

DRILLING FLUIDS PROGRAM

HOLE		CASING		MUD TYPE	MW	LGS	10 sec.	10 min.	Fann 100 rpm	Fann 3 rpm		PV	API FL	HTHP FL	MBT	pH	FV		KCl	Glycol	Total Volume Old Volume New Volume Usage [m³]
SIZE	TVD MD	SIZE	TVD MD		[SG]	[KG/m³]	[Pa]	[Pa]	(lbe/100sq.ft)			[cP]	[ml]	[ml]	[KG/m³]		[sec]		(kg/m3)	[%]	
36"	425	30"	425	Seawater/ Bentonite	1.03-1.30				38	17		6,5					9,6	109			329 0 329 106
				Comments: A total of 329 m3 (hivis pills and displacement fluid) - 223 m3 was transferred to next section. The section was drilled with seawater and 5-10 m3 hivis pills every 15 m. At TD the hole was swept clean with a 30 m3 hivis pill and then the well was displaced to 1,3 sg Bentonite/CMC mud before pulling out to run casing. Miking: Due to lack of shearing device, a higher concentration of bentonite was mixed to achieve required specifications.																	
17 1/2"	840 840	13 3/8"	834 834	SW/Bent sweeps	1,03																523 223 300 523
				SW/Bent Displacm.fl.	1,3				37	16		8					9,5	69			
				Kill fluid	1,7		8	14	41	16		27						79			
				Comments: A total of 223 m3 spud mud was transferred from the 36" section. Further 300 m3 were built. Spud mud was diluted with 30 % seawater before pumping. A total of 68 m3 Glydril mud was weighted up to 1,7 sg and used for kill mud due to problems with the surge tank while mixing/prehydrating bentonite mud. The section was drilled with seawater and hivis sweeps of 5-10 m3 every 15 m.																	
12 1/4"	1095 1095	0	0 0	Glydril	1.25	26	6	7	30	11		12	3,5	na	10	8,5			147	5	514 249 265 60
				Comments: A total of 249 m3 Glydril mud was received from field. This volume included 235 m3 Glydril Deepwater mud from Fylla - Greenland. KCl premix, Kill mud, Deepwater mud and drillwater was blended and weighted to 1,25 sg. This was done to save time and to reduce sulphate content in deepwater mud. Additional viscosifier was added to increase low end rheology once drilling commenced. The mud system was pre-treated with 1 kg/m3 Citric Acid and Sodium Bicarbonate prior to drilling cement. Addition of KCl dry salt and viscosifier was mixed as required and additional chemicals added after an incident were 24 m3 of seawater entered the active system due to a open seawater valve on mud pumps. Since shearing the polymers is difficult at surface, the required rheology is first achived after a few circulations. It is therefore recommended to add Duotec NS as quickly as possible after displacement. Furthermore, maintain a steady volume of polymers by adding directly to active. Due to fine mesh screens - polymers are lost at the shakers.																	
8 1/2"	2267 2267	0	0 0	Glydril	1.25-1.27	14 - 40	6	8 - 10	30	11		12	3,5	na	10	8,5			147	5	623 454 169 148
				Comments: Maintenance of the active system continued as described for the 12 1/4" section. And the Glydril Mud system proved to be very effective in providing good hole cleaning and inhibition. Close inspection of increase in MBT levels is required along with control of KCl levels.																	

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Geochemical evaluation of well 6710/10-1		
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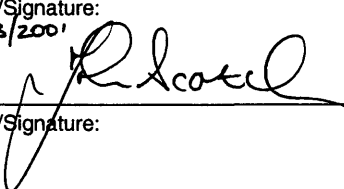

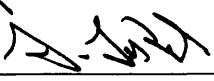
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SUMMARY

This report presents the results of a geochemical evaluation of the 6710/10-1 well (Hedda structure), Norwegian Sea. The well section is vertical and was drilled with GLYDRILL water-based mud.

1 INTRODUCTION

This report presents the results of a geochemical evaluation of the 6710/10-1 well (Hedda structure), Norwegian Sea (Figure 1). The well section is vertical and was drilled with GLYDRILL water-based mud.

The total numbers of analyses carried out during the course of the study are as follows:

Analysis	Cuttings	Core	SWC	Mud	Total
Sample preparation	8	5	12		25
TOC content	7	2	7		16
Rock-Eval pyrolysis	8	5	12		25
Vitrinite reflectance	7	2	7		16
Kerogen description	7	2	7		16
Solvent extraction	8	1	6	3	18
Whole extract GC	1	1	5	3	10
Asphaltene precipitation			5	1	6
MPLC separation			5	1	6
Saturates GC			4	1	5
Saturates GC-MS			3	1	4
Carbon isotopes			2		2

Full details of the analytical programme on a sample-by-sample basis are presented in Table 1. The analyses were carried out by Geolab Nor, with the exception of vitrinite reflectance analysis, which was carried out by IFE. All analytical work was performed in accordance with the guidelines given in "The Norwegian Industry Guide to Organic Geochemical Analyses, 3rd edition (1993)". The analytical data are presented in Appendix 1.

