LOG 05.03.2004

FINAL WELL REPORT : 6406/1-2
ENCLOSURE No. :
Completion Log /

Norsk Agip

Completion Log

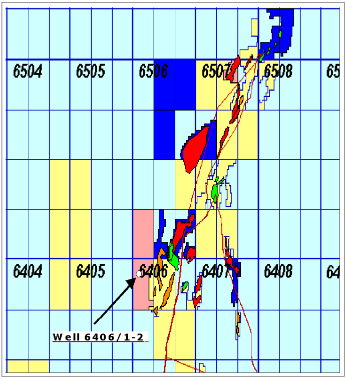
Well: 6406/1-2

Scale: 1:500

COUNTRY	Norway	**OPERATOR**	Norsk Agip
AREA	Sklinna South	**PARTNERS**	Norsk Agip, Petoro, Norske Shell, ENI Norge
LICENCE	PL 256		
BLOCK	6406/1		
SEISMIC REFERENCE	NA01 M2-3D	**GEOLOGISTS**	T.W Snåre / P. Anderson N. Feery / R. Hall
PLATFORM	Deep Sea Bergen		
CONTRACTOR	Odfjell		
T.D. (Driller)	4500 m MD	**MUDLOGGING**	Geoservices
T.D. (Logger)	4504 m DM	**MWD / LWD**	Pathfinder
KB MSL	23m	**ELECTRIC LOGGING**	Schlumberger
WATER DEPTH	383m	**MUD ENGINEERING**	MI
SPUD DATE	26.06.2003	**VSP**	Schlumberger
DRILLING END DATE	19.08.2003	**DIGITAL DRAFTING**	T.W.Snåre / P.Anderson
RIG RELEASE DATE	08.09.2003	**REVISED**	Dag Stensland
STATUS	Plugged and Abandoned with condensate discovery in Intra Lange Sandstone	**WELL CLASSIFICATION**	Exploration

Output log file created : 05.03.2004 09:36:23
Winlog well ID : 6406_1_2
Norsk Agip well ID :
Template version : v4 [20030616] - MJ(HRH)
Project file version : v
Designed for Winlog Pro TVD Edition

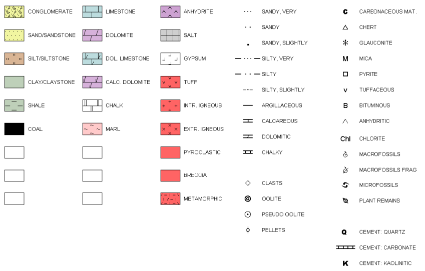
Location Map



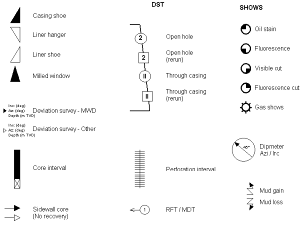
Well COORDINATES

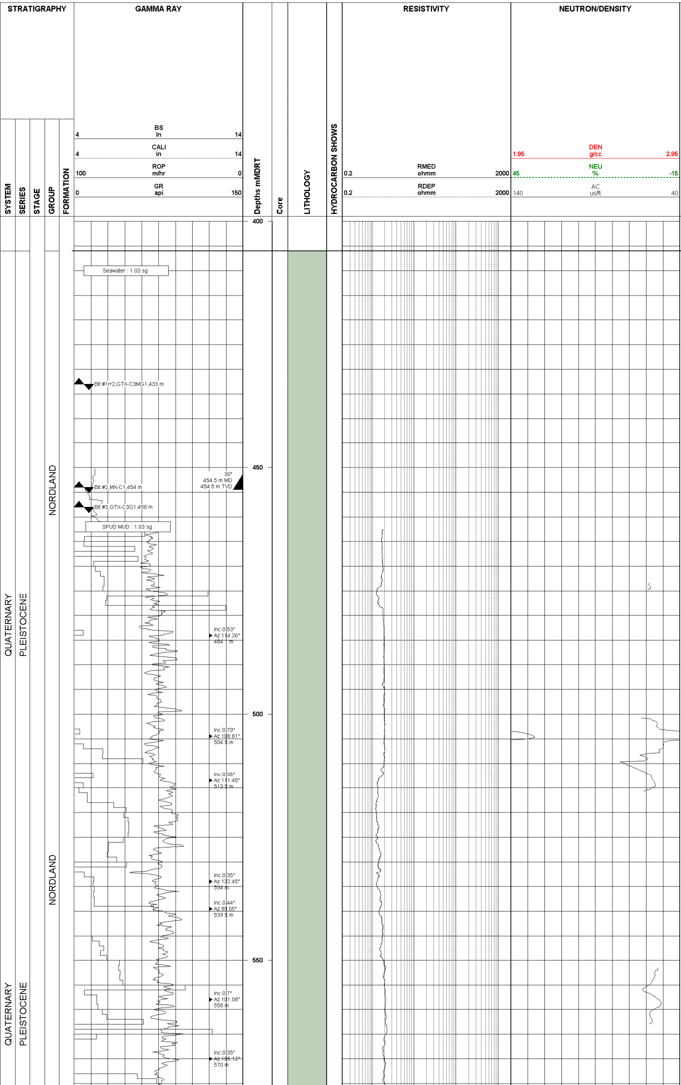
Geographical Derrick Position	06°07'55.671" E	64°55'32.285" N
UTM: Derrick Position	364414.38m E	7203421.02m N

