.:** 18.04.97 **Completed:** **T.D. Driller:** 2830 m **T.D. Logger:** 2820 m **Wireline Logging:** Schlumberger **Mudlogging:** Geoservice	**WELL:** 35/11-9 **COUNTRY** Norway

OPERATOR Norsk Hydro **LICENCE**

OWNED BY: Statoil (50%) N.Hydro (25%), Mobil (25%)

TARGETS
Primary: Intra heater early oxfordian turbidites
Secondary: Sognefjord Fm.

RESULTS

Plugged and abandoned.

Oil recovery

Confirm OWC

CASING

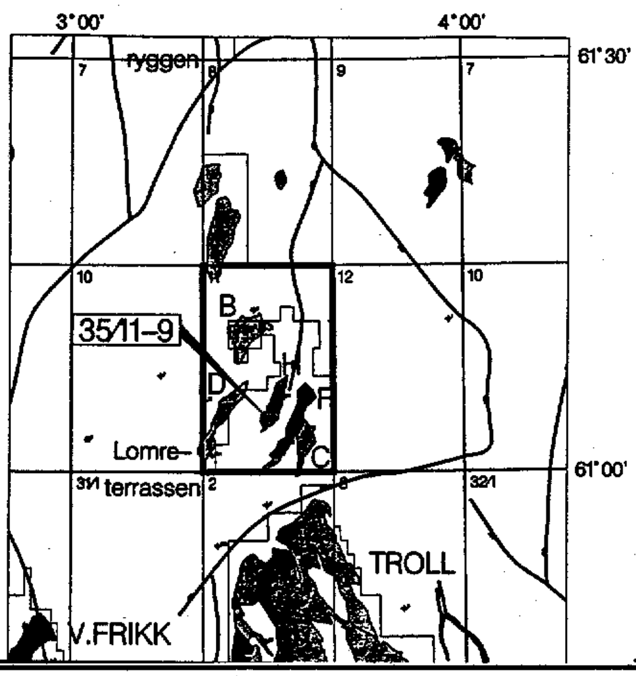
30" 447 m
13 3/8" 1243 m

CORES

1. C: 2638 - 2666.27 m
   R: 2638 - 2666.27 m
   (100%)
2. C: 2666.27- 2714.2 m
   R: 2666.27-2714.2 m
   (100%)
3. C: 2714.2-2743.0 m
   R: 2714.2-2740.95 m
   (92.3%)

GAS RECORD

386 - 1250 m: Return to seabed
1250-2389 m : 0.03 - 0.25% C1-C3, iC4
2389-2450 m : 0.34 - 2.30% C1-C5
2450-2570 m : 1 - 4.5% C1-C5
2570-2638 m : 1 - 2.2% C1-C5
2638-2650 m : 0.01 -0.24% C1-C4
2650-2714 m : 1.16 - 5.99% C1-C5
2714-2830 m : 0.39 - 0.77% C1-C5



LOGS

DLL/MSFL/LDL/CNL/NGT/AMS	1A	2820 - 1180 m
MDT/GR/ACTS	1A	2565 - 2731 m
DSI/FMI/GR/ACTS	1A	2795 - 1225 m
VSP/GR	1A	

OIL SHOWS

2378-2570 m: Source rock type shows on Claystone
2570-2638 m: Weak source rock type shows on Siltstone
2638-2649 m: Weak gas show on Siltstone in core
2649-2681 m: Good oil shows on Sandstone in core
2681-2692 m: Moderate oil shows on Sandstone in core
2692-2730 m: Weak shows on Sandstone in core
2730-2830 m: Weak source rock type shows on Siltstone in core and cuttings.

GEOLOGICAL WELL SUMMARY

HYDRO

DEPTH m MD RKB	LITHO SECTION	SYSTEM	SERIES/STAGE	GROUP	FORMATION	DESCRIPTION	SHOWS
						Seabed 386 m	
						30" 447 m	
						Drilled with Returns to Seabed Lithology Interpreted from MWD	
		TERTIARY		NORDLAND GP.	Utsira	767 m	
						783 m	
				HORDALAND GP.		Clst: w/Ls/Dol Stringers	
						13 3/8" 1243 m	
						1st returns at 1243 m	

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

Located on:
61° 03' 54.23"N 6 770 298.9 mN
03° 30' 06.95"E 527 093.0 mE
MN 9201
Inline 5320
x-line 1455

Water depth: 357 m MSL

WELL **35/11-9**

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	Group	Formation	Description
TERTIARY	HORDALAND GP.		**Clst:** varicol gry brn-dk gn gry-olv gry, sft-frm, loc calc, micromic glauc
			Clst: pl gn gry loc purp gry, frm plty-tab, Tr Glau, Tr pyr foram
			Dol: crm wh calc/dol, occ orng vhd, crptoxln
			Clst: pl gn gry, frm, plty, Tr Glau
			Clst: m brn gry, sft-frm, v slty, ea, sl calc, org, Tr Pyr, Micromic.
			Clst: rd brn, frm, sbfis-ea, sl calc.
		Balder	1534 m **Clst:** Tuff, varicol bl gn-purp-brn frm-hd, wxy-ea, fspr incl sl calc, abdt Glauc
		Sele	1583.5 m **Clst:** gry brn occ lt grn gry-mod brn, frm, ea, v slty, micropyr Tr Glau
		Lista	1646 m **Clst:** olv gry brn-gy grn, sl slty, wxy, r calc.
		Heimdal	1715 m **Sst:** Qtz, clr-trnsl, vf-m, ang-sbrnd, pr srt, wk cmt w/calc. org Mtx, loc abdt Glauc, r Mica
		Lista	1784 m **Clst:** dk gn-brn gry-olv gry, frm non calc
		Våle	1855.5 m
		Ty	1910 m **Clst:** m brn gry occ lt gn gry, frm hygrafilic, ea, v slty, calc, micromic, Tr Glauc
CRETACEOUS		Jorsalfare	1972.5 m **Clst:** purp rd brn gry, frm, calc abdt glauc
			Ls: off wh-crm wh, sft-frm, chky
		Kyrre	2093 m **Clst:** u brn-gry gr, sft-frm, slily calc loc Mrl, occ Pyr, Glauc
		Svarte	2303 m **Ls:** pl yel-mlky wh-lt olv gry, frm brit-crmbly, arg, lam, xln-microxln Micropyr, Microglauc
			Sst: lt brn, gen vf-f occ m-crs, Tr Glauc
		CK	2381 m
JURASSIC	VIKING GP.	Draupne	2389 m **Clst:** brn blk-olv gry, frm, sb fis, slily calc.
			Clst: cl v blk-gr blk, frm-mod hd gen blky occ sb fis, slty, slily calc, occ vf sd, micropyr

GEOLOGICAL WELL SUMMARY

HYDRO

WELL **35/11-9**

Located on:
61° 03' 54.23"N 6 770 298.9 mN
03° 30' 06.95"E 527 093.0 mE

MN 9201
Inline 5320
x-line 1455

Water depth:357 m MSL

DEPTH m MD RKB	LITHO SECTION	SYSTEM	SERIES/STAGE	GROUP	FORMATION	DESCRIPTION	SHOWS
2500		JURASSIC		VIKING GP.	Draupne	**Slst:** brn gy-olv blk, frm-hd, sbfis-plty, ea, carb, micromic, slily calc.	
						2538.5 m	
2550					Sogn-Lc	2556 m Sst: lt-m brn gry, vf-f com m-crs, v slty, carb, pr cmt.	
						2580 m	
2600					Heather	**Slst:** m brn-olv brn, hd, ea, carb, loc calc, com vf sd, micromic.	
2650						2653 m	
2700					E.O.T.	**Sst:** brn gry-lt gry, Qtz, clr-trnsl, m, com f-m, occ f-crs, mod cmt w/silic r cmt w/calc, loc com Mica	
						2733 m	
2750					Heather A	**Slst:** gry brn, frm-sft, tracky, non calc v/occ calc incls, abdt vf sd com grdy slty Sst.	
2800							
						2830 m **Ls:** v pl orng, sft, crmbly, arg carb lams.	

Depth scale (m MD RKB / second scale):

2500	3750
2550	3800
2600	3850
2650	3900
2700	3950
2750	4000
2800	4050
2850	4100
2900	4150
2950	4200
3000	4250
3050	4300
3100	4350
3150	4400
3200	4450
3250	4500
3300	4550
3350	4600
3400	4650
3450	4700
3500	4750
3550	4800
3600	4850
3650	4900
3700	4950

HYDRO

FORMATION PRESSURE WORKSHEET

Well Name : 35/11-9 **Rig :** West Delta **Date :** 21- 97-04-22

Pressure Units : Bars **RKB-MSL :** 29m m. **MSL-SBed:** 357 m. **Witnessed by :** Andersen/Hinderaker/Rokke

Run No./ Test No.	Depth mMD RKB	Depth mTVD RKB	Initial Hydrostatic Pressure Strain	Initial Hydrostatic Pressure Quartz	Formation Pressure Strain	Formation Pressure Quartz	Final Hydrostatic Pressure Strain	Final Hydrostatic Pressure Quartz	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
19	2717	2715,2	335,96	335,94	272,08	272,06	336,01	335,95	22:14	22:16	1,02	88,7	Y				138,9mD
20	2723,5	2721,7	336,74	336,75	272,67	272,68	336,72	336,75	22:23	22:26	1,02	88,9	Y				38,7mD
21	2731	2729,1	337,62	337,63	273,41	273,39	337,58	337,65	22:31	22:34	1,02	89,3	Y				136,1mD
22	2725	2723,2	336,90	336,90	272,83	272,82	336,90	336,91	22:45	22:47	1,02	89,7	Y				104,1mD
23	2728	2726,2	337,16	337,18	273,02	273,00	337,14	337,15	23:30	23:33	1,02	88,8	Y				117,9mD
24	2714	2712,3	335,32	335,30	271,67	271,66	335,38	335,37	23:40	23:43	1,02	89,1	Y				128,0mD
25	2708	2706,3	334,65	334,63	271,09	271,08	334,63	334,62	23:47	23:50	1,02	89,3	Y				213,6mD
26	2706	2704,2	334,50	334,50	271,03	270,93	334,48	334,49	00:25	14:00	1,02	97,0	Y	WATER		1GAL+2 X 450	Flow control used
27	2677,4	2675,9	332,70	332,71	268,35	268,38			14:20	14:40	1,02		N	OIL			Plugged
28	2679,9	2678,4							14:50	15:00			N	OIL			Tight
29	2677,5	2676	332,86	332,81	268,51	268,45	330,50	330,52	15:10	22:30	1,02	96,5	Y	OIL		4x450cc	Large area probe
30	2565	2564,6	316,72	316,77					22:50	23:00			N				Tight
31	2565,3	2564,9	316,85	316,77	259,43	259,35	316,82	316,72	23:10	23:20	1,03	89,4	Y				2,4 Darcies(Not full Drawdown)

NB: Fmtn Press sg calculated from RKB

MDT2.WKS

FORMATION PRESSURE WORKSHEET

HYDRO

Well Name :	35/11-9			Rig :	West Delta							Date :	21- 97-04-22				
Pressure Units :	Bars			RKB-MSL : 29m m.		MSL-SBed: 357 m.						Witnessed by :		Andersen/Hinderaker/Rokke			
Run No./ Test No.	Depth mMD RKB	Depth mTVD RKB	Initial Hydrostatic Pressure Strain	Initial Hydrostatic Pressure Quartz	Formation Pressure Strain	Formation Pressure Quartz	Final Hydrostatic Pressure Strain	Final Hydrostatic Pressure Quartz	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
1	2654	2652.6	328,40	328,31	-	-	-	-	19:54	19:56	-	81,5	N				NO SEAL
2	2653.8	2652.4	328,19	328,20	266,90	266,91	328,20	328,05	20:01	20:03	1,03	81,7	Y				30,5mD
3	2660	2658.6	329,00	329,01	267,29	267,30	329,03	329,00	20:07	20:09	1,06	82,3	Y				320,2mD
4	2665	2663.5	329,61	329,64	267,61	267,63	329,60	329,58	20:14	20:16	1,02	82,9	Y				479,1mD
5	2670	2668.5	330,18	330,29	267,98	267,97	330,20	330,20	20:21	20:23	1,02	83,5	Y				556,0mD
6	2674	2672.5	330,73	330,76	-	-	330,77	330,78	20:29	20:31	-	84,1	N				TIGHT
7	2673.5	2672	330,69	330,73	268,17	268,20	330,70	330,71	20:39	20:42	1,02	84,6	Y				18,3mD
8	2677	2675.5	331,08	331,08	268,44	268,43	331,07	331,07	20:46	20:48	1,02	85,1	Y				400,2mD
9	2680	2678.5	331,49	331,50	268,64	268,62	331,50	331,51	20:54	20:56	1,02	85,4	Y				486,8mD
10	2682	2680.4	331,68	331,70	268,79	268,78	331,70	331,71	21:00	21:02	1,02	85,8	Y				111,7mD
11	2684.5	2682.9	332,02	332,04	268,93	268,92	331,99	332,01	21:07	21:10	1,02	86,0	Y				300,8mD
12	2687	2685.4	332,31	332,28	269,12	269,11	332,33	332,30	21:15	21:18	1,02	86,4	Y				124,4mD
13	2689.5	2687.9	332,60	332,60	269,33	269,33	332,61	332,59	21:27	21:29	1,02	86,8	Y				152,7mD
14	2692.5	2690.9	332,98	332,97	-	-	333,05	333,03	21:34	21:36	-	87,0	N				TIGHT
15	2692	2690.4	332,90	332,89	269,61	269,58	332,95	332,92	21:41	21:44	1,02	87,3	Y				320,4mD
16	2699.4	2697.7	333,86	333,81	270,41	270,39	333,89	333,83	21:48	21:51	1,02	87,6	Y				79,9mD
17	2706	2704.3	334,66	334,63	271,01	271,03	334,67	334,65	21:56	21:59	1,02	87,9	Y				266,6mD
18	2710.5	2708.8	335,18	335,16	271,47	271,44	335,16	335,11	22:06	22:09	1,02	88,3	Y				109,0mD

NB: Fmtn Press sg calculated from RKB

SECTION C

OPERATIONS

Norsk Hydro

GENERAL INFORMATION ON WELL 35/11-9

Field : FRAM
Country: NORWAY
Licence : 90
UTM zone : 31
Central Meredian: 3' E
Horiz. Datum: ED50

LOCATION coordinates:		Surface	Target
UTM	N [m]:	6770299.0	6770301.5
UTM	E [m]:	527093.0	527091.9
Geographical	N :	61 03'54.23"	61 03'54.31"
Geographical	E :	03 30'06.95"	03 30'06.88

Water depth : 357 m Reference point height: 29 m
Formation at TD : No formation data found

Operator : NORSK HYDRO PRODUKSJON A/S Share: 25.00 %

Partners : DEN NORSKE STATS OLJESELSKAP A/S Share: 50.00 %
MOBIL EXPLORATION NORWAY INC. Share: 25.00 %

RIG NAME : WEST DELTA

Total depth (RKB) : 2830 m MD 2828 m TVD

TIME SUMMARY

Start time : 07-feb-1997 10:00
Spudding date : 02-mar-1997
Abandonment date: 03-may-1997

Main operation	Hours	Days	%
MOBILIZATION	151.5	6.3	7.4
DRILLING	438.5	18.3	21.3
FORMATION EVALUATION MWD	0.5	0.0	0.0
FORMATION EVALUATION LOGGING	71.5	3.0	3.5
FORMATION EVALUATION CORING	70.5	2.9	3.4
PLUG AND ABANDONMENT	113.0	4.7	5.5
DOWNTIME MOBILIZATION	675.5	28.1	32.9
DOWNTIME DRILLING	414.0	17.2	20.2
DOWNTIME FORM. EVAL. LOGGING	86.0	3.6	4.2
DOWNTIME PLUG AND ABANDONMENT	33.0	1.4	1.6
Sum	2054.0	85.6	

Hole and casing record

Hole	Depth [m MD]	Casing	Depth [m MD]
36"	447	30"	447
17 1/2"	1250	13 3/8"	1243
12 1/4"	2325		
8 1/2"	2830		

Well status : PERMANENTLY ABANDONED

TABLES

FIGURES

1 OPERATIONS AND EXPERIENCES

All depths referenced to RKB, 29 m above MSL. Seabed was located at 386 m.

The semi submersible rig "West Delta" went on contract at 10^{00} hours on February 7 1997 for drilling the appraisal well 35/11-9 on the Fram field.

Total time used 85,6 days (2054 hr's) of which 35,2 days (845,5 hr's) was operational time (41,16 %). For detailed break down see report 1-86.

1.1 Positioning and anchoring

Total time used: 544,5 hrs (22,7 days) Operational time: 89,5 hrs (16,44 %)
Downtime: 455 hrs (83,56 %)
For detailed breakdown; see report 1-21.

The navigation and position system used were Differential Global Position System.

The position / co-ordinates of the wellhead:

6 770 299 m N 527 093 m E

Rig heading was 200°.

The rig started anchorhandling for moving from Ølen to location 35/11-9 at 00^{00} hours on the February 12 after waiting on weather for 4.6 days. The rig arrived location at 10^{00} hours on February 13.

At 15^{00} hours on March 1 started the preparations for drilling of the 36" top section after waiting on weather and performing 5.2 days rig repair on anchorwinches and generators.

1.2 36" section

Total depth of section: 447 m.

Total time used: 406,5 hrs (16,9 days).Operational time: 80 hrs (19,68 %)
Downtime: 326,5 hrs (80,32 %)
For detailed breakdown; see report 22-40

Drilling

The well was spudded at 21^{00} hours on March 2. The section was drilled with 1.2 sg spud mud with 5 m^3 high viscous pills every 10 m. The hole was washed down from 386 to 391 m. After reaching TD at 447 m the hole was displaced to 1.4 sg high viscous mud. Due to waiting 10,8 days on consent from NPD to continue drilling the hole was left open without running the 30" conductor.

After receiving new consent to drill a wiper trip was performed. During the wiper trip a tight spot was observed at 432 m. After circulating the hole clean it was displaced to 1.4 sg hi-vis mud. During running the 30" casing hung up at 430 m, and had to be pulled out. The 36" BHA was run in, and it hung up at the same point as the casing. The string was then reamed and washed down to TD. The hole was displaced to 1.4 sg mud before the 30" casing was run to TD.

1.3 17 1/2" section

Total depth of section: 1250 m.

Total time used: 448 hrs (18,67 days). Operational time: 159,5 hrs (35,6%)
Downtime: 288,5 hrs (64,4%)

For detailed breakdown; see report 40-59

The cement and 1 m of new formation was drilled out with a 24" bit from 442 to 448 m.

The 17 1/2" hole was drilled in one run (ROP = 27.18 m/h) to TD using a roller-cone bit SS44SGLTJ4 from SDBS.

After reaching TD, the hole was displaced to 1.2 sg mud. Due to 25 T overpull the hole had to be backreamed from 1250 to 1065 m and from 910 m to 775 m. Several tight spots were observed from 570 to TD.

During running of the 13 3/8" casing in open sea, without BOP and riser, the casing hung up at 734 m due to tight hole. The casing running was continued until most of the landingstring was run. ROV was used for guiding the casing into the wellhead, but not during further running of casing. After observing irregular direction of the landingstring in the moonpool the ROV was run to inspect the wellhead. The ROV picture showed that the casing was bent over the 30" housing and was laying on the seabed. The rig was then pulled 10 m off location. During the attempt to pull the casing it broke with 29 joints in the hole and 28 joints left on the seabed. The casing left in hole was worked down 2 m, and then milled down 2,5 m. It was then pulled loose with 125 T overpull using a taper mill and spear assembly.

After pulling out of hole the rig had to wait 54 hr's due to waiting for backloading to boat due to insufficient payload.

The hole was then reamed to TD, and displaced to KCL mud before running the 13 3/8" casing. The casing was washed down from 1160m to landing point at 1243m. The casing was cemented and pressure tested to 142 bar.

1.4 12 1/4" section

Total depth of section: 2325 m.

Total time used: 119 hrs (4,96 days). Operational time: 117,5 hrs (98,74%)
Downtime: 1,5 hrs (1,26 %)

For detailed breakdown; see report 59-64

After running BOP the cement and 3 m of new formation was drilled out with a 12 1/4" bit and a LOT to 1,69 sg was performed.

The 12 1/4" hole was drilled in one run to TD using a PDC bit, Smith M73P. MW 1.25 sg. The section was drilled with high flowrate; 3400 - 3600 LPM, and high RPM; 160-200 RPM. The holecleaning was good, even with high ROP (70-100 m/h). Four hi-vis pills was pumped, but with no increase i cuttings on shakers. The section was drilled with reduced WOB to reduce the building tendency of the BHA. The hole was displaced to 1.2 sg mud before pulling out of hole due to formation evaluations concerns.

1.5 8 1/2" section

Total depth of section: 2830 m.

Total time used: 328 hrs (13,7 days). Operational time: 224 hrs (68,3 %)
Downtime: 104 hrs (31,7 %)

For detailed breakdown; see report 64-78

Further drilling was continued in 8 1/2" hole using a PDC bit, Smith M50P down to 2450 m MD before POOH due to steering problems and failure on the GR-sensor.

At 2325 m the hole was displaced to new 1,2sg Anco 2000 mud due to too high sulphate concentration for MDT fluid sampling. Mixing of new mud from Rhodopol 23 and KCL decreased the sulphate concentration from 400 to 50 ppm.

The rest of the section down to coring point at 2638 was drilled using a roller cone bit. The motor angle was increased from 0.78 to 1.15 deg, which gave good responce on the steering capability.

The first core was cut from 2638m to 2666,3m with 100 % recovery. Core #2 was cut from 2666.3m to 2715 m with 100% recovery. Core #3 was cut from 2715m to 2743 m with 95.4% recovery.

