Final Well Report

Well: 35/4-1

Licence 194

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Access	Internal
Downgrading	
Retention	Experience

Title	Final Well Report Well 35/4-1
Keywords	Geology, geophysics, drilling

Document category	Document ID	Amendment no.
Report	R-082209	

Area code	System code	Procurement ref./Package no.

SCM reference	Tag no.

Quadrant/Block/Well	Licence no.	Project
35 / 35/4 / 35/4-1	PL194	Block 35/4

Pages/appendices/volume(s)	Replaces

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Rev./ status	Date	Reason for issue	Author	Contr.	Disc. appr.	Proj. appr.	Hydro appr.

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NORSK HYDRO

FINAL WELL REPORT

WELL 35/4-1

NOVEMBER 1997

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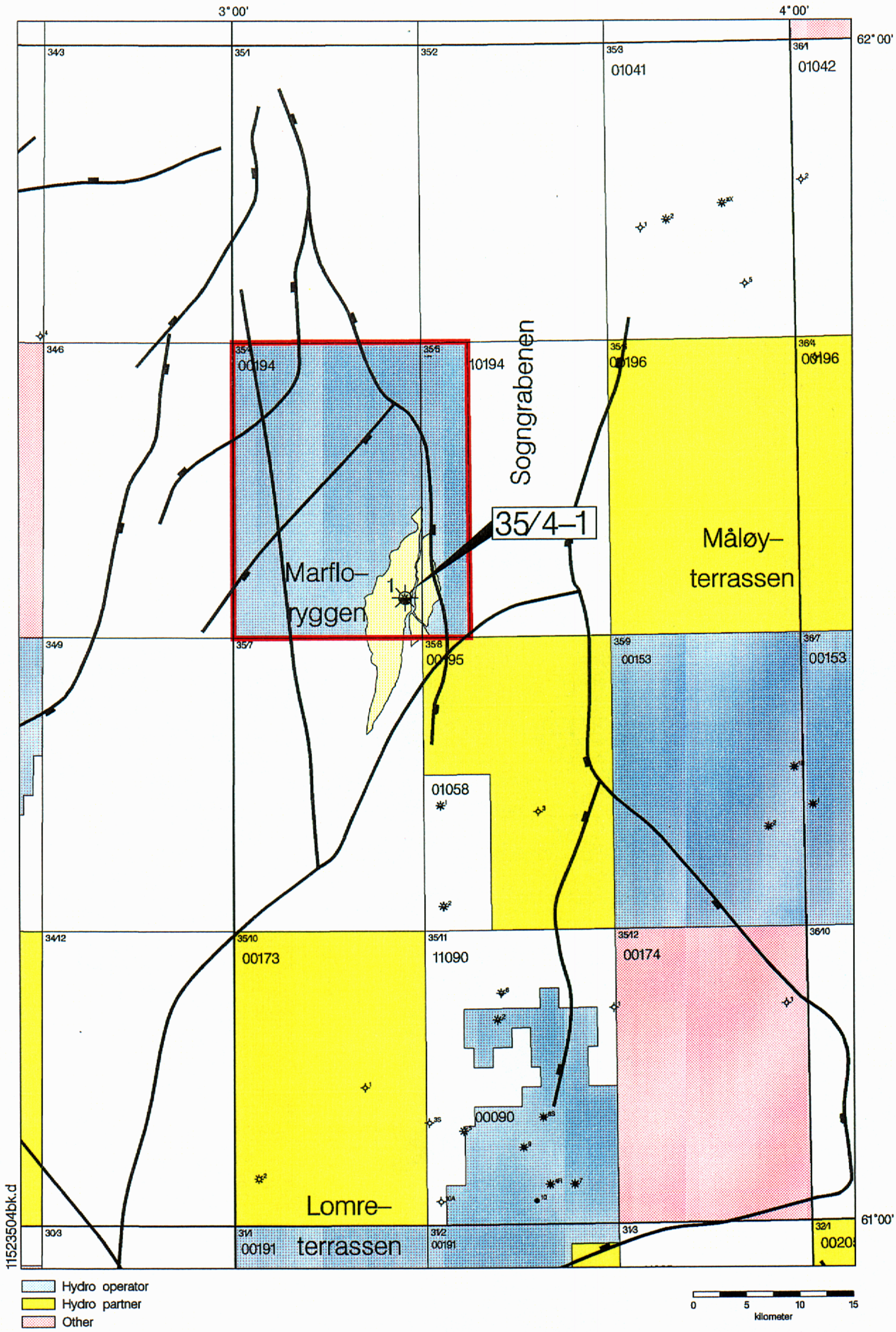
INTRODUCTION:

PREFACE

License PL 194 was awarded to Norsk Hydro ASA in 1995.

The well was drilled by Norsk Hydro ASA, on behalf of Statoil, Saga and Elf as partners of the licence.

All depths in this report are mMD RKB unless otherwise stated.



Location Map, Well 35/4–1

SUMMARY OF WELL DATA	
LOCATION:	61° 32' 00.55"N 03° 18' 08.26" N 6 822 412.0 m E 516 075.7 m ED 50, UTM Zone 31, CM 03°E
OPERATOR: RIG: CONTRACTOR:	Norsk Hydro Treasure Saga Transocean
KB ELEVATION (to MSL): WATER DEPTH (MSL):	26 m 377.5 m
START OF OPERATIONS: WELL SPUDDED: REACHED TD ON: COMPLETED: STATUS: FORMATION AT TD:	22.12.96 24.12.96 30.04.97 25.05.97 Dry. Permanently plugged and abandoned.
TD DRILLER (mRKB): TD LOGGER (mRKB):	4936m 4943m
DRILLING DEPTHS:	36" to 464.5m (171/2" to 468m) 26" to 1362m 17 1/2" to 3133m 12 1/4" to 3720m 8 1/2" to 4936m
CASING DEPTHS:	30" to 464.5m 20" to 1350m 13 3/8" to 3118m 9 5/8" to 3720m

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GEOLOGY

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1 OBJECTIVES

Well 35/4-1 is an exploration well which was committed to test the hydrocarbon potential of the Jurassic sandstones on the A structure. The main target was the Brent Group, The Cook Fm and the Statfjord Fm were the secondary targets. The well was drilled into the Hegre Group and T.D was set at 4936m MD.

The primary objectives were as follows:
- Prove the presence and type of hydrocarbons in the Brent Group reservoirs.
  The secondary objectives were:
- Prove the presence and type of hydrocarbons in the Cook Fm. and the Statfjord Fm reservoirs.
- Confirm the geological model and the geophysical interpretation.
- Establish a good seismic tie.

2 RESULTS

Well 35/ 4-1 was spudded on 24 of December 1996 and reached TD on 30 April 1997 at a depth of 4936 m MD RKB in the Triassic.

The well was found to be dry with weak hydrocarbon shows from the Eocene throughout the entire underlying section and into the Statfjord Fm. The well encountered sands within the Eocene, Dunlin Grp and Statfjord Fm.
The Brent Grp, which was the primary target, contained mostly silts and very little sands of reservoir quality.

High formation pressure was detected from the upper part of the Cretaceous to TD with a maximum of 1.84 rd recorded in the Brent Grp eq.

3 BIOSTRATIGRAPHY

The biostratigraphical evaluation of well 35/4-1 was carried out by Robertson Research International Limited.

The analyses were based on studies of lithology, micropalaeontology, palynology and nannoplankton, which were made on ditch cutting samples, sidewall cores and conventional core chips covering the interval 1370 m - 4936 m T.D.

Figure 3.1 on the next page shows summarised chronostratigraphic and lithostratigraphic subdivision of the well. Further details may be found in " Norsk Hydro 35/4-1 Norwegian North Sea well, biostratigraphy of the interval 1370 m - 4936 m.

Biostratigraphical breakdown based on biostratigraphical analyses by Robertson Research August 1997 (R - 076873).

GEOCHRONOLOGY

Age		**Depths (m)**
Tertiary	Early Oligocene (top not seen)	1370 - 1380
	-------------- unconformity ----------------	1383(log)
	Late Eocene	1390 - 1400
	-------------- possible unconformity --------------------	
	Middle Eocene	1410 - 1610
	----------------possible unconformity (minor) ----------	
	Early Eocene	1620 - 1770*
	Late Paleocene	1788* - 1885*
	Early Paleocene	1890 - 1910
	---------------unconformity -------------------------------	
L. Cret	Late Maastrichtian	1912(log) - 1920
	---------------unconformity --------------------------------	
	Early Maastrichtian	1922* - 1990
	late Campanian	2010 - 2160
	early Campanian	2180 - 2530
	Santonian	2550 - 2650
	Coniacian	2670 - 2810
	Turonian	2830 - 3480
	Late Cenomanian	3500 - 3540
	Middle Cenomanian	3560 - 3600
	Early Cenomanian	3610 - 3670
E. Cret	Late Albian	3680
	------------------------- unconformity -----------------------	
	Early Barremian	3690
	-------------------------- unconformity ---------------	3695(log)
L. Jurassic	Early Oxfordian	3695(log) - 3700
M. Jurassic	Late - Middle Callovian	3705 - 3730

	? Early Callovian	3740 - 3760
	Early Callovian	3760 - 3800
	Late - Middle Bathonian	3810 - 3890
	Early Bathonian	3900 - 3985
	? Early Bathonian - Late Bajocian	3990 - 4107,36**
	? Late Bajocian - Early Bajocian	4108,6** - 4285
	-------------- probable unconformity -------------	4287(log)
E. Jurassic	Middle Toarcian - Late Pliensbachian	4295 - 4445
	Late Pliensbachian	4448,25** - 4455,7**
	L. - E. Pliensbachian (barren)	4460,96** - 4474,85**
	Early Pliensbachian - Hettangian	4477 - 4870
L. Triassic	Rhaetian - Norian	4880 - 4936

* SWC
** core

Comments:

Top Triassic:

During the routine analyses (Robertson Research, 1997) no microfossils diagnostic of Triassic or older were encountered. Stratlab, who did "hot shot" analyses in the interval 4850 m - 4936 m, proved to have better recovery than Robertson Research (see appendix 1). The result of the latter analysis is the basis for the present interpretation of top Triassic.

Early Bajocian:

Robertson Research (report 1997) has interpreted the interval 4108,6 m (core) - 4285 m as Aalenien, based " essentially upon the common species of *N. senex* and *N. gracilis* and, more importantly, the occurrence of specimens assignable to the genus *Susadinium*. The latter is currently considered not to extend into post-Aalenian strata" (RRI, 1997, page 65).

We do not agree to this interpretation, basically because:

1) In the interval in question there is encountered a rather complete sequence of the in-house Early Bajocian (+ ? parts of the Late Bajocian) terrestrial palynological events established in the NH Standard Biostratigraphical Zonation and during the ongoing Brent Study.

2) Consistent *N. senex* is considered to range throughout the Early Bajocian. I consider the occurrence of common *N. senex* and *N. gracilis* in well 35/4-1 as a result of the shoreface facies (Rannoch Formation).

3) There are several opinions about the occurrence of *Susadinium*.

In Germany (mainly NW), several authors has documented the genus to range into Early Bajocian strata (Feist-Burkhardt & Wille, 1992, Preuss 1988, 1989), and possible also into Late Bajocian strata (Preuss, 1989).

BIOSTRATIGRAPHY

Planktonic Micropaleontological Zones

	Depths (m)
Tertiary	
MO(P)1A (top not seen)	1370 - 1380
ME(P)5 - ME(P)4	1390 - 1570
ME(P)3	1580 - 1640
Unassigned	1642,5 (SWC) - 1700
ME (P)1	1710
Unassigned	1712
MP(P)6C - MP(P)6B	1720 - 1730
MP(P)6A	1740 - 1803
Unassigned	1810 - 1885 (SWC)
MP(P)2 - ? MP(P)1	1890 - 1910

Cretaceous

NH micropaleontological zones for Cretaceous are not established in this well.

Jurassic	
MJ9	3700 - 3705
MJ9 C/B	3710 - 3715
MJ9A	3730
MJ8 C/B	3740 - 3800
MJ8A	3810 - 4080
Unassigned (no samples between 4080 - 4275)	4080 - 4295
MJ5B	4295 - 4405

Benthonic Micropaleontological Zones

Tertiary	
Unassigned	1370 - 1380
? ME(B)4 - ? ME(B)3C	1390 - 1487,5 (SWC)
ME(B)3B	1490 - 1590
ME(B)3B - ME(B)3A	1590 - 1640
ME(B)2	1642,5 (SWC) - 1712 (SWC)
Unassigned	1720 - 1790
MP(B)3	1800 - 1803 (SWC)
MP(B)2	1810 - 1871 (SWC)
? MP(B)1	1880 - 1885
MP(B)1	1890 - 1910

Palynological Zones

	Depths (m)
Tertiary	
PT7C (top not seen)	1370 - 1380
PT6	1390 - 1400
PT4B 4/3	1410
PT4B 2/1	1420 - 1500
PT4A4	1510 - 1550
PT4A3	1560 - 1610
PT3C3	1620 - 1640
PT3C2	1650 - 1670
PT3C1	1672,5 (SWC) - 1700
PT3B2 - ? PT3B1b	1710
PT3B1a	1720
PT3A2	1730 - 1760
PT3A1	1770 (SWC)
PT2C	1788 - 1810
PT2B 3/2	1820
PT2B2b *	1825,5 (SWC)
? PT2B1	1840 - 1847 (SWC)
PT2B1	1847 (SWC)
PT2A4	1860
PT2A 3/2	1871 (SWC)
PT2A1	1885 (SWC)
PT1C2	1890 - 1900
PT1C1	1910

Cretaceous

NH palynozones for Cretaceous are not established in this well.

Jurassic	
PJ6B	3700
PJ6A	3705 - 3730
? PJ5C	3740 - 3760
PJ5C	3760 - 3800
PJ5B	3810 - 3890
PJ5A2	3900 - 3940
PJ5A1	3950 - 3985
Unassigned	3990 - 4107,36 (core)
? PJ4D/E - PJ4C	4108,6 (core) - 4166,45 (core)
PJ4B	4177,0 (core) - 4202 (core)
PJ4A	4206,4 (core) - 4285
Unassigned	4295 - 4445
PJ3A	4448,25 (core) .- 4455,7 (core)

Comments:

* Palynozone PT2B2 is tentatively split into three intervals, PT2B2c, PT2B2b and PT2B2a, where PT2B2c is the youngest. PT2B2c is characterised with common to abundant *Areoligera gippingensis.* The FAO/FCO of *A. gippingensis* defines the base of PT2B2c. The FO of *A. gippingensis* defines the base of PT2B2b.

4 LITHOSTRATIGRAPHY

All depths are in mMD RKB (RKB is 26m), TVD depths in brackets.

This summary is compiled predominantly from ditch cuttings descriptions.
38 sidewall cores were taken in this well. A total of 9 conventional cores were cut in the interval from 4084m to 4736m 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 403.5m to 1362 m Lithology interpretation through this interval is based on MWD logs and drilling parameters. The first drill cuttings samples were taken at 1365 m.

4.1 Nordland Group (403.5 - 1116 m)

Age: Undifferentiated Quaternary - Tertiary

This interval was drilled with returns to seabed. Lithology is interpreted from MWD logs and drilling parameters.

403.5 - 562m

This interval comprises Clay with stringers of Sand and scattered Boulders.

Age: Pleistocene

562 - 1066m

This interval comprises Clay with stringers of Sand.

Age: Undifferentiated Quaternary - Tertiary.

1066 - 1116m

This interval comprises Claystone with sand stringers and scattered Boulders.

Age: Miocene

4.2 Hordaland Group 1116 - 1720m

Age: Undifferentiated Tertiary

1116 - 1365m

This interval was drilled with returns to seabed. Lithology is interpreted from MWD logs and drilling parameters. This interval comprises Claystone with traces of Sand.

1365 - 1455m

This interval comprises Claystone with traces of Sand

CLAYSTONE:	olive gray - olive black - brown black, firm - moderate hard, occasionally soft, blocky,generally friable, non calcareous, silty, partly grading to Siltstone, micromicaceous, trace Glauconite, rare sandy
SAND:	clear Quartz, medium - coarse, locally very coarse, subangular, moderately sorted, loose

1455 - 1720m

This interval comprises Claystone interbedded with Sandstone and minor stringers of Limestone.

CLAYSTONE:	dark green gray - olive gray, firm - moderate hard, blocky, non calcareous, partly very silty, partly glauconitic, micromicaeous.
SANDSTONE:	clear Quartz, fine - medium, occasionally coarse - very coarse, angular - subrounded, occasionally rounded, moderately sorted, trace Pyrite, trace argillaceous matrix, trace calcareous cement, predominately loose grain's, occasionally aggregates.
LIMESTONE:	light gray, olive gray, gray white, soft - firm, locally hard, locally brittle, blocky - platy, slightly argillaceous, minor silty, cryptocrystalline.

4.3 Rogaland Group 1720 - 1911m

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

AGE: Early Eocene - Early Paleocene

Balder Formation 1720 - 1775m

This interval comprises Claystone with minor Tuff and stringers of Limestone.

CLAYSTONE:	olive gray - olive black, green gray, medium dark gray, firm - moderately hard, generally slightly silty, micromicaceous, generally non calcareous, locally slightly calcareous, trace very calcareous grading to marl.
AGE:	Early Paleocene

Sele Formation 1775 - 1804m

This interval comprises Claystones with minor Sandstone and rare Tuff.

CLAYSTONE:	predominately olive black, rare medium grey - medium blue grey - dark green grey, soft - moderately hard, predominantly firm, blocky - platy, generally non calcareous, partly silty, partly micromicaceous, locally trace Pyrite.
SANDSTONE:	light grey, Quartz, very fine - fine, subangular - subrounded, moderately sorted, soft - friable, predominantly loose, non calcareous, argillaceous matrix, no visible porosity.
TUFF:	dark grey - medium blue grey, speckled, firm, friable, blky, non calcareous, silty, argillaceous.
AGE:	Late Paleocene

Lista Formation 1804 - 1883m

This interval comprises Claystones with stringers of Limestone and Sandstone.

CLAYSTONE:	varicolored, olive black - olive grey, minor medium grey - medium blue grey - dark green grey, trace pale yellow brown - olive grey - brown grey, soft - moderately hard, predominantly firm, blocky - platy, generally non calcareous, minor very calcareous grading Limestone, partly silty, partly micromicaceous, locally trace Pyrite, locally waxy.
LIMESTONE:	generally medium light grey, becoming very light grey - light grey and minor pale yellow brown and dusky yellow brown, soft - very hard, predominantly moderately hard, friable, brittle, blocky, slightly - very argillaceous, occasionally grading Claystone, cryptocrystalline.

SANDSTONE: light grey, becoming dark yellow brown, Quartz, very fine - fine, becoming very fine, subangular - subrounded, moderately sorted, soft - friable, non calcareous, becoming very calcareous, argillaceous matrix, glauconitic, micromicaceous, no visible porosity.

AGE: Late Paleocene

Våle Formation 1883 - 1912m

This interval comprises Claystones.

CLAYSTONE: dark grey, firm - moderately hard, blocky, generally non calcareous, locally slightly calcareous.

CLAYSTONE: medium light grey - medium grey, soft - firm, very calcareous grading argillaceous Limestone

AGE: Early Paleocene

4.4 <u>Shetland Group 1912 - 3675 m (1912 - 3674.5 m TVD)</u>

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

AGE: Late Maastrichtian - Early Cenomanian

Jorsalfare Formation 1912 - 2033m

This interval consists of Claystone with stringers of Limestone and trace Sand.

CLAYSTONE: medium light grey - medium grey, minor medium blue grey - light green grey, becoming predominately olive grey - olive black from 1975m, soft - firm, amor, sticky, generally moderately - very calcareous, locally grading argillaceous Limestone.

LIMESTONE: very light grey, medium dark grey, pale yellow brown, soft - very hard, amorphous - platy, partly very argillaceous, locally grading to calcareous Claystone, crypto - microcrystalline

SAND: clear Quartz, fine, subrounded - rounded.

Age: Late Maastrichtian - Late Campanian

Kyrre Formation 2033 - 3326m (2033 - 3325.5 m TVD)

This interval consists of Claystone with stringers of Limestone, trace Sand and rare Siltstone and Dolomite.

CLAYSTONE:	medium dark grey - dark grey, olive grey - brown grey, becoming olive grey - olive black from 3170m, generally soft - firm, minor moderately hard - very hard, blocky - subfissile, generally moderately - very calcareous, locally grading argillaceous Limestone, minor non calcareous, slightly silty, becoming very silty grading Siltstone; (locally very fine sandy, grading Sandstone), trace micromic, trace Glauconite, trace carbonaceous matter, rare Pyrite.
SANDSTONE:	light yellow brown - yellow brown, clear Quartz, very fine, angular - rounded, well sorted, friable, becoming friable - moderately hard, locally trace Glauconite and Mica, no visible porosity.
SILTSTONE:	medium dark grey - dark grey, dark yellow brown, blocky, firm - moderately hard, calcareous - very calcareous, locally very fine sandy grading Sandstone, trace micromica, trace carbonaceous matter, trace Glauconite.
LIMESTONE:	light olive grey, dark yellow brown, also becoming very light grey - light grey, soft - moderately hard, rare very hard, blocky, minor subfissile, locally very argillaceous grading calcareous Claystone, cryptocrystalline, rare Pyrite.
DOLOMITE:	dark - dusky yellow brown, moderately hard - hard, blocky, locally argillaceous, cryptocrystalline.
AGE:	Late Campanian - Turonian

Tryggvason Formation 3326 - 3500m (3325.5 - 3499.5 m TVD)

3326-3413m 3325.5 - 3412.5 m TVD

This interval consists of Claystone with stringers of Limestone and rare Dolomite.

CLAYSTONE:	dark grey - olive black, rare medium grey, soft - firm, subblocky - amorphous, non - slightly calcareous, locally very silty grading Siltstone, trace carbonaceous matter, trace micromica, locally slightly glauconitic.

LIMESTONE: light grey, brown grey, mod hard, blocky, common friable, partly argillaceous, crypto - microcrystalline.

DOLOMITE: brown grey, moderately hard - hard, blocky, argillaceous, crypto - microcrystalline.

3413-3500m (3412.5 - 3499.5 m TVD)

The interval consists of Limestone interbedded with Claystone.

LIMESTONE: light grey - light olive grey, occasionally dusky yellow brown, amorphous - subblocky, occasionally blocky, soft - firm, occasionally hard, argillaceous, partly very argillaceous grading to calcareous Claystone, locally very fine sandy, locally glauconitic, cryptocrystalline.

CLAYSTONE: dark grey - olive black, amorphous - subblocky, soft - firm, locally hard, slightly - moderately calcareous, generally slight silty, locally very silty grading to Siltstone, trace carbonaceous matter, trace micromica, rarely glauconitic.

AGE: Turonian

Blodøks Formation 3500 - 3510m (3499.5 - 3509.5 m TVD)

This interval consists of Claystone

CLAYSTONE: olive black, firm - hard, blocky - subblocky, non - slight calcareous, generally silty, trace carbonaceous matter, trace micromica, rare micropyrite.

AGE: Late Cenomanian

Svarte Formation 3510 - 3675m (3509.5 - 3674.5 m TVD)

This interval consists of interbedded Claystones with Limestone and Dolomite stringers and rare traces of Sandstone

CLAYSTONE: olive grey - dark grey - olive black, soft - firm, amorphous - subblocky, non - moderately calcareous, occasionally silty, trace carbonaceous matter, trace micromica, trace micropyrite

CLAYSTONE: brown grey - brown black, blocky - subblocky, soft - moderately hard, moderately - very calcareous, partly very silty grading Siltstone, trace carbonaceous matter, trace micromica.

LIMESTONE: light olive grey - light grey, soft - firm, amorphous - blocky, argillaceous, partly very argillaceous grading calcareous Claystone, cryptocrystalline.

DOLOMITE: dusky yellow brown, brown grey - brown black, hard - very hard, blocky, conchoidal, cryptocrystalline.

SANDSTONE: dusky yellow brown - grey brown, very fine, blocky, soft - firm, moderately calcareous, moderately sorted, argillaceous, trace micromica, poor visible porosity.

AGE: Late Cenomanian - Early Cenomanian

4.5 Cromer Knoll Group 3675 - 3695m (3674.5 - 3694.5 m TVD)

Rødby Formation 3675 - 3684m (3674.5 - 3683.5 m TVD)

This interval consists of Claystones with common Limestone stringers.

CLAYSTONE: olive black - grey black, blocky, soft - firm, very calcareous, trace carbonaceous matter.

LIMESTONE: olive grey - light grey, soft - firm, blocky, argillaceous, locally very argillaceous grading calcareous Claystone, occasionally very fine sandy, micaceous, rare crystalline.

AGE: Late Albian

3684 - 3695m (3683.5 - 3694.5 m TVD)

CLAYSTONE: brown grey, moderately calcareous, blocky - amorf, soft - firm, trace silty

LIMESTONE: light grey - grey white, blocky, firm, trace micropyrite, cryptocrystalline

AGE: Early Barremian

4.6 Viking Group 3695-4079m (3694.5 - 4077.5 m TVD)

Heather Formation 3695-4079m (3694.5 - 4077.5 m TVD)

The Heather formation consists of Claystone with occasional stringers of Limestone and rare Dolomite.

CLAYSTONE: brown black - black - olive black, soft - moderately hard, predominantly firm, blocky - amorphous, non - locally moderately calcareous, slightly - very silty locally grading to Siltstone, micromicaceous, locally micropyrite/Pyrite, trace carbonaceous matter.

LIMESTONE: light brown, pale - dark - dusky yellow brown, soft - moderately hard, occasionally very hard, blocky - platy, partly argillaceous, cryptocrystalline - microcrystalline.

DOLOMITE: brown grey - brown black, moderately hard - hard, blocky, cryptocrystalline.

AGE: Early Oxfordian - Late Bajocian

4.7 Brent Group 4079-4287m (4077.5 - 4283.0 m TVD)

The Brent Group was penetrated in a distal position, cores taken revealed a uniform lithology, consisting of interlaminated Sandstone (predominantly very fine graded), Siltstone and Claystone. Consequently, the interval was not divided into formations but treated as a Brent equivalent.

Brent Equivalent 4079-4287m (4077.5 - 4283.0 m TVD)

SANDSTONE: predominantly brown grey - brown black, locally dusky yellow brown, becoming predominantly medium dark grey - light grey, Quartz, very fine - silty grading Siltstone, trace fine, subangular - angular, becoming subangular - subrounded, poor - moderately sorted, locally well sorted, friable - moderately hard, becoming moderately hard - hard, generally non calcareous, locally slightly calcareous cement, locally weak siliceous cement, becoming generally siliceous cemented, silty/argillaceous matrix, locally trace Kaolinitic matrix, trace - abundant Mica, trace - abundant carbonaceous matter, rare - trace Wood fragments occasionally with Pyrite, rare bioturbation.

SILTSTONE: generally medium dark grey - brown black, predominantly moderately hard, locally hard, locally soft - firm, subblocky - blocky, locally subfissile, non - slightly calcareous, locally very fine sandy laminations and flaser bedding, argillaceous, locally very argillaceous grading Claystone, trace - abundant Mica/micromica, trace - abundant carbonaceous matter, locally bioturbated.

CLAYSTONE: brown black - grey black - dark grey, firm - hard, subblocky - blocky, slightly silty, locally very silty grading Siltstone, non calcareous, trace - abundant Mica/micromica, trace carbonaceous matter, locally slickensides.

AGE: Late Bajocian - Toarcian

4.8 Dunlin Group 4287-4703.5m (4283.0 - 4696.5 m TVD)

The Dunlin Group consist of the Drake, Cook and Amundsen Formations

AGE: Toarcian - Hettangian/Pliensbachian

Drake Formation 4287- 4434m (4283.0 - 4430.5 m TVD)

This interval comprises interbedded Siltstone and Claystone with rare stringers of Limestone.

CLAYSTONE: olive black - grey black, soft - firm - moderately hard, non calcareous, silty - very silty grading Siltstone, trace sand, micromicaceous, trace micropyrite, trace carbonaceous matter.

SILTSTONE: olive black - grey black, soft - firm - moderately hard, non calcareous, very argillaceous, sandy, locally very sandy grading very argillaceous Sandstone, trace micropyrite, trace micromica, trace carbonaceous matter.

SILTSTONE: dusky yellow brown - dark yellow brown, olive grey, firm, blocky, non - slightly calcareous, becoming moderately calcareous, locally grading argillaceous Limestone, locally very sandy grading Sandstone, rare micromica, rare micropyrite.

LIMESTONE: light olive grey, occasionally very light grey, soft, very argillaceous, rare - trace very fine sand

AGE: Toarcian - Late Pliensbachian

Upper Amundsen Formation 4434-4568m (4430.5 - 4563.0 m TVD)

The Upper Amundsen Formation comprises massive Sandstone and minor Siltstone in the upper part and Siltstone with interbedded Sandstone.

4434 - 4445m (4430.5 - 4441.5 m TVD)

This interval consists of Siltstone

SILTSTONE: dusky yellow brown - dark yellow brown, olive grey, firm, blocky, non - slightly calcareous, becoming moderately calcareous, locally grading argillaceous Limestone, locally very sandy grading Sandstone, rare micromica, rare micropyrite

4445-4515m (441.5 - 4511.0 m TVD)

This interval consists of Sandstone

SANDSTONE: light brown grey - light grey, locally brown black, becoming light grey - medium grey, clear - translucent Quartz, very fine - medium, locally medium - coarse, trace very coarse, subangular - subrounded, moderately sorted, hard, generally siliceous cement, locally very hard and calcareous cemented, micaceous, locally abundant argillaceous/micaceous lamination, trace carbonaceous matter, trace coal laminations, generally no visible porosity, locally poor visible porosity.

4515-4568m (4511.0 - 4563.0 m TVD)

This interval consists of interbedded Siltstone and minor Sandstone.

SILTSTONE: olive black - grey black, soft-firm - moderately hard, non calcareous, very argillaceous, sandy, locally very sandy grading very argillaceous Sandstone, trace micropyrite, trace micromica, trace carbonaceous matter.

SILTSTONE: dusky yellow brown - dark yellow brown, olive grey, firm, blocky, non - slightly calcareous, becoming moderately calcareous, locally grading argillaceous Limestone, locally very sandy grading Sandstone, rare micromica, rare micropyrite

SANDSTONE: light brown grey - light grey, very fine - fine, locally silty grading to siltstone, hard, silica cemented, argillaceous matrix, trace Mica, trace carbonaceous matter, no visible porosity,

Lower Amundsen Formation 4568-4703.5m (4563.0 - 4696. 5 m TVD)

The Lower Amundsen Formation comprises massive Sandstone and minor Claystone and Siltstone in the upper part and Siltstone with interbedded Sandstone and minor Claystone in the lower part.

4568-4627.5 m (4563.0 - 4621.5 m TVD)

This interval comprises claystone, Sandstone and Siltstone .

CLAYSTONE: brown black - olive black, firm - moderately hard, blocky, non calcareous, very silty grading to siltstone, micromicaceous, trace carbonaceous.

SANDSTONE: light brown grey - brown grey, light olive grey - olive grey - dark yellow brown, clear - occasionally milky Quartz, very fine - fine, rare calcareous cemented, partly argillaceous matrix, locally trace carbonaceous matter, no visible porosity

SILTSTONE: olive grey - brown grey, firm - moderately hard, non calcareous, sandy grading very fine Sandstone, argillaceous, trace carbonaceous matter.

4627.5-4703.5m (4621.5 - 4696.5 m TVD)

This interval consists of siltstone with traces of sandstones and sands with minor claystone at the base

SILTSTONE: olive grey - brown grey, olive black - brown black, firm - moderately hard, non calcareous, argillaceous occasionally grading to claystone, locally sandy grading to very fine sandstone, trace carbonaceous matter, trace micromica.

SANDSTONE: light brown grey - brown grey, light olive grey - olive grey - dark yellow brown, clear - occasionally milky Quartz, very fine - medium, predominantly fine, subangular - subrounded,

	friable - loose, rare calcareous cement, part argillaceous matrix, locally trace carbonaceous matter, no visible porosity
SAND:	clear - rare milky Quartz, fine - coarse, rare very coarse, predominantly fine - medium, subangular - subrounded, poor - moderately sorted, loose
CLAYSTONE:	brown black - olive black, firm - moderately hard, blocky, non calcareous, moderately - very silty grading to siltstone, trace micromica, tr carbonaceous matter.
AGE:	Pliensbachian - Hettangian

Statfjord Formation 4703.5-4918m (4696.5 - 4906.0 m TVD)

The Statfjord Formation comprises interbedded Sandstone, Siltstone and minor Claystones.

SANDSTONE:	very light grey - light grey - medium grey, clear - translucent, minor milky Quartz grains, fine - coarse, predominantly medium, becoming fine - medium, locally predominately coarse, occasionally trace - good trace pebbly Quartz grains, generally well sorted, becoming poor - moderately sorted, angular - subrounded, locally predominantly angular, becoming subangular - subrounded, generally friable - moderately hard, non - moderately calcareous cement, slightly weak siliceous cement, occasionally trace - good trace Kaolinitic matrix, locally argillaceous - silty matrix, rare - trace Mica, rare-trace carbonaceous matter, rare micropyritic nodules, generally massive, locally millimetre micaceous/carbonaceous laminations, rare - locally trace - good trace wood Fragments, no - fair visible porosity.
SANDSTONE:	olive grey - light olive grey, Quartz, very fine - silty, occasionally fine, subangular - subrounded, poor - moderately sorted, firm - friable - loose, non - occasionally calcareous, silty matrix grading Siltstone, locally Kaolinic matrix, rare micromica, rare carbonaceous matter, no visible porosity.
SILTSTONE:	olive black - brown black - olive grey, locally olive grey - light olive grey, non - slightly calcareous, locally very fine sandy grading Sandstone, argillaceous, occasionally very argillaceous grading Claystone, partly micromicaceous, partly carbonaceous.

SILTSTONE: very light grey, light olive grey - olive grey, green grey, dark green grey, friable - moderately hard, blocky, non - slightly calcareous, partly very fine sandy grading Sandstone, partly trace micromica, rare carbonaceous matter.

CLAYSTONE: olive grey - grey black - black, minor brown black - black, moderately hard, subblocky - fissile, non calcareous, occasionally very silty grading Siltstone, very carbonaceous, locally grading Coal, becoming rarely carbonaceous with depth, rare micromica.

KAOLINITE: light grey - white, moderately hard - friable, very deformated from bit action, very fine sandy, silty, locally slightly argillaceous.

AGE: E Pliensbachian/Hettangian - Rhaetian

4.9 Hegre Group 4918-4936m (4907 - 4924.2 m TVD)

The Hegre Group in this well consists of Siltstone

SILTSTONE: grey red, dark red brown, moderately brown, black red, light brown grey, becoming moderately brown, friable-moderately hard, blocky, non-slightly calcareous, partly very fine sandy grading Sandstone, becoming very argillaceous grading Claystone, partly trace micromica, rare carbonaceous matter.

AGE: Triassic

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 1362 m 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

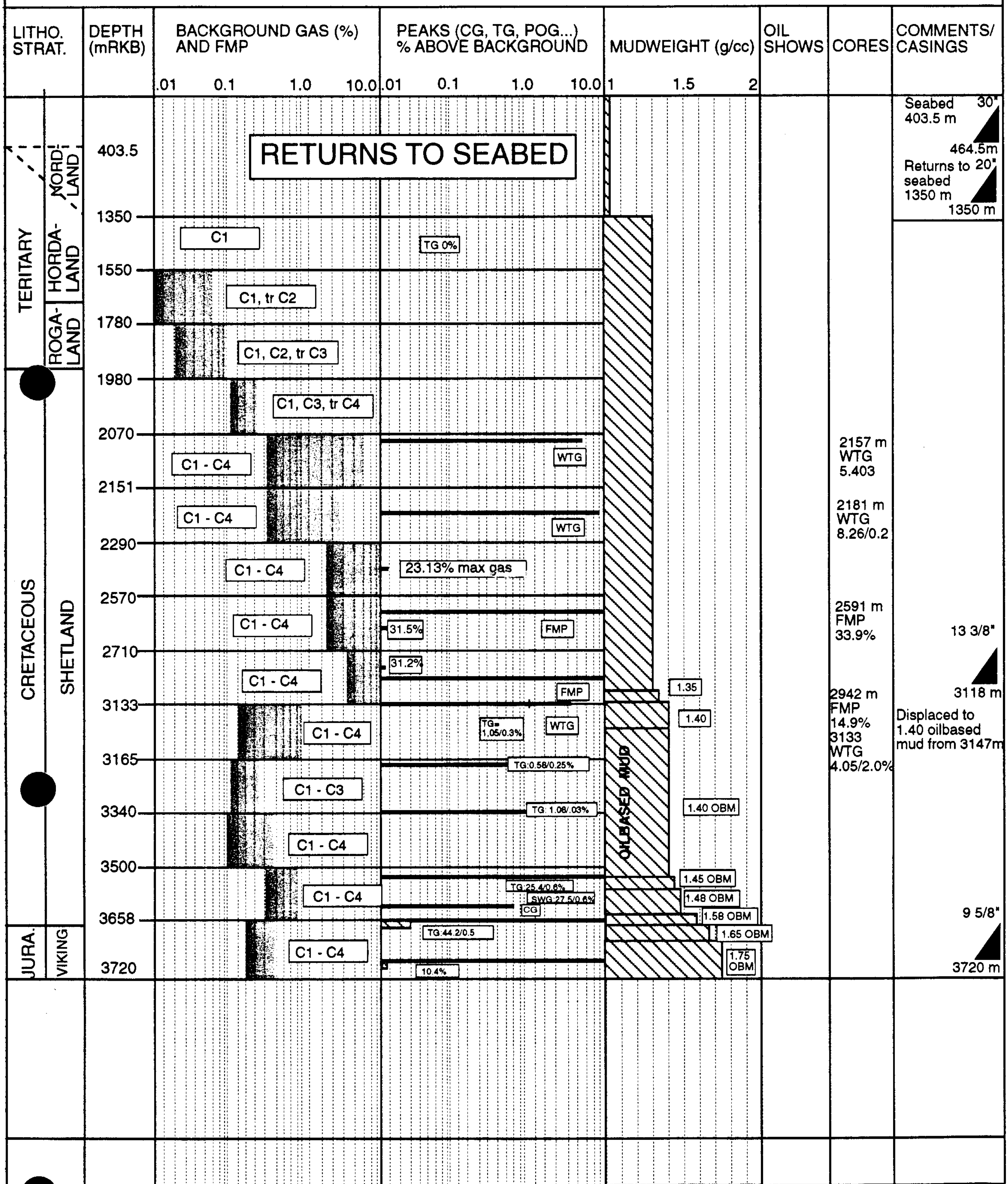
403.5-1362m

This interval was drilled with returns to sea bed.

1362-4936 m:

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

GAS SUMMARY WELL: 35/4-1

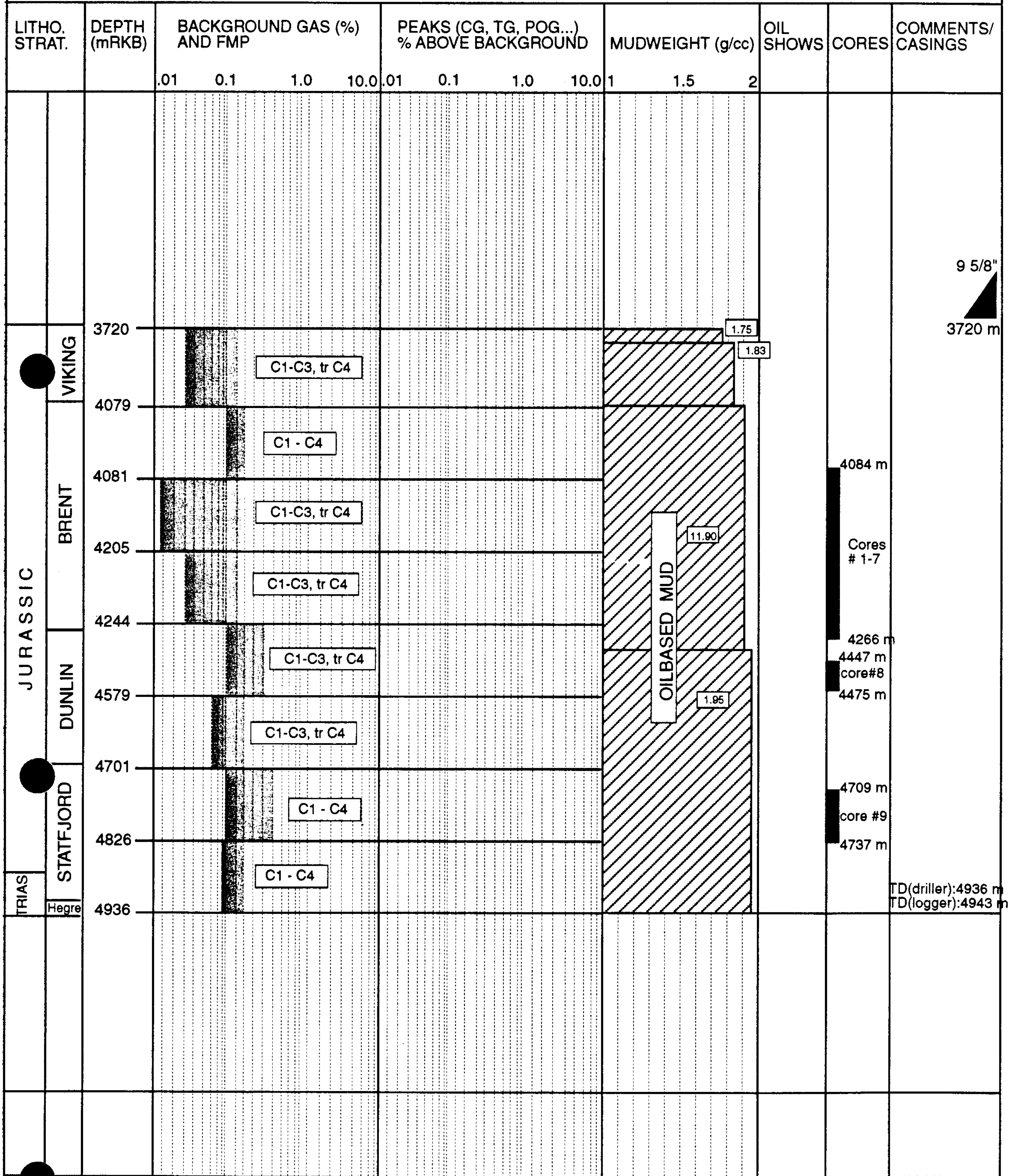


NOTE: NOT TO SCALE

Fig. 5.1a: Gas Summary

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

GAS SUMMARY WELL: 35/4-1



NOTE: NOT TO SCALE

Fig. 5.1.b: Gas Summary

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

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

INTERVAL (mRKB)	SOURCE	LITHOLOGY	SHOWS DESCRIPTION
1660-1695, 1790	Cuttings	Sandstone	no direct fluorescence, very slow-moderate fast streaming blue white fluorescent cut, no visible cut, blue white - yellow white fluorescent residue, no visible residue.
1825-2910	Cuttings	Sandstone Limestone	no - locally bright yellow - weak blue white direct fluorescence, no - slow blooming - streaming blue white fluorescent cut, no visible cut, blue white - yellow brown fluorescent residue, no visible residue.
2910-2950	Cuttings	Sandstone	fair - bright yellow dir fluorescence, fast streaming blue white fluorescent cut, no visible cut, blue white fluorescent residue, very pale straw visible residue
2950-3133	Cuttings	Claystone	no direct flourescence, no - slow streaming weak blue white fluorescent cut, no visible cut, no - dull blue white - yellow white fluorescent residue, no visible residue.
2950-3133	Cuttings	Siltstone Limestone	no - moderatly yellow direct fluorescence, slow - moderatly streaming - blooming blue white fluorescent cut, no visible cut, blue white - yellow white fluorescent residue. no visible residue.
4084-4178	Core	Sandstone/ Siltstone	good-no petroleum odour, no - locally weak yellow - blue white direct fluorescence, very slow - slow streaming - blooming blue white fluorescent cut, no visible cut, strong - weak blue white fluorescent residue. no visible residue.
4178-4266	Core	Sandstone/ Siltstone	no - very weak petroleum oduor, no - very weak dull yellow direct fluorescence, very slow - slow streaming blue white fluorescent cut, no visible cut, blue white fluorescent residue, no visible residue.
4447-4474.8	Core	Sandstone	no - moderate petroleum odour, no - weak dull yellow or weak bluish direct fluorescence , no - very slow - slow streaming weak bluish fluorescent cut, no visible cut, no - weak bluish fluorescent residue, no visible residue.

4709-4711	Core	Sandstone	faint - moderate petroleum odour, patchy - uniform bright white direct fluorescence , slow blooming blue white fluorescent cut, no visible cut, blue white fluorescent residue, no visible residue.

Table 5.1. Shows summary

6 CORING

6.1 Conventional cores

A total of 9 cores were at different intervals throughout the well. A summary of the cores is presented in the Table 6.1 below and the core descriptions can be found in Appendix I.

No	C: Cut(m) R: Recovery(m)	Rec. %	Lithology	Formations/Group
1	C: 4084.0 - 4093.5 R: 4084.0 - 4093.37	98.6	Sandstone	Brent equivalent
2	C: 4093.5 - 4108.5 R: 4093.7 - 7107.50	93.3	Sandstone/ Siltstone	Brent equivalent
3	C: 4108.5 - 4113.5 R: 4108.5 - 4113.65	100	Siltstone/trace Dolomite	Brent equivalent
4	C: 4113.5 - 4141.0 R: 4113.5 - 4140.75	99.1	Sandstone/Siltstone, trace Dolomite	Brent equivalent
5	C: 4141.0 - 4178.0 R: 4141.0 - 4177.1	97.6	Sandstone/Siltstone	Brent equivalent
6	C: 4178.0 - 4219.0 R: 4178.0 - 4222.0	100	Sandstone/Siltstone/ Claystone	Brent equivalent
7*	C: 4219.0 - 4263.0 R: 4220.0 - 4266.0	100	Sandstone/Siltstone/ Claystone	Brent equivalent
8	C: 4447.0 - 4475.0 R: 4447.0 - 4474.85	99.5	Sandstone	Amundsen Formation
9	C: 4709.0 - 4737.0 R: 4709.0 - 4737.25	100	Sandstone	Statfjord Formation

Table 6.1: Conventional cores
* Core # 7: Actual measured core depth differs +3m compared to drillers depth. Discrepancies occurred after cutting and measuring core # 6.

6.2 Sidewall cores

Sidewall cores were taken from 1460 to 4928 m. Details of recovery are given in Table 6.2 below.

Descriptions of the sidewall cores can be found in Appendix II, and gross lithology is reported on the Completion Log.

Run	Requested	Misfired	Lost	Empty	Recovered	Rec.%
1A	30	1	2	1	26	86.7
2B	24	0	23	0	1	4.2
4C	60	25	20	4	11	18.3

Table 6.2: Sidewall cores

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
DIL/DSI/LDL/CNL/GR/SP/AMS	14.01.97	2590-3105.2	1A
DIL/DSI/LDL/CNL/GR/SP/AMS	15.01.97	1350-2751	1B
VSP/GR	16.01.97	470-3090	1A
CST/GR	17.01.97	2353-1460	1A
DIL/DSI/LDL/CNL/GR/SP/AMS	14.02.97	3720-3000	2C
VSP/GR	14-15.02.97	3700-2002	2B
CST/GR	15.02.97	3715-3250	2B
DIL/DSI/LDL/CNL/NGT/AMS	14.04.97	4294-3671	3D/A
CBL/VDL/GR	14-15.04.97	3720-2950	3A
MDT/GR	15.04.97	4081.5-4206	3A
PI/LDL/CNL/NGS/AMS	30.04-1.05.97	4940-4225	4E/D/B
OBDT/DSI/GR/ACTS	01.05.97	4942-3720	4A/E
MDT/GR/AMS	01-02.05.97	4080.7-4877	4B
VSP/GR/AMS (0-offset)	02-03.05.97	4922-3550	4C
VSP/GR/AMS (Walkaway)	03-04.05.97	3715-3280	4D
CST/GR	04-05.05.97	4928-3722.5	4C

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:

403.5-4936m

Detailed MWD results can be found in the report "END OF WELL REPORT, MWD, FOR NORSK HYDRO, WELL 35/4-1"

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
DIL/DSI/LDL/CNL/GR/SP/AMS	1A	3105	81	12hrs 30 min	3hrs 55 min
DIL/DSI/LDL/CNL/GR/SP/AMS	1B	2751	81	42hrs 10 min	3hrs 55 min
VSP/GR	1A	3090	81	61hrs 20 min	3hrs 55 min
DIL/DSI/LDL/CNL/GR/SP/AMS	2C	3720	110	10hrs 10 min	4hrs 15 min
DIL/DSI/LDL/CNL/NGT/AMS	3D/A	4297	134	11hrs 50 min	2hrs 00 min
PI/LDL/CNL/NGS/AMS	4E/D/B	4943	160	15hrs 05min	2hrs 45min
OBDT/DSI/GR/ACTS	4A/E	4942	161.1	23hrs 45min	2hrs 45min
MDT/GR/AMS	4B	4877	162.8	39hrs 50min	2hrs 45min
VSP/GR/AMS (0-offset)	4C	4922	162.8	55hrs 55min	2hrs 45min
VSP/GR/AMS (Walkaway)	4D	3715	165.6	92hrs 50min	2hrs 45min

Table 7.2: Bottom hole temperatures from logs

8 PETROPHYSICAL RESULTS

The petrophysical evaluation is based on log data and core data. No SCAL data is available at present.

The quality of the MWD logs and the wireline logs is generally good.

No moveable hydrocarbons were identified, although hydrocarbon shows were encountered in the lower part of Eocene (1667m MD RKB), Brent, Amundsen and the upper part of Statfjord (down to 4712m MD RKB).

22.1 metres of net sand is interpreted in Eocene, in which a Net/Gross ratio of 0.11 is established. The sand is sub-divided by clay and calcite stringers.

18.7 metres of net sand is interpreted in Brent, in which a Net/Gross ratio of 0.09 is established. The reservoir properties are poor, the formation consists mainly of silt and shale, an average porosity of 16 p.u., permeability generally less than 1mD and interpreted net shows.

32.3 metres of net sand is interpreted in Amundsen, in which a Net/Gross ratio of 0.24 is established. The sand quality is fairly good at 4480-4510mMD, but generally the formation is tight, with an average porosity of 17 p.u. The highest measured core permeability does not exceed 8mD, but the high porosity interval from 4480 to 4515mMD, which is not cored, has recorded mobility's up to 145mD/cp (permeability >100mD).

23.8 metres of net sand is interpreted in Statfjord, in which a Net/Gross ratio of 0.11 is established. The sand quality is fairly good at the very top of the formation, but from 4745mMD downwards the quality is generally poor. The formation consists of alternating silt and shale interrupted by a few coal beds.

No net pay was computed in either of the formations, water has been proved to be the moveable fluid. The observed shows are considered residual.

Formation	Top	Base	Gross	Net res	N/G	Por (%)	Sw(%)
Eocene sst.	1500.0	1705.0	205	36.6	0.18	22	99
Brent	4079.0	4287.0	208	8.8	0.04	16	68
Amundsen	4434.0	4568.0	133	28.3	0.21	17	74
Statfjord	4703.5	4781.0	214	12.2	0.06	13	91

Table 8.1: Reservoir parameters for Eocene, Brent, Amundsen and Statfjord. Porosity cut-off is set to 12%, shale cut-off is set to 40%.

The MDT pressure survey gives a water gradient of 0.095bar/m for Brent and 0.096bar/m for Amundsen. Plotting of pressure points (fig. 8.1) indicate that Amundsen and Statfjord have pressure communication, and that there is a pressure barrier between Amundsen and Brent. All three reservoirs are overpressured.

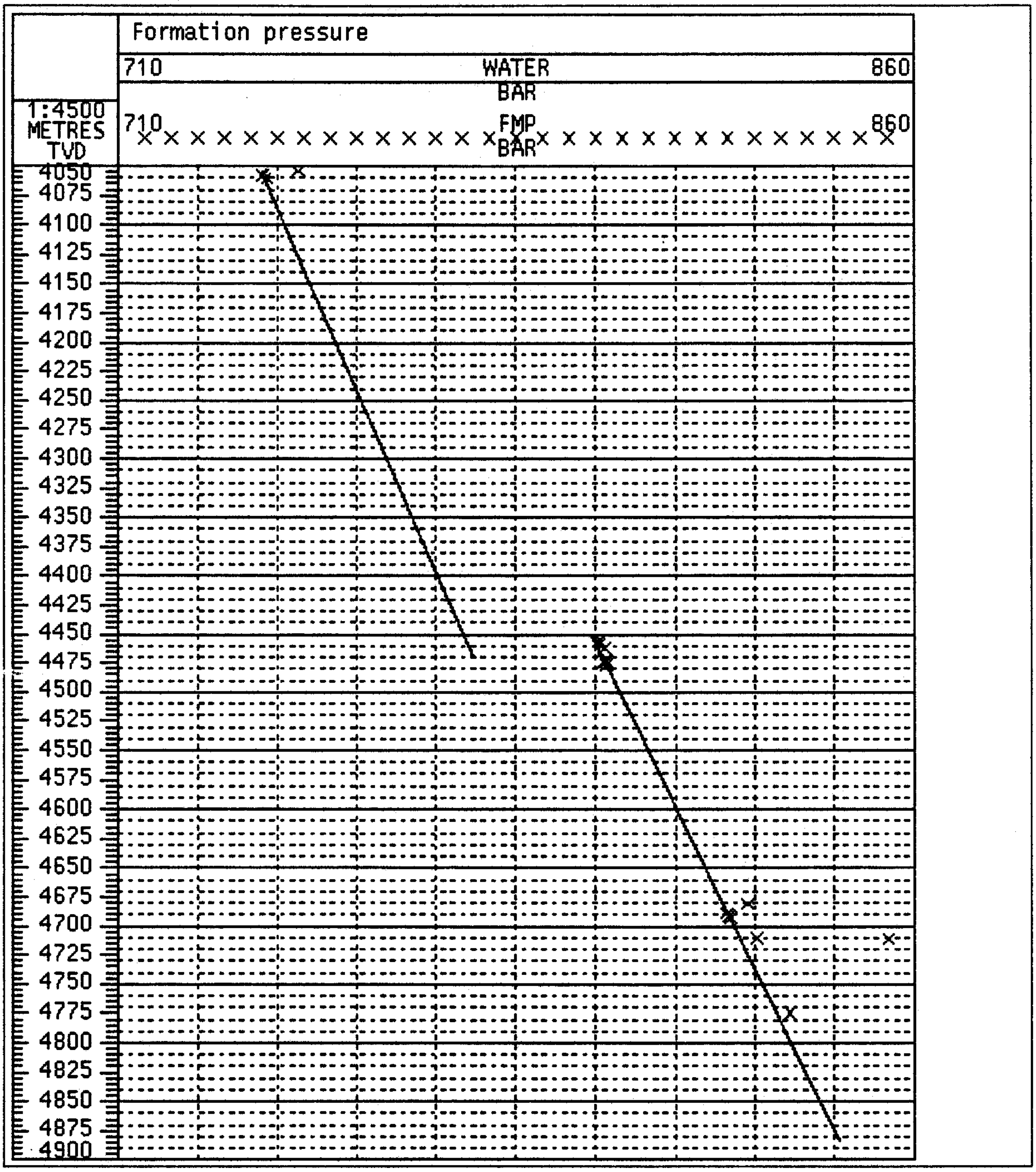


Figure 8.1: Pressure plot of the three reservoir intervals Brent, Amundsen, and Statfjord. The interpretation indicates pressure communication between Amundsen and Statfjord. The Brent water gradient is estimated to 0.095bar/m, the Amundsen and Statfjord water gradient is estimated to 0.096bar/m.