Lithology Legend



Symbol legend





LITHOLOGICAL DESCRIPTION

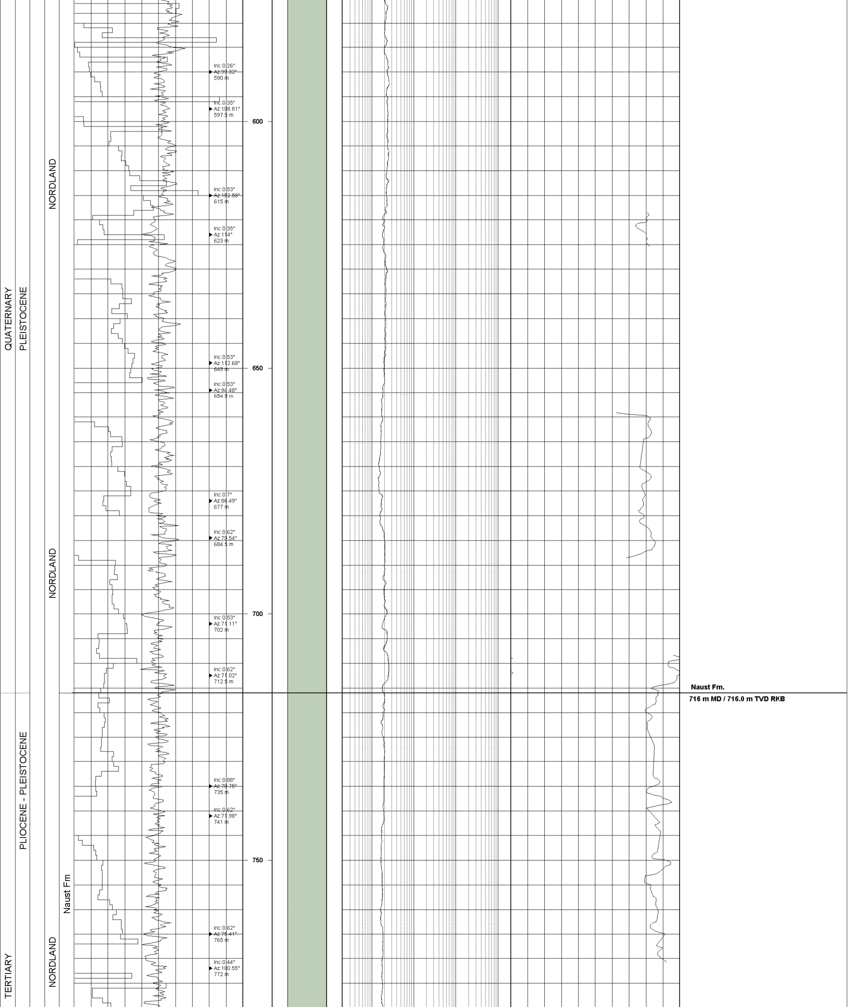
Seabed

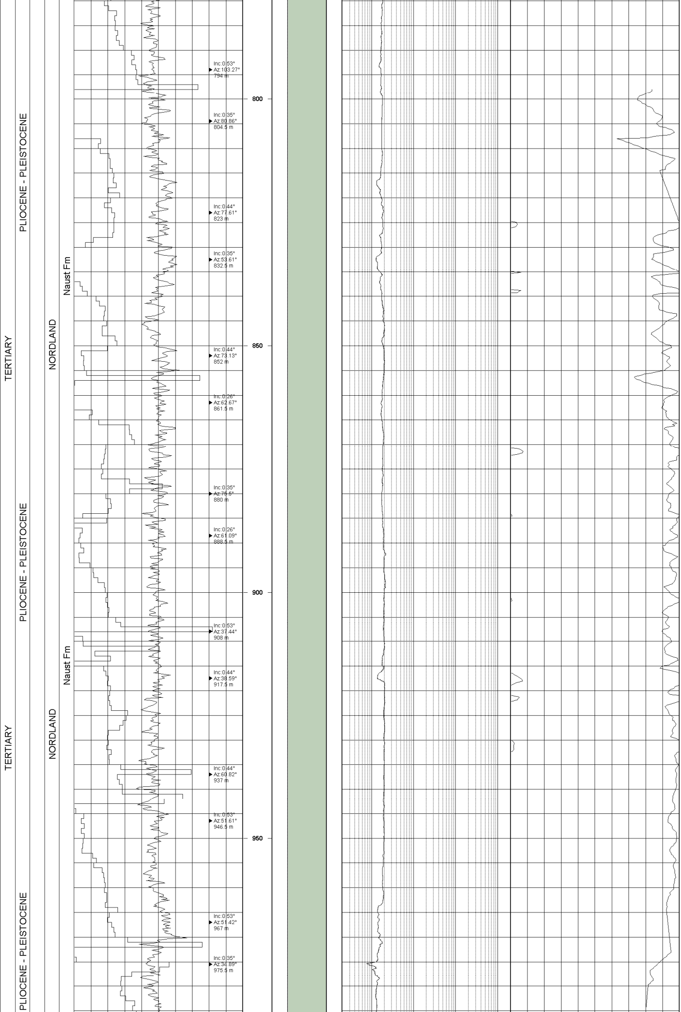
406 m MD / 406.0 m TVD RKB

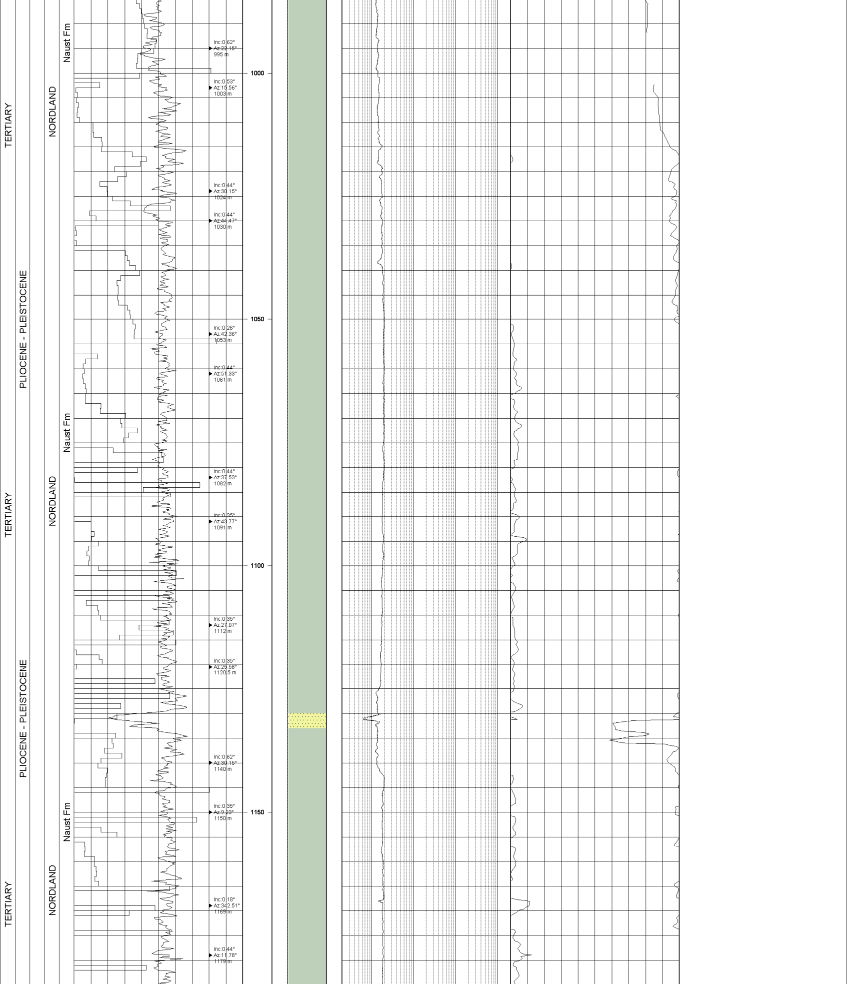
Drilled with returns to seabed to 1210m

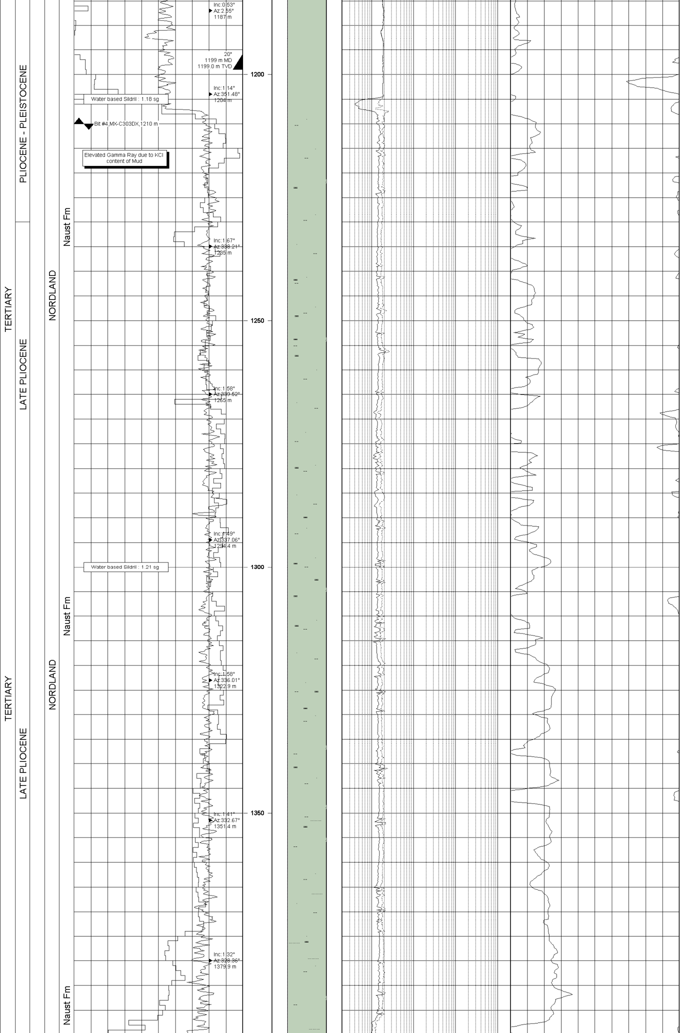
Clay

Cly: Firm to stiff medium grey clay with a little angular gravel of quartz together with a single sub angular cobble of gneiss was recovered from the 26" bit at 456m