The cored interval was then reamed using a roller cone bit, and drilling of rathole down to TD at 2830 was performed.

A DDL/MSFL/DSI/LDL/CNL/GR/SP/AMS logging string was RIH and logging of interval 2820m to 2630m, 2740m to 2630m, 2630m to 2500m and 2500m to 1180 m was performed. Two logging tool strings were not able to pass through the hole at 2592m, and was both POOH . The hole was reamed with a 8 1/2" bit, and the MDT/GR/ACTS was RIH, but hang up at 2369 m. Another reaming was performed and the mud weight was increased from 1,2sg to 1,25sg. The MDT/GR/ACTS logging string was RIH and pressure point, water samples and oil samples was taken. A DSI/FMI/GR/ACTS string was then RIH and logging was performed from 2732m to 2608m and from 2795m to 1225m. A VSP/GR string was RIH, but did not pass through the hole at 2325 m. The interval from 2320 to 1820 was logged. A 8 1/2" wiper trip was performed and the VSP/GR was RIH and logged interval from 2810m to 620m.

1.6 Plug and abandonment

Total time used: 146 hrs (6,1 days). Operational time: 113 hrs (77,4%)
Downtime: 33 hrs (22,6 %)

For detailed breakdown; see report 78-84

A cement plug was the set from 2819 to 2480 m. A EZSV-packer was set at 1200 m and pressure tested.

A cement plug was then set from 1200m to 1044m before POOH.

After pulling the wear bushing and BOP, casing cutting equipment with a stabilised BHA was stabbed in the wellhead and cut casing at 391,5 m. An attempt to pull the casing using a spear failed. An attempt using a 18 5/8" running tool also failed. During a new attempt to pull the casing, the bumper sub twisted of the mandrel, and the cutting assembly was fished using an overshot and grapple. A bumper sub from the rig was run with no sucess. A new cut was then performed at 390m without bumper sub, and the 18 5/8" wellhead housing came loose from the 30" conductor, and was pulled out of the water. An attempt to enter the 30" casing with cutting equipment failed, and a stop ring had to be removed from the cutting assembly. The 30" casing was then cut at 389,5 m and POOH with PGB. An attempt to release the spear on surface failed, and the spear had to be pushed through the bottom of the 30" conductor.

1.7 Anchor handling.

Total time used: 62 hrs (2,6days). Operational time: 62hrs (100%)
Downtime: 0 hrs (0 %)

For detailed breakdown; see report 84-86

The rig started to move to location at 34/8-A-13 H at Visund at 23:45 hrs on May 3 1997.

Final Well Report 35/11-9

Daily Report on Well 35/11-9

Norsk Hydro

DAILY REPORT ON WELL 35/11-9

Daily report no: 1 Date : 07-feb-1997
Midnight depth : m MD Estimated PP: sg Mudweight: sg

Stop time	Description
10:00	No activity. Rig on contract from 10:00 hours.
23:59	Waiting on weather for rig move to location.

Daily report no: 2 Date : 08-feb-1997
Midnight depth : 0 m MD Estimated PP: sg Mudweight: sg

Stop time	Description
23:59	Waiting on weather for rig move to location.

Daily report no: 3 Date : 09-feb-1997
Midnight depth : m MD Estimated PP: sg Mudweight: sg

Stop time	Description
23:59	Waiting on weather for rig move to location.

Daily report no: 4 Date : 10-feb-1997
Midnight depth : m MD Estimated PP: sg Mudweight: sg

Stop time	Description
23:59	Waiting on weather for rig move to location.

Daily report no: 5 Date : 11-feb-1997
Midnight depth : 0 m MD Estimated PP: sg Mudweight: sg

Stop time	Description
23:59	Waiting on weather for rig move to location.

Daily report no: 6 Date : 12-feb-1997
Midnight depth : m MD Estimated PP: sg Mudweight: sg

Stop time	Description
11:00	Prepared departure from Olen. Anchorhandling.
23:59	Rig move to new location 35/11-9.

Daily report no: 7 Date : 13-feb-1997
Midnight depth : m MD Estimated PP: sg Mudweight: sg

Stop time	Description
10:00	Arrived at location.
23:59	Waited on supply boats for anchor handling.

Norsk Hydro

DAILY REPORT ON WELL 35/11-9

Daily report no: 8 Date : 14-feb-1997
Midnight depth : m MD Estimated PP: sg Mudweight: sg

Stop time	Description
03:00	Wait on anchor handling boats.
06:00	Waited on weather.
23:59	W.O.W. Tow rig to location,arrive loc 1620hrs.

Daily report no: 9 Date : 15-feb-1997
Midnight depth : m MD Estimated PP: sg Mudweight: sg

Stop time	Description
12:00	WOW.TOW RIG TO LOC.
23:59	ANCHOR HANDLING.

Daily report no: 10 Date : 16-feb-1997
Midnight depth : 0 m MD Estimated PP: sg Mudweight: sg

Stop time	Description
07:30	Anchor handling. Anchor no.6 on bottom 07.06 hrs.
23:59	Wating on weather.

Daily report no: 11 Date : 17-feb-1997
Midnight depth : 0 m MD Estimated PP: sg Mudweight: sg

Stop time	Description
23:59	Waiting on weather.

Daily report no: 12 Date : 18-feb-1997
Midnight depth : 0 m MD Estimated PP: sg Mudweight: sg

Stop time	Description
12:00	Waiting on weather.
15:00	Prepare to move rig to location and tension anchors.
20:00	Move rig to location.
23:59	Tension anchors. Pick up 36" bottom hole assembly.

Daily report no: 13 Date : 19-feb-1997
Midnight depth : 0 m MD Estimated PP: sg Mudweight: sg

Stop time	Description
06:30	Tensioned anchors.
23:59	Worked on anchor no 4 motor. Changed brake pads on #3 anchor winch. Continued changing same on #9 winch.

Norsk Hydro

DAILY REPORT ON WELL 35/11-9

Daily report no: 14 Date : 20-feb-1997
Midnight depth : 0 m MD Estimated PP: sg Mudweight: sg

Stop time	Description
23:59	Rig repair.

Daily report no: 15 Date : 21-feb-1997
Midnight depth : 0 m MD Estimated PP: sg Mudweight: sg

Stop time	Description
23:59	Rig repair.

Daily report no: 16 Date : 22-feb-1997
Midnight depth : 0 m MD Estimated PP: sg Mudweight: sg

Stop time	Description
23:59	Rig repair.

Daily report no: 17 Date : 23-feb-1997
Midnight depth : 0 m MD Estimated PP: sg Mudweight: sg

Stop time	Description
23:59	Rig repair. Installation of new electrical motor on anchorwinch #4. Picked up a total of 93 std 5 1/2'" drillpipe and made up bit-hole opener-CDR-MWD & NMDC. Racked same back in derrick. Anchors to be tensioned to 140 t: 4-6-9-12.

Daily report no: 18 Date : 24-feb-1997
Midnight depth : 0 m MD Estimated PP: sg Mudweight: sg

Stop time	Description
08:00	Rig repair.
23:59	Waited on weather to chase/re-run/tension #6 and re-run/tension no 12 anchor.

Daily report no: 19 Date : 25-feb-1997
Midnight depth : 0 m MD Estimated PP: sg Mudweight: sg

Stop time	Description
23:59	Waited on weather.

Daily report no: 20 Date : 26-feb-1997
Midnight depth : 0 m MD Estimated PP: sg Mudweight: sg

Stop time	Description
23:59	Waited on weather.

Norsk Hydro

DAILY REPORT ON WELL 35/11-9

Daily report no: 21 Date : 27-feb-1997
Midnight depth : 0 m MD Estimated PP: sg Mudweight: sg

Stop time	Description
05:30	Waited on weather. Started preparing for anchorhandling at 05:30 hrs.
11:00	Ran anchor no 6.
14:30	Ran anchor no 12. Cut 400 m of wire and replaced it with 500 m of chain.
17:00	Pre-tensioned anchor no 6 and 12 to 100 MT.
19:00	Pre-tensioned anchor no 4, 6, 9 and 12 to 140 MT.
23:59	Waited on weather.

Daily report no: 22 Date : 28-feb-1997
Midnight depth : 0 m MD Estimated PP: sg Mudweight: sg

Stop time	Description
23:59	Waited on weather.

Daily report no: 23 Date : 01-mar-1997
Midnight depth : m MD Estimated PP: sg Mudweight: sg

Stop time	Description
15:00	Waiting on weather.
18:30	Made up cross overs to the hang off tool, and racked it in the derrick.
20:00	Made up the spudding assembly with the MWD tool. Calibrated the MWD tool. Ran in 1 stand 9 1/2" drill collar to 28 m.
23:00	Prepared for spudding. Pre tensioned anchor no. 4,6,7,8,9, 10,11,12 to 180 ton for 15 minutes.
23:59	Moved the rig to well location.

Daily report no: 24 Date : 02-mar-1997
Midnight depth : 397 m MD Estimated PP: 1.03 sg Mudweight: 1.06 sg

Stop time	Description
00:30	Continued moving the rig to the well location. Lost hydraulic power on the anchor winches.
04:30	Repaired the hydraulic hose for the anchor winches.
07:30	Continued positioning the rig prior to spud.
08:00	Lubricated the rig.
11:30	Continued making up the spudding bottom hole assembly. Ran in to 140 m.
12:30	Tested the MWD tool.
13:00	Ran in to 199 m.
17:30	Repaired broken (thorn off) hydraulic hose on the top drive.
18:30	Continued to run in to 371 m.
21:00	Installed one beacon 12 m away from the drill string, and two marker buoys, 7 m and 7.5 m away from the drill string. Checked the signals from the beacon.
23:00	Spudded the well. Tagged the sea-bed at 386 m. Washed down from 386 m to 391 m. Took a survey (0.17 deg.) Continued to wash/drill down to 397 m. Pumped 5 m3 high viscous pill, and performed a survey (0.53 deg.).
23:59	Trouble shooting on the draw work brake.

Norsk Hydro

DAILY REPORT ON WELL 35/11-9

Daily report no: 24 Date : 02-mar-1997
Midnight depth : 397 m MD Estimated PP: 1.03 sg Mudweight: 1.06 sg

Stop time	Description

Daily report no: 25 Date : 03-mar-1997
Midnight depth : 420 m MD Estimated PP: 1.03 sg Mudweight: 1.06 sg

Stop time	Description
21:30	Trouble shooting/repairing the draw work brake. Waiting on spare parts. Repairing electrical cables for the Hitec driller control console.
23:59	Continued to drill the 17 1/2"x36" hole from 397 m to 420 m. Pumped 5 m3 high viscous pills to clean the hole every 10 m..

Daily report no: 26 Date : 04-mar-1997
Midnight depth : 447 m MD Estimated PP: 1.03 sg Mudweight: 1.06 sg

Stop time	Description
04:00	Continued to drill 17 1/2" x 36" hole from 420 m to 431 m.
05:30	Calibrated/repaired the heave compensator.
11:30	Continued drilling 17 1/2" x 36" hole 431 m to 447 m.
12:00	Pumped 25 m3 high viscous pill, and displaced it with 50 m3 sea water. Took a survey (0.9 deg at 431.6 m survey depth). Displaced the hole to 1.20 sg high viscous mud.
13:00	Performed a wiper trip to 391 m.
13:30	Ran back to TD of the well. Washed a tight spot at 430 m.
14:00	Circulated bottoms up. Displaced the hole to 1.40 sg high viscous mud.
17:00	Pulled out of the hole.
18:00	Rigged up to run 30" conductor. Held pre-job safety meeting with the crew.
23:00	Ran the 30" conductor pipe. (1 shoe joint, 3 intermediate joints, 1 housing joint).
23:59	Prepared to run the cement stinger. Installed the running tool. Removed the 30" conductor elevator to be able to lower the housing joint. Racked the running tool in the derrick.

Daily report no: 27 Date : 05-mar-1997
Midnight depth : 447 m MD Estimated PP: 1.03 sg Mudweight: 1.06 sg

Stop time	Description
01:00	Waited on the weather. Not able to land the 30" housing in the PGB safely due to bad weather.
02:00	Continued waiting on the weather. Pulled the conductor out of the water. Secured it in the moon pool.
12:30	Waiting on the weather.
23:59	Waiting on further notice from the land organization.

Norsk Hydro

DAILY REPORT ON WELL 35/11-9

Daily report no: 28 Date : 06-mar-1997
Midnight depth : 447 m MD Estimated PP: 1.03 sg Mudweight: 1.06 sg

Stop time	Description
23:59	Waiting on further notice from land organization.

Daily report no: 29 Date : 07-mar-1997
Midnight depth : 447 m MD Estimated PP: sg Mudweight: 1.06 sg

Stop time	Description
23:59	Mobilization. Performing maintanance work.

Daily report no: 30 Date : 08-mar-1997
Midnight depth : 447 m MD Estimated PP: sg Mudweight: 1.06 sg

Stop time	Description
23:59	Mobilization. Performing maintenance work.

Daily report no: 31 Date : 09-mar-1997
Midnight depth : 447 m MD Estimated PP: sg Mudweight: 1.06 sg

Stop time	Description
23:59	Mobilizing. Performing maintenance work.

Daily report no: 32 Date : 10-mar-1997
Midnight depth : 447 m MD Estimated PP: 1.03 sg Mudweight: 1.06 sg

Stop time	Description
23:59	Mobilized. Performed maintenance work.

Daily report no: 33 Date : 11-mar-1997
Midnight depth : 447 m MD Estimated PP: 1.03 sg Mudweight: 1.06 sg

Stop time	Description
23:59	Mobilizing. Performing maintenance work.

Daily report no: 34 Date : 12-mar-1997
Midnight depth : 447 m MD Estimated PP: 1.03 sg Mudweight: 1.06 sg

Stop time	Description
23:59	Mobilizing. Performing maintenance work.

Norsk Hydro

DAILY REPORT ON WELL 35/11-9

Daily report no: 35 Date : 13-mar-1997
Midnight depth : 447 m MD Estimated PP: 1.03 sg Mudweight: 1.06 sg

Stop time	Description
23:59	Mobilizing. Performing maintenance work.

Daily report no: 36 Date : 14-mar-1997
Midnight depth : 447 m MD Estimated PP: 1.03 sg Mudweight: 1.06 sg

Stop time	Description
23:59	Mobilizing. Performing maintenance work.

Daily report no: 37 Date : 15-mar-1997
Midnight depth : 447 m MD Estimated PP: 1.03 sg Mudweight: 1.06 sg

Stop time	Description
23:59	Mobilizing. Performing maintenance work.

Daily report no: 38 Date : 16-mar-1997
Midnight depth : 447 m MD Estimated PP: 1.03 sg Mudweight: 1.06 sg

Stop time	Description
08:00	Mobilizing. Performing maintenance work. Non-conformances 10.412, 10.414, 10.415, 10.386, 10.397, 10.417, 10.419, 10.420, 10.390, 10.430, 10.431 signed out.
09:30	Prepared/rigged up for drilling activities.
10:30	Made-up 36" BHA.
13:00	Ran in to the seabed.
15:30	Ran in the hole to 447 m.
17:30	Circulated the hole clean. Displaced the hole to 1,40 sg hi-vis mud. Survey at TD; inclination 0,6 degrees and azimut 350 degrees.
19:00	Pulled out of the hole.
21:00	Rigged up for running casing.
23:59	Ran 30" casing.

Daily report no: 39 Date : 17-mar-1997
Midnight depth : 447 m MD Estimated PP: 1.03 sg Mudweight: 1.06 sg

Stop time	Description
02:00	Made-up 5 1/2" cement stinger to the running tool.
03:00	Attempted to make-up running string to 30" running tool. Damaged threads on top drive saver sub.
04:30	Made-up 30" running tool and landed housing in drilling guide base on trolley.
05:30	Changed saver sub on top drive.
09:00	Ran 30" casing to the sea bed.
10:00	Entered the well and ran in the hole to 430 m.
11:00	Hung up with the casing string at 430 m. Attempted to work and circulate casing down.
15:30	Pulled out of the hole. Landed drilling guide base with housing on trolley.
18:00	Made-up 36" BHA assembly. Ran in the water to 140 m.

Norsk Hydro

DAILY REPORT ON WELL 35/11-9

Daily report no: 39 Date : 17-mar-1997
Midnight depth : 447 m MD Estimated PP: 1.03 sg Mudweight: 1.06 sg

Stop time	Description
18:30	Changed saver sub on top drive.
21:00	Ran in the water to 379 m. Positioned the rig above the hole.
21:30	Entered the well and ran in the hole. Hung up at 430 m.
23:59	Reamed and washed down from 430 m to 447 m. Worked tight area several times.

Daily report no: 40 Date : 18-mar-1997
Midnight depth : 447 m MD Estimated PP: 1.03 sg Mudweight: 1.06 sg

Stop time	Description
02:00	Reamed and worked tight spot at 430 m.
02:30	Displaced the hole to 1,40 sg mud.
04:30	Pulled out of the hole and racked BHA in derrick.
09:30	Made-up 30" running tool to landing string and ran in water to sea bed. Positioned rig and entered the hole.
10:00	Made-up cement head and cement hose to landing string.
10:30	Ran 30" casing to 447 m.
12:30	Oriented/turned drilling guide base relative to rig.
13:30	Circulated 25 m3 sea water. Pressure tested cement hose to 250 bar.
14:30	Mixed and pumped cement slurry. Displaced cement with sea water.
16:00	Waited on the cement to set up.
17:00	Opened Titus valve, dropped dart and sheared sleeve. Mixed and pumped cement slurry. Displacement cement with sea water.
20:30	Waited on the cement to set up.
23:00	Released running tool and pulled out of the hole.
23:59	Made up 24" BHA and 17 1/2" stabilisator.

Daily report no: 41 Date : 19-mar-1997
Midnight depth : 680 m MD Estimated PP: 1.03 sg Mudweight: 1.06 sg

Stop time	Description
01:30	Made-up 24" BHA and 17 1/2" stabilisator.
02:30	Repaired leaking air tubing on high clutch on drawwork.
04:00	Ran in the hole with 24" bit and tagged top of cement at 442 m.
05:00	Drilled cement from 442 m to 447 m. Drilled 1 m of new formation.
05:30	Circulated the hole clean.
07:30	Pulled out of the hole. Laid down 24" BHA.
08:30	Laid down 17 1/2" bit and 36" hole opener.
09:30	Made up 17 1/2" BHA.
14:00	Ran in the hole and tagged bottom at 448 m.
19:00	Drilled 17 1/2" hole from 448 m to 515 m.
19:30	Changed filters on hydraulic unit for top drive.
23:59	Drilled 17 1/2" hole from 515 m to 680 m.

Norsk Hydro

DAILY REPORT ON WELL 35/11-9

Daily report no: 42 Date : 20-mar-1997
Midnight depth : 1250 m MD Estimated PP: 1.03 sg Mudweight: 1.06 sg

Stop time	Description
20:00	Drilled 17 1/2" hole from 680 m to 1250 m.
21:00	Displaced the hole to 1,20 sg mud.
23:00	Back-reamed the hole from 1250 m to 1065 m.
23:30	Circulated the hole clean.
23:59	Pulled out of the hole to 921 m.

Daily report no: 43 Date : 21-mar-1997
Midnight depth : 1250 m MD Estimated PP: 1.03 sg Mudweight: 1.06 sg

Stop time	Description
03:00	Pulled out of the hole to the casing shoe. Back-reamed from 910 m to 775 m.
05:00	Repaired leaking air tubing on high clutch on drawwork.
09:00	Ran in the hole to 1152 m. Reamed tight spot at 760 m and interval from 1060 m to 1152 m.
09:30	Investigated alarms on HPU.
11:30	Reamed from 1152 m to 1250 m.
12:30	Circulated the hole clean.
13:30	Displaced the hole to 1,2 sg mud.
17:00	Pulled out of the hole to the casing shoe.
17:30	Pulled out of the hole to seabed.
20:00	Washed the drilling guide base.
23:00	Pulled out of the hole. Racked the 17 1/2" BHA assembly in the derrick.
23:59	Loaded the cement head and racked same in derrick.

Daily report no: 44 Date : 22-mar-1997
Midnight depth : 1250 m MD Estimated PP: 1.03 sg Mudweight: 1.06 sg

Stop time	Description
02:30	Made-up cement wiper plugs to running tool. Made-up running tool to 18 3/4" housing and racked same in derrick.
04:30	Rigging up for running casing.
15:00	Ran 13 3/8" casing.
15:30	Picked-up wellhead and running tool from derrick.
17:00	Ran in the hole with casing to 660 m. Tight hole. Casing bent over 30" housing.
23:30	Pulled out of the hole. Casing parted after pulling 165 m of casing. 440 m casing left on seabed and 250 m casing left in hole.
23:59	Rigged down 13 3/8" casing equipment.

Daily report no: 45 Date : 23-mar-1997
Midnight depth : 1250 m MD Estimated PP: 1.03 sg Mudweight: 1.06 sg

Stop time	Description
03:00	Rigged-up 13 3/8" casing elevator on 5 1/2" drill pipe. Ran down to seabed.
04:00	Latched elevator onto the casing laying nearby the drilling guide base..
05:00	Retrieved guide wires no. 2, 3 and 4 to surface.

Norsk Hydro

DAILY REPORT ON WELL 35/11-9

Daily report no: 45 Date : 23-mar-1997
Midnight depth : 1250 m MD Estimated PP: 1.03 sg Mudweight: 1.06 sg

Stop time	Description
06:00	Pulled rig 10 m off location. Attempted to pull casing. Casing broke and elevator opened.
08:00	Retrieved drill pipe w/elevator to surface. Pulled rig back on location.
08:30	Investigated various failures in HPU.
12:00	Made-up 17 1/2" bit and ran in the well. Tagged top of fish at 386 m.
13:00	Worked fish down to 388 m.
14:00	Washed and cleaned area around top of fish.
21:30	Pulled out of the hole. Racked assembly in derrick.
23:59	Surveyed and identified lost casing on the sea bed.

