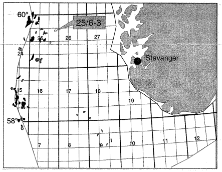
STATOIL

Mobil Expl. Norway Inc. **Saga Petroleum**	**25/6-3**	**Urd**
PARTNERS	WELL	PROSPECT STRUCTURE

COMPOSITE LOG
1 : 500

AREA:	**North Sea**
LICENCE:	**PL245**
COORDINATES:	**59° 42' 03.0"N** **02° 55' 26.0"E**
KB:	**25m**
WATER DEPTH:	**109m**
TOTAL DEPTH:	**2475 mMD RKB**
FM. AT T.D.:	**Shetland Group**
SPUD DATE:	**21.10.1999**
RIG RELEASE:	**11.11.1999**
WELL STATUS:	**Permanent P & A, dry well**
RIG:	**Byford Dolphin**
CONTRACTOR:	**Dolphin**
GEOLOGIST :	**L. Rasmussen, T. F. Kristensen, J. Basset, I. Winsvold, P. Furmyr**
PREPARED BY:	**Ø.Hovden / P. Furmyr**

LOCATION MAP



CASING DATA

30"	192.6 mMD
13 3/8"	1206 mMD

LEAK OFF TESTS

1.74 g/cc

VELOCITY SURVEY

A zero incidence VSP survey was performed by Read. 24 levels with 10 m spacing and 13 levels with 20 m spacing were recorded.

LOGS RUN

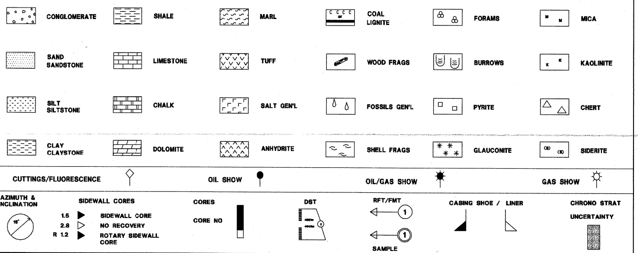
CONTRACTOR: Schlumberger / BHI (MWD)

PEX - HALS - DSI	MDT	VSP	CST		MWD LOGGING	
1A: 2472 - 1206 m (sonic to 575 m)	1A: 2085.5 - 2333 m	1A: 2460 - 460 m 1B: 2473 - 2057 m (all misfires)	1A: 2474 - 1798 m		Run1: 195 - 1215 m Run2: 1235 - 1277 m Run3: 1277 - 2062 m Run4: 2108 - 2475 m (fail at 2419 m)	

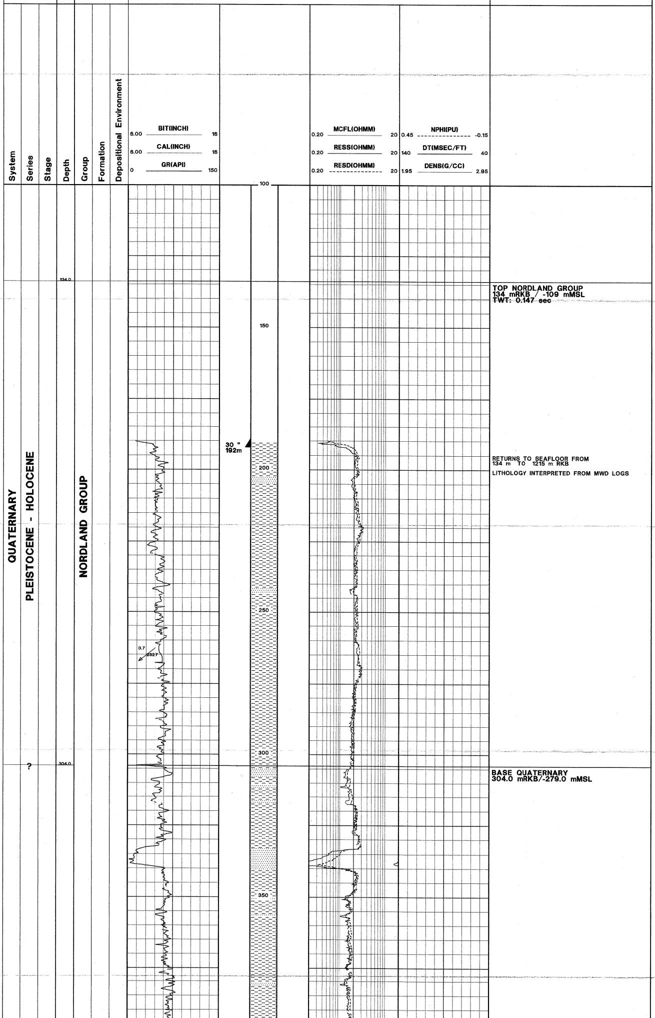
COMMENTS:

