NORSK HYDRO A.S

FINAL WELL REPORTS

WELL 30/6-10, 30/6-10A

LICENCE 053

SEPTEMBER 1983

DISTRIBUSJONSLISTE FOR "FINAL WELL REPORT" OG "COMPLETION LOG"

BRØNN:

Distribuert til:	Report	Completion Log		Dato
		Papir	Sepia	
NORSK HYDRO				
Arkiv, Sa	2	2	1	
Arkiv, Sd	1	1	1	
Arkiv, Be	2.	2	1.	
Arkiv, Ha				
S. I. Leivestad	1	1		
Operasjonskontor, Sa	1	1		
Operasjonskontor, Be	1	1		
Operasjonskontor, Ha				
Utforskningsleder og prosjektgruppe (for sirkulasjon)	1	1		
OLJEDIREKTORATET	2	2	1	
PARTNERE	(2)	(2)	(1)	
STATOIL.	2	2	1	
ELF.	2	2	1	
SAGA.	2	2	1	
MOBIL.	2	2	1	
TOTAL	2	2	1	
Ekstra	4	4		
Sum	25	25	9.	

NORSK HYDRO A.S

FINAL WELL REPORT

WELL 30/6-10

LICENCE 053

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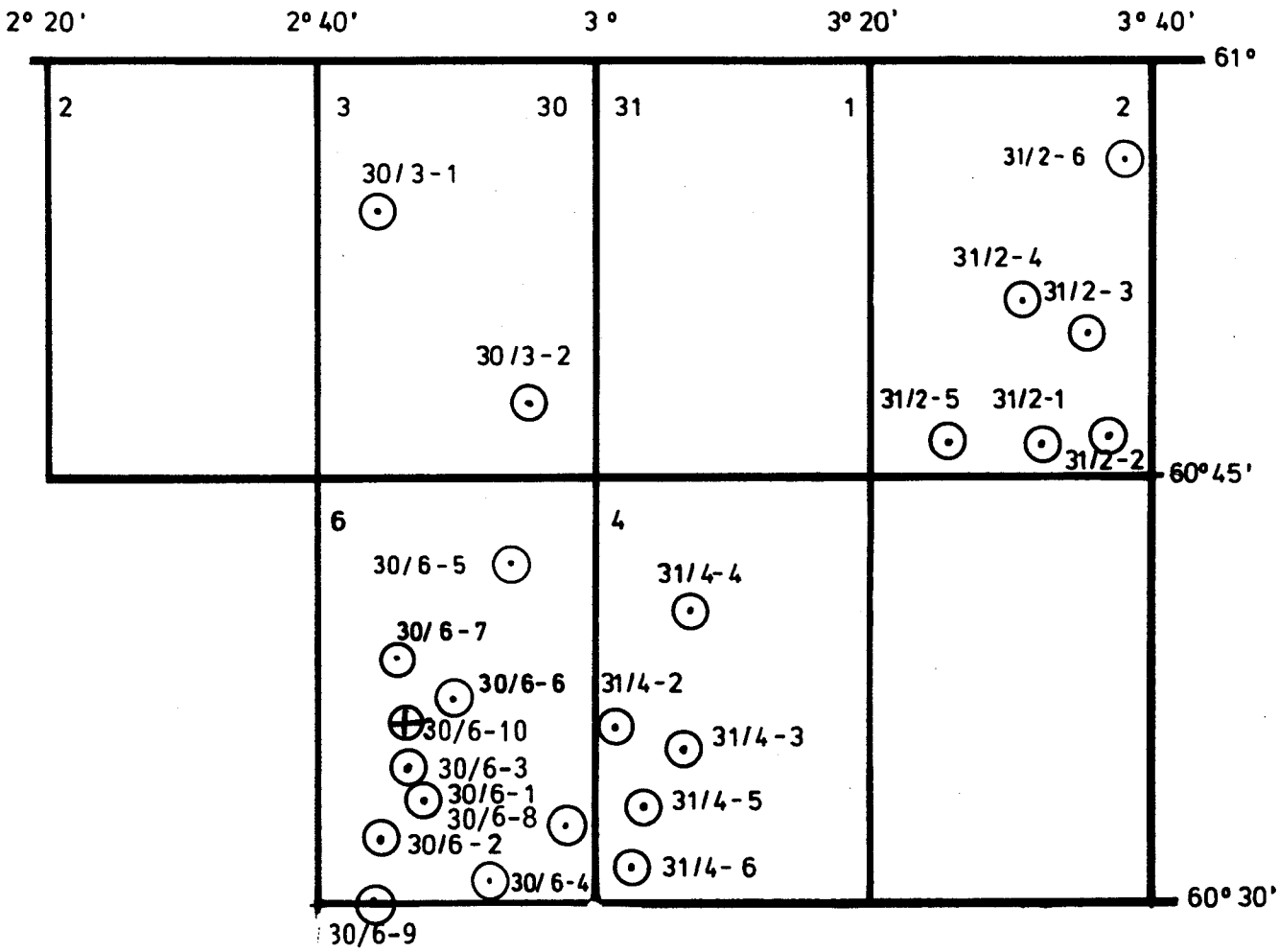
Preface

Licence 053 was awarded the Statoil/Elf/Hydro-group on April 6, 1979 with Statoil as operator. From April 1, 1982 Norsk Hydro Production a.s took over as operator. The licence includes the block 30/6 on the Norwegian Continental Shelf.

The group consists of the following companies:

Den Norske Stats Oljeselskap	50,00%
Elf Aquitaine Norway A/S	13,33%
Norsk Hydro Production a.s	12,50%
Mobil Norway a.s	10,00%
Saga Petroleum a.s	7,50%
Total	6,67%

The well 30/6-10 was drilled by Norsk Hydro Production a.s on behalf of the Statoil/Elf/Hydro-group.



Norsk Hydro Drilling Department	LOCATION MAP 30/6-10	Gr. no.: 3	Fig.:
		Date: 10/9 - 1982 Sign: RW / Hes	Dwg. no.: 23

SUMMARY OF WELL DATA

Location:	60°36' 29.6" N 02°46' 24.2" E
Operator:	Norsk Hydro Production a.s
Rig:	Treasure Scout
Contractor:	W. Wilhelmsen
RKB elevation (to MSL):	23 m
Water depth:	109 m
Start of operations:	October 1, 1982
Well spudded:	October 4, 1982
Well permanent abandoned:	March 3, 1983 (after 30/6-10A completion)
T.D. (driller):	2656 m
Formation at T.D.:	Jurassic
Status:	Permanent abandoned

Well program

Hole record:	36" to 220 m 26" to 970 m 17 1/2" to 2432 m 12 1/4" to 2656 m
Casing record:	30" set at 219 m 20" set at 949 m 13 3/8" set at 2138 m

All depths are given with reference to RKB.

SECTION A

GEOLOGY

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SECTION A

1. OBJECTIVES

The main objectives of this well were to define the gas/oil interface on the Alfa structure, obtain core material from this interface and to get a better spread of well data points to improve the general understanding of the Alfa structure.

The well was located on the northern part of the Alfa structure and was planned to reach total depth, 75m into the Dunlin Group, at 2630m ($\pm$ 100m).

2. RESULTS

The well 30/6-10 encountered hydrocarbon bearing Middle Jurassic, Brent Group sandstones with a net pay of 37.3 m.

No other hydrocarbon bearing reservoirs were encountered by this well.

Oilshows reported from Upper Cretaceous limestone stringers were considered uniteresting.

The Brent Group (2457,5-2575m) was found hydrocarbon bearing over the entire interval with the gas/oil contact calculated from RFT pressure recordings at 2520 m, which in this well is within the Ness Formation.

No oil/water contact was encountered.

The Ness Formation (2457,5-2540,5 m) consists of interbedded sandstones which are typically fine to very fine with occasional medium to coarse stringers, and separated by dark shales and siltstones with common coal stringer. The Etive Formation (2540,5-2575 m) consists of fairly homogenous sandstones which are very fine to coarse, in part very coarse to conglomeratic. The net pay in the Brent Group is calculated to be 37,3 m giving a net/gross ratio of 0.3. The average porosity is 23,3% with an average water saturation of 23,9% (Cut off values used are: $\emptyset$<12%,V_{sh}<40% and S_w<50%).

RFT pressure recordings and sampling were performed over the reservoir. This gave a gas gradient of 0.106 psi/ft with an underlying oil gradient of 0.29 psi/ft resulting in an gas/oil contact at 2520 m. No water gradient was obtained.

No production tests were performed in well 30/6-10 but were instedad perfromed in the sidetracked, 30/6-10A, well.

The pore pressures recorded at the top of the reservoir were 1,158rd.

Detailes on log interpretations and FMT results are found in Appendix 3 "Well Summary" and "FMT results"; and in "Petrophysical Report" which is issued separately.

The well was drilled to a total depth of 2656 m into Dunlin Group shales.

3. STRATIGRAPHY

The biostratigraphic evaluation of well 30/6-10 was performed by Robertson Research International Limited, Llandudno, Wales.

The basic material for the analysis was ditch cuttings together with sidewall cores and conventional cores. ISF/SONIC logs were used as an aid in picking lithostratigraphic boundaries.

The first analysis was at 210m in sediments of Pleistocene age which continued down to 340m and were underlain by a 1905,5m thick Tertiary sequense. A thin interval of Danian rocks were penetrated at 2245,5m and Late Cretaceous sediments of Late Maastrichtian to Early Maastrichtian age occured at 2253m. Sediments of Late to Early Campanian together with some possible Santonian sediments occured between 2347m and down to 2415,5m where Late Jurassic rock of Late to Early to Earliest Oxfordian age were encountered Middle Jurassic sediments of Early Bathonian to Late Bathonian were unconformably underlying these rocks at 2456m and below an unconformity at 2471,5m Middle to Early Bajocian rocks were encountered. After having penetrated Late to Middle Toarcian sediments at 2578,5m the well reached total depth at 2653m in rocks of this age.

Norsk Hydro

Norway

WELL 30/6-10

NOT TO SCALE

DEPTH REF K B ELEVATION K B 23 m ALL DEPTH IN METERS (m)

CHRONOSTRATIGRAPHY

SYSTEM	SERIES / STAGE	DEPTH	THICKNESS
	SEA BED	132	
QUATERNARY	PLEISTOCENE	210	78
		340	130
TERTIARY	PLIOCENE	720	380
	MIOCENE	930	210
	EARLY? – LATE OLIGOCENE	1380	450
	MIDDLE? EOCNE – EARLY OLIGOCENE	1640	260
	EARLY? – MIDDLE EOCENE	1960	320
	EARLY EOCENE	1981	21
	LATE PALEOCENE	2245.5	264.5
	DANIAN	2253	7.5
	L. MAASTRICHTIAN	2262	9
	MAASTRICHTIAN	2302	40
CRETACEOUS	UPPER E. MAASTRICHTIAN		45

LITHOSTRATIGRAPHY

GROUP	FORMATION / MEMBER	
		132
NORDLAND GROUP		
		687
	UTSIRA FM.	
		889.5
HORDALAND GROUP		1981
ROGALAND GROUP	BALDER FM.	2054
	SELE FM.	2158
	LISTA FM.	2245.5
MONTROSE GROUP	MAUREEN FM. EQUIV.	2253
SHETLAND GROUP		

Norsk Hydro

Norway

WELL 30/6-10

NOT TO SCALE

DEPTH REF K B ELEVATION K B 23 m ALL DEPTH IN METERS (m)

CHRONOSTRATIGRAPHY

SYSTEM	SERIES / STAGE		DEPTH	THICKNESS
JURASSIC	UPPER	E.-L. OXFORDIAN	2454	38.5
		EARLIEST OXFORDIAN	2456	2
	MIDDLE	L. BAJOCIAN - E. BATHONIAN	2471.5	15.5
		E.-M. BAJOCIAN	2578	106.5
	LOWER	M.-L. TOARCIAN	2656 (T.D.) (Driller)	78

LITHOSTRATIGRAPHY

GROUP		FORMATION / MEMBER	
HUMBER GROUP	2415.5	HEATHER FM	2415.5
	2457.5		2457.5
BRENT GROUP		NESS FM.	2540.5
	2575		2575
DUNLIN GROUP	2656	DRAKE FM.	2656

4. LITHOSTRATIGRAPHY

This summary is based primarily on ditch cuttings descriptions. Sidewall cores are available from the Oligocene (1227m) and down to the lower Jurassic with the last core recovered at 2653m Conventional cores cover the whole Brent interval, except for the top 3,5m and reach 15m down into the Lower Jurassic shales. Wireline logs were used as an aid in lithological interpretation and to place formation boundaries.

4.1 QUATERNARY (109-340m)

NORDLAND GROUP (109-340m)

This interval consists of clays with stringers of unconsolidated sands. In the top 50-60m of the interval occasional boulders were encountered.

The clay is olive gray to medium gray, very soft and sticky. It is very silty to sandy and is moderate calcareous.

The sands consist of poorly to moderately sorted, very fine to very coarse, subangular to subrounded, clear to milky quartz grains.

Lithic fragments, shell fragments, and traces of peat were also present.

The interval is Pleistocene in age and was deposited in a marine, inner shelf environment.

4.2. TERTIARY (340-2253m)

NORDLAND GROUP (340-889,5m)

340-687m

This interval is a continuation of the overlaying Pleistocene section and consists of clay with occasional stringers of sand.

The only difference to be seen is a slight colour change in the clays towards medium dark gray.

The age of these sedements are predominantly Pliocene (340-720m) with the lowermost section (720-687m) being Miocene in age. The environment is still of a marine to inner shelf type.

Utsira Formation (687-889.5m)

The Utsira Formation is the first well developed sand encountered in the Tertiary. It consists of clear quarts grains which are medium to coarse grained, moderately sorted, and subrounded to rounded. Occasional thin beds of a more consolidated brown gray to olive gray fine grained sandstone occur together with some thin beds of claystone. This claystone is soft to firm, medium dark gray to olive gray, very silty and sandy and slightly calcareous.

The sand contains traces of muscovite, pyrite and shell fragments and locally abundant glauconite.

This unit also belongs to a marine to inner shelf type environment and is Miocene in age.

HORDALAND GROUP (889,5-1981m)

889,5-920m

The uppermost section of the Hordaland Group consists entirely of clays. They are olive gray, very soft, sticky silty to sandy, glauconitic and slighty calcareous.

920-1320m

This interval is a continuation of the overlying section but occasional stringers of limestone and traces of a very fine sand are seen.

The clay are predominantly olive gray as above but are in parts dusky yellowish brown to brownish black. They are soft-firm, locally becoming more indurated and blocky, silty and sandy, glauconitic and non to slighty calcareous.

The stringers of limestone are light olive to light brownish gray to occasional pinkish gray. They are soft to moderate hard, locally sucrosic, argillaceous, locally sandy, occasional grauconitic and microcrystalline.

1320-1429m

This interval starts with a 17m sandbed followed by a claystone with numerous limestone/dolomite stringers.

The sand consists of well sorted, fine to medium, subrounded to rounded quartz grains. Part of the sand is occasional calcite cemented and appear as a very fine grained, olive gray sandstone in the form of moderate hard stringers.

The claystone is brownish black to olive black to olive gray, soft to firm to locally moderate hard and blocky. It is silty grading locally to siltstone, micromicaceous and non to slightly calcareous.

The limestone/dolomite is moderately yellowish brown, hard to very hard, brittle, blocky and slightly argillaceous.

1429-1485,5m

This is the main sand bed in the Hordaland group.

The sand consists of well sorted, medium grained, subrounded to rounded clear to milky quartz grains with traces of both pyrite and glauconite.

1485,5-1660m

This is a claystone interval with abundant limestone and dolomite stringers, and traces of sandstone.

The claystones are olive gray to brownish black, firm to occasionally moderately hard, blocky to platey, moderately to very silty, microamicaceous and non calcareous. With depth they become medium dark gray to dark gray and dusky brown, moderate hard, blocky to subfissile, silty and occacionally micropyritic.

The limestone/dolomite is pale to dusky yellowish brown and grayish brown, hard to occasionally very hard, friable and microcrystalline.

The sandstone is fine to medium grained, loose and is moderately sorted.

1660-1981m

This interval covers the lower part of the Hordaland Group. It is dominated by claystones with stringers of limestones and dolomites and traces of tuffaceous material below 1940m.

The top of this sequense is characterised by the incoming of dark green to grayish green claystones. Greenish black, dark gray and grayish black colours are also seen, and below 1910m, above the Balder Formation, typical brownish and bluish gray colours are present. The claystones are soft to moderate hard, slightly silty with locally very silty intervals, micromicaceous, micropyritic and non calcareous. Below 1900m the claystone becomes slightly carbonaceous and occasionally moderately calcareous.

The limestone/dolomite has the same characteristics as in the overlying interval.

The tuffaceous claystone is pale to medium bluish gray and a typical salt and pepper texture is developed by the black shards and white specs.

The Hordaland Group consist mainly of sediments from the Oligocene and Eocene timeintervals, except for the top 30,5m which are Miocene in age. The sediments belong to a marine, outer shelt to upper bathyal environment.

ROGALAND GROUP (1981-2245,5m)

Balder Formation (1981-2054m)

Although the typical bell shaped log motif of the Balder Formation is not clearly seen in this well the formation

is clearly developed with its claystones, scattered tuffaceous material together with stringers of limestone.

The claystones are varicoloured with dominantly grayish colours and brownish gray colours which disappear through the Balder formation. They are firm to moderately hard, rarely soft, blocky to subfissile, slightly silty to occasionally very silty grading siltstone and non to moderately calcareous.

The tuff consists of white specs and black shards in a gray to greenish gray and bluish gray silty clay matrix.

The limestone stringers are of the same type as in the Hordaland Group.

Sele Formation (2054-2158m)

Throughout the Sele Formation the tuffaceous claystones disappear and this interval is characterised by claystones with stringers of limestone.

The claystones are varicoloured but with medium dark to dark gray as the dominent colour. They are firm to moderate hard, blocky to subfissile, silty, both micromicaceous and micropyritic and non to locally slightly calcareous.

The tuff shows the same characteristic as in the Balder Formation.

The limestone stringers are medium gray, light brown to dark yellowish brown, firm to very hard and crypto-to microcrystalline. Rarely a light gray, soft limestone is seen.

Lista Formation (2158-2245,5m)

This interval is a continuation of the two overlying intervals and consists of claystones with occasional stringers of limestone and dolomite.

The claystones are gray to grayish black, brownish black and occasionally dark greenish gray. They are firm to moderately hard, locally soft, blocky to subfissile, slightly to moderately silty with local very silty intervals and is non to slightly calcareous.

The limestone/dolomite is white to medium gray and pale yellowish brown, friable to very hard and crypto to microcrystalline.

The whole of the Rogalnd Group is Paleocene in age and is laid down in a marine, outer shelf to upper bathyal environment.

MONTROSE GROUP (2245,5-2253m)

Maureen Formation Equivalent (2245,5-2253m)

This interval is a continuation of the overlying section, but with claystones being markedly more calcareous.

This unit represents a marine, inner to to outer shelf environment.

4.3. CRETACEOUS (2253-2415,5m)

SHETLAND GROUP (2253-2415,5m)

The Shetland Group consists of very calcareous claystones grading to marl and frequent limestone stringers with two

limestone benches towards the base. Towards the Cretaceous/Jurassic unconformity traces of sandstone can be seen.

The claystones are medium to dark gray, brownish gray to olive gray to dark greenish gray, soft, sticky, locally slightly silty and very calcaceous grading to marl.

The marl which in parts grades towards a limestone is white to pink to pale yellowish brown, soft to moderately hard, argilliceous, microcrystalline and contains huge amounts of tiny (0,5mm) one chambered foraminiferas.

The limestones can be given the same descriptions as for the marl except for the benches towards the base, which are white, soft to firm, microcrystalline, slightly glaucomitic and slightly to locally very fossiliferous.

The sandstone is medium gray to olive gray, very fine to fine, well sorted and has a poor visible porosity.

The Shetland Group is Maastrichtian in age down to 2347m, late Campanian down to 2392 m and Early Campanian to ?Santonian down to the Cretaceous/Jurassic unconformity.

The whole sequense developed in a marine, inner to outer shelf environment.

4.4 JURASSIC (2415,5-2654m)

HUMBER GROUP (2415,5-2457,5m)

Heather Formation (2415,5-2457,5m)

No "Hot Shale" was seen in this well but a claystone sequense with stringers of limestone which belongs to the Heather Formation could be distinguished.

The claystones are dark gray to olive black to brownish black. They have an earthy appearance, are silty, micromicaceous, pyritic, carbonaceous and are non to locally slightly calcareous.

The limestone is pale yellowish brown and microcrystalline.

This interval is Late - Early - Earliest Oxfordian and was laid down in an inner shelf environment with aerobic/dysaerobic bottom conditions.

BRENT GROUP (2457,5-2575m)

Ness/Tarbert? Formation. (2457,5-2540,5m)

This interval consists of sandstone beds of various thickness interbedded with shale grading to siltstone with frequent stringers of coal.

The top 14,5m of this interval consists of a marine sand with notably amounts of glauconite in it. In the 30/6-10 Biostrategraphic Report from Robertson Research Ltd. dated March 1983 this sand was classified as a Tarbert Formation sandstone. But due to recent biostrategraphicical and sedimentological studies it is

now believed to represent a reworked, marine sand of possible Callovian age.

This sandstone is medium dark gray, in colour with subangular to subrounded, fine to coarse quartz grains loosely cemented together by a clay matrix. It is micaceous, glauconitic, carbonaceous and is poorly to moderately sorted with a poor visible porosity.

The rest of the sandstones within the Ness Formation are olive gray in colour often with a light brown oilstain. They consist of subangular to subrounded, very fine to fine together with occasional medium sized quartz grains incoporated both in a clay matrix and silica cement. They are micaceous, carbonaceous, som have traces of glauconite, and they are generally moderate to well sorted with a poor visible porosity.

The interbeds of shale are brownish gray, olive gray to medium dark gray, are moderate hard to hard, both micromicaceous and micropyritic and non calcareous. Locally they are very silty and lamina of siltstone can be distinguished.

The coal is black to gray black, firm to hard, blocky to fissile, silty, locally micromicaceous and has occasionally a high argillaceous content.

Etive Formation (2540,5-2575m)

The Etive Formation is made up of a homogenous sandstone. Occasional high gamma ray readings on the log are due to layers with high mica content.

The sandstone is olive gray to pale yellowish brown and consists of subangular to subrounded clear to milky

quartz grains which are very fine to very coarse in grainsize with locally developed pebbly bands. It is moderately cemented together by a very light gray claymatrix, is slightly to very micaceous, slightly carbonaceous and has a sorting varying from poor to well. The porosity is generally fair to good.

The interval from 2456m to 2471,5m is dated Early Bathonian to Late Bajocian with sediments belonging to a shallow marine environment with a strong terrestrial influence, perhaps in close proximity to a deltaic setting. But as mentioned earlier in this section new, not yet finished studies might alter the above interpretation.

The rest of the Brent Group is Middle to Early Bajocian in age. The depositional environment can be devided into two with a marginal to inner shelf environment below 2540m shallowing to marginal marine deltic above this depth, culuminating in a phase of non marine depositions towards the top of the interval.

DUNLIN GROUP (2575-2654m(T. D.))

Drake Formation (2575-2654m (T. D.))

This interval consists of a silty shale with a few stringers of limestone and rare stringers of sandstone.

The shales are medium dark gray to dark gray, olive black to brownish black, firm to hard and blocky to subfissile. They are very silty grading locally to siltstone, micromicaceous, very pyritic with pyrite concretions up to 5 cm in diameter and are slightly calcareous.

The sandstone is medium dark gray and consists of well sorted very fine to fine, subangular, clear to milky quartz grains. It is very hard and silica cemented, very argillaceous and has no visible porosity.

The limestone is white to medium gray, pale yellowish brown, firm to very hard and crypto-to microcrystalline.

This interval is Late to Middle Toarcian in age and was laid down in an inner shelf, marine environment with strong terrestrial influence. According to Robertsen Reaserch the top 3,5 m can be classified as a Basal Rannoch Shale with a Middle to Early Bajocian age.

5. HYDROCARBON SHOWS

Evaluation of hydrocarbon shows was carried out in a conventional manner. Below 215m a complete hydrocarbon total gas detector (50 units = 1%) was operational together with a gas chromatograph for automatic and contineous gas analysis, recorded as ppm by volume of C1 through C5.

Hydrocarbon shows an ditch cuttings were evaluated according to Norsk Hydro's geologist's well site manual.

5.1. GAS RECORD

215-760m

Between 0,24 and 2,5% methane (C1) was recorded through this interval which consisted of clays with stringers of sand together with the top third of the Utsira sand. Maximum gas was recorded in a sand stringer just above the Utsira sand and through the top 40 m of the Utsira sand. From 720m there is a gradual decrease in the gas.

760-1520m

A generally low gas level of 0-0,38% C_1 was recorded over this interval, which includes the lower two thirds of the Utsira sand, Hordaland Group claystones with occasional limestone stringers and two sandintervals in the Oligoecene/Eocene.

1520-1730m

This interval which consists of Hordaland Group claystones with occasional stringers of dolomite and limestone, shows total gasreadings between 0,01-1,12% C_1 and occasional tracers of ethane (C_2).

1730-1980m

This interval comprises the lowermost 250m of the Hordaland Group and is a continuation of the interval above. But a general gas increase can be seen, varying between 0,36 to 1,12% C1.

1980-2165m

A further gas increase 0,6-1,32%, is seen through this interval and in addition to C_1 occassional traces of C_2, propane (C_3) and normal buthane (nC_4) were recorded. Lithologicaly this interval consists of Rogaland Group claystones,tuffaceous claystones and stringers of dolomite and limestone.

2165-2253m

Total gas through this section was between 0,48 and 0,74% C_1 with traces of C_2 and consists of Lista Formation claystones with stringers of limestones.

2253-2295m

Total gasreadings of 0,76-1,36% C_1 to C_3 together with occasional traces of nC_4 were recorded through this section which comprises the uppermost part of the Upper Cretaceous. The lithology is marly claystones with abundant limestone stringers.

2295-2355m

The lithology of the above interval continues through this section but with slightly lower gas readings, 0,76-1,0% C_1 to C_3.

2355-2390m

The total gas continues to decrease through this interval lying between 0,44 to 0,82% C_1 with occasional traces of C_2 andC_3. The intervals consist of calcareous claystone with a distinct bench of limestone towards the base.

2390-2470m

This intervals which comprises the rest of the Shetland group, the dark shales of the Upper Jarassic and the top of the Brent Group showed gasreadings between 0,26 to 0,93% c_1 to C_3.

2470-2640m

Gasreadings between 0,04 to 0,38% C_1 and C_2 with occasional traces of C_3 and nC_4 were recorded through this sections which consists of Brent Group sandstones, shales and coals together with Drake Formation shales.

2640 - 2654 (T.D.)

The last 14m of this well comprise silty shales of the Drake Formation and only 0,18 to 0,22% C_1 was recorded.

5.2. OILSTAIN AND FLUORESCENCE

1980 - 2030m

The first shows in this well was reported from limestone stringers at 1980m. The cuttings gave a fair, bright yellow orange fluorescence with a slow to moderate streaming pale yellowish white fluorescence cut. In some instances a pale brown visible cut and visible residue could be seen. The residue gave a dull orange brown fluorescence.

2030 - 2100m

From being fair in the above section the shows through this interval can be rated as poor. Claystones and tuff through this interval gave no fluoresence but an instant streaming, dull yellow orange fluorescence cut was present. The limestone cuttings gave a dull yellow orange fluorescence with traces of a slow to fast streaming bright orange yellow fluorescence cut. Some of the fluorescence was described as mineral fluorescence.

2215 - 2253m

Weak shows were reported on cuttings from limestone stringers within this interval. Traces of a dull orange fluorescence could be seen with a fast streaming pale yellow fluorescence residue. The shows were rated as poor.

2253 - 2380m

Good shows were reported on cuttings from limestone/marl through this Upper Cretaceous interval. The limestone/marl had a dark brown oilstain which gave a bright yellow orange pink fluorescence. The fluorescence cut was fast to instant streaming with a bluish white to

white colour and the residue gave a dull to bright gray orange pink fluorescence colour. When heating the limestone with hydrochloric acid a dark brown dead oil was released which gave a grayish orange to grayish orange pink fluorescence.

Weak shows were reported from the claystone cuttings. No fluorescence was described, but a slow streaming bright yellow white fluorescence cut with a bright yellow white fluorescence residue was reported.

2380 - 2409,5m

Weak shows were reported on limestone cuttings through this interval. A pale yellow fluorescence was seen but with no cut. When crushed the cuttings gave a very pale brown visible cut with a milky white fluorescence. The residue gave a pale yellow fluorescence. A sidewall core taken in limestone at 2385,5m had together with fluorescence and good cut, also a strong hydrocarbon colour and light brown oilstain.

2457,5 - 2575m

Good shows were reported from sandstones through cores 1-11 in the Brent Group. Oilstain first appeared at 2505m together with bleeding oil. A petrolferous odour was given off from all sandstone intervals through the whole cored section. From shale and siltstone intervals none to very weak shows were reported.

The sandstones from 2505 and downwards had a 100% strong yellow fluorescence and a fast to instant streaming bright yellow to yellowish white and blush white fluorescence cut. The residue gave a yellowish white to grayish orange pink fluorescence. Both a visible cut and

visible residue with colours ranging from pale straw to medium brown were reported. Above 2505 the show descriptions have the characteristics of gas shows and are different from the typical oil shows described above. The fluorescence is more patchy and both visible cut and visible residue are absent. This type of show was also seen in sidewall cores taken in sandstone at 2456m and 2458m.

2575 - 2585m

This Drake shale which make up the last 10 meters of core 11 gives very weak shows. Only traces of a dull yellow fluorescence can be seen together with a very slow to non-streaming very dull yellow fluorescence cut.

6. CORING

6.1 CONVENTIONAL CORING

A total of eleven conventional cores were cut in the well. Cores were cut from the top of the Ness Formation and down into the Dunlin Group shales. Core depths are driller depths throughout this report. Driller depths through the cored section are from 0-2,5m deeper than loggers depth.

Core no. 1 was cut from 2461m to 2475m where it jammed. The 14m (100%) recovered consisted predominantly of Ness Formation sandstones with some shale and coal towards the bottom. The shows on the sandstone were patchy and indicated gas.

Core no. 2 was cut from 2475m to 2493m 13m (74%) was recovered with interbeds of sandstones and shales together with occasional coal stringers. Good gas shows could be seen on the sandstone.

Core no. 3 was cut from 2493m to 2503m where the barrel jammed. 9m (90%) of sandstone, with good gas shows, and shale was recovered.

Core no. 4 was cut from 2503m to 2510m and 6,5m (93,5%) of sandstone/shale interbeds was recovered. From being gas shows so far, the shows from 2505m both included bleeding oil and visible cut and residue.

Core no. 5 was cut from 2510m to 2517,2m. 7,2m (100%) of interbeds of shale, siltstone and coal with one sandstone stringer towards the bottom was recovered. The sandstone had good oil shows.

Core no. 6 was cut from 2517,2m to 2530m and 11,2m of sandstone, shale, siltstone and coal was recovered with good oilshows in sandstone.

Core no. 7 was cut from 2530m to 2548m with 10m (100%) recovery. The core consisted mainly of shale but interbeds of siltstone and stringers of coal occurred. From ca. 2544 sandstones belonging to the Etive Formation was recovered. They had good oilshows.

Core no. 8 was cut from 2548m to 2553m and 3m (60%) of sandstone with conglomeratic layers was recovered. The good oilshows were consistent throughout the core.

Core no. 9 was cut from 2553m down to 2554,5m after jamming the core barrel. The 1,4m recovered was a continuation of the core above.

Core no. 10 was cut from 2554,5 to 2572,5m and the 18m (100%) of recovered core consisted of very fine to pebbly sandstone with good oilshows.

Core no. 11 was cut from 2572,5m down to 2590,4m. 17,9m (100%) of Etive Formation sandstones down to 2577,65m and Dunlin Group shales was recovered. The good oilshows continued down to the top of the Dunlin Group.

For core description see Appendix 1.

6.2 SIDE WALL CORES

65 side wall cores were shot from 1227m and down to T.D. in this well. The number recovered was 61 and 4 were lost.

7. WIRE LINE LOGGING

The following list is a summary of the wire line logs run in the well 30/6-10 and shows the date, logged interval and run number of each individual log.

Log	Date	Logged Interval	Run No.
ISF/LSS/GR	27.10.82	132 - 965,5 m	1.
" " "	4.11.82	950 - 2420 m	2.
" " "	7.12.82	2370 - 2652 m	3.
LDT/CNL/GR	4.11.82	950 - 2420 m	1.
" " "	7.12.82	2138 - 2652,5 m	2.
HDT	4.11.82	1932 - 2420 m	1.
"	13.12.82	2350 - 2650 m	2.
Cluster	15.11.82	1935 - 2421 m	1.
"	13.12.82	2351 - 2654 m	2.
Geodip	13.01.83	2450 - 2580 m	2.
DLL/MSFL/GR	7.12.82	2370 - 2650 m	1.
NGT	7.12.82	2138 - 2652,5 m	1.
Velocity Surv.	7.12.82	310 - 2654 m	1.
RFT	7.12.82	2458 - 2574 m	
		+ sample	1.
"	7.12.82	2467,5 m	2.
"	7.12.82	2521,4 - 2522,3 m	
		+ sample	3.
CST	4.11.82	1227 - 2420 m	1.
"	7.12.82	2412,5 - 2653 m	2.
CBL/VDL	7.12.82	1200 - 2134 m	1.

8. SPECIAL STUDIES

The biostratigraphic evaluation of the well has been performed by the laboratories of Robertson Research Int.Ltd. in Wales. The results of this evaluation are contained in the report:

Norsk Hydro 30/6-10
Norwegian North Sea Well: Biostratigraphy of the interval 210 - 2656 m

APPENDIX 1

CORE DESCRIPTIONS
CORES 1 - 11

Norsk Hydro

Well no	Core report	Core nos
30/6–10		1

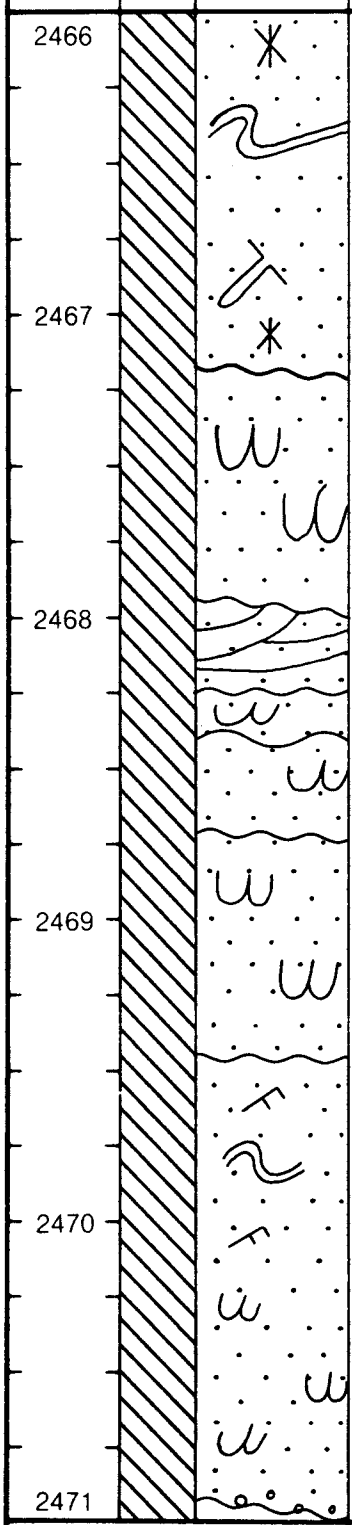
Interval	Area	Cut	Date
2461–2466 m	Norwegian North Sea	2461–2475 m	9.11.82
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2461–2475 m, 100%	Kalgraff/Henderson

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2461			2461 m Sealed sample 2461,24 m	**Sst:** m dk gy, clr - occ milky Qtz, f - crs, pred f, mod hd - fri, subang - subrnd, com pinkish gy cmt, tr cly mtx, mica, occ carb, loc v arg, glau, contrt, poor - mod srtd, mod - poor vis por.	No vis stn, 10% spec weak dull yel flu, fast streaming yel wh flu cut, strong yel wh flu resd, no vis cut, no vis resd, mod gd - petroliferous odour.
2462			2462,03 m Sealed sample 2462,20 m		
			2462,78 m Sealed samle 2463,01 m	Com burrows.	
2463				X-lam.	
			2463,44 m Sealed sample 2463,73 m		
2464				**Sst:** pred cntrt, pos by bioturbation.	
			2464,89 m Sealed sample 2465 m	**Sst:** a/a, incr cly mtx.	No vis stn, 80% fair - weak dull yel flu, fast instant streaming, strong yel wh flu cut, strong yel wh flu resd, no vis cut, no vis resd, gd petroliferous odour.
2465			2465,49 m Sealed sample 2465,75 m		
2466					

Norsk Hydro

Well no	Core report	Core nos
30/6–10		1

Interval	Area	Cut	Date
2466–2471 m	Norwegian North Sea	2461–2475 m	9.11.82
Scale	**Well RKB**	**Recovery**	**Geologist**
1:25	23 m	2461–2475 m, 100%	Kalgraff/Henderson

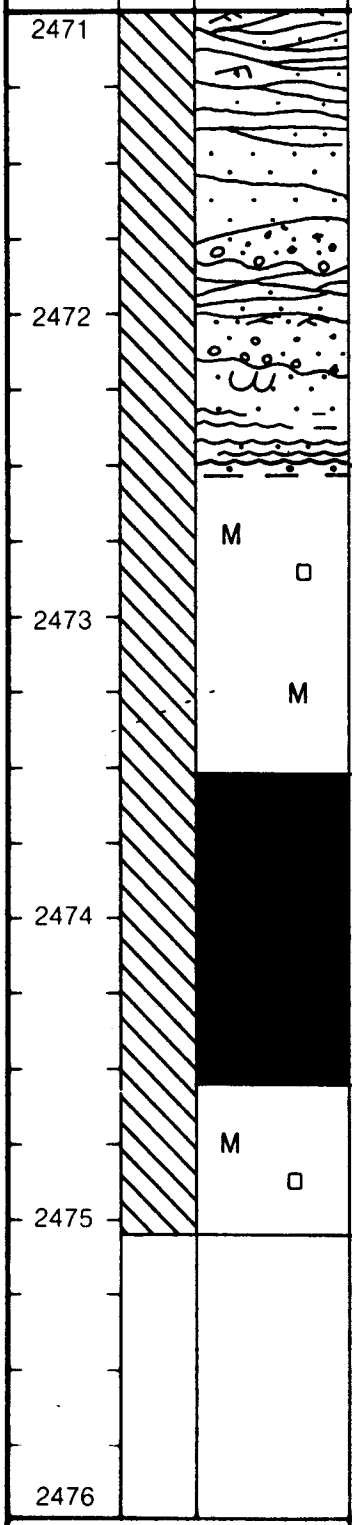


Depths	Lithological descriptions	Shows
2466,34 m Sealed sample 2466,60 m	Sst: m dk gy, vf - m, mod hd - fri, subang - subrnd, cmtd, cly mtx, v mica, occ v carb, bioturbated, cntrt, poor srtd, no vis por.	No vis stn, 50% fair yel flu, fast instant streaming yel wh flu cut, strong yel wh flu resd, no vis cut, no vis resd, mod - good petroliferous odour.
2467,32 m Sealed sample 2467,52 m	Sst: m gy, clr - milky Qtz, f - m, pred m, subang - subrnd, tr pale yel cmt, tr cly mtx, sl mica - mica, sl carb, lrg scaled x-strat poss through x-strat, com erosional surfaces, mod srtd, mod vis por.	No vis stn, 10% spec weak dull yel flu, fast - instant streaming yel wh flu cut, strong yel wh flu resd, no vis cut, no vis resd, mod petroliferous odeur.
2467,91 m Sealed sample 2468,19 m		
2469 m Sealed sample 2469,17 m	Trough x-strat.	
2469,52 m Sealed sample 2469,78 m	Sst: pred f, v mica, mod - poor srtd. Alternating ripple and m scaled x-strat.	
2470,47 m Sealed sample 2470,61 m	Through x-strat.	
	Pbly Sst. Erosional surface.	

Norsk Hydro

Well no	Core report	Core no s
30/6–10		1

Interval	Area	Cut	Date
2471–2475 m	Norwegian North Sea	2461–2475 m	9.11.82
Scale	**Well R.K.B**	**Recovery**	**Geologist**
1:25	25 m	2461–2475 m, 100%	Kallgraff/Henderson



Depths	Lithological descriptions	Shows
2471,23 m Sealed sample 2471,53 m	**Sst**: m dk gy, clr occ milky Qtz, vf - f, pred f, subang, v mic, v carb, tr cly lam, x-bdd and ripple lam at top, poor srtd, no vis por.	50% fair yel flu fast - instant streaming, strong yel wh flu cut, strong yel wh flu resd, no vis cut/resd, good petroliferous odour.
2471,97 m Sealed sample 2472,21 m	**Sst**: m dk gy, clr - milky Qtz, vf crs, in pt pbly, mod hd, fri, subang - subrnd, sl kaol cmt, tr cly mtx, v mica,carb, w ripple lam **Sst**, mod - poorly srtd.	
2472,60 m	**Sh**: brn blk, mod hd - hd, fis, flky, micromic, pyr, carb.	No show.
2473,50 m	**Coal**: brn blk, occ blk, firm - mod hd, fis, brit, shiny, vit, tr pyr, tr mica.	
2474,60 m		
2475,00 m		

Norsk Hydro

Well no.	Core report	Core no s
30/6–10		2

Interval	Area	Cut	Date
2475–2480 m	Norwegian North Sea	2475–2493 m	10.11.82
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2475–2488,3 m, 73,9%	Kalgraff/Henderson

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2475		M C		**Sst**: olv gy - m gy, clr - milky Qtz, vf - f, fri - mod hd, subang - subrnd, abn cmt, cly mtx, v mica, carb, roots in situ, pyr nod, plant rmn, mod srtd, no vis por.	No stn, 10% patchy bri yel flu, fast streaming wh yel flu cut, strong wh yel flu resd, no vis cut, no vis resd, weak petroliferous odour.
			2475,62 m		
			Sealed sample	**Sh**: dk gy - brn blk, mod hd, fis, occ blky, occ v slty grdg Slst, v mica, carb, non calc.	
			2475,95 m	**Sst**: a/a, w ripple lam.	
2476					
		M	2476,58 m		
			Sealed sample		
			2476,86 m	Ripple lam **Sst**, intbdd Sh w Sst lam and Sst lenses, occ bioturbation in Sst.	
2477					
		C M	2477,30 m		
			Sealed sample	**Sst**: a/a, vf - f.	
			2477,53 m		
			2477,88 m	Ripple lam **Sst**, occ Sh lam.	
2478		M	Sealed sample		
			2478,05 m		
			2478,64 m	Sh w thin lenticular bd Sst.	
		M	Sealed sample		
2479		C	2479,08 m	Ripple lam **Sst** w thin Sh lam. Com pyr nod.	
		C M		**Coal** clasts at base.	
				Sh: gy blk, brn blk, mod hd, fis, micromic, v carb, pyr, slickensides, non calc.	
2480					

Well	Core report	Core no s
30/6–10	1 of 4	2

Norsk Hydro

Well no	Core report	Core nos
30/6–10		2

Interval	Area	Cut	Date
2480–2485 m	Norwegian North Sea	2475–2493 m	10.11.82
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2475–2488.3 m, 73.9%	Kalgraff/Henderson

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2480		M C		Sh: gy blk, brn blk, mod hd, fis, flky, micromic, v carb, pyr, slickensides, non calc.	No show.
				Sh: dusky yel brn, olv gy, mod hd, fis, micromic, mica, carb, tr plant rmn, non calc.	
2481		M C			
				Sh: gy blk, brn blk, a/a.	
		M C		Sst: clr - milky Qtz, vf - f, subang - subrnd, v mica, carb, non calc, occ ripple lam, mod srtd, no vis por.	No stain, bri lam yel flu, strong instant streaming yel wh flu cut, strong yel wh flu resd, no vis cut, no vis resd, weak petroliferous odour.
2482		M C		Sh: dusky yel brn, olv gy, mod hd, fis, micromic, mica carb, non calc, slickensides.	
2483		M C			
2484		Coal		Coal: brn blk, fri - mod hd, dull, flky. mica, arg.	
		M C		Sh: dusky yel brn, olv gy a/a.	
				Sst: a/a w roots in situ.	No show.
2485				Sh: olv gy, mod hd, fis, mica, roots in situ.	

Norsk Hydro

Well no.	Core report	Core no s
30/6–10		2

Interval	Area	Cut	Date
2485–2490 m	Norwegian North Sea	2475–2493 m	10.11.82
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2475–2488.3 m, 73.9%	Kalgraff/Henderson

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2485				**Coal**: brn blk, fri - mod hd, dull, flky, mica, arg.	No show.
		M O C M		**Sh**: olv gy, dusky yel brn, mod hd, fis, micromic, mica, carb, tr plant foss. non calc, pyr.	
2486					
2487		M C M	2487.50 m Sealed sample 2487.9 m	**Sst**: lt gy - lt olv gy, vf - f, mod hd, subang - subrnd, mica, carb, non calc, abn cmt, roots, mod srtd, no vis por.	No show.
2488			2488,30 m		
2489		Not recovered			
2490					

Norsk Hydro

Well no.	Core report	Core nos
30/6–10		2

Interval	Area	Cut	Date
2490–2493 m	Norwegian North Sea	2475–2493 m	10.11.82
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2475–2488.3 m, 73.9%	Kalgraff/Henderson

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2491		Not recovered			
2492					
2493			2493 m		
2494					

Norsk Hydro

Well no.	Core report	Core no s
30/6–10		3

Interval	Area	Cut	Date
2493–2498 m	Norwegian North Sea	2493–2503 m	11.11.82
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2493–2502 m, 90%	Kalgraff/Slaatsveen

Depth scale	Re - covery	Lithological column	Depths	Lithological descriptions	Shows
2493				Cntrt Sst, Sh.	
				Sst: olv gy, clr - milky Qtz, f - occ m, subang - subrnd, pinkish gy cmt, mica, tr glau, low angle trough x-strat, well srtd, fair vis por.	No stn, 50–85% even to spec bright yel flu, strong instant streaming wh yel flu cut, strong wh yel flu resd, no vis cut, no vis resd, good petroliferous odour.
2494				Bioturbated Sst, Sh.	
				Lov angle x-lam, low angle trough x-strat, ripple lam, wave ripples, truncated ripples and erosional surf.	
2495				Sst: clr - milky Qtz f, subang - subrnd, pinkish gy cmt, mica, glau, ripple lam and through x bdd, mod - well srtd, fair vis por.	
2496				Wave ripples.	
				Sst: a/a, low angle through x strat.	
2497					
				Sst: clr - milky Qtz, vf - occ f, subang - subrnd, v mica in lam, low angle x-lam, loc low relief scours, well srtd, no vis por.	No show.
2498					

Norsk Hydro

Well no	Core report	Core no s
30/6–10		3

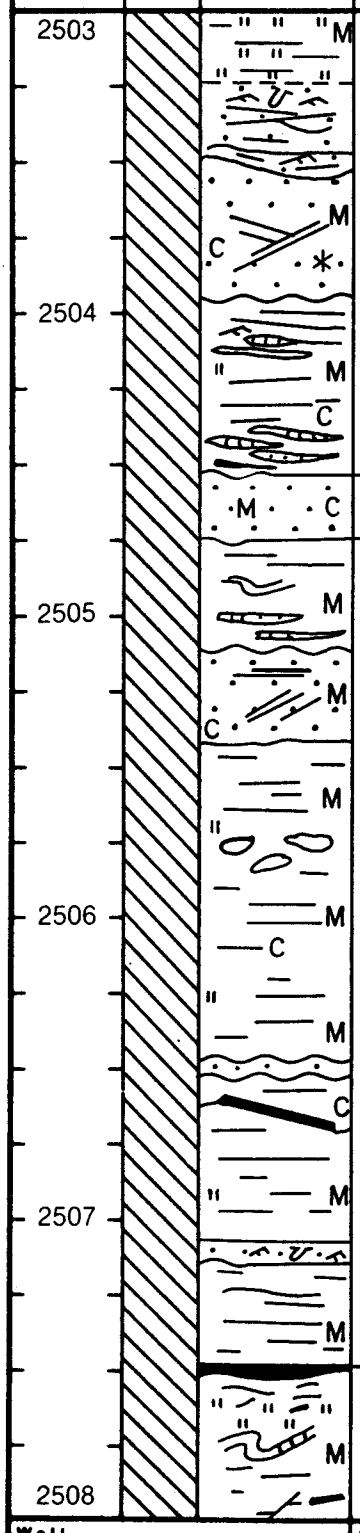
Interval	Area	Cut	Date
2498–2503 m	Norwegian North Sea	2493–2503 m	11.11.82
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2493–2502 m, 90%	Kalgraff/Slaatsveen

Depth scale	Re - covery	Lithological column	Depths	Lithological descriptions	Shows
2498				Microfault.	
				Sh: brn gy - olv blk, olv gy, hd - mod hd, fis, occ blky, occ plty, micromic, carb plant rmn, non calc.	No show.
2499		M			
		C			
2500		C			
2501		C		Slst: olv gy - olv blk, mod hd, v carb, rich in plant rmn, ioc v shly grg Sh, non calc.	No show.
		M			
2502		Not recovered	2502 m		
2503			2503 m		

Norsk Hydro

Well no.	Core report	Core no's
30/6–10		4

Interval	Area	Cut	Date
2503–2508 m	Norwegian North Sea	2503–2510 m	12.11.82
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2503–2509.5 m. 93%	Midtkandal/Slaatsveen



Depths	Lithological descriptions	Shows
	Slst: brn gy - olv gy, mod hd, mica - v mica in lam, carb frag, loc grdg to vf **Sst** in lenses, non calc.	No show. On **Sst**: 50–70% dull yel flu, fair slow - fast streaming yel - wh flu cut, strong yel wh flu resd, no vis cut, no vis resd, petroliferous odour.
2503,65 m Sealed sample	**Sst**: clr Qtz, olv gy, f. mod hd, fri, subang - occ subrnd, silic/cly cmtd, mica, carb, rr glau, well srtd, fair vis por.	
2503,95 m		
	Sh: brn gy, mod hd, subfis, mica, tr carb, sl slty, non calc. **Sst**: a/a, vf.	
2504,60 m		
	Sst: a/a. **Sh/Clyst**: a/a, blky.	
2504,75 m		
		On **Sst**: 100% bright yel flu, mod fast streaming yel wh flu cut, strong yel wh flu resd, pale straw vis cut, straw vis resd, petroliferous odour, bleeding oil.
2505,12 m Sealed sample	**Sst**: a/a. f.	
2504.40 m	**Clyst**: brn gy, mod hd, blky, micromic, tr carb, occ sl slty, non calc.	
	Sst: a/a, f. **Sst**: a/a, vf, abn **Coal** frag. Lenses of **Coal**: blk, mod hd, vit.	
	Sst: a/a, vf.	
2507,40 m	**Coal**: a/a. **Slst**: a/a, abn **Coal** frags. **Clyst**: a/a, microfaults.	

Norsk Hydro

Well no	Core report	Core nos
30/6–10		4

Interval	Area	Cut	Date
2508–2510 m	Norwegian North Sea	2503–2510 m	12.11.82
Scale 1:25	**Well R.K.B.** 23 m	**Recovery** 2503–2509.5 m, 93%	**Geologist** Midtkandal/Slaatsveen

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2508		C M C C C M C C M		**Clyst**: brn gy - olv gy, mod hd, blky, micromic, tr carb frag, microfaults w slicken sides, non calc.	No show.
2509			2509.15 m	**Slst**: m dk gy - brn gy, mod hd - v hd, v mica, abn **Coal** frag, tr pyr, non calc.	
		Not recovered	2509.50 m		
2510					

Norsk Hydro

Well no.	Core report	Core no's
30/6–10		5

Interval	Area	Cut	Date
2510–2515 m	Norwegian North Sea	2510–2517.2 m	14.11.82
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2510–2517.2 m, 100%	Midtkandal/Slaatsveen

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2510				Sh grdg to Slst: olv gy, mod hd - hd, subfis, coal frags, micromic, non calc.	No show.
			2510.70 m	Coal/coaly Sh: gy blk, mod hd, fis, vit, loc silty, micromic, tr micropyr, non calc.	
2511				Slst: brn gy, hd, blky, Coal frags, rr mica, non calc, incl Clyst: lt olv gy, hd, non calc, grdg to Sh.	
2512			2512.30 m	Coal: blk, mod hd, subfis, vit, wxy surfaces.	
		M		Sh: olv blk, hd, subfis, brit, micromic, tr Coal frags, non calc.	
2513				Coal/Coaly Sh: gy blk, mod hd, fis, vit, loc slty, micromic, tr micropyr, non calc, plant frags.	
		M			
2514		M			
			2514.15 m	Coal/coaly Sh: a/a.	
2515				Coal: blk, mod hd, subfis, vit, wxy surfaces, plant frags.	

