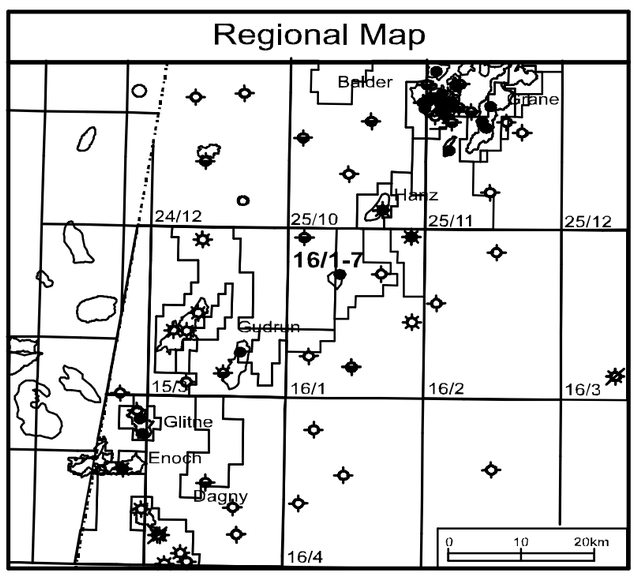
ESSO NORGE AS
COMPOSITE LOG 1:500

WELL: 16/1-7

REGIONAL MAP

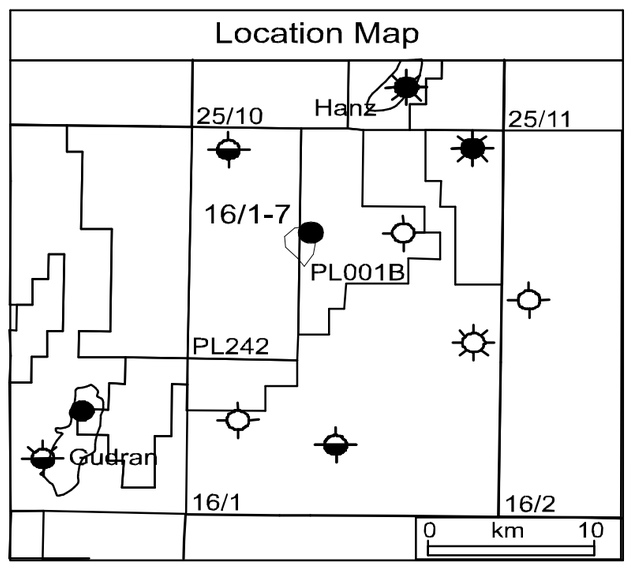


COUNTRY	:	NORWAY
BASIN	:	SOUTH VIKING GRABEN
BLOCK	:	16/1
LICENCE	:	PL001B/PL 242
OPERATOR	:	ESSO NORGE AS
PRE-DRILL STATUS	:	EXPLORATION
RIG NAME	:	DEEPSEA DELTA
STATUS	:	OIL DISCOVERY, P&A

OBJECTIVES

PRIMARY	:	SLEIPNER FORMATION
SECONDARY	:	U JURASSIC, PALEOCENE

LOCATION MAP



RIG DATA

RIG PICK UP DATE	:	27 April 2004	RKB - MSL	:	29.0 m
SPUD DATE	:	29 April 2004	RKB - SB	:	141.2 m
DRILLING COMPLETED	:	16 May 2004	WATER DEPTH	:	112.2 m
RIG RELEASED	:	30 May 2004	TD (Driller)	:	3186.0 m MDRKB
TOTAL DAYS	:	33 days	TD (Logger)	:	3186.5 m MDRKB
			TVD	:	(3156.0m TVDSS)

LOCATION DATA

SEABED LOCATION:	58° 55' 58.631" N (6 533 063.68m N)
	02° 07' 42.362" E (449 827.61m E)
TD LOCATION:	58° 55' 56.7792" N (6 533 006.39m N)
	02° 07' 42.4324" E (449 827.99m E)

PARTNERS

ESSO NORGE AS (OPERATOR)	:	50%
STATOIL	:	50%

CONTRACTORS

WELLSITE GEOLOGY	:	CAMBRIAN
MUD LOGGING	:	BHI
WIRELINE LOGGING	:	BAKER ATLAS
VSP	:	BAKER ATLAS
MWD LOGGING	:	BHI
CEMENTING	:	HALLIBURTON
MUD	:	MI-SWACO NORGE
CASING	:	ODFJELL CASING SERVICES

GEOLOGISTS

OPERATIONS	:	T. Valheim Y. Booth
WELLSITE	:	N. Feery
		I. McLeod
		P. Anderson
		R. Bulman
		J. Watson

LOG COMPILER(S)

I. McLeod R. Howes P. Anderson J. Watson

LITHOSTRATIGRAPHIC TOPS

GROUP	FORMATION	MEMBER	Cks TWT	DEPTH (mMDRKB)	DEPTH (mTVDSS)
Seabed				141.2	112.2
	UTSIRA		0.766	742.5	713.5
HORDALAND			0.831	815.0	786.0
	SKADE		0.920	920.0	891.0
	BASE SKADE		1.240	1240.0	1211.0
	GRID		1.620	1631.0	1602.0
	BASE GRID		1.857	1922.0	1893.0
ROGALAND	BALDER		2.039	2130.0	2101.0
	SELE		2.094	2197.5	2168.5
	LISTA		2.149	2263.0	2234.0
	HEIMDAL		2.196	2327.0	2298.0
SHETLAND	TOP CHALK		2.271	2436.0	2407.0
	TOR		2.344	2560.0	2531.0
CROMER KNOLL			2.419	2727.0	2698.0
VIKING	DRAUPNE		2.431	2747.0	2718.0
	HEATHER		2.546	2918.0	2889.0
VESTLAND	SLEIPNER		2.567	2952.5	2923.5
		OIL SAND	2.569	2955.5	2926.0
		OWC	2.577	2969.5	2940.0
HEGRE	SMITH BANK/ SKAGERAK		2.638	3083.0	3054.0
TD			Ca 2.694	3186.0	3157.0