	Sample Depth	Sample Type	Lithology Description	Vitrinite Reflectance	Kerogen Description	TOC Content	Rock-Eval	Solvent Extraction	Whole Oil/ Extract GC	Bulk Composition	Saturate GC	Saturate GC-MS	Carbon Isotopes
Rock Samples													
	891	cut	x	x	x			x					
	891	ext cut				x	x						
	926	swc	x	x	x	x	x						
	1096.92	ccp	x				x						
	1101.32	ccp	x	x	x	x	x						
	1109.92	ccp	x				x	x	x				
	1121.5	swc	x				x	x	x	x	x		
	1217.5	swc	x	x	x	x	x						
	1286.2	swc	x	x	x	x	x						
	1380	cut	x	x	x			x					
	1380	ext cut				x	x						
	1458.54	ccp	x				x						
	1460.23	ccp	x	x	x	x	x						
	1498	swc	x				x	x	x				
	1570	swc	x	x	x	x	x						
	1575	cut	x				x	x	x				
	1627.2	swc	x	x	x	x	x						
	1719	cut	x	x	x			x					
	1719	ext cut				x	x						
	1749.7	swc	x				x	x	x	x	x		
	1816.2	swc	x	x	x	x	x						
	1901.2	swc	x	x	x	x	x	x		x		x	
	1965	cut	x	x	x			x					
	1965	ext cut				x	x						
	1998	swc	x				x	x	x	x	x	x	x
	2061	cut	x	x	x			x					
	2061	ext cut				x	x						
	2196	cut	x	x	x			x					
	2196	ext cut				x	x						
	2253.8	swc	x				x	x	x	x	x	x	x
	2265	cut	x	x	x			x					
	2265	ext cut				x	x						
Mud samples													
	1050	Mud						x	x				
	1651	Mud						x	x	x	x	x	
	2267	Mud						x	x				
			25	16	16	16	25	18	10	6	5	4	2

Table 1 Geochemical analytical programme

Terpanes

	Depth (m RKB)	Sample Type	22S	TSTM	TTX	30D	30AB-HOP	28AB	TRICY	TETRACY	35H_34H	29H_30H	DEMET
	1901.20	Claystone	0.25	0.30	0.07	0.03	0.68	2.91	0.06	0.07	1.13	0.62	0.09
	1998.00	OS	0.57	0.74	0.36	0.04	0.90	0.10	1.17	0.46	0.81	1.16	0.10
	2253.80	OS	0.61	0.90	0.49	0.06	0.88	0.04	0.06	0.11	0.44	0.69	0.00
	1641	Mud	0.60	1.07	0.50	0.08	0.88	0.20	0.29	0.27	0.69	0.97	0.20

Steranes

	Depth (m RKB)	Sample Type	HOPST	20S	BB	C27BB	C28BB	C29BB	C30BB	DIAST
	1901.20	Claystone	8.48	-	0.23	33	48	19	0.00	0.00
	1998	OS	3.38	0.39	0.54	41	25	34	0.04	0.68
	2253.8	OS	12.73	0.43	0.53	39	26	35	0.04	1.26
	1641	Mud	3.45	0.47	0.59	41	25	34	0.05	1.35

Table 2 Saturated hydrocarbon biomarker ratios

GEOCHEMICAL DATA REPORT

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TITLE

WELL 6710/10-1, Hedda Standard Geochemical Study

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PAGE

1 of 1

Comments

This data report has been sub-divided into two sections:

1. Rocks: cores and cuttings (all cuttings were washed, uncrushed source rocks cuttings were also Soxtec-extracted for a short period before analysis).
2. Muds

The following points should be noted:

The well was drilled with a Glycol-based mud. TOC and Rock-Eval analysis was performed on the cuttings samples after picking, crushing and Soxtec extraction. The core and swc samples were analysed directly (i.e. were not extracted before TOC and Rock-Eval analysis were performed).

Table 1 Analytical Program for NOCS Well 6710/10-1, Hcdda (rock samples)