- The well was drilled with returns to seafloor down to 1215m.
- Core-depths have been shifted 2 m down in order to match wireline logs.
- Only recovered sidewall cores are indicated on the log.

LITHOLOGICAL SYMBOLS



Chron Strat		Litho Strat	Well Log	Lithological Descriptions

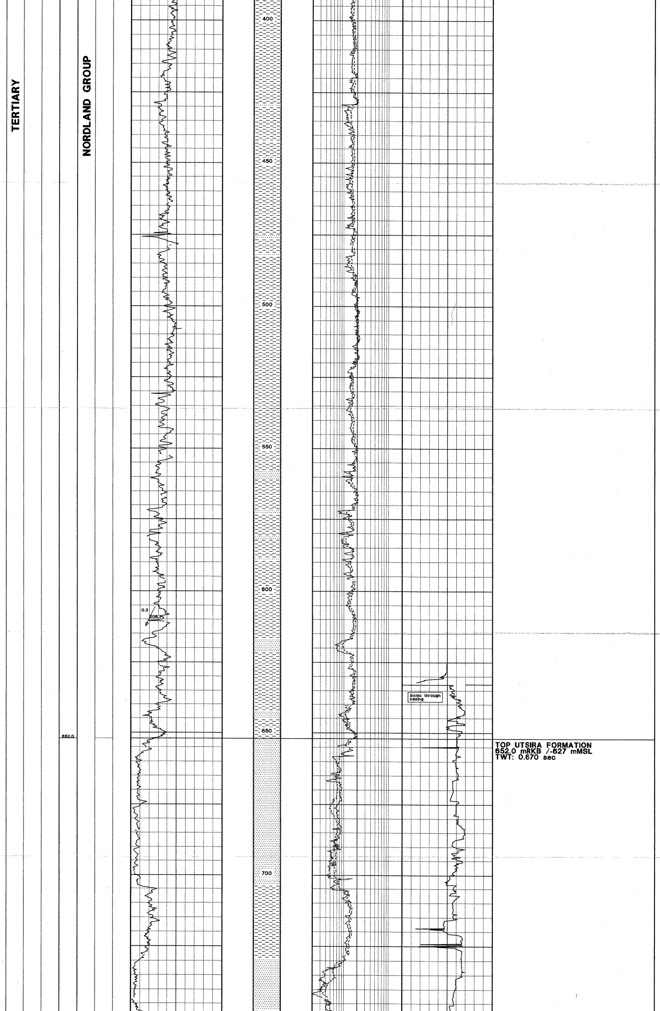