LWD & WIRELINE LOGS

DATE	RUN No.	LOGGING SUITE	INTERVAL (m)
LWD			
02-03/05/2004	1	MWD GR-MPR2-Dir	141 - 1186
07-09/05/2004	2	MWD GR-MPR3-ORD-CCN-APX-Dir	1186 - 2561
12-14/05/2004	3	MWD GR-MPR3-ORD-CNN-APX-Dir	2561 - 2749
14-16/05/2004	4	MWD GR-MPR3-ORD-CNN-APX-Dir	2749 - 3186
WIRELINE			
16-17/05/2004	1A	WL GR-HDIL-ZDL-CN-XMAC	2561 - 3186
17/05/2004	1A	WL GR-VSP	500 - 3186
17-18/05/2004	1A	WL GR-RCI 39 tests No samples	2957 - 3044
18-19/05/2004	1B	WL GR-RCI 4 tests 6 840cc, 2 4l samples	2964 - 2977.5
19/05/2004	1A	WL MR Ex	3020 - 2945
20-21/2004	1A	WL GR-STRADDLE PACKER	FAILED
21-22/2004	1A	WL GR-STRADDLE PACKER 3 zones tested	2957 59.5 64.5
23/07/2004	1A	SIDEWALL CORES	47 SHOTS
			5 RECOVERIES
23/07/2004	1B	SIDEWALL CORES	50 SHOTS
			30 RECOVERIES

CASING DATA

BIT SIZE	INTERVAL	CASING	SHOE DEPTH	MUD SYSTEM
36"	141 - 229m	30"	223.0m	Seawater/hi vis sweeps
17 1/2"	229 - 1286m	13 3/8"	1281.0m	Seawater/hi vis sweeps
12 1/4"	1286 - 2561m	9 5/8"	2556.0m	Versavert OBM
8 1/2"	2561 - 3186m			Versavert OBM

CONVENTIONAL CORES

CORE	INTERVAL	RECOVERY

BIOSTRATIGRAPHIC TOPS

SERIES	STAGE	ZONE	DEPTH (MDRKB)	DEPTH (TVDSS)

RCI STRADDLE PACKER

DST No	INTERVAL	FLOW	CHOKE	WHP
1	2956.4 - 2957.5			
2	2964.0 - 2965.0			
3	2959.0 - 2960.0			

RCI SAMPLES

RUN	DEPTH (MDRKB)	FORMATION PRESSURE (BARS)	CHAMBER VOLUME (CC)	SAMPLE TYPE
1B	2965.0	299.66	4 x 840	OIL
			2 x 4000	OIL
1B	2977.5	300.77	2 x 840	WATER

MISCELLANEOUS

SIDEWALL CORES

RUN	SHOT	DEPTH	RECOVERY	RUN	SHOT	DEPTH	RECOVERY
1	1	3166.0	0.5	2	1	3166.0	0.0
1	2	3158.0	0.0	2	2	3156.0	0.0
1	3	3155.0	0.5	2	3	3155.0	0.0
1	4	3140.0	0.0	2	4	3140.0	0.0
1	5	3136.0	0.0	2	5	3136.0	1.0
1	6	3095.0	0.0	2	6	3095.0	1.8
1	7	3085.0	0.0	2	7	3085.0	2.5
1	8	3069.0	0.0	2	8	3069.0	1.0
1	9	3062.5	0.0	2	9	3062.0	1.5
1	10	3056.0	0.0	2	10	3056.0	0.0
1	11	3045.0	0.0	2	11	3045.0	1.5
1	12	3021.0	0.0	2	12	3021.0	0.0
1	13	3011.5	0.0	2	13	3011.0	2.0
1	14	3005.0	0.5	2	14	3005.0	1.0
1	15	2997.0	0.5	2	15	2997.0	1.5
1	16	2992.0	0.0	2	16	2992.0	1.5

RFT DATA

RUN	DEPTH (RKB)	HYDROSTATIC PRESS (psi)	FORMATION PRESS (psi)	COMMENT	PERMEABILITY
1A	2957.0	441.07	299.14	Gd test	77.4 mD
1A	2959.0	441.23	299.35	Gd test	114.0 mD
1A	2961.0	441.52		Tight	
1A	2961.0	441.51		Tight	
1A	2964.0	442.07	299.62	Gd test	904.0 mD
1A	2965.0	442.14	299.68	Gd test	992.0 mD
1A	2967.0	444.48	299.82	Gd test	521.0 mD
1A	2968.0	442.60	299.91	Gd test	19.5 mD
1A	2970.0	442.59	300.02	Gd test	46.1 mD
1A	2973.0	443.33	300.34	Gd Test	38.3 mD
1A	2975.0	443.52		Tight	
1A	2974.5	443.46		Tight	
1A	2977.0	443.97	300.72	Gd Test	69.6 mD
1A	2980.0	444.45	301.04	Gd Test	78.6 mD

1	17	2991.0	0.0	2	17	2991.0	1.3	1A	2984.0	445.15	301.46	Gd Test	219.0 mD
1	18	2984.5	0.0	2	18	2984.0	0.0	1A	2994.0	445.78	302.50	Gd Test	76.7 mD
1	19	2980.0	0.0	2	19	2980.0	0.0	1A	2998.0	446.92		Seal Failure	2 failures
1	20	2975.0	0.0	2	20	2975.0	0.8	1A	3003.0	447.81	303.46	Gd Test	17.3 mD
1	21	2971.5	0.0	2	21	2971.0	2.3	1A	3012.0	449.33	304.32	Gd Test	3.8 mD
1	22	2970.0	1.0	2	22	2970.0	1.8	1A	3021.1	450.77	305.23	Gd Test	8.39 mD
1	23	2965.0	0.0	2	23	2965.0	0.0	1A	3030.0	452.16	306.19	Gd Test	5.4 mD
1	24	2964.0	0.0	2	24	2964.0	0.0	1A	3036.0	453.04	306.77	Gd Test	3.7 mD
1	25	2962.5	0.0	2	25	2962.0	1.2	1A	3044.0	454.26	307.95	Gd Test	6.68 mD
1	26	2959.5	0.0	2	26	2959.5	1.5	1A	2964.0	441.43	299.59	Gd Test	4.8 mD Attempted sample
1	27	2957.0	0.0	2	27	2957.0	1.8	1A	2965.0	441.55	299.71	Gd Test	10 mD SF while sampling
1	28	2948.0	0.0	2	28	2948.0	1.8	1A	2964.5	441.47	299.60	Gd Teat	1090 mD
1	29	2942.5	0.0	2	29	2942.5	1.3	1A	2964.5	441.33	299.62	Gd Test	64.7 mD
1	30	2917.0	0.0	2	30	2917.0	0.0	1A	2964.7	441.75	299.64	Gd Test	200.0 mD
1	31	2910.0	0.0	2	31	2910.0	0.0	1A	2959.5	441.00	299.43	Gd Test	21.0 mD
1	32	2875.0	0.0	2	32	2875.0	1.9	1A	2959.2	441.09	299.41	Gd Test	23.0 mD
1	33	2858.0	0.0	2	33	2858.0	0.0	1A	2957.0	440.00	299.18	Gd Test	47.0 mD
1	34	2837.0	0.0	2	34	2837.0	0.0	1A	2967.0	442.58	299.81	Gd Test	121.0 mD
1	35	2814.0	0.0	2	35	2814.0	2.0	1A	2957.0	441.46	299.18	Gd Test	48.5 mD
1	36	2798.0	0.0	2	36	2798.0	0.0	1A	2977.0	444.82	300.72	Gd Test	300 mD
1	37	2784.0	0.0	2	37	2784.0	1.9	1A	2984.5	445.45		Seal Failure	3 failures
1	38	2761.0	0.0	2	38	2783.0	2.0	1A	2995.0	447.69	302.77	Gd Test	30 mD
1	39	2756.0	0.0	2	39	2761.0	1.4	1A	2994.0	447.25	302.37	Gd Test	36 mD SF while sampling
1	40	2751.0	0.0	2	40	2756.0	1.0	1A	2965.0			Seal failure	
1	41	2745.0	0.0	2	41	2751.0	0.0	1A	2957.0			Seal Failure	
1	42	2735.0	0.0	2	42	2756.0	0.0	1B	2964.0	441.87	299.61	Gd Test	5.4 mD
1	43	2731.0	0.0	2	43	2735.0	0.0	1B	2965.0	442.13	299.66	Gd Test	746.0 mD Take oil samples
1	44	2674.0	0.0	2	44	2732.0	0.0	1B	2977.0	445.77	300.74	Gd Test	26.0 mD
1	45	2466.0	0.0	2	45	2674.0	1.9	1B	2977.5	445.53	300.77	Gd Test	
1	46	2609.0	0.0	2	46	2644.0	0.1						
1	47	2575.0	0.0	2	47	2609.0	2.0						
				2	48	2575.0	0.5						
				2	49	2576.0	0.0						
				2	50	2574.0	0.1						