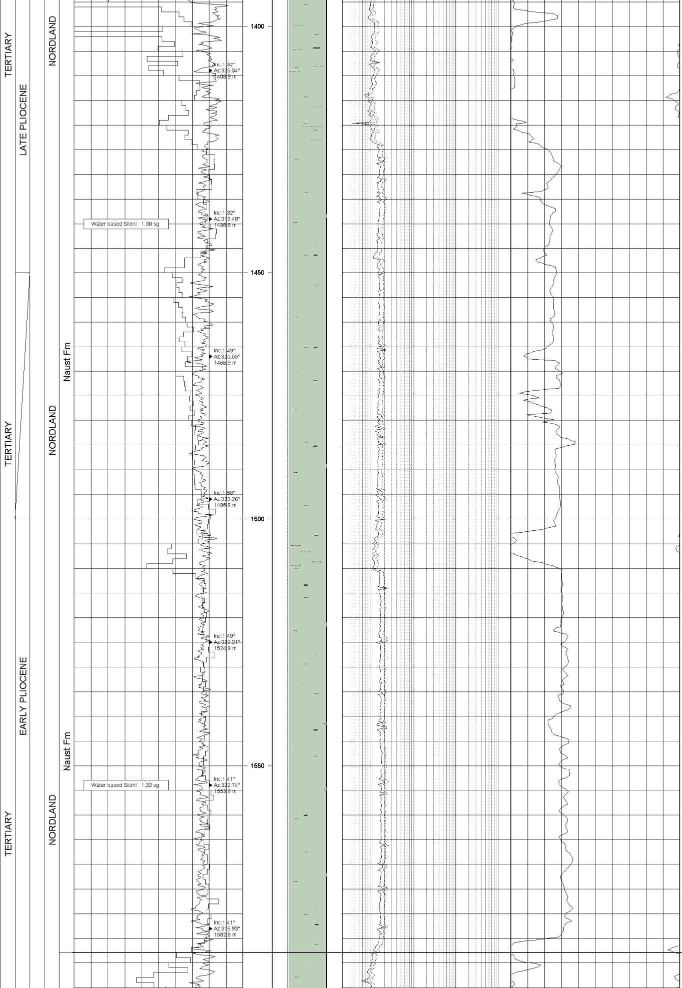
FIT 1199 m MD / 1199.0 m TVD RKB : 1.55 sg EMW

First cuttings from 1220m

Clst: m gry-m dk gry, blky,frm,com vf sd, com grdg arg Sst, v calc, tr dissem carb mat, tr micromic

Clst: m dk gry, blky, frm, v slty, mod calc, tr vf sd, tr lse qtz, vf-m, sbrndd-sbang

Clst: dk gry, frm,blky, v slty grdg Sltst, com vf sd, mod calc, com micromic

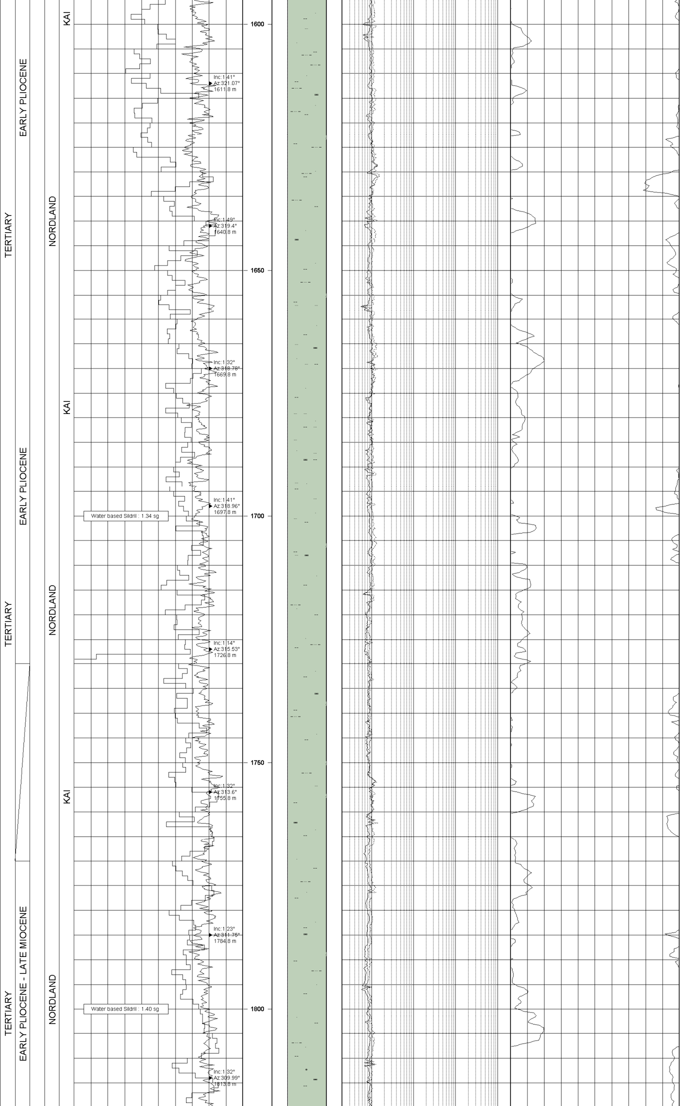


Clst: m dk gry, frm, blky, v slty grdg Sltst, com vf sd I.P. grdg arg Sst, slily calc, tr micromic, tr carb mat

Clst: m dk gry-dk olv gry, frm-occ mod hd, blky-subfis, v slty grdg Sltst, com vf sd I.P. grdg arg Sst, slily calc, tr micromic, tr carb mat, r lith frags

Kai Fm.

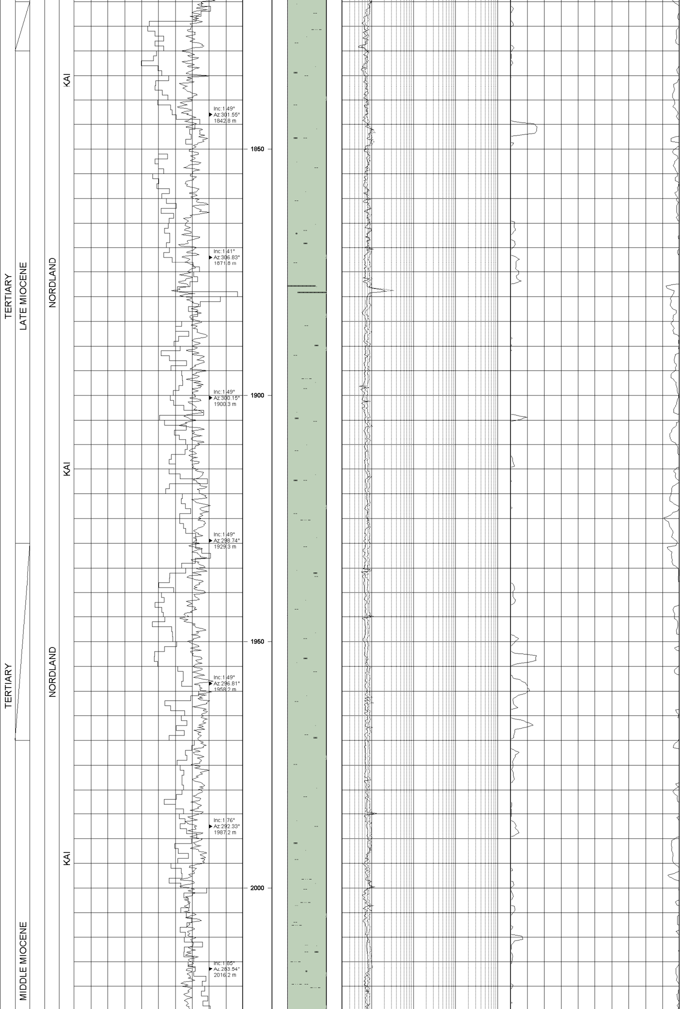
1588 m MD / 1587.8 m TVD RKB



Clst: m dk gry-dk olv gry-dk brn gry, frm, blky-subfis, v slty grdg Sltst, com vf sd I.P. grdg arg Sst, slily calc, tr micromic, tr carb mat, r lith frags