TOP NORDLAND GROUP
134 mRKB / -109 mMSL
TWT: 0.147 sec

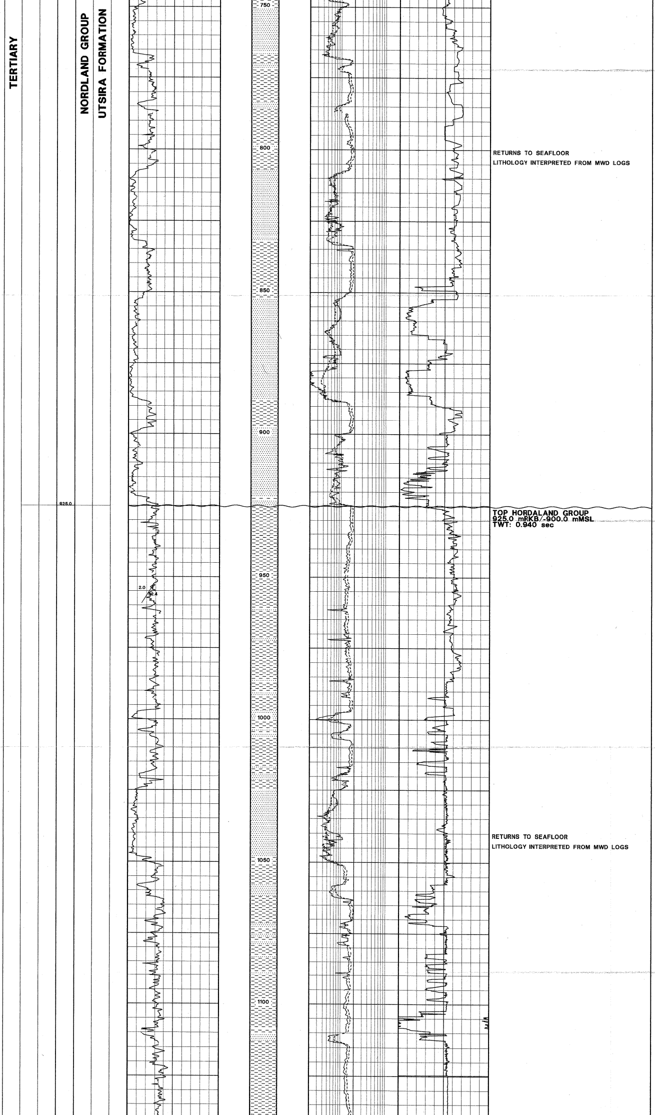
RETURNS TO SEAFLOOR FROM
134 m TO 1215 m RKB

LITHOLOGY INTERPRETED FROM MWD LOGS

BASE QUATERNARY
304.0 mRKB/-279.0 mMSL



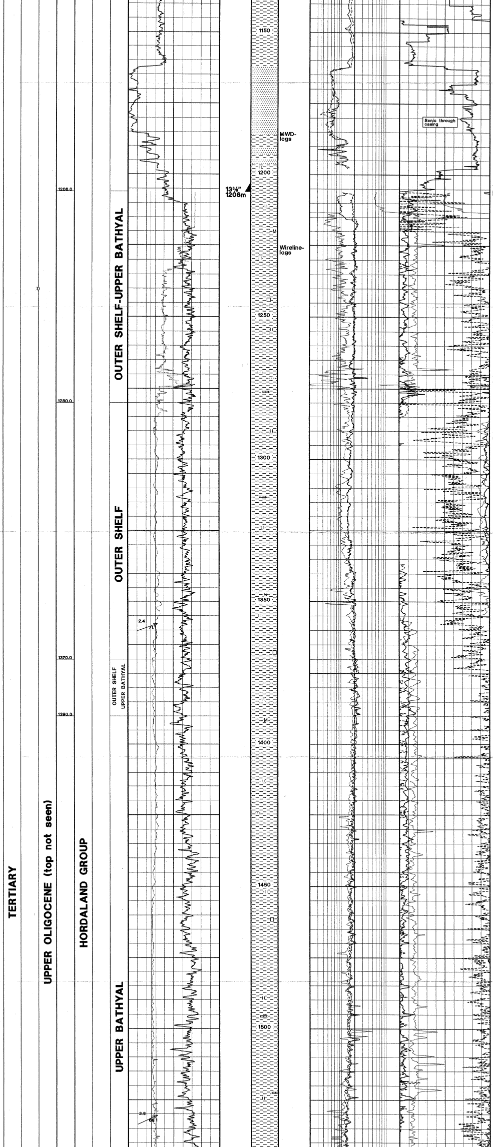
TOP UTSIRA FORMATION
652.0 mRKB /-627 mMSL
TWT: 0.670 sec