LITHOLOGY SYMBOLS

CONGLOMERATE
BRECCIA
SANDSTONE
SILTSTONE
CLAY
CLAYSTONE
SHALE
CALCAREOUS CLAYSTONE
MARL
CHALK
NO RETURNS

LIMESTONE
ARGILLACEOUS LIMESTONE
DOLOMITIC LIMESTONE
OOLITIC LIMESTONE
DOLOMITE
CALCAREOUS DOLOMITE
ANHYDRITE GYPSUM
COAL

HALITE
POLYHALITE
VOLCANICS TUFF
INTRUSIVE IGNEOUS
EXTRUSIVE IGNEOUS
METAMORHPIC
BASEMENT
CEMENT

ACCESSORY SYMBOLS

CONGLOMERATIC
SANDY
SILTY
ARGILLACEOUS
SHALY
MARLY
CALCAREOUS
DOLOMITIC
LIMESTONE STRINGER
ANHYDRITIC GYPSIFEROUS
VOLCANICS TUFFACEOUS

CALCITIC
CHERTY
GLAUCONITIC
FERRUGINOUS
PYRITIC
CARBONACEOUS
MICACEOUS
FELDSPATHIC
PHOSPHATIC
OOLITIC

MACROFOSSILS UNDIFF
MICROFOSSILS UNDIFF
AMMONITES
BELEMNITES
CORALS
ECHINOIDS
GASTROPODS
BIOTURBATED
ROOTS
PLANT REMAINS

OPERATIONAL SYMBOLS

9 5/8" 9805 CASING SHOE
CEMENT PLUG
BRIDGE PLUG
14000 / 14153 / 14158 / 14200 DST 2
BIT DATA DATE
NB NEW BIT
RRB RERUN BIT
CB CORE BIT
8950 Nº1 (SHIFT) RECOVERY 8970 / 8980 (NO REC) CORE

SIDEWALL CORES
RUN.SHOT (RECOVERED)
RUN.SHOT (NOT RECOVERED)
RFT/FMT
RUN SAMPLE TAKEN
RUN PRESSURE TEST
DIP DIPMETER
322 / 3° DEVIATION SURVEY
INTERVAL MARKER eg. FMS

CHRONO/LITHO STRATIGRAPHY: SYSTEM | SERIES | STAGE | GROUP | FORMATION | MEMBER

GAMMA RAY: GR(API) 0–150; GRAFM(AAPI) 0–150; 0.0 / 0.0

DEPTH AND LITH: 0

RESISTIVITY: M2RX(Ohm/m) 0.20–200; M2R2(Ohm/m) 0.20–200; M2R1(Ohm/m) 0.20–200; RPCLM(Ohm/m) 0.20–20; RACLM(Ohm/m) 0.20–20; RPCHM(Ohm/m) 0.20–20; RACHM(Ohm/m) 0.20–20

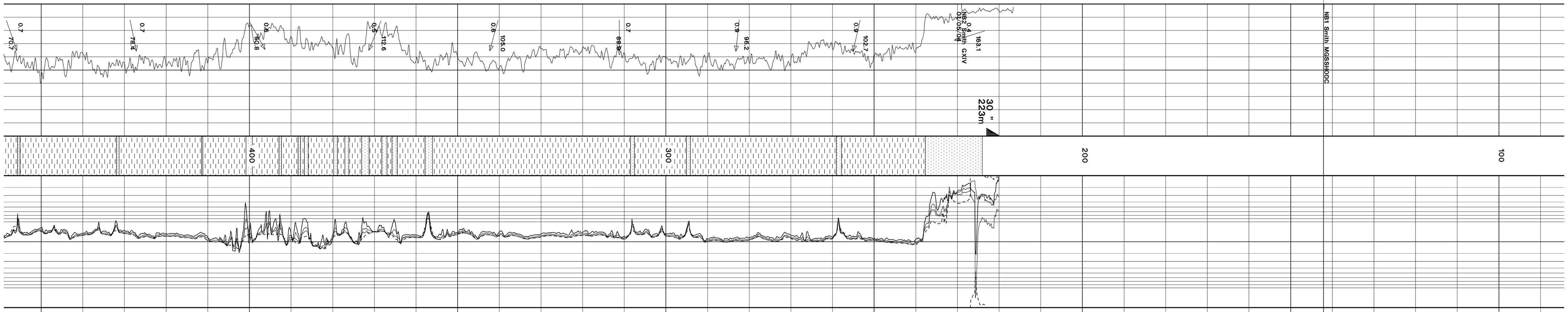
POROSITY: CNC(PU) 45–-15; ZDEN(GM/CC) 1.95–2.95; NPLFM(P/U) 45–-15; BDCFM(G/CC) 1.95–2.95; DTPM(usec/ft) 140–40; DT(msec/ft) 140–40