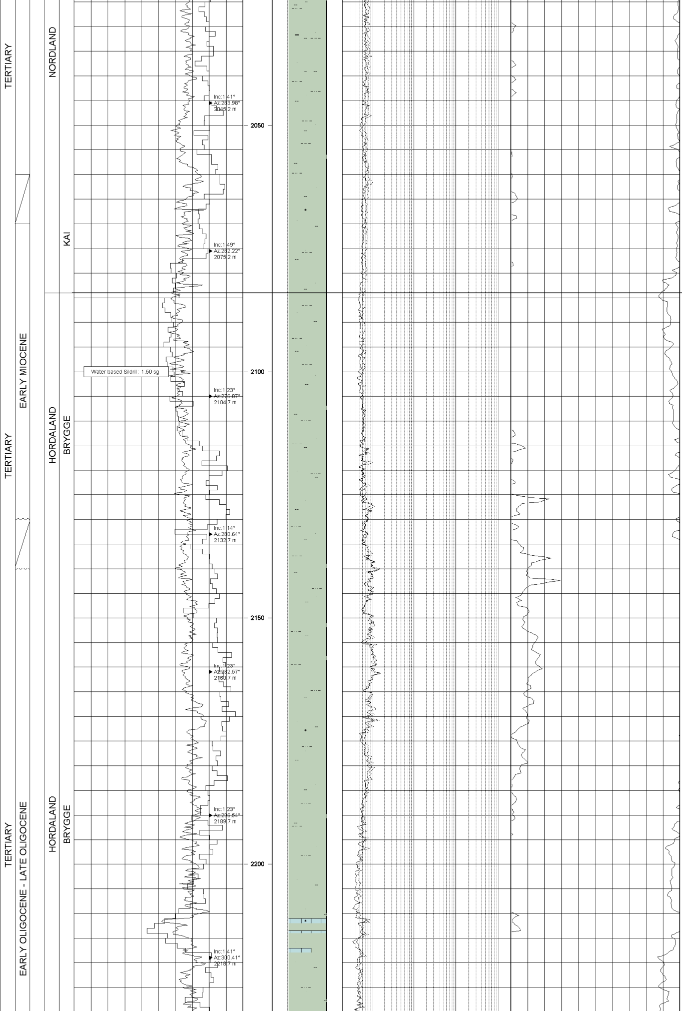
Clst: dk olv gry-m dk gry-dk gry, frm, blky, v slty, com-abd vf sd, grdg arg sst I.P., mod calc loc v calc, tr micromic

Clst: m dk gry-dk olv gry, dk brn gry-brn blk, olv blk, frm, blky-sbfis, v slty grdg Sltst, com vf sd I.P. grdg arg Sst, sli-v calc, tr micromic, tr carb mat, r lith frags



Ls: v lt gry, frm, blky, arg,

Clst: m dk gry-dk olv gry, dk brn gry-brn blk, olv blk, frm, blky-sbfis, v slty grdg Sltst, com vf sd I.P. grdg arg Sst, sli-mod calc, tr micromic, tr carb mat, r lith frags

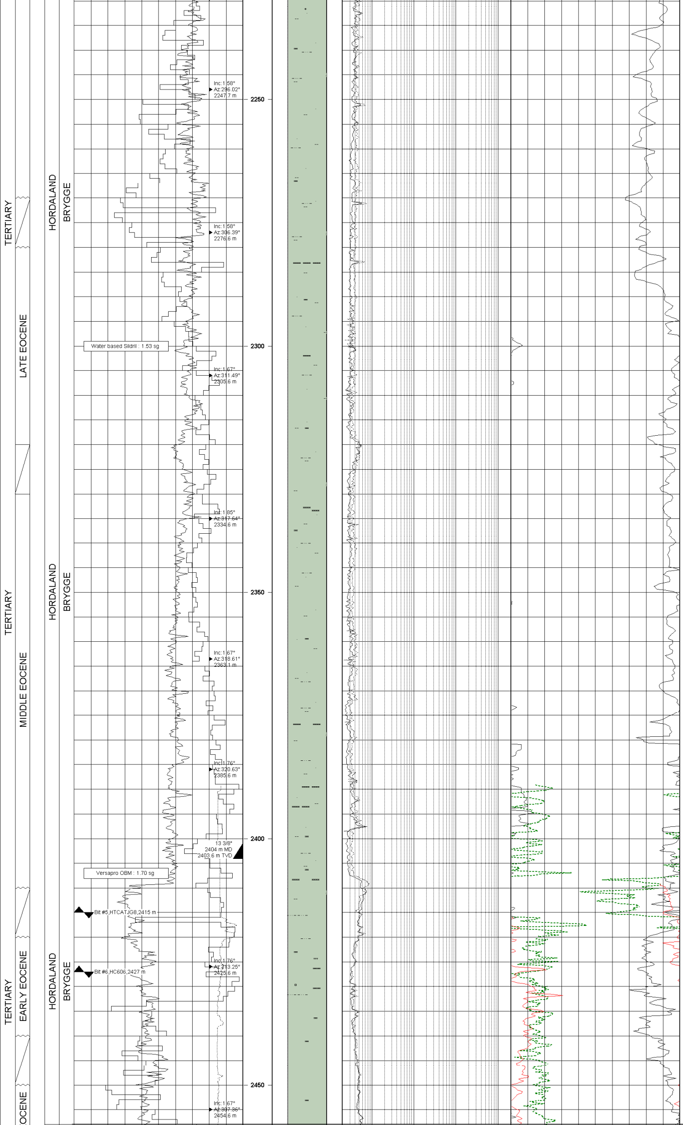


Brygge Fm.

2084 m MD / 2083.7 m TVD RKB

Clst: brn gry-brn blk, frm, blky, v slty grdg Sltst, ea tex, slily calc, tr vf sd, r micromic, tr glauc

Clst: brn gry-brn bl -olv gryk, frm, blky, r sbfis, v slty grdg Sltst, ea tex, non-slily calc, tr vf sd, r micromic



Sst: trans Qtz, vf, sub-ang - sub-rnd, wl srtd

Clst: dk gn - olv gry, olv blk - gry blk, sft - frm, occ hd, slty/vf sd, slily - md calc, tr glauc, micro pyr

Clst: m dk gry-dk olv gry, dk brn gry-brn blk, olv blk, bcmg more dk gn gry-gn blk w/ depth, sft-frm, blky-sbfis, occ wxy, v slty grdg Sltst, com vf sdy I. P. grdg arg Sst, sli-v calc, tr micromic, tr carb mat, r lith frags

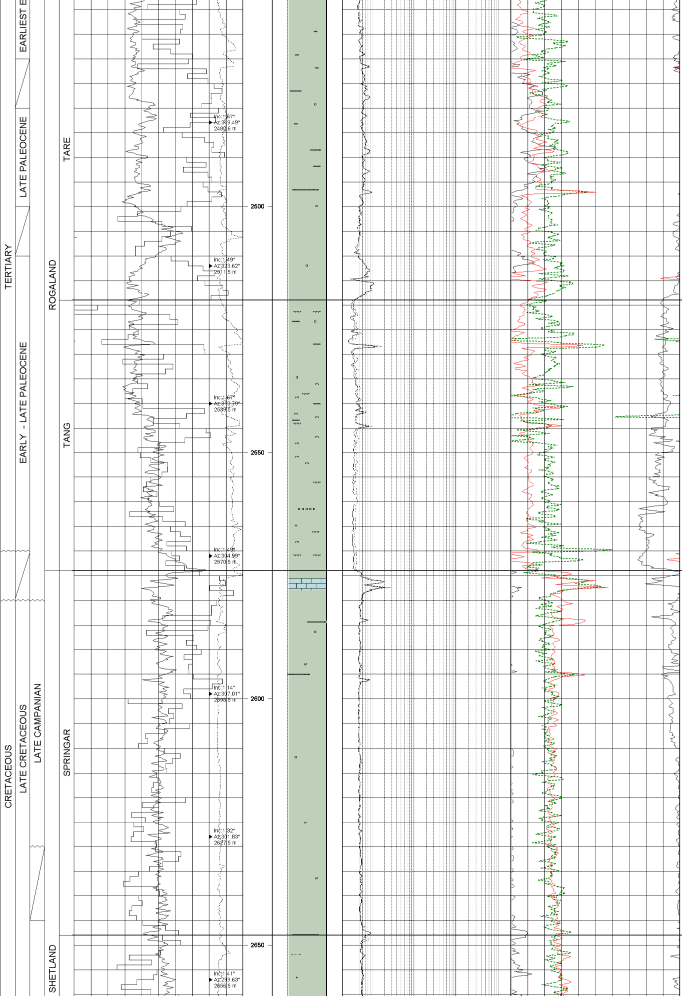
Tr Sst: dk brn, dk brn gy, vf, subang-sbrnd, mod-wl calc cmt, arg

Tr Ls: wh-v lt gry, occ yel gry, sft-frm occ mod hd, blky, mic-crpxln, arg I.P., tr glau

Clst: dk gn gy, dk brn gy, dk olv gy, olv blk,,sft-frm, blky-sub blky, slty grdg Sltst ip, tr vf sd.

FIT 2404 m MD / 2403.6 m TVD RKB : 1.87 sg EMW

Tare Fm.