Purpose	Sample Depth (m)	Sample Type	Sample Code	Lithology Description	Picking for screening	Prøvepreparing (Kjemematriale)	Prøvepreparing (Løsningsmiddel-Ekstraksjon)	Leco TOC	RockEval	GHM Thermal Extraction /Pyrolysis-GC	Picking for Extraction	Topping	Iatroscan	SOXTEC Extraction	MPLC & Deasphaltenes#	EOM GC	Whole Oil GC	Sat GC (non-Q)	Aro GC (Non-Q)	Sat GCMS (non-Q)	Aro GCMS (Non-Q)	Isotope of fractions \$	API Gravity (Westlab)	Vitritine Reflectance	Visual Kerogen	Gas composition and isotopes (IFE)
	Table nos.			3				5	5				8	8	8		13	9	9	11	12	10	17	4	7	14
SR	891	c	U26/0013-2	x				x	x		x			x									x	x		
SR	926	s	U26/0001-1	x				x	x														x	x		
OS	1096.2	p	U26/0021-1	x					x																	
SR	1101.32	p	U26/0022-1	x				x	x														x	x		
OS	1109.92	p	U26/0023-1	x					x					x		x										
OS	1121.5	s	U26/0002-1	x					x					x	x	x		x								
SR	1217.5	s	U26/0003-2	x				x	x														x	x		
SR	1286.2	s	U26/0004-1	x				x	x														x	x		
SR	1380	c	U26/0014-3	x				x	x		x			x									x	x		
OS	1458.54	p	U26/0024-1	x					x																	
SR	1460.23	p	U26/0025-1	x				x	x														x	x		
OS	1498	s	U26/0005-1	x					x					x		x										
SR	1570	s	U26/0006-1	x				x	x														x	x		
OS	1575	c	U26/0015-1	x					x		x			x		x										
SR	1627.2	s	U26/0007-1	x				x	x														x	x		
SR	1719	c	U26/0016-3	x				x	x		x			x									x	x		
OS	1749.7	s	U26/0008-1	x					x					x	x	x		x								
SR	1816.2	s	U26/0009-1	x				x	x														x	x		
SR	1901.2	s	U26/0010-1	x				x	x					x	x					x			x	x		
SR	1965	c	U26/0017-1	x				x	x		x			x									x	x		
OS	1998	s	U26/0011-1	x					x					x	x	x		x		x		x				
SR	2061	c	U26/0018-1	x				x	x		x			x									x	x		
SR	2196	c	U26/0019-1	x				x	x		x			x									x	x		
OS	2253.8	s	U26/0012-1	x					x					x	x	x		x		x		x				
SR	2265	c	U26/0020-1	x				x	x		x			x									x	x		
	Total			25				16	25		8			15	5	7		4		3		2	16	16		
	Sample type key c = Cuttings s = SWC p = Conv core/ plug o=oil g= gas m=mud			Q=quantitative, non-Q = not quantitative																						
	§ isotope analysis on SAT and ARO only																									

NOTE

Asterisk marks siltstone and shale samples which were extracted before TOC and Rock-Eval analyses

Table 3 : Lithology description for well NOCS 6710/10-1

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int	Cvd	TOC%	%	Lithology description		
891.00	cut					0013
		90	S/Sst	: gy w, f, crs, l		0013-1L
		0.56 *	10 Sltst	: pl gy, s, argill, mic		0013-2L
926.00	swc					0001
		1.15	100 Sh/Clst:	dsk y brn to brn blk, slt		0001-1L
1096.92	ccp					0021
			100 S/Sst	: pl gy to lt ol gy, carb, slt, argill, mic		0021-1L
1101.32	ccp					0022
		1.65	100 Sh/Clst:	dsk y brn		0022-1L
1109.92	ccp					0023
			100 S/Sst	: pl gy to lt ol gy, slt, argill, mic, f, l		0023-1L
1121.50	swc					0002
			100 S/Sst	: gy w, sft		0002-1L
1217.50	swc					0003
		1.77	70 Sh/Clst:	dsk y brn to brn blk, carb, pyr, s, mic		0003-2L
			30 S/Sst	: gy w, sft		0003-1L
1286.20	swc					0004
		1.49	100 Sh/Clst:	dsk y brn to brn blk, carb, pyr, s, mic		0004-1L

Table 3 : Lithology description for well NOCS 6710/10-1

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
-----	-----	-----	-----	-----	-----	-----
Int Cvd	TOC%	%	Lithology description			
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1380.00	cut					0014
	1.40*	75	S/Sst	: gy w, lt brn gy, mic, f, cem, l		0014-1L
		20	Sh/Clst:	lt gn gy, m drk gy, brn gy		0014-3L
		5	Sltst	: pl gy, s, argill, mic		0014-2L
1458.54	ccp					0024
		100	S/Sst	: gy w, l		0024-1L
1460.23	ccp					0025
	1.63	100	Sh/Clst:	dsk y brn to brn blk, mic		0025-1L
1498.00	swc					0005
		100	S/Sst	: gy w, glauc, sft		0005-1L
1570.00	swc					0006
	1.12	100	Sh/Clst:	dsk y brn, mic, sft		0006-1L
1575.00	cut					0015
		75	S/Sst	: gy w, lt brn gy, mic, f, cem, l		0015-1L
		20	Sh/Clst:	lt gn gy, m drk gy, brn gy		0015-3L
		5	Sltst	: pl gy, s, argill, mic		0015-2L
1627.20	swc					0007
	0.84	100	Sh/Clst:	dsk y gn to brn blk, calc, sft		0007-1L
1719.00	cut					0016
		90	S/Sst	: gy w, f, l		0016-1L
		5	Other	: drk gn, glauc		0016-2L
	1.46 *	5	Sh/Clst:	m gy to drk gy, lt gn gy		0016-3L

Table 3 : Lithology description for well NOCS 6710/10-1

Depth unit of measure: m

Depth	Type	Grp	Frm	Age	Trb	Sample
Int Cvd	TOC%	%	Lithology description			
1749.70	swc					0008
		100	S/Sst	: gy w to drk gn gy, glauc, sft		0008-1L
1816.20	swc					0009
	0.69	100	Sh/Clst:	dsk y gn to gn gy, calc, sft		0009-1L
1901.20	swc					0010
	0.91	100	Sh/Clst:	dsk y gn to brn blk, mic, sft		0010-1L
1965.00	cut					0017
	1.27 *	95	Sh/Clst:	m drk gy to brn gy, slt, s, st		0017-1L
		5	S/Sst	: gy w, mic, f, cem		0017-2L
		tr	Ca	: brn gy		0017-3L
1998.00	swc					0011
		100	S/Sst	: gy w, glauc, sft		0011-1L
2061.00	cut					0018
	0.98 *	100	Sh/Clst:	m gy to gy brn, calc, slt, mic		0018-1L
2196.00	cut					0019
	0.98 *	75	Sh/Clst:	m gy to gy brn, calc, slt, mic		0019-1L
		25	Ca	: gy w, mic, f, cem, l		0019-2L
		tr	Sh/Clst:	lt gn gy		0019-3L
2253.80	swc					0012
		100	S/Sst	: gy w, calc, sft		0012-1L
2265.00	cut					0020
	0.91 *	85	Sh/Clst:	m gy to gy brn, calc, slt, mic		0020-1L
		15	Ca	: gy w, mic, f, cem, l		0020-2L
		tr	Sh/Clst:	lt gn gy		0020-3L