Norsk Hydro

Well no.	Core report	Core no's
30/6–10		5

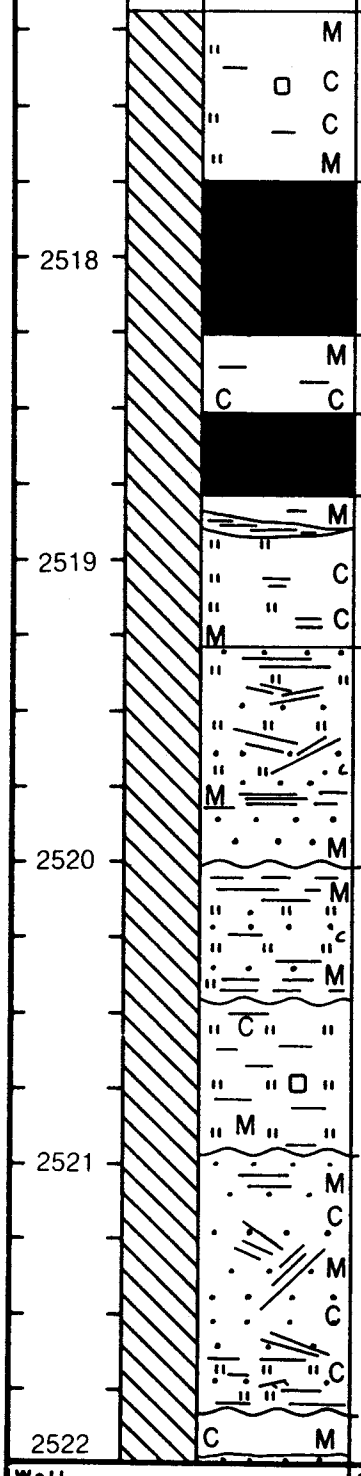
Interval	Area	Cut	Date
2515–2517.2 m	Norwegian North Sea	2510–2517.2 m	14.11.82
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2510–2517.2 m, 100%	Midtkandal/Slaatsveen

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2515		M		Sh: olv gy, mod hd, blky, micromic, micropyr, abn plant frags, non calc.	On Sst: 100% dull yel flu, mod fast strong bl wh flu cut, mod yel wh flu resd, straw vis cut, fair petroliferous odour.
			2515,4 m	Coal/coaly Sh: gy blk, mod hd, fis, vit, loc slty, micromic, tr micropyr, non calc.	
2516		M			
			2516,1 m	Sst: brn oil stn, clr - milky Qtz, f, mod hd, fri, subrnd - subang, cly cmt, mica, rr glau. Coal frags, well srtd, fair vis por.	On Sst: 100% bright yel flu, strong yel wh instant streaming flu cut, strong yel flu resd, straw vis cut, straw vis resd, good petroliferous odour, 100% brn oilstn.
			2516,45 m Sealed sample 2516,60 m		
		M			
2517			2516,9 m	Coal: gy blk, firm, fis, wxy surfaces.	
			2517,2 m		

Norsk Hydro

Well no.	Core report	Core no's
30/6–10		6

Interval	Area	Cut	Date
2517.2–2522 m	Norwegian North Sea	2517.2–2530.0 m	15.11.82
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2517.2–2528.4 m, 87.5%	Midtkandal/Slaatsveen

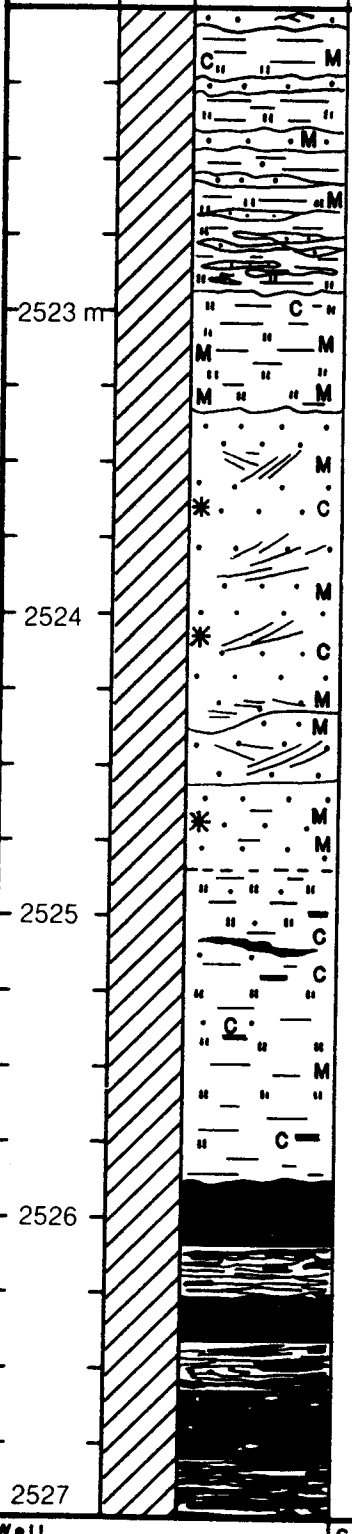


Depths	Lithological descriptions	Shows
2517.20 m	**Sh**: m dk gy, mod hd, blky, micromic, tr micropyr, occ Coal frags, non calc.	No show.
2517.75 m	**Coal**: blk, mod hd - hd, subfis - loc fis, tr micromic, plant rmn, loc waxy surfaces.	
2518.25 m	**Sh**: olv gy, hd, blky, abn plant rmn, slty, micromic, micro faults, loc waxy.	
2518.55 m	**Coal**: blk, blky, shiny, vit.	
2518.80 m	**Sh**: a/a.	
2519.30 m	**Sst**: lt gy, clr - milky Qtz, vf, mod hd, subrnd - subang, cly/silica cmtd, v mica in lam, rr Glau, tr **Coal**, well srtd, poor vis por.	On Sst: 100% yel wh flu, mod fast streaming bl - yel wh flu cut, pale straw vis cut, strong yel wh flu resd, sl lt brn oil stn, sl petroliferous odour.
2519.53 m Sealed sample 2519.73 m		
2520.00 m	Interlam/interbdd **Sh, Slst, Sst**: **Sh/Slst**: m dk gy, mod hd, subfis, micromic, carb, non calc. **Sst**: a/a, vf.	
	Slst and **Sh** lam a/a. Tr Pyr nod.	
2520.95 m	**Sst**: lt brn stn, clr - occ milky Qtz, f, mod hd - fri, pred subrnd, silic cmt, mica, carb, rr Glau, well srtd, poor - fair vis por.	
2521.33 m Sealed sample 2521.60 m	Interlam **Slst** and vf **Sst** a/a.	
2521.80 m	**Sh**: a/a.	
2521.95 m	**Sst**: a/a vf.	

Norsk Hydro

Well no.	Core report	Core no's
30/6–10		6

Interval	Area	Cut	Date
2522–2527 m	Norwegian North Sea	2517.2–2530 m	15.11.82
Scale 1:25	**Well R.K.B.** 23 m	**Recovery** 2517,2–2528,4 m 87,5%	**Geologist** Midtkandal/Slaatsveen



Depths	Lithological descriptions	Shows
	Int bdg og Sst and Sh.	
	Sst: lt brn stn, clr occ-milky Qtz, vf-occ f, subrnd, mod hd, cly/silic cmt, mica, tr carb, fair srtd, poor vis por.	
	Sh: olvgy - mdkgy, mod hd, subfis, micromic, carb, non calc, loc grdg to Slst.	
2522,9 m		
	Slst: m dk gy, mod hd, subfis v mica in lam, coal frags, non calc.	On Sst: bleeding gas rr bleeding oil lt brn stn gd petr odour 100% bright yel wh flu, strong inst fast streaming bl wh flu cut, dk amber vis cut, strong yel wh resd flu cut, dk amber resd vis cut.
2523,3 m Sealed sample		
	Sst: lt brn stn, pred clr Qtz, f, occ m, pred subrnd, mod hd, fri, silic cmt, mica, carb, rr glau, fair srtd, fair vis por.	
2523,5 m		
2523,85 m Sealed sample		
2524,0 m	X - bdg.	
	Sst: a/a vf - f,w v mica rich lam x - bdg.	
	Sst: a/a f, w vf mica rich lam.	
2524,8 m	Slst: dkgy - brn blk, mod hd, fis, v mica, carb, loc grdg to Sh, loc grdg to vf Sst.	
	Sh: olv blk a/a.	
2525,85 m	Coal: blk, mod hd, subfis, vit loc grdg to coaly Sh.	

Norsk Hydro

Well no	Core report	Core nos
6		6

Interval	Area	Cut	Date
2527–2528.4 m	Norwegian North Sea	2517.2–2530 m	15.11.82
Scale 1:25	**Well R.K.B** 23 m	**Recovery** 2517.2–2528.4 m 87,5%	**Geologist** Midtkandal/Slaatsveen

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2528		C / M / C / C / M	2527.65 m 2527,85 m	Coal: blk, mod hd. subfis. vit, loc shaly Coal. Slst/Sh: olv blk. mod hd, subfis, micromic, carb frags. non calc. root marks.loc grdg to vf Sst.	Occ bleeding gas from coal.
2529		Not recovered	2528,4 m	Clyst/Sh: m dk gy - olv gy. hd. fis. micromic, carb, non calc.	
2530			2530 m		
2531					

Well	Core report	Core nos
30/6–10	3 of 3	6

Norsk Hydro

Well no.	Core report	Core no s
30/6–10		7

Interval	Area	Cut	Date
2530–2535 m	Norwegian North Sea	2530–2548 m	16.11.82
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2530–2548 m, 100%	Midtkandal/Slaatsveen

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2531				Sh: m dk gy, mod hd, subfis, carb, slty, mica. Sst: slty w Sh lam. Sst: clr - mlky Qtz, vf - f, mod hd, subang - subrnd, mica, carb, well srtd, fair vis por. Sh: grn gy, mod hd, subfis, carb, mica. Sh: md dk gy, mod hd, subfis, mica, slty, carb.	On Sst: lt brn stn, 100% yel flu, m fast streaming bl wh (milky) flu cut, strong yel wh flu resd, none - pale straw vis cut, petroliferous odour.
2532				Slst grdg to f Sst: md dk gy, mod hd, mica, occ cl - mlky Qtz.	
2533				Sh: a/a. Sst: brn stn, clr to mlky Qtz, f, mod hd, subang to subrnd, mica, carb, Coal lenses, fair vis por.	
2534				Sh: m dk gy, mod hd, subfis, carb, sl slty, mica, non calc.	
				Coal: blk, mod hd, spltry, subfis, wxy, micro-mic. Sh: w plant frags, else a/a.	
				Coal: a/a.	

Norsk Hydro

Well no.	Core report	Core no's
30/6–10		7

Interval	Area	Cut	Date
2535–2540 m	Norwegian North Sea	2530–2548 m	16.11.82
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2530–2548 m, 100%	Midtkandal/Slaatsveen

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
				Coal: blk, mod hd, spltry, wxy, subfis, micromica.	
				Sh: gy blk, mod hd, fis, spltry, mica, carb, plant frags, non calc.	
2536					
				Sh: a/a.	
2537				Sh: a/a.	
				Coal: a/a.	
2538				Sh: dk gy, mod hd, spltry, subfis, carb mica, non calc, plant frags.	
2539				Sst: lt brn stn, clr - mlky Qtz, f - vf, mod hd, subang - subrnd, silic/cly cmt, mica, tr carb, rr glau, fair srtd, poor vis por.	On Sst: lt brn stn, 100% yel flu, mod fast streaming bl wh (milky) flu cut, strong yel wh flu resd, none - pale straw vis cut, petroliferous odour.
				Coal: a/a. Sst: a/a.	

Norsk Hydro

Well no.	Core report	Core no's
30/6–10		7

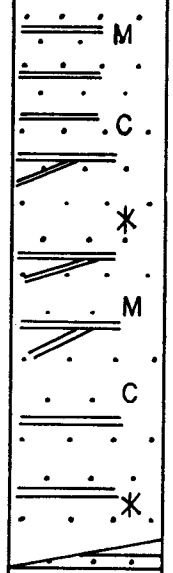
Interval	Area	Cut	Date
2540–2545 m	Norwegian North Sea	2530–2548 m	16.11.82
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2530–2548 m, 100%	Midtkandal/Slaatsveen

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
		M C		Slst Sh: m dk gy, hd, blky, occ subfis, micro - mic, tr carb, arg, non calc.	
		F		Slst: a/a, hd, blky - subfis, grdg to vf Sst.	
2541				Slst Sh: a/a, subfis, mica.	
		M		Sst: lt brn stn, clr - mlky Qtz, vf, mod hd, subang - subrnd, silic/cly cmt, mica, tr carb, rr glau, inter lam w slty mica - rich lam, fair srtd, poor vis por. Coal: blk, mod hd - hd, blky, vit.	On Sst: lt brn stn, 100% yel flu, mod fast streaming bl wh (milky) flu cut, strong yel wh flu resd, non - pale straw vis cut, petroliferous odour.
2542		C M M M C		Sh: m dk gy, hd, subfis - fis, mica, carb frags, loc slty lam, non calc.	
2543				Coal: a/a.	
2544		C M M C		Carb Sst: brn stn, Qtz, f, occ vf, mod hd, subrnd, cly cmt, arg, mica, carb, rr glau, plant frags, fair srtd, poor vis por.	
			2544.56 m Sealed sample 2544.90 m	Sst: lt brn stn, clr - mlky occ fros Qtz, m, mod hd, fri,pred subang - subrnd, cly cmt, tr mica, tr glau, tr carb, fair srtd, fair vis por.	On Sst: brn stn, 100% bri yel wh flu, strong instant-fast streaming flu cut, strong yel wh resd, amber - dk amber vis cut, dk amber vis resd, good petroliferous odour.

Norsk Hydro

Well no.	Core report	Core no.s
30/6–10		7

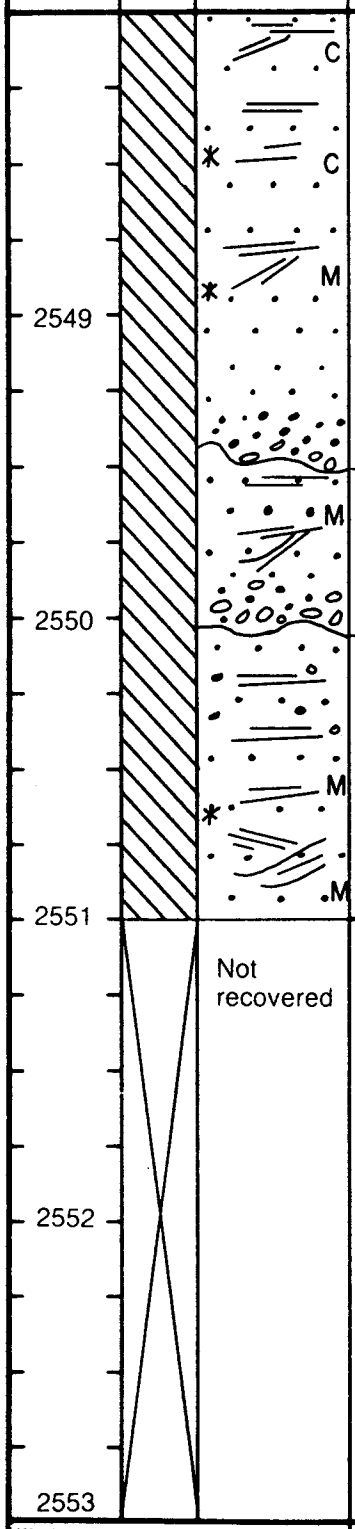
Interval	Area	Cut	Date
2545–2548 m	Norwegian North Sea	2530–2548 m	16.11.82
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2530–2548 m, 100%	Midtkandal/Slaatsveen

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2546			2545.64 m Sealed sample 2546.00 m	Sst: lt brn stn, clr - mlky - occ frosty Qtz, m, mod hd - fri, pred subang - subrnd, cly cmt, tr mica, tr glau, tr carb, fair srtd, fair vis por.	On Sst: brn stn, 100% bri yel wh flu, strong instant - fast streaming, flu cut, strong yel wh flu resd, amber - dk amber vis cut, dk amber vis resd, good petroliferous odour.
				Sst: a/a.	
2547			2546.96 m Sealed sample 2547.28 m	Sst: a/a. Coal: blk, mod hd - hd, vit.	
2548				Sst: a/a.	

Norsk Hydro

Well no.	Core report	Core no's
30/6–10		8

Interval	Area	Cut	Date
2548–2553 m	Norwegian North Sea	2548–2553 m	17.11.82
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2548–2551 m, 60%	Midtkandal/Slaatsveen

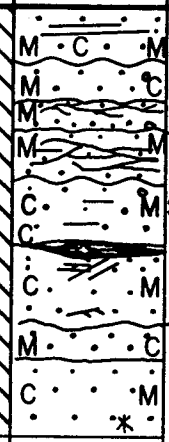


Depths	Lithological descriptions	Shows
2548 m Sealed sample 2548,28 m	Sst: brn stn, clr - milky occ smoky and frosty Qtz, pred m, also f - crs, mod hd, fri, subang - subrnd, cly mtx, rr mica, carb, arg, rr glau, fair srtg, good vis por.	Brn stn. 100% bri yel wh flu, strong instant - fast streaming bl wh (milky) flu cut, strong yel wh flu resd, amber - dk amber vis resd. good petroliferous odour.
2549,00 m Sealed sample 2549,27 m	Trough x-bdg.	
2549,40 m	Cgl: brn stn, Qtz a/a, vf - pbly, also pbls of Slst/vf Sst (0.5–2 cm), rnd - subrnd, mtx of Cly, Slst, vf Sst (bimodal) tr mica, poor srtg, good vis por.	
2549,65 m Sealed sample 2549.91 m		
2550,05 m	Sst: gen a/a pred m, loc f - crs.	
2550,64 m Sealed sample 2550,84 m	Horisontal and trough x-bdg.	
2551 m		

Norsk Hydro

Well no.	Core report	Core no's
30/6–10		9

Interval	Area	Cut	Date
2553–2554.4 m	Norwegian North Sea	2553–2554.4 m	17.11.82
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2553–2554.4 m, 100%	Midtkandal/Slaatsveen

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2554 2555			2553.15 m Sealed sample 2553.30 m 2553.40 m 2553.60 m Sealed sample 2553.80 m 2554.05 m 2554.15 m Sealed sample 2554.40 m	Sst: sl lt brn stn, clr - milky - frosty - smoky Qtz g, vf - v crs, mod hd, fri, subrnd - subang, cly mtx, mica in lam, tr - carb, poor srtg, fair vis por. Sst: gen a/a vf, loc m - pbly above erosive surfaces. Sst: gen a/a, f - crs, pred m, thin Coal Sh. above erosive surface; brn blk, fis. Sst: a/a, f, grdg upwards to vf. Congl: Qtz g, vf - peb (1–2 cm). Sst: brn stn, Qtz, f, grdg to m upwards, else a/a.	Brn stn, 100% bri yel wh flu, strong instant - fast streaming flu cut, strong yel wh flu resd, dk amber vis cut, dk amber vis resd, strong petroliferous odour.

Norsk Hydro

Well no.	Core report	Core no's
30/6–10		10

Interval	Area	Cut	Date
2554.5–2559 m	Norwegian North Sea	2554.5–2572.5 m	18.11.82
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2554.5–2572.5 m, 100%	Nilsen/Edvardsen

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2554					
			2554.50 m Sealed sample 2554.80 m	Sst: m dk - dk gy, slty - m, v hd, silic cmtd, arg, v mica, tr Pyr xls, Coal frags, mod srtd, no vis por. xbdd - x laminated, tr bioturbations.	80% dull - bri yel flu, fast - instant streaming bri yel wh flu cut, m - dk brn vis cut, wh flu resd, faint hydrocarbon odour.
2555			2555.20 m Sealed sample		
			2555.50 m	Interlam Sst, Slst and Sh. Sst: a/a grdg Slst; Sh: gy blk, v hd, v fis, v slty, v micromic - mica, v carb, non calc, x and wavy lams, ca 1 mm Coal seams.	Tr dull yel flu, tr slow streaming dull yel flu cut.
2556			2556.00 m		
			2556.30 m Sealed sample 2556.60 m	Sst: olv gy - pale yel brn, clr - mlky Qtz, slty, v crs, hd - fri, subang - subrnd, silic cmtd, m gy cly mtx, sl mica, poor srtd, poor - fair por. Bds dipping 15–20°.	Dk brn oil stn, 90% dull - bri yel - amber flu, fast - instant streaming, bri yel flu cut, m dk brn vis cut, wh flu resd, mod hydrocarbon odour.
			2556.85 m		
2557			2556.07 m Sealed sample 2556.37 m	Sst: olv gy - pale yel brn, clr - mlky Qtz m - pbly, mod hd - fri, subang - subrnd, some dk gy - loc v lt gy cly mtx, sl mica, tr Glau, m grn, sl tr Coal frags, homogeneous, mod srtd, fair - good por.	Dk brn - brn blk oil stn, 100% strong yel flu, fast - instant streaming bri yel - pale yel brn flu cut, m brn vis cut, gy orng - pink flu resd, m brn vis resd, fair - strong hydrocarbon odour.
2558			2558.10 Sealed sample 2558.30 m	Sst: a/a, f - pbly, poor - mod srtd.	
2559					

Norsk Hydro

Well no.	Core report	Core no's
30/6–10		10

Interval	Area	Cut	Date
2559–2564 m	Norwegian North Sea	2554.5–2572.5 m	18.11.82
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2554.5–2572.5 m, 100%	Nilsen/Edvardsen

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2559				Sst: a/a, m - crs - rr pbly, well srtd, good por.	Show pred a/a, fast - instant streaming bri yel wh - bl wh flu cut.
		M	2559.67 m Sealed sample		
2560			2559.97 m		
			2560.07 m Sealed sample		
			2560.37 m		
		M			
2561					
			2561.24 m Sealed sample		
			2561.54 m		
			2561.65 m	Sst: a/a, m - pbly, poor srtd, pred subrnd, ca 1 cm Cgl horizons.	Strong hydrocarbon odour.
2562					Show a/a.
		M			
			2562.34 m Sealed sample		
			2562.64 m		
			2562.80 m	Sst/Cgl: a/a, crs - pbly, pred subrnd, tr Coal frags, mod srtd.	Show a/a.
2563					
			2563.07 m Sealed sample		
			2563.37 m		
		M			
2564					

Norsk Hydro

Well no.	Core report	Core no's
30/6–10		10

Interval	Area	Cut	Date
2564–2569 m	Norwegian North Sea	2554.5–2572.5 m	18.11.82
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2554.5–2572.5 m, 100%	Nilsen/Edvardsen

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2564		M	2564.40 m Sealed sample 2564.70 m	Sst: a/a pred m - crs, rr pbly.	Show a/a.
2565		M	2565.10 m 2565.18 m Sealed sample 2565.48 m		
2566		M	2566.40 m Sealed sample 2566.70 m		
2567		M	2567.73 m Sealed sample 2568.00 m		
2568		M	2568.51 m Sealed sample 2568.82 m		
2569					

Norsk Hydro

Well no.	Core report	Core no's
30/6–10		10

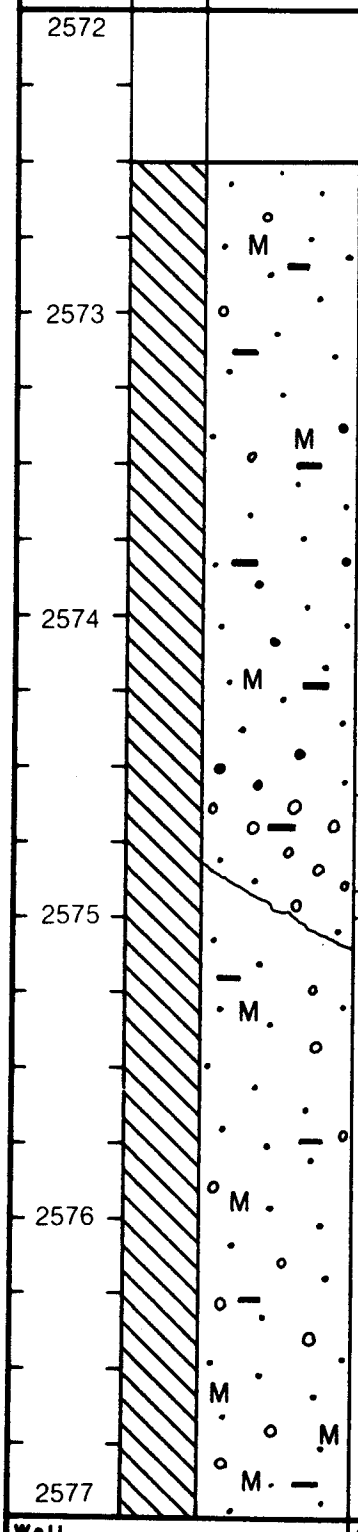
Interval	Area	Cut	Date
2569–2572.5 m	Norwegian North Sea	2554.5–2572.5 m	18.11.82
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2554.5–2572.5 m, 100%	Nilsen/Edvardsen

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2569		M	2569,00 m	Sst: a/a, m - pred crs - pbly, v fri, v good por.	Show a/a.
2570					
		M			
2571					
		M			
2572			2572.00 m Sealed sample 2572.30 m		
			2572.50 m		
2573					

Norsk Hydro

Well no.	Core report	Core no's
30/6–10		11

Interval	Area	Cut	Date
2572.5–2577 m	Norwegian North Sea	2572.5–2590.4 m	19.11.82
Scale 1:25	**Well R.K.B.** 23 m	**Recovery** 2572.5–2590.4 m, 100%	**Geologist** Nilsen/Edvardsen



Depths	Lithological descriptions	Shows
2572.5 m Sealed sample 2572.8 m	Sst: olv gy - brn gy, clr - mlky Qtz, crs - v crs - rr pbly, mod hd - v fri, subang - subrnd, some olv gy slty cly mtx, sl mica, abn fibrous Coal frags, mod - well srtd, good por. Whole Sst section dips 25–30°.	100% m - dk brn - grn brn oil stain, 100% strong yel flu, fast - instant streaming grn yel - wh yel - bl wh flu cut, m brn vis cut, gy orng pink flu resd, dk brn vis resd ring, strong hydrocarbon odour, 30% of Sst section bleeding oil.
2573.38 m Sealed sample 2573.68 m		
2573.98 m Sealed sample		
2574.38 m	Trs smoky Qtz.	
2574.60 m	25–30° dipping bds of Cgl, ca 2 cm thick, yp to 1 cm pbls.	
2574.90 m		
2575.00 m	0.1–0.5 cm seam of Coal; blk, shiny, fri, w some tar.	
2575.05 m Sealed sample		
2575.40 m		
2576.17 m Sealed sample		
2576.48 m		
2576.50 m	Sst: a/a, m - v crs - rr pbly, w 2–3 cm Muscflakes, mod srtd.	Shows pred a/a, slow - instant streaming cut.

Norsk Hydro

Well no.	Core report	Core no's
30/6–10		11

Interval	Area	Cut	Date
2577–2582 m	Norwegian North Sea	2572.5–2590.4 m	19.11.82
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2572.5–2590.4 m, 100%	Nilsen/Edvardsen

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2577			2577.00 m	Sst: a/a, m - pbly, more abn olv gy cly mtx, bcmg more mica, mod srtd, fair - gd por.	Show pred a/a, slow - fast strmg cut.
			2577.20 m – Sealed sample 2577.43 m	Sst: a/a, pred m - crs, abn tar mtx, v mica, v carb.	On basal Cgl: 30% weak, dull yel flu, tr weak slow streaming dull yel wh flu cut, no resd.
			Sealed sample 2577.62 m	10 cm thick basal Cgl, resting on irr erosional surface, up to 1 cm subrnd - rnd pbls, gy blk cly mtx, v carb, v mica.	On Sh: v weak dull yel flu, tr v slow streaming, v weak, dull yel flu cut, no resd.
2578			2577.65 m	From 2577.65 m: Sh: gy blk - brn blk, mod - v hd, v slty, grdg Slst, v micromic - v f mica, v micropyr, carb, v abn pyr concretions 0.3–3.0 cm, ll bdg planes, non calc.	
2579				Sh: brn blk - olv blk, a/a, v micromic - mica.	
2580			2580.25 m	Sh: a/a, bcc much less micromic - mica, v abn pyr vns and concretions, no preferred orientation.	Between 2580.25 and 2580.45 m: 50% bri yel orng flu, 50% fast - instant streaming, bri yel flu cut, no resd, faint hydrocarbon odour.
			2580.45 m	Sh: dk gy, v hd, v slty, grdg Slst, v micromic, sl mica, v micropyr, 0.5–1.0 cm Pyr concretions, rnd, sl carb, non calc.	Below 2580.45 m: no flu, tr slow, non streaming, v weak, dull yel flu cut, no resd.
2581					
2582					

Norsk Hydro

Well no.	Core report	Core no's
30/6–10		11

Interval	Area	Cut	Date
2582–2587 m	Norwegian North Sea	2572.5–2590.4 m	19.11.82
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2572.5–2590.4 m, 100%	Nilsen/Edvardsen

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2582				Sh: a/a.	Show a/a, bcmg gradually weaker.
2583					
2584					
			2584.80 m 2584.85 m	Sh: a/a, mod slty, sl micromic - mica, sl carb, 5 cm pyr concretions.	
2585				Sh: brn blk - olv blk, mod - v hd, v slty, grdg **Slst**, v micromic - mica, mod - v carb, micropyr, up to 1 cm rnd pyr concretions, non calc.	No show.
2586					
			2586.75 m	1 cm thick bd w pyr lenses and elongated concr.	
2587					

Norsk Hydro

Well no.	Core report	Core no's
30/6–10		11

Interval	Area	Cut	Date
2587–2590.4 m	Norwegian North Sea	2572.5–2590.4 m	19.11.82
Scale 1:25	**Well R.K.B.** 23 m	**Recovery** 2572.5–2590.4 m, 100%	**Geologist** Nilsen/Edvardsen

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2587			2587.00 m	Sh: a/a, no pyr concretions.	No flu, sl tr slow non streaming dull yel flu cut, no resd.
2588			2588.75 m	Sh: a/a, mod - v pyr, up to 1 cm pyr concr and lenses.	
2589			2589.00 m	Sh: brn blk - olv blk, mod - v hd, v slty, grdg Slst, v micromic - mica, v micropyr, sl carb, non calc.	No show.
2590			2590.40 m		
2591					

Well	Core report	Core no's
30/6–10	4 of 4	11

APPENDIX 2

SIDE WALL CORE DESCRIPTIONS
RUNS 1 - 2

Norsk Hydro

SIDE WALL CORES DESCRIPTION

WELL: 30/6-10	RUN N°: 1
LICENCE: 053	PAGE N°: 1 of 2
	DATE: October 30, 1982

SERVICE COMPANY:	Schlum
ASKED:	30
SHOT:	30
LOST:	0
EMPTY:	0
SAMPLES RECOVERED:	30
MISFIRE:	0
GEOLOGIST:	Nilsen/Edvardsen

tr : trace - M : medium - G : good

N°	DEPTHS m	REC cm	LITHOLOGY	Fluorescence tr M G	Fluorescence CUT
1	2420	4.0	Clyst, brn blk, firm, v slty - vf sdy, micromic - mica, carb, non calc.		
[illegible]	2419	4.0	Clyst, as for 2420 m, 1 mm lams of vf Sst.		
3	2417	2.5	Clyst, mod - v slty, else as for 2420 m.		
4	2415.5	3.5	Sst, m gy - olv gy, vf - f, subrnd, v arg, mica, well srtd, pr vis por v weak dull yel flu crush cut.		
5	2413	5,0	Clyst, m dk gy, sft, sticky, sl - mod slty, mod - v calc.		
6	2410	2,5	Clyst, sl - mod calc, else as for 2413 m.		
7	2406	2.5	Lst, lt gy, firm - mod hd, cryptoxln, sl arg, dull yel wh flu crush cut.		
8	2402	4,0	Clyst, m dk - dk gy, firm - mod hd, mod slty, sl micromic, sl calc.		
9	2398	5,0	Clyst, v calc grdg Mrl, else as for 2402 m.		
[illegible]	2396	3.5	Clyst, m dk - dk gy, sft - firm, sl slty, micromic, non – sl calc.		
11	2385.5	2,5	Lst, pale yel brn, firm, microxln, sl glau, gy orng pink flu, fast - instant streaming bri yel wh flu cut, gy orng pink flu resd, lt brn oil stn, strong hydrocarbon odour.		
12	2378	5,0	Clyst, dk gy - dk grn gy, firm, sl slty, sl micromic, v abn forams, non calc.		
13	2360.5	3,5	Clyst, dk gy, firm, sl slty, micromic, v calc, grdg Mrl.		
14	2320	3,0	Mrl, olv gy, firm, mod slty, sl micromic, weak, dull yel flu, instant streaming cloudy, dull yel wh flu cut.		
15	2273	3,0	Clyst, m - m dk gy, sft - firm, sl slty, v calc, grdg Mrl.		
16	2262	3.0	Clyst, dk gy, firm, subfis, sl slty, sl micromic, v calc, grdg Mrl.		
[illegible]	2256	4.0	Clyst, dk grn gy - dk gy, sft, sl slty, v calc, grdg Mrl.		

Norsk Hydro

SIDE WALL CORES DESCRIPTION

WELL: 30/6-10	RUN N°: 1
LICENCE: 053	PAGE N°: 2 of 2
	DATE: October 30, 1982

SERVICE COMPANY: Schlum
ASKED: 30
SHOT: 30
LOST: 0
EMPTY: 0
SAMPLES RECOVERED: 30
MISFIRE: 0
GEOLOGIST: Nilsen/Edvardsen

tr : trace - **M** : medium - **G** : good

N°	DEPTHS m	REC cm	LITHOLOGY	Fluorescence tr M G	Fluorescence CUT
18	2555	3,5	Dol, wh - pale yel brn - dk grn gy, v hd, crypto - microxln.		
●	2553	3,5	Clyst, dk gy - dk grn gy, firm, fis, grdg Sh, mod slty, abn forams, v calc, grdg Mrl.		
20	2245,5	3,5	Clyst, gy blk - brn blk, sft, v calc, grdg Mrl.		
21	2240,5	4,0	Clyst, dk gy, sft, sl - mod slty, micromic, v calc, grdg Mrl.		
22	2235	3,0	Clyst, gy blk - brn blk - blk, firm, sl slty, sl micromic, non calc.		
23	2015	5,0	Clyst, olv gy, firm, sl slty, non calc.		
24	1954	6,0	Clyst, m bl gy, firm, micromic, v calc.		
25	1900	5,5	Clyst, interlam pale yel brn and dusky brn, firm, sl micromic, v calc.		
26	1853	5,5	Clyst, dk grn gy, firm, sl slty, micromic, non - v sl calc.		
●	1820	6,0	Clyst, as for 1853 m.		
28	1545	6,0	Clyst, brn blk, dk grn gy, firm - mod hd, subfis, sl slty, sl carb, non - sl calc.		
29	1450	5,0	Sst, lt - m gy, clr - milky Qtz, f - crs, subang - subrnd, Glau, poor srtd.		
30	1227	5,0	Cly, olv gy, sft, sticky, sl slty, micromic, mod - v calc.		
●					

Norsk Hydro

SIDE WALL CORES DESCRIPTION

WELL: 30/6-10	RUN N°: 2
LICENCE: 053	PAGE N°: 1 of 3
	DATE: November 24, 1982

SERVICE COMPANY:	Schlum
ASKED:	35
SHOT:	35
LOST:	4
EMPTY:	0
SAMPLES RECOVERED:	31
MISFIRE:	0
GEOLOGIST:	Nilsen/Edvardsen

tr : trace - **M** : medium - **G** : good

N°	DEPTHS m	REC cm	LITHOLOGY	Fluorescence tr M G CUT
31	2653	2,0	Slst, m - m dk gy, firm - mod hd, arg, micromic, sl mica, v sl calc, tr dull yel flu resd.	
●	2652	3,0	Sh, dk gy, firm, v slty, grdg Slst, micromic, sl mica, v sl calc.	
33	2650	3,0	Sh, as for 2652 m.	
34	2647	3,0	Sh, as for 2652 m.	
35	2644	3,5	Sh, m dk gy, else as for 2652 m.	
36	2638	3,0	Sh, as for 2652 m.	
37	2629	0	Lost.	
38	2624	0	Lost.	
39	2617,5	0	Lost.	
●	2613	3,5	Sh, m dk gy, else as for 2652 m.	
41	2606	3.0	Sh, m dk gy - brn gy, firm, v slty, grdg Slst, sl v f sdy, micromic, sl carb, non calc.	
42	2593	3,0	Sh, m dk gy, firm, v slty, grdg Slst, micromic, sl carb, non calc.	
43	2490	2,5	Sst, pale yel brn, slty - vf, firm, arg, micromic, fair por, 100% dull yel flu, weak slow - non streaming dull yel wh flu cut, weak dull yel wh flu resd.	
44	2459	0	Lost.	
45	2458	4.0	Sst, pale yel brn, clr - milky Qtz, f - m, mod hd, subang - subrnd, arg, glau, sl mica, sl carb, poor srtd, fair vis por, 100% yel flu, weak slow - non streaming dull yel wh flu	
			cut, weak dull yel wh flu resd, faint hydro carbon odour.	
46	2456	6,0	Sst, f - m, well srtd, else as for 2458 m.	
●	2454	2.5	Sh, gy blk, firm - mod hd, v slty, micromic - mica, carb, non calc, no flu, tr v weak - slow streaming dull bl wh flu cut, no resd.	

Norsk Hydro

SIDE WALL CORES DESCRIPTION

WELL: 30/6-10	RUN N°: 2	SERVICE COMPANY: Schlum.
LICENCE: 053	PAGE N°: 2 of 3	ASKED: 35
	DATE: November 24, 1982	SHOT: 35
		LOST: 4
		EMPTY: 0
		SAMPLES RECOVERED: 31
		MISFIRE: 0
		GEOLOGIST: Nilsen/Edvardsen

tr : trace - M : medium - G : good

N°	DEPTHS m	REC cm	LITHOLOGY	Fluorescence tr M G	CUT
48	2452,5	3,5	Sh, gy blk, mod hd, sl slty, sl micromic, carb, mod calc.		
●	2449	4,5	Sh, gy blk, mod hd, mod slty, sl micromic, sl mica, carb, sl calc.		
50	2447	2,0	Sh, gy blk - brn blk, else as for 2449 m.		
51	2445	3,0	Sh, gy blk, mod hd, v fis, mod slty, sl micromic, carb, non calc.		
52	2438,5	2,0	Sh, gy blk, mod hd, mod - v slty, micromic, micropyr, v carb, non calc.		
53	2435	2,0	Sh, dk gy - brn blk, sl mica, sl calc, else as for 2438,5 m.		
54	2434	3,5	Sh, as for 2435 m.		
55	2432	3,0	Sh, v sl calc, else as for 2435 m.		
56	2429	2,0	Sh, as for 2435 m.		
●	2427;5	2,5	Sh, dk gy - brn gy, mod hd, mod slty, micromic - mica, v carb, mod - v calc.		
58	2425	2,5	Sh, m dk gy, mod hd, mod slty, micromic, sl carb, non calc.		
59	2422	2,5	Sh, brn blk, mod hd, sl - mod slty, micromic, mod carb, sl calc.		
60	2412	2,0	Sst, olv gy - gy brn, clr - milky Qtz, vf, v hd, subang, silic cmt, v arg, no vis por.		
61	2572	3,5	Sst, pale yel brn, clr - milky Qtz, m - pbly, firm - fri, subang - subrnd, sl arg, sl mica, sl carb, mod srtd, good por, 100% strong bri yel flu, fast - instant streaming wh yel - bl wh flu cut, m brn vis cut, gy orng pink flu resd, dk brn vis resd, strong hydrocarbon odour.		
62	2565	4,0	Sst, as for 2572 m.		
●	2629	4,5	Sh, m gy, firm, v slty, grdg Slst, micromic, sl mica sl carb, v sl calc.		

Norsk Hydro

SIDE WALL CORES DESCRIPTION

WELL: 30/6-10	RUN N°: 2
LICENCE: 053	PAGE N°: 3 of 3
	DATE: November 24, 1982

SERVICE COMPANY: Schlum
ASKED: 35
SHOT: 35
LOST: 4
EMPTY: 0
SAMPLES RECOVERED: 31
MISFIRE: 0
GEOLOGIST: Nilsen/Edvardsen

tr : trace - M : medium - G : good

N°	DEPTHS m	REC cm	LITHOLOGY	Fluorescence tr M G	CUT
64	2624	3,5	Sh, m gy, firm, v slty, grdg Slst, micromic, sl mica, sl carb, v sl carb.		
●	2617,5	3,0	Sh, a/a.		
●					
●					

APPENDIX 3

WELL SUMMARY

GEOLOGICAL WELL SUMMARY

RFT RESULTS

WELL SUMMARY

Coord: 60°36'29,53"N UTM: 6719328.2 m N
02°45'24,74"E 487600.6 m E
ZONE 31.3°E
Line: 913 133 SP: 615
Rig: Treasure Scout
Water depth: 109m (MSL)
Stopped in: Lwr. Jurassic (Dunlin Gr.) Shales.

On Location: October 3. 1982
Spudded: October 4. 1982
At T.D.: November 21. 1982
Completed: December 1. 1982
T.D. Driller 2656m T.D. Logger 2654m
Wireline logging: Schlumberger Mudlogging: Ex-log

WELL 30/6-10

COUNTRY Norway

OPERATOR Norsk Hydro a.s.

LICENCE 053

OWNED BY Statoil/N.H./Elf/Mobil/Saga/Total

TARGETS
Brent Group

RESULTS
Oil and gas discovered in Brent Group sandstones:
Brent Group: Gross thickness: 117,5 m
Net pay : 37,3 m
Øav: 23,3% Swav:23,9%

CASING

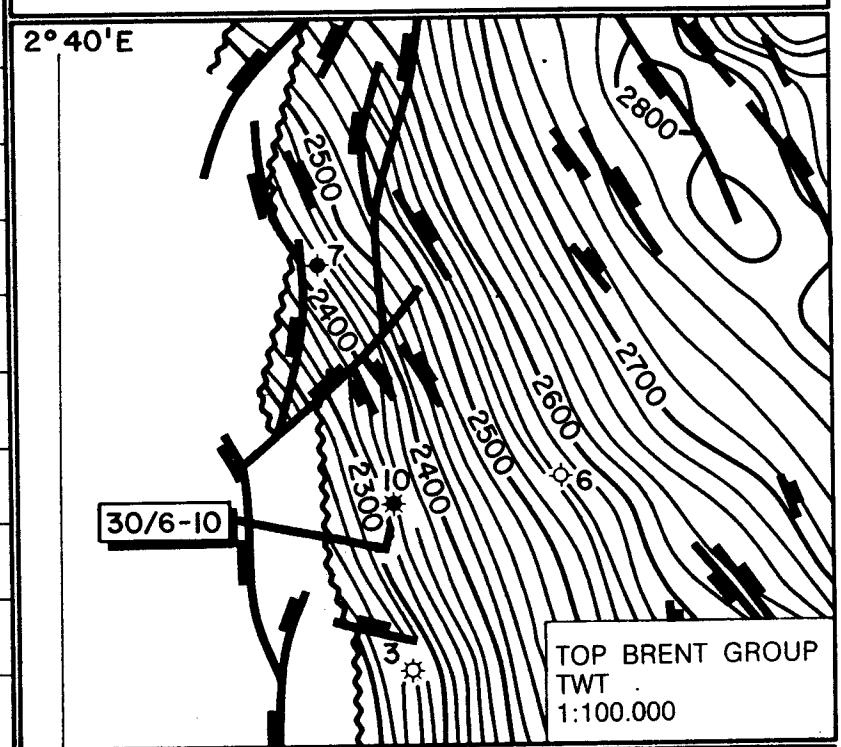
30" at 218m
20" at 949m
13⅜ at 2138m

CORES

Core No. 1	Cut: 2461-2475m. Rec: 2461-2475m. 100%
Core No. 2	Cut: 2475-2493m. Rec: 2475-2488m. 74%
Core No. 3	Cut: 2493-2503m. Rec: 2493-2502m. 90%
Core No. 4	Cut: 2503-2510m. Rec: 2503-2509,5m. 93%
Core No. 5	Cut: 2510-2517.2m. Rec: 2510-2517,2m 100%
Core No. 6	Cut: 2517,2-2530m Rec: 2517,2-2528,4m 87,5%
Core No. 7	Cut: 2530-2548m Rec: 2530-2548m 100%
Core No. 8	Cut: 2548-2553m Rec: 2548-2551m. 60%
Core No. 9	Cut: 2553-2554,5m Rec: 2553-2554,5m 100%
Core No. 10	Cut: 2554,5-2572.5m Rec: 2554,5-2572,5m 100%
Core No. 11	Cut: 2572,5-2590,4m Rec: 2572,5-2590,4m 100%

GAS RECORD

298- 970m: 0,06-1,4%C1
970-1665m: 0,0-0,1%C1
1665-1987m: 0,16-1,12%C1
1987-2252m: 0,48-1,14%C1, tr C2, occ tr C3
2252-2352m: 0,76-2,1%C1-C4
2352-2561m: 0,26-0,84%C1-C3
2561-2656m: 0,1-0,2% C1-C2, occ C3.



LOGS

ISF/LSS GR/SP	132- 965,5m	1.	CST	1227-2420m	1.
"	950-2420m	2.	"	2412,5-2653m	2.
"	2370-2652m	3.			
LDT/CNL GR/CAL.	950-2420m (CNL to 2105m)	1.			
"	2138-2652,5m	2.			
HDT.	1932-2420m	1.			
"	2350-2650m	2.			
DLL/ MSFL CAL/GR.	2370-2650m	1.			
NGT.	2138-2650 m	1.			
Vel.Sur	310-2654m	1.			
RFT.	2458-2574m	1.			
"	sample at 2555,5m				
"	sample at 2467,5m	2.			
"	2521,4-2522.3m sample at 2546,1m	3.			
CBL/VDL	1200-2134m	1.			

OIL SHOWS

On Cuttings
On Lst strgs: 1980-2077m, 2215-2300m: dull yel - orng flu, (partly mineral flu) tr slow - fast, pale yel - wh strmg flu cut, pale brn vis cut, dull orng brn flu resd.
On Lst/Mrl strgs: 2300-2410m: mdk brn oil stn, bright yel - orng pink flu, slow- loc instant strmg yel - wh flu cut, dull - bright gy orng flu resd.
On Clyst: 2320-2320m: no flu, slow strmg bright yel wh flu cut and flu resd.

On Cores
On Sst: 2461-2505,12m: no oil stn, 10-100% mod - right yel flu, weak - strong. fast - instant yel wh strmg flu cut, no vis cut or resd cut.
On Sst 2505,12-2577,65: occ bleeding oil, brn oil stn, mod - strong petrol odour occ bleeding gas, 100% bright yel wh flu, fast - instant bl wh flu cut, pale straw - dk amber vis cut and resd.

A. Davies
25.11.82

GEOLOGICAL WELL SUMMARY

LOCATED ON LINE: 913 133
SP: 615
60°36'29.53"N
02°46'24.74"E
WATER DEPTH 109 m (MSL)

WELL **30/6-10**

DEPTH | LITHO-SECTION | SYSTEM / SERIES | STAGES | FORMATION | DESCRIPTIONS. OBS | SHOWS

23 m SEA LEVEL

132 m SEA BED

30"
217 m

Cly: olv gy - m gy, v sft, stky, slty, loc v slty, sdy, mod - v calc.

Sd: clr Qtz, lithic frags, f - m, occ crs, subang - subrnd, lse.

Tr **Lig, Glau, Shell frags.**

NORDLAND GROUP

687

Sd: clr Qtz, m - crs, occ f - m, rnd subang, lse, mod - poor srtg, loc mic. Loc **Sst:** olv gy - brn blk, vf - f, occ m, firm - mod hd, fri, arg mtx, calc cmt, poor - mod srtg, fair - good por.

Strgs **Cly:** m dk gy, olv gy.

Tr **Glau, Pyr, Forams** and **Shell frags**

UTSIRA FM.

889,5 m

20"
950 m

Cly: olv gy - brn gy, bcmg brn blk - brn gy, occ dusky yel brn, olv blk, sft - firm, stky, loc v slty grdg **Slst,** sdy, non - sl calc.

Slst: brn blk - brn gy, firm, fri, v arg, sdy grdg **Sst,** non - sl calc.

strgs **Lst:** lt olv gy - olv gy , lt brn gy, sft - loc mod hd, sm fri, sucrosic, arg, sm micro xln, loc sdy, no vis por.

Tr **Sd,** vf.

Tr **Glau.**

Cly/Clyst: olv blk - olv brn, brn gy - brn blk, sft - firm, loc blky, slty grds **Slst,** loc sdy, non - mod calc.

Tr **Glau, Mica.**

HORDALAND GROUP

0.06–0.14% C1

0.0–0.1% C1

TERTIARY

CRETA-CEOUS

JURASSIC

EOCENE

PALEOCENE

UPPER

MID.

OLIGOCENE

UP.

HORDALAND GROUP

BALDER FM.

SELE FM

LISTA FM.

SHETLAND GROUP

HUMB. GROUP

BRENT GROUP

13⅜"
2138 m

Lst: pink gy, sft, arg.

1319.5 m
Sst: lt olv gy, clr Qtz, vf - f,
1337 m subang - subrnd, fri, occ lse, tr weak silic cmt, tr arg mtx, fair vis por.
Lst/Dol: mod yel brn, hd, brit blky, arg, micro xln.

1429 m
Sd: clr, occ milky Qtz, occ fros, m - occ crs, rnd - occ subang, lse.

1485,5 m
Tr **Glau, Mica, Pyr.**

Clyst/Sh: m dk gy - dk gy, dusky brn - brn blk, sft - mod hd, blky - subfis, occ fis, tr micromic, occ micro pyr, lam, occ slty, non calc.

Dol: pale - dk yel brn, gy brn, mod - v hd, micro xln, occ f sdy.

Strg **Slst:** dk gy - brn gy, firm, arg, vf sdy, glau, non calc.

1660 m
Clyst/Sh: dk grn gy - occ grn blk, sm mdk gy, brn gy, dusky brn, inter lam and mot, sft - mod hd, sl slty, occ micro pyr, non calc.

Abn **Forams.**

Dol: pale - dusky yel brn, mdk gy, sft - loc v hd, micro xln.

Tr **Lst:** pale - m yel brn, hd, micro xln, sm wh, firm - mod hd, xln.

Clyst: pred dk gy - olv gy - gy blk, firm, blky, loc slty, tr carb, tr micro mic, tr micro pyr, non - mod calc, bcm in pt, bl gy, wh, tuff.

1981 m
Clyst/Sh: m dk gy - dk gy, olv gy, brn blk, occ m bl gy, grn gy, firm - mod hd, blky - subfis, occ v slty, non - mod calc.

2054m Tr - loc abn **Tuff,** tr **Pyr.** strgs **Lst:** pale - dk yel brn, m gy, firm - hd, micro - crypto.

2058m xln, **dull yel orng Flu, tr slow - fast strmg, bright orng yel flu cut.**

Clyst/Sh: pred dk gy – gy blk, firm - mod hd, blky - subfis, tr micromic, tr micropyr, slty loc grdg **Slst:** brn blk, firm arg, non calc.

Clyst: a/a incr slty and calc. Tr **Pyr,** tr **Fossil Frags.**

2253 m
Lst/Mrl: pink gy - pale yel brn, sft - occ hd, arg, chky - micro - xln, low por. **Occ dk brn oil stn, bright yel flu, slow - occ instant bl - wh strmg cut.**

Clyst: dk gy - olv gy - brn gy. sft slty, v calc grdg **Mrl. No flu, slow strmg bright yel wh flu cut**
2415,5 **yel wh flu resd.**

Clyst: dusky yel brn - brn blk, sft - occ firm, slty, carb, earthy, non calc.