LITHOLOGY DESCRIPTION

TERTIARY - QUATERNARY

NORDLAND GROUP

UNDIFFERENTIATED



NB1 Smith MSSSH00C

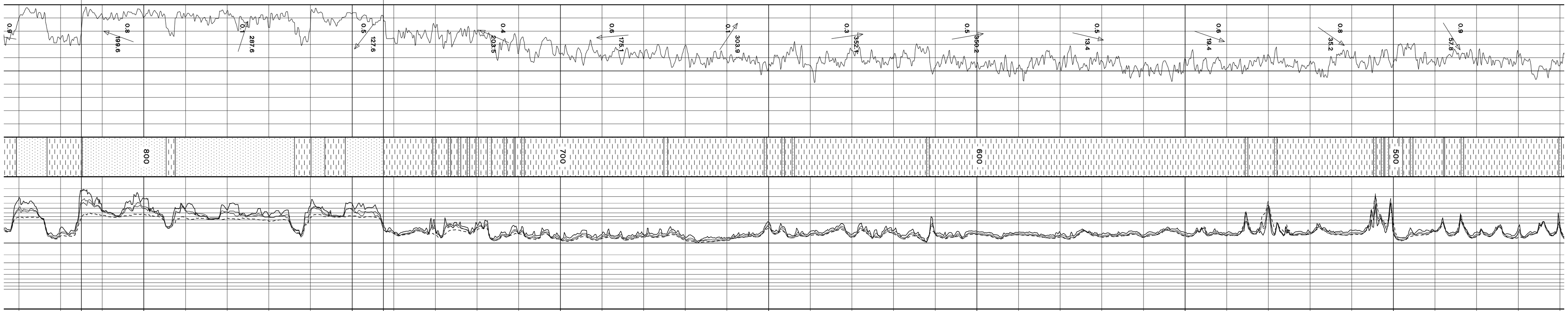
Seabed at 141.2m MDRKB

Cuttings returned to seabed above 1280m MD.
Lithology interpreted from MWD logs.

TERTIARY

ND GROUP | NORDLAND GROUP | NORDALAND GROUP | NORDLAND GROUP

UTSIRA FORMATION | UNDIFFERENTIATED



0.766s twt

UTSIRA FORMATION
742.50m MDRKB (713.50m TVDSS)

0.831s twt

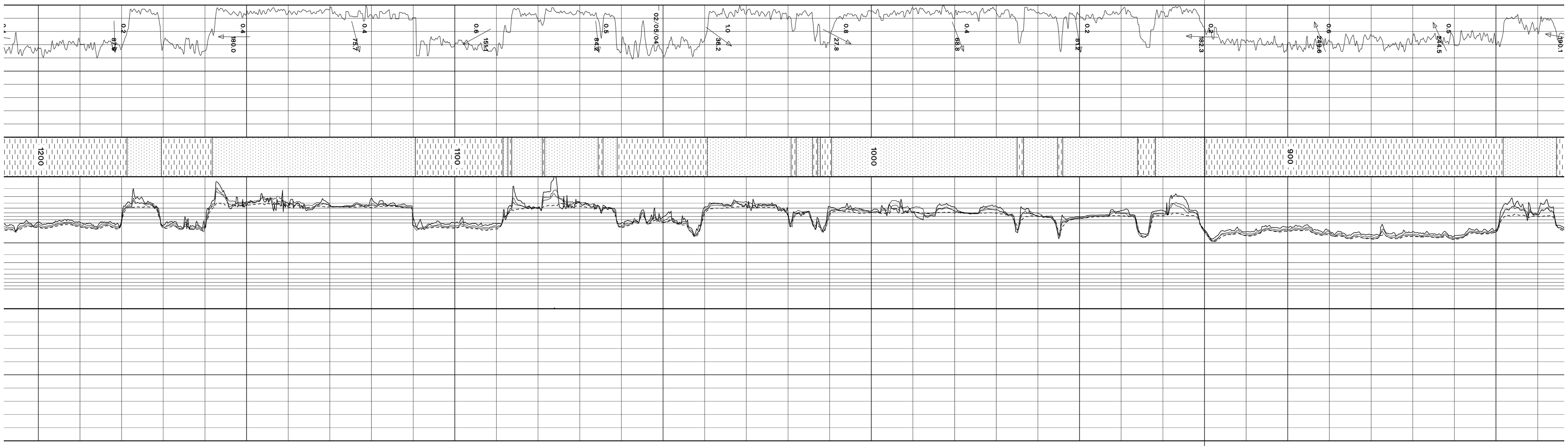
HORDALAND GROUP
815.0m MDRKB (786.0m TVDSS)

TERTIARY

HORDALAND GROUP

HORDALA

SKADE FORMATION



SKADE FORMATION
920.0m MDRKB (891.0m TVDSS)

0.920s twt

TERTIARY

TERTIARY

HORDALAND GROUP

HORDALAND GROUP

SKADE FORMATION

2.0 175.7

1.9 172.6

1.8 174.1

1.6 173.6

1.5 168.7

1.5 165.9

1.4 164.9

1.4 167.1

1.4 164.0

1.4 162.9

NB3 Reed 8SX97HGV 03-07/05/04

0.9 167.3

0.7 131.6

13⅜" 1281m

1500

1400

1300

1.240s twt

BASE SKADE FORMATION
1240.0m MDRKB (1211.0m TVDSS)

LOT 1.96 SGE at 1289m using 1.25 SG mud.

CLAYSTONE: light grey, firm to moderately hard, blocky, slightly to moderately calcareous, slightly silty, trace glauconite.

CLAYSTONE: medium grey, moderately hard, blocky, slightly to moderately calcareous, slightly glauconite, rare trace microcrystalline pyrite.

MW 1.25 SG

CLAYSTONE: medium grey, moderately hard, blocky, slightly silty, weakly to non-calcareous, local very finely disseminated carbonaceous material.

LIMESTONE: lime mudstone, off white to cream, moderately hard to hard, angular to blocky, chalky texture, recrystallised in part, very poor visible porosity, no shows.

CLAYSTONE: medium grey, moderately hard, blocky, slightly silty, gentrally homogeneous.

Start increasing MW from 1.25 SG to 1.32 SG

LIMESTONE: lime mudstone, cream to light brown grey, hard to very hard, microcrystalline, sucrosic in part, locally micritic, rare trace pyrite, no visible porosity, no shows.