Daily report no: 46 Date : 24-mar-1997
Midnight depth : 1250 m MD Estimated PP: 1.03 sg Mudweight: 1.06 sg

Stop time	Description
05:00	Surveyed and identified lost casing on the sea bed.
08:30	Made-up 26" flat bottom mill assembly. Tagged top of fish at 388,5 m.
11:00	Milled on the fish from 388,5 to 390 m.
13:00	Pulled out of the hole.
15:30	Made-up 12 1/4" taper mill and 13 3/8" casing spear assembly. Ran in the hole and tagged top of fish at 390 m.
19:00	Attempted to stab the mill into the fish.
20:00	Pulled out of the hole to 170 m.
21:30	Repaired hydraulic leakage on hose on upper racking arm.
22:30	Pulled out of the hole with the taper/spear assembly.
23:59	Made-up 26" flat bottom mill assembly.

Daily report no: 47 Date : 25-mar-1997
Midnight depth : 1250 m MD Estimated PP: 1.03 sg Mudweight: 1.06 sg

Stop time	Description
02:00	Ran in hole with 26" flat bottom mill. Tagged top of fish at 390 m.
06:00	Milled on the fish from 390 m to 391 m.
08:00	Pulled out of the hole.
11:00	Ran TV-camera on pod wire. Stabbed camera into housing and got picture on top of the fish. Pulled out of the hole with the TV-camera.
14:00	Made-up 12 1/4" taper mill with 13 3/8" spear assembly. Ran in hole and entered the housing.
15:00	Entered the fish and engaged the spear. Pulled the fish loose with 125 T overpull.
18:00	Pulled the fish out of the hole.
19:30	Rigged-up 13 3/8" casing equipment.
20:00	Laid down the milled casing joint.
22:30	Repaired broken return oil hose for top drive.
23:59	Pulled out and laid down casing.

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DAILY REPORT ON WELL 35/11-9

Daily report no: 48 Date : 26-mar-1997
Midnight depth : 1250 m MD Estimated PP: sg Mudweight: 1.06 sg

Stop time	Description
08:00	Continued laying down 13 3/8" csg.
09:00	Laied down 13 3/8" casing equipment.
12:30	Picked up and braked spear assembley. Laid down same. Laid down 9 1/2" NMDC, MWD and CDR.
14:30	Made up 17 1/2" bit. Installed guideropes to string.
23:59	WOW. Not aible to backload boat due to rough weather.

Daily report no: 49 Date : 27-mar-1997
Midnight depth : 1250 m MD Estimated PP: sg Mudweight: 1.06 sg

Stop time	Description
23:59	WOW. Not able to backload boat due to rough weather.

Daily report no: 50 Date : 28-mar-1997
Midnight depth : 1250 m MD Estimated PP: 1.03 sg Mudweight: 1.06 sg

Stop time	Description
20:30	WOW. Not able to backload boat due to rough weather.
23:00	Run in hole with 17 1/2" bit to well head.
23:30	Entered wellhead
23:59	Run in hole to casing shoe at 447m. Tok 5 ton weight.

Daily report no: 51 Date : 29-mar-1997
Midnight depth : 1250 m MD Estimated PP: 1.03 sg Mudweight: 1.06 sg

Stop time	Description
10:00	Reamed 17 1/2" hole from 447 m to 1250 m. No tight spots observed.
11:30	Displaced hole.
15:30	Performed wiper trip to 30" casing shoe and run back to bottom. Worked tight spot at 1166m and 1240m.
16:00	Displcaed to 100 m3 KCL mud.
18:00	Pulled out of hole to Well Head.
20:00	Rigged up and ran guideframe. Washed PGB and retrived frame.
20:30	Pulled out of hole.
21:00	Repaired electrical fault on DDM.
23:00	Continued pulling out of hole.
23:30	Performed safety meeting.
23:59	Run 13 3/8" casing.

Daily report no: 52 Date : 30-mar-1997
Midnight depth : 1250 m MD Estimated PP: 1.03 sg Mudweight: 1.06 sg

Stop time	Description
10:30	Run 13 3/8" casing to 660m.
12:00	Continued running 13 3/8" casing. Washed down from 1160m.
13:00	Picked up hanger from derrick.
15:30	Run casing on 5 1/2" DP landing string. Washed down to landing point at 1243m.

Norsk Hydro

DAILY REPORT ON WELL 35/11-9

Daily report no: 52 Date : 30-mar-1997
Midnight depth : 1250 m MD Estimated PP: 1.03 sg Mudweight: 1.06 sg

Stop time	Description
16:00	Picked up cement stand. Connected cement hose.
16:30	Landed 13 3/8" casing with 18 3/4" wellhead. Performed 30 ton overpulltest. Pumped 70 m3 seawater with rigpumps.
22:00	Tested surface lines to 200 bar. Mixed and pumped cement according to program. Dropped dart. Displaced cement and bumped plug. Pressure tested casing to 142 bar with Halliburton unit. Held pressure for 10 min.
22:30	Released casing running tool.
23:00	Racked back cement stand.
23:59	Washed wellhead/PGB

Daily report no: 53 Date : 31-mar-1997
Midnight depth : 1250 m MD Estimated PP: 1.03 sg Mudweight: 1.06 sg

Stop time	Description
05:30	Continue washing wellhead and PGB..
08:00	Pooh w/landing string.L/D 18 3/4 WH running tool.
09:30	L/D 17.5" bit-3 x 9.5" DC and 17.5" STB.
14:00	P/U and M/U new 12 1/4" BHA. 1 x 8" NMDC and 8 x 8" DC.
23:59	Waiting on BOP carrier system to be completed.

Daily report no: 54 Date : 01-apr-1997
Midnight depth : 1250 m MD Estimated PP: 1.03 sg Mudweight: 1.06 sg

Stop time	Description
09:00	Checked and prepared BOP running equipment. Picked up two joints of riser and racked back.
10:30	Pulled rig 50 m aft due to running of BOP.
20:00	Function tested BOP carrier system.
21:00	Prepared installation of guide spears for BOP.
23:59	WOW for running BOP.

Daily report no: 55 Date : 02-apr-1997
Midnight depth : 1250 m MD Estimated PP: 1.03 sg Mudweight: 1.03 sg

Stop time	Description
13:00	Waiting on weather for running BOP.
22:00	Continued performing modification work on the BOP skidding system. Performed NDT testing on the BOP skidding beam doors. Held safety meeting with the drilling crew including performing safe job analysis for the BOP skidding operation.
23:59	Skidded the BOP onto the BOP carrier. Was not able to fully skid the BOP due to height difference between the beams on the BOP carrier and the beam doors. Skidded the BOP to the set back position, and secured it.

Norsk Hydro

DAILY REPORT ON WELL 35/11-9

Daily report no: 56 Date : 03-apr-1997
Midnight depth : 1250 m MD Estimated PP: 1.03 sg Mudweight: 1.03 sg

Stop time	Description
09:00	Waited on the weather to skid the BOP. Chimmed the skid beam doors.
10:00	Skidded the BOP onto the BOP carrier.
14:00	Installed the lower BOP guide frame.
17:00	Moved the BOP carrier to well center. Adjusted upper frame from parking station. Cleaned the connection between the BOP and the riser. Connected the riser to the BOP.
23:59	Installed the upper guide frame. Installed the guide lines, and connected the kill line flexible hose. Welded brackets on the upper BOP guide frame.

Daily report no: 57 Date : 04-apr-1997
Midnight depth : 1250 m MD Estimated PP: 1.03 sg Mudweight: 1.03 sg

Stop time	Description
17:00	Continued welding brackets on the upper BOP guide frame, installing guide lines, and installing the kill line flexible hose.
18:30	Disconnected the riser in order to pressure test the kill line flexible hose. Pressure tested the kill line hose to 35/1035 bar for 5/10 minutes.
19:00	Connected the riser to the BOP.
19:30	Held pre job safety meeting, and performed safe job analysis for running riser/BOP with the drilling crew.
21:30	Installed transponder and the last guide line. Removed the BOP carrier from the well center.
23:59	Installed riser joint no. 3. Installed clamps on the pod lines. Lowered the BOP through the splash zone. Rigged up to pressure test the kill/choke lines.

Daily report no: 58 Date : 05-apr-1997
Midnight depth : 1250 m MD Estimated PP: 1.03 sg Mudweight: 1.25 sg

Stop time	Description
09:00	Pressure tested kill/choke lines to 35/345 bar for 5/10 minutes. Continued running BOP/riser.
10:00	Laid down joint no. 13 due to kill-/choke line failure. Picked up a new riser joint.
15:00	Continued running BOP/riser.
16:00	Laid down joint no. 11 due to kill-/choke line failure. Picked up a new riser joint.
20:30	Continued running BOP/riser.
22:00	Picked up the slip joint. Function tested and greased it.
22:30	Picked up the riser landing joint. Lowered the riser and engaged the support ring.
23:59	Installed the kill-/choke lines on the support ring while moving the rig towards the well center. Rig at well center at 23:30 hrs.

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DAILY REPORT ON WELL 35/11-9

Daily report no: 59 Date : 06-apr-1997
Midnight depth : 1250 m MD Estimated PP: 1.03 sg Mudweight: 1.25 sg

Stop time	Description
04:00	Continued installing the kill-/choke lines.
05:00	Landed the BOP. Activated the well head connector, and performed 30 MT overpull test.
06:30	Stroke out the slip joint. Laid down the riser landing joint.
09:00	Installed the diverter housing.
11:30	Flushed the kill-/choke lines. Pressure tested kill-/choke lines to 345 bar/10 minutes. Closed the shear ram with the accoustic system. Pressure tested the shear ram and the W.H connector to 160 bar/10 minutes.
12:00	Changed to short bails on the top drive.
13:30	Ran 18 3/4" x 13 3/8" extended wear bushing.
17:00	Function tested BOP with yellow pod from drillers panel, and with blue pod from the mini panel.
21:00	Made up 12 1/4" bit, and 12 1/4" bottom hole assembly.
23:59	Ran in the hole to 790 m. Tested the MWD tool.

Daily report no: 60 Date : 07-apr-1997
Midnight depth : 1515 m MD Estimated PP: 1.03 sg Mudweight: 1.25 sg

Stop time	Description
01:30	Continued running in the hole. Tagged cement at 1198 m.
02:00	Function tested the LPR. Closed upper annular, and performed a choke drill.
03:30	Drilled out cement wiper plugs at 1205 m.
04:00	Changed 2 plugged oil filters on the hydraulic power unit (HPU).
07:30	Drilled out wiper plug and float collar at 1206m.
08:30	Drilled the shoe track down to 1222 m.
09:30	Repaired fault on the hydraulic power unit.
10:30	Continued drilling the shoe track down to 1243 m.
11:30	Cleaned out the rathole down to 1250 m. Pumped 15 m3 high viscous pill followed by 15 m3 fresh water.
12:30	Displaced the well to 1.25 sg KCl mud. Drilled 3 m new formation down to 1253 m.
13:30	Circulated to condition the mud prior to performing the leak off test.
14:30	Flushed and pressure tested the kill line. Perfomed leak off test to 54 bar/1.69 SG EMW.
23:59	Continued drilling 12 1/4" hole from 1253m to 1515m

Daily report no: 61 Date : 08-apr-1997
Midnight depth : 1949 m MD Estimated PP: 1.03 sg Mudweight: 1.25 sg

Stop time	Description
20:00	Continued drilling 12 1/4" hole from 1515 m to 1890 m.
21:00	Performed slow circulating rate up riser/choke line.
23:59	Continued drilling 12 1/4" hole from 1890 m to 1949 m.

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DAILY REPORT ON WELL 35/11-9

Daily report no: 62 Date : 09-apr-1997
Midnight depth : 2237 m MD Estimated PP: 1.04 sg Mudweight: 1.26 sg

Stop time	Description
23:59	Continued drilling 12 1/4" hole from 1949 m to 2237 m.

Daily report no: 63 Date : 10-apr-1997
Midnight depth : 2325 m MD Estimated PP: 1.04 sg Mudweight: 1.20 sg

Stop time	Description
09:30	Continued drilling 12 1/4" from 2237 m to 2325m.
11:00	Pumped 12 m3 high viscous pill. Circulated the well clean.
16:00	Flow checked for 15 minutes. Performed a wiper trip to 1370 m. Hole in good condition.
18:30	Ran in the hole to TD at 2325 m.
22:00	Circulated whilst weighing up the new mud to 1.20 sg. Prepared for changing out the mud system.
22:30	Transferred shaker pit no. 4 and 5 to Viking Titan. Ceased the operation due to bad weather condition.
23:59	Pumped 15 m3 high viscous pill. Displaced the well to 1.20 sg Anco 2000 mud.

Daily report no: 64 Date : 11-apr-1997
Midnight depth : 2325 m MD Estimated PP: 1.04 sg Mudweight: 1.20 sg

Stop time	Description
01:00	Continued displacing the well to new 1.20 sg Anco 2000 mud. Displaced the kill-/choke lines to new mud.
05:00	Cleaned the shaker area, shaker pits, trip tank, and active pit no. 2. Continued to mix new mud.
09:00	Pumped slug. Pulled out of the hole to 1197 m. The hole is in very good condition.
11:00	Slipped and cut drilling line.
13:00	Continued to pull out of the hole.
16:00	Racked back the 8" drill collar stands, laid down the jar, 1 joint 8" drill collar, the non mag drill collar, and the MWD tool.
23:59	Made up a 8 1/2" bit, and 8 1/2" bottom hole assembly with a mudmotor.

Daily report no: 65 Date : 12-apr-1997
Midnight depth : 2450 m MD Estimated PP: 1.04 sg Mudweight: 1.20 sg

Stop time	Description
02:30	Ran in the hole to the casing shoe at 1243 m. Filled the drill string at 1000 m.
04:30	Continued running in to TD at 2325 m.
05:30	Circulated and conditioned the mud.
16:30	Drilled/oriented the 8 1/2" hole from 2325 m to 2450 m.
18:30	Circulated the hole clean prior to pull out of the hole to change the CDR tool. Maximum gas of 3 % from 2441 m (Draupne Fm).
21:00	Flow checked for 15 minutes. Pumped slug, and pulled out of the hole to 1243 m.
23:00	Continued pulling out of the hole to 140 m.

Norsk Hydro

DAILY REPORT ON WELL 35/11-9

Daily report no: 65 Date : 12-apr-1997
Midnight depth : 2450 m MD Estimated PP: 1.04 sg Mudweight: 1.20 sg

Stop time	Description
23:30	Pulled out of the hole with the bottom hole assembly.
23:59	Changed broken shear pins on the upper racking arm.

Daily report no: 66 Date : 13-apr-1997
Midnight depth : 2570 m MD Estimated PP: 1.04 sg Mudweight: 1.20 sg

Stop time	Description
03:00	Continued racking back the bottom hole assembly. Changed out the CDR tool. Made up a new bit, and changed the tilt angle on the mud motor from 0.78 deg. to 1.15 deg.
05:00	Ran in the hole to the 13 3/8" casing shoe. Filled the drill string, and tested the MWD tool.
08:00	Continued running in the hole to 2423 m.
08:30	Filled the pipe, and reamed down the last stand.
10:30	Drilled/steered 8 1/2" hole from 2450 m to 2475 m.
21:30	Continued drilling 8 1/2" hole from 2475 m to 2565 m.
23:30	Circulated bottoms up for samples.
23:59	Continued drilling 8 1/2" hole from 2565 m to 2570 m.

Daily report no: 67 Date : 14-apr-1997
Midnight depth : 2638 m MD Estimated PP: 1.04 sg Mudweight: 1.20 sg

Stop time	Description
11:00	Continued drilling 8 1/2" hole from 2570 m to 2638 m.
13:00	Circulated bottoms up. 1.18 % gas on bottoms up.
15:00	Flow checked for 15 minutes. Pulled out of the hole to 2480 m . Reamed from 2480 m to 2453 m.
18:00	Pumped slug, and pulled out of the hole to 1243 m.
21:00	Continued pulling out of the hole to 140 m.
22:00	Racked back the drilling bottom hole assembly.
22:30	Dumped the down hole memory on the MWD tool.
23:00	Broke the bit, and laid down the mud motor. Cleaned the drill floor.
23:59	Made up 30.48 m 6 3/4" corebarrel, and a 8 1/2" x 4" corehead.

Daily report no: 68 Date : 15-apr-1997
Midnight depth : 2666 m MD Estimated PP: 1.04 sg Mudweight: 1.21 sg

Stop time	Description
01:30	Continued assemblying the corebarrel assembly. Spaced out the inner barrel.
02:30	Checked for float sub valve.
04:30	Continued making up the bottom hole assembly.
07:00	Ran in the hole to the 13 3/8" casing shoe. Filled the drill string.
09:00	Continued running in the hole to TD at 2638 m.
09:30	Spaced out the drill string, and circulated to condition the mud.
10:00	Dropped the ball, and circulated it down.
11:00	Cut core no. 1 from 2638 m to 2666.3 m.

Norsk Hydro

DAILY REPORT ON WELL 35/11-9

Daily report no: 68 Date : 15-apr-1997
Midnight depth : 2666 m MD Estimated PP: 1.04 sg Mudweight: 1.21 sg

Stop time	Description
13:30	Flow checked for 15 minutes. Pumped slug, and pulled out of the hole to 1243 m.
15:00	Continued pulling out of the hole.
16:00	Racked back the bottom hole assembly. Laid down the corehead.
17:30	Recovered core no. 1. 100 % recovery.
21:30	Made up a 54.8 m corebarrel, and 8 1/2"x 4" core head.
23:59	Ran in the hole with corebarrel assembly no.2 to 1700 m.

Daily report no: 69 Date : 16-apr-1997
Midnight depth : 2743 m MD Estimated PP: 1.04 sg Mudweight: 1.21 sg

Stop time	Description
02:00	Ran in the hole with core barrel no. 2 to 2656 m.
03:00	Broke circulation and washed down to 2666 m.
04:30	Dropped ball and circulated same down. Cut core from 2666 m to 2715 m.
08:00	Pulled out of the hole to the casing shoe.
10:30	Pulled out of the hole.
12:30	Recovered core no. 2. 100 % recovery.
14:30	Assembled core barrel assembly no. 3.
15:30	Serviced the top drive.
18:00	Ran in the hole with core barrel no. 3 to the casing shoe.
20:00	Ran in the hole to 2715 m.
22:30	Circulated the hole untill gas reading was below 1 %.
23:59	Dropped ball and circulated same down. Cut core from 2715 m to 2743 m.

Daily report no: 70 Date : 17-apr-1997
Midnight depth : 2764 m MD Estimated PP: 1.04 sg Mudweight: 1.21 sg

Stop time	Description
03:00	Pulled out of the hole to the casing shoe.
06:00	Pulled out of the hole.
08:00	Broke the core head and laid down the inner core barrel. Recovered core no. 3.
09:30	Laid down the outer core barrel.
11:00	Made up 8 1/2" BHA no. 11.
13:00	Ran in the hole to the casing shoe.
16:00	Ran in the hole to 2619 m.
20:30	Reamed cored interval from 2619 m to 2727 m.
21:00	Repaired depth sensor.
22:00	Reamed cored interval from 2727 m to 2743 m.
23:59	Drilled 8 1/2" hole from 2743 m to 2764 m.

Daily report no: 71 Date : 18-apr-1997
Midnight depth : 2830 m MD Estimated PP: 1.04 sg Mudweight: 1.21 sg

Stop time	Description
03:00	Drilled 8 1/2" hole from 2764 m to 2830 m.
05:30	Circulated the hole clean.

Norsk Hydro

DAILY REPORT ON WELL 35/11-9

Daily report no: 71 Date : 18-apr-1997
Midnight depth : 2830 m MD Estimated PP: 1.04 sg Mudweight: 1.21 sg

Stop time	Description
06:00	Pulled out of the hole to 2750 m.
07:30	Back-reamed from 2750 m to 2702 m.
08:30	Pulled out of the hole to 2325 m.
09:30	Ran in the hole to 2830 m.
11:00	Circulated the hole clean.
13:00	Pulled out of the hole to the casing shoe.
14:30	Pulled out of the hole.
16:00	Laid down the MWD assembly and broke the bit.
17:30	Rigged up equipment for logging.
19:00	Made up the DDL/MSFL/DSI/LDL/CNL/GR/SP/AMS logging tool string.
19:30	Adjusted the brake on the logging unit.
22:30	Ran in the hole to 2820 m.
23:00	Logged interval from 2820 m to 2630 m.
23:30	Ran in the hole to 2740 m. Logged repeat interval from 2740 m to 2630 m.
23:59	Logged interval from 2630 m to 2500 m.

Daily report no: 72 Date : 19-apr-1997
Midnight depth : 2830 m MD Estimated PP: 1.04 sg Mudweight: 1.21 sg

Stop time	Description
05:00	Logged interval from 2500 m to 1180 m.
06:30	Pulled out of the hole.
08:30	Laid down the DDL/MSFL/DSI/LDL/CNL/GR/SP/AMS tool string.
11:00	Made up the MDT/GR/ACTS tool string.
13:30	Ran in the hole to 2592 m. Not able to pass with the logging string.
15:30	Pulled out of the hole.
16:00	Laid down the MDT/GR/ACTS tool string.
17:00	Made up the FMI/DSI/NGT/ACTS tool string.
18:30	Ran in the hole to 2592 m. Not able to pass with the logging string.
20:00	Pulled out of the hole.
21:00	Laid down the FMI/DSI/NGT/ACTS tool string.
21:30	Rigged down wireline equipment and changed bails.
23:59	Made up 8 1/2" BHA and ran in the hole to 300 m.