Tr **Pyr.**

2457.5 m

0.0–0.1% C1 — 0.16–1.12% C1 — 0.48–1.14 C1, tr C2 occ tr C3 — 0.76–2.1% C1–C4 — 0.26–0.84% C1–C3

GEOLOGICAL WELL SUMMARY

LOCATED ON	LINE	SP	WELL
60°36'29.53"N 02°46'24.74"E	UTM: 6 719 328.2mN 487 600.6mE Zone 31.3°E		30/6–10

WATER DEPTH 109m (MSL)

DEPTH m RKB	LITHO SECTION	SYSTEM	SERIES/STAGE	FORMATION	DESCRIPTIONS.	SHOWS
2461		JURASSIC	MIDDLE	NESS FM	2457.5 m Sst: pred vf - f, occ m - crs, mod hd, cly mtx/cmt, carb, mica, low - fair por Weak Shows. w strgs. Coal. Sh and Slst.	☼ C3 -occ
2500						
Core No.1-11						
2540.5 m				TARBERT FM	Sst: f - crs, bcmg, pred m - crs, occ congl, cly mtx, rr glau, tr coal frags	
2550					2575 m fair - gd por gd shows.	
2590.4			LOWER	DUNLIN GROUP	Sh: gy blk - brn blk, mod - v hd, silty grdg Slst, v m micro - m/c, mica, v micro - pyr, carb, non calc.	☼ 0.05 -0.8% C,
2600						
2650					T.D.	
2700					Drillers T.D.: 2656 m Loggers T.D.: 2654 m	
2750						
2800						
2850						
2900						
2950						
3000						
3050						
3100						
3150						
3200						
3250						
3300						
3350						
3400						
3450						
3500						
3550						
3600						
3650						
3700						
3750						
3800						
3850						
3900						
3950						
4000						
4050						
4100						
4150						
4200						
4250						
4300						
4350						
4400						
4450						
4500						
4550						
4600						
4650						
4700						
4750						
4800						
4850						
4900						
4950						

RFT RESULTS

WELL: 30/6–10

Run 1

No	Depth(RKB)	F.P.(PSI)	PERM.
1/1	2458	4050	Good
2/1	2461	4054	Low
3/1	2463	4054	Good
4/1	2464,5	4054	»
5/1	2466,8	4054	V. good
6/1	2767.5	4054	»
7/1	2468	4055	»
8/1	2470.6	4056	»
9/1	2477	4058	»
10/1	2478,3	4059	»
11/1	2481,3		No seal
12/1	2491.7	4063	V. good
13/1	2493,3	4070	Low
14/1	2501.6	4067	V. good
15/1	2503	4068	»
16/1	2505.4		No seal
17/1	2514.1		Poor
18/1	2517,6	4076	Low
19/1	2519.4		Poor
20/1	2521.7		»
21/1	2541	4100	»
22/1	2544	4096	Good
23/1	2546.1	4097	V. good
24/1	2548.4	4099	»
25/1	2551,2	4103	Low
26/1	2553	4107	Low
27/1	2555.5	4106	V. good
28/1	2558.5	4109	»
29/1	2561	4111	»
30/1	2564	4115	»
31/1	2567	4117	»
32/1	2570	4121	Good
33/1	2574	4123	V. good
34/1	2555.5	4104	»

Took segr. sample at 2555.5 m and recovered from 2 ¼ gal chamber:
19,4 cu.ft. gas. 5 l oil. 0.75 l filtrate.

Run 2

No	Depth (mRKB)	H.P.(PSI)	PERM.
1/2	2467,5	4059	V. good

Took segr. sample at 2467,5 m and recovered from 2¾ gal chamber:
74,8 cu.ft. gas, 0.5 l filtrate

Run 3

No	Depth (mRKB)	H.P.(PSI)	PERM.
1/3	2521.4	4058	Low
2/3	2522.3	4058	Good
3/3	2546.1	4079	V. good

Took segr. sample at 2546.1 m and recovered from 2¾ gal chamber:
26.5 cu.ft. gas. 6 l oil. 1 l filtrate

NOTE: F.P. readings from H.P.-gage.

Checked Jas
Date: 27.7.83

S E C T I O N B

OPERATIONS

LIST OF CONTENTS

SECTION B

TABLES:

FIGURES:

1. LOCATION SURVEY

From 16 September to 18 September 1982 a site survey on the "Oseberg" field was performed by A/S Geoteam. The area surveyed was a 3.4 km x 3.4 km square aligened N-S centered at the planned drilling location. The grid spacing of the analog lines were 100 m and 150 m in the E-W direction and 450 m and 200 m in the N-S direction. Three digital profiles were run, N-S and E-W through the planned drilling location and the third going NNE-SSW from the southern end of the N-S trending profile through well 30/6-3.

The report from this work showed that the water depth in the surveyed area varies from 106 m in the south-eastern part to 112 m in the north-eastern part. At the planned drilling location the depth was found to be 108.1 m. A 12 m long and 7 m high object was found 500 m south-east of the planned drilling location. The object was interpreted to be a wreck. Apart from this the survey showed an even and featureless seabed.

From the seabed to 117 m below Mean Sea Level an uppermost laminated sequence of clay/silt/sand was found. From 117 m to 140 m the sediments were interpreted to be glacial sand and clay. From 140 m to 165 m a zone consisting of mainly clay sediments was interpreted. The sequence from 165 m to a partly strong reflector at 185 m was belived to consist mainly of sand. The sequence from 185 m to a partly very strong reflector at 295 m was interpreted to be sand with interbedded clay layers. The base of this unit was believed to be gas charged sand sediments.

2. POSITIONING AND ANCHORING OF THE RIG

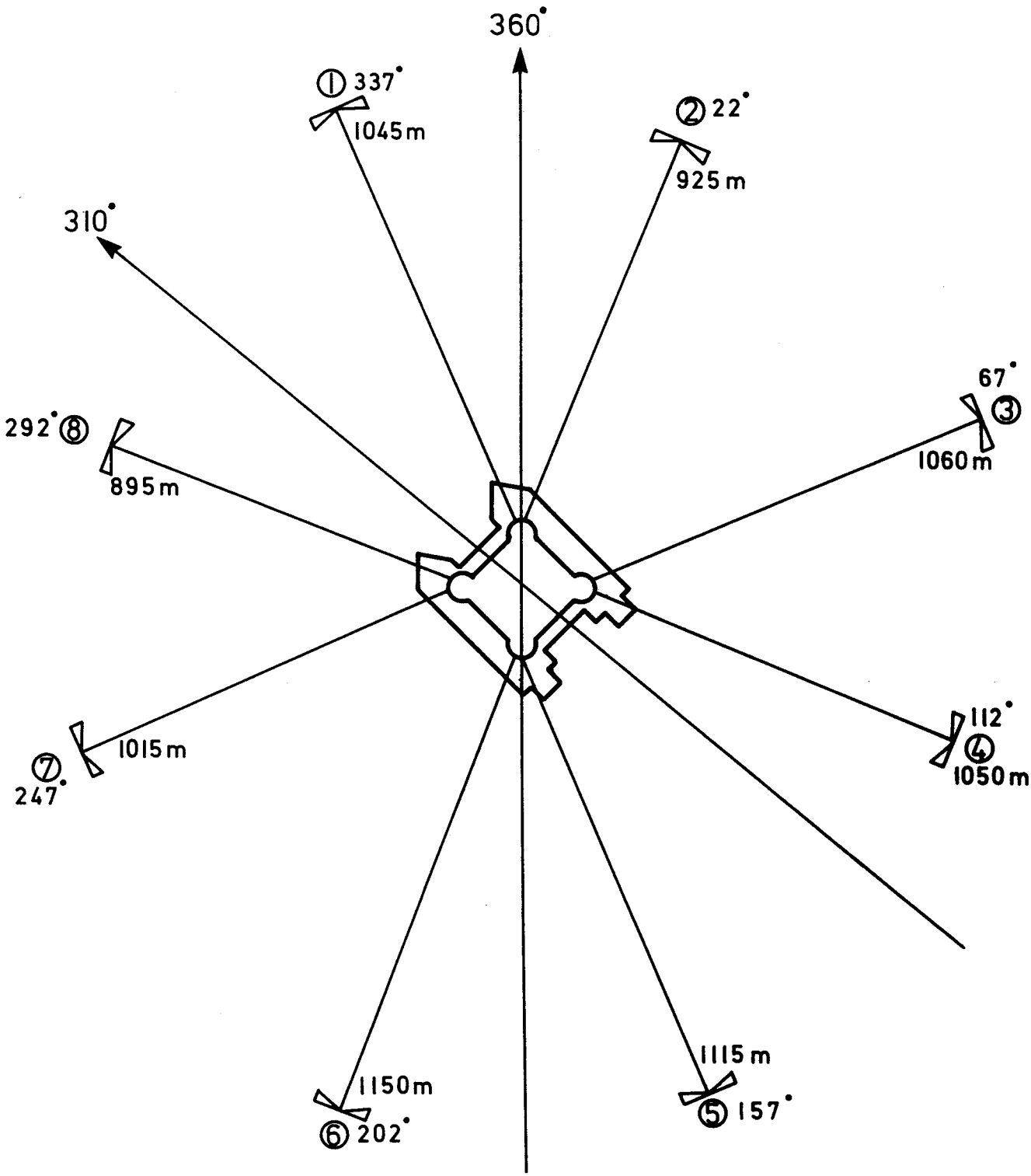
The positioning of the rig was carried out by A/S Geoteam. The Decca Pulse - 8 system was utilized for navigation. The position of the Pulse - 8 antenna was calculated based on the readings of four Pulse - 8 patterns.

Latitude 60° 36' 29.6" N
Longitude 02° 46' 24.2" E
The rig heading was 310°

Fug B-1 shows the anchor pattern, and the anchor tensions before spudding were

Chain no.1	1000 KN
Chain no.2	1000 KN
Chain no.3	1000 KN
Chain no.4	1000 KN
Chain no.5	1000 KN
Chain no.6	1000 KN
Chain no.7	1000 KN
Chain no.8	1000 KN

All anchors were pretensioned to 1267 KN prior to drilling out of the 30" casing.



HEADING: 310°

WELL COORDINATES: 60° 36' 29.6" N
02° 46' 24.2" E

Norsk Hydro Drilling Department	MOORING LINE PATTERN TREASURE SCOUT WELL 30/6-10	Gr. no.: 2	Fig.: B-1
		Date: 13.09.83. Sign: JTA/SF	Dwg. no.: 16

3. OPERATION RESUME

3.1 Summary

Treasure Scout left the 7120/9-1 location on September 27 at 03:30 hrs. The rig passed the 62nd paralell on October 1 at 17:00 hrs and arrived at location 30/6-10 on October 3. The well was spudded in on October 4 at 21:30 hrs.

The 36" hole was drilled to 220 m and the 30" casing was set at 219 m and cemented.

When pressure testing the 30" hydraulic latch and riser, it was discovered that the TGB and 30" casing was moving. With a 2-3/8" stinger the 30" casing was cemented 19 m down outside the casing.

The riser was run and the 17-1/2" pilot hole was drilled to 970 m. At this depth a logrun consisting of ISF/sonic/GR was made. The 17 1/2" hole was underreamed to 26" down to 970 m. The first attempt to run the 20" casing failed, it was not able to pass 227 m. The casing was pulled back,the hole washed and reamed before the 20" casing was rerun. The casing was set with the shoe at 949 m and cemented back to seabed.

The BOP and riser was run and tested according to the procedures.

The 17-1/2" hole was drilled to 973 m and a formation integrity test was performed to an equivalent mud density of 1.56 rd. Drilling continued down to 1342 m where two Rucker tensioners parted due to heavy weather. The drillstring was hung off in the wellhead and the rig waited on weather for 36 1/2 hrs. Drilling continued to 2432 m and the mudweight was increased gradually to 1.40 rd while drilling.

At this depth the following logs were run: ISF/LSS, LDT/CNL, HDT and CST. Started running the 13-3/8" casing. The pipe got stuck with the shoe at 1992 m due to 15 min lost time caused by cross treading joint no.168.

The pipe came free after having lost 31.5 hrs. The remaining casing was run and landed with the shoe at 2138 m. The 13-3/8" casing was cemented back to 2105 m.

Approximately 3 days were lost while working on leakages in the BOP stack. Then drilling continued with a 12 1/4" bit to 2164 m. A formation integrity test was made to an equivalent mud density of 1.79 rd and drilling continued to 2461 m. A total of 11 cores were cut from 2461 m to 2590 m. The 12-1/4" hole was then drilled to a total depth of 2656 m.

The following logs were run at TD:ISF-LSS-GR-SP, LDT-CNL-NGL-CAL-GR, DLL-MSFL-GR-CAL, SHDT with Cyperdip, SST (velocity survey) and RFT with sample taken at 2546.1 m. One run with CST-C was made and 29 samples recovered from 2653 m to 2412.5 m, and at last a CBL-VDL/GR-CCL log was run.

The well was plugged back as outlined in section 4.

A total of 106 hrs were lost working on the BOP and relatching the guidewires.

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Weekly drilling report

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Area	Well	Rig
	30/6-10	Treasure Scout

Casing	Size						
	Setting depth (m)						

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
1/10-83	-	-	-	Under way to well 30/6-10, passed 62nd. paralell at 17:00 hrs.
02/10-83	-	-	-	Underway to well 30/6-10
03/10-83	-	-	-	Arrived at location, ran out anchors, positioned the rig and tensioned all anchors to 1000 KN. Made up 36" bottom hole assembly and landing string for temporary guide base.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
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Area	Well	Rig
	30/6-10	Treasure Scout

	Size						
Casing		30"					
	Setting depth (m)	219					

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
04/10	151	-	1.03	Rigged up and ran temporary guide base. Picked up one riser joint and assembled the BOP. Landed 30" casing with permanent guide base on trolley. Tagged sea bed at 132 m and drilled 36" hole from 132 m to 151 m. Spotted 3 m^3 of high viscous mud on each connection.
05/10	220	-	-	Drilled 36" hole to 220 m, pumped high viscous pills on each connection. Displaced the hole with 48 m^3 high viscous mud, ran the survey, pulled out of hole to seabed and retrieved the survey. Ran into hole to bottom, circulated 48 m^3 seawater and displaced with 64 m^3 of high viscous mud. Pulled out to 25 m below the seabed, displaced with 16 m^3 high viscous mud and pulled out of the hole. Prepared to run the 30" casing.
06/10	220	-	1.08	Ran 30" casing landing string, positioned the rig, stabbed in and landet 30" casing. Rigged up surface lines and commenced circulating through the casing, a small leak in fill up valve on the running tool was observed. Cemented the 30" casing in place and displaced with seawater. Laid down 36" spud assembly and made up 17 1/2" bottom hole assembly. Made up and ran grouting string. Stabbed 2,5 m into permanent guide base. Pulled out and laid down grouting string. Ran hydraulic latch and pull tested to 220 KN. Ran into hole with bit number 2. Installed diverter packer element and flushed through. Put 7 bar over pressure on closed diverter system. A leak was traced to hydraulic latch on

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
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Area	Well	Rig
	30/6-10	Treasure Scout

	Size						
Casing		30"					
	Setting depth (m)	219					

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
				seabed. Unlatched and relatched the hydraulic latch and pull tested to 90 KN. Filled the riser and observed a steady loss of 80 liters per minute. Refilled and monitored the fluid loss. Permanent guide base was moving. Monitored this move.
07/10	220	-	1.08	Pulled 30" hydraulic latch and riser. Made up and ran in with 2 3/8" tubing and guide frame. Ran in the hole 19 m outside the 30" casing. Grouted 30" casing with 13.5 m^3 of 1.87 rd cement slurry and pulled out of the hole. Ran in with riser and latched the 30" hydraulic latch on the housing. Checked the latch with 10.000 KN overpull. Picked up standard drillpipe, closed diverter and attempted to test, but starboard over board automatic valve was leaking. Work was done on same. Ran in with 17 1/2" bottom hole assembly. Attempt was done to test diverter, but both automatic valves were leaking. Continued to run into the hole and tagged cement on 210 m. With TV camera it was observed that the permanent guide base and the 30" casing was rocking excessivly. Bottom hole assembly was pulled out of the hole and riser and 30" hydraulic latch was pulled back.
08/10	298	1.03	1.10	Ran 3 joints of 2 3/8" tubing with the 4-armed guide frame down to the seabed. Washed and worked the pipe 19 m down outside the 30" casing. Grouted the 30" casing with 20 m^3 of 1.89 rd cement slurry with 6% $CaCl_2$. Pulled the pipe back in stages of 6 m while

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
40		9-10	9	

Area	Well	Rig
	30/6-10	Treasure Scout

Casing	Size	30"					
	Setting depth (m)	219					

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
				cementing. Rigged up and ran 30" hydraulic latch and riser. Waited on cement. Latched on the 30" hydraulic latch and tested with 10000 KN overpull. Ran into the hole with 17 1/2" bottom hole assembly. A function test of the diverter system was successful, but the pressure test failed because of leakage thru the automatic valves on both overboard lines. Tagged the cement at 210 m. Drilled cement, rat hole and 17 1/2" pilot hole to 298 m with seawater. Pumped high viscous pills on each connection.
09/10	826	1.03	1.10	Drilled 17 1/2" hole to 586 m and pumped high viscous pills on every 2nd connection. Circulated the hole clean. Dropped the survey and pulled out to 30" casing shoe. Worked thru tight spots at 535, 455, 320 and 300 m, max excessive drag was 17 KN. Retrieved the survey, showing 1/4 deg N20W. Ran in the hole, observed no fill and drilled 17 1/2" hole to 826 m.
10/10	970		1.07	Drilled 17 1/2" hole to 970 m. Circulated the hole clean and flowchecked. Displaced the riser to seawater and flowchecked for 15 min. Dumped riser to sea level and flowchecked for 30 min. Displaced the riser with mud and circulated bottoms up. Dropped multishot survey and pulled out to the casing shoe. Retrieved the survey and flow checked-loosing mud at a rate of 5 bbl per 15 min. Continued pulling out of the hole. Ran ISF/sonic/GR log. Laid down excess pipe from the derrick.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
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Area	Well	Rig
	30/6-10	Treasure Scout

	Size						
Casing		30"	20"				
	Setting depth (m)	219	949				

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
				Made up 26" underreamer, function tested this and ran in the hole to 210 m. Underreamed cement to 218 m.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
41		11-14	11	

Area	Well	Rig
	30/6-10	Treasure Scout

	Size						
Casing		30"	20"				
	Setting depth (m)	219	949				

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
11/10	970		1.09	Underreamed 17 1/2" hole with 26" underreamer to 886 m.
12/10	970		1.09	Underreamed 17 1/2" hole with 26 underreamer to 970 m. Circulated the hole clean, flowchecked and pulled out to the 30" casing shoe. Displaced the riser to seawater and flowchecked for 15 mins. Dumped riser to sea level and flowchecked for 15 mins. Filled the riser with mud, the well was stable. Observed with TV camera. Continued pulling out. Pulled 30" hydraulic latch and riser. Made up 26" bit and ran in the hole to 965 m, had 5 m fill. Circulated 200 bbls of mud, then spotted 300 bbls of high viscous mud on bottom. Pulled out to 650 m and spotted 300 bbls of high viscous mud. Continued pulling out.
13/10	970		1.09	Continued pulling out of the hole. Rigged up and started to run 20" casing. Hung up at 219 m and worked thru this. Hung up at 227 m, unable to pass thru. Pulled out with the casing, ran TV and two armed guide frame while pulling the casing. Checked the shoe, two centralizers were missing. Rigged down the casing equipment. Made up and ran in the hole with 26" bit.
14/10	970		1.09	Continued running in with 26" bit. Worked thru tight spot from 217 m to 222 m. Pulled back to 209 m. Reamed and washed 3 times from 217 m to 222 m. The hole was clean-checked with no rotary. Washed and reamed to 242 m and checked with no rotary. Continued running into the hole, worked thru

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
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Area	Well	Rig
	30/6-10	Treasure Scout

	Size						
Casing		30"	20"				
	Setting depth (m)	219	949				

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
				occasional tight spots and cleaned this. Unable to pass 690 m, washed and reamed to 702 m and continued running into the hole to 955 m. Reamed and washed tight hole to 962 m - 3 m fill. Circulated 200 bbls mud and spotted 300 bbls high viscous mud on bottom. Pulled back to 650 m, circulated 200 bbls mud and spotted 300 bbls high viscous mud. Pulled out of the hole. Rigged up and ran 20" casing, worked through tight spot at 229 m and landed the casing. Checked the latch with 134 KN overpull and circulated the hole clean with 800 bbls mud. Pumped spacer fluid and cemented the 20" casing.
15/10	970		1.08	Continued cementing 20" casing. Dropped the dart and displaced with seawater. Bumped the plug and tested the casing to 70 bar for 10 min. Rigged down the cementing equipment. Rigged up to run BOP stack and riser. It was unable to unlatch the BOP stack from the test stump. Worked free with 2150 KN. Worked H-4 connector several times, changed VX-ring and repaired H-4 connector-indicator. Ran the BOP and riser, tested kill and choke lines to 348 bar at every 2nd joint. Made up kill, choke and booster hoses. Positioned the rig and landed the BOP stack. Checked overpull. Picked up diverter and nippled up the flow lines. Tested the connector against the shear ram to 34 bar for 10 min. Tested the choke manifold during the job. Ran in with the test plug and started testing the BOP.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
41		15-16	13	

Area	Well	Rig
	30/6-10	Treasure Scout

	Size						
Casing		30"	20"				
	Setting depth (m)	219	949				

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
16/10	990		1.20	Continued testing the BOP. Slipped the drilling line and pulled out with the test plug. Tested kelly cocks and inside BOP. Ran in the hole and installed wearbushing. Ran in the hole with new bottom hole assembly and tagged top of cement at 925 m. Drilled float collar, cement, shoe and cleaned out rathole to 970 m. Circulated and displaced to KCl/polymer mud. Drilled 17-1/2" hole to 973 m and performed a leak off test equal to a mudweight of 1.56 rd. Circulated and worked the junk basket. Took slow circulating rate. Pulled out of the hole.
17/10	1294	1.03	1.20	Continued pulling out of the hole. Serviced the junk basket and hang off assembly. Tested the diverter system to 7 bar. Made up new bottom hole assembly and ran into the hole to 985 m. Washed and reamed to 990 m, worked the junk sub and drilled 17-1/2" hole to 1294 m.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
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Area	Well	Rig
	30/6-10	Treasure Scout

	Size						
Casing		30"	20"				
	Setting depth (m)	219	949				

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
18/10	1342		1.20	Drilled 17-1/2" hole to 1342 m. Rucker tensioner No. 6 parted due to heavy weather. Circulated and pulled out of the hole. Tight hole at 1290 m, worked out to 1260 m, circulated and worked the pipe at 1278 m - the hole was very tight. Circulated and worked the pipe to 1200 m. Continued pulling out of the hole to 443 m. Installed inside BOP. Picked up hang off assembly, ran into the hole, landed and hung of at the wellhead. Backed out and pulled out with the landing string. Waited on weather to repair tensioner. The well was lined up on the trip tank. Rucker tensioner No. 3 parted, closed shear-ram and unlatched the lower marine riser package. Waited on weather and repaired the Rucker tensioner No. 6.
19/10	1342		1.20	Waited on weather and repaired tensioner No. 3. Slipped and cut tensioners No. 1, 2, 4 and 5. Relatched riser and tested with 160 kN overpull. Displaced riser to 1.2 rd mud. Ran in with retrieving string, retrieved drill string and pulled out of the hole. Ran into the hole with bit.
20/10	1445	1.03	1.20	Continued running into the hole to 1070 m. Reamed and washed back to the bottom and drilled 17-1/2" hole to 1445 m. Circulated the hole clean and dropped the survey. Pulled out with bit No. 6, pulled tight from 1412 m to 1287 m. The stand above the stabilizer was packed with gumbo. Retrieved the survey which was a misrun. Ran in with bit No. 7 to 1225 m and reamed and washed to 1323 m. The bit was taking weight all the way.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
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Area	Well	Rig
	30/6-10	Treasure Scout

	Size						
Casing		30"	20"				
	Setting depth (m)	219	949				

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
21/10	1520		1.21	Reamed from 1323 m to 1445 m and drilled 17-1/2" hole to 1520 m. Dropped the block on to the kelly. The trolly wheels dropped out of the trolley rails. Repaired the trolley wheels and replaced them in the trolley rail. Checked all surface drill string compensators, hooked the swivel equipment and replaced bent bails. Slipped and cut the drilling line. Pulled out to check the drill string. No visible signs of damage. Laid down 5 stands of drill pipe above the bottom hole assembly and replaced all crossovers. Ran in ther hole to the casing shoe with new bit. Vetco inspected hook, swivel, bales, lower kelly valve, saver sub and crossover. Laid down excess drill pipe for inspection. Continued tripping into the hole, the bit took weight at 1410 m.
22/10	1712	1.10	1.31	Made up left hand connections on the kelly. Reamed from 1393 m to 1485 m. Pulled out to change out the kelly. Ran in and circulated at the casing shoe while inspecting the drawwork brake assembly. Ran in to 1483 m, reamed to 1520 m and drilled 17-1/2" hole to 1712 m.
23/10	1983	1.13	1.30	Drilled 17-1/2" hole to 1735 m. Circulated and pulled out for a wiper trip, had tight hole from 1550 m to 1440 m. Ran in and reamed from 1460 m to 1523 m, ran in to bottom and circulated bottoms up for survey. Ran survey on slickline at 1735 m. Drilled 17-1/2" hole to 1935 m, circulated bottoms up and made an 18 stands wiper trip. Drilled 17-1/2" hole to 1983 m.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
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Area	Well	Rig
	30/6-10	Treasure Scout

Casing	Size	30"	20"				
	Setting depth (m)	219	949				

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
24/10	2167	1.13	1.35	Drilled 17-1/2" hole to 2167 m, circulated bottoms up and dropped the survey. Pulled out to change bit.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
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Area	Well	Rig
	30/6-10	Treasure Scout

	Size						
Casing		30"	20"				
	Setting depth (m)	219	949				

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
25/10	2265	1.20	1.36	Laid down kelly spinner and changed the upper kelly cock. Slipped the drilling line. Ran in with 17-1/2" drilling assembly, - maximum drag 440 kN. Drilled 17-1/2" hole to 2265 m.
26/10	2400	1.25	1.36	Drilled 17-1/2" hole to 2359 m. Repaired mudpump No. 1. Drilled 17-1/2" hole to 2400 m.
27/10	2432	1.15	1.40	Drilled 17-1/2" hole to 2432 m and circulated and conditioned the wellbore. Made a wiper trip to the 20" casing shoe - max drag was 310 KN. Ran in to 2110 m, reamed and washed to 2432 m.
28/10	2432	1.15	1.40	Circulated the hole clean and made a wiper trip to 2002 m, had max overpull 22 kN and no fill. Circulated and dropped multishot survey. Pulled out to 20" casing shoe and retrieved the survey. Pulled out of the hole. Ran ISF/LSS and LDT/CNL logs. Slipped and cut the drilling line.
29/10	2432	1.15	1.43	Ran in with bit No. 10 to 2400 m, reamed and washed down to 2432 m. Circulated and conditioned the mud. Rised the mudweight to 1.43 rd. Pulled out of the hole, had tight spot from 2260 m to 2250 m. Prepared for logging, had tool failure on the HDT tool. Ran the CST.
30/10	2432	1.15	1.45	Continued running the CST log, a new HDT arrived with chopper. Ran HDT log. Slipped 24' of the drilling line. Ran in with 17-1/2" bit to 2414 m. Washed down to 2421 m, reamed to 2423 m and washed to 2432 m. Had 1 m

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
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Area	Well	Rig
	30/6-10	Treasure Scout

	Size						
Casing		30"	20"				
	Setting depth (m)	219	949				

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
				fill. Circulated and conditioned the mud, and rised the mudweight to 1.45 rd. Pulled out of the hole, had several tight spots and max overpull was 134 kN. Ran in with jet sub and retrieving tool, washed the well head and retrieved the wear bushing.
31/10	2432	1.15	1.45	Rigged up and started running 13-3/8" casing. Cross threaded joint No. 168 and lost 15 min. The pipe got stuck with the casing shoe at 1992 m. It was unable to work the pipe free. Pumped a 15 m^3 "mill free" pill and displaced with mud leaving the top of the pill at 1320 m.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
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Area	Well	Rig
	30/6-10	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"			
	Setting depth (m)	219	949	2138			

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
01/11	2432	1.15	1.45	Worked the stuck pipe and pumped 0.16 m^3 every hour. Circulated out the "mill free" pill and conditioned the mud. Installed a wiper plug. Pumped 15.9 m^3 of Imco Spot and displaced with mud.
07/11	2432	1.15	1.35	The 13-3/8" casing came free when the Imco Spot pill was at 1350 m. Landed the 13-3/8" casing with the shoe at 2138 m. Cemented the casing with a slurry weight of 1.9 rd. Ran in and energized the seal assembly and pressure tested to 310 bars. Ran in with test plug and started pressure testing the BOP. Unable to get a test on the middle pipe rams.
03/11	2432	1.15	1.35	Rigged up and pulled the BOP. Changed rubber on the middle pipe rams. Tested the BOP on test stump. Was not able to get test on middle and lower rams. Opened the ram doors.
04/11	2432	1.15	1.36	Changed the seals on the body seat ring and changed the VX-ring on the stack connector. Tested the middle pipe rams. Was not able to get a test on the lower pipe ram. Changed the upper seal on same.
05/11	2432	1.15	1.36	Stump tested the BOP. Laid down the 9-1/2" drillcollars and made up the 8" drillcollars. Ran and landed the BOP and riser. Ran the test plug and tested the BOP. Pulled out with the test plug. Tested the upper and lower kelly valves, the "Texas Ironwork" and the inside BOP to 345 bar for 10 min. Ran in with jet sub.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
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Area	Well	Rig
	30/6-10	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"			
	Setting depth (m)	219	949	2138			

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
06/11	2432	1.15	1.36	Jetted the wellhead and set the wearbushing. Ran in with 12-1/4" bit. Tested the stand pipe and the choke manifold. Tagged the cement at 2110 m. Drilled out of the shoe and down to 2164 m. Circulated and conditioned the mud. Pulled out to the 13-3/8" casing shoe and made a leak of test to an equivalent mudweight of 1.79 rd.
07/11	2432	1.15	1.36	Pulled out and made up new bottom hole assembly. Ran in to the casing shoe, slipped and cut drilling line. Reamed from 2144 m to 2215 m.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
45		39–42	21	

Area	Well	Rig
	30/6-10	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"			
	Setting depth (m)	219	949	2138			

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
08/11	2461	1.15	1.36	Reamed and washed to 2321 m. The riser tension line No. 3 parted. Circulated and prepared to hang off. Worked on the Rucker lines No. 3 and 4. Hung off the string inside the BOP. Hung off with the bit inside the 13-3/8" casing and pulled out with hang off assembly. Ran in the hole with 12-1/4" bit to 2321 m, reamed to 2432 m and drilled 12-1/4" hole to 2461 m. Had a drilling break at 2458 m. Circulated the hole clean prior to coring.
09/11	2475	1.15	1.36	Dropped the survey and pulled out of the hole. Made up and ran in the hole with corebarrel to 2461 m. Cut the core from 2461 m to 2475 m. The core jammed, checked for flow and pulled out to 13-3/8" casing shoe and flowchecked. The hydraulic hose to the lower arm on the racking system parted. Continued pulling out while working on the racking system.
10/11	2492	1.15	1.36	Recovered core No. 1 - 14 m. Made service on the corebarrel and ran in the hole to 2465 m. Washed down to 2475 m and had 3 m fill. Circulated bottoms up. Dropped the ball and took slow circulating rate. Cut core No. 2 from 2475 m to 2492 m.
11/11	2503		1.36	Cut core No. 2 to 2493 m, flowchecked and pulled out to 13-3/8" casing shoe. Flowchecked and pulled out of the hole. Recovered core No. 2 - 13.3 m. Made service on the corebarrel and ran in the hole to the 13-3/8" casing shoe. Slipped the drilling line. Ran in to 2493 m and cut core No. 3 from 2493 m to 2503 m. The corebarrel jammed, flowchecked and pulled out of the hole.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
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Area	Well	Rig
	30/6–10	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"			
	Setting depth (m)	219	949	2138			

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
12/11	2510		1.36	Recovered core No. 3 - 9 m. Made service on the corebarrel and ran in the hole to 2499 m. Had 4 m fill. Washed to 2503 m and circulated bottoms up. Dropped the ball and took slow circulating rate. Cut core No. 4 to 2510 m. Flowchecked and pulled out of the hole.
13/11	2512		1.36	Recovered core No. 4 - 6.5 m. Made service on the corebarrel. Ran in the hole with jet sub and wearbushing retrieving tool. Washed the wellhead and retrieved the wearbushing. Ran in and seated test plug and tested the BOP. Pulled the test plug and ran the wearbushing. Tested the stand pipe manifold and kelly cocks. Pulled out of the hole. Ran in the hole with corebarrel to 2507 m and had 3 m fill. Washed to 2510 m, dropped the ball and took slow circulating rate. Cut core No. 5 to 2512 m.
14/11	2517		1.36	Cut core No. 5 to 2517 m. The corebarrel jammed, flowchecked and pulled out of the hole. Recovered core No. 5 - 7 m. Made up new corebarrel and new core head, and ran in the hole to the 13-3/8" casing shoe. Slipped the drilling line. Ran in to 2511 m and reamed to 2517 m. Circulated bottoms up.

Norsk Hydro

Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
46		46-49	23	

Area	Well	Rig
	30/6-10	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"			
	Setting depth (m)	219	949	2138			

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
15/11	2536		1.36	Dropped the ball and took slow circulating rate. Cut core No. 6 from 2517 m to 2530 m. The corebarrel jammed, flowchecked and pulled out of the hole. Retrieved core No. 6 - 11.2 m. Made service on the corebarrel and ran in the hole to 2530 m. Circulated bottoms up, dropped the ball and took slow circulating rate. Cut core No. 7 from 2530 m to 2536 m.
16/11	2553		1.36	Cut core No. 7 to 2548 m. Flowchecked and pulled out of the hole. Recovered core No. 7 - 18 m. Made service on the corebarrel, made up new bit and ran in the hole to 2000 m. Slipped the drilling line. Ran in to 2543 m, had 5 m fill, and washed and reamed to 2548 m. Circulated bottoms up, dropped the ball and took slow circulating rate. Deballasted the rig 1 m. Cut core No. 8 from 2548 m to 2553 m. Max heave increased to 5 m and was unable to compensate. Flowchecked and pulled out of the hole.
17/11	2554		1.36	Recovered core No. 8 - 3 m. Made service on the corebarrel and ran in the hole to 2552 m, had 2 m fill. Washed to 2553 m, circulated bottoms up, dropped the ball and cut core No. 9 to 2554 m. The weather was exessive, had up to 5 m heave. Flowchecked and pulled out of the hole. Recovered core No. 9 - 1.4 m. Made service on the corebarrel, changed Stratapax corehead to Diamond corehead and ran in the hole to the 13-3/8" casing shoe. Cut and slipped the drilling line. Waited on weather. Ran in the hole to 2550 m, had 4 m fill, reamed and washed to 2554 m.

Norsk Hydro

Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
46		46-49	24	

Area	Well	Rig
	30/6-10	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"			
	Setting depth (m)	219	949	2138			

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
18/11	2574		1.36	Dropped the ball and took slow circulating rate. Cut core No. 10 to 2572 m. Pulled out, had tight spot at 2560 m and recovered core No. 10 - 18 m. Made service on the corebarrel and ran in the hole to 2555 m. Washed and reamed to 2572 m. Circulated for 10 min, dropped the ball and took slow circulating rate. Cut core No. 11 to 2574 m.
19/11	2597		1.36	Cut core No. 11 to 2590 m. Pulled out of the hole, worked through tight spot at 2565 m. Recovered core No. 11 - 18 m. Laid down the corebarrel and ran in with 12-1/4" bit to the 13-3/8" casing shoe. Slipped the drilling line. Ran in to 2560 m, washed and reamed to 2590 m. Circulated and dropped the survey which was a misrun. Drilled 12-1/4" hole to 2597 m.
20/11	2635	1.18	1.36	Drilled 12-1/4" hole to 2610 m. Observed gradual pressure loss of 400 psi. Checked out surface equipment for possible source of pressure loss. Pulled out of the hole and found washout at the jars. Pulled out and inspected the bit. Ran in the hole with new jars to 2595 m. Washed and reamed to 2610 m and drilled 12-1/4" hole to 2635 m.
21/11	2656	1.15	1.36	Drilled 12-1/4" hole to 2656 m. Circulated bottoms up and dropped the survey. Pulled out to the casing shoe for a wiper trip. Broke the wire line at the tool while attempting to retrieve the survey. Ran in to the bottom and circulated bottoms up. Pulled out and retrieved the survey. Ran ISF-LSS-GR-SP and LDT-CNL-NGL-CAL-GR logs.

Norsk Hydro

Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
47		53-56	25	

Area	Well	Rig
	30/6-10	Treasure Scout

Casing							
	Size	30"	20"	13-3/8"			
	Setting depth (m)	219	949	2138			

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
22/11	2656	1.15	1.36	Continued running logrun No. 2 LDT-CNL-NGL-CAL-GR from 2652 m to 2137 m. Run No. 3 DLL-MSFL-GR-CAL from 2650 m to 2350 m. Run No. 4 SHDT with Cyberdip from 2653 m to 2350 m. Run No. 5 RFT from 2574 m.
23/11	2656	1.15	1.36	Continued logrun No. 5 from 2574 m to 2458 m. Run No. 6 SST (velocity survey) from 2654 m to 310 m. Run No. 7 RFT sample taken at 2546.1 m.
24/11	2656	1.15	1.36	Running logrun No. 8 CST-C, 29 samples was recovered from 2653 m to 2412.5 m. Run No. 9 CBL/VDL/GR/CCL from 2134 m to 1000 m. Ran in the hole with open ended drill pipe to 2656 m. Circulated bottoms up. Rigged up and tested the surface lines. Mixed and pumped 26 m^3 of 1.89 rd cement and set a balanced plug from 2656 m to 2400 m. Pulled out slowly to 2188 m, circulated bottom up and flushed choke and kill lines. Pulled out of the hole. Ran in the hole with jet sub and washed the BOP and wellhead. Continued running in with wearbushing retrieveing tool and retrieved the wearbushing. Pulled out of the hole. Ran in the hole with test plug to test the BOP.
25/11	PBTD 2488		1.36	Tested the BOP stack. Repaired packing in the kill side gooseneck. Retrieved the test plug. Ran in and seated the wearbushing. Pulled out of the hole. Ran in to the BOP with bit and tested shear/blind rams. Noted leak on open side through blue and yellow pods. Ran in and tagged the cement at 2470 m. Drilled cement from 2470 m to 2483 m.

20 H• B 6.82 4000

Norsk Hydro

Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
47		57-59	26	

Area	Well	Rig
	30/6-10	Treasure Scout

Casing							
Size	30"	20"	13-3/8"				
Setting depth (m)	219	949	2138				

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
				Circulated cement cuttings to the surface. Drilled firm cement from 2483 m to 2488 m. Circulated the hole clean and pulled out. Ran in the hole with open ended drill pipe to 2488 m. Circulated and conditioned to set plug No. 2.
26/11	PBTD 2282		1.36	Mixed and pumped cement plug No. 2 with 1.90 rd cement from 2488 m to 2300 m. Pulled out to 2250 m and reverse circulated, had 0.3 m^3 cement in return. Pulled out of the hole. Ran in the hole with drilling assembly. Slipped and cut drilling line. Waited on cement. Ran in and tagged top of the cement at 2282 m. Pulled out of the hole. Ran in with open ended drill pipe. Circulated the wellbore clean and set cement plug No. 3 from 2188 m to 2038 m, using 1.90 rd cement. Pulled out to 1960 m and reverse circulated, got no cement in return. Pulled out of the hole. Ran in the hole with drilling assembly.
27/11	PBTD 2045		1.36	Ran in the hole to 1890 m. While waiting on cement prepared to pull the BOP stack. Ran in the hole and tagged top of cement at 2045 m. Pressure tested plug No. 3 to 163 bar for 10 min and pulled out of the hole. Displaced the riser the to water and observed the well for 15 min. Laid out the diverter and unlatched the BOP. Nippled down kill, choke and booster lines. Unlatched support ring manually.

Norsk Hydro

Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
48		60-61	27	

Area	Well	Rig
	30/6-10	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"			
	Setting depth (m)	219	949	2138			

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
				Pulled the slip joint and the BOP. Landed the BOP on carrier and skidded back. The carrier was not able to lift the BOP. Repaired the BOP on the carrier and function tested the BOP on both pods.
28/11	PBTD 2045		1.36	Stump tested the BOP. Precharged the acoustic accumulators and repaired damaged pod seals. Skidded the BOP and changed VX-ring. Ran the BOP, it was unable to test the kill and choke lines. Pulled the BOP and retested the failsafe valves, the choke and kill lines at the stack. A fluid leak was noted in the acoustic control system. Repaired the acoustic control valves on the accumulator. Function tested the acoustic panel. It was unable to operate the wellhead connector, and repaired the control valve.
29/11	PBTD 2045		1.36	Repaired the acoustic control valves. Ran the BOP and two riser joints, it was unable to test the choke line. Pulled the BOP and retested the choke line. A leak was located on the lower outer choke bonnet. Changed out gasket seals and made a retest which failed. Nippled down the bonnet and found a washout in the valve bonnet's seal. Removed WKM failsafe valve and sent it to shore for repair. Repaired acoustic control valves on the shear ram's closing side. Nippled down the workplatform's guide wires and found that No. 3 and 4 was cut at the BOP carrier. Skidded back the BOP and carrier. An attempt to rise the BOP to

Norsk Hydro

Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
48		60-61	28	

Area	Well	Rig
	30/6-10	Treasure Scout

Casing	Size	30"	20"	13-3/8"			
	Setting depth (m)	219	949	2138			

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
				deck level failed. Repaired all the close side acoustic control valves on the shear-, upper pipe- and middle pipe ram. Moved the TV frame to starboard side.
30/11	PBTD 2045		1.36	Serviced, repaired and mounted the acoustic control valves. Choke valve arrived at the rig and was mounted on the stack. Tested the acoustic system, the surface unit failed. Tested the BOP. Located and repaired surface leaks. Installed new hydraulic pump for the BOP carrier and raised the stack with the carrier. Retested the BOP stack completely. Rigged up reentry equipment and Scorpio. Jumped Scorpio and cut guide wires No. 3 and 4 at the guide posts. Strong current was hampering the Scorpio in his operations. Ran a reentry frame and pin. The stabbing arm bent while caught in the tugger wires. An attempt to stab the pin on guide post No. 4 failed. Pulled out with frame and pin. The Scorpio was unable to stab the pin due to current and heave. Modified the reentry frame and overshot. NOTE The rest of the well is designated 30/6-10A, and a final report has been prepared for that one too.

3.3 TIME DISTRIBUTION

The total time used to move the rig from 62 parallel, drill and permanently plug and abandon the well 30/6-10 was total 62 1/24 days.

The operation is split between the following five main groups:

1. Underway and positioning the rig 2 days
2. Drilling the well 10.13 days
3. Formation evaluation 14.15 days
4. Lost time 11.02 days
5. Plugging and abandonment 0.75 days

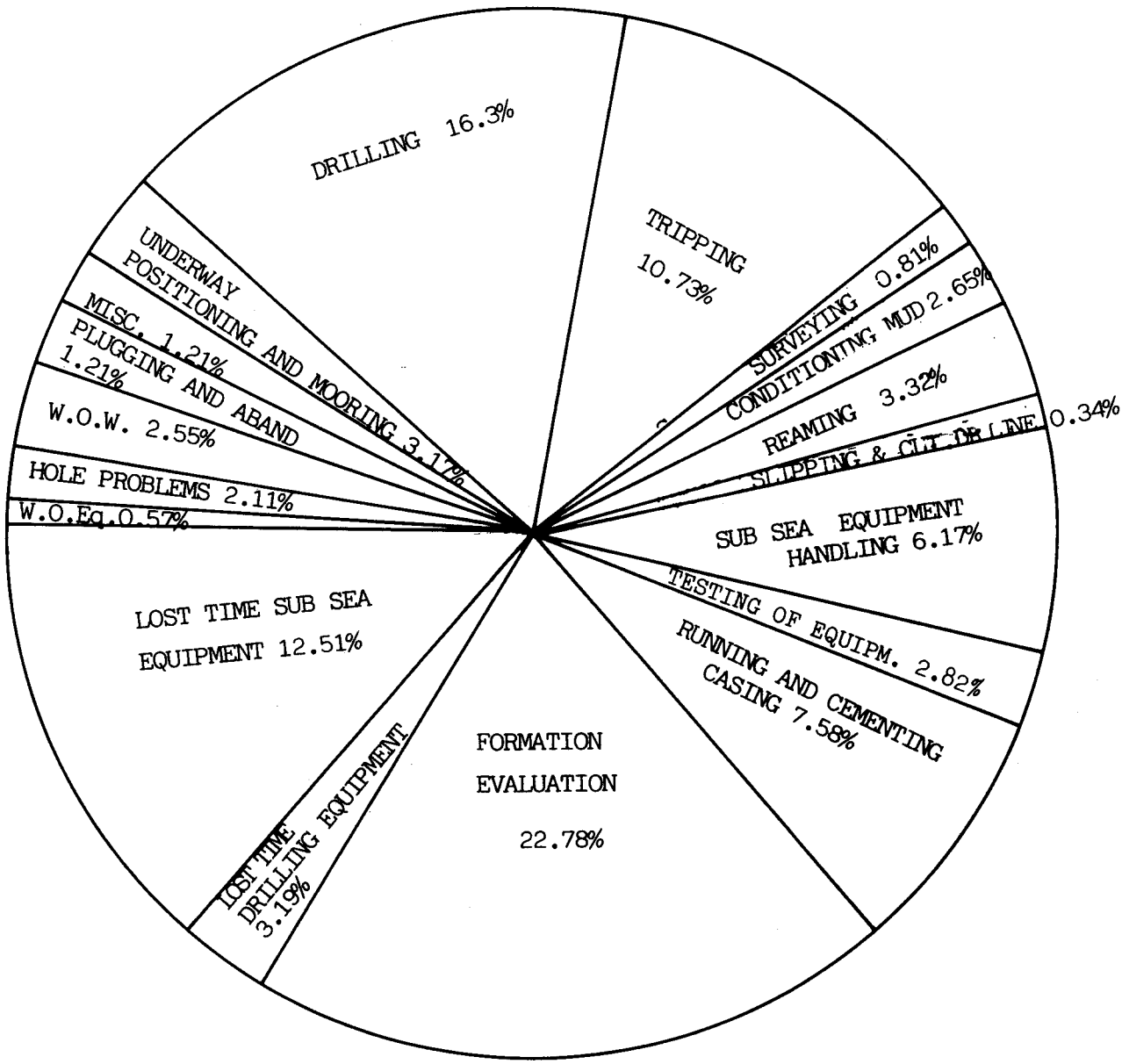
A total of 1.6 days was lost due to waiting on weather.

TABLE B - 1

Time Distribution

OPERATION	HOURS	PERCENTAGE OF TOTAL TIME
1. Underway	40	2.7
2. Positioning and Mooring	7	0.47
3. Drilling	243	16.30
4. Tripping	160	10.73
5. Surveying	12	0.81
6. Conditioning mud	39.5	2.65
7. Reaming	49.5	3.32
8. Slipping and cutting drlg.line	5	0.34
9. Subsea equipment handling	92	6.17
10. Testing of equipment	42	2.82
11. Running and cementing casing	113	7.58
12. Formation evaluation	339.5	22.78
13. Drills	-	-
14. Lost time: Drilling equipment	47.5	3.19
15. Lost time: Subsea equipment	186.5	12.51
16. Lost time: Waiting on equipment	8.5	0.57
17. Lost time: Hole problems	31.5	2.11
18. Lost time: Waiting on weather	38	2.55
19. Plugging and abandonment	18	1.21
20. Misc	18	1.21
Sum total:	1490.5	100

= 62 1/24 days



Norsk Hydro Drilling Department	TOTAL TIME DISTRIBUTION WELL 30/6-10 A	Gr. no.: 2	Fig.: B-2
		Date: 13.09.83 Sign: JTA/SF	Dwg. no.: 17

TABLE B -2

HOLE DEVIATION

30/6-10

TOTAL DEPTH	DIRECTION DEG MIN	ANGLE DEG MIN
219.0	Tie Coordinates	
221.0	N 76 30 W	0 41
250.0	N 62 30 W	0 35
278.0	N 81 30 W	0 40
307.0	N 48 30 W	0 43
336.0	N 0 30 W	1 17
365.0	N 37 30 E	0 47
394.0	N 41 30 E	0 23
422.0	N 51 30 E	0 43
451.0	N 30 30 E	0 32
480.0	N 9 30 W	0 39
509.0	S 78 30 W	0 8
538.0	S 78 30 E	0 18
566.0	N 65 30 E	0 44
595.0	N 34 30 W	0 27
624.0	S 80 30 E	0 39
653.0	S 48 30 E	0 19
681.0	S 31 30 E	0 30
710.0	S 31 30 E	0 27
739.0	S 2 30 E	0 15

Total Depth	Direction Deg Min	Angle Deg Min
768.0	S 15 30 E	0 23
797.0	S 16 30 E	0 24
825.0	S 11 30 E	032
854.0	S 0 30 E	0 42
882.0	S 26 30 E	0 34
911.0	S 21 30 E	0 33
940.0	S 8 30 E	0 37
949.0	S 15 30 E	0 45
965.0	S 1 30 E	0 35
1001.0	S 3 30 E	0 45
1030.0	S 16 30 E	0 25
1059.0	S 22 30 E	0 40
1088.0	S 39 30 E	0 30
1116.0	S 11 30 E	0 20
1145.0	S 6 30 E	0 15
1174.0	S 16 30 E	0 10
1203.0	N 86 30 W	0 10
1232.0	S 78 30 W	0 25
1260.0	S 85 30 W	0 30
1289.0	S 51 30 W	1 15
1318.0	S 61 30 W	1 5
1347.0	S 71 30 W	0 55
1376.0	S 78 30 W	1 45
1404.0	S 59 30 W	2 25
1433.0	S 25 30 W	2 30

Total Depth	Direction Deg min	Angle Deg min
1462.0	S 23 30 W	1 35
1491.0	S 23 30 W	1 35
1520.0	S 20 30 W	1 45
1548.0	S 33 30 W	1 30
1577.0	S 38 30 W	1 5
1606.0	S 53 30 W	1 0
1635.0	S 75 30 W	1 0
1664.0	S 63 30 W	0 45
1692.0	S 38 30 W	0 40
1721.0	S 13 30 W	0 45
1732.5	S 11 30 E	0 25
1762.5	S 65 12 E	0 19
1779.0	S 36 30 E	0 15
1807.0	N 33 30 E	0.10
1836.0	N 75 30 E	0 45
1865.0	N 73 30 E	1 00
1894.0	S 74 30 E	1 30
1923.0	S 60 30 E	1 35
1952.0	S 56 30 E	1 30
1980.0	S 46 30 E	1 55
2009.0	S 34 30 E	1 10
2038.0	S 28 30 E	1 25
2067.0	S 24 30 E	1 10
2096.0	S 16 30 E	0 55
2125.0	S 11 30 E	0 45

Total Depth	Direction Deg Min	Angle Deg min
2153.0	S 1 30 E	0 45
2182.0	S 11 30 W	1 00
2211.0	S 13 30 W	1 15
2269.0	S 6 30 W	1 10
2298.0	S 11 30 W	1 00
2327.0	S 20 30 W	1 15
2356.0	S 31 30 W	1 40
2385.0	S 15 30 W	1 40
2411.0	S 18 30 W	1 30
2427.0	S 37 30 W	1 10

4. PERMANENT ABANDONMENT OF THE WELL 30/6-10

The abandonment program was carried out as follows:

1. A Cement plug was set from 2488 m to 2656 m
2. A Cement plug was set from 2282 m to 2488 m
3. A Cement plug was set from 2045 m to 2188 m

Reference is made to the permanent abandonment drawing for well 30/6-10A.

