PL 050

STATOIL - NORSK HYDRO - SAGA PETROLEUM

COMPLETION REPORT

WELL 34/10-3

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GENERAL INFORMATION

1. Well data record

a. Well designation: 34/10-3
b. Well classification: Wildcat
c. Well location:

i) Country: Norway, North Sea
ii) Licence: 050
iii) Latitude: 61° 12' 49,70" N
Longitude: 02° 11' 53,65" E
iv) Seismic location: Shotpoint no. 405
Line no. 708/709 - 404
v) Water depth: 140 m

d. Rig data:

i) Rig name: "Norskald"
ii) Drilling draft: 21,3 m
iii) RKB-MSL: 25 m

2. Purpose of the well

Well 34/10-3 was drilled on the Delta structure situated in the north-eastern part of block 34/10. The primary objective of the well was to test sandstones of Middle Jurassic age. Secondary objectives were sandstones of Lower Jurassic and Upper Triassic age.

3. Results of the well

Well 34/10-3 proved the presence of oil in sandstones of Middle Jurassic age (Brent Group). The oil water contact is observed at 1972 m KB. The well was production tested (See 5. Testing operations and results).

Total depth was 2802 m KB which is 87 m into rocks of Triassic age. A total of 8 cores were recovered in the interval from 1904 to 2025,3 m and one core from 2467 to 2478,8 m KB.

3. Well history

a. General

i) Spud date: March, 14th 1979
ii) Rig released: June, 8th 1979
iii) Status: Plugged and abandoned

b. Contractors

i) Drilling platform: "Norskald"
ii) Rowan/K/S Gotaas-Larsen Expl. A/S
iii) Cementing: Halliburton
iv) Casing: Stavanger Casing
v) Well testing: Otis/Flopetrol
vi) Electric logging: Schlumberger
vii) Mud logging: Exploration Logging
viii) Mud contractor: Anker Drilling
ix) Supply boats: Vibran Shipping: "Normann Vibran"
Viking Supply Ships: "Anne Viking"
x) Conventional coring: Diamond Boart
xi) Diving: Comex
xii) Helicopters: Helikopter Service A/S
xiii) Core analysis: GECO
xiv) Sample analysis: Paleoservices Ltd.

c. Casing

i) 30" at 254 m
ii) 20" at 571 m
iii) 13 3/8" at 1475 m
iv) 9 5/8" at 1812 m
v) 7" liner at 2346 m

d. Coring

1) Conventional coring (description attached)

CORE NO.	INTERVAL	RECOVERED(m)	REC.(%)
1	1904 - 1919.4	14.7	95.5
2	1919.4 - 1930.9	10.3	90.4
3	1930.9 - 1936.1	2.45	47
4	1936.1 - 1953.2	11.65	68
5	1953.2 - 1971.1	15.8	88
6	1971.1 - 1989.2	18.1	100
7	1989.2 - 2007.3	17.2	90
8	2007.3 - 2025.3	18	100
9	2467.0 - 2478.8	11.8	100

2) Sidewall coring

78 samples of 90 shots were recovered (86.7%)
(Description attached).

7. Logging

1) Exploration Logging, GEMDAS unit include the following data:

i) Drilling rate (ROP)
ii) Lithology
iii) Cutting gas
iv) Mud gas
v) Chromatograph
vi) H_2S detector
vii) Shale density and 20 other parameters

2) Schlumberger

Type of log	Run No.	Interval (m KB)
ISF/SONIC-GR-SP	1	175 - 579
	2	571.3 - 1485.7
	3	1475 - 1817
	4	1809.5 - 2346.5
	5	2345.5 - 2508.5
	6	2490 - 2797.5
FDC/GR-CAL	1	571 - 1484.5
	2	1475 - 1818.5
FDC/CNL-GR-CAL	1	1809.5 - 2345.5
	2	2345.5 - 2508
	3	2490 - 2798
DLL-MSFL-GR	1	1809.5 - 2346
BHC-GR-CAL	1	2490 - 2795.5
HDT	1	1809.5 - 2346
	2	2345.5 - 2507.5
	3	2490 - 2797
CBL-GR	1	195 - 1404
	2	1346.5 - 1809.5
CBL-GR-VDL	1	1670 - 2344,5
	2	1870 - 2050
	3	1800 - 1958

g) Velocity Survey

The velocity survey was conducted by SSL. 23 checkshots with levels from 620 m - 2705 m KB.

II GEOLOGICAL REPORT

GEOLOGICAL REPORT

1. Stratigraphy

a. Table of Chronostratigraphy (all depths in m KB)

Chronostratigraphic tops	DEPTH
QUATERNARY	
Top Pleistocene	140
TERTIARY	
Top Pliocene	373
Top Oligocene	895
Top Eocene	1107
Top Paleocene	1578
CRETACEOUS	1748
Top Late Maastrichtian	1748
Top Maastrichtian - Campanian	1772
Top Albian - Aptian	1886
JURASSIC	
Top Earliest Bathonian - Bajocian	1892
Top Early Bajocian	2075
Top ?Early Bajocian - Toarcian	2095
Top Early Toarcian	2147
Top Early Toarcian/Late Pliensb.	2198
Top Late Pliensbachian	2240
Top Early Pliensbachian	2411
Top Early Pliensbachian - Sinemurian	2450
Top ?Sinemurian - Hettangian	2496
TRIASSIC	
Top Late Triassic, Rhaetian	2660

b. Table of Lithostratigraphy

Lithostratigraphic tops	depth (m)	thickness (m)
Shetland Group	1748	138
Cromer Knoll Group	1886	6
Brent Group	1892	199
Ness Formation	1892	87
Etive Formation	1979	23
Rannoch Formation	2002	82
Broom Formation	2084	7
Dunlin Group	2091	404
Drake Formation	2091	110
Cook Formation	2201	125
Burton Formation	2326	10
Amundsen Formation	2336	159
Lower Jurassic		
Statfjord Formation	2495	220
Nansen Member	2495	67
Eiriksson Member	2562	115
Raude Member	2677	38
Triassic		
Cormorant Formation	2715	87
TD	2802	

2. LITHOLOGICAL DESCRIPTION

Summary

The chronostratigraphic tops are mainly based on the paleontological report from Paleoservices Ltd. and on correlations with wells in blocks 33/9, 33/12 and 34/10.

QUATERNARY (140 - 373 m KB)

Pleistocene (280 - 373 m KB)

This interval consists of soft clays with a few thin layers of loose sand. The clay is light grey, sticky, non calcareous, silty and sandy in parts. The sand grains are clear to white quartz and vary from very fine to coarse in size. Traces of lignite and different kinds of fossils have been recorded throughout the sequence.

TERTIARY (373 - 1748 m KB)

Pliocene (373 - 895 m KB)

The sediments of this interval are dominated by the same lithology as that above. However, the sand layers become more frequent downwards. The clays are mostly slightly calcareous in this section. Traces of pyrite, glauconite and shell fragments have been recorded throughout most of the interval.

Oligocene (895 - 1107 m KB)

There is no trace of Miocene sediments and an unconformity exists below Pliocene. The Oligocene deposits consist of predominantly medium grey, brownish grey clay with minor amounts of thin bedded, poorly developed sands above 1000 m. The clay is non calcareous and partly silty. The sands are loose and usually fine to medium, occasionally coarse to very coarse and partly calcite cemented.

Below 1000 m is a 70 m thick interval of massive sand of same type as described above for this sequence.
Traces of pyrite, mica, lignite and shell fragments are common throughout the section.

Eocene (1107 - 1578 m KB)

In upper parts medium to coarse sands are interbedded with stringers of siltstone and claystone. The sands are mainly loose clear quartz, moderately sorted and contain usually mica. The claystones are predominantly light to medium grey, occasionally brownish grey and also become greenish grey below 1225 m. In the lower half of this unit claystone is more common and usually interbedded with thin layers of white to creamy, moderately hard limestone. Traces of fossil fragments, mica, pyrite and glauconite are usually found in this section.

Paleocene (1578 - 1748 m)

Predominantly grey, bluish grey claystones with minor amounts of thin bedded, poorly developed siltstones and sands. The sediments are calcareous in parts and occasional grading to limestones. The minor thin sands present range from silt size to medium sands, and are mostly developed in the lower part of Paleocene. Tuffaceous material, white to grey, bluish grey are particularly common near the upper boundary of Paleocene. Pyrite and glauconite are common through the interval in small amounts.

CRETACEOUS (1748 - 1892 m KB)

Shetland Group (1748 - 1886 m KB)

This interval is very mixed with primarily medium to dark grey claystones, and minor amounts of siltstones, sands, marls and limestones. The siltstone layers are pale yellow brown and calcite cemented in parts. The sand stringers have grain sizes ranging from fine to coarse. The soft to firm marls are of light grey colour. The limestone stringers are firm to hard, and slightly argillaceous.

Cromer Knoll Group (1886 - 1892 m KB)

This group consists mainly of light grey to light brown, firm and argillaceous limestone, and partly of claystone as described above.

JURASSIC (1892 - 2660 m KB)

Brent Group (1892 - 2092 m KB)

The Brent Group consists mainly of sands, but shales are frequent in the upper part (Ness Formation).

Ness Formation (1892 - 1979 m KB)

This formation consists of interbedded sandstone and shale with frequent coal layers. The sandstone is mostly very fine to fine, occasionally medium grained, and light brown in colour.
The friable sandstone range in thickness from thin stringers to over 10 meter thick layers. The sand is mostly moderate to well sorted, contains plant remains and partly silica and calcite cemented. The shales are generally medium to dark grey, moderately hard, micaceous, and mostly rich in organic matter.

Etive Formation (1979 - 2002 n KB)

Etive Formation consists of massive, friable, fine to medium sand, occasionally coarse to very coarse in size. The sand grains are clear to white and moderately to well sorted.

Rannoch Formation (2002 - 2084 m KB)

This formation consists generally of a loose to friable, massive, clear to white, very fine to fine grained, clean sand. The sand is very micaceous and well sorted and occasionally calcite and dolomite cemented. Traces of coal, pyrite and glauconite are present.

Broom Formation (2084 - 2091 m KB)

Primarily light grey, poorly sorted, fine to coarse sand dominate this formation. The sandstones are usually calcareous and pyritic.

Dunlin Group (2091 - 2'95 m KB)

The dominating rocks in the Dunlin Group are light to medium grey claystone with a 60 m thick bed of sandstone (Cook Fm), and stringers of siltstone and limestone.

Drake Formation (2091 - 2201 m KB)

Essentially a light to medium grey, soft, generally non calcareous claystone dominates the Drake Formation. Only very minor siltstone, very fine grained sand stringers and limestones are normally present. Lignite and pyrite are common.

Cook Formation (2201 - 2326 m KB)

Cook Formation consists of a thick sandstone in upper parts. In lower parts claystone dominates with thin layers of sandstone and limestone. The sandstone is very fine to medium, occasionally coarse to very coarse, mostly angular to subangular, micaceous and partly pyrite and calcite cemented. Traces of siderite and glauconite are common.

Burton Formation (2326 - 2336 m KB)

Fairly uniform grey claystone interbedded with thin layers of limestone characterize the Burton Formation. The claystone is soft, micromicaceous and non to slightly calcareous. The limestone is white to light brown and moderately hard. Traces of pyrite and lignite are common.

Amundsen Formation (2336 - 2495 m KB)

Especially in the upper parts claystone and stringers of limestone dominate. In the lower parts sandstone/siltstone with thin limestone streaks occur. The claystone is light grey, occasionally medium grey, soft, micromicaceous, non to slightly calcareous and in part silty. The sandstone is light to medium grey, very fine, angular to subrounded, poorly to moderately sorted, calcite cemented, micaceous and in part grading into siltstone. The limestone is white to light brown and moderately hard.

Statfjord Formation (2495 - 2715 m KB)

The lithology of the Statfjord Formation consists of interbedded sandstone and shale with scattered limestone layers.

Nansen Member (2495 - 2562 m KB)

A medium to very coarse grained, clear to white quartzitic sandstone dominated this interval. The sandstone is interbedded with a medium grey claystone, firm, subfissile, slightly to very calcareous, micromicaceous and silty in parts. The sandstone is partly calcite cemented and subrounded to subangular. Traces of black, brittle coal, pyrite and white to light grey, partly argillaceous, moderately hard limestone are found occasionally.

Eiriksson Member (2562 - 2677 m KB)

This interval also includes relatively thick sand beds of almost the same type as the sand above. In addition to the sand a medium to light grey, occasionally dark grey, brownish grey, red brown, firm to hard shale occurs frequently. Layers of siltstone, light to medium grey, firm, micaceous, non calcareous are recorded occasionally. Sporadic traces of limestone of the same nature as in Nansen Member occur.

Raude Member (2677 - 2715 m KB)

This interval consists of interbedded sandstone and shale. The sandstone is clear to milky quartz, occasionally pink to tan/light brown, medium to very coarse, angular to subrounded, loose and fair to well sorted. Occasionally granules can be seen. The shale is dark brown, red brown, greenish grey, light to medium grey, firm to hard, micromicaceous, non to slightly calcareous, and in parts silty.

TRIASSIC

Cormorant Formation (2715 - TD)

The Cormorant Formation is characterized by interbedded sand/shale with layers of siltstone and limestone. The shale is light to medium grey, dark brown to red brown, yellow green, firm to hard, occasionally micromicaceous, non to slightly calcareous. The sandstone is clear to milky, fine to medium grained, occasionally coarse grained and calcite cemented. Traces of limestone, mica and pyrite occur.

statoil
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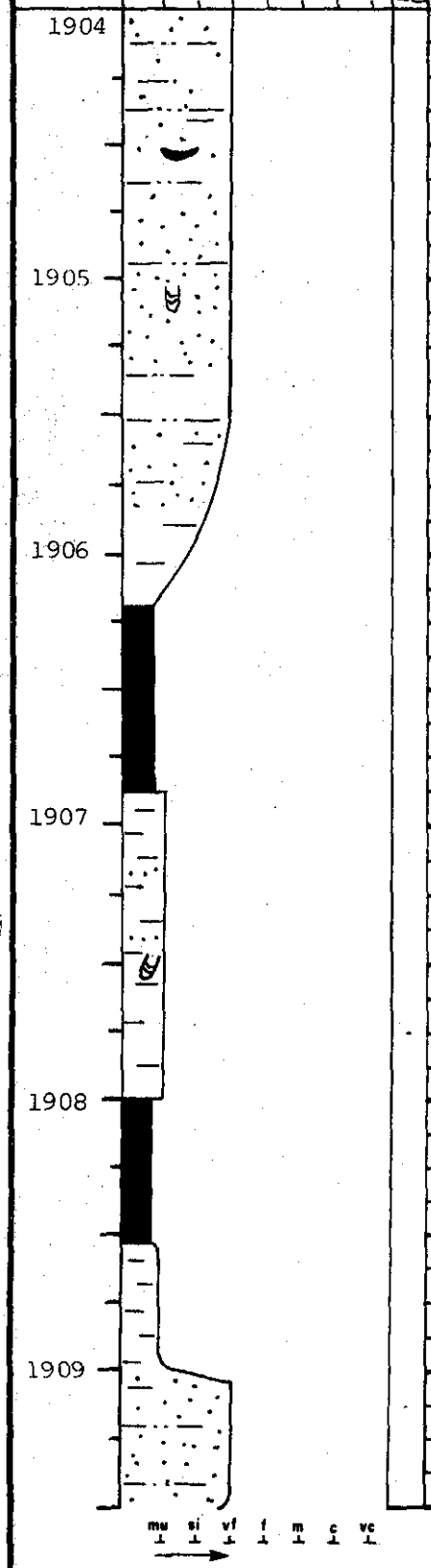
CONVENTIONAL CORE DESCRIPTION

FIELD	WELL NO. 34/10-3	AREA NORTH SEA	
CORE NO. 1	INTERVAL from 1904 to 1919,4	CORED 15,4	REC 14,7 — 95,5 %
FORM.	GEOLOGIST		DATE 7 April 79



LITHOLOGIC DESCRIPTION	MISC.
sandstone, vf, grading to siltstone, gy - lt brn, mod hd, v mic, non calc, plant remains	lt yel fluor fast str milky cut
shale, dk gy - blk, mod hd, rich in organic matter, mic, sl slty	
coal, blk, brittle	
shale a/a	
coal a/a	
sandstone, vf, slty, lt brn	lt yel fluor fast mlky cut

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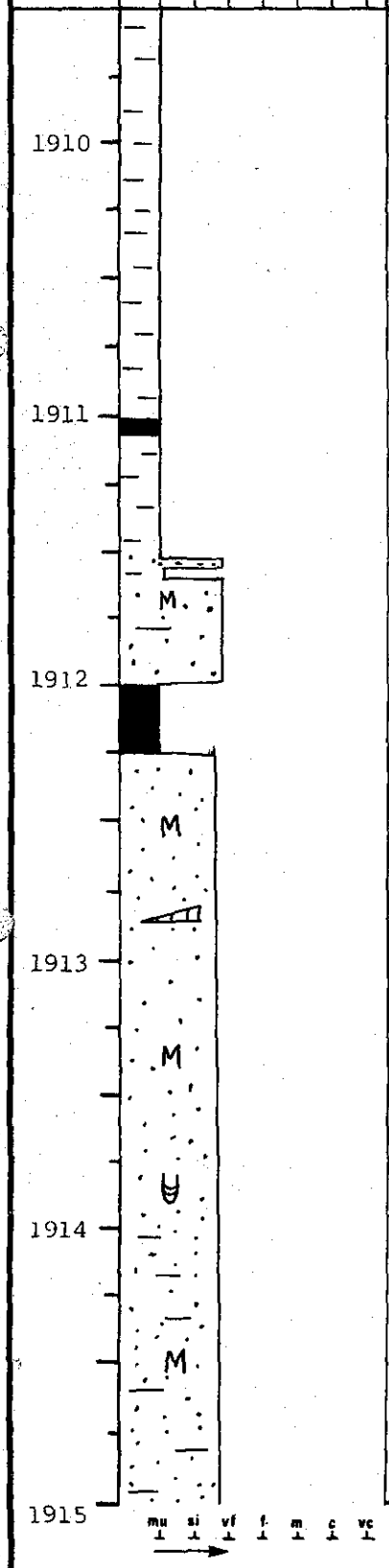
CONVENTIONAL CORE DESCRIPTION

FIELD _____ WELL NO. 34/10-3 AREA NORTH SEA

CORE NO. 1 INTERVAL from 1904 to 1919,4 CORED 15,4 REC 14,7 95,5 %

FORM. _____ GEOLOGIST _____ DATE 7 April 79



SHOWS

STAIN			CUT			FLUOR			Φ		
S	F	G	P	F	G	P	F	G	P	F	G

LITHOLOGIC DESCRIPTION

shale, dk brn - blk, mod hd, occ plant remains, occ balls of mudst, lt brn, sl calc

sandstone, vf, lt brn, fri, poor sil cmtd, v mic, non calc

shale, brnish gy, mod hd, micromic

MISC.

lt yel fluor. fast str mlky cut bleeding gas oil odour

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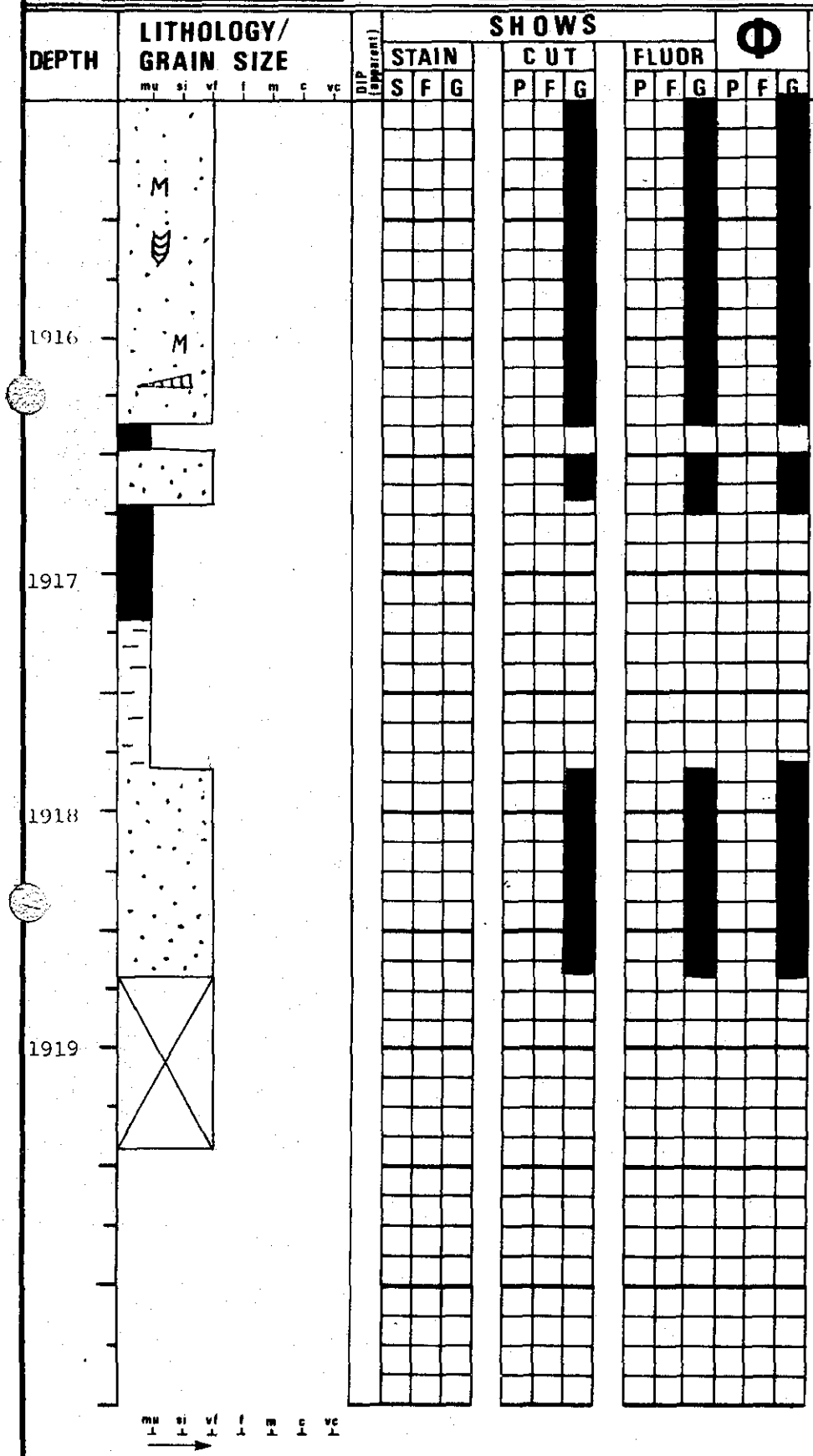
CONVENTIONAL CORE DESCRIPTION

FIELD _____ WELL NO. _____ AREA _____

CORE NO. 1 INTERVAL from 1904 to 1919,4 CORED 15,4 REC. 14,7 95,5 %

FORM. _____ GEOLOGIST _____ DATE 7 April 79



LITHOLOGIC DESCRIPTION	MISC.
sandstone, vf, lt brn mod hd, sil cmt, fri, v micac, plant remains burrows	lt yel fluor, fast str mlky cut
coal, blk, brittle, shny, massive	
shale, med gy, mod hd, v micac, sl slty, occ plant remains	
sandstone, fri - lse, else a/a	

4.00.17

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CONVENTIONAL CORE DESCRIPTION

FIELD _____ WELL NO. 34/10-3 AREA NORTH SEA

CORE NO. 2 INTERVAL from 1919,4 to 1930,9 CORED 11,5 m REC 10,4 m 90,4 %

FORM. _____ GEOLOGIST _____ DATE 8/4-1979

DEPTH	LITHOLOGY/ GRAIN SIZE (mu si vf f m c vc)	DIP (apparent)	SHOWS STAIN S F G	SHOWS CUT P F G	SHOWS FLUOR P F G	Φ P F G	LITHOLOGIC DESCRIPTION	MISC.
1919,4	M						sandstone, lt brn, vf, friable, v micac,	bright yellow fluor, mod fast mlky cut
1920	M							
							siltstone, med-dk gy, friable, micromic, shly in parts	
1921								
							sandstone, med gy, hd, slty w/strgs of sandstone a/a	
1922								
1923							coal, dk brn, sl lam, shly, firm	
1924								

mu si vf f m c vc

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CONVENTIONAL CORE DESCRIPTION

FIELD _____ WELL NO. 34/10-3 AREA NORTH SEA

CORE NO. 2 INTERVAL from 1919,4 to 1930,9 CORED 11,5 m REC 10,4 m 90,4 %

FORM. _____ GEOLOGIST _____ DATE 8/4-1979

DEPTH	LITHOLOGY/ GRAIN SIZE (mu si vf f m c vc)	DIP (apparent)	SHOWS STAIN S F G	CUT P F G	FLUOR P F G	Φ P F G	LITHOLOGIC DESCRIPTION	MISC.
1925							coal, blk, brittle	
							shale, med gry, hd, micromic, slty, abd plant remains	
1926								
1927							sandstone, lt brn, vf, v mic, lam w/siltst med gy, lse, v micac, abd plant remains	lt yellow fluor, mod fast mlky cut
1928							siltstone, lt brn-med gy, lam w/sandstone a/a	
1929								
1929,80								

mu si vf f m c vc

4.00.17

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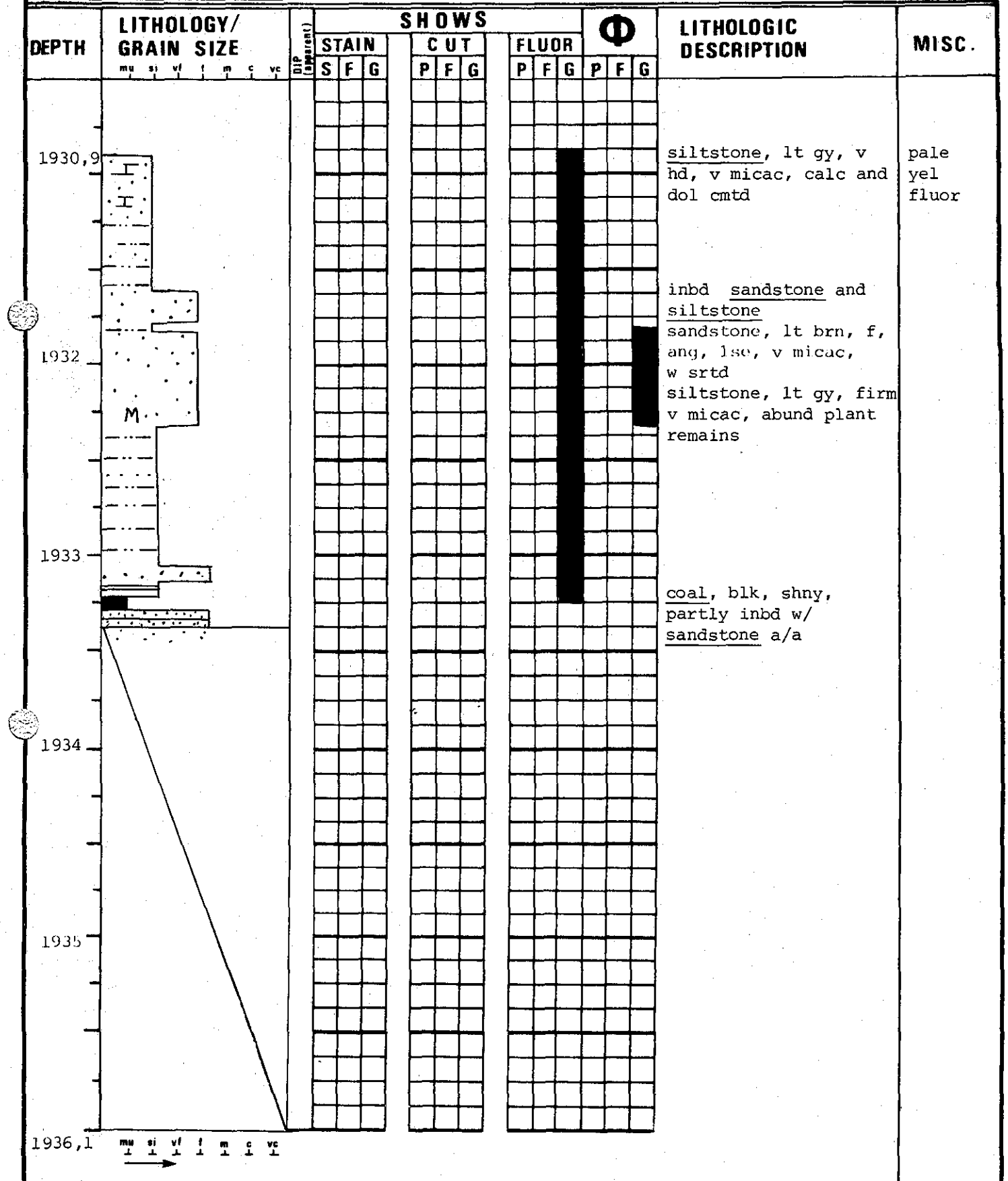
CONVENTIONAL CORE DESCRIPTION

FIELD _____ WELL NO. 34/10-3 AREA NORTH SEA

CORE NO. 3 INTERVAL from 1930,9 to 1936,1 CORED 5,2 REC 2.45 47 %

FORM. _____ GEOLOGIST _____ DATE 8 April 79



LITHOLOGIC DESCRIPTION

siltstone, lt gy, v hd, v micac, calc and dol cmtd

inbd sandstone and siltstone
sandstone, lt brn, f, ang, lse, v micac, w srtd
siltstone, lt gy, firm v micac, abund plant remains

coal, blk, shny, partly inbd w/ sandstone a/a

MISC.

pale yel fluor

4.00.17

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CONVENTIONAL CORE DESCRIPTION

FIELD	WELL NO. 34/10-3	AREA NORTH SEA	
CORE NO. 4	INTERVAL from 1936,1 to 1953,9	COREO 17,1 m	REC 11,65 m 68 %
FORM.	GEOLOGIST		DATE 9 April 79

DEPTH	LITHOLOGY/ GRAIN SIZE (mu si vf f m c vc)	DIP (apparent)	SHOWS STAIN S F G	SHOWS CUT P F G	SHOWS FLUOR P F G	Φ P F G	LITHOLOGIC DESCRIPTION	MISC.
1936							sandstone, lt brn, f - med, subang, lse w/tr of coal, blk, shiny	lt yel fluor, fast str milky cut
1937	M K						sandstone, lt brn, vf-f, mod srtd, subang, lse, v micac, kaolinitic	
1938	M H K						sandstone, lt brn, vf-f, subang, fri, partly calc and dol cmtd, v micac, sl kaolinitic w/lam of shale	
1939	M							
1940							siltstone, med gy - brnish gy, micromicac, kaolinitic, shaly in parts	
1941	(mu si vf f m c vc)							

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CONVENTIONAL CORE DESCRIPTION

FIELD	WELL NO. 34/10-3	AREA NORTH SEA	
CORE NO. 4	INTERVAL from 1936,1 to 1953,9	CORED 17,1 m	REC 11,65 m 68 %
FORM.	GEOLOGIST	DATE 9 April 79	

DEPTH	LITHOLOGY/ GRAIN SIZE (mu si vf f m c vc)	DIP (apparent)	SHOWS STAIN S F G	SHOWS CUT P F G	SHOWS FLUOR P F G	Φ P F G	LITHOLOGIC DESCRIPTION	MISC.
							siltstone, med gy - brnish gy, micromic, kaolinitic	
1942							sandstone, lt brn, vf - f, ang - subang, well srtd, calc and dol cmtd	wh yel fluor, mod fast milky cut
1943							shale, brnish gy, mod hd, shaly	
1944								
1945							shale, med gy, firm, micromic, sl slty	
1946	M						sandstone, f, ang - subang, firm - fri, micac, shaly in parts	— " —

4.00.17

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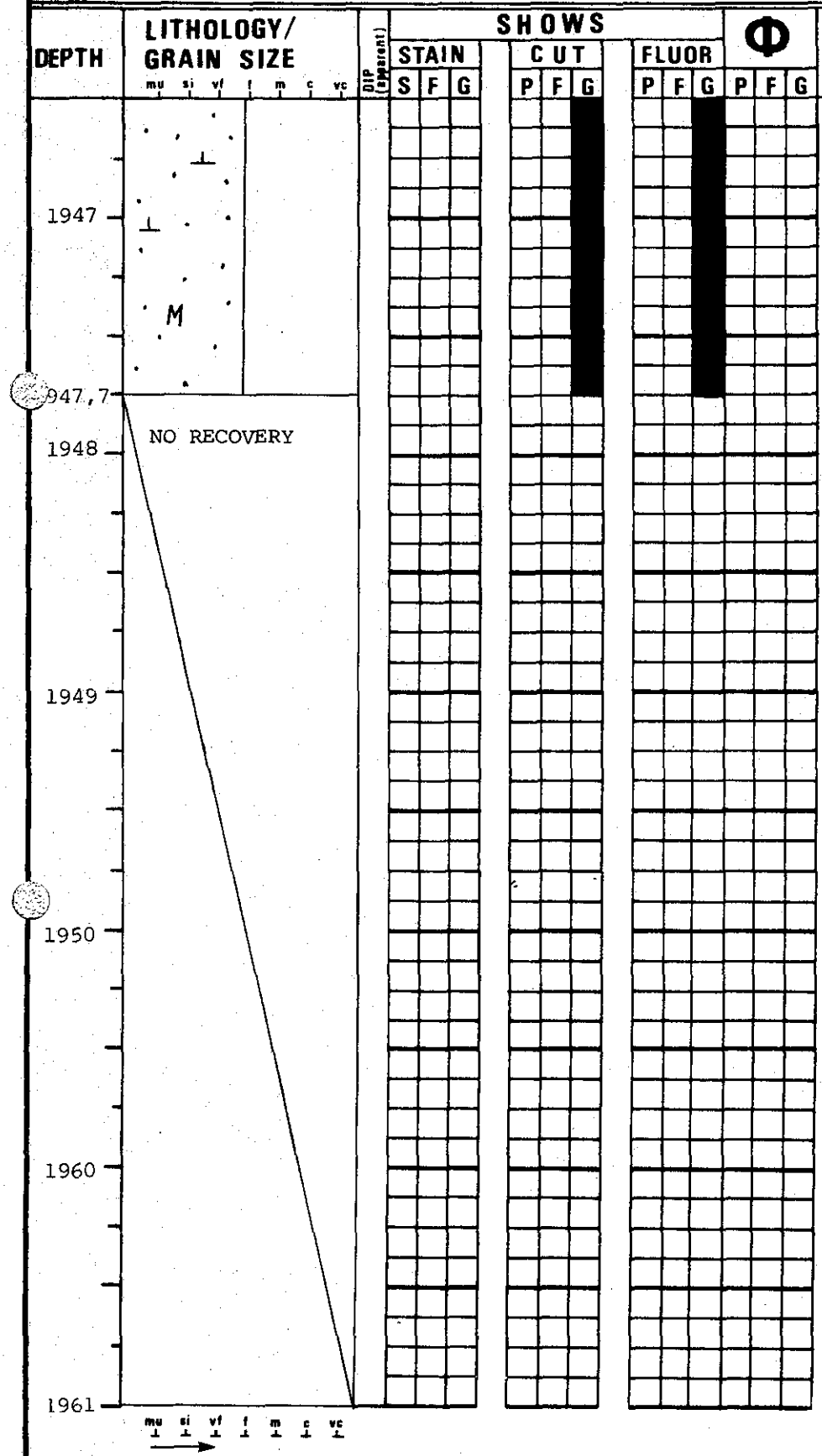
CONVENTIONAL CORE DESCRIPTION

FIELD _____ | WELL NO. 34/10-3 | AREA NORTH SEA

CORE NO. 4 | INTERVAL from 1936,1 to 1953,9 | CORED 17,1 m | REC 11,65 m | 68 %

FORM. _____ | GEOLOGIST _____ | DATE _____



LITHOLOGIC DESCRIPTION	MISC.
sandstone, f, ang - subang, firm - mod hd, calc cmtd, micac, lam of shale, med gy	wh yel fluor, mlky cut

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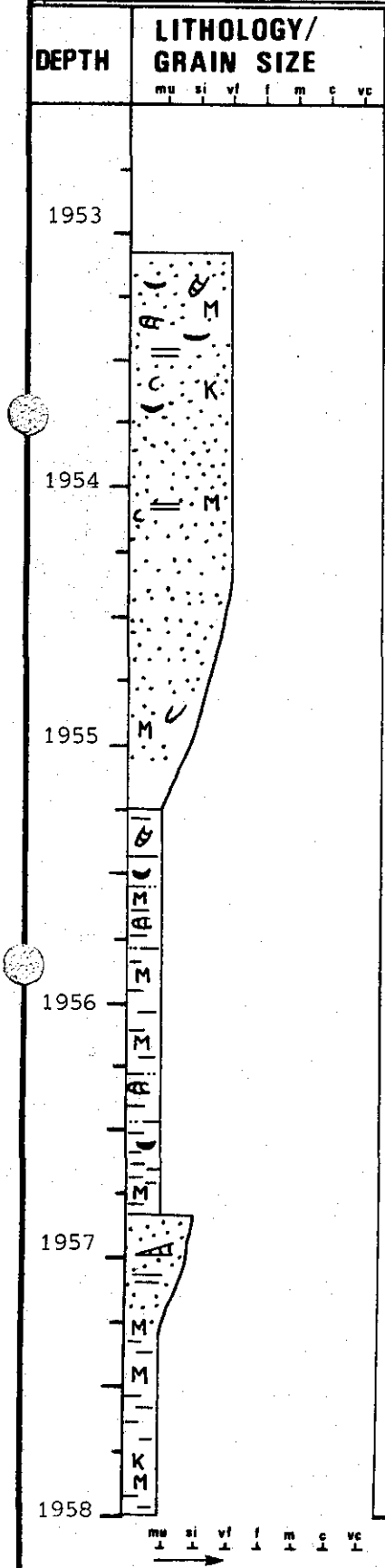
CONVENTIONAL CORE DESCRIPTION

FIELD	WELL NO. 34/10-3	AREA NORTH SEA		
CORE NO. 5	INTERVAL from 1953,2 to 1971,1	CORED 17,9 m	REC 15,8 m	88 %
FORM.	GEOLOGIST		DATE 10/4-1979	



LITHOLOGIC DESCRIPTION	MISC.
sandstone, lt brn, vf-f, lse-fri, v mic, kaolinitic, sl calc cmtd, coal lam	dull yel fluor, mod-fast str cut
shale; dk gy, mod hd, v mic, sst lam, flaser beds, irr lam	occ yel fluor, sl str cloudy cut
shale; dk gy, frm, v mic, slt lam	no shows
siltstone; med gy, hd, v mic, lignitic silica cmtd, irr lam	no shows
shale; dk gy, frm, v mic lignitic, kaol	no fluor, weak yel cut

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CONVENTIONAL CORE DESCRIPTION

FIELD _____ | WELL NO. 34/10-3 | AREA NORTH SEA

CORE NO. 5 | INTERVAL from 1953,2 to 1971,1 | CORED 17,9 | REC. 15,8 | 88 %

FORM. _____ | GEOLOGIST _____ | DATE 10/4-1979

DEPTH	LITHOLOGY/ GRAIN SIZE (mu si vf f m c vc)	DIP (apparent)	SHOWS STAIN S F G	SHOWS CUT P F G	SHOWS FLUOR P F G	Φ P F G	LITHOLOGIC DESCRIPTION	MISC.
1959							shale; dk gy, frm, v mic, lignitic, kaol	
1960								
1961								
1962							sandstone, vf, subang, well srtd, lse, mic, lignitic, v good visible por	bright yel fluor fast str milky cut
1963								

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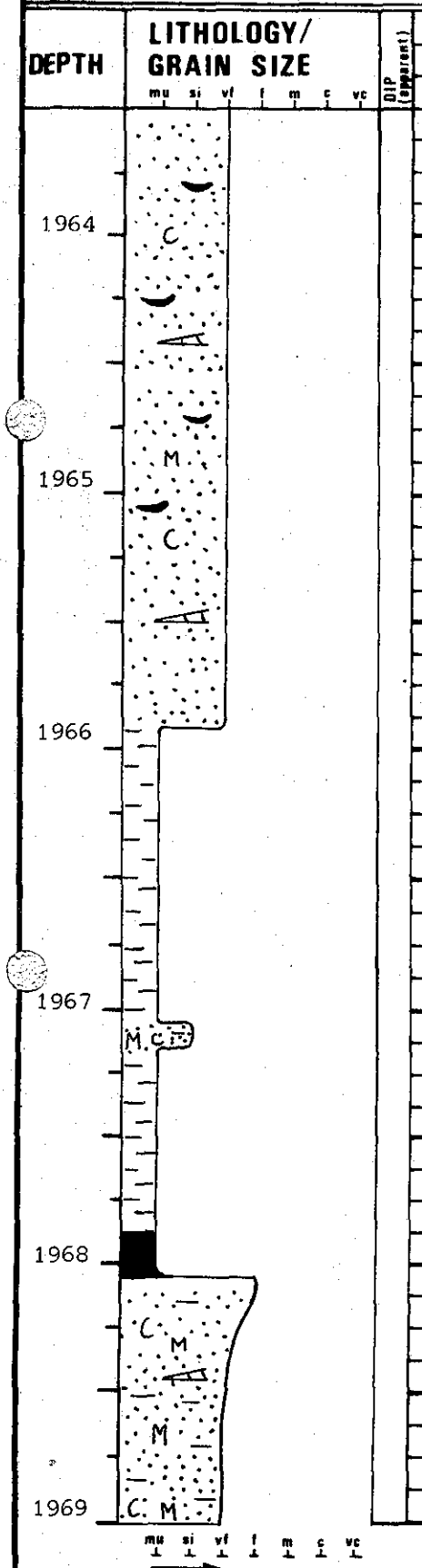
CONVENTIONAL CORE DESCRIPTION

FIELD _____ | WELL NO. 34/10-3 | AREA NORTH SEA

CORE NO. 5 | INTERVAL from 1953,2 to 1971,1 | CORED 17,9 | REC 15.8 | 88 %

FORM. _____ | GEOLOGIST _____ | DATE 10/4-1979



LITHOLOGIC DESCRIPTION	MISC.
sandstone; lt brn-med gy, vf, lse-friable, sl mic, lignitic	dull yel fluor, bluish milky cut
shale, dk gy, frm, lignitic, kaol	
siltstone, lt brn-med gy, lse-friable, sl mic, lignitic	
coal: blk, brittle, massiv	
sandstone; lt brn, vf-f, lse, lignitic, v mic, v good vis por	bright yel fluor fast str cut, mod fast str in part

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Den norske stats oljeselskap a s

CONVENTIONAL CORE DESCRIPTION

FIELD _____ | WELL NO. 34/10-3 | AREA NORTH SEA

CORE NO. 5 | INTERVAL from 1953,2 to 1971,1 | COREO 17,9 | REC 15,8 | 88 %

FORM. _____ GEOLOGIST _____ DATE 10/4-1979

DEPTH	LITHOLOGY/ GRAIN SIZE (mu si vf f m c vc)	DIP (apparent)	SHOWS: STAIN S F G	CUT P F G	FLUOR P F G	Φ P F G	LITHOLOGIC DESCRIPTION	MISC.