Daily report no: 73 Date : 20-apr-1997
Midnight depth : 2830 m MD Estimated PP: 1.04 sg Mudweight: 1.21 sg

Stop time	Description
04:00	Ran in the hole to 2590 m.
05:30	Reamed interval from 2590 m to 2619 and from 2813 m to 2830 m.
08:00	Circulated the hole clean.
10:30	Pulled out of the hole to the casing shoe.
12:00	Pulled out of the hole.
14:00	Rigged up the wireline equipment.
14:30	Made up the MDT/GR/ACTS tool string.
16:30	Ran in the hole to 2369 m. Not able to pass tight spot with the tool string.
18:00	Pulled out of the hole.

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DAILY REPORT ON WELL 35/11-9

Daily report no: 73 Date : 20-apr-1997
Midnight depth : 2830 m MD Estimated PP: 1.04 sg Mudweight: 1.21 sg

Stop time	Description
19:00	Laid down the MDT/GR/ACTS tool string.
19:30	Rigged down the wireline equipment.
21:00	Made up 8 1/2" BHA and ran in the hole to 100 m.
23:59	Ran in the hole to 2000 m.

Daily report no: 74 Date : 21-apr-1997
Midnight depth : 2830 m MD Estimated PP: 1.04 sg Mudweight: 1.25 sg

Stop time	Description
02:30	Ran in the hole to 2830 m. Reamed interval from 2360 m to 2386 m and tight spot at 2713 m.
06:00	Circulated the hole clean. Increased mud weight from 1.20 sg to 1.25 sg.
09:30	Pulled out of the hole to the casing shoe.
10:30	Damaged the wire on the stand lift.
12:00	Pulled out of the hole to 535 m.
12:30	Repaired damaged air hose on elevator.
15:00	Pulled out of the hole.
16:00	Rigged up the wireline equipment.
17:30	Made up the MDT/GR/ACT tool string.
19:30	Ran in the hole to 2654 m.
23:59	Took 26 pressure points in interval from 2654 m to 2731 m.

Daily report no: 75 Date : 22-apr-1997
Midnight depth : 2830 m MD Estimated PP: 1.04 sg Mudweight: 1.25 sg

Stop time	Description
08:30	Took water samples at depth 2706 m.
11:00	Problems with the Schlumberger computer.
14:00	Completed water samples at depth 2706 m.
22:30	Took oil samples at depth 2677 m.
23:30	Took one pressure point at depth 2565 m.
23:59	Pulled out of the hole to the casing shoe.

Daily report no: 76 Date : 23-apr-1997
Midnight depth : 2830 m MD Estimated PP: 1.04 sg Mudweight: 1.25 sg

Stop time	Description
00:30	Pulled out of the hole.
02:00	Laid down the MDT/GR/ACTS tool string.
02:30	Made up the DSI/FMI/GR/ACTS tool string.
04:00	Changed the cable head.
04:30	Ran in the hole to the casing shoe.
05:30	Ran in the hole to 2732 m.
06:00	Logged the interval from 2732 m to 2608 m.
11:30	Logged the interval from 2795 m to 1225 m.
12:30	Pulled out of the hole.
13:30	Laid down the DSI/FMI/GR/ACTS tool string.
14:00	Made up the VSP/GR tool string.
16:00	Ran in the hole to 2325 m. Not able to pass with the tool string.

Norsk Hydro

DAILY REPORT ON WELL 35/11-9

Daily report no: 76 Date : 23-apr-1997
Midnight depth : 2830 m MD Estimated PP: 1.04 sg Mudweight: 1.25 sg

Stop time	Description
17:00	Pulled out of the hole.
17:30	Added weight to base of the tool.
21:30	Ran in the hole to 2325 m. Not able to pass with the tool string.
23:00	Logged the interval from 2320 m to 1820 m.
23:59	Pulled out of the hole to 700 m.

Daily report no: 77 Date : 24-apr-1997
Midnight depth : 2830 m MD Estimated PP: 1.04 sg Mudweight: 1.29 sg

Stop time	Description
00:30	Pulled out of the hole.
02:00	Laid down the VSP/GR tool string and rigged down the wireline equipment.
02:30	Replaced air hose on elevator on top drive.
04:00	Made up 8 1/2" BHA and ran in the hole to 100 m.
07:00	Ran in the hole to 1230 m.
08:00	Cut and slipped the drilling line.
11:00	Ran in the hole to 2415 m. Back-reamed interval from 2328 m to 2415 m.
12:30	Ran in the hole to 2830 m. Back-reamed tight spots at 2563 m and 2690 m.
15:00	Circulated the hole clean. Increased the mud weight from 1.25 sg to 1.30 sg.
20:00	Pulled out of the hole.
21:00	Rigged up the wireline equipment.
22:30	Ran in the hole with the VSP/GR tool string to the casing shoe.
23:59	Waiting on the weather.

Daily report no: 78 Date : 25-apr-1997
Midnight depth : 2830 m MD Estimated PP: sg Mudweight: 1.28 sg

Stop time	Description
01:30	Ran in the hole to 2810 m. Took check shots on the way in.
06:00	Start logging the interval from 2810 m to 620 m.
07:00	Pulled out of the hole.
08:00	Laid down the VSP/GR tool string and rigged down the wireline equipment.
09:30	Ran in the hole to 195 m.
10:00	Changed dies on the iron-roughneck.
14:00	Ran in the hole to 2819 m.
14:30	Broke the circulation and conditioned the mud.
15:00	Rigged up the cement head and surface line.
16:30	Mixed and pumped the cement slurry. Displaced the cement with mud.
17:30	Pulled out of the hole to 2440 m.
18:00	Reverse circulated out excessive cement.
19:30	Laid down the cement head and surface line. Pulled out of the hole to 2400 m.
21:30	Circulated the hole clean.
23:59	Laid down 5 1/2" drill pipe.

Norsk Hydro

DAILY REPORT ON WELL 35/11-9

Daily report no: 79 Date : 26-apr-1997
Midnight depth : 2830 m MD Estimated PP: sg Mudweight: 1.28 sg

Stop time	Description
01:00	Laid down 5 1/2" drill pipe.
03:00	Re-arranged drill collars in the derrick. Laid down 8" drill collars.
04:30	Ran in the hole and tagged top of cement at 2480 m.
10:00	Pulled out of the hole.
13:00	Made up EZ-packer to setting tool. Ran in the hole to 1200 m.
13:30	Broke circulation and conditioned the mud.
14:30	Set and pressure tested the packer.
15:00	Rigged up cement head and surface lines.
16:00	Mixed and pumped cement slurry. Displaced the cement with mud.
17:00	Pulled out of the hole to 1044 m.
17:30	Reverse circulated out excessive cement.
18:30	Pulled out of the hole to 1000 m. Circulated the hole clean.
22:30	Pulled out to 395 m. Laid down 5 1/2" drill pipe.
23:30	Displaced the marine riser and kill/choke lines to seawater.
23:59	Pulled out to 250 m. Laid down 5 1/2" drill pipe.

Daily report no: 80 Date : 27-apr-1997
Midnight depth : 2830 m MD Estimated PP: sg Mudweight: 1.27 sg

Stop time	Description
02:30	Pulled out of the hole. Laid down 5 1/2" drill pipe.
06:00	Pulled 13 3/8" wear bushing.
08:30	Prepared to pull marine riser and BOP.
11:30	Installed spider and laid down diverter housing. Disconnected BOP and lifted clear off guideposts.
14:30	Disconnected pod wires and hoses from support ring. Disconnected kill and choke goosenecks from slip joint.
23:59	Pulled BOP to 75 m.

Daily report no: 81 Date : 28-apr-1997
Midnight depth : 2830 m MD Estimated PP: sg Mudweight: 1.27 sg

Stop time	Description
01:30	Pulled the BOP to surface.
06:30	Landed BOP on transporter and seafastened.
07:00	Laid down two marine riser joints.
08:00	Rigged down marine riser handling equipment.
09:30	Made up casing cutting equipment.
10:00	Re-arranged drill collars in the derrick.
13:30	Ran in the water with casing cutting equipment and stabbed in the wellhead.
17:00	Cut 18 5/8" and 30" casing at depth 391.5 m.
18:30	Troubleshoot hydraulic power unit for top drive.
20:30	Cut 18 5/8" and 30" casing at depth 391.5 m.
21:30	Attempted to pull the casing with spear.
23:00	Pulled out of the water with casing cutting equipment.
23:59	Made up 18 3/4" housing running tool.

Norsk Hydro

DAILY REPORT ON WELL 35/11-9

Daily report no: 82 Date : 29-apr-1997
Midnight depth : 2830 m MD Estimated PP: sg Mudweight: 1.27 sg

Stop time	Description
02:00	Ran in the water and locked running tool in 18 3/4" wellhead housing.
02:30	Attempted to pull the casing to surface.
04:00	Released running tool and pulled same to surface.
05:30	Made up casing cutting equipment.
07:00	Ran in the water and entered the wellhead housing.
08:30	Bumper sub twisted off mandrel. Pulled running string to surface.
14:00	Ran in the water with overshot and grapple. Retrieved casing cutting assembly to surface.
17:30	Ran in the water with cutting equipment and entered wellhead housing.
20:00	Cut casing at 390 m. 18 5/8" wellhead housing came loose from 30" conductor housing.
22:00	Pulled out of the water and laid down 18 3/4" wellhead housing.
23:30	Re-built casing cutting equipment for 30" casing.
23:59	Ran in the water to 100 m.

Daily report no: 83 Date : 30-apr-1997
Midnight depth : m MD Estimated PP: 0.00 sg Mudweight: 1.27 sg

Stop time	Description
01:00	Continue rih w/30" csg cutter.
02:30	Enter 30" csg w/cutter.No go to set spear.
03:30	Pooh.
04:00	Remove stop ring from cutting assy.
05:30	Rih.
06:00	Enter 30" csg & engage grapple.
08:00	Cut 30" csg at 389.5m.
09:30	Pull pgb and csg free w/30 ton overpull, pooh.
10:30	Land and secure pgb on flat car.
13:00	Attemt to release spear.No success.Push spear through btm of 30", and remove slips.Recover spear to rig floor and lay down same.
18:00	Lay down drillcollars from drk.
19:00	Lay down 5 1/2" dp f/drk.
19:30	Removed top catwalk carrier and changed dies on iron roughneck.
22:30	Continue lay down dp.
23:00	Drop dp from feeding table and hit dragchain linkbelt for pipehandler crane. Damaged one link.Repair same.
23:59	Continue lay down 5 1/2" dp from drk.

Daily report no: 84 Date : 01-may-1997
Midnight depth : m MD Estimated PP: 0.00 sg Mudweight: 1.27 sg

Stop time	Description
04:00	Continue L/D 5 1/2" DP, 138JNTS.
05:00	Deballasting rig/ L/D hang off tool.
08:00	Stop de-ballasting.Attempt to remove 30" CSG from PGB,no success.
11:00	L/D 3 1/2" DP. Re-commence de-ballast from 0830 HRS.

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DAILY REPORT ON WELL 35/11-9

Daily report no: 84 Date : 01-may-1997
Midnight depth : m MD Estimated PP: 0.00 sg Mudweight: 1.27 sg

Stop time	Description
23:59	Anchorhandling on anchor # 6-12-1.

Daily report no: 85 Date : 02-may-1997
Midnight depth : m MD Estimated PP: 0.00 sg Mudweight: 1.27 sg

Stop time	Description
23:59	Anchor handling on anchor # 2-3-5-9-10-11 and 12.

Daily report no: 86 Date : 03-may-1997
Midnight depth : m MD Estimated PP: sg Mudweight: 1.27 sg

Stop time	Description
23:59	Anchor handling: Lost anch.#11 13:35 hrs. Chain end blst.20:04 hrs. Penn.wire anch. #8 on boat 07:30 hrs. Disconn. chain from wire 22:44 hrs. Leave chain & anch. on M.Mariner. Wire on blst.23:30hrs. Start rig move to loc.34/8-A-13H 23:45hrs

Norsk Hydro

T I M E   D I S T R I B U T I O N

Well: 35/11-9 Rig: WEST DELTA Depth: 2830.0 m MD
All sections

Operations	Hours	%	Hours	%	Acc. total
MOBILIZATION					
MOVING	23.0	1.12			
MOORING; RUNNING ANCHORS	66.5	3.24			
MOORING; PULLING ANCHORS	62.0	3.02			
Sum			151.5	7.38	151.5
DRILLING					
BHA HANDLING/TESTING	34.0	1.66			
MWD HANDLING/TESTING/SURVEYING	1.0	0.05			
TRIPPING IN CASED HOLE	25.0	1.22			
TRIPPING IN OPEN HOLE	21.5	1.05			
DRILLING	150.5	7.33			
WELLHEAD EQUIPMENT INSTALLATIO	8.0	0.39			
OTHER	15.5	0.75			
REAMING	18.0	0.88			
CIRC. AND COND. MUD/HOLE	21.0	1.02			
WIPER TRIP	19.0	0.93			
CASING HANDLING/TESTING	9.0	0.44			
RUNNING CASING IN CASED HOLE	12.5	0.61			
RUNNING CASING IN OPEN HOLE	26.0	1.27			
DRILLING OUT OF CASING	9.0	0.44			
PRIMARY CEMENTING	15.5	0.75			
FORMATION STRENGTH TESTING	1.0	0.05			
DRILLING OUT CEMENT PLUG	1.5	0.07			
BOP HANDLING	10.5	0.51			
BOP RUNNING/RETRIEVING	30.0	1.46			
BOP TESTING	6.5	0.32			
WELLHEAD EQUIPMENT HANDLING	0.5	0.02			
SLIP AND CUT DRILLING LINE	3.0	0.15			
Sum			438.5	21.35	590.0
FORMATION EVALUATION MWD					
MWD HANDLING/TESTING/SURVEYING	0.5	0.02			
Sum			0.5	0.02	590.5
FORMATION EVALUATION LOGGING					
LOGGING	12.5	0.61			
LOGGING EQUIPMENT HANDLING/TES	12.5	0.61			
FORMATION TESTER	25.5	1.24			
TRIPPING IN CASED HOLE	4.0	0.19			
VERTICAL SEISMIC	6.0	0.29			
TRIPPING IN OPEN HOLE	11.0	0.54			
Sum			71.5	3.48	662.0
FORMATION EVALUATION CORING					
CIRCULATING FOR SAMPLE	2.0	0.10			
BHA HANDLING/TESTING	19.5	0.95			
TRIPPING IN CASED HOLE	17.5	0.85			
TRIPPING IN OPEN HOLE	21.0	1.02			
OTHER	1.0	0.05			
CORING	4.0	0.19			
CIRC. AND COND. MUD/HOLE	5.5	0.27			
Sum			70.5	3.43	732.5

Norsk Hydro

TIME DISTRIBUTION

Well: 35/11-9 Rig: WEST DELTA Depth: 2830.0 m MD
All sections

Operations	Hours	%	Hours	%	Acc. total
PLUG AND ABANDONMENT					
TRIPPING IN CASED HOLE	7.5	0.37			
TRIPPING IN OPEN HOLE	7.0	0.34			
WELLHEAD EQUIPMENT INSTALLATIO	3.5	0.17			
OTHER	25.5	1.24			
CIRC. AND COND. MUD/HOLE	6.0	0.29			
CASING HANDLING/TESTING	3.0	0.15			
TRIPPING FOR CEMENT JOB	9.0	0.44			
BOP HANDLING	8.5	0.41			
BOP RUNNING/RETRIEVING	17.5	0.85			
SET CEMENT PLUG	3.5	0.17			
SET MECHANICAL PLUG	1.0	0.05			
TRIPPING OF CASING CUTTING EQU	11.0	0.54			
CUT CASING/WELLHEAD	10.0	0.49			
Sum			113.0	5.50	845.5
DOWNTIME MOBILIZATION					
EQUIPMENT FAILURE AND REPAIR	129.0	6.28			
WAITING	287.0	13.97			
OTHER	259.5	12.63			
Sum			675.5	32.89	1521.0
DOWNTIME DRILLING					
EQUIPMENT FAILURE AND REPAIR	80.5	3.92			
WAITING	183.5	8.93			
STICKING/GOING STUCK WITH EQUI	126.5	6.16			
OTHER	23.5	1.14			
Sum			414.0	20.16	1935.0
DOWNTIME FORM. EVAL. LOGGING					
LOGGING EQUIPMENT HANDLING/TES	0.5	0.02			
EQUIPMENT FAILURE AND REPAIR	5.0	0.24			
WAITING	1.5	0.07			
TRIPPING IN CASED HOLE	0.5	0.02			
TRIPPING IN OPEN HOLE	1.0	0.05			
STICKING/GOING STUCK WITH EQUI	69.5	3.38			
OTHER	8.0	0.39			
Sum			86.0	4.19	2021.0
DOWNTIME PLUG AND ABANDONMENT					
EQUIPMENT FAILURE AND REPAIR	32.5	1.58			
WAITING	0.5	0.02			
Sum			33.0	1.61	2054.0

Reported time (100.0 % of well total 2054.0 hours) : 2054.0

Norsk Hydro

H O L E D E V I A T I O N

Well : 35/11-9
Reference Point : RKB , 29.0 m above MSL
Waterdepth: 357.0 m
Vertical to 359.9 m
UTM zone : 31 Central Meredian: 3' E Horizontal Datum: ED50
Template Centre Coordinates, UTM: North: 7128620.0 m, East: 412890.0 m
Wellhead Coordinates, UTM: North: 6770299.0 m, East: 527093.0 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
360.0	0.00	0.00	MWD		360.0	0.00	0.00	0.0	0.00	0.00	0.00
377.1	0.17	222.80	MWD		377.1	-0.02	-0.02	0.0	0.30	0.30	-240.7
385.3	0.53	85.30	MWD		385.3	-0.02	0.01	0.0	2.43	1.32	-503.0
400.1	1.00	169.70	MWD		400.1	-0.15	0.10	0.2	2.20	0.95	171.08
406.6	0.78	142.40	MWD		406.6	-0.24	0.14	0.3	2.18	-1.02	-126.0
412.3	0.74	144.80	MWD		412.3	-0.30	0.19	0.4	0.27	-0.21	12.63
423.3	0.93	188.80	MWD		423.3	-0.44	0.21	0.5	1.77	0.52	120.00
431.6	0.90	205.40	MWD		431.6	-0.57	0.17	0.6	0.96	-0.11	60.00
444.4	1.26	296.30	MWD		444.4	-0.60	0.01	0.6	3.66	0.84	213.05
472.3	1.11	183.50	MWD		472.3	-0.73	-0.29	0.8	2.12	-0.16	-121.3
500.1	0.99	188.40	MWD		500.1	-1.24	-0.34	1.3	0.16	-0.13	5.29
529.0	0.71	185.80	MWD		529.0	-1.66	-0.39	1.7	0.29	-0.29	-2.70
555.7	0.86	162.50	MWD		555.7	-2.02	-0.35	2.0	0.39	0.17	-26.18
588.3	0.64	172.10	MWD		588.3	-2.43	-0.25	2.4	0.23	-0.20	8.83
616.5	0.55	186.80	MWD		616.5	-2.72	-0.24	2.7	0.19	-0.10	15.64
643.6	0.57	186.20	MWD		643.6	-2.99	-0.27	3.0	0.02	0.02	-0.66
672.1	0.56	193.70	MWD		672.1	-3.26	-0.32	3.3	0.08	-0.01	7.89
700.6	0.69	186.80	MWD		700.6	-3.57	-0.38	3.6	0.16	0.14	-7.26
729.5	0.59	190.70	MWD		729.5	-3.89	-0.42	3.9	0.11	-0.10	4.05
759.5	0.90	205.00	MWD		759.5	-4.25	-0.55	4.3	0.36	0.31	14.30
787.7	1.30	222.60	MWD		787.7	-4.69	-0.86	4.8	0.55	0.43	18.72
817.8	0.94	209.30	MWD		817.8	-5.16	-1.21	5.3	0.44	-0.36	-13.26
846.7	0.56	247.30	MWD		846.7	-5.42	-1.46	5.6	0.63	-0.39	39.45
875.3	0.49	246.60	MWD		875.3	-5.52	-1.70	5.8	0.07	-0.07	-0.73
905.5	0.77	232.50	MWD		905.5	-5.69	-1.98	6.0	0.32	0.28	-14.01
933.9	0.60	234.50	MWD		933.8	-5.90	-2.25	6.3	0.18	-0.18	2.11
961.5	0.40	202.00	MWD		961.4	-6.07	-2.41	6.5	0.37	-0.22	-35.33
991.2	0.59	199.40	MWD		991.1	-6.31	-2.50	6.8	0.19	0.19	-2.63
1020.9	0.35	238.30	MWD		1020.8	-6.50	-2.63	7.0	0.39	-0.24	39.29
1049.4	0.63	242.90	MWD		1049.3	-6.62	-2.84	7.2	0.30	0.29	4.84
1079.0	0.43	233.30	MWD		1078.9	-6.76	-3.07	7.4	0.22	-0.20	-9.73
1108.7	0.53	238.80	MWD		1108.6	-6.90	-3.28	7.6	0.11	0.10	5.56
1137.4	0.91	227.90	MWD		1137.3	-7.12	-3.56	8.0	0.42	0.40	-11.39
1166.4	1.31	218.30	MWD		1166.3	-7.53	-3.94	8.5	0.45	0.41	-9.93
1194.8	1.49	216.20	MWD		1194.7	-8.09	-4.36	9.2	0.20	0.19	-2.22
1224.1	1.37	217.20	MWD		1224.0	-8.67	-4.79	9.9	0.13	-0.12	1.02
1235.6	1.34	213.00	MWD		1235.5	-8.89	-4.95	10.2	0.27	-0.08	-10.96
1276.4	0.81	212.60	MWD		1276.3	-9.54	-5.37	10.9	0.39	-0.39	-0.29
1295.9	0.85	209.00	MWD		1295.8	-9.78	-5.51	11.2	0.10	0.06	-5.54
1323.6	0.75	206.10	MWD		1323.5	-10.12	-5.69	11.6	0.12	-0.11	-3.14
1413.8	0.87	197.40	MWD		1413.7	-11.31	-6.15	12.9	0.06	0.04	-2.89