For more details regarding the petrophysical interpretation, see Norsk Hydro report "Formation Evaluation Report, well 35/4-1".

9 GEOPHYSICAL RESULTS

Prognosed and actual time/depth values from well 35/4-1 are listed in table 9.1 and a time/depth plot in figure 9.1.

The top Balder and top Cretaceous picks were within the margin of error. However, major differences occurred at the Base Cretaceous, top Brent, top Cook equivalent and top Statfjord levels. This was due to uncertainties introduced by poor seismic data quality in the region of the well location. The main problems were due to the presence of a gas chimney in the Cretaceous section and multiples, particularly due to an intra - Cenomanian event.

	Depth in meters MD		Time ms TWT	
	Actual	Prognosed	Actual	Prognosed
Top Balder	1720	1732	1740	1714
Top Cretaceous	1912	1920	1894	1876
Base Cretaceous	3695	3811	3202	3247
Top Brent	4079	4251	3472	3510
Top Cook equivalent	4411	4579	3664	3680
Top Statfjord	4703	4881	3812	3835

Table 9.1 Geophysical summary

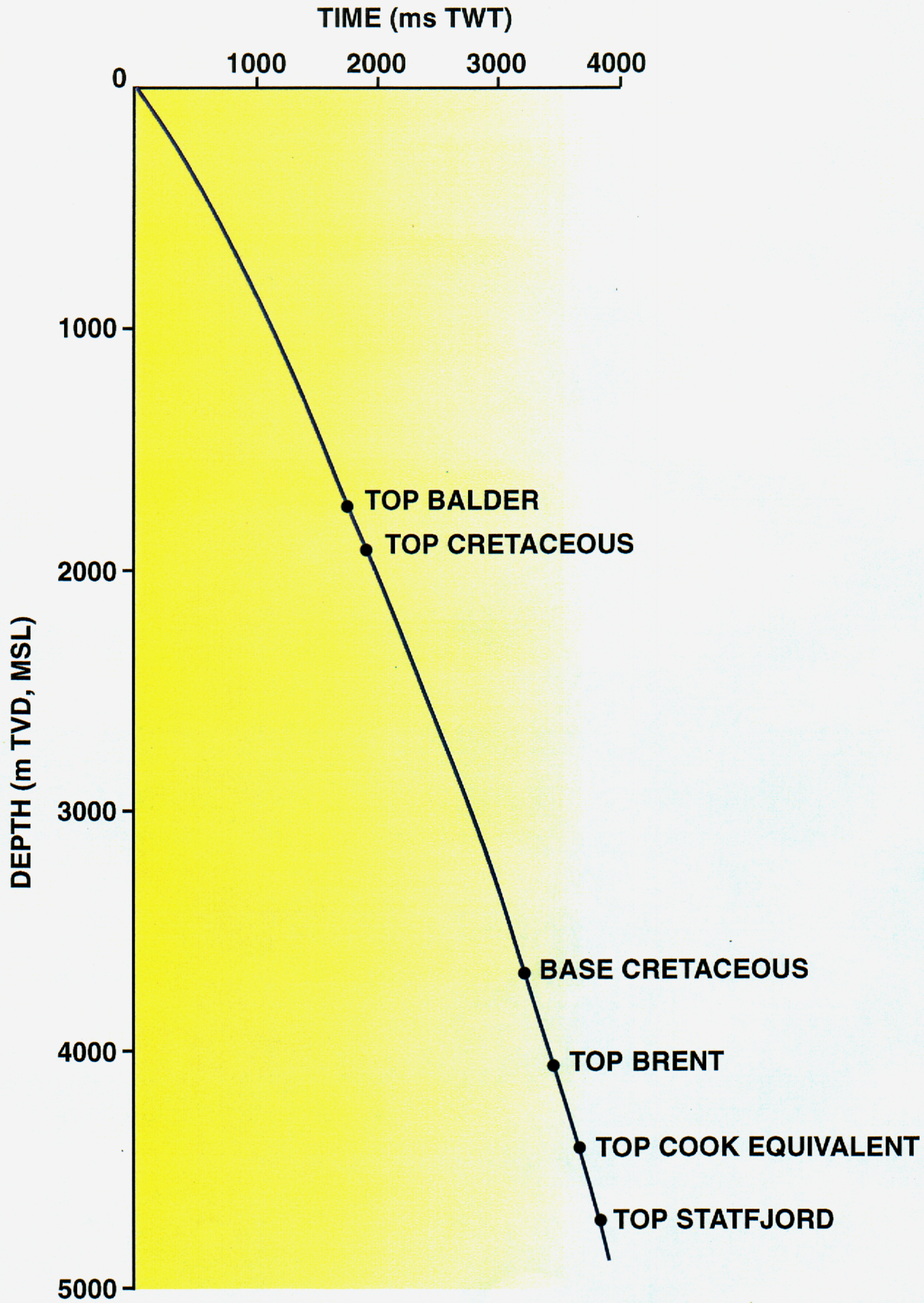


Figure 9.1

Well 35/4-1
Time/depth plot

HYDRO

FGO4693/FH/09.97

10 POST SITE SURVEY REPORT

WELL DATA:

1 Distance from rig floor to sea level: 26 m

2 Water depth (MSL): 404 m

3a Setting depth for conductor (m RKB): 464.5m

3b Leak Off / Formation Integrity Test (g/cc): None

4a Setting depth for casing on which BOP mounted: 1350 m

4b Leak Off / Formation Integrity Test (g/cc):

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

Base Pleistocene:	562 m/ 693 ms
Top Hordaland Gr.:	1116 m/ 1166 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:

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

Pleistocene layers: 445-450 m/358-360 ms, 475-478 m/464-466 ms, 482-484 m/578-594 ms, 532-549 m/596-611 ms

Pliocene layers: 622-625 m/358-360 ms, 737-739 m/464-466 ms, 774-775 m/578-594 ms,

Oligocene layers: 1147-1150 m/989-1000 ms, 1265-1267 m/1008-1038 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 & TWT) of unconformities at the well location:

Base Pleistocene: 562 m/ 693 ms
Top Hordaland Gr.: 1116 m/ 1166 ms

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

445-450 m: Pleistocene sand layer expected to have low continuity.
475-478 m, 482-484 m: Pleistocene sand layer expected to have low continuity.
532-549 m: Pleistocene sand layer expected to have high continuity.
622-625 m, 737-739 m, 774-775 m: Pliocene sand layers expected to have high continuity.
1147-1150 m, 1265-1267 m: Oligocene sand layers expected to have low continuity.

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

Amplitude anomalies were mapped at two levels:
483 m (596 ms) - 40 m to NW and 549 m (657 ms) - 25 m to E of the 35/4-1 spud location.

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

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

- **shallow gas:** A weak gas warning was given for the amplitude anomaly level at 549 m. The corresponding level in the well log is the top of a sand layer at 532 m. No gas is observed at this level.
- **sand bodies:** The Pleistocene sand layer between 532 m and 549 m was predicted as two separate layers. The sand layer is 17 m shallower than predicted. The sands of the Utsira Fm. were predicted between 1056 m and 1103 m. The corresponding interval is interpreted to be between 1066 m and 1116 m in the log. This interval consists of clay and is recognised by log to log correlation with the tie-well 35/8-1.

- **unconformities:** Base Pleistocene is poorly defined, but is picked in the logs at maximum gamma and resistivity events at 562 m. This is 28 m shallower than predicted. The great difference is caused by the very the very high interval velocities used for the lower part of Pleistocene. The Top Utsira Fm. was predicted 1056 m (1122 ms). The Base Utsira Fm. /Top Hordaland Gr. was predicted at 1103 m (1165 ms) and observed at 1116 m (1166 ms).

- **correlation to nearby wells:** The seismic correlation to tie well 35/8-1 is good for the Base Pleistocene and Top Hordaland Gr. However, the interval velocities used for the prediction was 14 % higher than calculated from the seismic to log correlation for the Pleistocene and 3 % lower in the Pliocene.

11 STANDARD AND SPECIAL STUDIES

- **Norsk Hydro, 1996:** Pore Pressure Analysis for drilling applications - (PANDA) - Pressure Prognosis for well 35/4-1 - Murmansk, October 1, 1996, R - 076272

- **Norsk Hydro, 1996:** Treasure Saga - Beredskapsanalyse Oljevern, brønn 35/4-1, R - 076297

- **Norsk Hydro, 1996:** Site Survey at location 35/4-1, R - 07644

- **Norsk Hydro, 1996:** Well Programme 35/4-1, R - 076497

- **Norsk Hydro, 1997:** Biostratigraphy of the interval 1370 - 4937 m, well 35/4-1, R - 076873

- **Norsk Hydro, 1997:** Poretrykksprediksjon, brønn 35/4-1, med bassengmodelleringsverktøyet Hydrobas, R - 077136

- **Norsk Hydro ,1997:** Navigation and Positioning of Treasure Saga well 35/4-1, R - 078333

- **Norsk Hydro, 1997:** Permanent Plug and Abandonment Programme well 35/4-1, PL 194, Treasure Saga, R - 078849

- **Norsk Hydro, 1997:** Final Seismic While Drilling (SWD) Report, well 35/4-1, R - 078941

- **Norsk Hydro, 1997:** Well Shoot for well 35/4-1, 1996-12-24 - 1997-01-28, R - 079026

- **Norsk Hydro, 1997:** Petroleum Geochemistry of Well 35/4-1, R - 077887

- **Norsk Hydro ,1997:** Conventional Core Analysis, well 35/4-1, R - 079034

- **Norsk Hydro, 1997:** Well 35/4-1, Norsk Hydro Standard Biostratigraphical Zonation, R - 081800

- **Norsk Hydro, 1997:** Pore Pressure Evaluation and Prediction during drilling of HPHT well 35/4-1 , R - 081827

- **Norsk Hydro, 1997:** Core Photographs, well 35/4-1, core 1 - 9, R - 081881

- **Norsk Hydro, 1997:** Formation Evaluation Report, well 35/4-1, R - 082016

- **Norsk Hydro, 1997:** Processing and interpretation of oil-based dipmeter (OBDT) data and processing of DSI data from well 35/4-1, R - 082178

- **Norsk Hydro, 1997:** Diagenesis, Reservoir Characterization, Sedimentology, Petrography, Core Description, R - 077832

- **Norsk Hydro, 1997:** VSP Processing Report, R - 082193

APPENDIX I

CORE DESCRIPTIONS

CORE REPORT

HYDRO

WELL: 35/4-1 DATE: 30.03.97 GEOL: Nyby/Henderson SCALE: 1:200

CORE NO: 1 FROM: 4084 m TO: 4093,5 m CORED: 9,5 m REC: 9,37 m 98,6

Depth m RKB	Rec.	Lith.	Grain Size (cly sl vf f m c vc)	Lithological Description	Dir Flu (tr m g)	Cut Flu (tr m g)	Shows description
4084							
4085				**Sst:** brn blk-brn gry, vf, Tr f, Qtz gr, sbang-ang, mod srt, fri-mod hd, non calc, sil cmt, arg Mtrx, Tr Mic, n.v.p.			wk Pet od, gen no dir Fluor, loc v wk yel-bl wh dir Fluor, v slo-slo strmg-blmg fluor cut, no vis cut, wk bl wh fluor Res, no vis Res.
				Sst: olv blk-brn blk, vf, Qtz gr, gen v slty grad Sltst, sbang-ang, mod srt, gen mod hd, occ fri-mod hd, gen non calc, occ slily calc, sil cmt, arg Mtrx, Tr-loc v gd Tr Mic, loc Wd Frag, n.v.p., loc v thn lam as Sst at 4084 m			
4090							
4093,37				**Sst:** gen v slty, else as 4084 m			
4093,5							

CORE REPORT

HYDRO

WELL: 35/4-1 | DATE: 01.04.97 | GEOL: Henderson/Nyby | SCALE: 1:200

CORE NO: 2 | FROM: 4093,5 m | TO: 4108,5 m | CORED: 15 m | REC: 14 m 93,3 %

Depth m RKB	Rec.	Lith.	Grain Size (cly sl vf f m c vc)	Lithological Description	Dir Flu (tr m g)	Cut Flu (tr m g)	Shows description
4093,5				**Sst:** brn blk-olv blk, Qtz, vf-slt, sbang, mod-wl srt, mod hd-loc hd, blky-plty, non calc, occ slily calc, v slty arg Mtrx grad Sltst, com-loc abd mic, loc Tr carb+pyr wd Frag, Tr carb, r bioturb, n.v.p.			wk Pet od, gen no-occ Tr dull yel-bl wh dir Fluor, gen tr slo blmg-loc strmg bl wh fluor cut, no vis cut, wk Tr-r strg bl wh-yel fluor Res, no vis Res.
4095							
4100				**Sltst:** brn blk-olv blk-blk, mod hd-hd, plty - subfis, non calc - pt mod calc, com lam Sst as 4093,5 m, com carb lam w/Wd Frag + pyr, com mic lam, arg.			
				Sltst: brn blk, mod hd-hd, blky-plty, non-occ sl calc, v sdy grad Sst, com-abd mic, Tr-abd carb Wd Frag, loc Tr Pyr, arg, loc bivalves-Lingula?			
4105							
4107,5							
4108,5							
4110							

CORE REPORT

HYDRO

WELL: 35/4-1 | DATE: 03.04.97 | GEOL: Henderson/Nyby/Kjellin | SCALE: 1:200

CORE NO: 3 | FROM: 4108,5 m | TO: 4113,5 m | CORED: 5 m | REC: 5,15 m 100%

Depth m RKB	Rec.	Lith.	Grain Size (cly sl vf f m c vc)	Lithological Description	Dir Flu (tr m g)	Cut Flu (tr m g)	Shows description
4108,5							
4810		C M M C M M C M C		**Sltst:** brn blk-gry blk, hd, plty-sbfis, non calc, Tr vf sdy, arg, com-loc abd Mic, carb, loc blk arg Ptgs, loc carb Wd Frag w/r Pyr. **Dol:** dusky yel brn, v hd-hd, sl calc, v slty grad Sltst, arg, Tr Mic, Tr sdy, Tr carb Wd Frag, microxln. Int lam **Sltst:** brn gry-brn blk-olv blk, mod hd, blky, non calc, v sdy grd Sst, vf-slt, and **Sltst:** as 4108,5 m and **C:** blk, hd, brit, vit, Wd Frag, mic.			v wk Pet od, no dir Fluor, v slo blmg bl wh fluor cut, no vis cut, Tr bl wh-yel fluor Res, no vis Res.
4813,65							

Note! cut 5 m, rec 5,15 m - may have recovered part of the stump from core #2.

CORE REPORT

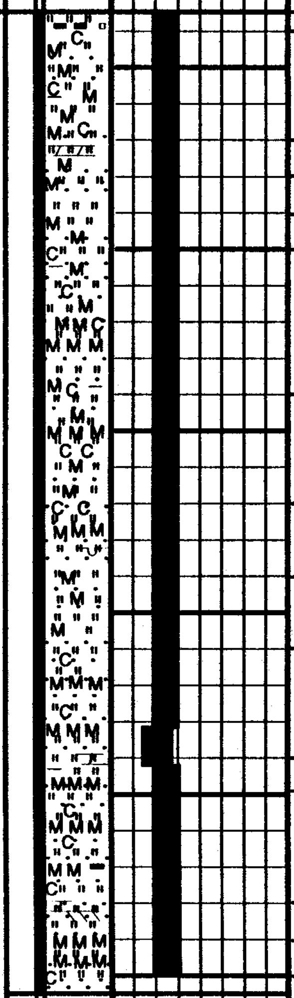
HYDRO

WELL: 35/4-1 **DATE:** 04.04.97 **GEOL:** Henderson/Nyby/kjellin **SCALE:** 1:200

CORE NO: 4 **FROM:** 4113,5 m **TO:** 4141 m **CORED:** 27,5 m **REC:** 27,25 m 99,1%

Depth m RKB	Lithological Description
4113,5	**Slst:** gry blk, hd, sbfis, non calc, abd Lam blk vit **C**, v carb grd **C**, Wd Frag, arg, abd Pyr.
	Sltst: gry blk-brn blk, hd, blky-plty, non calc, vf gr sdy grad Sst, arg, com-abd Mic, carb, pred mass/bioturb, loc Tr sblam.
4115	**Dol:** dusky yel brn-olv blk, v hd, blky, pt calc, v slty grad Sltst, arg, Tr Mic, Tr sdy, Tr carb.
	Sst: brn blk, Qtz, vf-slt, sbang, mod-wl srt, mod hd-fri, non calc, v slty grad Sltst, Mic, Tr carb, Tr arg, n.v.p.
4120	**Sltst:** olv gry-brn gry, else as 4114 m, w/com discon irr carb/arg/ mic Lam, sdy Lam, Wd Frag.
	Sst: brn gry-brn blk, Qtz, vf-slt grad Sltst, mod-wl srt, mod hd, blky-flg, non-r slily calc, v slty, com Mic, Tr carb, Tr arg, loc Tr-abd fis mic Ptg, n.v.p.
	Sltst: as 4114 m, loc v arg grad Clst, loc sdy Len.
4125	**Sltst:** as 4120 m w/abd fis mic/carb Lam/Ptg
	Sltst: as 4114 m w/loc Len Sst as 4120 m
4130	**Sst:** as 4120 m
	Sltst: brn blk-gry blk, v hd, blky-plty, slily calc, dol, arg, abd carb/mic Lam, Tr sdy Len
4135	**Sst:** gen as 4120 m, sbfis, v slty grad + intrlam Sltst as 4114 m, abd mic Ptg, r pyr, r Wd Frag.
	Sst: hd, calc cmt, else as 4120 m.
	Sltst: as 4114 m w/com mic Ptg, occ Lam Sst as 4120 m.
4140,75	**Sst:** as 4120 m, com mic Ptg.
4141	

Rec. | Lith. | Grain Size: cly sl vf f m c vc | Dir Flu: tr m g | Cut Flu: tr m g



Shows description

gen wk - loc no - gd Pet od, no-loc Tr dull yel dir Fluor, Tr slo blmg-occ slo strmg bl wh fluor cut, no vis cut, Tr bl wh fluor Res, no vis Res.

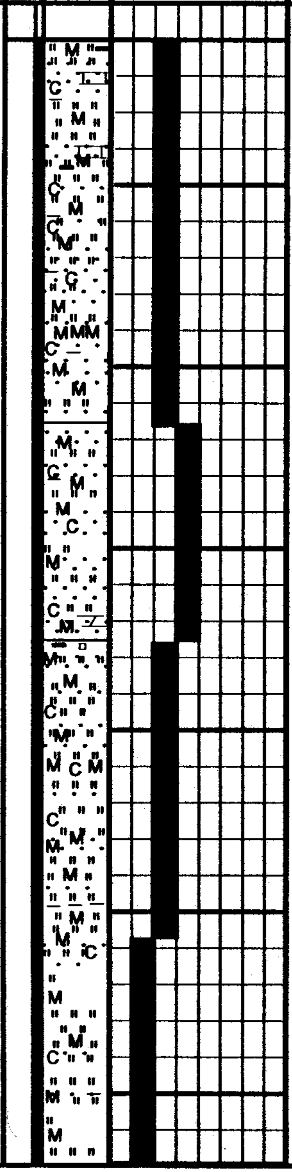
CORE REPORT

HYDRO

WELL: 35/4-1 DATE: 05.04.97 GEOL: Henderson/Nyby/Kjellin SCALE: 1:200

CORE NO: 5 FROM: 4141 m TO: 4178 m CORED: 37 m REC: 36,1 m 97,6 %

Depth m RKB	Rec.	Lith.	Grain Size (cly sl vf f m c vc)	Lithological Description	Dir Flu (tr m g)	Cut Flu (tr m g)	Shows description
4141				Intbd + int lam **Sst** and **Sltst** **Sst:** olv gry - brn blk, Qtz, vf-slt grad Sltst, mod - wl srt, mod hd, non - mod calc, v slty, mic, carb, pt mass, pt flg-fis w/ mic Ptgs, r carb Wd Frag, r Pyr, n.v.p.			no - wk Pet od, gen no - loc Tr dull yel wh dir Fluor, gen v slo blmg - occ slo strmg bl wh fluor cut, loc no fluor cut, no vis cut, gen v wk bl wh fluor Res, loc no - fr fluor Res, no vis Res.
4145				**Sltst:** gry blk - olv blk, hd - mod hd, plty - sbfis, non calc, vf gr sdy, arg, com-abd Mic, Lam - sbLam - flg, r carb Wd Frag w/Pyr grad **C**: blk vit.			
4150							
4151,5				**Sst:** dusky yel brn - brn blk, Qtz, vf - f, sbang-sbrnd, mod-pr srt, hd - mod hd, blky, non - loc mod calc, slty, arg Mtrx, com mic, Tr carb, mass, r p.p. Por.			
4155							
4157,5				**Sst + Sltst:** as 4141 m.			
4160							
4165				**Clst:** brn blk - gry blk - dk gry, hd - frm, blky - plty, non calc, sl - v slty grad Sltst, Tr mic, Tr carb, loc slick.			
4170							



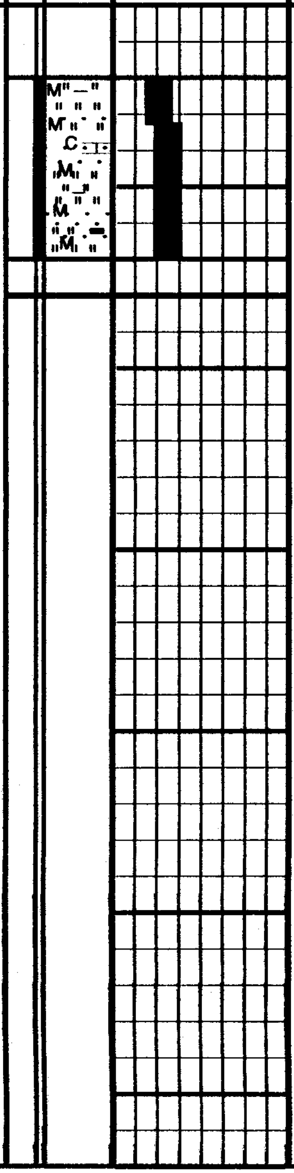
CORE REPORT

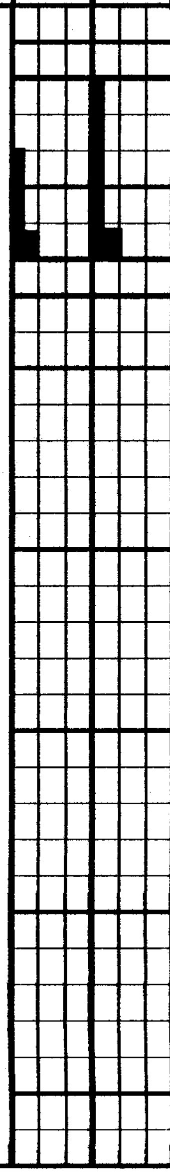
HYDRO

WELL: 35/4-1 **DATE:** 05.04.97 **GEOL:** Henderson/Nyby/Kjellin **SCALE:** 1:200

CORE NO: 5 **FROM:** 4141 m **TO:** 4178 m **CORED:** 37 m **REC:** 36,1 m 97.6%

Depth m RKB	Rec. / Lith. / Grain Size (cly sl vf f m c vc)	Lithological Description	Dir Flu (tr m g) / Cut Flu (tr m g)	Shows description
4172				
4175		**Sst:** m dk gry - brn blk, vf, sbang - ang, else as 4141 m.		
4177,1				
4178				





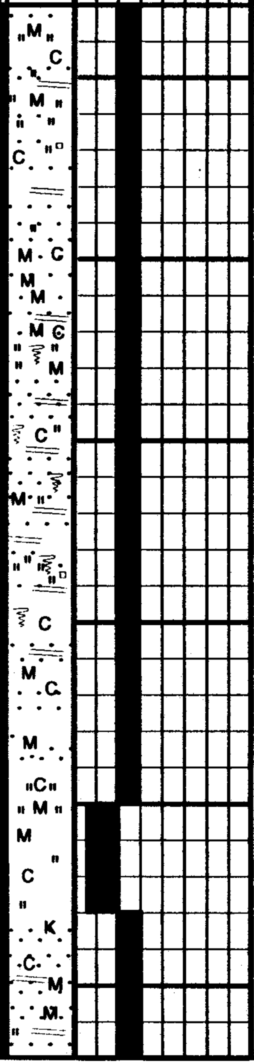
HYDRO

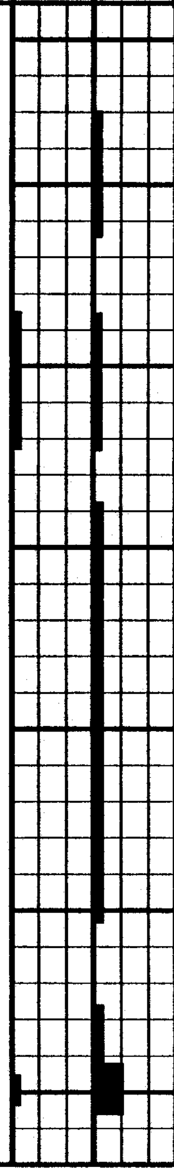
CORE REPORT

WELL: 35/4-1 | DATE: 08.04.97 | GEOL: Giskeødegaard/ Knape/ Kjellin | SCALE: 1:200

CORE NO: 6 | FROM: 4178 m | TO: 4219 m | CORED: 41 m | REC: 44,05 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
4178							no - fnt Pet od, no O stn, no dir Fluor, gen v slo strmg bl wh fluor cut, no vis cut, gen wk be wh fluor Res, no vis Res.
				Sst and Slst Intbd and Intlam			
4180				**Sst:** m dk gry - lt gry, clr - trnsl Qtz, vf, loc slty, sbang-sbrndd, mod srt, mod hd, gen sil cmt, loc calc·cmt, Tr Mic, Tr carb, lam, n.v.p.			
4185				**Slst:** m dk gry - brn blk, hd - mod hd, sbblky subfis, arg, loc vf sdy grdg Sst, gd Tr Mic, Tr carb, arg, loc micropyr.			
4190				**Sst:** m dk gry - lt gry, trnsl Qtz, vf, loc slty grad Slst, sbang - sbrndd, mod srt, mod hd, sil cmt, micromic, carb, arg, bioturb, lam, n.v.p.			
4195							
4200				**Clst:** gry blk - brn blk, sbblky-subfis, mod hd, non calc, Mic, micromic, Tr carb, Wd Frag, loc slty, loc slick.			
4205				**Sst:** lt gry - m gry, trnsl Qtz, vf, Tr f, sbang-sbrndd, mod srt, gen sil cmt, Tr calc cmt, Tr Kao Mtrx, abdt Mic, Tr carb, p.v.p.			Fnt Pet od, no O stn, 100% dull yel dir Fluor mod strng bl wh fluor cut, no vis cmt, str be wh fluor res no vis res





HYDRO

CORE REPORT

WELL: 35/4-1 DATE: 08.04.97 GEOL: Giskeødegaard/Knape/ Kjellin SCALE: 1:200

CORE NO: 6 FROM: 4178 m TO: 4219 m CORED: 41 m REC: 44,05 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
				Slst: brn blk-gry blk, frm-hd, blky-sbb?, Tr vt sdy, loc arg grdg Clst, Tr wd Frag, non calc, Tr carb, Mic, bioturb, Tr micropy/Pyr, Wd Frag.			
4210							
				Also cm intb w/sst: m dk gry, trnsl Qtz, vf, mod hd, sil cmt, hd, Tr micromic, r carb, loc lam when not biotur n.v.p.			
4215							fnt-mod strng pet Od, no O stn, no-Tr v wk dull yel dir Fluor, wk bl wn fluor cut, no vis cut, bl wh fluor Res, no vis Res.
				Sst: brn gry-m dk gry, vf, clr-trnsl Qtz, v slty grdg Slst, sbang, mod srtd, mod hd, arg, no calc, gd Tr Mic, Tr carb, n.v.p. Tr wd Frag, mass.			
4220							
4222,05							
				Note! cut 41 m, rec 44.05 m			

HYDRO

CORE REPORT

WELL: 35/4-1 | DATE: 10.04.97 | GEOL: Giskeødegaard/Knape Kjellin | SCALE: 1:200

CORE NO: 7	FROM: 4222 m	TO: 4266 m	CORED: 44 m	REC: 44 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
4222.05				**Sltst:** brn blk - dk gry - gry blk, non - slily calc, gen mod hd - hd, loc firm, blky - subfis, abd Mic, carb, loc **C** lam, i.p. arg grad **Clst**, loc vf sdy lam & flsr Bdg, Tr bioturb, loc ll lam.			**On Sst & Slst** no Pet od, no O stn, no dir Fluor, slo strmg bl wh fluor cut, no vis cut bl fluor Res, no vis Res.
4225							
4230							
4235				**Sst:** dk gry - m gry, clr Qtz, vf, loc slty, mod hd, gen sil cmt, Tr calc cmt, micromic, gen Flsr Bgd, n.v.p.			
4240				**Clst:** gry blk - brn blk, Tr dusky yel brn, non calc, subfis, loc slick, firm - mod hd, slty, Mic, carb - v carb, carb Frag.			
4245							
4250							

HYDRO

CORE REPORT

WELL: 35/4-1 | DATE: 10.04.97 | GEOL: Giskeødegard/Knape/ Kjellin | SCALE: 1:200

CORE NO: 7	FROM: 4222 m	TO: 4266 m	CORED: 44 m	REC: 44 m	100%

Depth m RKB	Lithological Description	Shows description
4252		
	Sltst: a.a	On Sst & Sltst: a.a
4255	Sst: a.a	
4260		
	Clst: a.a	
4265		
4266	Note! Actual measured core depth is + 3 m off compared with drillers depth	

CORE REPORT

HYDRO

WELL: 35/4-1 | DATE: 19.04.97 | GEOL: Ree/Knape | SCALE: 1:200

CORE NO: 8 | FROM: 4447 m | TO: 4475 m | CORED: 28 m | REC: 27,85 m 99,5%

Depth m RKB	Lithological Description	Shows description
4447 m – 4450	**Sst:** lt brn gry - lt gry, clr - trnsl Qtz, vf - m, loc m - v crs, sbang - sbrndd, mod srt, hd, sil cmt, Mic, loc abd Mic/arg lam, Tr carb, gen n.v.p., loc pr vis por.	Mod pet od, v wk dull yel dir Fluor, v slo strmg wk blsh fluor cut, no vis cut, wk blsh wh fluor Res no vis Res.
4455	Intrlam: **Sst:** vf - f, v Mic; **C:** blk, shiny, brit; **Clst/Sltst:** dusky yel brn, v slty grad Sltst, micromic	
	Sst: brn gry - brn blk, vf - f abd Mic/arg lam n.v.p., else a.s.	
4460	**Sst:** lt brn gry, vf - crs, gen m, v hd, wl calc cmt, n.v.p.	No shows
	Sst: lt brn gry - brn gry, vf - m, hd, sil cmt, abd Mic lam, n.v.p.	
4465		Wk pet (?) od, v wk dull yel dir Fluor, a.a.
4470	**Sst:** lt gry, vf - m, mod hd - fri, tr arg Mtrx, Tr Mic, Tr carb, pr vis por.	Mod pet (?) od, wk blsh wh dir Fluor, slo strmg blsh wh fluor cut, else a.a.
	Sst: lt gry - m dk gry, vf - m, abd Mic lam, tr C frag, n.v.p.	
4474,8		No shows
4475		

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

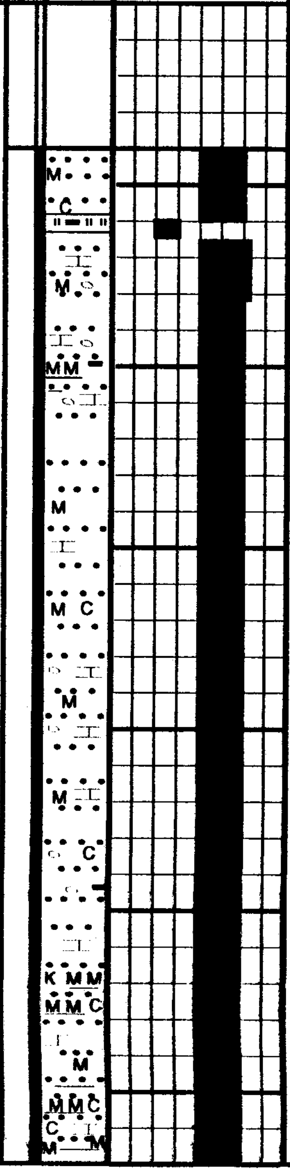
CORE REPORT

HYDRO

WELL: 35/4-1	DATE: 19.04.96	GEOL: Nyby/Henderson	SCALE: 1:200

CORE NO: 9	FROM: 4709 m	TO: 4737 m	CORED: 28 m	REC: 28,25 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
4709 – 4710				**Sst:** lt gry - m gry, clr - trnsl Qtz gr, f-crs, ang, wl srt, fri non calc, wk silic cmt, r - Tr Mic, r - Tr carb, mass, fr vis por. **Sltst:** brn blk, blky, frm, sli calc, Tr vf - f sdy, inter lam w/pyr Wd Frag/C, Tr micropyr Nod, gd Tr Mic.			Fnt - mod Pet od, no O stn, pch - uni brt wh dir Fluor, slo blmg bl wh fluor cut, no vis cut, pch bl wh fluor Res ring no vis Res. On Sltst: Fnt Pet od, no O stn, no dir Fluor, v slo blmg bl wh bl wh fluor Res ring, no vis Res.
4715							
4720				**Sst:** v lt gry - lt gry, loc v lt gry - lt brn gry, f - crs, pred m, loc pred crs, occ Tr - gd Tr Qtz pbl, ang, wl srt, mod hd - fri, mod - occ non - sli calc cmt, Tr - loc r Mic, r - Tr Carb, r RK Frag, occ Kao Mtrx, gen mass, loc mm Mic/carb Lam, com r - loc Tr - gd ir Wd frag, no - pr vis por.			n/s (pch mod yel - or, wk purp bkgrd dir min Fluor)
4725							
4730							
4735							
4737,75							



APPENDIX II

SIDEWALL CORE DESCRIPTIONS

NORSK HYDRO	SIDE WALL CORE DESCRIPTION	WELL: 35/4-1
		RIG : Treasure Saga

Run: 1A	Date 17.01.97	Logging Schlumberger			Page : 1 of 3
Shot: 30	Misfired: 1	Lost: 2	Empty : 1	Recoverd 26	Geologist Knape/Henderson

No.	Depth m RKB	Recoverd cm	Lithology and shows description						
1	2353	3.0	CLST: olv gry, sft - firm, blky, non calc, slily slty, loc r vf sdy, v wk pet od, dull -pl yel dir Fluor, slo strmg, bl wh Fluor cut, no vis cut, bl wh fluor Res, no vis Res.	X			X		
2	2346	4.0	CLST: a/a but slily calc, slty grad Sltst; (vf sdy lam), Tr Glauc, Tr carb, Shw as 2353m	X			X		
3	1922	2.5	CLST: m lt gry - lt gry, sft, blky, v calc grad arg LS, slily slty						
4	1914	3.0	CLST: as for 1922m but w/ r vf sdy lam, bri yel dir Fluor, slo strmg bl wh fluor cut, no vis cut, wk bl wh - yel wh fluor Res, no vis Res.	X			X		
5	1903	0	Lost in hole						
6	1885	5.0	CLST: olv gry, sft - firm, blky, v calc grad arg LS, slily slty, Tr micromic, Tr carb. slo strmg wk bl wh Fluor cut, no vis cut, wk bl wh fluor Res, no vis Res.				X		
7	1871	4.0	CLST: non calc else as for 1885m				X		
8	1847	3.0	CLST: m dk gry - dk gry, sft - firm, blky, slily calc, slily slty, Tr micromic, Shw as for 1885m				X		
9	1825.5	4.0	CLST: dk gn gry, firm - mod hd, blky, non - slily calc, sptd wk - dull yel dir Fluor, slo strmg wk bl wh Fluor cut, no vis cut, wk bl wh fluor Res, no vis Res.	X			X		
10	1803	6.0	CLST: dk gn gry, sft - firm, blky, non calc, Tr Glauc, slo strmg wk bl wh fluor cut, no vis cut, wk bl wh fluor Res, no vis Res.				X		

Tr:Trace M:Medium G:Good

Comments:

NORSK HYDRO	SIDE WALL CORE DESCRIPTION	WELL: 35/4-1 RIG : Treasure Saga

Run: 1A	Date 17.01.97	Logging Co Schlumberger			Page : 2 of 3
Shot: 30	Misfired: 26	Lost: 2	Empty : 1	Recoverd 26	Geologist Knape/Henderson

No.	Depth m RKB	Recoverd cm	Lithology and shows description	Fluorescence Direct Tr	Direct M	Direct G	Cut Tr	Cut M	Cut G
11	1793	2.5	SST: wh - v lt gry, trnsl - mky Qtz, vf - slty, sbang - sbrndd, w srt, fri, pr calc cmt, Tr Glauc, r Mic, no vis por, no pet od, sptd pl - mod yel dir Fluor, sl strmg bl wh fluor cut, no vis cut, wk bl wh fluor Res, no vis Res.	X			X		
12	1788	2.0	CLYST: m dk gry - dk gry, sft - firm, blky, slily calc, slily slty no dir Fluor, no - v wk bl wh fluor cut, no vis cut,v wk - wk bl wh fluor Res, no vis Res				X		
13	1770	4.5	CLYST: olv gry, firm - mod hd, blky, subfis, non calc, slily slty, r - Tr vf sdy, Tr micromic, Shw as for 1788m				X		
14	1755	3.0	SLTST: m dk gry - dk gry, sft firm, blky, slily calc, arg grad slty Cyst, Shw as for 1788m.				X		
15	1720	4.0	CLYST: sft - firm else as for 1770m Shw as for 1788m				X		
16	1712	4.5	CLYST: m bl gry, sft - firm, blky, non calc, slily slty, Tr micromic, Tr Pyr, Tr Glauc, Shw as for 1788m				X		
17	1700	0	Empty						
18	1687	0	Lost in hole						
19	1675	3.0	SST: v lt gry, m dk gry, mky- smoky Qtz, vf - m, r crs, sbang - sbrndd, lse - fri, in pt sli - mod calc cmt, Tri Mic, Tr Glauc, Shw as for 1788m				X		
20	1672.5	2.0	SST: vf - f, v calc cmt, else as for 1675m, Shw as for 1788m				X		

Tr:Trace M:Medium G:Good

Comments:

NORSK HYDRO	SIDE WALL CORE DESCRIPTION	WELL: 35/4-1
		RIG : Treasure Saga

Run: 1A	Date 17.01.97	Logging Co Schlumberger			Page : 3 of 3
Shot: 30	Misfired: 1	Lost: 2	Empty : 1	Recoverd 26	Geologist Knape/Henderson

No.	Depth m RKB	Recoverd cm	Lithology and shows description	Fluorescence Direct Tr	Direct M	Direct G	Cut Tr	Cut M	Cut G
21	1667.5	2.0	SST: as for 1675m but v calc, no Shw						
22	1655	6.0	CLYST: dk gn gry - m bl gry, sft - firm, blky, non calc, Tr micromicc, Tr micropyr, Shw as for 1788m				X		
23	1642.5	5.0	CLYST: olv gry, sft - firm, blky, non calc, no pet od, pl - mod dir Fluor, slo strmg bl wh fluor cut, no vis cut, bl wh - yel wh fluor Res, no vis Res.	X			X		
24	1604	2.0	SST: mky - smoky Qtz, vf - m, sbang, mod - w srt, fri - lse, calc cmt, Tr Mic, r Glauc, no vis por, no Shw.						
25	1592	3.0	SST: trnsl - mky, smoky Qtz, lge scale Clyst Frag, else as for 1604m, no Shw. CLYST: dk gn gry, sft - firm, blky, non calc, glauc, no Shw.						
26	1554	1.0	SST: as for 1604m						
27	1517	2.0	SLTST: gn gry - m bl gry, sft - firm, loc mod hd, v calc, loc vf sdy grad Sst, Tr micromic, Tr Pyr, no Shw.						
28	1502	2.5	SST: trnsl - smooky Qtz, vf - f, sbang, w srt, fri, non calc, Tr Mic, r Glauc, no fluor cut, no vis cut, v wk bl wh fluor Res, no vis Res.				X		
29	1487.5	6.0	CLYST: dk gry, firm - mod hd, blky, non calc, slily slty, r micromic, r Pyr.						
30	1460	0	Misfire						

Tr:Trace M:Medium G:Good

Comments:

NORSK HYDRO	SIDE WALL CORE DESCRIPTION	WELL: 35/4-1
		RIG : Treasure Saga

Run: 2B	Date 15.02.97	Logging Co Schlumberger	Page : 1 of 3

Shot: 24	Misfired: 0	Lost: 23	Empty : 0	Recoverd 1	Geologist Bang/Knudsen/Pedersen

No.	Depth m RKB	Recoverd cm	Lithology and shows description	Fluorescence Direct Tr	Direct M	Direct G	Cut Tr	Cut M	Cut G
31	3715		Lost						
32	3711		Lost						
33	3708		Lost						
34	3703		Lost						
35	3698		Lost						
36	3693		Lost						
37	3688		Lost						
38	3686		Lost						
39	3681		Lost						
40	3677		Lost						

Tr:Trace M:Medium G:Good

Comments:

NORSK HYDRO	SIDE WALL CORE DESCRIPTION	WELL: 35/4-1
		RIG : Treasure Saga

Run: 2B	Date 15.02.97	Logging Co Schlumberger	Page : 2 of 3
Shot: 24	Misfired: 0	Lost: 23 / Empty : 0 / Recoverd 1	Geologist Bang/Knudsen/Pedersen

No.	Depth m RKB	Recoverd cm	Lithology and shows description	Fluorescence Direct Tr	Direct M	Direct G	Cut Tr	Cut M	Cut G
41	3674		Lost						
42	3666		Lost						
43	3656		Lost						
44	3640		Lost						
45	3625		Lost						
46	3598		Lost						
47	3575		Lost						
48	3526	1,5cm	**Clst:** dk gry - olv blk, interlam m gry - olv gry, blky - subfis, mod hd, sli- mod hd, sli - mod slty, v calc, tr wh - lt gry Ls lam **Shows:** no direct fluor, mnr slo strmg bl wh fluor cut, no vis cut, blu wh fluor res, no vis res						
49	3501		Lost						
50	3486		Lost						

Tr:Trace M:Medium G:Good

Comments:

NORSK HYDRO	SIDE WALL CORE DESCRIPTION	WELL: 35/4-1
		RIG : Treasure Saga

Run: 2B	Date 17.02.97	Logging Co Schlumberger			Page : 3 of 3
Shot: 24	Misfired: 0	Lost: 23	Empty : 0	Recoverd 1	Geologist Bang/Knudsen/Pedersen

No.	Depth m RKB	Recoverd cm	Lithology and shows description	Fluorescence Direct Tr	Direct M	Direct G	Cut Tr	Cut M	Cut G
51	3463		Lost						
52	3421.5		Lost						
53	3300		Lost						
54	3250		Lost						

Tr:Trace M:Medium G:Good

Comments:

NORSK HYDRO	SIDE WALL CORE DESCRIPTION	WELL: 35/4-1
		RIG : Treasure Saga

Run: 4C	Date 05.05.97	Logging Co Schlumberger				Page : 1 of 6
Shot: 60	Misfired: 25	Lost: 20	Empty : 4	Recoverd 11	Geologist	Henderson/Nyby

No.	Depth m RKB	Recoverd cm	Lithology and shows description	Fluorescence Direct Tr	Direct M	Direct G	Cut Tr	Cut M	Cut G
55	4928	0	Lost in hole.						
56	4924	0	Lost in hole.						
57	4905	0	Lost in hole.						
58	4895	0	Lost in hole.						
59	4870	0	Lost in hole.						
60	4841	0	Empty.						
61	4812	0	Empty.						
62	4794	0	Lost in hole.						
63	4783.5	0	Lost in hole.						
64	4754	0	Lost in hole.						

Tr:Trace M:Medium G:Good

Comments:

NORSK HYDRO	SIDE WALL CORE DESCRIPTION	WELL: 35/4-1
		RIG : Treasure Saga

Run: 4C	Date 05.05.97	Logging Co Schlumberger			Page : 2 of 6
Shot: 60	Misfired: 25	Lost: 20	Empty : 4	Recoverd 11	Geologist Henderson/Nyby

No.	Depth m RKB	Recoverd cm	Lithology and shows description	Fluorescence					
				Direct			Cut		
				Tr	M	G	Tr	M	G
65	4750.5	0.5	**Sst**: olv blk-brn blk, Qtz, v f-slt, sbang, mod srtd, mod hd-lse, non calc, slty arg Mtrx, Tr micromic, Tr carb, n.v.p. Mod bl wh-yel dir Fluor, slo blmg bl wh fluor cut, no vis cut, Tr bl wh fluor Res, no vis Res.	XXX XXX XXX XXX XXX	XXX XXX XXX XXX XXX		XXX XXX XXX XXX XXX	X X X X X	
66	4702	0	Lost in hole.						
67	4696.5	0	Lost in hole.						
68	4685	Tr	**Clst**: gry blk, hd, blky-plty, sli calc, sli slty, carb.				XXX XXX XXX XXX XXX		
69	4672	1.0	**Sst**: olv gry-olv blk, spk blk, Qtz, slt-vf grad Sltst, Tr vf-f, sbang-sbrndd, pr srt, fri, calc cmt, v slty Mtrx, loc v arg Mtrx grad Clst, com Kao, r micromic. Tr mod bl wh-yel dir Fluor, slo blmg bl wh fluor cut, no vis cut, Tr bl wh fluor Res, no vis Res.	XXX XXX XXX XXX XXX			XXX XXX XXX XXX XXX		
70	4663	0.5	**Sltst**: brn blk-gry blk, mod hd, blky, non calc, v arg, v sdy grad Sst, slt-f, micromic. No dir Fluor, Tr slo blmg bl wh fluor cut, no vis cut, Tr bl wh fluor Res, no vis Res.				XXX XXX XXX XXX XXX		
71	4651	1.0	**Sltst**: brn blk, mod hd, blky, non calc, v arg grad Clst, sdy, slt-vf, micromic, carb. No dir Fluor, Tr slo blmg bl wh fluor cut, no vis cut, Tr bl wh fluor Res, no vis Res.				XXX XXX XXX XXX XXX		
72	4633.5	0.5	**Sst**: brn blk-gry blk, Qtz, vf-slt, sbang, mod srt, fri-lse, non calc, slty arg Mtrx grad Sltst, Tr micromic, Tr carb, n.v.p. Tr bl wh-yel dir Fluor, slo blmg bl wh fluor cut, no vis cut, Tr bl wh fluor Res, no vis Res.	XXX XXX XXX XXX XXX			XXX XXX XXX XXX XXX		
73	4626	Tr	**Sltst**: m dk gry, Lam brn blk, mod hd, pt v arg grad Clst, pt v sdy grad Sst, non calc, r micromic, Tr carb. Mod bl wh-yel dir Fluor, slo blmg bl wh fluor cut, no vis cut, Tr bl wh fluor Res, no vis Res.	XXX XXX XXX XXX XXX	XXX XXX XXX XXX XXX		XXX XXX XXX XXX XXX		
74	4612	0	Lost in hole.						
				Tr:Trace M:Medium G:Good					

Comments:

NORSK HYDRO	SIDE WALL CORE DESCRIPTION	WELL: 35/4-1
		RIG : Treasure Saga

Run: 4C	Date 05.05.97	Logging Co Schlumberger			Page : 3 of 6
Shot: 60	Misfired: 25	Lost: 20	Empty : 4	Recoverd 11	Geologist Henderson/Nyby

No.	Depth m RKB	Recoverd cm	Lithology and shows description	Fluorescence Direct Tr	Direct M	Direct G	Cut Tr	Cut M	Cut G
75	4595.5	0	Lost in hole.						
76	4574	0	Lost in hole.						
77	4569	0	Misfire.						
78	4556	0.5	**<u>Sst</u>**: lt olv gry-pl yel brn, Qtz, v f-slt, sbang-sbrndd, wl srtd, non-v sl calc, fri-hd, loc blk slty arg lam, n.v.p. <u>Wk- mod bl wh-yel dir Fluor, slo blmg bl wh fluor cut, no vis cut, Tr bl wh fluor Res, no vis Res.</u>	XXX XXX XXX XXX XXX	XXX XXX XXX XXX XXX		XXX XXX XXX XXX XXX		
79	4539	1	Intlam **<u>Sst</u>**: as 4556m, and **<u>Sltst</u>**, as 4651m.	XXX XXX XXX XXX XXX			XXX XXX XXX XXX XXX		
80	4528	1	**<u>Sst</u>**: as 4556m.	XXX XXX XXX XXX XXX	XXX XXX XXX XXX XXX		XXX XXX XXX XXX XXX	X X X X X	
81	4517.5	Tr	**<u>Sst</u>**: Tr micromic, else as 4556m.	XXX XXX XXX XXX XXX	XXX XXX XXX XXX XXX		XXX XXX XXX XXX XXX		
82	4504	0	Lost in hole.						
83	4488	0	Lost in hole.						
84	4478	0	Misfire.						

Tr:Trace M:Medium G:Good

Comments:

NORSK HYDRO	SIDE WALL CORE DESCRIPTION	WELL: 35/4-1
		RIG : Treasure Saga

Run: 4C	Date 05.05.97	Logging Co Schlumberger			Page : 4 of 6
Shot: 60	Misfired: 25	Lost: 20	Empty : 4	Recoverd 11	Geologist : Henderson/Nyby

No.	Depth m RKB	Recoverd cm	Lithology and shows description	Fluorescence					
				Direct			Cut		
				Tr	M	G	Tr	M	G
85	4441.5	0	Lost in hole.						
86	4433	0	Lost in hole.						
87	4419	0	Empty.						
88	4409	0	Misfire.						
89	4401	0	Lost in hole.						
90	4383	0	Lost in hole.						
91	4374.5	0	Misfire.						
92	4356	0	Lost in hole.						
93	4345	0	Lost in hole.						
94	4336.5	0	Misfire.						
				Tr:Trace M:Medium G:Good					

Comments:

NORSK HYDRO	SIDE WALL CORE DESCRIPTION	WELL: 35/4-1
		RIG : Treasure Saga

Run: 4C	Date 05.05.97	Logging Co Schlumberger			Page : 5 of 6
Shot: 60	Misfired: 25	Lost: 20	Empty : 4	Recoverd 11	Geologist Henderson/Nyby

No.	Depth m RKB	Recoverd cm	Lithology and shows description	Fluorescence Direct Tr	Direct M	Direct G	Cut Tr	Cut M	Cut G
95	4330	0	Misfire.						
96	4318	0	Misfire.						
97	4307.5	0	Misfire.						
98	4295	0	Misfire.						
99	4290	0	Misfire.						
100	4286.5	0	Misfire.						
101	4297	0	Misfire.						
102	4272	0	Misfire.						
103	4168.5	0	Misfire.						
104	4081.5	0	Misfire.						