1970

1971

mu si vf f m c vc

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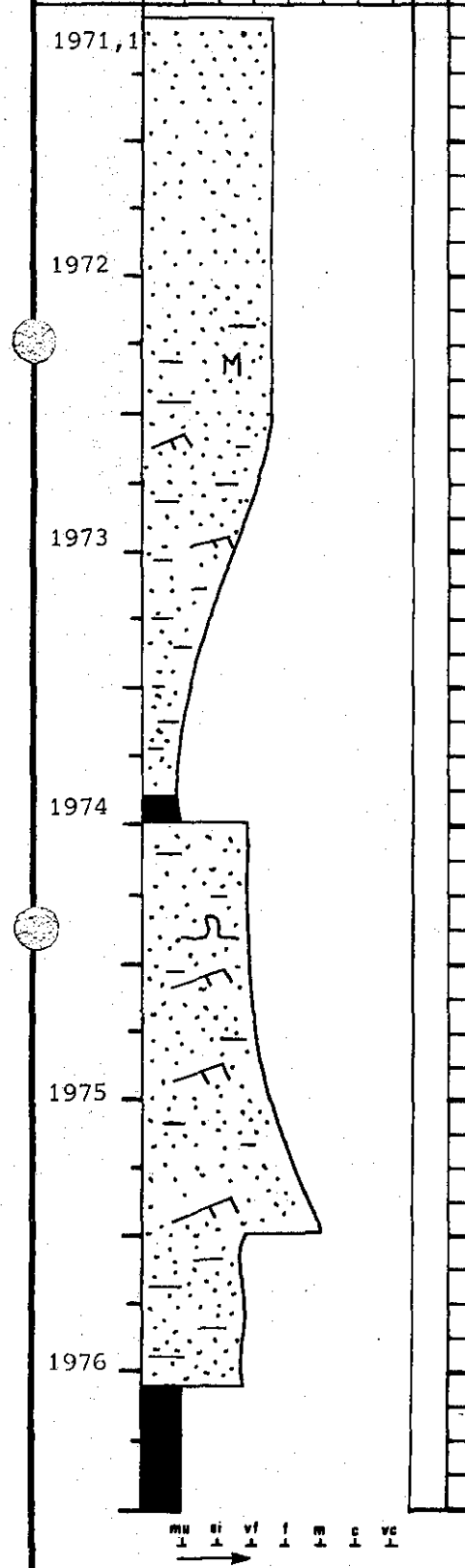
CONVENTIONAL CORE DESCRIPTION

FIELD _____ WELL NO. _____ AREA _____

CORE NO. 6 | INTERVAL from 1971,1 to 1989,2 | CORED 18,1 | REC 18,1 | 100 %

FORM. _____ GEOLOGIST _____ DATE 11/4-1979



LITHOLOGIC DESCRIPTION	MISC.
sandstone, lt brn-brnish gy, vf-f, ang-subang, well srtd, lse, v good vis por, sl slty, sl mic	lt yel fluor, fast str milky cut bleeding oil & gas
Ripple lam, flaser bedding ?	
coal, blk, brittle	no shows
slumping	
sandstone, a/a	
coal, dk brn, shly frm	

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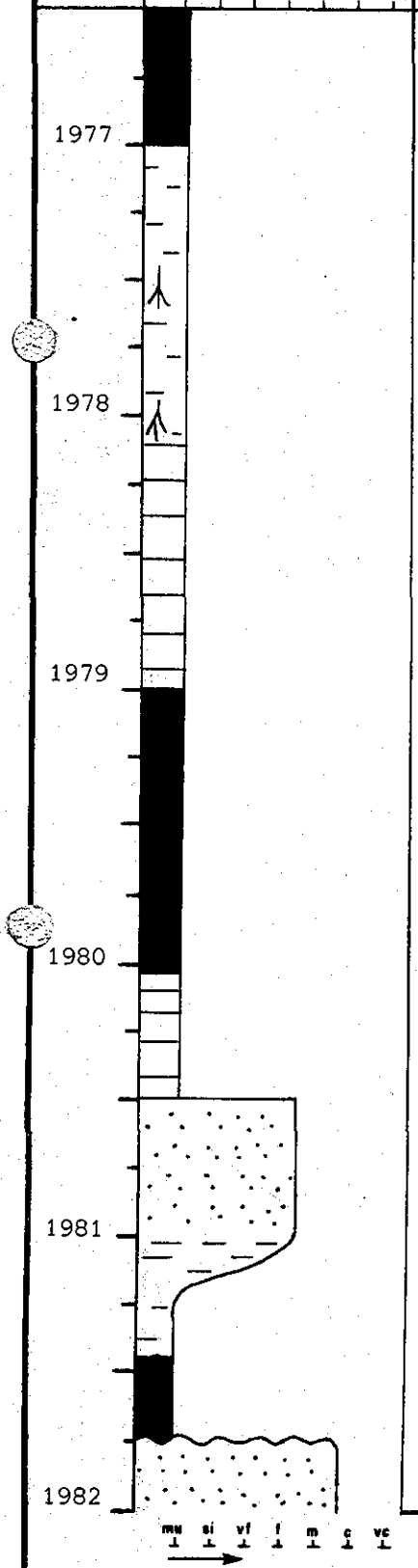
CONVENTIONAL CORE DESCRIPTION

FIELD	WELL NO. 34/10-3	AREA NORTH SEA	
CORE NO. 6	INTERVAL from 1971,1 to 1989,2	CORED 18,1	REC 18,1 — 100 %
FORM.	GEOLOGIST		DATE 11/4-1979



LITHOLOGIC DESCRIPTION	MISC.
coal, a/a	
shale; med gy, hd, sl slty, strongly cmtd (silica) sl lign	
claystone, brnish gy, frm	no shows
coal, a/a v arg	
claystone; a/a, mod hd	
sandstone; f-med, brn, subang, well srtd, lse, sl lign	weak dull yel fluor, fast str mlky cut
shale; dk brn, brnish gy, frm, v mic, lign	
sandstone; med crs else a/a	no shows

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CONVENTIONAL CORE DESCRIPTION

FIELD _____ WELL NO. 34/10-3 AREA NORTH SEA

CORE NO. 6 INTERVAL from 1971,1 to 1989,2 CORED 18,1 REC 18,1 100 %

FORM. _____ GEOLOGIST _____ DATE 11/4-1979

DEPTH	LITHOLOGY/ GRAIN SIZE (mu si vf f m c vc)	DIP (apparent)	SHOWS STAIN S F G	SHOWS CUT P F G	SHOWS FLUOR P F G	Φ P F G	LITHOLOGIC DESCRIPTION	MISC.
1982							sandstone; lt brn, med-crs, mod srtd, v lse, lign in part, looks water wet excellent vis por	weak dull yel fluor, fast str mlky cut
1983								bubbling gas, weak odour
1984								
1985							coal; shaly	
1986							sandstone; dk brn, vf-med, occ crs, prly srtd lse, sl mic	patchy weak dull yel fluor fast str mlky cut
1987								

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CONVENTIONAL CORE DESCRIPTION

FIELD _____ WELL NO. 34/10-3 AREA NORTH SEA

CORE NO. 6 INTERVAL from 1971,1 to 1989,2 CORED 18,1 REC 18,1 100 %

FORM. _____ GEOLOGIST _____ DATE 11/4-1979

DEPTH	LITHOLOGY/ GRAIN SIZE (mu si vf f m c vc)	DIP (apparent)	SHOWS STAIN S F G	SHOWS CUT P F G	SHOWS FLUOR P F G	Φ P F G	LITHOLOGIC DESCRIPTION	MISC.
1988	K						sandstone; dk brn, med subang, well srtd, kaolinitic, excellent vis por	patchy dull, yel fluor, mod, fast str mlky cut
1989	K							
1989,2								

mu si vf f m c vc →

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CONVENTIONAL CORE DESCRIPTION

FIELD _____ WELL NO. 34/10-3 AREA NORTH SEA

CORE NO. 7 INTERVAL from 1989,2 to 2007,3 CORED 18,1 m REC 17,2 m 95 %

FORM. _____ GEOLOGIST _____ DATE 12 April 79

DEPTH	LITHOLOGY/ GRAIN SIZE (mu si vf f m c vc)	DIP (apparent)	SHOWS STAIN S F G	SHOWS CUT P F G	SHOWS FLUOR P F G	Φ P F G	LITHOLOGIC DESCRIPTION	MISC.
1989							sandstone, lt - med brn, med - crs, sub-ang, well srtd, lse - fri, good vis por, occ mic	dull yel fluor, mod fast str mlky cut
1990							occ thin carb laminae	
1991							parallell lam, mass, occ x-bedded	
1992								"
1993								
1994								

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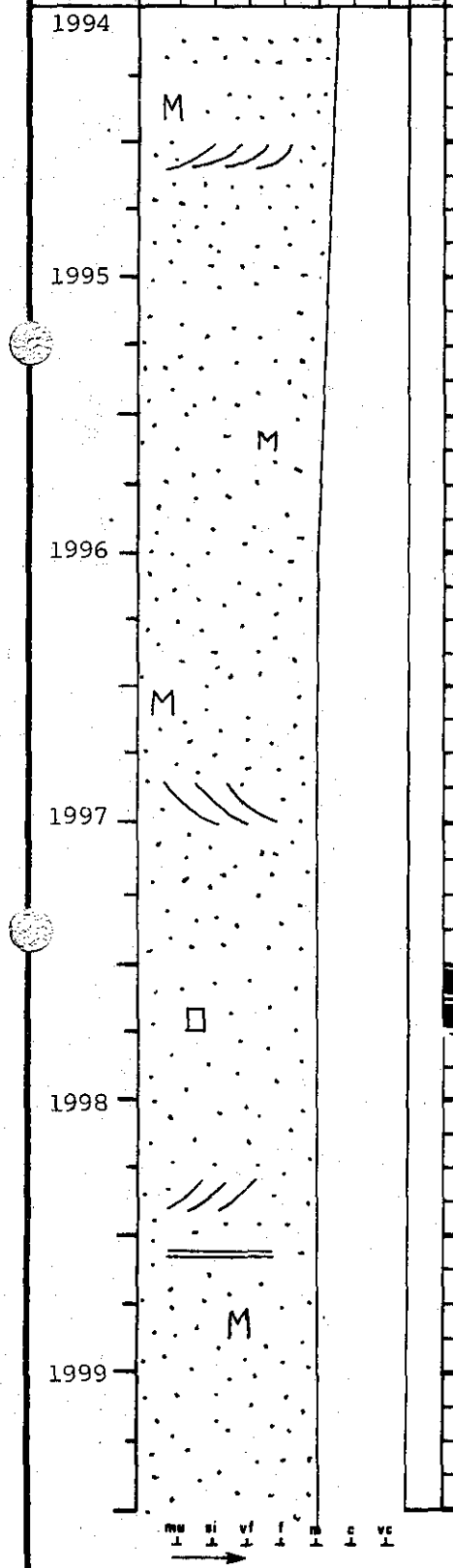
CONVENTIONAL CORE DESCRIPTION

FIELD _____ WELL NO. 34/10-3 AREA NORTH SEA

CORE NO. 7 INTERVAL from 1989,2 to 2007,3 CORED 18,1 REC 17,2 95 %

FORM. _____ GEOLOGIST _____ DATE 13 April 79



LITHOLOGIC DESCRIPTION

sandstone, lt - med brn, qtz, med - crs, w srtd, ang - subang, lse- fri, non calc kaolin, mic, good vis por
occ thin lam of carb material

sandstone, med, else a/a

MISC.

lt yel fluor, fast mlky cut occ flash cut

no shows spotty traces of dead oil

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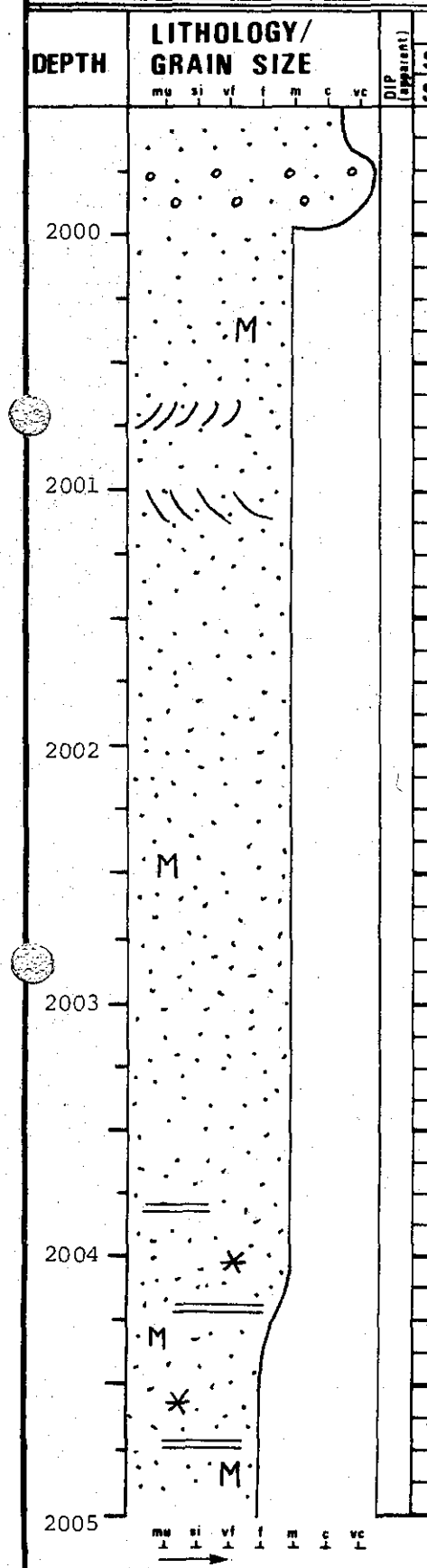
CONVENTIONAL CORE DESCRIPTION

FIELD	WELL NO. 34/10-3	AREA NORTH SEA	
CORE NO. 7	INTERVAL from 1989,2 to 2007,3	CORED 18,1	REC 17,2 — 95 %
FORM.	GEOLOGIST	DATE 13 April 79	



LITHOLOGIC DESCRIPTION

sandstone, clr, buff - wh, crs - v crs, abund gran, mlky - lt gy

sandstone, clr, buff, wh, med, w srtd, ang - subrnd, lse - fri, non calc, mic, occ kaolinitic, good vis por

occ thin layers of carbonaceous material

sandstone, clr, wh, f, w srt, ang - subang fri - firm, v mic, abund mic, glauc, calc occ lt red brn spotty areas w/carbonate looking mineral thin lam of org mat

MISC.

no shows

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CONVENTIONAL CORE DESCRIPTION

FIELD	WELL NO. 34/10-3	AREA NORTH SEA	
CORE NO. 7	INTERVAL from 1989,2 to 2007,3	CORED 18,1	REC 17,2 — 95 %
FORM.	GEOLOGIST	DATE 13 April 79	

DEPTH	LITHOLOGY/ GRAIN SIZE (mu si vf f m c vc)	DIP (apparent)	SHOWS STAIN S F G	SHOWS CUT P F G	SHOWS FLUOR P F G	Φ P F G	LITHOLOGIC DESCRIPTION	MISC.
2005	M						sandstone, clr, wh, f - med, w srtd, ang-subang, fri - firm, v mic, abund glauc, calc	no shows
2006	M						occ lt red brn spotty areas w/carbonate looking mineral	
2006,4	M						thin lam of org mat	
2007							fair - good vis por	
2007,3 m								

mu si vf f m c vc

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CONVENTIONAL CORE DESCRIPTION

FIELD _____ WELL NO. 34/10-3 AREA NORTH SEA

CORE NO. 8 INTERVAL from 2007,3 to 2025,3 CORED 18,0 REC 18,0 100 %

FORM. _____ GEOLOGIST _____ DATE 13 April 79

DEPTH	LITHOLOGY/ GRAIN SIZE (mu si vf f m c vc)	DIP (apparent)	SHOWS STAIN S F G	CUT P F G	FLUOR P F G	Φ P F G	LITHOLOGIC DESCRIPTION	MISC.
2007,3							sandstone, wh, clr, qtz, fri - lse, vf-f, ang - subang, mic - v mic, occ x-lam, w srtd, occ glauc, dol - calc cmtd, fair - good vis por	no shows
2008	M							
2009								"
2010								
2011	M							"
2012								

mu si vf f m c vc

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CONVENTIONAL CORE DESCRIPTION

FIELD	WELL NO. 34/10-3	AREA NORTH SEA	
CORE NO. 8	INTERVAL from 2007,3 to 2025,3	CORED 18,0	REC 18,0 (100 %)
FORM.	GEOLOGIST	DATE 13 April 79	

DEPTH	LITHOLOGY/ GRAIN SIZE (mu si vf f m c vc)	DIP (apparent)	SHOWS STAIN S F G	SHOWS CUT P F G	SHOWS FLUOR P F G	Φ P F G	LITHOLOGIC DESCRIPTION	MISC.
2014 – 2019	M; *						sandstone, wh, clr, qtz, vf - f, fri - lse ang - subang, mic - v mic, w srtd, occ glauc, dol/calc cmtd	

mu si vf f m c vc →

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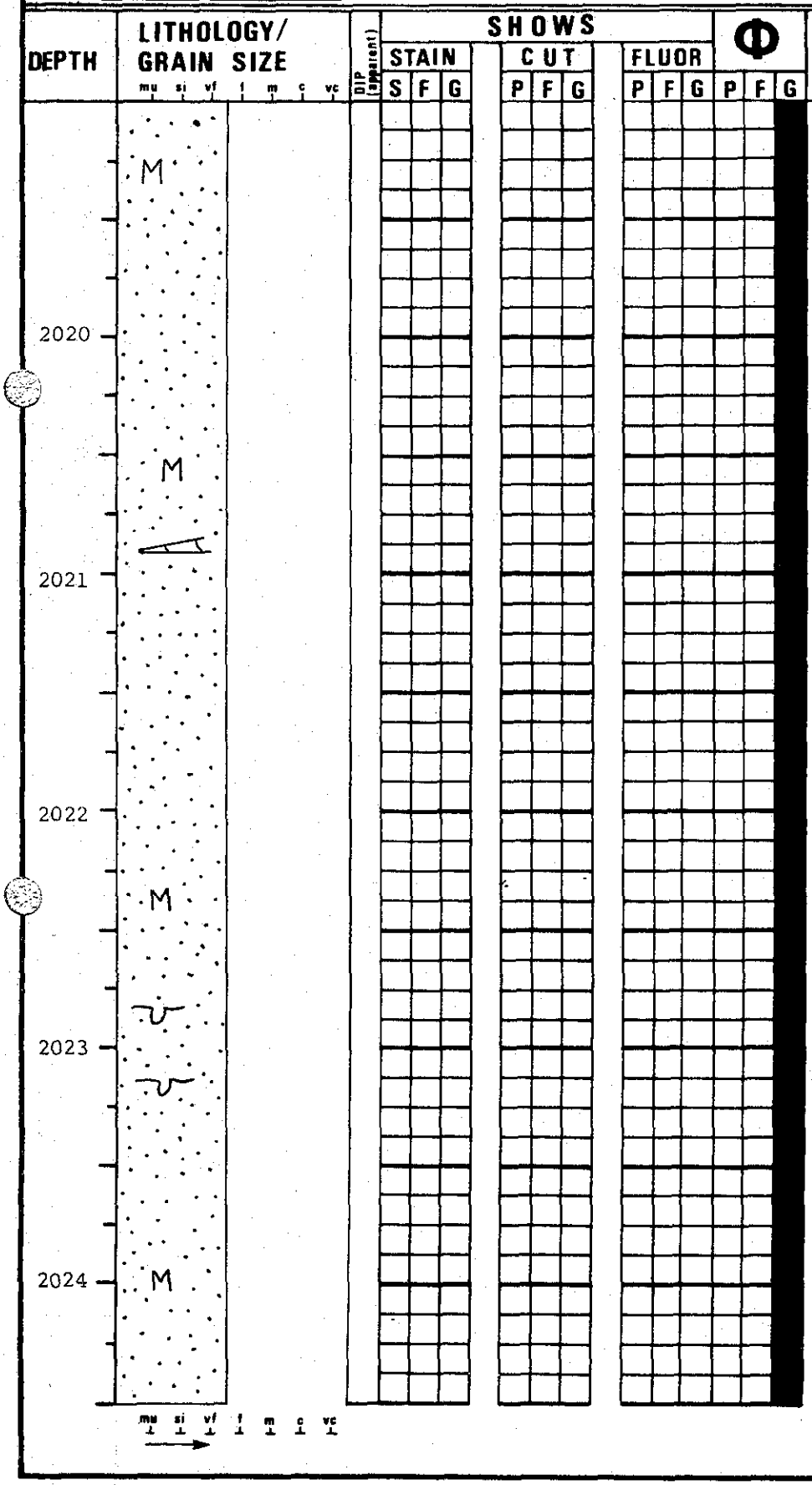
CONVENTIONAL CORE DESCRIPTION

FIELD _____ WELL NO. 34/10-3 AREA NORTH SEA

CORE NO. 8 INTERVAL from 2007,3 to 2025,3 CORED 18,0 REC 18,0 m 100 %

FORM. _____ GEOLOGIST _____ DATE 13 April 79



4.00.17

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CONVENTIONAL CORE DESCRIPTION

FIELD _____ WELL NO. 34/10-3 AREA NORTH SEA

CORE NO. 8 INTERVAL from 2007,3 to 2025,3 CORED 18,0 m REC 18,0 m 100 %

FORM. _____ GEOLOGIST _____ DATE 13 April 79

DEPTH	LITHOLOGY/ GRAIN SIZE (mu si vf f m c vc)	Dip (apparent)	SHOWS STAIN S F G	SHOWS CUT P F G	SHOWS FLUOR P F G	Φ P F G	LITHOLOGIC DESCRIPTION	MISC.
2025								

mu si vf f m c vc

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CONVENTIONAL CORE DESCRIPTION

FIELD	WELL NO. 34/10-3	AREA NORTH SEA	
CORE NO. 9	INTERVAL from 2467 to 2478,8 m	CORED 11,8 m	REC 11,8 m 100 %
FORM.	GEOLOGIST		DATE 1/5-1979

DEPTH	LITHOLOGY/ GRAIN SIZE (mu si vf f m c vc)	DIP (apparent)	SHOWS STAIN S F G	SHOWS CUT P F G	SHOWS FLUOR P F G	Φ P F G	LITHOLOGIC DESCRIPTION	MISC.
2467							sandstone/siltstone, lt-med gy, vf-slt, friable-frm, ang-sub-ang, poor srtd, v micac, equal amounts of biot and musc, arg, mod calc cmtd, poor vis por, parall lam traces of glauc, pyr and coal frags/lign	bleeding gas through-out core else no shows
2468								
2469								
2470								
2471								
2472								

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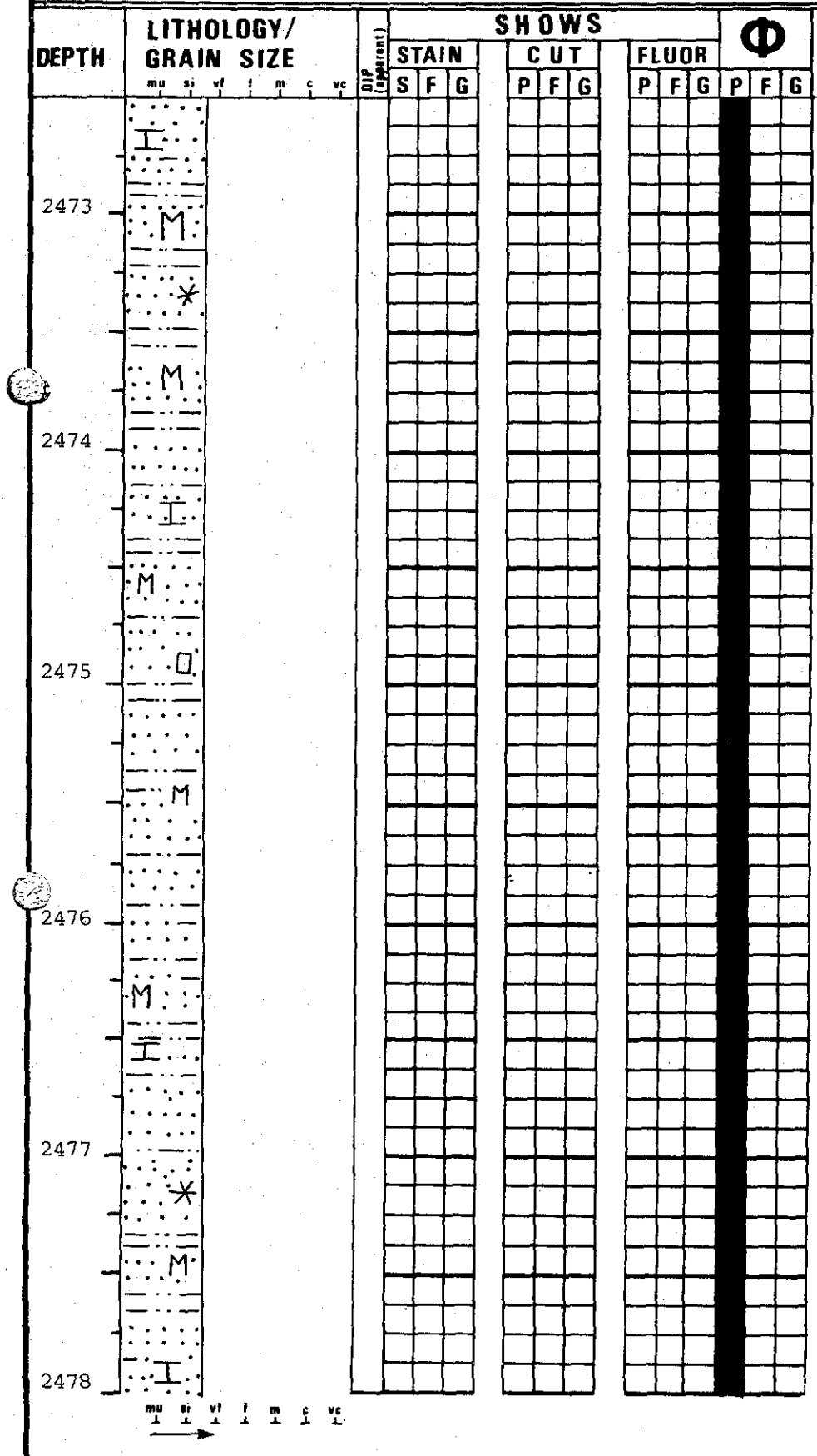
CONVENTIONAL CORE DESCRIPTION

FIELD _____ WELL NO. 34/10-3 AREA NORTH SEA

CORE NO. 9 INTERVAL from 2467 m to 2478,8 m CORED 11,8 m REC 11,8 m 100 %

FORM. _____ GEOLOGIST _____ DATE 1/5-1979



LITHOLOGIC DESCRIPTION

sandstone/siltstone, lt-med gy, vf-slt, friable-frm, ang-sub-ang, poor srtd, v micac, equal amounts of biot and musc, arg, mod calc cmtd, poor vis por, parall lam

tr glauc, pyr and lign/ coal frags

MISC.

bleeding gas throughout core

else no shows

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CONVENTIONAL CORE DESCRIPTION

FIELD	WELL NO. 34/10-3	AREA NORTH SEA	
CORE NO. 9	INTERVAL from 2467 to 2478,8 m	CORED 11,8 m	REC 11,8 m 100 %
FORM.	GEOLOGIST HEUM/LEINUM/EVENSEN	DATE 1/5-1979	

DEPTH	LITHOLOGY/ GRAIN SIZE (mu si vf f m c vc)	Dip (apparent)	SHOWS STAIN S F G	SHOWS CUT P F G	SHOWS FLUOR P F G	Φ P F G	LITHOLOGIC DESCRIPTION	MISC.
2478	M M End of core 2478,8 m						sandstone/siltstone, lt-med gy, vf-slt, friable-frm, ang-sub-ang, poor srtd, v micac, equal amounts of biot and musc, arg, mod calc cmtd, poor vis por, parall lam last 30 cm: sandstone/siltstone, lt gy, hd-v hd, v calc cmtd, no vis por, else a/a tr glauc, pyr and lign/ coal frags	bleeding gas else no shows
2479								
2480								
2481								
2482								
2483								

mu si vf f m c vc →

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SIDEWALL CORE DESCRIPTION

COUNTRY: Norway | AREA: North Sea | FIELD: ----------
WELL NO.: 34/10-3 | RUN NO.: 1 | INTERVAL: 1820-2030m
CO ORDINATES: 61° 12 ' 49.5" N ; 02 ° 11 ' 55.1 " E
K. B. E.: 25 meters | COMPANY: Statoil/N.Hydro/Saga
HOLE SIZE: 8 1/4 | GEOLOGIST: O.R.Heum | DATE: 22/4-79

DEPTH	REC.	LITHOLOGIC DESCRIPTION	POROSITY	SHOWS
1820	4cm	clyst:Med gy, sft, sl slty, non calc		
1829	4cm	clyst: a/a		
1837	4cm	clyst: a/a		
1841	4cm	clyst a/a		
1846	1.5cm	clyst:Med-lt gy, sft-med hd,slty, non calc		
1850	4cm	clyst: Med gy,sft, sl sty, non calc		
1856	4cm	clyst:a/a		
1865	4cm	clyst: a/a		
1870	4cm	clyst:a/a		
1875	2.0cm	Sltst: Med - lt gy, frm, non calc		
1880	4cm	clyst:a/a		
1881,5	3.5cm	clyst:Med-dk gy, sft, sl slty, non calc, pyntic.		
1883	4cm	clyst:a/a		
1884.5	4cm	clyst:Lt-med gy,sft,sl slty, non clac.		
1886	4cm	clyst:Rd,else a/a		
18887	4cm	clyst:Rd a/a		
1888.5	4cm	Sltst,brngy,occ grs of v f snd, laminated lignitic,shell frags	Poor	oilstain. strong odor
1890	0.5 cm	clyst:Rd a/a		
1891	4cm	clyst:Lt-med gy,v sft.		
1892	4cm	coal:Brn-blk, dull		
1893.5	4cm	Sdst:Lt-brn-gy,vf-f,lam,v micaceous friable.	Fair	oil stain strong odor
1895	4cm	Sdst:a/a cross lam?	Fair	------"--

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SIDEWALL CORE DESCRIPTION

COUNTRY: Norway	AREA: North Sea	FIELD: ----------
WELL NO.: 34/10-3	RUN NO.: 1	INTERVAL: 1820-2030 m
CO ORDINATES: 61° 12' 49,5" N ;	02° 11' 55,1" E	
K.B.E.: 25 meters	COMPANY: Statoil/N.Hydro/Saga	
HOLE SIZE: 8 1/4	GEOLOGIST: O.R.Heum	DATE: 22/4-1979

DEPTH	REC.	LITHOLOGIC DESCRIPTION	POROSITY	SHOWS
1896	4cm	Sdst: Lt.brn-gy,friable, f grained, micac, coal pieces	Fair	oilstained str.odor
1897	4cm	Sdst:Lt brn-dkgybrn, friable, f grained micac, obvious x-lamination	"	---"---
1898.5	4cm	Sdst:Alt lt brn and dk brn lam, friable. vf-f, micac, v obvious high angle x-lam	Poor	----"---
1900	2cm	Sdst:lt brn, friable, vf-f, micae	Fair	-----"--
1901	3cm	Sdst/Sltst: Lt-brn to dk gy, friable, rich in org.matter, micac, lam	Poor	-----"--
1902	4cm	Sdst:Alt lt and dk brn lam, vf-f,mic, friable, x-laminated,	Poor/fair	-----"---
1903.5	3cm	Sltst: Med-dk gy, frm, v micac, arg.		
2030	3cm	Sdst: Lt gy friable, f-med, sl micac,	Good	No

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SIDEWALL CORE DESCRIPTION

COUNTRY: Norway	AREA: North Sea	FIELD: ----------
WELL NO.: 34/10-3	RUN NO.: 2	INTERVAL: 2035 -2340
CO ORDINATES: 61 ° 12 ' 49,5 "N ;	02 ° 11 ' 55,1 "E	
K.B.E.: 25 meters	COMPANY: Statoil/N.Hydro/Saga	
HOLE SIZE: 8 1/4	GEOLOGIST: O.R. Heum	DATE: 22/4-1979.

DEPTH	REC.%	LITHOLOGIC DESCRIPTION	POROSITY	SHOWS
2035	4cm	Sdst: Lt gy,friable,f grained, sl mic	Good	No
2045	4cm	Sdst: f-med, else a/a	--"--	"
2055	0		---"--	No
2065	3cm	Sdst - f-med, else a/a		
2075	4cm	Sdst: Lt-med gy, f-med, else a/a	Good	No
2080	4cm	Sdst: Alt lt and dk brngy, friable f.grained X-laminated.	Fair	No
2085,5	4cm	coal and sdst: coal: Dk brn-blk, dull, partly interbedded		
		wth sdst: lt gy, friable, med, mic, X-lam.		
2089	3.5cm	Sltst, med gy-blck, mic, rich in org.mat.		
2092	Usikkert dyp			
2095	4cm	clyst, dkgy-blck, frm,sl slty, sl mic, non calc, v org.rich		
2110	4cm	clyst, med gy, v sft.		
2130	usikker dyp			
2140	1cm	clyst a/a		
2150	4cm	clyst a/a		
2158	usikker dyp			
2170	2.5cm	Shale/clyst:dk gy, frm,slty,subfiss.		
2185	4cm	Shale/clyst: a/a micaceous, non calc		
2195	4cm	clyst:dk gy,frm, slty, micaceous, non calc.		
2200	4cm	clyst: a/a		
2202	3cm	Sdst: Med-dk gy, friable-lse, crs,sl mic, sl lam.	Good	No
2205	1.5cm	Sdst: Lt, gy,l se, crs.	Good	No
2215	2.0cm	Sdst: Dk gy-blck,lse,Med-crs, mic org. rich	---"---	---"--

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SIDEWALL CORE DESCRIPTION

COUNTRY: Norway	AREA: North Sea	FIELD: ----------
WELL NO.: 34/10-3	RUN NO.: 2	INTERVAL: 2035-2340 m
COORDINATES: 61° 12' 49,5" N ;	02° 11' 55,1" E	
K.B.E.: 25 meters	COMPANY: Statoil/N.Hydro/Saga	
HOLE SIZE: 8 1/4	GEOLOGIST: O.R.Heum	DATE: 22/4-1979

DEPTH	REC.%	LITHOLOGIC DESCRIPTION	POROSITY	SHOWS
2228	1.0cm	Sdst, Lt gy, frm -hd, f-grained, densely cmtd, plant frags.	Poor	No
2240	4cm	Intbed.sdst and sltst.sdst:Lt gy frm. vf-f,slst:Dk gy, micac		
2250	4cm	sdst.Lt gy,friable, f grained, micac thin lam of dk gy slst. X-lam	Good	No
2275	4cm	clyst,dk gy, frm,mic,non calc,slty		---"---
2284	2.5cm	clyst, med gy v sft, non calc.		---"---
2300	3.5cm	clyst, dk gy, frm mic, non calc,slty Fossil fragment,buff		---"---
2327	1.5cm	clyst, med gy v sft non calc		---"---

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SIDEWALL CORE DESCRIPTION

COUNTRY: NORWAY	AREA: NORTH SEA	FIELD: WILDCAT
WELL NO.: 34/10-3	RUN NO.: 3	INTERVAL: 2492,5m - 2788,5m
CO ORDINATES: 61 ° 12 ' 49,5" N ;	02 ° 11 ' 55,1" E	
K.B.E.: 25 meters	COMPANY: STATOIL/NORSK HYDRO/SAGA	
HOLE SIZE: 6"	GEOLOGIST: M. HELLE	DATE: 23/5-79

DEPTH	REC.	LITHOLOGIC DESCRIPTION	POROSITY	SHOWS
2492,5	No.23 2,5cm	sdst, wh - lt gy, friable - firm, vf - f, subang. micac, sl calc	fair	No shows
2522	No.22 3 cm	slfst, lt - med gy, firm - mod hd, micac lignitic, sl calc	fair	No shows
2564	No.21 3,5cm	clayst, lt - med brnish gy, firm, occ slty micac, occ lignitic		No shows
2620	No.20 4 cm	clayst, brick red, micac, firm - sft sl calc		No shows
2623,5	No.19 2 cm	sdst, wh - lt gy, clr - mlky qtz, vf-f, subrnd micac, lignitic, lse	fair good	No shows
2639	No.18 0,5cm	sltst, wh-lt gy, mod hd, subfiss, micac occ calc		No shows
2645,5	No.17 3 cm	clayst, med gy, brnish gy, sft-firm		No shows
2650	No.16 2 cm	clay, lt brn sft, sticky, sl calc occ slty		No shows
2653	No.15 3 cm	sdst, wh-lt gy, vf-f, ang-subrnd occ lignitic, v micac in parts	fair good	No shows
2660	No.14 2.5cm	clayst, med gy, firm, occ slty, micac, sl calc		No shows
2674,5	No.13 3cm	clayst, lt brnish gy, else a/a		No shows
2685	No.12 3 cm	sdst, clr-mlky qtz, f-med, occ crs subang-subrnd, friable	good	No shows
2692	No.11 2 cm	sltst, lt gy, subfiss, firm-mod, hd mica		No shows
2703	No.10 2 cm	sltst, a/a		No shows
2715	No.9 2 cm	sltst, lt redish brn, brnish gy, mod hd, subfiss, micac		No shows
2723.5	No.8 2,5cm	clayst, brick red, firm, subfiss, calc		No shows
2735	No.7 3 cm	clayst, brick red, firm, occ slty, calc		No shows
2741,5	No.6 3,5cm	clayst, a/a		No shows
2749	No. 5 2 cm	clayst, brick red, firm-mod hd, slty, micac non-sl calc		No shows
2754	No.4 2 cm	clayst, brick red, firm-mod hd, slty, micac calc, micromicac		No shows
2772	No.3 2,5cm	clayst, v slty, firm, else a/a		No shows
27815	No.2 2 cm	clayst, brick red, sft-firm, subfiss micromicac, non-sl calc		No shows
2788,5	No.1 2cm	clayst a/a		No shows

4.00.15

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Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY	AREA: NORTH SEA	FIELD: 34/10- DELTA
WELL NO.: 34/10-3		
COORDINATES: 61° 12' 49,5"N ;	02° 11' 55,1" E	
K.B.E.: 25 meters	COMPANY: STATOIL/NORSK HYDRO/SAGA PETR.	
HOLE SIZE: 6"	GEOLOGIST: LEINUM/AASHEIM	DATE: 17-18 march-79

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
280	100	clay, lt gry, sticky, sl silty non calc	The depths are not accurate,
	tr	pyr	
	tr	lignite	sample taken every time
	tr	shell frags	
290			Kelly is on bottom
	100	clay a/a	
	tr	lignite	____ " ____
	tr	shell frags	
300			
	100	clay a/a	
	tr	lignite	____ " ____
	tr	shell frags	
310			
	98	clay a/a	
	2	lignite-wood frags	____ " ____
	tr	shell frags	
	tr	pyr	
320	98	clay a/a, slty	Depths ok.
	2	lignite	
	tr	sd, clr, qtz, vf-crs, subrnd-subang	
	tr	shell frags	
330			
	100	clay a/a	
	tr	lignite	
	tr	sd a/a	
	tr	shell frags	
340	100	clay a/a	
	tr	sd a/a	
	tr	lignite	
	tr	shell frags	
350			
	100	clay a/a	
	tr	sd a/a	
	tr	lignite/wood frags	
	tr	shell frags	
360			
	100	clay a/a	
	tr	sd a/a	
	tr	ls, lt brn, hd	
	tr	lignite	
	tr	shell frags	

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Den norske stats oljeselskap a.s
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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: 34/10-Delta

WELL NO.: 34/10 - 3

CO ORDINATES: 61° 12' 49.5" N ; 02° 11' 55.1" E

K.B.E.: meters | COMPANY: STATOIL/NORSK HYDRO/SAGA PETR.

HOLE SIZE: 17½ " | GEOLOGIST: LEINUM/AASHEIM | DATE: 18/3 - 79

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
370	100	clay, lt gry, sticky, sl slty	
	tr	sd, clr gtz, subrnd-subang, vf-med	
	tr	pyr	
	tr	shell frags	
380	100	clay a/a	
	tr	lig	
	tr	pyr	
	tr	shell frags	
390	100	clay a/a sl calc	
	tr	pyr	
400	100	clay a/a	
410	100	clay a/a	
	tr	lig	
420	100	clay a/a	
	tr	lig	
430	100	clay a/a	
	tr	shell frags	
440	100	clay a/a	
	tr	shell frags	
	tr	lig	
450	100	clay a/a	
	tr	sd, vf-f, clr qtz, subang-subrnd	
	tr	shell frags	
	tr	lig	
460	100	clay a/a	
	tr	lig	
	tr	shell frags	
470	100	clay a/a	
	tr	lig	
480	100	clay a/a	
	tr	sd, clr qtz, subang-subrnd	
	tr	lig	
	tr	shell frags	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY	AREA: NORTH SEA	FIELD: 34/10 Delta
WELL NO.: 34/10 - 3		
CO ORDINATES: 61 ° 12 ' 45.5 " N ;	02 ° 11 ' 55.1 " E	
K.B.E.: meters	COMPANY: STATOIL/NORSK HYDRO/SAGA PETR.	
HOLE SIZE: 17½ "	GEOLOGIST: LEINUM / AASHEIM	DATE: 18/3 - 79

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
490	100	clay, lt gry, sl slty, non calc, sticky	
	tr	sd, qtz, vf-med, subang- subrnd	
	tr	lig	
	tr	shell frags	
500			
	90	clay a/a	
	10	sd a/a	
	tr	shell frags	
510			
	95	clay a/a	
	5	sd a/a	
	tr	shell frags	
520			
	95	clay a/a	
	5	sd a/a slt - vf sd	
	tr	shell frags	
530			
	90	clay a/a	
	10	sd a/a occ f-med	
	tr	shell frags	
	tr	lig	
	tr	glauc	
540			
	90	clay a/a	
	10	sd a/a	
	tr	shell frags	
	tr	pyr	
550	65	clay a/a micromicac	BG: 130 units
	30	sd a/a	
	5	shell frags	
	tr	lig	
	tr	glauc	
560	100	clay a/a	
	tr	sd a/a	
	tr	shell frags a/a	
570	100	clay a/a	
	tr	sd a/a	
580			
	100	clay a/a	Last sample
	tr	sd a/a	before 20'csg
	tr	shell frags	
	tr	lig	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY	AREA: NORTH SEA	FIELD: 34/10 Delta
WELL NO.: 34/10 - 3		
COORDINATES: 61 ° 12 ' 49.7" N ;	02 ° 11 ' 53.65" E	
K.B.E.: 25 meters	COMPANY: STATOIL/N. HYDRO/SAGA	
HOLE SIZE: 17½ "	GEOLOGIST: M.HELLE/KARLSON	DATE: 24.March 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
590	100	clay, lt gy-med gy, sft, slty in parts, non calc	
	tr	sd, clr qtz, f-med, subrnd-rnd	
	tr	lig	
	tr	shell frags	
600			
	100	clay, lt-med gy, sft, stcky, occ slty, non-sl calc	
	tr	sd, mostly vf-f, else a/a	
	tr	shell frags	
	tr	lig, glauc	
610			
	100	clay a/a	
	tr	sd, subang- subrnd, else a/a	
	tr	shell frags	
	tr	lig	
	tr	glauc	
620			No shows
	100	sd, clr qtz, occ rock frags, med-crs, occ f, slty	
	tr	clay a/a	
	tr	shell frags, gastropod	
	tr	lig	
	tr	glauc, pyr	
630			
	60	sd, v slty, else a/a	
	40	clay a/a	
	tr	shell frags	
	tr	lig	
640			
	50	sd a/a	
	50	clay, v slty, else a/a	
	tr	shell frags	
650			
	70	clay a/a	
	30	sd a/a	
	tr	shell frags	
660			
	90	clay a/a	
	10	sd, f-med, else a/a	
	tr	foss frags	
	tr	pyr	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: 34/10 Delta

WELL NO.: 34/10 -3

COORDINATES: 61 ° 12 ' 49.7 "N ; 02 ° 11 ' 53.65 " E

K.B.E.: 25 meters | COMPANY: STATOIL/NORSK HYDRO/SAGA PETR.