Table 4 : Thermal Maturity Data for well NOCS 6710/10-1

Depth unit of measure: m

Depth	Typ	Lithology	Vitrinite Reflectance (%)	Number of Readings	Standard Deviation (%)	Spore Fluorescence Colour	SCI	Tmax (°C)	Sample
891.00	cut	Sltst : pl gy	0.23	6	0.04	—	4.5–5.0	356	0013–2L
926.00	swc	Sh/Clst: dsk y brn to brn blk	0.22	20	0.04	—	4.0–4.5	417	0001–1L
1101.32	ccp	Sh/Clst: dsk y brn	0.21	20	0.03	—	4.5	430	0022–1L
1217.50	swc	Sh/Clst: dsk y brn to brn blk	0.21	22	0.02	—	4.0–4.5	343	0003–2L
1286.20	swc	Sh/Clst: dsk y brn to brn blk	0.21	20	0.04	—	4.5	343	0004–1L
1380.00	cut	Sh/Clst: lt gn gy, m drk gy, brn gy	0.24	26	0.03	—	5.0–5.5	370	0014–3L
1460.23	ccp	Sh/Clst: dsk y brn to brn blk	0.31	20	0.05	—	5.5	427	0025–1L
1570.00	swc	Sh/Clst: dsk y brn	0.38	7	0.04	—	5.0–5.5 (?)	344	0006–1L
1627.20	swc	Sh/Clst: dsk y gn to brn blk	0.37	3	0.04	—	5.0–5.5	341	0007–1L
1719.00	cut	Sh/Clst: m gy to drk gy, lt gn gy	0.27	21	0.03	—	5.0 (?)	370	0016–3L
1816.20	swc	Sh/Clst: dsk y gn to gn gy	0.33	12	0.05	—	5.0	342	0009–1L
1901.20	swc	Sh/Clst: dsk y gn to brn blk	0.38	22	0.05	—	5.0–5.5	419	0010–1L
1965.00	cut	Sh/Clst: m drk gy to brn gy	NDP	—	—	—	5.5 (??)	373	0017–1L
2061.00	cut	Sh/Clst: m gy to gy brn	0.38	5	0.04	—	5.5–6.0	368	0018–1L
2196.00	cut	Sh/Clst: m gy to gy brn	NDP	—	—	—	6.0–6.5	368	0019–1L

Table 4 : Thermal Maturity Data for well NOCS 6710/10-1

Depth unit of measure: m

Depth	Typ	Lithology	Vitrinite Reflectance (%)	Number of Readings	Standard Deviation (%)	Spore Fluorescence Colour	SCI	Tmax (°C)	Sample
2265.00	cut	Sh/Clst: m gy to gy brn	0.38	3	0.02	-	6.0-6.5	365	0020-1L

Table 5A: Rock-Eval table for well NOCS 6710/10-1

Depth unit of measure: m

Depth	Typ	Form	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
891.00	cut	*	Sltst : pl gy	0.43	1.63	-	-	0.56	291	-	2.1	0.21	356	0013-2L
926.00	swc		Sh/Clst: dsk y brn to brn blk	0.22	1.75	-	-	1.15	152	-	2.0	0.11	417	0001-1L
1096.92	ccp		S/Sst : pl gy to lt ol gy	0.15	0.91	-	-	-	-	-	1.1	0.14	428	0021-1L
1101.32	ccp		Sh/Clst: dsk y brn	0.25	2.48	-	-	1.65	150	-	2.7	0.09	430	0022-1L
1109.92	ccp		S/Sst : pl gy to lt ol gy	0.46	0.72	-	-	-	-	-	1.2	0.39	337	0023-1L
1121.50	swc		S/Sst : gy w	3.63	1.32	-	-	-	-	-	5.0	0.73	329	0002-1L
1217.50	swc		Sh/Clst: dsk y brn to brn blk	0.72	2.22	-	-	1.77	125	-	2.9	0.24	343	0003-2L
1286.20	swc		Sh/Clst: dsk y brn to brn blk	0.53	2.75	-	-	1.49	185	-	3.3	0.16	343	0004-1L
1380.00	cut	*	Sh/Clst: lt gn gy, m drk gy, brn gy	1.39	6.70	-	-	1.40	479	-	8.1	0.17	370	0014-3L
1458.54	ccp		S/Sst : gy w	0.18	0.44	-	-	-	-	-	0.6	0.29	396	0024-1L
1460.23	ccp		Sh/Clst: dsk y brn to brn blk	0.19	1.70	-	-	1.63	104	-	1.9	0.10	427	0025-1L
1498.00	swc		S/Sst : gy w	2.25	0.94	-	-	-	-	-	3.2	0.71	338	0005-1L
1570.00	swc		Sh/Clst: dsk y brn	0.90	2.40	-	-	1.12	214	-	3.3	0.27	344	0006-1L
1575.00	cut		S/Sst : gy w, lt brn gy	0.16	0.34	-	-	-	-	-	0.5	0.32	345	0015-1L
1627.20	swc		Sh/Clst: dsk y gn to brn blk	0.51	1.82	-	-	0.84	217	-	2.3	0.22	341	0007-1L