Norsk Hydro

H O L E D E V I A T I O N

Well : 35/11-9 Reference Point : RKB , 29.0 m above MSL
Waterdepth: 357.0 m Vertical to 359.9 m
UTM zone : 31 Central Meredian: 3' E Horizontal Datum: ED50
Template Centre Coordinates, UTM: North: 7128620.0 m, East: 412890.0 m
Wellhead Coordinates, UTM: North: 6770299.0 m, East: 527093.0 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
1501.3	0.98	201.70	MWD		1501.2	-12.64	-6.63	14.3	0.04	0.04	1.47
1587.3	1.22	204.80	MWD		1587.2	-14.15	-7.29	15.9	0.09	0.08	1.08
1646.3	1.14	198.00	MWD		1646.2	-15.28	-7.73	17.1	0.08	-0.04	-3.46
1714.9	0.98	214.50	MWD		1714.7	-16.41	-8.27	18.4	0.15	-0.07	7.22
1796.0	0.95	191.30	MWD		1795.8	-17.64	-8.80	19.7	0.14	-0.01	-8.58
1848.5	0.85	186.70	MWD		1848.3	-18.46	-8.93	20.5	0.07	-0.06	-2.63
1934.7	0.95	201.00	MWD		1934.5	-19.76	-9.26	21.8	0.09	0.03	4.98
1963.6	0.87	205.60	MWD		1963.4	-20.18	-9.44	22.3	0.11	-0.08	4.78
1992.7	0.95	205.70	MWD		1992.5	-20.60	-9.64	22.7	0.08	0.08	0.10
2020.0	1.04	200.70	MWD		2019.8	-21.03	-9.83	23.2	0.14	0.10	-5.49
2051.0	1.08	192.90	MWD		2050.8	-21.58	-9.99	23.8	0.14	0.04	-7.55
2080.9	1.02	187.60	MWD		2080.7	-22.12	-10.09	24.3	0.11	-0.06	-5.32
2108.6	1.17	189.90	MWD		2108.4	-22.64	-10.17	24.8	0.17	0.16	2.49
2137.2	1.10	190.90	MWD		2137.0	-23.20	-10.27	25.4	0.08	-0.07	1.05
2165.4	1.18	191.10	MWD		2165.2	-23.75	-10.38	25.9	0.09	0.09	0.21
2195.3	1.37	181.40	MWD		2195.1	-24.41	-10.45	26.5	0.29	0.19	-9.73
2223.9	1.28	175.20	MWD		2223.7	-25.07	-10.43	27.2	0.18	-0.09	-6.50
2254.8	1.34	179.70	MWD		2254.6	-25.77	-10.40	27.8	0.12	0.06	4.37
2283.4	1.26	175.20	MWD		2283.1	-26.42	-10.37	28.4	0.14	-0.08	-4.72
2311.8	1.32	177.20	MWD		2311.5	-27.06	-10.33	29.0	0.08	0.06	2.11
2340.1	1.71	172.50	MWD		2339.8	-27.80	-10.26	29.6	0.43	0.41	-4.98
2369.0	1.66	172.40	MWD		2368.7	-28.65	-10.15	30.4	0.05	-0.05	-0.10
2398.8	1.44	165.20	MWD		2398.5	-29.44	-9.99	31.1	0.30	-0.22	-7.25
2427.3	0.60	155.80	MWD		2427.0	-29.92	-9.84	31.5	0.90	-0.88	-9.89
2455.9	1.51	10.10	MWD		2455.6	-29.68	-9.71	31.2	2.13	0.95	-152.8
2485.3	6.69	17.60	MWD		2484.9	-27.67	-9.13	29.1	5.30	5.29	7.65
2513.9	6.50	14.90	MWD		2513.3	-24.52	-8.21	25.9	0.38	-0.20	-2.83
2543.3	6.33	14.30	MWD		2542.5	-21.34	-7.38	22.6	0.19	-0.17	-0.61
2572.3	6.13	16.30	MWD		2571.4	-18.30	-6.55	19.4	0.31	-0.21	2.07
2599.9	6.06	16.10	MWD		2598.8	-15.49	-5.73	16.5	0.08	-0.08	-0.22
2614.7	6.10	16.30	MWD		2613.5	-13.98	-5.29	15.0	0.09	0.08	0.41
2629.9	6.06	15.50	MWD		2628.6	-12.43	-4.85	13.3	0.18	-0.08	-1.58
2658.6	6.10	15.20	MWD		2657.2	-9.50	-4.05	10.3	0.05	0.04	-0.31
2687.3	6.37	15.00	MWD		2685.7	-6.49	-3.24	7.3	0.28	0.28	-0.21
2717.0	6.49	14.90	MWD		2715.2	-3.28	-2.38	4.1	0.12	0.12	-0.10
2745.5	6.49	14.10	MWD		2743.5	-0.16	-1.57	1.6	0.10	0.00	-0.84
2774.8	6.05	12.90	MWD		2772.7	2.95	-0.82	3.1	0.47	-0.45	-1.23
2803.8	5.72	11.30	MWD		2801.5	5.86	-0.20	5.9	0.38	-0.34	-1.66
2815.2	5.69	10.54	MWD		2812.9	6.97	0.02	7.0	0.21	-0.08	-2.00

Norsk Hydro

MAIN CONSUMPTION OF CASING/TUBING ON WELL 35/11-9

Size	Casing string	Grade	Weight [kg/m]	Weight [lb/ft]	Threads type	Length [m]	No. of joints	Cost of str. in hole	Total cost of string
30"	CONDUCTOR	B	460.86	309.70	SL-60	62.0	5		
13 3/8"	SURFACE	N-80	101.19	68.00	BUTTRESS	860.0	70		

B I T R E C O R D   F O R   W E L L   35/11-9

Bit No	Bit RR	Bit Type	Size (in)	Manufacturer	Tradename	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)	Bit grading: Cutting structure I	O	DC	L	B	Gauge 1/16 (in)	Remarks oth	Remarks pul
1		MITO	17.500	SDBS	SS33SGLTJ4	654265	115M			18	18	18	18	0.994	1	447	61	6.66	9.2	0/102		0/13	1890/3230	20/62	2	3	WT	A	E	1	NO	TD
1		HO	36.000	REDB	HEAVYDUTY	21465				14	14	14	14	0.601	1	447	61	6.66	9.2	0/102		0/13	1890/3230	20/62	2	3	WT	A	E	1	NO	
2		MITO	24.000	SDBS	SS33SGJ4	692030	115M			18	18	18	18	0.994	2	448	1	1.00	1.0	/		/	/	/								
3		MITO	17.500	SDBS	SS44GLTJ4	681739	135M			18	18	18	18	0.994	3	1250	802	19.20	41.8	150/160		7/20	3600/4000	115/160	1	2	WT	A	E	1	NO	TD
1	2	MITO	17.500	SDBS	SS44GLTJ4	681739	135M			18	18	32	32	2.068	4	1250	0		0.0	/		/	/	/								
4		PDC	12.250	SMIT	M73P	JQ8346	M223	14	14	14	14	14	14	0.902	5	2325	1075	47.10	22.8	120/220	472000	20/150	3200/3550	170/190	4	2	BT	N	X	I	CT	BHA
5		PDC	8.500	SMIT	M50P	JR3654	M333	11	11	11	12	12	12	0.610	6	2450	125	6.40	19.5	150/210	175000	5/10	2000/2250	140/160	1	1	CT	S	X	I	PN	DTF
6		ISRT	8.500	HTC	ATMGT-P18D	J07CM	447				16	16	16	0.589	7	2638	188	22.00	8.5	0/220	303000	50/200	1950/2200	140/150	1	2	CC	N	E	I	NO	CP
7		CORE	8.500	SDBS	CD 93 FDIL	7970191	0896							0.700	8	2666	28	0.80	35.4	120/120	9000	80/150	1050/1050	65/65	1	1	NO	A	X	I	NO	NC
7	1	CORE	8.500	SDBS	CD 93 FDIL	7970191	0896							0.700	9	2714	48	2.11	22.6	85/120		78/147	1000/1050	50/65	1	1	WT	T	X	I	NO	NC
7	2	CORE	8.500	SDBS	CD 93 FDIL	7970191	0896							0.700	10	2743	29	0.90	32.2	84/84		98/147	1000/1000	50/50	1	2	WT	T	X	I	NO	NC
5	1	PDC	8.500	SMIT	M50P	JR3654	M333	11	11	11	12	12	12	0.610	11	2830	87	5.32	16.4	140/155		88/147	2000/2000	130/155	1	1	CT	T	X	I	NO	TD
6	1	ISRT	8.500	HTC	ATMGT-P18D	J07CM	447				16	16	16	0.589	12	2830	238		0.0	100/120		0/147	1600/1600	80/80	1	2	CC	N	E	I	NO	LOG
6	2	ISRT	8.500	HTC	ATMGT-P18D	J07CM	447				16	16	16	0.589	13	2830	461		0.0	100/100		0/98	1000/1000	80/80	1	2	CC	N	E	I	NO	LOG
6	3	ISRT	8.500	HTC	ATMGT-P18D	J07CM	447				16	16	16	0.589	14	2830	505		0.0	100/100		0/98	1500/1500	68/68	1	2	CC	N	E	I	NO	LOG

Norsk Hydro

BOTTOM HOLE ASSEMBLIES USED ON WELL 35/11-9

BHA no. 1: No./Element/OD(in)/Length(m) Depth In: 386 m MD Out: 447 m MD

1	SS33SGLTJ4	17.500	0.42	7	DRILL COLLAR STEEL	9.500	28.10
2	HEAVYDUTY	36.000	1.87	8	X-OVER	9.438	1.09
3	BIT SUB	9.500	0.96	9	DRILL COLLAR STEEL	8.000	28.07
4	CDR	9.500	7.29	10	DRILL COLLAR STEEL	8.000	27.85
5	MWD	9.500	8.49	11	X-OVER	8.000	0.91
6	NON MAG. COLLAR	9.500	8.91				

Reason Pulled: TOTAL DEPTH/CASING DEPTH Sum: 113.96

BHA no. 2: No./Element/OD(in)/Length(m) Depth In: 447 m MD Out: 448 m MD

1	SS33SGJ4	24.000	0.56	5	X-OVER	9.440	1.09
2	BIT SUB	9.500	0.98	6	DRILL COLLAR STEEL	8.000	55.92
3	DRILL COLLAR STEEL	9.500	28.10	7	X-OVER	8.000	0.91
4	STEEL STAB	17.500	2.34				

Reason Pulled: Sum: 89.90

BHA no. 3: No./Element/OD(in)/Length(m) Depth In: 448 m MD Out: 1250 m MD

1	SS44GLTJ4	17.500	0.42	7	DRILL COLLAR STEEL	9.500	28.10
2	BIT SUB	9.500	0.96	8	X-OVER	9.438	1.09
3	CDR	9.500	7.29	9	DRILL COLLAR STEEL	8.000	46.62
4	MWD	9.500	8.49	10	JAR	8.875	9.69
5	NON MAG. COLLAR	9.500	8.91	11	DRILL COLLAR STEEL	8.000	26.74
6	STEEL STAB	9.500	2.34	12	X-OVER	8.000	0.91

Reason Pulled: TOTAL DEPTH/CASING DEPTH Sum: 141.56

BHA no. 4: No./Element/OD(in)/Length(m) Depth In: 1250 m MD Out: 1250 m MD

1	SS44GLTJ4	17.500	0.42	6	DRILL COLLAR STEEL	8.000	46.62
2	BIT SUB	9.500	0.96	7	JAR	8.875	9.69
3	DRILL COLLAR STEEL	9.500	28.10	8	DRILL COLLAR STEEL	8.000	26.44
4	STEEL STAB	17.500	2.34	9	X-OVER	8.000	0.91
5	X-OVER	9.438	1.09				

Reason Pulled: Sum: 116.57

BHA no. 5: No./Element/OD(in)/Length(m) Depth In: 1250 m MD Out: 2325 m MD

1	M73P	12.250	0.37	6	NON MAG. COLLAR	8.000	9.35
2	BIT SUB	8.000	1.14	7	DRILL COLLAR STEEL	8.000	130.83
3	CDR	8.375	6.98	8	JAR	8.000	9.69
4	MWD	8.375	8.47	9	DRILL COLLAR STEEL	8.000	17.14
5	NON MAG. STAB	12.250	2.01	10	X-OVER	8.000	0.91

Reason Pulled: CHANGE BOTTOMHOLE ASSEMBLY Sum: 186.89

BHA no. 6: No./Element/OD(in)/Length(m) Depth In: 2325 m MD Out: 2450 m MD

1	M50P	8.500	0.30	7	NON MAG. STAB	8.250	1.79
2	DOWNHOLE MOTOR	6.250	7.70	8	NON MAG. COLLAR	6.750	9.43
3	FLOAT SUB	6.750	0.93	9	DRILL COLLAR STEEL	6.500	63.60
4	NON MAG. STAB	8.375	1.78	10	JAR	6.250	9.11
5	CDR	6.812	6.84	11	DRILL COLLAR STEEL	6.500	27.17
6	MWD	6.812	8.47	12	X-OVER	7.250	1.22

Reason Pulled: DOWNHOLE TOOL FAILURE Sum: 138.34

BOTTOM HOLE ASSEMBLIES USED ON WELL 35/11-9

BHA no. 7: No./Element/OD(in)/Length(m) Depth In: 2450 m MD Out: 2638 m MD

No.	Element	OD(in)	Length(m)	No.	Element	OD(in)	Length(m)
1	ATMGT-P18D	8.500	0.24	7	NON MAG. STAB	8.250	1.79
2	DOWNHOLE MOTOR	6.250	7.70	8	NON MAG. COLLAR	6.750	9.43
3	FLOAT SUB	6.750	0.93	9	DRILL COLLAR STEEL	6.500	63.60
4	NON MAG. STAB	8.375	1.78	10	JAR	6.250	9.11
5	CDR	6.812	6.86	11	DRILL COLLAR STEEL	6.500	27.17
6	MWD	6.812	8.47	12	X-OVER	7.250	1.22

Reason Pulled: CORE POINT Sum: 138.30

BHA no. 8: No./Element/OD(in)/Length(m) Depth In: 2638 m MD Out: 2666 m MD

No.	Element	OD(in)	Length(m)	No.	Element	OD(in)	Length(m)
1	CD 93 FDIL	8.500	0.36	5	DRILL COLLAR STEEL	6.500	54.23
2	CORE BARREL	6.750	30.12	6	JAR	6.250	9.11
3	DRILL COLLAR STEEL	6.500	9.37	7	DRILL COLLAR STEEL	6.500	27.17
4	NON MAG. STAB	8.375	1.92	8	X-OVER	7.250	1.22

Reason Pulled: NEW CORE/FULL BARREL Sum: 133.50

BHA no. 9: No./Element/OD(in)/Length(m) Depth In: 2666 m MD Out: 2714 m MD

No.	Element	OD(in)	Length(m)	No.	Element	OD(in)	Length(m)
1	CD 93 FDIL	8.500	0.36	6	DRILL COLLAR STEEL	6.500	54.23
2	CORE BARREL	6.750	54.82	7	JAR	6.250	9.11
3	FLOAT SUB	6.750	0.93	8	DRILL COLLAR STEEL	6.500	27.17
4	DRILL COLLAR STEEL	6.500	9.37	9	X-OVER	7.250	1.22
5	NON MAG. STAB	8.375	1.92				

Reason Pulled: NEW CORE/FULL BARREL Sum: 159.13

BHA no. 10: No./Element/OD(in)/Length(m) Depth In: 2714 m MD Out: 2743 m MD

No.	Element	OD(in)	Length(m)	No.	Element	OD(in)	Length(m)
1	CD 93 FDIL	8.500	0.36	6	DRILL COLLAR STEEL	6.500	54.27
2	CORE BARREL	6.750	30.12	7	JAR	6.250	9.11
3	FLOAT SUB	6.750	0.93	8	DRILL COLLAR STEEL	6.500	27.17
4	DRILL COLLAR STEEL	6.500	9.37	9	X-OVER	7.250	1.22
5	NON MAG. STAB	8.375	1.92				

Reason Pulled: NEW CORE/FULL BARREL Sum: 134.47

BHA no. 11: No./Element/OD(in)/Length(m) Depth In: 2743 m MD Out: 2830 m MD

No.	Element	OD(in)	Length(m)	No.	Element	OD(in)	Length(m)
1	M50P	8.500	0.30	6	NON MAG. COLLAR	6.750	9.43
2	BIT SUB	6.500	0.95	7	DRILL COLLAR STEEL	6.500	63.64
3	CDR	6.812	6.86	8	JAR	6.250	9.11
4	MWD	6.812	8.47	9	DRILL COLLAR STEEL	6.500	27.17
5	NON MAG. STAB	8.250	1.79	10	X-OVER	7.250	1.22

Reason Pulled: TOTAL DEPTH/CASING DEPTH Sum: 128.94

BHA no. 12: No./Element/OD(in)/Length(m) Depth In: 2592 m MD Out: 2830 m MD

No.	Element	OD(in)	Length(m)	No.	Element	OD(in)	Length(m)
1	ATMGT-P18D	8.500	0.24	5	DRILL COLLAR STEEL	6.500	54.27
2	BIT SUB	6.500	0.95	6	JAR	6.250	9.11
3	DRILL COLLAR STEEL	6.560	9.37	7	DRILL COLLAR STEEL	6.500	27.17
4	STEEL STAB	6.750	1.79	8	X-OVER	7.250	1.22

Reason Pulled: RUN LOGS Sum: 104.12

BOTTOM HOLE ASSEMBLIES USED ON WELL 35/11-9

BHA no. 13: No./Element/OD(in)/Length(m) Depth In: 2369 m MD Out: 2830 m MD

1	ATMGT-P18D	8.500	0.24	5	JAR	6.250	9.11
2	BIT SUB	6.500	0.95	6	DRILL COLLAR STEEL	6.500	27.17
3	DRILL COLLAR STEEL	6.560	9.37	7	X-OVER	7.250	1.22
4	DRILL COLLAR STEEL	6.500	54.27				

Reason Pulled: RUN LOGS Sum: 102.33

BHA no. 14: Depth In: 2325 m MD Out: 2830 m MD; same elements as in BHA no. 13
Except Bit, here HTC, ATMGT-P18D (Length 0.24 m)
Reason Pulled: RUN LOGS

BHA no. 15: No./Element/OD(in)/Length(m) Depth In: 392 m MD Out: 392 m MD

1	INTERNAL CUTTER	11.750	2.02	5	SPEAR	18.750	2.62
2	BIT SUB	8.000	0.62	6	BUMPER SUB	8.000	1.62
3	STEEL STAB	17.500	1.65	7	DRILL COLLAR STEEL	8.000	84.14
4	EXTENSION SUB	8.000	0.57	8	X-OVER	8.000	0.92

Reason Pulled: Sum: 94.16

BHA no. 16: No./Element/OD(in)/Length(m) Depth In: 390 m MD Out: 390 m MD

1	INTERNAL CUTTER	11.750	2.02	5	BUMPER SUB	8.000	1.62
2	BIT SUB	8.000	0.62	6	DRILL COLLAR STEEL	8.000	84.14
3	EXTENSION SUB	8.000	0.57	7	X-OVER	8.000	0.92
4	SPEAR	18.750	2.62				

Reason Pulled: Sum: 92.51

BHA no. 17: No./Element/OD(in)/Length(m) Depth In: 383 m MD Out: 0 m MD

1	OVER SHOT	7.750	2.01	3	X-OVER	8.000	0.92
2	DRILL COLLAR STEEL	8.000	84.14				

Reason Pulled: Sum: 87.07

BHA no. 18: No./Element/OD(in)/Length(m) Depth In: 390 m MD Out: 390 m MD

1	INTERNAL CUTTER	11.750	2.02	4	SPEAR	18.750	2.62
2	BIT SUB	8.000	0.62	5	DRILL COLLAR STEEL	8.000	84.14
3	EXTENSION SUB	8.000	0.57	6	X-OVER	8.000	0.92

Reason Pulled: Sum: 90.89

BHA no. 19: No./Element/OD(in)/Length(m) Depth In: 390 m MD Out: 0 m MD

1	INTERNAL CUTTER	11.750	2.02	4	DRILL COLLAR STEEL	8.000	84.14
2	BIT SUB	8.000	0.62	5	X-OVER	8.000	0.92
3	SPEAR	27.000	2.62				

Reason Pulled: Sum: 90.32

Norsk Hydro

CEMENT/ADDITIVE CONSUMPTION PER JOB ON WELL 35/11-9

Date	CsgSize	Jobtype	Cement/ Additive	Description	Unit	Amount Planned Used	Amount Actual Used	Difference Amount	Difference %	Difference Cost [kNOK]
18-mar-1997	30"	CASING CEMENTING	CaCl2C	CaCl2 / ACCELERATOR: CALCIUM C	1		1500			
			ECONO	EXTENDER: ECONOLITE	1		500			
30-mar-1997	13 3/8"	CASING CEMENTING	ECONO	EXTENDER: ECONOLITE	1		3600			
			HR-4L	RETARDER: HR-4L, LIQUID	1		2335			
25-apr-1997	UNDEFIN	PLUG IN OPEN HOL	CFR-3L	DISPERSANT: CFR-3 LIQUID	1		438			
			GASCON	EDP-C469-91	1		950			
			HAL600	FLUID LOSS ADDITIVE: HALAD-600	1		1000			
			NF-5	NF-5	1		38			
			SCR100	RETARDER: SCR-100	kg		330			
26-apr-1997	13 3/8"	PLUG IN CASED HO	HR-4L	RETARDER: HR-4L, LIQUID	1		90			
			NF-5	NF-5	1		19			