RETURNS TO SEAFLOOR
LITHOLOGY INTERPRETED FROM MWD LOGS

TOP HORDALAND GROUP
925.0 mRKB/-900.0 mMSL
TWT: 0.940 sec

RETURNS TO SEAFLOOR
LITHOLOGY INTERPRETED FROM MWD LOGS



MWD logs from 30" to 13 3/8" csg.
Wireline logs from 13 3/8" to TD
(Wireline sonic log in 13 3/8" csg)

13 3/8" casing at 1206 mRKB
LOT=1.74 g/cc

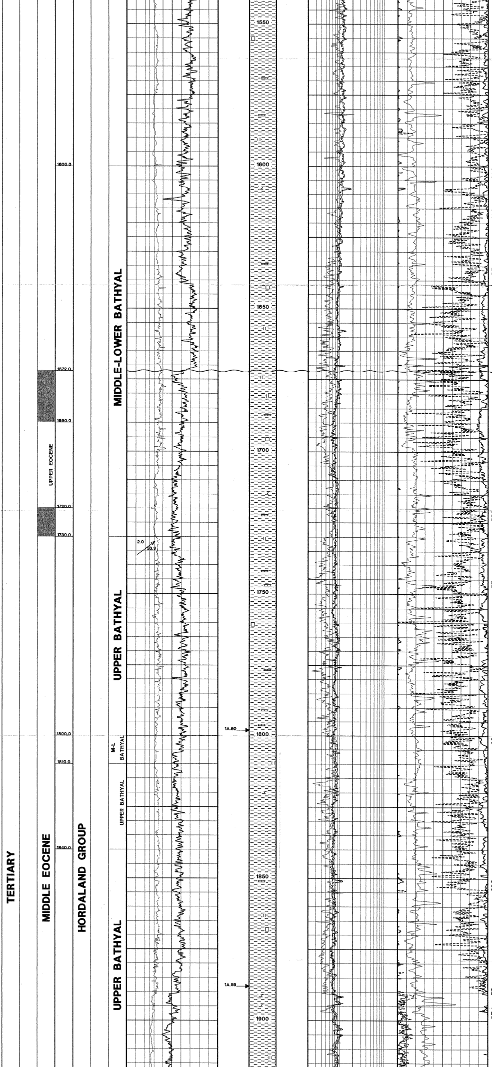
CLAYSTONE: olive grey to olive black, brownish black, firm, amorpheous to blocky, sandy, silty to very silty, in parts grading to Siltstone, micropyritic, micromicaceous, slightly glauconitic, non calcareous

TRACES OF SAND: clear to translucent quartz, medium to coarse, angular to subrounded

TRACES OF LIMESTONE: clear to offwhite, blocky, firm to moderate hard, micritic to crystalline, traces of sand

CLAYSTONE: olive grey to olive black, brownish black, firm, amorpheous to blocky, sandy, silty to very silty, in parts grading to Siltstone, micropyritic, micromicaceous, slightly glauconitic, non calcareous

TRACES OF LIMESTONE: clear to offwhite, blocky, firm to moderate hard, micritic to crystalline, traces of sand



CLAYSTONE: olive grey to brownish grey, olive black, firm, amorpheous to blocky, sandy, silty, micropyritic, micromicaceous, occasionally glauconitic, non calcareous to calcareous

TRACES OF DOLOMITE: brown to dark yellow brown, medium yellow brown, moderate hard to hard, blocky, microcrystalline

LIMESTONE: light yellow brown, medium brown, moderately hard, microcrystaline to crystaline

CLAYSTONE: olive grey, firm, amorphous to blocky, slightly silty, micropyritic, non calcareous, also medium blue grey, firm, blocky, micropyritic, non calcareous