Tr:Trace M:Medium G:Good

Comments:

NORSK HYDRO	SIDE WALL CORE DESCRIPTION	WELL: 35/4-1
		RIG : Treasure Saga

Run: 4C	Date 05.05.97	Logging Co Schlumberger			Page : 6 of 6
Shot: 60	Misfired: 25	Lost: 20	Empty : 4	Recoverd 11	Geologist Henderson/Nyby

No.	Depth m RKB	Recoverd cm	Lithology and shows description	Fluorescence					
				Direct			Cut		
				Tr	M	G	Tr	M	G
105	4078	0	Misfire.						
106	4063.5	0	Misfire.						
107	4009	0	Misfire.						
108	3946.5	0	Misfire.						
109	3908	0	Misfire.						
110	3871.5	0	Misfire.						
111	3843.5	0	Misfire.						
112	3751.5	0	Misfire.						
113	3736	0	Misfire.						
114	3722.5	0	Misfire.						
				Tr:Trace M:Medium G:Good					

Comments:

APPENDIX III

WELL SUMMARY

GEOLOGICAL WELL SUMMARY

MDT RESULTS

WELL SUMMARY:

Coord: 61° 32' 00.55"N
03° 18' 08.26"E

UTM: 6 822 412.0 mN
516 075.7 mE

Zone: ED 50, UTM zone 31 with CM 03° E

Line: NH9409, xline: 4643
inline: 2487
Rig: TREASURE SAGA
RKB: 26 m
Waterdepth: 377.5 m
Seabed: 403.5 m
Stopped In: Hegre Gp

On location: 22.12.96
Spudded: 24.12.96
At T.D.: 02:30 hrs, 30.04.97
Completed: 25.05.97
T.D. Driller: 4936 mMD (4924.2mTVD)
T.D. Logger: 4943 m
Wireline Logging: Schlumberger
Mudlogging: BHI

WELL: 35/4-1

COUNTRY Norway

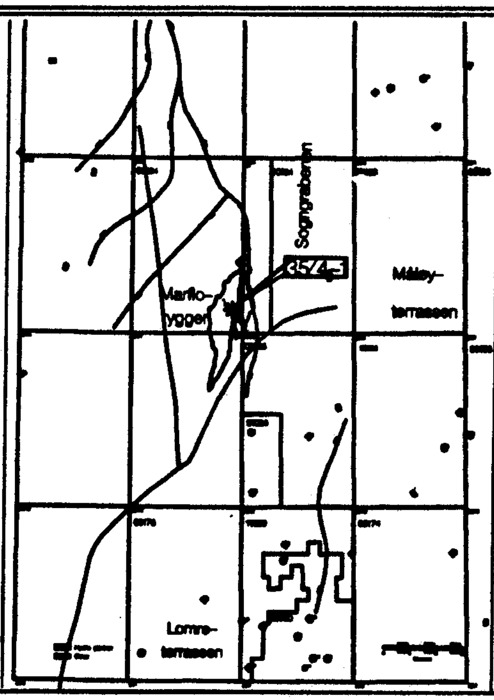
OPERATOR Norsk Hydro **LICENCE**

OWNED BY: Norsk Hydro 25%, Statoil 55%, Saga 10%, Elf 10%

TARGETS
Primary: Brent Group
Secondary: Cook Fm. and Statfjord Fm.

RESULTS

DRY WELL
PERMANENTLY PLUGGED & ABANDONED



CASING

30" @ 464.5 m
20" @ 1350 m
13 3/8" @ 3118 m
9 5/8 @ 3720
(corrected from 3715 m)

CORES

CORE #1
C: 4084 - 4093.5 m 96.6%
R: 4084 - 4093.37 m

CORE #2
C: 4093.5 - 4108.5 m 93.3%
R: 4093.5 - 4107.5 m

CORE #3
C: 4108.5 - 4113.5 m 100%
R: 4108.5 - 4113.65 m

CORE #4
C: 4113.5 - 4141 m 99.1%
R: 4113.5 - 4140.75 m

CORE #5
C: 4141 - 4178 m 97.6%
R: 4141 - 4177 m

CORE #6
C: 4178 - 4219 m +100%*
R: 4178 - 4222 m

CORE #7
C: 4219 - 4263 m 100%*
R: 4219 - 4266 m

CORE #8
C: 4447 - 4475 m 99.5%
R: 4447 - 4474.8 m

CORE #9
C: 4709 - 4737 m +100%
R: 4709 - 4737.25 m

GAS RECORD

1350-1580m	0.1%	C1
1580-1780m	0.1-0.7%	C1 tr C2
1780-1980m	0.3-0.17%	C1-C2 Tr C3
1980-2070m	0.12-0.42%	C1-C3 Tr C4
2070-2181m	0.53-5.43%	C1-C4
2181-2290m	0.78-3.6%	C1-C4
2290-2510m	2.14-23.18%	C1-C4
2510-2710m	2.2-31.5%	C1-C4
2710-3133m	4.5-13.2%	C1-C4
3133-3165m	0.22-1.27%	C1-C4
3165-3340m	0.15-0.47%	C1-C3
3340-3500m	0.1-0.6%	C1-C4
3500-3658m	0,5-1.0%	C1-C4
3658-3720m	0.30-0.60%	C1-C
3720-4079m	0.5-0.20%	C1-C3 Tr C4
4079-4081m	0.1-0.29%	C1-C4
4081-4205m	0.2-0.25%	C1-C3 Tr C4
4205-4244m	0.5-0.22%	C1-C3 Tr C4
4244-4579m	0.10-0.51%	C1-C3 Tr C4
4579-4701m	0.07-0.16%	C1-C3 Tr C4
4701-4796m	0.11-0.60%	C1-C4
4826-4936m	0.09-0.027%	C1-C4

LOGS

DIL/DSI/LDL/CNL/GR/SP/AMS 2590 - 3105.2 m	1A	MDT/GR/AMS 4080.7 - 4877 m	4 B
DIL/DSI/LDL/CNL/GR/SP/AMS 1350 - 2751 m	1B	VSP/GR/AMS (0-offset) 4922 - 3550 m	4 C
VSP/GR 470 - 3090 m	1 A	VSP/GR/AMS (walk-away) 3715 - 3280 m	4 D
CST/GR 2353 - 1460 m	1 B	CST/GR 4928 - 3722.5 m	4 C
DIL/DSI/LDL/CNL/GR/SP/AMS 3720 - 3000 m	2 C		
VSP/GR 3700 - 2002 m	2 B		
CST/GR 3715 - 3250 m	2 B		
DIL/DSI/LDL/CNL/NGT/AMS 4294 - 3671 m	3D/A		
CBL/VDL/GR 3720 - 2950 m	3 A		
CST/GR 4081.5 - 4206 m	3 A		
LDL/CNL/NGS/AMS 4940 - 4225 m	4E/D/E		
OBDT/DSI/GR/ACTS 4942 - 3720 m. DSI to 4000 m	4A/E		

OIL SHOWS

1660 - 1700 m: weak oil shows on cemented sandstone.

1720 - 3133 m: no - weak shows on Claystone, Limestone and Sandstone.

3133 - 4936 m: Possible oil shows on cuttings masked by oilbased mud. Cored intervals reveal no - weak hydrocarbon shows in uninvaded samples.

* Actual measured core length +3 m off compared to drillers depth, reason unknown

GEOLOGICAL WELL SUMMARY

HYDRO

DEPTH m MD RKB	LITHO SECTION	SYSTEM	SERIES/STAGE	GROUP	FORMATION	DESCRIPTION	SHOWS	Located on: 61° 32' 00.55" N 03° 18' 08.26" E 6 822 412,0 mN 516 075,7 mE Water depth: 377,5 m	NH9402 xline = 4643 Inline = 2487	WELL 35/4-1

Air gap. 26 m

Water depth 377,5 m

Seabed 403,5 m RKB

30°
484,5 m

Drilled with returns to the seabed down to 1362 m
Lith. interpretation based on MWD log.

562 m

1116 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

Quaternary

TERTIARY

NORDLAND GROUP

HORDALAND

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

CRETACEOUS

HORDALAND

ROGALAND: Balder, Sele, Lista, Våle

JORSALFARE

KYRRE

20°
1350 m

1366 m
Clst: olv gry - brn blk firm, non calc, pt v slty, micromic, glauc.

Green clay. ca. 1455 m
Clst: dk gr gry - olv gry, non calc, slty, micromic

1500m
Sd: f - crs pred m-f, sbrndd

Sst: Tr arg Mtrx, Tr calc cmt, pred lse

1720 m
Clst: gn gry, olv blk-olv gry, firm, slty, micromic
rTf: dk gry - m bl gry, spk

1775 m
Clst: olv blk, m gry - m bl gry - dk gn gry, firm, pt slty, pt micromic

1804 m
Ls: lt-v lt gry, gry or, pl yel brn, olv gry, sft-hd, crp-microxln pred arg.

1883 m
Clst: dk gry, firm - mod hd, non-sl calc.

1912 m
Clst: olv gry - olv blk, sft - firm, stky, mod-v calc grad **Ls**, loc non calc.

Ls: v lt gry-m gry - m dk gry, pl yel brn, pt cl can, pred arg grad **Clst**

2033 m

Clst: m dk gry - dk gry, olv gry-olv blk, sft-mod hd, slity-v calc, loc grad **Mrl**, loc slty, Tr micromic, r Pyr

Tr Sst: yel brn, clr Qtz, vf, wl srt, fri, n.v.p.

Clst: a/a but bcm v slty, loc grad **Slst**, loc vf sdy grad vf **Sst**

Clst: a/a but also Tr carb, Tr Glauc

Gas: 0.00-0.01% C1; 0.01-0.07% C1, Tr C2; 0.03-0.1% C1-C2, Tr C3; 0.42-1.0% C1-C4; 0.42 - 4.8 C1 - C4; 3.5 - 23.13% C1-C4

GEOLOGICAL WELL SUMMARY

HYDRO

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

Located on:
61° 32' 00.55" N
03° 18' 08.26" E
6 822 412,0 mN
516 075,7 mE
Water depth: 377,5 m

NH9402 x-line: 4643
inline: 2487

WELL 35/4-1

2500–3720 m

System: CRETACEOUS / JURAS.
Group: SHETLAND / VIKING
Formation: KYRRE / TRYGGVASON / SVARTE / R. / HEATH.

Clst: a/a

Tr Ls: v lt gry-lt gry, dk yel brn, sft-firm, blky, arg, crpxln

Tr Dol: dk yel brn, mod hd-hd, blky, loc arg, crpxln

Tr **Sltst**: dk gry-dk yel brn, frm-md hd, calc-v calc, loc vf grad **Sst**, Tr micromic, Tr carb, Tr Glauc

Tr Sst: lt yel brn, clr Qtz, vf, wl srt, fri-mod hd, gen mod calc cmt, Tr Glauc, Tr Mic.

13 3/8"
3118 m

Clst: olv gry-olv blk, gd Tr m gry, gen slily slty, gen slily-mod calc

3326 m

Ls: lt gry-lt olv gry, occ dusky yel brn arg-Mrly, grad **Mrl**, occ microglauc

3500 m
Dol: dusky yel brn, hd, blky, grit, crpxln
3510 m

3675 m
3695 m

9 5/8"
3720 m

Shows: 3.5-31.2% C1-C4; 5.3 - 31.2% C1-C4; 0.15-0.45% C1-C3; 0.1-0.58% C1-C4; 0.5 - 0.9% C1-C4; 0.3-0.58% C1-C4

3750–4950 m

System: JURASSIC / TRIASSIC
Group: VIKING / BRENT / DUNLIN / HEG.
Formation: HEATHER / TARBERT / NES/ ORE / DRAKE / U. AMUNDSEN / AMUNDSEN / STATFJORD

Clst: pred brn blk, sft-frm, gen sli-mod calc, sli-mod slty, occ v slty

Ls: dk yel brn-dusky yel brn, brn gry, occ pl yel brn, wh-m lt gry, sft-mod hd, occ v hd, blky, slily arg, crpxln, occ microxln

Clst: loc v slty grad **Sltst**, else a/a

4079 m

Sst: gen brn blk, Qtz, vf-slty, r m-v crs, gen mod srt, gen non calc, loc mod calc, Tr-abd Mic, Tr-v carb

Sltst: brn blk, gen mod hd, blky, non-occ mod calc, v sdy grad **Sst** (vf), abd Carb Tr Pyr, Tr Wd Frags

Clst: brn blk-gry blk, firm-hd,blky-plty, non-calc, slily-v slty grad **Sltst**, Mic, carb

4287 m

Sltst: olv blk-gy blk, sft-firm-mod hd, non calc, v arg, sdy, Tr micromic, Tr micropyr, Tr carb, loc v sdy grad v arg **Sst** (vf)

4434 m

Sst: lt brn gry-lt gry, loc brn blk, clr-trnsl Qtz, vf-m, loc m-crs, Tr v crs, hd, sil cmt, loc calc cmt, Mic, carb.
Sltst: olv blk-gy blk, a.a.

Sltst: dusky yel brn-dk yel brn gen non calc, loc v calc grad **Ls.** else a/a

4568 m

Sst: v calc mtx, else a.a.
Slst: olv gry-brn gry, olv blk-brn blk, non calc
Sst: clr-r mky, f-crs, r v crs, sbang-sbrndd, pr-mod srt, lse, r Agg w/ sil cmt

4703.5 m

Sst: Lt gry-m gry, clr-trnsl Qtz, f-crs, pred m, occ pbl, ang-sbrndd, fri-mod hd, non-mod calc cmt, Tr kao/ arg mtrx
Sst: olv gry-lt olv gry, Qtz, vf-slty, non-occ calc, slty mtrx, grad slst
Slst: olv blk-olv gry, non-slily calc, loc vf sdy grad sst.

4918 m

Slst: gry rd, dk rd brn, non-slily calc, pt vf sdy grad sst

TD (driller)=4936mMD/4924.2mTVD
TD (logger)=4943 m

Shows: 0.04 - 0.2% C1-C3, Tr C4; 0.02-0.25% C1-C4; 0.04-0.2% C1-C3, Tr C4; 0.1 - 0.5% C1-C3, Tr C4; 0.07-0.3% C1-C3, Tr C4; 0.1-0.6% C1-C4; 0.09-0.3% C1 - C4

FORMATION PRESSURE WORKSHEET

HYDRO

Well Name : 35/4-1 **Rig :** Treasure Saga **Date :** 15.04.97

Pressure Units : Bars **RKB-MSL :** 26 m. **MSL-SBed:** 378 m. **Witnessed by :** Giskeødegaard/Rodgers/Knape

Run No./ Test No.	Depth mMD RKB	Depth mTVD RKB	Initial Hydrostatic Pressure Strain	Initial Hydrostatic Pressure HP	Formation Pressure Strain	Formation Pressure HP	Final Hydrostatic Pressure Strain	Final Hydrostatic Pressure HP	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 mD/cp
3A/1	4086,5	4085,2	761,7	761,41	737,9	738,09	761,4	761,58	04:51	05:18	1,841		?				0,2
3A/2	4081,5	4080,2	760,9	760,69	743,4	743,62	760,5	760,36	06:12	07:03	N/A	137,2	N				Supercharge
3A/3	4085,0	4083,7	761,3	761,49	737,0	737,22	761,2	761,43	07:10	07:28	1,840	137,9	Y			20	0,5
3A/4	4086,5	4085,2	761,5	761,78	N/A	N/A		761,68	07:38	07:48	N/A		N				Tight
3A/5	4092,0	4090,7	762,6	762,83	N/A	N/A		762,75	08:00	08:06	N/A	138,2	N				Tight
3A/6	4101,0	4099,6	764,2	764,47	N/A	N/A		764,44	08:15	08:21	N/A		N				Tight
3A/7	4101,5	4100,1		764,5	N/A	N/A		764,47	08:30	08:35	N/A		N				Tight
3A/8	4122,0	4120,5	768,2	768,41	N/A	N/A	768,1	768,27	08:43	08:55	N/A	139,0	N				Tight
3A/9	4141,3	4139,7	771,7	771,95	N/A	N/A	771,6	771,81	09:20	09:30	N/A	140,0	N				Tight
3A/10	4151,5	4149,9	773,6	773,84	N/A	N/A	773,5	773,67	09:34	09:43	N/A	140,5	N			3,1	Tight
3A/11	4155,0	4153,4	774,1	774,38	N/A	N/A	774,1	774,28	09:50	09:57	N/A	141,1	N			3	Tight
3A/12	4157,0	4155,4	774,5	774,75	N/A	N/A	774,5	774,84	10:05	10:12	N/A	141,5	N			2,8	Tight
3A/13	4179,0	4177,3	778,6	778,84	N/A	N/A	778,5	778,79	10:29	10:35	N/A	142,1	N			2,8	Tight
3A/14	4193,0	4191,2	781,1	781,37	N/A	N/A	781,3	781,26	10:48	10:53	N/A	141,6	N			2,5	Tight
3A/15	4203,0	4201,2	783,0	783,28	N/A	N/A	782,9	783,11	10:59	11:09	N/A	143,1	N			2,9	Tight
3A/16	4205,5	4203,7	783,4	783,62	N/A	N/A	783,4	783,55	11:10	11:21	N/A	148,5	N				Tight
3A/17	4206,0	4204,2	783,4	783,60	N/A	N/A			11:24	12:20	N/A	148,0	N				Tight
3A/18	4205,0	4203,2	783,2	783,44	N/A	N/A					N/A		N				Tight

NB: Fmtn Press sg calculated from RKB

HYDRO

FORMATION PRESSURE WORKSHEET

Well Name 35/4-1 **Rig :** Treasure Saga **Date :** 15.04.97

Pressure Units : Bars **RKB-MSL :** 26 m. **MSL-SBed:** 378 m. **Witnessed by :** Giskeødegaard/Knape/Rodgers

Run No./ Test No.	Depth mMD RKB	Depth mTVD RKB	Initial Hydrostatic Pressure Strain	Initial Hydrostatic Pressure HP	Formation Pressure Strain	Formation Pressure HP	Final Hydrostatic Pressure Strain	Final Hydrostatic Pressure HP	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 mD/cp
3A/19	4205,3	4203,5		784	-	-	-	783,489					N				Tight
3A/20	4085	4053,7	761,51	761,621	736,83	736,951	761,5	761,6	13:56	14:20		138,2	Y			20,5	1,7 Draw down Pretest
Sampling	4085	4083,7	761,37	761,515				761,535	14:28	14:40		138,1	Y				

NB: Fmtn Press sg calculated from RKB

MDT3A_2.WK4

FORMATION PRESSURE WORKSHEET

Well Name: 35/4-1 | Rig: Treasure Saga | Date: 01-02.05.97

Pressure Units: Bars | RKB-MSL: 26 m. | MSL-SBed: 378 m. | Witnessed by: Rodgers/Nyby/Nilsen/Henderson

Run No./ Test No.	Depth mMD RKB	Depth mTVD RKB	Initial Hydrostatic Pressure Strain	Initial Hydrostatic Pressure HP	Formation Pressure Strain	Formation Pressure HP	Final Hydrostatic Pressure Strain	Final Hydrostatic Pressure HP	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
4B/1	4449.5	4446.0	848.19	848.307		668.323		848.234	18:39	18:59		150.0	N				Too low permeability
4B/2	4485.0	4481.1	854.82	85.488	800.65	800.740	854.69	854.712	19:18	19:30	1.82	151.3	Y				Mobility: 5.4mD/Cp
4B/3	4488.5	4484.6	855.46	855.544	800.61	800.708	855.35	855.410	19:32	19:40	1.82	151.9	Y				Mobility: 14.8 mD/Cp
4B/4	4492.0	4488.1	856.12	856.194	801.58	801.670		856.007	19:41	19:57		152.2	N				Mob: 0.1 mD/Cp Supercharged?
4B/5	4503.5	4499.4	858.42	858.429	801.82	801.876		858.277	20:05	20:10	1.82	152.9	Y				Mobility: 144.6 mD/Cp
4B/6	4510.0	4505.9	859.64	859.657		777.813		859.544	20:15			153.3	N				Too low permeability
4B/7	4526.0	4521.7	862.59	862.571		632.655		862.473	20:39			153.9	N				Too low permeability
4B/8	4557.0	4552.4	868.60	868.512		648.717		868.354	20:46			154.0	N				Too low permeability
4B/9	4560.0	4555.4	869.22	869.083		641.976		868.917	21:03			154.4	N				Too low permeability
4B/10	4564.0	4558.3	869.92	869.779		632.673		869.676	21:10			154.6	N				Too low permeability
4B/11	4705.0	4698.5		895.777		628.301		895.664					N				Too low permeability
4B/12	4708.5	4701.4	896.69	896.417		676.569		896.318	22:22			158.8	N				Too low permeability
4B/13	4716.0	4709.3	896.70	897.904		633.840		897.751	22:29			159.0	N				Too low permeability
4B/14	4721.5	4714.2	899.23	898.922	824.92	824.672	899.02	898.725		22:47	1.78	159.8	Y				0.2mD/cp
4B/15	4725.0	4718.2	899.82	899.538	825.64	825.340	899.65	899.353	22:50	23:03	1.78		Y?				0.2mD/Cp Slight supercharged
4B/16	4731.5	4724.5	901.06	900.786		651.716		900.650	23:07	23:11			N				Too low permeability
4B/17	4732.0	4725.1	901.02	900.717		646.662		900.651	23:15				N				Too low permeability
4B/18	4743.0	4735.9	903.29	902.966	830.78	830.541		902.755	23:25	23:33		161.2	N				Mob: 0.3 mD/Cp Supercharged

NB: Fmtn Press sg calculated from RKB

HYDRO

FORMATION PRESSURE WORKSHEET

Well Name 35/4-1 **Rig :** Treasure Saga **Date :** 01-02-05.97

Pressure Units : Bars **RKB-MSL :** 26 m. **MSL-SBed:** 378 m. **Witnessed by :** Rodgers/Nyby/Nilsen/Henderson

Run No./ Test No.	Depth mMD RKB	Depth mTVD RKB	Initial Hydrostatic Pressure Strain	Initial Hydrostatic Pressure HP	Formation Pressure Strain	Formation Pressure HP	Final Hydrostatic Pressure Strain	Final Hydrostatic Pressure HP	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
4B/19	4744.1	4736.9	903.32	903.016		855.158		902.929	23:36	23:45		161.4	N				Mob: 0.28mD/Cp Supercharged
4B/20	4757.0	4749.7	905.93	905.595		641.288		905.432	23:47	23:53		161.7	N				Low permeability
4B/21	4773.5	4766.0	909.06	908.707		651.186		908.532	23:56	00:01		161.9	N				Low permeability
4B/22	4809.0	4800.7	915.6	915.232		836.640		914.987	00:05	00:17		162.6	N				Mob: 0.32mD/Cp Supercharged
4B/23	4877.0	4867.1	928.41	928.082					00:40	00:45		163.7	N				Low permeability
4B/24	4721.5	4714.2	900.11	893.373								161.9?	N				Low permeability
4B/25	4723.9	4717.2			825.58	825.085			02:25		1.78	161.0	Y				Mobility: 0.1 mD/Cp
4B/26	4715.9	4709.3	897.92	897.396					02:47	02:53		161.1	N				Low permeability
4B/27	4713.0	4706.3	897.42	896.640					02:55	03:10		161.1	N				Mob: 0.1 mD/Cp Supercharged
4B/28	4503.5	4499.4	858.68	858.692	802.7	801.60			03:45	06:59	1.82	153.9	Y				1 gal sample
4B/29	4506.5	4502.4	859.6	858.57	803.1	801.98	859.6	867.5	07:11	07:15	1.82	155.7	Y				Mobility: 52.3 mD/Cp
4B/30	4500.5	4495.2	858.4	857.26			858.4	855.16	07:22	07:25		155.7	N				Mobility: 1.7 mD/Cp Tight
4B/31	4206.0	4204.2	804.3	802.71					07:52	07:56		150.6?	N				Tight
4B/32	4157.0	4155.4	795.1	791.14					08:08	08:09		147.2	N				Tight
4B/33	4082.0	4080.7	781.8	780.19					08:17	08:19		145.9	N				Tight

NB: Fmtn Press sg calculated from RKB

MDT4B_2.WK4

LIST OF CONTENT

1 GENERAL

The Treasure Saga arrived the location on the 22nd of December 1996 at 07:30 hrs and spudded on the 23rd of December at 20:00 hrs.

The well was drilled to a TD of 4936 m MD RKB fulfilling the objectives of the target depth. Including an expanded coring programme the activities lasted for 155 days, some 63 days behind the original budget. The main contribution for the budget overrun were bad weather conditions, technical problems in the well, technical problems for the drilling contractor, slow penetration rate in the lower sections section and a comprehensive plug and abandonment programme.

The rig left the location on the 25th of may at 04:00 hrs.

2 Well planning

Operation Plan
The drilling strategy was to take advantage of the LOT value at the previous casing and continue drilling until a fixed minimum margin between the LOT and ECD was met, or the casing running load was close to the derrick load capacity.

Pore pressure evaluation
The porepressure evaluation was carried out on site by assigned personnel. A comprehensive set up of tools were used to predict and evaluate the porepressure.

- ✓ The PANDA computer software programme for predicting pore pressures
- ✓ Seismic While Drilling (SWD), utilizing noise generated by the bit as source of a seismic signal.
- ✓ PREDICT software programme for evaluate porepressure
- ✓ CW, Continuous Wave measurements of dT on the cuttings
- ✓ Pseudo Sonic data from surface drilling parameters
- ✓ Second gas trap on the flowline.

For further details see 'Pore pressure evaluation and prediction during drilling on HPHT well 35/4-1' by Eammon Doyle, Document No. R-081827

Well Path
A straight hole was required by the drilling sector in order to minimise the potential for barite sagging in the mud.

Drillstring
The drilling hydraulics were calculated based on the prognosed porepressure and mudweight. To maintain good hydraulics for all section a 5 1/2" DP was selected for drilling down to the 8 1/2" section and a 5" DP from then on. The 5" DP was sour service graded.

Mud
Water based mud was selected for the upper part of the well and oil based mud for the 12 1/4" and 8 1/2" section. The OBM was selected as it's technical data proved it to have superior rheology under HTHP conditions.

Rig modifications
The rig was modified to handle the OBM. It involved setting up cutting removal equipment, cover the pits to curtain vapour , increase the vent capacity in pit/shaker rooms and secure dump lines for un-intended operation.

BOP ram
The BOP was configured with rams for 5 1/2" DP down to the 8 1/2" section, and for 5" DP from then on. High temperature and high pressure elastomers were only available for fixed rams.

The ram configuration for any DST was evaluated and incorporated as applicable.

MWD
Standard MWD's were selected for the entire well.

Although the prognosis for the geotemperature was as high as 182 °C, simulations by the Enertech programme showed that the bottomhole drilling temperature could be maintained within the operation range of a standard MWD; <150°C.

A HT MWD was to be kept on standby onshore if required.

PWD
A PWD (Pressure While Drilling), an annulus pressure sensor, was included in the downhole MWD equipment from the start of the 12 1/4" section to confirm the computer models and possibly used to extend the hole section as the margin between the ECD and LOT became narrow.

SWD (Seismic While Drilling)
The SWD, monitoring of the seismic signal from the bit, was actively used down to approx. 3700 m MD. It provided information valuable for the on site porepressure evaluation, look ahead reflection data for early warning of hazardous zones, information for update of the geological and pore pressure prognoses.

A string of geophones/hydrophones was laid on seabed with signals through cables to the rig.

Logging tools
The logging tools assigned for HTHP conditions were put in a heat bath and tested to the reservoir temperature to confirm their technical specifications.

As the HTHP logging schedule was delayed successively, the tools were used for other jobs in between.

Bits
Rollercone bits were used down to the reservoir to provide best possible conditions for pore pressure evaluation and signals for the SWD.

Temperature Simulations
Temperature simulations was made by the Wellcat programme and was used as an input for the evaluation of MWD tools, casing analyses and wellhead temperature prognosis.

No critical temperature for the BOP elastomers was identified.

ECD calculations
The ECD calculations was made by the Wellcat programme (temperature corrected mudparameters) and by the Hydmod2 programme.

Well control
The Norsk Hydro HTHP procedures was to be applied as the HPHT criterion became valid.

Casing
Casing analyses, including enclosed annulus pressures, elongation stretch of the tie-backs string, was made on the Wellcat programme of Enertech.

The 20" casing included a deep-set 16" casing adapter in order to hang of any 16" liner if the porepressure and mudweight demanded so.

Metal to metal connections were preferred on the 13 3/8" casing, but could not be delivered within the time frame.

The running load of the 13 3/8"casing and 10 3/4" tie-back string was close to the load capacity of the derrick.

The production casing was split into a 9 5/8" liner and a 10 3/4" tie back to reduce the running load and ECD values during running and cementing operations.

A 9 5/8" liner was selected as no liner hanger with pressure ratings better than a 9 5/8" 53.5# P-110 casing was available within the time frame.

The casing exposed to drilling fluids passing through the reservoir had sour service grade.

A heavy duty 5" DP 25.6# U-170 was used for landing the 13 3/8" csg and the 10 3/4" tie back string.

Time estimate
The time estimate was based on Norsk Hydro time parameter. The actual versus budget progress matched quite well down to the start of the 12 1/4" section.

From then on the gap between the curves were ever increasing, mainly due to bad weather, technical problems in the well, technical problems for the drilling contractor, low ROP, but also due to underestimating the time consumption. The latter is especial valid for coring operations using HPHT procedures and the extensive plug and abandonment for any HPHT well.

Personnel
A 2 days HTHP seminar was held for leading drilling contractor personnel, service personnel and relevant Norsk Hydro personnel.

3 DRILLING OPERATIONS

3.1 Anchoring

One piggy back anchor was installed to achieved full anchor tension.

3.2 Drilling Activity Summary

3.2.1 9 7/8" Pilot Hole.

A weak shallow gas warning was given for the well and a 9 7/8" pilot hole was accordingly drilled from 404 m to 590 m MD, some 30 m below the shallow gas warning. The hole was displaced to 1.2 sg mud prior to pulling out.

No shallow gas was encountered.

3.2.2 36" hole section

A 17 1/2" vs 26" vs 36" hole was drilled from 403.5 m MD to 464 m MD using seawater and high viscous bentonite sweeps. A wiper trip was performed and the hole displaced to 1.2 sg mud prior to running the 30" conductor. The conductor was held in tension for some 7 hours before the running tool was released.

Two holeopeners, 26" &36", were run in order to improve the penetration rate, but no significant impact on the ROP was achieved.

3.2.3 26" hole section

Drilling operation
The section was drilled to the planned section depth at 1362 m MD, using a 26" SS33SGJ bit . The casing point was selected to meet a logging objective in the Hordaland.

The drilling fluid was seawater and high viscous pills with returns to seabed. After drilling to TD, the hole was displaced to 1.20 sg mud and a wiper trip was performed prior to running casing. A few tight spots were encountered. Minor gas bubbles was observed on the return by the ROV.

Casing & cementing
The 20" casing, incorporating a deep set 16" casing adapter was run and landed with the shoe at 1350 m MD. The five lower joints was lost to seabed while making up the 8th joint. The most likely cause is improper make up. The five joints were protruding into the seabed at an almost 90° inclination in a safe distance from the wellhead.

The casing was cemented using gasblock cement for the shallower part of the hole to cure the gas seepage. The plug did not bump, nor did the shoe hold pressure, causing a 4 hour delay to allow the cement to cure. The cement bulk volume capacity of the rig was on the limit for this job and a supply boat with cement bulk was tied up to the rig as a corrective measure in case of a failed cement job.

Installed the BOP and pressure tested the casing to 165 bar.

Bit
The ROP was acceptable in the upper part of Nordland, but slowed down to <15 m/hr in the upper part of Hordaland.

3.2.4 17 ½" vs 22" Hole Section & 16" liner

The drilling programme included a 17 1/2" & 22" hole section due to a prognosed pressure build up in Shetland. However, the porepressure was lower than predicted and the 16" liner was not run.

3.2.5 17 ½" Hole Section & 13 3/8" Casing

Drilling
The cement was found 3 m high in the shoetrack. Drilled out the shoetrack and performed a leak off test to 1.58 sg; well above the predicted value.

Displaced the well to 1.3 sg Anco 2000 and attempted to drill. The ROP was low, < 2.0 m/hr and the bit, a 17 1/2" Smith OM10, was pulled at 1367 m MD. A 17 1/2" MAX. GT 03 was run. The ROP was less then 3 m/hr down to 1379 m MD, but increased from then on to 30 - 40 m/hr. Continued drilling down to 2152 m MD and performed a wiper trip. Some tight spots were encountered on the way out and in. Continued drilling down to 2158 m MD where a washout in the top drive occurred. Pulled out of the hole and repaired the top drive causing a 2 days delay.

Continued drilling with a new 17 1/2" MAX GT03 from 2158 m MD to 2710 m MD. Performed a routine wiper trip. Backreamed some spots on the way out and washed and reamed some spots on the way in.

Continued drilling from 2710 m MD to 3090 m MD. Increased the mudweight from 1.30 sg to 1.35 sg based on evaluation of some gas peaks as possible connection gases, al though there was uncertainty linked to the evaluation. Continued drilling down to 3133 m MD RKB and increased the mudweight to 1.4 sg for the same reason.

The background gas was increasing gradually from a low value at the top Cretaceous and up to approx. 10 % at 2600 m MD and remained at the 8 - 10% level down to 3133 m MD RKB. The high gas readings are attributed to release of gas as the large bit size crushed gas rich shale in the Cretaceous and cavings from the same area. The caliper log showed overgauge hole from the casing shoe and down to 2340 m MD, with the interval 2100 - 2340 m MD being above 20".

No connection gas was experienced.

Performed a wiper trip to the 20" casing shoe. The hole was tight at several intervals both on the way out and in. Reamed and washed as required.

The electric and fluid flowline service loop hit the production standpipe on the way out as a result of strong wind and the standpipe being out of position. Though most of the repair work was carried out in conjunction with the loggin operation, some 20 hours were logged as downtime

Logging
Performed the logging programme, # 1 DIL/DSI/LDL/CNL/GR/SP/AMS, #2 VSP/GR, while repairing the electric and fluid control line. Both runs suffered tool failures.

Casing
Performed a wiper trip to TD. The hole was in good condition and the trip gas was approx. 6%.

Ran and landed the 13 3/8" casing. A heavy duty DP string, 5" 25.6# U-170, was used for landing the casing. Circulated prior to cementing in order to reduce the background gas level, but the level was steady at approx. 9-10%. Displaced the cement and pressure tested the casing. Ran the mill and flush tool prior to installing the seal assembly ,with the outer lockring attached.The installation of the outer lockring was used to confirm proper landing of the casing hanger.

Bit
The ROP of the first bit , a 17 1/2" Smith 10M, was marred by either a non crushed wiper plug, or a phenomenon linked to having the stabilizers inside the shoetrack. The second bit, a 17 1/2" HTC MAX GT 03, experienced the same low ROP as the previous bit, but the ROP picked up rapidly as the stabilizers entered the open hole or the wiper plug was destroyed. The ROP were in the range of 30 - 40 m/hr down to approx. 2350 m MD, where it gradually slowed down to approx. 10 m/hr at the end of section.

Though the MAX GT03 bit experienced large amount of broken teeth, it's considered as a good choice.

Hole cleaning/wellstabillity
No operational problems linked to wellcleaning/wellstabillity are reported during drilling operations, but tight hole were experienced on all trips with 1.3 sg mud in the hole.

No tight hole was reported after the well was displaced to 1.4 sg.

See also 'Pore pressure evaluation and prediction during drilling on HPHT well 35/4-1' by Eammon Doyle, Document No. R-081827

Pore pressure prediction

The high gas readings experienced in the section would normally have led to an increase in the mudweight, but the confidence gained from the other pore pressure parameters, particularly the Dxc, MWDRes and SWDSonic enabled maintaining the mudweight low and thus deepen the planned casing shoe by nearly 500 m.

In general the gas readings throughout the Cretaceous were very variable because of a gas trap which was very sensitive position in the ditch and level of mud flowing through it. Gas readings were therefore difficult to intepret during pore pressure prediction.

3.2.6 12 1/4" Hole section

Drilling
Drilled out the shoetrack and down to 3138 m MD and performed a leak off test to 1.89 sg.

Displaced the well to 1.4 sg oil based mud. Circulated for approx. 18 hours to condition the onshore premixed mud.

Commenced drilling 12 1/4" hole using OBM, but the ROP was low, < 3.5 m/hr, and the bit was pulled at 3168 m MD. The tripping time was prolonged as the drain of the trip tank could not handle cold and viscous OBM in an efficient manner. The drain was later redesigned to allow direct dump into the pits through a 6" line, which proved to be efficient.

Continued drilling from 3168 m to 3715 m MD using four rollercone bits. The ROP remained low, < 3.5 m/hr, and the bits were pulled on hours. As the teeth breakage were significant, the drillstring included a junkbasket to recover the inserts.

The bit was pulled inside the casing and the string hung off for approx. 30 hours due to bad weather.

The mudweight was increased from 1.40 sg to 1.75 sg in the interval of 3532 - 3715 m MD, mostly based on pump of f tests and a couple of connection gases.

After reconnecting to the hang off tool, the well was observed through the choke line. 8 bar pressure was encountered increasing to 32 bar as the cold and viscous mud was displaced.
The stroke versus gas readings indicated gas accumulation in the wellhead. Gas peaks up to 40% was recorded from the wellhead. The gas level and pressure were reduced by various circulating sequences in the wellhead and through the drillstring to allow the hang off tool being pulled above the BOP. The drillstring was then stripped out to remove the hangoff tool. Inspection to come later, showed heavy wear on the annular. The phenomenon is attributed the shape of the DP tool joints which is not designed for stripping out.

The drillstring was stripped close to TD and by various circulation sequences the gas concentration was reduced and the pressure removed. Pulled the drillstring.

To verify the pressure integrity of the casing and seal assembly, separate tests of both items were performed using the BOP test tool and a RTTS packer. Both the casing and the seal assembly were tested successfully.

Although no proven evidence is found, the gas in wellhead is attributed to gas migrating through the buttress threads of the 13 3/8" casing close to the wellhead. The gas source is gas rich shale in the Cretaceous.

Some 115 hours were spent to remove the gas from the well and confirm pressure integrity of the casing.
Logging

Logging
Performed a wiper trip and the logging programme.

#1	DIL-DSI-LDL-CNL-GR-AMS
#2	VSP
#3	CST

Casing
Performed a wiper trip and hang of the drillstring due to bad weather. Disconnected the riser on the LMRP and waited on the weather for 6 days.

Reconnected the LMRP to the BOP and the drillstring to the hang off tool. Observed the well on the choke and approx. 12 bar was recorded on the choke. Circulated through the drillstring and the choke line to remove the gas. The major gas peak, 47.5% peak value, was coming from the wellhead. Pulled the string and removed the hang off tool. Ran to TD and circulated to remove the gas..

Installed and pressure tested the 9 5/8" liner. Performed a separate trip to clean out the PBR and laid down 5 1/2" DP on the way out. Waited on weather for approx. 3 days. Ran the 10 3/4" tieback and landed it using a heavy duty landing, 5" DP 25.6# U-170. The weight of the tie back string was close to the load capacity of the derrick. Pressure tested the 10 3/4" tie-back string and liner to 460 bar.

BHA
The pendulum assembly had a slight build tendency, building the inclination up to approx. 2 - 2.5° at the casing shoe. The weight on bit was for some period of time reduced in order to drop inclination.

A packed assembly will give another characteristic of the drillstring dynamics and may be beneficial with respect to reducing the potential for MWD failure and allow more weight to be applied on the bit.

Bits
4 rollercone bits were used for drilling the section. The ROP was low ,< 3.5 m/hr, for all of them and it seemed that neither bit wear nor change of drilling parameters made any impact on the ROP. The drillbit hydraulics were good for all of the bits.

The penetration dropped from approx. 10 m/hr at the end of the 17 1/2" section to less than 3.5 m/hr at the start of the 12 1/4" section. No specific reason has been identified, but it should be looked into drillstring dynamics and allowing PDC bits for drilling the interval.

Mud
The mud fulfilled it's objectives as to maintain wellstability and good hole cleaning, though it's impact on the low ROP experienced in the section has not been identified.

The mud proved to have stable parameter both in dynamic and in static conditions. The latter confirmed by circulating bottoms up after 8 days with waiting on weather with almost unaltered properties.

The cooling effect in the riser made the mud quite viscous and masked the choke pressure readings. To enable true pressure readings, the kill line was displaced to base oil.

The mudproperties were kept as low as possible without initiating a settling problem.

Displacing the riser back and forth to OBM generated approx. 10 - 30 m3 slop per cycle.

The transfer capacity of slop from the rig to the boat was initial carried out with approx. 10 m/hr, but was increased to approx. 30 m3/hr by adding a oil wetting agent.

Pore Pressure prediction
Though Dxc worked well for the entire section, the dominant pore pressure indicators were gas readings; background gas, trip gas and pump off tests.

The SWD signals were of a lower quality than experienced in the 17 1/2" section, therefore of less value in porepressure evaluation.

3.2.7 8 1/2" Section

Drilling
Secured the well by installing a RTTS at 1507 m MD RKB and pressure test to 400 bar.

Waited on the weather for 1.5 days prior to pulling the BOP. Installed rams for 5" DP and reran the BOP. Pressure tested the wellhead connector to 785 bar.

Picked up 5" DP 19.5# X-95 and ran in the hole to 500 m MD and displaced the riser, including choke & kill line, to 1.75 sg OBM. Continued running in the hole and engaged to the RTTS. The pressure beneath the RTTS was 8 bar. Bled off the pressure and pulled the RTTS loose with 60 ton overpull. Retrieved the packer. The high overpull is attributed to the high test pressure applied on the packer.

Picked up 5" DP and drilled almost entire shoetrack. A hydraulic leak on the BOP control system then occurred. Secured the well by spotting a cement plug at the bottom of the shoetrack and installing a RTTS packer at 1497 m MD.

Pulled, repaired and reran the BOP. A nipple on the accumulator bottles was broken.
Displaced the riser to 1.75 sg OBM and retrieved the RTTS.

Drilled out the cement plug and the remaining part of the shoetrack. Performed a leak off test to 2.18 sg.

Continued drilling down to first core point at 4084 m MD RKB, using three rollercone bits. The ROP was low, <4.5 m/hr and the bits were pulled on hours.

The mud weight was raised to 1.83 sg at 3954 m MD, and 1.90 sg at 4044 m MD.

Though the actual well conditions did not fulfil the HTHP definitions, the HPHT procedure was applied as the HTHP criterion may be achieved within a close drilling distance.

Coring

Performed the coring activity. The HTHP procedures set an initial limitation on the corebarrel length to 30 ft, but as the coring activity proceeded the corebarrel length was increased to 60ft, 90ft and 150 ft with good result. The coring activity was carried out in singles to facilitate installation of a kelly cock at regular intervals. A circulation sub was, for one trip, installed in the drillstring close to the top of the corebarrel to facilitate higher flow rates as the circulation according to the HTHP procedures was carried out. The ports failed to shear open and the drillstring was pulled wet.

Core No	Interval (m MD)	Recovery (%)	Bit	Barrel (ft)	Comment
1	4084.0 - 4093.5	98.6	CD 93 FDIL	30	
2	4093.5 - 4108.5	93.3	CD 93 FDIL	60	
3	4108.5 - 4113.5	100.0	CT 103	90	jammed
4	4113.5 - 4141.0	99.1	CD 93 FDIL	90	
5	4141.0 - 4178.0	97.6	CD 93 FDIL	150	jammed
6	4178.0 - 4219.0	100	CD 93 FDIL	150	
7	4219.0 - 4263.0	100	CD 93 FDIL	150	

Drilling

Continued drilling from 4263 - 4267 m MD using a PDC bit, where the MWD failed. Pulled out of the hole and changed out the MWD. Drilled down to 4297 m MD using a PDC bit and pulled out for unscheduled intermediate logging.

Intermediate logging

Performed intermediate logging and recorded the porepressure by MDT to be 1.84 sg.

# 1	DIL/DSI/LDL/CNL/NGT/AMS/GR
# 2	CBL/VDL
# 3	MDT/GR

Drilling

Increased the mudweight to 1.95 sg to maintain riser margin and continued drilling with PDC bit down to 4447 m MD. Pulled out of the hole for coring.

Cut one 90 FT core, # 8; 4447 - 4475 m MD 99.5 % recovery.

Continued drilling down to 4709 m MD using PDC bit and pulled out for coring as drilling break occurred at 4702 m MD. The decoding of the MWD signals were troubled by erratic torque and heave movements. Circulated on the way in to keep the temperature exposed to the MWD below 150°C.

Cut one 90 FT core, # 9; 4709 - 4737 m MD 100% recovery.

Continued drilling down to 4826 m MD using PDC bit. Pulled out of the hole as the drill torque was bouncing and no signals from the MWD could be decoded.

Changed bit and changed out the MWD. Continued drilling down to 4936 m MD where complete MWD failure occurred. The depth was accepted as final TD.

Logging
The logging activity was carried out with only minor technical problems; none of them linked to the HPHT conditions.

The MDT took a long time, and the pressure point recording was only partial successful due to low permeability. The ambient temperature at 4877 was recorded to be 163.7°C.

# 1	DIT/LDL/CNL/NGT/AMS
# 2	OBDT/DSI/GR/ACTS
# 3	MDT/GR
# 4	VSP

Bit
The bit selection down to the core point was ruled by the need for porepressure prediction and signals for the SWD. All the selected rollercone bits gave low ROP.

As the coring of the upper reservoir was completed, PDC bits were used from then on down to TD. The ROP was then increased to 5-10 m/hr, but it made a negative impact on characteristics of the drillstring dynamics. Slip sticking of the drillstring gave varying torque and decoding of MWD signal became troublesome.

BHA
By introducing the PWD sub in the bottomhole assembly, the first stab is moved accordingly away from the bit. The bottomhole assembly is thus sensitive for building while applying high weights. Though the weight on bit was reduced for some period of time, the assembly was building.

The bottomhole configuration in conjunction with PDC bit was detrimental for the MWD as erratic torque occurred.

MWD
Standard MWD tools were used, though the ambient temperature was above the specification of the tool. The temperature exposed to the tool was closely monitored and circulation was carried out as required to cool the tools. MWD data was recorded down to well TD.

The MWD service suffered as drilling was carried out with a PDC bit. The decoding of the signal became troublesome and two MWD failures occurred.

Abnormal high MWD repair costs were incurred.

HPHT
The HPHT procedures were applied throughout the entire section, but minor adjustments, not compromising the safety aspect were accepted as the reservoir pressure became known.

The corebarrel length was increased up to 150 FT, but with drilling in singles to allow installation of a kelly cock at regular intervals.

The ROP limitation was lifted after penetrating the reservoir.

Circulation prior to pulling out of the hole after coring was long lasting as the core assembly has low flow capacity.

Mud
The mud fulfilled it's objectives as to maintain wellstability , good hole cleaning and stable properties during the logging activity.

Pore pressure prediction
The dominant porepressure indicators from the shoe and down to the core point at 4084 m MD was a good Dxc trend and gas readings such as variation in background gas and connection/pump off gas.

From the start of the coring , followed by a shift of bit type from rollercone to PDC bit, the criteria for qualitative use of the Dxc as pore pressure indicator changed. The porepressures from then on were based on drilled gas values and formation evaluation (samples and cores)

3.2.8 Plug and abandonment

The open hole was plugged off by setting six cement plugs successively from well TD and into the 9 5/8" casing. To maintain overbalance as the cement loses its hydrostatic force while curing, the three first plugs were allowed to cure before the next three plugs were set. Hydrostatic pressure was applied as the cement cured to maintain overbalance at any time. The slurry for the five first plugs were the same and was based on the TD static temperature and the slurry for the sixth plug was based on ambient temperature at its setting depth.

As the last plug was displaced in place the string was plugged off while pulling out of the plug. Some 435 m of solid cement was found inside the drillstring as it was retrieved. The plugging of the string may be attributed to the change of slurry or the design of the cement stinger; plugged 3 1/2" DP with a perforated body.

# 1	4936 - 4700
# 2	4680 - 4450
# 3	4430 - 4200

Waited for the cement to cure and applied 15 bar on the plug.

# 4	4180 - 3950
# 5	3930 - 3720
# 6	3710 - 3550

Waited until the cement cured and applied 40 bar on the plug to maintain overbalance.

Pressure tested the cement plug to 170 bar with 1.95 sg mud in the hole.

Installed a mechanical plug with high temperature elastomers at 3000 m MD and pressure tested same to 350 bar with 1.95 sg mud in the hole.

As there was not enough pit capacity to handle two wellbore volumes of OBM with different weights, the riser was first displaced to 1.75 sg OBM and then the volume below the wellhead.
The mudweight outside the 10 3/4" tie-back string was 1.75 sg.

Pulled the seal assembly loose with the annular closed on the DP body and observing pressure on the choke. The pressure increased by 12 bar. Circulated up the choke line and through the poorboy until the well was static. Bypassed the poorboy and circulated until the gas readings were low and then up the riser. Pulled the seal assembly.

The 10 3/4" casing would not come loose by applying 100 ton overpull. The available pull force was limited by the drilling line load capacity. A hydraulic force was applied to help freeing the tiebackstring, but it was not enough. The string was cut close to the seal stem and pulled loose without any overpull. A heavy duty DP was used as pulling string.

Circulated the one casing annulus volume. The mudweight varied between 1.72 sg and 1.84 sg. Retrieved the 10 3/4" casing. The break out torque of was by large in the range of 25 - 30000 ft-lbs, but with occasional peak values significantly higher.

Spotted a cement plug from 3003 - 2800 m MD; on top of the mechanical plug and across the liner hanger.

Installed a mechanical plug in the 13 3/8" casing at 1325 m MD and displaced the well to 1.4 sg waterbased mud; same mudweight as outside the 13 3/8" casing.

Cut the 13 3/8" casing at 1300 m MD using the Mercur annular swivel for pressure control. The choke line pressure increased to 12 bar. Circulated up the choke line to remove the pressure. Observed the well static on the choke prior to opening the annular. Circulated until the gas readings were low and pulled the casing cutting assembly.

Pulled the seal assembly with the annular closed on a DP body. The pressure increased to 52 bar. Circulated down the drillstring and up the choke line to reduce the pressure and remove the gas. The method was not successful and the pressure was finally bled off. Gained approx. 2.8 m3. Circulated up the choke line after the well was static to confirm no presence of gas prior to opening the annular and circulating the long way.

Engaged the spear to the 13 3/8" casing. Circulated the 13 3/8" vs 20" casing annulus with returns up the choke line until the gas readings were low and then the long way. Retrieved the 13 3/8" casing.

The cutting and retrieval of the 13 3/8" casing lasted for approx. 80 hours. The long lasting operation is attributed to excessive circulation hours to remove the gas in the wellhead.

Spotted a gas tight cement plug from 1325 - 1125 m MD. Applied 25 bar pressure and allowed the cement to cure. Dressed off the plug down to 1142 m MD. Recorded 43% gas in the returns. Pressure tested the plug to 100 bar and commenced laying down DP. Reran the drillstring close to the cement plug and recorded 38% gas in the returns. The main gas peaks were from some distance above the cement plug.

Installed an inflatable plug at 1128 m MD and spotted a cement plug from 1128 - 970 m MD. Applied 30 bar on the plug and allowed the cement to cure. Circulated and confirmed no gas in the well. Spotted some left over cement on top of the previous cement plug.

Pulled the BOP.

Retrieved the wellhead and the 30" housing. The cutting assembly included a mudmotor, enabling the running string to be static while the cut was made and thereby reducing the potential for parting the wellhead from the 30" housing.

Retrieved the 20" casing lost to seabed during running of the 20" casing by engaging a spear and applying 95 ton overpull.

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DAILY REPORT ON WELL 35/4-1

Daily report no: 1 Date : 22-dec-1996
Midnight depth : m MD Estimated PP: sg Mudweight: sg

Stop time	Description
06:30	No activity on well 35/4-1.
20:00	In transit from location of well 30/5-2 to location of well 35/4-1.
23:59	Anchor handling.

Daily report no: 2 Date : 23-dec-1996
Midnight depth : 490 m MD Estimated PP: 1.03 sg Mudweight: 1.05 sg

Stop time	Description
04:00	Anchor handling.
09:30	Ballasted the rig.
16:00	Pretensioned the anchors. Ran piggy back on anchor # 4.
18:30	Made up and ran in with 9 7/8" bottom hole assembly for drilling pilot hole.
19:00	Performed a shallow gas drill.
20:00	Trouble shot due to problems with MWD hard ware, calibrated same. No signals to surface.
21:00	Spudded the well and drilled 9 7/8" hole to 428 m.
21:30	Recalibrated MWD due to power failure.
23:59	Continued drilling 9 7/8" hole from 428 to 490 m.

Daily report no: 3 Date : 24-dec-1996
Midnight depth : 464 m MD Estimated PP: 1.03 sg Mudweight: 1.05 sg

Stop time	Description
03:00	Continued drilling 9 7/8" hole from 490 to 590 m.
04:00	Circulated the hole clean with high viscous pills. Flow checked the well with sea water while observing with ROV, no gas. Displaced the hole to 1.20 sg mud.
05:30	Pulled out of the hole with the 9 7/8" bottom hole assembly. Laid down 1 x 8" DC, 1 x 8" NMDC and 8" MWD tool. Broke off the bit.
06:00	Picked up the 9 1/2" MWD tool and loaded same.
11:00	Made up the 17 1/2" bit to the 36" bottom hole assembly. Ran in the hole and tagged the sea bed at 403.5 m.
11:30	Positioned 2 x buoys with the ROV.
17:00	Drilled 36" hole from 403.5 to 464.2 m.
18:00	Confirmed the depth with the ROV. Circulated high viscous pill around to clean the hole. Displaced the hole to 1.20 sg mud.
19:00	Performed a wiper trip to 417 m. Circulated high viscous pill around and displaced the hole to 1.20 sg mud. Reconfirmed depths with the ROV. Positioned the ROV.
20:30	Pulled out of the hole. Racked the 36" bottom hole assembly in the derrick.
21:00	Prepared to run 30" casing. Held pre-job - / safety meeting.
22:00	Ran 30" casing.
23:59	Made up cement stinger.

Daily report no: 4 Date : 25-dec-1996
Midnight depth : 464 m MD Estimated PP: 1.03 sg Mudweight: 1.05 sg

Stop time	Description
02:30	Made up the running tool and ran the 30" casing and the Permanent Guide Base on 5 1/2" DP.
04:00	Checked the level indicator and the orientation of the Permanent Guide Base.
06:00	Pulled casing 0.5 m off bottom. Pumped 25 m3 of sea water. Pressure tested surface lines to 100 bar. Mixed and pumped 18.3 m3 of 1.56 sg lead slurry and 20.2 m3 of 1.90 sg tail slurry cement. Displaced the cement with 7.1 m3 of sea water.
13:00	Landed casing on bottom. Waited on cement to cure.
15:00	Released the 30" running tool and pulled out of the hole with the landing string. Broke off and laid down the running tool. Laid down the stinger.
22:00	Changed the well head connector on the BOP.
22:30	Laid down cement stand.
23:59	Made up the running tool with sub sea plugs to the 18 3/4" well head housing.