Norsk Hydro

DAILY MUD PROPERTIES : RHEOLOGY PARAMETERS FOR WELL 35/11-9

Hole section: 36"

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]
02-mar-1997 23:59	397	397	SPUD MUD	100.0	1.06	0.0									0.0	0.0	0.0	0.0	0.0
03-mar-1997 23:59	420	420	SPUD MUD	100.0	1.06	0.0									0.0	0.0	0.0	0.0	0.0
04-mar-1997 23:59	447	447	SPUD MUD	100.0	1.06	0.0									0.0	0.0	0.0	0.0	0.0
05-mar-1997 23:59	447	447	SPUD MUD	100.0	1.06	0.0									0.0	0.0	0.0	0.0	0.0
06-mar-1997 23:59	447	447	SPUD MUD	100.0	1.06	0.0									0.0	0.0	0.0	0.0	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 Readings 600	300	200	100	60	30	6	3	Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]
20-mar-1997 23:59	1250	1250	SEA WATER	100.0	1.06	0.0									0.0	0.0	0.0	0.0	0.0
21-mar-1997 23:59	1250	1250	SEA WATER	100.0	1.06	0.0									0.0	0.0	0.0	0.0	0.0
30-mar-1997 23:00	1250	1250	SEA WATER	100.0	1.06	0.0									0.0	0.0	0.0	0.0	0.0

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 Readings 600	300	200	100	60	30	6	3	Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]
02-apr-1997 22:59	1250	1250	SEA WATER	0.0	1.03	0.0									0.0	0.0	0.0	0.0	0.0
03-apr-1997 22:59	1250	1250	SEA WATER	0.0	1.03	0.0									0.0	0.0	0.0	0.0	0.0
04-apr-1997 23:59	1250	1250	SEA WATER	0.0	1.03	0.0									0.0	0.0	0.0	0.0	0.0
05-apr-1997 23:59	1250	1250	ANCO 2000	0.0	1.25	0.0	67	49	41	31			13	11	50.0	18.0	15.5	6.0	8.0
06-apr-1997 11:30	1250	1250	ANCO 2000	0.0	1.25	0.0	72	54	44	34			13	11	50.0	18.0	18.0	6.0	8.0
07-apr-1997 20:20	1515	1515	ANCO 2000	0.0	1.25	0.0	67	49	41	31			13	11	50.0	18.0	15.5	6.0	10.0
08-apr-1997 20:30	1890	1890	ANCO 2000	77.0	1.25	0.0	76	55	46	35			13	11	50.0	21.0	17.0	6.0	10.0
09-apr-1997 22:00	2220	2220	ANCO 2000	70.0	1.26	0.0	64	47	41	31			13	10	50.0	17.0	15.0	5.5	8.0

See also the report 'DAILY MUD PROPERTIES : OTHER PARAMETERS'

DAILY MUD PROPERTIES : RHEOLOGY PARAMETERS FOR WELL 35/11-9

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]
10-apr-1997 23:59	2325	2325	ANCO 2000	70.0	1.20	0.0	65	47	41	31			13	10	50.0	18.0	14.5	5.5	8.0

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 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]
11-apr-1997 23:00	2325	2325	ANCO 2000	56.0	1.20	0.0	62	45	38	28			10	9	50.0	17.0	14.0	5.5	8.0
12-apr-1997 23:00	2450	2450	ANCO 2000	73.0	1.20	0.0	59	44	35	26			10	9	50.0	15.0	14.5	5.0	8.0
13-apr-1997 23:00	2565	2564	ANCO 2000	80.0	1.20	0.0	58	43	35	26			10	9	50.0	15.0	14.0	5.0	10.0
14-apr-1997 23:59	2638	2637	ANCO 2000	90.0	1.20	0.0	70	52	45	34			15	13	50.0	18.0	17.0	6.5	12.0
15-apr-1997 23:00	2666	2665	ANCO 2000	98.0	1.21	0.0	77	56	47	35			15	13	50.0	21.0	17.5	6.5	13.0
16-apr-1997 23:00	2743	2741	ANCO 2000	100.0	1.21	0.0	77	57	47	34			15	13	50.0	20.0	18.5	7.0	14.0
17-apr-1997 23:00	2754	2752	ANCO 2000	80.0	1.21	0.0	65	46	39	31			12	10	50.0	19.0	13.5	6.5	13.0
18-apr-1997 23:00	2754	2752	ANCO 2000	80.0	1.21	0.0	64	47	39	31			12	10	50.0	19.0	13.5	6.5	13.0
19-apr-1997 23:00	2754	2752	ANCO 2000	80.0	1.21	0.0	64	47	39	31			12	10	50.0	19.0	13.5	6.5	13.0
20-apr-1997 23:00	2754	2752	ANCO 2000	80.0	1.21	0.0	64	47	39	30			12	10	50.0	19.0	13.5	6.5	13.0
21-apr-1997 15:00	2830	2828	ANCO 2000	79.0	1.25	0.0	61	45	39	29			11	10	50.0	16.0	14.5	5.0	9.0
22-apr-1997 23:00	2830	2828	ANCO 2000	84.0	1.25	0.0	62	46	39	29			11	10	50.0	16.0	15.0	5.0	9.0
23-apr-1997 15:00	2830	2828	ANCO 2000	84.0	1.25	0.0	62	46	39	29			11	10	50.0	16.0	15.0	5.0	9.0
24-apr-1997 14:00	2830	2828	ANCO 2000	83.0	1.29	0.0	83	59	49	35			12	10	50.0	24.0	17.5	5.0	13.0
25-apr-1997 17:00	2400	2400	ANCO 2000	76.0	1.28	0.0	85	60	50	37			12	10	50.0	25.0	17.5	5.0	13.0
26-apr-1997 17:00	1000	1000	ANCO 2000	84.0	1.28	0.0	84	59	49	36			12	10	50.0	25.0	17.0	5.0	12.0
27-apr-1997 15:00	0		ANCO 2000	87.0	1.27	0.0									50.0	24.0	17.0	5.0	11.0

See also the report 'DAILY MUD PROPERTIES : OTHER PARAMETERS'

DAILY MUD PROPERTIES : OTHER PARAMETERS FOR WELL 35/11-9

Hole section: 36"

WATER BASED SYSTEM

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Dens [sg]	Filtrate API [ml]	Filtrate HPHT [ml]	Filt.cake API [mm]	Filt.cake HPHT [mm]	HPHT Press/Temp [psi/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++ [mg/l]	Tot hard [mg]	Percentage Solid [%]	Percentage Oil [%]	Percentage Sand [%]	CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
02-mar-1997 23:59	397	397	SPUD MUD	1.06	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
03-mar-1997 23:59	420	420	SPUD MUD	1.06	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
04-mar-1997 23:59	447	447	SPUD MUD	1.06	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
05-mar-1997 23:59	447	447	SPUD MUD	1.06	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
06-mar-1997 23:59	447	447	SPUD MUD	1.06	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

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]	Filt.cake API [mm]	Filt.cake HPHT [mm]	HPHT Press/Temp [psi/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++ [mg/l]	Tot hard [mg]	Percentage Solid [%]	Percentage Oil [%]	Percentage Sand [%]	CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
20-mar-1997 23:59	1250	1250	SEA WATER	1.06	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
21-mar-1997 23:59	1250	1250	SEA WATER	1.06	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
30-mar-1997 23:00	1250	1250	SEA WATER	1.06	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

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]	Filt.cake API [mm]	Filt.cake HPHT [mm]	HPHT Press/Temp [psi/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++ [mg/l]	Tot hard [mg]	Percentage Solid [%]	Percentage Oil [%]	Percentage Sand [%]	CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
02-apr-1997 22:59	1250	1250	SEA WATER	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
03-apr-1997 22:59	1250	1250	SEA WATER	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
04-apr-1997 23:59	1250	1250	SEA WATER	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
05-apr-1997 23:59	1250	1250	ANCO 2000	1.25	3.0	0.0	0	0	0/0	9.5	0.0	0.0	0.0	170	0	0	0	0	0	0.0	0.0	0.0	0	0.0	0
06-apr-1997 11:30	1250	1250	ANCO 2000	1.25	0.0	0.0	0	0	0/0	9.4	0.0	0.0	0.0	179	0	90000	0	0	0	9.7	0.0	0.0	0	0.0	2
07-apr-1997 20:20	1515	1515	ANCO 2000	1.25	3.0	0.0	1	0	0/0	8.7	0.0	0.0	0.0	0	0	80000	0	0	0	10.0	0.0	0.0	0	0.0	21
08-apr-1997 20:30	1890	1890	ANCO 2000	1.25	3.8	0.0	1	0	0/0	8.6	0.0	0.0	0.0	170	0	68000	240	0	0	11.5	0.0	0.0	22	0.0	96
09-apr-1997 22:00	2220	2220	ANCO 2000	1.26	3.7	0.0	1	0	0/0	8.1	0.0	0.0	0.0	130	0	87000	290	0	0	11.6	0.0	0.0	21	0.0	79
10-apr-1997 23:59	2325	2325	ANCO 2000	1.20	3.7	0.0	1	0	0/0	8.1	0.0	0.0	0.0	130	0	87000	290	0	0	10.8	0.0	0.0	21	0.0	146

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]	Filt.cake API [mm]	Filt.cake HPHT [mm]	HPHT Press/Temp [psi/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++ [mg/l]	Tot hard [mg]	Percentage Solid [%]	Percentage Oil [%]	Percentage Sand [%]	CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
11-apr-1997 23:00	2325	2325	ANCO 2000	1.20	3.7	0.0	1	0	0/0	8.0	0.0	0.0	0.0	146	0	70000	280	0	0	8.0	0.0	0.0	0	0.0	0
12-apr-1997 23:00	2450	2450	ANCO 2000	1.20	3.7	0.0	1	0	0/0	8.2	0.0	0.0	0.0	140	0	59000	170	335	0	8.0	0.0	0.0	13	0.0	10
13-apr-1997 23:00	2565	2564	ANCO 2000	1.20	3.7	0.0	1	0	0/0	8.1	0.0	0.0	0.0	140	0	610000	170	322	0	9.0	0.0	0.0	25	0.0	63
14-apr-1997 23:59	2638	2637	ANCO 2000	1.20	3.8	0.0	1	0	0/0	8.1	0.0	0.0	0.0	143	0	710000	160	0	325	9.0	0.0	0.0	30	0.0	56
15-apr-1997 23:00	2666	2665	ANCO 2000	1.21	3.8	0.0	1	0	0/0	8.5	0.0	0.0	0.0	143	0	700000	140	0	320	9.0	0.0	0.0	28	0.0	44
16-apr-1997 23:00	2743	2741	ANCO 2000	1.21	3.8	0.0	1	0	0/0	8.1	0.0	0.0	0.0	145	0	72000	130	0	310	9.0	0.0	0.0	28	0.0	41
17-apr-1997 23:00	2754	2752	ANCO 2000	1.21	3.5	0.0	1	0	0/0	8.3	0.0	0.0	0.0	145	0	70000	200	0	320	10.0	0.0	0.0	28	0.0	97
18-apr-1997 23:00	2754	2752	ANCO 2000	1.21	3.5	0.0	1	0	0/0	8.3	0.0	0.0	0.0	145	0	70000	200	0	320	10.0	0.0	0.0	28	0.0	97
19-apr-1997 23:00	2754	2752	ANCO 2000	1.21	3.5	0.0	1	0	0/0	8.3	0.0	0.0	0.0	145	0	70000	200	0	320	10.0	0.0	0.0	28	0.0	97

See also the report 'DAILY MUD PROPERTIES : RHEOLOGY PARAMETERS'

DAILY MUD PROPERTIES : OTHER PARAMETERS FOR WELL 35/11-9

Hole section: 8 1/2"

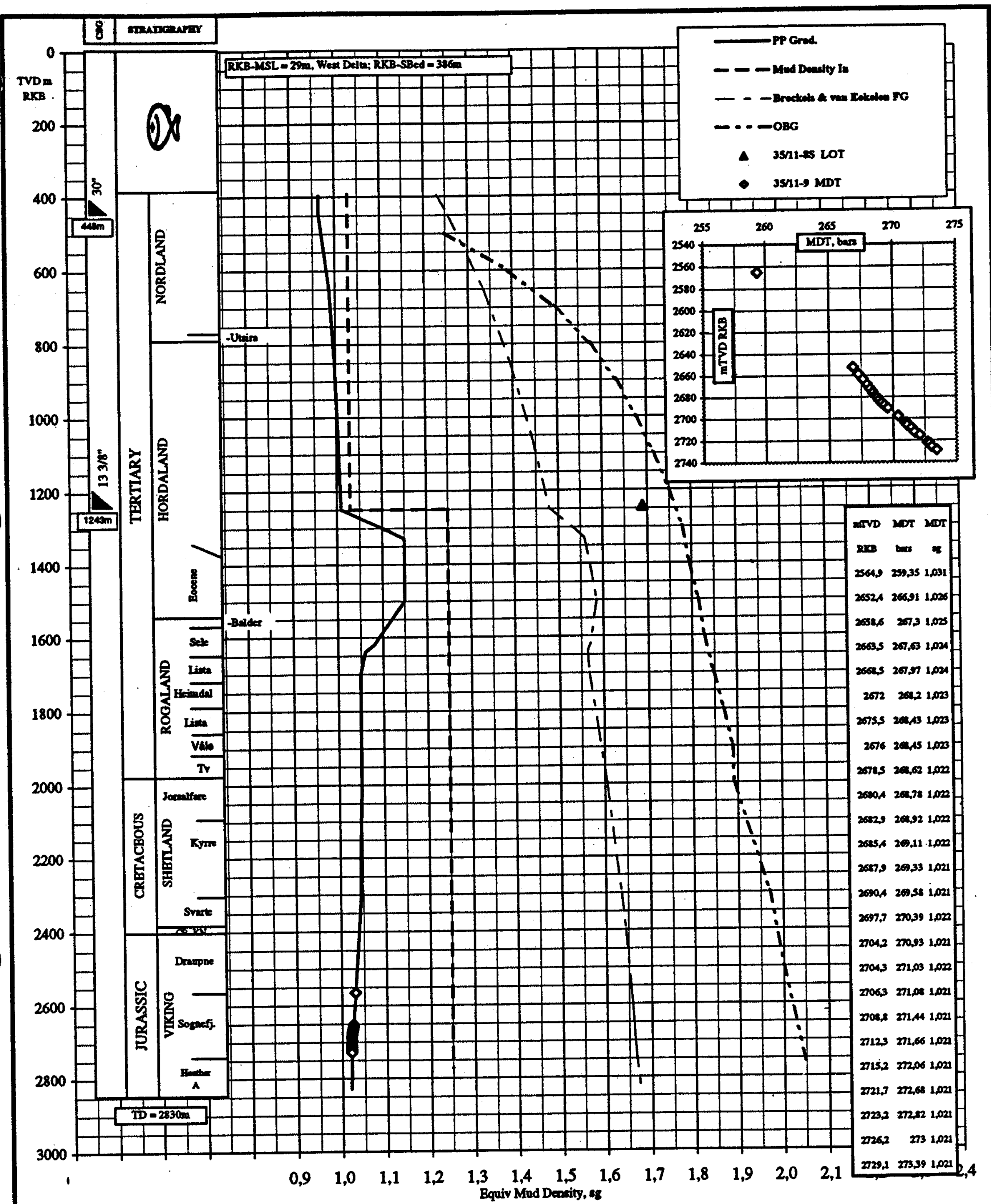
WATER BASED SYSTEM

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Dens [sg]	Filtrate API [ml]	Filtrate HPHT [ml]	Filt.cake API [mm]	Filt.cake HPHT [mm]	HPHT Press/Temp [psi/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++ [mg/l]	Tot hard [mg]	Percentage Solid [%]	Percentage Oil [%]	Percentage Sand [%]	CEC [Kg/m3]	ASG [sg]	LGS [Kg/m3]
20-apr-1997 23:00	2754	2752	ANCO 2000	1.21	3.5	0.0	1	0	0/0	8.3	0.0	0.0	0.0	145	0	70000	200	0	320	10.0	0.0	0.0	28	0.0	97
21-apr-1997 15:00	2830	2828	ANCO 2000	1.25	3.3	0.0	1	0	0/0	8.0	0.0	0.0	0.0	142	0	71000	120	0	260	12.0	0.0	0.0	32	0.0	136
22-apr-1997 23:00	2830	2828	ANCO 2000	1.25	3.3	0.0	1	0	0/0	8.0	0.0	0.0	0.0	143	0	71000	120	0	260	12.0	0.0	0.0	33	0.0	136
23-apr-1997 15:00	2830	2828	ANCO 2000	1.25	3.3	0.0	1	0	0/0	8.0	0.0	0.0	0.0	143	0	71000	120	0	260	12.0	0.0	0.0	33	0.0	136
24-apr-1997 14:00	2830	2828	ANCO 2000	1.29	3.1	0.0	1	0	0/0	9.1	0.0	0.0	0.0	142	0	71000	120	0	220	13.0	0.0	0.0	34	0.0	141
25-apr-1997 17:00	2400	2400	ANCO 2000	1.28	3.2	0.0	1	0	0/0	8.7	0.0	0.0	0.0	140	0	71000	120	0	180	13.0	0.0	0.0	35	0.0	141
26-apr-1997 17:00	1000	1000	ANCO 2000	1.28	3.2	0.0	1	0	0/0	9.1	0.0	0.0	0.0	139	0	71000	160	0	260	13.0	0.0	0.0	35	0.0	141
27-apr-1997 15:00	0		ANCO 2000	1.27	3.4	0.0	1	0	0/0	9.1	0.0	0.0	0.0	132	0	71000	160	0	260	13.0	0.0	0.0	34	0.0	157

See also the report 'DAILY MUD PROPERTIES : RHEOLOGY PARAMETERS'

TOTAL CONSUMPTION OF MUD ADDITIVES ON WELL 35/11-9

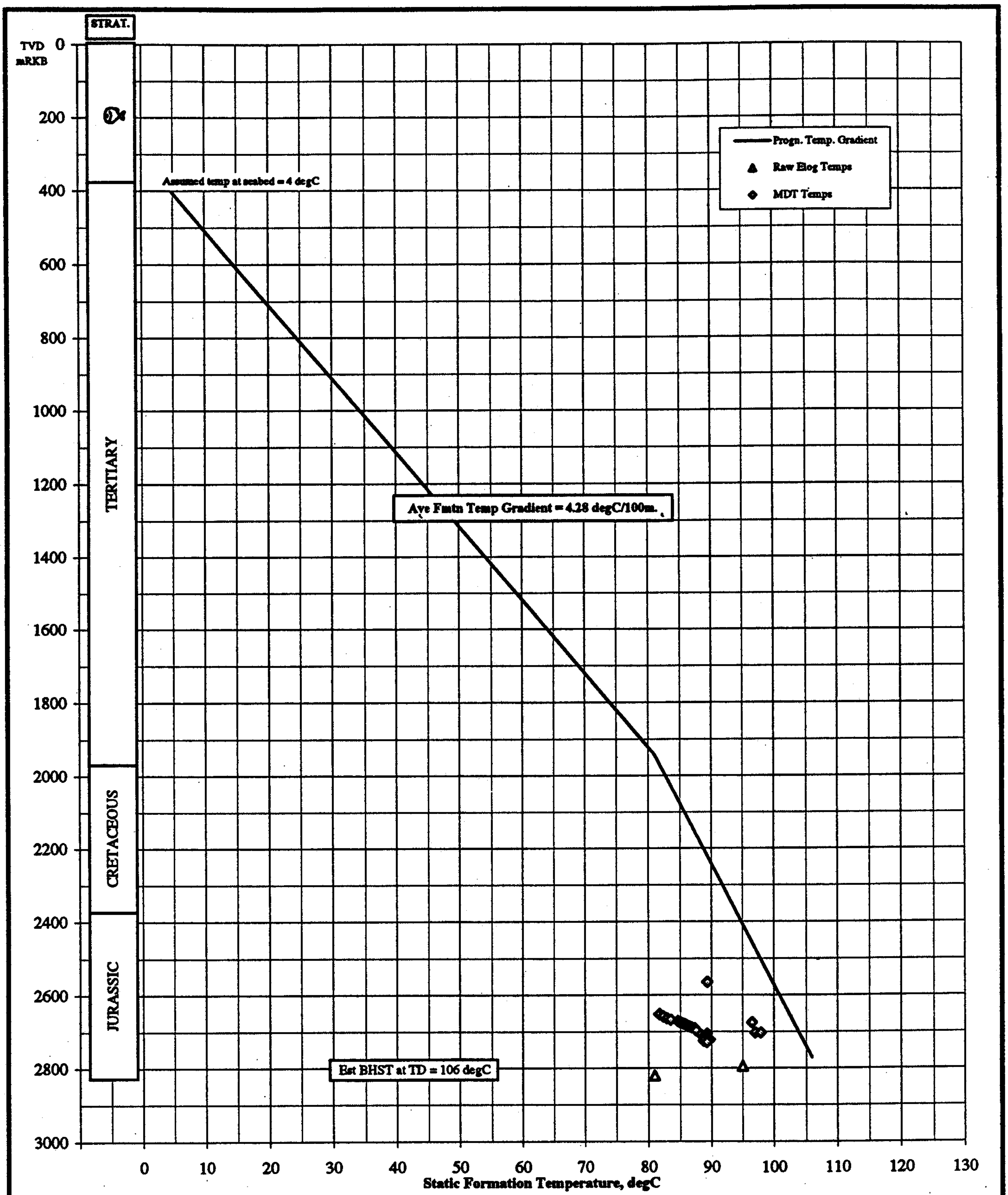
Section Size	Product/Additive	Total Amount Planned	Total Amount Used	Unit	Difference Amount	Difference %	Difference in cost %	Difference in cost [kNOK]
36"	ANCO BAR		132000.0	kg				
	BENTONITE		72000.0	kg				
	LIME		280.0	kg				
	SODA ASH		475.0	kg				
17 1/2"	ANCO BAR		128000.0	kg				
	BENTONITE		57000.0	kg				
	KCL BRINE		59000.0	l				
	LAMPAC EXLO		1000.0	kg				
	LIME		185.0	kg				
	POTASSIUM BICARBONATE		50.0	kg				
	RHODOPOL 23P		625.0	kg				
	SODA ASH		825.0	kg				
12 1/4"	ANCO 208		18300.0	l				
	ANCO BAR		82000.0	kg				
	ANCO NOFOAM		150.0	l				
	BENTONITE		1000.0	kg				
	KCL		70000.0	kg				
	KCL BRINE		240000.0	l				
	LAMPAC EXLO		7725.0	kg				
	LIME		20.0	kg				
	POTASSIUM BICARBONATE		575.0	kg				
	RHODOPOL 23P		3925.0	kg				
	SODA ASH		50.0	kg				
8 1/2"	ANCO 208		20900.0	l				
	ANCO BAR		188000.0	kg				
	BICARBONATE		200.0	kg				
	CITRIC ACID		425.0	kg				
	FLOWZAN 71006		4025.0	kg				
	KCL		104000.0	kg				
	LAMPAC EXLO		10275.0	kg				
	POT. CARBONATE		500.0	kg				



mTVD RKB	MDT bars	MDT sg
2564,9	259,35	1,031
2652,4	266,91	1,026
2658,6	267,3	1,025
2663,5	267,63	1,024
2668,5	267,97	1,024
2672	268,2	1,023
2675,5	268,43	1,023
2676	268,45	1,023
2678,5	268,62	1,022
2680,4	268,78	1,022
2682,9	268,92	1,022
2685,4	269,11	1,022
2687,9	269,33	1,021
2690,4	269,58	1,021
2697,7	270,39	1,022
2704,2	270,93	1,021
2704,3	271,03	1,022
2706,3	271,08	1,021
2708,8	271,44	1,021
2712,3	271,66	1,021
2715,2	272,06	1,021
2721,7	272,68	1,021
2723,2	272,82	1,021
2726,2	273	1,021
2729,1	273,39	1,021