CLAYSTONE: dark grey, moderately hard, blocky to hackly, slightly silty, frequent very finely disseminated

TERTIARY

TERTIARY

TERTIARY

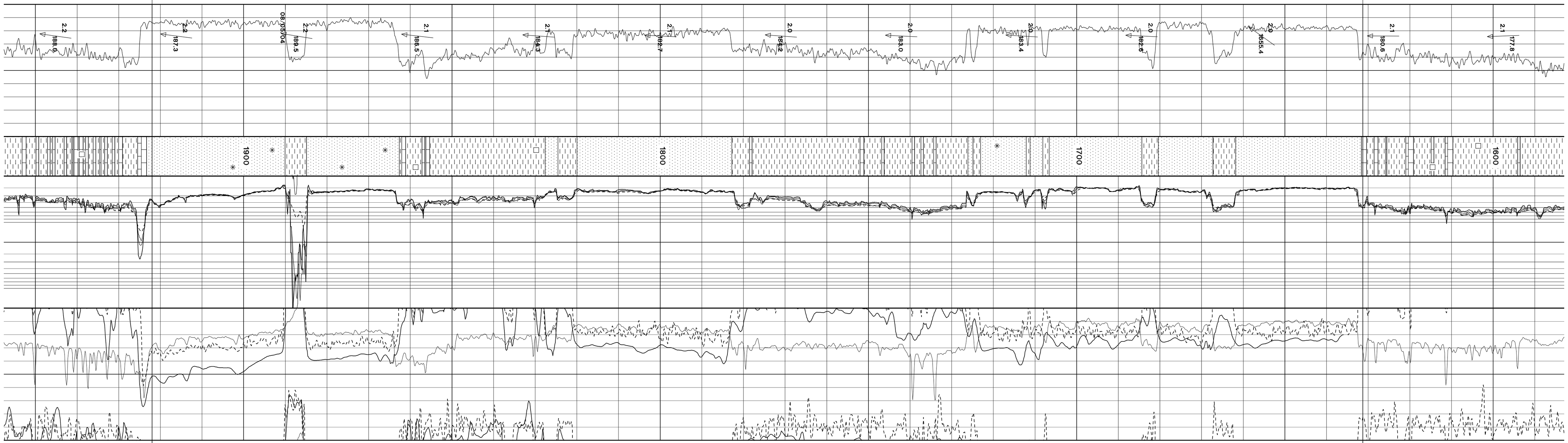
HORDALAND GROUP

HORDALAND GROUP

HORDALAND GROUP

GRID FORMATION

GRID FORMATION



pyrite, trace finely disseminated carbonaceous material.

CLAYSTONE: firm, blocky to splintery, light to medium blue grey, moderately calcareous in part, occasional very finely disseminated pyrite, occasional thin SILTSTONE laminae, slightly micromicaceous, subspherical, well sorted, extensive argillaceous matrix, no visible porosity, no shows.

1.620s twt

GRID FORMATION
1631m MDRKB (1602m TVDSS)

SANDSTONE: off white to very light grey, firm, translucent, very fine (U) to fine (L), subround to round, subspherical, moderately well sorted, common kaolinitic matrix, moderate porosity, no shows.

CLAYSTONE: light to medium blue grey, moderately hard, sub-blocky to sub-platy, waxy in part, occasional pyrite, frequent local sand lenses, slightly micromicaceous, well sorted, extensive argillaceous matrix, no visible porosity, no shows.

SANDSTONE: white, translucent, very fine(U) to fine(U), occasionally medium(L), subround, subspherical, moderately well sorted, rare pyrite, good visible porosity, no shows.

SANDSTONE: off white, firm, very fine(U) to fine(U), rarely medium(L), subround, subspherical, moderately well sorted, weak siliceous cement, occasional glauconite, good porosity, no shows.

MW 1.32 SG

SANDSTONE: white to very light grey, moderately hard, very fine to fine, sub rounded, moderately to well sorted, weakly cemented with silica, occasional glauconite, moderate visible porosity, no show.

SANDSTONE: white to very light grey, moderately hard, very fine to fine, sub rounded, moderately to well sorted, weakly cemented with silica, occasional glauconite, moderate visible porosity, no show

CLAYSTONE: bluish grey, firm, blocky, occasionally sub platey, non calcareous, occasional micropyrite.

SANDSTONE: Loose Quartz, clear to translucent, fine to coarse, sub rounded, moderately sorted, occasional aggregated grains with some glauconite, common Glauconite. No show.

SANDSTONE: Loose quartz, clear to translucent, medium to coarse sub rounded well sorted occasional aggregated grains with some glauconite, local kaolin matrix. No visible porosity, No show.

1.857s twt

BASE GRID FORMATION
1922.0m MDRKB (1893.0m TVDSS)

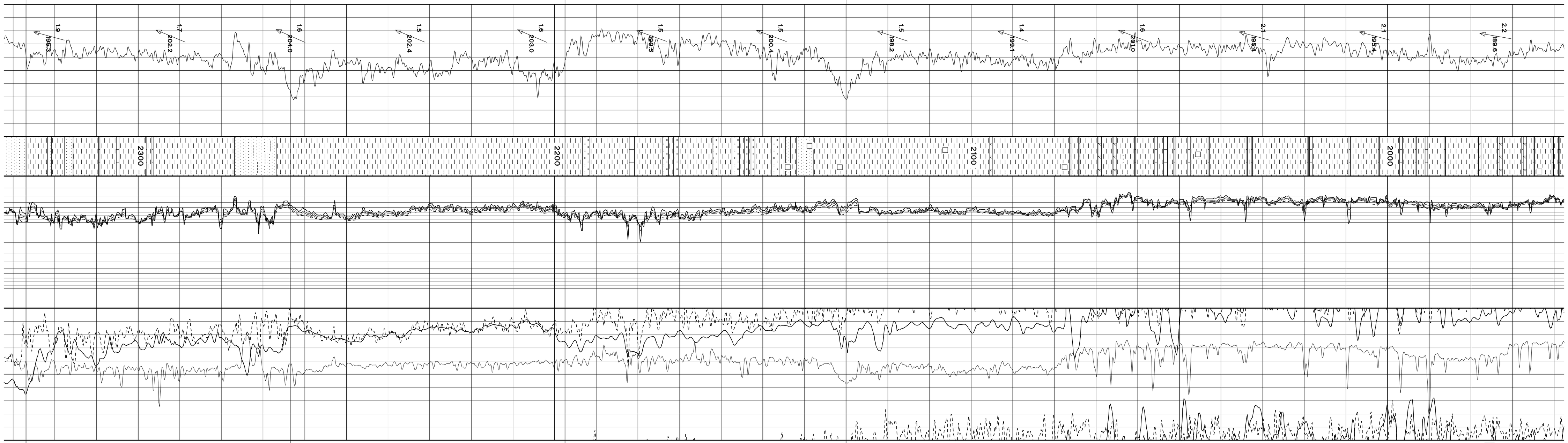
CLAYSTONE: Pale blue to blue grey to green grey, firm, blocky, occasionally sub platey, non calcareous, common micropyrite, occasional Pyrite nodules.