Daily report no: 5 Date : 26-dec-1996
Midnight depth : 710 m MD Estimated PP: 1.03 sg Mudweight: 1.05 sg

Stop time	Description
00:30	Racked the 18 3/4" well head housing in the derrick and secured same.
02:00	Made up and loaded the cement head. Racked the stand in the derrick.
02:30	Broke off the 17 1/2" bit and laid down the 36" bottom hole assembly.
05:00	Made up the 26" bottom hole assembly and ran in to 387 m.
08:00	Ran the guide frame and sub sea camera. Observed the guide lines to be twisted around the drill string. Worked the guide lines and string free. The ROV was out of order.
08:30	Continued running in the hole from 387 to 459 m with the 26" bottom hole assembly. Pulled the guide frame to surface after stabbing into the 30" housing.
10:00	Drilled cement and shoe from 459 to 464.5 m.
10:30	Drilled 26" hole from 464.5 to 468 m.
13:30	Waited on sub sea camera and ROV to be repaired.
23:59	Drilled 26" hole from 468 to 710 m.

Daily report no: 6 Date : 27-dec-1996
Midnight depth : 1204 m MD Estimated PP: 1.03 sg Mudweight: 1.05 sg

Stop time	Description
23:59	Continued drilling 26" hole from 710 to 1204 m.

Daily report no: 7 Date : 28-dec-1996
Midnight depth : 1362 m MD Estimated PP: 1.03 sg Mudweight: 1.05 sg

Stop time	Description
08:00	Continued drilling 26" hole from 1204 to 1362 m.
11:00	Pumped 15 m3 of high viscous pill and 249 m3 of sea water. Displaced the hole to 1.20 sg mud.
14:00	Performed a wiper trip to the 30" casing shoe.
15:30	Waited while mixing 1.20 sg mud.
16:30	Ran in the hole to TD at 1362 m.
19:00	Pumped 15 m3 of high viscous pill and 50 m3 of sea water. Displaced hole to 1.20 sg mud.
20:30	Pulled out of the hole to the 30" casing.
22:00	Washed the 30" housing and the Permanent Guide Base.
23:59	Pulled out of the hole. Dumped the memory of the MWD tool.

Daily report no: 8 Date : 29-dec-1996
Midnight depth : 1362 m MD Estimated PP: 1.03 sg Mudweight: 1.05 sg

Stop time	Description
00:30	Racked the bottom hole assembly in the derrick.
01:30	Prepared to run the 20" casing. Held safety meeting.
05:00	Ran 20" casing. Filled every joint with sea water.
07:30	When making up the 8th joint, 5 joints were lost in the sea. Laid out 3 joints of 20" casing. Prepared and jumped ROV in water. Inspected the 30" housing and PGB. Located the 20" casing 20 m FWD from well location,sticking 23 m into sea bed
08:00	Held pre-job safety meeting for running of 20" casing.
14:00	Ran 20" casing. Stabbed into the 30" casing and continued running in the hole.
19:30	Continued running the 20" casing in open hole.
23:00	Made up the 18 3/4" wellhead. Filled up the housing with sea water above the sub sea release plug. Continued running the 20" casing on 5 1/2" DP. Landed the casing and performed and over pull test of 250 kN.
23:59	Waited on weather to be able to connect cement hose from supply boat to rig.

Daily report no: 9 Date : 30-dec-1996
Midnight depth : 1362 m MD Estimated PP: 1.03 sg Mudweight: 1.05 sg

Stop time	Description
02:00	Waited on weather.
02:30	Waited on weather. Set down 500 kN of casing weight while observing bulls eye.
08:30	Established circulation and circulated one 170 m3 of sea water and 56 m3 of 1.20 sg mud.
14:30	Circulate seawater while gradually increasing pump rate to 3500 lpm with 120 bar. Pressure test cement surface line to 200 bar. Mix and pump cement. Released the dart and displaced w/4500 ltrs. seawater. Sheared the wiper plug with 164 bar.
16:00	Released the dart and displaced with 4500 ltrs. seawater. Sheared the wiper plug with 164 bar. Changed to rig pumps and displaced the cement with 165.97m3 seawater. The plug did not bump. Bled back to check float. Float not holding.

Daily report no: 9 Date : 30-dec-1996
Midnight depth : 1362 m MD Estimated PP: 1.03 sg Mudweight: 1.05 sg

Stop time	Description
20:00	Waited on cement to cure.
22:00	Bled off casing pressure from 45 bar to 0 bar.
23:59	Pulled out of the hole with landing string. Laid out running tool.

Daily report no: 10 Date : 31-dec-1996
Midnight depth : 1362 m MD Estimated PP: 1.03 sg Mudweight: 1.05 sg

Stop time	Description
01:00	Laid out the cement head.
04:30	Made up the grout assembly with 2 stands of 3 1/2" drill pipe and ran in to the wellhead. Stabbed into the grouting funnel and ran in to 404m.
06:00	Pulled out of the hole with the grouting assembly.
06:30	Slipped 56ft of drilling line.
08:00	Rigged up to run the BOP stack. Held safety meeting.
11:30	Cleared and prepared BOP stack on cellar deck.
23:59	Ran the BOP and riser. Pressure tested choke and kill line to 700 bar.

Daily report no: 11 Date : 01-jan-1997
Midnight depth : 1362 m MD Estimated PP: 1.03 sg Mudweight: 1.30 sg

Stop time	Description
03:00	Ran the BOP stack and riser. Pressure tested choke and kill line to 700 bar.
05:00	Picked up the slip joint and landing joint. Attached the support ring. Hooked up choke, kill and booster line. Installed pod hose saddles.
09:00	Positioned the rig and landed the BOP stack at 06:22 hrs. Performing an overpull test to 50 tons. Laid down the landing joint. of riser. Installed and function tested the diverter.
10:00	Made up and ran in with the bore protector.
10:30	Pressure tested the kill and choke line to 700 bar.
11:30	Closed the shear ram with accoustic. Attempted to pressure test wellhead connector and 20" casing to 165 bar. No succes, leaking.
12:00	Pulled out and laid down the bore protector.
13:00	Made up BOP test tool. Picked up 5 1/2" drill pipe from deck while running in to the wellhead.
15:30	Pressure tested the wellhead connector against upper pipe ram to 165 bar. Picked up the test tool and closed the shear ram. Pressure tested the 20" casing to 165 bar.
16:00	Pulled out and laid out the BOP test tool.
17:30	Ran in and sat the bore protector. Took depth measurement with index line. Pulled out and laid out the running tool. Function tested UPR and SR on both pads.
19:30	Laid down the 26" bottom hole assembly.
23:00	Made up and ran in the hole with the 17 1/2" bottom hole assembly.
23:59	Ran in the hole and picked up 5 1/2" drill pipe from deck.

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Daily report no: 12 Date : 02-jan-1997
Midnight depth : 1362 m MD Estimated PP: 1.03 sg Mudweight: 1.30 sg

Stop time	Description
05:30	Ran in with the 17 1/2" drilling assembly. Picked up 5 1/2" drill pipe from the deck.
10:00	Pressure tested standpipe valves on rig floor and in pump room to 35/345 bar 5/10 minute.
13:00	Repaired top drive pipe handler, and changed out the saver sub.
16:00	Ran in the hole to 1335 m. Drilled out wiper plug at 1335 m, cement from 1345 m and 20" shoe at 1350 m. Cleaned out the rathole to 1362 m. Swept the hole with 10 m3 Hi-Vis mud.
18:00	Drilled 17 1/2" hole from 1362 m to 1367 m.
18:30	Pumped and displaced 40 m3 Hi-Vis 1.03 sg mud on bottom.
20:00	Rigged up for leak off test. Pressure tested circulating hose to 150 bar. Performed leak off test equivalent to 1.58 sg. Rigged down test equipment.
22:30	Displaced choke/kill and booster lines to 1.30 sg mud. Displaced the hole to 1.30 sg Anco 2000 mud.
23:00	Attempted to drill 17 1/2" hole. No progress.
23:59	Pulled out with the 17 1/2" drilling assembly due to low ROP.

Daily report no: 13 Date : 03-jan-1997
Midnight depth : 1697 m MD Estimated PP: 1.03 sg Mudweight: 1.30 sg

Stop time	Description
01:30	Pulled out of the hole with the drilling assembly.
02:30	Pulled out with the 17 1/2" bottom hole assembly.
04:00	Changed the bit and ran in with the 17 1/2" bottom hole asembly. Function tested the MWD tool.
06:00	Ran in the hole with the drilling assembly to 1367 m.
23:59	Drilled the 17 1/2" hole from 1367 m to 1697 m.

Daily report no: 14 Date : 04-jan-1997
Midnight depth : 1933 m MD Estimated PP: 1.03 sg Mudweight: 1.30 sg

Stop time	Description
23:59	Drilled the 17 1/2" hole from 1697 m to 1933 m.

Daily report no: 15 Date : 05-jan-1997
Midnight depth : 2152 m MD Estimated PP: 1.05 sg Mudweight: 1.30 sg

Stop time	Description
13:00	Drilled the 17 1/2" hole from 1933 m to 2152 m.
15:00	Pumped 6 m3 high viscous pill and circulated the pill to surface and the hole clean.
18:30	Pulled out for a wiper trip to the 20" shoe. The hole was tight at 1920 m, 1789 m and 1673 m. Maximum overpull 50-60 ton.
19:30	Backreamed from 1425 m to 1350 m, 20" shoe.
20:30	Circulated the bottoms up.
22:00	Ran in the hole to 1887 m.
22:30	Washed/reamed from 1887 m to 1945 m.

Daily report no: 15 Date : 05-jan-1997
Midnight depth : 2152 m MD Estimated PP: 1.05 sg Mudweight: 1.30 sg

Stop time	Description
23:00	Ran in to TD at 2152 m.
23:59	Circulated and flow checked the well.

Daily report no: 16 Date : 06-jan-1997
Midnight depth : 2152 m MD Estimated PP: 1.05 sg Mudweight: 1.30 sg

Stop time	Description
02:00	Drilled 17 1/2" hole from 2152 m to 2181 m.
05:00	Observed washout in swivel stem on top drive. Rigged up the cement hose and circulated bottoms up and the hole clean.
10:00	Pulled out with the 17 1/2" drilling assembly.
23:59	Repared swivel. Dismantled pipe handler. Broke out saver sub, lower and upper safety valves. Free top drive from swivel. Free swivel from travelling block and EGO adapter.

Daily report no: 17 Date : 07-jan-1997
Midnight depth : 2152 m MD Estimated PP: 1.05 sg Mudweight: 1.30 sg

Stop time	Description
02:00	Disassembled the top drive swivel for repair.
09:30	Assembled the swivel with new parts. Filled the swivel with oil. Installed the washpipe. Installed the swivel to the EGO adapter and travelling block.
12:00	Made up the travelling block and installed the upper guide dolly.
14:30	Picked up the travelling block and installed the upper guide dolly.
16:30	Hooked up the top drive to the swivel and travelling block.
18:00	Made up the upper safety valve. Installed the pipehandler. Made up the lower safety valve and saver sub.
19:30	Function tested the pipehandler. Made up the cement hose and pressure tested the main shaft body to 35/345 bar 5/10 minutes.
23:30	Made up bottom hole assembly and run in the hole to 450 m. Function tested the MWD tool and ran in the hole to 1350 m.
23:59	Repaired broken electrical cable on the top drive.

Daily report no: 18 Date : 08-jan-1997
Midnight depth : 2152 m MD Estimated PP: 1.05 sg Mudweight: 1.30 sg

Stop time	Description
01:00	Ran in the hole from 1350 m to 2112 m. Hole tight
01:30	Washed and reamed from 2112 m to 2181 m TD.
02:00	Circulated and take slow pump rates.
11:30	Drilled 17 1/2" hole from 2181 m to 2380 m.
13:00	Circulated due to high gas readings in the mud.
23:59	Drilled 17 1/2" hole from 2380 m to 2516 m.

Daily report no: 19 Date : 09-jan-1997
Midnight depth : 2710 m MD Estimated PP: 1.12 sg Mudweight: 1.30 sg

Stop time	Description
07:30	Drilled the hole from 2516m to 2595m.
11:00	Circulated due to high gas reading in the mud returns. Max gas 33.9 %.
19:30	Drilled 17 1/2" hole from 2595m to 2710m.
22:00	Pumped a 10m3 high viscosity pill and circulated bottoms up and pill to surface.
23:30	Connection between upper and lower safety valve on the top drive backed out while removing the drilling pup, due to over torqued saver sub. Changed out the saver sub and reinstalled the lower safety valve.
23:59	Made a wiper trip to 2090m. Max overpull 40-50 tons on 2679m, 2612m and 2575m.

Daily report no: 20 Date : 10-jan-1997
Midnight depth : 2863 m MD Estimated PP: 1.19 sg Mudweight: 1.30 sg

Stop time	Description
02:30	Wiper tripped to 2090m.
03:00	Lubricated the rig.
04:00	Ran in the hole from 2090m to 2550m. Tight hole.
05:00	Washed and reamed from 2550m to 2710m TD.
05:30	Circulated and took slow pump rates.
08:30	Drilled the 17 1/2" hole from 2710m to 2739m.
09:30	Observed washout on connection between saver sub and the drilling pup. Changed out the saver sub. Flow checked.
23:59	Drilled the 17 1/2" hole from 2739 m to 2863 m.

Daily report no: 21 Date : 11-jan-1997
Midnight depth : 3045 m MD Estimated PP: 1.20 sg Mudweight: 1.30 sg

Stop time	Description
23:59	Drilled the 17 1/2" hole from 2863 m to 3045 m.

Daily report no: 22 Date : 12-jan-1997
Midnight depth : 3133 m MD Estimated PP: 1.20 sg Mudweight: 1.40 sg

Stop time	Description
06:30	Drilled the 17 1/2" hole from 3045 m to 3088 m.
07:30	Circulated due to weather,
08:00	Drilled the 17 1/2" hole from 3088 m to 3090 m.
11:00	Circulated and weighted up the mud from 1.30 to 1.35 sg.
17:00	Drilled the 17 1/2" hole from 3090 m to 3133 m.
20:30	Pumped a 10 m3 high viscous pill. Circulated and weighted up the mud from 1.35 to 1.40 sg.
23:59	Wiper tripped to 20" shoe. Intermittent tight hole. Worked string until free. Max overpull 40-55 ton. Backreamed from 2337 m to 2309 m due to tight hole.

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Daily report no: 23 Date : 13-jan-1997
Midnight depth : 3133 m MD Estimated PP: 1.20 sg Mudweight: 1.40 sg

Stop time	Description
03:00	Pulled out of the hole to 20" shoe for a wiper trip.
03:30	Lubricated the rig.
04:30	Slipped and cut the drilling line.
06:30	Ran in the hole from the 20" shoe to 2385m. The hole was tight.
12:00	Washed and reamed from 2385m to 2445m, 2610m to 2650m, 2845m to 2992m, 3096m to 3100m, 3110m to 3133m.
16:00	Pumped 7m3 high viscosity pill and circulated the hole clean.
17:30	Flow checked. Pulled out of the hole to 2880m.
18:00	Backreamed from 2880 m to 2820 m due to tight hole.
22:30	The electrical and fluid sevice loop hose bundle hit the flowline test standpipe. The hoses and lines at the top drive were sheared off. Circulated with hose while rigging down hoses and observing damage.
23:59	Pulled out of the hole.

Daily report no: 24 Date : 14-jan-1997
Midnight depth : 3133 m MD Estimated PP: 1.20 sg Mudweight: 1.40 sg

Stop time	Description
06:30	Pulled out of the hole. Broke out the bit and bit sub.
07:00	Dumped the memory of the MWD.
07:30	Lubricated the rig.
08:00	Rigged up wireline.
11:00	Made up log #1: DIL, DSI, LDL, CNL, GR, SP, AMS and ran in the hole to 3107m.
14:30	Logged from 3107m to 2590m.
15:30	Pulled out of the hole due to tool failure
22:00	Trouble shooting on the logging tool
23:00	Rigged down log #1.
23:59	Made up log #2: VSP, GR.

Daily report no: 25 Date : 15-jan-1997
Midnight depth : 3133 m MD Estimated PP: 1.20 sg Mudweight: 1.40 sg

Stop time	Description
01:00	Made up log #2: VSP/GR.
02:00	Ran in the hole with log #2 to 1200m.
03:00	Attempted to make a check shot, discovered hoses to guns had parted due to heavy seas.
04:00	Pulled out of the hole with the VSP/GR.
10:30	Waited on the DSI logging tool. Too rough weather to run the VSP.
11:00	Laid down the VSP tool.
15:00	Rigged up to rerun log # 1: DIL/DSI/LDL/CNL/GR/SP/AMS.
17:30	Ran in the hole with log # 1 to 2750 m. Tied on to previous log.
23:59	Logged from 2590 m to 1174 m.

Daily report no: 26 Date : 16-jan-1997
Midnight depth : 3133 m MD Estimated PP: 1.20 sg Mudweight: 1.40 sg

Stop time	Description
05:00	Logged with log # 1: DIL/DSI/LDL/CNL/GR/SP/AMS from 1174 m to seabed.
06:30	Pulled out and laid down log # 1.
09:30	Rigged up to ran log # 2: VSP/GR.
10:00	Ran in the hole with log # 2 to 1200 m.
12:00	Continued to ran in the hole with the VSP/GR to 3090 m.
22:00	Logged with the VSP/GR from 3090 m to 470 m.
22:30	Pulled out of the hole with log # 2.
23:59	Rigged down the VSP/GR.

Daily report no: 27 Date : 17-jan-1997
Midnight depth : 3133 m MD Estimated PP: 1.20 sg Mudweight: 1.40 sg

Stop time	Description
01:00	Rigged up log # 3: CST
05:30	Ran the CST gun.
06:00	Rigged down the CST tool and the Schlumberger wireline.
20:30	Installed cables and hoses on the topdrive.
23:00	Made up 17 1/2" bottom hole assembly.
23:59	Ran in the hole to 920 m.

Daily report no: 28 Date : 18-jan-1997
Midnight depth : 3133 m MD Estimated PP: 1.20 sg Mudweight: 1.40 sg

Stop time	Description
04:00	Ran in the hole from 920 m to 3074 m.
08:30	Washed and reamed from 3074 m to 3133 m.
11:30	Pumped a 5 m3 hi-vis pill and circulated the hole clean.
16:30	Pulled out of the hole.
20:00	Rigged up and ran in the hole and retrieved the 18 3/4" bore protector.
21:00	Rigged up to run 13 3/8" casing.
22:00	Hydraulic failure on the Flush Mounted Spider. Worked on same.
23:00	Made up the 13 3/8" casing hanger to pup joints. Laid down same on deck.
23:59	Picked up the 13 3/8" casing shoe and ran in the hole to 46 m.

Daily report no: 29 Date : 19-jan-1997
Midnight depth : 3133 m MD Estimated PP: 1.20 sg Mudweight: 1.40 sg

Stop time	Description
01:00	Ran 13 3/8" casing to 90 m.
01:30	Reinstalled the Flush Mounted Spider. Still hydraulic failure on same.
07:00	Continued to run 13 3/8" casing to 642 m.
08:00	Installed the Flush Mounted Spider. Still hydraulic failure.
09:00	Continued to run 13 3/8" casing to 805 m.
09:30	Installed the Flush Mounted Spider.
13:00	Continued to run 13 3/8" casing to 1350 m.

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Daily report no: 29 Date : 19-jan-1997
Midnight depth : 3133 m MD Estimated PP: 1.20 sg Mudweight: 1.40 sg

Stop time	Description
14:00	Changed the bails, installed casing circulating packer and 500 tons elevator.
23:30	Continued to ran 13 3/8" casing to 2663 m.
23:59	Installed the 13 3/8" casing hanger / running tool and continued to run in the hole with the landing string to 2782 m.

Daily report no: 30 Date : 20-jan-1997
Midnight depth : 3133 m MD Estimated PP: 1.20 sg Mudweight: 1.40 sg

Stop time	Description
03:00	Ran in the hole with the 13 3/8" landing string. Landed the 13 3/8" casing shoe at 3118.6 m.
03:30	Worked to release the 500 ton elevator.
05:00	Installed 13 3/8" cementing head with manifold and cement hose.
09:30	Circulated the well prior to cementing.
13:30	Tested the surface lines to 250 bar. Pumped 11 m3 with 1.8 sg spacer ahead. Mixed and pumped 29.5 m3 with 1.90 sg slurry. Displaced the cement slurry with 238.8 m3 1.4 sg mud.
14:00	Checked for backflow and tested the 13 3/8" casing to 235 bar.
15:30	Laid down the cement head, circulating packer and 500 tons elevator.
21:00	Released the running tool and pulled out of the hole with the 13 3/8" landing string. Laid down the running tool and cleared the drill floor for casing equipment.
21:30	Slipped the drill line.
23:59	Made up mill & flush tool and ran in the hole and washed the seal area. Operated the upper pipe ram to mark the pipe to verify the depth. Pulled out of the hole.

Daily report no: 31 Date : 21-jan-1997
Midnight depth : 3133 m MD Estimated PP: 1.20 sg Mudweight: 1.40 sg

Stop time	Description
03:00	Pipe tally measurements indicated that the 13 3/8" casing hanger was sitting 8 cm above landing shoulder. Reran mill & flush tool to verify correct depth. Operated the lower pipe ram to mark the pipe. Pulled out of the hole.
07:30	Laid down the 17 1/2" bottom hole assembly and excess 9 1/2" drill collars from derrick. Laid down the mill & flush tool.
08:00	Laid down one stand with 5 1/2" drill pipe due to overtorque..
10:00	Ran in the hole with the seal assembly and outer lock ring attached. Set and tested the seal assembly to 235 bar.
13:00	Tested the BOP to 35/235 bar.
13:30	Released the running tool and pulled out of the hole.
16:00	Redressed the running tool and ran in the hole with the 13 3/8" wear bushing and set same.
18:00	Tested the kelly hose and topdrive to 35/345 bar.
19:00	Made up 12 1/4" bottom hole assembly.

Daily report no: 31 Date : 21-jan-1997
Midnight depth : 3133 m MD Estimated PP: 1.20 sg Mudweight: 1.40 sg

Stop time	Description
19:30	Attempted to test the MWD.
20:00	Continued to make up the 12 1/4" bottom hole assembly.
21:30	Attempted to test the MWD.
22:00	Tested the MWD tool.
23:59	Continued to make up the bottom hole assembly and ran in the hole to 304 m.

Daily report no: 32 Date : 22-jan-1997
Midnight depth : 3138 m MD Estimated PP: 1.28 sg Mudweight: 1.40 sg

Stop time	Description
05:00	Ran in the hole with 12 1/4" bottom hole assembly to 2194 m. Picked up 62 joints of 5 1/2" drill pipe.
05:30	Performed kick - and choke drill with crew # 1.
07:30	Continued to run in the hole from 2194 m. Tagged the cement at 3069.5 m.
08:00	Performed kick - and choke drill with crew # 2.
16:30	Drilled cement, float and shoe from 3069.5 m to 3118 m. Reamed and washed the rathole to 3133 m.
17:00	Circulated the well.
20:00	Drilled 12 1/4" hole from 3133 m to 3138 m.
22:30	Circulated for equal mud weight in and out.
23:59	Rigged up and tested the surface lines to 200 bar. Started to perform leakoff test.

Daily report no: 33 Date : 23-jan-1997
Midnight depth : 3147 m MD Estimated PP: 1.28 sg Mudweight: 1.40 sg

Stop time	Description
01:00	Performed a leakoff test to 1.89 equivalent mud weight. Rigged down the cement hose.
06:00	Drilled 12 1/4" hole from 3138 m to 3147 m.
09:30	Flushed and cleaned all surface lines. Washed and cleaned the pits in the shaker and pump room.
13:30	Pumped 10 m3 seawater and a 10 m3 hi-vis pill. Displaced kill,choke and booster lines to 1.40 sg oilbased mud. Displaced the hole to 1.40 sg oilbased mud.
15:00	Cleaned the shaker pits while conditioning the oilbased mud from the boat.
23:00	Conditioned the oilbased mud from the boat.
23:59	Circulated and conditioned the oilbased mud.

Daily report no: 34 Date : 24-jan-1997
Midnight depth : 3168 m MD Estimated PP: 1.28 sg Mudweight: 1.40 sg

Stop time	Description
01:30	Conditioned the oilbased mud while cleaning the flowline ditch.
09:00	Circulated and conditioned the oilbased mud.
10:00	Took slow circulating rate up the choke line and the riser. Logged with the MWD from 3133 m to 3147 m.

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Daily report no: 34 Date : 24-jan-1997
Midnight depth : 3168 m MD Estimated PP: 1.28 sg Mudweight: 1.40 sg

Stop time	Description
22:30	Drilled 12 1/4" hole from 3147 m to 3168 m. The ROP was low.
23:59	Pulled out of the hole due to low ROP.

Daily report no: 35 Date : 25-jan-1997
Midnight depth : 3181 m MD Estimated PP: 1.28 sg Mudweight: 1.40 sg

Stop time	Description
04:00	Pulled out of the hole to 180 m.
05:30	Pulled out with the bottom hole assembly.
06:00	Replaced the DPR sub on the MWD.
06:30	Made up new bit and new jar and ran in the hole.
07:00	Loaded data from the MWD.
08:00	Ran in the hole with the 12 1/4" bottom hole assembly to 180 m.
12:00	Ran in the hole to 1605 m.
13:00	Circulated and conditioned the mud due to high viscosity.
15:00	Continued to run in the hole with the 12 1/4" bottom hole assembly to 3114 m.
16:00	Slipped and cut the drill line.
16:30	Lubricated the rig.
17:00	Ran in the hole to 3168 m and circulated for 15 min.
23:59	Drilled 12 1/4" hole from 3168 m to 3181 m.

Daily report no: 36 Date : 26-jan-1997
Midnight depth : 3254 m MD Estimated PP: 1.31 sg Mudweight: 1.40 sg

Stop time	Description
23:59	Drill 12 1/4" hole from 3181 m to 3254 m.

Daily report no: 37 Date : 27-jan-1997
Midnight depth : 3334 m MD Estimated PP: 1.32 sg Mudweight: 1.40 sg

Stop time	Description
23:59	Drilled 12 1/4" hole from 3254 m to 3334 m.

Daily report no: 38 Date : 28-jan-1997
Midnight depth : 3354 m MD Estimated PP: 1.32 sg Mudweight: 1.40 sg

Stop time	Description
00:00	
03:30	Continued to drill 12 1/4" hole from 3334 m to 3340 m. Flow checked.
05:00	Pulled out to the 13 3/8" casing shoe. Flow checked. Pulled out due to hours on bit and slight decreasing ROP.
09:30	Continued to pull out of the hole.
10:30	Pulled out with the bottom hole assembly.
11:00	Dumped the data from the MWD.
12:00	Changed out the bit and ran in with the bottom hole assembly.

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Daily report no: 38 Date : 28-jan-1997
Midnight depth : 3354 m MD Estimated PP: 1.32 sg Mudweight: 1.40 sg

Stop time	Description
16:00	Continued running in the hole. Picked up 27 joints 5 1/2" drill pipe.
16:30	Circulated and conditioned the mud. Empty the trip tank.
19:30	Ran in the hole to the casing shoe.
20:00	Lubricated the rig and circulated to condition the mud.
20:30	Continued running in the hole to 3319 m . Washed down to 3340 m.
23:59	Drilled 12 1/4" hole from 3340 m to 3354 m.

Daily report no: 39 Date : 29-jan-1997
Midnight depth : 3438 m MD Estimated PP: 1.32 sg Mudweight: 1.40 sg

Stop time	Description
23:59	Drilled 12 1/4" hole from 3354 m to 3438 m.

Daily report no: 40 Date : 30-jan-1997
Midnight depth : 3495 m MD Estimated PP: 1.32 sg Mudweight: 1.40 sg

Stop time	Description
23:59	Drilled 12 1/4" hole from 3438 m to 3495 m.

Daily report no: 41 Date : 31-jan-1997
Midnight depth : 3526 m MD Estimated PP: 1.32 sg Mudweight: 1.40 sg

Stop time	Description
09:00	Drilled 12 1/4" hole from 3495 m to 3526 m.
10:00	Made pump off test.
12:00	Circulated bottoms up after the pump off test.
13:00	Flow checked the hole and pulled out to the casing shoe. Pulled out due to hours on the bit.
17:30	Flow checked in the shoe. Pulled out of the hole.
19:00	Continued pulling the bottom hole assembly.
19:30	Dumped the MWD memory.
20:00	Lubricated the rig.
21:30	Made up new bit with junk sub and ran in with the bottom hole assembly.
23:59	Continued tripping in the hole.

Daily report no: 42 Date : 01-feb-1997
Midnight depth : 3575 m MD Estimated PP: 1.35 sg Mudweight: 1.45 sg

Stop time	Description
01:30	Ran in the hole .
02:00	Circulated to condition the mud while empty the trip tank.
02:30	Continued running in to the shoe.
03:00	Slipped 56 fot of the drilling line.
04:00	Ran in the hole to 3526 m.
04:30	Worked the junk sub and circulated on bottom.
06:00	Drilled 12 1/4" hole from 3526 m to 3532 m.

Daily report no: 42 Date : 01-feb-1997
Midnight depth : 3575 m MD Estimated PP: 1.35 sg Mudweight: 1.45 sg

Stop time	Description
09:30	Increased the mud weight to 1.45 sg.
23:59	Drilled 12 1/4" hole from 3532m to 3575 m.

Daily report no: 43 Date : 02-feb-1997
Midnight depth : 3634 m MD Estimated PP: 1.40 sg Mudweight: 1.45 sg

Stop time	Description
23:59	Drilled 12 1/4" hole from 3575 m to 3634m.

Daily report no: 44 Date : 03-feb-1997
Midnight depth : 3658 m MD Estimated PP: 1.47 sg Mudweight: 1.58 sg

Stop time	Description
00:30	Drilled 12 1/4" hole from 3634 m to 3635 m.
02:30	Increased the mud weight to 1.48 sg.
14:30	Continued drilling 12 1/4" hole from 3635 m to 3658 m.
18:00	Due to the bad weather forcast: Flow checked the well and pulled in to the casing. Picked up the hang off tool and landed out in the well head.
23:59	Waited on the weather.

Daily report no: 45 Date : 04-feb-1997
Midnight depth : 3658 m MD Estimated PP: 1.55 sg Mudweight: 1.58 sg

Stop time	Description
16:30	Waited on the weather. At 00:00 hrs displaced the riser to sea water. At 12:00 hrs displaced the riser back to mud.
20:00	Ran in and retrieved the hang off tool. Latched on at 18:20 hrs.
21:00	Circulated 5500 stokes and checked for flow.
22:30	Ran in the hole to 3658 m.
23:59	Circulated bottoms up.

Daily report no: 46 Date : 05-feb-1997
Midnight depth : 3668 m MD Estimated PP: 1.55 sg Mudweight: 1.65 sg

Stop time	Description
02:30	Performed a pump-off test and circulated the bottom up.
07:30	Drilled 12 1/4" hole from 3658 m to 3668 m. Pump-off test indicated increasing in the pore pressure. Raised the mud weight to 1.65 sg.
09:30	Circulated bottom up. Performed a new pump off test prior to circulate bottom up. Pulled out due to hours on the bit.
10:30	Flow checked and pulled out to the casing shoe.
16:00	Pulled out of the hole.
17:30	Continued pulling the bottom hole assembly. Broke off the bit and the junk sub.
18:30	Laid down the MWD and PWD tool.
20:00	Picked up new MWD tool. Checked out and verified the tool.

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Daily report no: 46 Date : 05-feb-1997
Midnight depth : 3668 m MD Estimated PP: 1.55 sg Mudweight: 1.65 sg

Stop time	Description
21:00	Ran in the hole with the bottom hole assembly.
22:00	Continued running in the hole to 906 m.
23:00	Circulated the mud due to high viscosity. Tested the MWD.
23:30	Lubricated the rig.
23:59	Ran in the hole to 1314 m.

Daily report no: 47 Date : 06-feb-1997
Midnight depth : 3705 m MD Estimated PP: 1.62 sg Mudweight: 1.75 sg

Stop time	Description
01:00	Ran in the hole to 1753 m.
01:30	Circulated while empty the trip tank.
03:00	Ran in to the casing shoe.
04:00	Continued running in the hole to 3668 m.
06:00	Circulated bottom up.
23:30	Drilled 12 1/4" hole from 3668 m to 3705 m.

Daily report no: 48 Date : 07-feb-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
03:00	Drilled 12 1/4" hole from 3705 m to 3715 m. Pump off gas at 3710 m: Total 0.79 % (0.34/0.45).
05:30	Circulated to increase the mud weigt from 1.70 sg. to 1.75 sg. due to a estimated increase in the pore pressure. Equivalent to 1.64 sg.
07:30	Pulled out to 2775 m due to the weather forecast and the rig heave increased to 6 meters.
08:00	Picked up the hang off tool. Ran in to the well head and landed out the string at 08:10 hrs. Released from the hang off tool and pulled out with the landing string. Bit dept at 3105 m.
23:59	Waited on the weather. At 20:30 hrs. Ran back in to the BOP with the string to circulate the mud in the riser due to the high mud viscosity. Rotate the string while circulating.

Daily report no: 49 Date : 08-feb-1997
Midnight depth : 3715 m MD Estimated PP: sg Mudweight: 1.75 sg

Stop time	Description
05:00	Waited on the weather. Circulated the mud in the riser due to the high viscosity of cold oil based mud.
21:30	Displaced the riser to sea water due to increase in the rig heave.
23:59	Transfered slop from the rig to the supply boat.

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Daily report no: 50 Date : 09-feb-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
01:00	Continued to transfer slop to the supply boat.
04:00	Displaced the riser from sea water to oil based mud.
05:00	Ran in to retrieved the hang off tool. Latched on at 05:00 hrs.Checked the pressure on the well head, 8 bar.
07:30	Observed the annulus pressure While cleaning out the contaminated mud from the shaker area
08:00	Circulated the volume of the kill and choke lines, due to the high viscosity oil mud. Annulus pressure changed from 8 to 32 bar. Closed the upper annular preventer and open lower pipe ram and prepaired to start the circulation.
09:00	Started the circulation with returns up the choke line. Circulation rate 18 SPM , drill pipe pressure 65 bar. Had to stop the circulation after 1960 strokes to adjust the mud weight in the active pit.
10:00	Attempted to continue the circulation but stopped due to high pressure readings. Closed the lower pipe ram and circulated the kill and choke line volumes.
18:00	Opened the lower pipe ram and started the circulation with upper annular closed and return up the kill line. Used the choke line for measuring the annulus or the well head pressure. Circulated with 18 SPM and 60 bar drill pipe pressure.
20:00	Stopped the circulation and checked for pressure after 11700 strokes. Shut in drill pipe pressure: 18 bar and shut in casing pressure: 18 bar and increasing to 21 bar. Gained total of 4200 liters mud.
21:00	Close the lower pipe ram blead off pressure and open the upper annular. Displaced the kill and choke line to base oil due to the high viscosity of cold mud. Differential pressure of 35 bar with base oil in the kill line.
23:59	Closed the upper annular and opened the lower pipe ram and started to circulate with return up the choke line. Circulated with constant drill pipe pressure of 65 bar at 40 SPM.

Daily report no: 51 Date : 10-feb-1997
Midnight depth : 3715 m MD Estimated PP: sg Mudweight: 1.75 sg

Stop time	Description
02:30	Circulated with returns up the choke line. No mud gain observed.
03:00	Shut in the well and checked the pressure. Shut in annulus pressure 3 bar increasing to 7 bar.
07:30	Continued to circulate with returns up the choke line. Increased the circulating rate to 47 SPM.
08:00	Checked for flow on the choke line and the well was static.
10:00	Open annular and checked for flow up the riser. Gained 600 liter. Pulled the hang off tool above the annular and closed the well back inn. Observed the pressure increased up to 12 bar.
12:00	Prepaired to strip out with the hang off tool. Pumped 4 m3 2.0 sg slug and displaced with 1 m3 1.75 sg. mud. Attempted to circulate across the well head to lubricate while stripping out. Pressure build up and lost 600 liters of mud.
13:00	Attempted to bleed down the pressure over the choke but not

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Daily report no: 51 Date : 10-feb-1997
Midnight depth : 3715 m MD Estimated PP: sg Mudweight: 1.75 sg

Stop time	Description
	possible. Had to displace the choke line back to base oil. Observed the annulus pressure trough the choke line to 29 bar.
19:00	Flushed both the kill and choke lines with base oil. Due to different shut in pressure readings, Started to circulate bottoms up from the bit trough the choke line .Pumped with 40 to 44 SPM and 64 to 68 bar drill pipe pressure.
22:45	Stripped out with the hang off tool, using the upper annular. Pumping base oil down the choke line with the cement unit to maintain the wll head pressure while stripping out. Total loss of 1.0 m3.
23:59	Rigged down the hang off tool.

Daily report no: 52 Date : 11-feb-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
04:00	Stripped in with the upper annular closed to 3709 m. Total loss after stripping in 600 liters
09:30	Circulated with the lower annular closed and returns up the choke line. Circulated with 700 liters a minute.
10:00	Flow checked over choke line, Gained 160 ltr. in 16 min. Flow checked up riser, Gained 440 ltr. in 17 Min.
12:00	Circulated the long way, Total strokes 23300.
12:30	Performed pump off test and flow checked. Gained 210 ltr. in 10 min.
15:00	Circulated bottoms up.
16:00	Flow checked 45 Min, Gained 250 Ltr.
16:30	Circulated 2000 strokes and made short trip to 3564 m, ran back to bottom.
18:30	Circulated bottoms up.
19:00	Flow checked 15 Min. Well static. Functioned upper and lower annulars, UPR and LPR.
19:30	Circulated.
20:00	Pump off test and flow checked. Well static.
22:00	Circulated bottoms up.
23:59	Pulled out of the hole to 2670 M.

Daily report no: 53 Date : 12-feb-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
02:00	Made up the multi purpose tool with the 13 3/8" cup tester and ran in the hole with tester to 370m.
03:00	Circulated bottoms up from the BOP stack.
05:00	Landed the multi purpose tool in the wear bushing. Tested the seal assy to 235 bar. Lost 2 bar in 11 min. Bled off to 41 bar and shut in for 30 min. Pressure increased to 2 bar.
05:30	Pulled the cup tester above the BOP and flow checked
06:30	Circulated bottoms up from the BOP stack.
08:00	Pulled out of the hole with the multi purpose tool.
09:00	Pulled out to 2282m. Made up 13 3/8" RTTS tool and ran in the hole to 2964 m.

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Daily report no: 53 Date : 12-feb-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
10:00	Circulated with the RTTS tool above the BOP stack
12:00	Ran in to 3032 m and set the RTTS tool packer at 449 m. Tested casing against UPR to 235 bar OK. Ran in to 3113 m, set packer at 530 m and tested to 235 bar .
13:00	Pulled out to 2964 m.
14:00	Circulated with RTTS tool above the BOP.
17:00	Pulled out and laid down RTTS tool. Continued pulling out to 1472 m.
17:30	Lubricated the rig.
19:30	Pulled out of the hole to 650 m.
21:00	Made up the RTTS packer, storm valve and bumper sub. Performed pump test.
23:59	Ran in the hole to 1950 m.

Daily report no: 54 Date : 13-feb-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
03:00	Ran in the hole to 3115 m. Packer at 2460 m.
04:30	Broke circulation, Set the RTTS packer at 2460 m. Tested the choke line to 200 bar. Tested the casing to 135 bar for 15 minutes. Volume pumped 806 liters. Lost 2 bar in 15 minutes. Bled off and got 800 liters back.
05:00	Backed out the running tool and tested the storm valve to 135 bar for 10 minutes. Lost 1 bar.
07:30	Circulated bottoms up from 2460 m. Flowchecked 15 minutes.
09:00	Circulated 8600 strokes, Flow checked 30 minutes.
11:00	Circulated bottoms up, Flow checked 60 Minutes.
13:00	Circulated 20600 strokes.
13:30	Retrieved the RTTS packer and flow checked 20 min.
20:00	Pulled out of the hole with the RTTS assembly to 730 M.
21:00	Circulated 7800 strokes.
22:00	Pulled out of the hole to the RTTS packer and layed down same.
23:59	Ran in the hole with the drilling assembly to 1900 M.

Daily report no: 55 Date : 14-feb-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
01:30	Ran in the hole to the 13 3/8" casing shoe and filled the string.
02:00	Slipped the drilling line.
02:30	
03:00	Ran in the hole to TD.
07:30	Circulated bottoms up and gas down.
08:30	Pulled out of the hole to the 13 3/8" casing shoe.
13:30	Pulled out of the hole with bit number 11, layed down 12 1/4" stab. and the MWD tool.
15:30	Rigged up Schlumberger and made up logging tools for run number 1, DIL- DSI - LDL - CNL - GR - AMS. IN hole 15:30 Hrs.
20:00	Ran log No. 1, Logged from TD to 3000 M.

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Daily report no: 55 Date : 14-feb-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
22:00	Rigged down the super combo logging tools.
23:30	Rigged up the VSP tools.
23:59	Changed out damaged connection on VSP tools.

Daily report no: 56 Date : 15-feb-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
00:30	Continued making up VSP tools.
01:30	Tested the VSP tools at surface.
02:30	Ran in the hole with VSP to 1200 M.
03:00	Continued running in the hole with the VSP tools to 3000 M while waiting on the rig air to build up.
05:00	Waited on rig air pressure to build up
14:00	Ran VSP log from 3700 M to 2002.5 M.
15:30	Layed down the VSP tools.
16:00	Made up 24 shot CST tools.
20:00	Ran CST from 3715 M to 3250 M.
21:30	Layed down CST tools and rigged down schlumberger.
22:00	Picked up two joints of 5 1/2" drill pipe and the cement head. Cross over too long, layed down same.
22:59	Made up bottom hole assembly and ran in the hole.

Daily report no: 57 Date : 16-feb-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
04:30	Ran in the hole with Bit No. RR 11 to condition the hole.
07:30	Circulated and condition mud.
09:30	Pulled out of the hole to 2700 M.
11:00	Picked up the hang off assembly, Ran in the hole and landed the hang off tool in the wear bushing at 11:00 Hrs. Closed the lower pipe rams.
23:59	WOW, Circ the riser. Max Gas 6.92 % at 3700 ST. Released the hang off tool, Displaced the riser, Choke, Kill and booster lines to sea water. Pulled the landing string and closed the shear rams. See seperate page for WX. data.

Daily report no: 58 Date : 17-feb-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
23:59	Waited on weather.

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Daily report no: 59 Date : 18-feb-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
23:59	Waited on weather.

Daily report no: 60 Date : 19-feb-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
23:59	Waited on weather. ROV installed a new VX ring gasket and re-connected guide lines no. 3 and 4.

Daily report no: 61 Date : 20-feb-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
23:59	Waited on weather

Daily report no: 62 Date : 21-feb-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
06:00	Waited on weather
08:00	Attempted to untangle Guide line no. 3 which was stuck in funnel on LMRP and tangled around TV guide line. Shear pin on guide line no. 4 broke.
10:00	Pulled the ROV to surface to install the wire cutter.
11:00	Ran the ROV to connect guide line no. 4 and cut guide line no. 3.
20:30	Waited on visibility at BOP stack to clear for ROV to work.
21:00	Pulled the ROV to surface to fill the hydraulic reservoir while waiting on the visibality to clear.
23:59	Repaired the grabber arm bracket on the ROV which was broken when pulling out.

Daily report no: 63 Date : 22-feb-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
06:00	Continued repairing and installing the ROV grabber arm.
19:30	Waited on weather.
23:59	Ran the ROV, Positioned the rig, Attempted to untangle the TV guide lines without success. Cut the port and stbd. TV guide lines and pulled to surface. Cut no. 3 guide line at the top of BOP and each side of the guide on LMRP & pulled.

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Daily report no: 64 Date : 23-feb-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
07:30	Observed the Bop, Pulled the ROV to surface to remove the wire cutter. Ran the ROV and guide line # 4, and connected. Ran guide line # 2 and 3 and connected.
10:30	Landed LMRP at 08:00 Hrs, Took 30 ton overpull test. Tested the choke and kill lines to 300 bar and filled the riser with sea water and observed for leak.
16:30	Waited on weather and observed riser.
20:00	Displaced booster, choke, kill lines and riser to oil base mud.
21:30	Ran in the hole to the hang off tool.
22:00	Attempted to screw into the hang off tool, no success.
22:30	Pulled out of the hole with the 4 1/2" IF connection.
23:30	Made up the cross over sub with 5 1/2" full hole and ran in the hole and screwed into the hang off tool.
23:59	Opened the lower failsafe valves and checked for pressure. Had 31 bar of pressure. Closed the lower annular and opened the lower pipe ram. started circulating holding 12 bar on kill line.

Daily report no: 65 Date : 24-feb-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
01:30	Continued circulating through the drill pipe and up the choke line at 10 SPM.
02:00	Flow checked through the choke line, opened the upper annular and flow checked.
05:00	Circulated the long way to get gas down.
08:00	Flow checked, Pulled hang off tool above the BOP. Functioned test blue and yellow pod. Pull out with the hang off tool. Serviced the hang off tool and racked in the derrick.
10:00	Ran in the hole to TD at 3715 M.
13:30	Circulated and conditioned mud.
15:00	Pulled out of the hole to 2980 M. Took torque, weight and pump pressure readings.
19:30	Pulled out of the hole to run 9 5/8" liner.
21:00	Made up the Baker cement head and racked in the derrick.
22:00	Rigged up to run liner.
23:59	Ran 9 5/8" liner to 125 M.

Daily report no: 66 Date : 25-feb-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
05:00	Ran in the hole with the 9 5/8" liner to 740 m.
09:30	Picked up the 9 5/8" liner hanger, made up same. Ran in the hole with the landing string to 940 m. A 2 1/2" drill pipe drift was accidently dropped into the landing string.
11:00	Pulled out of the hole with the landing string. Removed the drill pipe drift and ran back in the hole to 940 m.
20:00	Continued to run in the hole with the landing string to the 13 3/8" casing shoe at 3118 m.
22:30	Circulated at the 13 3/8" casing shoe.

Daily report no: 66 Date : 25-feb-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
23:59	Continued to run in the hole with the landing string to 3470 m.

Daily report no: 67 Date : 26-feb-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
01:00	Ran in the hole with the 9 5/8" liner to 3699 m.
01:30	Picked up the cement stand. Broke the circulation and tagged the bottom at 3715 m with 10 ton.
09:30	Circulated and conditioned the mud.
10:30	Spaced out, dropped the ball and set the hanger with 135 bar. Released the running tool with 250 bar.
11:00	Established circulation with 2000 l/min.
11:30	Pumped 5 m3 with base oil and tested the surface lines to 200 bar.
12:00	Pumped 12 m3 with 1.85 sg spacer.
14:30	Dropped the dart and mixed and pumped 32.6 m3 of 1.90 sg slurry. Displaced the cement with 56.8 m3 with 1.75 sg mud. Bumped the plug and held 150 bar for 5 min.
16:00	Set the liner hanger packer with 45 ton down weight. Pulled out and racked the cement head in the derrick.
17:00	Reverse circulated out excess cement.
18:00	Pressure tested the liner packer & liner to 120 bar. Circulated the long way.
19:00	Disconnected the surface hose and pulled out of the hole to 2827 m.
20:00	Slipped and cut the drill line.
23:59	Pulled out of the hole with the landing string to 35 m.

Daily report no: 68 Date : 27-feb-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
01:00	Pulled out of the hole with the landing string. Laid down the liner hanger running tool.
02:00	Laid down the cement head assembly.
04:00	Made up the tieback mill assembly and spaced out for 8 1/2" bit.
08:30	Ran in the hole with the tieback mill assembly to 2953 m.
09:00	Washed down from 2953 m to top of the liner at 2973 m. Tagged the liner with 10 ton. Polished the top of the PBR.
12:00	Circulated the bottoms up.
13:30	Pulled out of the hole to 2345 m.
15:00	Pulled out of the hole to 1970 m while laying down 5 1/2" drill pipe singles.
15:30	Lubricated the rig.
16:30	Attempted to adjust the load cell on the HTV arm in the V-door.
19:00	Pulled out of the hole to 1416 m while laying down 5 1/2" drill pipe singles.
19:30	Adjusted the load cell on the HTV arm in the V-door.
23:59	Continued to pull out of the hole to 540 m while laying down

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Daily report no: 68 Date : 27-feb-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
	5 1/2" drill pipe singles.

Daily report no: 69 Date : 28-feb-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
05:30	Pulled out of the hole while laying down 5 1/2" drill pipe singles, 15 x 5 1/2" HWDP and 3 x 8" drill collar. Laid down a total of 223 joints of 5 1/2" drill pipe.
06:00	Made up one stand with 5" drill pipe and racked in the derrick.
07:30	Re-dressed the running/retrieving tool to the 13 3/8" wear bushing. Picked up 5 " drill pipe and racked back in the derrick.
10:30	Made up bull nose and ran in the hole with 5" drill pipe to 410 m.
12:30	Circulated.
13:30	Picked up the hang-off stand and ran in the hole to 813 m and hung off the string in the wellhead.
20:00	Waited on the weather to run the 10 3/4" tieback string. Circulated the riser.
23:59	Waited on the weather. Pulled out of the hole with the hang-off landing string. Changed the running tool. Circulated the riser through the booster line.

Daily report no: 70 Date : 01-mar-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
14:00	Waited on the weather to run the 10 3/4" tieback string.
16:30	Picked up 12 x 6 1/2" drill collar and racked back in the derrick.
19:00	Changed swedge from casing to casing pup joint.
21:30	Made up the 10 3/4" casing hanger and racked same in derrick.
23:59	Waited on the weather to run 10 3/4" tieback string.

Daily report no: 71 Date : 02-mar-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
23:59	Waited on the weather to run the 10 3/4" tieback.

Daily report no: 72 Date : 03-mar-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
05:30	Waited on the weather to run the 10 3/4" tieback string.
07:00	Ran in the hole with 5 1/2" drill pipe. Closed the lower

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Daily report no: 72 Date : 03-mar-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
	pipe ram and screwed into the hang-off tool. Opened the lower pipe ram and pulled above the BOP with the hang-off tool.
08:30	Circulated.
12:30	Pulled out of the hole and laid down the hang-off tool. Pulled out with the 5" drill pipe string.
14:00	Made up new hang-off tool and racked back in the derrick.
15:00	Attempted to brake the saver sub on the topdrive. Rigged down the pipe handler and broke the saver sub with the rig tongs. Rigged up the pipe handler.
16:00	Installed topdrive pipe handler for 5" drill pipe.
17:30	Picked up the wear bushing retrieving tool and ran in the hole.
18:00	Latched into the wear bushing. Closed the middle pipe ram to mark the pipe. Open the middle pipe ram. Closed the lower annular and pulled the wear bushing with 30 ton. Observed for pressure. Opened the lower annular. Flow checked.
18:30	Circulated.
20:30	Pulled out of the hole and laid down the wear bushing and the running tool.
21:30	Rigged up to run 10 3/4" tieback string.
23:59	Ran 10 3/4" tieback string to 355 m.

Daily report no: 73 Date : 04-mar-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
00:30	Repaired broken hose on Hydralift deck crane.
15:30	Ran in the hole with the 10 3/4" tieback string to 2576 m.
20:00	Made up X-over to 5" drillpipe and ran in the hole for space out.
21:30	Tagged the top of the PBR and went in 5.70 m. Pressure tested the seal stem and checked for backflow. Marked the pipe with the middle pipe ram.
23:59	Pulled out with the space out string.

Daily report no: 74 Date : 05-mar-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
01:00	Pulled out of the hole with the space out string.
01:30	Lubricated the rig.
03:00	Spaced out the 10 3/4" tie back string. Installed the 10 3/4" casing hanger/seal assembly.
06:00	Ran in the hole with the landing string. Stung into the seal stem and landed the 10 3/4" hanger.
11:00	Evaluated the seal stem sting-in depth with concern to pressure testing of tie-back string.
12:00	Ran in the hole and landed the 10 3/4" casing hanger in the wellhead. Pressured up the PBR to 70 bar. Displaced the kill line to 1.75 sg mud.
13:30	Closed the middle pipe ram and tested the seal assembly to 460 bar. Opened the middle ram and pulled the 10 3/4" casing

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Daily report no: 74 Date : 05-mar-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
	running tool with 30 ton.
15:00	Pulled out of the hole with the 10 3/4" casing running tool.
16:00	Pressure tested the 10 3/4" vs 9 5/8" casing to 460 bar.
18:30	Made up the 9 5/8" wear bushing to the running tool and ran in the hole. Set the wear bushing with 15 ton. Pulled out of the hole and laid down the running tool.
19:00	Slipped the drill line.
19:30	Changed handling equipment to 5 1/2" drillpipe.
23:59	Ran in the hole with 15 x 6 1/2" drillcollar. Made up the 10 3/4" RTTS packer. Continued to run in the hole with 5 1/2" drillpipe to 1380 m.

Daily report no: 75 Date : 06-mar-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
00:30	Ran in the hole with the RTTS packer to 1507 m.
02:00	Set the RTTS packer at 1507 m. Pressure tested same to 400 bar.
03:30	Circulated and conditioned the mud.
09:00	Pulled out of the hole to 500 m while laying down 5 1/2" drillpipe singles.
10:00	Circulated and conditioned the mud.
12:00	Displaced the kill/choke- and booster lines to seawater. Displaced the well from 500 m and upward with seawater.
15:30	Pulled out of the hole while laying down 5 1/2" drill pipe singles from the derrick.
16:30	Made up BOP wash tool and ran in the hole.
17:30	Washed the BOP. Operated the rams.
20:00	Pulled out and laid down excess 5" drill pipe.
21:00	Rigged up to pull riser and BOP.
23:59	Waited on the weather to pull the BOP.