HOLE SIZE: 17½ " | GEOLOGIST: HELLE / KARLSON | DATE: 24 March 1977

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
670	80	clay, lt gy, sft, slty, non calc	No shows
	20	sd, clr qtz, vf-med, lse,subrnd,occ rnd	
	tr	foss frags, mostly shell frags	
	tr	pyr	
	tr	glauc	
680	70	clay a/a	
	30	sd, a/a	
	tr	foss frags	
	tr	pyr	
	tr	lig	
690	100	clay a/a	
	tr	sd a/a	
	tr	foss frags	
	tr	lig	
700	80	clay a/a	
	20	sd a/a	
	tr	foss frags	
	tr	lig	
710	70	clay a/a	
	30	sd, f, occ med, else a/a	
	tr	foss frags	
	tr	lig	
	tr	pyr, mostly on the lig. frags	
720	100	clay a/a, sticky	
	tr	sd a/a	
	tr	foss frags	
	tr	lig, pyr	
	tr	calcite, in concreation with lig. and pyr	
730	90	clay a/a	
	10	sd a/a	
	tr	foss frags	
	tr	pyr	
	tr	lig	
	tr	calcite a/a	
740	90	clay a/a	
	lo	sd, a/a	
	tr	foss frags, shell frags mostly	
	tr	lig, calcite a/a	
	tr	pyr	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD 34/10 delta

WELL NO.: 34/10 - 3

CO ORDINATES: 61 ° 12 ' 49.7' N ; 02 ° 11 ' 53.65' E

K.B.E.: 25 meters | COMPANY: STATOIL/NORSK HYDRO/SAGA PETR.

HOLE SIZE: 17 ½ " | GEOLOGIST: HELLE/KARLSON | DATE:

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
750	90	clay, lt gy, sft, sticky in parts, slty, non- sl calc	No shows
	10	sd, clr qtz, occ lt brn,f-med,occ crs,subrnd-rnd lse,	
	tr	lig	Conreation of calcite, lig. and pyr in the same particle
	tr	pyr, mostly on the lig. frags	
	tr	foss frags	
	tr	calcite	
760	100	clay, slty in parts, else a/a	
	tr	sd a/a	
	tr	lig	
	tr	foss frags	
	tr	pyr a/a	
	tr	calcite	
770	100	clay a/a	
	tr	sd, a/a	
	tr	foss frags (shells)	
	tr	lig	
	tr	pyr	
780	100	clay a/a	
	tr	sd, clr qtz, med-crs, rock frg(metam.)	
	tr	lig	
	tr	shell frags, foram	
790	100	clay a/a	
	tr	sd, clr qtz, subrnd, rock frg, med-crs	
	tr	lig	
	tr	gravel rock frg(qtz), subang-subrnd	
	tr	foss frags	
800	100	clay a/a silty	
	tr	sand a/a	
	tr	foss frags(shellfrags, foram.)	
	tr	Pyr (rods and blocky grns)	
	tr	gravel(amfibolite w/epidote)	
810	100	clay a/a , sandy	
	tr	sand a/a	
	tr	foss frags	
	tr	pyr	
	tr	gravel, amfibolite	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: 34/10-DELTA
WELL NO.: 34/10-3
CO ORDINATES: 61 ° 12 ' 49.7 "N ; 02 ° 11 ' 53.65" E
K.B.E.: 25 meters | COMPANY: STATOIL/HYDRO/SAGA
HOLE SIZE: 17½" | GEOLOGIST: HELLE/KARLSSON | DATE: 24march 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
820	100	Clay a/a	No shows
	Tr	Sd a/a, ang-subrend	
	Tr	Lig.	
	Tr	Pyr (rods)	
	Tr	Shell frgs, forams	
	tr	Gvl, (qtzite)	
830	50	Clay a/a	
	50	Rk frags, gvl (1.5cm), ang-subang, metam	
	Tr	Sd a/a	
	Tr	Shell frags, forams	
	Tr	Lig.	
	Tr	Pyr	
840			
	100	Clay a/a	
	Tr	Sd a/a	
	Tr	Lig.	
	Tr	Pyr	
	Tr	Forams	
850			
	100	Clay a/a	
	Tr	Sd a/a occ. p.red. brown, greemishgrey	
	Tr	Pyr	
	Tr	Shell frags, forams	
	Tr	Lig	
	Tr	Gvl rk frags, phyllite, metam	
860			
	100	Clay a/a	
	Tr	Sd a/a occ. mic	
	Tr	Pyr	
	Tr	Shell frag	
	Tr	Lig	
870			
	100	Clay a/a, less than 10% sd	
	Tr	Gvl, subrnd-subang	
	Tr	Shell frag., foram	
880			885: 60 units 887 No gas eg.
	100	Clay a/a	
	Tr	Sd a/a	25 units
	Tr	Lig	885 Drilling break 29 to 50 mtr/h
890			
	60	Clay a/a	
	40	Sd, med- crs, clr gtz, subang-subrnd	
	Tr	Mica, pyr cmt lig, glauconite	
	Tr	fossfrags, forams	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY	AREA: NORTH SEA	FIELD: 34/10-DELTA
WELL NO.: 34/10		
CO ORDINATES: 61 ° 12 ' 49.7 "N ;	02 ° 11 ' 53.65 " E	
K.B.E.: 25 meters	COMPANY: STATOIL/N.HYDRO/SAGA	
HOLE SIZE: 17½"	GEOLOGIST: HELLE/KARLSSON	DATE: 25March 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
	50	Clay, med-dark grey firm, not calc	Change from stic-
900	50	Sd, med-crs, pyr cmt, clr qrz, subang	ky to mod.hd cl.
	Tr	Lig	
	Tr	Mica	
			NO SHOWS
	Tr	Shell frags	
910			
	50	Cl-Claystone, firm, not calc, silty	
	40	Sd a/a	
	Tr	mica	
920			
	80	Clay a/a	
	20	Sd a/a	
	Tr	Shell frags.	
	Tr	Lig	
	Tr	Mica	
930			
	100	Clayst, firm, lt-med brnish gy	
		slty in parts, non-sl calc	
	Tr	Sd, a/a	
	Tr	Lig	
	Tr	Mica	
	Tr	shell frags	
940	90	Clayst a/a	
	10	Sd, clr qtz, med-crs, subang.subrnd, lse	
	Tr	Lig	
	Tr	mica	
	Tr	shell frags	
950	100	Clayst a/a	
		Sd, a/a"	
	Tr	Lig	
	Tr	mica	
	Tr	shell frags	
960	100	Clayst, occ mod hd, else a/a	
	Tr	Sd, a/a	
	Tr	Lig	
	Tr	mica	
970			
	100	Clayst a/a	
	Tr	Sd a/a	
	Tr	Pyr , lig	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: 34/10-DELTA

WELL NO.: 34/10-3

CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"

K.B.E.: 25 meters | COMPANY: STATOIL/N.HYDRO/ SAGA

HOLE SIZE: 17½" | GEOLOGIST: HELLE/KALRSSON | DATE: 25 march 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
980	100	Clayst, lt-med brnish gy, firm,modhd non calc, slty in parts	NO SHOWS
	Tr	Sd, clr qtz, med-crs, subang-subrnd lse	
	Tr	Lig	
990	100	Clayst, lt-med gy, brnish gy, else a/a	
	Tr	Sd, occ rnd, else a/a	
	Tr	foss. frags (shells)	
1000	90	Clayst a/a	
	10	Sd a/a	
	Tr	foss frags	DRLG BREAK AT 1001m From
1010	100	Sd, clr gtz, f-med, occ crs-vcrs, subrnd, crs-vcrs usually rnd. lse	53 to 142 M/H
	Tr	Clayst a/a	
1020	100	Sd, med-crs, occ vcrs, else a/a	
	Tr	Clayst a/a	
1030	100	Sd, f-crs, mostly med, occ vcrs, subrnd -rnd, occ rk frags, crs-vcrs	
	Tr	Clayst a/a	
	Tr	Lig	
1040	100	Sd, a/a	
	Tr	Clayst a/a	
1050	100	Sd,clr qtz, f-med, occ crs, subang-subrnd, occ rnd, (occ rk frags, med-crs)	
		lse, well srted	
	Tr	Clayst a/a	
1060	80	Sd, med-crs, occ vcrs,else a/a	
	20	Clayst, lt gy, occ lt brnish gy, firm, non calc	
	Tr	Shell frags	
	Tr	glauc	
	Tr	lig	
1070	60	Sd, lse-friable, calcite cmt in parts, also	rk frags w pyr,
	40	else a/a, Clayst ,lt brnish gy, firm-md hd, v slty occ sandy,	
	Tr	Lig	
	Tr	Pyr	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: 34/10-DELTA
WELL NO.: 34/10-3
CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"
K.B.E.: 25 meters | COMPANY: STATOIL/N.HYDRO/SAGA
HOLE SIZE: 17½" | GEOLOGIST: M.HELLE/KARLSSON | DATE: 25 march 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1080	80	Sd, clr qtz, med - crs, occ v crs and f, subang-subrnd, occ rnd, mod - w srtd,	
	20	lse- friable, occ calcite cmt, Clayst, lt brnish gy, firm - mod hd, c slty occ sdy, non calc	
	Tr	lig	
	Tr	glauc	
1090	80	Sd, med, occ crs-v crs, occ f, else a/a	1090 sd
	20	Clayst, lt brnish gy, firm-mod hd, slty in parts, non calc	~~1096 clayst~~
1100	100	Clayst a/a	
	Tr	Sd, clr qtz, med - crs, occ v crs, subrnd, lse occ, rk frags	
	Tr	mica	
1110	100	Clayst a/a	Pooh at 1113m because of bad weather mud was not circulated ~~for the same~~ reason.
	Tr	Sd, a/a	
1120	100	Sd, clr qtz, med - crs, subrn-rnd, mod-w srtd, lse	
	Tr	lig	
	Tr	pyr	
1130	100	Clayst, drk grey, non calc, firm, occ sticky	
	Tr	Sd a/a	
1140	50	clayst a/a	
	50	Silt-siltst, pt cal cmt, pt ls	
	Tr	sd a/a	
	Tr	Shell frags	1154: Drilling problems. Difficult to get through.
	Tr	glauconite	
1150	100	Clayst a/a	
	Tr	Sd a/a, occ qtz cmt f sd	
	Tr	glaus	
	Tr	mica	
	Tr	Foss frags	
	Tr	Pyr	

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Den norske stats oljeselskap a.s
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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: 34/10-DELTA

WELL NO.: 34/10-3

CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"

K.B.E.: 25 meters | COMPANY: STATOIL/N.HYDRO/SAGA

HOLE SIZE: 17½" | GEOLOGIST: HELLE/KARLSSON | DATE: 26march 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1160	50	Clayst, lt - med brnish gy, firm - mod hd, occ slty, non calc, occ micromica	
	30	Sd, clr qtz, med - crs, subrnd - rnd, lse occ calcite cmt, occ rk frags	
	20	silt- siltst, lt gy, sft- firm, sandy in parts	
	TR	mica	
	Tr	pyr	
	Tr	glauc	
	Tr	shell frags (shells)	
1170	65	Clayst, a/a	
	30	silt a/a	
	5	Sd, a/a	
	Tr	mica	
	Tr	glauc	
	Tr	foss frags (shells)	
1180	100	Clayst a/a	
	Tr	silt a/a	
	Tr	mica	
	Tr	foss frags	
	Tr	sd a/a	
	Tr	glauc	
1190	100	Clayst, slty, else a/a	DRLG BREAK at 1190m. From 40 to 120 m/H
	Tr	Sd, a/a	
	Tr	mica	
	Tr	glauc	
	Tr	foss frags	
1200	50	Sd, clr qtz, med- crs occ f, subrnd - rnd, lse, mod-well srtd	
	50	clayst, a/a'	
	Tr	mica	
	Tr	foss frags, (shells and foram)	
	Tr	glauc	
1220	80	sd,occ v crs, else a/a	
	20	Clayst a/a	
	Tr	mica, lig	
	Tr	foss frags a/a	
	Tr	glauc	
1220	50	Sd, clr qtz f-med, occ crs-v crs, subang-subrnd,occ rnd, well srtd, lse	
	50	Clayst a/a	
	Tr	mica, fors frags a/a	
	Tr	glauc, lig	

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Den norske stats oljeselskap a.s
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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: 34/10-DELTA

WELL NO.: 34/10-3

CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"

K.B.E.: 25 meters | COMPANY: STATOIL/N. HYDRO/SAGA

HOLE SIZE: 17½" | GEOLOGIST: M. HELLE/KARLSSON | DATE: 26march 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1230	75	clay, lt-med brnish gy, firm-mod hd, occ slty, non calc	No shows
	20	clay/clayst, sft-firm, lt gy, lt grnish gy,	
	5	sd, ch gtz, f-med, occ crs-v crs, subang subrnd, occ rnd, lse, mod-well srtd	
	tr	mica	
	tr	glauc	
1240	50	clay/clayst, a/a	
	40	clayst, lt-med, a/a	
	10	sd, a/a	
	tr	mica, foss frags	
	tr	glaus	
	tr	pyr	
	tr	marl, wh-crm, lt gy, sft-firm,	
1250	90	clayst, lt grnish gy, a/a	
	10	clayst, lt-med brnish gy, a/a	
	tr	sd a/a	
	tr	mica	
	tr	glanc	
	tr	pyr	
1260	100	clay/clayst, lt-med grnish gy, occ brnish gy, soft-firm, non calc, occ micromica	
	tr	sd, a/a	
	tr	mica	
	tr	glauc	
	tr	pyr	
1270	60	clay/clayst, a/a	
	40	sd, a/a	
	tr	mica	
	tr	glauc	
	tr	pyr	
1280	80	clay/clayst, lt-med gy, grnish gy, brnish gy, occ mod-hd, else a/a	
	20	sd, a/a	
	tr	mica	
	tr	glauc, pyr	
1290	90	clay/clayst a/a	
	10	sd, a/a	
	tr	glauc	
	tr	pyr	

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Den norske stats oljeselskap a.s
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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: 34/10-DELTA

WELL NO.: 34/10-3

CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"

K.B.E.: 25 meters | COMPANY:

HOLE SIZE: 17½" | GEOLOGIST: HELLE/KARLSSON | DATE: 26 march 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1300	80	clayst, lt grnish gy, lt brnish gy, firm-mod hd, subfiss, non calc	
	20	sd, clr qtz, med-crs, occ f, subang-subrnd else	
	tr	mica	
	tr	glauc	
	tr	foss frags, forams	
1310	50	sd, clr gtz med-crs, subrnd-rnd, lse, w srtd	
	50	clayst a/a	
	tr	pyr	
	tr	sltst, grn gry, firm	
	tr	lig	
	tr	mica, musc	
1320	50	sd a/a	
	50	clayst grnish gry, firm, brnish gry firm-mod hd, non calc	
	tr	pyr	
	tr	mica, musc	
	tr	forams	
1330	60	sd, clr gtz, med-crs, occ f, subang-subrnd	
		lse	
	40	clayst a/a	
	tr	mica,	
	tr	pyr,	
	tr	lig	
	tr	foss frags	
1340	90	sd, clr gtz, f-med, subang-subrnd, mod srtd, lse	
	10	clayst, a/a	
	tr	mica	
	tr	lig	
	tr	pyr	
1350	90	sd, med-crs, occ f, else a/a	
	10	clayst, firm, grnish gry, slty	
	tr	lig	
	tr	pyr	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: 34/10 DELTA

WELL NO.: 34/10-3

CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"

K.B.E.: 25 meters | COMPANY: STATOIL/N. HYDRO/SAGA

HOLE SIZE: 17½" | GEOLOGIST: HELLE/KARLSSON | DATE: 26 march 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1360	70	sd, clr qtz, med-crs, occ f, subrnd-rnd, mod srtd	
	30	clayst, grnish gy, firm, non calc	
	tr	pyr,	
	tr	lig	
	tr	mica	
	tr	glauc pt covered w pyr	
1370	60	sd a/a, occ mlky qtz	
	40	clayst a/a	
	tr	pyr lg	
	tr	mica, crs	
1380	60	sd, a/a	
	40	clayst a/a	
	tr	pyr	
	tr	mica	
	tr	lig	
1390	50	sd a/a	
	50	clayst, a/a	
	tr	forams	
	tr	pyr, euhedral	
1400	50	sd a/a	
	50	clayst, pt fiss, lse a/a	
	tr	pyr	
	tr	sltst, firm, grnish gy,	
	tr	glan	
	tr	lig	
1408	50	clayst, a/a	
	30	sd, a/a	
	tr	pyr, enriched, 2-5%	
	tr	lig, forams	
	20	ls, mod hd, wh, non arg, trasparent,	ls beds
1409	70	sd a/a	
	10	clayst, a/a	
	10	pyr,	pyr beds
	tr	lig	ls beds
	10	ls, dolomitic, lse a/a	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: 34/10 DELTA

WELL NO: 34/10-3

CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"

K.B.E.: 25 meters | COMPANY: STATOIL/N. HYDRO/SAGA

HOLE SIZE: 17½" | GEOLOGIST: M. HELLE/W. KARLSSON | DATE: 26 march 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1410	40	clayst, grnish gy, firm-sft, occ slty, non calc	Yell flour in ls.Flash milky
	30	ls, wh-crm, med gy, mod hd-firm, non ang	
	20	sd, clr gtz, crs, rnd, w srtd, lse	cut from a few grains.
	10	sdst, calcite cmt clr gtz, occ lig transparent, dolomitic, f, mod hd-hd	"dead oil stain"
	tr	pyr	
	tr	lig	started with 5m sampling interval.
1420	50	clayst, a/a	
	20	ls, a/a	yell flour in ls
	20	sdst a/a	
	10	sd a/a	Flash milky cut ~~from 10-15%~~
	tr	pyr	of the sample
	tr	lig	
1425	50	clayst a/a	
	30	sdst, a/a	
	10	ls, a/a	____ " ____
	10	sd, a/a	
	tr	pyr, approx 5%	
1430	60	clayst/clay, sft-firm, lt-med grnish gy, occ brnish gy-brn, non calc, subfiss	____" ____
	20	sd, med-crs, rnd-subrnd, else a/a	
	tr	pyr	
	tr	lig	
1435	70	clayst, a/a	____ " ____
	30	sdst, a/a	
	tr	pyr, approx 3%	
1440	90	clayst, lt-med gy, lt grnish gy, occ brnish gy, else a/a	____"____
	10	sdst, a/a	
	tr	pyr	
1445	100	clayst, also brnish gy, else a/a	back to 10m
	tr	sdst, a/a	sampling inter-
	tr	ls, wh-crm, occ lt gy, firm-sft	vall
	tr	pyr	
	tr	lig	
1450	100	clayst, grn gy, occ brn, lt-med gy, firm-slf occ mod hd, occ subfiss, non calc	
	tr	~~sdst, a/a~~	
	tr	ls, a/a	
	tr	pyr	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: 34/10 DELTA

WELL NO.: 34/10-3

CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"

K.B.E.: 25 meters | COMPANY: STATOIL/NORSK HYDRO/SAGA PETR.

HOLE SIZE: 17 ½ " | GEOLOGIST: M.HELLE/KARLSON | DATE: 26 March 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1455	80	clayst, grn gy, lt-med gy, occ brn, firm-sft, occ mod hd, subfiss, non calc	Yel flour in calcite cmt
	10	Pyr	sdst. streamer cut
	10	sd, clr qtz, f, occ med, subrnd-rnd, lse	
	tr	ls, non-crm, occ dt gy, occ arg, firm-slft	dead oil stain 10%
	tr	sdst, dolimite(calcite)cmt clr qtz, f, med hd-hd	
1460	100	clayst, a/a	"
	tr	sd a/a	
	tr	ls a/a	
	tr	pyr, glauc	
	tr	sdst, a/a	
	tr	Dol	
1465	95	clayst a/a	"
	5	ls, wh-crm, lt-med gy, firm-mod hd, arg	
	tr	sdst, dol cmt, a/a	
	tr	sd a/a	
	tr	pyr	
1470	100	clayst a/a	"
	tr	ls a/a	
	tr	sdst, dol cmt, a/a	Dead oil stain from a few grains
	tr	pyr	
	tr	sand a/a	
1475	95	clayst a/a	
	5	ls a/a	
	tr	sdst a/a	
	tr	sd a/a	
	tr	pyr	
1480	100	clayst a/a	
	tr	ls a/a	
	tr	sd a/a	
	tr	pyr	
1485	100	clayst a/a	
	tr	ls a/a	
	tr	pyr	
1488.5	100	clayst lt-med gy, grn gy, occ brn, firm-sft, occ mod hd, subfiss, non calc	Bottoms up
	tr	ls, wh-crm, lt-med hd. soft-firm, mod hd, arg	
	tr	sd, clr qtz, f-med, subrnd, occ rnd, lse	
	tr	pyr	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY	AREA: NORTH SEA	FIELD: 34/10 DELTA
WELL NO.: 34/10-3		
CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"		
K.B.E.: meters	COMPANY: STATOIL/NORSK HYDRO/SAGA PETR.	
HOLE SIZE: 12 1/4 "	GEOLOGIST: B.RASMUSSEN	DATE: 1/4 - 79

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1490	100	clayst, lt-med gy, grn gy, firm-mod hd, non-calc	Contem. by cmt.
	tr	pyr	
1500	100	clayst a/a	
	tr	pyr	
	tr	ls, wh-lt gy, firm, argill	
	tr	dol, buff, firm	
1510	100	clayst a/a, subfiss,in parts	
	tr	pyr	
	tr	ls a/a	
	tr	dol, lt gy-buff, firm	
1520	100	clayst a/a	
	tr	pyr	
	tr	ls a/a	
	tr	dol a/a	
1530	100	clayst a/a	Incr. amt of calc matr.
	tr	Pyr	
	tr	ls a/a	
	tr	dol a/a	
1540	100	clayst a/a	
	tr	pyr	
	tr	ls a/a	
	tr	dol a/a	
	tr	sand, vf, well rnd	
	tr	glauc	
1550	100	clayst a/a, glauc, becomes shaly	
	tr	pyr	
	tr	ls a/a, firm-hd	
	tr	dol a/a silty	
1560	90	clayst a/a, shaly, blue gy	
	10	ls a/a	
	tr	dol a/a	
	tr	pyr	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: 34/10 - DELTA
WELL NO.: 34/10 -3
CO ORDINATES: ____° ____' ____"N ; ____° ____' ____"
K.B.E.: 25 meters | COMPANY: STATOIL/NORSK HYDRO/SAGA PETR.
HOLE SIZE: 12 ½ " | GEOLOGIST: B.RASMUSSEN | DATE: 1/4 - 79

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1570	100	Clayst, blue gy, firm-mod.hd, non-calc	Lot of carings the wh tuff
	tr	ls, wh-lt, gy, firm-hd	
	tr	pyr	seen at 1565 residual oil
	tr	dol, buff, firm, occ silty	
	tr	tuff, lt gy-wh, v. sft, sl calc and blue gy, mottled firm	in the ls(dyel fluor,cloudy cut)
1580	90	clayst a/a	
	10	ls a/a, residual oil	
	tr	pyr	
	tr	tuff, lt. gy-wh, v.sft, sl calc	
	tr	sand, fine, qtz, arg-w.rnd, clear-rust brn	
1590	90	clayst a/a	
	10	ls a/a	
	tr	pyr	
	tr	sand a/a	
	tr	siltstone, p.yel.brn, firm, well cmt, non-calc	
1600	80	clayst a/a	
	15	siltst a/a	
	5	ls a/a	
	tr	pyr	
	tr	sand a/a	
	tr	fossils, forum	
	tr	dol a/a	
1610	70	clayst a/a	
	30	siltst a/a	
	tr	ls a/a	
	tr	sand a/a	
	tr	pyr	
1620	60	clayst a/a	
	40	siltst a/a	
	tr	sand a/a	
	tr	pyr	
	tr	glauc	
1630	60	siltst a/a, occ calcite int.	
	40	clayst a/a	
	tr	pyr	
	tr	ls a/a	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: 34/10 DELTA

WELL NO.: 34/10 - 3

CO ORDINATES: ____° ____' ____"N ; ____° ____' ____"

K.B.E.: 25 meters | COMPANY: STATOIL/NORSK HYDRO/SAGA PETR.

HOLE SIZE: 12 1/4" | GEOLOGIST: B.RASMUSSEN | DATE: 1 APRIL 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1640	80	siltstone, p. yel. brn, firm, calc in parts	
	10	clayst, blue gy, firm- mod hd, non-calc	
	10	ls, buff, wh, lt gry, firm-hd	
	tr	sand, vf, arg, hd	
	tr	pyr	
1650	50	siltst a/a	
	40	clayst a/a	
	5	sand, vf-f, qtz, clear, ang	
	5	ls, mostly buff, else a/a	
	tr	pyr	
1657	40	siltst a/a	circ. btm up due to drilling break
	40	clayst a/a	
	15	ls a/a	
	5	sand a/a	
	tr	pyr	
1660	70	clayst a/a, incr. amt.of med gry clayst	
	20	siltst a/a	
	10	ls a/a	
	tr	sand	
	tr	pyr	
1670	50	clayst a/a	
	40	siltst a/a	
	10	ls a/a	
	tr	pyr	
	tr	glauc	
1680	70	clayst a/a	
	25	siltst a/a	
	5	ls a/a	
1690	70	clayst a/a, med gry	
	20	siltst a/a	
	10	ls a/a	
	tr	pyr	
1700	70	clayst a/a	
	20	siltst a/a	
	10	ls a/a	
	tr	pyr	
	tr	sand a/a	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY	AREA: NORTH SEA	FIELD: 34/10 DELTA
WELL NO.: 34/10 - 3		
CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"		
K.B.E.: 25 meters	COMPANY: STATOIL/NORSK HYDRO/SAGA PETR.	
HOLE SIZE: 12 1/4"	GEOLOGIST: B.RASMUSSEN	DATE: 1 APRIL 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
	50	sand, f, qtz, clear, subang, loose	
1703	30	siltstone, p.yel. brn, firm-hd, calc in parts	
	20	clayst., med gy, firm-mod.hd	
	tr	ls, buff, hd	
	tr	pyr	
1706	100	clayst a/a	
	tr	siltstone, occ lt.gy, else a/a	
1712			
	100	sand a/a	
	tr	pyr	
1718	100	sand a/a	
1721	50	clayst a/a	
	30	siltst a/a	
	20	sand a/a	
	tr	ls	
1724			
	90	sand a/a	
	10	ls a/a, occ wh	
	tr	siltst	
1727	100	sand, f-med, occ crs, else a/a	
1730			
	70	sand a/a	
	30	siltst a/a	
1733	50	sand a/a	
	50	siltst a/a	
1739			
	50	sand a/a	
	50	siltst a/a	
1742	70	silst a/a	
	30	sand a/a	
	tr	pyr	
1745	70	siltst a/a	
	30	sand a/a	
1748			
	70	siltst a/a	
	30	sand a/a	
	tr	ls, wh, else a/a	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY	AREA: NORTH SEA	FIELD: 34/10 DELTA
WELL NO.: 34/10 . 3		
CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"		
K.B.E.: 25 meters	COMPANY: STATOIL/NORSK HYDRO/SAGA PETR.	
HOLE SIZE: 12 1/4 "	GEOLOGIST: B.RASMUSSEN	DATE: 1 APRIL 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1751	50	siltstone, p. yel.brn. firm-hd, calc in parts	
	45	sand, f-crs, subang-subrd,qtz, clear, loose	
	5	ls, wh- lt gy, hd	
	tr	pyr	
1754			
	60	siltst a/a	
	25	sand a/a	
	10	ls a/a	
	5	pyr	
1757	50	siltst a/a	
	25	sand a/a	
	15	ls a/a	
	10	pyr	
	tr	fossils	
1760	50	clayst, med dk gy, firm	
	25	siltst	
	15	sand a/a	
	10	ls a/a	
	tr	marle, lt.gy, sft	
1775	50	clayst a/a	
	25	siltst	
	25	marl a/a	
1790	40	clayst a/a	
	20	siltst a/a	
	20	marl a/a	
	20	ls a/a	
	tr	pyr	
1805	35	clayst a/a	
	20	siltst a/a	
	20	ls a/a	
	20	marl a/a	
	5	pyr	
1811	35	clayst a/a	
	20	silst a/a	
	20	marl a/a	
	5	pyr.	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: 34/10 DELTA

WELL NO.: 34/10 - 3

CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"

K.B.E.: 25 meters | COMPANY: STATOIL/N. HYDRO/SAGA

HOLE SIZE: 12 1/4 " | GEOLOGIST: RASMUSSEN/MÆHLE | DATE: 2/4-79, 6/4-79

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1814	70	clayst, med dk. gy, firm, non-sl. calc	Oil in mud, dull lt yel
	10	ls, lt gy, buff, firm-hd	
	10	marl, lt gy, sft-firm	fluor.
	10	sand, med, rnd, loose, qtz, clear-milky	
	tr	pyr	lot of blue gy clayst. carings
1817	80	clayst a/a	
	15	siltst, p. yel brn, mod hd, occ calc	
	5	marl a/a	
1820	70	clayst a/a	
	20	siltst	
	5	marl a/a	
	tr	ls	
	tr	pyr	
	tr	sand	
1823	10	sltst.brnish gy, mod hd, sl calc	
	60	clst, lt gy, med gy, grush gy subfiss sft -firm	Min fluor ?
	30	marl a/a	dull yel fluor in ls
	tr	pyr	
	tr	glauc	fluor frame pipe dope.
	tr	ls, lt gy a/a	
1826			
	90	clst, lt-med gy, grush gy, sft-frm. occ subfiss	
			lot of cement in samples
	10	marl a/a	
	tr	a/a	
1829	70	ls, wh-buff, gravel, f-crs, slr-milky	
	30	clst a/a	
	tr	sd & felds	
		feldsp, brn- redish	
1832	50	clst a/a	lot of cement in samples
	40	ls a/a	
	10	sd, clr qtz, f-med	dull yell fluor in ls grains
1835	80	clst a/a	
	16	sd a/a	
	10	ls a/a	
	tr	pyr	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY	AREA: NORTH SEA	FIELD: 34/10 DELTA
WELL NO.: 34/10-3		
COORDINATES: ___° ___' ___"N ; ___° ___' ___"		
K.B.E.: 25 meters	COMPANY: STATOIL/NORSK HYDRO/SAGA PETR.	
HOLE SIZE: 8 1/4 "	GEOLOGIST: S. MÆHLE	DATE: 6/4 - 79

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1838	50	clst, lt-med gy, brnsh gy, grnsh gy, sft-frm, occ subfiss	
	40	sd, clr qtz, occ mlky, vf-f, subrnd, well srtd,	sample well washed, lost clay
	10	ls, wh-yel buff, frm-mod hd	
	tr	pyr	
1841	60	clst a/a	
	30	sd a/a	sample well washed
	10	ls a/a	
	tr	pyr	weak yel. fluor from MW:1.7 min
1844	50	clst-clay, med gy, grnsh gy, mod hd, non-calc, slty in parts,	
	40	ls & dolmte ls, wh-ltgy & yelsh brn, frm-mod hd, arg,	
	10	sd a/a	
	tr	pyr	
	tr	marl, lt gy, subfiss	yel. dull fluor in ls frags min
	tr	sltst, lt gy frm	
1847	50	cly a/a	
	30	sd a/a	sl.yel.fluor min no cut
	20	ls & dl mte ls a/a	
	tr	pyr	
	tr	sltsf. a/a	
1850	10	cly a/a v.lse	
	20	sd a/a	
	10	ls a/a	
	tr	pyr	
1853	100	cly a/a sft- stky	
	tr	sd a/a	
	tr	glauc	
	tr	ls a/a	
1856	100	clay a/a stky. slty in parts, micromica	
	tr	sd , c.f.	
	tr	ls, a/a pyr	
1859	100	clay a/a	
	tr	sd. a/a	
	tr	ls a/a	
	tr	pyr	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: 34/10 DELTA
WELL NO.: 34/10-3
COORDINATES: ___° ___' ___"N ; ___° ___' ___"
K.B.E.: 25 meters | COMPANY:
HOLE SIZE: 8 1/4 " | GEOLOGIST: S.Mæhle/I. Miljteig | DATE: 6/4-79

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1862	100	clay, med gy sticky, v- sft, micromic ,very calc	MW: 1.75
	tr	ls, wh, mod hd,	
1865	100	clay a/a	min fluor
1868	100	clay a/a	weighting up to MW:1.78
	tr	ls, wh- cream yel,mod hd, sd clr , vf-f, subang	
1871		a/a	
1874		a/a	min fluor
1877	100	clay a/a	
	tr	slt, clr, qtz, pyr , ls, cr yel- lt brn	
1880	100	clay a/a	
	tr	sltst a/a	MW:1.78
	tr	pyr	
	tr	ls wh-yel, mod hd,	
	tr	sd, clr qtz, vf-f, subrnd	
1883	95	clay a/a	
	5	ls, lt brn, mod hd	
1886		a/a	heavy oil-prob, pipe dope.Slightly
			more fluor than sample above
1889		a/a	drophts of heavy oil a/a giving yel ~~fluor~~ good yel ~~fluor~~
1890	100	clay lt brn, sticky, sl calc	
	tr	ls, wh-cr yel, mod hd	
	tr	oil drophts	
	tr	sd, clr qtz, f-med, subang	37 units
1891		a/a	oil smell
1892	100	clay a/a	lt yel fluor mod fast str.
	tr	ls a/a	
	tr	sd a/a	cloudy cut. in ls frags
	tr	med gy sh, mod hd	
1893	90	clay a/a	
	5	coal blk , dk brn shing brittle(lignosulf?)	lt yel fluor
	10	ls a/a	
	tr	sd a/a	lignosulfonate in mud ?
	tr	pyr	

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Den norske stats oljeselskap a.s
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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: 34/10 DELTA

WELL NO.: 34/10-3

COORDINATES: ____° ____' ____"N ; ____° ____' ____"

K.B.E.: 25 meters | COMPANY: STATOIL/NORSK HYDRO/SAGA PETR.

HOLE SIZE: 8 1/4" | GEOLOGIST: MILJETEIG/MÆHLE | DATE: 7.4.79

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
1895	90	clay lt brn, sticky,	weak lt yel fluor
	10	ls, wh-mod hd-hd	lignosulf in mud
	tr	sd, f-med clr qtz, subrnd	
1898			
	95	clay a/a	
	5	ls a/a	lt yel fluor weak milky cut
	tr	sd a/a	
1901			
	75	clay a/a	
	20	ls a/a	
	5	sd a/a	
1904	tr	pyr	cire bottoms up
		GIH w/core barrel	
2024		sdst, clayst, coal, sh, pyr, glauc, micaclr	cavings
2027	100	sdst,clr wh qtz, vf-f, occ med, friable-lse, calcitedol	No shows
		cmt, mod-w srtd, subang-subbrnd	
	tr	mica	
	tr	pyr	
	tr	glauc	
	tr	coal, dk, brittle	
2030			
	100	sdst, v calcite cmt , occ dol cmt else a/a	
	tr	mica, biotite & muscovite	
	tr	pyr	
	tr	glauc	
	tr	core	
2033	90	sdst, clr-wh, occ lt gy, vf-f, friable-hard, v calc cmtd	
	tr	mica, pyr, glauc & coal a/a	
	10	ls, wh, firm, xln, occ chalky, sl arg & sandy	
2036	95	sdst a/a	
	5	ls a/a	
	tr	mica pyr glauc & coal a/a mica is often green which might indicate Fuchsite (chromium mica)	
2039	95	sdst a/a	
	5	ls a/a occ dolic, hd, arg, buff-tan	
	tr	mica, pyr, glauc & coal a/a	

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Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: 34/10 DELTA

WELL NO.: 34/10-3

CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"

K.B.E.: 25 meters | COMPANY: STATOIL/NORSK HYDRO/SAGA PETR.

HOLE SIZE: 8 1/4" | GEOLOGIST: HELLE/HEUM | DATE: 14/4-79

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2042	90	sdst, clr-wh qtz, vf-f, occ med, abnd calc cmt, sl-v micac, musc + biot, occ fresh green mica-possibly	No shows
		Fuchsite, friable-(hd), some-no vis porosity, w srtd, ang-subang	
	10	ls, wh-lt gy, sft-firm, sl arg, occ dolic, buff-tan firm-hd	
	tr	pyr	
	tr	coal frags, blk, brittle as grains in the sand	
	tr	glauc	
	95	sdst, dom lse-uncmtd-good por, v w srtd else a/a	
2045	5	ls a/a	
	tr	pyr, beautiful x-aggregate of intergrown octahedrals	
	tr	coal & glauc a/a	
2048	85	sdst, calc cmt-friable a/a	
	15	ls a/a	
	tr	pyr	
2051	Lost		
2054	90	sdst a/a v calc	
	10	ls a/a	
	tr	pyr	
2057-	90	sdst a/a v calc	
2060-	10	ls a/a	
	tr	pyr	
2063	95	sdst a/a occ hd v calc	
	5	ls a/a	
	tr	pyr, occ w xln (cube)	
	tr	coal dk brn-blk, brittle	
	tr	glauc?	
2066	95	sdst a/a	
	5	ls a/a	
	tr	pyr, coal a/a	

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Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY	AREA: NORTH SEA	FIELD: 34/10 DELTA
WELL NO.: 34/10-3		
CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"		
K. B. E.: meters	COMPANY: STATOIL/NORSK HYDRO/SAGA PETR.	
HOLE SIZE: 8 1/4"	GEOLOGIST: HELLE / HEUM	DATE: 14/4-79

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2069	95	sdst: clr-wh vf-f, ang-sub ang, w srtd, v calc cmtd, friable, non-sl micac, poor-mod vis por	no shows
	5	ls: wh-lt gy, sft-firm, xln-chalky, occ dolic, buff-tan, hd, xln.	
	tr	pyr	
	tr	coal frags, blk, brittle	
	tr	glauc?	
2072-2075	95	sdst:a/a occ entirely cmtd by pyrite	
	5	ls a/a	
	tr	pyr	
	tr	coal frags	
2078	80	sdst: v muscovitic, occ pyr cmtd, else a/a	
	10	ls a/a	
	10	dol: buff-tan, frm-hd, microxln	
	tr	pyr, coal frags	
	tr	glauc?	
2081-2084	60	sdst:vf-med, else a/a	
	20	ls & dol a/a	
	20	coal and ironstone, coal: blk, brittle	
	tr	pyr	
2087-2090			
	40	sdst: vf-med a/a micaceous(muscovite only)	
	40	sdst: crs-v crs, and-rnd, lse	
	15	dol: lt gy, hd, arg, occ buff-tan a/a, occ calcitic a/a	
	5	coal & ironstone a/a occ pyritic	
	tr	pyr	
2093	95	sdst:crs-v crs, dom clr qtz, subang-w rnd, occ feldspar grains, buff-pink, plateshaped, grains/cleav age	
	5	Non-sl calc cmtd,lse, occ vf-f calc cmtd sand, friable dol, lt gy, hd, arg a/a occ calcitic	
	tr	coal, ironstone	
	tr	pyr	
2096	60	sdst: a/a occ dol cmtd, occ pyr cmtd, sl muscovitic	The clay is so soft that it easily gets
	30	clyst: lt gy, v soft, non calc	
	10	dol: a/a occ buff, firm, occ dk brn gy, v hd	washed out. Probable amount is above 80% clay

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Den norske stats oljeselskap a.s
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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY	AREA: NORTH SEA	FIELD: 34/10 DELTA
WELL NO.: 34/10-3		
CO ORDINATES: ____° ____' ____"N ; ____° ____' ____"		
K.B.E.: meters	COMPANY: STATOIL/NORSK HYDRO/SAGA PETR.	
HOLE SIZE: 8 1/4"	GEOLOGIST: HELLE/HEUM	DATE: 14 APRIL 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2099	15	sdst:crs-vcrs,dom clr qtz,occ buff, lt yel,pink colors subang-rnd, occ plateshaped feldspar grains, occ	No show
		densely cmt by dol, occ densely cmtd by pyr, occ silica occ f-med grain size.Prob.largly inherited from above	cmtd
	80	clyst: lt gy,v sft, non calc	
	5	dol: lt gy,hd,microxln, occ buff-tan,firm, xln, occ	
		dk gy brn,v hd,microxln, sl arg. Prob.origin as cement in the v coarse sand	
	tr	ls: wh, sft-firm	
	tr	pyr	
2102	80	clyst a/a	
	15	sdst a/a	
	5	dol a/a	
	tr	pyr (abnd ~ 5%)	
	tr	ls a/a	
2105	80	clyst a/a	
	10	sdst a/a	
	5	dol (+ls) a/a	
	5	pyr	
2108	85	clyst a/a	
	5	sdst a/a	
	5	dol (+ls) A/A	
	5	pyr,abund framboidal,spheroidal,tubular & well chry-	
		stallized + irregular grains	
2111	85	clyst a/a	
	5	sdst a/a	
	5	dol (+ls) a/a	
	5	pyr a/a	
	tr	coal frags, occ pyritic,	
2114	85	clyst a/a	
	5	sdst a/a	
	5	dol (+ls) a/a	
	5	pyr a/a	
	tr	coal frags a/a	
2117	80	clyst a/a	
	5	sdst a/a	
	5	dol:lt gy,hd,microxln,arg	
	5	ls,buff-tan-rd brn,firm & chalky to hd & xln,occ wh,sft	
	5	pyr a/a	

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Den norske stats oljeselskap a.s
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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: 34/10 DELTA

WELL NO.: 34/10-3

CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"

K.B.E.: meters | COMPANY: STATOIL/NORSK HYDRO/SAGA PETR.