Table 5A: Rock-Eval table for well NOCS 6710/10-1

Page: 2

Depth unit of measure: m

Depth	Typ	Form	Lithology	S1	S2	S3	S2/S3	TOC	HI	OI	PP	PI	Tmax	Sample
1719.00	cut		*Sh/Clst: m gy to drk gy, lt gn gy	1.13	6.85	-	-	1.46	469	-	8.0	0.14	370	0016-3L
1749.70	swc		S/Sst : gy w to drk gn gy	1.47	1.60	-	-	-	-	-	3.1	0.48	340	0008-1L
1816.20	swc		Sh/Clst: dsk y gn to gn gy	0.47	1.92	-	-	0.69	278	-	2.4	0.20	342	0009-1L
1901.20	swc		Sh/Clst: dsk y gn to brn blk	0.12	1.04	-	-	0.91	114	-	1.2	0.10	419	0010-1L
1965.00	cut		* Sh/Clst: m drk gy to brn gy	0.68	4.21	-	-	1.27	331	-	4.9	0.14	373	0017-1L
1998.00	swc		S/Sst : gy w	1.38	0.99	-	-	-	-	-	2.4	0.58	341	0011-1L
2061.00	cut		* Sh/Clst: m gy to gy brn	0.75	3.81	-	-	0.98	389	-	4.6	0.16	368	0018-1L
2196.00	cut		* Sh/Clst: m gy to gy brn	0.72	3.35	-	-	0.98	342	-	4.1	0.18	368	0019-1L
2253.80	swc		S/Sst : gy w	1.29	0.64	-	-	-	-	-	1.9	0.67	337	0012-1L
2265.00	cut		* Sh/Clst: m gy to gy brn	0.40	2.78	-	-	0.91	305	-	3.2	0.13	365	0020-1L

Table 5b Rock-Eval Data on SR-1 standard for 6710/10-1 study

	S1	S2	Tmax
SR1	1.24	5.39	437
SR1	1.25	5.48	439
SR1	1.25	5.72	440
SR1	1.23	5.54	438

Table 7: Visual Kerogen Composition Data for well NOCS 6710/10-1

Depth unit of measure: m

Depth	Typ	Lithology	Amorphous AM% FA HA			Algal/Phytoplankton AP% Cy Ta Bo Di De					Herbaceous HE% SP Cu De				Woody WO% FL NF De				Coaly CO% FS De			SCI	Sample
891.00	cut	Sltst	80	*	**	TR	*		*		5	*	?	*	5		*	**	10	*	**	4.5-5.0	0013-2L
926.00	swc	Sh/Clst	40	*	**	10	**		*	*	15	**	*	**	20		*	**	15	*	**	4.0-4.5	0001-1L
1101.32	ccp	Sh/Clst	30		*	5	*				20	**	*		40		**	*	5	**	*	4.5	0022-1L
1217.50	swc	Sh/Clst	5		*	TR	*				15	*	**	*	65	*	**	*	15	**	*	4.0-4.5	0003-2L
1286.20	swc	Sh/Clst	20		*	10	*		*	*	25	**	*	*	30		**	*	15	**	*	4.5	0004-1L
1380.00	cut	Sh/Clst	75		*	5	*		*	*	5	**	*	*	5		*	**	10	*	**	5.0-5.5	0014-3L
1460.23	ccp	Sh/Clst	50		*	5	*				10	**	*	*	15		*	**	20	*	**	5.5	0025-1L
1570.00	swc	Sh/Clst	65		*	TR	*		*	*	10	*	?	**	5		*	**	20	*	**	5.0-5.5(?)	0006-1L
1627.20	swc	Sh/Clst	5		*	10	*		*	*	25	**	*	*	35		**	*	25	**	*	5.0-5.5	0007-1L
1719.00	cut	Sh/Clst	85		*	TR	*		**		TR	*	?	**	5			*	10		*	5.0(?)	0016-3L
1816.20	swc	Sh/Clst	TR		*	25	*		**	*	25	**	*	*	30		**	*	20	**	*	5.0	0009-1L
1901.20	swc	Sh/Clst	TR		*	15	*		**	*	25	**	*	*	25		**	*	30	**	*	5.0-5.5	0010-1L
1965.00	cut	Sh/Clst	85		*	5	*		*		TR	*	?	*	5			*	5		*	5.5(??)	0017-1L
2061.00	cut	Sh/Clst	65	*	*	5	*				10	**	*	*	10		*	**	10	*	**	5.5-6.0	0018-1L
2196.00	cut	Sh/Clst	85		*	TR	*				5	*		*	5			*	5		*	6.0-6.5	0019-1L