Daily report no: 76 Date : 07-mar-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
23:59	Waited on the weather to pull the BOP.

Daily report no: 77 Date : 08-mar-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
02:00	Waited on the weather to pull the riser and BOP.
04:00	Rigged up to pull the riser and BOP.
17:00	Pulled the riser and BOP.
19:30	Nippled down on cellar deck. Changed VX-ring.
23:59	Positioned the BOP in the moonpool. Installed safety set and scaffold around the BOP. Removed the upper annular.

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Daily report no: 78 Date : 09-mar-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
04:00	Rigged up to remove the rams.
19:00	Opened the bonnets on the rams. Replaced upper pipe ram to 5" fixed.
23:59	Replaced lower pipe ram to 5" fixed.

Daily report no: 79 Date : 10-mar-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
02:00	Changed bonnet seal on middle pipe ram.
12:00	Made up the bonnets on the rams. Rigged down scaffolding.
21:00	Installed upper annular cover and flex joint.
23:59	Function tested the BOP.

Daily report no: 80 Date : 11-mar-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
19:00	Function tested the BOP. Pressure tested the pipe rams and shear ram to 35 bar and 1035 bar, lower annular preventer to 482 bar and upper annular preventer to 240 bar.
23:30	Moved the BOP to center. Installed guide lines. Positioned beacon and bulls eye.
23:59	Started running the BOP and riser.

Daily report no: 81 Date : 12-mar-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
16:30	Continued running the riser and BOP. Pressure tested the kill - and choke lines to 1035 bar.
20:00	Nippled up the kill -, choke - and booster hoses. Pressure tested the kill - and choke lines to 35 bar/10 min and 1035 bar/10 min.
23:00	Moved rig in position above the well head. Installed guide line anchors No. 2, 3 and 4 in the posts of the Permanent Guide Base.
23:59	Landed the BOP and latched the well head connector. Over pull tested the BOP with 500 kN. Checked the bulls eyes with the ROV.

Daily report no: 82 Date : 13-mar-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
01:00	Laid down the landing joint. Installed the diverter assembly.
02:30	Changed the bails. Rearranged drill pipe. Installed the bulldozer on the cat walk. Cleaned the drill floor for

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Daily report no: 82 Date : 13-mar-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
	excess equipment and washed the drill floor.
06:00	Picked up 9 joints of 5" drill pipe. Made up the BOP test tool. Continued picking up 5" drill pipe while running in the hole. Drifted the drill pipe while running in the hole.
07:00	Pressure tested the well head connector against the upper pipe ram to 35 bar/5 min and 785 bar/10 min.
08:00	Pulled out of the hole and broke off the BOP test tool.
10:00	Made up the RTTS retrieving tool and ran in the hole to 514 m.
12:30	Displaced the kill -, choke - and booster lines, and the riser, to oil based mud.
19:30	Continued running in the hole while picking up and drifting drill pipe.
21:30	Circulated bottoms up. Checked for pressure below RTTS packer. Released the RTTS packer. Flow checked. Pumped slug.
23:59	Pulled out of the hole with the RTTS packer.

Daily report no: 83 Date : 14-mar-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
02:00	Continued pulling out with the RTTS packer. Laid down the packer with storm valve, stabilizer and bumper sub. Racked the 5 stands of 6 1/2" drill collars below in the derrick.
03:00	Made up the hang off tool and racked in the derrick.
04:00	Made up the 6 3/4" modular DPR tool and pin x pin sub.
04:30	Made up 8 1/2" bit, junk - and bit sub.
05:00	Verified the MWD tool.
06:30	Ran in the hole with 6 1/2" drill collars. Picked up 6 1/2" drilling jar and 15 x 5" HWDP.
23:59	Ran in the hole with drill pipe. Picking up and drifting 5" drill pipe meanwhile. Pulled out and racked 25 stands of drill pipe in the derrick.

Daily report no: 84 Date : 15-mar-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
01:30	Broke the circulation. Reamed and logged with the MWD tool the radioactive markers on 10 3/4" tie back and 9 5/8" liner to check space out of tie back seal stem in PBR.
04:30	Continued running in the hole with the 8 1/2" bottom hole assembly while picking up and drifting 5" drill pipe.
05:30	Slip and cut drilling line.
07:00	Held choke drill for both crews.
07:30	Changed pup joint on hang off stand.
08:30	Ran in the hole from 3405 to 3625 m.
18:00	Washed down from 3625 to 3640 m. Drilled cement, landing and float collar from 3640 to 3711 m.
19:30	Circulated bottoms up while investigating possible failure on BOP control system.
23:59	Pumped slug. Pulled out of the hole.

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Daily report no: 85 Date : 16-mar-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
01:00	Continued pulling out of the hole. Racked the bottom hole assembly in the derrick.
07:00	Ran in the hole with open ended 3 1/2" perforated joint and 7 stands of 3 1/2" drill pipe. Continued running in the hole with 5" drill pipe to 3711 m.
08:30	Circulated bottoms up. Rigged up and pressure tested cement hose and surface lines to 200 bar.
10:00	Pumped 2885 l of 1.80 sg Spacer 500. Mixed and pumped 3.7 m3 of 1.90 sg silica cement slurry. Pumped 363 l of 1.80 sg Spacer 500. Displaced the cement with 500 l of 1.75 sg mud with the cement pumps and with 29 m3 with the rig pumps.
11:30	Pulled out of the hole to 3604 m. Reverese circulated out the spacer. Circulated the long way.
16:30	Pumped slug. Pulled out of the hole. Broke off the bit and junk sub from the stand in the derrick.
23:59	Waited on cement.

Daily report no: 86 Date : 17-mar-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
10:00	Continued waiting on cement. Ran 5 stands of 6 1/2" drill collars, made up the RTTS packer and storm valve, stabilizer and bumper sub. Ran in the hole to 362 m. Pressure tested the cement plug to 234 bar/10 min against the shear ram.
17:00	Ran in the hole and set the RTTS at 1495 m. Pressure tested the packer to 234 bar/10 min. Pulled out to 420 m. Dislaced the kill-, choke- and booster lines and riser to sea water. Pulled out of the hole.
21:30	Washed and cleaned the drill floor. Rigged up to pull the riser and BOP. Laid out the diverter assembly. Made up the landing joint. Unlatched the BOP. Nippled down hoses on cellar deck.
23:59	Pulled the riser and BOP.

Daily report no: 87 Date : 18-mar-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
06:00	Pulled the BOP stack.
11:30	Replaced the broken nipple on the accumulator charge line, welded support brackets to secure. Function tested the blue and yellow pods. Function tested the accoustic and pressure tested the hydraulic control system to 207 bar.
13:30	Waited on weather to run the BOP stack.
23:59	Ran the BOP stack, Tested the choke and kill lines to 1035 bar each six joints.

Daily report no: 88 Date : 19-mar-1997
Midnight depth : 3715 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
02:30	Continued running the BOP stack and picked up the slip joint.
05:00	Installed the choke, kill and booster line goosenecks. Installed the pod line saddles.
08:00	Positioned the rig over the well head, Tested the choke and kill lines to 35/ 1035 bar. re-installed no. 3 guide line. Landed the BOP at 06:30 Hrs, Latched the conn. and O/P test 500 KN. Installed divertor
11:00	Made up and ran in with the BOP test tool and tested the well head connector to 35/ 785 bar against the LPR. Function tested the shear ram and the MPR with the acoustic. Pulled out and layed down the BOP test tool.
11:30	Made up the RTTS retrieving tool and ran in the hole to 450 M.
13:30	Displaced the riser, choke, kill and booster line to oil base mud.
15:00	Ran in the hole with the RTTS retrieving tool to 1495 M. and broke circulation. Screwed into the RTTS packer and checked for pressure. Had 10 bar, bleed off and pulled the packer free with 10 ton over pull.
18:30	Pumped slug, Pulled out and layed down the RTTS assembly.
19:00	Made up bit, junk sub and MWD tool.
19:30	Installed PWD sub in the MWD tool.
20:00	Loaded the MWD tool.
23:59	Ran in the hole to 500 M, Tested the MWD tool and continued running in to 2400 M.

Daily report no: 89 Date : 20-mar-1997
Midnight depth : 3737 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
01:30	Continued running in the hole to 3600 M.
02:00	Slipped the drilling line.
06:30	Broke circulation, Tagged the cement at 3607 M. Drilled the cement plug to 3711 M
07:30	Drilled cement from 3711 M to 3720 M. Drilled the 9 5/8" casing shoe at 3720 M.
10:00	Drilled 8 1/2" hole from 3720 M to 3724 M.
12:00	Circulated and conditioned the mud prior to performing FIT.
13:00	Continued circulating while installing Schlumberger SWD sensors on the top drive.
14:00	Performed leak off test, Eq mud weight 2.18 SG. Surface pressure pressure 157 Bar with 1.75 SG mud.
14:30	Took slow pump rates and choke line friction loss.
18:30	Drilled 8 1/2" hole from 3724 M to 3735 M.
19:00	Shut the well in on upper annular and monitored for pressure on the kill line. Neg.
22:00	Opened the upper annular, Flow checked. Circulated bottoms up, Flow checked 50% and 75% of bottoms up to the BOP stack.
23:30	Continued circulating while prepairing to make modifications to the trip tank.
23:59	Drilled 8 1/2" hole from 3735 M to 3737 M.

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Daily report no: 90 Date : 21-mar-1997
Midnight depth : 3807 m MD Estimated PP: 1.64 sg Mudweight: 1.75 sg

Stop time	Description
23:59	Drilled 8 1/2" hole from 3737 M to 3807 M

Daily report no: 91 Date : 22-mar-1997
Midnight depth : 3837 m MD Estimated PP: 1.65 sg Mudweight: 1.75 sg

Stop time	Description
13:00	Drilled 8 1/2" hole from 3808 M to 3837 M.
15:00	Circulated bottoms up, Flow checked. Well static.
16:00	Made a wiper trip from 3837 M to 3695 m. Flow checked at bottom, Well static.
18:30	Circulated bottoms up. Flow checked 50 & 75% of bottoms up to the BOP stack.
19:00	Slugged the pipe and pulled out to the 9 5/8" casing shoe.
23:59	Pulled out of the hole to 60 M.

Daily report no: 92 Date : 23-mar-1997
Midnight depth : 3875 m MD Estimated PP: 1.65 sg Mudweight: 1.76 sg

Stop time	Description
00:30	Continued pulling out of the hole, Layed down bit and junk basket.
01:00	Dumped the MWD memory and reprogrammed the PWD sub.
03:30	Unable to verify the DPR sub, Changed out the DPR sub. Unable to communicate with the DPR sub. Broke and cleaned the connection and made up again. Verified the DPR sub and reprogrammed the MWD.
09:30	Made up new bit, Picked up st. stab. and ran in the hole to 3720 M.
14:00	Reamed/ Washed from 3720 M to TD at 3837 M, Circulated bottoms up. Flow checked 50% and 75% of bottoms up to the BOP stack.
23:59	Drilled 8 1/2" hole from 3837 M to 3875 M

Daily report no: 93 Date : 24-mar-1997
Midnight depth : 3954 m MD Estimated PP: 1.70 sg Mudweight: 1.83 sg

Stop time	Description
18:30	Drilled 8 1/2" hole from 3875 M to 3954 M.
20:30	Flow checked prior to increasing the mud weight to 1.83 SG. Had 500 liter loss in the trip tank in 1 hr and 10 min. The loss decreased and began to level off. Total loss 600 Ltr.
23:59	Increased the mud weight from 1.75 SG to 1.83 SG. Took slow pump rates.

Daily report no: 94 Date : 25-mar-1997
Midnight depth : 3992 m MD Estimated PP: 1.70 sg Mudweight: 1.83 sg

Stop time	Description
02:00	Drilled 8 1/2" hole from 3954 M to 3963 M.
03:00	Shut the well in and checked for pressure, SICP = 4 Bar, SIDP = 0, After 30 minutes. Opened the upper annular and flow checked, NEG.
06:00	Circulated bottoms up. Flow checked 50% and 75% of bottoms up to the BOP stack. Took slow pump rates.
14:00	Drilled 8 1/2" hole from 3963 M to 3992 M.
16:30	Circulated bottoms up and flow checked, Well static.
17:00	Made wiper trip to 3848 M.
20:00	Circulated bottoms up, Flow checked 50 % and 75 % of volume below the BOP stack.
21:00	Pulled out of the hole to the 9 5/8" casing shoe.
23:59	Pulled out of the hole to 1600 M.

Daily report no: 95 Date : 26-mar-1997
Midnight depth : 3992 m MD Estimated PP: 1.70 sg Mudweight: 1.83 sg

Stop time	Description
03:00	Continued pulling out of the hole. Broke out the bit, Recovered the MWD memory and racked the MWD in the derrick.
05:00	Made up the multipurpose tool, Ran in and recovered the wear bushing.
05:30	Ran in the hole with 5 stands of HWDP, picked up BOP test tool and ran in the hole and landed in the well head.
11:00	Tested BOP, pipe rams and failsafe valves (except lower outer kill and upper outer kill) to 35/785 bar. Upper annular to 35/241 bar, lower annular to 35/483 bar. Operated upper pipe ram and shear ram with acoustic.Test tool started leaking.
14:30	Pulled out of the hole with the BOP test tool and installed new seal rings.
16:00	Ran in the hole with the BOP test tool and attempted to test the BOP, BOP test tool leaking.
17:30	Pulled out of the hole and laid down the BOP test tool.
20:00	Made up the multi purpose tool with cup tester and new wear bushing and ran in the hole and landed same.
21:00	Tested the lower outer kill and the upper outer kill failsafe valves against the upper pipe rams to 35 / 460 bar. Function tested on the blue and yellow pods.
22:30	Pulled out of the hole, laid down 30 joints of 5" 25.6 lb/ft drill pipe and redressed the multi purpose tool.
23:59	Pressure test kelly cocks and IBOP to 35/785 Bar.

Daily report no: 96 Date : 27-mar-1997
Midnight depth : 4009 m MD Estimated PP: 1.70 sg Mudweight: 1.83 sg

Stop time	Description
02:00	Continued testing the kelly cocks, IBOP to 35/785 bar and the top drive, rotary hose and to stand pipe manifold to 345 Bar.
02:30	Verified the MWD tool and layed down the damaged bit sub.
06:30	The bit sub was damaged when installing the float valve, Removed the float valve and repaired the bit sub.

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Daily report no: 96 Date : 27-mar-1997
Midnight depth : 4009 m MD Estimated PP: 1.70 sg Mudweight: 1.83 sg

Stop time	Description
08:30	Ran in the hole to 656 M.
09:00	Function tested the MWD.
10:00	Repaired the torque cylinder on the top drive.
11:00	Cut and slipped the drilling line.
15:00	Ran in the hole to the 9 5/8" casing shoe.
15:30	Ran in the hole to TD.
19:00	Circulated bottoms up. Flow checked after 50% and 75 % of volume pumped to the BOP stack. Took slow circulation rates.
23:59	Drilled 8 1/2" hole from 3993 M to 4009 M.

Daily report no: 97 Date : 28-mar-1997
Midnight depth : 4081 m MD Estimated PP: 1.79 sg Mudweight: 1.90 sg

Stop time	Description
16:30	Drilled 8 1/2" hole from 4009 m to 4064 m.
20:00	Increased the mud weight from 1.83 SG to 1.90 SG. Took slow circulating rates.
23:59	Drilled 8 1/2" hole from 4064 m to 4081 m. Drilling break at 4079 m.

Daily report no: 98 Date : 29-mar-1997
Midnight depth : 4084 m MD Estimated PP: 1.79 sg Mudweight: 1.90 sg

Stop time	Description
00:30	Flow checked. Neg.
01:00	Drilled 8 1/2" hole from 4081 m to 4084 m. Drilling break ROP 20 to 35 m/hr.
01:30	Flow checked. Neg.
04:30	Circulated bottoms up. Flow checked 50 % and 75 % of bottoms up to the BOP stack.
05:00	Flow checked. Neg.
05:30	Made a wiper trip to 3944 m.
06:00	Flow checked, Neg.
09:00	Circulated bottoms up. Flow checked 50% and 75 % of bottoms up to the BOP stack.
10:00	Slugged the pipe and pulled out of the hole to the 9 5/8" casing shoe.
16:00	Pulled out of the hole and broke off the bit.
16:30	Recovered the MWD memory.
19:00	Picked up a 30 Ft. core bbl and made up the bottom hole assembly.
23:59	Ran in the hole with the core bbl to 3422 M.

Daily report no: 99 Date : 30-mar-1997
Midnight depth : 4093 m MD Estimated PP: 1.79 sg Mudweight: 1.90 sg

Stop time	Description
00:30	Ran in the hole to 3720 m.
01:00	Ran in the hole to 4064 m. Washed down from 4064 m to 4084 m.
05:00	Circulated bottoms up, Flow checked 50 % and 75 % of bottoms

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Daily report no: 99 Date : 30-mar-1997
Midnight depth : 4093 m MD Estimated PP: 1.79 sg Mudweight: 1.90 sg

Stop time	Description
	up to the bop stack.
05:30	Dropped the ball and pumped down. Took slow circulation rates.
08:00	Cut core no. 1 from 4084 m to 4093.5 m.
12:30	Circulated bottoms up, Flow checked 50 % and 75 % of bottoms up to the BOP stack.
13:30	Made a wiper trip to 3950 m.
14:00	Flow checked. Neg.
18:00	Circulated bottoms up, flow checked 50 % and 75 % of bottoms up to the BOP stack.
19:00	Pulled out of the hole to the 9 5/8" casing shoe.
23:59	Pulled out of the hole to 174 M.

Daily report no: 100 Date : 31-mar-1997
Midnight depth : 4108 m MD Estimated PP: 1.79 sg Mudweight: 1.90 sg

Stop time	Description
01:00	Pulled out of the hole at reduced pulling speed with the core bbl.
02:00	Recovered the core.
04:30	Made up a 60 FT. core bbl and bottom hole assembly and ran in the hole to 314 M.
05:00	Ran in the hole with the core bbl to 940 M.
05:30	Slipped the drilling line.
06:00	Serviced the rig.
10:00	Ran in the hole to the 9 5/8" casing shoe.
10:30	Ran in the hole to 4065 M. Washed down to 4093.5 M.
13:30	Circulated bottoms up, Flow checked 50 % and 75 % of bottoms up to the BOP stack.
14:00	Spaced out, Dropped the ball and pumped down. Took slow pump rates.
20:30	Cut core no. 2 from 4093.5 M to 4108.5 m.
23:59	Circulated bottoms up, Flow checked 50 % and 75 % of bottoms up to the BOP stack.

Daily report no: 101 Date : 01-apr-1997
Midnight depth : 4108 m MD Estimated PP: 1.79 sg Mudweight: 1.90 sg

Stop time	Description
00:00	
01:00	Circulated the bottoms up. Max. Gas 0.09 %
01:30	Flow checked.
02:00	Made a wiper trip to 3965 M.
02:30	Flow checked.
06:30	Circulated bottoms up. Flow checked 50 % and 75 % of bottoms up to the BOP stack. Max gas: 0.11 %.
07:30	Pulled out to the 9 5/8" casing shoe with core # 2.
13:30	Pulled out of the hole with core # 2 and laid down the core bit.
14:00	Recovered core # 2. Recovered 14.0 m, 93.3 %.
16:30	Made up a 90 ft core bbl and a new core bit.
21:30	Ran in the hole with core assembly # 3 to 3700 m.
22:00	Lubricated the rig.

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Daily report no: 101 Date : 01-apr-1997
Midnight depth : 4108 m MD Estimated PP: 1.79 sg Mudweight: 1.90 sg

Stop time	Description
23:00	Ran in the hole to 4093 m. Washed down and tagged the bottom at 4108.5 m.
23:59	Circulated the bottoms up.

Daily report no: 102 Date : 02-apr-1997
Midnight depth : 4113 m MD Estimated PP: 1.78 sg Mudweight: 1.90 sg

Stop time	Description
02:00	Circulated the bottoms up and flow checked according to Norsk Hydro HPHT procedures. Max gas: 0.55 %.
02:30	Dropped the ball and pumped down. Took slow pump rates.
06:30	Cut core # 3 from 4108.5 m to 4113.5 m. Core jammed.
10:30	Circulated bottoms up. Flow checked according to Norsk Hydro HPHT procedures. Max gas: 0.06 %.
11:00	Made a 5 stands wiper trip.
11:30	Flow checked.
12:30	Circulated and dropped the ball. Unable to shear the shear-pin in the circulating sub.
14:00	Pulled out to the 9 5/8" casing shoe.
14:30	Flow checked.
23:00	Pulled out of the hole with core # 3 and laid down the core bit.
23:59	Recovered core # 3. Recovered 5 m, 100 %.

Daily report no: 103 Date : 03-apr-1997
Midnight depth : 4141 m MD Estimated PP: 1.77 sg Mudweight: 1.90 sg

Stop time	Description
01:00	Made up new core bit and 90 ft core bbl.
02:30	Ran in the hole with core assembly # 4 to 959 m.
03:30	Cut and slipped the drill line.
04:00	Lubricated the rig.
08:30	Continued to run in the hole with core assembly # 4 to 4085 m. Washed down and tagged the bottom at 4113.5 m.
11:30	Circulated and flow checked according to Norsk Hydro HPHT procedures. Max gas: 0.55 %.
12:00	Spaced out. Dropped the ball and pumped down. Took slow pump rates.
23:59	Cut core # 4 from 4113.5 m to 4141 m.

Daily report no: 104 Date : 04-apr-1997
Midnight depth : 4141 m MD Estimated PP: 1.77 sg Mudweight: 1.90 sg

Stop time	Description
04:30	Circulated and flow checked according to Norsk Hydro HPHT procedures. Max gas: 0.09 %.
05:00	Made a 5 stands wiper trip.
05:30	Flow checked.
09:30	Circulated the bottoms up and flow checked according to Norsk Hydro HPHT procedures. Max gas: 0.06 %.
10:30	Pulled out to the 9 5/8" casing shoe.

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Daily report no: 104 Date : 04-apr-1997
Midnight depth : 4141 m MD Estimated PP: 1.77 sg Mudweight: 1.90 sg

Stop time	Description
17:00	Pulled out of the hole with core # 4 and laid down the core bit.
18:00	Recovered core # 4. Recovered 27.25 m, 99.1 %.
20:00	Evaluated and serviced core # 4 while making up new core bit and 150 ft core barrel.
23:59	Ran in the hole with core assembly # 5 to 1900 m.

Daily report no: 105 Date : 05-apr-1997
Midnight depth : 4178 m MD Estimated PP: 1.75 sg Mudweight: 1.90 sg

Stop time	Description
02:30	Ran in the hole with core assembly # 5 to 3670 m.
03:00	Lubricated the rig.
04:00	Ran in the hole to 4120 m. Washed down and tagged the bottom at 4141 m.
08:00	Circulated and flow checked according to Norsk Hydro HPHT procedures. Max gas: 0.41 %.
08:30	Dropped the ball and pumped down. Took slow pump rates.
23:59	Cut core # 5 from 4141 m to 4178 m.

Daily report no: 106 Date : 06-apr-1997
Midnight depth : 4178 m MD Estimated PP: 1.75 sg Mudweight: 1.90 sg

Stop time	Description
00:30	Attempted to cut core from 4178. No success. Core jammed.
03:30	Circulated bottoms up. Flow checked. Max gas 0.06 %.
05:00	Made a 5 stands wiper trip. Flow checked.
09:00	Circulated bottoms up and flow checked according to Norsk Hydro HPHT procedures. Max gas: 0.05%.
10:00	Pulled out with core # 5 to the 9 5/8" casing shoe.
17:00	Pulled out of the hole with core # 5.
18:00	Recovered core # 5. Recovered 36.1 m, 97.6 %.
20:30	Evaluated core # 5 and serviced the core barrel.
22:30	Ran in the hole with core assembly # 6 to 1076 m.
23:00	Slipped the drill line.
23:30	Lubricated the rig.
23:59	Continued to run in the hole to 1480 m.

Daily report no: 107 Date : 07-apr-1997
Midnight depth : 4219 m MD Estimated PP: 1.74 sg Mudweight: 1.90 sg

Stop time	Description
02:00	Ran in the hole with core assembly # 6 to the 9 5/8" casing shoe at 3720 m.
03:00	Continued to run in the hole to 4158 m. Washed down and tagged bottom at 4178 m.
06:00	Circulated and flow checked according to Norsk Hydro HPHT procedures.
06:30	Dropped the ball and circulated down.
19:00	Cut core # 6 from 4178 m to 4219 m. Core jammed.
22:00	Circulated the bottoms up. Max gas: 0.06 %. Flow checked.

Daily report no: 107 Date : 07-apr-1997
Midnight depth : 4219 m MD Estimated PP: 1.74 sg Mudweight: 1.90 sg

Stop time	Description
23:30	Made a 5 stands wipertrip. Flow checked.
23:59	Circulated the bottoms up.

Daily report no: 108 Date : 08-apr-1997
Midnight depth : 4219 m MD Estimated PP: 1.74 sg Mudweight: 1.90 sg

Stop time	Description
03:30	Circulated the bottoms up and flow checked according to Norsk Hydro HPHT procedures. Max gas: 0.15 %.
04:30	Pulled out of the hole to the 9 5/8" casing shoe.
10:00	Continued to pull out of the hole with core assembly # 6.
11:00	Recovered core # 6. Recovered 41 m, 100 %.
12:00	Racked the core barrel in the derrick.
14:30	Made up the wear bushing retrieving tool and ran in the hole and retrieved the 9 5/8" wear bushing.
16:00	Made up and ran in with BOP test tool and jet sub. Washed the wellhead.
18:00	Tested the upper annular on the BOP.
21:00	Pulled out due to leakage on the BOP test tool. Replaced damaged o-ring and ran in the hole with the BOP test tool.
23:59	Continued to test the BOP according to Norsk Hydro test procedure.

Daily report no: 109 Date : 09-apr-1997
Midnight depth : 4244 m MD Estimated PP: 1.73 sg Mudweight: 1.90 sg

Stop time	Description
01:30	Pulled out with the BOP test tool.
03:30	Ran in the hole and set the 9 5/8" wear bushing. Pulled out with the running tool.
05:30	Tested the topdrive and the kelly hose.
06:00	Picked up 150' core barrel from the derrick and made up the core head.
08:30	Repaired leak on diverter insert packer lock down dogs.
10:00	Made up core assembly # 7.
15:00	Ran in the hole with core assembly # 7 to the 9 5/8" casing shoe at 3720 m.
15:30	Continued to run in the hole to 4200 m. Washed down and tagged bottom at 4219 m.
18:30	Circulated and flow checked according to Norsk Hydro HPHT procedures. Max gas: 1.40 %.
19:00	Dropped the ball and pumped down. Took slow pump rates.
23:59	Cut core # 7 from 4219 m to 4244 m.

Daily report no: 110 Date : 10-apr-1997
Midnight depth : 4263 m MD Estimated PP: 1.76 sg Mudweight: 1.90 sg

Stop time	Description
05:30	Cut core # 7 from 4244 m to 4263 m.
08:00	Circulated the bottoms up. Flow checked
10:00	Made a 5 stands wipertrip. Flow checked.

Daily report no: 110   Date : 10-apr-1997
Midnight depth : 4263 m MD   Estimated PP: 1.76 sg   Mudweight: 1.90 sg

Stop time	Description
14:00	Circulated and flow checked according to Norsk Hydro HPHT procedures.
15:00	Pulled out of the hole to the 9 5/8" casing shoe.
20:30	Continued to pull out of the hole with core assembly # 7.
21:30	Recovered core # 7. Recovered 44 m, 100 %.
23:30	Serviced the core barrel and evaluated the core while laying down 4 stands with drill pipe.
23:59	Lubricated the rig.

Daily report no: 111   Date : 11-apr-1997
Midnight depth : 4267 m MD   Estimated PP: 1.76 sg   Mudweight: 1.90 sg

Stop time	Description
01:00	Made up 8 1/2" bit.
01:30	Made up and tested the MWD.
03:00	Continued to make up the 8 1/2" bottom hole assembly.
05:00	Ran in the hole with the 8 1/2" bit to 767 m.
06:00	Slipped and cut the drill line.
10:00	Continued to run in the hole to 3930 m.
17:00	Washed down from 3930 m 4075 m. Reamed and logged with the MWD from 4075 m to 4263 m.
20:00	Circulated and flow checked according to Norsk Hydro HPHT procedures. Max gas: 0.06 %.
20:30	Drilled 8 1/2" hole from 4263 m to 4267 m.
21:30	Trouble shooting on the MWD tool. Decided to pull out of the hole due to MWD failure.
23:30	Circulated the bottoms up. Flow checked. Max gas: 0.26 %.
23:59	Made a 5 stands wipertrip.

Daily report no: 112   Date : 12-apr-1997
Midnight depth : 4267 m MD   Estimated PP: 1.76 sg   Mudweight: 1.90 sg

Stop time	Description
00:30	Flow checked.
03:30	Circulated and flow checked according to Norsk Hydro HPHT procedures.
09:30	Pulled out of the hole with the 8 1/2" bottom hole assembly.
12:00	Changed the MWD collar and the DPR sub and verified same.
14:30	Made up the 8 1/2" bit and ran in the hole to 1060 m.
15:00	Attempted to test the MWD.
18:00	Pulled out of the hole due to MWD failure.
19:30	Changed the MWD collar and verified same. Ran in the hole to 200 m.
20:30	Attempted to test the MWD. Pulled out due to MWD failure.
23:59	Laid down the MDP sub. Attempted to test the MWD. Laid down the DPR sub.

Daily report no: 113 Date : 13-apr-1997
Midnight depth : 4294 m MD Estimated PP: 1.76 sg Mudweight: 1.90 sg

Stop time	Description
02:00	Made up new DPR sub. Tested the MWD tool.
07:00	Ran in the hole with 8 1/2" bit to 3930 m.
08:30	Washed down from 3930 m to 4267 m.
11:30	Circulated and flow checked according to Norsk Hydro HPHT procedures.
14:00	Drilled 8 1/2" hole from 4267 m to 4294 m.
16:30	Circulated the bottoms up. Flow checked.
17:30	Made a 5 stands wiper trip. Flow checked.
20:30	Circulated and flow checked according to Norsk Hydro HPHT procedures.
21:30	Pulled out of the hole with the 8 1/2" bit to the 9 5/8" casing shoe.
22:00	Slipped the drill line.
23:59	Continued to pull out of the hole with 8 1/2" bit to 2164 m.

Daily report no: 114 Date : 14-apr-1997
Midnight depth : 4294 m MD Estimated PP: 1.76 sg Mudweight: 1.90 sg

Stop time	Description
02:30	Pulled out of the hole with 8 1/2" bit to 180 m.
03:00	Pulled out with the 8 1/2" bottom hole assembly.
03:30	Dumped the memory on the MWD. Laid down the bit.
05:00	Rigged up Schlumberger wireline. Made up super combo tools: DIL/DSI/LDL/CNL/NGT/AMS/GR.
06:30	Ran in hole with super combo. Pulled out of hole due to failure on AMS. Replaced the AMS.
16:30	Ran super combo and logged from 4292.5 m to 3720 m.
19:00	Laid down the super combo and rigged up the CBL/VDL/GR.
23:30	Ran the CBL/VDL/GR and logged from 3720 m to 2950 m.
23:59	Laid down the CBL/VDL/GR.

Daily report no: 115 Date : 15-apr-1997
Midnight depth : 4294 m MD Estimated PP: 1.81 sg Mudweight: 1.90 sg

Stop time	Description
01:00	Rigged up the MDT/GR.
22:00	Ran MDT/GR. Took sample and estimated pore pressure at 4085 m to 1.84 sg equivalent density.
23:00	Laid down the tools.
23:30	Rigged down the Schlumberger wireline
23:59	Made up the bottom hole assembly.

Daily report no: 116 Date : 16-apr-1997
Midnight depth : 4347 m MD Estimated PP: 1.81 sg Mudweight: 1.95 sg

Stop time	Description
01:30	Made up pressure sub to the MWD and tested out the same.
02:00	Ran in with the bottom hole assembly and function tested the MWD ok.
06:30	Ran in the hole with 8 1/2" bit to 9 5/8" casing shoe.
07:00	Continued tripping in the hole to 3930 m.

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Daily report no: 116 Date : 16-apr-1997
Midnight depth : 4347 m MD Estimated PP: 1.81 sg Mudweight: 1.95 sg

Stop time	Description
08:00	Washed down from 3930 m to 4206 m.
08:30	Flow checked after pumped 50 % of the volume below the BOP.
09:00	Continued washing down from 4206 m to 4294 m.
11:00	Flow checked and continued circulating bottoms up.
14:30	Circulated to increase the mud weight from 1.90 sg to 1.95 sg.
23:30	Drilled 8 1/2" hole from 4294 m to 4347 m.
23:59	Reamed from 4322 m to 4347 m due to tight hole at 4343 m and 4347 m.

Daily report no: 117 Date : 17-apr-1997
Midnight depth : 4447 m MD Estimated PP: 1.81 sg Mudweight: 1.95 sg

Stop time	Description
01:30	Drilled 8 1/2" hole from 4347 m to 4356 m.
02:00	Flow checked drilling brake - negative.
16:30	Drilled 8 1/2" hole from 4356 m to 4447 m.
18:30	Circulated bottom up for samples.
19:00	Checked for flow - negative.
20:00	Made a 5 stand wiper trip and checked for flow - negative.
23:00	Circulated bottoms up and flow checked according to Norsk Hydro procedures for HTHP.
23:59	Pulled out of the hole to 4110 m.

Daily report no: 118 Date : 18-apr-1997
Midnight depth : 4469 m MD Estimated PP: 1.81 sg Mudweight: 1.95 sg

Stop time	Description
00:30	Pulled out to the 9 5/8" casing shoe.
04:00	Continued pulling out of the hole
05:00	Pulled out with the bottom hole assembly.
05:30	Dumped the memory from the MWD tool. Broke off the bit and racked MWD in the derrick.
10:00	Made up 90 ft core assembly and ran in the hole to 790 m.
11:00	Slipped and cut the drill line.
14:30	Ran in the hole with the core assembly to the casing shoe.
15:00	Continued running in the hole to 4427 m.
18:30	Washed down to bottom. Circulated bottoms up and flow checked according to Norsk Hydro HTHP procedures.
19:00	Dropped and pumped down the ball. Took slow pump rates.
23:59	Cut core # 8 from 4447 m to 4469 m.

Daily report no: 119 Date : 19-apr-1997
Midnight depth : 4475 m MD Estimated PP: 1.81 sg Mudweight: 1.95 sg

Stop time	Description
01:30	Cut core # 8 from 4469 m to 4475 m.
04:30	Circulated bottoms up and flow checked-negative.
05:30	Made a 5 stands wiper trip and flow checked-negative.
09:30	Circulated the bottoms up and flow checked according to Norsk Hydro HTHP procedures.

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Daily report no: 119 Date : 19-apr-1997
Midnight depth : 4475 m MD Estimated PP: 1.81 sg Mudweight: 1.95 sg

Stop time	Description
11:00	Pulled out to the 9 5/8" shoe.
15:00	Continued pulling out of the hole.
16:30	Pulled out with the bottom hole assembly
17:30	Recoverd core # 8. Recoverd 27.85 m - 99,5 %.
19:30	Serviced and dressed the core barrel and changed out the jar while evaluating the core.
22:00	Pressure tested the top drive valves and the kelly hose.
23:59	Retrieved the 9 5/8 wear bushing.

Daily report no: 120 Date : 20-apr-1997
Midnight depth : 4493 m MD Estimated PP: 1.81 sg Mudweight: 1.95 sg

Stop time	Description
00:30	Laid down the wear bushing running tool.
02:00	Ran in the hole with the BOP test tool.
05:30	Pressure tested the BOP according to Norsk Hydro test procedure.
07:00	Pulled out with the test tool.
08:30	Sat the wear bushing.
09:00	Made up bit. Loaded the MWD and checked out the same.
11:00	Ran in with the bottom hole assembly. Function tested the MWD ok.
15:00	Ran in the hole to the 9 5/8" casing shoe.
15:30	Slipped 56 feet of the drilling line.
16:00	Continued running in the hole to 3900 m.
20:00	Circulated and washed down from 3900 m to 4447 m to cool down the MWD tool. Flow checked after circulate 50 % and 75 % of the hole volume below the BOP.
20:30	Repaired the broken depth line.
21:30	Ream and log with MWD core hole from 4447 m to 4475 m.
23:59	Drilled 8 1/2" hole from 4475 m to 4493 m.

Daily report no: 121 Date : 21-apr-1997
Midnight depth : 4579 m MD Estimated PP: 1.81 sg Mudweight: 1.95 sg

Stop time	Description
23:59	Drilled 8 1/2" hole from 4493 m to 4579 m.

Daily report no: 122 Date : 22-apr-1997
Midnight depth : 4684 m MD Estimated PP: 1.81 sg Mudweight: 1.95 sg

Stop time	Description
23:59	Drilled 8 1/2" hole from 4579 m to 4684 m.

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Daily report no: 123 Date : 23-apr-1997
Midnight depth : 4709 m MD Estimated PP: 1.81 sg Mudweight: 1.95 sg

Stop time	Description
04:00	Drilled 8 1/2" hole from 4684 m to 4700 m.
05:00	Circulated for samples.
05:30	Drilled from 4700 m to 4705 m
06:00	Flow checked drilling brake - negative.
09:30	Circulated bottoms up and flow checked according to NH procedures for HT HP.
10:30	Drilled 8 1/2" hole from 4705 m to 4709 m.
11:00	Flow checked - negative.
12:00	Made a 5 stand wiper trip and checked for flow - negative.
15:00	Circulated bottoms up and flow checked according to NH procedures for HT HP.
17:30	Pulled out to the 9 5/8" shoe. Circulated the string volume each 5 stand up to 4000 m to cool down the MWD.
21:00	Continued pulling out of the hole.
22:00	Pulled out with the bottom hole assembly.
22:30	Attempted to dump the memory from the MWD no success.
23:59	Picked up 90 feet core assembly and checked out the same.

Daily report no: 124 Date : 24-apr-1997
Midnight depth : 4737 m MD Estimated PP: 1.81 sg Mudweight: 1.95 sg

Stop time	Description
05:30	Ran in the hole with 90 feet core assembly to the 9 5/8" casing shoe.
07:30	Continued running in the hole to 4709 m.
10:30	Circulated bottoms up and flow checked according to NH HTHP procedure.
11:00	Dropped and pumped down the ball. Took slow pump rates.
14:30	Cut core # 9 from 4709 m to 4737 m.
17:30	Circulated the bottoms up. Flow checked - negative.
18:30	Made a 5 stand wiper trip and checked for flow - negative.
22:30	Circulated the bottoms up and flow checked according to NH HT HP procedure.
23:59	Pulled out to the casing shoe.

Daily report no: 125 Date : 25-apr-1997
Midnight depth : 4737 m MD Estimated PP: 1.81 sg Mudweight: 1.95 sg

Stop time	Description
02:30	Pulled out of the hole.
03:00	Lubricated the rig.
04:30	Continued pulling out of the hole.
06:30	Pulled out with the bottom hole assembly.
07:30	Recoverd core # 9. 100 % recovery - 28.25 m.
08:30	Slipped and cut the drilling line.
10:30	Rearranged BHA in the derrick and made up new MWD.
11:00	Loaded the MWD and tested out the same.
12:00	Ran in with the bottom hole assembly. Function tested the MWD.
17:00	Ran in the hole to 3450 m.
17:30	Failure on the SCR to the drowwork motors.
18:00	Continued running in the hole to 3900 m.
22:00	Circulated and washed down from 3900 m to 4636 m to cool

Daily report no: 125 Date : 25-apr-1997
Midnight depth : 4737 m MD Estimated PP: 1.81 sg Mudweight: 1.95 sg

Stop time	Description
	down the MWD tool. Flow checked according to NH procedures for HT HP.
22:30	Logged with the MWD from 4636 m 4655 m.
23:59	Changed out the upper safety valve (IBOP) on the Varco top drive due to leak.

Daily report no: 126 Date : 26-apr-1997
Midnight depth : 4796 m MD Estimated PP: 1.80 sg Mudweight: 1.95 sg

Stop time	Description
07:30	Worked on the top drive to change out the upper safety valve. Pressure tested connections to 35 / 345 bar. Tested IBOP to 785 bar.
08:00	MWD depth line broke while hoisting the block. Repaired the line.
08:30	Logged with the MWD from 4658 m to 4675 m.
09:00	Attempted to take real time log with the MWD - no success.
10:30	Continued to ream and logged in the memory with the MWD.
11:00	Attempted to take survey with the MWD - no success.
13:00	Drilled 8 1/2" hole from 4735 m to 4745 m.
15:00	Pulled out to 4684 and performed real time log from 4684 m to 4745 m.
23:59	Drilled 8 1/2" hole from 4745 m to 4796 m.

Daily report no: 127 Date : 27-apr-1997
Midnight depth : 4826 m MD Estimated PP: 1.79 sg Mudweight: 1.95 sg

Stop time	Description
08:30	Drilled 8 1/2" hole from 4796 m to 4826 m.
10:00	Reamed tight hole from 4821 m to 4826 m.
10:30	Flow checked - negative.
11:30	Made a 5 stand wiper trip and checked for flow - negative.
14:30	Circulated bottoms up and flow checked according to NH procedure for HT HP.
17:00	Pulled out to the casing shoe. Circulated on the way out according to BHI procedure
21:00	Continued pulling out of the hole.
22:00	Pulled out with the bottom hole assembly.
23:00	Attempted to empty the MWD for memory , no success. Lay down the same.
23:59	Laid down the core assembly from the derrick.

Daily report no: 128 Date : 28-apr-1997
Midnight depth : 4877 m MD Estimated PP: 1.78 sg Mudweight: 1.95 sg

Stop time	Description
00:30	Lubricated the rig.
01:30	Made up new MWD. Loaded and tested out the same.
02:30	Made up bottom hole assembly and ran in the hole.
07:30	Ran in the hole to the casing shoe. Funtion tested the MWD at 740 m.

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Daily report no: 128 Date : 28-apr-1997
Midnight depth : 4877 m MD Estimated PP: 1.78 sg Mudweight: 1.95 sg

Stop time	Description
08:00	Slipped 56 feet of the drilling line.
08:30	Continued running in the hole to 3900 m.
12:30	Circulated and washed down from 3900 m to 4800 m. Flow checked according to NH procedures for HT HP.
14:00	Reamed tight hole from 4800 m to 4826 m.
16:30	Drilled 8 1/2" hole from 4826 m to 4838 m.
17:30	Repaired failure on BHI gas sensor.
23:59	Drilled 8 1/2" hole from 4838 m to 4877 m.

Daily report no: 129 Date : 29-apr-1997
Midnight depth : 4934 m MD Estimated PP: 1.77 sg Mudweight: 1.95 sg

Stop time	Description
04:00	Drilled 8 1/2" hole from 4877 m to 4887 m.
05:00	Repaired failure on the speed control trottle for the top drive.
14:30	Drilled 8 1/2" hole from 4887 m to 4915 M.
16:00	Changed out the speed control throttle for the top drive.
23:59	Drilled 8 1/2" hole from 4915 M to 4934 M.

Daily report no: 130 Date : 30-apr-1997
Midnight depth : 4936 m MD Estimated PP: 1.77 sg Mudweight: 1.95 sg

Stop time	Description
02:30	Drilled 8 1/2" hole from 4934 M to 4936 M.
03:00	Circulated remaining bottoms up prior to wiper trip.
03:30	Flow checked.
04:30	Circulated 21000 Ltr to cool MWD. Made a 5 stand wiper trip.
05:30	Circulated to cool MWD and flow checked.
08:30	Circulated bottoms up as HTHP procedures.
10:00	Pulled out of the hole to the 9 5/8" casing shoe.
14:30	Pulled out of the hole to the bottom hole assembly.
16:00	Pulled out of the hole with the bottom hole assembly and lay out bit sub and bit.
17:00	Recovered the MWD memory, Layed down the MWD tool and the 6 1/2" NMDC.
18:30	Rigged up for wire line logging and made up and checked super combo logging tools.
23:59	Ran log No. 1, DIT / LDL / CNL / NGT / AMS.

Daily report no: 131 Date : 01-may-1997
Midnight depth : 4936 m MD Estimated PP: 1.77 sg Mudweight: 1.95 sg

Stop time	Description
02:00	Continued running log No. 1, DIT/LDL/CNL/NGT/AMS
06:00	Layed down the super combo tools and made up logging tools for run No. 2, OBDT/DSI/GR/ACTS.
14:30	Ran log No. 2, OBDT/DSI/GR/ACTS.
16:30	Layed down log run No. 2 tools and made up run No. 3 tools. MDT/GR
23:59	Ran log No. 3. MDT/GR

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Daily report no: 131 Date : 01-may-1997
Midnight depth : 4936 m MD Estimated PP: 1.77 sg Mudweight: 1.95 sg

Stop time	Description

Daily report no: 132 Date : 02-may-1997
Midnight depth : 4936 m MD Estimated PP: 1.77 sg Mudweight: 1.95 sg

Stop time	Description
10:00	Continued running log No. 3. MDT/GR
12:30	Layed dowm MDT/GR tools and made up Zero offset VSP tools.
14:00	Ran in the hole to TD with the zero offset VSP log
14:30	Trouble Shooting on VSP satelites after first check shot.
23:59	Logged with zero offset VSP from 4936 M to 3815 M.

Daily report no: 133 Date : 03-may-1997
Midnight depth : 4936 m MD Estimated PP: 1.77 sg Mudweight: 1.95 sg

Stop time	Description
04:00	Continued running zero offset VSP log from 3815 M to 3500 M and Pulled out of the hole.
06:00	Layed down the zero offset VSP tools and made up the walkaway VSP tools.
09:00	Ran in the hole with the walkaway VSP log
09:30	Lost contact with the VSP tool.
10:30	Continued running in the hole to 3715 M.
12:00	Schlumberger had problems setting scaling parameters in soft wear. Trouble shooting.
12:30	Waiting for air pressure on the boat to build up for firing the gun.
15:00	Shot line NS 1 and part of line NS 2 at 3715 M and 3650 M.
15:30	Schlumberger had soft wear problems.
23:59	Logged with walkaway Vsp.

Daily report no: 134 Date : 04-may-1997
Midnight depth : 4936 m MD Estimated PP: 1.77 sg Mudweight: 1.95 sg

Stop time	Description
17:00	Continued running the walkaway VSP log.
19:00	Layed down the walkaway VSP tools and made up the CST tools.
23:59	Ran CST log.

Daily report no: 135 Date : 05-may-1997
Midnight depth : 4936 m MD Estimated PP: 1.77 sg Mudweight: 1.95 sg

Stop time	Description
00:00	
10:30	Ran cst log.
13:00	Rocovered CST cores, Layed down CST tools and rig down Schlumberger.
17:30	Picked up 3 1/2" cement divertor and 12 stands of 3 1/2" drill pipe and ran in the hole to 1800 M
18:30	Circulated the riser volume.

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Daily report no: 135 Date : 05-may-1997
Midnight depth : 4936 m MD Estimated PP: 1.77 sg Mudweight: 1.95 sg

Stop time	Description
20:00	Ran in the hole to 3715 M.
22:30	Circulated bottoms up from the 9 5/8" casing shoe at 3715 M
23:00	Ran in the hole to 4300 M.
23:30	Circulated bottoms up from 4300 M into the 9 5/8" casing shoe.
23:59	Ran in the hole to TD at 4936 M

Daily report no: 136 Date : 06-may-1997
Midnight depth : 4936 m MD Estimated PP: sg Mudweight: 1.95 sg

Stop time	Description
04:00	Circulated bottoms up as per NH HPHT procedures. Max mudweight out 2.0 sg. Max gas 2.78 %.
05:30	Batch mixed cement while installing cement hose.
07:00	Spotted silica cement plug #1 from 4936 - 4700 m.
08:00	Pulled back the string to 4690 m.
09:00	Reverse circulated out excess cement.
10:00	Batched mixed cement while making up the cement hose.
11:00	Spotted silica cement plug #2 at 4680-4450 m.
12:00	Pulled back to 4440 m.
13:00	Reversed out the excess cement.
14:00	Pulled back to 4430. Circulated while batch mixing cement.
15:00	Spotted silica cement plug # 3 from 4430 - 4200 m.
16:00	Pulled back to 4190 m.
17:00	Reversed out excess cement.
18:00	Pulled back to 4170 m and circulated to clean the pipe.
19:00	Pulled back to 3715 m.
19:30	Positioned the string and closed a ram.
23:59	Applied approximately 15 bar on cement plug. Waited for cement to cure.

Daily report no: 137 Date : 07-may-1997
Midnight depth : 4180 m MD Estimated PP: 1.81 sg Mudweight: 1.95 sg

Stop time	Description
10:00	Applied 20 bar on the annulus and waited for the cement to cure.
11:00	Ran in the hole to 4180 m.
14:00	Circulated bottom up and flow checked after 50% and 75 % of bottom up to the BOP as per HPHT procedures. Batch mixed the cement.
15:00	Spotted 1.95 sg silica cement plug #4 from 4180 m to 3950 m.
16:00	Pulled the string back to 3940 m.
17:00	Reverse circulated one drillstring volume.
17:30	Pulled back to 3930 m and circulated while batch mixing cement.
18:30	Spotted 1.95 sg silica cement plug #5 from 3930 m to 3720 m
19:30	Pulled back to 3720 m
20:30	Reversed circulated one drillstring volume.
21:30	Pulled back to 3710 m and circulated while batch mixing cement.
22:30	Spotted 1.95 sg silica cement plug #6 from 3710 m to 3550 m.
23:00	Pulled the string back to 3500 m.

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Daily report no: 137 Date : 07-may-1997
Midnight depth : 4180 m MD Estimated PP: 1.81 sg Mudweight: 1.95 sg

Stop time	Description
23:30	Attempted to reverse circulated, but the string was plugged off. Max applied pressure on cement plug was 55 bar. Attempted to circulate down the drillstring with 210 bar.
23:59	Pulled the string back to 3350 m. Attempted to circulate by applying 285 bar on the drillstring.

Daily report no: 138 Date : 08-may-1997
Midnight depth : 3573 m MD Estimated PP: sg Mudweight: 1.95 sg

Stop time	Description
01:00	Waited for the cement to cure.
01:30	Installed drilling stand with kelly cock.
15:00	Applied 40 bar on the annulus and waited for the cement to cure.
16:00	Ran in the hole and tagged the cement at 3573 m.
19:00	Pulled out of the hole to 1400 m.
20:00	Slipped and cutted the drilling line.
20:30	Lubricated the rig.
21:30	Repaired a leak in hydraulic system for the racking arm.
23:00	Continued pulling out of the hole. A mixture of spacer and green cement was found from 476 m. Solid cement was found from 436 m.
23:59	Continued pulling out of the hole. Laid down cement contaminated 5" DP and 3 1/2" DP.

Daily report no: 139 Date : 09-may-1997
Midnight depth : 3000 m MD Estimated PP: sg Mudweight: 1.75 sg

Stop time	Description
02:00	Continued pulling out of the hole and laid down all the 3 1/2" DP. Pressure tested the cement plug to 170 bar as the drillstring was above the BOP.
02:30	Made up the 9 5/8" EZ-SV type B mechanical plug.
07:00	Ran in the hole with mechanical plug to 3000 m.
07:30	Set the mechanical plug at 3000 m.
08:00	Pressure tested the mechanical plug to 350 bar with 1.95 sg mud in the hole.
10:00	Displaced the riser to 1.75 sg OBM.
13:00	Reduced the mudweight in active pits from 1.95 sg to 1.75 sg.
15:00	Displaced the hole belov the BOP to 1.75 sg OBM.
16:30	Pulled out of the hole to 1400 m.
21:30	Laid down 5" DP
22:00	Made up the wearbushing retrieving tool.
23:59	Picked up 5" DP 25.6# U-170 heavy duty string and ran in the hole with wear bushing retrieving tool.

Daily report no: 140 Date : 10-may-1997
Midnight depth : m MD Estimated PP: sg Mudweight: 1.75 sg

Stop time	Description
03:00	Retrieved the wearbushing.
04:00	Ran in the hole with seal assembly pulling tool. Closed the annular and pulled the seal assembly loose. The pressure on the kill line side increased with 14 bar.
06:00	Observed the well for 15 min. Circulated up choke line and through the poor boy degasser. No gas recorded at shaker box. Flow checked.
08:00	Lined up to bypass the poorboy. Circulated up choke line to reduce gas readings. Max gas readings was 11.1%. Open the annular and flow checked.
09:30	Circulated up the riser. Max gas readings was 17.9 %.
10:00	Worked on the trottle for the top drive.
11:30	Pulled out of the hole with the seal assembly.
14:00	Made up the spear for retrieving the 10 3/4" tie-back.
14:30	Repaired the trottle on the top drive.
15:30	Continued running in the hole with the 10 3/4" spear.
16:30	Attempted to engage the 10 3/4" spear to the casing.
17:30	Pulled out of the hole. Inspected the spear and found no defaults.
18:30	Removed the spear stop plate and reran the 10 3/4" spear .
20:30	Engaged the spear to the 10 3/4" tie back approx 14 m below the casing hanger. Attempted to pull the tieback loose with 100 ton overpull. (50 ton stretch and 100 bar pressure)
22:00	Released and pulled the spear.
22:30	Lubricated the rig.
23:59	Made up the 10 3/4" casing cutting assembly.

Daily report no: 141 Date : 11-may-1997
Midnight depth : 3000 m MD Estimated PP: sg Mudweight: 1.76 sg

Stop time	Description
03:30	Ran in the hole with the 10 3/4" casing cutter.
04:00	Recorded drillstring paramters.
04:30	Postioned the annular swivel and closed the annular. Cut the 10 3/4" casing at 2946 m.
05:30	Flow checked.
09:30	Pulled out of the hole with the casing cutting equipment.
11:00	Ran in the hole and engaged the 10 3/4" casing spear at 422 m. Pulled the casing free with no overpull.
16:30	Circulated to monitor the gas level. Max gas reading was 17.8%.
19:00	Pulled the casing hanger to surface.
19:30	Installed the flush mounted spider. Released and racked the casing spear.
22:00	Rigged up the 500 ton spider elevator and heavy duty casing tongs. Laid down the 10 3/4" casing hanger.
23:59	Retrieved 10 3/4" casing.