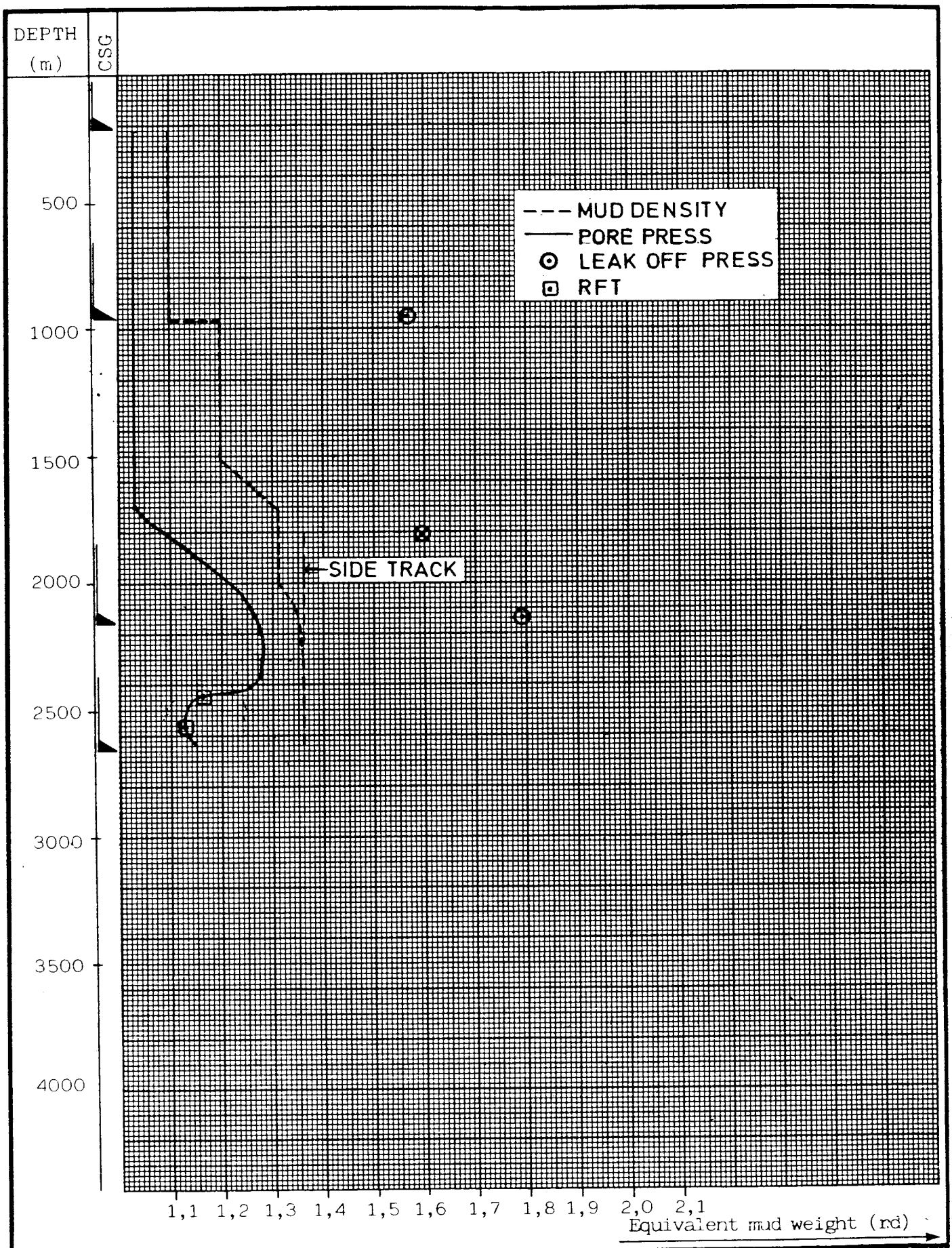
PORE PRESSURE WELL 30/6-10

The pore pressure is estimated from DC-exp. and Sonic log by use of relative and equivalent depth method. The normal trend lines are established on real RFT measurements in the reservoir. The Sonic lo is not conclusive when estimating pressures in the Cretaceous formations. RFT measurements taken in the Cretaceous formation has indicated a pore pressure gradient of 1.27 rd - 1.30 rd (well 30/6-3 and 4). It is assumed to be the same for well 30/6-10. (Ref. fig. B-3).

Depth (m)	Pore press. from DC-exp. (rd)	Pore press. from Soniclog (rd)	RFT (rd)	Most prob. pore press. (rd)	Actual m densitie used (rd)
0-1530	1.03	1.03		1.03	1.10-1
1700	1.10	1.03		1.03	1.31
1900	1.13	1.15		1.15	1.31
1950	1.17	1.17		1.17	1.31
2300	1.21	1.34		1.28	1.35
2350	1.25	1.35		1.28	1.36
2458			1.16	1.16	1.36
2503			1.14	1.14	1.36
2574			1.12	1.12	1.36

FORMATION INTEGRITY, WELL 30/6-10

Casing Depth (m)	Formation Integrity Strength (rd)
949	1.56
1788	1.59
2138	1.79



Norsk Hydro Drilling Department	MUD DENSITY, PORE PRESSURE AND FORMATION INTEGRITY PRESSURE, WELL 30/6-10 AND 30/6-10A	Gr. no.: 2	Fig.: B-3
		Date: 31.08.83 Sign: RW/SF	Dwg. no.: 71

6. MATERIALS REPORT

6.1 Casing and wellhead

The well was planned to be temporarily abandoned for possible future sub sea completion. A temporary guide base was therefore run prior to spudding the well. Also, a modular template - primary base structure was used instead of the permanent guide base.

A Vetco 690 bar 3 hanger 18 3/4" wellhead housing was used.

The casing strings were run as shown in table B-3.

TABLE B - 3 CASING COMPOSITION.

Size	Grade	Weight lbs/ft	Length(m)	Treads	Setting depth(m)
30"	B	1.5"WT	13.25	ATD	
	B	1" WT	75.42	ATD	219
20"	K55	133	818	BIG OMEGA	949
13 3/8"	N80	72	2007.4	Buttress	2138 m

BIT RECORD

WELL NO.: 30/6-10

BIT NO.	SIZE	MAKE	TYPE	SERIAL NO.	JETS 32 ND.	DEPTH OUT M	M DRLG.	HRS. DRLG.	M/HR	ACC. DRLG. HRS.	WEIGHT KN	RPM	PRESS. BAR	OUTP. G/MIN	SPM		BIT COND				REMARKS
															1	2	T	B	G	OTHER	
1	26"	Reed	Y11	T56690	6 x 20	220	89	20	4.5	20	0/50	80	70		86	86	3	2	I		CLY/ SALT
.	36"	Servco	HO	-	3 x 22												8	8	1/2		
2	17 1/2	Reed	S11J	A24797	3 x 22	970	750	29.5	25.4	49 1/2	50/130	150	210		115	115	4	4	I		CMT/CLY/SAND
2 RR	17 1/2	Reed	S11J	A24797	3 x 22												5	5	I		
	26"	Servco	UR	703242	-	970	750	29.5	25.4	79	45	100	210		109	109	5	8	I		CMT/CLY/SAND
3	26"	Reed	Y11J	T 56690	3 x 22	965															
4	26"	Reed	Y11J	T 57113	-	962															
5	17 1/2	SEC	M 44 NE	121625	3 x 24	990	20	4	5	83	0/22	60	155		100	100	3	2	I		24m CLY/CMT
6	17 1/2	Smith	SDS	XB 0914	3 x 22	1445	455	24	18.9	107	0/200	140	185		90	90	6	2	1/8		CLYST
7	17 1/2	Smith	SDT	XA 6821	3 x 22	1520	75	3.5	21.4	110 1/2	0/200	140	185		86	86	2	2	I		CLYST
8	17 1/2	Smith	SDT	SAN 302	3 x 22	2167	647	41	15.8	151 1/2	200	140	205		76	76	5	5	I		CLYST
9	17 1/2	SEC	M44 NG	150138	3 x 28	2432	265	50	5.3	201 1/2	156/189	140/ 150	220		75	75	5	5	I		CLYST/LMST
10	17 1/2	SEC	M44 NG	150172	3 x 28																
11	12 1/4	SEC	M44 NG	258419	3 x 22												2	6	I	Reamed 25m	28m CMT
12	12 1/4	SEC	S44G	268368	3 x 16	2461	29	8.5	3.4	210	224	110	200		55	55	3	2	I	Reamed 228m	SHALE/SAND
CB-1	12 1/4	DB	CB403		-	2517	56	38	1.5	248	122	110	138			70	40	%	1/32		SAND/SILT CLAY
CB-2	12 1/4	DB	CB403	440072	-	2548	31	18	1.7	266	112	100/ 110	96			70					
CB-3	12 1/4	DB	CB502	7081489	-	2554	6	5.5	1	271.5	44/88	100	86			70	15	%			
CB-2RR	12 1/4	DB	CB403	4400722	-	2590	36	31.5	1.3	303	133/180	100	80			70	20	%			
13	12 1/4	SVH	Smith	XB 3094	3 x 16	2656	66	17	3.9	320	180/220	110	190			105	8	5	0	1/16	SHALE
14	12 1/4	Reed	S13G	NNP386	3 x 16	2488	18	1	18	321	20/44	50	206			52	1	1	I		CMT

6.2 BOTTOM HOLE ASSEMBLIES

Bit No.	Bit size	Bottom hole Assembly 30/6-10
1	26"	Bit-36" HO - STB - 9 1/2" Monel - STB - 5x9 1/2 DC -XO - 3x8" DC - XO - 3 x HWDP - PUP
2	17 1/2"	Bit - Bit Sub - 9 1/2" Monel - 9 1/2" DC - 17 1/2" STB - 4x9 1/2" DC -XO - 3x8" DC - XO - 15 x HWDP
2RR	17 1/2"	Bit - Bit Sub - 9 1/2" Monel - 9 1/2" DC - 17 1/2" STB - 4x9 1/2" DC -XO - 3x8" DC - XO - 15 x HWDP
3	26"	Bit-Bit sub - 9 1/2" Monel - 9 1/2" DC - STB - 4x9 1/2" DC - XO - 3x8" DC - XO - 15xHWDP
4	26"	Bit - 9 1/2" Monel - STB - 3x8"DC - XO - 15xHWDP
5	17 1/2"	Bit - Junk Sub - Bit Sub - 9 1/2" Monel - 5x9 1/2" DC - XO - 9x8" DC - XO - 15xHWDP
6	17 1/2"	Bit - Junk Sub - Bit Sub - 9 1/2" Monel - 17 1/2" STB - 4x9 1/2" DC - XO - 12x8" DC - Jars - XO - 15xHWDP
7	17 1/2"	Bit - Junk Sub - Bit Sub - 9 1/2" Monel - 17 1/2" STB - 4x9 1/2" DC - XO - 12x8" DC - Jars - XO - 15xHWDP
8	17 1/2"	Bit - Bit Sub - 9 1/2" Monel - 9 1/2" DC - 17 1/2" STB - 4x9 1/2" DC - XO - 12x8" DC - Jars - XO - 15xHWDP

Bit No.	Bit size	Bottom hole Assembly 30/6-10
9	17 1/2"	Bit - Bit Sub - 9 1/2" Monel - 9 1/2" DC - 17 1/2" STB - 4x9 1/2" DC - XO - 12x8" DC - Jars - XO - 15xHWDP
10	17 1/2"	Bit - Bit Sub - 9 1/2" Monel - 9 1/2" DC - 17 1/2" STB - 4x9 1/2" DC - XO - 12x8" DC - Jars - XO - 15xHWDP.
10RR	17 1/2"	Bit - Bit Sub - 9 1/2" Monel - 9 1/2" DC - 17 1/2" STB - 4x9 1/2" DC - XO - 12x8" DC - Jars - XO - 15xHWDP
11	12 1/4"	Bit - J. Basket - NB STB - 8" Monel - 8" DC - Jars - 3x8" DC-STB - XO - 15xHWDP
12	12 1/4"	Bit - Junk Sub - NB STB - 8" Monel - 12 1/4" STB - 8" DC - 12 1/4" STB - 2x8" DC - 12 1/4" STB - 14x8" DC - Jars - 3x8" DC - XO - 15xHWDP
CB1	12 1/4"	CB - 8" Monel - 12 1/4" STB - 8" DC - 12 1/4" STB - 2x8" DC - 12 1/4" STB - 14x8" DC - Jars - 3x8" DC - 15xHWDP
CB1RR1	12 1/4"	CB - 8" Monel - 12 1/4" STB - 8" DC - 12 1/4" STB - 2x8" DC - 12 1/4" STB - 14x8" DC - Jars - 3x8" DC - XO - 15xHWDP
CB 2	12 1/4"	CB - 8" Monel - 12 1/4" STB - 8" DC - 12 1/4" STB - 2x8" DC - 12 1/4" STB - 14x8" DC - Jars - 3x8" DC - XO - 15xHWDP
CB2RR1	12 1/4"	CB - 8" Monel - 12 1/4" STB - 8" DC - 12 1/4" STB - 2x8" DC - 12 1/4" STB - 14x8" DC - Jars - 3x8" DC - XO - 15xHWDP

Bit No.	Bit size	Bottom hole Assembly 30/6-10
CB3	12 1/4"	CB - 8" Monel - 12 1/4" STB - 8" DC - 12 1/4" STB - 2x8" DC - 12 1/4" STB - 14x8" DC - Jars - 3x8" DC - XO - 15xHWDP
CB3RR1	12 1/4"	CB - 8" Monel - 12 1/4" STB - 8" DC - 12 1/4" STB - 2x8" DC - 12 1/4" STB - 14x8" DC - Jars - 3x8" DC - XO - 15xHWDP
CB2RR2	12 1/4"	CB - 8" Monel - 12 1/4" STB - 8" DC - 12 1/4" STB - 2x8" DC - 12 1/4" STB - 14x8" DC - Jars - 3x8" DC - XO - 15xHWDP
13	12 1/4"	Bit - NB STB - Monel - 12 1/4" STB - 8" DC - 12 1/4" STB - 2x8" DC - 12 1/4" STB - 14x8" DC - Jars - 3x8" DC - XO - 15xHWDP
13RR	12 1/4"	Bit - NB STB - Monel - 12 1/4" STB - 2x8" DC - 12 1/4" STB - 2x8" DC - 12 1/4" STB - 14x8" DC - Jars - 3x8" DC - XO - 15xHWDP
14	12 1/4"	Bit - NB STB w/float - Monel - 12 1/2" STB - 8" DC - STB - 2x8" DC - STB - 14x8" DC - Jars - 3x8" DC - XO - 15xHWDP
14RR	12 1/4"	Bit - NB STB w/float - Monel - STB - 8" DC - STB - 8" DC - STB - 2x8" DC - Jars - 3x8" DC - XO - 15xHWDP

6.3 Mud Report

36" hole, 30" csg: The 36" hole was drilled using seawater with return to the seabed.
3 m^3 high viscous pills were pumped on each connection. Displaced hole with 48 m^3 high viscous mud. Circulated 48 m^3 seawater, and displaced hole with 64 m^3 high viscous mud. Pulled out to 25 m below TGB, and displaced with 16 m^3 high viscous mud. Materials used in this section were:
Bentonite, Caustic Soda and Wyoming Bentonite.

26" hole, 20 csg: The riser was run before the 17 1/2" pilot hole was drilled. Drilled 17 1/2" pilot hole and spotted 3 m^3 viscous slug every 2nd connection. Displaced riser to mud and circulated bottoms up. Ran in the hole with 26" underreamer. Circulated 200 bbls mud, spotted 300 bbls viscous mud on bottom. Pulled 10 stands and spotted 300 bbls viscous mud.

Ran 20" casing, but unable to pass 690 m. Put on kelly, and washed and cleaned to 702 m. Circulated 200 bbl mud, then spotted 300 bbls high viscous mud on bottom. After running 20" casing, circulated hole clean with 800 bbls mud.
Materials used in this section were:
Bentonite, barite, caustic soda, soda ash.

17 1/2" hole, 13 3/8" csg:
In this section we used a coring fluid which was used in the 17 1/2" section on 30/6-9. The 20" casing shoe was drilled out using 1.36 rd mud. Circulated to KCL/Polymer mud. At 2432 m circulated and conditioned the mud, raised mud weight to 1.43 rd.

Pipe got stuck at 1992 m, pumped 15 m^3 mill free pill. Work stuck pipe and pumped 15 m^3 of diesel and 15.9 m^3 of "Imco Spot" pill, and displaced with mud. Circulated mud, and raised mud weight to 1.45 rd.

Materials used in this section were:
Barite, KCL, Milpolymer 302, Milpolymer 351R, Milpolymer 351 L, Milpolymer 352 L, Drispac, Caustic Soda, Soda Ash, Bicarbonate, Magcolube, Milspot, Pipe Lax.

12 1/4" hole (30/6-10):

The 13 3/8" casing shoe was drilled out with 1.23 rd mud. Circulated and conditioned the mud. Drilled to 2461 m. Circulated hole clean prior to coring. When the drill pipe got stuck in the sandzone, we pumped 80 bbl of piplax pill.
Materials used in this section were:
Barite, Bentonite, Bicarbonate, Caustic Soda, Milpolymer. Permalose, KCL.

DRILLING MUD RECAP

Contractor WILHELMSEN OPERATOR NORSK HYDRO A/S LEGAL DESCRIPTION

Rig No. TREASURE SCOUT Well Name And No. 30/6-10 Field BERGEN COUNTRY NORWAY

Promud a/s Warehouse OCB BERGEN Spud Date 4/10/82 No. Drilling Days To T.D. 102 DATE T.D. REACHED 13/1/83 TOTAL DEPTH 2665 m TOTAL COST $ 694,573.11

DATE (1982)	TIME	DEPTH meters	WT (ppg)	FV API@	PV cp@	YIELD POINT (lb/100ft²)	GELS (lb/100ft²) 0/10	pH	FILTRATE (ml/30 min) API	HT-HP	°F	Cake (32nd in)	Alkalinity P_m	P_f/M_f	Chloride (ppm)	Calcium (ppm)	Sand (% by Vol.)	Solids (% by Vol.)	Oil (% by Vol.)	Water (% by Vol.)	Methy. Blue (me/ml mud)	KCl lb/bbl	Circ. Volume (bbl)	REMARKS
4/10	2400			100+				10							100	40								Drilling 36" hole.
5/10		220																						Build 400 bbls Hi-Vis mud.
6/10	2400	220	1.08	100+				10							80	40								Build 110m³ Hi-Vis mud.
7/10	2400	220	1.08	100+				10							80	40								R.I. Riser; POH. Riser.
8/10	2400	274	1.10	40	5	7.5	6/15	10							19500	230	TR	4		96				Spot Hi-Vis pill each conn.
9/10	2400	836	1.10	34	3	13.5	7/16	9.5							20000	230	3	4		96				Drlg massive sand formantion.
10/10	2400	970	1.07	33	3	7.0	2/9	10							18500	320	1	4		96				Logged.
11/10	2400	970	1.09	37	7	17.5	7.5/15	10							19000	250	1	4		96				Underreaming 26" hole.
12/10	2400	970	1.09	38	5	15.0	7/12	10							18900	230	1	4		96				Trip with 26" pit.
13/10	2400	970	1.09																					Run 20" casing.
14/10	2400																							Building volume.
15/10	2400	970	1.08	50	20	15.0	2/3	8.5				1		.01/.02	45000	100								Build 238m³ of KCl mud.
16/10	2400	990	1.20	45	14	8.5	2/3	8.5	15.5			1		.015/.2	45000	300	0.5	10		90				Displaced hole to KCl mud.
17/10	2400	1300	1.20	42	12	9.0	1.5/3	8.5	13			1		.01/.16	32000	250	0.5	10		90	15	21		Diluting with whole mud.
18/10	2400	1350	1.20	40	10	9.0	1.5/2	8.5	12			1		.06/.15	32000	300	0.5	10		90	15	22		P.O. to shoe. Waiting on weather.
19/10	2400	1350	1.20	40	10	9.0	1/2	8.5	12			1		.05/ 1	30000	300	0.5	9		91	15	22		Displace riser. RIH.
20/10	2400	1350	1.20	45	14	8.5	2/4	8.5	12			1		.01/.25	30000	260	0.3	10		90	15	21		Ream from 1070-1342.
21/10	2400	1450	1.21	40	16	5.0	3/5	8.5	14			1		.01/.13	33000	260	0.5	10		90	14	22		Ream from 1410-1450.
22/10	2400	1700	1.21	47	24	8.0	2/3.5	8.5	13			1.5		.03/.35	34000	600	0.5	13		87	18	22		Ream 1483-1520. Incr. wt.1.3
23/10	2400	1980	1.30	70	35	12.5	5/10	8.5	14			2		.05/.2	33000	380	0.5	13		87	20	20		Ream 1374-1520 - 1714-1736.
24/10	2400	2168	1.35	54	24	13.0	3.5/9	8.2	12.8			2		.3/.2	34000	380	0.5	16		84	25	23		Increase density to 1.35.
25/10	2400	2260	1.36	50	26	8.0	2/6	8.2	11			2		.04/.2	38000	440	0.5	14.5		85.5	22	25		Trip for bit.Wash 2m to btm.
26/10	2400	2400	1.36	55	26	9.5	3.5/9	8.5	12			2		.05/.25	32000	480	0.5	14		86	26	24		Drilling ahead. No problems.
27/10	2400	2400	1.40	58	28	7.0	5/10	8.5	12.2			2		.05/.35	35000	320	0.5	14.5		85.5	21	22		Ream from 2167-2432.
28/10	2400	2432	1.40	54	20	8.0	6/10	8.5	14			2		.05/.4	32000	300	0.5	15		85	19	21		Ream to 2432. Wiper trip good. Logging.
29/10	2400	2432	1.43	70	24	15.0	7/12	8.5	12			2		.04/.4	31000	300	0.5	16		84	19	18		Logging.RIH.Wash&wash 2400m
30/10	2400	2432	1.45	58	24	11.0	9/12	8.2	14			2		.05/.3	33000	300	0.5	17		83	18	21		Ream&wash 2421-2423-2423-2432
31/10	2400	2432	1.45	58	24	10.0	8/14	8.0	13			2		.03/.25	23000	300	0.5	17		83	16	21		Run csg to 1992. Stuck-spot. Off.

Date 31/10/82 Promud a/s Technical Representative Hinkson/Schmidt/McKenzie/Hutchings. District North Sea Region Norway

DRILLING MUD RECAP

Contractor WILHELMSEN OPERATOR NORSK HYDRO A/S LEGAL DESCRIPTION

Rig No. TREASURE SCOUT Well Name And No. 30/6-10 Field BERGEN COUNTRY NORWAY

Promud a/s Warehouse CCB BERGEN Spud Date 4/10/82 No. Drilling Days To T.D. 102 DATE T.D. REACHED 13/1/83 TOTAL DEPTH 2665 m TOTAL COST $ 694,573.11

DATE (1982)	TIME	DEPTH meters	WT (ppg)	FV API@	PV cp @	YIELD POINT (lb/100ft²)	GELS (lb/100ft²) 0/10	pH	FILTRATE (ml/30 min) API	FILTRATE (ml/30 min) HT-HP	FILTRATE (ml/30 min) °F	Cake (32nd in)	Alkalinity P_m	Alkalinity P_f/M_f	Chloride (ppm)	Calcium (ppm)	Sand (% by Vol.)	Solids (% by Vol.)	Oil (% by Vol.)	Water (% by Vol.)	Methy. Blue (me/ml mud)	lb/bbl K+ ppm.	Circ. Volume (bbl)	REMARKS
1/11	2400	2432	1.45	54	20	10	9/15	8.2	15.4			2		.03/.3	31000	300	.5	17		83	16	21		Spot diesel, work csg free.
2/11	2400	2432	1.35	47	24	5	15/3	9.0	6.2			2		.12/.3	52000	500	.5	13		87	15	45,000		Cmt WOC mud-Coring fluid.
3/11	2400	2138	1.35	47	24	5.5	2/3	9.0	6.5			2		.15/.35	52000	500	.5	13		87	14	45,000		Pull riser and BOP.
4/11	2400	2138	1.35	46	23	5	1.5/3	9.0	6.5			2		.2/.4	52500	480	.5	13		87	14	44,000		Work on stack.
5/11	2400	2138	1.36	47	23	6	1.5/3	9.0	6.4			2		.15/.4	52000	400	.5	13		87	14	43,000		Test stock.RIH stack&riser.
6/11	2400	2163	1.36	46	22	6.5	2.5/8	9.0	12.0			2		.2/.35	43000	400	.5	12		88	15	32,500		RIH.Drill out cement& shoe.
7/11	2400	2250	1.36	50	23	7	3/6	10	7.8			2		.5/.8	55000	360	.5	11		89	13	46,000		Ream 2144-2250.
8/11	2400	2458	1.36	47	20	5	3/9	11	22.0			2	.35	.3/.5	52000	260	.5	11		89	15	41,000		Ream 2250-2432.Drill 12 1/4 hole
9/11	2400	2475	1.36	56	28	12	3/10	10.5	6.4			2	.42	.35/.65	53000	180	.5	11		89	14	41,500		Cut core 1.2461-2475.Jammed.
10/11	2400	2497	1.36	53	24	13	5/12	10.5	10.2			2	.3	.25/.4	53000	180	.5	11		89	15	42,000		Cut core 2. 2475-2492.
11/11	2400	2504	1.36	50	20	9	4/10	10.5	6.3			1	.3	.2/.35	51000	100	15	13		87	15	42,000		Cut core 3. 2493-2503.
12/11	2400	2510	1.36	53	20	8	4/10	10.5	6.0	14	200	1	1.0	.2/1.0	55000	90	.25	14		86	15	44,000		Cut core 4. 2503-2510.
13/11	2400	2511	1.36	53	18	8	.3/1.8	10.5	5.5	14	200	1	1.8	.3/1.5	55000	100	.25	14		86	15	44,000		Cut core 5 from 2510.
14/11	2400	2517	1.36	53	20	10	5/17	10	5.0	14	200	1	1.1	.2/1.1	56000	90	.25	18		85	15	44,000		Core from 2512-2517.
15/11	2400	2536	1.36	50	19	6.5	5/15	10	5.0	14	200	1	1.0	.1/.7	55000	150	.25	15		85	15	43,000		Core No. 6 2517-2530.
16/11	2400	2554	1.36	51	20	6	2/9	10.5	5.0	16	200	1	1.5	.7/1.5	55000	120	.25	14		86	17	44,000		Core No. 7. 2536-2548.
17/11	2400	2554	1.36	50	19	7	2/8	10.5	6.0	15	200	1	1.9	.6/1.9	55000	200	.10	14		86	17	43,000		Core No. 9. 2553-2554.
18/11	2400	2575	1.36	53	22	8.5	2/8	10	6.0	16	200	1	2.1	.2/2.0	58000	210	.10	14		86	17	45,000		Core No.10. 2554-2568.
19/11	2400	2598	1.36	54	23	8	3/15	10.5	5.9	18	200	1	2.0	.25/.8	60000	240	.75	15		85	17	46,000		Core No.11. 2568-2590.
20/11	2400	2635	1.36	53	22	8	3/15	10.5	6.5	18	200	1	1.8	.2/1.0	60000	360	1	14		86	17	46,000		Drilling.
21/11	2400	2655	1.36	54	24	9	2/10	10.5	6.0	16	200	1	1.9	.2/.8	57000	300	1	14		86	17	43,000		Logging.
22/11	2400	2656	1.36	54	29	7.5	2/10	10.5	6.0	16	200	1	2.0	.6/2.0	57000	200	.25	14		86	17	43,000		Logging.
23/11	2400	2656	1.36	54	27	7	2/10	10.5	6.0	16	200	1	1.9	.5/1.9	57000	180	.25	14		86	17	43,000		Logging.
24/11	2400	2400	1.36	52	22	5	2/10	10.5	6.5	17	200	1	1.9	.7/.7	55000	300	.25	14		86	17	40,000		Logging/Plugging.
25/11	2400	2488	1.36	45	17	4	1.5/5	11.5	6.3	16.5	200	1	2.0	.45/.15	57000	800	.25	15		85	17	40,000		Plug back.
26/11	2400	2038	1.36	45	14	5	1.5/6	12	6.8	17	200	1	3.0	.8/1.7	58000	1000	.3	14		86	17	43,500		Plugging.
27/11	2400	2045	1.36	60	25	12	3/11	11.3	8.5	15	200	1	4.0	.6/1.6	57000	1100	.3	14		86	15	43,000		Plugging.
28/11	2400	2045	1.36	90	54	6	1.5/14	11	10.0	16	200	1	4.0	.5/.6	56000	200	.3	14		86	15	43,000		Work on BOPs.

Date 28/11/82 Promud a/s Technical Representative Pawson/Hutchings/McKenzie/Schmidt/Hinkson. District North Sea Region Norway

DRILLING MUD RECAP

Contractor WILHELMSEN OPERATOR NORSK HYDRO A/S LEGAL DESCRIPTION

Rig No. TREASURE SCOUT Well Name And No. 30/6-10 Field BERGEN COUNTRY NORWAY

Promud a/s Warehouse CCB BERGEN Spud Date 4/10/82 No. Drilling Days To T.D. 102 DATE T.D. REACHED 13/1/83 TOTAL DEPTH 2665 m TOTAL COST $ 694,573.11

DATE (1982)	TIME	DEPTH meters	WT (ppg)	FV API@	PV cp@	YIELD POINT (lb/100ft²)	GELS (lb/100ft²) 0/10	pH	FILTRATE (ml/30 min) API	FILTRATE HT-HP	FILTRATE °F	Cake (32nd in)	Alkalinity P_m	Alkalinity P_f/M_f	Chloride (ppm)	Calcium (ppm)	Sand (% by Vol.)	Solids (% by Vol.)	Oil (% by Vol.)	Water (% by Vol.)	Methy. Blue (mg/ml mud)	K+ (ppm)	Circ. Volume (bbl)	Reserve m^3	REMARKS
29/11	2400	2045	1.36	75	38	7	1.5/8	11	9.8	15.0	200	2	4.0	.6/1.5	55000	180	.3	14		86	15	45000	273	98	Work on BOP.
30/11	2400	2045	1.36	78	38	6	1.5/7	11	10.4	15.0	200	2	4.0	.6/1.5	55000	180	.3	14		86	15	45000	273	98	Work on BOP.

6.4 Cement Reports

30" casing

The 30" casing was set at 219 m and cemented back to the seabed, using the following slurries:

Slurry	Composition	Total used
1. Lead slurry:		
Class G cement:		31.2 ton
Yield	1.07 m^3/ton	
Sea Water	0.644 m^3/ton	21.0 m^3
D III	0.071 m^3/ton	2.32 m^3
D77 ($CaCl_2$ - 2% Bwoc)	0.036 m^3/ton	1.21 m^3
Density	1.68 rd	
Thickening time	4:11 + hrs at BHCT.	
Tail in slurry:		
Class G cement		22.7 ton
Yield	0.81 m^3/ton	
Sea Water	0.435 m^3/ton	9.8 m^3
D 77	0.071 m^3/ton	1.91 m^3
Density	1.87 rd	
Thickening time	1:55 hrs at BHCT.	

20" Casing.

The 20" casing was set at 949 m and cemented back to seabed.

Slurry	Composition	Total used
1. Lead slurry:		
Class G cement:		184.2 ton
Yield	1.415 m^3/ton	
Sea Water	1.183 m^3/ton	192.6 ton
D-75	0.036 m^3/ton	6.63 ton
D-81	0.0144m^3/ton	2.65 ton
Thickening time	7:05 hrs min at 46°C	
Density	1.51 rd.	
Tail in slurry:		
Class G cement:		21.2 ton
Yield	0.858 m^3/ton	
Sea Water	0.442 m^3/ton	9.4 m^3
D-81	0.0028 m^3/ton	0.06 m^3
D-80	0.0144m^3/ton	0.37 m^3
Density	1.9 rd	
Thickening time	4:45 hrs at 34°C	

13 3/8" casing

The 13 3/8" casing was set at 2138 m and cemented back to 2105 m.

Slurry	Composition	Total used
Lead slurry:		
Class G cement:		102.6 ton
Yield	0.760 m^3/ton	
Fresh water	0.435 m^3/ton	44.6 m^3
D 80	0.004 m^3/ton	0.410 m^3
D 81	0.005 m^3/ton	0.513 m^3
Density	1.9 rd	
Thickening time	3:48 hrs at 87°C	

ABANDONMENT PLUGS

Plug No.1. Cement plug from 2488 m - 2656 m

Slurry	Composition	Total used
Class G cement		48.7 tons
Yield	0.764 m^3/ton	
Fresh Water	0.435 m^3/ton	21.2 m^3
D 81	0.005 m^3/ton	0.257 m^3
Density	1.9 rd	
Thickening time	5 hrs 22 min at 54 deg C.	

Plug No.2. Cement plug from 2282 m - 2488 m

Slurry	Composition	Total used
Class G cement		32.9 tons
Yield	0.764 m^3/ton	
Fresh Water	0.435 m^3/ton	14.3 m^3
D 81	0.005 m^3/ton	0.182 m^3
Density	1.9 rd	

Plug No.3. Cement plug from 2045 m - 2188 m

Slurry	Composition	Total used
Class G cement		21.3 tons
Yield	0.764 m^3/ton	
Fresh Water	0.435 m^3/ton	6.1 m^3
D 80	0.004 m^3/ton	0.378 m^3
D 81	0.005 m^3/ton	0.057 m^3
Density	2.1 rd	
Thickening time:	2 hrs 58 min at 54 deg C.	

Jordheim, Kile, Nilsen, Hollevik

Norsk Hydro

Estimated Final

7. Cost Report

Period from	to	Total operation days	Sign.	Date
01.10.82 1700 25.02.83	18.01.83 0630 04.03.83 1435	115.462	NJ	05.04.8

Well no.	Acc.no.	Rig name
30/6 - 10A	01801	Treasure Scout

Orig.budg.dated	M.Nkr.	Based on	Oper.days
Rev. 05.01.83	106	110	

Sub. no.	Item	Cost in period 1000 Nkr.	Cumulative costs 1000 Nkr	Budget revision 1000 Nkr	Costs in % of budget	Remarks
	LOCATION ESPENSES:					
105	Site-survey		400'	400'		
106	Resurvey		200'	200'		
120	Locationing		200'	200'		
125	Location Clean-up		400'	400'		
130	Miscellaneous		200'	200'		
	RIG:					
210	Rig Contract		54267'	51700'		
212	Reimbursables		525'	800'		
	SUPPLIES:					
310	Bits		1000'	1000'		
311	Coring Equipment		1300'	1600'		
312	Drilling Tools		1000'	1000'		
313	Fishing Tools		-	-		
320	Casing		3350'	3350'		
321	Casing Equipment		120'	160'		
322	Test Tubing & Equipment		-	-		
330	Mud Products		4930'	4500'		
332	Cement		1000'	1000'		
340	Wellheads		1200'	1200'		
395	Fuel and Greases		5773'	5500'		
398	Miscellaneous		510'	500'		
	SERVICES:					
405	Helicopter		1616'	1320'		
410	Supply and Standby Ships		8430'	7300'		
415	Mud Engineering		432'	415'		
420	Mud Logging		1332'	1270'		
425	Cementing		1127'	1085'		
430	Logging		7065'	6500'		
431	Velocity Services		100'	100'		
435	Fishing		-	-		
440	Fishing Tool Rentals		-	-		
444	Casing Services		210'	230'		
445	Casing Cutting		150'	300'		
446	Tubular Inspection		100'	100'		
450	Coring		200'	200'		
455	Testing		-	-		
460	Test Tool Rentals		971'	935'		
470	Diving		650'	535'		
475	Radioservice		231'	215'		
480	Meteorological Service		51'	48'		
485	Catering		175'	170'		
490	Miscellaneous		1280'	300'		
	OPERATORS COSTS:					
510	Mobilisation Costs		520'	495'		
511	Repair TSC juli 82		577'	550'		
515	Repair TSC feb 83		-	-		
520	Insurance		1301'	1400'		
530	Base		1716'	1650'		
540	Laboratory Studies		2000'	2000'		
550	Onshore Drilling Supervision		1616'	1540'		
555	Onshore Geological Supervision		611'	580'		
560	Offshore Drilling Supervision		2425'	2310'		
570	Offshore Geological Supervision		462'	440'		
580	Exploration Assistance		250'	250'		
595	Miscellaneous		52'	52'		
			111500'			

Norsk Hydro

Cost Report

Period from	to	Total operation days	Sign.	Date
18.01.83 0630	25.02.83 1700	38.437	NJ	05.04

Well no.	Acc.no.	Rig name
Test 30/6 - 10A	01851	Treasure Scout

Orig.budg.dated	M.Nkr.	Based on	Oper.days
Rev. 14.02.83	39.5	40	

Sub. no.	Item	Cost in period 1000 Nkr.	Cumulative costs 1000 Nkr	Budget revision 1000 Nkr	Costs in % of budget	Remarks
	LOCATION ESPENSES:					
105	Site-survey		-	-		
106	Resurvey		-	-		
120	Locationing		-	-		
125	Location Clean-up		-	-		
130	Miscellaneous		-	-		
	RIG:					
210	Rig Contract		18065'	18800'		
212	Reimbursables		184'	300'		
	SUPPLIES:					
310	Bits		-	-		
311	Coring Equipment		5'	-		
312	Drilling Tools		150'	150'		
313	Fishing Tools		-	-		
320	Casing		1060'	1060'		
321	Casing Equipment		143'	200'		
322	Test Tubing & Equipment		500'	500'		
330	Mud Products		-	-		
332	Cement		392'	350'		
340	Wellheads		200'	200'		
395	Fuel and Greases		1800'	2000'		
398	Miscellaneous		420'	50'		
	SERVICES:					
405	Helicopter		595'	560'		
410	Supply and Standby Ships		2580'	2920'		
415	Mud Engineering		145'	150'		
420	Mud Logging		417'	423'		
425	Cementing		375'	390'		
430	Logging		2506'	2500'		
431	Velocity Services		-	-		
435	Fishing		-	-		
440	Fishing Tool Rentals		-	-		
444	Casing Services		270'	300'		
445	Casing Cutting		-	-		
446	Tubular Inspection		30'	50'		
450	Coring		-	-		
455	Testing		3200' 3700	1800'		
460	Test Tool Rentals			3000'		
470	Diving		240'	230'		
475	Radioservice		125'	80'		
480	Meteorological Service		90'	80'		
485	Catering		142'	60'		
490	Miscellaneous		350'	200'		
	OPERATORS COSTS:					
510	Mobilization Costs		173'	180'		
511	Repair TSC juli 82		192'	200'		
515	Repair TSC feb 83		-	-		
520	Insurance		432'	500'		
530	Base		575'	600'		
540	Laboratory Studies		-	-		
550	Onshore Drilling Supervision		535'	557'		
555	Onshore Geological Supervision		-	-		
560	Offshore Drilling Supervision		810'	842'		
570	Offshore Geological Supervision		-	-		
580	Exploration Assistance		179'	268'		
595	Miscellaneous		-	-		
	Total		40500'	39500'		

1925 HK 12.79 1000

PROBLEMS WITH DRILLING EQUIPMENT

Failure and problems with drilling equipment have earlier not been reported under a separate heading in our final well reports. Norsk Hydro is in the process of developing a suitable and useful format for this reporting.

Below follows a listing of special problems during the drilling of this well.

8 PROBLEMS WITH THE DRILLING EQUIPMENT

17 1/2" Section

- After pulling blue pod, found 2 damaged O-rings on SPM valve. Changed out valve and reran pod, still no test.

- Problem to test the diverter, both automatic valves were leaking.

- Attempted to rabbit landing string, several joints would not rabbit.

- Attempted to unlatch BOP from test stump, needed 2150 kN to work it free.

- Rucker tensioner no.6 parted (heavy weather)
  Rucker tensioner no.3 parted, closed shear rams and pulled lower marine riser package.
- Problems with kelly spinner, needed new sub.

- Iron Roughneck, needed new spinner assambly.

-Yellow pod accumulator isolator leaking in pilot line.

- Port crane, oil leakage.

- Leak on middle pipe ram, pulled BOP. Changed rubber on middle pipe ram, and VX ring on stack connector.

12 1/4" Section

- Riser tensioner line no.3 parted

- Changed out bearings on core barrel.

- Got stuck with wear bushing.

- Repaired packing in kill side gooseneck.

- Carrier unable to lift BOP. Repaired BOP on carrier.

- Blind shear rams: the shuttle valve - open side was leaking on output side.

- Flexible moonpool hose was plugged.

- The seals on the pods were damaged.

- Acoustic system:
  Problem with 4 way valve on upper pipe ram.
  Problem with 4 way valve on accumulator functions.

- Riser connector not operated due to position of BOP stack in moonpool.

- Acustic control valve for shear close side leaked.

- Guidelines no.3 and no.4 was found cut when caught between BOP stack and carrier.

NORSK HYDRO A.S

FINAL WELL REPORT

WELL 30/6-10A

LICENCE 053

LIST OF CONTENTS

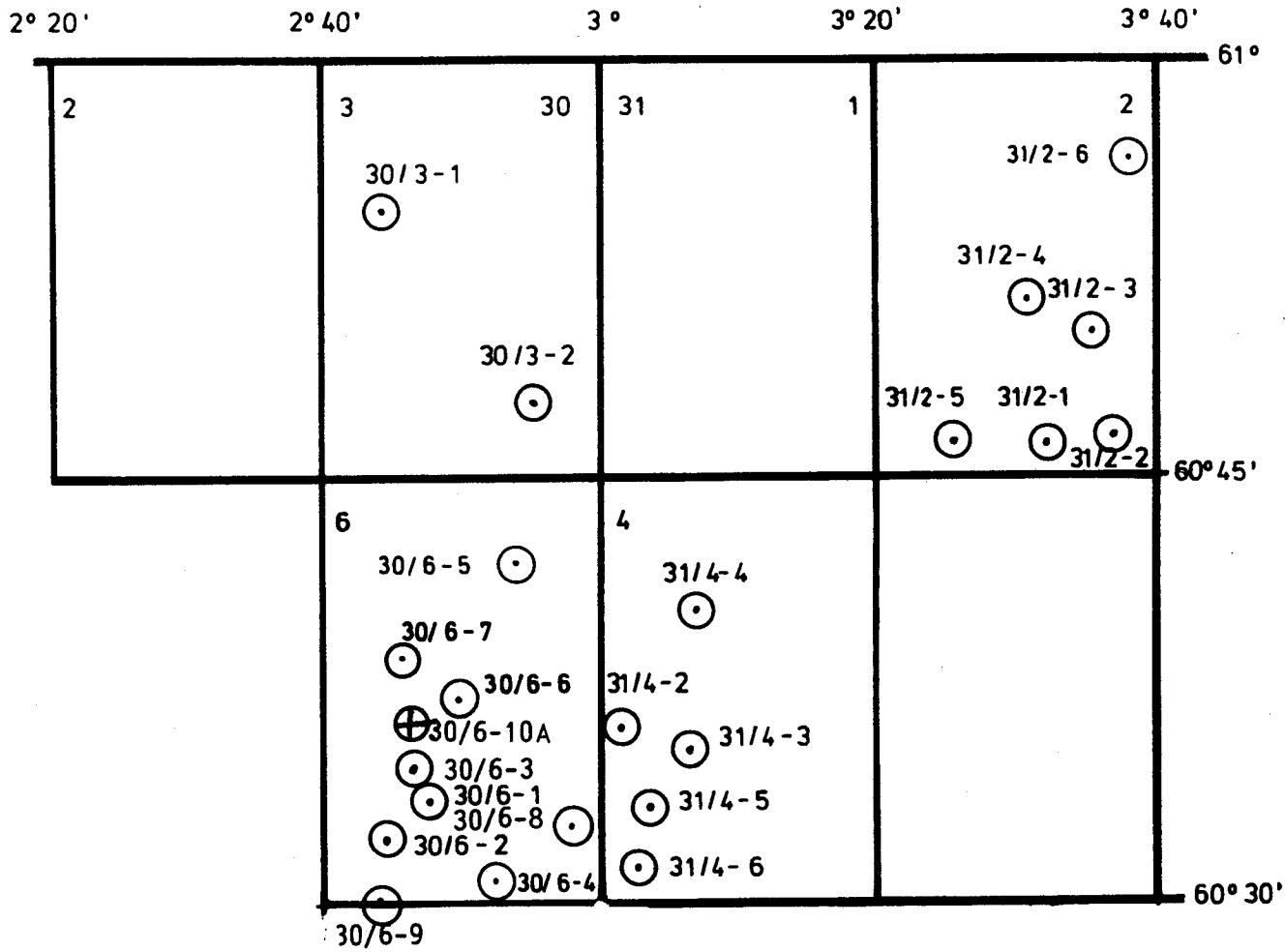
Preface

Licence 053 was awarded the Statoil/Elf/Hydro-group on April 6, 1979 with Statoil as operator. From April 1, 1982 Norsk Hydro Production a.s took over as operator. The licence includes the block 30/6 on the Norwegian Continental Shelf.

The group consists of the following companies:

Den Norske Stats Oljeselskap	50,00%
Elf Aquitaine Norway A/S	13,33%
Norsk Hydro Production a.s	12,50%
Mobil Norway a.s	10,00%
Saga Petroleum a.s	7,50%
Total	6,67%

The well 30/6-10A was drilled by Norsk Hydro Production a.s on behalf of the Statoil/Elf/Hydro-group.



Norsk Hydro Drilling Department	LOCATION MAP 30/6-10A	Gr. no.: 3	Fig.:
		Date: 10/9 - 1982 Sign: RW / Hes	Dwg. no.: 23

SUMMARY OF WELL DATA

Location:	60°36' 29.6" N
	02°46' 24.2" E
Operator:	Norsk Hydro Production a.s
Rig:	Treasure Scout
Contractor:	W. Wilhelmsen
RKB elevation (to MSL):	23 m
Water depth:	109 m
Start of operations:	October 1, 1982
Well spudded:	October 4, 1982
Well permanent abandoned:	March 3, 1983
T.D. (driller):	2665 m
Formation at T.D.:	Jurassic
Status:	Permanent abandoned

Well program

Hole record:	36" to 220 m
	26" to 970 m
	17 1/2" to 2432 m
	12 1/4" to 2665 m
Casing record:	30" set at 219 m
	20" set at 949 m
	13 3/8" set at 1788 m (window)
	9 5/8" set at 2652 m

All depths are given with reference to RKB.

SECTION A

GEOLOGY

LIST OF CONTENTS

SECTION A

OBJECTIVES

One of the primary objectives of the 30/6-10 well was to encounter a free gas/oil contact within sandstones of the Etive Formation. When this contact was encountered high in shales of the Ness Formation, it was decided to drill a sidetracked well, 30/6-10A, to fulfill the above mentioned primary objective. The possibility of determining the lateral continuity of channel sand bodies within the Ness Formation was considered as a secondary objective together with a possibility of seing lateral variations in the Etive Formation sandstones.

The well was prognosed to be deviated from a depth of 1800m in Eocene deposits and to penetrate the Brent reservoir approximately 300m west of the original hole. Total deviated depth was estimated to 2670m or 60m into the Drake Formation. This corresponds to a true vertical depth of 2586m.

RESULTS

The sidetracked well 30/6-10A encountered hydrocarbon bearing Middle Jurassic, Brent Group sandstones with a net pay of 58m.

No other hydrocarbon bearing reservoirs were encountered by this well.

Oilshows reported from Upper Cretaceous limestone stringers were considered uninteresting.

The Brent Group interval from 2480 - 2608,5m (2429-2531m) was found hydrocarbon bearing over the entire interval with the free gas/oil contact at 2594m (2520m) calculated from RFT pressure recordings. Depths in brackets are T.V.D. The contact is in this well within the Etive Formation.

No oil/water contact was encountered.

The Ness Formation interval from 2480-2572m (2429-2502m) consists of interbedded sandstones and shale with frequente siltstone and coal stringers. The sandstones are typically fine to very fine with occasional medium to coarse stringers, separated by dark shales and siltstones with common coal stringers. The Etive Formation interval from 2572-2608,5m (2502-2531m) consists of fairly homogeneous sandstones which are very fine to coarse, in part very coarse to conglomeratic. The net pay in the Brent Group is calculated to be 58m giving a net/gross ratio of 0.56. The higher ratio in this well when compared with 30/6-10, is due to more sand developement in the Ness Formation. The average porosity is 24,4% with an average water saturation of 27% (cut off values used :Ø<12%, V_{sh} > 40% and Sw > 50%).

RFT pressure recordings and sampling were performed over the reservoir interval. This gave a gas gradient of 0,106 psi/ft with an underlying oil gradient of 0,29 psi/ft resulting in a gas oil contact at 2594m (2520m). No water gradient was obtained.

Four production tests were performed, three in the gas zone and one in the oilzone.

DST No 1 from 2600-2602m at the base of the Etive Formation, tested 3540 STB/day (562,8 Sm^3/day) of gas through a 32/64" choke. Oil gravity was 35,7° API and gas gravity was 0,685 (air=1). GOR was 805 SCF/STB.

DST No2 from 2587-2590m in the middle of the Etive Formation tested 1135 STB/day (180.4 Sm^3/day) of condensate and 19,3 MMSCF/day (54651 Sm^3/day) of gas through a 40/64" choke. Condensate gravity was 58,7° API and gas gravity was 0.660. GOR was 17100 SCF/STB.

DST No 3 from 2546-2555m in the lower Ness Formation tested 1080 STB/day (171,7 Sm^3/day) of condensate and 19,7 MMSCF/day (557837 Sm^3/day) of gas through a 40/64" choke. Condensate gravity was 60,2° API and gas gravity was 0,655. GOR was 18200 SCF/STB.

DST No 4 from 2480,5 - 2486,5m in the Upper Ness Formation tested 1590 STB/day (252,85 Sm^3/day) of condensate and 28,2 MMSCF/day (798528 Sm^3/day) of gas through a 64/64" choke. Condensate gravity was 60,2° API and gas gravity 0,665. GOR was 17800 SCF/STB.

The pore pressure recorded at the top of the reservoir was 1.169 rd.

Details on log interpretation, RFT and DST results are found in Appendix 3 "Well summary" and "RFT and DST results;" and in "Well Test Report and Petrophysical Report" which are issued separately.

The well was drilled to a total depth of 2665 m (2577m).

STRATIGRAPHY

The biostratigraphic evaluation of well 30/6-10A was performed by Robertson Research International Limited, Llandudno, Wales.

The basic material for the analysis was ditch cuttings together with conventional cores. ISF/SONIC logs were used as an aid in picking lithostratigraphic boundaries.

The first analysis was at 2410m in Late Cretaceous sediments of Early Maastrichtian to ?Santonian age. Due to good well control from 30/6-10 no biostratigraphic analysis was carried out above this depth. At 2448m the well penetrated Late Jurassic sediments of Late to Middle Oxfordian age followed by Early Oxfordian sediments at 2469,5m. The Middle Jurassic was encountered at 2480m with first a Bathonian to Bajocian sequence, followed by rocks of Middle to Early Bajocian age from 2490,5m down to 2611m. The well reached total depth at 2665m in sediments of Late to Middle Toarcian age.

Norsk Hydro

Oslo Norway

WELL 30/6-10A SIDETRACK

Not to scale TVD IN BACKETS

DEPTH REF K B ELEVATION K B 23 m ALL DEPTH IN METERS (m)

CHRONOSTRATIGRAPHY

SYSTEM	SERIES / STAGE	DEPTH	THICKNESS
	Well was sidetracked from 1788 m. Biostratigraphy was done from top Jurassic and down to T.D.	1788	
CRET-ACEOUS	LATE — TOP NOT SEEN		
	EARLY MAAS.–? SANTONIAN	2448 (2404)	21.5 (17)
JURASSIC	LATE — LATE – MIDDLE OXFORDIAN	2469.5 (2421)	10.5 (8)
	EARLY OXFORDIAN – BATHONIAN – BAJOCIAN	2480 (2429)	10.5 (9)
	MIDDLE — MIDDLE – EARLY BAJOCIAN	2490.5 (2438)	120.5 (95)
		2611 (2533)	
	EARLY — LATE – MIDDLE TOARCIAN		45 (37)
		2656TD 2570TVD	

LITHOSTRATIGRAPHY

GROUP	FORMATION / MEMBER
(1788) 1788	
HORDALAND GROUP (1980) 1982	1982
ROGALAND GROUP (2236.5) 2250	BALDER FORMATION 2053
	SELE FORMATION (2160) 2168
	LISTA FORMATION 2250
MONTROSE GROUP 2264.5 (2249.5)	MAUREEN FM. EQUIVALENT 2264.5
SHETLAND GROUP (2404) 2448	
HUMBER GROUP 2480 (2429)	HEATHER FORMATION 2480
BRENT GROUP (2531) 2608	NESS FORMATION 2571.5
	ETIVE FORMATION 2608
DUNLIN GROUP 2656 (2570)	DRAKE FORMATION 2656 (2570)

LITHOSTRATIGRAPHY

This summary is compiled predominantly from ditch cuttings description. Wire-line logs were used as an aid in lithological interpretation and to place formation boundaries. Conventional cores are available from 2606,5 m (Middle Jurassic) and down to 2467 m (Early Jurassic). No sidewall core samples were taken in this well.

All depths below are M.D., for T.V.D. see chrono-and lithostratigraphy page 6.

4.1 TERTIARY (1788 (KICK OFF DEPTH) - 2264,5 M)

HORDALAND GROUP (1788 - 1982 M)

The Hordaland Group consists of fairly homogenous claystones with occasional stringers of limestones, dolomitic limestones and dolomites.

The claystones are predominantly medium dark gray to dark gray becoming brownish gray towards the base, a colour change which often occurs close to the Eocene/Paleocene boundary. The claystones are firm, blocky to fissile, micromicaceous, silty and noncalcareous. Towards the base they get very silty and grades occasional to a siltstone, slightly calcareous and the first traces of tuff can be seen.