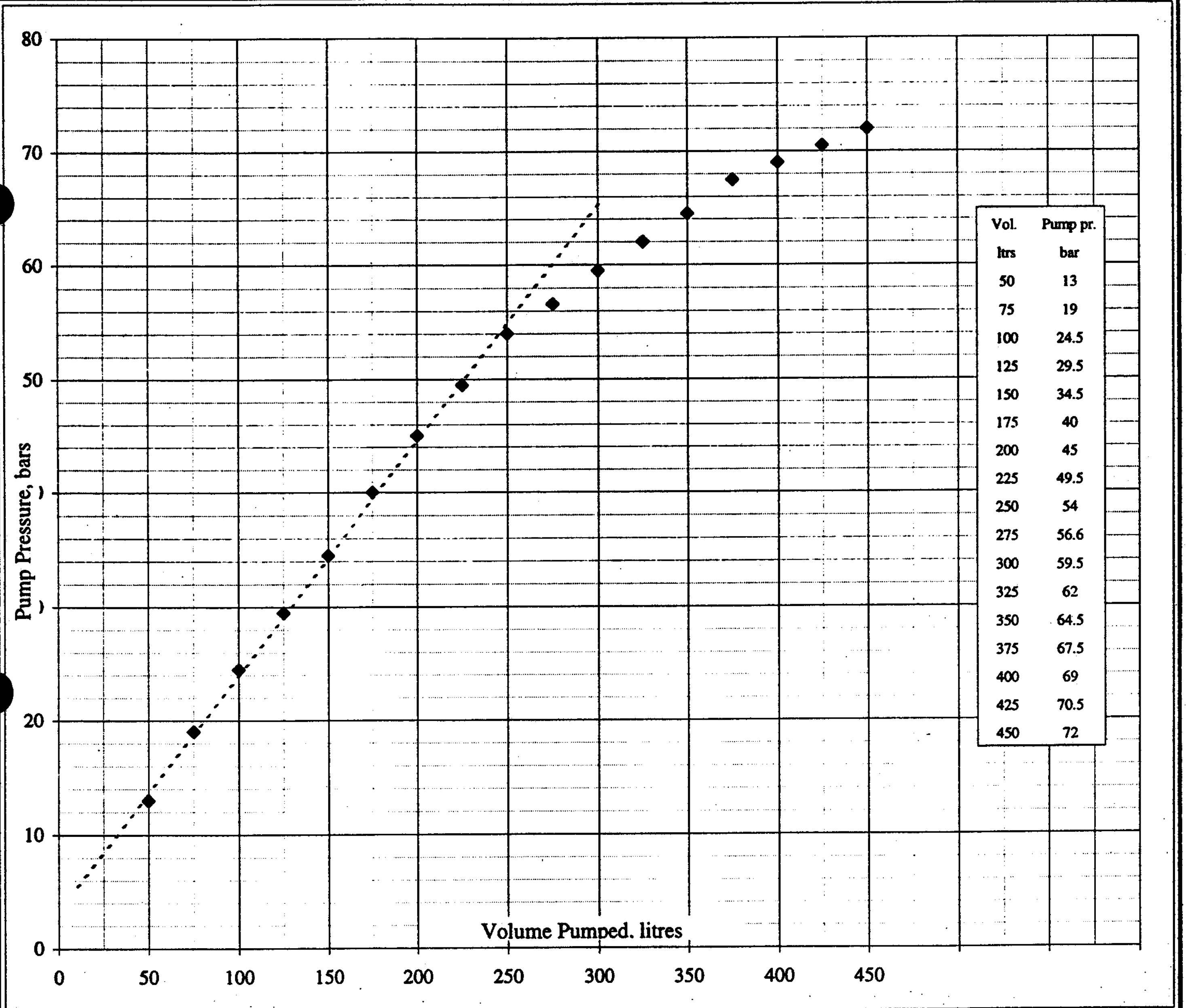
Final Well Report 35/11-9	Figure: 5.1	Estimated pore pressure, mud density, fracture- and overburden gradients

HYDRO



Final Well Report 35/11-9	Fig.: 5.2	Prognosed Formation Temperature Gradient	HYDRO

Well 35/11-9		Test type - ELOT/LOT/FIT LOT		Test date 07.04.97	
Rig West Delta	Airgap(m) 29	MSL-Seabed (m) 357	Csg OD" 13 3/8"	Hole angle (deg) 0	
Csg Shoe (mMD/mTVD) 1243	1243	1250	1250	Lithology Shale	
Mud Properties	Dens (sg) 1.25	API WL(ml/30min) 3	PV (cp) 18	YP (Pa) 18	Gels (Pa) 6/8
Pump Rate (l/min) 50		Vol pumped (l.) 450		Vol bled back (l.) 375	
Leakoff Pressure (bar) 54		Max pressure (bar) 72		Propagation press. (bar)	
Test result (sg EMD) **1.69**		Comments			



Final Well Report 35/11-9	**Fig.** 3.	**Formation Strength Test Report**

HYDRO

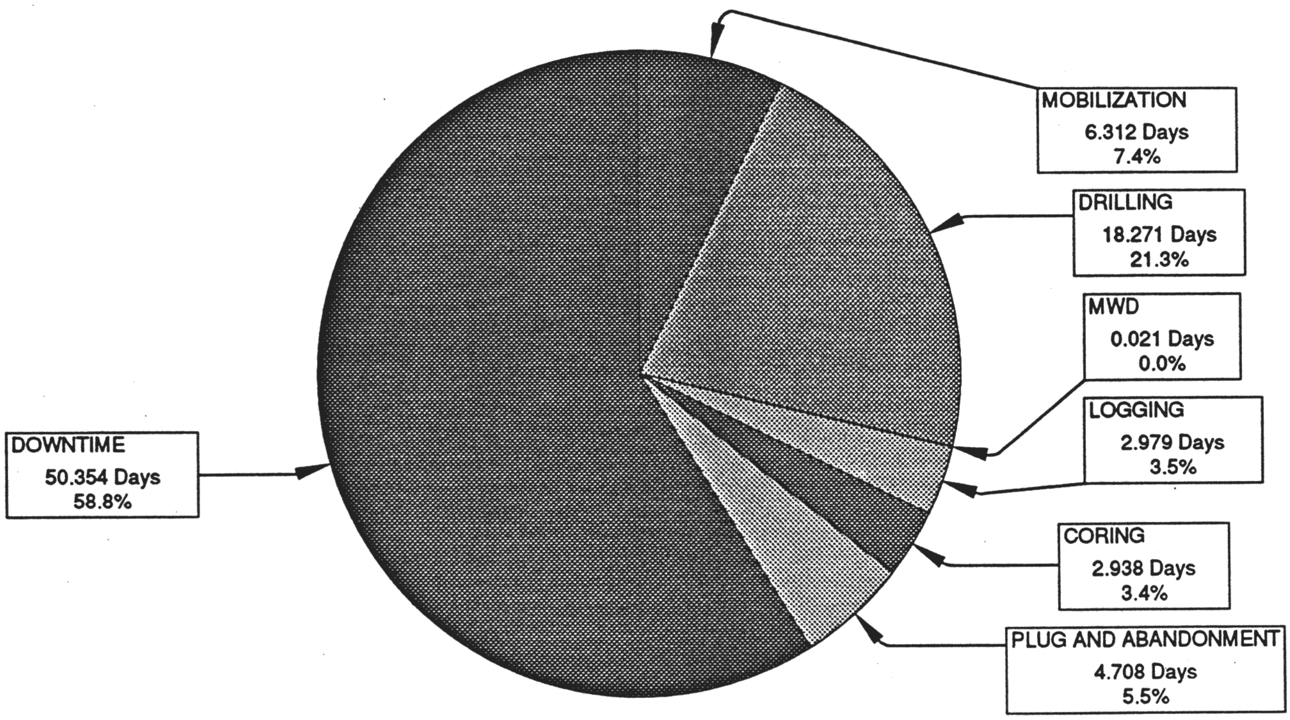
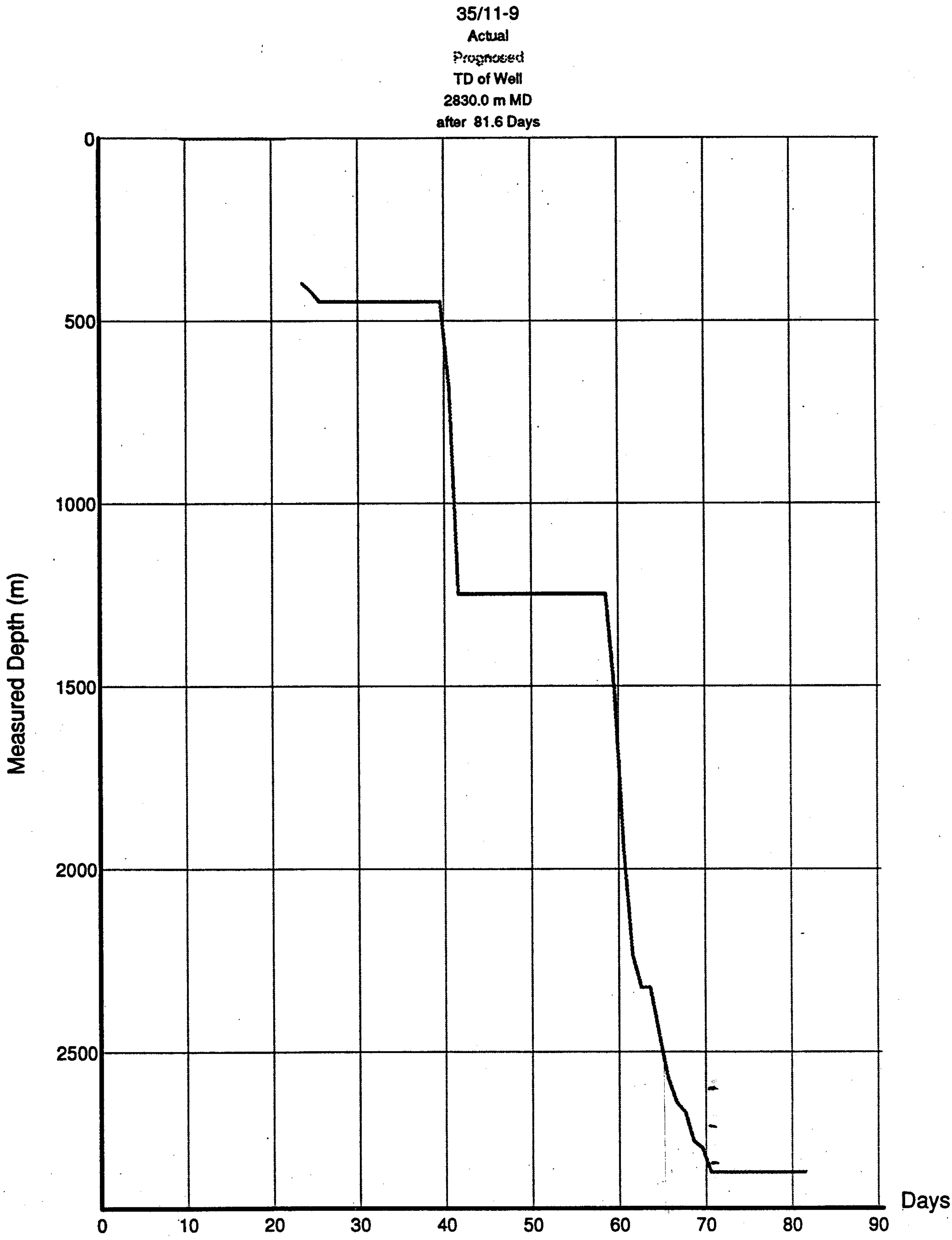
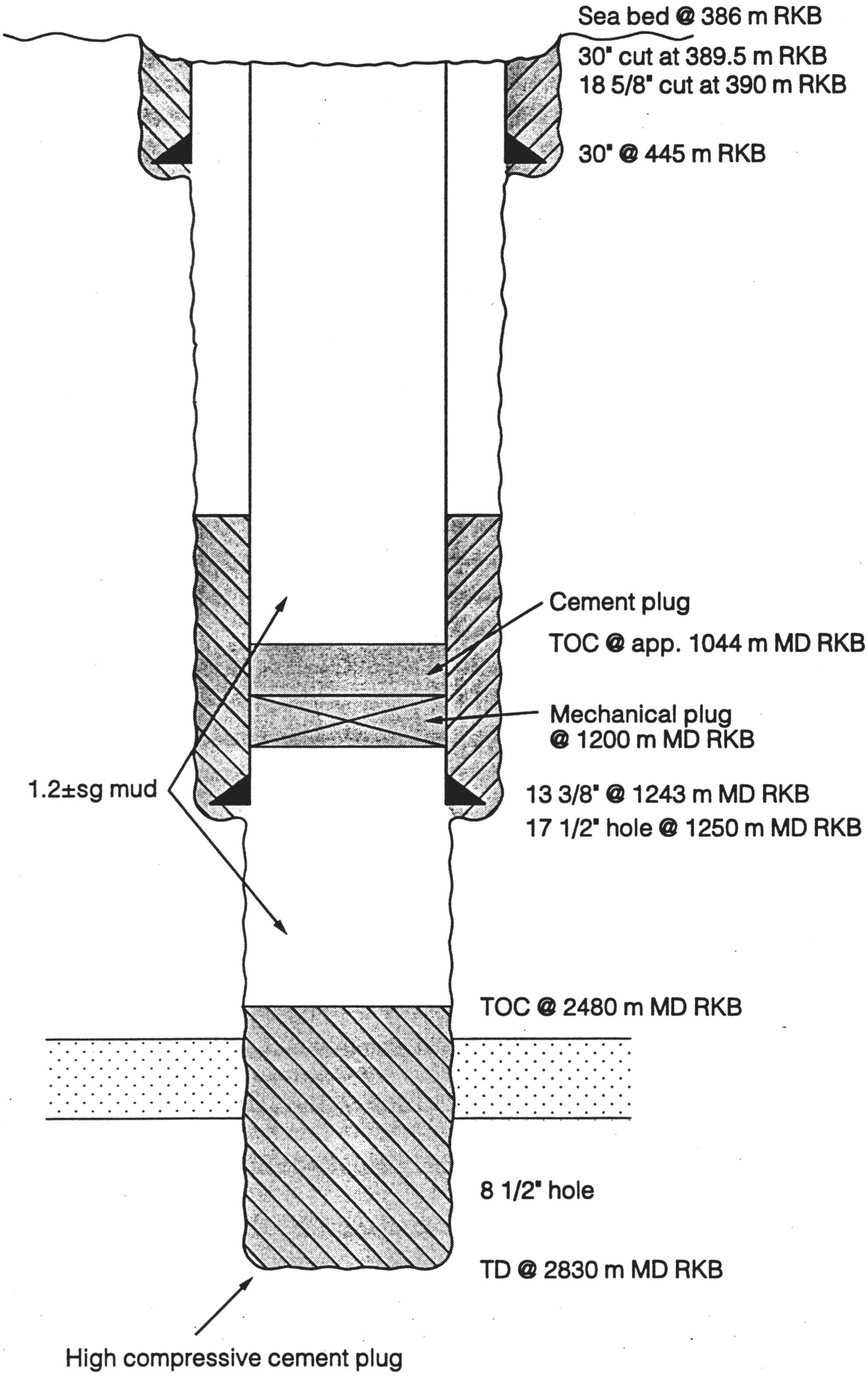


Figure 4		Time Distribution Well: 35/11-9	HYDRO

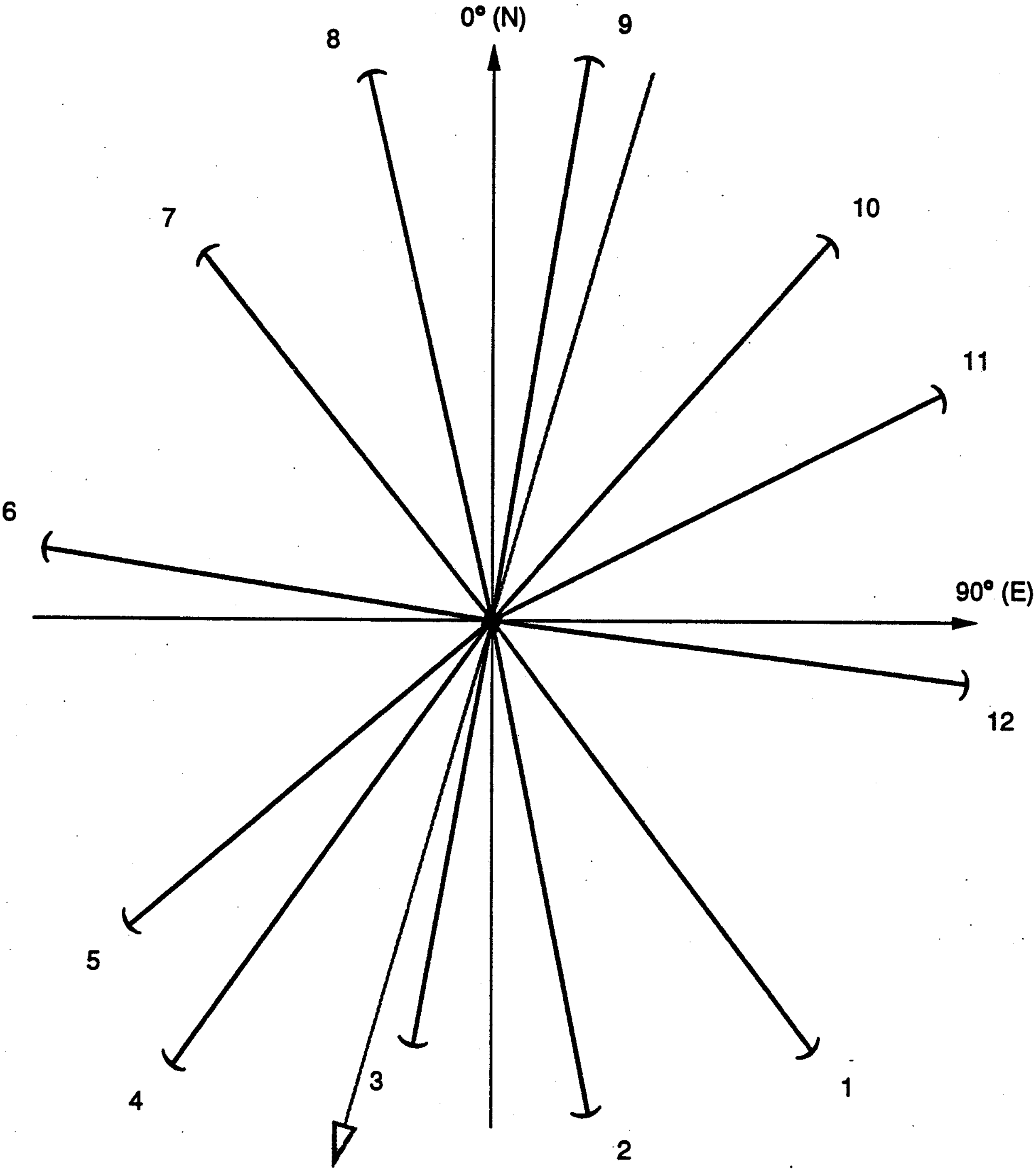


Ref. Point: RKB 29.0 m above MSL

Figure 5		MD Drilling Curve	HYDRO



Well 35/11-9	Figure :6 Revision :0 Date :19.09.97	**Well Status after Abandonment**



RIG HEADING 200 DEG.