Daily report no: 142 Date : 12-may-1997
Midnight depth : m MD Estimated PP: sg Mudweight: 1.76 sg

Stop time	Description
03:30	Continued pulling out of the hole with the 10 3/4" casing.
04:00	Changed out the 20" casing tong due to malfunction.
23:59	Continued retrieving the 10 3/4" casing.

Daily report no: 143 Date : 13-may-1997
Midnight depth : m MD Estimated PP: sg Mudweight: 1.76 sg

Stop time	Description
01:00	Retrieved the 10 3/4" casing.
02:30	Rigged down the 10 3/4" casing handling equipment.
05:30	Made up diverter sub and 26 joints of 3 1/2" drill pipe. Ran in the hole to 700 m.
06:00	Slipped the drill line.
08:30	Continued to run in the hole and tagged the bridge plug at 3003 m. Pulled out to 2992 m.
09:30	Circulated for equal mud weight in and out.
10:00	Hooked up the cement line and tested the surface lines to 200 bar.
11:00	Set a balanced cement plug from 3003 m to 2800 m.
12:30	Pulled out of the hole to 2500 m.
13:00	Reverse circulated out excess cement.
14:30	Circulated the long way. Max gas: 15.2 %.
16:00	Pulled out of the hole to 770 m.
19:00	Continued to pull out of the hole and laid down 5" drill pipe in singles.
23:59	Laid down excess 6 1/2" drill collar, 5" HWDP and hang off tool from the derrick.

Daily report no: 144 Date : 14-may-1997
Midnight depth : m MD Estimated PP: sg Mudweight: 1.40 sg

Stop time	Description
00:30	Laid down excess 5" drill pipe.
03:00	Made up 13 3/8" EZSV packer and ran in the hole to 1325 m.
04:00	Set the EZSV packer at 1325 m and tested same to 100 bar.
07:00	Circulated while mixing new 1.40 sg water based mud.
09:00	Displaced the hole to 1.40 sg water based mud, displaced the kill -, choke - and booster lines to same.
13:30	Displaced the surface lines to water based mud and cleaned the shaker pits.
15:00	Pulled out of the hole.
16:00	Laid down the 10 3/4" spear assembly from the derrick.
21:30	Made up the 13 3/8" casing cutter and ran in the hole to 3000 m. Engaged the spear and closed the upper annular. Attempted to rotate the string.
23:00	Pulled out of the hole and changed pup joint due to wrong space out on annular swivel. Ran in the hole to 1300 m.
23:30	Engaged the spear and closed the annular. Cut the 13 3/8" casing at 1300 m. Max gas: 19 %.
23:59	Closed in the well. Got 12 bar on the choke.

Daily report no: 145   Date : 15-may-1997
Midnight depth : m MD Estimated PP: sg Mudweight: 1.40 sg

Stop time	Description
01:00	Bled of the pressure on the choke and circulated down the string and up the choke line to reduce gas readings. Flow checked over the choke.
01:30	Opened the annular and flow checked.
06:30	Circulated the well to reduce the gas readings. Max gas: 30 %.
08:00	Closed the upper annular and circulated up the choke line and over the poorboy degasser.
10:30	Opened the upper annular and circulated. Max gas: 27 %.
14:00	Released the spear and pulled out of the hole with the 13 3/8" casing cutting assembly.
14:30	Made up the retrieving tool for the 13 3/8" seal assembly.
15:00	Ran in the hole. Closed the lower annular and retrieved the 13 3/8" seal assembly with 20 ton overpull. Pressure built up to 52 bar.
21:00	Circulated down the string and up the choke line to reduce the gas readings. Bled of the gas.
21:30	Circulated down the string and up the kill line.
22:00	Shut in the well. Flow checked. The well was flowing. Shut in the well.
23:59	Circulated down the string and up the choke line.

Daily report no: 146   Date : 16-may-1997
Midnight depth : m MD Estimated PP: sg Mudweight: 1.40 sg

Stop time	Description
02:00	Circulated down the string and up the choke line to reduce the gas readings.
02:30	Shut in the well. Flow checked. The well was flowing. Shut in the well.
09:00	Continued to circulate down the string and up the choke line.
10:30	Circulated,shut in the well and bled off on the choke in steps.
12:30	Circulated down the string and up the choke line.
13:00	Shut in the well and installed the diverter element. Bled off the kill - and choke pressure from 6 bar to 0 bar.
16:00	Closed the upper annular and opened the lower annular. Pulled the string to below the upper annular and closed the shear ram. Circulated the riser. Opened the upper annular and circulated on booster line and down the string. Max gas: 27 %.
17:30	Pulled out of the hole with the 13 3/8" seal assembly.
18:30	Picked up and laid down the 13 3/8" spear and bumper subs.
21:00	Made up new 13 3/8" spear assembly with circulating packer and ran in the hole and tagged the shear ram. Closed the upper annular, opened the shear ram and stripped into the wellhead.
22:30	Observed leak in the wash pipe. Stripped out and closed the shear ram. Opened the upper annular and flow checked. Circulated the riser while replacing the wash pipe. Ran in and closed the upper annular and opened the shear ram.
23:59	Stripped into the wellhead and engaged the spear. Circulated the 13 3/8" x 20" annular volume over the choke and poorboy degasser. Max gas: 28.4 %.

Daily report no: 146 Date : 16-may-1997
Midnight depth : m MD Estimated PP: sg Mudweight: 1.40 sg

Stop time	Description

Daily report no: 147 Date : 17-may-1997
Midnight depth : m MD Estimated PP: sg Mudweight: 1.40 sg

Stop time	Description
05:00	Circulated the 13 3/8" x 20" annulus over the choke and poorboy degasser to reduce the gas readings. Max gas: 23 %.
05:30	Flow checked the well. Well static.
06:00	Opened up the upper annular and flow checked. Well static.
09:30	Circulated the casing and up the riser to reduce the gas readings. Max gas: 29 %.
10:00	Flow checked the well. Well static.
12:00	Pulled the 13 3/8" casing loose with 35 ton overpull. Pulled out of the hole with the landing string.
13:00	Rigged up the casing handling equipment and released the 13 3/8" spear.
20:30	Pulled out of the hole with the 13 3/8" casing.
21:00	Rigged down the casing handling equipment.
23:30	Ran in the hole with diverter sub and cement stinger. Tagged the 13 3/8" bridge plug at 1325 m.
23:59	Circulated to reduce gas readings and for equal mud weight in and out.

Daily report no: 148 Date : 18-may-1997
Midnight depth : m MD Estimated PP: sg Mudweight: 1.40 sg

Stop time	Description
04:00	Circulated to reduce gas readings. Max gas: 26 %. Gas reading when start cement job: 6.0 %.
04:30	Hooked up the cement line and tested the surface lines to 200 bar.
06:30	Set a balanced gas tight cement plug from 1325 m to 1125 m.
07:30	Pulled out to 1090 m and hooked up the surface hose.
09:00	Reverse circulated out excess cement. Circulated the long way.
10:00	Pulled out of the hole to 260 m. Closed the shear ram and applied 20 bar on the cement.
11:30	Pulled out of the hole and laid down the 3 1/2" cement stinger.
12:30	Picked up and laid down the 13 3/8" spear assembly and bumper sub.
19:30	Laid down excess 5" drill pipe from the derrick while waiting on the cement.
22:30	Made up 17 1/2" bit and ran in the hole to the BOP. Bled off the pressure below the shear ram. Opened up the shear ram and flow checked. Ran in the hole and tagged the cement at 1137 m with 10 ton. Dressed off the cement to 1142 m.
23:59	Circulated the bottoms up. Max gas: 43.6 %.

Daily report no: 149 Date : 19-may-1997
Midnight depth : m MD Estimated PP: sg Mudweight: 1.40 sg

Stop time	Description
01:00	Circulated and conditioned the mud. Gas readings when bottoms up: 2.5 %.
02:00	Rigged up and pressure tested the cement plug to 100 bar.
02:30	Racked one stand back in the derrick.
03:30	Cut and slipped the drill line.
05:30	Pulled out of the hole and laid down the 17 1/2" bit.
07:00	Ran in the hole with open ended drill pipe to 1135 m.
12:00	Circulated to reduce gas readings. Max gas: 38.5 %.
13:00	Pulled out of the hole.
15:30	Made up 17 1/2" bit and ran in the hole and washed the inflatable packer setting area.
17:00	Pulled out of the hole.
22:00	Made up and ran in the hole to 1128 m with the inflatable packer.
22:30	Set the inflatable packer at 1128 m.
23:59	Circulated at max rate. Shut the pump off for 30 minutes. Continued to circulate the bottoms up. Max gas: 44.2 %.

Daily report no: 150 Date : 20-may-1997
Midnight depth : m MD Estimated PP: sg Mudweight: 1.40 sg

Stop time	Description
05:00	Circulated the bottoms up. Gas from bottoms up: 32 %. Shut the pumps off for 1 hrs. Circulated the bottoms up. Max gas: 9.1 % from 875 m. Gas from bottoms up: 5.0 %.
05:30	Hooked up the cement line and pressure tested the surface lines to 200 bar.
07:00	Set a balanced cement plug from 1128 m to 970 m.
08:00	Pulled out of the hole to 922 m. Reverse circulated out excess cement. Circulated the long way.
18:30	Closed the BOP and applied 30 bar on the cement. Waited on the cement to set up.
19:00	Opened the BOP and ran in the hole and tagged the cement at 979 m.
20:00	Circulated the bottoms up.
22:30	Shut the pumps off for 60 minutes. Circulated the bottoms up.
23:00	Hooked up the cement line and pressure tested the surface lines to 200 bar.
23:30	Set a balanced cement plug from 979 m to 914 m.
23:59	Pulled out to 831 m

Daily report no: 151 Date : 21-may-1997
Midnight depth : m MD Estimated PP: sg Mudweight: 1.40 sg

Stop time	Description
01:00	Reverse circulated out excess cement. Circulated the long way.
03:00	Pulled out to 405 m and laid down 5" drill pipe singles.
04:00	Displaced the riser, kill-, choke- and booster line to seawater.
04:30	Pulled out of the hole.
08:00	Laid down excess drill pipe from the derrick.

Daily report no: 151 Date : 21-may-1997
Midnight depth : m MD Estimated PP: sg Mudweight: 1.40 sg

Stop time	Description
11:00	Made up BOP wash tool and ran in to the wellhead. Operated and wash the BOP. Pulled out of the hole.
12:00	Laid down the bit, bit sub and cutter from the derrick.
17:00	Made up the 20" / 30" cutting assembly and tested the motor. Changed the bumper sub.
21:00	Rigged up to pull the BOP. Laid down the diverter. Pulled the BOP.
22:30	Nippled down on cellar deck.
23:59	Pulled out with the riser and BOP.

Daily report no: 152 Date : 22-may-1997
Midnight depth : m MD Estimated PP: sg Mudweight: 1.40 sg

Stop time	Description
11:00	Pulled the riser and the BOP.
12:00	Rigged down on cellar deck.
17:00	Attempted to split the lower marine riser package.
18:30	Secured the BOP and laid down the riser.
22:30	Modified the casing cutting assembly and ran into the wellhead. Stabbed into the wellhead and engaged the spear.
23:59	Cut the 20"/30" casing.

Daily report no: 153 Date : 23-may-1997
Midnight depth : m MD Estimated PP: sg Mudweight: 1.40 sg

Stop time	Description
02:00	Cut the 20"/30" casing.
03:00	Pulled out with the 18 5/8"/30" wellhead. Landed the wellhead/guiodebase on cellar deck.
05:30	Attempted to release the 30"/18 5/8" wellhead from the guide base.
06:00	Disconnected the wellhead and removed the 30" lock ring. Pulled the wellhead through the rotary.
07:00	Released the spear and laid down the 30"/18 5/8" wellhead.
10:00	Made up 20" spear assembly and ran in to 350 m.
12:00	Positioned the rig.
12:30	Stabbed into the 20" casing. Pulled the casing with 95 ton overpull.
15:30	Pulled out with the casing and laid down 5" drillpipe singles.
17:00	Rigged up and laid down 5 x 20" casing.
20:00	Laid down the spear assembly, 6 x 8" drill ciollars and tubuløars from the derrick.
23:00	Backloaded equipment on the supply boat.
23:59	Deballasted the rig.

Norsk Hydro

DAILY REPORT ON WELL 35/4-1

Daily report no: 154 Date : 24-may-1997
Midnight depth : m MD Estimated PP: sg Mudweight: 1.40 sg

Stop time	Description
05:00	Deballasted the rig.
23:59	Anchor handling.

Daily report no: 155 Date : 25-may-1997
Midnight depth : m MD Estimated PP: sg Mudweight: 1.40 sg

Stop time	Description
04:00	Anchor handling.
23:59	No activity on well 34/4-1.

Norsk Hydro

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

Well : 35/4-1   Rig: TREASURE SAGA   Depth: 4936.0 m MD
Main operation: ALL   Sequence: ALL

Section : 36"

Operations		Hours	%	Hours	%	Running total
DRILLING						
BHA HANDLING/TESTING	:	0.5	0.01			
TRIPPING IN OPEN HOLE	:	1.5	0.04			
DRILLING	:	5.5	0.15			
OTHER	:	0.5	0.01			
CIRC. AND COND. MUD/HOLE	:	1.0	0.03			
WIPER TRIP	:	1.0	0.03			
CASING HANDLING/TESTING	:	6.0	0.16			
RUNNING CASING IN OPEN HOLE	:	3.5	0.09			
PRIMARY CEMENTING	:	2.0	0.05			
TRIPPING FOR CEMENT JOB	:	0.5	0.01			
Sum......................................				22.0	0.60	22.0
DOWNTIME DRILLING						
EQUIPMENT FAILURE AND REPAIR	:	7.0	0.19			
WAITING	:	7.0	0.19			
Sum......................................				14.0	0.38	36.0

Section : 26"

Operations		Hours	%	Hours	%	Running total
DRILLING						
BHA HANDLING/TESTING	:	2.5	0.07			
TRIPPING IN CASED HOLE	:	0.5	0.01			
TRIPPING IN OPEN HOLE	:	4.0	0.11			
DRILLING	:	73.5	1.99			
CIRC. AND COND. MUD/HOLE	:	14.5	0.39			
WIPER TRIP	:	7.5	0.20			
CASING HANDLING/TESTING	:	11.0	0.30			
RUNNING CASING IN CASED HOLE	:	6.0	0.16			
RUNNING CASING IN OPEN HOLE	:	12.5	0.34			
PRIMARY CEMENTING	:	21.0	0.57			
DRILLING OUT CEMENT PLUG	:	1.5	0.04			
BOP HANDLING	:	5.0	0.14			
BOP RUNNING/RETRIEVING	:	22.0	0.60			
BOP TESTING	:	1.5	0.04			
WELLHEAD EQUIPMENT HANDLING	:	3.0	0.08			
SLIP AND CUT DRILLING LINE	:	0.5	0.01			
Sum......................................				186.5	5.05	222.5
DOWNTIME DRILLING						
EQUIPMENT FAILURE AND REPAIR	:	9.5	0.26			
WAITING	:	5.0	0.14			
OTHER	:	3.0	0.08			
Sum......................................				17.5	0.47	240.0

Norsk Hydro

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

Well : 35/4-1 Rig: TREASURE SAGA Depth: 4936.0 m MD
Main operation: ALL Sequence: ALL

Section : 17 1/2"

Operations	Hours	%	Hours	%	Running total
DRILLING					
BHA HANDLING/TESTING :	8.0	0.22			
MWD HANDLING/TESTING/SURVEYING:	0.5	0.01			
EQUIPMENT TEST :	6.5	0.18			
TRIPPING IN CASED HOLE :	11.0	0.30			
TRIPPING IN OPEN HOLE :	9.5	0.26			
DRILLING :	125.5	3.40			
WELLHEAD EQUIPMENT INSTALLATIO:	6.0	0.16			
REAMING :	11.5	0.31			
CIRC. AND COND. MUD/HOLE :	15.0	0.41			
WIPER TRIP :	31.0	0.84			
CASING HANDLING/TESTING :	16.0	0.43			
RUNNING CASING IN CASED HOLE :	12.0	0.32			
RUNNING CASING IN OPEN HOLE :	13.0	0.35			
DRILLING OUT OF CASING :	3.0	0.08			
PRIMARY CEMENTING :	10.0	0.27			
FORMATION STRENGTH TESTING :	2.0	0.05			
BOP TESTING :	3.0	0.08			
WELLHEAD EQUIPMENT HANDLING :	4.5	0.12			
SLIP AND CUT DRILLING LINE :	1.5	0.04			
Sum......................................			289.5	7.84	529.5
FORMATION EVALUATION LOGGING					
LOGGING EQUIPMENT HANDLING/TES:	7.0	0.19			
LOGGING :	18.0	0.49			
SIDEWALL CORING :	4.5	0.12			
VERTICAL SEISMIC :	13.5	0.37			
Sum......................................			43.0	1.16	572.5
DOWNTIME DRILLING					
EQUIPMENT FAILURE AND REPAIR :	79.0	2.14			
Sum......................................			79.0	2.14	651.5
DOWNTIME FORM. EVAL. LOGGING					
EQUIPMENT FAILURE AND REPAIR :	17.0	0.46			
WAITING :	10.5	0.28			
Sum......................................			27.5	0.74	679.0

Norsk Hydro

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

Well : 35/4-1   Rig: TREASURE SAGA   Depth: 4936.0 m MD
Main operation: ALL   Sequence: ALL

Section : 12 1/4"

Operations	Hours	%	Hours	%	Running total
DRILLING					
BHA HANDLING/TESTING :	14.5	0.39			
MWD HANDLING/TESTING/SURVEYING:	4.5	0.12			
TRIPPING IN CASED HOLE :	80.5	2.18			
TRIPPING IN OPEN HOLE :	8.5	0.23			
DRILLING :	217.5	5.89			
OTHER :	3.5	0.09			
WELLHEAD EQUIPMENT INSTALLATIO:	8.0	0.22			
CIRC. AND COND. MUD/HOLE :	59.0	1.60			
WIPER TRIP :	15.0	0.41			
CASING HANDLING/TESTING :	14.5	0.39			
RUNNING CASING IN CASED HOLE :	69.5	1.88			
RUNNING CASING IN OPEN HOLE :	3.0	0.08			
DRILLING OUT OF CASING :	8.5	0.23			
PRIMARY CEMENTING :	13.0	0.35			
TRIPPING FOR CEMENT JOB :	1.0	0.03			
FORMATION STRENGTH TESTING :	5.0	0.14			
SLIP AND CUT DRILLING LINE :	2.5	0.07			
Sum...			528.0	14.30	1207.0
FORMATION EVALUATION LOGGING					
LOGGING :	4.5	0.12			
LOGGING EQUIPMENT HANDLING/TES:	10.5	0.28			
SIDEWALL CORING :	4.0	0.11			
VERTICAL SEISMIC :	10.5	0.28			
Sum...			29.5	0.80	1236.5
DOWNTIME DRILLING					
PRESSURE DETECTION :	15.5	0.42			
EQUIPMENT FAILURE AND REPAIR :	72.0	1.95			
WAITING :	319.0	8.64			
WELL CONTROL :	64.5	1.75			
Sum...			471.0	12.76	1707.5
DOWNTIME FORM. EVAL. LOGGING					
EQUIPMENT FAILURE AND REPAIR :	2.5	0.07			
Sum...			2.5	0.07	1710.0

Norsk Hydro

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

Well : 35/4-1   Rig: TREASURE SAGA   Depth: 4936.0 m MD
Main operation: ALL   Sequence: ALL

Section : 8 1/2"

Operations	Hours	%	Hours	%	Running total
DRILLING					
BHA HANDLING/TESTING :	17.0	0.46			
MWD HANDLING/TESTING/SURVEYING:	5.5	0.15			
EQUIPMENT TEST :	8.0	0.22			
TRIPPING IN CASED HOLE :	127.0	3.44			
TRIPPING IN OPEN HOLE :	13.0	0.35			
DRILLING :	245.0	6.63			
OTHER :	1.5	0.04			
REAMING :	3.5	0.09			
CIRC. AND COND. MUD/HOLE :	21.0	0.57			
TRIPPING/CIRC. FOR PRESSURE DE:	89.0	2.41			
FORMATION STRENGTH TESTING :	3.0	0.08			
DRILLING OUT CEMENT PLUG :	10.5	0.28			
BOP HANDLING :	90.0	2.44			
BOP RUNNING/RETRIEVING :	30.0	0.81			
BOP TESTING :	35.0	0.95			
WELLHEAD EQUIPMENT HANDLING :	6.0	0.16			
SET MECHANICAL PLUG :	1.5	0.04			
SLIP AND CUT DRILLING LINE :	5.0	0.14			
Sum.......................................			711.5	19.27	2421.5
FORMATION EVALUATION MWD					
MWD HANDLING/TESTING/SURVEYING:	4.5	0.12			
LOGGING WITH MWD :	12.0	0.32			
Sum.......................................			16.5	0.45	2438.0
FORMATION EVALUATION LOGGING					
LOGGING EQUIPMENT HANDLING/TES:	23.5	0.64			
LOGGING :	26.0	0.70			
FORMATION TESTER :	38.5	1.04			
SIDEWALL CORING :	15.5	0.42			
VERTICAL SEISMIC :	51.5	1.39			
Sum.......................................			155.0	4.20	2593.0
FORMATION EVALUATION CORING					
BHA HANDLING/TESTING :	2.0	0.05			
TRIPPING IN CASED HOLE :	99.0	2.68			
CORING EQUIPMENT/CORE HANDLING:	28.5	0.77			
TRIPPING IN OPEN HOLE :	29.0	0.79			
OTHER :	1.5	0.04			
CORING :	74.0	2.00			
CIRC. AND COND. MUD/HOLE :	90.5	2.45			
SLIP AND CUT DRILLING LINE :	4.0	0.11			
Sum.......................................			328.5	8.90	2921.5
DOWNTIME DRILLING					
EQUIPMENT FAILURE AND REPAIR :	177.0	4.79			
WAITING :	47.0	1.27			
Sum.......................................			224.0	6.07	3145.5
DOWNTIME FORM. EVAL. MWD					
EQUIPMENT FAILURE AND REPAIR :	6.0	0.16			
Sum.......................................			6.0	0.16	3151.5

Norsk Hydro

TIME DISTRIBUTION

Well : 35/4-1 Rig: TREASURE SAGA Depth: 4936.0 m MD
Main operation: ALL Sequence: ALL

Section : 8 1/2"

Operations	Hours	%	Hours	%	Running total
DOWNTIME FORM. EVAL. LOGGING					
EQUIPMENT FAILURE AND REPAIR :	5.0	0.14			
Sum			5.0	0.14	3156.5
DOWNTIME FORM. EVAL. CORING					
EQUIPMENT FAILURE AND REPAIR :	27.0	0.73			
Sum			27.0	0.73	3183.5
DOWNTIME PLUG AND ABANDONMENT					
OTHER :	1.5	0.04			
Sum			1.5	0.04	3185.0

Section : 0.0

Operations	Hours	%	Hours	%	Running total
MOBILIZATION					
MOVING :	13.5	0.37			
MOORING; RUNNING ANCHORS :	20.0	0.54			
MOORING; PULLING ANCHORS :	32.0	0.87			
Sum			65.5	1.77	3250.5
DRILLING					
BHA HANDLING/TESTING :	7.5	0.20			
MWD HANDLING/TESTING/SURVEYING:	0.5	0.01			
TRIPPING IN CASED HOLE :	0.5	0.01			
TRIPPING IN OPEN HOLE :	1.5	0.04			
DRILLING :	6.5	0.18			
CIRC. AND COND. MUD/HOLE :	1.0	0.03			
Sum			17.5	0.47	3268.0
PLUG AND ABANDONMENT					
TRIPPING IN CASED HOLE :	67.0	1.81			
TRIPPING IN OPEN HOLE :	1.0	0.03			
WELLHEAD EQUIPMENT INSTALLATIO:	6.0	0.16			
CIRC. AND COND. MUD/HOLE :	39.5	1.07			
CASING HANDLING/TESTING :	5.5	0.15			
TRIPPING FOR CEMENT JOB :	23.0	0.62			
BOP HANDLING :	8.0	0.22			
BOP RUNNING/RETRIEVING :	12.5	0.34			
WELLHEAD EQUIPMENT HANDLING :	4.0	0.11			
SET CEMENT PLUG :	39.7	1.07			
SET MECHANICAL PLUG :	2.0	0.05			
TRIPPING OF CASING CUTTING EQU:	33.0	0.89			
CUT CASING/WELLHEAD :	8.0	0.22			
CASING RETRIEVING :	42.0	1.14			
SLIP AND CUT DRILLING LINE :	2.5	0.07			
Sum			293.6	7.95	3561.6
DOWNTIME DRILLING					
EQUIPMENT FAILURE AND REPAIR :	4.5	0.12			
WAITING :	13.5	0.37			
Sum			18.0	0.49	3579.6

Norsk Hydro

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

Well : 35/4-1   Rig: TREASURE SAGA   Depth: 4936.0 m MD
Main operation: ALL   Sequence: ALL

Section : 0.0

Operations		Hours	%	Hours	%	Running total
DOWNTIME PLUG AND ABANDONMENT						
EQUIPMENT FAILURE AND REPAIR	:	11.0	0.30			
WAITING	:	10.5	0.28			
CEMENTING	:	35.0	0.95			
OTHER	:	55.5	1.50			
Sum......................................				112.0	3.03	3691.6
Reported time (100.0 % of well total 3692.6 hours) :						3691.6

Norsk Hydro

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

Well : 35/4-1 Reference Point : RKB , 26.0 m above MSL
Waterdepth: 378.0 m Vertical to 402.9 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: 6822412.0 m, East: 516075.7 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
403.0	0.00	0.00	MWD		403.0	0.00	0.00	0.0	0.00	0.00	0.00
404.0	0.10	287.40	MWD		404.0	0.00	-0.00	0.0	3.00	3.00	******
429.0	0.40	50.90	MWD		429.0	0.06	0.05	0.1	0.56	0.36	148.20
456.0	0.30	213.10	MWD		456.0	0.06	0.08	0.1	0.77	-0.11	180.22
497.0	0.30	99.50	MWD		497.0	-0.05	0.13	0.1	0.37	0.00	-83.12
527.0	0.10	272.20	MWD		527.0	-0.06	0.18	0.2	0.40	-0.20	172.70
555.0	0.20	182.10	MWD		555.0	-0.11	0.15	0.2	0.24	0.11	-96.54
584.0	0.60	97.60	MWD		584.0	-0.18	0.30	0.3	0.64	0.41	-87.41
612.0	0.40	81.40	MWD		612.0	-0.18	0.54	0.6	0.26	-0.21	-17.36
644.0	0.30	81.10	MWD		644.0	-0.15	0.74	0.8	0.09	-0.09	-0.28
674.0	0.30	104.10	MWD		674.0	-0.16	0.89	0.9	0.12	0.00	23.00
703.0	0.40	83.60	MWD		703.0	-0.17	1.06	1.1	0.16	0.10	-21.21
733.0	0.20	112.80	MWD		733.0	-0.17	1.22	1.2	0.25	-0.20	29.20
761.0	0.40	101.60	MWD		761.0	-0.21	1.36	1.4	0.22	0.21	-12.00
792.0	0.60	91.80	MWD		792.0	-0.24	1.63	1.6	0.21	0.19	-9.48
821.0	0.70	67.00	MWD		821.0	-0.18	1.94	1.9	0.31	0.10	-25.66
851.0	0.30	76.30	MWD		851.0	-0.08	2.19	2.2	0.41	-0.40	9.30
880.0	0.60	69.90	MWD		880.0	-0.01	2.40	2.4	0.31	0.31	-6.62
908.0	0.80	78.10	MWD		908.0	0.08	2.73	2.7	0.24	0.21	8.79
938.0	0.70	67.40	MWD		938.0	0.19	3.11	3.1	0.17	-0.10	-10.70
966.0	0.80	79.70	MWD		966.0	0.29	3.46	3.5	0.20	0.11	13.18
995.0	1.20	71.10	MWD		995.0	0.42	3.94	4.0	0.44	0.41	-8.90
1024.0	1.10	71.00	MWD		1024.0	0.61	4.49	4.5	0.10	-0.10	-0.10
1053.0	1.50	76.50	MWD		1053.0	0.79	5.12	5.2	0.43	0.41	5.69
1083.0	1.10	68.40	MWD		1083.0	0.99	5.77	5.9	0.44	-0.40	-8.10
1112.0	0.90	58.60	MWD		1112.0	1.21	6.23	6.3	0.27	-0.21	-10.14
1141.0	1.00	55.70	MWD		1140.9	1.47	6.63	6.8	0.11	0.10	-3.00
1171.0	0.90	58.40	MWD		1170.9	1.74	7.05	7.3	0.11	-0.10	2.70
1200.0	1.10	62.00	MWD		1199.9	1.99	7.49	7.7	0.22	0.21	3.72
1229.0	1.10	48.30	MWD		1228.9	2.31	7.94	8.3	0.27	0.00	-14.17
1258.0	0.90	39.00	MWD		1257.9	2.67	8.29	8.7	0.27	-0.21	-9.62
1287.0	0.90	312.40	MWD		1286.9	3.00	8.27	8.8	1.28	0.00	-89.59
1318.0	0.60	292.30	MWD		1317.9	3.23	7.94	8.6	0.38	-0.29	-19.45
1348.0	0.30	89.50	MWD		1347.9	3.29	7.87	8.5	0.88	-0.30	157.20
1355.0	0.40	34.80	MWD		1354.9	3.31	7.90	8.6	1.43	0.43	-234.4
1382.0	0.10	16.30	MWD		1381.9	3.41	7.96	8.7	0.34	-0.33	-20.56
1471.0	0.40	167.60	MWD		1470.9	3.18	8.05	8.7	0.17	0.10	51.00
1559.0	0.00	164.50	MWD		1558.9	2.88	8.12	8.6	0.14	-0.14	-1.06
1647.0	0.50	184.50	MWD		1646.9	2.50	8.09	8.5	0.17	0.17	6.82
1735.0	0.80	30.30	MWD		1734.9	2.65	8.37	8.8	0.43	0.10	-52.57
1821.0	1.40	89.00	MWD		1820.9	3.18	9.72	10.2	0.42	0.21	20.48

Norsk Hydro

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

Well : 35/4-1
Waterdepth: 378.0 m
UTM zone : 31 Central Meredian: 3' E
Template Centre Coordinates, UTM: North: 7128620.0 m, East: 412890.0 m
Wellhead Coordinates, UTM: North: 6822412.0 m, East: 516075.7 m
Official surveys : Y Track :
Coordinates are measured from the wellhead centre.

Reference Point : RKB , 26.0 m above MSL
Vertical to 402.9 m
Horizontal Datum: ED50

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
1852.0	1.60	137.00	MWD		1851.9	2.87	10.40	10.8	1.19	0.19	46.45
1879.0	1.00	119.60	MWD		1878.9	2.48	10.86	11.1	0.79	-0.67	-19.33
1909.0	1.10	123.30	MWD		1908.9	2.19	11.33	11.5	0.12	0.10	3.70
1939.0	0.70	133.70	MWD		1938.9	1.91	11.70	11.9	0.43	-0.40	10.40
1969.0	0.40	130.90	MWD		1968.9	1.71	11.91	12.0	0.30	-0.30	-2.80
98.0	0.50	125.60	MWD		1997.9	1.57	12.09	12.2	0.11	0.10	-5.48
2028.0	0.10	85.20	MWD		2027.9	1.50	12.22	12.3	0.43	-0.40	-40.40
2086.0	0.70	29.90	MWD		2085.9	1.81	12.45	12.6	0.34	0.31	-28.60
2115.0	0.30	97.90	MWD		2114.9	1.95	12.61	12.8	0.67	-0.41	70.34
2145.0	0.10	295.20	MWD		2144.9	1.95	12.67	12.8	0.40	-0.20	-162.7
2175.0	0.10	186.40	MWD		2174.9	1.94	12.64	12.8	0.16	0.00	-108.8
2206.0	0.20	221.40	MWD		2205.9	1.87	12.60	12.7	0.13	0.10	33.87
2263.0	0.40	250.80	MWD		2262.9	1.73	12.35	12.5	0.13	0.11	15.47
2322.0	0.80	310.40	MWD		2321.9	1.93	11.84	12.0	0.35	0.20	30.31
2379.0	0.60	318.00	MWD		2378.9	2.41	11.34	11.6	0.12	-0.11	4.00
2438.0	0.90	301.10	MWD		2437.9	2.88	10.73	11.1	0.19	0.15	-8.59
2467.0	1.00	300.50	MWD		2466.9	3.12	10.32	10.8	0.10	0.10	-0.62
2526.0	0.90	290.00	MWD		2525.9	3.54	9.44	10.1	0.10	-0.05	-5.34
2584.0	1.10	294.70	MWD		2583.8	3.93	8.51	9.4	0.11	0.10	2.43
2643.0	1.10	307.30	MWD		2642.8	4.51	7.54	8.8	0.12	0.00	6.41
2703.0	1.00	330.40	MWD		2702.8	5.32	6.83	8.7	0.22	-0.05	11.55
2761.0	0.80	7.00	MWD		2760.8	6.16	6.62	9.0	0.31	-0.10	18.93
849.0	0.60	342.80	MWD		2848.8	7.21	6.56	9.7	0.12	-0.07	-8.25
37.0	0.60	330.90	MWD		2936.8	8.05	6.20	10.2	0.04	0.00	-4.06
3025.0	0.70	357.10	MWD		3024.8	8.99	5.95	10.8	0.11	0.03	8.93
3123.0	1.00	8.60	MWD		3122.8	10.43	6.05	12.1	0.11	0.09	3.52
3151.0	1.10	2.10	MWD		3150.8	10.94	6.10	12.5	0.17	0.11	-6.96
3219.0	1.10	32.50	MWD		3218.8	12.15	6.47	13.8	0.25	0.00	13.41
3248.0	1.60	30.20	MWD		3247.8	12.73	6.82	14.4	0.52	0.52	-2.38
3276.0	1.60	26.90	MWD		3275.8	13.42	7.20	15.2	0.10	0.00	-3.54
3306.0	1.90	33.70	MWD		3305.7	14.21	7.66	16.1	0.36	0.30	6.80
3326.0	1.90	32.40	MWD		3325.7	14.76	8.02	16.8	0.06	0.00	-1.95
3365.0	1.80	32.50	MWD		3364.7	15.82	8.70	18.1	0.08	-0.08	0.08
3394.0	2.20	33.70	MWD		3393.7	16.67	9.25	19.1	0.42	0.41	1.24
3423.0	2.50	36.30	MWD		3422.7	17.64	9.94	20.2	0.33	0.31	2.69
3442.0	2.30	31.60	MWD		3441.6	18.30	10.38	21.0	0.44	-0.32	-7.42
3453.0	2.20	29.50	MWD		3452.6	18.67	10.60	21.5	0.35	-0.27	-5.73
3482.0	1.50	47.00	MWD		3481.6	19.42	11.15	22.4	0.92	-0.72	18.10
3511.0	1.60	62.70	MWD		3510.6	19.86	11.79	23.1	0.45	0.10	16.24
3541.0	2.00	62.80	MWD		3540.6	20.29	12.63	23.9	0.40	0.40	0.10
561.0	2.10	60.00	MWD		3560.6	20.64	13.26	24.5	0.21	0.15	-4.20

Norsk Hydro

HOLE DEVIATION

Well : 35/4-1
Waterdepth: 378.0 m
UTM zone : 31 Central Meredian: 3' E
Template Centre Coordinates, UTM: North: 7128620.0 m, East: 412890.0 m
Wellhead Coordinates, UTM: North: 6822412.0 m, East: 516075.7 m
Official surveys : Y Track :
Coordinates are measured from the wellhead centre.

Reference Point : RKB , 26.0 m above MSL
Vertical to 402.9 m
Horizontal Datum: ED50

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
3572.0	2.20	58.20	MWD		3571.6	20.85	13.61	24.9	0.33	0.27	-4.91
3599.0	2.50	56.70	MWD		3598.6	21.45	14.54	25.9	0.34	0.33	-1.67
3629.0	2.40	52.40	MWD		3628.5	22.19	15.59	27.1	0.21	-0.10	-4.30
3658.0	2.50	51.70	MWD		3657.5	22.95	16.56	28.3	0.11	0.10	-0.72
3686.0	2.00	45.00	MWD		3685.5	23.67	17.39	29.4	0.60	-0.54	-7.18
3705.0	1.60	50.90	MWD		3704.5	24.08	17.83	30.0	0.70	-0.63	9.32
3729.0	1.30	63.00	MWD		3728.5	24.41	18.33	30.5	0.53	-0.38	15.12
3787.0	2.90	111.60	MWD		3786.4	24.17	20.28	31.6	1.17	0.83	25.14
3815.0	3.80	115.20	MWD		3814.4	23.51	21.78	32.1	0.99	0.96	3.86
3824.0	4.20	112.60	MWD		3823.4	23.26	22.35	32.3	1.46	1.33	-8.67
3855.0	4.00	108.40	MWD		3854.3	22.48	24.43	33.2	0.35	-0.19	-4.06
3883.0	3.80	101.20	MWD		3882.2	21.99	26.27	34.3	0.57	-0.21	-7.71
3912.0	3.70	98.20	MWD		3911.1	21.67	28.13	35.5	0.23	-0.10	-3.10
3940.0	3.60	93.80	MWD		3939.1	21.49	29.91	36.8	0.32	-0.11	-4.71
3966.0	3.80	89.50	MWD		3965.0	21.44	31.58	38.2	0.39	0.23	-4.96
3994.0	3.90	86.60	MWD		3993.0	21.50	33.46	39.8	0.23	0.11	-3.11
4021.0	4.30	83.50	MWD		4019.9	21.67	35.38	41.5	0.51	0.44	-3.44
4052.0	4.90	84.70	MWD		4050.8	21.93	37.86	43.7	0.59	0.58	1.16
4071.0	5.30	86.70	MWD		4069.7	22.05	39.54	45.3	0.69	0.63	3.16
4126.0	5.20	85.10	MWD		4124.5	22.41	44.56	49.9	0.10	-0.05	-0.87
4214.0	5.20	88.30	MWD		4212.1	22.87	52.52	57.3	0.10	0.00	1.09
4279.0	6.00	98.70	MWD		4276.8	22.44	58.82	63.0	0.59	0.37	4.80
4301.0	6.70	101.60	MWD		4298.7	22.01	61.21	65.1	1.05	0.95	3.95
4329.0	6.90	104.60	MWD		4326.5	21.26	64.44	67.9	0.44	0.21	3.21
4357.0	7.00	106.10	MWD		4354.3	20.36	67.71	70.7	0.22	0.11	1.61
4413.0	8.00	108.60	MWD		4409.8	18.17	74.68	76.9	0.56	0.54	1.34
4462.0	7.90	112.30	MWD		4458.3	15.81	81.03	82.6	0.32	-0.06	2.27
4491.0	7.80	113.10	MWD		4487.1	14.28	84.68	85.9	0.15	-0.10	0.83
4519.0	8.10	117.60	MWD		4514.8	12.62	88.18	89.1	0.74	0.32	4.82
4572.0	8.60	121.10	MWD		4567.2	8.84	94.88	95.3	0.40	0.28	1.98
4600.0	9.10	124.50	MWD		4594.9	6.51	98.50	98.7	0.78	0.54	3.64
4629.0	9.00	126.40	MWD		4623.5	3.86	102.21	102.3	0.33	-0.10	1.97
4658.0	9.20	129.50	MWD		4652.2	1.04	105.83	105.8	0.55	0.21	3.21
4686.0	10.40	124.30	MWD		4679.8	-1.81	109.64	109.7	1.60	1.29	-5.57
4732.0	9.70	129.60	MWD		4725.1	-6.62	116.06	116.2	0.76	-0.46	3.46
4807.0	11.40	134.00	MWD		4798.8	-15.79	126.26	127.2	0.75	0.68	1.76
4826.0	11.80	132.20	MWD		4817.4	-18.40	129.05	130.4	0.85	0.63	-2.84
4845.0	12.50	134.80	MWD		4836.0	-21.16	131.95	133.6	1.40	1.11	4.11
4864.0	13.30	135.10	MWD		4854.5	-24.15	134.95	137.1	1.27	1.26	0.47
4893.0	14.40	135.50	MWD		4882.7	-29.09	139.83	142.8	1.14	1.14	0.41
4923.0	15.40	130.80	MWD		4911.7	-34.35	145.46	149.5	1.57	1.00	-4.70

Norsk Hydro

MAIN CONSUMPTION OF CASING/TUBING ON WELL 35/4-1

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	X-52	677.98	455.60	SL-60	49.3	0		
	CONDUCTOR	X-52	1013.40	681.00	SL-60	12.8	1		
20"	SURFACE	X-56	301.94	202.90	E60MT	948.7	79		
13 3/8"	INTERMEDIATE	P-110	107.14	72.00	BUTTRESS	2716.0	226		
10 3/4"	TIE-BACK	AC-110	150.30	101.00	NKHWSL	2580.7	215		
9 5/8"	PRODUCTION LINER	P-110	79.61	53.50	NK 3 SB	16.7	2		
	PRODUCTION LINER	P-110	79.61	53.50	NK 3 SB	74.0	6		
	PRODUCTION LINER	P-110	79.61	53.50	NEW VAM	649.9	54		

Norsk Hydro

BITRECORD FOR WELL 35/4-1

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 structur I	O	DC	L	B	Gauge 1/16 (in)	Remarks oth	Remarks pul
1		MITO	9.780	SDBS	S44GF	S56584	137S				20	20	20	0.920	1	590	186	5.20	35.8	80/80		50/100	0/0	85/90	2	1	WT	A	E	I	NO	TD
2		MITO	17.500	SDBS	SS44GLTJ4	673621	135M				18	18	18	0.746	2	464	60	5.00	12.0	83/83		0/60	0/0	100/110	2	1	WT	A	E	I	NO	TD
2		HO	26.000	GRNT	IPE DRS	21436		8	8	8	8	8	8	0.295	2	464	60	5.00	12.0	83/83		0/60	0/0	100/110	2	1	WT	A	E	I	NO	
2		HO	36.000	DARR	IPE DRS	21470		8	8	8	8	8	8	0.295	2	464	60	5.00	12.0	83/83		0/60	0/0	100/110	2	1	WT	A	E	I	NO	
3		MITO	26.000	SDBS	SS33SGJ	684773	115			16	20	20	20	1.117	3	1362	898	33.50	26.8	146/159		7/18	4400/4400	182/217	2	2	WT	A	E	I	NO	TD
4		ISRT	17.500	SMIT	10M	LG3265	435			18	20	22	24	1.368	4	1367	4	1.40	2.9	54/161	5683	11/29	3600/3900	128/197	0	0	NO	A	E	I	NO	PR
5		ISRT	17.500	HTC	MAX-GT03	G37CG	415			16	22	22	24	1.381	5	2181	814	37.00	22.0	55/164	428844	3/24	3316/4566	164/260	4	1	BT	M	E	1	CT	RIG
5		ISRT	17.500	HTC	MAX-GT03	F70CE	415			16	22	22	24	1.381	6	3133	952	76.40	12.5	150/160	730575	10/35	3000/4583	170/275	2	5	BT	A	F	I	WT	TD
4	1	ISRT	17.500	SMIT	10M	LG3265	435			32	32	32	32	3.142	7	0	****		0.0	/		/	/	/								
7		ISRT	12.250	SMIT	12MD	LG3940	435X			16	18	22	22	1.187	8	3168	35	17.50	2.0	19/127	106431	5/22	1328/3312	66/281	8	6	BT	A	E	2	CT	PR
8		ISRT	12.250	SDBS	ERA3RDL	689669	417			14	20	20	22	1.135	9	3340	172	51.30	3.4	85/128	302082	110/230	1728/3360	80/275	3	5	WT	A	F	1	JD	HR
9		MITO	12.250	SDBS	ERA3DL	680818	135				22	22	22	1.114	10	3526	186	55.30	3.4	0/161	505898	6/19	0/3232	105/280	8	8	BT	A	E	2	JD	HR
10		ISRT	12.250	HTC	ATM-11CG	H03CC	447G				22	22	22	1.114	11	3668	142	53.80	2.6	153/161	510932	9/22	0/3280	266/291	1	1	NO	A	E	1	NO	HR
11		ISRT	12.250	HTC	ATMGTP18DD	K42CS	447				22	22	24	1.184	12	3715	47	17.60	2.7	85/163	167030	9/19	1936/3088	125/305	1	4	BT	M	E	1	CT	TD
11	1	ISRT	12.250	HTC	ATMGTP18DD	K42CS	447				22	22	24	1.184	13	3715	0		0.0	0/0	0	0/0	0/3000	300/300								
12		MITO	8.500	SDBS	SS44G	653178	135M				16	16	16	0.589	14	3715	0	8.30	0.0	30/115	34473	10/140	1750/1910	298/310	2	1	BT	N	E	I	WT	RIG
13		ISRT	8.500	SDBS	ERAD17DPL	963773	447				16	16	16	0.589	15	3837	122	40.90	3.0	62/155	246817	8/21	1934/2100	285/330	3	4	CI	H	F	1	CT	HR
14		ISRT	8.500	HTC	ATMGTPS09	C72CX	437				16	18	18	0.693	16	3992	155	33.80	4.6	119/155	300891	5/15	1944/2052	288/325	2	2	LT	M	E	1	NO	WC
15		ISRT	8.500	HTC	ATMGTPS09	K76CX	437				18	18	18	0.746	17	4084	92	23.20	4.0	90/154	172704	9/20	1930/2011	309/321	1	1	WT	A	E	I	ER	CP
16		CORE	8.500	SDBS	CD 93 FDIL	7970011	O896								18	4094	10	2.20	4.3	71/115	14529	5/11	972/972	113/125	1	1	CT	S	X	I	NO	NC
16	1	CORE	8.500	SDBS	CD 93 FDIL	7970011	O896							0.760	19	4108	15	6.30	2.4	93/119	43189	6/16	972/972	101/118	1	1	CT	S	X	I	NO	CJ
16		CORE	8.500	SDBS	CT 103	7970313	T6X3							0.760	20	4114	5	3.70	1.4	82/122	23719	40/180	983/983	115/148	1	1	WT	A	X	I	NO	CJ
16		CORE	8.500	SDBS	CD 93 FDIL	7970012	O896							0.760	21	4141	28	11.10	2.5	88/148	77696	70/140	983/983	118/150	1	1	WT	A	X	I	NO	NC
16		CORE	8.500	SDBS	CD 93 FDIL	7970185	O896							1.470	22	4178	37	15.30	2.4	65/160	129822	80/220	983/1158	120/172	1	1	WT	A	X	I	NO	CJ
16	1	CORE	8.500	SDBS	CD 93 FDIL	7970185	O896							1.470	23	4219	41	11.20	3.7	110/120	77300	110/170	1143/1158	156/165	1	1	WT	A	X	I	NO	CJ
16	2	CORE	8.500	SDBS	CD 93 FDIL	7970185	O896							1.470	24	4263	44	9.40	4.7	122/147	73341	140/210	1144/1171	156/187	1	1	WT	A	X	I	NO	CJ
16		PDC	8.500	HTC	G447XL	1210049	M432			15	15	15	15	0.690	25	4267	4	0.50	8.0	78/150	3459	30/80	1683/1884	277/312	1	1	WT	A	X	I	NO	DTF
16	1	PDC	8.500	HTC	G447XL	1210049	M432			15	15	15	15	0.690	26	4267	0		0.0	/		/	/	/	1	1	WT	A	X	I	NO	DTF
16	2	PDC	8.500	HTC	G447XL	1210049	M432			15	15	15	15	0.690	27	4294	27	2.10	12.9	134/166	21130	30/100	1723/1777	276/298	1	1	WT	A	X	I	NO	LOG

Norsk Hydro

BITRECORD FOR WELL 35/4-1

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 structur I	O	DC	L	B	Gauge 1/16 (in)	Remarks oth	Remarks pul
16	3	PDC	8.500	HTC	G447XL	1210049	M432			15	15	15	15	0.690	28	4447	153	7.70	19.9	109/126	54761	0/80	1640/1700	271/296	1	1	NO	A	X	I	NO	CP
17		CORE	8.500	SDBS	CD 19RFDIL	7970184								1.470	29	4475	28	5.60	5.0	109/165	52605	0/130	1100/1127	155/294	1	1	WT	N	X	I	NO	NC
16	4	PDC	8.500	HTC	G447XL	1210049	M432			15	15	15	15	0.690	30	4709	234	45.00	5.2	124/156	388842	20/130	1580/1681	254/290	1	2	WT	S	X	I	NO	CP
17	1	CORE	8.500	SDBS	CD 19RFDIL	7970184								1.470	31	4737	28	3.10	9.0	102/154	27862	40/90	1224/1224	162/177	1	3	WT	S	X	I	NO	NC
16	5	PDC	8.500	HTC	G447XL	1210049	M432			15	15	15	15	0.690	32	4826	89	17.50	5.1	78/169	155781	20/90	1650/1682	265/300	3	4	WT	S	X	1	NO	PR
17		PDC	8.500	HTC	G449XLG3	1210011		12	12	12	12	13	13	0.701	33	4936	110	29.50	3.7	120/185	275100	50/180	1600/1680	285/322	4	2	WT	T	X	I	NO	PR

Norsk Hydro

BOTTOM HOLE ASSEMBLIES USED ON WELL 35/4-1

BHA no. 1: No./Element/OD(in)/Length(m) Depth In: 404 m MD Out: 590 m MD

No.	Element	OD(in)	Length(m)	No.	Element	OD(in)	Length(m)
1	S44GF	9.780	0.26	7	DRILL COLLAR STEEL	7.687	8.80
2	BIT SUB	7.687	1.22	8	JAR	7.812	9.67
3	DIVERTER SUB	8.750	4.80	9	DRILL COLLAR STEEL	7.750	9.03
4	MWD	8.750	11.80	10	X-OVER	7.750	0.60
5	NON MAG. COLLAR	7.875	8.28	11	HWDP		131.85
6	DRILL COLLAR STEEL	7.750	9.15				

Reason Pulled: TOTAL DEPTH/CASING DEPTH Sum: 195.46

BHA no. 2: No./Element/OD(in)/Length(m) Depth In: 404 m MD Out: 464 m MD

No.	Element	OD(in)	Length(m)	No.	Element	OD(in)	Length(m)
1	SS44GLTJ4	17.500	0.40	8	DRILL COLLAR STEEL	9.500	28.43
2	IPE DRS	26.000	3.70	9	X-OVER	9.500	0.55
3	IPE DRS	36.000	2.57	10	DRILL COLLAR STEEL	8.000	44.88
4	BIT SUB	9.760	0.80	11	X-OVER	7.750	0.60
5	MWD	9.500	13.80	12	HWDP	5.500	131.85
6	NON MAG. COLLAR	9.812	9.05	13	X-OVER	7.000	0.67
7	DRILL COLLAR STEEL	9.437	9.44				

Reason Pulled: TOTAL DEPTH/CASING DEPTH Sum: 246.74

BHA no. 3: No./Element/OD(in)/Length(m) Depth In: 464 m MD Out: 1362 m MD

No.	Element	OD(in)	Length(m)	No.	Element	OD(in)	Length(m)
1	SS33SGJ	26.000	0.56	8	DRILL COLLAR STEEL	8.000	35.90
2	BIT SUB	9.500	0.80	9	JAR	8.000	9.67
3	MWD	9.500	13.80	10	DRILL COLLAR STEEL	8.000	27.48
4	NON MAG. COLLAR	9.500	9.05	11	X-OVER	7.750	0.60
5	STEEL STAB	9.437	2.17	12	HWDP	5.500	131.85
6	DRILL COLLAR STEEL	9.500	37.37	13	X-OVER	7.000	0.67
7	X-OVER	9.500	0.55				

Reason Pulled: TOTAL DEPTH/CASING DEPTH Sum: 270.47

BHA no. 4: No./Element/OD(in)/Length(m) Depth In: 1363 m MD Out: 1367 m MD

No.	Element	OD(in)	Length(m)	No.	Element	OD(in)	Length(m)
1	10M	17.500	0.57	8	DRILL COLLAR STEEL	7.812	72.18
2	BIT SUB	9.406	0.80	9	JAR	7.812	9.67
3	MWD	9.500	13.80	10	DRILL COLLAR STEEL	7.875	27.48
4	NON MAG. COLLAR	9.500	9.05	11	X-OVER	7.750	0.60
5	STEEL STAB	17.500	2.51	12	HWDP	5.500	131.85
6	DRILL COLLAR STEEL	9.500	37.37	13	X-OVER	7.000	0.67
7	X-OVER	7.750	0.55				

Reason Pulled: PENETRATION RATE Sum: 307.10

BHA no. 5: No./Element/OD(in)/Length(m) Depth In: 1367 m MD Out: 2181 m MD

No.	Element	OD(in)	Length(m)	No.	Element	OD(in)	Length(m)
1	MAX-GT03	17.500	0.43	8	DRILL COLLAR STEEL	7.812	72.18
2	BIT SUB	9.812	0.80	9	JAR	7.812	9.67
3	MWD	9.500	13.80	10	DRILL COLLAR STEEL	7.875	27.48
4	NON MAG. COLLAR	9.812	9.05	11	X-OVER	7.750	0.60
5	STEEL STAB	9.500	2.51	12	HWDP	5.500	131.85
6	DRILL COLLAR STEEL	9.500	37.37	13	X-OVER	7.000	0.67
7	X-OVER	7.750	0.55				

Reason Pulled: RIG REPAIR/SURFACE EQP. FAILURE Sum: 306.96

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BOTTOM HOLE ASSEMBLIES USED ON WELL 35/4-1