HOLE SIZE: 8 1/4" | GEOLOGIST: HELLE/HEUM | DATE: 14 APRIL 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2120	85	clyst,lt gy,v soft,noncalc prob v pyr	
	5	ls + dol:wh-buff-lt gy dk,brn gy-rdbrn	
	5	sdst: clr qtz med-v crs, subang-rnd, occ pyr	
	5	pyr	
	tr	coal frags	
2123	85	clyst a/a	
	5	ls: varicoloured a/a , no syst. (+dol)	
	5	sdst a/a	
	5	pyr a/a	
2126	85	clyst a/a	
	10	ls: varicoloured a/a, little dolomite	
	5	sdst+pyr a/a	
2129	100	clyst a/a sl slty, n-calc	
2132	100	clyst a/a	
2135	100	clyst/clay,lt gy,sft,slty,n-sl calc	
	tr	pyr	
2137	95	clyst a/a	
	5	sltst, dk-med gy,micac lr , abund plant remains in	
		the sltst	
	tr	pyr	
	tr	glauc	
	tr	ls,wh-buff, occ lt gy, sft-hd	
	tr	sdst, cbr qtz,med,subang-rnd,carb cmtd	
2141	100	clayst a/a	
	tr	sltst a/a	
	tr	sdst, clr qtz, f-med, occ crs, subrnd	
	tr	pyr	
	tr	glauc	
2144	100	clayst a/a	
	tr	sdst a/a	
	tr	sltst a/a	
	tr	pyr	
	tr	glauc	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY	AREA: NORTH SEA	FIELD: 34/10 DELTA
WELL NO.: 34/10-3		
CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"		
K.B.E.: meters	COMPANY: STATOIL/NORSK HYDRO/SAGA PETR.	
HOLE SIZE: 8 1/4"	GEOLOGIST: HELLE/HEUM	DATE: 14 APRIL 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2147	100	clayst, lt gy,sft,slty in parts,n-sl calc,micacaous	No Shows
	tr	sdst,clr qtz, f-med, occ crs, subrnd-subang	
	tr	ls,wh-lt gy, partly argill, firm-mod, hd-hd	
	tr	pyr, 2-5 %	
	tr	sltst, med gy,occ dk gy, mic,sft-firm	
2150	95	clayst a/a	
	5	pyr	
	tr	sdst a/a	
	tr	sdst a/a	
	tr	ls a/a	
2153	80	clayst a/a	
	10	ls a/a	
	5	sltst a/a	
	5	pyr	
	tr	sdst a/a	"
	tr	mica	
2156	90	clayst a/a	
	5	ls a/a	
	5	sltst a/a	
	tr	sdst a/a	
	tr	pyr	
	tr	mica	
2159	95	clayst,lt-med gy sft-firm slty, n-sl calc,sl micaceous,subfiss in parts,	
	5	ls-dol,wh-lt gry,firm-hd,argil in parts	
	tr	sdst a/a	
	tr	pyr, mica	
2162	95	clayst a/a	
	5	ls-dol a/a	
	tr	sdst a/a	
	tr	pyr,mica	
	tr	glauc	"
2165	80	clayst a/a	
	20	sdst,clr qtz,vf-f,occ med-crs, subang-subrnd,occ dolmite	
	tr	cmt,w srtd	
	tr	pyr	
	tr	mica	

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Den norske stats oljeselskap a.s
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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY	AREA: NORTH SEA	FIELD: 34/10 DELTA	
WELL NO: 34/10-3			
CO ORDINATES: ____" ____' ____"N ; ____" ____' ____"			
K.B.E.: meters	COMPANY: STATOIL/HYDRO/SAGA		
HOLE SIZE:	GEOLOGIST: HELLE/HEUM	DATE: 14 APRIL 1979	

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2168	85	clayst, lt-med gy,sft-firm,slty,non-calc	
		sl mic, occ subfiss	No shows
	15	sdst, clr qtz, vf-f, occ med, ang-subang, lse, w srtd, occ dol-calcite cmt	
	tr	pyr	
	tr	mica	
2171	80	clayst a/a	____"____
	15	sdst a/a	
	5	ls,wh-lt brn,firm-hd,argill in parts	"
	tr	pyr, glauc	
2174	90	clayst, v slty in parts, else a/a	
	10	sdst a/a	
	tr	pyr	
2177	95	clayst a/a	
	5	sdst a/a	
	tr	pyr	
	tr	mica	
2180			
	80	clayst a/a	
	20	sdst a/a	
	tr	mica	
	tr	pyr	
	tr	coal fragment, black	
2183			
	60	clayst a/a	Bottoms up
	40	sdst a/a	
	tr	coal a/a	
	tr	mica	
2186	75	clyst:a/a grades into siltstone,lt-med gy,sft,sl	
		laminated,micaceous,spotted w sltsized coal frags, non calc	No shows
	15		
		sndst:clr qtz,occ buff,wh,bluish,pink,vf-med,subang-	
		subrnd, lse	
	5	ls:varicoloured.dom wh-buff,frm-hd,xln-chalky,occ lt-	
		med gy,hd,arg, occ dolic, buff, firm-hd	
	5	pyr	
	tr	glauc?v abund glauc-coloured spheriods inserted w pyr	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY	AREA: NORTH SEA	FIELD: 34/10 DELTA
WELL NO.: 34/10-3		
CO ORDINATES: ____° ____' ____" N ; ____° ____' ____"		
K. B. E.: meters	COMPANY: STATOIL/HYDRO/SAGA	
HOLE SIZE: 8 1/4"	GEOLOGIST: HELLE/HEUM	DATE: 15/4-1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2189	75	clyst:lt-med gy,v sft,sticky,slty,n-calc,grading into	
		slts:lt-med gy,sft,sl laminated,micaceous,spotted	
		w sltsized lign frags,n-calc	
	15	sdst:clr qtz,occ buff,wh,pink,vf-med,subang-subrnd,	
		lse,occ vf,white,calatecmt ,firm,glauc	
	5	ls:varicoloured,dom wh-buff,frm-hd,xln-chalky,occ	
		lt-med gy,hd,occ dolic,buff,firm-hd	
	5	pyr	
	tr	glauc?Very abund glauc.colottred grains, dom spheroidal	
		densely inserted by pyr	
	tr	lign. blk,brittle	
		pyritized	
2192	80	clyst & sltst a/a	
	10	sdst a/a	
	5	ls a/a+equal amounts of dol,lt gyish white,micritic,	
		sl arg, hd	
	5	pyr	
	tr	glauc a/a decreasing amount	
	tr	lig. a/a	
2195	80	clyst & sltst a/a	
	10	sdst a/a	
	5	ls +dol (equally) a/a	
	5	pyr	
	tr	a/a	
2198	80	clyst & sltst a/a	
	10	sdst a/a	
	5	ls + dol(eq.) a/a	
	5	Pyr	
	tr	glauc + lig a/a	
2201	70	clyst & siltst a/a	
	20	sdst a/a, occ crs-vcrs	
	5	ls+dol (eq) a/a	
	5	pyr	
	tr	glauc +lig a/a	
	tr	ironstone,fibrous,poss. petrified wood	

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Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY	AREA: NORTH SEA	FIELD: 34/10 DELTA
WELL NO.: 34/10-3		
CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"		
K.B.E.: meters	COMPANY: STATOIL/HYDRO/SAGA	
HOLE SIZE: 8 1/4 "	GEOLOGIST: HELLE/HEUM	DATE: 15/4-79

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2204	70	sdst: dom clr qtz,vf-med,ang-subang,abd euhed qtzgrowth	sirkulated up at 2205 after 3 meter
		occ plateshaped feldspar,lse	
		occ densely cmtd by pyr v musc	drlg brake,
	20	ironstone,rustrd-brn,fibrous,occ pyritized, occ lig	
		strong similarity to wood.	Registered 6 units gas, no shows
	10	clyst & sltst, lt-med gy v sft,n-calc. Probl. washed	
		out from above.	
	tr	ls + dol in equal amts. wh-buff,firm-hd	
	tr	glauc,pyr,lig	
2207	70	sdst: a/a occ densely dol cmtd	
	15	sltst:lt-med gy,sft-frm,sl lam, micac,n-calc	
	5	ls + dol: ls:wh,sft-frm,occ buff-rdbrn(clr)hd	
		dol: dull crm,frm-hd,microxln,sl arg	
	5	clyst: lt-med gy,v sft,sticky,n-calc	
	5	pyr	
	tr	Ironstone & lig a/a glauc	
2210	70	sdst a/a v pyritic	
	20	pyr	
	10	clyst + sltst a/a	
	tr	ironstone, ls dol, a/a	
	tr	glauc, lign a/a	
2213	70	sdst a/a v pyrite cmtd, several composite grains	occ crs-vcrs
	20	pyr	
	10	clyst + sltst a/a	
	tr	ironstone(abund),	
	tr	glauc, lign a/a	
2216	80	sdst a/a vf-med, v pyritic	
	20	pyr	
	tr	clyst,sltzt,ls dol a/a	
	tr	glauc,lig a/a	
2219	80	sdst a/a vf-crs,v pyritic	
	20	pyr	
	tr	ls,clr wh-dull wh,sft-frm, pure calcite	
	tr	glauc,lig	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY	AREA: NORTH SEA	FIELD: 34/10 DELTA
WELL NO.: 34/10-3		
CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"		
K.B.E.: meters	COMPANY: STATOIL/HYDRO/SAGA	
HOLE SIZE: 8 1/4"	GEOLOGIST: HELLE/HEUM	DATE: 15 APRIL 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2222	80	sdst: med-vcrs,ang-subang,abund euhedral qtz growth,v densley pyrite cmtd,muscovithic	No shows
	20	pyr	still much masking of lithology by clayst+sltst drilled higher up(probably not currently represented in this section)
	tr	ls,wh,sft glauconite	
2225	40	sdst a/a	
	40	sdst clr-wh,vf,densely calc cmtd in comination w pyr cmt	
	20	pyr	
	tr	ls a/a	
	tr	glauc,lig and fibrous ironstone	
2228	80	sdst,clr-wh,vf-med,ang-subang,densley and by calcite and pyr- muscovitic	
	20	pyr	
	tr	ls a/a occ buff-lt gy,hd,occ dolic	
2231	20	sdst , clr qtz,f-med,ang-subrnd,pytite cmtd,muscovitic	
	20	sdst-wh,vf-f,slty,densley calcite cmtd	
	50	ls,wh-buff,v slty and sandy,sl arg,frm-hd,glauc.	
	10	pyr	No shows
2234-2237	90	sdst,clr qtz,vf-med,ang-subang,slightly/very cmt by pyrite, occ vf,densly cmt by calcite	
	10	Pyr	
	tr	glauc,fibrous ironstone,rustbrn	
	tr	ls a/a	
2240	85	sdst clr qtz,vf-crs,occ v crs,subang-subbrnd occ ang v cmtd by calcite & pyrite in parts	
	10	clayst,med-dk gy,firm-mod hd,slty in parts subfiss,micromic, n-calc	"
	5	pyr	
	tr	mica ls a/a	
2243	90	sdst a/a	
	5	clayst a/a	
	5	pyr	
	tr	mica	
	tr	glauc	
	tr	ls a/a	
2246	85	sdst a/a	
	10	clayst a/a	
	5	pyr	
	tr	mica	
	tr	ls a/a	"

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY	AREA: NORTH SEA	FIELD: 34/10 DELTA
WELL NO.: 34/10-3		
CO ORDINATES: ___° ___' ___" N ; ___° ___' ___"		
K.B.E.: meters	COMPANY: STATOIL/HYDRO/SAGA	
HOLE SIZE: 8 1/4"	GEOLOGIST: HELLE/HEUM	DATE: 15 APRIL 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2249	85	sdst,clr qtz,lt gy-wh,v calcite cmtd,occ lig,vf-f,mod hd	
	10	sdst,clr qtz,f-crs,occ v vis,subang-subrnd,lse	no shows
	5	clayst,med-dk gy,firm,slty in parts	weak mineral flour
	tr	subfiss,micromic,n-calc	
		pyr	
	tr	mica	
	tr	glauc	
2252	85	sdst,v calcite cmtd,occ dol cmt else a/a	
	10	sdst, clr qtz,med-crs,else a/a	
	5	clayst a/a	
	tr	pyr	
	tr	mica	
2255	70	sdst,v calcite cmted a/a	
	25	clayst a/a	
	5	sdst,clr qtz a/a	
	tr	pyr	
	tr	mica	
	tr	marl,wh-lt gy,sft,slty in parts	
2258	80	sdst,v calcite cmtd a/a	
	10	clayst a/a	
	5	marl, a/a	
	tr	sdst ch qtz a/a	
	5	pyr	
	tr	mica	
2261	95	clay/clayst,lt gy,occ med gy,sft-frm,v slty in parts	No shows
	10	n-sl calc	
		sdst,v calcite-dol cmtd,wh-lt gy, qtz,vf-med,mod hd,	
	5	subang-subrnd	
		pyr	
	tr	marl a/a	
	tr	ls,wh-buff,firm-mod hd,	
2264	90	clay/clayst a/a	
	10	sdst a/a	
	tr	pyr	
	tr	marl a/a	
	tr	ls a/a	
2267	80	clay/clayst a/a	
	15	sdst a/a	
	5	pyr	
	tr	marl a/a	
	tr	ls a/a	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: 34/10 DELTA

WELL NO.: 34/10-3

COORDINATES: ___° ___' ___"N ; ___° ___' ___"

K.B.E.: 25 meters | COMPANY: STATOIL/HYDRO/SAGA

HOLE SIZE: 8 1/4" | GEOLOGIST: HELLE/HEUM | DATE: 15 APRIL 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2270	90	Clay /clayst, lt gy,occ med gy,sft,occ firm,micromic slty in parts, n-sl calc	No shows
	10	sdst,clr qtz, wh-lt gy,vf-med,mostly v calcite-dol cmtd,occ lse sd, then crs-v crs,occ med-f, subang-subrnd	
	tr	pyr	
	tr	mica	
2273	85	clay/clayst a/a	
	10	sdst a/a	
	5	pyr	
	tr	ls,wh-buff,mod hd,argill (mica)	
2276	90	sdst a/a	No shows
	10	clay/clayst a/a	
	tr	pyr	
	tr	ls a/a	
2279	50	sdst a/a	
	50	clay/clayst a/a	
	tr	pyr, mica	
	tr	ls a/a	
2282	50	sdst a/a	
	50	clay/clayst a/a	
	tr	pyr	
	tr	glauc	
	tr	ls a/a	
	tr	mica	
2285	70	clayst/clay,lt gy,sft, micromic,slty in parts, n-sl calc	
	30	sdst,ch qtz,partly v calcite-dol cmtd,partly lse, mod hd -hd,vf-med,when cmtd else f-crs,occ v crs subang-subrnd	No shows
	tr	pyr	
	tr	ls a/a	
2288	90	clay/clayst a/a	
	10	sdst a/a	
	tr	pyr	
	tr	mica	
2291	90	clay/clayst a/a	
	10	sdst a/a	
	tr	pyr	No shows
	tr	mica	
	tr	ls,wh-buff,mod hd, hd	

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Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY	AREA: NORTH SEA	FIELD: 34/10 DELTA
WELL NO.: 34/10 - 3		
CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"		
K.B.E.: 25 meters	COMPANY: STATOIL/HYDRO/SAGA	
HOLE SIZE: 8 1/4"	GEOLOGIST: HELLE/HEUM	DATE: 15 APRIL 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2294	95	clayst/clay, lt gy,sft,v slty,n-sl calc	
	5	sdst,clr qtz,partly calcite-dol cmtd,hd,f partly lse	
		then med-crs, occ vf-f	
	tr	pyr	
2297	75	clay/clayst a/a	
	15	sltst,med-dk gy,firm-mod hd- occ subfiss,lig.	
	10	sdst a/a	
	tr	marl,wh-lt gy,sft	
	tr	pyr	
	tr	mica	
2300	85	clay/clayst a/a	
	10	sdst a/a	
	5	sltst a/a	
	tr	pyr	
	tr	ls,wh-lt brn, occ argill,firm-mod hd	
	tr	marl a/a	
	tr	mica	
2303	85	clyst a/a	
	10	sdst a/a	
	5	slst a/a	
	tr	ls marl a/a	
	tr	mica,pyr a/a	
2306	95	clyst a/a	
	5	sdst,clr,occ wh,vf,occ f, dom lse	
	tr	slfst a/a,ls a/a occ dolomiteic	
	tr	pyr	
2309	95	clyst a/a	
	5	sdst a/a	
	tr	sltst,ls , dol a/a	
	tr	pyr	
2312	95	clyst a/a	
	5	sdst a/a	
	tr	sltst a/a	
	tr	ls+dol a/a occ tan-rdbrn,dkbrn,mod hd	
2315	95	clyst a/a	
	5	sdst a/a	
	tr	sltst,ls dol a/a	
	tr	pyr,glauc	
2318	95	clyst a/a	
	5	sdst a/a	
	tr	sltst,ls + dol a/a	
	tr	pyr,glauc, muse,lign.	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: 34/10 DELTA

WELL NO.: 34/10-3

CO ORDINATES: ____ " ____ ' ____ "N ; ____ " ____ ' ____ "

K.B.E.: 25 meters | COMPANY: STATOIL/HYDRO/SAGA

HOLE SIZE: 8 1/4" | GEOLOGIST: HELLE/HEUM | DATE: 15 APRIL 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2321	95	clayst,lt-med gy,v sft, sticky,n-calc	
	5	sdst,clr qtz,vf-silty,occ f-med,lse	
	tr	ls+dol,wh-buff-tan,sft-hd	
	tr	sltst,med gy,sl lam,sft-frm,sl mic,sl lign	
		non calc	
	tr	pyr,musc,glauc,lign	
2324	95	clyst a/a	
	5	ls+dol, wh and sft to buff-rdbrn-gybrn,mod hd-hd,sl arg	
	tr	sndst a/a	
	tr	marl,buff,sft,partly dolomitic	
2327	90	clyst a/a (occ shaly,sft)	
	5	sdst,partly clr-qtz, vf, calcite cmtd, partly vf-med, lse	
		glauconitic	
	5	ls+dol,ls: dom wh-buff,sft-mod hd. Dol: buff-tan-	
		dk brn,mod hd-hd,sl arg. all gradations in betw.	
	tr	sltst,lt-med gy,sft,fissile,n-calc	
	tr	marl a/a	
	tr	glauc,pyr,lign,muscovite	
2330	90	clyst a/a	
	5	sdst a/a	
	5	ls + dol a/a	
	tr	sltst a/a	
	tr	glauc,pyr lign,musc.	
2333	80	clyst a/a	
	10	sltst/silty shale:lt-med gy,sft-frm,musc,lign.	
		n-calc	
	5	sdst a/a	
	5	ls + dol a/a	
	tr	glauc,pyr,lign,musc	
2336	80	clyst a/a	
	10	sltst/shale a/a	
	5	sdst a/a	
	5	ls+dol a/a	
	tr	glauc,pyr,lign,musc.	
	tr	very abund ironstained mineral,flaky like mica,	
		irregular-degraded	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY	AREA: NORTH SEA	FIELD: 34/10 DELTA
WELL NO.: 34/10-3		
CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"		
K.B.E.: meters	COMPANY: STATOIL/HYDRO/SAGA	
HOLE SIZE: 8 1/4"/6"	GEOLOGIST: HELLE/HEUM	DATE: 16/4-79,28/4-79

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2339	75	clyst,lt gy,v sft,n-calc,occ slty shale,lan,sft	No shows
	20	sndst,clr qtz,f-med,ang-subbrnd,lse	
	5	dol,buff-tan-dk rdbrn,hd,xln	
	tr	ls,wh-clr,sft-mod hd	
	tr	marl,buff,sft	
	tr	glauc,pyr,lign	
2342	65	clyst a/a	
	30	sndst a/a	
	5	dol (+ls) a/a	
	tr	marl a/a	
	tr	glauc,pyr,lign	
2345	75	clyst a/a	
	20	sdst a/a	
	5	dol +ls a/a	
	tr	marl a/a	
	tr	glauc,pyr,lign	
	tr	abund ironstained flakey minerals like mica, but look	
		v degraded	
2347	85	clyst a/a more shale a/a	Bottoms up
	10	sdst a/a+abund wh,vf,calcite cmtd,frm-hd	
	5	carbonates,dom dol, else a/a	
	tr	glauc,pyr,lign	
	tr	strange mineral a/a	
		SET 7" LINER,SHOE at 23465 m	
2348	100	cmt	
2350	80	cmt	
	15	sst,clr qtz,vf-crs,subang-subrnd, some rock	
		frags,dull	
	5	ls,wh-lt brn,mod hd	
2351	80	cmt	
	15	sst a/a	
	5	ls a/a	
	tr	clyst, lt gy,slty,stky,calc	
2354	50	cmt	No shows
	30	sst,clr qtz,occ wh,subbrnd-subang	
		vf-med,mostly fine	
	20	ls,buff-tan,mod hd	
	tr	clyst a/a ,	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY	AREA: NORTH SEA	FIELD: 34/10 DELTA
WELL NO.: 34/10 - 3		
CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"		
K.B.E.: 25 meters	COMPANY: STATOIL/HYDRO/SAGA	
HOLE SIZE: 6"	GEOLOGIST: HEUM/LEINUM/EVENSEN	DATE: 28/4-79

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
	50	cmt	
2355.5	50	clyst, lt gy,slty,sl calc,sft,stky	
	tr	sst,vf-f,clr qtz	
	tr	ls,tan,mod hd	
2357	50	cmt	
	50	clyst a/a occ shaly,dk gy	
	tr	sst a/a	
	tr	ls a/a,occ dolic	
2360	50	cmt	
	50	clyst a/a	
	tr	sst,clr qtz,subang-subbrnd,vf-f	
	tr	ls,wh,mod hd	
	tr	dol,tan,hd,xln	
2363	50	cmt	
	40	sltst/clyst a/a	
	10	ls,buff-dk brn,sft-hd,occ xln,occ arg.	
	tr	snd,clr qtz,vf-f,ang-subrnd,lse	
	tr	marl,buff,sft	
	tr	pyr	
2366	40	cmt	
	30	clyst a/a	
	10	shale:med gy,frm,fiss-subfiss,all grads to clyst a/a	
	20	ls a/a	
	tr	snd a/a. occ clusters of sndst,vf,firm,densely calcite	
2369	50	clyst a/a calc	still~40% cmt,but
	30	shale,med gy,sft-frm,subfiss-fiss,musc, occ pyritic	uninteresting
		dom not slty.calc	conserning the lit-
	10	sltst, med gy,calc	lithology
	10	lst a/a	
	tr	snd and sndst a/a,occ crs-v crs grains	
	tr	glauc &pyr	
2372	60	clyst a/a,calc	
	10	sh a/a	
	10	sltst a/a occ, brn-gy	
	15	lst,a/a,occ,wh-dk gy brn w/floating qtz gr	
	5	sand,clr qtz gr,f-v crs,lse,occ v f,calc,cmt,frm	
	tr	pyr, lign	
	tr	glauc	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: 34/10 DELTA

WELL NO.: 34/10 - 3

COORDINATES: ___° ___' ___"N ; ___° ___' ___"

K.B.E.: 25 meters | COMPANY: STATOIL/HYDRO/SAGA

HOLE SIZE: 6" | GEOLOGIST: HEUM/LEINUM/EVENSEN | DATE: 28/4-79

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2375	70	clyst,lt gy-gy,calc,sft,slty,stky	still cmt in cuttings
	10	sh med gy,frm,fiss	
	15	lst,tan-wh,mod hd	
	5	sand,clr qtz _ ,occ tan occ wh,f-v crs,SA-SR	
	tr	pyr	
2378	60	clayst, lt-med gy,sl calc, v sft,occ slty,stky	"
	20	sh a/a	
	20	ls,abund buff-tan,stt-frm,xln,occ wh,sft	
		occ dk brn-gy,hd,occ w/foating qtz grains,crs	
	tr	sndst,vf,densely calc cmtd,occ pyr cmtd,else a/a	
	tr	snd,clr qtz,vf-med,occ crs lse	
	tr	glauc,pyr	
2381	70	clyst a/a	"
	15	sh a/a	
	15	ls a/a	
	tr	pyr	
2384	85	clyst,lt-med gy,sl calc,v sft,stky	"
	10	ls a/a	
	5	sh a/a	
	tr	sndst,vf-med,tan occ wh, subang-subrnd,	
	tr	pyr	
	tr	Few tr of dol or dolm ls	
2387	90	clyst,lt gy-gy,sl calc, v stky	"
	5	ls a/a	
	5	sh a/a	
	tr	sndst,vf-med,occ crs, a/a	
2390	80	clyst,gy-grnish gy,occ,lt brn,sft,slty,v,calc	"
	10	sh, dk gy,frm,fiss,sli calc	
	5	lst,tan-wh, mod hd	
	5	sand,vf-med,occ crs,clr qtz-wh,subang-subrnd	
	tr	fossil frags,wh-yel	
2393	60	clyst lt gy,occ grnish gy,v sft,slty, v stky	"
	35	sh a/a calc,slty	
	5	lst a/a arg	
	tr	sand a/a,v f-f	
	tr	py	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: 34/10 DELTA
WELL NO.: 34/10-3
CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"
K.B.E.: . meters | COMPANY: STATOIL/HYDRO/SAGA
HOLE SIZE: 6" | GEOLOGIST: HEUM/LEINUM/EVENSEN | DATE: 29/4-79

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2396	80	clayst,lt gy-gy,occ calc,sft,v stky,occ slty	
	10	sh,med gy,sft-frm,subfiss-fiss,occ pyritic	
	10	ls, buff-tan,sft-frm,occ xln,occ wh sft,occ dk brn,hd	
	tr	snd/sndst,tan,occ wh,clr-wh qtz grns,vf-med,SA-SR.	
	tr	pyr	
2399	90	clyst,calc a/a	
	5	sh,med gy,frm,subfiss-fiss,grads to clyst	
	5	ll a/a	
	tr	sndst,vf-f,occ med a/a	
	tr	pyr	
2402	90	clyst a/a,sl calc, v stky	
	10	sh a/a	
	tr	ls a/a	
	tr	sand a/a vf-f	
	tr	pyr	
2405	90	clyst a/a v stky	
	10	sh a/a	
	tr	ls a/a	
	tr	snd a/a	
	tr	pyr	
2408	90	clyst, calc,occ v calc,else a/a	
	5	sh a/a	
	5	ls a/a	
	tr	snd,vf-f,occ crs,clr-wh qtz grns,SA-SR	
	tr	pyr	
	tr	glauc	
	tr	fossil fraq, wheel shape,diam.about 1 mm	
2411	90	clyst a/a occ slty	
	5	sh a/a	
	5	ls a/a	
	tr	pyr	
2414			
	90	clyst a/a	
	5	sh a/a	
	5	ls a/a	
	tr	snd a/a	
	tr	pyr	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY	AREA: NORTH SEA	FIELD: 34/10 DELTA
WELL NO.: 34/10-3		
COORDINATES: ____" ____' ____"N ; ____" ____' ____"		
K.B.E.: meters	COMPANY: STATOIL/HYDRO/SAGA	
HOLE SIZE: 6"	GEOLOGIST: HEUM/LEINUM/EVENSEN	DATE: 29 APRIL 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2417	90	clyst,slty, occ sl calc,lt gy-gy,sft,v stky	
	5	sh,med gy sft-frm,fiss	
	5	ls,buff to tan,occ xln,occ wh,sft	
	tr	snd,tan,occ wh,vf-med,subang-subrnd	
	tr	pyr	
	tr	feldspar?	
2420	90	clyst a/a	
	10	sh a/a	
	tr	ls a/a	
	tr	sand a/a	
2423	100	clyst a/a	
	tr	sh a/a	
	tr	ls a/a occ sl dolic	
	tr	snd,dom clr qtz,vf-f,occ med, lse occ sndst,densely	
		cmt og calcite and pyr vf-crs	
	tr	sltst,med gy,n-calc	
	tr	pyr	
2426	100	clyst a/a	
	tr	snd a/a,dom vf,lse	
	tr	sltst a/a	
	tr	ls a/a small amts	
	tr	pyr	
2429	100	clyst a/a, calc	
	tr	snd a/a vf,lse	
	tr	slty shall,med gy, subfiss	
	tr	pyr	
2432	100	clyst a/a sl calc or dispersed is grains	
	tr	snd a/a vf,lse,white	
	tr	pyr	Trip at 2438.3
2435	100	clyst a/a	without bottom up
	tr	sndst,lst,sltst,shale etc. cavings	
2438	100	clayst,a/a	
	tr	cavings,a/a	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: 34/10 DELTA

WELL NO.: 34/10-3

CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"

K.B.E.: meters | COMPANY: STATOIL/HYDRO/SAGA

HOLE SIZE: 6" | GEOLOGIST: HEJM/LEINUM/EVENSEN | DATE: 29 APRIL 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2441	90	clayst,lt gy,sft,calc	
	5	sh,med gy,frm,fissile,sl calc,disp microlig,occ musc,occ lt gy grading into sltst occ pyritic	
	5	ls,buff-tan,flaky,sft-frm,dom v irreg. slty texture, microxln	
	tr	snd,clr qtz,vf-f,ang-subrnd	calcite cmtd vurrows,tubular
	tr	pyr	
2444	90	clyst,lt gy,sft,stky,occ calc	
	5	sh a/a	
	5	ls a/a	
	tr	snd a/a	
	tr	pyr	
2447	75	clyst a/a	
	15	shale a/a grading into an incr. amt of sltst	
	5	sndst,wh-lt gy,vf-f,densely cmtd by calc	
	5	ls a/a,occ wh,occ dk gy	
	Tr	pyr	
2450	70	clyst a/a	
	15	shale/sltst a/a	
	10	sndst,dom clr qtz,vf-f,lse &dispersed in the clay occ calcite amtd a/a	
	5	ls a/a occ w/clr calc veins	
	tr	pyr & glauc	
2453	80	clyst a/a	
	10	sndst a/a	
	5	sh a/a	
	5	ls a/a	
	tr	mica	
	tr	pyr	
2454	75	clyst a/a	
	15	sanst a/a,musc,sand mostly vf	No shows
	5	lst a/a	
	5	sh a/a	
	tr	pyr	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY	AREA: NORTH SEA	FIELD: 34/10 DELTA
WELL NO: 34/10-3		
CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"		
K.B.E.: meters	COMPANY: STATOIL/HYDRO/SAGA	
HOLE SIZE: 6"	GEOLOGIST: HEUM/LEINUM/EVENSEN	DATE: 2/5-79

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2457	60	sand,clr qtz,slt-f,mostly vf,sr-sa,muscov.	
	25	clyst, lt gy,sft,	
	5	sh med gy, firm,fiss	
	tr	lst,tan,occ,wh,mod hd	no shows
	tr	pyr	
	tr	coal fibrous,pyritic	
2460	80	sand a/a	
	15	clyst a/a	
	5	sh a/a	
	tr	ls a/a	
	tr	pyr	
	tr	coal,pyritic,fibrous	
2463	70	sand a/a	
	15	sltst,lt gy-gy,friable	
	5	sh a/a	
	10	clyst a/a	Cavings
	tr	ls a/a	
	tr	pyr	
	tr	fossil frag	
2466	80	snd/sndst a/a	
	10	sltst a/a	
	10	clyst a/a	
	tr	ls a/a	"
	tr	pyr	
	tr	coal	
2468	80	snd/sndst a/a	
	10	sltst a/a	
	10	clyst a/a	"
	tr	ls a/a	
	tr	pyr	
2481	70	sdst,vf-slt,muse and biot,else a/a,occ calc cmtd	Cored
	20	shale,med gy,frm,subfiss,slty,sl-v calc	2467-2478.8 m
	10	ls,buff-tan,sft-mod hd,occ w/flakey nature	
		and silty texture	
	tr	glauc,pyr,lign	
	tr	clayst a/a	
2484	70	sdst a/a,dom densely calc cmtd	
	20	ls a/a,occ recrystallized	
	tr	glauc,pyr lig	
	tr	clayst a/a	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: 34/10 DELTA

WELL NO.: 34/10-3

CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"

K.B.E.: meters | COMPANY: STATOIL/HYDRO/SAGA

HOLE SIZE: 6" | GEOLOGIST: HEUM/LEINUM/EVENSEN | DATE: 1/5-79

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2487	70	sdst,wh-med gy,vf-slt,dom densely cmt by calc,poor-mod srtd,ang-subrnd, v biot and musc.	No shows
	20	sh, med gy,sft-frm,subfissile,sl-v calc, micromic, occ pyr,slty in parts	
	10	ls,varicoloured,occ buff-tan,flaky w/slty tex, sft-frm,occ dk brn-gy-tan,hd blocky,occ filling fractures in the sh, xln, clr, occ wh, sft as marl	
	tr	glauc,pyr,lign	
	tr	clyst a/a,	
2490	70	sdst a/a	
	20	sh a/a	
	10	ls a/a	
	tr	a/a	
2493			
	70	sdst a/a,incr amt of clear sand grains in f fraction,occ med-crs	
	20	sh a/a	
	10	ls a/a	
	tr	a/a	
2496	75	sdst a/a w/f-crs grains	
	20	sh a/a	
	5	ls a/a	
	tr	a/a	
2499	95	sdst, clr/wh qtz,crs-v crs,occ granuels, subrnd-subang mod srtd,abund calc cmtd comp grains,most	No shows
		grains show calc cmt on surf,occ vf-f,prob from above	No ditch gas
	5	sh a/a	
	tr	ls,clr-wh,chalky,sft-v sft,occ dk gy,hd	No blender gas
	tr	pyr and glauc,lig.	
2502	95	sdst a/a,occ ang	
	5	sh a/a	
	tr	ls,clr-wh,chalky,sft-v sft	
	tr	pyr,glauc,lig	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY	AREA: NORTH SEA	FIELD: 34/10 DELTA
WELL NO.:		
CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"		
K.B.E.: meters	COMPANY: STATOIL/HYDRO/SAGA	
HOLE SIZE: 6"	GEOLOGIST: HEUM/LEINUM/EVENSEN	DATE: 2 MAY 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2505	80	sst, clr-wh qtz,crs-v crs,occ granules subang-subrnd,mod srtd,abund calc cmtd comp grains	No shows
		most grains show calc cmt on surf,occ vf-f,prob inherited from above	
	10	sh,med gy,sft-frm,subfissile,sl-v calc,prob mostly inherited from above	
	10	coal, blk,brit,occ fibrous	
	tr	ls,clr-wh,chalky,sft-v sft	
	tr	pyr,occ musc	
2508	80	sst a/a,abund sec qtz growth	
	10	sh a/a	
	10	coal a/a	
	tr	a/a	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY	AREA: NORTH SEA	FIELD: 34/10 DELTA
WELL NO.: 34/10-3		
CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"		
K.B.E.: meters	COMPANY: STATOIL/HYDRO/SAGA	
HOLE SIZE: 6"	GEOLOGIST: E. ASPHAUG	DATE: 4-9/5-79

DEPTH	LITH. %	LITHOLOGIC DESCRIPT	Shows & Remarks
2512.5	90	sd,crs-v crs,occ granules,loose,clr qtz, subang-subrnd, mod clr,abund,calc cmtd	
	10	sh, md gy,sft-frm,subfiss,sl-v calc micromic occ pyr, slty in parts	
	tr	coal, blk,brit,occ fib	
	tr	glauc & pyr	
2514	80	sd a/a	
	20	sh a/a	
2517	90	sd a/a	
	10	sh a/a	
	tr	ls,buff,micritic,v glauconitic frm-hd	
2520	90	sd a/a	
	10	sh a/a	
	tr	ls buff-white,mic , glauconite frm-hd	
	tr	coal a/a	
	tr	pyr	
2524	95	sd a/a	
	5	sh a/a	
	tr	mica	
	tr	pyr	
2526	95	sd a/a	
	5	sh a/a	
	tr	pyr	
	tr	mica	
	tr	glauc	
2529		a/a but lot of cavings due to tripping	
2532	100	sd a/a but mostly med size	
	tr	a/a	
2535	100	sd a/a	
	tr	sh a/a	
	tr	pyr	
	tr	glauc	
	tr	mica	

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Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY	AREA NORTH SEA	FIELD 34/10 DELTA
WELL NO.: 34/10-3		
CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"		
K.B.E.: meters	COMPANY: STATOIL/HYDRO/SAGA	
HOLE SIZE: 6"	GEOLOGIST E. ASPHAUG /KRÆMER	DATE: 10 MAY 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2538	100	sdst ,med,occ crs-v crs,clr qtz,subang-subrnd,mod srt ab calc cmtd,mostly lse	No shows
	tr	sh-v calc,micromic,occ pyr,slty in parts	
	tr	coal,blk,brit, occ fibrous	
	tr	pyr	
2541	100	sdst a/a	
	tr	sh a/a	
	tr	ls,buff-wh,gy,firm-hd,arg	
	tr	pyr	
2544			
	100	sdst,clr-mlky occ wh,med-v crs,occ granules,ang-sub-	
		rnd,mod srt,lse,occ calc cmtd	
	tr	ls,wh-lt gy-buff,firm	No shows
		occ hd,mostly arg, dolomitic in prts	
	tr	sh,med-dk gy,firm,occ sft,subfiss,calc,occ micromicac	
		pyritic & silty in prts,occ v sl calc	
	tr	coal,blk,brit ,occ fibr.	
	tr	pyr	
2547	100	sdst,occ pink qtz,else a/a	
	tr	ls a/a	
	tr	sh (up to 5 pct) occ grnish gy,else a/a	
	tr	foss frags,mica,pyr,coal	
2550			
	100	sdst,med,occ crs-v crs-granules,else a/a	
	tr	ls a/a	
	tr	sh,med gy,occ lt brnish gy,lt grnish gy,lt brnish	
		red,else a/a	
	tr	mica,pyr,coal & foss frags	
2553			
	100	sdst,med,occ crs,else a/a	
	tr	ls a/a	
	tr	sh (rare) a/a	
	tr	mica,pyr,coal (rare)	

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Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: WILDCAT

WELL NO.: 34/10-3

COORDINATES: ____° ____' ____"N ; ____° ____' ____"

K.B.E.: 25 meters | COMPANY: STATOIL/NORSK HYDRO/SAGA

HOLE SIZE: 6 " | GEOLOGIST: R. KRÆMER | DATE: 11 MAY 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2556	100	sdst,clr qtz,med-crs,occ v crs,ang-subang,occ subrnd, mod srt	No shows
	tr	sh med gy occ lt gy grnish gy, lt brnish gy, sl calc occ calc,subfiss,firm,pyritic & slty in parts,	
		occ micromicac	
	tr	ls,wh,occ lt gy and buff,hd microxln,occ arg	
	tr	coal,blk,brit,hd,matured	
	tr	pyr	
2559			
	100	sdst,crs-v crs,occ med & grnls,else a/a	
	tr	sh a/a	
	tr	ls a/a	
	tr	coal,pyr, mica	
2562	100	sdst a/a (mostly med-crs)	
	tr	ls a/a	
	tr	sh a/a	
	tr	coal,pyr,mica	
2565	100	sdst a/a	
	tr	ls a/a	
	tr	sh a/a	
	tr	coal, pyr , mica(rare)	
2568	100	sdst,vf-f,occ med-crs,else a/a	
	tr	ls a/a	
	tr	sh a/a	
	tr	coal, pyr	
2569	100	sdst,crs-v crs,occ f-med,else a/a	
	tr	ls a/a	
	tr	sh a/a	
	tr	coal,pyr	
2570	100	sdst a/a	No shows
	tr	ls a/a	
	tr	sh a/a	
	tr	coal,pyr	

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Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY	AREA: NORTH SEA	FIELD: WILDCAT
WELL NO.: 34/10-3		
COORDINATES: ___° ___' ___"N ; ___° ___' ___"		
K.B.E.: 25 meters	COMPANY: STATOIL/NORSK HYDRO/SAGA	
HOLE SIZE: 6"	GEOLOGIST: R. KRÆMER	DATE: 11 MAY 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2573	70	sh,med gy-med brn,firm-hd, sl-non calc,prtly slty,sub-fiss,occ micromicac	New bit J3 sh-liner from 2571 m
	30	sdst,clr,occ mlky qtz,med-v crs, ang-subrnd,lse,occ calc cmtd,occ pyr veins	
	tr	ls,wh-lt gy,hd,partly arg,occ xln	
	tr	coal,blk,brit,matured,occ pyr	
	tr	pyr	
	tr	sltst,lt-med gy,firm,micac,	smpls every m
		occ pyritic,non-calc	
2577	60	sh a/a	
	30	sdst a/a	
	10	sltst a/a	
	tr	ls a/a	
	tr	pyr	
2579	70	sh a/a	
	25	sdst a/a	
	5	sltst a/a	No shows
	tr	ls a/a	
	tr	pyr	
2580	50	sdst a/a,f-v crs,poorly,srtd	
	40	sh a/a	
	10	sltst a/a	
	tr	ls a/a	
	tr	pyr	
	tr	coal	
2583	90	sdst a/a	Drlg break at 2582
	10	sh a/a	
	tr	sltst a/a	
	tr	ls a/a	
	tr	pyr,coal (rare)	
2586	50	sdst a/a	
	50	sh a/a,occ lt gy	No shows
	tr	ls a/a	
	tr	pyr	

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Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: WILDCAT

WELL NO.: 34/10-3

CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"

K.B.E.: meters | COMPANY: STATOIL/HYDRO/SAGA

HOLE SIZE: 6" | GEOLOGIST: KRÆMER | DATE 12 MAY 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2589	95	sdst, clear occ mlky qtz,med-v crs, subang-subrnd,lse	
		occ calc cmt, fair-well srtd	
	5	sh,med gy-med brn,occ lt gy,firm-hd,occ micromicac,occ slty,non-calc,subfiss,hd	
	tr	ls,wh,firm,xln	
2592	95	sdst,occ granules,else a/a	
	5	sh a/a	
	tr	ls a/a	
	tr	sltst,lt gy,firm,micac,n-calc	
2595	80	sh a/a,occ red brn,	
	20	sdst,occ pink,else a/a	
	tr	ls a/a	
	tr	pyr	
2598	95	sh a/a	
	5	sltst,brnish gy, lt gy,else a/a	
	tr	sdst a/a	
	tr	ls a/a	
2601	80	sh a/a	
	15	sdst a/a	
	5	sltst a/a	
	tr	ls a/a	
2604			
	80	sh a/a	
	15	sdst a/a	
	5	sltst a/a	
	tr	ls a/a	
	tr	mica	
2607			
	50	sh a/a	
	45	sdst a/a	
	5	sltst a/a	
	tr	ls a/a	
	tr	mica	

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Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY	AREA: NORTH SEA	FIELD: WILDCAT
WELL NO.: 34/10-3		
COORDINATES: ___° ___' ___"N ; ___° ___' ___"		
K.B.E.: 25 meters	COMPANY: STATOIL/HYDRO/SAGA	
HOLE SIZE: 6"	GEOLOGIST: KRÆMER	DATE: 12 MAY 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2610	80	sdst,clr occ mlky qtz, med-v crs,subang-subrnd, occ ang lse,occ calc cmt,fair srt	No shows
	20	sh,lt-med gry,med brn,occ dk gy,lt brnish gy,firm-hd, n-calc,subfiss,occ slty,occ micromicac	
	tr	ls,wh,hd-firm,xln	
2613	95	sdst a/a	
	5	sh a/a	
	tr	sltst,lt-med gy,firm,micac,n-calc	
	tr	ls a/a	
2616	90	sdst a/a mostly med,well-srtd	
	10	sh a/a v slty in prts	BG:0-1 units
	tr	sltst a/a	
	tr	ls a/a	
2619	85	sdst a/a	
	10	sh a/a	
	5	ls a/a	
	tr	sltst a/a	
2622	50	sh a/a	
	50	sdst a/a	
	tr	sltst a/a	
	tr	ls a/a	
	tr	mica	
2625	80	sdst a/a	
	20	sh a/a	
	tr	sltst a/a	
	tr	ls a/a	
2628	80	sdst a/a	Drlg break at 2627,5 m
	20	sh,occ grnish gy,else a/a	
	tr	ls a/a	
	tr	sltst a/a	
	tr	coal	

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Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY	AREA: NORTH SEA	FIELD: WILDCAT
WELL NO.: 34/10-3		
COORDINATES: ___° ___' ___"N ; ___° ___' ___"		
K.B.E.: 25 meters	COMPANY: STATOIL/HYDRO/SAGA	
HOLE SIZE: 6"	GEOLOGIST: KRÆMER	DATE: MAY 13 th, 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2631	60	sdst,clr-mlky-wh,occ pink, med-v crs,occ granules, ang-subrnd,lse,occ calc cmtd,fair srtd,	No shows
	40	sh,lt-med gy,occ grnish gy,red,dk gry & brnish gy, firm-hd n-calc,subfiss,occ slty, occ micromicac	
	tr	clayst,brick red,lt gy,sft,n-calc,occ slty	
	tr	ls,wh occ tan,firm-hd,xln-microxln	
	tr	coal,blk,brit,blocky,matured	
2634	80	sdst,med-crs,occ v crs-granules,else a/a	
	20	sh a/a	
	tr	clyst a/a	
	tr	ls a/a	
2637			
	90	sdst a/a	
	10	sh a/a	
	tr	clyst a/a	
	tr	ls a/a	
2640	100	sdst a/a	
	tr	sh a/a	
	tr	ls a/a	
	tr	pyr	
2643			
	100	sdst a/a	
	tr	sh a/a	
	tr	ls a/a	
2649			
	100	sdst a/a	
	tr	sh a/a	
	tr	ls a/a	

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Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: WILDCAT

WELL NO.: 34/10-3

CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"

K.B.E.: 25 meters | COMPANY: STATOIL/NORSK HYDRO/SAGA

HOLE SIZE: 6 " | GEOLOGIST: R. KREMER | DATE: MAY 13TH 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2652	100	sdst,clr-mlky,wh qtz,med-crs,occ v crs,ang-subrnd,lse, occ calc cmtd,fair-well srtd	No shows
	tr	sh,lt-med gy,occ dk gy,brnish lt grnish gy, brick red, firm-hd non-calc,subfiss,occ silty ,occ micromica	
2655	90	sdst a/a	
	10	sh a/a	
	tr	ls a/a	
	tr	pyr	
2658	90	sdst a/a	
	10	sh a/a	
	tr	ls a/a	
	tr	pyr	
2661	80	sh,also olive grn,else a/a	
	20	sdst a/a	
	tr	ls a/a	
	tr	pyr	
2664	80	sdst a/a	
	20	sh a/a	
	tr	ls a/a	
	tr	pyr	
2667	100	sdst a/a	
	tr	sh, a/a	
	tr	ls a/a	
	tr	pyr	
2670	95	sdst a/a	
	5	sh a/a	
	tr	ls a/a	
	tr	pyr	
2673	90	sdst a/a	
	10	sh a/a	
	tr	ls a/a	
	tr	pyr	

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Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY	AREA: NORTH SEA	FIELD: WILDCAT
WELL NO.: 34/10-3		
CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"		
K.B.E.: 25 meters	COMPANY: STATOIL/HYDRO/SAGA	
HOLE SIZE: 6"	GEOLOGIST KRÆMER	DATE 13 MAY 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2676	65	sdst,clr-mlky qtz,occ pink-yel-wh, med-v crs,occ granules,lse,ang-subrnd,fair-well srtd	No shows
	30	sh,lt-med gy,brnish gy,occ lt gruish,dk gy,olive grn, red brn,firm-hd,n-calc,subfiss,occ slty,occ v slty	
		occ micromicac	
	5	ls,wh,occ buff,firm-hd,xln,occ arg	
	tr	pyr	
2679	60	sh a/a	
	40	sdst,mostly med,else a/a	
	tr	pyr	
	tr	ls a/a	
2682			
	60	sh a/a cont of red brn increases	
	25	sdst a/a	
	15	ls a/a	
	tr	pyr	
2685	75	sh,lt-med gy,red brn,lt grnish gy, occ lt brn & dk gy, else a/a	
	20	sdst,also yel,else a/a	
	5	ls a/a	
	tr	pyr	
2688	70	sh,also olive grn,cont red brn,x increases,else a/a	
	25	sdst a/a	
	5	ls a/a	
	tr	pyr	
2691	60	sdst a/a	
	35	sh,dk brn red brn,lt grnish gy lt-dk gy,olive grn	
		else a/a	
	5	ls a/a	
	tr	pyr	
2694	80	sdst a/a	
	15	sh a/a	No shows
	5	ls a/a	
	tr	pyr	

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Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY	AREA: NORTH SEA	FIELD: WILDCAT
WELL NO.: 34/10-3		
COORDINATES: ___° ___' ___"N ; ___° ___' ___"		
K.B.E.: 25 meters	COMPANY: STATOIL/HYDRO/SAGA	
HOLE SIZE: 6"	GEOLOGIST: KRÆMER	DATE: 13 MAY 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2697	50	sdst,clr-mlky,occ wh-pink-tan-yel,med-v crs,lse,ang-subrnd,fair-wellsrtd	
	45	sh,dk brn,red brn,lt gruish gy,lt-dk gy,occ med gy, olive gy,firm-hd,subfiss, occ sl calc,occ micromica	No shows BG:0-2 units
		slty-v slty in prts	
	5	ls,wh,occ buff,firm-hd,microxln-xln,arg in prts	
	tr	pyr	
2700	60	sh,occ dk grn,else a/a	
	35	sdst a/a	
	5	ls a/a	
	tr	pyr	
2703			
	70	sh a/a	
	25	sdst a/a	
	5	ls a/a	No shows
2706			
	70	sh a/a	
	20	sdst a/a	
	10	ls a/a	
2709			
	80	sh a/a	
	10	sdst a/a	
	10	ls a/a	
	tr	mica	
2712	90	sh a/a	
	5	sdst,occ f w/calc cmt,else a/a	
	5	ls a/a	
	tr	pyr,mica	
2715	100	sh,lt-med gy,dk brn-red brn,yel-grn,occ lt brn,lt grnish gy, firm-hd,calc-sl calc, subfiss,slty in prts,occ v slty,micromicac	
	tr	sltst,med gy-dk brnish gy,firm,n-calc- sl calc,micac	
	tr	ls,wh occ buff,firm-hd-xln-microxln,arg in prts	
	tr	sdst,clr-mlky qtz,med-crs,subang-subrnd,lse, occ calc cmt.	