Table 7: Visual Kerogen Composition Data for well NOCS 6710/10-1

Depth unit of measure: m

Depth	Typ	Lithology	Amorphous AM% FA HA			Algal/Phytoplankton AP% Cy Ta Bo Di De						Herbaceous HE% SP Cu De				Woody WO% FL NF De				Coaly CO% FS De			SCI	Sample
2265.00	cut	Sh/Clst	65		*	5	*					10	**	*	*	5		*	**	15	*	**	6.0-6.5	0020-1L

Table 8a: MPLC Bulk Composition: Weight of EOM and Fraction for well NOCS 6710/10-1

Page: 1

Depth unit of measure: m

Depth	Typ	Lithology	Rock Extracted (g)	EOM (mg)	Sat (mg)	Aro (mg)	Asph (mg)	NSO (mg)	HC (mg)	Non-HC (mg)	TOC(e) (%)	Sample
891.00	cut	Sltst : pl gy	4.7	7.2	-	-	-	-	-	-	0.56	0013-2L
1109.92	ccp	S/Sst : pl gy to lt ol gy	10.1	32.4	-	-	-	-	-	-	-	0023-1L
1121.50	swc	S/Sst : gy w	7.4	41.0	0.3	0.3	3.7	36.8	0.5	40.5	0.20	0002-1L
1380.00	cut	Sh/Clst: lt gn gy, m drk gy, brn gy	4.5	2.6	-	-	-	-	-	-	1.40	0014-3L
1498.00	swc	S/Sst : gy w	8.9	38.6	-	-	-	-	-	-	0.11	0005-1L
1575.00	cut	S/Sst : gy w, lt brn gy	3.9	5.8	-	-	-	-	-	-	0.89	0015-1L
1719.00	cut	Sh/Clst: m gy to drk gy, lt gn gy	1.9	2.8	-	-	-	-	-	-	1.37	0016-3L
1749.70	swc	S/Sst : gy w to drk gn gy	7.1	29.4	0.5	0.8	2.0	26.1	1.3	28.1	0.22	0008-1L
1901.20	swc	Sh/Clst: dsk y gn to brn blk	4.8	13.9	0.8	0.6	1.4	11.0	1.5	12.4	0.91	0010-1L
1965.00	cut	Sh/Clst: m drk gy to brn gy	5.2	2.6	-	-	-	-	-	-	1.20	0017-1L
1998.00	swc	S/Sst : gy w	8.4	30.2	0.3	0.5	2.1	27.2	0.8	29.4	0.11	0011-1L
2061.00	cut	Sh/Clst: m gy to gy brn	5.5	3.7	-	-	-	-	-	-	1.04	0018-1L
2196.00	cut	Sh/Clst: m gy to gy brn	6.2	6.2	-	-	-	-	-	-	0.95	0019-1L
2253.80	swc	S/Sst : gy w	4.6	16.9	0.3	0.3	0.7	15.6	0.5	16.4	0.10	0012-1L
2265.00	cut	Sh/Clst: m gy to gy brn	6.0	7.0	-	-	-	-	-	-	0.91	0020-1L

Table 8b: MPLC Bulk Composition: Concentration of EOM and Fraction (wt ppm rock) for well NOCS 6710/10-1

Page: 1

Depth unit of measure: m

Depth	Typ	Lithology	EOM	Sat	Aro	Asph	NSO	HC	Non-HC	Sample
891.00	cut	Sltst : pl gy	1518	-	-	-	-	-	-	0013-2L
1109.92	ccp	S/Sst : pl gy to lt ol gy	3223	-	-	-	-	-	-	0023-1L
1121.50	swc	S/Sst : gy w	5518	34	34	501	4948	68	5449	0002-1L
1380.00	cut	Sh/Clst: lt gn gy, m drk gy, brn gy	575	-	-	-	-	-	-	0014-3L
1498.00	swc	S/Sst : gy w	4322	-	-	-	-	-	-	0005-1L
1575.00	cut	S/Sst : gy w, lt brn gy	1487	-	-	-	-	-	-	0015-1L
1719.00	cut	Sh/Clst: m gy to drk gy, lt gn gy	1458	-	-	-	-	-	-	0016-3L
1749.70	swc	S/Sst : gy w to drk gn gy	4170	73	109	286	3700	183	3987	0008-1L
1901.20	swc	Sh/Clst: dsk y gn to brn blk	2883	172	129	299	2283	301	2582	0010-1L
1965.00	cut	Sh/Clst: m drk gy to brn gy	497	-	-	-	-	-	-	0017-1L
1998.00	swc	S/Sst : gy w	3586	32	64	254	3235	96	3490	0011-1L
2061.00	cut	Sh/Clst: m gy to gy brn	675	-	-	-	-	-	-	0018-1L
2196.00	cut	Sh/Clst: m gy to gy brn	1004	-	-	-	-	-	-	0019-1L
2253.80	swc	S/Sst : gy w	3650	59	59	153	3378	118	3531	0012-1L
2265.00	cut	Sh/Clst: m gy to gy brn	1166	-	-	-	-	-	-	0020-1L

Table 8c: MPLC Bulk Composition: Concentration of EOM and Fraction (mg/g TOC(e)) for well NOCS 6710/10-1