The dolomites and limestones are pale to dark yellowish brown and occasional medium dark gray when dolomitic. They are soft to very hard, micro-crystalline and slightly argillaceous.

Pyrite and glauconite occur as traces throughout the section.

No biostratigraphic work was done through this interval, but correlation to the 30/6-10 well gives an age from Middle to Early Eocene. The sequence was laid down in a marine, outer shelf to upper bathyal environment.

ROGALAND GROUP (1982 -2250 M)

Balder Formation (1982 - 2053 M)

The characteristic bell shaped log motif which defines this unit in surrounding wells is also fairly well developed in this well.

The claystones shows a wider range of colour variation in this interval, medium dark grey, dark grey, olive grey, grey brown, dark brown, dusky yellow brown, occational green grey and blue grey. The claystones are of similar types to what was found in the overlaying basal part of the Hordaland Group, and the increasing amount of silt noted through that section continues throughout the Balder Formation. Tuffaceous material is fairly common and occurs as specules, shards and angular fragments often associated with lighter coloured clays.

Stringers of pale yellow brown, locally white, argillaceous microcrystalline limestones are common.

Sele Formation (2053 - 2168m)

The Sele Formation is fairly well defined on the logs and is marked by a colour change in the claystones in the cuttings and are predominantly grey black, olive grey, olive black, green black with minor grey brown and dusky red. The claystones are firm to moderately hard, blocky to subfissile locally silty and micromicaceous, none to slightly calcareous. Traces off tuff were noted in the cuttings but disappears completly throughout the Sele Formation.

Some thin stringers of limestones similar to those in the Balder Formation occur throughout the interval.

Lista Formation (2168 - 2250 M)

This formation is composed of medium dark grey, dark grey, olive grey to olive black, dark green grey, green black and minor grey brown to dusky red claystones. The claystones are firm to moderate hard, locally soft, predominantly blocky to subfissile, commonly silty, locally grading siltstone. The formation is rarely carbonaceous and becomes increasingly calcareous downwards.

Stringers of light grey, olive grey and brown grey to dusky yellow brown limestones occur throughout the interval with an increasing frequency towards base. These are slightly argillaceous becoming more argillaceous in the lower part where thin stringers of dolomite are associated.

MONTROSE GROUP (2250 - 2264,5m)

Maureen Formation Equivalent (2250 - 2264,5m)

This section is a continuation of the above interval, but is characterized by more calcareous claystones.

Although no biostratigraphic analysis were done over the Rogaland and Montrose Group interval in this well, they are respectively thought of as Late Paleocone and Late to Early Paleocone in age. The whole interval was laid down in a marine, outer shelf to upper bathyal environment.

CRETACEOUS (2264,5 - 2448m)

SHETLAND GROUP (2264,5 -2448m)

The Shetland Group is clearly marked by log breaks. The main lithology is claystones with limestone stringers in

the upper part of the interval becoming less frequent down to 2409 m. Below this depth the lithology is characterised by two distinct limestone intervals interbedded in the claystone.

The claystones are predominantly medium dark grey, only rarely dark green grey, medium light grey and grey red. Generally the claystones are soft to moderately hard, blocky to subfissile, locally silty, micromicaceous and rarely calcareous. Traces of pyrite were noted throughout the interval. Locally the claystones are very calcareous grading to marl.

The limestones are white to light grey, dark grey, dark yellow brown to pale yellow brown and pinkish grey are also common. The limestones are partly chalky, partly microcrystalline and cryptocrystalline and locally argillaceous.

Using the biostratigraphic data from the 30/6-10 well this section is Late Cretaceous in age varying from Late Maastrichtian to Early Campanian to Santonian? The sediments was deposited in a marmé, inner to outer shelf environment.

JURASSIC (2448 -2665m)

HUMBER GROUP (2448 -2480m)

Heather Formation (2448 - 2480 m)

The Heather Formation is clearly defined on the logs and in the cuttings samples. It consists of brownish black, black, grey black and brownish grey shales which are soft to moderate hard, subfissile, micromicaceous, carbonaceous and are generally very silty, grading

towards a siltstone. It is non to slightly calcareous and contains pyrite throughout the section.

The age of this interval is Late to Middle Oxfordian down to 2469,5 m, and Early Oxfordian down to 2480 m. The environment was marine, inner shelf with aerobic/dysaerobic bottom conditions through Late to Middle Oxfordian times.

BRENT GROUP (2480 - 2608m)

Ness/(Tarbert)? Formation (2480 - 2572 m)

This interval consists of sandstonebeds of various thickness interbedded with shales and siltstones with occasional stringers of coal.

The top 10 m of this interval consists of a marine sand with notably amounts of glauconite in it. In the 30/6-10A Biostratigraphic Report from Robertsen Research Ltd. dated April 1983 this sand is classified as a Tarbert Formation sandstone. But due to recent biostratigraphic and sedimentological studies it is now belived to represent a reworked marine sand of possible Callovian age.

This sandstone is medium dark grey, in colour with subangular to subrounded, fine to medium quartz grains loosely cemented togehter by a clay matrix. It is micaceous, glauconitic, carbonaceous and is poorly to moderately sorted with a poor visible porosity.

The rest of the sandstones within the Ness Formation are olive grey in colour often with a light brown oil strain. They consists of subangular to subrounded, very fine to fine together with occasional medium sized quartz grains incorporated both in a clay matrix and silica cement.

They are micaceous, carbonaceous, some have traces of glauconite, and they are generally moderate to well sorted with a poor visible porosity.

The interbeds of shale are olive grey to medium grey and brownish black. They are moderate hard, both micromicaceous and micropyritic and non calcareous. Locally they are very silty and lamina of siltstones can be distingquised.

More clearly developed interbeds of siltstone can also be seen. They are medium to dark grey in colour, moderate hard, blocky to subfissile, micromicaceous and locally carbonaceous and argillaceous.

The coal is black to brownish black, hard, brittle, blocky, locally silty and contains plant fragments.

Etive/Rannoch Formation (2572 - 2608 m)

The Etive Formation is made up of a homogenous sandstone unit with occasional micaceous laminations which give the high gamma ray readings.

The sandstones consists predominantly of medium to coarse quartz grains which locally can range from fine to very coarse and also a few pebble horizones were noted in the cores. The subangular to subrounded grains are loosley bounded together by a clay matrix and occasionally silica cement. The sandstones are locally micaceous, with some very micaceous laminations and are also locally carbonaceous and micropyritic. They are in general moderately to well sorted and the porosity is generally good.

The top 10 m of the Brent Group is in the biostratigraphic report, from the well belived to be

Bathonian/Bajocian in age, but the database is tiny and new investigation indicate a Callovian age for this zone. The environment was shallow marine with a strong terrestrial influence. The rest of the Brent Group is Middle - Early Bajocian in age and is developed in a marginal marine to inner shelf environment becoming marginal marine to deltaic below 2572 m.

DUNLIN GROUP (2608 - 2665m)

Drake Formation (2608 - 2665m)

The top of this interval is clearly defined on the logs and consists of massive shales with a few stringers of limestone towards the top of the interval. Between 2608 m to 2611 m Robertsen Research has put in a Basal Rannoch Shale interval.

The shales are olive grey, olive black, green black, brown black and locally black red. Generally the shale is firm to moderate hard, blocky to subfis, silty, pyritic, micromicaceous, locally carbonaceous and is non calcareous.

The limestone stringers are predominantly white, locally pale yellow brown, soft to moderate hard and microcrystalline to crystalline.

This interval is Late to Middle Toarcian in age and was laid down in a marine, inner shelf environment.

5. HYDROCARBON SHOWS

Evaluation of hydrocarbon shows at the wellsite was carried out in a conventional manner. Below 1788m a complete hydrocarbon total gas detector (50 units = 1%) was operational together with a gas chromatgraph for automatic and continous gas analysis, recorded as ppm by volume of C_1 through C_5.

Hydrocarbon shows on ditch cuttings were evaluated according to Norsk Hydro's geologist's well site manual.

5.1 GAS RECORD

1788 - 1980 m

Between 0,06 and 0,24% methane (C_1) and traces of ethane (C_2) was recorded through this intervers which consisted of claystones with stringers of limestones.

1980 - 2265 m

A slight increase in total gas, 0,1 - 0,4% was noted, and also occasional propane (C_3) and butane (C_4) was recorded together with C_1 and C_2. The lithology is made up of claystone with occasional stringers of limestone and dolomite.

2265 - 2449 m

This interval which covers Cretaceous claystones with interbeds and stringers of limestone shows a marked increase in the gascontent varying between 0,2 to 2,8%. All four components were present.

2449 - 2572 m

This interval covers the Heather Formation shales together with the Ness Formation sandstones, shales and stringers of coal. The gas was generally low between 0,08 and 0,28% with only C_1 to C_3 present. The low gasreadings through the Ness Formation probably corresponds with low drilling rates during coring.

2572 - 2665 m

The gas through this interval was varying between 0,1 and 0,76% C_1 to C_3. The lithology through this interval was Etive Formation sandstones and Dunlin Group shales with occasional limestone stringers.

5.2 OIL STAIN AND FLUORESENCE

2051 - 2250 m

A fair bright to dull yellow to orange fluoresence with a slow to fast streaming white to yellow fluoresence cut giving a yellowish white fluoresence residue could be seen on limestone cuttings.

2250 - 2448 m

The show through this interval was also seen within the limestone stringers. Often a light to dark brown oilstain could be seen on the cuttings giving a dull to bright yellow fluoresence. A slow to fast streaming yellow fluoresence cut gave a orange to yellow fluoresence residue. Both a brown vis cut and visible residue could also be seen.

2480 - 2571,5 m

This whole interval was cored and consists of interbeds of sandstone and shale with occasional coal stringers. The shows on the sandstones are typical gas shows. A non to dull spotty yellow fluoresence can be seen together with a slow to fast streaming greenish yellow fluoresence cut which gives a bright yellow fluoresence residue when dried.

2571,5 - 2608 m

This interval make up the Etive Formation sandstones, and is covered by cores. Unfortunately the free gas/oil contact seen on the logs at 2594 was within the lost part of core no. 10. The shows above the contact is of the same type as described above. The cores recovered in the oilzone release a fair to strong hydrocarbon odour and

had a dark brown oil stain. The fluoresence was 100% dull to bright yellowish white and when adding chlorothene a fast to instant streaming bright white to yellow fluoresence cut was seen, giving a greyish orange pink fluoresence residue. Both a medium to dark brown visible cut and visible residue could be seen.

6. CORING

6.1 CONVENTIONAL CORES

A total of 10 cores were cut in this well covering the lower part of the Heather Formation, Ness Formation and the last core ended in the oilzone of the Etive Formation.

Core no. 1 was cut from 2467 m to 2477,5 m in the Heather Formation. Since the intention was to start coring before entering the reservoir and the core jammed, 8,68 m (83%) of Heather shale was recovered, with occasional weak shows.

Core no. 2 was cut from 2477,5 m to 2496 m and 18,1 m (98%) of sandstone, shale and siltstone was recovered. The top of the Brent Group was seen within this core at 2479,80 m. No shows were described from this core.

Core no. 3 was cut from 2496 m to 2515 m and 16,8 m of predeminantly sandstone with occasional stringers of shale and siltstone were recovered. The sandstone within this core had spotty shows which is typical for gasbearing formations.

Due to no seating of the ball in the corebarrel core nr. 4 was only cut from 2515 m to 2520 m and 4,7 m (94%) of sandstone with minor shale and siltstone were recovered. Typical gas shows were described from the sandstones.

Core no. 5 was cut from 2520 m down to 2537 m and 15,9 m (94%) of interbeds of sandstone, shale and siltstone together with occasional coalstringers were recovered. Sandstones within this core also had typical gas shows.

Core no. 6 jammed of after beeing cut from 2537 m down to 2546 m. 9 m (100%) of the same lithology as in core no. 5 was recovered with the same type of gas shows.

Core no. 7 was cut from 2546 m down to 2564 m and 15,18 m (84%) of sandstone was recovered with only some shalestringers towards the base of the core. Typical gas strows could also be seen through this core.

Core no. 8 was cut from 2564 m down to 2574,5 m and 8,18 m (87%) of shales, siltstones, sandstones and coal from the Ness Formation together with ca. 5 m of sandstone belonging to the Etive Formation was recovered. 30 cm of core belonging to core no. 7 was recovered together with core no. 8. Gas shows continues through this core.

Core no. 9 was cut in Etive Formation sandstone from 2574,5 m to 2588 m and 13,42 m (99%) was recovered. The spotty shows still indicated gas.

Core no. 10 which was the last core in this well, was cut from 2588 to 2606,5 m. During coring operation innerbarrel parted in two and part of the core was washed away by the mud. 4,3 m (21,6%) was recovered, but relating this part to any specific depth is impossible. Core no. 10 penetrated the gas/oil contact and the part recovered is sandstone with good oil shows.

For core description see Appendix 1.

2 SIDE WALL CORES

No sidewall cores were taken in this well due to good biostratigraphic control in the 30/6 - 10 well.

WIRE LINE LOGGING

The following list is a summary of the wire line logs run in well 30/6-10A and shows the date, logged interval and run number of each log.

Log	Date	Logged Interval	Run No.
ISF/LSS GR/SP	16.1.83	1786,5 - 2654 m	1.*
LDT/CNL/CAL	16.1.83	1786,5 - 2650 m	1.*
NGT	16.1.83	2330 - 2640 m	1.
DLL/MSFL	16.1.83	2340 - 2648 m	1.*
SHDT	17.1.83	1786,5 - 2654 m	1.
Cluster Dip	24.1.83	1791 - 2654 m	1.
GEODIP	24.1.83	2480 - 2620 m	1.
EPT	17.1.83	2350 - 2625 m	1.
RFT	17.1.83	2481,5 - 2607 m	1.
	18.1.83	2605,5 m	2.
	18.1.83	2592 m	3.

* Also computed into T.V.D.logs

SPECIAL STUDIES

The biostratigraphic evaluation of the well has been performed by the laboratories of Robertson Research Int. Ltd. in Wales. The results of this evaluation are contained in the report:

Norsk Hydro 30/6-10A
Norwegian North Sea Well: Biostratigraphy of the interval 2410 - 2665 m

Norsk Hydro

Oslo - Norway

DRILLING PROGRESS, WELL: 30/6 - 10

OPERATOR : NORSK HYDRO A/S

COORDINATES : 60° 36' 29,6" N
: 02° 46' 24,2" E

SPUD IN : 04.10.82.

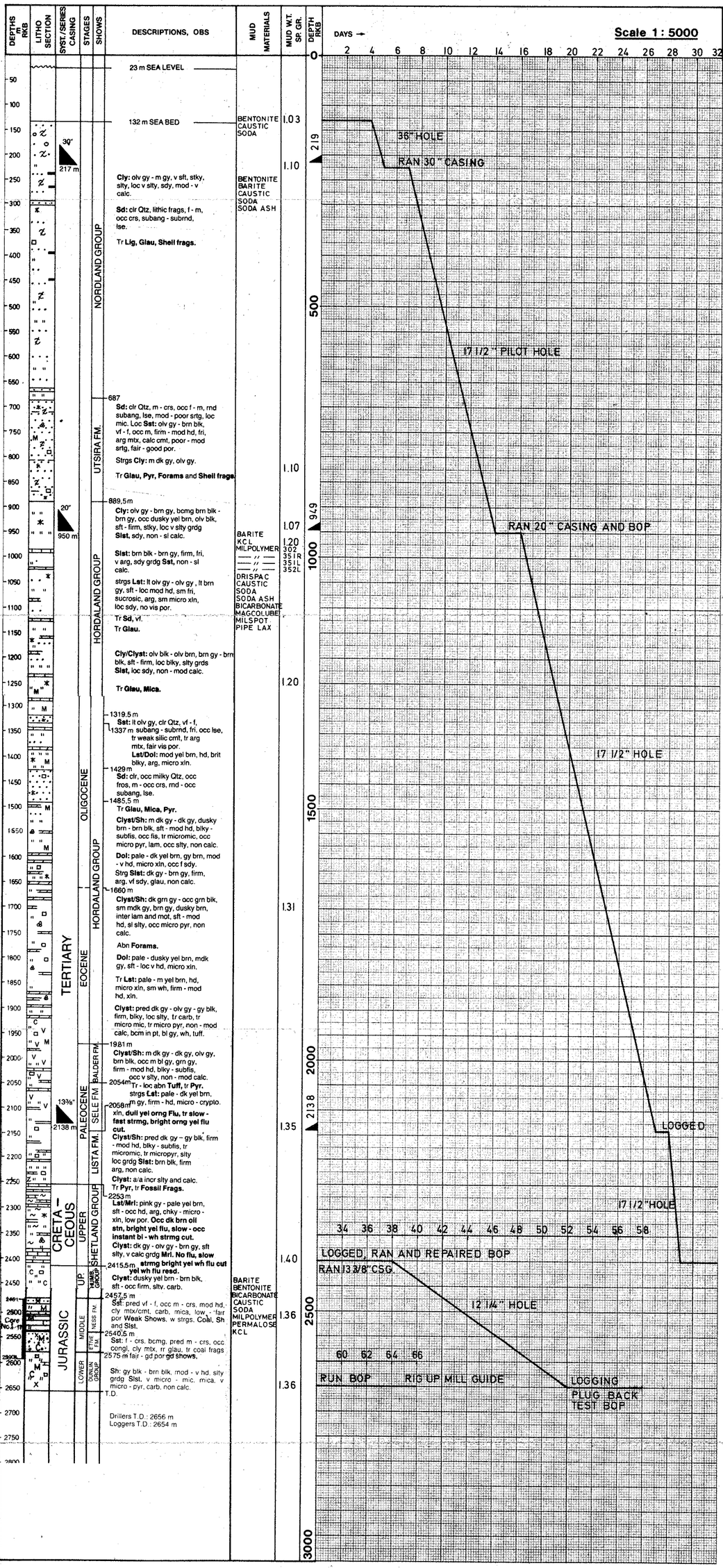
WELL COMPL.: 30.11.82.

RIG : TREASURE SCOUT

WATER DEPTH : 109 m

RKB to MSL : 23 m

RKB to SEABED: 132 m



APPENDIX 1

CORE DESCRIPTIONS
CORES 1-10

Norsk Hydro

Well no.	Core report	Core no's
30/6–10A		1

Interval	Area	Cut	Date
2467–2472	Norwegian North Sea	2467–2477.5	28.12.82
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2467–2475.68 m, 83%	Allack

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2467		C			No show.
				Sh: brn blk - blk, also gy blk, mod hd, subfis, sl calc, v slty, micromic, v carb, pyr.	
		C M			
2468					
				Apparent dip 40°, hole angle 40°.	
		M			
		C C		Sh: blk, mod hd, subfis - fis, sl calc, sl slty, carb, pt grdg coal.	
2469					
		C M			
		C		Sh: blk, mod hd, subfis, sl calc, micromic, micropyr, slty, carb.	
2470		C M			
				Sh: a/a w abn thin carb lam, specs, and 1–4 cm pyr nodules.	Instant dul yel - wh cut, yel wh flu resd.
		C			
				Sh: gy blk - blk, mod hd, blky - subfis, sl calc, slty carb, micromic, pyr, Belemnite.	
2471		C M			
				Sh: brn blk - blk, mod hd, subfis, non calc, sl slty, sl micro mic, pyr, coaly.	No show.
		C C			
		C M			
2472					

Norsk Hydro

Well no.	Core report	Core no s
30/6–10A		1

Interval	Area	Cut	Date
2472–2477	Norwegian North Sea	2467–2477.5 m	28.12.82
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2467–2475.68 m, 83%	Allack

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2472					No show.
		C M		Sh: a/a, Belemnite frag.	
		C M			
2473		C M		Sh: brn blk, blky, mod hd, subfis, sl calc, slty, micromic, v carb, v pyr.	
		C M		Sh: a/a, abn carb lam, specs.	
2474		C M		Pyr nodules.	
		C		Slst: m gy, mod hd - hd, blky, non calc, sl micromic, rr blk carb specs.	
2475		C M M C M		Sh/Slst: dk gy, mod hd, subfis, non calc, micromic, carb, pyr.	
			2475.68 m		
2476					
2477					

Norsk Hydro

Well no.	Core report	Core nos
30/6–10A		1

Interval	Area	Cut	Date
2477–2477.5 m	Norwegian North Sea	2467–2477.5 m	28.12.82
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2467–2475.68 m, 83%	Allack

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2477		Not recovered	2477.50 m		
2478					

Norsk Hydro

Well no.	Core report	Core no's
30/6–10A		2

Interval	Area	Cut	Date
2477.5–2482 m	Norwegian North Sea	2477.5–2496 m	29.12.82
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2477.5–2495.60 m, 98%	Allack

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2477					
			2477.50 m		
		C M		Slst: brn gy, firm - mod, hd, micromic, micropyr, sdy, carb, non calc.	No shows.
2478					
		C			
		C M			
2479				Slst: a/a.	
		M			
		C			
		C M			
			2479.80 m	Sst: brn gy, hd, m, subrnd, sl carb, v sl tr wh arg mtx, silic cmt, well srtd, no vis por.	V slow grn yel flu, crush cut, faint yel brn flu resd.
			2479.89 m Sealed sample 2480.07m		
2480		C			
		C			
			2480.85m		
2481			Sealed sample		
		C	2481.34 m		
		C			
2482				Sst: brn gy - lt olv gy a/a.	a/a.

Norsk Hydro

Well no.	Core report	Core no s
30/6–10A		2

Interval	Area	Cut	Date
2482–2487 m	Norwegian North Sea	2477.5–2496 m	29.12.82
Scale 1:25	**Well R.K.B.** 23 m	**Recovery** 2477.5–2495.60 m, 98%	**Geologist** Allack

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2482		M	2482.00 m Sealed sample 2482.20 m		No show.
2483			2482.83 m Sealed sample 2483.21 m	Sst: lt brn gy, hd, dom m, occ f, subang, sl tr arg mtx, silic cmt, mod srtd, mod vis por.	
2484				Slst: dk-m dk gy, hd, blky, sl micromic, vf sdy, pyr, non calc. Sst: brn gy, hd, m, subrnd, sl tr wh arg mtx, banding caused by carb rich layers, silic cmt, well srtd, mod vis por.	
2485		M	2484.28 m Sealed sample 2484.62 m		
2486		C M	2485.60 m 2486.11 m Sealed sample 2486.31 m	Sst: lt brn gy, hd, f - m, subrnd, sl tr wh arg mtx, thin lam of mica, silic cmt, mod strd, no vis por. Sst: brn blk - brn gy, mod hd, fri, m, subrnd, sl glau, sl carb, silic/calc cmt mod srtd, no vis por.	
2487		C C M		Sst: a/a. Coaly lam, X bdg.	

Norsk Hydro

Well no.	Core report	Core no's
30/6–10A		2

Interval	Area	Cut	Date
2487–2492 m	Norwegian North Sea	2477.5–2496 m	29.12.82
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2477.5–2495.6 m, 98%	Allack

Depth scale	Recovery	Lithological column	Depths	Lithological descriptions	Shows
2487		M			No show.
			2487.43 m Sealed sample 2487.74 m	Sst: brn gy - olv gy, hd, dom f, occ m, subang, mica, sl tr wh arg mtx, silic cmt, well srtd, poor vis por.	
		M			
2488			2488.00 m Sealed sample 2488.22 m		
		M			
2489		C M			
		C	2489.49 m Sealed sample 2489.72 m	Sst: m dk gy - brn gy, hd, f occ m, mica, coaly w/thin lam + specs of Coal, silic cmt, mod well srtd, v poor vis por. Sst: fining upwards.	
		M			
2490		C		Sh/Slst: brn blk - blk, mod hd, subfis, micromic, v slty, arg, v pyr, v carb, non calc.	
		C		Sh: blk, mod hd, fis, sl micromic, pyr, sl slty, v carb, non calc.	
2491		M			
		C		Large pyr nodules + lam.	
		M			
2492					

Norsk Hydro

Well no.	Core report	Core no's
30/6–10A		2

Interval	Area	Cut	Date
2492–2496 m	Norwegian North Sea	2477.5–2496 m	29.12.82
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2477.5–2495.6 m, 98%	Allack

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2492		C		Sh: brn blk - dk gy, hd, subfis, micromic, carb, pyr, pt grdg Coal, non calc.	No show.
		C □ M			
2493		C M			
		C C			
		M			
		□			
		C C			
2494			2494.13 m	Interbedded Sst/Slst: Sst: lt brn gy, hd, f - occ v f, subang, mica, silic cmt, mod srtd, no vis por. Slst: brn blk - dk gy, subfis, v carb, arg, micromic, impressions of plant stems, non calc.	
		M □			
			2494.60 m		
		C M			
2495					
		C M			
			2495.4 m	Coal blk, shiny, hd, slty, arg, impressions a/a.	
			2495.60 m		
		Not recovered			
2496			2496.00 m		
2497					

Norsk Hydro

Well no.	Core report	Core no's
30/6-10A		3

Interval	Area	Cut	Date
2496–2501 m	Norwegian North Sea	2496–2515 m	29.12.82
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2496–2512,8 m, 88%	Allack

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2496				Sh: olv gy, mod hd, subfis, pyr.	No show.
2497		M M C M	2497.20 m	Small Coal frags. Sst: lt brn gy - m lt gy, hd, f - m, subang, mica, wh arg mtx, pyr, carb, f mica lam, silic cmt, well srtd, mod vis por.	
2498			2497.98m Sealed sample 2498.22m	Sst: m dk gy - olv gy, mod hd, vf - rr f, ang micro lam, mica, carb, arg mtx, silic cmt, poorly srtd, no vis por.	
2499			2498.61m Sealed sample 2498.85m	Crs Sst bnd. Sst: lt olv gy - lt olv brn, moc hd, fri, f - m, ang, wh arg mtx, rr pyr, silic cmt, poorly srtd, no vis por.	10% patchy yel flu, slow yel wh flu crush cut. v dull yel flu resd.
			2499.30m Sealed sample 2499.52m		
2500			2500.21m Sealed sample 2500.52 m 2500.71m Sealed sample	Sst: lt olv gy - lt olv brn, mod hd, m, ang, sl tr wh arg mtx, silic cmt, mod srtd, no vis por.	V slow dull yel grn flu cut, yel flu resd.
2501					

Norsk Hydro

Well no.	Core report	Core no s
30/6–10A		3

Interval	Area	Cut	Date
2501–2506 m	Norwegian North Sea	2496–2515 m	29.12.82
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2496–2512.8 m, 88%	Allack

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2501			2501.10m	Sst: a/a.	10% spotty, dull yel flu, v slow dull yel grn flu cut a/a.
			25.01.72m Sealed sample 2502.10 m	Sst: lt olv gy a/a, w coaly + mica lam.	No direct flu, slow streaming grn yel flu cut yel flu resd.
2502			2502.68m	Coaly lam.	
		C M	Sealed sample 2502.92 m	Alt Slst,Sst.	
2503		C M		Slst: gy brn, hd, micromic, pyr, abn Coal frags + lam.	No show.
		C M	2503.41 m	Sst: mod yel brn - olv brn, hd, f - m, subrnd, cly clasts, wh arg mtx, mica, silic cmt, mod srtd, no vis por.	
		C M		Sst: pale yel brn, hd, m, rnd, wh arg mtx, sl mica, silic cmt, well srtd, no vis por.	No dir flu, v slow v dull yel flu cut.
		M	2503.62 m Sealed sample		
2504			2503.84m	Cgl: pale yel brn, hd vcrs - 4 mm, subrnd, abn gy orng arg mtx, coal frags, silic cmt, poorly srtd, no vis por.	10% dull yel patchy dir instant yel grn flu cut, yel flu resd.
			2504.42 m Sealed sample 2504.69m		
			2504.79 m Sealed sample 2505.10 m		
2505				Sst: pale yel brn, hd, sl fri, m, well rnd, silic cmt, well srtd, good vis por.	a/a.
			2505.66 m Sealed sample	Coaly lam at base of fining upward sequence.	
2506			2505.96m		

Norsk Hydro

Well no.	Core report	Core no s
30/6–10A		3

Interval	Area	Cut	Date
2506–2511 m	Norwegian North Sea	2496–2515 m	29.12.82
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2496–2412.8 m, 88%	Allack

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2506				Sst: a/a.	a/a.
2507		C	2507.02m Sealed sample 2507.43m		
2508		C C C	2508.00m Sealed sample 2508.40m	Sst: pale yel brn, hd, crs - occ cgl, well rnd, gy orng arg mtx, carb, silic cmt, mod srtd, mod vis por.	No dir flu. Slow streamingweak grn yel flu cut.
2509		M C C M	2509.03m 2509.18m Sealed sample 2509.42m	Sst: pale yel brn, hd, f - crs, subang - subrnd, sl tr arg mtx, sl micromic, silic cmt, poor srtd, no vis por. Coal frags at base of fining upward sequence.	5% spotty dull yel flu, fast streaming grn yel flu cut, yel flu resd.
2510		C M C	2509.80m Sealed sample 2510.06m	Sst: pale yel brn, hd, m, well rnd, silic cmt, well srtd, poor vis por.	5% spotty dull yel flu, v slow streaming dull grn yel flu cut.
2511		M M		Sst: pale yel brn, hd, m, occ crs, subrnd, v carb. flecks + lam of Coal, mica, silic cmt, mod well srtd, no vis por.	30% patchy dull yel flu, instant grn yel flu cut, bright yel flu resd.

Norsk Hydro

Well no.	Core report	Core no s
30/6–10A		3

Interval	Area	Cut	Date
2511–2514.5 m	Norwegian North Sea	2496–2515 m	29.12.82
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2496–2512.8 m, 88%	Allack

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2511				Sst: pale yel brn, mod hd, fri, f - m, subrnd, gy orng arg mtx, silic cmt, mod srtd, good vis por.	30% show a/a.
				Sst: pale yel brn, mod hd, fri, f - m, subrnd. gy orng arg mtx. silic cmt, mod srtd, mod vis por.	
			2511.84m		
2512					80% uniform good yel flu, instant dull grn yel flu cut,yel flu resd.
			Sealed sample		
			2712.47m		
			2512.70m		
		C	2512.80m	Sh: olv gy, mod hd, blky, sl slty, sl carb, non calc.	No show.
2513					
		Not recovered			
2514					
2515			2515.00m		

Norsk Hydro

Well no.	Core report	Core no s
30/6–10A		4

Interval	Area	Cut	Date
2515–2520 m	Norwegian North Sea	2515–2520 m	31.12.82
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2515–2519.7 m, 94%	Henderson/Allack

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2515		C, C		Coal lam + frags.	
				Sh: olv gy - brn gy, mod hd - hd, subfis, micromic, abn carb, plant frags, stems + leaves, pyr.	No show.
			2515.50m Sealed sample	Sst: brn gy, mod hd, blky, f, ang - subang, micromic, abn carb wood frags, coal lam, arg, occ pt slty grdg Slst, silic cmt, poorly srtd, no vis por.	
2516		C, M, C, M	2515.90m 2516.00m Sealed sample 2516.31m		
		C, M	2516.72m Sealed sample	Sst: pale yel brn, mod hd, fri, f, ang - subang, gy orng arg mtx, sl micromic, occ thin Coal lam, silic cmt, mod srtd, no vis por.	90% even dull yel flu, mod fast streaming grn yel flu cut, yel flu resd.
2517		C, M, C, M	2516.97m	Slst: olv gy - brn gy, mod hd, subfis - blky, micromic, micropyr, abn finely disseminated carb mat, vf sdy.	
					No show.
2518		C, M, C, M	2518.00m 2518.14m Sealed sample 2518.41m	Sst: pale yel brn - lt olv gy, mod hd, fri, gen f, occ m, subang, arg mtx, micromic, carb flecks + lam, occ sl slty, mod srtd, silic cmt, no vis por.	No dir flu, mod fast yel grn streaming flu cut, dull grn yel flu resd.
2519		C, C, M	2518.75m Sealed sample 2518.97m	Sst: pale yel brn, fri, m, well rnd, sl tr gy orng arg mtx, sl calc, dom silic cmt, well srtd, no vis por.	10% spotty dull yel flu, fast streaming yel flu cut, dull grn yel flu resd.
		C, M		Sst: m - f, mod srtd a/a.	5% patchy v dull yel flu, slow streaming grn yel flu cut, v dull grn yel flu resd.
2520		Not recovered	2519.70m 2520.00m		

Norsk Hydro

Well no.	Core report	Core nos
30/6–10A		5

Interval	Area	Cut	Date
2520–2525 m	Norwegian North Sea	2520–2537 m	31.12 1982– 1.1 1983
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2520–2535.9 m, 94%	Henderson/Allack

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
			2520.46m Sealed sample 2520.77m	**Sst:** pl yel brn - gy orng, m - f, loc m - crs, firm - mod hd, ang - subang, silic cmt, slty, arg mtx, clr Qtz, tr mafic min, tr Mica, tr Pyr, massive coarse X - lam, mod srtd, fair vis por.	No vis oil stn, 20–40% spotty weak yel flu, fast streaming dull yel grn flu cut, yel grn flu resd, no vis cut or resd. Petr odour.
2521		C M	2521.27m 2521.38m	**Slst:** m gy, mod hd, blky - subfis, micro-mic, carb, non calc.	Tr yel grn flu resd only.
			2521.61m Sealed sample 2521.82m		
2522		C M	2522.12m	**Slst:** m gy, mod hd, blky - subfis, v arg grdg **Clyst**,bcmg less arg, micromic, carb, loc tr lig, non calc.	Tr yel grn flu resd only.
2523		C M	2522.95m Sealed sample		
		M C	2523.35m 2523.50m	**Slst:** a/a loc cntrt lam **Sst:** v lt gy, vf - slty, poor por.	On **Sst:** 100% strong yel flu, fast streaming yel grn flu cut, yel grn flu resd, petr odour. No show.
2524		M	2524.00m 2524.20m	**Sh:** olv gy, mod hd, brit, blky, loc subfis, loc waxy lustre on slickenslides, slty grdg **Slst**, micromic, non calc. **Sst:** olv gy - lt olv gy, f - slty, predom v f, mod hd, subang, arg mtx, com Musc on lam, poor - mod srt, no vis por.	30% patchy lam yel flu, slow streaming yel - wh flu cut, yel grn flu resd, petr odour.
		M M M	2524.71m Sealed sample		
2525		M	2525.00m		

Norsk Hydro

Well no.	Core report	Core no s
30/6–10A		5

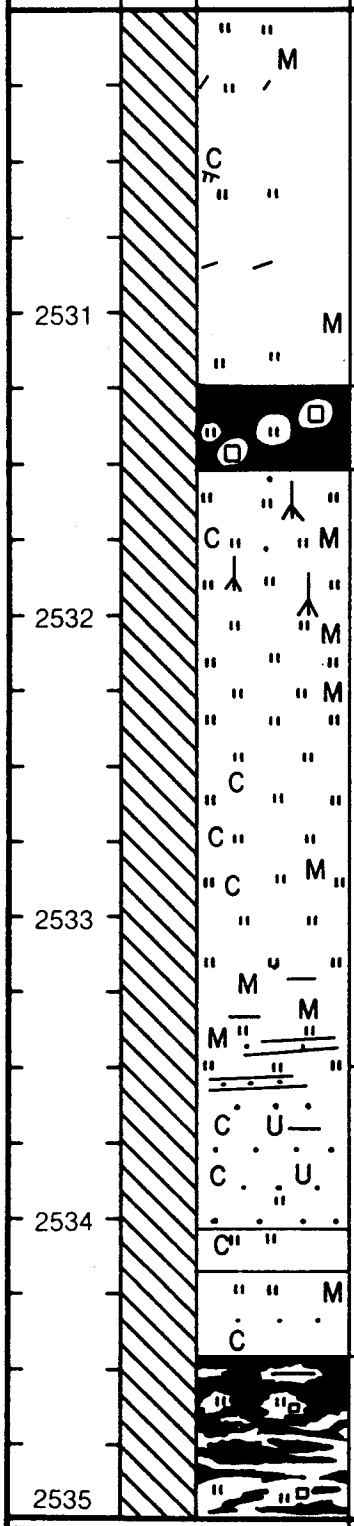
Interval	Area	Cut	Date
2525–2530 m	Norwegian North Sea	2520–2537 m	31.12.1982–1.1.1983
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2520–2535.9 m. 94%	Henderson/Allack

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
			2525.01m	Sh: olv gy, m dk gy, mod hd, blky - subfis, carb, sl - loc v slty, pyr, loc slickenslides, loc micromic, non calc, occ tr Coal: blk - brn blk, hd, brit, loc vitr, loc slty.	No show.
2526					
			2526.60 m	Sh: a/a slty - v slty, loc grdg Slst: olv gy, mod hd, brit, blky, arg, carb, plant frags, micromic.	No show.
2527					
			2527.55 m	Sst: olv gy - pl yel brn, v f, mod hd - firm, subang - subrnd, arg mtx, slty, rr mica, mod srt, poor vis por.	80% patchy bright yel flu, fast streaming yel - wh flu cut, yel - grn flu resd, petr odour.
			2527.63m Sealed sample		
2528			2527.94m	Sh: a/a com slickenslides around loc com pyr nod, 1–2 cm.	No show.
			2528.00 m		
			2528.55 m	Slst: olv gy - lt olv gy - m dk gy, mod hd, blky - plty loc subfis, arg - v arg bcm v f sdy, loc abn pyr, loc abn plant frags, lig, carb, micromic.	Occ tr v slow grn yel flu crsh cut, yel flu resd.
2529					
			2529.70 m.	Sh: a/a.	
2530					

Norsk Hydro

Well no.	Core report	Core no s
30/6–10A		5

Interval	Area	Cut	Date
2530–2535 m	Norwegian North Sea	2520–2537 m	31.12.1982–1.1. 1983
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2520–2535.9 m, 94%	Henderson/Allack



Depths	Lithological descriptions	Shows
	Sh: olv gy, mod hd, brit, blky - plty - subfis, loc waxy, slty, tr carb, tr micromic, non calc.	No show.
2531.25 m	**Coal**: blk - brn blk, hd, brit, blky. loc slty, loc vit, abn plant frags.	
2531.50 m	**Slst**: olv - lt olv gy - m - m dk gy, mod hd, brit, blky - subfis, loc v f sdy, loc v carb, micromic, tr pyr, loc arg grdg **Sh**; m dk gy, mod hd, brit, plty - subfis, slty, com plant frags, micromic, non calc.	
2532.17m Sealed sample		
2532.53m		
2533.5 m		
2533.73m Sealed sample 2533.92m	**Sst**: pl yel brn - olv gy, f - slty, mod hd - fri, subfis, subang - subrnd, slty arg mtx, com carb, arg intra lam, loc intra lam **Sh** a/a.	30–50% lam bright yel flu, fast streaming yel - wh flu cut, yel - grn flu resd, petr odour.
2534.45m	**Coal**: blk - brn blk, hd, brit, blky, loc vitr, loc slty, loc v arg grdg **Sh**.	No show.

Norsk Hydro

Well no.	Core report	Core no s
30/6–10A		5

Interval	Area	Cut	Date
2535–2537 m	Norwegian North Sea	2520–2537 m	31.12.1982 1. 1.1983
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2520–2535.9 m, 94%	Henderson/Allack

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
			2535.26m		
		C M	2535.40m Sealed sample 2535.63m	Slst: olv gy, mod hd. brit, blky, subfis. arg grdg Sh, abn plant frags. tr micromic, non calc.	No show.
2536		Not recovered	2535.90m		
2537			2537m		
2538					
2539					
2540					

Norsk Hydro

Well no.	Core report	Core no's
30/6–10A		6

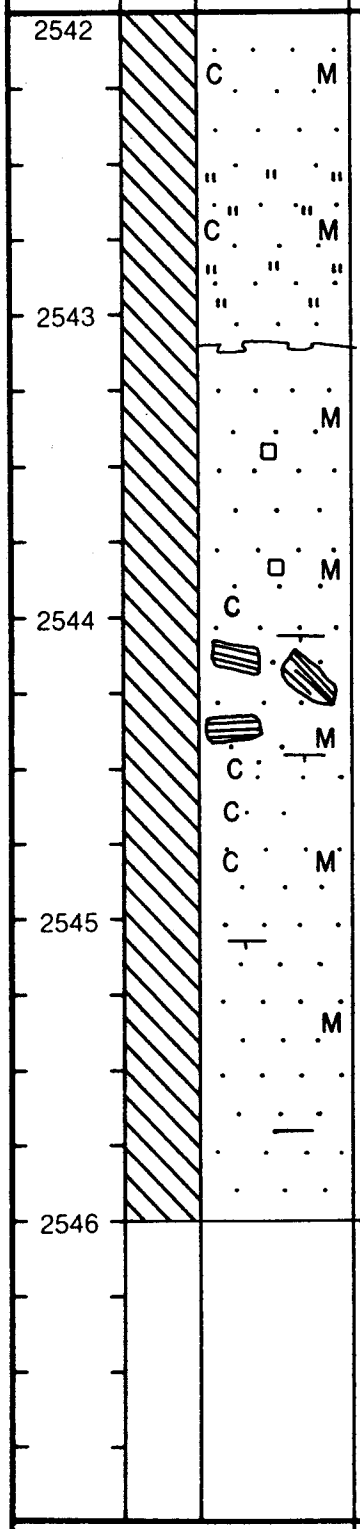
Interval	Area	Cut	Date
2537–2542 m	Norwegian North Sea	2537–2546 m	1.1.83
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2537–2546 m, 100%	Allack/Henderson

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2537				Slst: brn gy, mod hd, subfis, micromic, pyr, carb, abn carb rootlets, non calc.	
			2537.40 m	Sh: brn blk, mod hd, fis, carb.	No show.
			2537.90 m	Sh: brn blk, gy blk, mod hd, subfis, carb, occ slty bnds, pyr, micromic.	
2538			2538.25 m	Sh: blk, mod hd, fis, v sl micromic, v carb pt grdg Coal: blk, dull, mod hd.	No dir flu, v dull grn yel flu cut, dull brn yel flu resd
			2538.70 m 2538.75 m	Slst: dk gy, mod hd - hd, blky, pyr, abn blk f disseminated carb mat.	
2539			2538.95 m 2539.14 m Sealed sample 2539.37 m	Sst: dusky yel brn, v hd, m occ crs, subrnd - rnd, silic cmt, well srtd, no vis por.	
			2539.40 m	Sh: olv blk - gy blk, mod hd, subfis, sl micromic, sl pyr, v carb.	
2540					No show.
			2540.20 m	Coal: blk, dull, mod hd, irr frac, arg.	
			2540.50 m	Sh: dk gy - blk, mod hd, blky, subfis, sl micromic, abn carb/coaly partings, lam + streaks.	
2541			2541.25 m	Coal: blk - brn blk, mod hd, sub conchoidal frac, v arg.	
			2541.50 m	Clyst: brn gy - m gy, v hd, blky, sl micromic, sl slty, silicified.	
2542			2541.80 m		

Norsk Hydro

Well no.	Core report	Core no's
30/6–10A		6

Interval	Area	Cut	Date
2542–4546 m	Norwegian North Sea	2537–2546 m	1.1.83
Scale 1:25	**Well R.K.B.** 23 m	**Recovery** 2537–2546 m, 100%	**Geologist** Allack/Henderson



Depths	Lithological descriptions	Shows
	Sst: lt olv gy, mod hd, vf - f, ang, occ mica, sl carb, mod well srtd.	Fast/instant grn yel flu flu cut, v dull brn yel flu resd.
2542.41m Sealed sample		
2542.66m	Sst/Slst: lt olv gy, mod hd, slty - vf, ang, sl micromic, occ mica lam, silic cmt, mod srtd, no vis por.	5% streaky v poor yel flu, v weak blu/yel flu crsh cut, v weak brn flu resd.
2543.10m	Sst: lt gy, v hd, spltry, m, rnd, sl, micromic, abn, large wood frags, occ pyr, completely silicified, well srtd, no por.	80% fair- good bright yel flu, no cut.
2543.80m Sealed sample		
2544.09m	Sst: m olv gy, mod hd, m occ f, subang, arg mtx, occ mica partings, sl carb, silic cmt, mod well srtd, no vis por.	5% spotty/patchy dull yel flu, fast streaming grn yel flu cut, brn flu resd.
	Sst: m olv gy, mod hd, m, subang - subrnd, mica, silic cmt, well srtd, fair por.	No show.
	Sst: m olv gy, m - f, subang, tr arg mtx, sl micromic, silic cmt, mod srtd, mod vis por.	Poor grn yel flu cut, brn flu resd.
2546.00m		

Norsk Hydro

Well no.	Core report	Core no s
30/6–10A		7

Interval	Area	Cut	Date
2546–2551 m	Norwegian North Sea	2546–2564 m	2.1.83
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2546–2561.18 m, 84%	Henderson/Allack

Depth scale	Recovery	Lithological column	Depths	Lithological descriptions	Shows
2547		M	2546.40 m Sealed sample 2546.80 m	**Sst**: dk yel brn - lt olv gy, m - f, mod hd - fri, brit, blky, subrnd - subang, v pr silic cmt, loc arg slty mtx, mica-micromic, Musc, loc tr carb, mass, occ discont mica lam, mod - well srtd, fair - good - occ poor vis por.	1–5% yel flu, slow streaming - non streaming yel grn flu cut, weak yel orng - yel grn flu resd. Petr odour.
2548		M	2547.55 m Sealed sample 2547.90 m		
2549		M	2548.44 m Sealed sample 2548.75 m		
2550		C C M	2549.34 m 2549.46 m Sealed sample 2549.88 m	Abn **Coal** and **Lig** frags as chunks and irreg lam: blk - brn blk, vitr - slty, loc fibrous.	
2551				**Coal**: a/a. Loc abn lam of mica and carb, dip 20–25°. Discont coaly lam.	

Norsk Hydro

Well no	Core report	Core no s
30/6–10A		7

Interval	Area	Cut	Date
2551–2556 m	Norwegian North Sea	2546–2564 m	2.1. 1983
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2546–2561.18 m, 84%	Henderson/Allack

Depth scale	Re · covery	Lithological column	Depths	Lithological descriptions	Shows
		C M	2551.23 m	Coal/Lig	0–5% yel flu, slow streaming - non streaming yel grn flu cut, yel orng - yel grn flu resd.
		M	2551.32 m Sealed sample	Sst: a/a.	
			2551.67 m	Coal.	
2552		M	2552.12 m	Abn coaly lam, dip 20–25°.	
			2552.30 m	Sst: lt olv gy - dk yel brn, f - m, mod hd - fri, brit, blky, subrnd - subang, pr silic cmt, slty arg mtx, micromic, tr carb, mass, mod - poor srtd, fair - poor por.	
		C M			
2553		M		Coaly flecks.	
			2553.43 m Sealed sample		
			2553.72 m		
2554		C M			
		M			
			2554.93 m Sealed sample		
2555			2555.31 m		
		M			
		C			
2556		M			

Norsk Hydro

Well no	Core report	Core no s
30/6–10A		7

Interval	Area	Cut	Date
2556–2561 m	Norwegian North Sea	2546–2564 m	2.1. 1983
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2546–2561.18 m, 84%	Henderson/Allack

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
				Coaly flecks.	
			2556.38	Sst: a/a.	5–10% yel flu, fast streaming yel flu cut, yel grn flu resd.
			Sealed sample		
			2556.82	Pyrite nodules.	
2557					
				Abn Coal frags.	No show.
			2557.70	2557.7–2557.72 m:	
			2557.72	Sst: a/a grdg Sst: m dk gy, v f - slty, occ f - m, mod hd, blky - subfis, v slty grdg Slst, arg, v mica, carb, poor srt, no vis por.	40% yel flu, fast streaming bri yel - wh flu cut, yel flu resd.
			2557.94		
2558			Sealed sample		
			2558.22	Sst: lt - olv gy - dk yel brn a/a, dip 40–45°.	
				Coaly flecks,dip 30–35°.	
			2558.82	Slst: m dk gy, mod hd, subfis - blky, v f sdy in lam and disseminated, loc grdg Sst, v arg, loc carb, micromic, loc cntrd and micro faulted.	Loc v slow non streaming yel wh flu cut, yel wh flu resd.
2559				Dip 25°	
				Sh: olv gy, mod hd, brit, blky - subfis, waxy, loc carb.	No show.
2560			2560.05		
			2560.25	Coal: blk - brn blk, hd, brit, blky - subfis, plant frags, loc vitr.	
			2560.5	Slst: a/a.	
2561					

Norsk Hydro

Well no.	Core report	Core nos
30/6–10A		7

Interval	Area	Cut	Date
2561–2564 m	Norwegian North Sea	2546–2564 m	2.1. 1983
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2546–2561.18 m, 84%	Henderson/Allack

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
			2561.18 m	Slst: a/a.	Tr yel grn flu crsh cut, yel grn flu resd.
2562		Not recovered			
2563					
2564			2564.00 m		
2565					

Well	Core report	Core nos
30/6–10A	4 of 4	7

Norsk Hydro

Well no	Core report	Core nos
30/6–10A		8

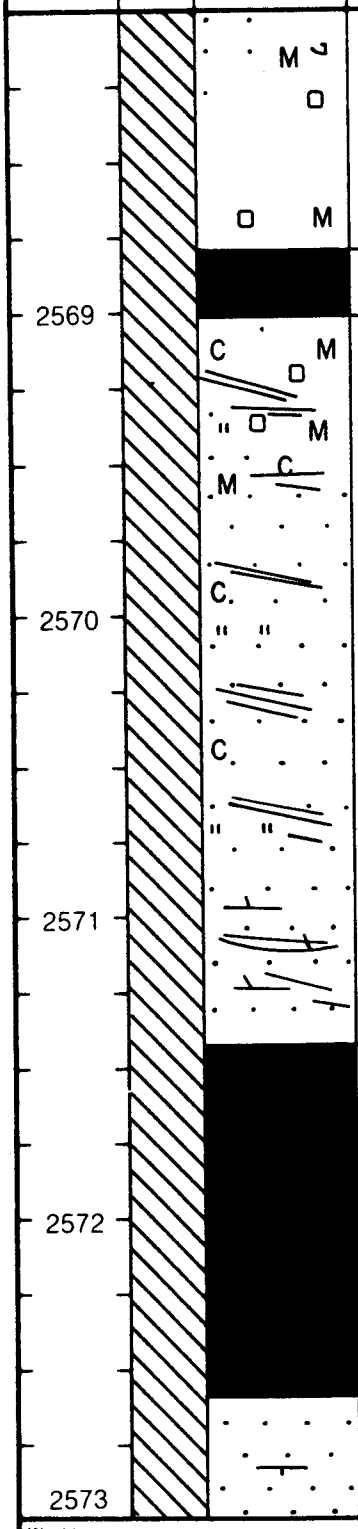
Interval	Area	Cut	Date
2564–2568 m	Norwegian North Sea	2564–2574.5 m	4.1. 1983
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2564–2573.18 m 87%	Allack/Henderson

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
		C		Slst: m dk gy, mod hd, subfis - blky, vf sdy in lam, v arg, loc carb, micromic.	
				Part of core 7 recovered with core 8, length 30 cm, depth unspecified but between 2561.18 and 2564.00 m.	
2564			2564.00 m	Sh: gy blk, mod hd, fis, pyr, micromic, v carb pt grdg Coal.	No show.
		M		Slst: m dk gy - brn gy, firm - mod hd, fis, v mica, arg, rr vf sdy.	70% dull yel flu, slow grn crush flu cut.
			2564.83 m	Sh: brn gy, mod hd, subfis, pyr, pt grdg Coal.	No show.
2565		C M		Slst/Sh: m dk gy, mod hd, fis, micromic, pyr, sl carb.	
		C M			
				Sst: m dk gy - brn gy, mod hd - hd, vf - slty, mica, sl carb, pyr, pyr/silic cmt, no vis por.	90% even dull yel flu, v fast streaming blw yel flu cut.
2566		M C			
		M C			
			2566.45 m	Coal: gy blk, blk, mod hd, sl micromic, arg, sl pyr.	No show.
			2566.65 m	Sst: brn gy - m dk gy, pt gy blk, mod hd, vf, ang, arg, v slty, mica + coaly lam, flecks + streaks, X - lam, silic cmt, poorly srtd, no vis por.	80% patchy yel flu, slow dull grn yel flu cut.
		C M			
2567			2567.08 m		
		C M			
		C M			
			2567.66 m Sealed sample 2567.87 m	Sst: a/a, pyr, occ pt grdg Slst.	50% flu a/a, v fast, streaming dull yel grn flu cut.
2568					

Norsk Hydro

Well no.	Core report	Core no s
30/6–10A		8

Interval	Area	Cut	Date
2568–2573 m	Norwegian North Sea	2564–2574.5 m	4.1.1983
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2564–2573.18 m, 87%	Allack/Henderson



Depths	Lithological descriptions	Shows
	Sh: blk - gy blk, mod hd, blky, subfis, pyr, v sl micromic.	No show.
2568.75 m	**Coal:** blk, mod hd	
2569.00 m		
2569.73 m Sealed sample 2570.00 m	**Sst:** m lt gy - lt olv gy, mod hd-hd, vf,lg ang, slty mtx, mica, sl carb, silic cmt, poorly srtd, no vis por.	40% patchy dull yel flu, v poor dull blu crush flu cut.
2570.41 m Sealed sample 2570.63 m	**Sst:** lt brn gy, mod hd - hd, vf - f, ang - subang, sl slty mtx, micro lam, silic cmt, poorly srtd, no vis por.	V poor dull grn cut.
2571.40 m	**Coal:** blk, mod hd, uneven - sub conchoidal frac, sl arg, sl micromic, pyr, occ pt grdg **Sh:** a/a.	
2572.60 m	**Sst:** pale yel brn, v fri, lse in pts, pred m - rr f, subang, v sl tr gy orng arg mtx, weak silic cmt, well srtd, v good vis por.	Instant poor dull blu yel flu cut.