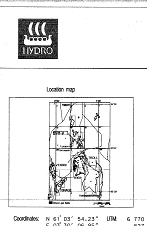
ANCHOR NO.	DIRECTION (DEG.)	LENGTH (m)
1	137	1911
2	166	1657
3	193	1423
4	222	1957
5	236	1792
6	277	1849
7	315	1681
8	344	1858
9	12	1879
10	48	1844
11	68	1973
12	96	1945

Figure 7		Mooring Line Pattern WEST DELTA 35/11-9	HYDRO

Completion log

Scale: 1:500

Well: 35/11-9



CORE REPORT

WELL: 35/11-9 | DATE: 15.04.97 | GEOL: T.H. Watts | SCALE: 1:200

CORE NO: 1 | FROM: 2638 m | TO: 2666.3 m | CORED: 28.3 m | REC: 100%

Depth m RKB	Lithological Description	Shows description
2640	**Sltst:** m-dk gry, hd, wl cmtd, fis, lam, v Mic/Micromic, v carb, fspr, abd vf sd, plt rem, sl dol	No dir fluor, slo strmg crm wh cut fluor, faint brn vis cut, m grn/yel res fluor, lt brn vis resd
2645	**Mic Sltst:** m - dk gry, hd, fis, abd musc Mic + Micromic, carb clasts + plt deb, sl sdy Tr fspr w/lams **Sandy Sltst:** m - dk gry - brn dk gry, hd, abd vf sd, mic, fspr, sl dol carb	
2650	**Sltst:** m dk gry, hd, fis, mic carb, sl pyr, plt rem, Tr sd, fspr, sl dol **Sdy Sltst:** dk brn gry-m bru, hd, sbfis-mass, v mic, carb, interlam w/Sst: lt brn hd, vf-vrs, wl cmt w/dol, mic, fspr, Tr arg mtrx, no vis por **Sltst:** m-dk gry, hd, sbfis, v mic, carb, fspr, calc/dol vf sd **Laminated Sst:** pl yel brn, frm-hd, fri, mic lams, f-vf, ang-sbang, fspr, sil cmt mod-pr vis por	Patchy dull brt straw yel dir fluor, v slw strmg yel wh cut fluor, no vis cut, wh resd fluor, no vis res - lt brn res
2655	**Sst:** pl yel, loc m gry, O stn trnsl gts, frm, fri, f occ vf, wl srt, ang occ sbang-sbrndd, musc mic, fspr (Kao), loc mic lams, wk sil cmt, Tr slty mtrx, v gd vis por	Med straw yel dir fluor, fst strmg mky wh cut fluor, no vis cut, crm wh res fluor, grn/yel vis res
2660	**Sst:** pl yel brn-pl gn brn, O stn, trnsl-op qtz, frm - hd, fri, vf - crs, ang - sbrndd, pr srt, Mic, sil cmt, r calc cmt, fspr (Kao) occ arg clasts, abd carb mat w/plt deb, gd vis por	
2665		Straw yel dir fluor inst flash cut, slo-mod strmg mky wh cut fluor no vis cut, ? wh res fluor gn/ yel vis res,-lt brn res

CORE REPORT

WELL: 35/11-9 | DATE: 16.04.97 | GEOL: Anderson/Eriksson/Pedersen | SCALE: 1:200

CORE NO: 2 | FROM: 2666.3 m | TO: 2714.2 m | CORED: 47.9 m | REC: 47.9 m 100 %

Depth m RKB	Lithological Description	Shows description
2666.3	**Sst:** lt gry, Qtz, trnsl-clr occ op, pred m occ f-crs, gen sbang-occ sbrndd, spher occ sb spher mod hd, cmt w/sil, occ carb, occ Mic, mod - gd vis por	Fnt-mod pet od. No oil stn, uni brt yel/gn dir fluor, slo brt yel strmg occ inst cut fluor, no vis cut, brt pl yel fluor res, pl yel brn vis res.
2670	**Slst:** dk gry, mod hd, plty, com vf sd, non calc, micromic.	
2675	**Sst:** at 2677 m hd, wl cmt w/sil	
2680	**Sst:** lt gry brn-lt gry, Qtz, clr-trnsl, f-m r crs, sbang- sbrndd, sb spher, wl srt, mod hd, occ frm, cmt w/sil, Tr Mica, Mod vis por.	Below 2681 m. Cut fluorscence is less intense. (Pos top of transition zone)
2685		
2690	**Slst:** dk gry, mod hd, sb fis-plty, non calc, occ vf sd, Micromic.	
2695		No shows below 2692 m OWC between 2692 - 2695 m

CORE REPORT

2 of 2

WELL: 35/11-9 | DATE: 16.04.97 | GEOL: Anderson/Eriksson/Pedersen | SCALE: 1:200

CORE NO: 2 | FROM: 2695 m | TO: 2714.20 m | CORED: 47.9 m | REC: 47.9 m 100%

Depth m RKB	Lithological Description	Shows description
-	**Sst:** lt gry, Qtz, clr-trnsl, gen f-m, sbang-sbrndd, wl srt, mod hd, cmt w sil, Tr MicroMic, mod vis por.	No shows
2700		
2705		
2710	**Sst:** lt gry, Qtz, clr-trnsl, f-crs, sbang, sb spher-sb elong, mod srt, mod hd, cmt w/sil, occ lithic frag, Tr Mic, mod vis por.	No shows
2714.20		

CORE REPORT

WELL: 35/11-9 | DATE: 17.04.97 | GEOL: T. Pedersen | SCALE: 1:200

CORE NO: 3 | FROM: 2714.20 m | TO: 2740.95 m | CORED: 26.75 m | REC: 26.75 m 92.3%

Depth m RKB	Lithological Description	Shows description
2715	**Sst:** lt-m dk gry, clr-trnsl Qtz, occ mky wh, vf - v crs, dom f-m, sbang-sbrndd, mod srt, Tr Clyst-Sltst clast, Tr Micropyr, cotd,. P., Tr Kao Mtrx, Tr sil cmt, r -Tr calc cmt, r - Tr carb Mat. pr vis por	no dir Fluor w/mnr yel brt spots, slo v wk wh-bl wh strmg cut fluor, no vis cut, yel-wh res fluor, no vis res
2720	**Sst:** lt-m dk gry, dk gry I.P., clr-trnsl Qtz, occ mky wh, f-v crs, dom f-m, sbang-sbrndd, mod srt, arg & Kao Mtrx, gd Tr calc cmt, gd Tr clyst-sltst clast, Tr Pyr, r Tr carb Mat. pr vis por	no dir Fluor, pr vis wh bl strmg cut fluor, no vis cut, bl-wh mky wh res fluor, no vis res
2725	**Sst:** wh-lt gry, clr-trnsl, Qtz, f-crs, dom f-m, mod srt, calc cmt & Kao Mtrx, Tr Clyst clasts, Tr Musc, gd-f-vis por	no dir Fluor, strmg bl-wh cut fluor, no vis cut, wk bl wh res fluor, no vis res
2730	**Sltst:** gry blk-blk, hd, flk, brit, shaly, non calc, v arg, v gd Tr Musc, Tr lt brn Qtz Gr I.P., Tr carb Mat	no dir Fluor, brt bl-wh slw strmg/ blmg cut fluor, no vis cut, brt yel/gn wh res ring, no vis res
2735	**Sltst w/inbd sst & md draping:** Sltst a.a w/lt gry-wh sst intbd, clr-trnsl Qtz, vf-f, wi srt, calc cmt & Kao Mtrx, pr vis por, w/m brn - brn gry md draping, Tr Musc	no dir Fluor, yel/bl wh fst strmg/ blmg cut fluor, no vis cut, dull wh res fluor, no vis res.
2740	**Sdy llst:** brn-brn gry, v hd, vf sdy, m-crs Gr I.P., abd Musc, Tr carb Mat, r Tr Fspr, calc **Mic Sltst:** gry blk-blk, hd, mass, f lk, splint, abd Mic, v calc I.P., Tr vf-f Sd Gr	

FORMATION PRESSURE WORKSHEET

Well Name: 35/11-9 | Rig: West Delta | Date: 21- 97-04-22

Pressure Units: Bara | RKB-MSL: 29m m. | MSL-SBed: 357 m. | Witnessed by: Andersen/Hinderaker/Rokke

Run No./ Test No.	Depth mMD RKB	Depth mTVD RKB	Initial Hydrostatic Pressure Strain	Initial Hydrostatic Pressure Quartz	Formation Pressure Strain	Formation Pressure Quartz	Final Hydrostatic Pressure Strain	Final Hydrostatic Pressure Quartz	Time hh:mm Set	Time hh:mm Retract	Formation Pressure sg EMD	Test Temp degC	Good Data? Y/N	Sample Information Main Fluid Type	HC Gravity g/cc	Sample Vol, cc	Remarks
1	2654	2652.6	328,40	328,31	-	-	-	-	19:54	19:56	-	81,5	N				NO SEAL
2	2653.8	2652.4	328,19	328,20	266,90	266,91	328,20	328,05	20:01	20:03	1,03	81,7	Y				30,5mD
3	2660	2658.6	329,00	329,01	267,29	267,30	329,03	329,00	20:07	20:09	1,06	82,3	Y				320,2mD
4	2665	2663.5	329,61	329,64	267,61	267,63	329,60	329,58	20:14	20:16	1,02	82,9	Y				479,1mD
5	2670	2668.5	330,18	330,29	267,98	267,97	330,20	330,20	20:21	20:23	1,02	83,5	Y				556,0mD
6	2674	2672.5	330,73	330,76	-	-	330,77	330,78	20:29	20:31	-	84,1	N				TIGHT
7	2673.5	2672	330,69	330,73	268,17	268,20	330,70	330,71	20:39	20:42	1,02	84,6	Y				18,3mD
8	2677	2675.5	331,08	331,08	268,44	268,43	331,07	331,07	20:46	20:48	1,02	85,1	Y				400,2mD
9	2680	2678.5	331,49	331,50	268,64	268,62	331,50	331,51	20:54	20:56	1,02	85,4	Y				486,8mD
10	2682	2680.4	331,68	331,70	268,79	268,78	331,70	331,71	21:00	21:02	1,02	85,8	Y				111,7mD
11	2684.5	2682.9	332,02	332,04	268,93	268,92	331,99	332,01	21:07	21:10	1,02	86,0	Y				300,8mD
12	2687	2685.4	332,31	332,28	269,12	269,11	332,33	332,30	21:15	21:18	1,02	86,4	Y				124,4mD
13	2689.5	2687.9	332,60	332,60	269,33	269,33	332,61	332,59	21:27	21:29	1,02	86,8	Y				152,7mD
14	2692.5	2690.9	332,98	332,97	-	-	333,05	333,03	21:34	21:36	-	87,0	N				TIGHT
15	2692	2690.4	332,90	332,89	269,61	269,58	332,95	332,92	21:41	21:44	1,02	87,3	Y				320,4mD
16	2699.4	2697.7	333,86	333,81	270,41	270,39	333,89	333,83	21:48	21:51	1,02	87,6	Y				79,9mD
17	2706	2704.3	334,66	334,63	271,01	271,03	334,67	334,65	21:56	21:59	1,02	87,9	Y				266,6mD
18	2710.5	2708.8	335,18	335,16	271,47	271,44	335,16	335,11	22:06	22:09	1,02	88,3	Y				109,0mD

NB: Fmtn Press sg calculated from RKB

Page: 2 of 2

FORMATION PRESSURE WORKSHEET

Well Name: 35/11-9 | Rig: West Delta | Date: 21- 97-04-22

Pressure Units: Bara | RKB-MSL: 29m m. | MSL-SBed: 357 m. | Witnessed by: Andersen/Hinderaker/Rokke

Run No./ Test No.	Depth mMD RKB	Depth mTVD RKB	Initial Hydrostatic Pressure Strain	Initial Hydrostatic Pressure Quartz	Formation Pressure Strain	Formation Pressure Quartz	Final Hydrostatic Pressure Strain	Final Hydrostatic Pressure Quartz	Time hh:mm Set	Time hh:mm Retract	Formation Pressure sg EMD	Test Temp degC	Good Data? Y/N	Sample Information Main Fluid Type	HC Gravity g/cc	Sample Vol, cc	Remarks
19	2717	2715,2	335,96	335,94	272,08	272,06	336,01	335,95	22:14	22:16	1,02	88,7	Y				138,9mD
20	2723,5	2721,7	336,74	336,75	272,67	272,68	336,72	336,75	22:23	22:26	1,02	88,9	Y				38,7mD
21	2731	2729,1	337,62	337,63	273,41	273,39	337,58	337,65	22:31	22:34	1,02	89,3	Y				136,1mD
22	2725	2723,2	336,90	336,90	272,83	272,82	336,90	336,91	22:45	22:47	1,02	89,7	Y				104,1mD
23	2728	2726,2	337,16	337,18	273,02	273,00	337,14	337,15	23:30	23:33	1,02	88,8	Y				117,9mD
24	2714	2712,3	335,32	335,30	271,67	271,66	335,38	335,37	23:40	23:43	1,02	89,1	Y				128,0mD
25	2708	2706,3	334,65	334,63	271,09	271,08	334,63	334,62	23:47	23:50	1,02	89,3	Y				213,6mD
26	2706	2704,2	334,50	334,50	271,03	270,93	334,48	334,49	00:25	14:00	1,02	97,0	Y	WATER	[illegible]		Flow control used
27	2677,4	2675,9	332,70	332,71	268,35	268,38			14:20	14:40	1,02		N	OIL			Plugged
28	2679,9	2678,4							14:50	15:00			N	OIL			Tight
29	2677,5	2676	332,86	332,81	268,51	268,45	330,50	330,52	15:10	22:30	1,02	96,5	Y	OIL		4x450cc	Large area probe
30	2565	2564,6	316,72	316,77					22:50	23:00			N				Tight
31	2565,3	2564,9	316,85	316,77	259,43	259,35	316,82	316,72	23:10	23:20	1,03	89,4	Y				2,4 Darcies(Not full Drawdown)

NB: Fmtn Press sg calculated from RKB

Page: 2 of 2

MDT2.WKS

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/ 11-9

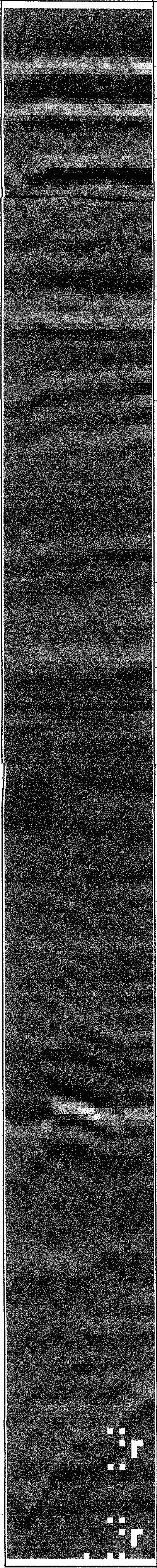
COORDINATES:
Geographic: 61°03` 54.23" N – 3°30` 06.95" E
UTM: 6770 298.9 mN – 527 093.0 mE
ED50, Zone 31 (CM 3° E).

RIG: WEST DELTA
RKB: 29 m
SPUD DATE: 12.03.97
COMPLETION DATE: 18.04.97

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

Seismic source: 4x40 cu.in sleeve airgun
Sample rate: 1.0 ms
Streamer: 1200 m96 ch/6.25m, 6.25m
Line: MN9201– X-Line 1455

Well location 35/11-9

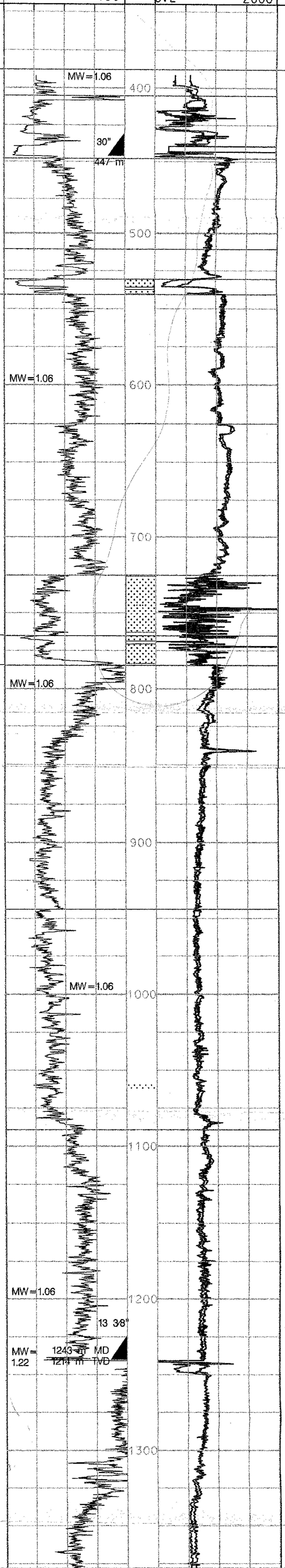


Reflectors	TWT (ms)	Int. vel	TVD Depth (m RKB)	Results RKB (TWT)	Int.vel.
	483		386	386 m (483 ms)	
R1	512	1585	409	405 m (512 ms)	1565
R3	556	1883	449	448 m (556 ms)	2058
R4	615	1933	506	511 m (615 ms)	
R4b	645		535	530 m (645 ms)	2000
R5	656	2000	546	542 m (656 ms)	
R6	714	2165	610	625 m (714 ms)	2153
R7	826	1930	730	725 m (820 ms)	
				767 m (860 ms)	1871
R8	882	1913	784	783 m (882 ms)	
R9	905		806		
R10	1043	2007	939	945 m (1043 ms)	2070
R11	1178		1080	1089.5 m (1178 ms)	

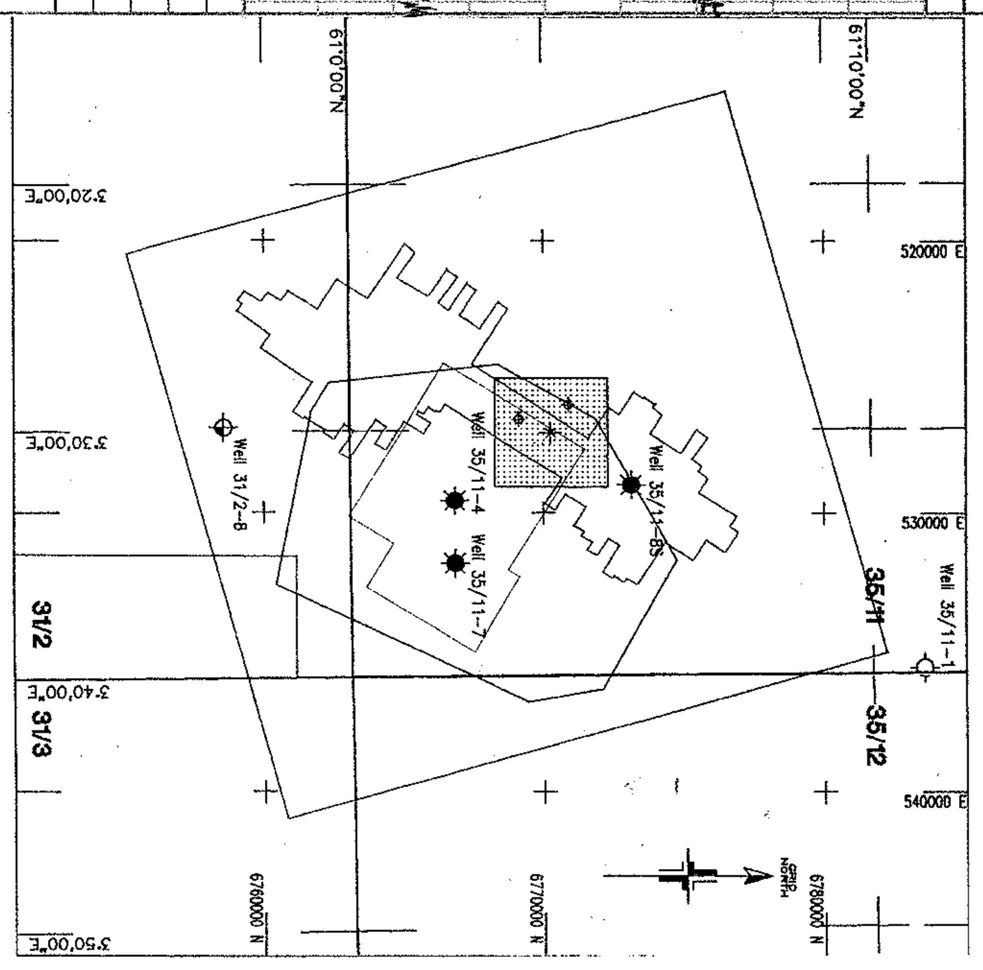
Anomaly: No Shallow Gas Expected at Location

Stratigraphy: System / Series / Group / Formation / Informal Unit
QUATERNARY – PLEISTOCENE – NORDLAND
PLIOCENE
TERTIARY – MIOC – UTSIRA
OLIGOCENE – HORDALAND

Shallow Gas: Drilled with returns to seabed to 1243 m RKB.



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 35/11-9



HYDRO
Marine Surveys Section
Exploration and Production Division

Drawing title: Post site survey for well 35/11-9
Comparison for predicted lithology, stratigraphy, shallowgas and obtained drilling results

Interpreted by	Drawn by	Checked by	Date	File no.	Rev.	Scale
FS	FSS /KB	KB	06.10.1997	35119.dtr	0	1:2000