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Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY	AREA: NORTH SEA	FIELD: WILDCAT
WELL NO.: 34/10-3		
CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"		
K.B.E.: 25 meters	COMPANY: STATOIL/HYDRO/SAGA	
HOLE SIZE: 6"	GEOLOGIST: KRÆMER	DATE: 13 MAY 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2718	95	sh,lt-med gy,dk brn-red brn,yel grn,occ lt brn,lt grnish gy,firm-hd,calc-sl calc,subfiss, slty in prts,	No shows
		occ v slty,micro-micac	
	5	sltst,med gy-dk brnish gy,firm,n-sl calc, micac	
	tr	ls,wh-buff,firm-hd,xln-microxln,arg in parts	
	tr	sdst,clr-mlky qtz,med-crs,occ v crs,subang-subrnd,lse,	
		occ calc cmtd	
2721	95	sh a/a	
	5	sltst a/a	
	tr	ls a/a	
	tr	sdst a/a	
	tr	pyr	
2724	95	sh a/a	
	5	sltst a/a	
	tr	ls a/a	
	tr	sdst a/a	
2727	100	sh a/a	
	tr	sltst a/a	
	tr	ls a/a	
	tr	pyr	
2730	90	sh a/a	
	5	ls a/a	
	5	sltst a/a	
	tr	sdst,occ f,else a/a	
2733	100	sh,red brn,yel grn,lt brn,occ lt-med gy,dk brn & lt grnish gy,else a/a	
	tr	sltst a/a,occ lt gy	
	tr	sdst a/a	
	tr	ls a/a	
2736	90	sh a/a	
	10	sltst a/a	
	tr	sdst,f-med,occ crs,else a/a	
	tr	ls a/a	

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Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY | AREA: NORTH SEA | FIELD: WILDCAT

WELL NO.: 34/10-3

CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"

K.B.E.: 25 meters | COMPANY: STATOIL/HYDRO/SAGA

HOLE SIZE: 6" | GEOLOGIST: KRÆMER | DATE: MAY 14 TH 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2739	90	sh,red brn,lt brn,yel grn,occ lt-med gy,dk brn,firm-hd calc-sl calc, subfiss,slty in prts,micromicac	No shows
	5	sltst,lt-med gy,dk brnish gy,firm,n- sl calc,micac	
	5	ls,wh,occ buff,hd,microxln,occ arg	
	tr	sdst ,subang-subrnd,lse,occ calc cmt	BG: 1 unit
2742	90	sh,less yel grn,else a/a	
	5	sltst a/a	
	5	ls a/a	
	tr	sdst, occ pink & yel,else a/a	
	tr	clyst,brick red,sft,calc,sl micac	
2745	100	sh a/a	
	tr	sltst a/a	
	tr	ls a/a	
	tr	clyst a/a	
	tr	sdst a/a	
2748	75	sh a/a	
	15	sltst a/a	
	5	ls a/a	
	5	clyst a/a	
	tr	sdst a/a	
2751	90	sh a/a	
	10	sltst a/a	
	tr	ls,also clr calcite,else a/a	
	tr	sdst a/a	
	tr	clyst a/a	
2754	80	sh a/a	
	10	ls a/a	
	10	sltst a/a	
	tr	clyst a/a	
	tr	sdst,f,occ med-crs,mostly calc,cmt	

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Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY	AREA: NORTH SEA	FIELD: WILDCAT
WELL NO.: 34/10-3		
CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"		
K.B.E.: 25 meters	COMPANY: STATOIL/HYDRO/SAGA	
HOLE SIZE: 6"	GEOLOGIST: KRÆMER	DATE: MAY 15TH 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2757	75	sh,red brn,lt-med brn,med-dk gy,occ lt gy,yel grn,dk brn, firm-hd,calc-sl calc,subfiss,slty in prts,micro-micac	No shows
	5	sltst,lt-med gy,dk brnish gy,firm,n-sl calc,micac	
	10	ls,wh,occ buff,occ clr (calcite),hd-firm,microxln,occ arg	
	tr	clyst, brick red,sft,sl calc-calc	
	10	sdst,f,clr-wh,occ yel,qtz mostly calc cmt,subang-sub-rnd,occ lse	
2760	75	sh,occ lt grnish gy,else a/a	
	15	ls a/a	
	5	sltst a/a	
	5	clyst a/a	
	tr	sdst a/a	
2763	80	sh a/a	
	10	sdst a/a	
	5	ls a/a	
	5	sltst a/a	
	tr	clyst a/a	
2766	80	sh a/a	
	10	sltst a/a	
	5	sdst a/a	
	5	ls a/a	
	tr	clyst a/a	
2769	50	sdst,clr-mlky-wh,occ tan-yel,occ crs, med-f,subang-subrnd,lse,occ calc cmt,fair srtd	
	35	sh a/a	
	10	ls,occ lt brn,else a/a	
	5	sltst a/a	
	tr	mica	
	tr	pyr	

statoil
Den norske stats oljeselskap a.s
Postboks 300, 4001 Stavanger

WELLSITE SAMPLE DESCRIPTION

COUNTRY: NORWAY	AREA: NORTH SEA	FIELD: WILDCAT
WELL NO.: 34/10-3		
CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"		
K.B.E.: 25 meters	COMPANY: STATOIL/HYDRO/SAGA	
HOLE SIZE: 6"	GEOLOGIST: KRÆMER	DATE: 15 MAY 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2772	60	sdst,clr-mlky-wh,occ tan-yel,f-med,occ crs,subang-subrnd,occ rnd,lse,occ calc cmt,fair srt	
	35	sh,red brn,lt-med brn,med gy,occ yel grn,lt gy and dk gy,lt grnish gy,subfiss,firm-hd,sl calc,occ calc	No shows
	5	non calc,slty and micromicac in prts ls,wh,occ tan, lt gy,firm-hd,occ arg,microxln,occ calcite	
	tr	clyst,brick red,sft,sl slty,non-sl calc	
	tr	pyr,mica	
	tr	sltst,lt-med gy,firm,non-sl calc, micac,occ dk brn	
2775	70	sh a/a	
	20	sdst a/a	
	10	ls a/a	
	tr	clyst a/a,sltst a/a	
	tr	pyr,mica	
2778	50	sh a/a	
	30	sdst,pyrite in prts,else a/a	
	15	ls a/a	
	5	clyst a/a	
	tr	sltst a/a,pyr,mica	
2781	60	sh a/a	
	30	sdst a/a	
	10	ls a/a	
	tr	clyst a/a,sltst a/a,pyr,mica	
2784			
	80	sh a/a	
	15	sdst a/a	
	5	ls a/a	
	tr	clyst a/a, sltst a/a,mica	
2787	60	sh a/a	
	20	sdst a/a	
	10	sltst a/a	
	10	ls a/a	
	tr	clyst a/a	

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WELLSITE SAMPLE DESCRIPTION

COUNTRY: NCRWAY	AREA: NORTH SEA	FIELD: WILDCAT
WELL NO.: 34/10-3		
CO ORDINATES: ___° ___' ___"N ; ___° ___' ___"		
K.B.E.: 25 meters	COMPANY: STATOIL/HYDRO/SAGA	
HOLE SIZE: 6"	GEOLOGIST: KRÆMER	DATE: 15 MAY 1979

DEPTH	LITH. %	LITHOLOGIC DESCRIPTION	Shows & Remarks
2790	90	sh,red brn,lt-med brn,yel grn,med gy,occ lt grnish gy dk brn,occ calc-non calc,subfiss,occ slty,occ micro-micac	No shows
	5	ls,wh-buff,firm-hd-occ arg microxln	
	5	clyst,brick red,sft,sl slty,non -sl calc	
	tr	sdst,clr-wh,occ yel,f,occ med-crs, subang-subrnd	
		occ rnd,mostly calc cmt,occ lse,well srt	
	tr	pyr	
2793	90	sh a/a	
	5	ls a/a	
	5	sdst a/a	
	tr	clyst a/a,pyr	
2796			
	90	sh a/a	
	5	ls a/a	
	5	sdst a/a	
	tr	clyst a/a	
2799	50	sh a/a	
	35	sdst a/a ,(vf-f),mostly wh,else a/a	
	10	ls a/a	
	5	pyr,mica	
2802			
	60	sdst,mostly cmt,vf-f,slty,else a/a	Bottoms up
	30	sh a/a	No shows
	10	ls a/a	
	tr	mica	
		FINISHED DRILLING	
		MAY 15TH 1100 hrs	

III DRILLING REPORT

III 3. EXTRACT OF DAILY ACTIVITIES 34/10-3.

11.3.79 Pulled anchors, under tow to location.

12.3.79 Under tow to location, anchorhandling.

13.3.79 Anchorhandling, checking rig position, run 30" csg.

14.3.79 Rih w/new bha, drill 51M of 36" hole, circ, wiper trip, dropped and retrieved survey.

15.3.79 Run 30" csg, circ, cement 30" csg, pooh, rih w/26" bit, drill cmt + 2M new hole, circ, washed wellhead, pooh, rih w/riser.

16.3.79 Run riser, installed diverter, rih w/ 17 ½" bha, test diverter, drill to 269M, lost returns, change slip joint packing.

17.3.79 W.O.W., installed and tested diverter, drill 17 ½" hole to 480M.

18.3.79 Drill to 586M, circ, ran survey showing 1/4degr S15W corrected, circ, run logs ISF/SONIC/GR, rih w/new bha.

19.3.79 Underreamed to 374M, lost circ, ball joint leaking, pooh, lay down underreamer and diverter, observed well head OK, pull riser and pin connector.

20.3.79 Rih w/new bha, opened up 17,5" hole to 26" from 374M to 586M, circ high vis mud.

21.3.79 Run and cement 20" csg, wash wellhead, pooh.

22.3.79 Run BOP and riser, test BOP.

23.3.79 Run BOP on riser, test BOP OK, rih w/bit no 3, drill cmt to 566M.

III 1. Summary.

34/10-3 was a wildcat well designed to test possible hydrocarbon accumulations in the Delta-closure. The closure is located in the north-eastern part of block 34/10.

This was the second well drilled in the Delta closure. The first was 34/10-1, located to the south in a separate fault block.

The well was drilled into the Triassic formation to a depth of 2802 m.

The well reached its total depth exactly on schedule. However, a total of almost 10 days were lost, mainly because the corehead and the chain tong were lost in the hole. No obvious reason was found as to why the corehead twisted off.

There was also some trouble with the slip joint and the ball joint. This may have been due to the fact that the rig had been "stacked" for some time and had only been mobilized for this well.

The repairs on the draw-works should not have caused any down-time. However, one and a half days were lost, due to late arrival of new equipment and underestimation of the amount of work involved.

Apart from this the drilling itself went quite smoothly, and no major drilling problems were encountered.

The cost of the drilling phase of the well came to about 1.5 million kroner less than budgeted.

The test phase lasted only half as long as expected, and thus the total cost of the well was about 6 million kroner less than budgeted.

III 2. Drilling operation in intervals.

36" hole, 204-255 m.

The well was spudded at 14:30 hours on 14 March 1979. The final position was 61° 12' 49.48" N and 02° 11' 55.03" E with a deviation from the intended location of 7 m at 90°. The water depth was 179 m.

The hole was drilled with a 26" bit and 36" hole-opener in one run, and the 30" casing was run and cemented at 254 m without any problems.

26" hole, 255-586 m.

The 30" casing was cleaned out with a 26" bit. The pin connector and riser were run, and the diverter was installed. A 17½" pilot hole was drilled to 269 m, then the slip joint was found to be leaking. The pin connector was disconnected with some difficulty due to high riser angle, and the riser was picked up enough to be able to change the slip joint packing.

After a few hours of waiting on weather, the pin connector was latched back onto the wellhead. Then, the hole was drilled to 586 m.

A maximum of 130 units of gas was encountered at 550 m. The formation drilled was predominantly clay, and the penetration rate was controlled to a rate of about 30 m/hr.

The hole was then logged and underreamed to 374 m, at which point the ball joint was discovered to be leaking.

The riser was pulled, again after experiencing difficulty in disconnecting the pin connector. This was probably due to the angle of the riser.

The hole was then opened up to 26" with a hole-opener down to 586 m. The 20" casing was run and cemented at 571 m without any problems. The BOP was then run and tested.

17½" hole, 586-1488 m.

The 20" casing was drilled out, and a formation integrity test was run. The results of the test showed a specific gravity (sp.gr.) of 1.60. The 17½" hole was then drilled to 1488 m without much problem, apart from the fact that half a day was lost due to waiting on weather and some tight spots encountered below 1200 m.

The formation was alternately claystone and sand. The rate of penetration decreased from 25-30 m/hr in the beginning, to around 8 m/hr towards the end of the interval. The gas readings were around 5-10 units with a peak of 58 at 885 m.

The hole was logged, and 13 3/8" casing was run and cemented at 1475 m. The slip joint was leaking, thus making it difficult to check returns. The slip joint and ball joint packings were replaced.

12 1/4" hole, 1488-1820 m.

The 13 3/8" casing was drilled out, and two leak-off tests showing a specific gravity equivalent to 1.72,were run. The hole was then drilled to 1820 m. The formation was mainly claystone, with sandstone and siltstone towards the bottom. The gas readings averaged 15 units with a maximum of 250 units at 1810 m. The drilling rate averaged 15 m/hr. The hole was then logged. The cement bond log (CBL) would not go below the 1408 m level. The casing/open hole was cleaned out, and the 9 5/8" casing was run and cemented without problems at 1812 m.

8½" hole, 1820-2347 m.

The 9 5/8" casing was drilled out and a formation integrity test, showing a specific gravity equivalent to 2.02, was run. The hole was then drilled to 1904 m where a drilling break occurred, and 130 units of gas were recorded. The lithology was clay with strings of sand and limestone.

Eight cores were then cut down to 2025 m. The recovery was good, and the cores consisted mainly of sandstone.

The hole was then reamed and drilled to 2347 m. There was a tight section from 2063 to 2091 m, but reaming was not necessary upon re-entering the hole. The formation was sandstone and claystone, and the rate of penetration was 7-9 m/hr. The maximum gas recorded in this section was 7 units at 2080 m.

The hole was then logged. A 7" liner was run and cemented with the shoe at 2346.5 m and the liner top at 1671 m.

A cement plug was set at 1574 m, and the BOP was pulled to change the 5" drill pipe rams to 3½" rams.

The stack was run. However, it had to be pulled again to change the AX-ring which was leaking. Then, the BOP was run and tested OK.

6" hole, 2347-2802 m.

After the cement plug was drilled out, one and a half days were lost in replacing the coupling between the draw-works and the Elmagco brake.

The liner was then drilled out and a formation integrity test was run, showing a specific gravity equivalent to 2.31, without leak-off being reached.

A 6" hole was then drilled to 2467 m, where it was decided that a core be cut.

After waiting on weather for almost a day, a core was cut to 2478 m with 100% recovery.

The hole was reamed and drilled to 2479 m when the pump pressure dropped 40 bars. One half of one of the nozzles was found to be missing. After going in with a new bit and working the junk basket, the hole was drilled to 2512 m where core no. 10 was cut. The core barrel jammed at 2512.5 m and the core head matrix was left in the hole.

After failing to recover anything with a reverse circulating basket, a flat bottom mill was run to the top of the liner. The compensator was put on while turning the string with a chain tong in order to pass through the liner top. The tong hit the rotary when the compensator suddenly stroked out as the mill passed through the liner top. The chain broke and the tong fell in the hole.

After failing to recover anything with a reverse circulating basket, the hole was logged. The fishing continued for 3½ days, and the tong and most of the matrix were recovered.

The hole was then drilled to 2802 m.

The lithology was mostly sand for the entire 6" interval. The gas readings were from 0 to 2 units, reaching a peak of 21 units at 2485 m. The rate of penetration was from 3 to 5 m/hr.

The hole was then logged, plugged back, and tested.

Abandonment plugs were set. The BOP was pulled, and a corrosion cap was installed, as the well was to be temporarily abandoned.

"Norskald" left the drilling location at 07:38 hrs on 8 June 1979.

24.3.79 Drill out shoe + new hole to 590M, circ, formation integrity test equal to 1.60 sg., drill 17 ½" hole to 1000M.

25.3.79 Drill to 1144M, W.O.W., circ, drill to 1189M.

26.3.79 Drill 17 ½" hole to 1440M, circ bttms up, run survey-misrun, rih w/bit no 5.

27.3.79 Drill 17 ½" hole to 1488M, wiper trip, circ bttms up, run survey, run logs ISF/SONIC/GR.

28.3.79 Run logs FDC/GR, rih w/drillstring, circ. & cond. mud, pooh, run 13 3/8" csg.

29.3.79 Run and land 13 3/8" csg at 1475M, cmt. csg, wash well-head and BOP, run seal assy., test seal assy. and BOP OK, pooh.

30.3.79 Changed slip joint and ball joint packing, land LMP, install diverter and ball joint, test csg and BOP-ok, lay down 17½" bha.

31.3.79 Rih w/new bha, drill cmt + 4M new hole, circ, run 2 leak off tests - 1.72 sg., raise MW to 1.5, drill 12 1/4" hole to 1551M.

1.4.79 Drill to 1653M, circ, drill 12 1/4 hole to 1820M, circ.

2.4.79 Raise MW to 1.55, run logs ISF/SONIC/GR/CAL/FDC/CBL.

3.4.79 Rih, circ. & cond. mud, raise MW to 1.6, run survey-misrun, circ, run survey - 1/4 deg at N 29W at 1816M, pooh.

4.4.79 Retrieve wear bushing, run and land 9 5/8" csg, circ, cmt. csg, washed wellhead, run seal assy.

5.4.79 Seat assy., test seal assy-ok, test BOP and csg-ok, lay down 12 1/4" bha, rih w/8½" bha, drill plugs, float and shoe.

6.4.79 Drill to 1823M, leak off test - 2.02 sp.gr., drill to 1891M, check for flow, circ, drill to 1904M, check for flow, circ, drop survey, pooh.

7.4.79 Recover survey, pick up core barrel, rih, circ, core no 1 to 1919M, pooh, rec. 95%, rih, circ, core no 2 to 1930M.

8.4.79 Pooh, rec. 90%, rih, core no 3 to 1936M, pooh, rec. 47%, rih, slip and cut drill line.

9.4.79 Core no 4 to 1953M, pooh, rec. 67%, rih, core no 5 to 1971M.

10.4.79 Pooh, rec. 88%, rih, circ, core no 6 to 1989M.

11.4.79 Pooh, rec. 100%, rih, circ, core no 7 to 2007M.

12.4.79 Pooh, rec. 95%, rih, circ, core no 8 to 2025M.

13.4.79 Pooh, rec. 100%, lay down core barrel, rih w/bit no 11, ream, drill 8 ½" hole to 2134M.

14.4.79 Drill to 2182M, circ, run survey, rih w/bit no 12, ream. last 20M, drill to 2205M, circ for samples, drill to 2215M.

15.4.79 Drill 8½" hole to 2347M, circ. bttm up.

16.4.79 Pooh, logging ISF/SONIC/FDC/CNL/DLL/MSFL, rih w/bit no 8.

17.4.79 Ream last 5M, circ. & cond. mud, pooh, run RFT log.

18.4.79 Run logs CBL/RFT, rih, cut and slip drill-line, rih, wash and ream last 20M, circ. & cond. mud, pooh.

19.4.79 Run 7" liner, rih w/liner, cementing, pooh.

20.4.79 Rih, set cmt plug 1574M, tested plug - ok, pooh, unlatch BOP, pull stack.

21.4.79 Pull riser and BOP-stack, change rams to 3½", function test on BOP, repairs.

22.4.79 Run BOP, test BOP, leak in stack connector, pooh with test plug.

23.4.79 Pull BOP, change ax-ring, run BOP.

24.4.79 Run BOP,test BOP-ok, install wear bushing, rih w/ 8½" bit.

25.4.79 Drill plug to 1570M, test liner-ok, pooh, repair coupling between drawworks and Elmaco brake.

26.4.79 Dismantled coupling, installed new coupling and adjusted same.

27.4.79 Rih w/6" bha, drill out flapper valve assy., test csg-ok, drill cmt + 3M formation, leak off test, drill to 2354M, leak off test - 2.31 sp.gr., drill to 2363M, circ, pooh.

28.4.79 Rih w/bit no 15, drill to 2422M.

29.4.79 Drill 6" hole to 2438M, pooh, rih w/bit no 16, slip and cut drill line, rih, drill to 2460M, circ. up sample, drill to 2467M, pooh.

30.4.79 Made up core barrel, rih, W.O.W.

1.5.79 W.O.W., rih, circ, core no 9 to 2478M, pooh, rec. 100%, rih w/bit no 18, ream 32M to bottom, drill to 2479M, pooh, rih w/bit no 19.

2.5.79 Rih, drill to 2510M, circ up sample, drill to 2512M, pooh, rih w/core barr., circ, core no 10 to 2512.5M, pooh.

3.5.79 Rih, fish for bit matrix, circ, pooh, no rec., rih w/flat bottom mill, tong fell in hole, pooh, fish trying to jam string.

4.5.79 Rih to 2509M, circ, pooh, junk basket empty, run logs ISF/SONIC/FDC/CNL/GR, work on HDT.

5.5.79 Run CBL-log, cut and slipped drill line, run vel. survey, rih, fishing- no indication, pooh.

6.5.79 Rec. part of fish, rih, fish, pooh, rec. part of fish, rih, mill junk, pooh, change mill, rih.

7.5.79 Mill on junk, pooh, rih w/new bha, run reverse circ. basket, pooh, rec. one piece of junk, rih.

8.5.79 Rih, work junk basket, mill on junk, pooh, rih w/reverse circ. basket, work reverse circ. basket, pooh.

9.5.79 Pooh, one kilo junk in basket, rih w/bit no 20, circ, drill to 2524, pooh, rih w/bit no 21, drill 6" hole to 2544M.

10.5.79 Drill to 2545M, pooh, test BOP-ok, rih w/bit no 22, slip and cut drill line.

11.5.79 Rih, drill to 2571M, pooh, rih w/bit no 23, circ and work junk basket, drill to 2593M.

12.5.79 Drill to 2638M, circ, pooh, rih w/bit no 24, drill to 2676M.

13.5.79 Drill to 2701M, circ sample, pooh, rih w/bit no 25, drill to 2721M.

14.5.79 Drill to 2748M, circ sample, pooh, rih w/bit no 26, drill to 2781M.

15.5.79 Drill to 2802M, circ bottoms up, pooh, run logs ISF/SONIC/ GR/FDC/CNL/HDT.

16.5.79 Logging SONIC/GR/CST, rih, circ, set cmt plugs, pooh.

17.5.79 Rih w/bit and scraper, raise MW to 1.80, tag cmt at 2374M, pooh, set retainer plug at 2300M, rih w/stinger, circ, cmt., test csg.

18.5.79 Pooh, perforated at 1977M, rih w/rtts packer, set packer at 1967M, cmt., pooh, rih w/test plug.

19.5.79 Test BOP, pooh, reset and pulltested anchors, rih w/bit no 16 R.R., drill cmt to 1982M, rih, circ, pooh strap pipe.

20.5.79 Run CBL log, test csg, rih w/rtts packer to 1740M, test and squeeze cmt.

21.5.79 Pooh, rih w/6" bit and 7" csg. scraper, drill cmt to 1980M, rih, circ. & cond. mud, test csg, pooh, rih w/rtts packer to 1971M.

22.5.79 Circ, squeeze cmt, pooh, rih, drill 9M of cmt to 1980M, rih to 2276M, circ. & cond. mud, pooh, rih w/rtts packer.

23.5.79 Set packer, check for flow - no flow, pooh,perforate from 1990M to 1995M, run drill string.

24.5.79 Rih w/test string, open APR test valve, run press. recorder.

25.5.79 First flow period, shut in, second flow period, shut in, unseat packer, pooh, rih, hit top sand at 1993M, pooh.

26.5.79 Rih, set retainer at 1971M, squeeze cmt, test csg, pooh, perforate from 1911M to 1912M, pooh, rih, set packer, squeeze cmt, pooh.

27.5.79 Rih to 1906M, drill 9M cmt, rih to 1960M, circ, pooh, run CBL log, set packer at 1905M, testing.

28.5.79 Set packer, squeezed cmt, pooh, rih w/6" bit, circ, drill cmt, pooh.

29.5.79 Perforate 1935-1940M, rih w/test string, test same, set packer.

30.5.79 Second flow test.

31.5.79 Second flow period, shut in, flow for sampling, shut in, third flow period, close in, retrieve press. rec.

1.6.79 Bullhead well, unseat packer, lay down test assy.,rih w/bit, circ. & cond. mud, pooh, set retainer at 1906M, rih w/ stinger, squeeze cmt, pooh.

2.6.79 Perforate 1895 - 1900M, rih w/test string, test same, pick up sstt, rih, unable to get sstt through BOP, leak in X-O on top of sstt and bttm of pup jt., repair same, test string and sstt-ok, rih.

3.6.79 Rig and test lubricator, run press. rec., first flow, shut in, second flow, run bailer, rigg down lubricator.

4.6.79 Pooh w/test string, rih w/6" bit, circ, pooh, set retainer, rih w/stinger.

5.6.79 Squeeze cmt, pooh, set retainer at 1608M, rih, lay cmt. plug 1608 - 1580M, circ, lay cmt. plug 1575 - 1430M, pooh, cmt plug 625 - 525M, pooh, cmt plug 350 - 250M, displace riser, lay down d.p. and d.c.

6.6.79 Pull riser and BOP, run corrosion cap.

7.6.79 Run and set corr. cap, anchor handling.

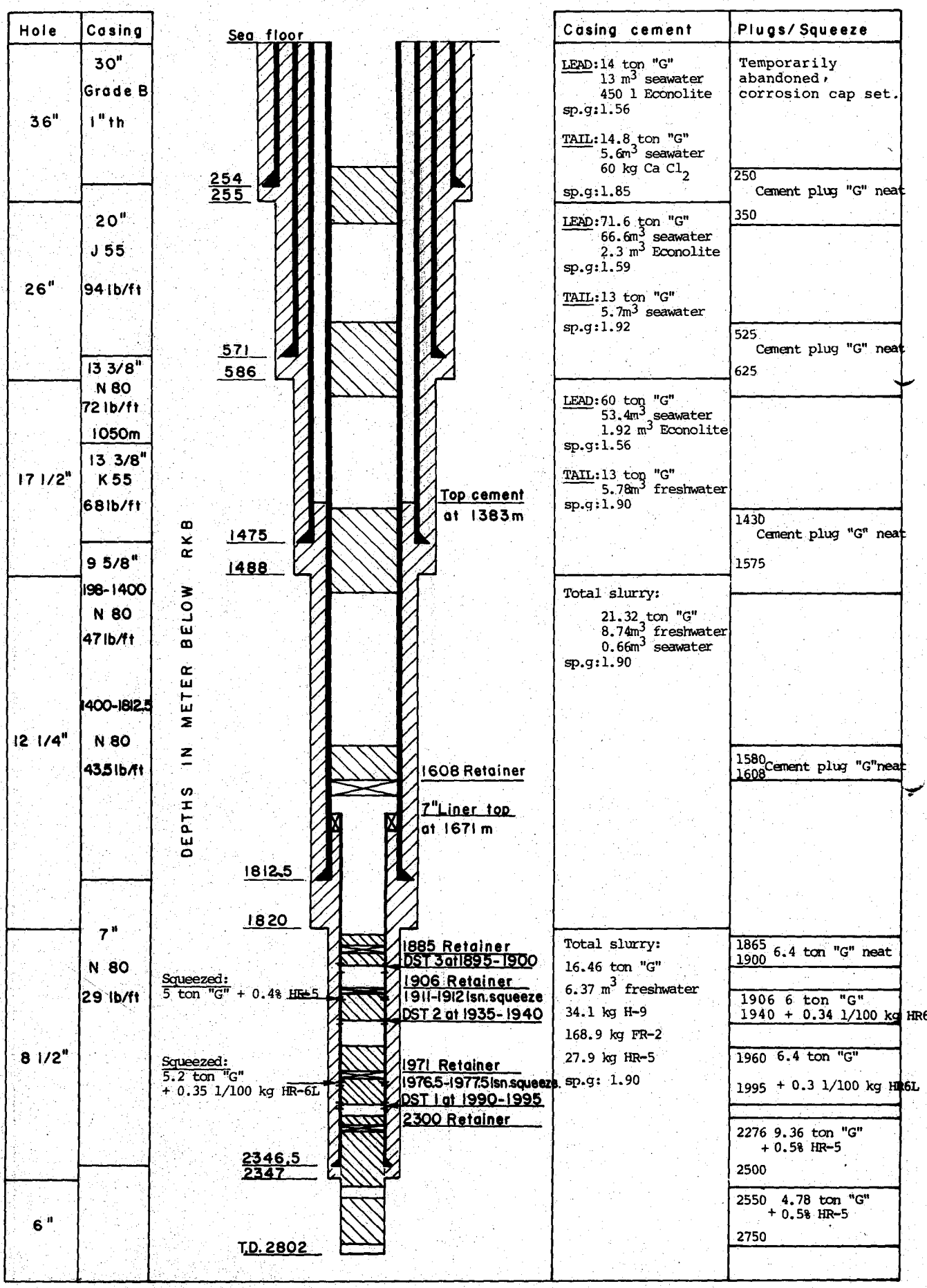
8.6.79 Anchor handling, rig under way to new location.

III 4. WELLBORE SCHEMATIC 34/10-3

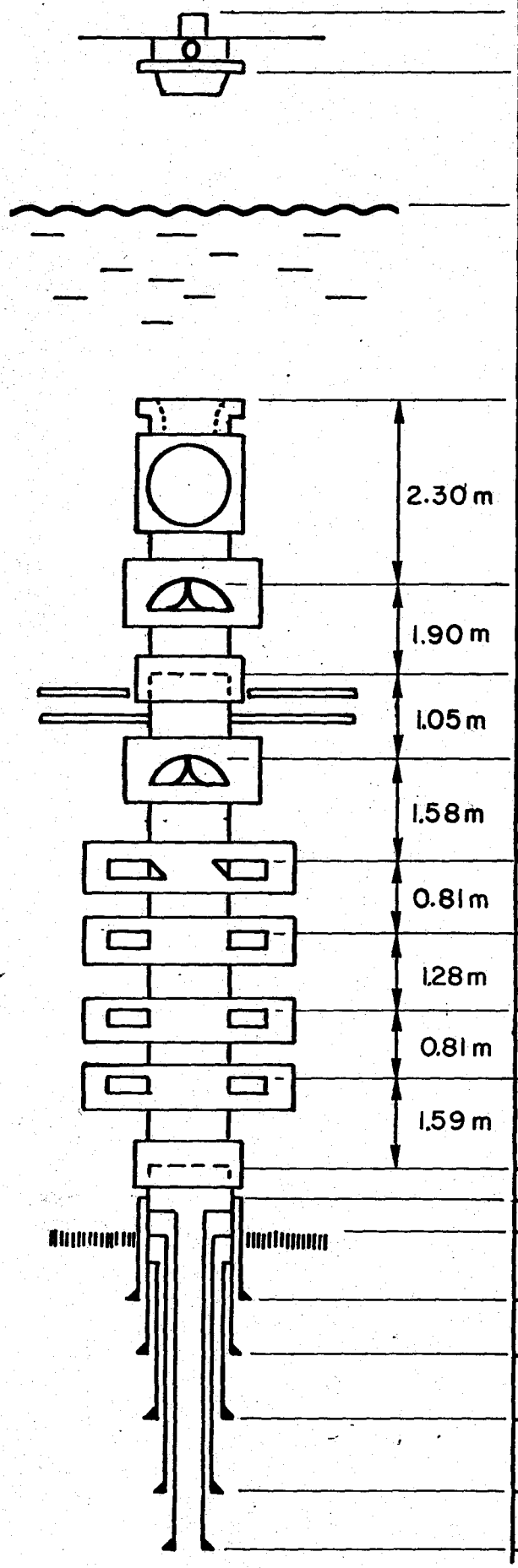
RKB - MSL : 25 m.

WATER DEPTH : 179 m.

Not to scale



III 5. NORSKALD SUBSEA ASSEMBLY WELL 34/10-3



M.	
0	RKB
	DIVERTER RISER CONNECTOR FLANGE
25	SEA LEVEL MEAN
189.17	BALL JOINT RISER CONNECTOR FLANGE
191.47	UPPER ANNULAR RUBBER TOP (CLOSED)
193.37	LOWER STACK ASSEMBLY TOP
194.42	LOWER ANNULAR RUBBER TOP (CLOSED)
196	SHEAR RAMS TOP
196.81	U.P. RAMS TOP
198.09	M.P. RAMS TOP
198.90	L.P. RAMS TOP
200.49	18 3/4 WELLHEAD TOP
201	30" HOUSING TOP
204	MUD LINE
254	30" SHOE
571	20" SHOE
1475	13 3/8" SHOE
1812.5	9 5/8" SHOE
2346.5	7" SHOE

III 6. FORMATION INTEGRITY TESTS.

statoil

FORMASJONSSTYRKETEST

Dato: 24.3.79

Brønn nr.: 34/10-3 **Dybde:** Brønn: 590 m Foring: 571 m Test: 590 m

Fartøy: Norskald **Høyde R.K.B.:** Over vannfl.: 25 m Over sjøb.: 204 m

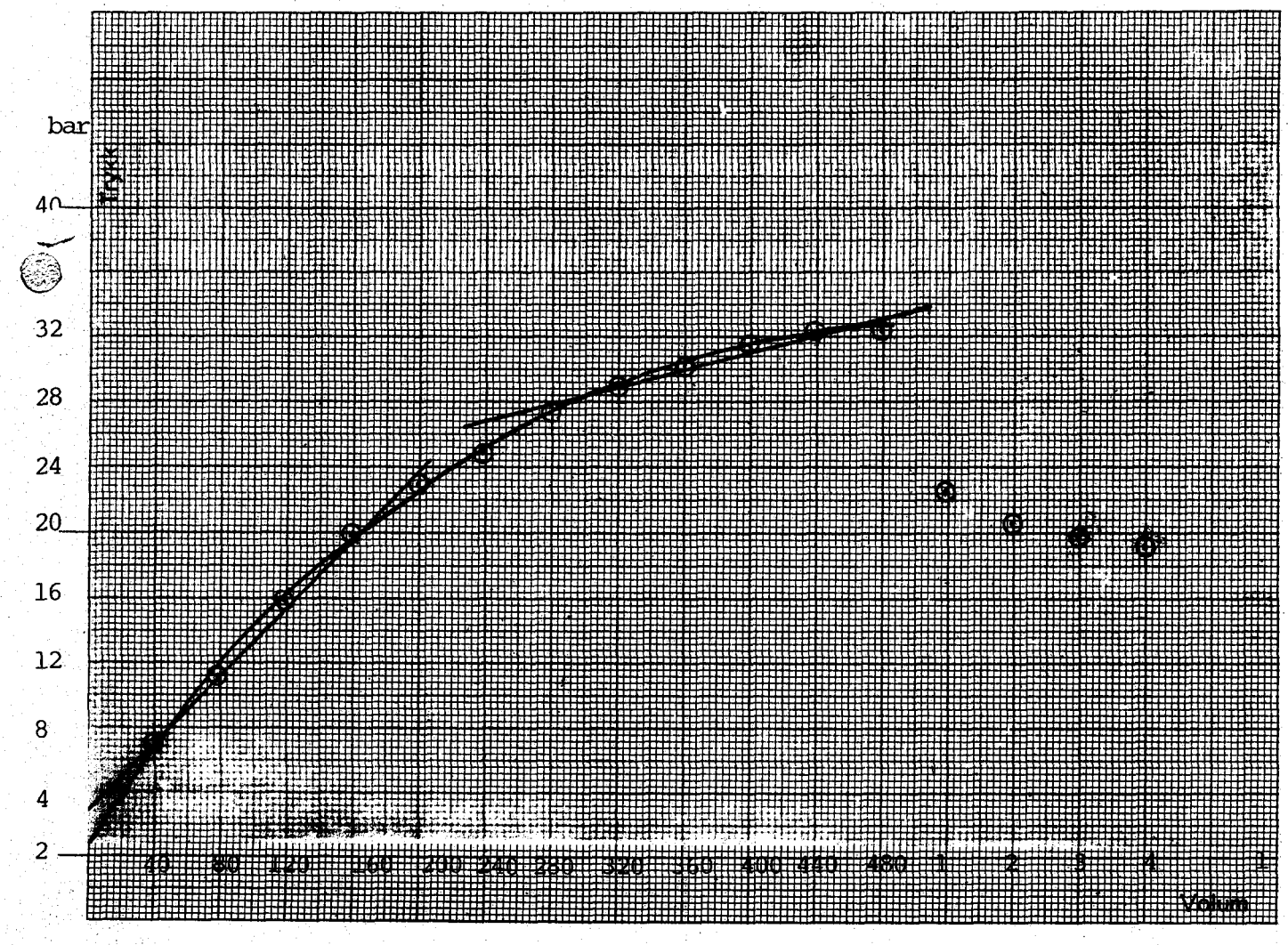
Foring: Diam.: 20" Tyngde: 94 lb/ft Grad: k55 Maks. trykk:

Boreslam: Tetthet: 1.04 s.g. Vis: 40 sec P.V.: 8 cp Y.P.: 14 lb/100 ft^2 Filt: Gel.: 8/14 lb/100 ft^2

Pumpe: Type: Halliburton Kapasitet: Vol./tidsenh.: 120 l/min. Tilb.str.: 145

Antatt styrke: Obs. spr. trykk: 32.4 bar Ekv. formasj. styrke: 1.60 s.g.