Norsk Hydro

Well no	Core report	Core nos
30/6–10A		8

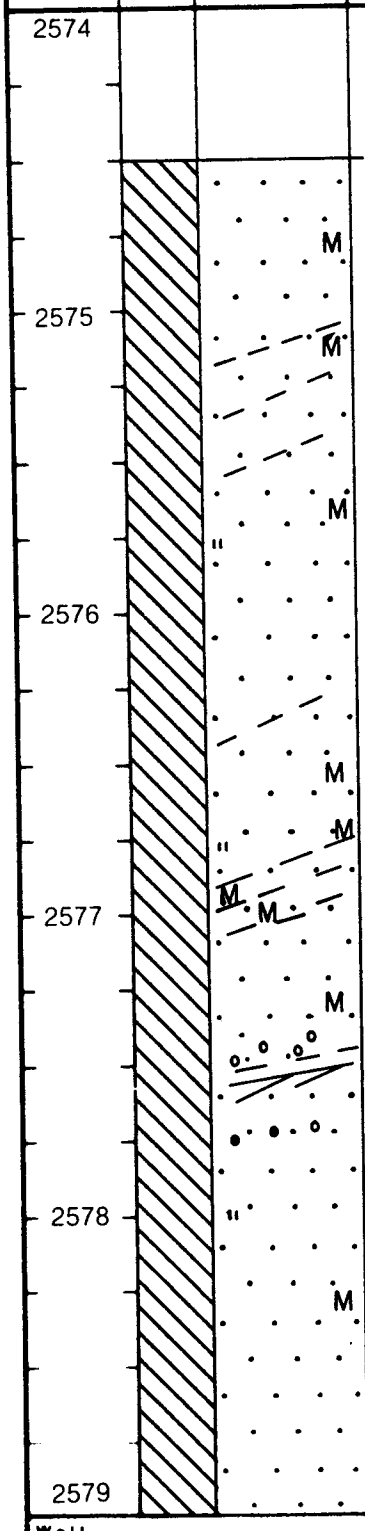
Interval	Area	Cut	Date
2573–2574.5 m	Norwegian North Sea	2564–2574.5 m	4.1. 1983
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2564–2573.18 m, 87%	Allack/Henderson

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
2574		Not recovered	2573.18		
2575			2574.5		
2576					
2577					
2578					

Norsk Hydro

Well no	Core report	Core no s
30/6–10A		9

Interval	Area	Cut	Date
2584–2588 m	Norwegian North Sea	2574.5–2588 m	1.1. 1983
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	2574.5–2587.92 m, 99%	Henderson/Allack

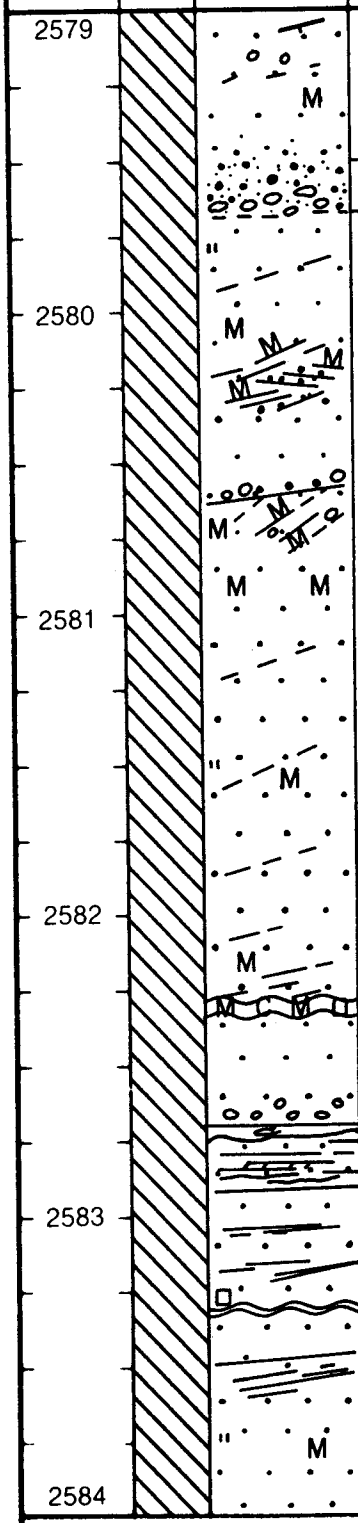


Depths	Lithological descriptions	Shows
2574.50 m Sealed sample 2574.90 m	Dip 40° **Sst:** dk - pl yel brn, crs - f, predom m, mod hd - fri, brit, subang - subrnd, v pr silic cmt, tr - v good pl yel brn arg mtx, sl slty, tr mica, rr to pyr, massive w occ large scale X - bdg and occ arg lam, loc flaggy, mod - pr srt, no - mod vis por, occ v good vis por. Dip 20°	Tr weak yel flu, fast streaming yel - wh flu cut, yel - orng yel flu resd, petr odour.
2576.15 m Sealed sample 2576.60 m	Dip 35°	
	Loc v flaggy, v arg mica lam.	
	Dip 30–40° Pebbles 0.5–2 cm, Qtz, scattered.	
2578.02 m Sealed sample 2578.45 m		

Norsk Hydro

Well no	Core report	Core no s
30/6–10A		9

Interval	Area	Cut	Date
2579–2584 m	Norwegian North Sea	2574.5–2588 m	1.1. 1983
Scale	**Well R.K.B**	**Recovery**	**Geologist**
1:25	23 m	2574.5–2587.92 m, 99%	Henderson/Allack



Depths	Lithological descriptions	Shows
	Coaly discont. lam. Sst: a/a w loc peb Qtz, 0.5–1 cm. dip 10°. Cgl: clr and mlky Qtz pbls, 0.5–2 cm, subrnd - rnd, in mtx of Sst: a/a, dk - pl yel brn, m - crs, occ f, mod hd, brit, subang - subrnd, pr silic cmt, pl yel brn arg mtx, loc micromic, mass, loc flaggy arg lam, loc small scale X - bdg, poor - mod srt, no - loc good vis por.	Tr dull yel flu, slow streaming yel - grn flu cut, yel - orng yel flu resd, petr odour.
2579.50 m		
2579.67 m		
2579.94 m	Dip 10°.	
Sealed sample		
2580.23 m	Loc pbls Qtz, 0.5–2 cm. Dip 45°.	5% dull yel flu, cut and resd a/a.
2581.37 m	Sst: a/a.	
Sealed sample		
2581.82 m		
2582.27 m	Dip 30°. Sh: m dk gy, mod hd, brit, fis, sl slty, v mica partings, v carb, pyr, ripple bdg.	No show.
2582.30 m		
2582.68 m	Sh: a/a w burrows interlam Sst a/a f - v f, occ m, and Sh: a/a.	No show.
2582.90 m	Sst: a/a, m. Dip 30–40°. Sh: m dk gy, mod hd, brit, subfis, slty, micro pyr, carb, ripple bdg.	20% lam yel flu v slow streaming yel grn flu cut, yel - orng yel flu resd.
2583.28 m		No show.
2583.31 m	Sst: dk - pl yel brn gen a/a, crs - m, poor srtd, fair por.	10% spotty yel flu, fast streaming yel grn flu cut, yel - orng yel flu resd, petr odour.
2584.00 m		

Norsk Hydro

Well no	Core report	Core nos
30/6–10A		9

Interval	Area	Cut	Date
2574.5–2579 m	Norwegian North Sea	2574.5–2588 m	5.1. 1983
Scale	**Well R.K.B**	**Recovery**	**Geologist**
1:25	23 m	2574.5–2587.92 m, 99%	Henderson/Allack

Depth scale	Recovery	Lithological column	Depths	Lithological descriptions	Shows
2584			2584.00 m		
				Sst: dk yel brn - lt olv gy, f - vf, mod hd, brit, blky - fis, subang - subrnd, v pr silic cmt, slty arg mtx, mod - v mica, loc com arg mica lam, loc carb, flaggy, poor - mod srtd, poor por. Dip 20–30°.	50–90% lam dull yel flu, fast streaming yel - wh flu cut, yel - orng flu resd, petr odour.
			2584.71 m Sealed sample 2584.98 m		
2585					
2586			2586.08 m	Load casted and ripple bdd Sh: dk - m dk gy, mod hd, brit, subfis, carb, loc v mica, loc slty, loc intra lam Sst.	Show in Sst int lam a/a.
			2586.22 m		tr yel flu, fast streaming yel grn flu cut, yel - orng flu resd, petr odour.
			2586.67 m Sealed sample	**Sst:** dk - pl yel brn - olv gy, crs - m, fri, subrnd - subang, poor pate yel brn arg mtx, rr mica, mass, mod - well srt, good por.	
2587			2587.00 m		
			2587.92 m		
		Not Recovered	2588.00 m		
2588					

Norsk Hydro

Core report

Well no.	Core no's
30/6–10A	10

Interval	Area	Cut	Date
0–4 m	Norwegian North Sea	2588–2606,5 m	6.1.83
Scale	**Well R.K.B.**	**Recovery**	**Geologist**
1:25	23 m	4 m (22,2%)	Nilsen/Edvardsen

Depth scale	Re-covery	Lithological column	Depths	Lithological descriptions	Shows
0		M M M M	0,28 m Sealed sample 0,52 m	Sst: olv gy, clr - milky Qtz, crs - v crs, rr pbly, fri, subang - subrnd, wh - lt gy - olv gy cly mtx, abn Musc, coal frags, mod - well srtd, good por.	Dk brn oilstn, 100% dull - pred bri yel wh flu, inst - fast streaming strong bri wh yel - wh flu cut, gy orng pink flu resd, m brn vis resd, dk brn vis resd ring, v strong HC-odour.
1			1,28 m Sealed sample 1,64 m	Due to parting of inner barrel only 22.2% of this core was recovered, and it is impossible to relate the core to any depth. The oilshows on the core put it below the gas/oil contact at 2594 m.	
2		M M M M	1,97 m Sealed sample 2,28 m	Sst: a/a, crs - pbly, mod srtd.	
3		M M M	3,34 m Sealed sample 3,72 m	Sst: a/a, crs - v crs, rr pbly, well srtd.	
4					

APPENDIX 2

WELL SUMMARY

GEOLOGICAL WELL SUMMARY

RFT RESULTS

DST RESULTS

WELL SUMMARY

Coord: 60°36'29.53"N Utm: 6 719 328.2mN
02°46'24.74"E 487 600.6mE
Seismic Line: 913 133 SP: 615 Zone 31.3 E
Rig: Treasure Scout
Water depth: 109m (msl)
Stopped in: Lower Jurassic (Dunlin Grp.) Shales

Started operations: December 2. 1982
Started drilling formation: December 13. 1982
At T.D: January 13. 1983
Completed: March 4, 1983
T.D. driller: 2665m MD (2577mTVD)
T. D. logger: 2656m MD (2570mTVD)
Wireline logging: Schlumberger. Mudlogger: Ex-log

WELL 30/6-10A SIDETRACK

COUNTRY NORWAY

OPERATOR Norsk Hydro A.s

LICENCE 053

OWNED BY Statoil/N.H./Elf/Mobil/Saga/Total

TARGETS

Gas/oil contact in the Etive Fm of the Brent Grp.

RESULTS

Oil and gas discovery in the Brent Group sandstones:
Brent Group:
Interval: 2429–2531m TVD
GWC: 2520m TVD
Net Pay: 58m
ϕav: 24.4%, Sw av: 27%

CASING

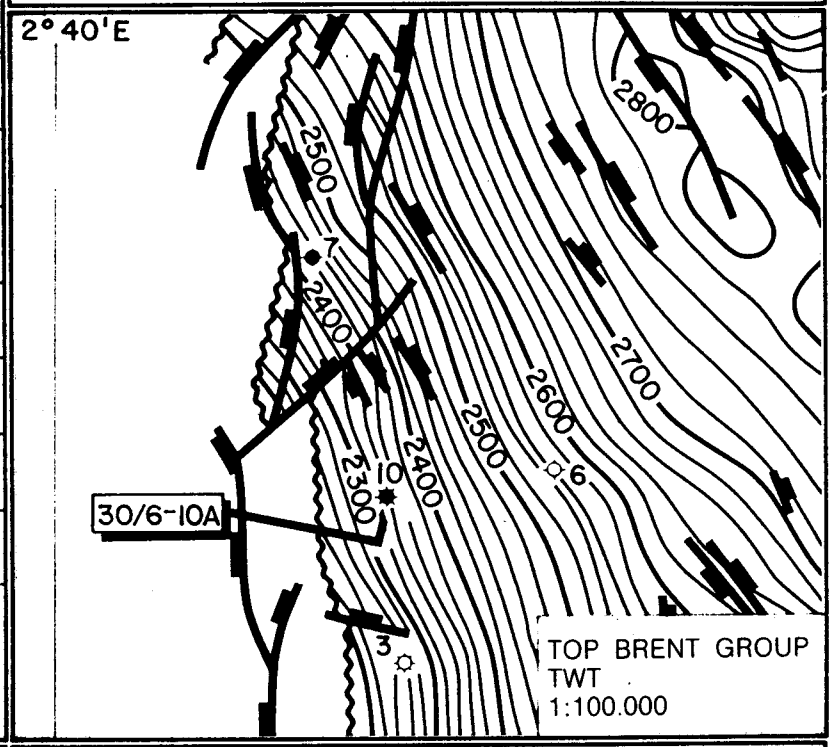
13⅜" at 2138m
(this well sidetracked through window in 13⅜" csg between 1788-1803m)
9⅝" at 2652m

GAS RECORD

1788-1980m: 0.06-0.24% C1 TR C2
1980-2265m: 0.4% C1. C2. occ C3. C4
2265-2449m: 0.2-2.8% C1-C3. occ C4
2449-2572m: 0.08-0.28% C1-C3
2572-2665m: 0.1-0.76% C1-C3

CORES

Core No. 1	Cut: 2467-2477.5m Rec: 2467-2475.68m 83%
Core No. 2	Cut: 2477.5-2496m Rec: 2477.5-2495.60m 98%
Core No. 3	Cut: 2496-2515m Rec: 2496-2512.80m 88%
Core No. 4	Cut: 2515-2520m Rec: 2515-2519.7m 94%
Core No. 5	Cut: 2520-2537m Rec: 2520-2535.90m 94%
Core No. 6	Cut: 2537-2546m Rec: 2537-2546m 100%
Core No. 7	Cut: 2546-2564m Rec: 2546-2561.16m 84%
Core No. 8	Cut: 2564-2574.5m Rec: 2564-2573.18m 87%
Core No. 9	Cut: 2574.5-2588m Rec: 2574.5-2587.92m 99%
Core No. 10	Cut: 2588-2606.5m Rec: 2602.5-2606.5m 21.6%



LOGS

ISF/LSS GR/SP	1786,5-2654m	1*
LDT/ CNL/ CAL	1786,5-2650m	1*
NGT	2330-2640m	1
DLL MSFL	2340-2648m	1*
HDT	1786,5-2654m	1
Cluster Dip	1791–2654m.	1
Geo Dip	2480–2620m	1
EPT	2350-2625m	1
RFT	2481,5-2607m 2605,5m 2592m	1 2 3

* Also computed into T.V.D. logs.

OIL SHOWS

On Lst strgs 1980-2449m:
-fair bn-dull yel orng flu, v slow-fast strong faint wh yel flu cut, weak dull orng brn-br yel wh resd flu occ pl brn v s cut.
On cores:
on Slst core 1 (2467-2477.5m): v pr grn blue crush cut, occ dull yel wh flu cut, yel wh flu resd.
on Sst (2477.5-2510m): occ tr v dull yel flu, slow dull grn yel flu cut, faint yel flu resd.
on Sst (2510-2587.92m): 5-100% spotty or uniform dull-br yel flu, slow-fast dull grn yel-yel wh flu cut, dull-br grn yel-yel brn flu resd.
on Sst (4m rec. in core no 10): 100% bright yel wh flu, fast to inst strmg strong bri wh - yel wh flu cut, gy orng pnk flu resd.

J. H. Skogen
28.7.83

GEOLOGICAL WELL SUMMARY

DEPTH m RKB (M.D.)	LITHO SECTION	SYSTEM	SERIES/STAGE	FORMATION	DESCRIPTIONS.	SHOWS

LOCATED ON 60°36'29.53"N 02°46'24.74"E
LINE 913 133 **SP** 615
UTM: 6719328,2 m N 487600,6 m E Zone 31,3°E
WATER DEPTH 109 m (MSL)

WELL 30/6-10A SIDETRACK

WELL SIDETRACKED FROM 1788 m THROUGH WINDOW IN 13⅜" CSG (1788–1803 m).

NOTE: ALL DEPTHS ARE MEASURED DEPTHS.

1788m (TVD IN BRACKETS)

Clyst Sh: m dk - dk gy. grn gy. m brn. firm - mod hd. subfis. slty - v slty. m - mic. non calc. pyr. sl glau. Strgs Lst and Dol.

1982m (1980m)

Clyst Sh: m gy - gy blk. gy brn. m - dk brn. grn gy. dk grn. lt - m blue gy. firm. blky - subfis. mod - v slty. m - mic. non - mod calc.

2053m (2050m)

Tr Tuff: pl - m blue gy. abn vf wh and blk specks. Tr Pyr Strgs Lst: pl - dk yel brn. micro - crypto xln. with pr shows

2168m (2160m)

Clyst Sh: m dk - dk grn gy. olv gy. gy brn - v dusky rd. sft - mod hd. blky - subfis. slty - v slty. non - sl calc. occ v calc grdg Mrl. Strg Lst: occ w/pr shows.

2264.5 m (2249.5m)

Clyst: m lt - m dk gy. sft - firm. blky. rr subfis. sl slty. pyr. non - mod calc. Strgs/intbds Lst: lt brn gy. lt gy. sft - firm. occ mod hd. occ arg. crypto - micro xln. w/pr - fair shows. Mrl: m lt - m gy. sft. amorph.

2448m (2404)

Sh: gy blk - brn blk. mod hd. subfis. m - mic. carb. v slty. pyr. non - sl calc

- - - 0.2–2.8%, C1–C3, occ C4 - - - 0.1–0.4% - C1, C2 occ C3, C4 - - - 0.06–0.24%, C1, TR C2 -

GEOLOGICAL WELL SUMMARY

LOCATED ON	LINE 913 133 SP 615	WELL
60°36'29.53"N	UTM: 6719328.2 m N	30/6-10A
02°46'24.74"E	487600.6 m E	
WATER DEPTH 109 m (MSL)	Zone 31,3°E	

DEPTH m RKB | LITHO SECTION | SYSTEM | SERIES/STAGE | FORMATION | DESCRIPTIONS. | SHOWS

2467

2480m (2429m)

Sst: m, occ f - v crs, mod hd - fr, arg mtx, m - mic, carb, silic cmtd, no - gd vis por, w/pr - fair shows. Intbd w/Sh, Slst and Coal strgs.

2500

Core 1–10

2550

2572m (2502m)

Sst: f - crs, occ cgl, cly mtx, pr silic cmt, occ cly mtx, pr - v gd por, pr - fair shows, gd shows below.

2600

2606.5

2608m (2531m)

Sh: olv gy - olv blk, mod hd, blky - subfis, slty, occ grdg **Slst**, micromic abn pyr, non - mod calc.

2650

T.D. DRILLER: 2665m(2577mTVD)
T.D. LOGGER: 2656m(2570mTVD)

2700 2750 2800 2850 2900 2950 3000 3050 3100 3150 3200 3250 3300 3350 3400 3450 3500 3550 3600 3650 3700

JURASSIC

MIDDLE

LOWER

NESS FM

ETIVE FM.

DRAKE FM

SHOWS: -- 0,1–0,76% C1–C3 ---

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

RFT RESULTS

WELL: 30/6–10 A

No	Depth(mRKB)	F.P.(PS)	PERM.
RUN 1			
1/1	2481.5	4041	V. good
2/1	2486.5	4043	»
3/1	2500.5	4047	Low
4/1	2508.5	4049	V. good
5/1	2511.5	4050	»
6/1	2520	4052	Good
7/1	2548.5	4059	V. good
8/1	2556.5	4061	»
9/1	2572.5	4066	»
10/1	2577	4066	»
11/1	2587	4070	»
12/1	2592	4070	»
13/1	2596	4073	»
14/1	2600	4076	»
15/1	2602.5	4078	»
16/1	2605	4080	»
17/1	2607	4082	Good
18/1	2596	4073	V. good

Took segr. sample at 2596 m and recovered from 2¾ gal chamber:
332.4 cu.ft. gas. 5.85 l oil. 0.65 l solids. (Drained on rigfloor).

RUN 2

1/2	2605.5	4078	V. good

Took segr. sample at 2605.5 and recovered from 2¾ gal chamber:
298.8 cu.ft. gas. 2.8 l oil. 3.5 l filtrate. 0.7 l solids.

RUN 3

1/3	2592	4067	V. good

Took segr. sample at 2592 m and recovered from 2¾ gal chamber:
736 cu.ft. gas. 0.5 l condensate with traces of oil.

NOTE F.P readings from H.P.-gage

Checked Jas
Date. 26.7.83

DST RESULTS

WELL: 30/6–10 A

DST 1

Perforated interval:	2600–2602 m
Choke size:	32/64"
Flow rates:	3540 STB/D, grav: 35,7° API 2,85 MMSCF/D, grav: 0,685
GOR:	805 SCF/STB

DST 2

Perforated interval:	2587–2590 m
Choke size:	40/64"
Flow rates:	1135 STB/D, grav: 58,7° API 19,3 MMSCF/D, grav: 0,660
GOR:	17 100 SCF/STB

DST 3

Perforated intervals:	2546–2555 m
Choke size:	40/64"
Flow rates:	1080 STB/D, grav: 60,2° API 19,7 MMSCF/D, grav: 0,655
GOR:	18 200 SCF/STB

DST 4

Perforated interval:	2480,5–2486,5 m
Choke size:	64/64"
Flow rates:	1590 STB/D, grav: 60,2° API 28,2 MMSCF/D, grav: 0,665
GOR:	17 800 SCF/STB

Checked: Jas
Date: 26.7.83

SECTION B

OPERATIONS

LIST OF CONTENTS

SECTION B

TABLES: Page

FIGURES:

1. LOCATION SURVEY

From 16 September to 18 September 1982 a site survey on the "Oseberg" field was performed by A/S Geoteam. The area surveyed was a 3.4 km x 3.4 km square aligened N-S centered at the planned drilling location. The grid spacing of the analog lines were 100 m and 150 m in the E-W direction and 450 m and 200 m in the N-S direction. Three digital profiles were run, N-S and E-W through the planned drilling location and the third going NNE-SSW from the southern end of the N-S trending profile through well 30/6-3.

The report from this work showed that the water depth in the surveyed area varies from 106 m in the south-eastern part to 112 m in the north-eastern part. At the planned drilling location the depth was found to be 108.1 m. A 12 m long and 7 m high object was found 500 m south-east of the planned drilling location. The object was interpreted to be a wreck. Apart from this the survey showed an even and featureless seabed.

From the seabed to 117 m below Mean Sea Level an uppermost laminated sequence of clay/silt/sand was found. From 117 m to 140 m the sediments were interpreted to be glacial sand and clay. From 140 m to 165 m a zone consisting of mainly clay sediments was interpreted. The sequence from 165 m to a partly strong reflector at 185 m was belived to consist mainly of sand. The sequence from 185 m to a partly very strong reflector at 295 m was interpreted to be sand with interbedded clay layers. The base of this unit was believed to be gas charged sand sediments.

2. POSITIONING AND ANCHORING OF THE RIG

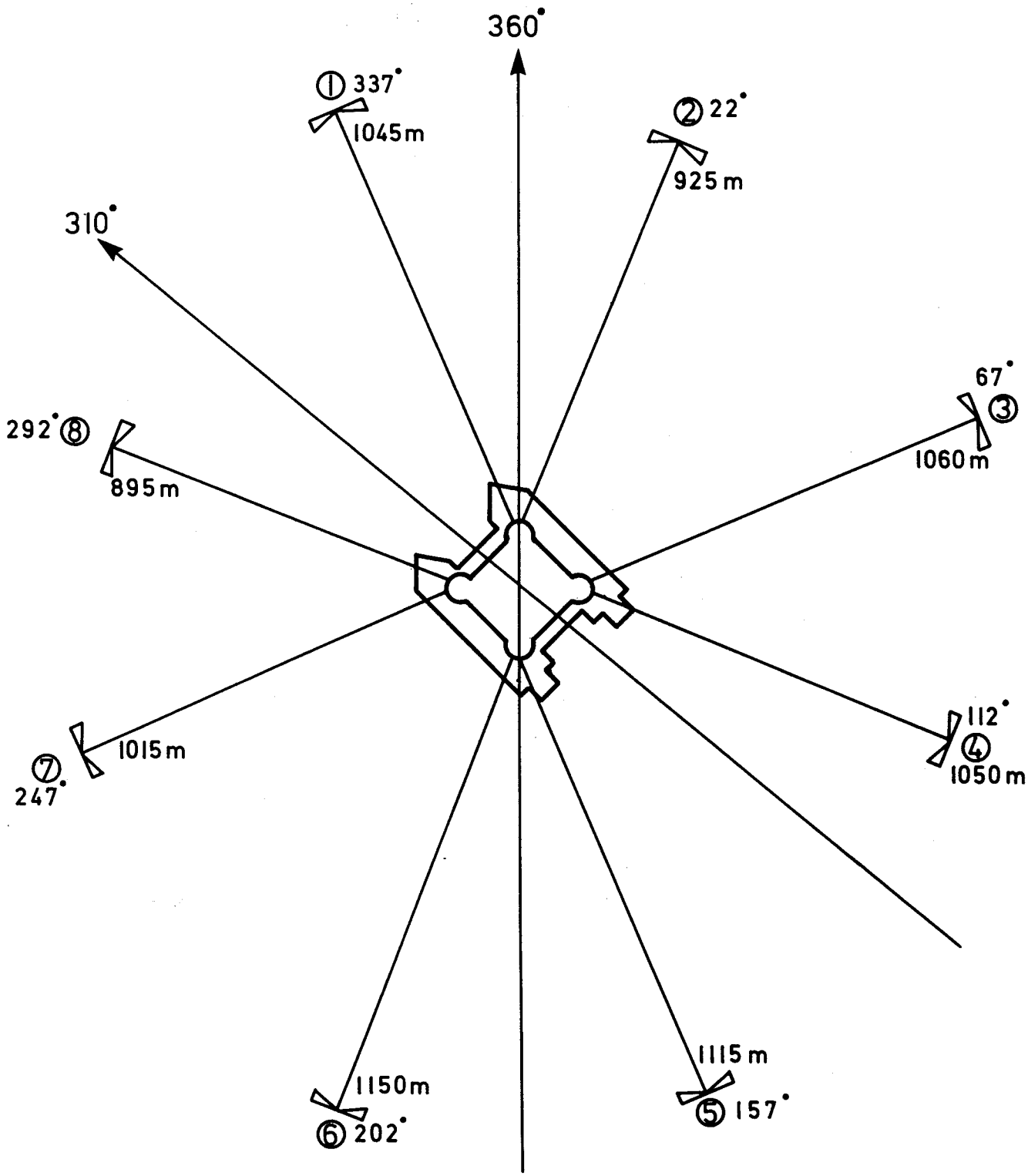
The positioning of the rig was carried out by A/S Geoteam. The Decca Pulse - 8 system was utilized for navigation. The position of the Pulse - 8 antenna was calculated based on the readings of four Pulse - 8 patterns.

Latitude 60° 36' 29.6" N
Longitude 02° 46' 24.2" E
The rig heading was 310°

Fig B-1 shows the anchor pattern, and the anchor tensions before spudding were

Chain no.1	1000 KN
Chain no.2	1000 KN
Chain no.3	1000 KN
Chain no.4	1000 KN
Chain no.5	1000 KN
Chain no.6	1000 KN
Chain no.7	1000 KN
Chain no.8	1000 KN

All anchors were pretensioned to 1267 KN prior to drilling out of the 30" casing.



HEADING: 310°

WELL COORDINATES: 60° 36' 29.6" N
02° 46' 24.2" E

Norsk Hydro Drilling Department	MOORING LINE PATTERN TREASURE SCOUT WELL 30/6-10 A	Gr. no.: 2	Fig.: B-1
		Date: 13.09.83. Sign: JTA / SF	Dwg. no.: 16

3. OPERATION RESUME

3.1 Summary drilling

Well 30/6-10A is a sidetrack from well 30/6-10. Moving in, setting of 30", 20" and 13 3/8" casing and plugging back of the 30/6-10 12 1/4" open hole is covered in the final report for 30/6-10. On December 1st the BOP was landed and tested, which is defined as the start of well 30/6-10A.

A window was milled in the 13 3/8" casing from 1788 m to 1803 m and a cement plug was set from 1873 m to 1725 m. Then work on the BOP took 47.5 hrs before dressing the cement with 12-1/4" bit from 1725 m to 1787 m. A mud motor and bent sub were used to kick off from the casing window and to drill to 2284 m. Lost 16 hrs waiting on weather.

From there a 12-1/4" bottom hole assembly was used to drill down to 2467 m. A total of 11 cores were cut from 2467 m to 2606.5 m. The lower marine riser package had to be disconnected and 27 hours were lost to waiting on weather.

The mudweight was cut back to 1.33 rd before the 12-1/4" hole was drilled to 2657 m. Due to heavy weather the drill string had to be hung off in the wellhead and the lower marine riser package unlatched. All four guide lines broke while attempting to relatch the lower marine riser package and a total of 87 hrs were lost waiting on weather and reestablishing the guide lines.

The 12-1/4" hole was continued to 2665 m, where the pipe got stuck and 32.5 hrs were used working the pipe free.

The following logs were run at 2665 m: ISF-LSS-GR-SP, CDL-CNL-NGL-CAL, DLL-MSFL, SHDT which was a misrun, HDT and EPT. Three runs with RFT were made taking samples at 2596 m, 2605.5 m and 2592 m.

After logging the 9 5/8" casing was run and set with the shoe at 2652 m. Bumped the plug and pressure tested the casing to 310 bar for 5 min.

3.2 Summary production testing

DST NO. 1

The well was plugged back to 2608 m and perforated from 2600-2602 m. Ran in with the test string, opened the well to the stock tank and flowed approximately 10 bbl of cushion. Shut in the well at the choke manifold and the tester valve for one hour. Opened the well for main flow and flowed the well to the burner, when clean effluent was obtained, flow was diverted through the separator. Stabilized the flow and took surface samples. Shut in the well for 6 hours. Ran in with bottom hole samplers but was not able to pass 2316 m. Opened the liquid pressure response valve and worked the wire line tool. Pulled out and got stuck at 2212 m. Heated the lubricator with steam while pulling. Injected glycol in the lubricator and steamed while working the wire. Opened the well for flow and the tool got free. Pulled out and closed the well. Flowed the well through the separator for a period of 2 hrs for 4000 BPD, 6000 BPD and 8000 BPD to check for sand production. Killed the well and pulled out of the hole with the test string.

DST NO. 2

Plugged back to 2596 m and perforated from 2587 m to 2590 m. Ran in the hole with the test string and opened the well for initial flow, flowed 11.6 bbl into the stock tank for 4 mins. Shut the well in for one hour for initial build up. Opened the well on 48/64" choke for final flow and flowed the well to the burner. Flowed through the separator and took surface samples. Shut the well in for pressure build-up for 9 hours. Killed the well and pulled out of the hole with the test string.

DST NO. 3

Plugged back to 2558 m and perforated from 2546 m to 2555 m. Ran in the hole with the test string, opened the well for initial flow and flowed the well for 10 mins to the stock tank. Shut in the well for initial build up for one hour. Opened the well for main flow period

and flowed the well to the burner. When clean effluent was obtained flowed the well to the seperator to take surface samples. Shut the well in for main pressure build-up. Killed the well and pulled out of the hole with the test string.

DST NO. 4

Plugged back to 2541 m and perforated from 2480.5 m to 2486.5 m. Ran in the hole with the test string and opened the well for initial flow, flowed the well for 6 mins. Shut the well in for one hour for initial pressure build up period. Opened the well for final flow for 12 hours before the well was shut in for final pressure build-up. The duration of the build-up period was 18 hours. Killed the well and pulled out of the hole with the test string. Continued the permanent abandonment of the well.

Norsk Hydro

Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
48		62 - 65 (1-4)	8	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"			
	Setting depth (m)	219	949	1788			

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
01/12	PBTD 2045		1.36	Repaired and stump tested the BOP stack. Repaired the BOP carrier before lowering the BOP. Modified the reentry overshot and reestablished guide lines No. 3 and 4 after several attempts. Moved the BOP, installed new VX-ring and prepared to run the BOP.
02/12	PBTD 2045		1.36	Ran the BOP and tested choke and kill lines. Nippled up kill-, choke- and booster lines. Positioned the rig, landed the BOP stack and pull tested to 224 kN. Installed the diverter. Ran in the hole with retrieving tool, retrieved wearbushing and pulled out. Ran in hole with test plug and tested the BOP. Slipped and cut drilling line. Pulled out with the test tool. Ran in the hole and seated the wearbushing. Tested surface equipment. Made up 11-3/4" casing cutter and ran in the hole. Picked up the marine swivel at 1660 m.
03/12	PBTD 2045		1.36	Ran in the hole to 1788 m and landed the swivel in the wellhead. Cut the 13-3/8" casing at 1788 m. Circulated and conditioned the mud. Flowchecked, pulled out and laid down cutting assembly. Ran in the hole with mill and milled 13-3/8" casing from 1788 m to 1791 m. Circulated bottoms up and pulled out of the hole. Redressed and made up casing mill, and ran in the hole to 1788 m. Reamed and washed to 1791 m.
04/12	PBTD 2045		1.36	Milled 13-3/8" casing from 1791 m to 1796 m and pumped high viscous pills at 1792 m and 1795 m. Repaired broken rotary drive coupling. Reamed and washed from 1793 m to 1796 m. Milled 13-3/8" casing from 1796 m to 1797 m.

Norsk Hydro

Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
48		66 (5)	9	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"			
	Setting depth (m)	219	949	1788			

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
05/12	PBTD 2045		1.36	Milled 13-3/8" casing from 1797 m to 1798 m. Pumped high viscous pill at 1797 m. Circulated bottoms up, flowchecked and pulled out with mill No. 2. Ran in the hole with mill No. 3 to 1796 m and reamed and washed to 1798 m. The hole fell in. Used 540 kN overpull to work the pipe free. Pulled out and ran in with 12-1/4" bit, worked through tight spot at 1791 m. Reamed and washed from 1791 m to 1807 m. Circulated, pumped slug and pulled out with 12-1/4" bit. Made up mill and ran in the hole.

Norsk Hydro

Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
49		67-69 (6-8)	10	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"			
	Setting depth (m)	219	949	1788			

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
06/12	PBTD 2045		1.36	Ran in the hole with mill No. 4 to 1788 m, reamed and washed to 1798 m. Milled at 1798 m but got no progress. Circulated and pulled out of the hole. Redressed the mill and ran in with mill No. 5 to 1788 m. Slipped 24' of the drilling line. Reamed and washed to 1798 m. Milled 13-3/8" casing to 1800 m. Welded on tie down bolts on rotary and circulated while welding. Milled at 1800 m, but got no progress. Pulled out of the hole, redressed the mill and ran in the hole with mill No. 6.
07/12	PBTD 2045		1.36	Milled from 1800 m to 1801 m. Pulled out of the hole and found three knives on the mill broken. Redressed the mill and ran in the hole to 1801 m. Milled 13-3/8" casing to 1803 m. Pulled out of the hole and laid down the mill. Slipped and cut the drilling line. Made up bit and ran in the hole to 1803 m. Circulated and worked the pipe through the stub. Made a connection and was not able to reenter without rotating. Deballasted the rig which was no success, the pipe came out of the stub.
08/12	PBTD 2045		1.36	Deballasted and repositioned the rig to enter the lower part of the 13-3/8" casing. It was not able to enter without rotation. Circulated while positioning the rig. Rotated and washed junk ahead of the bit to 1883 m. Circulated bottoms up, flowchecked, slugged the pipe and pulled out of the hole. Ran in with jet sub, washed the BOP and wellhead and worked all BOP functions. Washed the BOP and cleaned out choke and kill

Norsk Hydro

Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
49		70-73 (9-12)	11	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"			
	Setting depth (m)	219	949	1788			

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
				lines. Pulled out and laid down jet sub. Picked up and rebuilt hang off assembly. Ran in the hole with 3-1/2" drillpipe to 1873 m. Mixed and pumped cement. Pulled out to 1673 m and reverse circulated, had no return of cement. Pulled out of the hole.
09/12	PBTD 1725		1.36	Tested the BOP while waiting on cement. Failed to test upper pipe ram. Tested the cement plug to 2100 psi for 10 min. Pulled the BOP stack. Changed damaged top seal, 2 damaged o-rings and backup ring in seal seat. Opened the seals and the doors on all rams for inspection.
10/12	PBTD 1725		1.36	Changed to new style seal seats on all four rams. Changed out ram top seal on forward shear ram and upper pipe ram. Changed to new type ram bodies complete with seals on the lower pipe ram. Changed out knife seal on the shear ram and fixed a leak in the yellow pod.
11/12	PBTD 1725		1.36	Stump tested the BOP. Ran and landed the BOP, but was not able to latch it. Pulled the BOP back to the surface. Worked on the valve for the emergency recovery system. Ran and landed the BOP. Ran in with test plug and tested the BOP. Pulled out and laid down test tool.
12/12	PBTD 1787		1.36	Pressure tested kelly, kelly cocks and stab on valve. Set wearbushing. Ran in the hole with 12-1/4" bit and tagged cement at 1725 m. Tested the stand pipe manifold. Drilled cement to 1787 m. Tested the choke manifold. Circulated and pulled out of the hole. Slipped 24' of the drilling line. Made up new bottom hole assembly with Dynadrill.

Norsk Hydro

Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
50		74-77 (13-16)	12	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"			
	Setting depth (m)	219	949	1788			

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
13/12	1824	1.10	1.36	Ran in the hole with Dynadrill and 2 deg bent sub. Ran a gyro survey and oriented the tool. Washed and reamed from 1787 m to 1788 m and drilled to 1815 m. Pulled out of the hole. Changed to 1-1/2 deg bent sub, picked up one monel drill collar and ran in the hole. Circulated and conditioned the mud, made a leak off test equal to a mudweight of 1.59 rd. Drilled from 1815 m to 1824 m and ran a gyro survey.
14/12	1882	1.10	1.36	Ran the gyro single shot. Drilled from 1824 m to 1852 m and ran a gyro single shot. Drilled from 1852 m to 1854 m, lost pressure. Pulled out and checked the connections for washout. Found washout in the lockbolt on the orienting sub. Tested the Teleco survey. Changed out bit and Dynadrill and tested this. Ran in the hole, slipped 7.3 m of the drilling line and ran in to 1854 m. Oriented the tool and drilled to 1881 m. Ran a gyro single shot, oriented the tool and drilled to 1882 m.
15/12	2025	1.13	1.36	Drilled from 1882 m to 1910 m. Ran a gyro single shot, flowchecked and pulled out of the hole. Ran in the hole with new 12-1/4" bottom hole assembly, worked the pipe through the window and got 7 m fill. Reamed and washed to 1910 m and drilled to 2025 m. Made a Teleco survey on every single.
16/12	2062	1.13	1.36	Circulated bottoms up, dropped the survey and pulled out of the hole. Made up bit no. 20, extention sub and near bit stabilizer. Ran in the hole,

Norsk Hydro

Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
50		78-80 (17-19)	13	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"			
	Setting depth (m)	219	949	1788			

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
				slipped the drilling line and ran in to 2010 m. Washed to 2025 m and drilled 12-1/4" hole to 2062 m. Circulated bottoms up and pulled out of the hole. Ran in the hole with Dynadrill and 2 deg bent sub. Hit a bridge at 1979 m, washed and reamed slowly to 1997 m.
17/12	2107.5	1.13	1.36	Washed from 1997 m to 2062 m, oriented the tool and drilled to 2081 m. The Dynadrill was stalling out. Pulled out to the shoe, had 180 kN overpull at 2040 m. Slipped and cut the drilling line. Pulled out of the hole. Ran in the hole with new Dynadrill and bit to 2067 m. Got 14 m fill, and washed and reamed to 2081 m. Drilled to 2107 m where the tool was stalling out. Worked the pipe and rotated to restart the Dynadrill. Drilled to 2107.5 m.
18/12	2209	1.13	1.36	Drilled from 2107.5 m to 2108 m. The Dynadrill stalled out. Circulated, flowchecked, pumped slug and pulled out of the hole. Ran in the hole with new bit and near bit stabilizer to the shoe. Slipped the drilling line and ran in to 2108 m, had 2 m fill. Drilled from 2108 m to 2209 m.
19/12	2214		1.36	Drilled 12-1/4" hole from 2209 m to 2214 m. The assembly was not building. Circulated, dropped the survey and pulled out of the hole. Retrieved the survey. Ran in the hole and jetted the wellhead area clean. Retrieved the wearbushing. Ran in and jetted the wellhead. Ran in and set the test plug. Tested the BOP stack and pulled out with the test plug. Tested the surface equipment. Ran and set the wearbushing. Waited on weather and tested the mud manifold and the choke manifold. Ran in the hole with new bit, Navidrill and 2 deg bent sub.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
51		81-86 (20-25)	14	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"			
	Setting depth (m)	219	949	1788			

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
20/12	2262	1.13	1.36	Ran in to 2172 m, washed and reamed tight hole to 2214 m and drilled 12-1/4" hole with turbine to 2262 m. Rate of penetration decreased. Circulated, pumped slug and pulled out of the hole.
21/12	2284	1.20	1.36	Ran in the hole to the casing shoe with new bit and Navidrill. Slipped the drilling line and ran in to 2257 m. Reamed to 2262 m. Orientated and drilled 12-1/4" hole to 2284 m where the tool stopped building. Circulated and pulled out of the hole. Made up new bit and new bottom hole assembly.
22/12	2284	1.20	1.36	Waited on weather. The heave was 6 m. Ran in the hole to 2280 m and reamed to 2284 m. An attempt to drill was not successfull, due to exessive heave. Pulled out to 1613 m and waited on weather. Ran in to 2256 m and reamed to 2284 m.
23/12	2340	1.20	1.36	Drilled 12-1/4" hole to 2336 m. Rotary table broke down, pulled out to the shoe and repaired the rotary table. Ran in and washed tight hole from 2290 m to 2336 m. Drilled 12-1/4" hole to 2340 m.
24/12	2387	1.20	1.36	Drilled 12-1/4" hole to 2387 m. Dropped the survey, flowchecked and pulled out of the hole. Ran in the hole with new bit to the shoe.
25/12	2450	1.15	1.36	Slipped and cut the drilling line. Ran in to 2348 m and washed and reamed to 2387 m. Drilled to 2443 m, had a drilling break. Circulated bottom up for samples and continued drilling to 2450 m.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
51		87 (26)	15	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"			
	Setting depth (m)	219	949	1788			

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
26/12	2467	1.15	1.36	Drilled 12-1/4" hole to 2467 m. Pulled out of the hole. Ran in the hole with jet sub and washed the BOP and wellhead area. Ran in, retrieved the wearbushing and pulled out of the hole. Ran in and seated the test plug. Tested the BOP stack, choke line and kill line. Replaced seals on kill line stab in. Pulled out of the hole with the test plug. Set the wearbushing and tested surface equipment. Picked up and made service on the corebarrel.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
52		88-91 (27-30)	16	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"			
	Setting depth (m)	219	949	1788			

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
27/12	2474	1.15	1.36	Ran in the hole with new bit and junk basket to 2414 m. Washed and reamed to bottom, got 1.5 m fill. Circulated and conditioned the mud. Pulled out of the hole. Ran in the hole with corebarrel to 2445 m. Washed and reamed to bottom, got 3 m fill. Dropped the ball, circulated and took slow circulating rate. Cut core No. 1 from 2467 m to 2474 m.
28/12	2494	1.15	1.37	Cut core No. 1 from 2474 m to 2477.5 m. Circulated 10 min. and pulled out. Slipped 7.5 m of the drilling line and pulled out of the hole. Recovered core No. 1 - 8.7 m. Serviced the corebarrel, ran in the hole and hit tight spot at 2434 m. Washed and reamed to 2477.5 m, had 5 m fill. Cut core No. 2 to 2494 m.
29/12	2515		1.36	Cut core No. 2 from 2494 m to 2496 m, flowchecked and pulled out of the hole. Recovered core No. 2 - 18.1 m. Serviced the corebarrel and changed out the bearings. Ran in the hole to 2491 m, washed and reamed to 2496 m, circulated for 10 min. and cut core No. 3 from 2496 m to 2515 m. Pulled out of the hole, had tight hole from 2500 m to 2465 m.
30/12	2517	1.15	1.37	Continued pulling out, the hydraulic motor on the upper racking arm broke down. Slipped 8 m drilling line. Recovered core no. 3 - 16.8 m, and serviced the corebarrel. Ran in the hole with clean up assembly and Teleco tool. Washed and reamed from 2500 m to 2515 m. Circulated while working the pipe from 2495 m to 2515 m, had

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
52		92-94 (31-33)	17	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"			
	Setting depth (m)	219	949	1788			

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
				200-300 kN drag. Made a Teleco survey at 2515 m and pulled out of the hole. Ran in the hole to 2474 m, washed and reamed to 2511 m. Dropped the ball, but observed no pressure buildup. Reamed to 2515 m and cut core no. 4 from 2515 m to 2517 m.
31/12	2536	1.15	1.37	Cut core No. 4 from 2517 m to 2520 m. Pulled out of the hole due to the possibility that the ball was not seated in the corebarrel. Recovered core No. 4 and found the ball left in the Teleco screen. Changed bearing and seal on the corebarrel and ran in the hole. Slipped 7.5 m of the drilling line and ran in to 2505 m. Reamed to 2520 m and circulated the hole clean. Dropped the ball and cut core No. 5 to 2536 m.
01/01	2546	1.15	1.36	Cut core No. 5 from 2536 m to 2537 m. Pulled out of the hole and recovered core No. 5 - 15.9 m. Serviced the corebarrel and ran in the hole. Slipped and cut the drilling line and ran in to 2525 m. Reamed to 2537 m, dropped the ball and cut core no. 6 to 2546 m. The core jammed. Pulled out of the hole and recovered core no. 6. Serviced the corebarrel and ran in the hole.
02/01	2564	1.15	1.36	Ran in the hole to 2532 m and washed and reamed to 2546 m. Dropped the ball and cut core No. 7. Pulled out of the hole and recovered core No. 7 - 15.2 m. Ran in the hole with jet sub, washed the wellhead and retrieved the wearbushing. Ran in with test plug and tested the BOP. Retrieved the test plug. Ran in and set the wearbushing. Tested the surface equipment. Ran in the hole with corebarrel.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
1		95-97 (34-36)	18	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"			
	Setting depth (m)	219	949	1788			

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
03/01	2564	1.15	1.36	Slipped and cut the drilling line. Ran in to 2554 m, washed and reamed to 2564 m. Dropped the ball and attempted to cut the core, but got no penetration. Pulled out of the hole and recovered 0.5 m of core No. 7. Serviced the corebarrel and changed bit. Ran in the hole slowly due to the increasing wind blowing the drill string compensator hoses across the elevators and under the racking system. Rigged the drill string compensator hoses to run behind the traveling block. Continued to run in slowly. Waited on weather with the corehead at the casing window. Worked to reset emergency shut down on driller's consol.
04/01	2577	1.15	1.37	Continued working on driller's consol. Ran in the hole to 2553 m, washed and reamed to 2564 m. Dropped the ball and cut core No. 9 to 2574.5 m. Pulled out of the hole and recovered core No. 9 - 9.8 m. Serviced the corebarrel and ran in the hole to 2551 m. Washed and reamed to 2574.5 m, got 1 m fill. Dropped the ball and cut core No. 10 to 2577 m.
05/01	2588	1.15	1.36	Cut core No. 10 to 2588 m. Started to pull out, but the pipe got stuck. Jared the pipe free and pulled out of the hole. Recovered core No. 10 - 13.4 m. The inner sub backed of. Serviced the corebarrel and checked all connections. Slipped the drilling line. Ran in the hole with bit to make a wipertrip. Worked junk sub and circulated the hole clean. Worked the pipe and had no drag. Dropped the survey. The pipe got stuck. Jarred free and worked the pipe, had no drag. Pulled out of the hole, had 538 kN overpull after having set back the kelly.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
1		98-101 (37-40)	19	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"			
	Setting depth (m)	219	949	1788			

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
06/01	2606.5	1.15	1.35	Replaced the shear pins on the upper racking arm. Retrieved the survey and pulled out of the hole. Ran in the hole with corebarrel. Slipped the drilling line. Ran in to 2574 m, reamed and washed to 2588 m. Cut core No. 11 to 2606.5 m. Pulled out of the hole and recovered core No. 11 - 4 m. The inner corebarrel had parted. Waited on weather, displaced the riser to seawater and disconnected the lower marine riser package. Slipped and cut Rucker lines No. 1, 3 and 6 while waiting on weather.
07/01	2606.5	1.15	1.35	Waited on weather. Landed the lower marine riser package. Tested choke and kill lines and displaced the riser with mud. Ran in the hole. Slipped and cut the drilling line.
08/01	2646	1.15	1.32	Ran in the hole 2571 m. Reamed and washed to 2606 m, got 10 m fill. Circulated bottom up. Circulated and cut back the mudweight to 1.33 rd. Ran a survey on the slick line. Drilled 12-1/4" hole from 2606 m to 2646 m.
09/01	2657	1.15	1.32	Drilled 12-1/4" hole from 2646 m to 2657 m. Pulled out to the window. Had max overpull 582 kN after having set back the kelly. Picked up hang off assembly and installed one joint below the hang off tool inside BOP. Ran in the hole and hung off. Backed off and closed the blind rams. Pulled out of the hole. Waited on weather and unlatched the lower marine riser package.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
2		102-104 (41-43)	20	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"			
	Setting depth (m)	219	949	1788			

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
10/01	2657	1.15	1.32	Waited on weather. Guidelines No. 2 and 4 broke. Attempted to stab the lower marine riser package. Guidelines No. 1 and 3 broke and were not able to stab. Pulled the lower marine riser package. Installed new rope sockets on the guide wires.
11/01	2657	1.15	1.32	Installed new rope sockets in the guide lines. Dived Scorpio and inspected the BOP posts. Found wire left in post No. 1, the others were clear. Ran the four armed guide frame with guide lines No. 2, 3 and 4. An attempt to reestablish by use of Scorpio failed. Pulled the guide frame and Scorpio. Ran four armed guide frame on guide lines no. 3 and 4 with TV and insert tool on guide line No. 2. Moved the rig. Guide line No. 2 hung up on the stack. Pulled out and guide line no. 2 came loose. Ran the four armed guide fram on No. 3. Moved the rig and reestablished guide line No. 3.
12/01	2657	1.15	1.32	Reestablished guide lines No. 4 and 2 using the 4 armed guide frame and insert tool. Rigged up and ran the lower marine riser package. Tested kill and choke lines and rigged up the diverter. Retrieved the hang off tool. Function tested the BOP. Ran in the hole. Repaired the hydraulic line to the racking system. Ran in to 2513 m and washed to 2519 m. Continued running into the hole.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
2		105-106 (44-45)	21	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"			
	Setting depth (m)	219	949	1788			