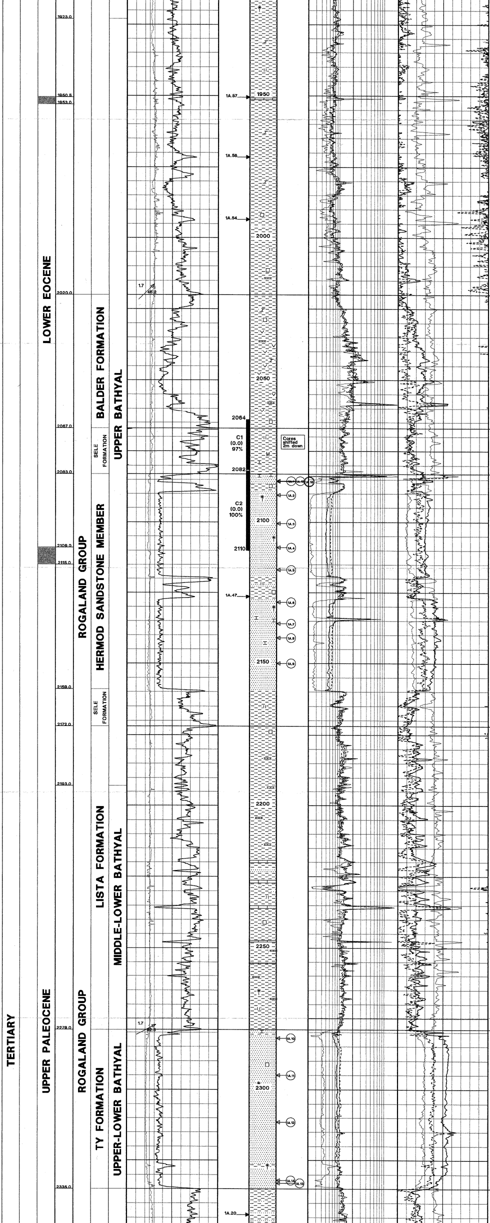
LIMESTONE: off white, light brown, also clear, firm to moderately hard, microcrystaline to crystaline, occasionally slightly argillaceous

CLAYSTONE: medium dark grey, moderately hard, blocky, non calcareous

CLAYSTONE: dark greenish grey, moderately hard to firm, slightly silty, slightly micropyritic, slightly glauconitic, non to slightly calcareous

CLAYSTONE: dark grey to dark green grey, moderately hard, blocky, non calcareous

TRACE DOLOMITE: pale yellow brown to yellow brown to dusky brown, medium dark grey, hard, microcrystaline, occasionally succrosic



CLAYSTONE: sligtly silty, micropyritic, slightly glauconitic in parts, else as above

CLAYSTONE: medium grey to dark grey, olive grey, dark green grey, moderately hard, blocky, slightly silty, micropyritic, slightly glauconitic in parts, non to slightly calcareous

DOLOMITE: pale yellow brown to dusky brown, medium dark grey, hard to very hard, microcrystaline, succrosic in part, slightly argillaceous

CLAYSTONE: brown grey, firm to moderately hard, blocky, non calcareous

CLAYSTONE: varicoloured, predominantly grey red, firm to moderately hard blocky, slightly silty, non to occasionally calcareous

TRACE DOLOMITE, LIMESTONE, PYRITE

TOP ROGALAND GROUP
TOP BALDER FORMATION
2020.0 mRKB/-1995.0 mMSL
TWT: 1.955 sec

CLAYSTONE: varicoloured, increasing amount of medium to light grey, micropyritic, else as above

TUFF: medium grey to blue grey, soft to firm, amorphous, speckled, grainy texture

TRACE LIMESTONE: off white to light brown, moderately hard, micritic to microcrystaline, occasionally argillaceous

TRACE DOLOMITE: light brown to dark brown, hard to very hard, microxln

TOP SELE FORMATION
2067.0 mRKB/-2042.0 mMSL
TWT: 1.990 sec

CLAYSTONE: medium dark grey to olive grey, firm to hard, slightly to non calcareous, micropyritic, micromicaceous, pyrite nodules