Trace LIMESTONE: off white, moderately hard, blocky, hackly fracture, occasionally argillaceous laminae, saccroic texture, microcrystalline

TERTIARY | TERTIARY | TERTIARY

ROGALAND GROUP | ROGALAND GROUP | HORDALAND GROUP

ON | LISTA FORMATION | SELE FORMATION | BALDER FORMATION



Trace DOLOMITE, off white, hard, blocky, sucrosic texture, microcrystalline.

MW 1.32 SG

CLAYSTONE, medium grey to olive grey occasionally blue grey, firm, blocky, non calcareous, occasional micropyrite.

LIMESTONE, off white, firm to moderately hard, argillaceous laminations, chalky, occasional argillaceous laminations.

DOLOMITE, off white hard, blocky, sucrosic texture, occasional very fine quartz grains, microcrystalline

CLAYSTONE, Predominantly blue grey to green grey, occasionally olive grey, moderately hard, blocky, occasionally sub platey, non calcareous, occasional micropyrite

LIMESTONE/DOLOMITE, off white to yellow grey, firm, occasionally hard, blocky, hackly fracture, rare very fine sand, commonly grading to dolomite, locally chalky, generally slightly argillaceous.

2.039s twt

ROGALAND GROUP
BALDER FORMATION
2130.0m MDRKB (2101.0m TVDSS)

SANDSTONE, loose, transparent, medium (U) to coarse(L), round to subround, subelongate to subspherical, moderately well sorted, common pyrite, good inferred porosity, no shows.

CLAYSTONE, light blue grey, blocky, occasional microcrystalline pyrite, finely laminated.

TUFF, very light blue grey to very light purple grey, moderately hard, blocky, occasionally friable, common fine ferromagnesian crystals in very fine crystal lithic matrix, frequent glassy shards.

CLAYSTONE, olive grey, moderately hard, blocky, slightly silty, slightly carbonaceous, generally homogeneous.

LIMESTONE, lime mudstone, white to off white, angular to blocky, microcrystalline, rarely dolomitic, no visible porosity, no shows.

CLAYSTONE, olive grey, moderately hard, blocky, generally homogeneous.

2.094s twt

SELE FORMATION
2197.5m MDRKB (2168.5m TVDSS)

CLAYSTONE, olive grey, moderately hard, blocky, slightly carbonaceous in part, locally very finely laminated, generally homogeneous.

MW 1.32 SG

CLAYSTONE, dark olive grey, moderately hard, blocky, occasionally very finely disseminated pyrite.

CLAYSTONE, dark olive grey, moderately hard, blocky, moderately carbonaceous, occasional very finely disseminated pyrite.

2.149s twt

LISTA FORMATION
2263.0m MDRKB (2234.0m TVDSS)

SANDSTONE, off white, moderately hard to firm, occasionally friable, very fine(U) to fine(U), subround, moderately well sorted, siliceous cement, occasional argillaceous matrix, occasional carbonaceous & coaly clasts, fair visible porosity, no shows.

CLAYSTONE, medium to light blue grey, moderately hard, blocky, rare microcrystaline pyrite, generally homogeneous.

SANDSTONE, loose, translucent, very fine(U) to medium(L), subround, spherical, moderately well sorted, no cement, occasional coaly clasts, moderate inferred porosity, no shows.

2.196s twt

HEIMDAL FORMATION
2327.0m MDRKB (2298.0m TVDSS)

TERTIARY

CRETACEOUS

HEIMDAL FORMATION

ROGALAND GROUP

HEIMDAL FORMATION

SHETLAND GROUP

SHETLAND GROUP

TOR

TOR

TOR

TOR FORMATION

1.6 188.7

1.7 187.4

2400

1.6 182.6

1.9 181.2

1.8 180.2

09/05/04

1.8 180.3

2500

1.6 186.0

MWD GR
0 to 150 API

9 5/8"
2556m

10/05/04

NB3 Reed DSX173DG

1.7 179.5

WL GR
0 to 150 API

1.7 177.9

2600

1.7 178.8

1.7 180.9

1.8 175.3

2700

13/05/04

ZDEN
1.95 to 2.95 g/cc

CNC
45 to -15 PU

DT Sonic
40 to 140 ms/ft

SANDSTONE: loose, translucent to transparent, fine(U) to coarse(L), subround, subspherical, poorly sorted, moderate to good porosity, no shows.

MWD realtime resistivity failure at 2365m occurred after jars fired.

SANDSTONE: white, hard to very hard, angular, fine(L) to fine(U), subangular to subrounded, spherical, well sorted, extensive calcareous cement, no visible porosity, no shows.

CLAYSTONE: light to medium blue grey, moderately hard, blocky, waxy in part, occasional trace microcrystalline pyrite, locally finely laminated.

SANDSTONE: off white, firm, friable, very fine(U) to fine(U), subround, subspherical, moderately well sorted, extensive kaolinitic matrix, fair to poor porosity, no shows.

CLAYSTONE: light to medium blue grey, moderatetly hard, blocky to sub-platy, rare trace microcrystalline pyrite, generally homogeneous.

SANDSTONE: off white, generally loose Quartz, fine(U) to coarse(L), locally slightly cemented, moderate visible porosity. No show.

CLAYSTONE: medium to dark grey, moderately hard, blocky, rare very finely disseminated carbonaceous material.

2.271s twt

SHETLAND GROUP

2436.0m MDRKB (2407.0m TVDSS)

LIMESTONE: white, firm to moderately hard, blocky, chalky.

CLAYSTONE: dark grey, green grey, olive grey, rarely moderate brown, rarely blue grey, firm, sub platey, slightly splintery, generally non calcareous locally slightly calcareous. rare micropyrite.

Trace SANDSTONE: very light grey, Quartz, clear to translucent, very fine to medium(L), sub rounded, sub spherical, poorly sorted, weakly cemented with calcite. No show

LIMESTONE: white, firm, blocky, hackly fracture, chalky. Occasionally off white, blocky, brittle, microcrystalline.

CLAYSTONE: dark grey, occasionally green grey, occasionally olive grey, rarely light grey, firm to moderately hard, blocky to sub platey, generally non calcareous, occasionally calcareous, rarely very calcareous, rare micropyrite.

MW 1.32 SG

SANDSTONE: off white to light grey, moderately hard to hard, angular, very fine(U) to fine(U), occasionally medium(L), subround, occasionally round, spherical, poorly sorted, moderate siliceous cement, local patchy calcareous cement, very poor to no visible porosity, no shows.