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
13/01	2665	1.15	1.32	Reamed and washed from 2633 m to 2657 m, had 2 m fill. Drilled 12-1/4" hole from 2657 m to 2665 m. Circulated and made a 10 stands wipertrip. Circulated bottoms up and worked the pipe. Dropped the survey. The pipe got stuck on bottom. Jarred the stuck pipe and pumped a 80 bbl unweighted pipe lax pill. Displaced with mud leaving 5 bbl of the pill inside the string. Pumped 1 bbl each half hour while working and jarring the stuck pipe. Circulated the pill out and circulated while working and jarring the pipe.
14/01	2665	1.15	1.32	Pumped 20 bbl diesel followed by a 80 bbl Imco spot pill and displaced with 125 bbl mud. Worked and jarred the pipe and pumped 1 bbl every hour. Pumped 69 bbl of mud and worked and jarred the pipe. Circulated the pill out of hole and circulated while working and jarring the pipe. Pumped 187 bbl of diesel followed by 59 bbl of 1.32 rd mud followed by 68 bbl of 1.23 rd mud. Displaced slowly with 72 bbl 1.32 rd mud. Worked and jarred the pipe until it became free. Pulled out to 2447 m, circulated and conditioned the mud to 1.32 rd.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
2		107-108 (46-47)	22	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"			
	Setting depth (m)	219	949	1788			

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
15/01	2665	1.15	1.28	Circulated and conditioned the mud while raising the mudweight to 1.32 rd and made a flowcheck. Pulled out to the 13-3/8" casing shoe having maximum overpull of 385 kN. Slipped and cut the drilling line, pulled out of the hole and laid down the jars. Ran in the hole with new bottom hole assembly. Reamed from 2470 m to 2475 m and from 2491 m to 2497 m. Washed from 2536 m to 2540 m and from 2561 m to 2577 m. Ran in to 2657 m and got 8 m fill. Reamed from 2657 m to 2665 m. Circulated and conditioned the mud and cut the mudweight back to 1.28 rd. Flowchecked and made a wipertrip to the 13-3/8" casing shoe. Had tight spots at 2358 m and 2329 m, max overpull was 403 KN. Circulated and conditioned the mud.
16/01	2665	1.15	1.28	Circulated and flowchecked. Pulled out of the hole, had tight spots at 2390 m and 2361 m with max overpull 806 kN. Worked the tight spots free. Pulled out of the hole and made a flowcheck at the casing shoe. Rigged up Schlumberger and ran logrun No. 1 - ISF/LSS/GR/SP, logrun No. 2 - CDL/CNL/NGL/CAL, logrun No. 3 - DLL/MSFL and logrun No. 4 - SHDT which was a misrun, due to tool failure.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
3		109-112 (48-51)	23	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"			
	Setting depth (m)	219	949	1788			

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
17/01	2665	1.15	1.28	Ran logrun No. 5 - HDT, logrun No. 6 - EPT, logrun No. 7 - RFT - taking sample at 2596 m and logrun No. 8 - RFT - taking sample at 2605.5 m.
18/01	2665	1.15	1.28	Ran logrun No. 9 - RFT - taking sample at 2592 m. Slipped and cut 7.3 m drilling line. Ran in the hole to 1640 m and made up hang off assembly. Waited on weather. Stood back the hang off assembly. Ran in the hole to 2655 m and reamed to 2665 m. Circulated and conditioned the mud.
19/01	2665	1.15	1.28	Circulated and conditioned the mud and made a flowcheck. Pulled out to 2615 m. Spotted a 7.8 m^3 diesel pill and displaced with 22.6 m^3 mud. Broke of the kelly, the diesel pill was undisplaced. Made up kelly and displaced the diesel pill to balance the pressure. Pulled out to 2510 m and flowchecked for 15 min. Pulled out of the hole, worked through tight spot at 2427 m and had max overpull 224 kN. Ran in to 1640 m and picked up bottom part of the hang off assembly. Ran in to 1673 m and waited on weather. Stood back hang off tool, laid out the inside BOP and installed the diverter. Ran in to 2655 m and reamed to 2665 m.
20/01	2665	1.15	1.28	Circulated and conditioned the wellbore. Spotted 7.8 m^3 of diesel at 2615 m and displaced with 23.7 m^3 mud. Pulled out to 2530 m and flowchecked. Pulled out to the casing shoe and had tight spots with a max overpull of 448 kN at 2428 m and 2371 m. Slipped 24' drilling line. Pulled out to 691 m. Waited on weather. Ran in to the shoe and picked up hang off assembly. Waited on weather.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
3		113-115 (52-54)	24	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"	9-5/8"		
	Setting depth (m)	219	949	1788	2652		

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
21/01	2665	1.15	1.28	Waited on weather. Stood back the hang off assembly and the Gray valve. Installed the diverter. Ran in the hole to 2660 m and reamed to 2665 m. Circulated and conditioned the hole. Pulled out to 2615 m, spotted a 7.8 m^3 diesel pill and flowchecked. Pulled out to 2450 m and flowchecked. Pulled out and wiped a tight spot at 2370 m clean. Slipped 7.3 m of the drilling line. Ran in the hole and jetted the BOP and the wellhead. Ran in and retrieved the wearbushing.
22/01	2665	1.15	1.28	Pulled out with the wearbushing. Ran in and jetted the wellhead area. Pulled out of the hole. Rigged up to run the 9-5/8" casing. Ran and landed the 9-5/8" casing with the shoe at 2652 m. Rigged up the surface equipment and the cementing head. Circulated the casing and the wellbore. Pressure tested the surface equipment to 348 bar. Circulated 1.6 m^3 seawater and 15 m^3 Dowell 3000 spacer. Pumped 1.9 rd cement. Had leakages on the Dowell equipment. Dropped the dart and displaced the cement with 1.6 m^3 water followed by 94.4 m^3 mud.
23/01	2665	1.15	1.28	Bumped the plug and pressure tested the casing to 310 bar for 5 min. Bled back 1400 l. Circulated the kill and choke lines. Rigged down the cement equipment. Torqued the seal assembly and tested it to 206 bar. Pulled out with the landing string. Pulled the riser and BOP stack. Changed out 5" rams to 3-1/2" rams in the BOP. Reestablished guidelines No. 1, 2 and 4 using the 4 armed guide frame, reestablishing tools and Scorpio. Hammer tool was required to clear the permanent guide base posts No. 4 and 3.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
4		116-120 (55-59)	25	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"	9-5/8"		
	Setting depth (m)	219	949	1788	2652		

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
24/01	2665	1.15	1.23	Reestablished guideline No. 3 while working on the BOP. Replaced the 5" upper and middle pipe rams with 3-1/2" rams. Changed all 64 allen screws in the ram wear seat seals. Bolted the bonnets. Laid down 5" drill pipe while working on the BOP.
25/01	2665	1.15	1.23	Laid down 5" drill pipe and picked up 3-1/2" drill pipe. Stump tested the BOP.
26/01	2665	1.15	1.23	Picked up 3-1/2" drill pipe. Picked up 3-1/2 PH-6 tubing, using Weatherford. Completed the BOP stump test. Waited on weather.
27/01	2665	1.15	1.23	Continued picking up 3-1/2" PH-6 tubing. Rigged down the powertong equipment. Rigged up to run the BOP stack, but rigged down again due to deteriorating weather. Laid down 8" drill collars and picked up 6-1/2" drill collars. Rigged up Weatherford and picked up 3-1/2" PH-6 tubing. Slipped and cut drilling line. Picked up 3-1/2" VAM tubing.
28/01	2665	1.15	1.23	Completed picking up and standing back 3-1/2" VAM-tubing. Picked up Halliburton down hole test tools, made up connections and laid down same. Rigged up and ran the BOP. Installed the support ring. Hooked up the choke, kill and booster line goosenecks. Landed and latched the BOP. Pull tested the wellhead connector with 224 kN. Picked up and installed the diverter. Ran in the hole with test tool and tested the BOP. Pulled out with the test tool. Installed the wearbushing. Closed the middle pipe ram to check space out. Rigged up Schlumberger.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
4		121-122 (60-61)	26	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"	9-5/8"		
	Setting depth (m)	219	949	1788	2652		

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
29/01	2665	1.15	1.23	Ran CBL/VDL log. The tool slowed down at 2300 m and stopped at 2516 m. Pulled out and rigged down Schlumberger. Picked up running tool and tripped the wearbushing. Ran in the hole with 8-3/8" bit and casing scraper, tagged the cement at 2623 m. Made a short trip to 2300 m. Displaced the riser to 1.23 rd mud. Reverse circulated and displaced 1.28 rd mud in the hole with 1.23 rd mud. Pumped 30 m^3 cement contaminated mud. Pumped 1.6 m^3 high viscous spacer, 3.2 m^3 KCl brine and displaced with mud. Pulled out with 8 stands, slugged the pipe and pulled out of the hole. Rigged up Schlumberger and ran CBL/VDL/CCL/GR log to 2621.5 m. Rigged down Schlumberger. Rigged up Sperry Sun wire line unit.
30/01	PBTD 2610	1.15	1.23	Ran a gyroscopic multishot on wire line to 2618.5 m. Rigged down Sperry Sun. Rigged up Schlumberger and made run No. 1 - perforated from 2612 m to 2612.5 m, run No. 2 with junk basket and gauge ring and run No. 3 - set a cement retainer at 2610 m. Rigged down Schlumberger. Ran in the hole with a Baker stinger and stabbed into the retainer. Pressure tested annulus to 69 bar. Reverse circulated a KCl pill in the hole into the string. Stung into the packer. Established injection rate and pulled out of the packer. Stung into the packer and squeezed 6.3 m^3 cement. Pulled out of the hole and reverse circulated. Recorded 11.6 % CO_2 gas from the mud coming back. Circulated and treated the mud with 0.4 m^3 WF 2058. The CO_2 content dropped back to 0.5 %. Spotted a 1.6 m^3 high viscous pill followed by 3.2 m^3 1.16 rd KCl brine. Rigged down the surface lines and pulled out of the hole.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
5		123-124 (62-63)	27	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

Casing							
	Size	30"	20"	13-3/8"	9-5/8"		
	Setting depth (m)	219	949	1788	2652		

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
31/01	PBTD 2608	1.15	1.23	Pulled out of the hole with the cement stinger. Picked up surface test tree and made up connections. Picked up hose reel and control panel for the sub sea test tree. Broke out tools on the drillfloor. Rigged up Schlumberger and ran CBL/VDL log. Rigged down Schlumberger. Rigged up to pull the BOP, but decision was made to squeeze. Rigged down the BOP handling equipment. Rigged up Schlumberger and made run No. 1 - perforated from 2609 m to 2609.5 m. Run No. 2 with gauge ring and junk basket. Run No. 3 - set a Baker cement retainer at 2608 m. Ran in the hole with cement stinger. Rigged up surface lines. Tagged the retainer at 2606 m. Stung in and tested the annulus to 69 bar. Performed an injection test and pulled out of the packer. Mixed and pumped cement. Stung into the packer and started squeezing.
01/02	PBTD 2608	1.15	1.23	Squeezed 3.9 m^3 cement with final pressure 193 bar. Stung out of the packer and pressure tested the retainer to 241 bar for 10 min. Reverse circulated 8200 strokes. Opened the annular preventer and circulated the long way. Spotted 1.6 m^3 high viscous mud and 3.2 m^3 KCl brine. Pulled out 8 stands, pumped slug and pulled out of the hole. Rigged up to pull the BOP and displaced the riser to seawater. Rigged down the riser handling tools. Rigged up Schlumberger and ran CBL/VDL log. Retrieved the wearbushing. While waited on weather prepared to pull the BOP. Tightened connections and function tested the sub sea test tree and the lubricator. Rigged up to pull the BOP. Waited on weather.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
5		125-127 (64-666	28	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"	9-5/8"		
	Setting depth (m)	219	949	1788	2652		

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
02/02	PBTD 2608	1.15	1.23	Waited on weather. Pulled the BOP. Rigged down lines and set the BOP back. Installed new hoses from the yellow pod to the BOP mounted accumulator bottles and from the blue pod to the riser mounted accumulator bottles. Function tested the BOP on blue and yellow pods. Stump tested the BOP. Changed the VX-ring due to leakage. Tested the middle and lower pipe rams. Leakage was found in the controlhoses to the upper pipe ram's closing side and the upper outer choke's closing side. The hoses were changed out.
03/02	PBTD 2608	1.15	1.23	Worked on the BOP and stump tested same. Skidded the BOP under the rotary, installed VX-ring and skidded back the carrier. Ran the BOP.
04/02	PBTD 2608	1.15	1.23	Positioned the rig and landed the BOP. Pull tested the wellhead connector to 224 kN overpull. Ran in the hole with test plug and tested the BOP. Pulled out with the testplug and set the wearbushing. Displaced the riser with mud. Picked up the surface test tree and made up x-overs to the Otis wire line lubricator. Laid down same. Made a dummyrun with the sub sea test tree. Rigged up Schlumberger and ran gauge ring and junk basket. Stopped at 2576 m and pulled out of the hole. Ran in the hole with rockbit and casing scraper to 1156 m. Picked up hang off assembly and prepaired to hang off. Screwed out of the hang off tool.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
5		128-129 (67-68)	29	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

	Size	30"	20"	13-3/8"	9-5/8"		
Casing	Setting depth (m)	269	586	1788	2652		

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
05/02	PBTD 2608	1.15	1.23	Pulled out with the landing string. Displaced the riser to seawater. Slipped 7.3 m of the drilling line. Waited on weather. Retrieved the hang off tool and ran in with bit and scraper. Circulated and conditioned the mud. Pumped 1.5 m^3 high viscous mud followed by 3.2 m^3 KCl brine and displaced with mud. Rigged up Schlumberger and perforated from 2600 m to 2602 m. Flowchecked the well for 10 min. and pulled out of the hole. Ran gauge ring and junk basket. Ran in the hole with test string for drill stem test No. 1.
06/02	PBTD 2608	1.15	1.26	Tested bottom hole test assembly to 310 bar for 10 min. Ran in the hole with PH-6 tubing and pressure tested to 310 bar for 10 min. after 38 stands and before picking up the sub sea test tree. Filled every 3rd stand with water. Picked up the sub sea test tree and function tested same. Pressure tested sub sea test tree to 310 bar for 10 min. Closed the sub sea test tree and bled off the pressure above to 35 bar and checked for leakage from below. Equalized the pressure and opened the valves. Observed 1.1 m^3 gain in the triptank. Picked up one joint of VAM-tubing and adjusted the compensator to the string weight. Closed the well in at the upper annular. The pressure built up slowly to 39 bar after one hour and stabilized at 62 bar after 1-3/4 hours. Opened the RTTS circulating valve on the third attempt. The annulus pressure dropped to 48 bar. Reversed out through the choke and degasser. Lowest mud weight measured in the triptank was 1.12 rd.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
5		129 (68)	30	
Area	**Well**		**Rig**	
	30/6-10 (A)		Treasure Scout	

	Size						
Casing		30"	20"	13-3/8"	9-5/8"		
	Setting depth (m)	269	586	1788	2652		

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
				Had maximum 12 units gas after the mud had passed the degasser and triptank. Circulated and increased the mudweight to 1.26 rd. Flowchecked the well. Unwinded and function tested the hoses on the sub sea test tree. Ran in the hole with 3-1/2" VAM-tubing. Circulated the hole with the RTTS circulating valve at 2513 m. Had 8.5 units as max gas.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
6		130-131 (69-70)	31	
Area	**Well**		**Rig**	
	30/6-10 (A)		Treasure Scout	

	Size						
Casing		30"	20"	13-3/8"	9-5/8"		
	Setting depth (m)	269	586	1788	2652		

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
07/02	PBTD 2608	1.15	1.26	Circulated and conditioned the mud. Displaced the test string with 9.3 m^3 water. Closed the sub sea test tree and bled off the pressure above. Ran the remainder of the test string. Made up the surface test tree and lines. Landed the sub sea test tree and picked up 4.6 m to set the packer. Set the packer on the third attempt. Landed the sub sea test tree and closed the middle pipe ram. Pressure tested the surface equipment to 310 bar for 10 min. Rigged up equipment on the data header and opened the well for initial flow. Initial flow from 08:25 hrs to 08:30 hrs. Initial shut in from 08:30 hrs to 09:30 hrs. Main flow periode from 09:30 hrs to 18:00 hrs. Main build up periode from 18:00 hrs to 24:00 hrs.
08/02	PBTD 2608	1.15	1.26	The well was shut in. Rigged up Otis wireline lubricator and BOP. The Otis diesel hydraulic powerpack broke down, rigged up Weatherford powerpack to the Otis wire line unit. Installed the wire line lubricator with samplers and gauges. Pressure tested the lubricator to 138 bar and checked lubricator valve to hold the pressure from below. Ran in with bottom hole samplers. Was not able to pass 2316 m. Opened the liquid pressure response valve and worked the wire line tools. Started pulling out, but got stuck at 2212 m. Rigged up the BOP carrier hydraulics to the Otis unit to increase the pulling power. Heated the lubricator with steam while pulling. Injected glycol in the lubricator and steamed while working the wire. Opened the well for flow and the wire line tools became free.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
6		132-133 (71-72)	32	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

	Size	30"	20"	13-3/8"	9-5/8"		
Casing	Setting depth (m)	219	949	1788	2652		

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
				Pulled out and closed the well. The lubricator was leaking after closing. Closed the sub sea test tree, bled off the pressure above and checked for flow. Rigged down the lubricator. Tested the surface equipment and flowed the well for sand test.
09/02	PBTD 2608	1.15	1.26	Flowed the well through the 1" choke. Closed the well in at the chokemanifold and at the master valve. Flushed the lines to the burner. Equalized the pressure over the master valve and opened same. Bullheaded 14.3 m^3 mud down the tubing with maximum 310 bar pressure. Bled back 0.2 m^3. Observed the well for 1/2 hour, the well was stable. Sheared the annular pressure reversing multishot valve and reversed out 20 m^3 mud through the mud gas separator. Changed the lines and reversed over the shaker. Opened the middle pipe ram and unseated the packer. Observed the well for 10 min. Closed the middle pipe ram and bullheaded 2 m^3 mud. Bled back 0.4 m^3. Picked up and laid down surface test tree and landed the sub sea test tree in the wearbushing. Circulated and had maximum gas of 1195 units. Flowchecked for 10 min. Pulled out of the hole. Rigged up Schlumberger and started to run gauge ring and junk basket.
10/02	PBTD 2608	1.15	1.26	Ran junk basket and gauge ring. Pulled out of the hole. Ran and set the Baker squeeze packer. Ran in the hole with stinger. After 56 stands one notised that improper torque was applied due to failure on the iron roughneck's torque gauge. Pulled out to the x-over from

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
6		134 (73)	33	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"	9-5/8"		
	Setting depth (m)	219	949	1788	2652		

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
				drill pipe to heavy weight pipe and ran in retorquing. Picked up circulating head and tagged the cement retainer at 2596 m. Circulated and conditioned the mud while waiting on weather to perform a squeeze job.
11/02	PBTD 2596	1.15	1.26	Circulated and conditioned the mud while waiting on weather to perform a squeeze job. Broke the circulation with the Dowell unit and pressure tested the surface lines to 345 bar. Stung into the packer, closed the annular preventer and pressure tested the annulus to 138 bar. Performed an injection test, opened perforations with 275 bar and established an injection rate of 320 l/min at 103 bar. Bled of annulus pressure, opened the annular preventer and pulled out of the packer. Pumped 1.6 m^3 fresh water followed by 4 m^3 of 1.9 rd class "G" cement slurry followed by 0.3 m^3 water and 1.4 m^3 mud. Stung into the retainer, closed the annular and pressured up to 138 bar. Pumped and squeezed 5,4 m^3 cement with final squeeze pressure 121 bar at 40 l/min. Bled back 0.71 m^3. Bled off the annulus pressure, opened the annular preventer and pulled out of the retainer. Flowchecked and reverse circulated 1500 strokes, got no cement in return. Tested the squeeze job to 159 bar. Pumped 1.6 m^3 high viscous mud followed by 3.2 m^3 KCl brine and displaced with 10.2 m^3 mud. Pulled out of hole. Ran in with perforating gun and perforated from 2587 m to 2590 m. Flowchecked and pulled out of the hole. Ran gauge ring and junk basket. Rigged down Schlumberger. Slipped and cut the drilling line. Made up tail pipe assembly and installed gauges. Flopetrol worked on the SSDP gauge. Made up Halliburton down hole tools and ran in for drill stem test No. 2.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
6		135 (74)	34	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"	9-5/8"		
	Setting depth (m)	219	949	1788	2652		

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
12/02	PBTD 2596	1.15	1.26	Tested the bottom hole assembly to 310 bar for 10 min. Ran in with 37 stands of 3-1/2" PH-6 tubing and pressure tested to 310 bar for 10 min. Ran the remaining PH-6 tubing and pressure tested to 310 bar for 10 min. Picked up the EZ-tree and tested the string to 310 bar for 10 min. Closed the EZ-valve, bled off the pressure above to 34 bar and checked for leaks. Equalized the pressure, opened the valve and bled off the pressure in the string. Ran in the hole with landing string, 3-1/2" VAM-tubing. Picked up lubricator valve and flowhead, installed hydraulic hoses and landed the EZ-tree in the wellhead. Pressure tested surface equipment to 310 bar, flushed all surface lines with seawater and tested down hole equipment. Picked up the test string and seated the packer at 2564.5 m. Landed the test string in the wellhead. Flushed through kill line and closed the middle pipe ram. Pressured up the annulus to 97 bar to open tester valve. Opened the well on 32/64" choke, increasing to 48/64". Shut in at the choke and closed the tester valve. Flowed 11.6 bbl into the stock tank in 4 min. The well was shut in for 1 hour. Opened the well on 48/64" choke for final flow. Had traces of mud to the surface. Got gas to the surface. Reduced the choke to 40/64". Flowed through the separator.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
6		136 (75)	35	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"	9-5/8"		
	Setting depth (m)	219	949	1788	2652		

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
13/02	PBTD 2596		1.26	Continued final flow on drill stem test No. 2. Shut the well in at the choke, the liquid pressure response valve and the tester valve. Had final build up on drill stem test No. 2. Closed the master valve and bled off the pressure downstream the master valve. Flushed water through the surface lines, separator and burners. Opened the kill valve, equalized the pressure with the Dowell unit and opened the master valve. Opened the Halliburton tester valve and bullheaded 80 bbl mud with the Dowell unit. Bled back 2 bbl and observed the well for 1/2 hour. Sheared the Halliburton annular pressure reversing multishot circulating valve with 209 bar. Reverse circulated 130 bbl mud through the choke manifold and degasser. Opened the middle pipe ram and unseated the packer. Landed the EZ-tree, closed the kill valve and bullheaded 10 bbl mud down the annulus. Bled back 5 bbl and flowchecked. Opened the middle pipe ram and observed the well. Rigged down the flowhead, picked up one joint of 3-1/2" VAM tubing and landed the EZ-tree. Circulated the long way, had maximum gas of 470 units.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
7		137 (76)	36	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"	9-5/8"		
	Setting depth (m)	219	949	1788	2652		

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
14/02	PBTD 2582	1.15	1.26	Circulated and conditioned the mud and flowchecked for 10 min. Rigged down the lubricator, pulled the 3-1/2" VAM tubing and laid down the EZ-tree. Pulled out of the hole with the 3-1/2" PH-6 tubing. Serviced the Halliburton down hole tools and changed packer element. Rigged up Schlumberger and ran gauge ring and junk sub. Ran and set a cement retainer at 2584 m. Rigged down Schlumberger. Ran in with stinger and tagged the packer at 2582 m. Circulated and conditioned the mud, had maximum gas contamination of 225 units. Tested the surface lines to 345 bar for 5 min. Bled off and stung into the packer with 89 kN. Closed the upper annular preventer and pressured up the annulus to 138 bar. Performed an injection test and broke the formation with 138 bar. Established an injection rate of 320 l/min at 128 bar. Bled of the annulus pressure, opened the annular preventer and pulled out of the retainer. Started pumping water. Changed out the Dowell union on the x-over between the LQ torque valve and drill pipe due to leakage. Pressure tested and continued to pump a total of 1.6 m^3 fresh water. Mixed and pumped 4 m^3 1.9 rd class "G" cement slurry followed by 0.3 m^3 water and 4.1 m^3 mud. Stung into the retainer, closed the upper pipe ram and pressured up annulus to 103 bar. Started the squeeze job, but after having squeezed 4.5 m^3, the annulus pressure increased to 135 bar. Bled off at the Dowell unit and the pressure in annulus stayed at 135 bar. Attempted to continue squeezing with 40 l/min at

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
7		138 (77)	37	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"	9-5/8"		
	Setting depth (m)	219	949	1788	2652		

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
				135 bar, but the annulus pressure increased to 135 bar. Bled off at the Dowell unit and the annulus and opened the annular preventer. Pulled out of the retainer and closed the annular preventer. Started to reverse circulate and got 1.6 m^3 cement in return.
15/02	PBTD 2558	1.15	1.26	Continued reverse circulating. Pressure tested the packer to 172 bar. Pulled out of the hole. Rigged up Schlumberger and made run No. 1 with junk basket and gauge ring. Run No. 2 and perforated from 2558.2 m to 2558.8 m. Run No. 3 with junk basket and gauge ring and run No. 4 set a cement retainer at 2557.3 m. Rigged down Schlumberger. Ran in the hole with the stinger and tagged the retainer at 2554.5 m. Circulated and conditioned the mud, had maximum 24 units gas. Pressure tested the cementing head to 345 bar. Stung into the packer, closed the upper annular preventer and pressured up the annulus to 69 bar. Performed an injection test, established injection rate of 636 l/min at 159 bar. Pulled out of the packer. Pumped 1.1 m^3 fresh water followed by 7.9 m^3 1.9 rd class "G" cement slurry and 0.3 m^3 fresh water. Stung into the retainer, closed the upper annular preventer and pressured up the annulus to 69 bar. Squeezed cement and pumped 9.4 m^3 of mud. Final squeeze pressure was 238 bar at 80 l/min. Pulled out of the retainer and reverse circulated 1500 strokes, got water and traces of cement at 470 strokes. Pressure tested the squeeze job to 139 bar. Pumped 10 bbl high viscous mud, a 20 bbl KCl pill and displaced with 64.5 bbl of mud. Pulled out 8 stands, slugged the pipe and pulled out of the hole.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
7		139 (78)	38	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"	9-5/8"		
	Setting depth (m)	219	949	1788	2652		

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
16/02	PBTD 2558	1.15	1.26	Pulled out of the hole with the cement stinger. Retrieved the wearbushing. Ran in the hole with the testplug and tested the BOP. Pulled out with the testplug. Ran in and seated wearbushing. Rigged up Schlumberger and made run No. 1 with gauge ring and junk basket, run No. 2 CBL log and run No. 3 perforated from 2546 m to 2555 m. Flowchecked for 15 min. and rigged down Schlumberger. Made up tail pipe and installed down hole gauges. Made up Halliburton down hole tools and drifted 6-1/2" drillcollars. Filled one stand above the tester valve with high viscous mud. Tested the bottom hole assembly and one stand of PH-6 tubing to 310 bar. Filled the tubing with water while running in and pressure tested the string to 310 bar after having run 38 stands of PH-6 tubing.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
7		140 (79)	39	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

	Size	30"	20"	13 3/8"	9-5/8"		
Casing	Setting depth (m)	219	949	1788	2652		

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
17/02	PBTD 2558	1.15	1.26	Got flow in the tubing after running 56 stands. Lost 1 m^3 mud in the annulus. Put on the stab-in valve and closed this. Made up the kelly and pumped 1 m^3 of water into the tubing. Set the packer, closed the RTTS circulating valve and bled off. Unseated the packer and pressure tested the tubing to 310 bar for 10 min. Ran in the hole and pressure tested the tubing to 310 bar for 10 min. Picked up the EZ-tree, operated and pressure tested it to 310 bar. Closed the valve and bled off to 34 bar. Ran in the hole with 3-1/2" VAM tubing. Made up lubricator and flowtree. Rigged up surface lines and landed the EZ-tree in the wellhead. Flushed through the surface equipment, the kill valve, test string and lubricator valve. Tested to 310 bar for 10 min. The master valve was not holding the pressure. Flopetrol worked on the master valve. Laid down the flowtree and worked on this. It would not test from below. Turned the valve around and tested the master valve to 310 bar for 10 min. on the deck. Picked up the flowtree and landed the EZ-tree in the wellhead. Pressure tested the surface lines and equipment to 310 bar for 10 min. Set the RTTS packer at 2516.6 m. Closed the middle pipe ram and opened the tester valve.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
7		141-142(80-81)	40	
Area	**Well**		**Rig**	
	30/6-10 (A)		Treasure Scout	

Casing	Size	30"	20"	13-3/8"	9-5/8"		
	Setting depth (m)	219	949	1788	2652		

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
18/02	PBTD 2558	1.15	1.26	Flowed the well through 32/64" choke. Shut in at the choke and liquid pressure response tester valve. Had initial build up at drill stem test No. 3 for 1 hour. Opened the well on 48/64" positive choke and changed to 40/64" choke. Shut the well in for main build up. Closed the liquid pressure response tester valve and the choke for main build up.
19/02	PBTD 2558	1.15	1.26	The well was shut in for initial build up on drill stem test No. 3. Closed the lubricator valve, opened the kill valve and the choke manifold. Flushed water through the surface lines, separator and burner. Closed the flow line valve and choke manifold. Equalized the pressure across the lubricator valve to 179 bar and opened same. Opened the Halliburton liquid pressure response valve and bullheaded 14.3 m^3 mud. Bled back 0.3 m^3 and observed the well for 1/2 hour. Sheared the Halliburton annular pressure response multishot circulating valve and reverse circulated 40 m^3 through the degasser. Opened the middle pipe ram and unseated the packer. Landed the EZ-tree in the wellhead, closed the middle pipe ram and the kill valve and bullheaded 2 m^3 mud down the annulus. Bled back 0.8 m^3 and observed the well. Opened the kill valve and the middle pipe ram. Laid out the flowtree, picked up 1 joint of VAM-tubing and landed the EZ-tree in the wellhead. Circulated and conditioned the mud, the long way, with maximum gas 570 units. Laid down the EZ-tree and lubricator and pulled out of the hole.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
7		143 (82)	41	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"	9-5/8"		
	Setting depth (m)	219	949	1788	2652		

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
20/02	PBTD 2541		1.26	Continued pulling out. Serviced the Halliburton down hole tools and retrieved the gauges. Serviced and laid down the flowtree. Rigged up Schlumberger, ran gauge ring and junk basket and set a cement retainer at 2541 m. Ran in the hole with stinger and tagged the retainer at 2541 m. Circulated and conditioned the mud, had maximum 201 units of gas. Tested the surface lines to 345 bar. Stung into the packer and pressured up the annulus to 138 bar. Performed an injection test, broke down the formation at 179 bar and pumped 318 l/min at 138 bar. Bled of and pulled out of the packer. Pumped 1.6 m^3 fresh water followed by 4 m^3 1.9 rd class "G" cement, 0.3 m^3 of fresh water and displaced with 3.8 m^3 mud. Stung into the packer and pressured up the annulus to 69 bar. Squeezed 4.5 m^3 cement at 39 l/min and reached the final squeeze pressure of 310 bar. Bled back 0.15 m^3 and pulled out of the stinger. Reverse circulated out 1500 strokes and got water and cement in return. Tested the packer to 310 bar. Pumped 1.6 m^3 high viscous mud, a 3.2 m^3 KCl pill and displaced with 9.2 m^3 mud. Pulled 8 stands, slugged the pipe and pulled out of the hole.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
8		144-145 (83-84)	42	
Area	**Well**		**Rig**	
	30/6-10 (A)		Treasure Scout	

Casing	Size	30"	20"	13-3/8"	9-5/8"		
	Setting depth (m)	219	949	1788	2652		

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
21/02	PBTD 2541		1.26	Pulled out of the hole, drifted the 6-1/2" drill collars and laid down the stinger. Picked up the flow tree and changed out the handling sub. Tightened up the connections on the tree. Rigged up Schlumberger and ran gauge ring and junk sub. Ran perforating gun and perforated from 2480.5 m to 2486.5 m. Made up tail pipe and installed down hole gauges. Made up Halliburton down hole tools and 1 stand of 3-1/2" PH-6 tubing. Ran in the hole and pressure tested to 310 bar for 10 min after 37 stands. Continued running in and pressure tested the string to 310 bar for 10 min. Picked up the EZ-tree and pressure tested to 310 bar for 10 min. Closed the EZ-tree, bled off the pressure above the valve and checked for leakage. Equalized the pressure and opened the EZ-tree. Continued to run in the hole with 3-1/2" VAM tubing. Picked up lubricator and flow tree and installed flow and kill lines.
22/02	PBTD 2541		1.26	Landed the EZ-tree in the wellhead. Flushed through the surface tree to the burners. Pressure tested the kill line and tested the string and master valve from below to 310 bar. It was unable to test the lubricator. Laid it down, but it was unable to repair the lubricator on deck. Picked up 3-1/2" VAM tubing pup joint and landed the EZ-tree in the wellhead. Flushed through the surface tree. Pressure tested the test string, heater/separator valves and Flopetrol choke manifold to 310 bar for 10 min. Set the packer at 2465 m. Opened the Halliburton liquid pressure response valve for initial flow. Shut the well in for initial build up. Opened the well for final flow at 1" choke.

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Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
8		144-145 (83-84)	43	
Area	**Well**		**Rig**	
	30/6-10 (A)		Treasure Scout	

	Size						
Casing	Setting depth (m)	30"	20"	13-3/8"	9-5/8"		
		219	949	1788	2652		

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
21/02	PBTD 2541		1.26	Pulled out of the hole, drifted the 6-1/2" drill collars and laid down the stinger. Picked up the flow tree and changed out the handling sub. Tightened up the connections on the tree. Rigged up Schlumberger and ran gauge ring and junk sub. Ran perforating gun and perforated from 2480.5 m to 2486.5 m. Made up tail pipe and installed down hole gauges. Made up Halliburton down hole tools and 1 stand of 3-1/2" PH-6 tubing. Ran in the hole and pressure tested to 310 bar for 10 min after 37 stands. Continued running in and pressure tested the string to 310 bar for 10 min. Picked up the EZ-tree and pressure tested to 310 bar for 10 min. Closed the EZ-tree, bled off the pressure above the valve and checked for leakage. Equalized the pressure and opened the EZ-tree. Continued to run in the hole with 3-1/2" VAM tubing. Picked up lubricator and flow tree and installed flow and kill lines.
22/02	PBTD 2541		1.26	Landed the EZ-tree in the wellhead. Flushed through the surface tree to the burners. Pressure tested the kill line and tested the string and master valve from below to 310 bar. It was unable to test the lubricator. Laid it down, but it was unable to repair the lubricator on deck. Picked up 3-1/2" VAM tubing pup joint and landed the EZ-tree in the wellhead. Flushed through the surface tree. Pressure tested the test string, heater/separator valves and Flopetrol choke manifold to 310 bar for 10 min. Set the packer at 2465 m. Opened the Halliburton liquid pressure response valve for initial flow. Shut the well in for initial build up. Opened the well for final flow at 1" choke.

Norsk Hydro

Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
8		148-149 (87-88)	44	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"	9-5/8"		
	Setting depth (m)	219	949	1788	2652		

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
25/02	PBTD 2475		1.26	Ran gauge ring and junk basket to 2478 m. Ran and set a cement retainer at 2475 m. Made up and ran in with cement stinger. Tagged the retainer and circulated the wellbore. Pressure tested the surface equipment to 347 bar. Stung in and established injectivity. Pulled out of the retainer. Pumped 1.6 m^3 water, 3.2 m^3 class "G" cement slurry, 0.3 m^3 water and displaced with 4.5 m^3 mud. Squeezed 2.4 m^3 cement into the perforations, pulled out of the packer and placed a 0.8 m^3 balanced cement plug above the retainer. Rigged down the surface lines. Pulled out 3 stands and reverse circulated, got no cement in return. Tested the retainer to 179 bar. Pulled out of the hole. Ran in the hole with open ended drill pipe. Rigged up Schlumberger, pressure tested surface equipment and perforated at 1688 m. Made a flowcheck. When perforating got 0,12 m^3 gain in the trip tank.
26/02	PBTD 1538		1.26	Pulled out and rigged down Schlumberger. Ran in to 1688 m. Pressure tested the surface equipment. It was unable to establish injectivity, held 275 bar for 15 min and bled back. Ran in to 1738 m and set a 7.6 m^3 balanced cement plug from 1758 m to 1538 m. Pulled out to 1424 m and reversed out, got no cement in return. Pulled out to 200 m. Rigged up Schlumberger and made a dummy run through the drill pipe. Rigged up stuffing box and landed the drill pipe in the middle pipe ram. Ran perforating gun and pressured down annulus to 35 bar. Perforated the

Norsk Hydro

Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
8		150 (89)	45	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"	9-5/8"		
	Setting depth (m)	219	949	1788	2652		

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
				casing at 230 m and noted a pressure drop of 10 bar. Flowchecked for 15 min and had a 0.1 m^3 gain. Pulled out and rigged down Schlumberger. Slipped and cut the drilling line. Picked up 5" drill pipe, retrieved the wearbushing and pulled out. Ran in the hole with 9-5/8" cutting tool and landed the swivel. Cut the 9-5/8" casing at 759 m. Pumped slug and pulled out of the hole.
27/02	PBTD 1538		1.26	Pulled out and laid down the cutting tool. Ran in with 9-5/8" spear. Latched the spear and pulled the casing free with 358 kN overpull. Pulled out with the latch string. Pulled and laid down the 9-5/8" casing. Ran in with 3-1/2" drill pipe to 200 m. Rigged up Schlumberger and made a dummy trip in the drill pipe. Perforated the 13-3/8" casing at 230 m. Pulled out the wireline and rigged down Schlumberger. Pulled out and laid down the 3-1/2" drill pipe. Ran in with 13-3/8" casing cutter. The knives contacted the casing. Pulled out and redressed the knives. Ran in and cut the 13-3/8" casing at 749 m. Pulled out of the hole.

Norsk Hydro

Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
9		151-152 (90-91)	46	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

	Size						
Casing	Setting depth (m)	30"	20"	13-3/8"	9-5/8"		
		219	949	1788	2652		

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
28/02	PBTD 180		1.26	Laid down the 13-3/8" cutting tool and 9-5/8" casing spear. Ran in the hole with 13-3/8" spear to 129 m. Latched the spear and pulled the casing free with 448 kN overpull. Pulled the spear and casing. Laid down 13-3/8" casing and rigged down the latching equipment. Ran in with 3-1/2" open ended drill pipe to 790 m. Rigged up and tested the circulating head. Pumped 3.5 m^3 water followed by 24.5 m^3 class "G" cement, 0.1 m^3 water and displaced with 2.2 m^3 mud. Pulled out to 500 m and squeezed 17 m^3 cement down the 20" x 13-3/8" annulus. Top of cement was estimated to be at 700 m. Pulled out to 380 m. Recovered a 3-1/2" drill pipe stand that had dropped across the derrick. Picked up and pressure tested the circulating head. Repaired a blocked surge tank vent line. Pumped 3.5 m^3 water followed by 37 m^3 class "G" cement , 0.1 m^3 water and displaced with 0.5 m^3 mud. Pulled out to 179 m and reversed out 1 m^3 cement.
01/03	PBTD 180		1.26	Laid down 3-1/2" drill pipe. Ran in with jet tool, washed the BOP, displaced the riser and pulled out of the hole. Slipped 7.3 m drilling line. Pulled the BOP, nippled down and skidded it back. Laid down the riser and BOP equipment. Picked up and laid down 9-1/2" drill collars. Picked up 8" drill collars, made up dress swivel and 36" cutter. Installed the string on the guide lines and ran in with help of TV. Cut the 20" and 30" casing at 135.84 m. Pulled out and changed knives to 52" cutters. Ran in the hole with cutters.

Norsk Hydro

Weekly drilling report

Week	Weeks Progress	Report no.	Page	of
9		153-155 (92-94)	47	

Area	Well	Rig
	30/6-10 (A)	Treasure Scout

	Size						
Casing		30"	20"	13-3/8"	9-5/8"		
	Setting depth (m)	219	949	1788	2652		

Date	Depth (m) / Progress (m)	Pore Press grad (r.d.)	Mud Dens grad (r.d.)	Detailed operation
	PBTD			
02/03	180			Cut the 30" casing at 135.59 m. Pulled out with cutters. Ran in with 20" spear. Repaired the TV camera. Stabbed into the 18-3/4" housing and pulled out with the 20", 30" casings and the permanent guide base. Ran TV-weight assembly on the guide line. Ran in with "J" tool on 6-1/2" drill collar, moved the rig and stabbed into the temporary guide base. Was unable to "J" into the tool due to the guide lines. Pulled out with "J" tool and ran in with 9-5/8" casing spear and TV. Located the temporary guide base with the TV camera.
03/03				Repositioned the rig and stabbed into the temporary guide frame. Rotated the hook under the frame and pulled with 1000 kN overpull. Pulled the TV camera and weight cans, pulled out with the temporary guide base and landed it in the trolley. Nippled down and secured the temporary guide base. Laid down drill collars, 5" drill pipe, heavy weight drill pipe and 3-1/2" drill pipe. Waited on weather. Deballasted the rig. Pendant wire No. 2 broke, to "Atlantic Andwi".
04/03				Completed deballasting the rig. Pulled all anchors. Underway to new location at 14:35 hrs.

3.3. Time distribution

Time used to drill and permanently plug and abandon the well 30/6-10A was total 92.23 days.

The operation can be devided as follows:

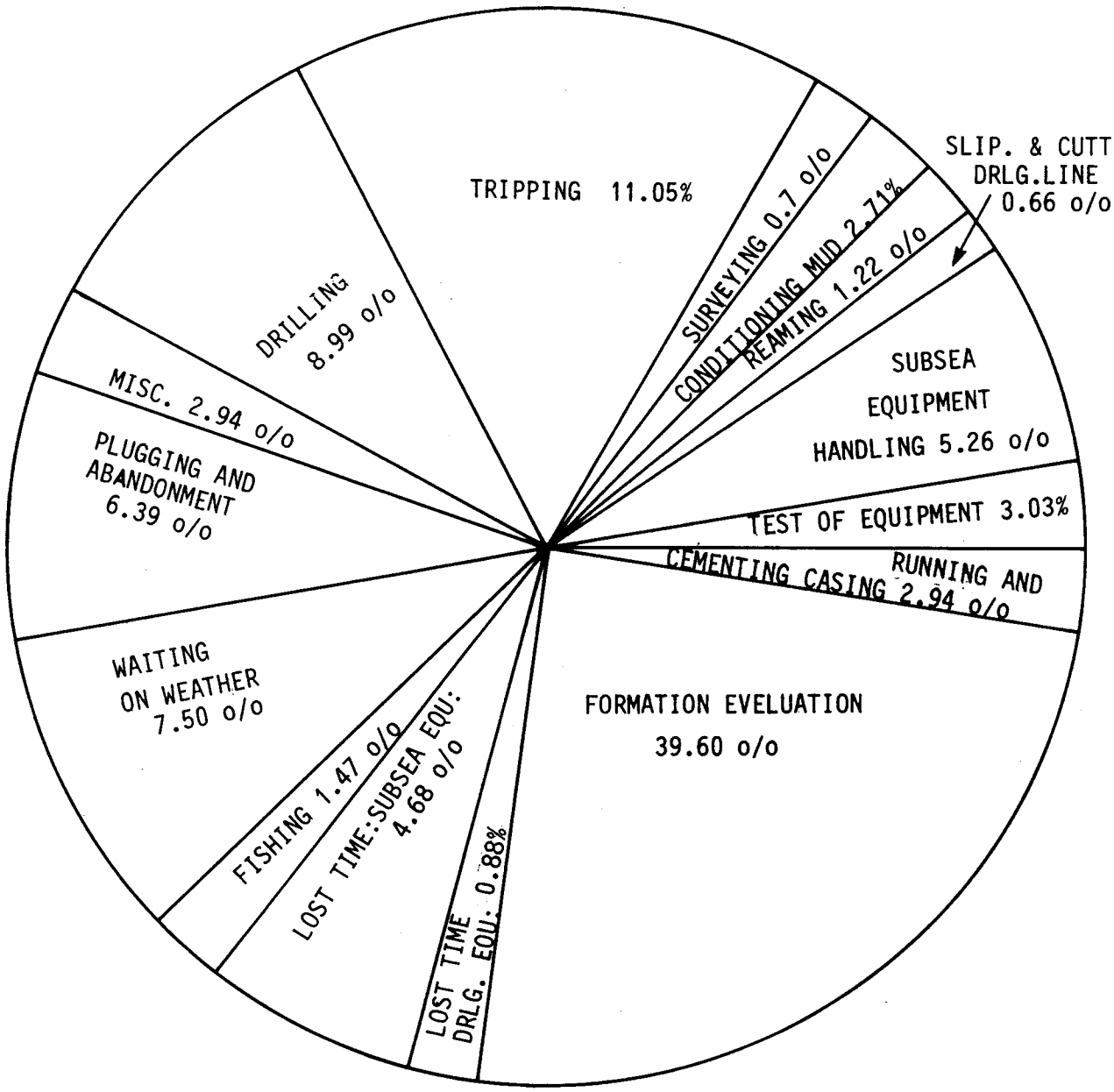
1.	Drilling the well to T.D.	10.20 days
2.	Formation evaluation	36.52 days
3.	Lost time	14.20 days
4.	Plugging and abandonment	5.90 days

The time distribution is shown in table B-1 and fig. B-2.

TABLE B-1

Time distribution

OPERATION		HOURS	PERCENTAGE OF TOTAL TIME
1.	Drilling	199	8.99
2.	Tripping	244.5	11.05
3.	Surveying	15.5	0.70
4.	Conditioning mud	60	2.71
5.	Reaming	27	1.22
6.	Slipping and cutting drlg. line	14.5	0.66
7.	Subsea equipment handling	116.5	5.26
8.	Testing of equipment	67	3.03
9.	Running and cementing casing	65	2.94
10.	Formation evaluation	876.5	39.60
11.	Lost time: Drilling equipment	19.5	0.88
12.	Lost time: Subsea equipment	103.5	4.68
13.	Lost time: Fishing	32.5	1.47
14.	Lost time: Waiting on weather	166	7.50
15.	Plugging and abandonment	141.5	6.39
16.	Misc	65	2.94
	Sum total:	2213.5	100
		= 92.23 days	



Norsk Hydro Drilling Department	TOTALE TIME DISTRIBUTION WELL 30/6-10A.	Gr. no.: 2	Fig.: B-2
		Date: 15.09.83. Sign: SKn / SF	Dwg. no.: 18

TABLE B-2

Hole deviation 30/6-10A

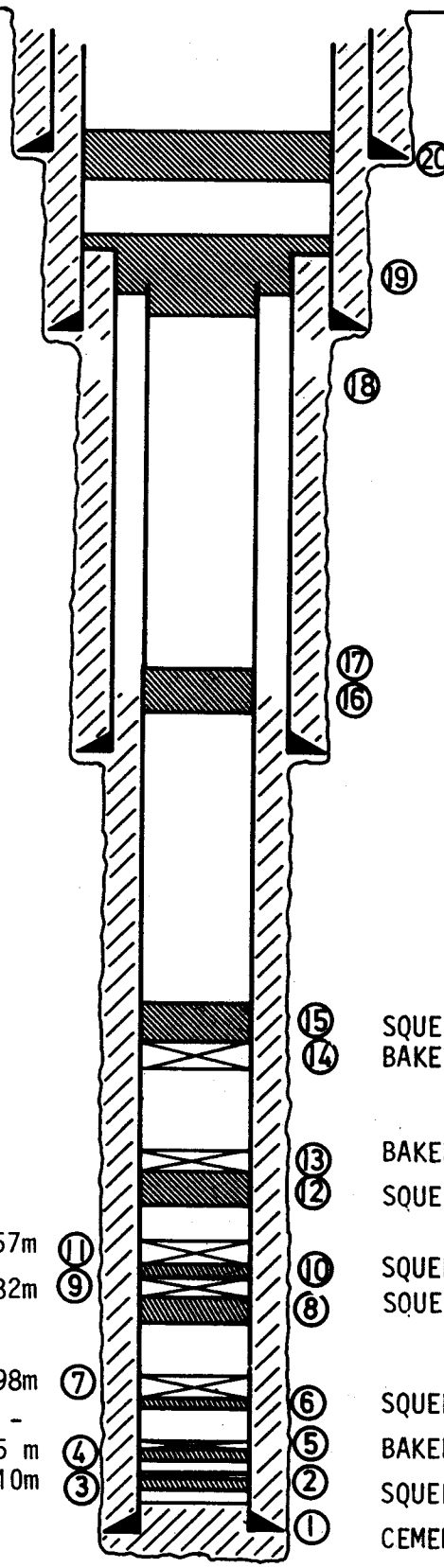
Direction survey:

Depth (m)	Inclination (Deg)	(m)	Direction (Deg)	(Min)
1775	0	18	S 31	17 E
1818	2	3	S 64	0 W
1849	4	18	S 54	0 W
1877	5	39	S 63	0 W
1914	8	42	S 61	54 W
1943	9	42	S 63	42 W
1971	10	0	S 64	42 W
2010	10	18	S 66	6 W
2078	14	12	S 66	30 W
2132	18	12	S 65	6 W
2152	19	30	S 66	30 W
2171	20	0	S 67	54 W
2198	21	18	S 69	18 W
2223	22	30	S 72	30 W
2235	23	36	S 71	0 W
2243	24	0	S 72	0 W
2252	24	6	S 72	6 W
2262	24	24	S 73	0 W
2285	26	24	S 74	36 W
2295	27	6	S 74	54 W
2323	29	24	S 76	0 W
2333	30	30	S 76	18 W
2345	31	12	S 77	0 W
2352	32	6	S 77	0 W
2371	33	42	S 77	24 W
2400	35	54	S 77	42 W
2429	37	54	S 78	6 W
2451	39	0	S 78	24 W
2606	36	30	N 90	0 W
2665	32	45	N 90	0 W

4. PERMANENT ABANDONMENT OF WELL 30/6-10 A

The abandonment program is shown in Fig. B-3 and was carried out as follows:

- Cement plug from 2623 - 2665 m.
- Cement retainer at 2610 m, and squeeze cemented perforations 2612 m - 2612.5 m.
- Cement retainer at 2608 m, and squeeze cemented perforations 2609 m - 2609.5 m.
- Cement retainer at 2598 m, and squeeze cemented perforations 2600 m - 2602 m.
- Cement retainer at 2582 m, and squeeze cemented perforations 2587 m - 2590 m.
- Cement retainer at 2557 m, and squeeze cemented perforations 2558.2 m - 2558.8 m.
- Cement retainer at 2541 m, and squeeze cemented 2546 m - 2555 m.
- Cement retainer at 2475 m, and squeeze cemented 2480.5 m - 2486.5 m.
- Cement plug 1538 m - 1738 m
- Cement plug 700 m - 790 m
- Cement plug 179 m - 380 m



30"CSG SHOE AT 219 m RKB

20"CSG SHOE AT 949 m RKB

13 3/8" CSG WINDOW AT 1788 m

13 3/8" CSG SHOE AT 2138 m RKB

BAKER RETAINER AT 2557m (11)

BAKER RETAINER AT 2582m (9)

BAKER RETAINER AT 2598m (7)

SQUEEZE CEMENT 2609m - 2609.5 m (4)

BAKER RETAINER AT 2610m (3)

9 5/8" CSG SHOE AT 2652 m

T.D. AT 2665 m

(20) BALANCED CEMENT PLUG FROM 179 m - 380 m

(19) CEMENT PLUG 700 m - 790 m

(18) TOP OF CEMENT AT 1024 m

(17) CEMENT PLUG 1538 m - 1738 m

(16) PERFORATIONS AT 1688 m

(15) SQUEEZED CEMENT 2480.5 m - 2486.5 m

(14) BAKER SQUEEZE PACKER AT 2475 m

(13) BAKER SQUEEZE PACKER AT 2541 m

(12) SQUEEZED CEMENT 2546 m - 2555 m

(10) SQUEEZE CEMENT 2558.2 m - 2558.8 m

(8) SQUEEZE CEMENT 2587 m - 2590 m

(6) SQUEEZE CEMENT 2600 m - 2602 m

(5) BAKER RETAINER AT 2608 m

(2) SQUEEZE CEMENT 2612 m - 2612.5 m

(1) CEMENT PLUG FROM 2623 m - 2665 m

Norsk Hydro Drilling Department	PERMANENT ABANDONMENT WELL 30/6-10 A	Gr. no.: 2	Fig.: B-3
		Date: 15.09.83. Sign: SKn/SF	Dwg. no.: 20

PORE PRESSURE WELL 30/6-10A

Ref. fig. B-3.

For the Tertiary and Cretaceous formations, the pore pressure is assumed to be equal to the pore pressure found in well 30/6-10.