2458 m MD / 2457.6 m TVD RKB

Clst: varicol gy, bec dsky bl gn, occ pa bl,wxy, frm, blky to sub fiss, n swlg, crypfis, dol ip, pyr,

Clst: varicol gy,dsky bl gn, occ gy red, wxy, mod hd, sub fis-blky, n calc, sl swlg. Rare tr vein calcite, wh, fibrous, within pyrite.

Tang Fm.

2519 m MD / 2518.5 m TVD RKB

Clst: varicol gy, com pa bl-dsky bl gn, rr gy red, wxy, frm-sft, sb blky, n calc, n dol.

Clst: lt gry, pa bl, occ dsky bl gn, rr brn gry, hd, blky, n calc, n swlg, micrpyr, grading to Tuffaceous Clst.

Clst: lt-med gry, rthy, lt gn gry, wxy, mod hd, sub blky, calc, rr lt bl gry, occ dsky bl gn, soft amor.

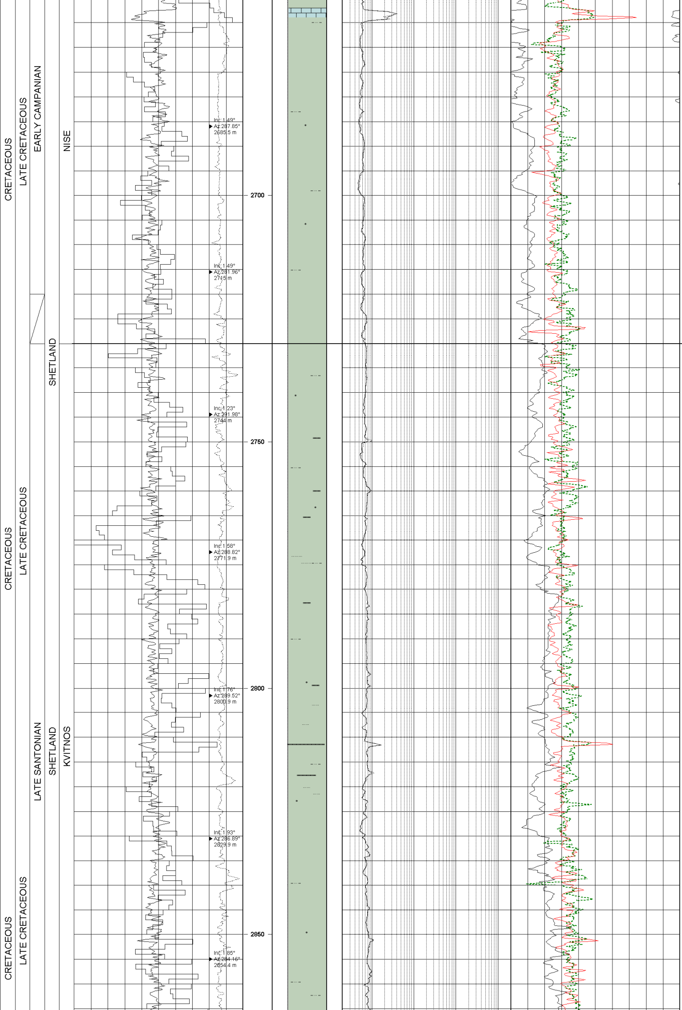
Springar Fm.

2574 m MD / 2573.5 m TVD RKB

Clst: med gry & light gry, waxy, hard & soft, blocky & amorphous, slightly swelling ip, calcareous - non calcareous, cryptofissile ip, micrpyr, micrmic.

Nise Fm

2648 m MD / 2647.5 m TVD RKB

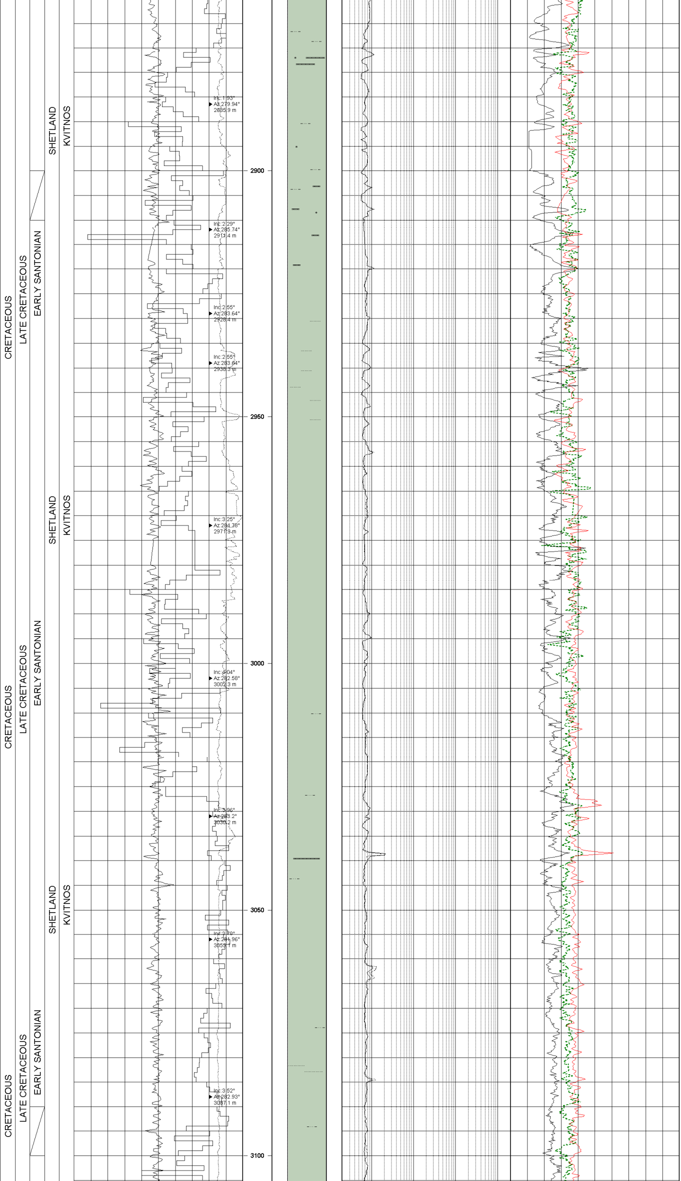


Clst: med gry-dk gry, waxy-granular, hard, blocky, non calc, slty- v silty, occ common sd, glauc. Grdg Sltst- silty/sdy Clst.

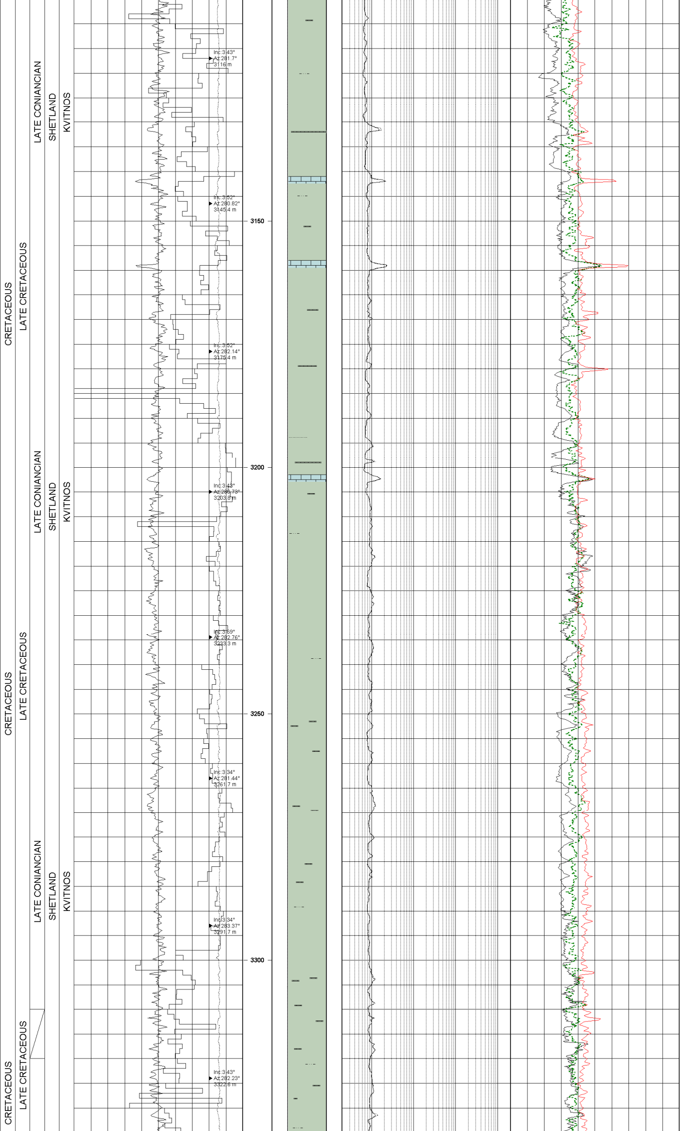
Kvitnos Fm

2730 m MD / 2729.5 m TVD RKB

Clst: med gry-dk gry, waxy-granular, hard, blocky, non calc, slty- v silty, occ common sd, glauc. Grdg Sltst- silty/sdy Clst