Page: 1

Depth unit of measure: m

Depth	Typ	Lithology	EOM	Sat	Aro	Asph	NSO	HC	Non-HC	Sample
891.00	cut	Sltst : pl gy	271.25	-	-	-	-	-	-	0013-2L
1109.92	ccp	S/Sst : pl gy to lt ol gy	-	-	-	-	-	-	-	0023-1L
1121.50	swc	S/Sst : gy w	2759.08	17.06	17.06	250.83	2474.13	34.13	2724.96	0002-1L
1380.00	cut	Sh/Clst: lt gn gy, m drk gy, brn gy	41.09	-	-	-	-	-	-	0014-3L
1498.00	swc	S/Sst : gy w	3929.55	-	-	-	-	-	-	0005-1L
1575.00	cut	S/Sst : gy w, lt brn gy	167.10	-	-	-	-	-	-	0015-1L
1719.00	cut	Sh/Clst: m gy to drk gy, lt gn gy	106.45	-	-	-	-	-	-	0016-3L
1749.70	swc	S/Sst : gy w to drk gn gy	1895.55	33.31	49.97	130.09	1682.19	83.28	1812.27	0008-1L
1901.20	swc	Sh/Clst: dsk y gn to brn blk	316.90	18.94	14.20	32.86	250.90	33.14	283.77	0010-1L
1965.00	cut	Sh/Clst: m drk gy to brn gy	41.43	-	-	-	-	-	-	0017-1L
1998.00	swc	S/Sst : gy w	3260.64	29.12	58.25	231.72	2941.54	87.37	3173.26	0011-1L
2061.00	cut	Sh/Clst: m gy to gy brn	64.92	-	-	-	-	-	-	0018-1L
2196.00	cut	Sh/Clst: m gy to gy brn	105.77	-	-	-	-	-	-	0019-1L
2253.80	swc	S/Sst : gy w	3650.11	59.27	59.27	153.37	3378.21	118.53	3531.57	0012-1L
2265.00	cut	Sh/Clst: m gy to gy brn	128.21	-	-	-	-	-	-	0020-1L

Table 8d: MPLC Bulk Composition: Material extracted from the rock (%) for well NOCS 6710/10-1

Page: 1

Depth unit of measure: m

Depth	Typ	Lithology	Sat	Aro	Asph	NSO	Total	HC	Non-HC	Recov. MPLC	Recov. Asph	Sample
891.00	cut	Sltst : pl gy	-	-	-	-	-	-	-	-	-	0013-2L
1109.92	ccp	S/Sst : pl gy to lt ol gy	-	-	-	-	-	-	-	-	-	0023-1L
1121.50	swc	S/Sst : gy w	0.62	0.62	9.09	89.67	100.00	1.24	98.76	1.20	0.91	0002-1L
1380.00	cut	Sh/Clst: lt gn gy, m drk gy, brn gy	-	-	-	-	-	-	-	-	-	0014-3L
1498.00	swc	S/Sst : gy w	-	-	-	-	-	-	-	-	-	0005-1L
1575.00	cut	S/Sst : gy w, lt brn gy	-	-	-	-	-	-	-	-	-	0015-1L
1719.00	cut	Sh/Clst: m gy to drk gy, lt gn gy	-	-	-	-	-	-	-	-	-	0016-3L
1749.70	swc	S/Sst : gy w to drk gn gy	1.76	2.64	6.86	88.74	100.00	4.39	95.61	1.26	0.92	0008-1L
1901.20	swc	Sh/Clst: dsk y gn to brn blk	5.98	4.48	10.37	79.17	100.00	10.46	89.54	1.25	0.79	0010-1L
1965.00	cut	Sh/Clst: m drk gy to brn gy	-	-	-	-	-	-	-	-	-	0017-1L
1998.00	swc	S/Sst : gy w	0.89	1.79	7.11	90.21	100.00	2.68	97.32	1.26	0.95	0011-1L
2061.00	cut	Sh/Clst: m gy to gy brn	-	-	-	-	-	-	-	-	-	0018-1L
2196.00	cut	Sh/Clst: m gy to gy brn	-	-	-	-	-	-	-	-	-	0019-1L
2253.80	swc	S/Sst : gy w	1.62	1.62	4.20	92.55	100.00	3.25	96.75	1.20	0.92	0012-1L
2265.00	cut	Sh/Clst: m gy to gy brn	-	-	-	-	-	-	-	-	-	0020-1L