LIMESTONE: lime mudstone, white, hard, angular, chalky texture, no vivible porosity, no shows.

SANDSTONE: light grey, moderately hard, angular, friable in part, very fine(U) to fine(U), very occasionally medium(L), subround, spherical, poorly sorted, moderate siliceous cement, rare trace glauconite, very poor to no visible porosity.

LIMESTONE: lime mudstone, white, hard, angular to blocky, microcrystalline, chalky matrix, generally homogeneous, no visible porosity, no shows.

SANDSTONE: light grey, moderately hard, angular, very fine(U) to fine (U), subround, spherical, moderately sorted, poor porosity, frequent coaly clasts, no shows.

LOT 1.94 SGE at 2556m using 1.38 SG mud

2.344s twt

TOR FORMATION

2560.0m MDRKB (2531.0m TVDSS)

MW 1.38 SG

LIMESTONE, white, mod hd, blky, chalky texture, cryptocrystalline, no visible porosity. No show

CLAYSTONE: grey black to brown grey, hard to brittle, very calcareous.

CLAYSTONE: grey black to brown grey, also dusky red moderately hard, brittle break to sub platey, very calcareous

CLAYSTONE: very dusky red, soft. crumbly break, calcareous.

LIMESTONE: white, occasionally light brown grey to light pinkish grey, firm to hard, blocky, chalky texture, trace glauconite

CLAYSTONE/MARL: dark reddish brown to very dusky red, soft to firm, crumbly to blocky, very calcareous

Raise MW to 1.50 SG

LIMESTONE: white, very pale grey to light grey, pinkish grey to light brown grey, firm to moderately hard, blocky to brittle break, chalky texture, argillaceous in part, microcrystalline. No show.

Trace SILTSTONE: light grey, very pale green grey, firm to friable, blocky, calcareous. No show.

LIMESTONE: white, occasionally light grey, firm to moderately hard, blocky to brittle break, slightly argillaceous in part, chalky texture, microcrystalline. No show.

JURASSIC
UPPER JURASSIC
VIKING GROUP
HEATHER FORMATION
SLEIPNER FORMATION

CRETACEOUS
TOR FORMA
CROMER KNOLL
DRAUPNE

167.9
2.0
165.2
2.0
170.7
1.8
14/05/04
172.2
1.7
176.0
1.6
179.8
1.5
CLST
184.4
1.5
192.4
1.4
194.6
1.5
SST
2956m
2959m
2964m
202.3
1.7
207.1
1.7
204.3
1.5
195.6
1.6
SLTST

2800
2900
3000

LIMESTONE: white to very light grey, common dark argillaceous streaks, speckled appearance, occasional light green chlorite specks, rare pyrite nodules.

CLAYSTONE: light grey, soft to firm, brumbly break, silty in part.

2.419s twt

CROMER KNOLL
2727.0m MDRKB (2698.0m TVDSS)

CLAYSTONE: dark reddish brown to very dusky red, soft to firm, crumbly to sub blocky, very calcareous.

LIMESTONE: light grey occasionally white, very pale green, soft to firm, sub blocky, chalky texture, argillaceous in part, microcrystalline,

2.431s twt

DRAUPNE FORMATION
2747.0m MDRKB (2718.0m TVDSS)

CLAYSTONE: olive black, soft, sub blocky, calcareous.

CLAYSTONE: black to olive black, soft to firm, sub blocky, calcareous, silty in part.

Claystone: olive black, to very dark grey, firm, sub blocky, micropyritic in par,t occasional cubic pyrite, silty, calcareous.

Tr DOLOMITE: light brown, translucent, hard, brittle, crystalline to sucrosic texture.

CLAYSTONE: olive black, soft, crumbly to sub blocky, calcareous, very silty in part, common micropyrite.

MW 1.52 SG

CLAYSTONE: olive black to olive grey, soft to firm, crumbly to sub blocky, calcareous, silty in part.

LIMESTONE: light grey, dark argilaceous laminations, soft to firm, blocky.

CLAYSTONE: olive black, to olive grey, soft to firm, crumbly break, silty in part.

LIMESTONE: white, moderately hard, blocky, angular, microcrystalline.

2.546s twt

HEATHER FORMATION
2918.0m MDRKB (2889.0m TVDSS)

SILTSTONE: olive black, moderately hard, blocky, com argillaceous grading to claystone, trace very fine sand, non calcareous, occ disseminated carbonaceous material.

LIMESTONE: light grey brown, hard, blocky, hackly fracture, slightly argillaceous, microcrystalline

CLAYSTONE: olive black, soft, blocky to sub platey,, non calcareous, very silty, earthy texture.

SILSTONE: olive black to brown black, firm, blocky, hackly fracture, non calcareous, common glauconite.

2.567s twt

SLEIPNER FORMATION
2952.5m MDRKB (2923.5m TVDSS)

COAL: black, brittle, vitreous, occasionally fusainous.

SANDSTONE: light grey brown, quartz, clear to transluscent, very fine to coarse(U), predominantly fine(U), sub angular to sub rounded, poorly sorted, sub spherical, silica cemented, soft to firm, occasionally hard, occasional glauconite, trace kaolin matrix, occasional pyrite nodules, poor visible porosity. Show masked by oil mud.

SILTSTONE: brown black, firm to moderately hard, blocky, hackly fracture, non calcareous, occasional very fine sand, common disseminated carbonaceous material.

SANDSTONE: white to very light grey, quartz, clear to transluscent to opaque, very fine to very coarse(L), predominantly fine to medium, sub angular to sub rounded, poorly sorted, spherical, common kaolin matrix, silica cemented, generally firm occasionally hard. occasional disseminated carbonaceous material, nil to poor visible porosity. Shows masked by oil mud.

CLAYSTONE: light brown grey to brown grey, firm, blocky, non calcareous, common carbonaceous streaks.

SAMPLES AT 2955.0 m MDRKB
299.86 BAR 2 x 840 cc Oil
2 x 4000 cc Oil

SAMPLES AT 2977.5m MDRKB
300.77 bar 2x 840 cc Water

Gas readings "froze" at 0.08% between 2983-3042m

SANDSTONE: white, quartz, clear to transluscent, fine(L) to coarse(U), sub angular to angular, poorly sorted, spherical, weakly calcite cemented, abundant kaolin matrix, moderately hard, occasional pyrite nodules, trace disseminated carbonaceous material, nil to poor visible porosity. Shows masked by oil mud.

MW 1.52 SG

CLAYSTONE: brown grey to brown black, moderately hard, blocky, non calcareous, common disseminated carbonaceous material.