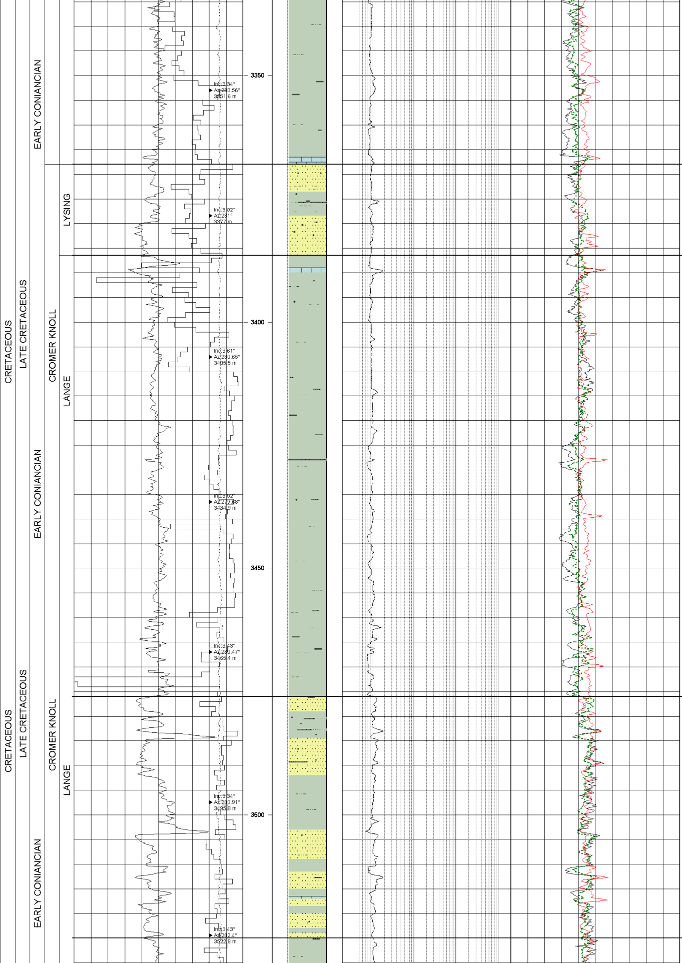


Clst: med gry, mod hd - hd, amor - blky, r slty/sdy, microcarb, sl calc - calc



Ls: pa yel brn - yel brown, hd, blky, slily arg, crypxln, dol grad dol

Ls: yel brn, mod hd, cmb



Lysing Fm.

3368 m MD / 3366.5 m TVD RKB

Sst: v lt gry - pa grn, w dk grn mott, v f - med, crs w/depth, pr - mod srtd, v sft - md hd, fri, arg mtx, nil - mod vis por, sl calc, v glauc

Lange Fm.

3386.5 m MD / 3385.0 m TVD RKB

Clst: lt gry - med dk gry, eart, hd, slty - v slty grad sltst, occ sl sdy, non calc, sl micro carb

Ls: dk yel org - yel wh, mod hd - hd, occ arg, micro - crp xln

Upper Lange Sst

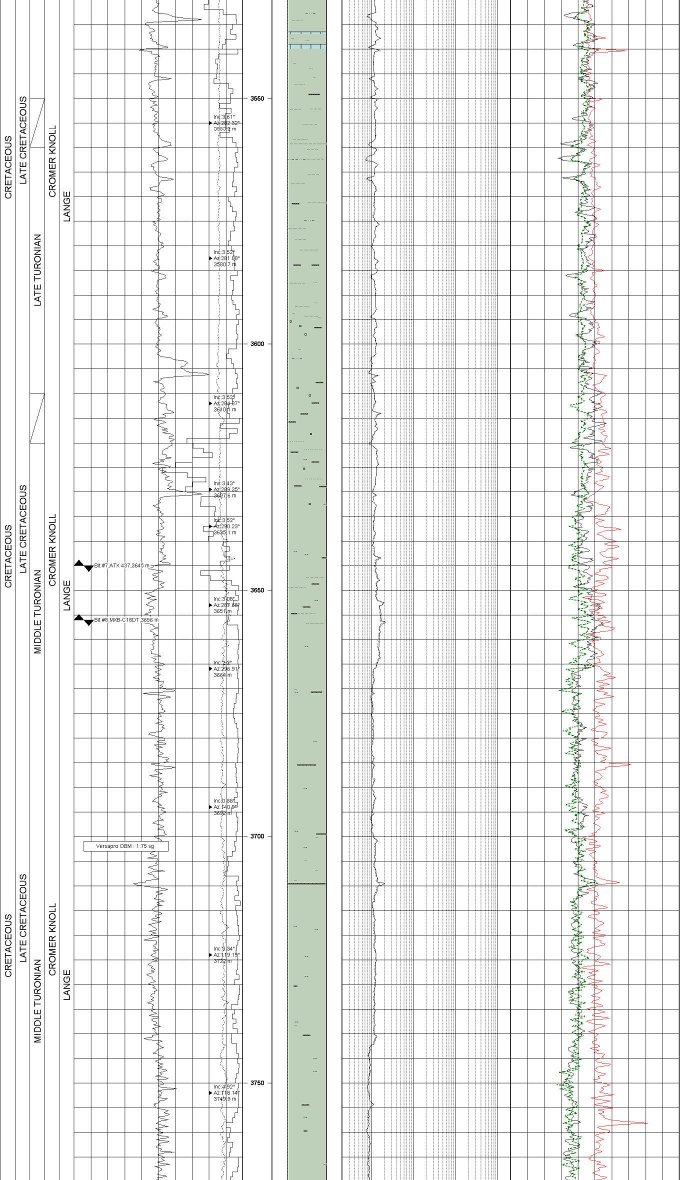
3476 m MD / 3474.3 m TVD RKB

Sst: lt gry, f - med, mod srt, subang - subrnd, lse, fri, mnly lse Qtz grns, arg, glauc, non - sl calc

Clst: m dk - dk gry, frm - mod hd, blky, slty non calc

Lange Fm

3525 m MD / 3523.3 m TVD RKB



Ls: lt brn - dk yel org, m hd, blky, microxln - micritic

Sst: lt gry, f - med, occ crs, mod srt, subang - subrnd, lse, fri, mnly lse Qtz grns, arg, tr glauc, non - sl calc

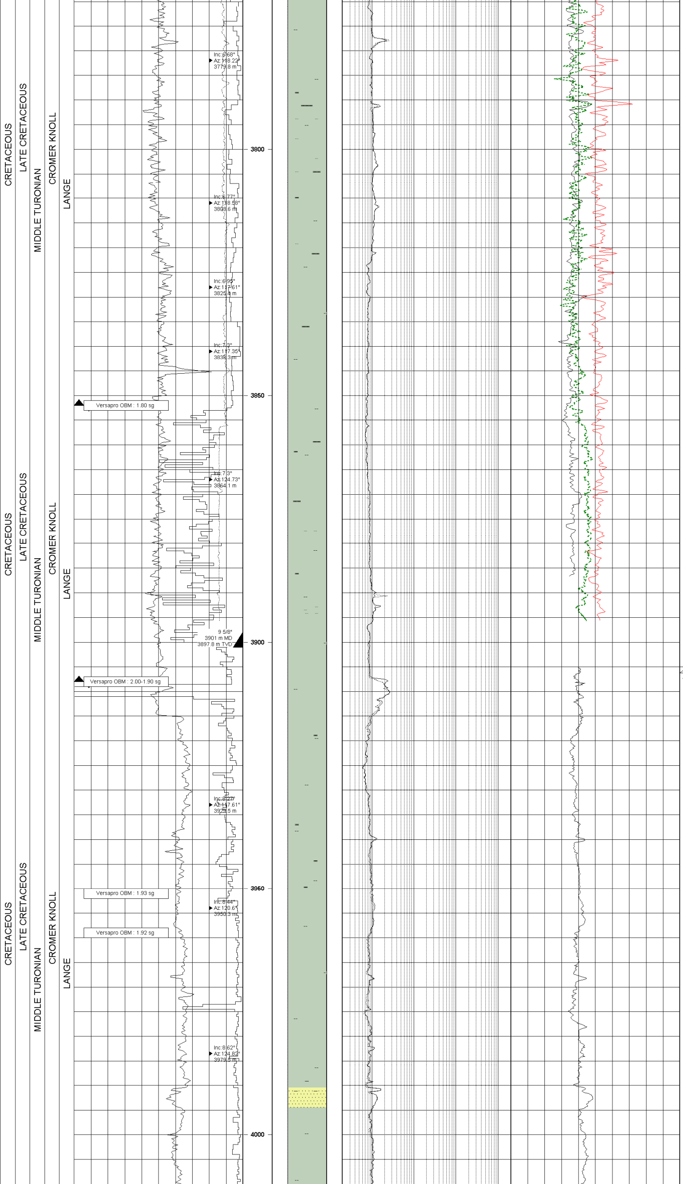
Clst: md dk gry - dk gry, frm, blky, slty, non calc, IP lt - med gry, slty - v slty grad sltst.