TOP HERMOD SST MEMBER
2083.0 mRKB/-2058.0 mMSL
TWT: 2.008 sec

SANDSTONE: medium grey, clear to translucent quartz, fine to coarse, predominantly medium, moderately to well sorted, subrounded, in parts slightly calcareous and/or silica cemented, friable, traces glauconite, mica, rock fragments and mafic material, good visual porosity

SANDSTONE: predominantly fine to medium, else as above

CLAYSTONE: medium dark grey to medium grey, firm, blocky, micromicaceous, slightly silty, non calcareous

SANDSTONE: occasionally calcareous cemented, else as above

TOP LISTA FORMATION
2159.5 mRKB/-2133.7 mMSL
TWT: 2.061 sec

CLAYSTONE: varicoloured, medium dark grey to medium grey, dark green grey, brown grey, medium light grey, firm to moderately hard, blocky, occasionally subfissile, silty to very silty, grading to siltstone in parts, micropyritic, non calcareous

SANDSTONE: light grey, clear quartz, fine to coarse, poor sorting, subangular to subrounded, calcareous cement, friable, glauconitic in parts

LIMESTONE: pale brown grey to yellow brown, moderately hard to hard, micritic to microxln

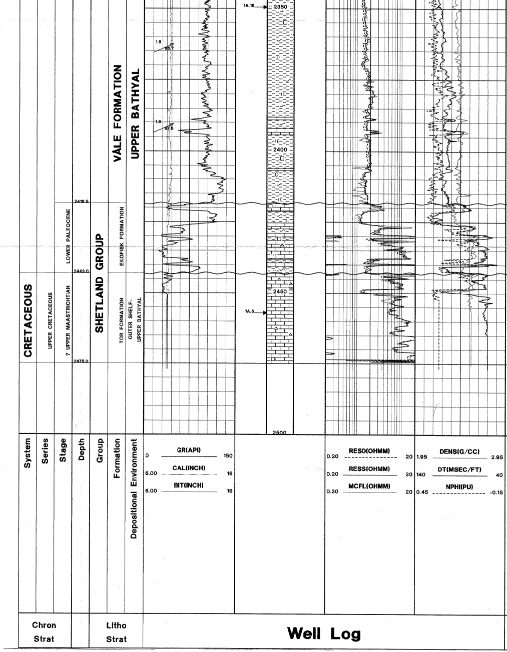
TOP TY FORMATION
2279.0 mRKB/-2254.0 mMSL
TWT: 2.075 sec

SANDSTONE: clear to translucent quartz, fine to coarse, predominantly medium, poor sorting, subrounded, loose

SANDSTONE: as above

CLAYSTONE: predominantly green grey, firm to moderately hard, blocky, non calcareous

TOP VÅLE FORMATION
2335.0 mRKB/-2310 mMSL
TWT: 2.120 sec



SANDSTONE: medium light grey, clear quartz, fine to coarse to very coarse, moderately to poorly sorted, subangular to subrounded, grey and off white kaolinitic matrix, friable, micaceous, black specks, good visual porosity

CLAYSTONE: grading to siltstone, varicoloured, medium dark grey, brown grey, locally green grey, locally medium grey, soft to firm, calcareous to very calcareous, marly

LIMESTONE: white, yellow grey to light yellow brown, friable to hard, occasionally argillaceous, blocky to subangular, microcrystaline to crystaline

TOP SHETLAND GROUP
TOP EKOFISK FORMATION
2418.5 mRKB/-2392.5 mMSL
TWT: 2.248 sec

LIMESTONE: white to light grey, moderately hard - occasionally hard, predominantly micritic with chalky texture, occasionally microcrystaline to crystaline, occasionally slightly argillaceous

CLAYSTONE: varicoloured, predominantly grey black, also moderately brown and green grey, firm, blocky, very calcareous and marly, sandy and silty in parts, occasionally grey black and non calcareous

LIMESTONE: white, hard, chalky texture, traces of translucent chert

TOP TOR FORMATION
2443 mRKB/-2418 mMSL
TWT: 2.260 sec

LIMESTONE: a/a

TD OF WELL
2475.0 mRKB/-2449 mMSL

Lithological Descriptions