BHA no. 6: No./Element/OD(in)/Length(m) Depth In: 2181 m MD Out: 3133 m MD

No.	Element	OD(in)	Length(m)	No.	Element	OD(in)	Length(m)
1	MAX-GT03	17.500	0.43	9	X-OVER	7.750	0.55
2	BIT SUB	9.812	0.80	10	DRILL COLLAR STEEL	8.000	72.18
3	MWD	9.500	13.80	11	JAR	7.812	9.67
4	NON MAG. COLLAR	9.812	9.05	12	DRILL COLLAR STEEL	8.000	27.48
5	STEEL STAB	9.500	2.51	13	X-OVER	7.750	0.60
6	DRILL COLLAR STEEL	9.500	9.44	14	HWDP	5.500	131.85
7	STEEL STAB	9.500	1.79	15	X-OVER	7.000	0.67
8	DRILL COLLAR STEEL	9.500	27.93				

Reason Pulled: TOTAL DEPTH/CASING DEPTH Sum: 308.75

BHA no. 7: No./Element/OD(in)/Length(m) Depth In: 3133 m MD Out: 0 m MD

No.	Element	OD(in)	Length(m)	No.	Element	OD(in)	Length(m)
1	10M	17.500	0.57	8	DRILL COLLAR STEEL	8.000	72.18
2	BIT SUB	9.812	0.80	9	JAR	7.812	9.67
3	NON MAG. COLLAR	9.812	9.05	10	DRILL COLLAR STEEL	8.000	27.48
4	STEEL STAB	9.500	2.51	11	X-OVER	7.750	0.60
5	DRILL COLLAR STEEL	9.500	9.44	12	HWDP	5.500	131.85
6	DRILL COLLAR STEEL	9.500	27.93	13	X-OVER	7.000	0.67
7	X-OVER	7.750	0.55				

Reason Pulled: Sum: 293.30

BHA no. 8: No./Element/OD(in)/Length(m) Depth In: 3133 m MD Out: 3168 m MD

No.	Element	OD(in)	Length(m)	No.	Element	OD(in)	Length(m)
1	12MD	12.250	0.31	9	STEEL STAB	12.250	1.47
2	BIT SUB	7.812	1.22	10	DRILL COLLAR STEEL	8.000	99.23
3	PIN-PIN SUB	8.250	0.90	11	JAR	7.812	9.67
4	MWD	8.250	7.18	12	DRILL COLLAR STEEL	8.000	27.48
5	PRESSURE WHILE DRILL	8.250	10.79	13	X-OVER	7.750	0.60
6	SAVER SUB	8.250	1.02	14	HWDP	5.500	131.85
7	NON MAG. STAB	12.250	2.29	15	X-OVER	7.000	0.67
8	NON MAG. COLLAR	8.000	8.72				

Reason Pulled: PENETRATION RATE Sum: 303.40

BHA no. 9: Depth In: 3168 m MD Out: 3340 m MD; same elements as in BHA no. 8
Except Bit, here SDBS, ERA3RDL (Length 0.38 m)
Reason Pulled: HOURS

BHA no. 10: Depth In: 3340 m MD Out: 3526 m MD; same elements as in BHA no. 8
Except Bit, here SDBS, ERA3DL (Length 0.38 m)
Reason Pulled: HOURS

BHA no. 11: No./Element/OD(in)/Length(m) Depth In: 3526 m MD Out: 3668 m MD

No.	Element	OD(in)	Length(m)	No.	Element	OD(in)	Length(m)
1	ATM-11CG	12.250	0.30	9	NON MAG. COLLAR	8.000	8.72
2	JUNK SUB	9.500	0.70	10	STEEL STAB	12.250	1.47
3	BIT SUB	7.812	1.22	11	DRILL COLLAR STEEL	8.000	99.23
4	PIN-PIN SUB	8.250	0.90	12	JAR	7.812	9.67
5	MWD	8.250	7.18	13	DRILL COLLAR STEEL	8.000	27.48
6	PRESSURE WHILE DRILL	8.250	10.79	14	X-OVER	7.750	0.60
7	SAVER SUB	8.250	1.02	15	HWDP	5.500	131.85
8	NON MAG. STAB	12.250	2.29	16	X-OVER	7.000	0.67

Reason Pulled: HOURS Sum: 304.09

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BOTTOM HOLE ASSEMBLIES USED ON WELL 35/4-1

BHA no. 12: No./Element/OD(in)/Length(m) Depth In: 3668 m MD Out: 3715 m MD

1	ATMGTP18DD	12.250	0.29	8	STEEL STAB	12.250	1.47
2	BIT SUB	7.812	1.22	9	DRILL COLLAR STEEL	8.000	99.23
3	PIN-PIN SUB	8.250	0.90	10	JAR	7.812	9.67
4	MWD	8.250	14.90	11	DRILL COLLAR STEEL	8.000	27.48
5	SAVER SUB	8.250	1.02	12	X-OVER	7.750	0.60
6	NON MAG. STAB	12.250	2.29	13	HWDP	5.500	131.85
7	NON MAG. COLLAR	8.000	8.72	14	X-OVER	7.000	0.67

Reason Pulled: TOTAL DEPTH/CASING DEPTH Sum: 300.31

BHA no. 13: No./Element/OD(in)/Length(m) Depth In: 3715 m MD Out: 3715 m MD

1	ATMGTP18DD	12.250	0.29	7	JAR	7.800	9.70
2	JUNK SUB	9.500	0.70	8	DRILL COLLAR STEEL	7.800	27.48
3	BIT SUB	8.000	1.51	9	X-OVER	7.750	0.60
4	DRILL COLLAR STEEL	7.875	27.05	10	HWDP	5.500	137.85
5	STEEL STAB	12.250	1.47	11	X-OVER	7.000	0.62
6	DRILL COLLAR STEEL	7.690	72.18				

Reason Pulled: Sum: 279.45

BHA no. 14: No./Element/OD(in)/Length(m) Depth In: 3715 m MD Out: 3715 m MD

1	SS44G	8.500	0.25	6	NON MAG. COLLAR	6.500	9.00
2	JUNK SUB	6.500	0.77	7	DRILL COLLAR STEEL	6.500	103.40
3	BIT SUB	6.500	1.16	8	JAR	6.500	9.91
4	MWD	6.750	16.31	9	DRILL COLLAR STEEL	6.500	28.41
5	NON MAG. STAB	8.500	1.69	10	HWDP	5.000	137.52

Reason Pulled: RIG REPAIR/SURFACE EQP. FAILURE Sum: 308.42

BHA no. 15: No./Element/OD(in)/Length(m) Depth In: 3715 m MD Out: 3837 m MD

1	ERAD17DPL	8.500	0.29	7	DRILL COLLAR STEEL	6.437	103.40
2	JUNK SUB	6.500	0.77	8	JAR	6.437	9.91
3	BIT SUB	6.438	1.16	9	DRILL COLLAR STEEL	6.500	28.41
4	MWD	6.750	18.11	10	HWDP	5.000	137.52
5	NON MAG. STAB	8.500	1.69	11	DRILL PIPE	5.000	30.14
6	NON MAG. COLLAR	6.437	9.00	12	DART SUB	6.250	0.62

Reason Pulled: HOURS Sum: 341.02

BHA no. 16: No./Element/OD(in)/Length(m) Depth In: 3837 m MD Out: 3992 m MD

1	ATMGTPS09	8.500	0.24	8	DRILL COLLAR STEEL	6.500	103.40
2	BIT SUB	6.437	1.16	9	JAR	6.437	9.91
3	MWD	6.750	18.11	10	DRILL COLLAR STEEL	6.500	28.41
4	PRESSURE WHILE DRILL	8.250	10.25	11	HWDP	5.000	128.33
5	NON MAG. STAB	8.500	1.69	12	DART SUB	6.312	0.51
6	NON MAG. COLLAR	6.437	9.00	13	HWDP	5.000	9.19
7	STEEL STAB	8.500	1.91				

Reason Pulled: WEATHER CONDITIONS Sum: 322.11

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BOTTOM HOLE ASSEMBLIES USED ON WELL 35/4-1

BHA no. 17: No./Element/OD(in)/Length(m) Depth In: 3992 m MD Out: 4084 m MD

1	ATMGTPS09	8.500	0.24	7	DRILL COLLAR STEEL	6.500	103.40
2	BIT SUB	6.437	1.16	8	JAR	6.437	9.91
3	MWD	6.750	18.11	9	DRILL COLLAR STEEL	6.500	28.41
4	NON MAG. STAB	8.500	1.69	10	HWDP	5.000	128.33
5	NON MAG. COLLAR	6.437	9.00	11	DART SUB	6.312	0.51
6	STEEL STAB	8.500	1.91	12	HWDP	5.000	9.19

Reason Pulled: CORE POINT Sum: 311.86

BHA no. 18: No./Element/OD(in)/Length(m) Depth In: 4084 m MD Out: 4094 m MD

1	CD 93 FDIL	8.500	0.36	8	DRILL COLLAR STEEL	6.500	103.40
2	CORE BARREL	6.750	11.09	9	JAR	6.500	9.91
3	X-OVER	6.500	0.29	10	DRILL COLLAR STEEL	6.500	28.41
4	BIT SUB	6.437	1.07	11	HWDP	5.000	128.33
5	CIRCULATING SUB	6.500	0.76	12	DART SUB	6.250	0.51
6	DRILL COLLAR STEEL	6.500	9.44	13	HWDP	5.000	9.19
7	STEEL STAB	8.500	1.91				

Reason Pulled: NEW CORE/FULL BARREL Sum: 304.67

BHA no. 19: No./Element/OD(in)/Length(m) Depth In: 4094 m MD Out: 4108 m MD

1	CD 93 FDIL	8.500	0.36	8	DRILL COLLAR STEEL	6.500	103.40
2	CORE BARREL	6.750	11.09	9	JAR	6.437	9.91
3	X-OVER	6.500	0.29	10	DRILL COLLAR STEEL	6.500	28.41
4	BIT SUB	6.437	1.07	11	HWDP	5.000	128.33
5	CIRCULATING SUB	6.500	0.76	12	DART SUB	6.250	0.51
6	DRILL COLLAR STEEL	6.500	9.44	13	HWDP	5.000	9.19
7	STEEL STAB	8.500	1.91				

Reason Pulled: CORE JAMMED Sum: 304.67

BHA no. 20: No./Element/OD(in)/Length(m) Depth In: 4108 m MD Out: 4114 m MD

1	CT 103	8.500	0.37	8	DRILL COLLAR STEEL	6.500	103.40
2	CORE BARREL	6.750	29.39	9	JAR	6.437	9.91
3	X-OVER	6.500	0.29	10	DRILL COLLAR STEEL	6.500	28.41
4	BIT SUB	6.187	0.91	11	HWDP	5.000	128.33
5	CIRCULATING SUB	6.500	0.76	12	DART SUB	6.250	0.51
6	DRILL COLLAR STEEL	6.500	9.44	13	HWDP	5.000	9.19
7	STEEL STAB	8.500	1.91				

Reason Pulled: CORE JAMMED Sum: 322.82

BHA no. 21: No./Element/OD(in)/Length(m) Depth In: 4114 m MD Out: 4141 m MD

1	CD 93 FDIL	8.500	0.36	7	DRILL COLLAR STEEL	6.500	103.40
2	CORE BARREL	6.750	29.39	8	JAR	6.437	9.91
3	X-OVER	6.500	0.29	9	DRILL COLLAR STEEL	6.500	28.41
4	BIT SUB	6.187	0.91	10	HWDP	5.000	128.33
5	DRILL COLLAR STEEL	6.500	9.44	11	DART SUB	6.250	0.51
6	STEEL STAB	8.500	1.91	12	HWDP	5.000	9.19

Reason Pulled: NEW CORE/FULL BARREL Sum: 322.05

Norsk Hydro

BOTTOM HOLE ASSEMBLIES USED ON WELL 35/4-1

BHA no. 22: No./Element/OD(in)/Length(m) Depth In: 4141 m MD Out: 4178 m MD

1	CD 93 FDIL	8.500	0.36	7	DRILL COLLAR STEEL	6.500	103.40
2	CORE BARREL	6.750	47.66	8	JAR	6.437	9.91
3	X-OVER	6.500	0.29	9	DRILL COLLAR STEEL	6.500	28.41
4	BIT SUB	6.187	0.91	10	HWDP	5.000	128.33
5	DRILL COLLAR STEEL	6.500	9.44	11	DART SUB	6.250	0.51
6	STEEL STAB	8.500	1.91	12	HWDP	5.000	9.19

Reason Pulled: CORE JAMMED Sum: 340.32

BHA no. 23: Depth In: 4178 m MD Out: 4219 m MD; same elements as in BHA no. 22
Except Bit, here SDBS, CD 93 FDIL (Length 0.36 m)
Reason Pulled: CORE JAMMED

BHA no. 24: Depth In: 4219 m MD Out: 4263 m MD; same elements as in BHA no. 22
Except Bit, here SDBS, CD 93 FDIL (Length 0.36 m)
Reason Pulled: CORE JAMMED

BHA no. 25: No./Element/OD(in)/Length(m) Depth In: 4263 m MD Out: 4267 m MD

1	G447XL	8.500	0.32	7	DRILL COLLAR STEEL	6.500	112.84
2	BIT SUB	6.437	0.91	8	JAR	6.437	9.91
3	MWD	6.750	17.93	9	DRILL COLLAR STEEL	6.500	28.41
4	NON MAG. STAB	8.500	1.69	10	HWDP	5.000	128.33
5	NON MAG. COLLAR	6.437	9.00	11	DART SUB	6.312	0.51
6	STEEL STAB	8.500	1.91	12	HWDP	5.000	9.19

Reason Pulled: DOWNHOLE TOOL FAILURE Sum: 320.95

BHA no. 26: No./Element/OD(in)/Length(m) Depth In: 4267 m MD Out: 4267 m MD

1	G447XL	8.500	0.32	7	DRILL COLLAR STEEL	6.500	112.84
2	NEAR BIT STAB	8.375	1.98	8	JAR	6.437	9.91
3	MWD	6.750	18.08	9	DRILL COLLAR STEEL	6.500	28.41
4	NON MAG. STAB	8.500	1.69	10	HWDP	5.000	128.33
5	NON MAG. COLLAR	6.437	9.00	11	DART SUB	6.312	0.51
6	STEEL STAB	8.500	1.91	12	HWDP	5.000	9.19

Reason Pulled: DOWNHOLE TOOL FAILURE Sum: 322.17

BHA no. 27: No./Element/OD(in)/Length(m) Depth In: 4267 m MD Out: 4294 m MD

1	G447XL	8.500	0.32	7	DRILL COLLAR STEEL	6.500	112.84
2	NEAR BIT STAB	8.375	1.98	8	JAR	6.437	9.91
3	MWD	6.750	16.16	9	DRILL COLLAR STEEL	6.500	28.41
4	NON MAG. STAB	8.500	1.69	10	HWDP	5.000	128.33
5	NON MAG. COLLAR	6.437	9.00	11	DART SUB	6.312	0.51
6	STEEL STAB	8.500	1.91	12	HWDP	5.000	9.19

Reason Pulled: RUN LOGS Sum: 320.25

BHA no. 28: No./Element/OD(in)/Length(m) Depth In: 4294 m MD Out: 4447 m MD

1	G447XL	8.500	0.32	7	DRILL COLLAR STEEL	6.500	112.84
2	NEAR BIT STAB	8.375	1.98	8	JAR	6.437	9.91
3	MWD	6.750	17.80	9	DRILL COLLAR STEEL	6.500	28.41
4	NON MAG. STAB	8.500	1.69	10	HWDP	5.000	128.33
5	NON MAG. COLLAR	6.437	9.00	11	DART SUB	6.312	0.51
6	STEEL STAB	8.500	1.91	12	HWDP	5.000	9.19

Reason Pulled: CORE POINT Sum: 321.89

Norsk Hydro

BOTTOM HOLE ASSEMBLIES USED ON WELL 35/4-1

BHA no. 29: No./Element/OD(in)/Length(m) Depth In: 4447 m MD Out: 4475 m MD

No.	Element	OD (in)	Length (m)	No.	Element	OD (in)	Length (m)
1	CD 19RFDIL	8.500	0.36	7	DRILL COLLAR STEEL	6.500	103.40
2	CORE BARREL	6.750	30.11	8	JAR	6.437	9.91
3	X-OVER	6.500	0.29	9	DRILL COLLAR STEEL	6.500	28.41
4	BIT SUB	6.187	0.91	10	HWDP	5.000	128.33
5	DRILL COLLAR STEEL	6.500	9.44	11	DART SUB	6.250	0.51
6	STEEL STAB	8.500	1.91	12	HWDP	5.000	9.19

Reason Pulled: NEW CORE/FULL BARREL Sum: 322.77

BHA no. 30: No./Element/OD(in)/Length(m) Depth In: 4475 m MD Out: 4709 m MD

No.	Element	OD (in)	Length (m)	No.	Element	OD (in)	Length (m)
1	G447XL	8.500	0.32	7	DRILL COLLAR STEEL	6.500	56.31
2	NEAR BIT STAB	8.375	1.98	8	JAR	6.437	9.93
3	MWD	6.750	17.80	9	DRILL COLLAR STEEL	6.500	28.41
4	NON MAG. STAB	8.500	1.69	10	HWDP	5.000	128.33
5	NON MAG. COLLAR	6.437	9.00	11	DART SUB	6.312	0.51
6	STEEL STAB	8.500	1.91	12	HWDP	5.000	9.19

Reason Pulled: CORE POINT Sum: 265.38

BHA no. 31: No./Element/OD(in)/Length(m) Depth In: 4709 m MD Out: 4737 m MD

No.	Element	OD (in)	Length (m)	No.	Element	OD (in)	Length (m)
1	CD 19RFDIL	8.500	0.36	7	DRILL COLLAR STEEL	6.500	56.46
2	CORE BARREL	6.750	30.11	8	JAR	6.437	9.39
3	X-OVER	6.500	0.29	9	DRILL COLLAR STEEL	6.500	28.28
4	BIT SUB	6.187	1.12	10	HWDP	5.000	128.33
5	DRILL COLLAR STEEL	6.500	9.55	11	DART SUB	6.250	0.51
6	STEEL STAB	8.500	1.69	12	HWDP	5.000	9.19

Reason Pulled: NEW CORE/FULL BARREL Sum: 275.28

BHA no. 32: No./Element/OD(in)/Length(m) Depth In: 4737 m MD Out: 4826 m MD

No.	Element	OD (in)	Length (m)	No.	Element	OD (in)	Length (m)
1	G447XL	8.500	0.32	7	DRILL COLLAR STEEL	6.500	56.31
2	NEAR BIT STAB	8.375	1.98	8	JAR	6.437	9.93
3	MWD	6.750	17.61	9	DRILL COLLAR STEEL	6.500	28.41
4	NON MAG. STAB	8.500	1.69	10	HWDP	5.000	128.33
5	NON MAG. COLLAR	6.437	9.00	11	DART SUB	6.312	0.51
6	STEEL STAB	8.500	1.91	12	HWDP	5.000	9.19

Reason Pulled: PENETRATION RATE Sum: 265.19

BHA no. 33: No./Element/OD(in)/Length(m) Depth In: 4826 m MD Out: 4936 m MD

No.	Element	OD (in)	Length (m)	No.	Element	OD (in)	Length (m)
1	G449XLG3	8.500	0.32	7	DRILL COLLAR STEEL	6.500	84.65
2	NEAR BIT STAB	8.375	2.14	8	JAR	6.437	9.93
3	MWD	6.750	16.17	9	DRILL COLLAR STEEL	6.500	28.41
4	NON MAG. STAB	8.500	1.69	10	HWDP	5.000	128.33
5	NON MAG. COLLAR	6.437	9.00	11	DART SUB	6.312	0.51
6	STEEL STAB	8.500	1.91	12	HWDP	5.000	9.19

Reason Pulled: PENETRATION RATE Sum: 292.25

Norsk Hydro

CEMENT/ADDITIVE CONSUMPTION PER JOB ON WELL 35/4-1

Date	CsgSize	Jobtype	Cement/ Additive	Description	Unit	Amount Planned Used	Amount Actual Used	Difference Amount	Difference %	Cost [kNOK]
25-dec-1996	30"	CASING CEMENTING	API CLASS G	API CLASS G	MT		33			
			CaCl2C	CaCl2 / ACCELERATOR: CALCIUM C	l		1600			
			ECONO	EXTENDER: ECONOLITE	l		500			
			NF-5	NF-5	l		60			
30-dec-1996	20"	CASING CEMENTING	API CLASS G	API CLASS G	MT		239			
			CFR-3L	DISPERSANT: CFR-3 LIQUID	l		4000			
			ECONO	EXTENDER: ECONOLITE	l		2100			
			GASCON	EDP-C469-91	l		24200			
			HA344L	FLUID LOSS ADDITIVE: HALAD - 3	l		22180			
			HR-4L	RETARDER: HR-4L, LIQUID	l		6580			
			NF-5	NF-5	l		170			
20-jan-1997	13 3/8"	CASING CEMENTING	API CLASS G	API CLASS G	MT		43			
			CFR-3L	DISPERSANT: CFR-3 LIQUID	l		550			
			GASCON	EDP-C469-91	l		1550			
			HAL600	FLUID LOSS ADDITIVE: HALAD-600	l		1550			
			NF-5	NF-5	l		90			
			SCR-L	RETARDER: SCR-100L	l		720			
			SP500	SPACER 500	l		278			
26-feb-1997	9 5/8"	LINER CEMENTING	SILICA CEME	SILICA CEMENT	MT		37			
			CFR-3L	DISPERSANT: CFR-3 LIQUID	l		75			
			GASCON	EDP-C469-91	l		1700			
			HAL600	FLUID LOSS ADDITIVE: HALAD-600	l		1370			
			MUSOLE	SPECIAL ADDITIVE: N-VERS-SPERS	l		374			
			NF-5	NF-5	l		70			
			SCR-L	RETARDER: SCR-100L	l		1600			
			SEM 7	SPACER ADDITIVE: SEM 7	l		168			
			SP500	SPACER 500	l		300			
16-mar-1997	9 5/8"	PLUG IN CASED HO	SILICA CEME	SILICA CEMENT	MT		5			
			GASCON	EDP-C469-91	l		200			
			HAL600	FLUID LOSS ADDITIVE: HALAD-600	l		250			
			MUSOLE	SPECIAL ADDITIVE: N-VERS-SPERS	l		256			
			NF-5	NF-5	l		65			
			SCR-L	RETARDER: SCR-100L	l		160			
			SEM 7	SPACER ADDITIVE: SEM 7	l		112			
			SP500	SPACER 500	l		136			

Norsk Hydro

CEMENT/ADDITIVE CONSUMPTION PER JOB ON WELL 35/4-1

Date	CsgSize	Jobtype	Cement/ Additive	Description	Unit	Amount Planned Used	Amount Actual Used	Difference Amount	Difference %	Difference Cost [kNOK]
06-may-1997	UNDEFIN	PLUG IN OPEN HOL	SILICA CEME	SILICA CEMENT	MT		32			
			CFR-3L	DISPERSANT: CFR-3 LIQUID	1		520			
			GASCON	EDP-C469-91	1		1280			
			HA413L	FLUID LOSS ADDITIVE: HALAD-413	1		1280			
			HR-15L	RETARDER: HR-15L, LIQUID	1		2080			
06-may-1997	UNDEFIN	PLUG IN OPEN HOL	SILICA CEME	SILICA CEMENT	MT		0			
			CFR-3L	DISPERSANT: CFR-3 LIQUID	1		0			
			GASCON	EDP-C469-91	1		0			
			HA413L	FLUID LOSS ADDITIVE: HALAD-413	1		0			
			HR-15L	RETARDER: HR-15L, LIQUID	1		0			
07-may-1997	UNDEFIN	PLUG IN OPEN HOL	SILICA CEME	SILICA CEMENT	MT		60			
			CFR-3L	DISPERSANT: CFR-3 LIQUID	1		780			
			GASCON	EDP-C469-91	1		1920			
			HA413L	FLUID LOSS ADDITIVE: HALAD-413	1		1920			
			HR-15L	RETARDER: HR-15L, LIQUID	1		3720			
			SP500	SPACER 500	1		0			
07-may-1997	UNDEFIN	PLUG IN OPEN HOL	SILICA CEME	SILICA CEMENT	MT		10			
			CFR-3L	DISPERSANT: CFR-3 LIQUID	1		165			
			GASCON	EDP-C469-91	1		330			
			HA413L	FLUID LOSS ADDITIVE: HALAD-413	1		330			
			HR-15L	RETARDER: HR-15L, LIQUID	1		575			
			MUSOLE	SPECIAL ADDITIVE: N-VERS-SPERS	1		1052			
			NF-5	NF-5	1		36			
			SEM 7	SPACER ADDITIVE: SEM 7	1		600			
			SP500	SPACER 500	1		925			
13-may-1997	9 5/8"	PLUG IN CASED HO	API CLASS G	API CLASS G	MT		18			
			CFR-3L	DISPERSANT: CFR-3 LIQUID	1		300			
			GASCON	EDP-C469-91	1		815			
			HAL600	FLUID LOSS ADDITIVE: HALAD-600	1		830			
			MUSOLE	SPECIAL ADDITIVE: N-VERS-SPERS	1		350			
			NF-5	NF-5	1		73			
			SCR-L	RETARDER: SCR-100L	1		360			
			SEM 7	SPACER ADDITIVE: SEM 7	1		160			
			SP500	SPACER 500	1		273			
18-may-1997	13 3/8"	PLUG IN CASED HO	API CLASS G	API CLASS G	MT		29			

Norsk Hydro

CEMENT/ADDITIVE CONSUMPTION PER JOB ON WELL 35/4-1

Date	CsgSize	Jobtype	Cement/ Additive	Description	Unit	Amount Planned Used	Amount Actual Used	Difference Amount	Difference %	Difference Cost [kNOK]
18-may-1997	13 3/8"	PLUG IN CASED HO	CFR-3L	DISPERSANT: CFR-3 LIQUID	l		865			
			GASCON	EDP-C469-91	l		2120			
			HAL600	FLUID LOSS ADDITIVE: HALAD-600	l		1800			
			HR-4L	RETARDER: HR-4L, LIQUID	l		270			
			NF-5	NF-5	l		30			
20-may-1997	20"	PLUG IN CASED HO	SILICA CEME	SILICA CEMENT	MT		34			
			CFR-3L	DISPERSANT: CFR-3 LIQUID	l		420			
			GASCON	EDP-C469-91	l		1780			
			HAL600	FLUID LOSS ADDITIVE: HALAD-600	l		1000			
			HR-4L	RETARDER: HR-4L, LIQUID	l		230			
			NF-5	NF-5	l		30			
20-may-1997	20"	PLUG IN CASED HO	SILICA CEME	SILICA CEMENT	MT		10			
			HR-4L	RETARDER: HR-4L, LIQUID	l		185			

Norsk Hydro

DAILY MUD PROPERTIES : RHEOLOGY PARAMETERS FOR WELL 35/4-1

Hole section: WATER BASED SYSTEM

Date	Depth [m] MD	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]
23-dec-1996 23:59	464		BENTONITE	0.0	1.05	0.0									0.0	0.0	0.0	0.0	0.0

Hole section: 36" WATER BASED SYSTEM

Date	Depth [m] MD	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]
24-dec-1996 23:59	464		BENTONITE	0.0	1.05	0.0									0.0	0.0	0.0	0.0	0.0
25-dec-1996 00:00	464		BENTONITE	0.0	1.05	0.0									0.0	0.0	0.0	0.0	0.0

Hole section: 26" WATER BASED SYSTEM

Date	Depth [m] MD	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]
26-dec-1996 00:00	464		BENTONITE	0.0	1.05	0.0									0.0	0.0	0.0	0.0	0.0
27-dec-1996 00:00	464		BENTONITE	0.0	1.05	0.0									0.0	0.0	0.0	0.0	0.0
28-dec-1996 00:00	464		BENTONITE	0.0	1.05	0.0									0.0	0.0	0.0	0.0	0.0
29-dec-1996 00:00	464		BENTONITE	0.0	1.05	0.0									0.0	0.0	0.0	0.0	0.0
30-dec-1996 00:00	464		BENTONITE	0.0	1.05	0.0									0.0	0.0	0.0	0.0	0.0
31-dec-1996 00:00	464		BENTONITE	0.0	1.05	0.0									0.0	0.0	0.0	0.0	0.0
01-jan-1997 00:00	1362	1266	BENTONITE	70.0	1.30	0.0									50.0	20.0	11.0	3.0	4.0

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

Norsk Hydro

DAILY MUD PROPERTIES : RHEOLOGY PARAMETERS FOR WELL 35/4-1

Hole section: 17 1/2" WATER BASED SYSTEM

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann 600	Fann 300	Fann 200	Fann 100	Fann 60	Fann 30	Fann 6	Fann 3	Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]
02-jan-1997 23:59	1362	1266	ANCO 2000	55.0	1.30	0.0	48	31	22	17			6	4	50.0	17.0	7.0	2.0	4.0
03-jan-1997 23:00	1362	1266	ANCO 2000	83.0	1.30	0.0									50.0	20.0	22.5	5.0	2.0
04-jan-1997 23:00	1920	1755	ANCO 2000	78.0	1.30	0.0									50.0	25.0	17.5	5.5	12.0
05-jan-1997 23:00	2181	2011	ANCO 2000	87.0	1.30	0.0	84	60	50	37			11	9	50.0	24.0	18.0	5.0	9.0
06-jan-1997 23:00	2181	2011	ANCO 2000	87.0	1.30	0.0	84	60	50	37			11	9	50.0	24.0	18.0	5.0	9.0
07-jan-1997 22:00	2181	2011	ANCO 2000	90.0	1.30	0.0	84	60	50	37			11	9	50.0	24.0	18.0	5.0	9.0
08-jan-1997 22:00	2496	2291	ANCO 2000	90.0	1.30	0.0	82	58	48	36			12	9	50.0	24.0	17.0	5.0	10.0
09-jan-1997 19:30	2706	2440	ANCO 2000	68.0	1.30	0.0	70	49	41	30			10	7	50.0	21.0	14.0	4.5	10.0
10-jan-1997 21:30	2845	2517	ANCO 2000	74.0	1.30	0.0	71	50	41	29			10	8	50.0	21.0	14.5	4.0	8.0
11-jan-1997 23:30	3040	2550	ANCO 2000	85.0	1.30	0.0	80	55	46	33			10	8	50.0	25.0	15.0	4.5	9.0
12-jan-1997 20:30	3133	2544	ANCO 2000	96.0	1.40	0.0	87	60	48	34			10	8	50.0	31.0	17.5	5.0	12.5
13-jan-1997 21:30	3133	2544	ANCO 2000	96.0	1.40	0.0									50.0	31.0	17.5	5.0	12.5
14-jan-1997 22:30	3133	2544	ANCO 2000	96.0	1.40	0.0	97	66	53	38			12	9	50.0	31.0	17.5	5.0	12.5
15-jan-1997 22:30	3133	2544	ANCO 2000	98.0	1.40	0.0	97	66	53	38			12	9	50.0	31.0	17.5	5.0	12.5
16-jan-1997 22:00	3133	2544	ANCO 2000	99.0	1.40	0.0	97	66	53	38			12	9	50.0	31.0	17.5	5.0	12.5
17-jan-1997 19:30	3133	2544	ANCO 2000	105.0	1.40	0.0	99	67	53	38			12	9	50.0	32.0	17.5	5.0	12.5
18-jan-1997 11:30	3133	2544	ANCO 2000	71.0	1.40	0.0	87	60	49	35			11	8	50.0	27.0	16.5	4.0	10.0
19-jan-1997 23:00	3133	2544	ANCO 2000	110.0	1.40	0.0	85	57	47	34			9	7	50.0	28.0	14.5	4.0	10.0
20-jan-1997 10:00	3133	2544	ANCO 2000	120.0	1.40	31.0	86	57	47	34			9	7	50.0	29.0	14.0	4.0	10.0

Hole section: 12 1/4" WATER BASED SYSTEM

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann 600	Fann 300	Fann 200	Fann 100	Fann 60	Fann 30	Fann 6	Fann 3	Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]
21-jan-1997 21:00	3133	2544	ANCO 2000	0.0	1.40	0.0	88	56	46	33			9	7	50.0	32.0	12.0	4.5	11.0
22-jan-1997 22:00	3138	2544	ANCO 2000	68.0	1.40	0.0	78	52	41	29			7	5	50.0	26.0	13.0	2.5	7.0

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

Norsk Hydro

DAILY MUD PROPERTIES : RHEOLOGY PARAMETERS FOR WELL 35/4-1

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]
23-jan-1997 15:00	3147	2544	ANCOVERT	180.0	1.40	18.0	77	45	35	24			9	7	50.0	32.0	6.5	3.5	6.0
24-jan-1997 15:00	3159	2544	ANCOVERT	75.0	1.40	44.0	79	49	42	29			9	8	50.0	30.0	9.5	5.0	6.0
25-jan-1997 23:15	3178	2544	ANCOVERT	78.0	1.40	42.0	89	51	38	26			9	8	50.0	38.0	6.5	4.5	5.0
26-jan-1997 23:15	3252	2548	ANCOVERT	62.0	1.40	49.0	81	49	38	26			9	8	50.0	32.0	8.5	4.5	7.0
27-jan-1997 21:00	3324	2555	ANCOVERT	63.0	1.40	48.0	81	51	38	24			9	8	50.0	30.0	10.5	4.5	6.0
28-jan-1997 21:00	3343	2556	ANCOVERT	103.0	1.40	48.0									50.0	28.0	8.6	4.5	6.0
29-jan-1997 21:00	3428	2560	ANCOVERT	64.0	1.40	48.0									50.0	30.0	10.0	5.0	6.5
30-jan-1997 21:00	3480	2560	ANCOVERT	66.0	1.40	44.0									50.0	30.0	9.5	5.0	7.5
31-jan-1997 00:00	3526	2560	ANCOVERT	0.0	1.40	32.0	83	51	38	26			9	8	50.0	32.0	9.5	5.0	7.0
01-feb-1997 00:00	3564	2559	ANCOVERT	64.0	1.45	52.0	82	49	40	27			9	8	50.0	33.0	8.0	5.0	8.0
02-feb-1997 00:00	3625	2554	ANCOVERT	65.0	1.45	45.0	82	49	39	26			9	8	50.0	33.0	8.0	5.0	7.5
03-feb-1997 00:00	3658	2553	ANCOVERT	110.0	1.58	0.0	93	56	44	30			10	9	50.0	37.0	9.5	5.0	9.0
04-feb-1997 00:00	3658	2553	ANCOVERT	150.0	1.58	20.0	86	53	42	29			10	9	50.0	33.0	10.0	5.0	8.5
05-feb-1997 21:00	3668	2553	ANCOVERT	140.0	1.65	20.0	95	58	45	30			11	9	50.0	37.0	10.5	5.5	10.0
06-feb-1997 21:00	3715	2553	ANCOVERT	0.0	1.75	18.0	111	66	51	34			11	9	50.0	45.0	10.5	6.0	10.5
06-feb-1997 21:30	3697	2553	ANCOVERT	100.0	1.70	38.0	99	60	46	30			11	9	50.0	39.0	10.5	5.5	10.0
07-feb-1997 21:00	3715	2553	ANCOVERT	0.0	1.75	18.0	111	66	51	34			11	9	50.0	45.0	10.5	6.0	10.5
08-feb-1997 22:30	3715	2553	ANCOVERT	0.0	1.75	20.0	105	63	48	33			11	9	50.0	42.0	10.5	6.0	10.0
09-feb-1997 22:00	3715	2553	ANCOVERT	0.0	1.75	27.0	102	61	46	30			11	9	50.0	41.0	10.0	6.0	10.0
10-feb-1997 21:00	3715	2553	ANCOVERT	0.0	1.75	20.0	99	60	45	30			10	9	50.0	39.0	10.5	5.5	9.5
11-feb-1997 22:00	3715	2553	ANCOVERT	128.0	1.75	27.0	96	58	42	28			10	9	50.0	38.0	10.0	5.5	9.0
13-feb-1997 22:00	3715	2553	ANCOVERT	118.0	1.75	31.0	89	53	42	28			10	8	50.0	36.0	8.5	5.0	9.0
14-feb-1997 22:00	3715	2553	ANCOVERT	0.0	1.75	0.0	85	51	37	25			8	7	50.0	34.0	8.5	4.0	7.0
15-feb-1997 22:00	3715	2553	ANCOVERT	95.0	1.75	20.0	82	48	35	24			7	6	50.0	34.0	7.0	4.5	7.0
16-feb-1997 22:00	3715	2553	ANCOVERT	95.0	1.75	20.0									50.0	34.0	7.0	4.5	7.0
17-feb-1997 22:00	3715	2553	ANCOVERT	135.0	1.75	15.0	82	48	35	24			7	6	50.0	34.0	7.0	4.5	7.0
18-feb-1997 00:00	3715	2553	ANCOVERT	0.0	1.75	0.0	83	48	36	25			7	6	50.0	35.0	6.5	4.5	7.0
19-feb-1997 22:00	3715	2553	ANCOVERT	0.0	1.75	0.0	82	48	35	24			7	6	50.0	34.0	7.0	4.5	7.0

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

Norsk Hydro

DAILY MUD PROPERTIES : RHEOLOGY PARAMETERS FOR WELL 35/4-1

Hole section: 12 1/4" OIL 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-feb-1997 23:00	3715	2553	ANCOVERT	0.0	1.75	0.0	83	48	36	25			7	6	50.0	35.0	6.5	4.5	7.0
21-feb-1997 23:00	3715	2553	ANCOVERT	0.0	1.75	0.0	82	48	35	24			7	6	50.0	34.0	7.0	4.5	7.0
22-feb-1997 23:00	3715	2553	ANCOVERT	0.0	1.75	0.0	83	48	36	25			7	6	50.0	35.0	6.5	4.5	7.0
23-feb-1997 00:00	3715	2553	ANCOVERT	0.0	1.75	0.0	81	47	35	24			7	6	50.0	34.0	6.5	4.5	7.0
24-feb-1997 00:00	3715	2553	ANCOVERT	0.0	1.75	0.0	82	48	36	25			7	6	50.0	34.0	7.0	4.5	6.5
25-feb-1997 21:00	3100	2545	ANCOVERT	0.0	1.75	21.0	86	49	37	24			8	7	50.0	37.0	6.0	4.5	6.5
26-feb-1997 21:00	3715	2553	ANCOVERT	0.0	1.75	0.0	82	48	35	23			7	6	50.0	34.0	7.0	4.0	6.5
27-feb-1997 21:00	3715	2553	ANCOVERT	0.0	1.75	0.0	88	52	39	25			8	7	50.0	36.0	8.0	4.5	6.5
28-feb-1997 21:00	3715	2553	ANCOVERT	0.0	1.75	0.0	85	50	40	25			8	7	50.0	35.0	7.5	4.5	6.5
01-mar-1997 21:00	3715	2553	ANCOVERT	0.0	1.75	0.0	84	50	38	25			8	7	50.0	34.0	8.0	4.0	6.5
02-mar-1997 21:00	3715	2553	ANCOVERT	0.0	1.75	0.0	83	49	39	25			8	7	50.0	34.0	7.5	4.5	6.5
03-mar-1997 21:00	3715	2553	ANCOVERT	0.0	1.75	0.0	80	43	37	24			8	7	50.0	32.0	8.0	4.0	6.0
04-mar-1997 21:00	3715	2553	ANCOVERT	0.0	1.75	0.0	83	49	38	24			8	7	50.0	35.0	8.0	4.5	6.5

Hole section: 8 1/2" OIL 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]
06-mar-1997 20:00	3715	2553	ANCOVERT	0.0	1.75	0.0	86	51	38	25			8	7	50.0	35.0	8.0	4.5	6.0
07-mar-1997 20:00	3715	2553	ANCOVERT	0.0	1.75	0.0	85	51	40	26			8	7	50.0	34.0	8.5	4.5	6.0
08-mar-1997 20:00	3715	2553	ANCOVERT	0.0	1.75	0.0	85	51	40	26			8	7	0.0	34.0	8.5	4.5	6.0
09-mar-1997 20:00	3715	2553	ANCOVERT	0.0	1.75	0.0	84	50	39	26			8	7	50.0	34.0	8.0	4.5	6.0
10-mar-1997 16:00	0		ANCOVERT	0.0	1.75	0.0	83	49	38	25			8	6	50.0	34.0	7.5	4.5	6.0
12-mar-1997 16:00	0		ANCOVERT	0.0	1.75	0.0	84	50	38	25			8	6	50.0	34.0	8.0	4.5	6.0
13-mar-1997 16:00	0		ANCOVERT	160.0	1.75	23.0	83	49	37	24			7	6	50.0	34.0	7.5	4.5	6.0
14-mar-1997 22:00	0		ANCOVERT	160.0	1.75	23.0	83	49	37	24			7	6	50.0	34.0	7.5	4.5	6.0
15-mar-1997 22:00	3715	2553	ANCOVERT	75.0	1.75	38.0	82	48	36	23			7	6	50.0	34.0	7.0	4.0	6.0

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

Norsk Hydro

DAILY MUD PROPERTIES : RHEOLOGY PARAMETERS FOR WELL 35/4-1

Hole section: 8 1/2"

OIL 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]
18-mar-1997 23:00	3711	2553	ANCOVERT	0.0	1.75	0.0	83	49	36	23			7	6	50.0	34.0	7.5	5.0	6.0
19-mar-1997 22:00	3711	2553	ANCOVERT	0.0	1.75	0.0	85	51	37	24			7	6	50.0	34.0	8.5	4.5	6.0
19-mar-1997 23:00	3735	2553	ANCOVERT	74.0	1.75	42.0	88	51	38	24			8	7	50.0	37.0	7.0	4.5	6.0
21-mar-1997 22:00	3802	2552	ANCOVERT	62.0	1.75	46.0	82	47	35	23			7	6	50.0	35.0	6.0	4.0	5.5
22-mar-1997 22:00	3837	2552	ANCOVERT	79.0	1.75	30.0	76	44	32	21			7	6	50.0	32.0	6.0	4.0	5.5
23-mar-1997 22:00	3868	2551	ANCOVERT	69.0	1.76	32.0	72	42	32	21			7	6	50.0	30.0	6.0	3.5	5.0
24-mar-1997 23:30	3954	2551	ANCOVERT	65.0	1.83	38.0	83	47	36	24			7	6	50.0	36.0	5.5	3.5	6.0
25-mar-1997 21:00	3992	2554	ANCOVERT	85.0	1.83	29.0	85	50	37	24			8	6	50.0	35.0	7.5	4.5	6.0
26-mar-1997 22:00	3992	2554	ANCOVERT	93.0	1.83	29.0	85	50	37	24			8	6	50.0	35.0	7.5	4.5	6.0
27-mar-1997 22:00	4005	2554	ANCOVERT	0.0	1.83	27.0	80	46	35	22			7	6	50.0	34.0	6.0	4.0	6.0
28-mar-1997 22:00	4072	2558	ANCOVERT	72.0	1.90	37.0	89	52	39	25			8	6	50.0	37.0	7.5	4.5	6.5
29-mar-1997 23:59	4084	2558	ANCOVERT	74.0	1.90	0.0									50.0	37.0	7.5	4.5	6.5
30-mar-1997 23:59	4093	2558	ANCOVERT	104.0	1.90	0.0									50.0	37.0	8.0	4.5	6.0
31-mar-1997 21:00	4108	2559	ANCOVERT	104.0	1.90	22.0	89	52	38	24			7	6	50.0	37.0	7.5	4.5	6.5
01-apr-1997 21:00	4108	2559	ANCOVERT	102.0	1.90	20.0	90	52	39	25			7	6	50.0	38.0	7.0	4.0	6.5
02-apr-1997 22:00	4113	2559	ANCOVERT	102.0	1.90	20.0	88	51	38	25			7	6	50.0	37.0	7.0	4.0	6.0
03-apr-1997 22:00	4139	2560	ANCOVERT	101.0	1.90	22.0	87	50	38	24			7	6	50.0	37.0	6.5	4.0	6.0
04-apr-1997 22:00	4141	2560	ANCOVERT	101.0	1.90	22.0	92	54	41	26			8	7	50.0	38.0	8.0	4.5	6.5
05-apr-1997 21:30	4174	2562	ANCOVERT	97.0	1.90	24.0	90	52	38	24			7	6	50.0	38.0	7.0	4.0	6.5
06-apr-1997 22:30	4178	2562	ANCOVERT	108.0	1.90	20.0	90	52	38	24			7	6	50.0	38.0	7.0	4.0	6.5
07-apr-1997 22:00	4219	2565	ANCOVERT	88.0	1.90	24.0	87	50	37	23			7	6	50.0	37.0	6.5	4.0	6.0
08-apr-1997 20:00	4219	2565	ANCOVERT	0.0	1.90	0.0	87	50	37	24			7	6	50.0	37.0	6.5	4.0	6.0
09-apr-1997 23:30	4245	2567	ANCOVERT	98.0	1.90	21.0	91	53	38	24			7	6	50.0	38.0	7.5	4.0	6.0
10-apr-1997 23:00	4263	2569	ANCOVERT	105.0	1.90	0.0	87	50	37	24			7	6	50.0	37.0	6.5	4.0	6.0
11-apr-1997 22:00	4267	2569	ANCOVERT	88.0	1.90	28.0	87	50	38	24			7	6	50.0	37.0	6.5	4.0	6.0
12-apr-1997 22:30	4267	2569	ANCOVERT	95.0	1.90	0.0	86	49	36	24			7	6	50.0	37.0	6.0	4.0	6.0
13-apr-1997 21:00	4294	2571	ANCOVERT	81.0	1.90	36.0	91	53	39	25			7	6	50.0	38.0	7.5	4.0	7.0
14-apr-1997 22:30	0		ANCOVERT	0.0	1.90	0.0	91	53	40	25			7	6	50.0	38.0	7.5	4.0	6.0

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

Norsk Hydro

DAILY MUD PROPERTIES : RHEOLOGY PARAMETERS FOR WELL 35/4-1

Hole section: 8 1/2" OIL 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]
15-apr-1997 23:00	0		ANCOVERT	0.0	1.90	0.0	91	53	39	24			7	6	50.0	38.0	7.5	4.0	6.0
16-apr-1997 22:30	4324	2573	ANCOVERT	84.0	1.95	36.0	102	60	45	28			8	7	50.0	42.0	9.0	4.5	7.0
17-apr-1997 23:00	4447	2570	ANCOVERT	88.0	1.95	29.0	105	62	47	29			8	6	50.0	43.0	9.5	4.5	7.0
18-apr-1997 22:00	4464	2568	ANCOVERT	145.0	1.95	21.0	107	62	46	29			8	6	50.0	45.0	8.5	4.5	7.0
19-apr-1997 23:00	4475	2567	ANCOVERT	0.0	1.95	0.0	104	61	44	28			8	6	50.0	43.0	9.0	4.5	7.0
20-apr-1997 22:30	4478	2566	ANCOVERT	112.0	1.95	0.0	103	61	43	28			8	6	50.0	42.0	9.5	4.5	7.0
21-apr-1997 23:59	4579	2555	ANCOVERT	115.0	1.95	0.0									50.0	43.0	9.0	4.5	6.5
22-apr-1997 20:30	4669	2544	ANCOVERT	105.0	1.95	28.0	109	63	47	29			8	7	50.0	46.0	8.5	4.5	7.0
23-apr-1997 20:30	4709	2539	ANCOVERT	105.0	1.95	28.0	110	64	48	29			8	7	50.0	46.0	9.0	5.0	7.5
24-apr-1997 22:00	4737	2536	ANCOVERT	102.0	1.95	26.0	107	62	46	29			8	7	50.0	45.0	8.5	4.5	7.5
25-apr-1997 22:00	4737	2536	ANCOVERT	122.0	1.95	26.0	109	63	47	29			8	6	50.0	46.0	8.5	4.5	7.0
26-apr-1997 22:00	4737	2536	ANCOVERT	122.0	1.95	26.0	105	61	45	28			8	6	50.0	44.0	8.5	4.5	7.0
27-apr-1997 22:00	4826	2526	ANCOVERT	0.0	1.95	26.0	112	65	49	30			8	7	50.0	47.0	9.0	4.5	7.5
28-apr-1997 22:00	4877	2520	ANCOVERT	0.0	1.95	32.0	112	64	48	30			8	7	50.0	48.0	8.0	4.5	7.5
29-apr-1997 22:00	4934	2513	ANCOVERT	95.0	1.95	32.0	115	67	48	30			8	7	50.0	48.0	9.5	4.5	7.5
30-apr-1997 22:00	4936	2513	ANCOVERT	100.0	1.95	38.0									50.0	50.0	8.5	4.5	7.5
01-may-1997 22:00	4936	2513	ANCOVERT	*****	1.95	0.0									50.0	51.0	9.5	4.5	8.0
02-may-1997 22:00	4936	2513	ANCOVERT	0.0	1.95	0.0	121	70	53	33			9	8	50.0	51.0	9.5	4.5	8.0
03-may-1997 22:00	4936	2513	ANCOVERT	0.0	1.95	0.0	117	68	51	32			9	7	50.0	49.0	9.5	4.5	7.0
04-may-1997 22:00	4936	2513	ANCOVERT	0.0	1.95	0.0	117	68	52	33			9	7	50.0	49.0	9.5	4.5	7.5

Hole section: 0.0 OIL 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]
05-may-1997 22:00	4936	2513	ANCOVERT	0.0	1.95	26.0	123	72	53	33			9	7	50.0	51.0	10.5	4.5	7.5
06-may-1997 22:00	4936	2513	ANCOVERT	0.0	1.95	26.0	124	71	52	32			8	6	50.0	53.0	9.0	4.5	7.5

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

Norsk Hydro

DAILY MUD PROPERTIES : RHEOLOGY PARAMETERS FOR WELL 35/4-1

Hole section: 0.0

OIL 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]
07-may-1997 22:00	4190	2563	ANCOVERT	0.0	1.95	26.0	117	67	52	32			9	7	50.0	50.0	8.5	4.5	7.5
08-may-1997 22:00	4190	2563	ANCOVERT	0.0	1.95	26.0	116	67	51	31			9	7	50.0	49.0	9.0	4.5	7.5
09-may-1997 22:00	3000	2552	ANCOVERT	0.0	1.75	26.0	86	50	37	24			7	6	50.0	36.0	7.0	4.0	5.5
10-may-1997 22:00	3000	2552	ANCOVERT	0.0	1.75	0.0	90	53	39	25			7	6	50.0	37.0	8.0	4.0	5.5
11-may-1997 22:00	3000	2552	ANCOVERT	0.0	1.76	0.0	81	47	35	22			7	6	50.0	34.0	6.5	4.0	5.5
12-may-1997 22:00	2946	2548	ANCOVERT	0.0	1.76	0.0	91	56	35	22			8	7	50.0	35.0	10.5	4.5	7.0
13-may-1997 22:00	3003	2552	ANCOVERT	0.0	1.76	0.0	86	49	36	23			8	7	50.0	37.0	6.0	4.5	7.0

Hole section: 0.0

WATER BASED SYSTEM

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Funnel Visc [sec]	Dens [sg]	Mudtmp Out [DegC]	Fann Readings 600	300	200	100	60	30	6	3	Rheo Test [DegC]	PV [mPas]	YP [Pa]	Gel0 [Pa]	Gel10 [Pa]
14-may-1997 22:00	1300	1216	BENTONITE	68.0	1.40	13.0	63	50	44	23			19	16	50.0	13.0	18.5	9.0	19.0
15-may-1997 23:00	1300	1216	BENTONITE	58.0	1.40	18.0	62	44	37	30			21	19	50.0	18.0	13.0	12.0	18.0
16-may-1997 23:00	1300	1216	BENTONITE	58.0	1.40	14.0	62	45	37	30			21	19	50.0	17.0	14.0	12.0	16.0
17-may-1997 23:00	1300	1216	BENTONITE	56.0	1.40	11.0	60	43	37	28			16	14	50.0	17.0	13.0	10.0	18.0
18-may-1997 00:00	1300	1216	BENTONITE	65.0	1.40	15.0	53	38	31	24			13	12	50.0	15.0	11.5	7.0	16.0
19-may-1997 22:00	1128	1076	BENTONITE	62.0	1.40	11.0	48	34	29	21			12	11	50.0	14.0	10.0	6.0	15.0
20-may-1997 20:00	1128	1076	BENTONITE	54.0	1.40	13.0	48	34	28	21			11	10	50.0	14.0	10.0	7.0	19.0
21-may-1997 04:00	1128	1076	BENTONITE	0.0	1.40	0.0	47	33	27	21			11	10	50.0	14.0	9.5	7.0	16.0

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

DAILY MUD PROPERTIES : OTHER PARAMETERS FOR WELL 35/4-1

Hole section:

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]
23-dec-1996 23:59	464		BENTONITE	1.05	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: 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]
24-dec-1996 23:59	464		BENTONITE	1.05	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
25-dec-1996 00:00	464		BENTONITE	1.05	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: 26"