Clst: md gry - olvgry, sft - frm, blky, slty- v.slty, non calc

Sst: lt gry, v f occ f, mod srt, v arg grad sdy clst, non cal, non vis por

Ls: yel wh - dk yel org, md hd - hd, blky, micro - crp xln, IP sl dol

Clst: olv blk-dk gry-brn blk, frm, blky, slty, non calc, occ slily ea tex



Clst: dk gry-olv gry-m dk gry, frm, blky, slty, non-slily calc

LOT 3901 m MD / 3897.8 m TVD RKB : 2.00 sg EMW

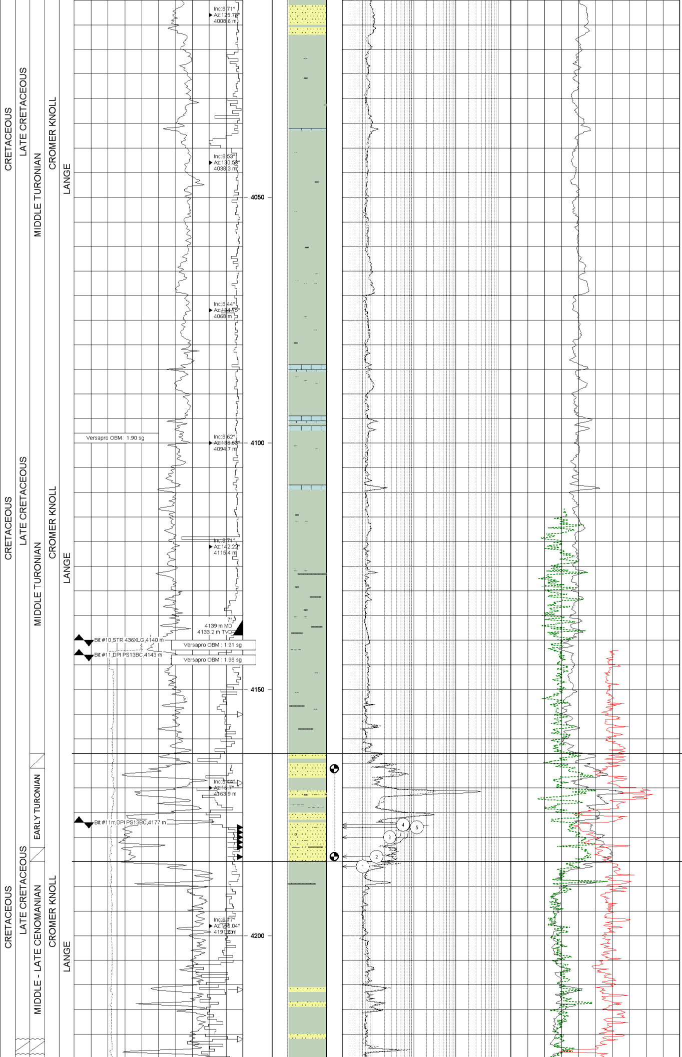
Loss: Drilled new formation with 2.0 sg mud and got losses. Decreased MW to 1.93 sg.

Connection gases from fault zone close to the shoe

Clst: olv gry-m dk gry-olv blk, frm, sb blky, occ sb fis, slty, non calc

Clst: dk gry-olv blk-brn blk-brn gry, frm, blky-sb plty, slty, non-slily calc

Sst: pred lse qtz, clr-trnsl, vf-f, occ m, mod srt, tr agg gr, wkly cmt w/sil. OBM masks any possible show



Sst: pred lse qtz, clr-trnsl, vf, mod srt, tr agg gr, wl cmt w/sil. OBM masks any possible show

Clst: m dk gry-dk gry, olv gry-olv blk, occ dk brn gry-brn blk, frm, sbblky-blky, occ sbplty, slty, non calc-occ slily/mod calc

Clst: m dk gry-dk gry, olv gry-olv blk, occ dk brn gry-brn blk, frm, sbblky-blky, occ sbplty, slty, non calc-occ slily/mod calc

Ls: md gry-brn gry, brit-blky, dol, arg, slty/vf sdy l. P., crypxln

Clst: dk gry-brn gry, occ olv blk, frm, blky-sb plty, slty loc grdg Sltst, non-slily calc/dol, r micropyr

LOT 4140 m MD / 4134.2 m TVD RKB : 2.07 sg EMW

Clst: dk gry-med dk gry, bec lt gry-lt brn gry, firm-hd, blocky, bec sft, amor ip, v slty-slty bec n slty, n calc bec sl swelling.

Lower Lange Sst

4163 m MD / 4157.0 m TVD RKB

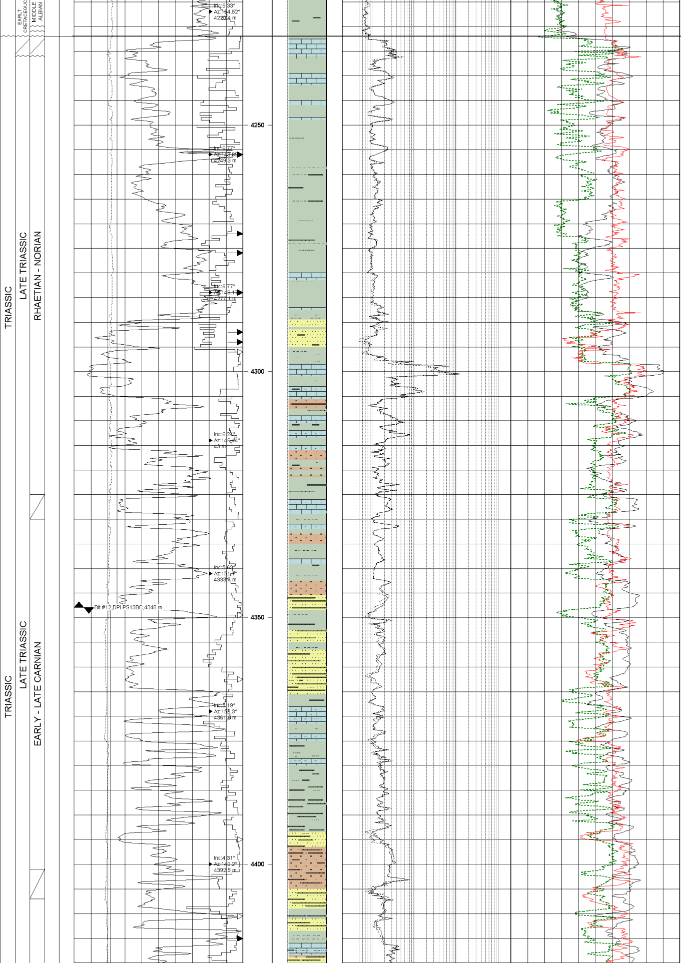
Sst: lt brn gry - m dk gry, vf - f, occ med, mod srtd, rnd - ang, frm, fri, arg mtx, calc cmt, mod vis por

Sst: brn bkl, clr- r transl Qtz, vf - f, wl srt, ang - sb ang, hd, w sil cmt, com carb mat, occ Mic, tr glauc, no vis por

Lange Fm

4185 m MD / 4178.7 m TVD RKB

Clst: dk-med gry, olv gry-olv blk, bec lt gry, lt olive gry ip, lt grn gry-grn gry, frm- sft, blky-amor, n calc, micrmic ip.