L	bar		bar			
Volum/tid	Trykk	Volum/tid	Trykk	Volum/tid	Trykk	Anmerkninger
40	6.9	360 l	30.3			
80	11.0	400 l	31.7			
120	15.9	440 l	32.4			
160	20.0	480 l	32.4			
200	22.8	1 min	22.8			
240	24.8	2 min	20.7			
280	27.6	3 min	20			Sign.: Terje Lund
320	29	4 min	19.3			



statoil

TEST NR. 1

FORMASJONSSTYRKETEST

Dato: 31.3.79

Brønn nr.: 34/10-3 **Dybde:** Brønn: 1491m Foring: 1475m Test: 1491m

Fartøy: Norskald **Høyde R.K.B.:** Over vannfl.: 25m Over sjøb.: 204m

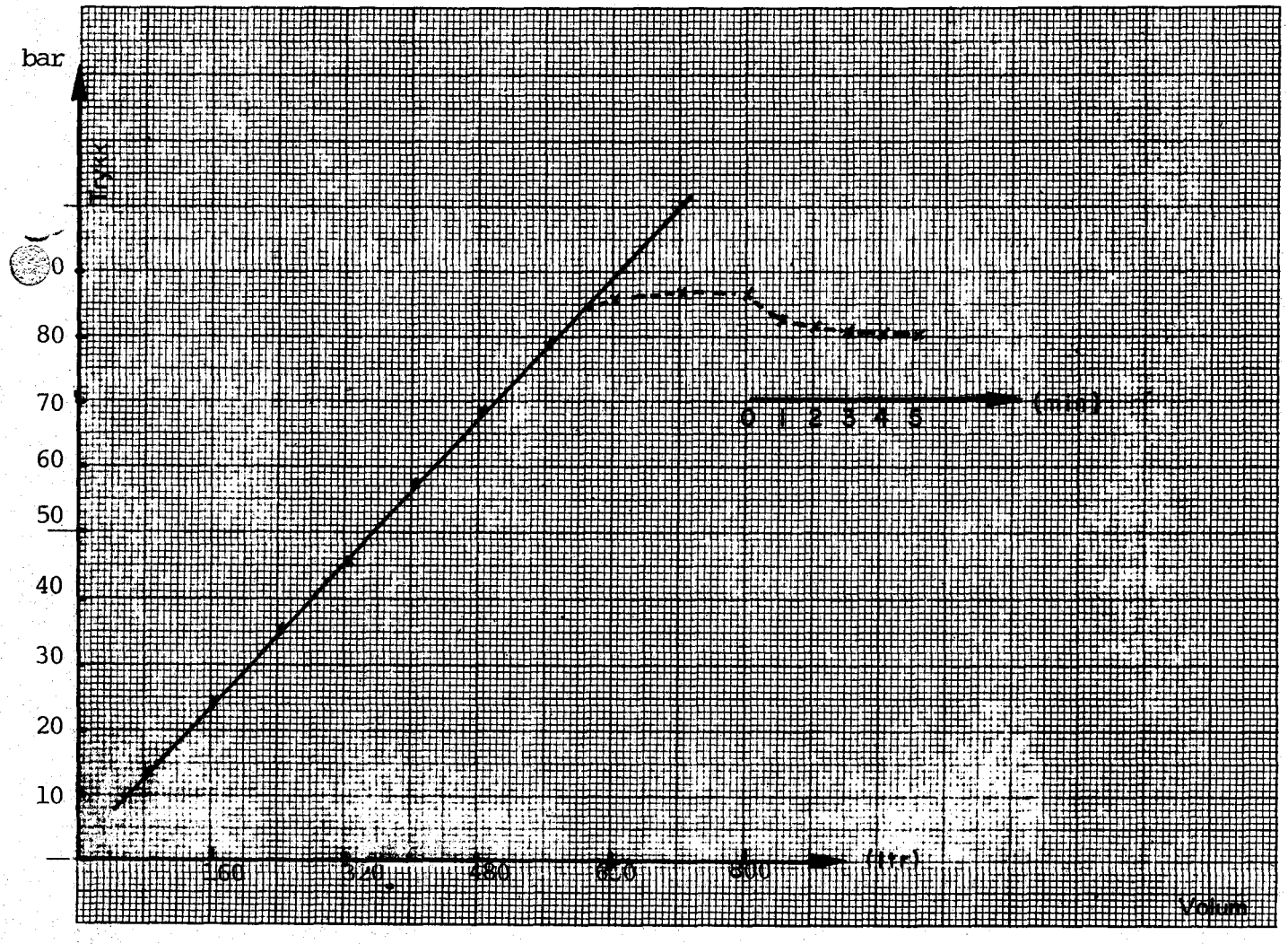
Foring: Diam.: 13 3/8" Tyngde: 68 lb/ft Grad: k55 Maks. trykk: 238 bar

Boreslam: Tetthet: 1.15 s.g. Vis: 42 sec P.V.: 10 cp Y.P.: 12 lb/100 ft^2 Filt: 10 cc Gel.: 5/10 lb/100 ft^2

Pumpe: Type: HT 400 Kapasitet: _____ Vol./tidsenh.: 80 l/min. Tilb.str.: 560 ltr

Antatt styrke: 1.65 g/cm^3 Obs. spr. trykk: _____ Ekv. formasj. styrke: 1.72 g/cm^3

L Volum/tid	bar Trykk	L Volum/tid	bar Trykk	~~Volum~~/tid	bar Trykk	Anmerkninger
80	13.8	720	86.2	1 min.	82.8	
160	24.1	800	86.2	2 min.	81.4	
240	35.2			3 min.	80.7	
320	45.5			4 min.	80.0	
400	57.2			5 min.	79.7	
560	78.6					
640	85.2					Sign.: Olaf Angeltvedt



statoil

FORMASJONSSTYRKETEST

Dato: 31.3.79

Brønn nr.: 34/10-3 **Dybde:** Brønn: 1491m Foring: 1475m Test: 1491m

Fartøy: Norskald **Høyde R.K.B.:** Over vannfl.: 25 m Over sjøb.: 204m

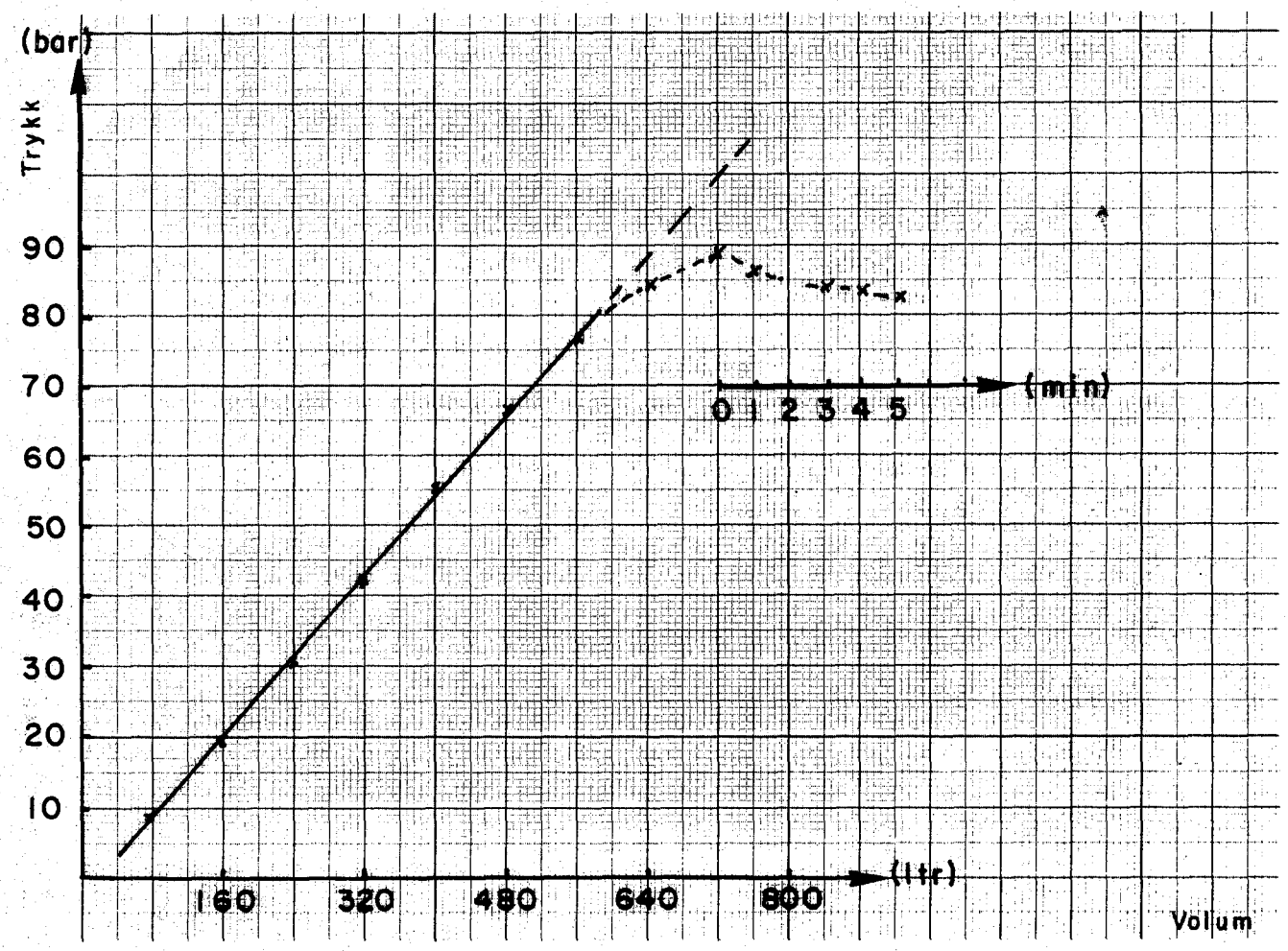
Foring: Diam.: 13 3/8" Tyngde: 68 lb/ft Grad: k55 Maks. trykk: 238 bar

Boreslam: Tetthet: 1.15 s.g. Vis: 42 sec P.V.: 10 cp Y.P.: 12 lb/100 ft^2 Filt: 10 cc Gel.: 5/10 lb/100 ft^2

Pumpe: Type: HF 400 Kapasitet: Vol./tidsenh.: 80 l/min. Tilb.str.: 560 ltr

Antatt styrke: 1.65 g/cm^3 Obs. spr. trykk: 82.7 bar Ekv. formasj. styrke: 1.72 g/cm^3

L	bar	L	bar		bar	
Volum/tid	Trykk	Volum/tid	Trykk	Volum/tid	Trykk	Anmerkninger
80	9.0	720	89.3	1 min.	86.2	
160	19.3			2 min.	84.8	
240	31.0			3 min.	84.1	
320	42.1			4 min.	83.5	
400	55.2			5 min.	82.8	
480	66.9					
560	77.2					Sign.: Olaf Angeltvedt
640	84.8					



statoil

FORMASJONSSTYRKETEST

Dato: 6.4.79

Brønn nr.: 34/10-3 **Dybde:** Brønn: 1823m Foring: 1812m Test: 1820m

Fartøy: Norskald **Høyde R.K.B.:** Over vannfl.: 25m Over sjøb.: 204m

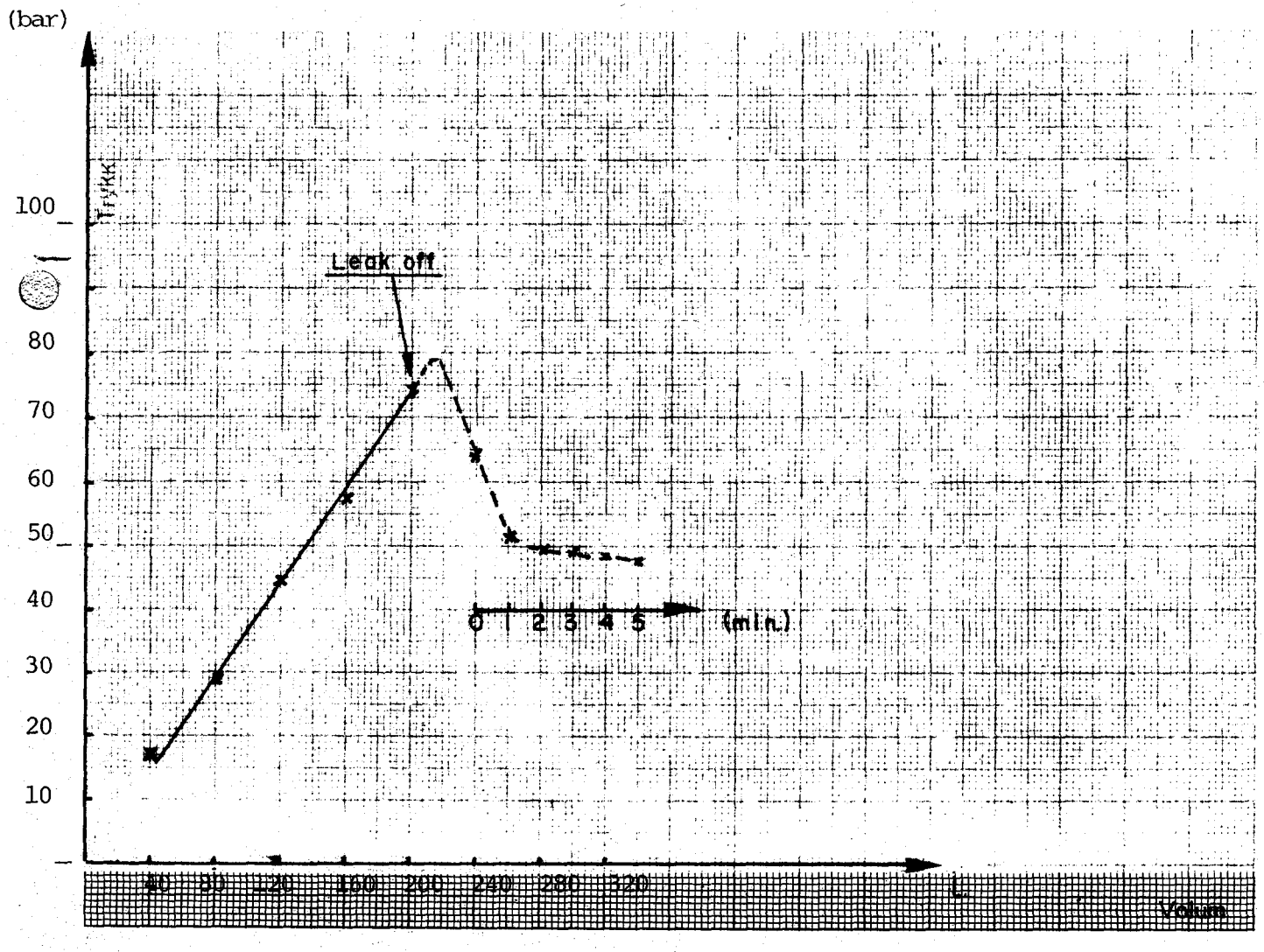
Foring: Diam.: 9 5/8" Tyngde: 47/43.5 lb/ft Grad: N80 Maks. trykk: 436 bar

Boreslam: Tetthet: 1.60 s.g. Vis: 47 sec P.V.: 17 cp Y.P.: 10 lb/100 ft^2 Filt: 5.5 cc Gel.: 10/35 lb/100 ft^2

Pumpe: Type: Halliburton Kapasitet: _____ Vol./tidsenh.: 40 l/min Tilb.str.: 200 l

Antatt styrke: _____ Obs. spr. trykk: 74.5 bar Ekv. formasj. styrke: 2.02 s.g.

L	bar		bar			
Volum/tid	Trykk	Volum/tid	Trykk	Volum/tid	Trykk	Anmerkninger
40	17.2	0 min.	64.1			
80	29.0	1 min	51.7			
120	44.8	2 min.	49.7			
120	57.2	3 min.	49.0			
200	74.5	4 min.	48.3			
240	64.1	5 min.	47.6			
						Sign.: Kristen Kjeldstad
						Olav Pettersen
						Olaf Angeltvedt



statoil

FORMASJONSSTYRKETEST

Dato: 27.4.79

Brønn nr.: 34/10-3 **Dybde:** Brønn: 2354 m Foring: 2346 m Test: 2354 m

Fartøy: Norskald **Høyde R.K.B.:** Over vannfl.: 25 m Over sjøb.: 204 m

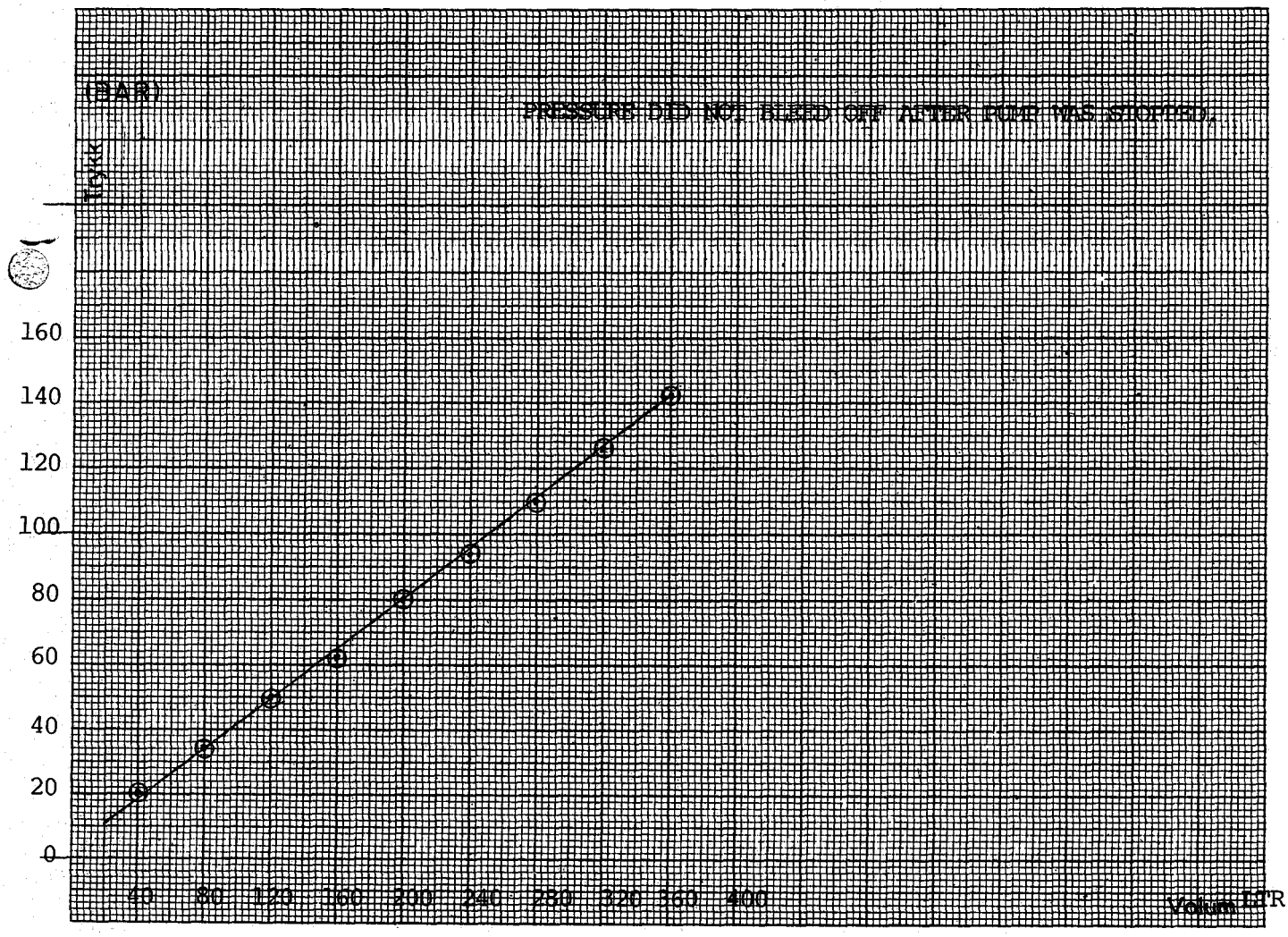
Foring: Diam.: 7" Tyngde: 29 lb/ft Grad: N-80 Maks. trykk:

Boreslam: Tetthet: 1.70 s.g. Vis: 50 sec P.V.: 20 cp Y.P.: 14 lb/100 ft² Filt: 5.4 cc Gel.: 6/28 lb/100 ft²

Pumpe: Type: HT 400 Kapasitet: Vol./tidsenh.: 40 l/min. Tilb.str.: 358 ltr

Antatt styrke: 1.75 s.g. Obs. spr. trykk: not observed Ekv. formasj. styrke: 2.31 sp.gr.

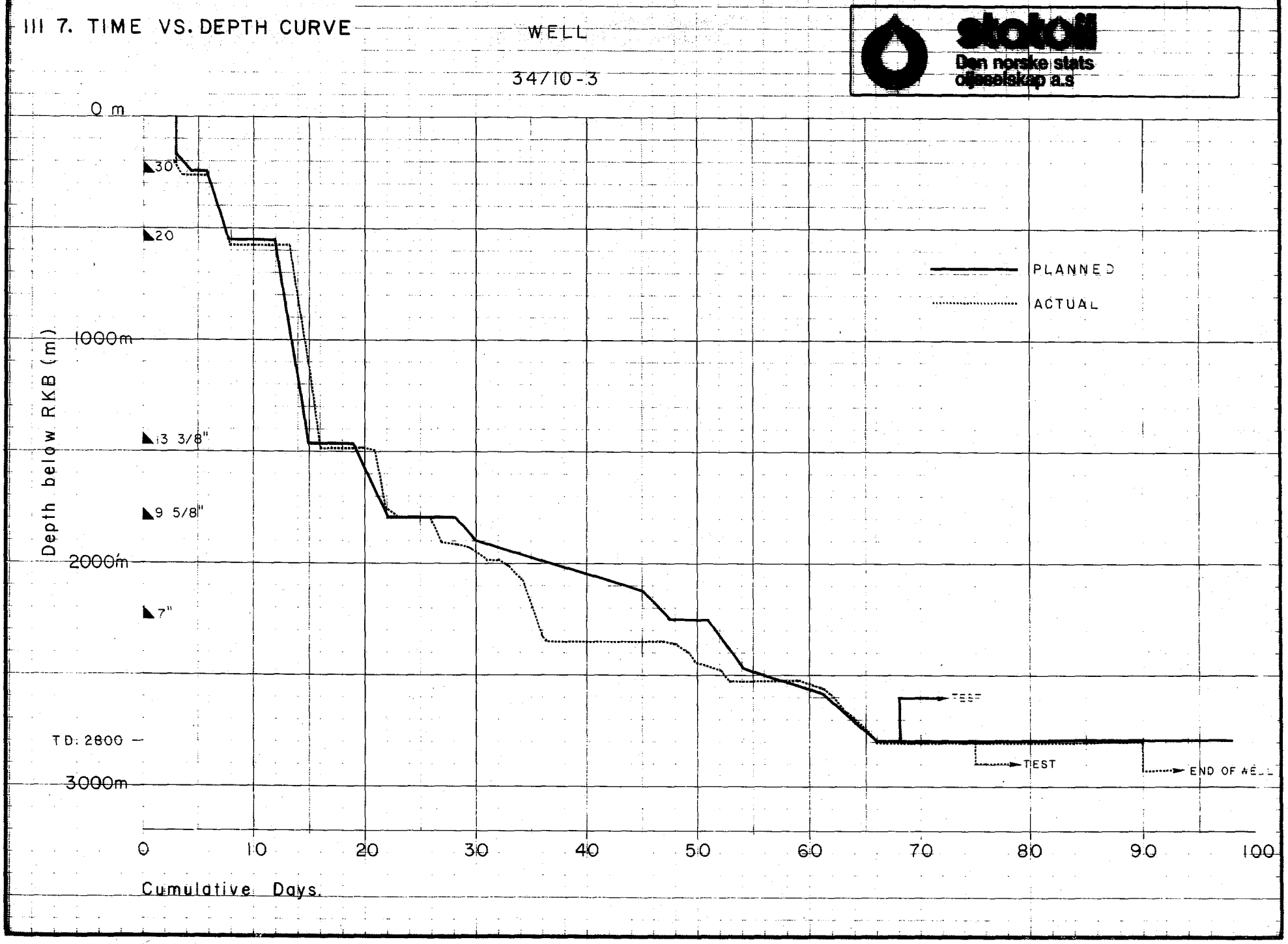
L Volum/tid	bar Trykk	L Volum/tid	bar Trykk	Volum/tid	Trykk	Anmerkninger
40	20.69	358	142.07			cutting sample from 2354m
79	34.50					containing 30% sand + lime-
119	49.65					stone frags.
159	62.07					
199	80.69					
238	95.17					
278	110.34					Sign.:
318	126.21					H. Ødegård



III 7. TIME VS. DEPTH CURVE

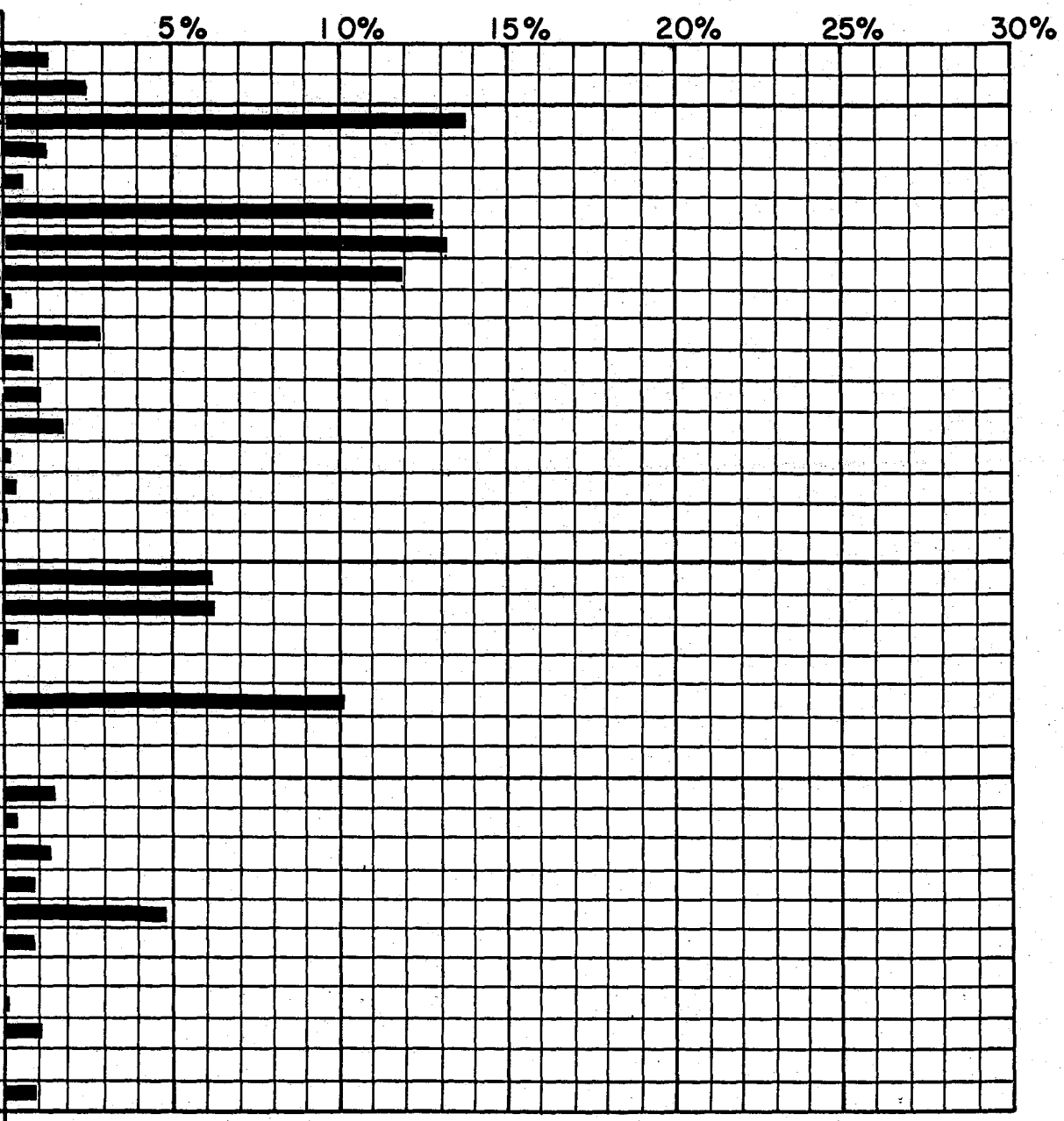
WELL

34/10-3



III 8. RIG TIME DISTRIBUTION FOR WELL 34/10-3

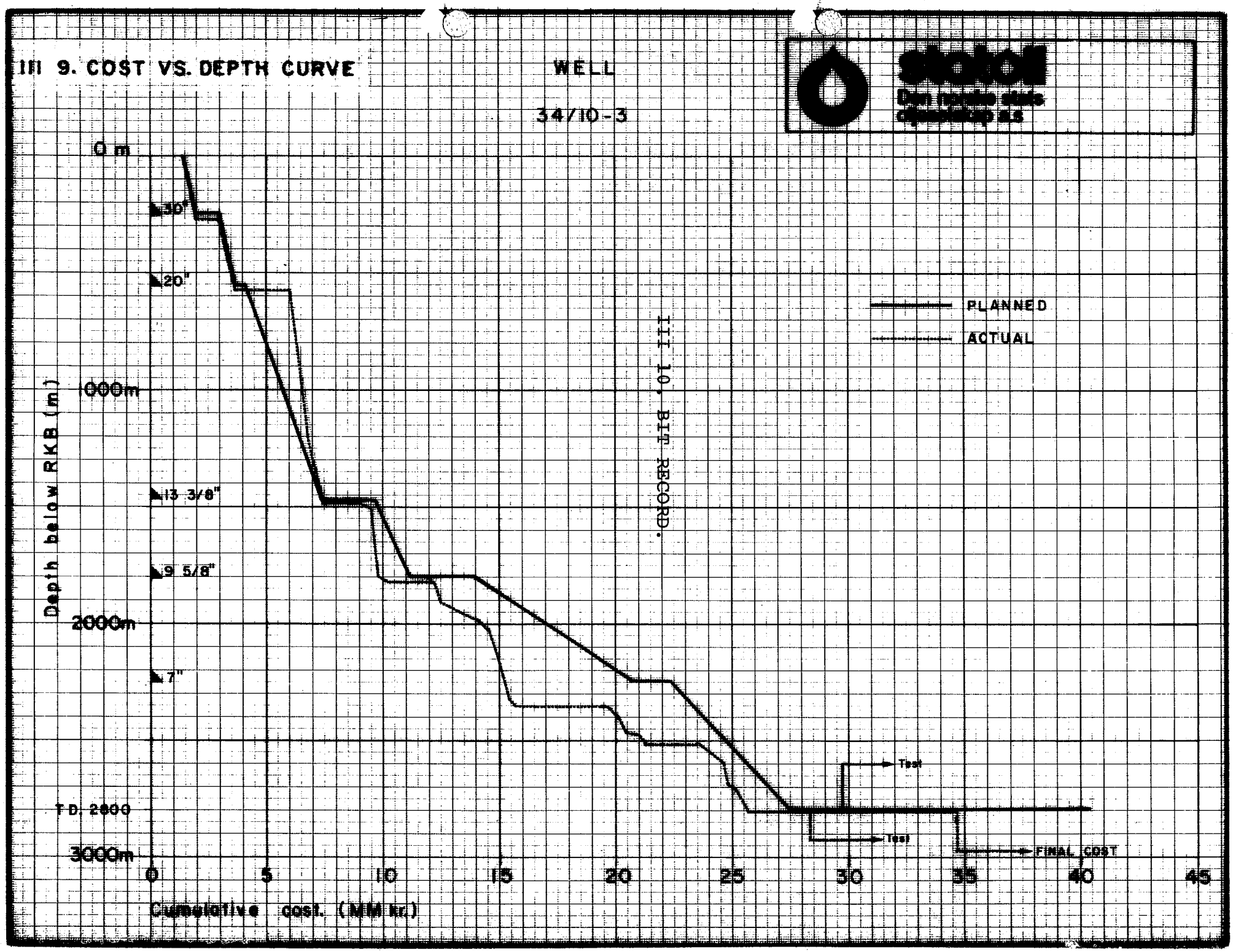
		HRS	%
	Moving	31.5	1.47
	Mooring	57.0	2.67
DRILLING OPERATION	Efficient drilling	294.5	13.78
	Other drilling	31.0	1.45
	Hole opening	13.0	0.61
	Regular tripping	275.5	12.89
	Casing and cementing	281.0	13.15
	Sub sea eq. and BOP	255.0	11.93
	Abnormal press. detection	4.5	0.21
	Cond. and circ.	62.0	2.90
	Reaming	17.0	0.80
	Directional survey	21.5	1.01
	Plugging	41.5	1.94
	Formation leak-off test	4.0	0.19
	Maintenance	7.0	0.33
	Other	1.0	0.05
FORMATION EVALUATION	Coring	131.5	6.15
	El. logging	132.0	6.18
	Circ. for samples	7.0	0.33
	RFT		
	Production testing	235.5	11.02
	Other		
DOWNTIME	Rig repairs	35.0	1.64
	Rig moving	6.5	0.30
	Waiting on weather	28.5	1.33
	Subsea eq. and BOP	19.0	0.89
	Fishing	103.0	4.82
	Lost sirculation	17.0	0.80
	Well control		
	Hole problems	1.5	0.07
	Formation evaluation	22.0	1.03
	Diving		
	Other	2.0	0.09
	TOTAL	2137.5	100



III 9. COST VS. DEPTH CURVE

WELL

34/10-3



statoil

BORKRONEDATA

Brønn nr.: 34/10-3

Nr.	B. k. Nr.	Diam.	Fabr.	Type	Serie no.	Dyser 1/32"	Dybde ut	Fremdrift	Rot. tid	Total rot.tid	Bore-hast.	V.p.b.	O.p.m.	Pumpe			Tilstand			Anmerkninger
														Trykk	V.grad	v/t	T	B	G	
1	1	26"		TSK		3x20	255	51	6.5	6.5	7.8	0-2	55	41.4	0.97					
2	2	17½"	HTC	OSC3A		3x18	586	240	10.5	17.0	31.3	2-4	100	180	0.97					underreamed hole to 26"
3	3	17½"		DSJ		2x18 1x16	1144	457	20.2	20.2	22.6	10-15	100-110	175	0.97		4	4	1	
4	4	17½"	HTC	OSC3A		3x18	1440	296	12.1	32.3	24.6	10-20	70-90	155	0.97	3000	6	3	1	
5	5	17½"	SEC	M+NJ		3x18	1488	48	6	38.3	8	10-15	80	165	0.97	3170	3	3	1	
6	6	12 1/4"	SEC	M44N		3x15	1820	332	21.6	59.9	15.2	10-19	105	207	0.97	2830	4	6	1	Drill CMT + Float&shoe
7	7	12 1/4"	HTC	X1G		3x16	1820			circulating										
8	8	8½	HTC	X1G		3x13	1904	84	12.3	72.2	6.8	14-16	100	207	0.97	1760	4	3	1	6 BT
9	9	8 15/32"	DB	CB303		-	1971	67	35	107.2	1.9	4-7	80	41-55	0.97	700	90% salv.			Overtorque at connect.
13	10	8 15/32"	DB	CB303		-	2025	52	32	139.2	1.6	5-8	84	50-60	0.97		75% salv.			
14	11	8½"	HTC	J3		3x12	2183	158	17.2	156.4	9.3	15	80	220	0.97		4	6	1	4 teeth broken
15	12	8½"	HTC	J3		3x12	2347	164	24.2	180.6	6.9	10-15	90	230	0.97		75 1/4" off			
16	13	8½"	HTC	J3		3x14														Drlg. 85 m of CMT. plug
17	14	6"	HTC	OWV-J		3x10	2364	16	6	190.6	2.7	5-8	60	200	0.97	800	4	7	1	Drlg. 37MTR CMT in 4 hrs
18	15	6"	HTC	J3		3x10	2438	74	21.0	211.6	3.5	9-11	70	207	0.97	800	3	4	1	
19	16	6"	HTC	J3		3x10	2467	29	4	215.6	7.3	9-11	85	207	0.97	800	2	2	1	Pulled to core.
20	17	5 31/32"	DB	CB303		-	2479	12.3	3.2	218.8	3.7	5-6	100	100	0.97	440				Coring
21	18	6"	HTC	J3		3x10	2480	1	0.5	219.3	2.0	10	70	20.6	0.97	815	Junked in hole			
22	19	6"	HTC	J4		3x10	2512	32	9.8	229.1	3.3	10	70	20.6	0.97	815	6	4	1	
23	17 RR	5 31/32"	DB	CB303		-	2512.5	0.5	1.2	230.3	0.5	5-8	75	71	0.97	492				Coring

statoil

BORKRONEDATA

Brønn nr.: 34/10-3

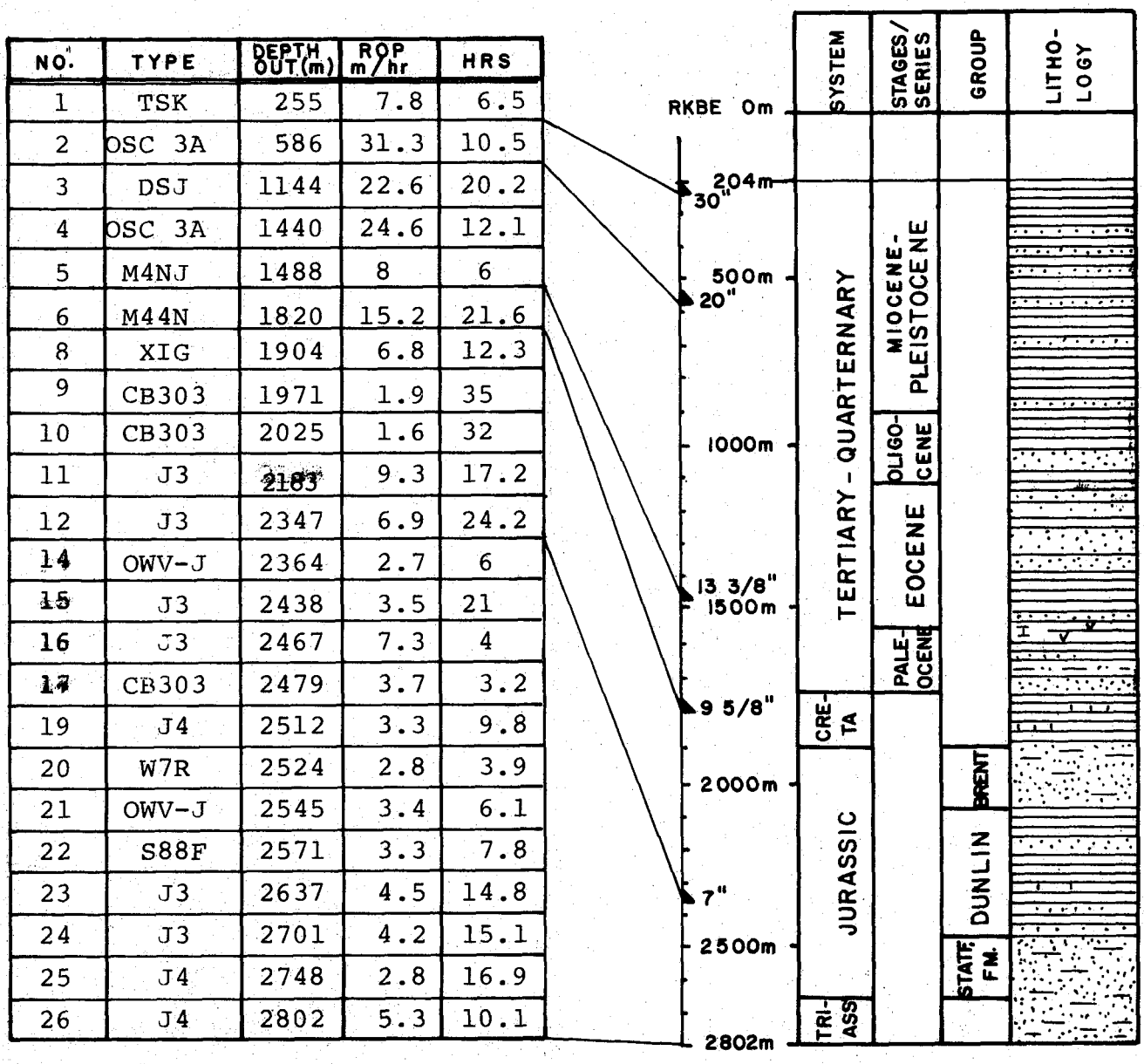
Nr.	B. k. Nr.	Diam.	Fabr.	Type	Serie no.	Dyser 1/32"	Dybde ut	Fremdrift	Rot. tid	Total rot.tid	Bore-hast.	V.p.b.	O.p.m.	Pumpe			Tilstand			Anmerkninger
														Trykk	V.grad	v/t	T	B	G	
24	20	6"	HTC	W7R		3x18	2524	11	3.9	234.2	2.8	9-11	50-70	207	0.97	860	2	7	1	Drill junk
25	21	6"	HTC	OWV-J		3x11	2545	21	6.1	240.3	3.4	8-10	50-80	207	0.97	860	5	7	1	
26	22	6"	SEC	S88F		3x11	2571	26	7.8	248.1	3.3	8-10	60-80	207	0.97	860	2	3	1	Pulled on low penetr.
27	23	6"	HTC	J3		3x11	2637	66	14.8	262.9	4.5	8-12	60-80	207	0.97	860	4	6	1	
28	24	6"	HTC	J3		3x11	2701	64	15.1	278.0	4.2	8-12	60-80	207	0.97	860	5	5	1	
29	25	6"	HTC	J4		3x11	2748	47	16.9	294.9	2.8	8-12	60-80	209	0.97	792	3	5	1	
30	26	6"	HTC	J4		3x11	2802	54	10.1	305.0	5.3	8-12	60-80	211	0.97	840	4	7	1	
31	16 RR	6"	HTC	J3		-														Drilled 17m CMT.
32	16 RR	6"	HTC	J3		-														Drilled 18 m CMT.

4.01.08

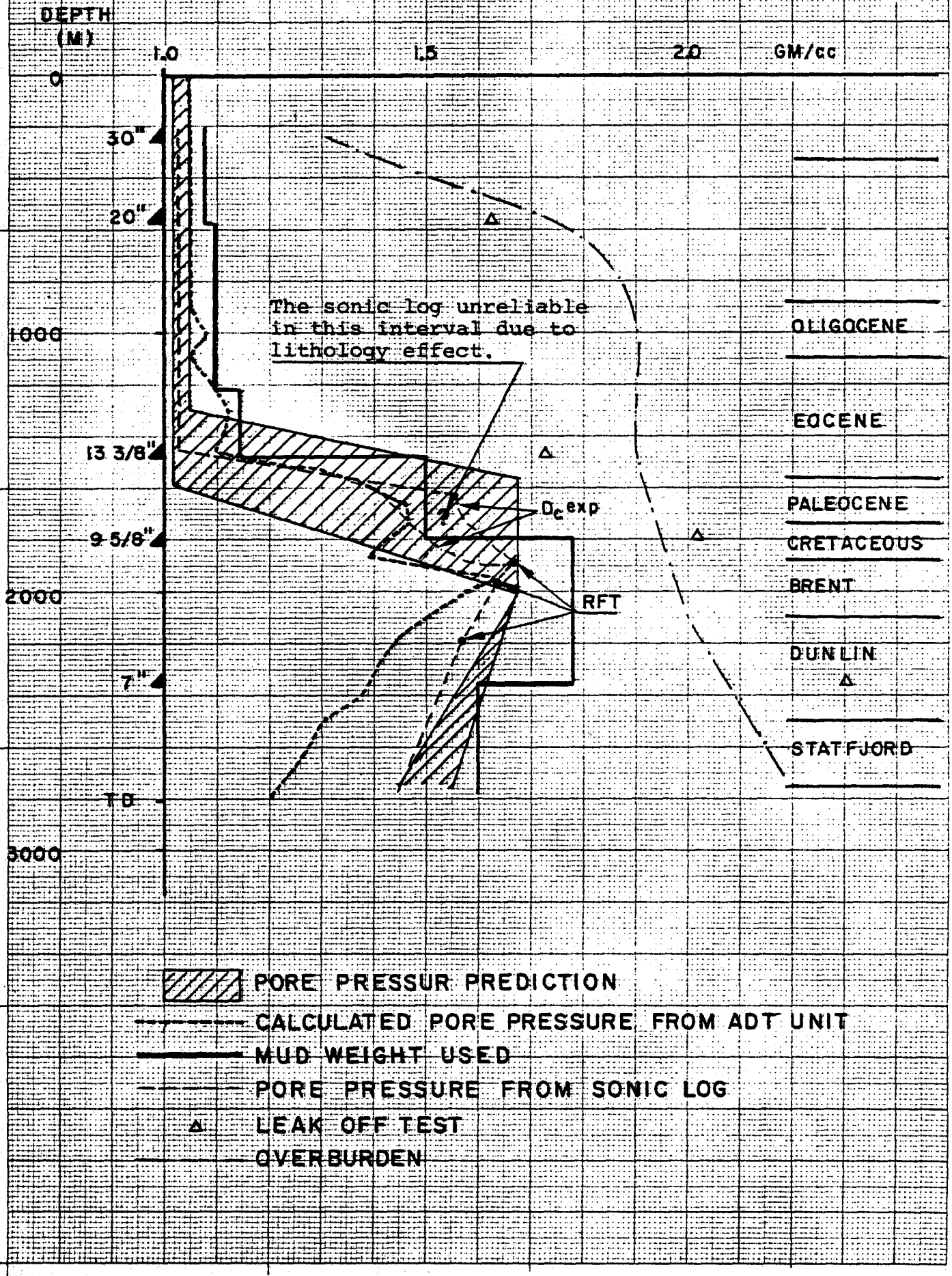
III. 11 BIT SEQUENCE AND LITHOLOGY COLUMN

34/10-3

NO.	TYPE	DEPTH OUT(m)	ROP m/hr	HRS
1	TSK	255	7.8	6.5
2	OSC 3A	586	31.3	10.5
3	DSJ	1144	22.6	20.2
4	OSC 3A	1440	24.6	12.1
5	M4NJ	1488	8	6
6	M44N	1820	15.2	21.6
8	XIG	1904	6.8	12.3
9	CB303	1971	1.9	35
10	CB303	2025	1.6	32
11	J3	2183	9.3	17.2
12	J3	2347	6.9	24.2
14	OWV-J	2364	2.7	6
15	J3	2438	3.5	21
16	J3	2467	7.3	4
17	CB303	2479	3.7	3.2
19	J4	2512	3.3	9.8
20	W7R	2524	2.8	3.9
21	OWV-J	2545	3.4	6.1
22	S88F	2571	3.3	7.8
23	J3	2637	4.5	14.8
24	J3	2701	4.2	15.1
25	J4	2748	2.8	16.9
26	J4	2802	5.3	10.1



III 12. 34/10-3 PORE PRESSURE PROFILES



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III 13. DRILLING FLUID SUMMARY.