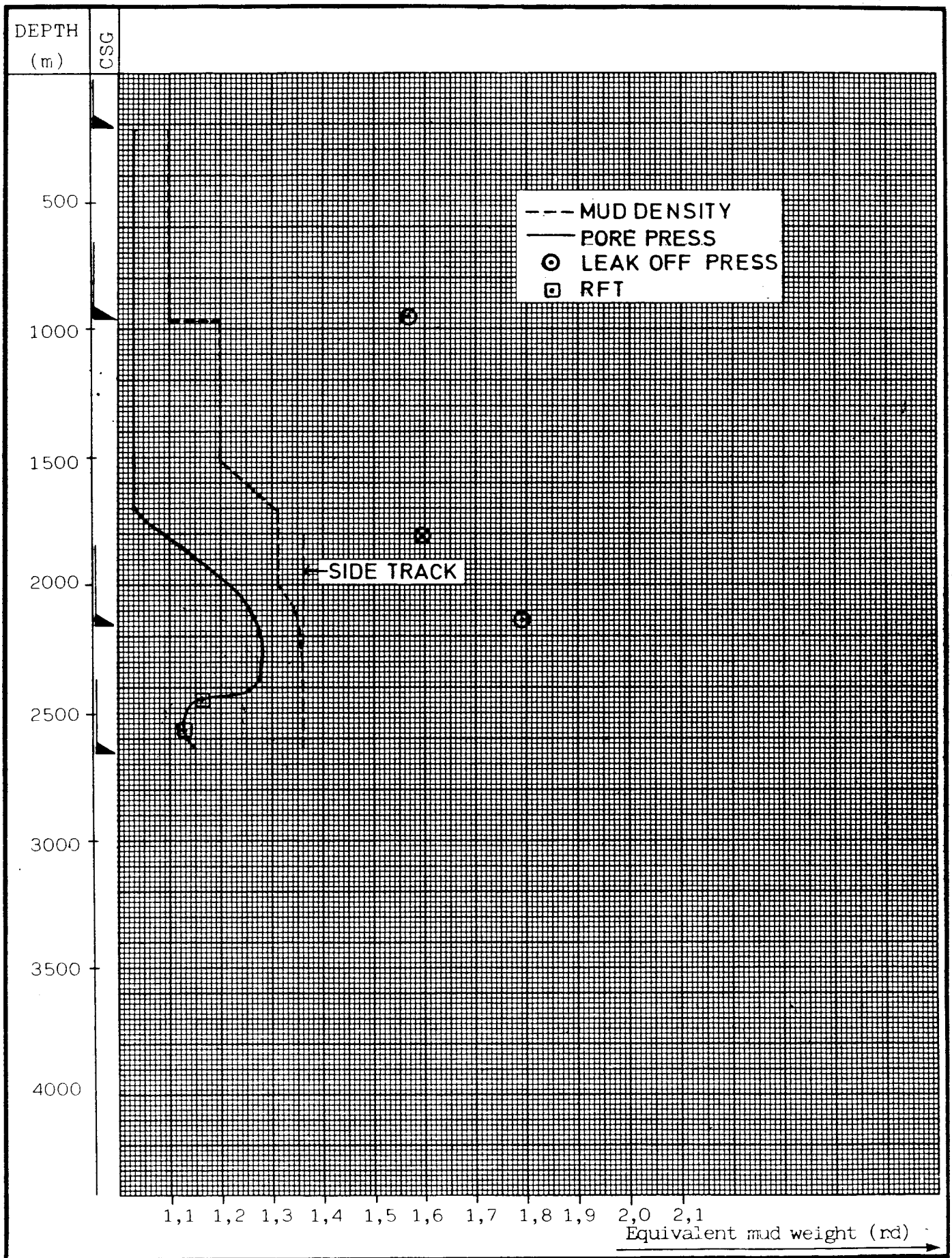
RFT-pressure measurements are as follows:

Depth (TVD) (m)	RFT (RD)
2431	1.164
2454.5	1.155
2502.7	1.136
2526.7	1.128

FORMATION INTEGRITY, WELL 30/6-10, 10A

Ref. fig. B-3.

Casing Depth (m)	Formation Integrity Strength (rd)
949	1.56
1788	1.59
2138	1.79



Norsk Hydro Drilling Department	MUD DENSITY, PORE PRESSURE AND FORMATION INTEGRITY PRESSURE, WELL 30/6-10 AND 30/6-10A	Gr. no.: 2	Fig.: B-3
		Date: 31.08.83 Sign: RW/SF	Dwg. no.: 71

6. MATERIALS REPORT

6.1 Casing and wellhead

The well was planned to be temporarily abandoned for possible future sub sea compleation. A temporary guide base was therefore run prior to spudding the well. Also, a modular template - primary base structure was used instead of the permanent guide base.

A Vetco 690 bar 3 hanger 18 3/4" wellhead housing was used.

The casing strings were run as shown in table B-3.

TABLE B - 3 CASING COMPOSITION.

Size	Grade	Weight lbs/ft	Length(m)	Treads	Setting depth(m)
30"	B	1.5"WT	13.25	ATD	
	B	1" WT	75.42	ATD	219
20"	K55	133	818	BIG OMEGA	949
13-3/8"	N80	72	2007.4	Buttress	1788 m
9-5/8"	N80	47	2522.06	Buttress	2652.3

BIT RECORD

WELL NO.: 30/6-10A

BIT NO.	SIZE	MAKE	TYPE	SERIAL NO.	JETS 32 ND.	DEPTH OUT M	M DRLG.	HRS. DRLG.	M/HR	ACC. DRLG. HRS.	WEIGHT KN	RPM	PRESS. BAR	OUTP. G/MIN	SPM		BIT COND				REMARKS
															1	2	T	B	G	OTHER	
ST1 15	12 1/4	SEC	M44 NG	258439	3 x 16	1787	62	12.5	5	333.5	50/130	80	180		55	55	2	5	I		CMT
ST2 16	12 1/4	SEC	S44G	268351	3 x 20	1815	27	6	4.5	339.5	25	-	112		66		1	4	1/16		DYNA Drill
ST3 17	12 1/4	SEC	S44G	268411	3 x 20	1854	39	6.5	6	346.0	36	-	105		70		1	3	I		DYNA Drill
ST4 18	12 1/4	Reed	S13G	NJX399	3 x 20	1910	56	11.5	4.9	357.5	45	-	106		70		2	3	I		DYNA Drill
ST5 19	12 1/4	Smith	SDGH	XB3364	3 x 14	2025	115	9.0	12.8	366.5	67/270	120/ 60	137		78		6	2	1/8		
ST6 20	12 1/4	Smith	SVH	X 33103	3 x 14	2062	37	4.5	8.2	371.0	268	50	122			70	3	1	1/32		
ST7 21	12 1/4	SEC	M44 NE	258440	3 x 20	2081	19	5.5	3.5	374.5	67	-	139			75	1	6	1/16		
ST8 22	12 1/4	Smith	SVH	XB3092	3 x 18	2108	27	9	3	383.5	40	-	130			75	1	4	1/16		
ST9 23	12 1/4	Smith	SVH	XB3093	3 x 14	2214	106	15	7.1	398.5	260	60	173		85		2	6	1/8		
ST10 24	12 1/4	HTC	XDG	098YK	3 x 22	2262	48	16.5	2.9	415	44/130	-	140/103		92/ 70		2	5	1/32		
ST11 25	12 1/4	Reed	S13G	N5X400	3 x 22	2284	22	11.5	1.9	426.5	90/120	-	120			81	1	3	I		
ST12 26	12 1/4	Smith	SVH	XB3305	3 x 14	2387	103	35	2.9	461.5	265	80	180		90		3	8	3/16		
ST13 27	12 1/4	Smith	SVH	XB3313	3 x 14	2467	80	27.5	2.9	489	230	80	180		90		3	8	I		
ST14, 28	12 1/4	Smith	SVH	XB3310	3 x 14	2467											1	1	I		
CBST1 29	12 1/4	DIABT	CB 403	7082315		2515	48	36	1.3	525	60/170	105	98		70		35%	Worn			Formation damage
CBST2 30	12 1/4	DIABT	CB 403	7082776		2546	31	23.5	1.3	548.5	110/170	90/ 100	90/100		70		30%	Worn			Formation damage
CBST3 31	12 1/4	DIABT	CB 403	7082780		2564	18	12	1.5	560.5	130	80/ 120	90		76		20%	Worn			Formation damage
CBST4 32	12 1/4	DIABT	CB 502	4100708		2564	0	1	0	561.5	44/177	80/ 120	80		70		3%	Worn			Pyrite on top of next core
RRCBST 3 31	12 1/4	DIABT	CB 403	7082780		2574	10.5	9	1.2	572	60/150	80/ 120	95		70		40%	Worn			Heavy format damage
CBST5 33	12 1/4	DIABT	CB 403	21342		2588	13.5	11.5	1.2	583.5	90/135	80/ 120	100		70		15%	Worn			
RRST14 28	12 1/4	Smith	SVH	XB3310	Wiper trip												2	3	I		

BIT RECORD

WELL NO.: 30/6-10A

BIT NO.	SIZE	MAKE	TYPE	SERIAL NO.	JETS 32 ND.	DEPTH OUT M	M DRLG.	HRS. DRLG.	M/HR	ACC. DRLG. HRS.	WEIGHT KN	RPM	PRESS. BAR	OUTP. G/MIN	SPM		BIT COND				REMARKS
															1	2	T	B	G	OTHER	
CBST6 34	12 1/4	DIABT	CB 502ST			2606.5	18.5	3.5	5.3	587	80/110	80	100		71		15% Worn				
RRST14 35	12 1/4	Smith	SVH	XB3310	3 x 14	2665	59	29.5	2.0	616.5	200/250	70/ 110	210		98		7	8	I		

6.2 BOTTOM HOLE ASSEMBLIES

Bit No.	Bit Size	Bottom Hole Assembly 30/6-10A
16	12 1/4"	Bit - Dyna Drill - XO - 2° Bent Sub - XO - Teleco Sub - 2 x Monel - 3 x 8" DC - Jars - 3 x 8" DC - XO - 15 x HWDP
17	12 1/4"	Bit - Dyna Drill - XO - 1 1/2° Bent Sub - Monel - XO - Teleco Sub - OR Sub - Monel - 3 x 8" DC - Jars - 3 x 8" DC - XO - 15 x HWDP
18	12 1/4"	Bit - Dyna Drill - XO - 1 1/2° Bent Sub - Monel - XO - Teleco Sub - OR.Sub - Monel - 3 x 8" DC - Jars - 3 x 8 " DC - XO - 15 x HWDP
19	12 1/4"	Bit - NB Stab - Monel - XO - Teleco Sub - Stab - 2 x Monel - 12 x 8" DC - Jars - 3 x 8" DC - XO - 15 x HWDP
20	12 1/4"	Bit - Ext. Sub - NB Stab - Monel - XO - Teleco - 2 x Monel - 12 x 8" DC - Jars - 3 x 8" DC - XO - 15 x HWDP
21	12 1/4"	Bit - Dyna Drill - XO - 2° Bent Sub - Monel - XO - Teleco - Orient Sub - 2 x Monel - 3 x 8" DC - 8" Jars - 3 x 8" DC - XO - 15 x HWDP
22	12 1/4"	Bit - Dyna Drill - XO - 2° Bent Sub - Monel - XO - Teleco - Orient Sub - 2 x Monel - 3 x DC - 8" Jars - 3 x 8" DC - XO - 15 x HWDP
23	12 1/4"	Bit - NB Stab - Monel - XO - Teleco - 2 x Monel - 12 x 8" DC - Jars - 3 x 8" DC - XO - 15 x HWDP

Bit No.	Bit Size	Bottom Hole Assembly 30/6-10A
24	12 1/4"	Bit - Navi Drill - 2° Bent Sub - Monel - XO - Teleco - Orient Sub - 2 x Monel - 3 x 8" DC - 8" Jars - 3 x 8" DC - XO - 15 x HWDP
25	12 1/4"	Bit - Navi Drill - 2° Bent Sub - Monel - XO - Teleco - Orient Sub - 2 x Monel - 3 x 8" DC - 8" Jars - 3 x 8" DC - XO - 15 x HWDP
26	12 1/4"	Bit - Ext. Sub - NB STB - Monel - XO - Teleco - 2 x Monel - 12 x 8" DC - Jars - 3 x 8" DC - XO - 15 x HWDP
27	12 1/4"	Bit - Ext. Sub - NB STB - Monel - XO - Teleco - 2 x Monel - 12 x 8" DC - Jars - 3 x 8" DC - XO - 15 x HWDP
28	12 1/4"	Bit - Junk Sub - NB STB - Monel - 12 1/4" Stab - XO - Teleco - 2 x Monel - 12 x 8" DC - Jars - 3 x 8" DC - XO - 15 x HWDP
CBI	12 1/4"	CB - Core BBL - 13 x 8" DC - Jars - 3 x 8" DC - XO - 15 x HWDP
RRCBI	12 1/4"	CB - Core BBL - 13 x 8" DC - Jars - 3 x 8" DC - XO - 15 x HWDP
RR28	12 1/4"	Bit - Junk Sub - NB Stab - Monel - 12 1/4" N.M. Stab - XO - Teleco - 2 x Monel - 12 x 8" DC - Jars - 3 x 8" DC - XO - 15 x HWDP
CB2	12 1/4"	CB - Core BBL - 12 x 8" DC - Jars - 3 x 8" DC - XO - 15 x HWDP
CB3	12 1/4"	CB - Core BBL - 12 x 8" DC - Jars - 3 x 8" DC - XO - 15 x HWDP

Bit No.	Bit Size	Bottom Hole Assembly 30/6-10A
CB4	12 1/4"	CB - Core BBL - 12 x 8" DC - Jars - 3 x 8" DC - XO - 15 x HWDP
RR28	12 1/4	Bit - Junk Sub - NB Stab - 8" DC - 12 1/4" Stab - 8" DC - 12 1/4" Stab - 16 x 8" DC - Jars - 3 x 8" DC - XO - 15 x HWDP
CB5	12 1/4"	CB - Core BBL - 12 x 8" DC - Jars - 3 x 8" DC - XO - 15 x HWDP
29	12 1/4"	Bit - NB STB w/float - 8" Monel - Stab - 8" DC - Stab - 16 x 8" DC - Jars - 3 x 8" DC - XO - 15 x HWDP
RR29	12 1/4"	Bit - NB STB w/float - 8" Monel - Stab - 8" DC - Stab - 16 x 8" DC - Jars - 3 x 8" DC - XO - 15 x HWDP
30	12 1/4"	Bit - NB Stab - 8" DC - Stab - 8" DC - Stab - 8" DC - Stab - Jar - XO - 18 x HWDP - 6 1/2" Jars - 15 x HWDP
RR30	12 1/4"	Bit - NB Stab - 8" DC - Stab - 8" DC - Stab - 8" DC - Stab - Jar - XO - 18 x HWDP - 6 1/2" Jar - 15 x HWDP

6.3 Mud Report

Ran in hole with new bit, turbine and 2^{o} bent sub. Circulated bottoms up for samples. At 2414 m circulated and conditioned the mud. Pipe got stuck at 2665 m. Pumped 80 bbl of unweighted pipe lax pill and displaced with mud, left 5 bbl of pill inside string.

Pumped 20 bbls diesel, followed by 80 bbls of Imco spot pill. Displaced with 125 bbls of mud. Pumped 187 bbls of diesel, 59 bbls of 1.32 rd mud and 68 bbls of 1.23 rd mud. Displaced slowly with 72 bbls 1.32 rd mud and pipe came free.

Circulated and conditioned the mud, ran 9-5/8" casing. Materials used in this section were: Barite, Bentonite, Bicarbonate, Caustic Soda, Milpolymer, Permalose and KCL.

PROMUD a/s

DRILLING MUD RECAP

Contractor WILHELMSEN OPERATOR NORSK HYDRO A/S LEGAL DESCRIPTION

Rig No. TREASURE SCOUT Well Name And No. 30/6-10A Field BERGEN COUNTRY NORWAY

Promud a/s Warehouse CCB BERGEN Spud Date 4/10/82 No. Drilling Days To T.D. 102 DATE T.D. REACHED 13/1/83 TOTAL DEPTH 2665 m TOTAL COST $ 694,573.11

DATE (1982)	TIME	DEPTH meters	WT (ppg)	FV API	PV cp @	YIELD POINT (lb/100ft²)	GELS (lb/100ft²) 0/10	pH	FILTRATE (ml/30 min) API	FILTRATE (ml/30 min) HT-HP	P_F	Cake (32nd in)	Alkalinity P_m	Alkalinity P_f/M_f	Chlorides (ppm)	Calcium (ppm)	Sand (% by Vol.)	Solids (% by Vol.)	Oil (% by Vol.)	Water (% by Vol.)	Methy. Blue (mg/ml mud)	K+ (ppm)	Circ. Volume (bbl)	Re-serve m^3	REMARKS
29/11	2400	2045	1.36	75	38	7	1.5/8	11	9.8	15.0	200	2	4.0	.6/1.5	55000	180	.3	14		86	15	45000	273	98	Work on BOP.
30/11	2400	2045	1.36	78	38	6	1.5/7	11	10.4	15.0	200	2	4.0	.6/1.5	55000	180	.3	14		86	15	45000	273	98	Work on BOP.
1/12	2400	2045	1.36	74	40	5	1.5/7	11	12.0	15.0	200	2	3.8	.5/1.3	55000	300	.3	14		86	15	45000	273	98	Work on BOP.
2/12	2400	2045	1.36	85	46	6	1.5/9	115	14.0	16.0	200	2	3.6	.5/1.3	55000	300	.3	14		86	15	45000	273	98	Run BOP.RIH to cut csg.
3/12	2400	1791	1.36	83	38	11	2/8	118	11.5	16.0	200	2	4.0	.4/1.0	53000	300	.3	15		85	14	43000	276	44	Milling.
4/12	2400	1797.5	1.36	85	35	13	3/8	12	10.5	15.0	200	2	1.8	.1/1.3	53000	600	.3	15		85	14	43000	272	76	Milling through csg cut.
5/12	2400	1798	1.36	80	34	15	3/8	12	9.5	15.0	200	2	1.3	.1/.3	52000	500	.4	16		84	15	43000	280	45	Milling with 13 3/8 mill
6/12	2400	1799.8	1.36	80	37	17	2.5/8	12	9.0	18.0	200	2	1.2	.15/.3	56000	320	.4	14.5		85.5	14	43500	266	45	" "
7/12	2400	1803	1.36	82	35	18	2.5/6	119	8.8	17.5	200	1	1.2	.1/.3	53000	330	.4	15		85	14	43000	275	76	" "
8/12	2400	1718	1.36	75	36	16	2/6	116	7.5	17	200	1	0.9	.1/.3	52000	480	.4	15		85	14	43000	239	50	Reamed-cement plug.
9/12	2400	1718	1.36	70	28	16	2/4	115	7.8	17	200	1	0.8	.15/.25	53000	500	.5	14		86	14	43000	306	50	Pull BOP. Working on BOP
10/12	2400	1718	1.36	70	28	16	2/4	115	7.8	17	200	1	0.8	.15/.25	53000	500	.5	14		86	14	43000	306	50	Pull BOP. Working on BOP
11/12	2400	1718	1.36	57	26	15	2/4	115	7.0	17	200	1	0.8	.1/.2	53000	360	.5	14		86	14	43000	299	50	Run BOP & test.
12/12	2400	1786	1.36	51	25	5	2/4	115	10.0	17	200	1	1.3	.1/.2	55000	600	.5	13		87	14	43000	271	82	Drilling 12 1/4 sidetrack
13/12	2400	1824	1.36	55	28	12.5	2/4	117	12.0	17	200	1	1.3	.1/.2	55000	440	.5	14		86	14	44000	319	100	Drlg/Leak off test-1.59sg
14/12	2400	1882	1.36	59	26	10	2/4	11.5	9.0	20	200	1	0.8	.05/.1	55000	300	.5	13		87	12	44000	300	93	Drilling.
15/12	2400	2025	1.36	60	30	12	3/7	11	7.8	17	200	1	0.8	.08/1.5	57000	600	.5	13		87	12	46000	292	93	"
16/12	2400	2026	1.36	57	28	10	3/7	11	8.0	17	200	1	0.5	.05/.1	55000	440	.5	13		87	12	46000	304	80	"
17/12	2400	2109	1.36	55	26	11.5	3/8	115	7.2	21	200	1	2.0	.15/.6	55000	560	.5	13		87	12	45000	300	70	"
18/12	2400	2207	1.36	61	23	10	4/8	105	9.0	20	200	1	1.0	.15/.5	55000	560	.5	14		86	15	42000	318	60	"
19/12	2400	2214	1.36	56	28	8	3/7	105	9.0	21	200	1	0.9	.1/.5	55000	600	.5	14		86	15	43000	314	58	", BOP test OK. WOW. RIH.
20/12	2400	2262	1.36	50	22	8	3/7	95	9.0	21	200	1	0.5	.3/.4	55000	540	TR	13		87	15	45500	310	40	Drilling.
21/12	2400	2284	1.36	55	24	10	4/9	9.0	8.8	21	200	1	0.5	.1/.3	55000	200	.3	13		87	15	45000	312	37	"
22/12	2400	2284	1.36	52	23	9	4/9	9.0	8.8	22	200	1	0.4	.2/.6	55000	200	.3	13.5		86.5	15	43000	245	57	Drilling after WOW.
23/12	2400	2337	1.36	53	23	10.5	4/8	8.8	8.4	20	200	1	0.4	.1/.4	56000	350	.25	13.5		86.5	15	43000	253	45	Work on rotary table.
24/12	2400	2387	1.36	56	21	9	4/9	8.5	9.0	21	200	1	0.4	.1/.4	56000	425	.2	13.5		86.5	15	49000	253	46	Drilling.
25/12	2400	2448	1.36	54	19	7	4/10	8.8	8.7	21	200	1	0.4	.1/.3	55000	300	.2	14		86	15	45000	278	46	Drilling.
26/12	2400	2467	1.36	60	22	7	3/6	8.5	7.4	16	200	1	0.4	.1/.3	55000	340	.2	14		86	14	48000	304	46	Drilling then coring.

Date 26/12/82. Promud a/s Technical Representative Pawson/Hutchings/McKenzie/Schmidt/F.Stamper/Sola. District North Sea. Region Norway. PAGE 3 OF 6

DRILLING MUD RECAP

Contractor WILHELMSEN OPERATOR NORSK HYDRO A/S LEGAL DESCRIPTION

Rig No. TREASURE SCOUT Well Name And No. 30/6-10 A Field BERGEN COUNTRY NORWAY

Promud a/s Warehouse CCB BERGEN Spud Date 4/10/82 No. Drilling Days To T.D. 102 DATE T.D. REACHED 13/1/83 TOTAL DEPTH 2665 m TOTAL COST $ 694,573.11

DATE 82 (1983)	TIME	DEPTH meters	WT (ppg)	FV API@	PV cp@	YIELD POINT (lb/100ft²)	GELS (lb/100ft²) 0/10	pH	FILTRATE (ml/30 min) API	HT-HP	@F	Cake (32nd in)	Alkalinity P_m	P_f/M_f	Chloride (ppm)	Calcium (ppm)	Sand (% by Vol.)	Solids (% by Vol.)	Oil (% by Vol.)	Water (% by Vol.)	Methy. Blue (me/ml mud)	K+ (ppm)	Circ. Volume (bbl)	REMARKS
27/12	2400	2474	1.36	56	24	11	3/7	8.6	6.0	14	200	1	0.4	08/.4	56000	300	.2	14		86	14	49000	298	20 Coring.
28/12	2400	2492	1.36	58	24	9.5	4/7	8.8	6.0	14	200	1	0.4	05/.2	56000	340	.25	15		85	15	49000	303	40 "
29/12	2400	2514	1.36	50	20	7.5	4/8	8.6	6.0	13.5	200	1	0.35	05/.2	55000	240	.2	15		85	15	45000	300	40 "
30/12	2400	2515	1.36	50	20	5.5	4/7	8.5	6.3	14	200	1	0.4	04/.2	55000	250	.2	15		85	15	45000	300	40 "
31/12	2400	2434	1.37	56	20	8	6/10	8.5	6.5	13.5	200	1	0.3	04/.19	55000	260	.2	15		85	14	45000	322	40 "
1/1	2400	2546	1.36	55	20	6.5	5/9	8.6	5.9	13	200	1	0.2	03/.9	55000	240	.2	14		82	14	45000	319	40 "
2/1	2400	2566	1.36	54	20	6.5	6/10	8.5	5.6	13.5	200	1	0.3	03/.7	55000	270	.2	15		82	14	45000	328	24 "
3/1	2400	2566	1.37	53	20	6	5/9	8.5	6.0	13.5	200	1	0.3	03/.75	55000	260	.2	15		82	14	55000	328	15 "
4/1	2400	2577	1.37	55	20	6	6/11	8.5	6.7	14	200	1	0.2	01/.4	56000	300	.2	15		82	14	45000	358	20 "
5/1	2400	2588	1.36	53	20	7.5	5/11	8.8	6.3	14	200	1	0.5	03/.4	55000	300	2	15		82	14	45000	328	20 "
6/1	2400	2595	1.35	60	21	9	7/13	8.8	6.0	13	200	1	0.4	04/.4	55000	250	2	15		82	14	45000	335	20 Coring - WOW.
7/1	2400	2606	1.35	61	21	9.5	7/14	8.5	6.0	13	200	1	0.3	02/.2	55000	250	2	15		82	14	45000	335	20 WOW. RIH to drill.
8/1	2400	2646	1.32	53	20	7	5/9	8.5	6.1	13	200	1	0.4	02/.3	56000	260	2	16		84	14	46000	334	56 Drilling.
9/1	2400	2657	1.32	56	20	8	5/11	8.5	6.2	12	200	1	0.5	04/.4	55000	280	1	16		84	14	45000	334	56 WOW.
10/1	2400	2657	1.32	57	20	8.5	6/12	8.5	6.2	12.5	200	1	0.4	04/.3	55000	280	1	16		84	14	45000	334	56 WOW.
11/1	2400	2657	1.32	53	20	6.5	5/9	8.5	6.6	13.5	200	1	0.4	01/.2	55000	280	1	16		84	14	45000	334	56 WOW.
12/1	2400	2657	1.32	53	20	6.5	5/9	8.5	6.6	13.5	200	1	0.4	01/.2	55000	280	1	16		84	14	45000	334	56 WOW.
13/1	2400	2665	1.32	50	18	8	5/8	8.5	6.4	14	200	1	0.3	01/.2	52000	250	1	16		84	14	45000	334	56 WOW.
14/1	2400	2665	1.32	56	20	8	4/9	8.5	7.5	14	200	1	0.3	01/.3	50000	260	1	14		84	14	42000	373	- Drilling then pipe stuck.
15/1	2400	2665	1.28	53	22	6.5	2/5	8.5	5.0	13	200	1	0.4	02/.3	50000	350	1	12		88	14	41000	366	26 RIH. Ream and wash.
16/1	2400	2665	1.28	50	20	5	3/4	8.5	5.0	13	200	1	0.3	01/02	50000	290	1	10		90	14	41000	360	26 Logging.
17/1	2400	2665	1.28	53	20	7	2/4	8.5	3.0	10.5	200	1	0.4	01/.3	58000	280	1	10		90	14	46000	360	26 "
18/1	2400	2665	1.28	52	20	6.5	2/4	8.7	5.0	11.5	200	1	0.4	02/.3	54000	350	1	11		89	14	44000	360	26 "
19/1	2400	2665	1.28	52	20	6.5	2/4	8.8	6.0	13.5	200	1	0.6	02/.6	53000	540	1	11		89	14	42000	360	26 Circ. Condition mud for
20/1	2400	2665	1.28	53	20	7	2/4	8.5	5.0	12	200	1	0.6	02/.6	54000	400	1	11		89	15	43000	360	26 WOW. casing.
21/1	2400	2665	1.28	53	20	7	2/4	8.4	5.2	11.4	200	1	0.4	02/.4	53000	600	.25	11		89	15	42000	330	- Circ.&condition mud.
22/1	2400	2652	1.28	54	20	7	2/4	8.5	5.3	11.5	200	1	0.4	02/.4	53000	600	.25	12		88	15	42000	310	- Run 9 5/8 csg.Set at 2652m
23/1	2400	2652	1.28	54	20	7	2/4	8.5	5.5	11.6	200	1	0.4	02/.4	53000	600	.25	12		88	15	42000	305	- Cmt csg.Displ. riser to seawater.

Date 23/1/83. Promud a/s Technical Representative Pawson/Hutchings/F.Stamper/Sola/Vistnes. District North Sea. Region Norway.

DRILLING MUD RECAP

Contractor WILHELMSEN OPERATOR NORSK HYDRO A/S LEGAL DESCRIPTION

Rig No. TREASURE SCOUT Well Name And No. 30/6-10 A Field BERGEN COUNTRY NORWAY

Promud a/s Warehouse CCB BERGEN Spud Date 4/10/82 No. Drilling Days To T.D. 102 DATE T.D. REACHED 13/1/83 TOTAL DEPTH 2665 m TOTAL COST $ 694,573.11

DATE (1983)	TIME	DEPTH meters	WT (ppg)	FV API@	PV cp@	YIELD POINT (lb/100ft²)	GELS (lb/100ft²) 0/10	pH	FILTRATE (ml/30 min) API	FILTRATE (ml/30 min) HT-HP	°F	Cake (32nd in)	Alkalinity P_m	Alkalinity P_f/M_f	Chloride (ppm)	Calcium (ppm)	Sand (% by Vol.)	Solids (% by Vol.)	Oil (% by Vol.)	Water (% by Vol.)	Methy. Blue (me/ml mud)		Circ. Volume (bbl)	REMARKS
24/1	2400	2652	1.23	55	21	7	2/4	8.4	5.5	11.6	200	1	0.4	02/.4	45000	720	.25	11		89	15	38000	310	- Working on BOP.
25/1	2400	2652	1.23	55	21	7	2/4	8.4	5.5	11.6	200	1	0.4	02/.4	40000	720	.25	12		88	15	38000	310	- WOW. Working on BOP.
26/1	2400	2652	1.23	55	21	7	2/4	8.4	5.5	11.6	200	1	0.1	02/.1	40000	720	.25	12		88	15	38000	310	- WOW. BOP tested.
27/1	2400	2652	1.23	55	21	7	2/4	8.4	5.5	11.6	200	1	0.1	02/.1	40000	720	.25	12		88	15	38000	310	- WOW.
28/1	2400	2652	1.23	55	21	7	2/4	8.4	5.5	11.6	200	1	0.1	02/.1	40000	720	.25	12		88	15	38000	310	- Ran BOP.Rig up schlumberg
29/1	2400	2652	1.23	55	21	6	2/5	8.4	6.5	12.4	200	1	0.1	02/.1	40000	800	.25	12		88	15	38000	270	Displ.riser to mud.Cont mud. Ruff csg.Scraper.Circ.out cmt.:
30/1	2400	2652	1.23	55	22	7	2/9	8.4	8.5	15	200	1	0.1	1/3.5	40000	1000	.25	12		88	15	38000	260	- Run schlumberger - cbl.
31/1	2400	2652	1.23	55	20	6.5	2/4	9.5	9.0	18	200	2	0.5	15/1.5	40000	520	.25	12		88	15	38000	255	- Schlumberger-cbl.Cmt.squ
1/2	2400	2652	1.23	53	23	6	2/4	9.8	6.5	20	200	1	0.5	15/1.0	40000	400	.25	12		88	15	38000	240	- Cement squeeze. WOW.
2/2	2400	2652	1.23	53	23	6	2/4	9.8	6.5	20	200	1	0.5	15/1.0	40000	400	.25	12		88	15	38000	240	- Pull BOP. Working on BOP.
3/2	2400	2652	1.23	54	21	6.5	2/4	9.8	6.8	20	200	1	0.5	15/1.0	40000	400	.25	12		88	15	38000	240	- Working on BOP. Run BOP.
4/2	2400	2652	1.23	54	21	6.5	2/4	9.8	6.8	20	200	1	0.5	15/1.0	40000	400	.25	12		88	15	39000	230	- WOW.
5/2	2400	2652	1.23	55	22	6.5	1/2	10	6.8	20	200	1	1.0	45/1.0	38000	240	.25	12		88	15	39000	200	- RIH with test string.
6/2	2400	2652	1.26	60	24	7.5	1/2	10	5.8	18	200	1	0.8	3/1.0	38000	320	.25	12		88	12	39000	200	- Gas kick - Circulating.
7/2	2400	2652	1.26	60	24	7.5	1/2	10	5.8	18	200	1	0.8	3/1.0	38000	320	.25	12		88	15	40000	255	30 DST No. 1.
8/2	2400	2652	1.26	58	25	8	2/4	10	5.5	16	200	1	0.5	3/.8	39000	320	.25	12		88	15	40000	255	30 DST No. 1.
9/2	2400	2652	1.26	55	24	10	2/4	10.5	5.0	16	200	1	0.9	5/1.5	39000	120	.25	12		88	15	40000	255	Kill well.POOH with test string.
10/2	2400	2608	1.26	58	24	9	2/4	10.5	5.5	16	200	1	0.9	6/.7	38000	150	.25	12		88	15	40000	255	- Squeeze perfs.
11/2	2400	2602	1.26	68	27	13	2/4	10.5	5.5	16	200	1	0.9	7/.6	39000	200	.25	12		88	15	40000	255	- Squeeze perfs.
12/2	2400	2602	1.26	63	25	11.5	2/4	10.5	5.5	16	200	1	1.0	6/.7	39000	200	.25	12		88	15	40000	255	DST No. 2.
13/2	2400	2602	1.26	60	23	11	2/4	10	5.5	16	200	1	1.7	9/2.5	39000	200	.25	12		88	15	40000	255	Kill well.
14/2	2400	2602	1.26	57	23	10.5	2/4	10.5	5.5	15	200	1	1.7	8/2.2	38000	200	.25	12		88	15	40000	250	Squeeze perfs.
15/2	2400	2602	1.26	57	23	10	2/4	10	5.4	15	200	1	1.6	7/.4	39000	200	.25	12		88	15	40000	250	Reverse circulate.
16/2	2400	2602	1.26	57	23	10	2/4	10	5.4	15	200	1	1.6	7/.4	39000	200	.75	12		88	15	40000	250	DST No. 3.
17/2	2400	2602	1.26	56	22	9.5	2/4	10.5	5.5	16	200	1	1.6	9/.9	39000	200	.25	12		88	15	40000	250	DST No. 3.
18/2	2400	2602	1.26	56	22	9.5	2/4	10.5	5.5	16	200	1	1.6	8/.7	39000	200	.75	12		88	15	40000	250	DST No. 3.
19/2	2400	2555	1.26	55	24	10	2/4	10.5	5.6	16	200	1	2.0	9/1.8	38000	200	.25	12		88	15	40000	250	Kill well.
20/2	2400	2555	1.26	56	22	10	2/4	10.5	5.6	16	200	1	2.2	10/21	38000	200	.25	12		88	15	40000	232	Squeeze job.

Date 20/2/83. Promud a/s Technical Representative Tom Pawson. District North Sea. Region Norway PAGE 5 OF 6

DRILLING MUD RECAP

Contractor WILHELMSEN OPERATOR NORSK HYDRO A/S LEGAL DESCRIPTION

Rig No. TREASURE SCOUT Well Name And No. 30/6-10 A Field BERGEN COUNTRY NORWAY

Promud a/s Warehouse CCB BERGEN Spud Date 4/10/82 No. Drilling Days To T.D. 102 DATE T.D. REACHED 13/1/83 TOTAL DEPTH 2665 m TOTAL COST $ 694,573.11

DATE (1983)	TIME	DEPTH meters	WT (ppg)	FV API@	PV cp @	YIELD POINT (lb/100ft²)	GELS (lb/100ft²) 0/10	pH	FILTRATE (ml/30 min) API	FILTRATE (ml/30 min) HT-HP	°F	Cake (32nd in)	Alkalinity P_m	Alkalinity P_f/M_f	Chloride (ppm)	Calcium (ppm)	Sand (% by Vol.)	Solids (% by Vol.)	Oil (% by Vol.)	Water (% by Vol.)	Methy. Blue (ma/ml mud)		Circ. Volume (bbl)	REMARKS
21/2	2460	2555	1.26	58	23	11	2/4	105	5.7	16	200	1	2.3	12/21	39000	200	.25	12	-	88	15	232		DST No. 4.
22/2	2400	2555	1.26	59	24	11.5	2/4	105	5.7	16	200	1	2.3	12/22	38000	200	.25	12	-	88	15	232		DST No. 4.
23/2	2400	2555	1.26	56	21	9	2/4	105	5.8	16	200	1	2.3	1/2	38000	200	.25	12	-	88	15	232		Kill well.
24/2	2400	2555	1.26	52	25	7.5	2/4	105	6.0	17	200	1	2.2	1/2	38000	200	.25	12	-	88	-	-		Lay down tubing.
25/2	2400	1688	1.26	50	17	8	2/4	105									.25	12	-	88	-	-		Squeeze at 1688.
26/2	2400	760	1.26	54	21	9	2/4	105									.25	12	-	88				Cut 9 5/8 casing.
27/2	2400	650	1.26	56	20	9.5	2/4	105									.25	12	-	88				Cut and retrieve 13 3/8 csg.

Date 27/2/83. Promud a/s Technical Representative Brian Hutchings. District North Sea. Region Norway. PAGE 6 OF 6

PRINT A/S - SANDNES

6.4 Cement Report

9-5/8" casing

The 9-5/8" casing was set at 2652 m and cemented back to 2240 m.

Slurry	Composition	Total used
Class "G" cement:		75.8 ton
Yield:	0.77 m^3/ton	
Fresh water:	0.402 m^3/ton	30.5 m^3
D73:	0.027 m^3/ton	205 m^3
D80:	0.018 m^3/ton	1.36 m^3
D81:	0.003 m^3/ton	0.23 m^3
Density:	1.9 r.d.	
Thickening time:	3:54 hrs at BHCT.	

4. ABANDONMENT PLUGS 30/6-10A

Plug No. 1

Perforated the 9-5/8" casing from 2612 m to 2612.5 m, set a cement retainer at 2610 m. Squeeze cemented.

Slurry	Composition	Total used
Class G cement		5.58 tons
Yield	0.77 m^3/ton	
Fresh water	0.404 m^3/ton	2.25 m^3
D73	0.027 m^3/ton	0.151 m^3
D80	0.018 m^3/ton	0.1 m^3
D81	0.001 m^3/ton	0.006 m^3
Density	1.9 r.d.	
Thickening time:	2:50 hrs at BHCT.	

Plug No. 2

Perforated the 9-5/8" casing from 2609 m to 2609.5 m, set a cement retainer at 2608 m. Squeeze cemented.

Slurry	Composition	Total used
Class G cement		3.5 tons
Yield	0.77 m^3/ton	
Fresh water	0.404 m^3/ton	1.41 m^3
D73	0.027 m^3/ton	0.095 m^3
D80	0.018 m^3/ton	0.063 m^3
D81	0.001 m^3/ton	0.004 m^3
Density	1.9 r.d.	
Thickening time:	2:50 hrs at BHCT.	

Plug No. 3

Perforated 9-5/8" casing from 2600 m - 2602 m, set a cement retainer at 2598 m. Squeeze cemented.

Slurry	Composition	Total used
Class G cement		5.2 tons
Yield	0.77 m^3/ton	
Fresh water	0.404 m^3/ton	2.1 m^3
D73	0.027 m^3/ton	0.140 m^3
D80	0.018 m^3/ton	0.094 m^3
D81	0.001 m^3/ton	0.005 m^3
Density	1.9 r.d.	
Thickening time	2:50 hrs at BHCT.	

Plug No. 4

Perforated 9-5/8" casing from 2587 m - 2590 m, set a retainer at 2582 m. Squeeze cemented.

Slurry	Composition	Total used
Class G cement		5.1 ton
Yield	0.77 m^3/ton	
Fresh water	0.404 m^3/ton	2.06 m^3
D73	0.27 m^3/ton	1.4 m^3
D80	0.018 m^3/ton	0.092 m^3
D81	0.001 m^3/ton	0.005 m^3
Density	1.9 r.d.	
Thickening time:	2:50 hrs at BHCT.	

Plug No. 5

Perforated 9-5/8" casing from 2558.2 m - 2558.8 m, set a retainer at 2557 m. Squeeze cemented.

Slurry	Composition	Total used
Class G cement		10.3 ton
Yield	0.77 m^3/ton	
Fresh water	0.404 m^3/ton	4.16 m^3
D73	0.027 m^3/ton	0.278 m^3
D80	0.018 m^3/ton	0.185 m^3
D81	0.001 m^3/ton	0.01 m^3
Density	1.9 r.d.	
Thickening time:	2:50 hrs at BHCT.	

Plug No. 6

Perforated 9-5/8" casing from 2546 m - 2555 m, set a retainer at 2541 m. Squeeze cemented.

Slurry	Composition	Total used
Class G cement		5.2 ton
Yield	0.77 m^3/ton	
Fresh water	0.404 m^3/ton	2.1 m^3
D73	0.027 m^3/ton	0.140 m^3
D80	0.018 m^3/ton	0.094 m^3
D81	0.001 m^3/ton	0.005 m^3
Density	1.9 r.d.	
Thickening time:	2:50 hrs at BHCT.	

Plug No. 7

Perforated 9-5/8" casing from 2480.5 m - 2486.5 m, set a retainer at 2475 m. Squeeze cemented.

Slurry	Composition	Total used
Class G cement		4.9 ton
Yiled	0.77 m^3/ton	
Fresh water	0.404 m^3/ton	1.98 m^3
D73	0.027 m^3/ton	0.132 m^3
D80	0.018 m^3/ton	0.088 m^3
D81	0.001 m^3/ton	0.005 m^3
Density	1.9 r.d	
Thickening time:	2:50 hrs at BHCT.	

Plug No. 8

Balanced plug from 1738 m - 1538 m. Perforations at 1688 m.

Slurry	Composition	Total used
Class G cement		10.1 ton
Yield	0.75 m^3/ton	
Fresh water	0.470 m^3/ton	4.75 m^3
D73	0.014 m^3/ton	0.141 m^3
D80	0.014 m^3/ton	0.141 m^3
D81	0.001 m^3/ton	0.01 m^3
Density	1.9 r.d.	
Thickening time:	3:10 hrs at BHCT.	

Plug No. 9

Cement plug from 700 m - 790 m.

Slurry	Composition	Total used
Class G cement		50.6 tons
Yield	0.81 m^3/ton	
Seawater	0.494 m^3/ton	24.9 m^3
D77	0.03 m^3/ton	1.52 m^3
Density	1.9 r.d.	
Thickening time	4:30 hrs at BHCT.	

Plug No. 10

Cement plug from 380 m - 179 m.

Slurry	Composition	Total used
Class G cement		52.11 tons
Yield	0.71 m^3/ton	
Seawater	0.494 m^3/ton	25.74 m^3
Density	1.92 r.d.	
Thickening time	6:00 hrs/min at 10°C.	

Jordheim, Kile, Nilsen, Hollevik

Norsk Hydro

7. Estimated Final Cost Report

Period from	to	Total operation days	Sign.	Date
01.10.82 1700 25.02.83	18.01.83 0630 04.03.83 1435	115.462	NJ	05.04

Well no.	Acc.no.	Rig name
30/6 - 10A	01801	Treasure Scout

Orig.budg.dated	M.Nkr.	Based on	Oper.d
Rev. 05.01.83	106	110	

Sub. no.	Item	Cost in period 1000 Nkr.	Cumulative costs 1000 Nkr	Budget revision 1000 Nkr	Costs in % of budget	Rema
	LOCATION ESPENSES:					
105	Site-survey		400'	400'		
106	Resurvey		200'	200'		
120	Locationing		200'	200'		
125	Location Clean-up		400'	400'		
130	Miscellaneous		200'	200'		
	RIG:					
210	Rig Contract		54267'	51700'		
212	Reimbursables		525'	800'		
	SUPPLIES:					
310	Bits		1000'	1000'		
311	Coring Equipment		1300'	1600'		
312	Drilling Tools		1000'	1000'		
313	Fishing Tools		-	-		
320	Casing		3350'	3350'		
321	Casing Equipment		120'	160'		
322	Test Tubing & Equipment		-	-		
330	Mud Products		4930'	4500'		
332	Cement		1000'	1000'		
340	Wellheads		1200'	1200'		
395	Fuel and Greases		5773'	5500'		
398	Miscellaneous		510'	500'		
	SERVICES:					
405	Helicopter		1616'	1320'		
410	Supply and Standby Ships		8430'	7300'		
415	Mud Engineering		432'	415'		
420	Mud Logging		1332'	1270'		
425	Cementing		1127'	1085'		
430	Logging		7065'	6500'		
431	Velocity Services		100'	100'		
435	Fishing		-	-		
440	Fishing Tool Rentals		-	-		
444	Casing Services		210'	230'		
445	Casing Cutting		150'	300'		
446	Tubular Inspection		100'	100'		
450	Coring		200'	200'		
455	Testing		-	-		
460	Test Tool Rentals		971'	935'		
470	Diving		650'	535'		
475	Radioservice		231'	215'		
480	Meteorological Service		51'	48'		
485	Catering		175'	170'		
490	Miscellaneous		1280'	300'		
	OPERATORS COSTS:					
510	Mobilization Costs		520'	495'		
511	Repair TSC juli 82		577'	550'		
515	Repair TSC feb 83		-	-		
520	Insurance		1301'	1400'		
530	Base		1716'	1650'		
540	Laboratory Studies		2000'	2000'		
550	Onshore Drilling Supervision		1616'	1540'		
555	Onshore Geological Supervision		611'	580'		
560	Offshore Drilling Supervision		2425'	2310'		
570	Offshore Geological Supervision		462'	440'		
580	Exploration Assistance		250'	250'		
595	Miscellaneous		52'	52'		

Jordheim, Kile, Nilsen, Hollevik

Norsk Hydro

Cost Report

Period from	to	Total operation days	Sign.	Date
18.01.83 0630	25.02.83 1700	38.437	NJ	05.04.8

Well no.	Acc.no.	Rig name	
Test 30/6 - 10A	01851	Treasure Scout	

Orig.budg.dated	M.Nkr.	Based on	Oper.days
Rev. 14.02.83	39.5	40	

Sub. no.	Item	Cost in period 1000 Nkr.	Cumulative costs 1000 Nkr	Budget revision 1000 Nkr	Costs in % of budget	Remarks
	LOCATION ESPENSES:					
105	Site-survey		-	-		
106	Resurvey		-	-		
120	Locationing		-	-		
125	Location Clean-up		-	-		
130	Miscellaneous		-	-		
	RIG:					
210	Rig Contract		18065'	18800'		
212	Reimbursables		184'	300'		
	SUPPLIES:					
310	Bits		-	-		
311	Coring Equipment		5'	-		
312	Drilling Tools		150'	150'		
313	Fishing Tools		-	-		
320	Casing		1060'	1060'		
321	Casing Equipment		143'	200'		
322	Test Tubing & Equipment		500'	500'		
330	Mud Products		-	-		
332	Cement		392'	350'		
340	Wellheads		200'	200'		
395	Fuel and Greases		1800'	2000'		
398	Miscellaneous		420'	50'		
	SERVICES:					
405	Helicopter		595'	560'		
410	Supply and Standby Ships		2580'	2920'		
415	Mud Engineering		145'	150'		
420	Mud Logging		417'	423'		
425	Cementing		375'	390'		
430	Logging		2506'	2500'		
431	Velocity Services		-	-		
435	Fishing		-	-		
440	Fishing Tool Rentals		-	-		
444	Casing Services		270'	300'		
445	Casing Cutting		-	-		
446	Tubular Inspection		30'	50'		
450	Coring		-	-		
455	Testing		3200' 3700	1800' 3000'		
460	Test Tool Rentals		240'	230'		
470	Diving		125'	80'		
475	Radioservice		90'	80'		
480	Meteorological Service		142'	60'		
485	Catering		350'	200'		
490	Miscellaneous					
	OPERATORS COSTS:					
510	Mobilization Costs		173'	180'		
511	Repair TSC juli 82		192'	200'		
515	Repair TSC feb 83		-	-		
520	Insaurance		432'	500'		
530	Base		575'	600'		
540	Laboratory Studies		-	-		
550	Onshore Drilling Supervision		535'	557'		
555	Onshore Geological Supervision		-	-		
560	Offshore Drilling Supervision		810'	842'		
570	Offshore Geological Supervision		-	-		
580	Exploration Assistance		179'	268'		
595	Miscellaneous		-	-		
			40500'	39500'		

PROBLEMS WITH DRILLING EQUIPMENT

Failure and problems with drilling equipment have earlier not been reported under a separate heading in our final well reports. Norsk Hydro is in the process of developing a suitable and useful format for this reporting.

Below follows a listing of special problems during the drilling of this well.

8. PROBLEMS WITH THE DRILLING EQUIPMENT

- Had to repair rotary drive coupling.

- Problem to test upper pipe ram. Pulled BOP stack. Had to change new style seal seat on all 4 rams, and knife seal on shear ram.

- Leak in yellow pod.

- Problem to latch BOP.

- Emergency shutdown drawworks not functioning properly.

- Guide line no. 2 and 4 broken due to heavy weather.

- Attempt to stab lower marine riser package, guide wire no. 1 and 3 broken due to heavy weather. Not able to stab same. Moved rig and used Scorpio to stab.

- Pulled BOP, leaked at VX-ring. Ring changed.

- One camera propulsion not operative. Repaired.

Norsk Hydro

Oslo - Norway

DRILLING PROGRESS, WELL 30/6 - 10 A

OPERATOR : NORSK HYDRO A/S

COORDINATES : 60° 36' 29.6" N
: 02° 46' 24.2" E

SPUD IN : 01. 12. 82.

WELL COMPL.: 04. 03. 83.

RIG : TREASURE SCOUT

WATER DEPTH : 109 m

RKB to MSL : 23 m

RKB to SEABED: 132 m

DEPTHS RKB | LITHO SECTION | SYST./SERIES | CASING | STAGES | SHOWS | DESCRIPTIONS, OBS | MUD MATERIALS | MUD W.T. SP. GR. | DEPTH RKB | DAYS → | Scale 1 : 5000

WELL SIDETRACKED FROM 1788 m THROUGH WINDOW IN 13⅜" CSG (1788–1803 m).

NOTE: ALL DEPTHS ARE MEASURED DEPTHS.
1788m (TVD IN BRACKETS)

TERTIARY
PALEOCENE
EOCENE
HORDALAND GROUP
BALDER FM.
SELE FM.
LISTA FM.

Clyst Sh: m dk - dk gy, grn gy, m brn, firm - mod hd, subfis, slty - v slty, m - mic, non calc, pyr, sl glau.
Strgs Lst and Dol.

1982m (1980m)
Clyst Sh: m gy - gy blk, gy brn, m - dk brn, grn gy, dk grn, lt - m blue gy, firm, blky - subfis, mod - v slty, m - mic, non - mod calc.

2053m (2050m)
Tr Tuff: pl - m blue gy, abn vl wh and blk specks, Tr Pyr.
Strgs Lst: pl - dk yel brn, micro - crypto xln, with pr shows.

2168m (2160m)
Clyst Sh: m dk - dk grn gy, olv gy, gy brn - v dusky rd, sft - mod hd, blky - subfis, slty - v slty, non - sl calc, occ v calc grdg Mrl.
Strg Lst: occ w/pr shows.

2264.5 m (2249.5m)

JURASSIC
CRETACEOUS
UPPER
SHETLAND GRP

Clyst: m lt - m dk gy, sft - firm, blky, rr subfis, sl slty, pyr, non mod calc.
Strgs/Intbds Lst: lt brn gy, lt gy, sft - firm, occ mod hd, occ arg, crypto - micro xln, w/pr - fair shows.
Mrl: m lt - m gy, sft, amorph.

2448m (2404)
Sh: gy blk - brn blk, mod hd, subfis,

2480m (2429m)

MIDDLE
TYNE FM.
MESS FM.

Sst: m, occ f - v crs, mod hd - fri, arg mtx, m - mic, carb, silic cmtd, no - gd vis por, w/pr - fair shows.
Intbd w/Sh, Slst and Coal strgs.

2572m (2502m)
Sst: f - crs, occ cgl, cly mtx, pr silic cmt, occ cly mtx, pr - v gd por, pr - fair shows, gd shows below.

LOWER
DRAKE FM.

2608m (2531m)
Sh: olv gy - olv blk, mod hd, blky - subfis, slty, occ grdg Slst, micromic abn pyr, non - mod calc.

T.D. DRILLER: 2665m (2577mTVD)
T.D. LOGGER: 2656m (2570mTVD)

BARITE
BENTONITE
BICARBONATE
CAUSTIC SODA
MILPOLYMER
PERMALOSE
KCL

1.36
1.35
1.32

Core 1–10
2606.5

MILLED REP. BOP

12 1/4" HOLE

PULL LMRP

RUN 9 5/8" CSG

PULL BOP

TESTING AND

PULL LMRP
REP. GUIDE LINES

PIPE STUCK

LOGGED

WORK ON DIVERTER

PEMANENT ABAND.