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]
26-dec-1996 00:00	464		BENTONITE	1.05	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
27-dec-1996 00:00	464		BENTONITE	1.05	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
28-dec-1996 00:00	464		BENTONITE	1.05	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
29-dec-1996 00:00	464		BENTONITE	1.05	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-dec-1996 00:00	464		BENTONITE	1.05	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
31-dec-1996 00:00	464		BENTONITE	1.05	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
01-jan-1997 00:00	1362	1266	BENTONITE	1.30	2.0	0.0	0	0	0/0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0.0	0.0	1.0	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]
02-jan-1997 23:59	1362	1266	ANCO 2000	1.30	2.0	0.0	0	0	0/0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0.0	0.0	1.0	0	0.0	0
03-jan-1997 23:00	1362	1266	ANCO 2000	1.30	2.0	0.0	0	0	0/0	8.8	0.0	0.3	1.4	130	68	64000	0	0	680	9.3	0.0	0.7	14	****	62
04-jan-1997 23:00	1920	1755	ANCO 2000	1.30	2.4	0.0	0	0	0/0	8.2	0.0	0.1	0.8	140	73	76000	600	0	740	8.8	0.0	1.0	28	****	77
05-jan-1997 23:00	2181	2011	ANCO 2000	1.30	2.2	0.0	1	0	500/140	8.0	0.0	0.0	0.9	0	73	76000	680	24	720	15.0	0.0	1.0	40	3.6	104
06-jan-1997 23:00	2181	2011	ANCO 2000	1.30	2.2	0.0	1	0	500/140	8.0	0.0	0.0	0.9	0	73	76000	680	24	720	15.0	0.0	1.0	40	3.6	104
07-jan-1997 22:00	2181	2011	ANCO 2000	1.30	2.2	0.0	1	0	500/140	8.0	0.0	0.0	0.9	0	73	76000	680	24	720	15.0	0.0	1.0	40	3.6	104
08-jan-1997 22:00	2496	2291	ANCO 2000	1.30	2.0	0.0	1	0	500/140	8.0	0.0	0.1	0.8	140	73	79000	520	43	680	15.0	0.0	1.0	40	3.6	104
09-jan-1997 19:30	2706	2440	ANCO 2000	1.30	2.7	0.0	1	0	500/140	7.9	0.0	0.1	0.8	140	73	84000	660	0	780	16.0	0.0	1.0	40	3.6	139
10-jan-1997 21:30	2845	2517	ANCO 2000	1.30	2.3	0.0	1	0	500/140	7.8	0.0	0.1	0.8	140	73	85000	520	0	0	16.5	0.0	0.5	53	****	163
11-jan-1997 23:30	3040	2550	ANCO 2000	1.30	2.2	0.0	1	0	500/140	7.8	0.0	0.0	0.8	140	73	89000	500	0	0	16.5	0.0	0.2	52	****	153
12-jan-1997 20:30	3133	2544	ANCO 2000	1.40	2.2	0.0	1	0	500/140	7.9	0.0	0.1	0.8	137	72	72000	520	0	0	19.0	0.0	0.5	52	****	167
13-jan-1997 21:30	3133	2544	ANCO 2000	1.40	2.2	0.0	1	0	500/140	7.9	0.0	0.1	0.8	137	72	72000	520	0	0	19.0	0.0	0.5	52	****	167
14-jan-1997 22:30	3133	2544	ANCO 2000	1.40	2.2	0.0	1	0	500/140	7.9	0.0	0.1	0.8	137	72	72000	520	0	0	19.0	0.0	0.5	52	****	167
15-jan-1997 22:30	3133	2544	ANCO 2000	1.40	2.2	0.0	1	0	500/140	7.9	0.0	0.1	0.8	137	72	72000	520	0	0	19.0	0.0	0.5	52	****	183
16-jan-1997 22:00	3133	2544	ANCO 2000	1.40	2.2	0.0	1	0	500/140	7.9	0.0	0.1	0.8	137	72	72000	520	0	0	19.0	0.0	0.5	52	****	184

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

Norsk Hydro

DAILY MUD PROPERTIES : OTHER PARAMETERS FOR WELL 35/4-1

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]
17-jan-1997 19:30	3133	2544	ANCO 2000	1.40	2.2	0.0	1	0	500/140	7.9	0.0	0.1	0.8	137	72	72000	520	0	0	19.0	0.0	0.5	52	****	184
18-jan-1997 11:30	3133	2544	ANCO 2000	1.40	2.4	0.0	1	0	500/140	8.0	0.0	0.1	0.8	135	71	72000	520	0	0	18.5	0.0	0.5	52	****	157
19-jan-1997 23:00	3133	2544	ANCO 2000	1.40	2.4	0.0	1	0	500/140	7.9	0.0	0.1	0.8	135	71	72000	520	0	0	18.5	0.0	0.5	52	****	157
20-jan-1997 10:00	3133	2544	ANCO 2000	1.40	2.4	0.0	1	0	500/140	7.9	0.0	0.1	0.8	0	71	73000	500	0	0	18.5	0.0	0.2	54	3.6	155

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]
21-jan-1997 21:00	3133	2544	ANCO 2000	1.40	2.6	0.0	1	0	500/140	8.1	0.0	0.1	0.8	0	70	72000	480	72	600	18.5	0.0	0.5	49	3.6	157
22-jan-1997 22:00	3138	2544	ANCO 2000	1.40	3.1	0.0	1	0	500/140	10.5	0.0	0.0	0.0	0	65	69000	880	24	920	18.0	0.0	0.5	49	3.6	121

Hole section: 12 1/4"

OIL BASED SYSTEM

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Dens [sg]	Filtrate HPHT [ml]	Filt.cake HPHT [mm]	HPHT Press/Temp [psi/DegC]	Electrical Stability [V]	Alcalinity Pm [ml]	CaCl2 [mg/l]	Oil/Water Ratio	Percentage Solid [%]	Percentage Oil [%]	Percentage Sand [%]	ASG [sg]	LGS [Kg/m3]
23-jan-1997 15:00	3147	2544	ANCOVERT	1.40	5.0	1	500/75	217	0.0	152	74/26	22.0	58.0	0.2	0.0	323
24-jan-1997 15:00	3159	2544	ANCOVERT	1.40	5.0	1	500/75	2000	0.0	152	75/25	18.5	61.5	0.1	0.0	124
25-jan-1997 23:15	3178	2544	ANCOVERT	1.40	2.0	1	500/75	2000	0.0	166	75/25	18.5	61.5	0.3	0.0	147
26-jan-1997 23:15	3252	2548	ANCOVERT	1.40	2.0	1	500/75	2000	0.0	197	77/23	18.0	63.0	0.2	0.0	84
27-jan-1997 21:00	3324	2555	ANCOVERT	1.40	2.4	1	500/75	2000	0.0	213	79/21	18.0	64.5	0.1	0.0	94
28-jan-1997 21:00	3343	2556	ANCOVERT	1.40	3.0	1	500/75	2000	0.0	205	79/21	18.0	64.5	0.1	0.0	95
29-jan-1997 21:00	3428	2560	ANCOVERT	1.40	2.8	1	500/75	2000	0.0	220	79/21	18.0	64.5	0.1	0.0	94
30-jan-1997 21:00	3480	2560	ANCOVERT	1.40	2.8	1	500/75	2000	0.0	236	80/20	18.0	66.0	0.1	0.0	89
31-jan-1997 00:00	3526	2560	ANCOVERT	1.40	2.8	1	500/140	2000	2.9	236	80/20	18.0	66.0	0.1	3.6	89
01-feb-1997 00:00	3564	2559	ANCOVERT	1.45	2.4	1	500/140	2000	3.0	246	82/18	20.0	66.0	0.1	3.6	111
02-feb-1997 00:00	3625	2554	ANCOVERT	1.45	2.8	1	500/140	2000	2.8	246	83/17	19.5	66.5	0.1	3.6	83
03-feb-1997 00:00	3658	2553	ANCOVERT	1.58	3.0	1	500/140	2000	3.2	241	84/16	24.0	64.0	0.1	3.6	113
04-feb-1997 00:00	3658	2553	ANCOVERT	1.58	3.0	1	500/140	2000	3.2	226	83/17	23.0	64.0	0.1	3.6	61
05-feb-1997 21:00	3668	2553	ANCOVERT	1.65	2.6	1	500/140	2000	2.9	252	83/17	25.0	62.0	0.1	3.6	58
06-feb-1997 21:00	3715	2553	ANCOVERT	1.75	2.4	1	500/140	2000	3.0	221	81/19	27.0	59.0	0.5	3.6	9
06-feb-1997 21:30	3697	2553	ANCOVERT	1.70	2.6	1	500/140	2000	2.6	238	81/19	26.0	60.0	0.4	3.6	35
07-feb-1997 21:00	3715	2553	ANCOVERT	1.75	2.4	1	500/140	2000	3.0	221	81/19	27.0	59.0	0.5	3.6	9
08-feb-1997 22:30	3715	2553	ANCOVERT	1.75	2.4	1	500/140	2000	2.7	230	81/19	27.0	59.0	0.5	3.6	9
09-feb-1997 22:00	3715	2553	ANCOVERT	1.75	3.0	1	500/140	2000	2.6	221	81/19	28.0	58.0	0.6	3.6	48
10-feb-1997 21:00	3715	2553	ANCOVERT	1.75	3.0	1	500/140	2000	3.0	213	81/19	28.0	58.0	0.6	3.6	64
11-feb-1997 22:00	3715	2553	ANCOVERT	1.75	2.8	1	500/140	2000	3.0	217	82/18	28.0	59.0	0.5	3.6	61
13-feb-1997 22:00	3715	2553	ANCOVERT	1.75	2.6	1	500/140	2000	2.8	226	82/18	28.0	59.0	0.5	3.6	61
14-feb-1997 22:00	3715	2553	ANCOVERT	1.75	2.4	1	500/140	2000	3.0	217	82/18	28.5	58.5	0.5	3.6	88
15-feb-1997 22:00	3715	2553	ANCOVERT	1.75	2.8	1	500/140	2000	2.6	196	82/18	28.5	58.5	0.5	3.6	89
16-feb-1997 22:00	3715	2553	ANCOVERT	1.75	2.8	1	500/140	2000	2.6	196	82/18	28.5	58.5	0.5	3.6	89

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

Norsk Hydro

DAILY MUD PROPERTIES : OTHER PARAMETERS FOR WELL 35/4-1

Hole section: 12 1/4"

OIL BASED SYSTEM

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Dens [sg]	Filtrate HPHT [ml]	Filt.cake HPHT [mm]	HPHT Press/Temp [psi/DegC]	Electrical Stability [V]	Alcalinity Pm [ml]	CaCl2 [mg/l]	Oil/Water Ratio	Percentage Solid [%]	Percentage Oil [%]	Percentage Sand [%]	ASG [sg]	LGS [Kg/m3]
17-feb-1997 22:00	3715	2553	ANCOVERT	1.75	2.8	1	500/140	2000	2.6	196	82/18	28.5	58.5	0.5	3.6	89
18-feb-1997 00:00	3715	2553	ANCOVERT	1.75	2.6	1	500/140	2000	2.6	196	82/18	28.5	58.5	0.0	3.6	89
19-feb-1997 22:00	3715	2553	ANCOVERT	1.75	2.6	1	500/140	2000	2.6	196	82/18	28.5	58.5	0.0	3.6	89
20-feb-1997 23:00	3715	2553	ANCOVERT	1.75	2.8	1	500/140	2000	2.6	196	82/18	28.5	58.5	0.0	3.6	89
21-feb-1997 23:00	3715	2553	ANCOVERT	1.75	2.4	1	500/140	2000	2.6	196	82/18	28.5	58.5	0.0	3.6	89
22-feb-1997 23:00	3715	2553	ANCOVERT	1.75	2.6	1	500/140	2000	2.6	185	82/18	28.5	58.5	0.0	3.6	88
23-feb-1997 00:00	3715	2553	ANCOVERT	1.75	2.8	1	500/140	2000	2.6	185	82/18	28.5	58.5	0.0	3.6	88
24-feb-1997 00:00	3715	2553	ANCOVERT	1.75	2.8	1	500/140	2000	2.2	185	82/18	28.5	58.5	0.0	3.6	88
25-feb-1997 21:00	3100	2545	ANCOVERT	1.75	2.8	1	500/140	2000	2.2	203	81/19	28.0	58.0	0.0	3.6	64
26-feb-1997 21:00	3715	2553	ANCOVERT	1.75	2.2	1	500/140	2000	2.5	196	82/18	28.0	59.0	0.0	3.6	61
27-feb-1997 21:00	3715	2553	ANCOVERT	1.75	2.0	1	500/140	2000	2.2	161	79/21	28.0	57.0	0.0	3.6	68
28-feb-1997 21:00	3715	2553	ANCOVERT	1.75	2.0	1	500/140	2000	2.3	172	81/19	28.0	58.0	0.2	3.6	64
01-mar-1997 21:00	3715	2553	ANCOVERT	1.75	2.2	1	500/140	2000	2.4	162	81/19	28.0	58.0	0.2	3.6	64
02-mar-1997 21:00	3715	2553	ANCOVERT	1.75	2.0	1	500/140	2000	2.3	162	81/19	28.0	58.0	0.2	3.4	64
03-mar-1997 21:00	3715	2553	ANCOVERT	1.75	2.0	1	500/140	2000	2.2	162	81/19	28.0	58.0	0.2	3.6	64
04-mar-1997 21:00	3715	2553	ANCOVERT	1.75	2.2	1	500/125	2000	2.2	162	81/19	28.0	58.0	0.2	0.0	64

Hole section: 8 1/2"

OIL BASED SYSTEM

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Dens [sg]	Filtrate HPHT [ml]	Filt.cake HPHT [mm]	HPHT Press/Temp [psi/DegC]	Electrical Stability [V]	Alcalinity Pm [ml]	CaCl2 [mg/l]	Oil/Water Ratio	Percentage Solid [%]	Percentage Oil [%]	Percentage Sand [%]	ASG [sg]	LGS [Kg/m3]
06-mar-1997 20:00	3715	2553	ANCOVERT	1.75	2.0	1	500/125	840	0.0	183	58/14	28.0	58.0	0.2	****	64
07-mar-1997 20:00	3715	2553	ANCOVERT	1.75	2.0	1	500/125	840	0.0	173	81/19	28.0	58.0	0.2	****	64
08-mar-1997 20:00	3715	2553	ANCOVERT	1.75	2.0	1	500/125	840	0.0	173	81/19	28.0	58.0	0.2	****	64
09-mar-1997 20:00	3715	2553	ANCOVERT	1.75	2.0	1	500/125	840	2.4	173	81/19	28.0	58.0	0.2	****	64
10-mar-1997 16:00	0		ANCOVERT	1.75	2.0	1	500/140	800	2.4	162	81/19	28.0	58.0	0.2	3.6	64
12-mar-1997 16:00	0		ANCOVERT	1.75	2.0	1	500/140	790	2.0	162	81/19	28.0	58.0	0.2	3.6	64
13-mar-1997 16:00	0		ANCOVERT	1.75	2.0	1	500/140	750	2.0	162	81/19	28.0	58.0	0.2	3.6	58
14-mar-1997 22:00	0		ANCOVERT	1.75	2.0	1	500/140	750	2.0	162	81/19	28.0	58.0	0.2	3.6	64
15-mar-1997 22:00	3715	2553	ANCOVERT	1.75	2.0	1	500/140	810	2.6	182	80/20	30.0	56.0	3.0	3.6	175
18-mar-1997 23:00	3711	2553	ANCOVERT	1.75	2.2	1	500/140	800	2.5	182	80/20	29.0	57.0	2.5	3.6	119
19-mar-1997 22:00	3711	2553	ANCOVERT	1.75	2.2	1	500/140	800	2.4	176	80/20	29.0	56.5	2.0	3.6	121
19-mar-1997 23:00	3735	2553	ANCOVERT	1.75	2.0	1	500/140	585	1.2	184	78/22	29.0	55.5	0.5	3.6	125
21-mar-1997 22:00	3802	2552	ANCOVERT	1.75	2.0	1	500/140	708	2.5	176	80/20	29.0	56.5	0.2	3.6	121
22-mar-1997 22:00	3837	2552	ANCOVERT	1.75	2.0	1	500/140	760	2.4	173	80/20	30.0	56.0	0.2	3.6	174
23-mar-1997 22:00	3868	2551	ANCOVERT	1.76	1.8	1	500/140	779	2.4	163	81/19	30.0	57.0	0.0	3.6	155
24-mar-1997 23:30	3954	2551	ANCOVERT	1.83	1.6	1	500/140	723	2.3	187	83/17	33.0	55.8	0.0	3.6	200
25-mar-1997 21:00	3992	2554	ANCOVERT	1.83	1.6	1	500/140	860	2.2	170	83/17	33.0	55.5	0.0	3.6	201
26-mar-1997 22:00	3992	2554	ANCOVERT	1.83	1.6	1	500/140	860	2.4	176	83/17	31.0	57.0	0.0	3.6	93
27-mar-1997 22:00	4005	2554	ANCOVERT	1.83	2.2	1	500/140	650	3.0	241	83/17	31.0	57.0	0.0	3.6	92
28-mar-1997 22:00	4072	2558	ANCOVERT	1.90	2.6	1	500/140	950	3.2	241	82/18	33.0	55.0	0.0	3.6	89
29-mar-1997 23:59	4084	2558	ANCOVERT	1.90	2.6	1	500/140	950	3.2	240	83/17	33.0	55.5	0.0	3.6	87

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

Norsk Hydro

DAILY MUD PROPERTIES : OTHER PARAMETERS FOR WELL 35/4-1

Hole section: 8 1/2"   OIL BASED SYSTEM

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Dens [sg]	Filtrate HPHT [ml]	Filt.cake HPHT [mm]	HPHT Press/Temp [psi/DegC]	Electrical Stability [V]	Alcalinity Pm [ml]	CaCl2 [mg/l]	Oil/Water Ratio	Percentage Solid [%]	Percentage Oil [%]	Percentage Sand [%]	ASG [sg]	LGS [Kg/m3]
30-mar-1997 23:59	4093	2558	ANCOVERT	1.90	2.4	1	500/140	840	3.1	208	83/17	33.0	55.5	0.0	3.6	87
31-mar-1997 21:00	4108	2559	ANCOVERT	1.90	2.4	1	500/140	940	3.1	195	83/17	33.0	55.5	0.8	3.6	87
01-apr-1997 21:00	4108	2559	ANCOVERT	1.90	2.8	1	500/140	990	3.1	195	83/17	33.0	55.5	0.3	3.6	87
02-apr-1997 22:00	4113	2559	ANCOVERT	1.90	2.4	1	500/140	960	3.1	204	84/16	33.0	56.0	0.2	3.6	85
03-apr-1997 22:00	4139	2560	ANCOVERT	1.90	2.2	1	500/140	920	2.9	191	84/16	33.0	56.0	0.2	3.6	86
04-apr-1997 22:00	4141	2560	ANCOVERT	1.90	2.6	1	500/140	1020	2.9	199	84/16	33.0	56.5	0.2	3.6	84
05-apr-1997 21:30	4174	2562	ANCOVERT	1.90	2.6	1	500/140	950	3.0	209	85/15	34.0	56.0	0.1	3.6	137
06-apr-1997 22:30	4178	2562	ANCOVERT	1.90	2.4	1	500/140	920	2.9	221	85/15	34.0	56.0	0.1	3.6	137
07-apr-1997 22:00	4219	2565	ANCOVERT	1.90	2.4	1	500/140	880	2.9	209	85/15	34.0	56.0	0.2	3.6	137
08-apr-1997 20:00	4219	2565	ANCOVERT	1.90	2.6	1	500/140	900	2.9	209	85/15	34.0	56.0	0.1	3.6	137
09-apr-1997 23:30	4245	2567	ANCOVERT	1.90	2.8	1	500/140	980	2.9	233	85/15	34.0	56.0	0.1	3.6	137
10-apr-1997 23:00	4263	2569	ANCOVERT	1.90	3.4	1	500/140	780	1.7	209	85/15	34.0	56.0	0.1	3.6	137
11-apr-1997 22:00	4267	2569	ANCOVERT	1.90	2.6	1	500/140	760	2.3	245	85/15	34.0	56.0	0.1	3.6	137
12-apr-1997 22:30	4267	2569	ANCOVERT	1.90	2.6	1	500/140	760	2.1	233	85/15	34.0	56.0	0.1	3.6	137
13-apr-1997 21:00	4294	2571	ANCOVERT	1.90	2.6	1	500/140	960	2.0	233	85/15	34.0	56.0	0.2	3.6	137
14-apr-1997 22:30	0		ANCOVERT	1.90	3.6	1	500/140	1260	2.0	221	85/15	34.0	56.0	0.1	3.6	137
15-apr-1997 23:00	0		ANCOVERT	1.90	2.2	1	500/140	1180	2.1	209	85/15	34.0	56.0	0.1	3.6	137
16-apr-1997 22:30	4324	2573	ANCOVERT	1.95	2.8	1	500/140	960	2.2	221	85/15	34.0	56.0	0.1	3.6	39
17-apr-1997 23:00	4447	2570	ANCOVERT	1.95	2.8	1	500/140	860	2.4	239	87/13	36.5	55.0	0.2	3.6	188
18-apr-1997 22:00	4464	2568	ANCOVERT	1.95	2.2	1	500/140	820	2.0	252	87/13	36.5	55.0	0.2	3.6	188
19-apr-1997 23:00	4475	2567	ANCOVERT	1.95	2.2	1	500/140	880	2.2	253	86/14	36.0	55.0	0.2	3.6	162
20-apr-1997 22:30	4478	2566	ANCOVERT	1.95	2.6	1	500/140	910	2.4	228	86/14	36.5	54.5	0.2	3.6	190
21-apr-1997 23:59	4579	2555	ANCOVERT	1.95	2.6	1	500/140	870	2.4	241	86/14	37.0	54.0	0.2	3.6	217
22-apr-1997 20:30	4669	2544	ANCOVERT	1.95	2.2	1	500/140	850	2.4	228	86/14	37.0	54.0	0.5	3.6	217
23-apr-1997 20:30	4709	2539	ANCOVERT	1.95	2.8	2	500/140	820	2.3	228	86/14	37.0	54.0	0.5	3.6	217
24-apr-1997 22:00	4737	2536	ANCOVERT	1.95	2.6	2	500/140	815	2.7	228	86/14	37.0	54.0	0.2	3.6	217
25-apr-1997 22:00	4737	2536	ANCOVERT	1.95	2.4	2	500/140	815	2.4	228	86/14	37.5	53.5	0.2	3.6	245
26-apr-1997 22:00	4737	2536	ANCOVERT	1.95	2.6	2	500/140	845	2.7	215	86/14	37.0	54.0	0.5	3.6	217
27-apr-1997 22:00	4826	2526	ANCOVERT	1.95	2.2	2	500/140	800	2.4	215	86/14	37.5	53.5	0.5	3.6	245
28-apr-1997 22:00	4877	2520	ANCOVERT	1.95	2.2	2	500/140	900	2.4	236	87/13	39.0	53.0	0.5	3.6	324
29-apr-1997 22:00	4934	2513	ANCOVERT	1.95	2.8	2	500/140	830	2.4	215	86/14	37.0	54.0	0.5	3.6	217
30-apr-1997 22:00	4936	2513	ANCOVERT	1.95	2.6	2	500/140	820	2.4	215	86/14	37.0	54.0	0.2	3.6	217
01-may-1997 22:00	4936	2513	ANCOVERT	1.95	2.6	2	500/140	1080	2.2	215	86/14	37.0	54.0	0.2	3.6	217
02-may-1997 22:00	4936	2513	ANCOVERT	1.95	0.0	2	500/140	1080	2.2	215	86/14	37.0	54.0	0.2	3.6	217
03-may-1997 22:00	4936	2513	ANCOVERT	1.95	2.6	2	500/140	1130	2.2	215	86/14	37.0	54.0	0.2	3.6	217
04-may-1997 22:00	4936	2513	ANCOVERT	1.95	2.8	2	500/140	1010	2.1	215	86/14	37.0	54.0	0.2	3.6	217

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

Norsk Hydro

DAILY MUD PROPERTIES : OTHER PARAMETERS FOR WELL 35/4-1

Hole section: 0.0 OIL BASED SYSTEM

Date	Depth [m] MD	Depth [m] TVD	Mud Type	Dens [sg]	Filtrate HPHT [ml]	Filt.cake HPHT [mm]	HPHT Press/Temp [psi/DegC]	Electrical Stability [V]	Alcalinity Pm [ml]	CaCl2 [mg/l]	Oil/Water Ratio	Percentage Solid [%]	Percentage Oil [%]	Percentage Sand [%]	ASG [sg]	LGS [Kg/m3]
05-may-1997 22:00	4936	2513	ANCOVERT	1.95	2.8	2	500/140	790	2.4	215	86/14	37.0	54.0	0.2	3.6	201
06-may-1997 22:00	4936	2513	ANCOVERT	1.95	2.8	2	500/150	715	2.7	181	84/16	37.0	53.0	0.2	0.0	205
07-may-1997 22:00	4190	2563	ANCOVERT	1.95	0.0	0	500/140	690	2.7	180	84/16	37.0	53.0	0.2	3.6	221
08-may-1997 22:00	4190	2563	ANCOVERT	1.95	0.0	0	500/140	680	2.4	195	84/16	37.0	53.0	0.2	3.6	221
09-may-1997 22:00	3000	2552	ANCOVERT	1.75	0.0	0	500/140	995	3.2	151	81/19	31.0	56.0	0.2	3.6	226
10-may-1997 22:00	3000	2552	ANCOVERT	1.75	0.0	0	500/140	750	3.1	151	81/19	31.0	56.0	0.2	3.6	226
11-may-1997 22:00	3000	2552	ANCOVERT	1.76	0.0	0	500/140	720	3.0	140	81/19	31.0	56.0	0.2	3.6	210
12-may-1997 22:00	2946	2548	ANCOVERT	1.76	0.0	0	500/140	745	2.7	140	81/19	31.0	56.0	0.2	3.6	210
13-may-1997 22:00	3003	2552	ANCOVERT	1.76	0.0	0	500/140	720	2.8	140	81/19	31.0	56.0	0.2	3.4	210

Hole section: 0.0 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]
14-may-1997 22:00	1300	1216	BENTONITE	1.40	0.0	0.0	0	0	500/140	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0.0	0.0	0.0	0	3.6	0
15-may-1997 23:00	1300	1216	BENTONITE	1.40	0.0	0.0	0	0	500/140	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0.0	0.0	0.0	0	3.6	0
16-may-1997 23:00	1300	1216	BENTONITE	1.40	0.0	0.0	0	0	500/140	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0.0	0.0	0.0	0	3.6	0
17-may-1997 23:00	1300	1216	BENTONITE	1.40	0.0	0.0	0	0	500/140	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0.0	0.0	0.0	0	3.6	0
18-may-1997 00:00	1300	1216	BENTONITE	1.40	0.0	0.0	0	0	500/140	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0.0	0.0	0.0	0	3.6	0
19-may-1997 22:00	1128	1076	BENTONITE	1.40	0.0	0.0	0	0	500/140	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0.0	0.0	0.0	0	3.6	0
20-may-1997 20:00	1128	1076	BENTONITE	1.40	0.0	0.0	0	0	500/140	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0.0	0.0	0.0	0	3.6	0
21-may-1997 04:00	1128	1076	BENTONITE	1.40	0.0	0.0	0	0	500/140	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0.0	0.0	0.0	0	3.6	0

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

TOTAL CONSUMPTION OF MUD ADDITIVES ON WELL 35/4-1

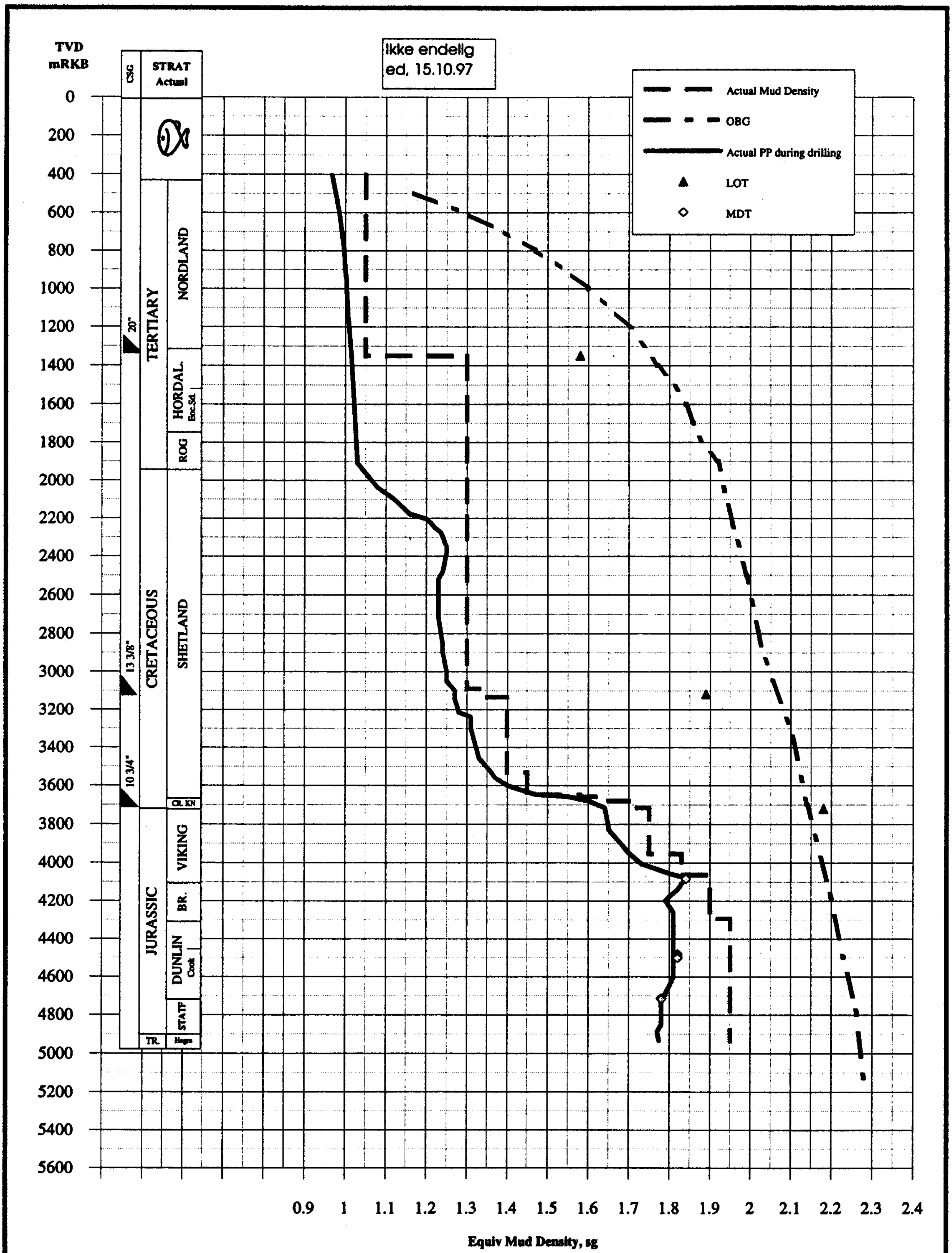
Section Size	Product/Additive	Total Amount Planned	Total Amount Used	Unit	Difference Amount	Difference %	Difference in cost %	Difference in cost [kNOK]
36"	ANCO BAR		108000.0	kg				
	ANCO ZAN		100.0	kg				
	BENTONITE		38000.0	kg				
	SODA ASH		250.0	kg				
26"	ANCO BAR		157000.0	kg				
	ANCO CMC EHV		525.0	kg				
	BENTONITE		75000.0	kg				
	SODA ASH		250.0	kg				
17 1/2"	ANCO 208		48600.0	l				
	ANCO BAR		351000.0	kg				
	ANCO CMC EHV		525.0	kg				
	ANCO NOFOAM		120.0	l				
	ANCO ZAN		7300.0	kg				
	ANTISOL FL10		17200.0	kg				
	CITRIC ACID		425.0	kg				
	KCL BRINE		1030000.0	l				
	KCL POWDER		7975.0	kg				
	LAMPAC EXLO		4550.0	kg				
	SODA ASH		350.0	kg				
	SODIUM BICARBONATE		2650.0	kg				
	SPERCELL FE		375.0	kg				
12 1/4"	ANCO BAR		712000.0	kg				
	ANCO VERT F		10000.0	l				
	ANCO VERT M		220.0	l				
	ANCO VERT P		16000.0	l				
	ANCO VERT S		9000.0	l				
	ANCO VERT VIS		7575.0	kg				
	ANCO ZAN		375.0	kg				
	CALSIUM CHLORIDE POWDER		22150.0	kg				
	HDF 200		632000.0	l				
	LIME		11600.0	kg				
8 1/2"	ANCO BAR		419000.0	kg				

Norsk Hydro

17-oct-1997

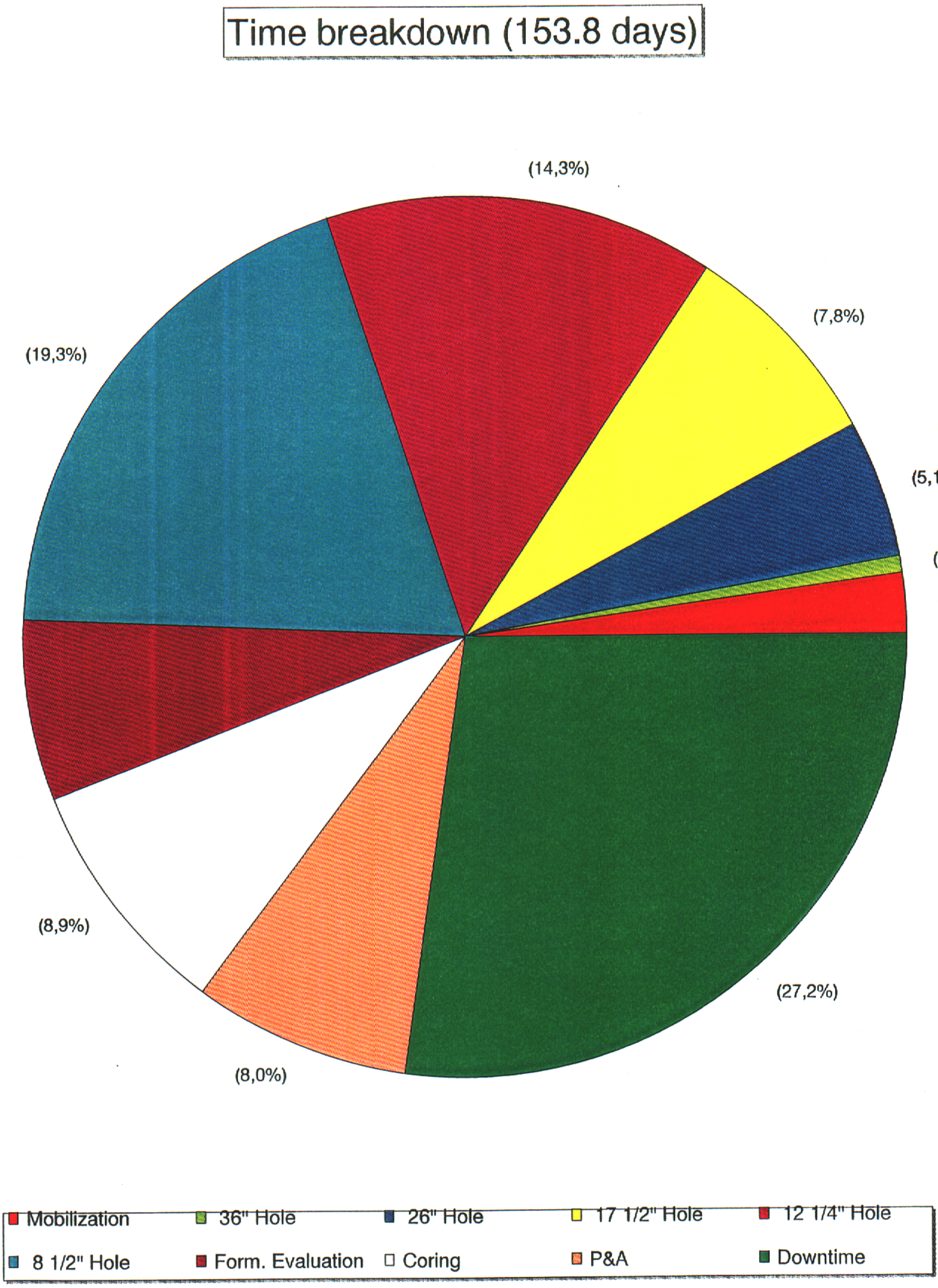
TOTAL CONSUMPTION OF MUD ADDITIVES ON WELL 35/4-1

Section Size	Product/Additive	Total Amount Planned	Total Amount Used	Unit	Difference		Difference in cost	
					Amount	%	%	[kNOK]
8 1/2"	ANCO SUPERWASH		800.0	l				
	ANCO VERT F		3000.0	l				
	ANCO VERT M		200.0	l				
	ANCO VERT P		13000.0	l				
	ANCO VERT S		8000.0	l				
	ANCO VERT VIS		2600.0	kg				
	ANCO ZAN		275.0	kg				
	CALSIUM CHLORIDE POWDER		4100.0	kg				
	HDF 200		250000.0	l				
	LIME		4720.0	kg				
	NUTPLUG F		50.0	kg				
0.0	ANCO BAR		350000.0	kg				
	ANCO DEFOAMER		300.0	l				
	ANCO GREEN S		800.0	l				
	ANCO SUPERWASH		3200.0	l				
	ANCO VERT P		1000.0	l				
	ANCO VERT S		1000.0	l				
	ANCO VERT VIS		875.0	kg				
	ANCO ZAN		625.0	kg				
	BENTONITE		14000.0	kg				
	CALSIUM CHLORIDE POWDER		375.0	kg				
	CITRIC ACID		775.0	kg				
	DESCO CF		113.0	kg				
	HDF 200		103000.0	l				
	LIME		880.0	kg				
	MICA F/M/C		175.0	kg				
	MICA FINE		400.0	kg				
	NUTPLUG C		75.0	kg				
	NUTPLUG F		325.0	kg				
	SODA ASH		100.0	kg				
	SODIUM BICARBONATE		500.0	kg				
	SPERCELL FE		625.0	kg				

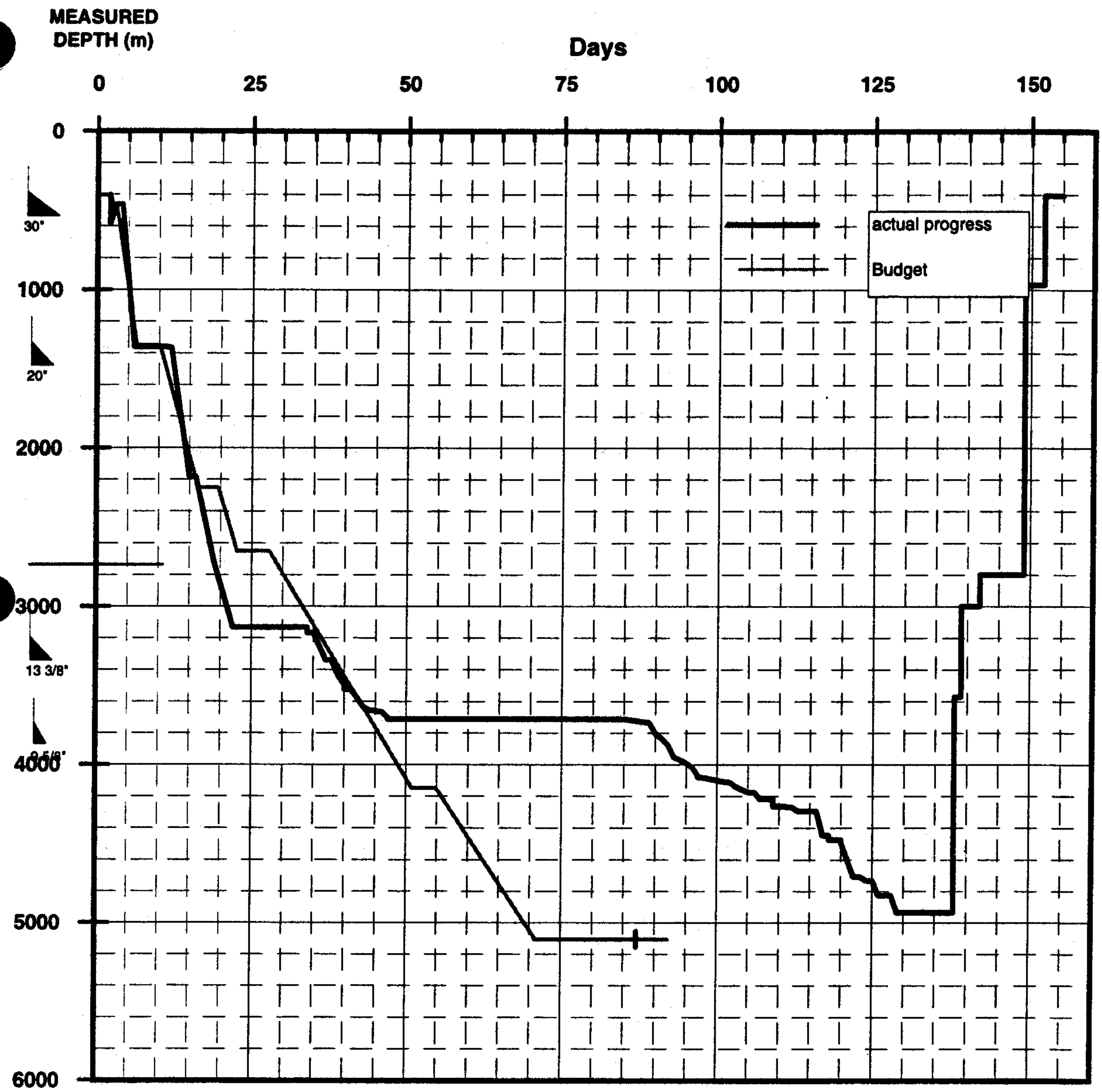


Final Well Report 35/4-1	**Fig.:**	**Final pore pressure, mud density, fracture and overburden gradients**

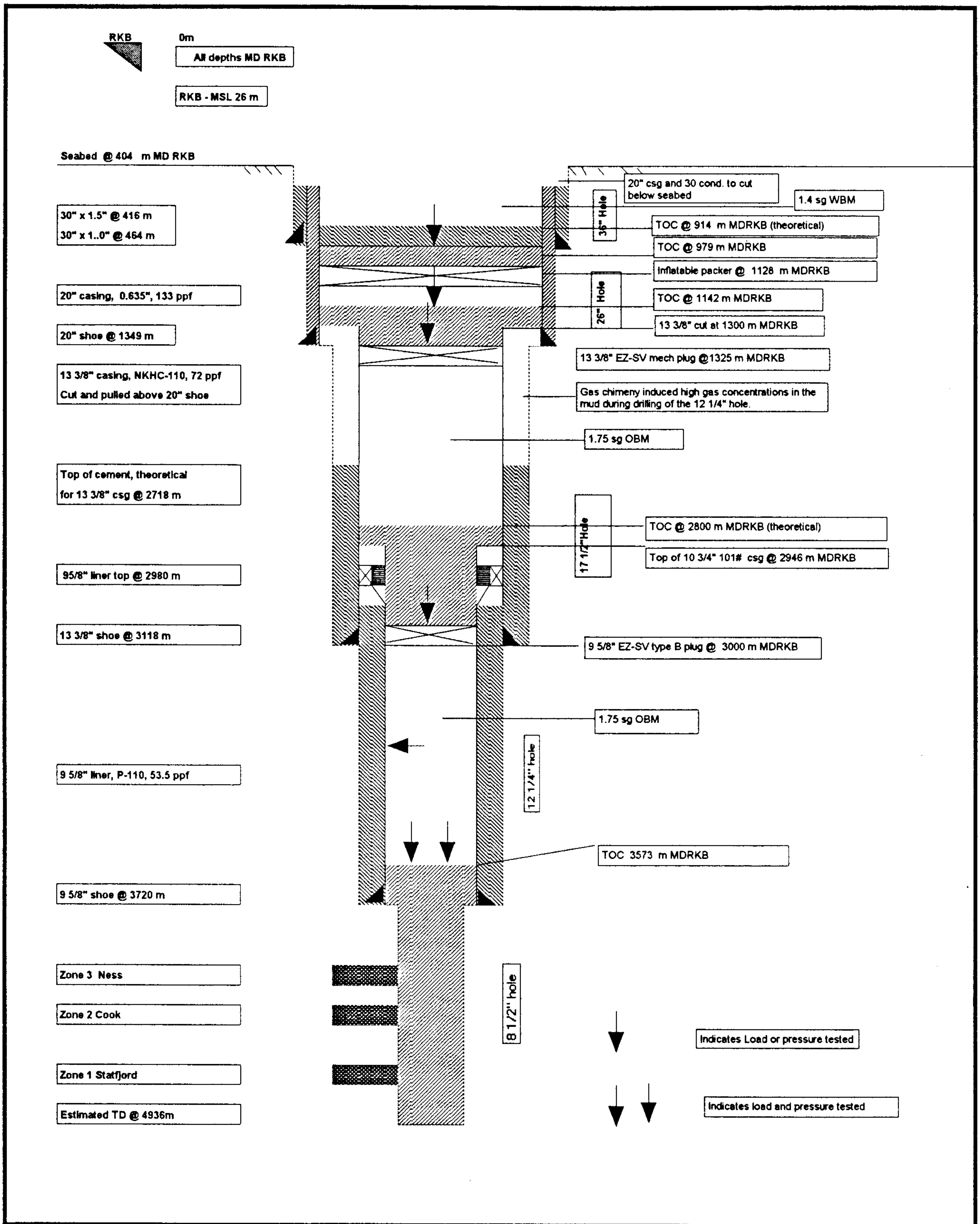
\PP_1510.XLS



Time breakdown (153.8 days)
(14,3%)
(7,8%)
(5,1%)
(0,6%)
(2,2%)
(27,2%)
(8,0%)
(8,9%)
(6,6%)
(19,3%)
Mobilization
36" Hole
26" Hole
17 1/2" Hole
12 1/4" Hole
8 1/2" Hole
Form. Evaluation
Coring
P&A
Downtime



35/4-1	Figure : Revision : O1E Date : 06.06.97	**Drilling curve** **Actual progress versus budged**



Final Well Report **35/4-1** **Treasure Saga** **Norsk Hydro**	Revision: 01E Date: 11.06.97	**As is Well Status** **Plug and Abandonment**

HYDRO

Completion log

Scale: 1:500

Well: 35/4-1

Location map

Country:	Norway
Licence:	PL194
Owners:	Hydro, Statoil, Saga, Elf
Field:	Wild Cat
Date Spudded:	24.12.96
Reached Total Depth:	30.04.97 02:30 hrs
Completed:	25.05.97
Well Status:	Dry, Plugged and abandoned
Rig:	Treasure Saga
Contractor:	Transocean
Mudlogging Company:	BHI
Geologists:	Dahl/Henderson/Knudsen/Nyby/Kjellin/Knape/Ree
Prepared by:	Kjellin, Knape
Controlled by:	Aggerholm
Date:	16.11.97

Coordinates:	N 61° 32' 00.55" E 03° 18' 08.26" UTM: 6 822 412.0 mN 516 075.7 mE ED 50, Zone 31, CM 3°E
Elevation K B:	26 m
Water Depth:	377.5 m MSL/403.5 m RKB
Total Depth (Driller):	4936 m MD/4924.2 m TVD
Total Depth (Logger):	4943 m RKB
Formation at Total Depth:	Hegre Gp.

Casing Records:

30"	at 464.5 m
20"	at 1350 m
13 3/8"	at 3118 m
9 5/8"	at 3720 m

Comments:

Logs Run

Legend

84235

35/4-1

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

35/4-1

COORDINATES:
Geographic:
61 °32' 00.55" N - 3 °18' 08.26" E

UTM:
6822 412.0 mN - 516 075.7 mE
ED50, Zone 31 (CM 3° E).

RIG: TREASURE SAGA

RKB: 26 m

SPUD DATE: 24.12.96

COMPLETION DATE: 25.05.97

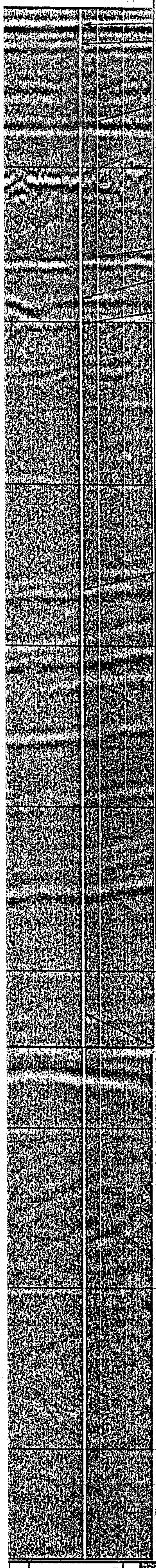
LEGEND:

- Clay/claystone
- Silt/Siltstone
- Sand/sandstone
- Limestone
- Cement plug

Seismic

Seismic source: 2x20,2x40 cu.in sleeve airgun
Sample rate: 1.0 ms
Streamer: 1200 m96 ch12.5 m/12.5 m
Line: NH9554-109 (105 m to West)

Well location 35/4-1



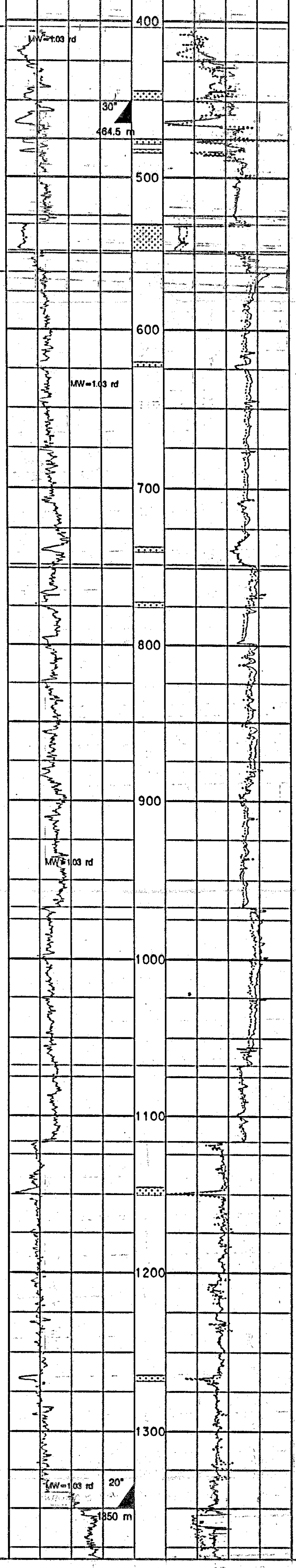
Prognosis

Reflectors	TWT (ms)	Int. vel	TVD Depth (m RKB)
	508		404
R1	522	1600	415
R2	566	1820	455
R3	596		483
		2180	
IKAN1	657		549
R4b	677	2020	569
R5	698		590
	847		754
		2195	
R6	1122		1056
		2210	
R7	1165		1103
		2245	

Anomaly | Correlation

Stratigraphy (System / Series / Group / Formation / Informal Unit)

QUATERNARY – PLEISTOCENE – NORDLAND
TERTIARY – PLIOCENE
MIOCENE
OLIGOCENE – HORDALAND

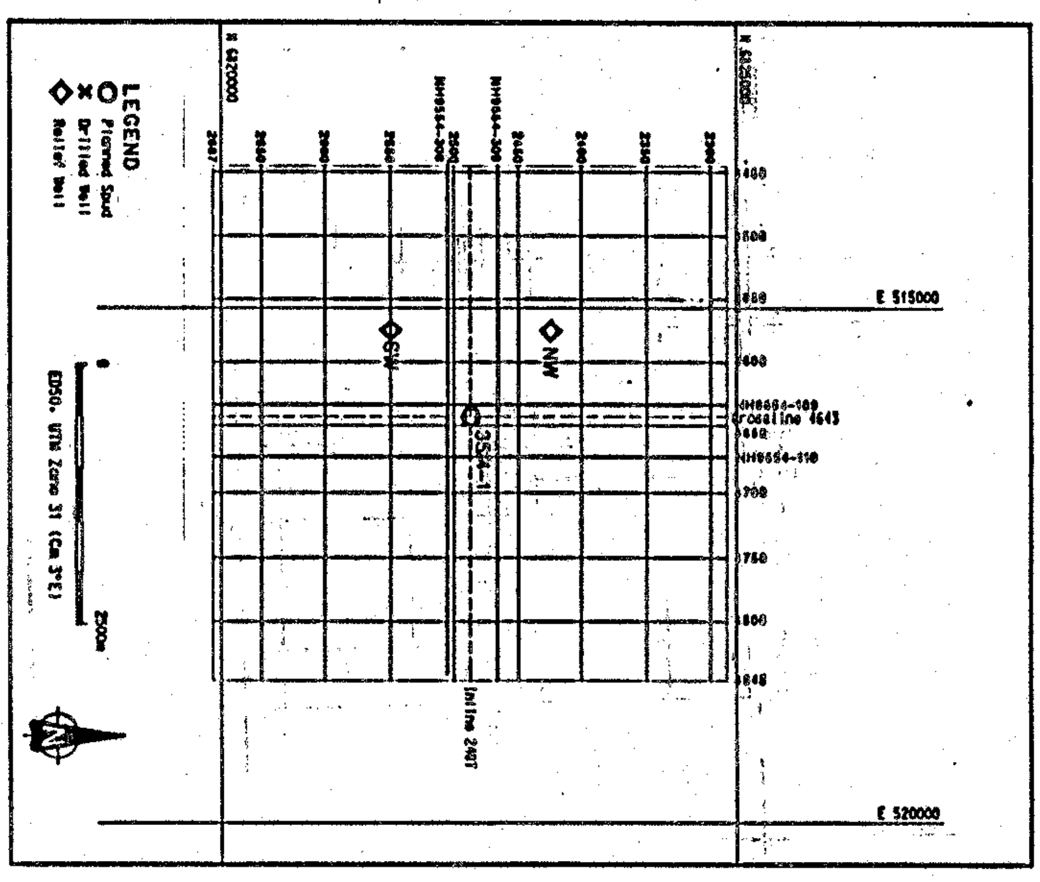


Results

Drilled with returns to seabed to 1350 m MD.

MD (TVD /TWT)	Int.vel.
404 m (508 ms)	
475 m (592 ms)	1720
532 m (657 ms)	
549 m (677 ms)	
582 m (693 ms)	
	2250
737 m (848 ms)	
	2290
967 m (1038 ms)	
1068 m (1122 ms)	
	2250
1116 m (1168 ms)	
	2245

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 35/4-1



HYDRO

Marine Surveys Section

Exploration and Production Division

Drawing title:

Post site survey for well 35/4-1

Comparison for predicted lithology, stratigraphy, shallowgas and obtained drilling results

KB	KB	KB	03.10.1997	0

Scale 1:2000