GENERAL SUMMARY

OPERATOR	DEN NORSKE STATS OLJESELSKAP A/S - STATOIL
WELL NO.	34/10-3
OPERATOR'S REPRESENTATIVES	T. BRINCH, O. TANGEN, K. KJELDSTAD, J. HAAVE, S. LONGVA, H. ØDEGAARD, O. PETTERSEN, B. HANSSON
CONTRACTOR	ROWAN INC.
RIG	NORSKALD
CONTRACTOR'S REPRESENTATIVES	R. WILDHABER, W. DAVIES
ANCHOR ENGINEERS	S. ASBJØRNSEN, R. LARSEN, T. HELLSTRAND, M. ÅRSETH
WATER DEPTH	179M
SEABED to RKB	202 M
36" HOLE DRILLED TO	255M
30" CASING SET AT	254M
26" HOLE DRILLED TO	586M
20" CASING SET AT	571M
17½" HOLE DRILLED TO	1488M
13⅜" CASING SET AT	1475M
12¼" HOLE DRILLED TO	1820M
9⅝" CASING SET AT	1812M
8½" HOLE DRILLED TO	2374M
7" LINER SET AT	2346M
6" HOLE DRILLED TO	2802M

SUMMARY OF EVENTS

OPERATOR: STATOIL

WELL NO. 34/10-3

36" **HOLE/** 30" **CASING INTERVAL**

The surface hole was drilled to 255M, and conductor casing was set at 254M without any problems.

SUMMARY OF EVENTS

OPERATOR: STATOIL

WELL NO. 34/10-3

26" **HOLE/** 20" **CASING INTERVAL**

Drilled 17½" pilot hole to 586M.
The hole was opened to 374M with 26" underreamer. Due to mechanical failure on slip joint, riser was pulled and the hole was opened with 26" hole opener. 20" casing was run and set at 571M.

SUMMARY OF EVENTS

OPERATOR: STATOIL

WELL NO. 34/10-3

17-1/2" **HOLE/** 13-3/8" **CASING INTERVAL**

The 17-1/2" hole was drilled with no problems to 1488M.
300 bbls. mud were lost to formation at 1400-1435M.
Formation sealed off by itself.
The 13-3/8" casing was run and set at 1475M.
450 bbls. mud were lost through leaking slip joint, while running casing.

SUMMARY OF EVENTS

OPERATOR: STATOIL

WELL NO. 34/10-3

12-1/4" **HOLE/** 9-5/8" **CASING INTERVAL**

13-3/8" shoe was drilled out with 1.15 s.g. Mud weight was then increased to 1.55 s.g. by the end of this interval. That was drilled to 1820M.
High gas content was circulated out on wiper trip so mud weight was raised to 1.60 s.g.
Prior to run 9-5/8" casing that was run and set at 1812M with no problems.

SUMMARY OF EVENTS

OPERATOR: STATOIL

WELL NO. 34/10-3

8-1/2" **HOLE/** 7" **CASING INTERVAL**

This section was drilled with no problems to 2347M.
Eight cores were cut from 1904M to 2013M.
The 7" liner were run and set at 2346M.

SUMMARY OF EVENTS

OPERATOR: STATOIL

WELL NO. 34/10-3

6" **HOLE/** _____ **CASING INTERVAL**

This last section was drilled to 2802M with no problems. 200 bbls. of viscous mud were mixed in order to clean hole for junk.

The 6" hole was plugged and testing procedure could start.

The 34/10-3 was tested, plugged and abandoned.

OPERATOR STATOIL

WELL NO. 34/10-3

MATERIAL CONSUMPTION & COST ANALYSIS

36" HOLE DRILLED TO 257 Meters ~~Feet~~ 30" CASING SET AT 254 Meters ~~Feet~~

ACTUAL AMOUNT OF HOLE DRILLED 55 Meters ~~Feet~~ DAYS ON INTERVAL 3

DRILLING FLUID SYSTEM SPUD MUD

MATERIAL	UNIT SIZE	PROG.	USED	VARIANCE ±	COST
BENTONITE	BULK M/T	20	27	+7	$ 7.290.-
CAUSTIC SODA	25KG	20	9	-11	$ 94.50
BARITE	BULK M/T	10	32	+22	$ 3.680.-

COST/DAY $ 3.688.17

TOTAL COST FOR INTERVAL $ 11.064.50

COST/Mt. or Ft. $ 201.17

PROG. COST FOR INTERVAL $ 6.360.-

ENGR. COST $ 1.050.-

COST VARIANCE FOR INTERVAL + $ 4.704.50

OPERATOR STATOIL

WELL NO. 34/10-3

MATERIAL CONSUMPTION & COST ANALYSIS

26" HOLE DRILLED TO 586 Meters ~~Feet~~ 20" CASING SET AT 571 Meters ~~Feet~~

ACTUAL AMOUNT OF HOLE DRILLED 329 Meters ~~Feet~~ DAYS ON INTERVAL 7

DRILLING FLUID SYSTEM SPUD MUD

MATERIAL	UNIT SIZE	PROG.	USED	VARIANCE ±	COST
BENTONITE	BULK M/T	0	23	+23	$ 6.210.-
BENTONITE	50KG	510	240	-270	$ 3.000.-
BARITE	BULK M/T	55	23	-32	$ 2.645.-
CAUSTIC SODA	25KG	12	61	+49	$ 640.50
SODA ASH	50KG	8	6	-2	$ 99.-
LIME	25KG		13	+13	$ 55.25

COST/DAY $ 1.807.11 TOTAL COST FOR INTERVAL $ 12.649.75

COST/Mt. or Ft. $ 38.45 PROG. COST FOR INTERVAL $ 12.958.-

ENGR. COST $ 3.150.- COST VARIANCE FOR INTERVAL - $ 308.25

OPERATOR STATOIL

WELL NO. 34/10-3

MATERIAL CONSUMPTION & COST ANALYSIS

17-1/2" HOLE DRILLED TO 1488 Meters ~~Feet~~ 13-3/8" CASING SET AT 1475 Meters ~~Feet~~

ACTUAL AMOUNT OF HOLE DRILLED 902 Meters ~~Feet~~ DAYS ON INTERVAL 7

DRILLING FLUID SYSTEM WYOMING BENTONITE/LIGNOSULFONATE

MATERIAL	UNIT SIZE	PROG.	USED	VARIANCE ±	COST
BENTONITE	50KG	450	365	-85	$ 4.562.50
CAUSTIC SODA	25KG	65	60	-5	$ 630.-
LIGNOSULFONATE	25KG	280	144	-136	$ 2.160.-
BARITE	BULK M/T	153	46	-107	$ 5.290.-
SODIUM BICARBONATE	50KG	5	-	-5	$ 0.-
DRISPAC REGULAR	50LB	10	-	-10	$ 0.-
SODA ASH	50KG	-	1	+1	$ 16.50

COST/DAY $ 1.808.43 TOTAL COST FOR INTERVAL $ 12.659.-

COST/Mt. or Ft. $ 14.03 PROG. COST FOR INTERVAL $ 29.485.-

ENGR. COST $ 3.150.- COST VARIANCE FOR INTERVAL - $ 16.826.-

OPERATOR STATOIL

WELL NO. 34/10-3

MATERIAL CONSUMPTION & COST ANALYSIS

12-1/4" HOLE DRILLED TO 1820 Meters ~~Feet~~ 9-5/8" CASING SET AT 1812 Meters ~~Feet~~

ACTUAL AMOUNT OF HOLE DRILLED 332 Meters ~~Feet~~ DAYS ON INTERVAL 5

DRILLING FLUID SYSTEM GEL/LIGNO

MATERIAL	UNIT SIZE	PROG.	USED	VARIANCE ±	COST
BARITE	BULK M/T	280	329	+49	$ 37.835.-
BENTONITE	50KG	270	153	-117	$ 1.912.50
LIGNOSULFONATE	25KG	155	229	+74	$ 3.435.-
CAUSTIC SODA	25KG	50	88	+38	$ 924.-
CMC	25KG	35	58	+23	$ 2.900.-
DRISPAC REGULAR	50Lb	0	4	+4	$ 520.-
DRISPAC SUPERLO	50LB	15	15	-	$ 2.130.-
SODA ASH	50KG	0	2	+2	$ 33.-
BICARBONATE	50KG	0	2	+2	$ 33.-

COST/DAY $ 9.944.50 TOTAL COST FOR INTERVAL $ 49.722.50

COST/Mt. or Ft. $ 149.77 PROG. COST FOR INTERVAL $ 42.305.-

ENGR. COST $ 2.250.- COST VARIANCE FOR INTERVAL + $ 7.417.50

OPERATOR STATOIL

WELL NO. 34/10-3

MATERIAL CONSUMPTION & COST ANALYSIS

8-1/2" HOLE DRILLED TO 2347 Meters ~~Feet~~ 7" CASING SET AT 2346 Meters ~~Feet~~

ACTUAL AMOUNT OF HOLE DRILLED 527 Meters ~~Feet~~ DAYS ON INTERVAL 16

DRILLING FLUID SYSTEM GEL/LIGNOSULFONATE

MATERIAL	UNIT SIZE	PROG.	USED	VARIANCE ±	COST
BARITE	BULK M/T	500	284	-216	$ 32.660.-
WYOMING BENTONITE	50KG	290	36	-254	$ 450.-
CAUSTIC SODA	25KG	115	57	-58	$ 598.50
LIGNOSULFONATE	25KG	400	126	-274	$ 1.890.-
DRISPAC SUPERLO	50LB	20	19	-1	$ 2.698.-
CMC	25KG	30	15	-15	$ 750.-
LIGNITE	50LB	300	0	-300	$ 0.-

COST/DAY	$ 2.440.41	TOTAL COST FOR INTERVAL	$ 39.046.50
COST/Mt. or Ft.	$ 74.09	PROG. COST FOR INTERVAL	$ 78.672.50
ENGR. COST	$ 6.150.-	COST VARIANCE FOR INTERVAL	- $ 39.626.-

OPERATOR STATOIL

WELL NO. 34/10-3

MATERIAL CONSUMPTION & COST ANALYSIS

6" HOLE DRILLED TO 2802 Meters ~~Feet~~ - CASING SET AT - Meters Feet

ACTUAL AMOUNT OF HOLE DRILLED 455 Meters ~~Feet~~ DAYS ON INTERVAL 47

DRILLING FLUID SYSTEM LIGNOSULFONATE/BENTONITE

MATERIAL	UNIT SIZE	PROG.	USED	VARIANCE ±	COST
BARITE	BULK M/T		334		$ 38.410.-
BENTONITE	50KG		326		$ 4.075.-
LIGNOSULFONATE	25KG		182		$ 2.730.-
CAUSTIC SODA	25KG		58		$ 609.-
CMC	25KG		37		$ 1.850.-
DRISPAC SUPERLO	50LB		23		$ 3.266.-
DRISPAC REGULAR	50LB		2		$ 260.-
SODA ASH	50KG		4		$ 66.-
BICARBONATE	50KG		7		$ 115.

COST/DAY $ 1.093.22 TOTAL COST FOR INTERVAL $ 51.381.50

COST/Mt. or Ft. $ 112.93 PROG. COST FOR INTERVAL -

ENGR. COST $14.200.- COST VARIANCE FOR INTERVAL -

OPERATOR STATOIL

WELL NO. 34/10-3

TOTAL CONSUMPTION & COST ANALYSIS

TOTAL DEPTH 2802 Meters ~~Feet~~ TOTAL HOLE DRILLED 2600 Meters ~~Feet~~

TOTAL DAYS 85

MATERIAL	UNIT SIZE	PROG.	USED	VARIANCE ±	COST
BARITE	BULK M/T		1048		$ 120.520.-
BENTONITE	BULK M/T		50		$ 13.500.-
BENTONITE	50KG		1120		$ 14.000.-
LIGNOSULFONATE	25KG		681		$ 10.215.-
CAUSTIC SODA	25KG		333		$ 3.496.50
CMC	25KG		110		$ 5.500.-
DRISPAC SUPERLO	50LB		57		$ 8.094.-
DRISPAC REGULAR	50LB		6		$ 780.-
BICARBONATE	50KG		9		$ 148.50
LIME	25KG		13		$ 55.25
SODA ASH	50KG		13		$ 214.50

COST/DAY $ 2.076.75 TOTAL COST $ 176.523.75

COST/Mt. or Ft. $ 67.89 PROG. COST $ 169.780.50

ENGR. COST $ 29.950.- COST VARIANCE + $ 6.743.25

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Mud Properties Record

WELL NAME 34/10-3 AREA NORTH SEA

OPERATOR STATOIL RIG. NORSKALD

MUD SYSTEM LIGNOSULFONATE/BENTONITE ENGINEERS ASBJØRNSEN, LARSEN, HELLSTRAND, ÅRSETH

Day No.	DATE 1979	DEPTH FEET ☐ METERS ☐	MUD PROPERTIES																						OPERATION REMARKS
			DENSITY PPG ☐ SG ☐	VISCOSITY sec/qt	A.V. cps	P.V. cps	Y.P. #/100 sq.ft.	GELS 0/10	FLUID LOSS 30 Min cc's	CAKE 32 nds	H.T.H.P. cc's	pH	Filtrate Analysis Cl⁻ ppm	Ca. ++ ppm	Pf	RETORT % OIL	% SOLIDS	% SAND	BENTONITE #/BBL	POTASH #/BBL	POLYMER #/BBL	"N"	"K"	
2	15.3.		1.02	86				/	N/C			10.0													Drl. 36" hole.
3	16.	257	1.02	38	15	5	20	10/12	N/C			10.0													Drl. cmt. 26" bit. Made riser connect.
4	17.	257	1.02	37	14	5	18	9/12	N/C			10.0													RIH w/17½" bit. Slip joint leak.
5	18.	381	1.08	44	23	6	34	18/26	N/C			10.0						TR							Drl. 17½" pilot hole.
6	19.	586	1.09	42	19	6	26	17/25	N/C			9.5						TR							Drl 17½". Logging.
7	20.	586	1.09	38	19	6	23	16/25	N/C			9.5			.05			TR							Underreaming 26". Balljoint leaking.
8	21.	586	1.05	100	28	6	46	/	N/C			9.8	4	120	0.1										u/ream 26". Displ.hole to high v.mud.Wi.trip.
9	22.	571		40	15	8	14	8/14	N/C																Run + cement 20" casing.
10	23.	571	1.06	40	15	8	14	8/14	N/C																Mix. mud running BOP.
11	24.		1.06	40	15	8	14	8/14	N/C			11.0													RIH 17½" drl., cmt. with seawater.
12	25.	962	1.14	41	19	13	12	6/18	20	4		10.5	14	160	0.2		10	TR	15			0.60			Drl.shoe.L/off=13x4 lb/gal. Drlg.
13	26.	1170	1.14	42	20	13	14	10/26	15	2		10.7	13	160	0.2		10	TR	15			0.57			Drl. trip.WOW.RIH. Drl.
14	27.	1435	1.14	42	21	12	18	8/24	12	2		9.5	9	200	0.2		10	0.5	17.5			0.49	1.46		Drl. lost mud to sandstone. POOH.
15	28.	1488	1.14	48	25	15	20	16/45	13	2		9.5	8	220	0.1		10	0.3	17.5			0.51	1.45		RIH drlg. to 1488. Wi.trip. POOH logging

REMARKS

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Mud Properties Record

WELL NAME 34/10-3 AREA NORTH SEA

OPERATOR STATOIL RIG. NORSKALD

MUD SYSTEM GEL/LIGNO ENGINEERS ASBJØRNSEN, LARSEN, HELLSTRAND, ÅRSETH

Day No.	DATE	DEPTH (FEET ☐ METERS ☒)	MUD PROPERTIES: DENSITY PPG ☐ SG ☒	VISCOSITY: sec/qt	A.V. cps	P.V. cps	Y.P. #/100 sq.ft.	GELS: 0 / 10	FLUID LOSS 30 Min cc's	CAKE 32 nds	H.T.H.P. cc's	pH	Filtrate Analysis: Cl⁻ ppm x1000	Ca ++ ppm	Pf /Mf	RETORT: % OIL	% SOLIDS	% SAND	BENTONITE #/BBL	POTASH #/BBL	POLYMER #/BBL	"N"	"K"	OPERATION REMARKS
1979																								
16	29.	1488	1.16	47	30	20	20	10/30	15	2		9.8	10	280	0.15		10	TR	17.5			0.58	1.04	Check trip. Running casing.
17	30.	1488	1.16	42	20	13	14	6/20	12	2		9.6	9	220	0.10			TR	17.5					Run 13-3/8" csg. Loosing mud.through
18	31.	1488	1.16	40	19	14	10	2/5	10	1		10.3	9	180	0.15			TR	15					slip joint. Work on slip joint. Build.
19	1.4	1530	1.50	50	34	23	22	22/56	12	2		10.6	9	160	.25		14	3/4	17.5					new mud.Drl. cmt. & new formation.
20	2.	1810	1.50	43	19	15	8	1/6	6.0	1		11.0	14	120	1.2		15	1/4	22.0			.72	.25	Drl. ahead.
21	3.	1820	1.55	44	16.5	12	9	1/9	5.5			11.0	14	120	1.2		18	TR	22.5			.65		Circ. weight up to 13.0.
22	4.	1820	1.60	46	26	20	12	8/25	5.5	1		11.0	12	120	1.2		24	TR	22.5					Circ. logg. Circ. out 1350 units gas, weigh
23	5.	1820	1.60	47	27	21	12	8/30	5.5	1		11.0	12	120	1.2		23	TR	22.5					up to 1.60. Run, cmt. 9-5/8" csg.
24	6.	1820	1.60	47	22	17	10	8/35	5.5	1		11.0	12	160	1.2		23	TR	22.5					Drl. csg. shoe.
25	7.	1865	1.78	50	25	18	14	4/38	6.0	2		10.0	12	120	.23/.4		25	1/2	20					Incr. mud weight 1.60>1.78 SG.
26	8.	1919	1.78	47	25	20	11	5/42	4.9	1		11.2	11.5	80	2.6/4.6		24	.3	20					Cut core no. 1.
27	9.	1936	1.78	50	25	16	11	3/20	4.2	1	14.2	11.0	12	140	1.9/3.7		26	.5	20					Cut core no. 2+3.
28	10.	1953	1.78	48	24	18	11	3/17	4.8	1	15.2	11.0	12	100	1.6/2.7		25	.3	21					Cut core no. 4.
29	11.	1972	1.78	53	26.5	18	9	3/27	4.4	1	15	10.5	11.5	160	1.7/3.3		25	.3	22					Cut core no. 5.

REMARKS

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Mud Properties Record

WELL NAME 34/10-3 AREA NORTH SEA

OPERATOR STATOIL RIG. NORSKALD

MUD SYSTEM BENTONITE/LIGNOSULFONATE ENGINEERS ASBJØRNSEN, LARSEN, HELLSTRAND, ÅRSETH

Day No.	DATE 1979	DEPTH FEET ☐ METERS ☒	MUD PROPERTIES: DENSITY PPG ☐ SG ☒	VISCOSITY: sec/qt	A.V. cps	P.V. cps	Y.P. #/100 sq.ft.	GELS 0/10	FLUID LOSS 30 Min cc's	CAKE 32 nds	H.T.H.P. cc's	pH	Filtrate Analysis: Cl⁻ ppm x1000	Ca ++ ppm	Pf/Mf	RETORT: % OIL	% SOLIDS	% SAND	BENTONITE #/BBL	POTASH #/BBL	POLYMER #/BBL	"N"	"K"	OPERATION REMARKS
30	12.	1992	1.78	51	25.5	18	12	4/30	4	1	11	11.0	11	160	1.7/3.2		26	.3	22						Cut core no. 6.
31	13.	2013	1.78	52	26	20	10	3/18	4	1		10.5	11	200	1.3/2.6		25	.4	22.5						Cut core no. 7.
32	14.	2117	1.78	51	24	19	10	3/21	3.6	1	15.2	11.0	11.5	100	1.5/2.8		26	1/4	22.0						Cut core no. 8, drl. 8½" hole.
33	15.	2200	1.78	52	23.5	19	9	3/26	3.4	2	15.8	11.0	11	120	1.5/2.7		25	TR	22.0						Drl. 8½" hole, trip for new bit.
34	16.	2340	1.75	49	25.5	21	9	3/22	3.8	2	15.0	11.0	10.5	160	1.0/2.3		26	TR	22.5						Drl. 8½" hole, cut mudwt. to 1.75.
35	17.	2347	1.75	52	26.5	22	9	2/16	3.8	1	15.0	10.5	10.5	140	0.9/2.2		25	TR	22.5						Ready for logging.
36	18.	2347	1.75	50	25.5	21	9	2/14	4.0	1	15.4	10.5	10.5	140	1.0/1.9		24	TR	22.0						Logging.
37	19.	2347	1.75	53	25.0	20	10	3/23	3.7	1	15.2	11.0	11	80	1.5/2.8		24	TR	22.5						Logging.
38	20.	2347	1.75	50	25	20	10	4/38	3.8	1	15.0	10.8	11	80	1.3/2.5		24	TR	20						Run 7" liner.
39	21.	2347	1.75	49	23	18	10	3/27	4	1	15.2	10.8	10.5	100	1.4/2.6		24	TR	20						Break down DP.
40	22.	2347	1.74	46	20	16	8	2/23	5.6	2	17.5	11.0	11	130	1.5/3.2		23	TR	15						Pulling BOP.
41	23.	2347	1.74	46	20	16	8	2/23	5.6	2	17.5	11.0	11	130	1.5/3.2		23	TR	15						Testing BOP.
42	24.	2347	1.74	46	20	16	8	2/23	5.6	2	17.5	11.0	11	130	1.5/3.2		23	TR	15						Pulling BOP (leak).
43	25.	2347	1.74	46	20	16	8	2/23	5.6	2	17.5	11.0	11	130	1.5/3.2		23	TR	15						Landing and testing BOP.

REMARKS

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Mud Properties Record

MUD SYSTEM: BENTONITE/LIGNOSULFONATE

WELL NAME: 34/10-3 AREA: NORTH SEA

OPERATOR: STATOIL RIG: NORSKALD

ENGINEERS: ASBJØRNSEN, LARSEN, HELLSTRAND, ÅRSETH

Day No.	DATE 1979	DEPTH FEET ☐ METERS ☒	MUD PROPERTIES																							OPERATION REMARKS
			DENSITY PPG ☐ SG ☒	VISCOSITY sec/qt	A.V. cps	P.V. cps	Y.P. #/100 sq.ft.	GELS 0/10	FLUID LOSS 30 Min cc's	CAKE 32 nds	H.T.H.P. cc's	pH	Filtrate Analysis Cl⁻ ppm x1000	Ca ++ ppm	Pf /Mf	RETORT % OIL	% SOLIDS	% SAND	BENTONITE #/BBL	POTASH #/BBL	POLYMER #/BBL	"N"	"K"			
44	26.	2347	1.72	50	27	20	14	4/56	5.4	2	21.0	11.5	12	250	2.7/4.5		22	TR	16.2							Logging.
45	27.	2347	1.72	50	27	20	14	4/56	5.4	2	21.0	11.5	12	250	2.7/4.5		22	TR	16.2							Work on draw block.
46	28.	2362	1.60	53	30	23	14	6/48	5.4	2	17.0	11.0	12	240	3.5/6.5		20	TR	22.5							Mud wt. cut to 1.60.
47	29.	2397	1.60	50	24.5	16	17	3/50	5.4	2	18.2	11.5	11	150	3.5/5.0		20	TR	20.0							RIH with 6" bit.
48	30.	2453	1.60	51	22	17	10	3/40	4.8	2	15.4	11.4	10	80	3.2/4.4		20	TR	20.0							Tripping in order to
49	1.5.	2468	1.60	50	17	20	15	4/35	5.0	2	16.0	11.3	10	90	3.0/4.5		20	TR	20.0							core. No activity due to bad weather.
50	2.		1.60	50	22.5	17	11	2/12	5.0	2	15.1	11.3	10.5	80	2.7/5.0		20	TR	17.5							Coring.
51	3.	2512	1.60	49	19.5	16	7	2/12	5.2	2	15.0	11.4	11	120	2.5/5.3		20	TR	17.5							~~Drill POOH to core.~~
52	4.	2512	1.60	50	18	15	6	2/12	5.0	2	15.0	11.3	10	160	2.0/4.5		20	TR	17.5							Lost corebit. Milling.
53	5.	2512	1.60	50	20.5	17	7	2/10	5.0	1	15.6	11.3	10	140	1.6/3.1		20	TR	20.0							RIH w/junk basket ~~POOH, logg.~~
54	6.	2512	1.60	51	21.5	17	7	2/12	4.5	1	15.0	11.5	10.5	140	1.7/3.2		21	TR	20.0							Logging.
55	7.	2512	1.60	51	24	20	8	2/10	4.8	1	15.2	11.5	10.2	140	1.7/3.3		21	.3	20.0							Milling.
56	8.	2512	1.60	51	23.5	20	7	2/9	4.9	1	15.1	11.4	10	140	1.6/2.9		20	.3	20.0							Mill and fish for junk.
57	9.	2512	1.60	53	20.5	22	7	2/9	4.4	1	15.0	11.3	10.2	140	1.5/3.1		20	.3	20.0							Change BHA, RIH ~~w/junk basket.~~

REMARKS

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Mud Properties Record

WELL NAME 34/10-3 AREA NORTH SEA

OPERATOR STATOIL RIG. NORSKALD

MUD SYSTEM BENTONITE/LIGNOSULFONATE ENGINEERS ASBJØRNSEN, LARSEN, HELLSTRAND, ÅRSETH

Day No.	DATE 1979	DEPTH FEET ☐ METERS ☒	MUD PROPERTIES: DENSITY PPG ☐ SG ☒	VISCOSITY: sec/qt	A.V. cps	P.V. cps	Y.P. #/100 sq.ft.	GELS 0/10	FLUID LOSS 30 Min cc's	CAKE 32 nds	H.T.H.P. cc's	pH	Filtrate Analysis: Cl ppm x1000	Ca ++ ppm	Pf	RETORT: % OIL	% SOLIDS	% SAND	BENTONITE #/BBL	POTASH #/BBL	POLYMER #/BBL	"N"	"K"	OPERATION REMARKS
58	10.	2524	1.60	52	24.5	20	9	2/11	4.1	1	14.5	11.4	10	150	1.4 2.7		20	.3	20.0						Fish w/RCB, pump slug.
59	11.	2544	1.60	50	22	19	7	2/10	4.8	2	15.6	11.4	9	130	1.8 3.4		19	.25	20.0						Drill POOH, testing BOP.
60	12.	2574	1.60	54	24.5	21	8	2/10	4.3	1	15.3	11.4	9	130	1.4 2.7		19	.25	20.0						RIH Drilling.
61	13.	2649	1.60	53	24.5	21	7	2/9	3.7	1	14.5	11.3	9	120	1.5 2.9		20	.25	20.0						Drill POOH, change bit, RIH.
62	14.	2705	1.60	53	24.5	21	7	2/7	3.8	1	13.6	11.4	9	130	1.7 3.3		20	TR	20.0						Drill POOH, change bit.RIH, drill.
63	15.	2749	1.60	53	23	20	6	2/7	3.5	1	13.3	11.5	9	120	2.1 3.7		19	.25	20.0						Drill POOH, changed bit. RIH.
64	16.	2802	1.60	49	22.5	19	7	2/7	3.8	1	13.5	11.5	9	120	1.5 2.9		19	TR	20.0						Drilling.
65	17.	2802	1.80	55	26	21	12	2/12	3.7	1	13.8	11.3	9	130	1.7 3.3		20	.25	20.0						Cmt. plug no. 1 and 2.
66	18.	2802	1.80	56	28	23	10	3/29	4.1	1	14.2	11.3	8.5	120	1.4 2.7		25	.3	20.0						Squeeze cement.
67	19.	2802	1.80	60	31	26	10	3/27	4.2	1	14.5	11.0	8.7	120	1.35 2.6		24.5	.25	20.0						Perforate, cement perforations.
68	20.	2802	1.80	60	33	28	10	4/32	4.9	2	15.0	10.8	9	150	1.8		25	.5	20.0						Drill cement.
69	21.	2802	1.80	57	29	25	8	3/27	5.1	2	14.6	10.5	8.7	150	1.6		25	.5	20.0						Test csg., cement leaking zone.
70	22.	2802	1.80	60	33	28	12	3/36	5.2	2	15.0	10.7	8.8	180	1.8		25	.3	20.0						Cmt. perforated zone.
71	23.	2802	1.80	58	32	27	10	3/34	5.0	2	15.0	10.7	8.8	200	1.85		25	.5	20.0						Squeeze cement into perforated zone.

REMARKS

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Mud Properties Record

WELL NAME 34/10-3 AREA NORTH SEA
OPERATOR STATOIL RIG. NORSKALD
MUD SYSTEM BENTONITE/LIGNOSULFONATE ENGINEERS ASBJØRNSEN, LARSEN, HELLSTRAND, ÅRSETH

Day No.	DATE 1979	DEPTH FEET ☐ METERS ☒	MUD PROPERTIES: DENSITY PPG ☐ SG ☒	VISCOSITY: sec/qt	A.V. cps	P.V. cps	Y.P. #/100 sq.ft.	GELS 0/10	FLUID LOSS 30 Min cc's	CAKE 32 nds	H.T.H.P. cc's	pH	Filtrate Analysis: Cl⁻ ppm x1000	Ca ++ ppm	Pf/Mf	RETORT: % OIL	% SOLIDS	% SAND	BENTONITE #/BBL	POTASH #/BBL	POLYMER #/BBL	"N"	"K"	OPERATION REMARKS
72	24.	2802	1.80	52	28.5	24	9	3/34	5.3	2	15.5	10.5	9	180	1.8		25	.5	20.0						Run packer, perforate.
73	25.	2802	1.80	51	27	23	8	3/32	5.4	2	15.5	10.5	9	180	1.7		25	.5	20.0						RIH w/test string.
74	26.	2802	1.79	55	31	26	11	5/35	5.5	2		10.7	9	180	1.7		25	.5	20.0						Testing.
75	27.	2802	1.80	53	27.5	23	9	5/34	5.6	2		10.6	8	190	1.3 2.2		25	.5	20.0						Run junk basket, circ. and squeeze.
76	28.	2802	1.80	57	30	25	10	5/35	5.6	2		10.8	8	200	1.4 2.4		25	.5	20.0						Drill cement plug, logg.
77	29.	2802	1.80	56	30.5	25	11	6/35	5.8	2		10.8	8	200	1.3 2.5		25	.5	20.0						Squeeze, cement
78	30.	2802	1.80	55	30	25	10	5/34	5.7	2		10.8	8	180	1.4 2.6		25	.5	20.0						Cement squeeze o.k.
79	31.	2802	1.80	53	26.5	22	9	4/33	5.2	2		10.9	8	120	1.6 2.8		25	.5	20.0						Testing.
80	1.6	2802	1.80	53	26	22	8	4/32	5.2	2		10.8	8	120	1.5 2.8		25	.5	20.0						Prod. testing.
81	2.	2802	1.80	51	25	20	10	4/32	5.1	2		11.1	8	120	1.6 2.8		25	.5	20.0						Set plug.
82	3.	2802	1.79	49	24	20	8	4/32	5.1	2		11.0	8	120	1.6 2.7		25	.5	20.0						Run test string.
83	4.	2802	1.77	47	22	17	10	3/28	5.2	2		10.9	8	150	1.4 2.5		25	.5	20.0						Weight reduction due to leakage.
84	5.	2802	1.80	49	24	20	8	3/28	5.2	2		11.0	8	120	1.4 2.6		25	.5	21.0						Prepair for squeeze cmt.
85	6.	2802	1.80	45	22	19	6	3/26	5.3	2		11.0	8	130	1.4 2.6		25	.5	21.0						Hole plugged.

REMARKS

ANCHOR DRILLING FLUIDS AS

OSLO — STAVANGER

Drilling Fluid & Material Consumption Report

MUD SYSTEM: GEL/LIGNO

WELL NAME: 34/10-3 AREA: NORTH SEA

OPERATOR: STATOIL RIG: NORSKALD

ENGINEERS: ASBJØRNSEN, LARSEN, HELLSTRAND, ÅRSETH

Day No.	DATE 1979	ESTIMATED DAILY MUD VOLUMES: LOSSES SUB SURFACE	LOSSES SURFACE	VOLUME MUD BUILT	BULK MATERIALS: BARITE M/T	BENTONITE M/T	SACK MATERIALS: BENTONITE	CAUSTIC SODA	LIGNOSULF.	MATERIALS ADDED TO CONTROL PROPERTIES — THINNERS		POLYMERS				OTHERS: LIME	SODA ASH
1	14.3			1080		12		5									
2	15.	900		430	14	6		1									
3	16.	30		600	18	9		3									
4	17.		120	411	10	5		3									
5	18.		111	200				3									
6	19.	60	400	885	5			15									
7	20.		350	455	8	4		5									
8	21.	1254		1300		14	11	17								8	
9	22.	1826		700			56	13								5	6
10	23.			420			173	5									
11	24.																
12	25.		89	350	10		70	4									1
13	26.		264	900	14		190	15	50								
14	27.	300	39	450	10		105	26	58								
FORWARD																	
ESTIMATED TOTALS		4370	1373	8181	89	50	605	115	108							13	7

REMARKS:

ANCHOR DRILLING FLUIDS AS

OSLO — STAVANGER

Drilling Fluid & Material Consumption Report

MUD SYSTEM: LIGNOSULFONATE/BENTONITE

WELL NAME: 34/10-3 AREA: NORTH SEA

OPERATOR: STATOIL RIG: NORSKALD

ENGINEERS: ASBJØRNSEN, LARSEN, HELLSTRAND, ÅRSETH

Day No.	DATE 1979	ESTIMATED DAILY MUD VOLUMES: LOSSES SUB SURFACE	LOSSES SURFACE	VOLUME MUD BUILT	BULK MATERIALS: BARITE M/T	BENTONITE M/T	SACK MATERIALS: BENTONITE	CAUSTIC SODA	LIGNOSULF.*	THINNERS			POLYMERS: DRISPAC SL	CMC	DRISPAC R			OTHERS: LIME	SODA ASH	BICARB.*							
15	28.			129				6	22																		
16	29.		190					5	14																		
17	30.	50	1207	360	12			4																			
18	31.			274	14		97	9	31						2												
19	1.4		150	234	117		56	5	20				1		2				2	2							
20	2.		200	265	30			53	135					38													
21	3.			250	117			13	38				4	20													
22	4.		50	50	51			8	5				10														
23	5.				20								2														
24	6.				11																						
25	7.				90			12	26				3	6													
26	8.				7			6	13																		
27	9.				18		4		11				1	4													
28	10.				17				8				2	1													
FORWARD		4370	1373	8181	89	50	605	115	108									13	7								
ESTIMATED TOTALS		4420	3170	9743	593	50	762	236	431				23	69	4			13	9	2							

REMARKS:

ANCHOR DRILLING FLUIDS AS

OSLO — STAVANGER

Drilling Fluid & Material Consumption Report

MUD SYSTEM: LIGNOSULFONATE/BENTONITE/CMC

WELL NAME: 34/10-3 AREA: NORTH SEA

OPERATOR: STATOIL RIG: NORSKALD

ENGINEERS: ASBJØRNSEN, LARSEN, HELLSTRAND, ÅRSETH

Day No.	DATE 1979	ESTIMATED DAILY MUD VOLUMES: LOSSES SUB SURFACE	LOSSES SURFACE	VOLUME MUD BUILT	BULK MATERIALS: BARITE BULK	BENTONITE BULK	SACK MATERIALS: BENTONITE	CAUSTIC	THINNERS: LIGNOSULF.				POLYMERS: DRISPAC SL	CMC	DRISPAC R			OTHERS: LIME	SODA ASH	BICARB.							
29	11.		15		11		10						2													
30	12.		10		5								2													
31	13.	60	90	60	8			2	16				2	3												
32	14.	22	10	20	16			7					2													
33	15.	90	58	100	26			9	15				1													
34	16.		20	133	15		22	6	33					1												
35	17.			20	5			3	4				2													
36	18.		11		12			4																		
37	19.		49		9																					
38	20.		13		14			8																		
39	21.				NONE																					
40	22.				NONE																					
41	23.				NONE																					
42	24.				NONE																					
FORWARD		4420	3170	9743	593	50	762	236	431				23	69	4			13	9	2							
ESTIMATED TOTALS		4592	3445	10075	714	50	794	275	499				34	73	4			13	9	2							

REMARKS:

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

Drilling Fluid & Material Consumption Report

WELL NAME 34/10-3 AREA NORTH SEA

OPERATOR STATOIL RIG. NORSKALD

MUD SYSTEM LIGNOSULFONATE/BENTONITE ENGINEERS ASBJØRNSEN, LARSEN, HELLSTRAND, ÅRSETH

Day No.	DATE 1979	ESTIMATED DAILY MUD VOLUMES: LOSSES SUB SURFACE	LOSSES SURFACE	VOLUME MUD BUILT	BULK MATERIALS: BARITE BULK	BENTONITE BULK	SACK MATERIALS: BENTONITE	CAUSTIC SODA	MATERIALS ADDED TO CONTROL PROPERTIES: THINNERS: LIGNOSULF.				POLYMERS: DRISPAC SL	CMC	DRISPAC R			OTHERS: LIME	SODA ASH	BICARB.							
43	25.																										
44	26.		45		15				23																		
45	27.		80																								
46	28.		313	330			120	7	12										4								
47	29.						5	8	20					6						3							
48	30.								36					10													
49	1.5			70	7																						
50	2.				6									2													
51	3.				1		4		1					5													
52	4.						6		3																		
53	5.						20	1	2				1														
54	6.																										
55	7.																										
56	8.				-								2														
FORWARD		4592	3445	10075	714	50	794	275	499				34	73	4			13	9	2							
ESTIMATED TOTALS		4592	3883	10475	743	50	949	291	596				37	96	4			13	13	5							

REMARKS:

ANCHOR DRILLING FLUIDS AS

OSLO — STAVANGER

Drilling Fluid & Material Consumption Report

WELL NAME 34/10-3 AREA NORTH SEA

OPERATOR STATOIL RIG. NORSKALD

MUD SYSTEM LIGNOSULFONATE/BENTONITE ENGINEERS ASBJØRNSEN, LARSEN, HELLSTRAND, ÅRSETH

Day No.	DATE 1979	ESTIMATED DAILY MUD VOLUMES: LOSSES SUB SURFACE	LOSSES SURFACE	VOLUME MUD BUILT	BULK MATERIALS: BARITE BULK	BENTONITE BULK	SACK MATERIALS: BENTONITE	CAUSTIC SODA	LIGNOSULF.	THINNERS			POLYMERS: DRISPAC SL	CMC	DRISPAC R			OTHERS: LIME	SODA ASH	BICARB.						
57	9.		60		11		10						3												
58	10.				6		11	1	10																
59	11.			30	16		11	5	1																
60	12.			60	5		29	8	1				1	1											
61	13.			73	7		12	6	59					13											
62	14.		50	70	7			6	12																
63	15.				2			6																	
64	16.				7								1												
65	17.		100		10		3						6												
66	18.			100	70		18						2												
67	19.	40			14		2						1												
68	20.		60		4		3	2																	
69	21.				10			4					1												
70	22.		80		24		12	4					1							1					
FORWARD		4592	3883	10475	743	50	949	291	596				37	96	4			13	13	5					
ESTIMATED TOTALS		4632	4233	10808	936	50	1060	333	679				53	110	4			13	13	6					

REMARKS:

ANCHOR DRILLING FLUIDS AS

OSLO — STAVANGER

Drilling Fluid & Material Consumption Report

WELL NAME 34/10-3 AREA NORTH SEA

OPERATOR STATOIL RIG. NORSKALD

MUD SYSTEM LIGNOSULFONATE/BENTONITE ENGINEERS ASBJØRNSEN, LARSEN, HELLSTRAND, ÅRSETH

Day No.	DATE 1979	ESTIMATED DAILY MUD VOLUMES: LOSSES SUB SURFACE	LOSSES SURFACE	VOLUME MUD BUILT	BULK MATERIALS: BARITE BULK	BENTONITE BULK	SACK MATERIALS: BENTONITE	CAUSTIC SODA	MATERIALS ADDED TO CONTROL PROPERTIES: LIGNOSULF.	THINNERS			POLYMERS: DRISPAC SL	CMC	DRISPAC			OTHERS: LIME	SODA ASH	BICARB.				
71	23.		50		13								1							1				
72	24.			10	17		4						2							2				
73	25.																							
74	26.				7		13																	
75	27.				2								1											
76	28.				16				2						1									
77	29.			30	2		11								1									
78	30.																							
79	31.				5																			
80	1.6																							
81	2.																							
82	3.																							
83	4.				8																			
84	5.				18		20																	
FORWARD		4632	4233	10808	936	50	1060	333	679				53	110	4			13	13	6				
ESTIMATED TOTALS		4632	4283	10848	1024	50	1108	333	681				57	110	6			13	13	9				

REMARKS.