Trace COAL: black, brittle, vitreous, occasionally fusainous, blocky to angular, conchoidal fracture.

SANDSTONE: predominantly loose quartz, clear to transluscent, very fine to coarse(U), tarce very coarse, predominantly fine(L) to medium(U), poorly sorted, sub spherical, occasional aggregated grains with kaolin matrix.

CLAYSTONE: olive black to brown black, moderately hard to hard, blocky, non calcic, trace disseminated carbonaceus material, very silty in part.

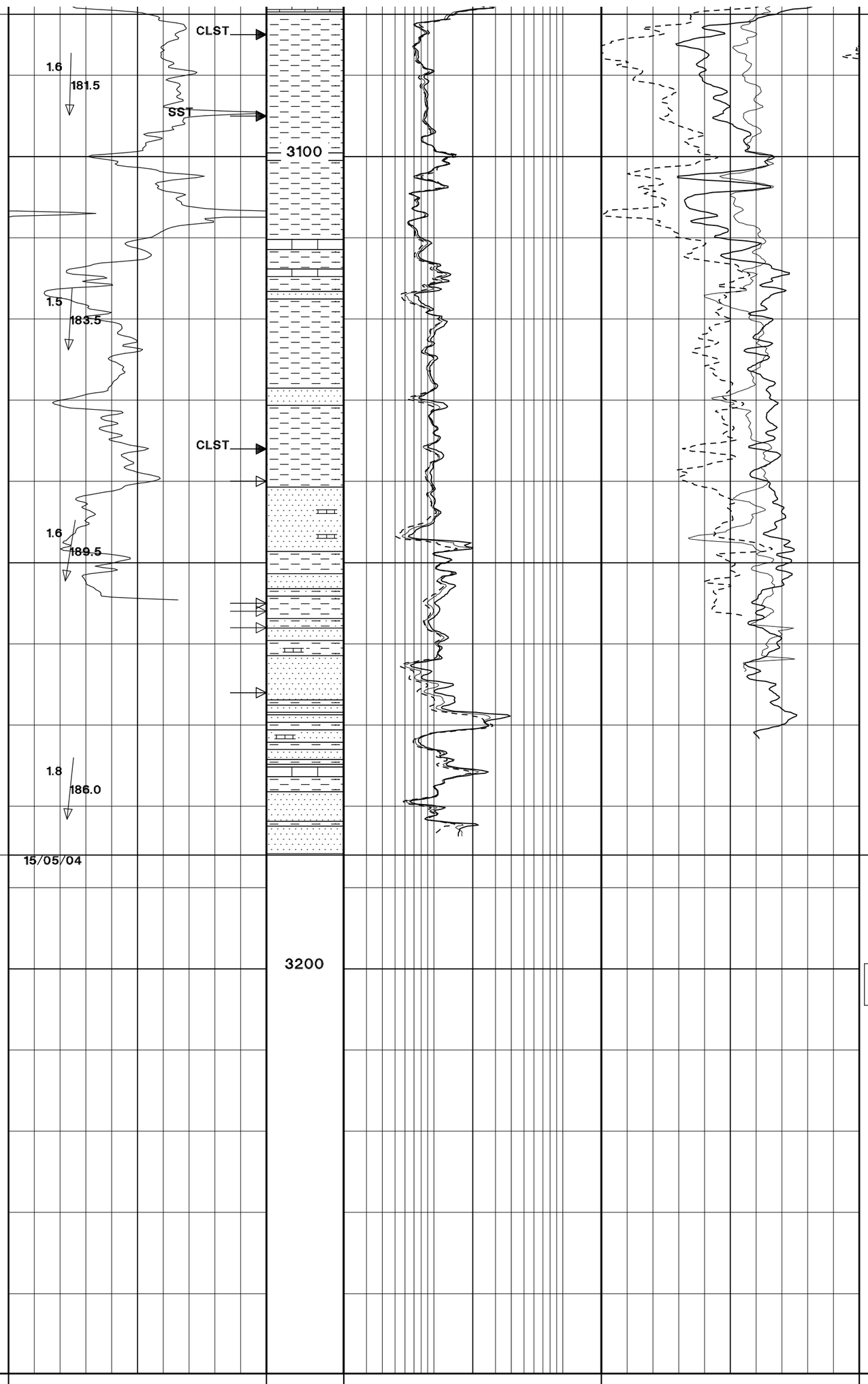
SANDSTONE: white, mottled light grey, qtz, clear to translucent, very fine to fine, commonly medium grained, subangular, moderately sorted, abundant Kaolin matrix, occasional calcite cement.

2.638s twt

TRIASSIC

HEGRE GROUP

SMITH BANK/SKAGERAK FORMATION



SMITH BANK/SKAGERAK FORMATION

3083.0m MDRKB (3054.0m TVDSS)

CLAYSTONE: red brown, firm, blocky, non calcareous, very silty.

CLAYSTONE: light greenish grey, light grey, moderate brown, firm to moderately hard, blocky, sub platy, non calcareous.

LIMESTONE: white hard, brittle microcrystaline.

CLAYSTONE: pale blue grey, firm, sub platy, non to slightly calcic.

CLAYSTONE: moderate brown, firm, blocky, slightly calcic, silty earthy texture in part.

SANDSTONE: very light grey, occasionally pale blue grey, quartz, very fine, well sorted, well cemented with calcite cement, grading to very sandy limestone.

CLAYSTONE: moderate brown, firm, blocky, very silty, very sandy in part.

SANDSTONE: white to pale grey, light green grey, quartz grains, colourless clear, very fine to fine, angular, generally equant, calcic cement, grading to sandy limestone in part.

2.694s twt

DRILLERS TD 3186.0m
LOGGERS TD 3186.5m

SYSTEM	SERIES	STAGE	GROUP	FORMATION	MEMBER

GRAFM(AAPI) 0 — 150
GR(API) 0 — 150

RACHM(Ohm/m) 0.20 — 20
RPCHM(Ohm/m) 0.20 — 20
RACLM(Ohm/m) 0.20 — 20
RPCLM(Ohm/m) 0.20 — 20
M2R1(Ohm/m) 0.20 — 200
M2R2(Ohm/m) 0.20 — 200
M2RX(Ohm/m) 0.20 — 200

DT(msec/ft) 140 — 40
DTPM(usec/ft) 140 — 40
BDCFM(G/CC) 1.95 — 2.95
NPLFM(P/U) 45 — -15
ZDEN(GM/CC) 1.95 — 2.95
CNC(PU) 45 — -15

CHRONO/LITHO STRATIGRAPHY	GAMMA RAY	DEPTH AND LITH	RESISTIVITY	POROSITY	LITHOLOGY DESCRIPTION