Base Cretaceous Unc

4232 m MD / 4225.4 m TVD RKB

Ls: lt bl gn-grn gry, rr pk gry, mod org pk-gry orng pk, bec lt gry-v lt gry w depth, crypxln, frm, blky-amor, bec f xln in arg mtx,sl arg bec v arg, intergrdg to va calc Clst.

Clst: dk gry, poorly laminated, hd, slty, calc, tr micromic

Clst: dk gry, hard, blky, calc.

Clst: olv gry, mod hd, blky, non calc, occ polished surfaces

Clst: m dk gry, mod hd, blky, non calc, slily slty, tr dissem carb mat

Sst: lt gry, f-crs, mod srtd, sbrnd, fri, pr consol,occ hd silic cmt, no vis por

Ls: lt gry - v lt gry - lt brn gry, frm, blky, occ amor, arg, occ aren, cryp - micro xln

Clst: dk gry - olv gry, frm, blky, slty, non - sl slty

Sltst: m dk gry - med gry - olv gry, frm, blky, calc - v calc, grad slty Ls

Sst: Calcareous Sandstone / Sandy Limestonene, v lt gry - lt gry, f - med, tr crs, mod srt, sbrnd, v calc, frm -mod hd, fr, no vis pori

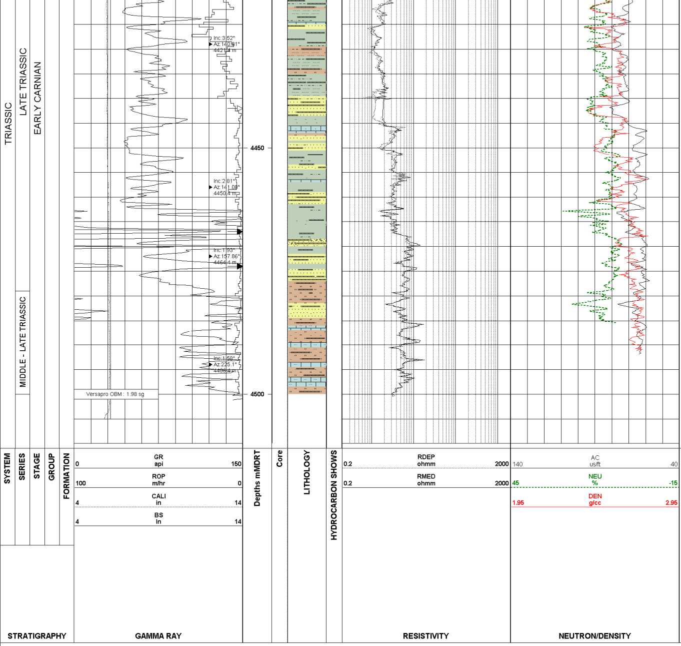
Thinly and very thinly interbedded and intergrading calcareous silty Claystone and very argillacous sandy Limestone

Sltst: med gry - lt gry, frm, blky, clyly, occ sl sdy, non cal - v.calc, occ grad slty claystone, occ grad silty sandy limestone

Sst: lse qtz grns, f - v crs, pr srtd, sbrnd - rnd

Ls: gry wh - lt gry, mod hd, arg - v fn sd ip, microxln

Clst: dk gry-dk gry, blky, hd, non calc, slily slty, tr micromic



LITHOLOGICAL DESCRIPTION

Intergrading silty/sandy, calcareous Claystones and sandy/silty argillaceous Limestones with some Siltstone

Clst: m dk gry - olv gry - dk gry, v slty grad clyly siltstone, sft - frm, amor - blky, sl - v calc

Ls: v lt gry, frm - mod hd, blky - cmb, arg - sdy, diss pyr

Clst: med - dk gry,dk gry brn, rr dk grn gry, hd, crm - blky, sl slty, pyr, non calc

Sst: med gry, clr - mod brn, v fn, sb ang, w srtd, hd, slty mtx, w calc cmt, non vis por

Argillaceous - sandy Limestone grading calcareous clyly Siltstone, v dsky red, blky - cmb, frm - mod hd

Total Depth. 4500 mMD (Driller),
4504 mMD (E-logs)

Casing Records

Diameter	Shoe depth m MD RKB	Shoe depth m TVD RKB
30" Casing shoe	454.5	454.5
20" Casing shoe	1199	1199.0
13 3/8" Casing shoe	2404	2403.6
9 5/8" Casing shoe	3901	3897.8
7" Casing shoe	4139	4133.2

LOT / FIT

Type	Result sg	Depth m MD RKB	Depth m TVD RKB
LOT	1.50	1199	1199.0
FIT	1.55	1199	1199.0
FIT	1.87	2404	2403.6
LOT	2.00	3901	3897.8
LOT	2.07	4140	4134.2

Comments

The 30" conductor pipe was installed employing toe driving techniques. Where the toe driving met refusal the hole was advanced with a 26" bit assembley after which the toe driving continued. A 9 7/8" pilot hole was drilled from 461-1210m

The interval 3625 -3839m was drilled with a motor to correct hole angle. This interval was reamed and logged on the subsequent bit run.

Logs

Run no.	Log type	Logged interval
	MWD Logs	
1	GR-Res-Dir-Sonic	454.5-1210m
2	Dir	454.5-1205m
3	GR-Res-Sonic-Dir	1205-2415m
4	GR-Res-Dens-Neu-PWD-Dir	2415-2415m
5	GR-Res-Sonic-Dens-Neu-PWD-Dir	2415-3645m
6	GR-Dir	3645-3656m
7	GR-Dir	3656 - 3852m
8	GR-Res-Dens-Neu-Sonic-PWD-Dir	3852 - 3908m
9	GR-Res-Dir	3908 - 4140m
10	GR-Res-Dir	4140 - 4177m
11	GR-Res-Dir	4177 - 4348m
12	GR-Res-Dir	4348 - 4500m
	Wireline Logs	
1	OBDT/DSI	4500 - 2770m
2	IPLT/AIT	4506 - 4072m
3	MDT / IPLT	4177.5 - 4186m
4	VSP/APS miss-run	None
5	VSP/APS	4480 - 1900 (VSP)
6	MSCT	4474 - 4155m
7	MDT	4178m

Cores

Core no.	Cored interval m MD RKB	Recovered interval m MD RKB	Rec. mMD	Rec. %

Pressure points (MDT)

Test no.	Depth m MD RKB	Depth m TVD RKB	Fmn. Press. bars	Test no.	Depth m MD RKB	Depth m TVD RKB	Fmn. Press. bars
1	4186	4179.7					
2	4184	4177.7					
3	4180	4173.8					
4	4177.5	4171.3					
5	4178	4171.8	748.900				

Block: 6406/1

Well: 6406/1-2 Prognosed Versus Actual Stratigraphy

Location: Sklinna South Line Trace: NA01 M2-3D **X: 7 203 421.02 Y: 364 414.38 BRT: 23m**

Tops (pre-well)	TWT (sec)	Progn Depth (m MSL)	Progn Depth (m BRT)	Actual Depth (m MSL)	Actual Depth (m BRT)	Delta (m)	Delta (%)	Horizon (post well)
Sea Floor	0.512	383	406	383	406			
Kai Fm	1.646	1614	1637	1565	1588	-49		
HORDALAND GP	2.143	2169	2192	2061	2084	-108		
Brygge Fm	2.143	2169	2192	2061	2084	-108		
ROGALAND GP	2.488	2513	2536	2435	2458	-78		
Tare Fm	2.488	2513	2536	2435	2458	-78		
SHETLAND GP	2.579	2636	2659	2550	2574	-86		
Springar Fm	2.579	2636	2659	2550	2574	-86		
CROMER KNOLL GP	3.215	3435	3458	3343	3368	-92		
Lysing Fm	3.215	3435	3458	3343	3368	-92		
Lange Fm	3.301	3558	3581	3362	3385	-196		
Lower Lange Sandstone	3.76	4248	4271	4134	4163	-114		
Base Cretaceous Unc.	3.799	4304	4327	4202	4232	-102		
Base Reservoir		4651	4674					
TD		4700	4723	4469	4500			