ANCHOR DRILLING FLUIDS AS

OSLO — STAVANGER

Drilling Fluid & Material Consumption Report

WELL NAME 34/10-3 AREA NORTH SEA

OPERATOR STATOIL RIG. NORSKALD

MUD SYSTEM LIGNOSULFONATE/BENTONITE ENGINEERS ASBJØRNSEN, LARSEN, HELLSTRAND, ÅRSETH

Day No.	DATE 1979	ESTIMATED DAILY MUD VOLUMES: LOSSES SUB SURFACE	LOSSES SURFACE	VOLUME MUD BUILT	BULK MATERIALS: BARITE BULK	BENTONITE BULK	SACK MATERIALS: BENTONITE	CAUSTIC SODA	LIGNOSULF.	THINNERS			POLYMERS: DRISPAC SL	CMC	DRISPAC R			OTHERS: LIME	SODA ASH	BICARB.							
85	6.				24		12																			
FORWARD		4632	4283	10848	1024	50	1108	333	681				57	110	6			13	13	9						
ESTIMATED TOTALS		4632	4283	10848	1048	50	1120	333	681				57	110	6			13	13	9						

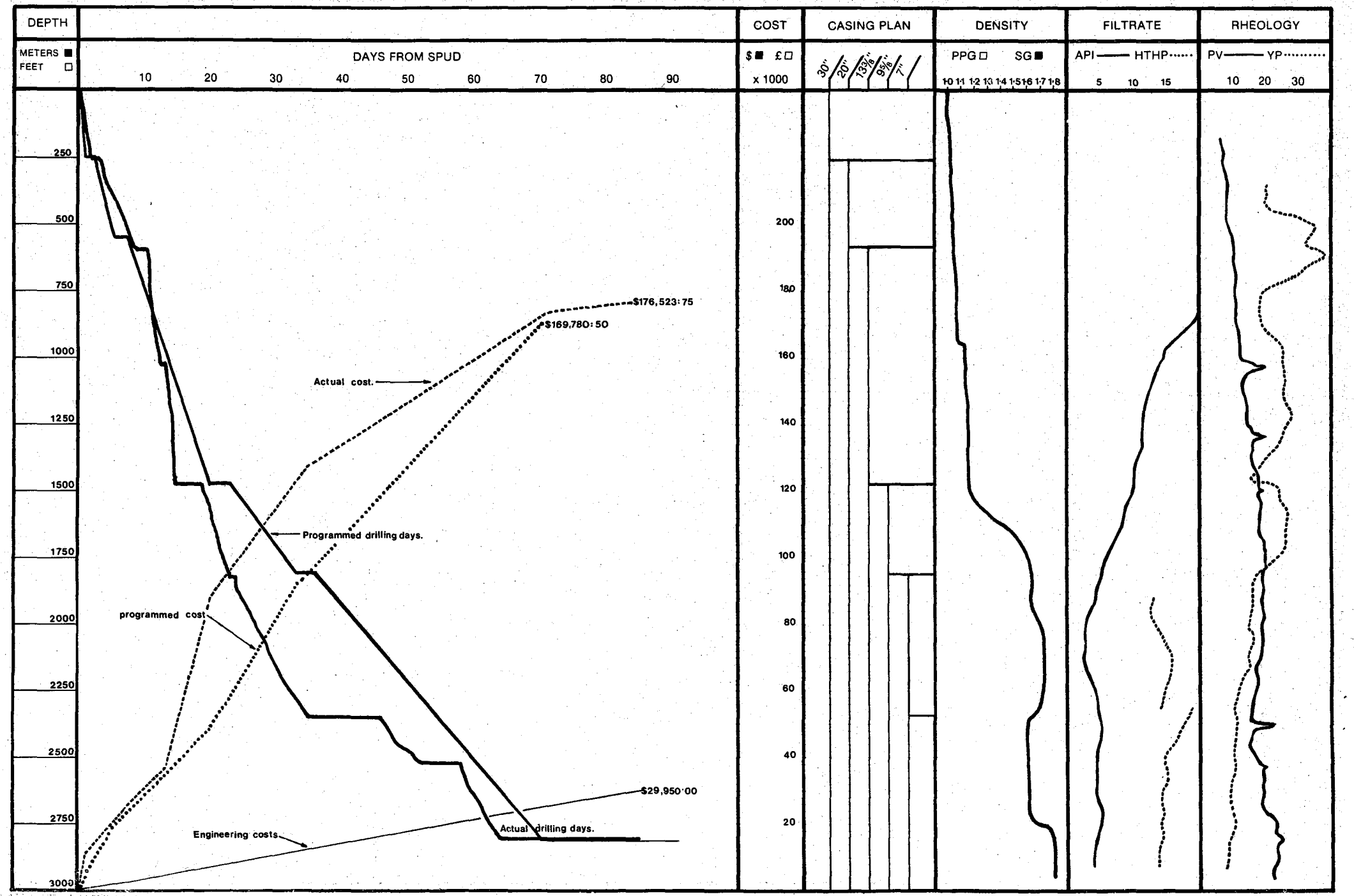
REMARKS:

ANCHOR DRILLING FLUIDS AS
OSLO — STAVANGER

GRAPHI-CAP

OPERATOR: STATOIL
WELL NAME: 34/10-3
CONTRACTOR: NORSKALD

PAGE NO: 1
SPUD DATE: 14·3·79
RIG:



III 14. DIRECTIONAL SURVEYS AND WELL PROFILE.

SINGLE SHOT SURVEY 34/10-3

12 September, 1979

Total Depth	Direction Deg	Direction Min	Angle Deg	Angle Min	Vertical Depth	Latitude Metres	Departure Metres	Vertical Section	Dog Leg
0	N	0 0 E	0	0	0.00	0.00 N	0.00 E	0.00	0.00
255	N	0 0 E	0	0	255.00	0.00 N	0.00 E	0.00	0.00
580	S	15 0 W	0	15	580.00	0.69 S	0.19 W	-0.71	0.02
1485	N	15 0 W	0	30	1484.97	1.22 N	1.73 W	0.74	0.02
1816	N	29 0 W	0	15	1815.96	3.25 N	2.45 W	2.52	0.02
1900	N	90 0 E	0	15	1899.96	3.41 N	2.36 W	2.70	0.16
1950	N	20 0 E	0	24	1949.96	3.57 N	2.19 W	2.90	0.24
2000	N	20 0 E	0	36	1999.96	3.98 N	2.04 W	3.33	0.12
2050	N	30 0 E	1	0	2049.95	4.61 N	1.73 W	4.02	0.26
2100	N	15 0 E	1	0	2099.95	5.41 N	1.40 W	4.87	0.16
2150	N	25 0 E	2	0	2149.93	6.62 N	0.92 W	6.17	0.63
2180	N	23 0 E	4	0	2179.88	8.06 N	0.29 W	7.72	2.03
2200	N	20 0 E	3	0	2199.85	9.19 N	0.17 E	8.93	1.55
2250	N	25 0 E	2	24	2249.79	11.37 N	1.06 E	11.26	0.39
2300	N	20 0 E	2	15	2299.75	13.24 N	1.84 E	13.27	0.15
2347	N	20 0 E	2	0	2346.72	14.88 N	2.44 E	15.01	0.16
2802	N	20 0 E	2	0	2801.44	29.80 N	7.87 E	30.82	0.00

The dogleg severity is in degrees per one hundred feet.
The vertical section was computed along N 14 48 E.

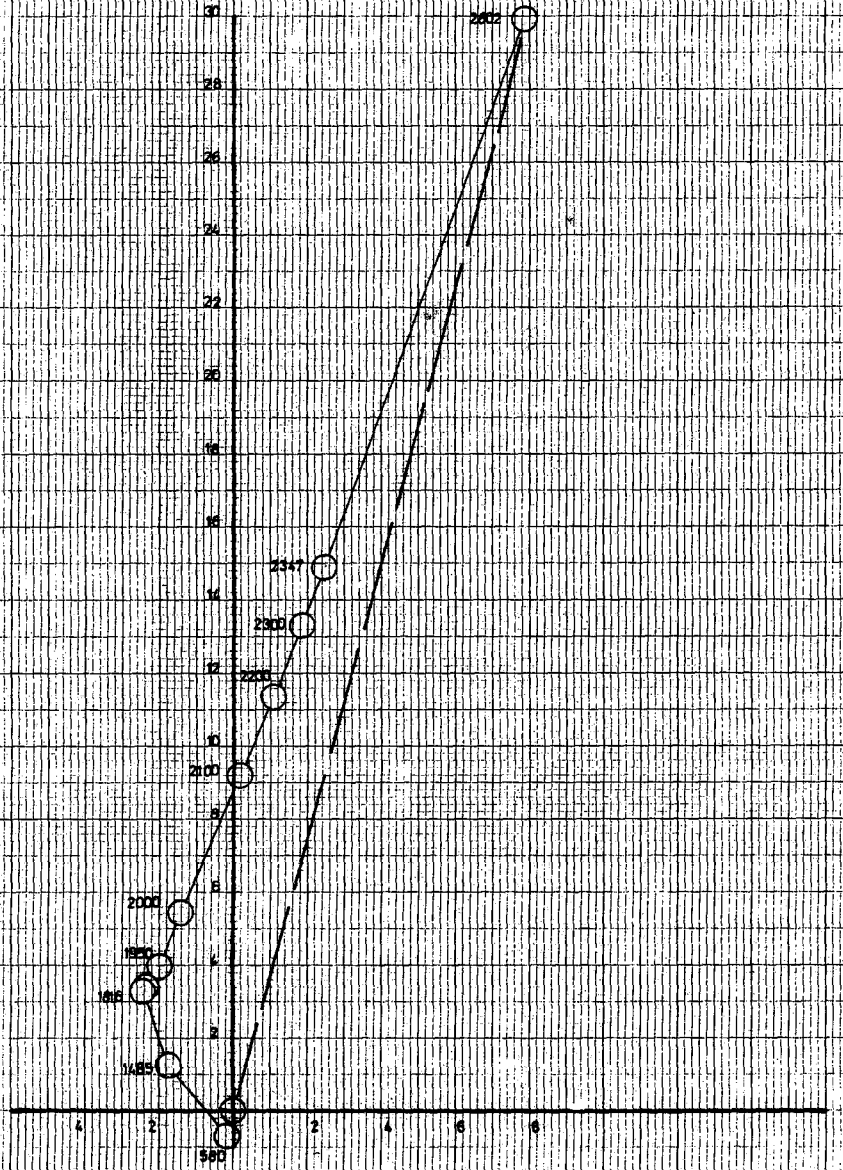
Based upon minimum curvature type calculations. The bottom hole displacement is 30.82 metres, in the direction of N 14 48 E
bottom hole displacement is relative to wellhead.
Vertical section is relative to wellhead.

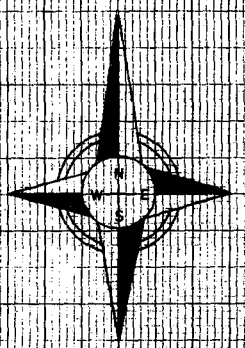
SPERRY SUN INTERNATIONAL INC.

FOR:

STATOIL

WELL Nº 34/10-3





14. SEPTEMBER 1979

HORIZONTAL SECTION

SCALE : ONE INCH = 2 METRES

IV SUMMARY OF PETROPHYSICAL PROPERTIES

4. SUMMARY OF PETROPHYSICAL PROPERTIES

Brent and Statfjord formation have been evaluated using electrical logs, RFT, core- and DST-data. Brent Formation penetrated the oil-water contact at 1972 m (RKB). Statfjord Formation is waterbearing. Brent is divided into three reservoir units; Ness, Etive and Rannoch. The table below list the average petrophysical parameters zone by zone:

FORMATION	INTERVAL	NET SAND THICKNESS	AV. POR. (%)	AVERAGE WATER SAT.	NET/GROSS
NESS *	1892-1979	33.0 / 38.25	27.3 / 26.8	38.5 / 42.8	0.41 / 0.44
ETIVE	1979-2002	22.25	32.4	100	0.97
RANNOCH	2002-2084	72.25	30.3	100	0.88
STATFJORD	2495-2715	100.25	18.9	100	0.46

* NET PAY / NET SAND

CUT-OFF CRITERION

$\emptyset$ < 12%

S_w > 65%

VSH > 40%

These results are based on a preliminary interpretation. A separate report will be made covering the final results of the petrophysical evaluation.

V TESTING OPERATIONS AND RESULTS

TESTING OPERATIONS AND RESULTS

1. DST operations

34/10-3 was the second well drilled in the Delta area in block 34/10. In the first well, 34/10-1, hydrocarbons were tested and proven to be present throughout the Brent sand. Testing indicated high productivity and good reservoir characteristics but also problems with sand production.

The purpose of testing 34/10-3 were therefore to:

- confirm continuity of pressure, temperature, reservoir characteristics and quality of reservoir fluid from 34/10-1 to the 34/10-3 fault block.

- investigate sand production and sand strenght on more details

- obtain sample of formation water

The test analysis is based on Statoil test analysis program package.

Comment:

The quality of the DST-data are not satisfactory because the tests were designed and carried out as sand tests. Conventional test analysis are uncertain when applied as such data and the results can therefore only be used as an indication of the reservoir properties.

DST summary data

Test results

DST no. 1: Performation: 1965 - 1970 m MSL
(1990 - 1995 m RKB) Ref: ISF/SONIC

Flow data (main flow periods):

Choke size 1/64"	Oil water rate m^3/d (STB/d)	BHP at 1948 M MSL bar (psi)
12	155 (970)	312.5 (4533)
14	170 (1080)	313.7 (4550)
16	255 (1600)	312.9 (4539)
16 + 8	320 (2000)	313.8 (4552)
20	420 (2600)	314.9 (4568)

Extrapolated reservoir pressure: 317.6 bar (4606 psi) at 1948 m MSL
Max. recorded temperature: 75.5°C (168°F at 1948 m MSL
Permeability: k = 1500 mD
Water density: 1.0294 gr/cc at 15°C

DST no. 2: Performation: 1910 - 1915 m MSL
(1935 - 1949 m RKB) Ref: ISF/SONIC

Flow data (main flow periods):

Choke size 1/64"	Oil/water rate m^3/d (STB/d)	Gas rate $10^3 Nm^3/d$ $10^3 scf/d$)	GOR Nm^3/m^3 (scf/STB)	BHP at 1890 m MSL bar (psi)
10	70(450)			311.3(4515)
12	120(750)			310.5(4503)
14	160(1000)			309.1(4483)
16	190(1200)	14.9(550)	78(460)	309.8(4493)
16+8	240(1500)	17.6(648)	73(430)	309.2(4485)
20	320(2000)	23.5(870)	74(435)	307.7(4463)
20+10	400(2500)	27.7(1020)	70(410)	307.3(4457)
20+14	450(2850)	31.7(1167)	70(410)	306.2(4440)

Extrapolated reservoir pressure: 315.5 bar (4547 psi) at 1890 m MSL
Max. recorded temperature: 72°C (162°F) at 1890 m MSL
Permeability: k = 3000 mD
Oil gravity: 29.9 API°
Gas sp. gr. 0.656 (Air = 1)

DST no. 3: Performation: 1870 - 1875 m MSL
(1895 - 1900 m RKB) Ref. ISF/
SONIC

Flow data (main flow periods):

Choke size 1/64"	Oil/water rate m^3/d (STB/d)	Gas rate $10^3 Nm^3/d$ ($10^3 scf/d$)
10	(650)	not measured

Extrapolated reservoir pressure: 308.2.bar (447 psi) at 1846 m MSL
Max. recorded temperature: 69.5°C (157°F) at 1846 m MSL
Permeability: k = 50 - 70 mD
Oil gravity: 29 API°

2. RFT operations

Repeat formation tester was run during the final logging through Brent and Dunlin formations at April 17th, 1979.

37 pressure tests were made (26 in Brent and 11 in Dunlin Formation).

The test program included one segregated sample to check for oil/water contact and one segregated sample in the oil zone. Because of problems with sand plugging the probe in the zones of interest (while pressure testing), no attempt was made to collect samples.

2 Amerada pressure gauges were run with the RFT. The pressure readings from these gauges are very scattered and can not be used in any analysis. It seems, however, that the Amerada pressures are higher (varying from 0 to 100 psi) than the RFT pressures.

No RFT was run in the Statfjord Formation.

3. RFT results and analysis

- Temperature and pressure corrections:

The calibration certificate for the RFT tool used is dated June-76. Since the tool has not been calibrated for 3 years, Schlumberger does not recommend to include their corrections. The tool was, however, calibreted vs. dead weight tester (at room temperature) one week before the test was run. At the pressure range of interest the RFT pressure was only t or 3 psi lower than the DWT pressure.

Based on this no corrections are made.

RFT results and analysis

Test no.	Depth (m MSL)	P-hyd(psig) Before/after	Set time (mins)	P-final (psig)	Remarks
1	1907.5	4807/4803	2½	4531	
2	2229	5615/5617	4½	5061	long build up
3	2215	5583/5575	10	5011	long build up
4	2214.5	5577/5573	½		tight
5	2206.5	5551/5549	3	4971	
6	2199.5	5531/5525	6	4957	long build up
7	2191.5	5505/5503	5	4958	long build up
8	2192	5505/5503	5½	4922	long build up
9	2188.5	5495/5492	3	4933	
10	2182	5475/5473	3	4921	
11	2180	5468/5466	3	4918	
12	2177.5	5458/5458	4	4910	
13	2055	5167/5164	4	4734	
14	2050	5154/5151	3	4727	
15	2042	5134/5132	3½	4716	
16	2033	5113/5109	3	4702	
17	2020	5079/5076	4	4682	
18	2012.5	5061/5058	4	4672	
19	1997	5025/5023	4	4647	long build up
20	1991	5008/5007	4	4643	
21	1982	4988/4986	3½	4633	
22	1977	4972/4971	4	4622	
23	1969	4947/4945	3½	4605	
24	1870	4714/4711	3½	4485	long build up*
25	1872	4719/4715	5	4493	long build up*
26	1875.5	4724/4726	4½	4501	
27	1893	4773/4766	3	4519	
28	1895	4773/4771	3½	4520	
29	1903	4789/4787	3½	4527	decreasing pressure*
30	1910	4804/4803	3	4537	
31	1914	4817/4813	3	4537	
32	1925	4845/4841	4	4549	
33	1928.5	4851/4847	4	4555	long build up*
34	1936	4871/4865	4	4559	
35	1944	4885/4883	3	4567	
36	1956	4920/4911	4	4582	
37	1972	4956/4950	3½	4605	

*Not included in analysis

VI MARINE REPORT

MARINE REPORT

1. Weather and anchor tension summary.

There was only about one day lost waiting on weather.

The maximum wind speed measured was in the 25-30 m/sec range. This occured only once, from the NW.

The predominant wind direction was from the NE, mostly between 5 and 15 m/sec.

Wave heights exceeded 10 m once, from the S. Waves in the 1-3 m range from the NE were most common.

The anchor tension never exceeded 120 tons, but on one occasion anchor no. 8 started slipping and had to be reset causing 6.5 hours of downtime.

LOCATION WEATHER DATA SUMMARY

statoil
Den norske stats oljeselskap a.s

WELL: 34/10-3 RIG: Norskald

TIME PERIOD: FROM 11.3 TO 8.6 - 1979

READINGS PR. MONTH: 30

WIND

dir. \ m/sec.	0 - 5	5 - 10	10 - 15	15 - 20	20 - 25	25 - 30	> 30	total
N		1	1					2
NNE		2	3					5
NE	1	4	10	2				17
ENE		2	1					3
E		3	2	1				6
ESE		1						1
SE		3	1	1	1			6
SSE		2	2					4
S		3	5	3				11
SSW		1	2	1				4
SW		2	6	1				9
WSW					1			1
W		2						2
WNW		1		2				3
NW	2	2	7			1		12
NNW			2					2
total	3	29	42	11	2	1		

WAVE

dir. \ height (m)	0 - 1	1 - 2	2 - 3	3 - 5	5 - 7	7 - 10	> 10	total
N				2				2
NNE		2	1					3
NE	2	7	7	2	1			19
ENE			1					1
E	1	2		1				4
ESE		2						2
SE		2	4	2				8
SSE	1	1		1	1			4
S		1	5	4			1	11
SSW		2		1	1			4
SW		4	4	2				10
WSW				1		1		2
W		1	2	1	1			5
WNW								
NW	1	1	5	2	2	1		12
NNW			1	2				3
total	5	25	30	21	6	2	1	

statoil

19 March 1979
MS/GL

3. NAVIGATION REPORT

RIG MOVE OF "NORDSKALD" TO 34/10-3.

1. Final position:

Lat.: 61° 12' 49.48"N Long.: 02° 11' 55.03"E

Accurary: ± 10 meters.

Rig heading: 310°.

Deviation from intended location: 7m - 90°.

(This deviation is the difference between final Pulse/8 position and intended Pulse/8 (seismic shot using Pulse/8).)

2. Navigation/positioning method

a) Navigation: Pulse/8 navigation system with computer and plotter.

Navigation contractor: Decca Survey Norway, Bergen.

Navigation engineer: Helge Sørdal.

b) Final positioning: Magnavox 1502 satellite positioning system.

Positioning contractor: A/S Geoteam, Oslo.

Positioning engineer: Leif Olav Horten.

20.000-9-76 Litografen 7933

3. Duration of move

Navigation equipment and personnel on board:	9 April 1979 at 1900 hours
Positioning equipment and personnel on board	9 April 1979 at 2300 hours
Start from Tananger	11 April 1979 at 0925 hours
Start run-in	12 April 1979 at 1750 hours
First anchor (no. 4) set	12 April 1979 at 1825 hours
Breach of pennant-wire anchor no. 6	12 April 1979 at 2355 hours
Problems with the cranes	13 April 1979 at 0300 hours
Cranes OK	13 April 1979 at 0630 hours
Start to pick up anchor no. 6 to put on a new pennant-wire	13 April 1979 at 1445 hours
Last piggy-back anchor set (no. 6)	13 April 1979 at 1855 hours
All anchors tensioned	13 April 1979 at 2150 hours

Total time from start of move till all anchors tensioned	60 hours, 25 minutes.
Down time due to crane problems	3 hours, 30 minutes.
Effective time from setting first anchor till last piggy-back anchor set	21 hours, 00 minutes.

4. Techniques/problems

To ensure good and continuous navigation control during run-in, a Pulse/8 receiver interfaced with computer and plotter was used. The Pulse/8 system performed well indicating move of the rig of less than 10-15 meters.

The satellite navigation system was to be used for final positioning. The new Magnavox 1502 system performed very well.

As the wind was south-easterly it was decided to drop anchor no. 4 during run-in. To control the rig during the run-in, one supply vessel was towing the rig.

After having set anchor no. 4, anchors no. 5, 1, 8, 3, 2 and 7 were set with piggy-backs. Finally anchor no. 6 was re-set with a new pennant-wire and piggy-back.

Discrepancy between Pulse/8 and Satnav position is 15m - 296° (Pulse/8 west north-west of Satnav).

MSkaar

SLR

OLJEDIREKTORATET
PLANLEGGINGSAVDELINGEN
OPPFØLGINGSGRUPPEN

19.7.79
IA/RH

IVAR AARSETH

N O T A T

SLUTTRAPPORT 34/10-3

Lisensinnehavere:	Statoil 85% Norsk Hydro 9% Saga 6%
Operatør:	Statoil
Totalt arbeidsprogram:	9 (4)
Hittil boret:	34/10-1, 34/10-2
Boring:	34/10-3
Påbegynt:	13.3.79
Avsluttet:	
Prospekt:	Midtre jura sandstein (Brent formasjonen)
Sekundære prospekter:	Undre jura, øvre trias.
Dyp til prospekt:	1888 m (RKB)
Totalt dyp:	2802 m (RKB)
Funn:	Påvist hydrokarboner i Brent formasjonen. 1888 m - 1975 m (RKB), Olje/vann-kontakt etter logger på 1975 m. Har god sand under 1975 m, men vannførende. Utført tre DST. DST nr 2 ga 2800 fat olje pr dag.
Tidligere funn:	I 34/10-1 er det påvist hydrokarboner i Brent (1780 m - 1938 m) (RKB). Foreløpige anslag: 245 x 10^6 tonn. 34/10-3 bores på samme struktur, lenger nede på flanken.

Prosjektgruppen har bestått av

Ivar Aarseth
Inger Flesland Strass, (lithostratigrafi)
Kaare Ulleberg, (bio/kronostratigrafi)
Helene Eide, (trykkplotting)

Innledning

Lisensen består av blokken 34/10 og er tildelt Statoil 85% (operatør), Norsk Hydro 9% og Saga 6%. Lisensen ble tildelt som første blokk i 4. runde. Rettighetshaverne er forpliktet til å bore 9 brønner hvorav brønner skal bores gjennom jura eller til 5000 m, avhengig av hva som nås først. Dersom de 5 første brønner er tørre, kan operatøren søke om å få slippe videre boring.

Området består av roterte forkastningsblokker. Hovedforkastningssystemet går tilnærmet NNØ-SSV.

Hittil er det boret i to separate forkastningsbetingede strukturer, nemlig δ (34/10-1 og -3) og α (34/10-2). Det er påvist hydrokarboner i begge strukturene.

34/10-3 er boret som en undersøkelsesbrønn på flanken av strukturen etter at 34/10-1 hadde påvist hydrokarboner i Brent-formasjonen. 34/10-3 gjennomboret 200 m Brent-formasjon. Topp Brent er satt til 1892 m. Tolkningen av loggene gir en olje/vann-kontakt på 1972 m. Netto oljeførende sand er 37,7 m med en gjennomsnittlig porøsitet på 26% og Sw = 32,6%. For en vannbærende del av pakken er ϕ = 30,4% med 90,3 m ren sand.

Basert på de karter som foreligger fra Statoil, ligger de påviste reserver på 220 x 10^6 tonn olje. Under forutsetning av vanninjeksjon kan det antas en utvinningsgrad på 35-40%. Dette vil si at utvinnbare reserver er 80-85 x 10^6 tonn olje.

Prognoser mot endelig resultat

	Prognoser m (RKB)	Dyp m (RKB)
Top Oligocene	900 ± 50	900
Top Paleocene	1580 ± 50	1580
Top Kritt	1755 ± 50	1748
Top Brent	1915 ± 50	1892
Top Dunlin	2145 ± 50	2092
Top Statfjord	2465 ± 50	2495
Top Trias	2715 ± 50	2720

Lithostratigrafi 34/10-3

Nordlandsgruppen, 172 - ca 900 m

De øverste 900 m av brønnen består av lys grå leire med spredte sandstrenger. Sanden er for det meste fin til middels kornig kvartssand. Skjellfragmenter, kull og glauconitt finnes.

Hordalandgruppen, ca 900 - 1580 m

Består for det meste av opptil 70 m tykke sekvenser av løs eller kalksementert kvartssand. Sanden er fra fin til grov, til tider meget grovkornet. En brungrå leirsten adskiller sandsekvensene. Skjellfragmenter, kull, glaukonitt og pyritt finnes spredt i hele intervallet. I nedre del av intervallet kommer det inn en hvit - lys grå kalksten. Fra ca 1500 m ned til grensen til Rogalandsgruppen finnes mangefargete leirstener, grå, grønngrå, blågrå.

Rogalandgruppen, 1580 - 1748 m

Balderformasjonen er ut fra logg satt til intervallet 1580 - 1650 m. Tuff er beskrevet i en sone omkring 1600 m som blågrå og hvitspettet. Forøvrig finnes en blågrå leirsten og en brunlig siltsten innen formasjonen.

Listaformasjonen, 1650 - 1748 m

Mørk grå og blågrå leirsten og brunlig siltsten. I nedre del av intervallet en fin til middels kornig sandsten interbedded med siltsten. Bunnen av Listaformasjonen er satt ved loggebrudd.

Shetlandgruppen, 1748 - 1892 m

Består av grå leirsten, grå og brunlig kalksten og grå mergel. Enkelte soner rik på pyritt. Denne sekvensen er ikke forsøkt videre inndelt i formasjoner. I vedlagte rapport fra Paleoservice er et intervall på 6 m datert til Early Cretaceous. Dette intervallet kan ikke skilles ut ved hjelp av logger, og Shetlandgruppen settes ned til topp Brent.

Brentformasjonen, 1892 - 2092 m

Øverste del består av alternerende lag av sand og skifer med kullag. Sanden er stort sett finkornig. Skiferen er mørk og rik på organisk materiale. Kullagene er stort sett i størrelsesorden omkring 1 m tykke. Rundt 2000 m er et ca 5 m tykt lag av en grov til meget grovkornet sandsten. Dette markerer sannsynligvis bunnen av Etive-leddet, muligens en "distributary channel" avsetning (antydet i Notat av 18.12.78, JaV/SLR, om 34/10-1 og 34/10-2). Nedre halvdel av Brent består stort sett av en lys for det meste finkornig sandsten. Den er delvis glimmerrik. Enkelte parter er dolomitt-/kalksementert og kalk- og dolomittstrenger forekommer særlig i denne del.

Inndeling i "sub-units" er antydet på vedlagte figur.

Dunlinformasjonen, 2092 - 2495 m

Består i øverste del av en bløt, lys grå leirsten med sandstrenger. Ved 2200 m finnes en ca 20 m sekvens av en fin-middels sandsten med pyritt-sement og jernsten (sideritt). Dette sandige intervallet antas å representere Cook Sub-unit. Nedre del av formasjonen består for det meste av lys grå leristen og siltsten. De nederste ca 50 m består av interbedded sandsten og leirsten med kalkstrenger.

Statfjordformasjonen, 2495 - ca 2720 m

Tydelige loggeutslag markerer toppen av Statfjordformasjonen på 2495 m. Denne består øverst av en grov til meget grovkornet sandsten med kalksement. Strenger av skifer og kull er beskrevet fra denne delen. Rundt 2570 m finnes en grå og brunlig skifer. I nedre del av formasjonen blir sandstenen beskrevet for det meste som klar kvarts, men også hvit og rosa. Kornstørrelsen er stort sett fin til middels, men i nedre del er sanden også grov og opp til grus størrelse. Strenger av grå og brun skifer finnes også i

nedre del. Bunnen av formasjonen er satt ved bunnen av en "coarsening upwards" sekvens på 2720 m.

Cormorantformasjonen, 2720 - 2802 m (TD)

Rødbrun skifer, leirsten og siltsten. Hvit og gulaktig, fin til middels kornig sandsten med kalksement.

Biostratigrafi/kronostratigrafi

Paleoservice's endelige rapport er mottatt, se denne.

Trykkutvikling

Prognosene på trykkutvikling viser stor overensstemmelse med de registrerte verdier. Som trykkplottet viser, har området en overgangssone som begynner på ca 900 m med en markert økning i boreslamsvekten på ca 1400 m. Bergarten hvor foringsskoen sitter, har hele tiden en god integritet med sammenbruddsverdier som ligger godt over den aktuelle boreslamvekt.

OPERATOR: STATOIL
RIG: NORSKALD
WATER DEPTH: 173 m
KB: 25
WELL: 34/10-3

PERIOD	EPOCH/AGE	GROUP	FORMATION	DEPTH KB	LITHOLOGY	DESCRIPTIONS
TERTIARY		HORDALAND	NORDLAND	100		
				200		Sea bottom
				300		
				400		Cl: lt gy, slt Tr: S: clr qtz, f-m Tr: Lign: wood frags Tr: Shell frags Tr: glauc
				500		
				600		Cl: lt gy, sft Tr: S: clr qtz, f-m, loose S: as ab w thin layers of Cl: as ab
				700		Cl: as ab w strgs of S: as ab Tr: Carb matr Tr: Shell frags Tr: Pyr Tr: Calcite
				800		
				900		S: clr qtz, m-crs, occ pyr cmt Clst: m brn gy, firm, occ slt Clst: as ab w strgs of S: as ab Tr: carb mat, Tr: shell frags
				1000		S: clr qtz, f-crs, mostly m, occ crs loose fri, occ calc cmt w thin layers of Clst: as ab Rk frags Tr: Carb mat foss frags, Glauc Pyr
				1100		Clst: as ab intbd w. strg. of S: as ab occ qtz cmt Slt: lt gy, sft-frm Clst: lt-m gn gy, subfiss, occ slt S: clr qtz, m-crs, loose occ calc cmt
				1200		Clst: as ab intbd w strgs of S: as ab

PERIOD	EPOCH	GROUP	FORMATION	DEPTH KB
CRETACEOUS	PALEOCENE	ROGALAND	BALDER	1600
		SHETLAND	LISTA	1700
				1800
				1900
JURASSIC			N	
			E	2000
			R	
			B	
				2100
			D	
			I	
			N	2200
			C	
			L	
			U	2300
			D	
			B ?	
			N	
			A	2400
			STATFJORD	2500

DEPTH KB	DESCRIPTIONS
1400	S: clr qtz, m-crs, loose, occ calc cmt Strgs of Clst: as ab Tr: Mica, Pyr, Glauc, foss frags
1500	Clst: as ab intbd w. strgs of Sst: clr qtz, f-f, calc cmt S: as ab + Ls wh-crm, m gy, occ arg Tr: Sst: clr qtz, f, dol cmt Clst: m gy, occ gn gy intbd w strgs of Ls: wh-lt gy, arg + Dol: lt gy Tr: Pyr
1600	Clst: bl gy else as ab Tr: Tuff bl gy, mottled, wh-lt gy, sft (calc) Siltst: pa yel brn, silica cmt intbd w. Clst: as ab
1700	Clst: m dk gy else as ab intbd. w Siltst: as ab Sst: clr qtz-f-m occ crs, loose intbd. w. Siltst: as ab
1800	Siltst: as ab intbd w. Clst: as ab & Mrl lt gy, sft Strgs of Ls: wh-lt gy, mod hd abd Pyr Cl: lt m gy, gn gy, sft-firm occ thin beds of Ls: wh-crm, yel, thin strgs of S: clr qtz, occ milky f-f
1900	Sh: blk, mod hd abn plant rem. Coal: dk brn & Sst: lt brn f grading to Siltst Sh: dk gy crs upw. to Sst: lt brn f-f Coal: blk Sst: lt-dk brn, f-crs
2000	Sst: wh-clr qtz, f-f, loose, mic Strgs of Dol: + Ls: lt gy
2100	Sst: crs-crs, occ cmt by Dol as ab Clst: lt gy, sft, pyr intbd w. S: as ab Dol: as ab, Ls: as ab
2200	Sst: clr qtz, f-m, occ pyr cmt w. Ironstone: rust red, occ lign Sst: wh-lt gy, f-f, partly clr qtz Strgs of Clst: m-dk gy Clst: lt-m gy, sft w. strgs of Sst: f-m else as ab Siltst: lt-m gy, sft, grades into Sh Ls: wh-buff Clst: lt gy, sft intbd w streaks of Sst: clr qtz, f-crs mostly f
2300	Clst: lt gy-gy, sft, slt Tr: Sh: m gy, fiss, firm (slf) Ls: buff-tan, Sst: clr qtz, f-f Intbd: Clst, Sst, Ls as ab Sst: clr qtz, slt-f, musc Sst: wh-m gy, f-slt, calc cmt Strgs of Sh & Ls
2400	Sst: crs-crs, occ gran, calc cmt Strgs of Sh: m gy & coal brit Sst: as ab but mostly m Sh: m gy, m brn, occ lt gy & red brn, slt, intbd w. layers of Sst: clr, occ milky & pk f-m
2500	

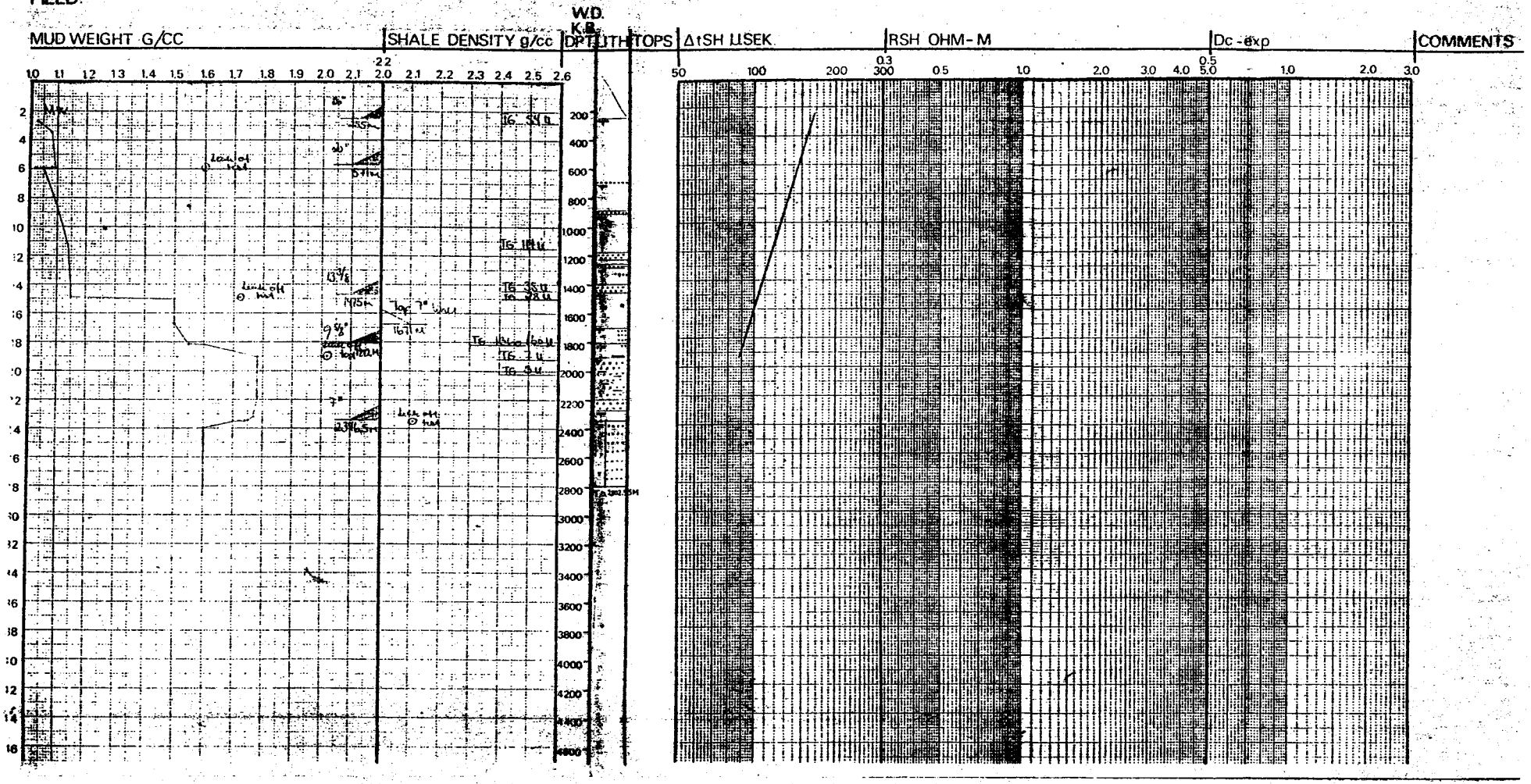
PERIOD	EPOCH/AGE	GROUP	FORMATION	DEPTH KB	LITHOLOGY	DESCRIPTIONS	OPERATOR RIG WATER DEPTH KB	WELL 34/10-3
TRIASSIC →			CORMORANT ◆ STATFJORD	2700		Sst: as ab w. streaks of Sh: lt-m gy, m brn, occ dk brn & lt brn gy Sst: clr-milky occ pk, yel, wh, m-crs gran loose, layers of Sh: lt-m gy, m brn, occ dk gy gn, rd brn Streaks of Ls: wh, occ buff, hd Sh: rd brn-lt brn, else as ab Tr Clst: brick red, sft, calc Intbd Sh as ab & Sst: clr, milky wh, occ tan yel qtz, f-m, calc cmt		
				2800		TD 2802 m		

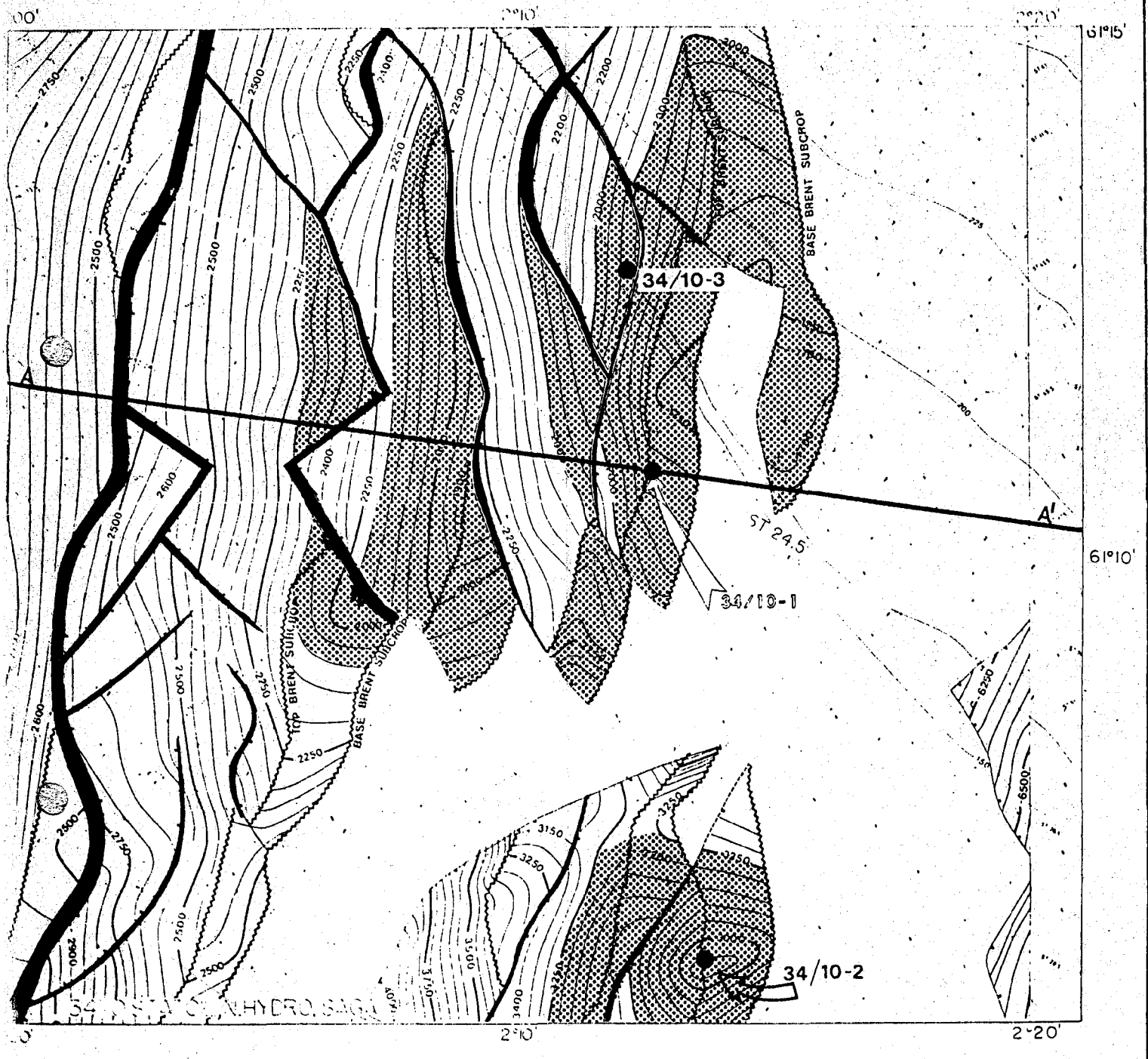
WELL NO: 34/10-3
COMPANY: Statoil
FIELD:

POSITION: 61° 12' 44.5" N
2° 11' 55.1" E

SPUD DATE: 15.4.91
COMPL. DATE:

34/10-3





TOP BRENT SANDSTONE

Structure map in depth, CI = 50

0 1 km 5

1:50000