Table 8e: MPLC Bulk Composition: Ratios for well NOCS 6710/10-1

Page: 1

Depth unit of measure: m			Sat	HC	Asp	
Depth	Typ	Lithology	Aro	Non-HC	NSO	Sample
891.00	cut	Sltst : pl gy	-	-	-	0013-2L
1109.92	ccp	S/Sst : pl gy to lt ol gy	-	-	-	0023-1L
1121.50	swc	S/Sst : gy w	1.00	0.01	0.10	0002-1L
1380.00	cut	Sh/Clst: lt gn gy, m drk gy, brn gy	-	-	-	0014-3L
1498.00	swc	S/Sst : gy w	-	-	-	0005-1L
1575.00	cut	S/Sst : gy w, lt brn gy	-	-	-	0015-1L
1719.00	cut	Sh/Clst: m gy to drk gy, lt gn gy	-	-	-	0016-3L
1749.70	swc	S/Sst : gy w to drk gn gy	0.67	0.05	0.08	0008-1L
1901.20	swc	Sh/Clst: dsk y gn to brn blk	1.33	0.12	0.13	0010-1L
1965.00	cut	Sh/Clst: m drk gy to brn gy	-	-	-	0017-1L
1998.00	swc	S/Sst : gy w	0.50	0.03	0.08	0011-1L
2061.00	cut	Sh/Clst: m gy to gy brn	-	-	-	0018-1L
2196.00	cut	Sh/Clst: m gy to gy brn	-	-	-	0019-1L
2253.80	swc	S/Sst : gy w	1.00	0.03	0.05	0012-1L
2265.00	cut	Sh/Clst: m gy to gy brn	-	-	-	0020-1L

Table 9a¹ Raw Peak Area data for Saturated Hydrocarbon GC of NOCS 6710/10-1 Rocks

Lower depth	Sample type	Desc	%Lithology	nC15	nC16	Norpristane	nC17	Pristane	nC18	Phytane	nC19	nC20	nC21	nC22
1121.5	swc	sandstone/sand	100	11440	38262	23087	32514	29700	51324	28140	65299	80297	58169	54764
1749.7	swc	sandstone/sand	100	35113	113983	66457	118603	88776	120029	76151	146949	145819	92338	72735
1998	swc	sandstone/sand	100	19231	46469	40138	64416	60157	95337	63629	133326	117906	75603	56369
2253.8	swc	sandstone/sand	100	28109	64543	37248	120200	90058	191600	63813	230841	267221	277630	282311

Lower depth	Sample type	Desc	nC23	nC24	nC25	nC26	nC27	nC28	nC29	nC30	nC31	nC32	nC33	nC34	Sample number
1121.5	swc	sandstone/sand	34916	37930	27495	31382	14283	0	0	0	0	0	0	0	U26/0002-1
1749.7	swc	sandstone/sand	47327	38574	30692	25079	30148	16679	26559	23006	17828	19825	9997	6894	U26/0008-1
1998	swc	sandstone/sand	45065	33664	25578	17938	18752	24442	10831	15570	10006	16072	6583	0	U26/0011-1
2253.8	swc	sandstone/sand	297150	275317	271671	205781	170880	123856	108603	90994	75140	65882	51145	40842	U26/0012-1

Table 9B: Saturated Hydrocarbon Ratios (peak area) for well NOCS 6710/10-1

Depth unit of measure: m

Depth	Typ	Lithology	<u>Pristane</u>	<u>Pristane</u>	<u>Pristane/nC17</u>	<u>Phytane</u>	CPI1	<u>nC17</u>	Sample
			<u>nC17</u>	<u>Phytane</u>	<u>Phytane/nC18</u>	<u>nC18</u>		<u>nC17+nC27</u>	
1121.50	swc	S/Sst : gy w	0.91	1.06	1.67	0.55	0.97	0.69	0002-1L
1749.70	swc	S/Sst : gy w to drk gn gy	0.75	1.17	1.18	0.63	1.13	0.80	0008-1L
1998.00	swc	S/Sst : gy w	0.93	0.95	1.40	0.67	0.80	0.77	0011-1L
2253.80	swc	S/Sst : gy w	0.75	1.41	2.25	0.33	1.09	0.41	0012-1L

Table 10a: Tabulation of carbon isotope data for EOM/EOM - fractions for well NOCS 6710/10-1

Depth unit of measure: m

Depth	Typ	Lithology	EOM	Saturated	Aromatic	NSO	Asphaltenes	Kerogen	Sample
1998.00	swc	bulk	-	-27.23	-27.26	-	-	-	0011-0
2253.80	swc	bulk	-	-28.15	-27.52	-	-	-	0012-0

Table 10b: Tabulation of cv values from carbon isotope data for well NOCS 6710/10-1

Depth unit of measure: m

Depth	Typ	Lithology	Saturated	Aromatic	cv value	Sample
1998.00	swc	bulk	-27.23	-27.26	-3.28	0011-0
2253.80	swc	bulk	-28.15	-27.52	-1.52	0012-0

Table 11a: Variation in Triterpane Distribution (peak height) SIR for Well NOCS 6710/10-1

Page: 1

Depth unit of measure: m

Depth	Lithology	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Ratio6	Ratio7	Ratio8	Ratio9	Rat.10	Rat.11	Rat.12	Rat.13	Rat.14	Sample
1901.20	Sh/Clst	3.39	0.77	0.23	0.62	0.38	0.03	2.91	4.68	0.74	0.02	0.68	0.40	0.50	24.91	0010-1
1998.00	S/Sst	1.35	0.57	0.29	1.16	0.54	0.04	0.10	0.09	0.09	0.54	0.90	0.53	0.10	56.85	0011-1
2253.80	S/Sst	1.11	0.53	0.16	0.69	0.41	0.06	0.04	0.06	0.04	0.03	0.88	0.42	0.15	60.58	0012-1

List of Triterpane Distribution Ratios

Ratio 1: 27Tm / 27Ts

Ratio 2: 27Tm / 27Tm+27Ts

Ratio 3: 27Tm / 27Tm+30aß+30ßa

Ratio 4: 29aß / 30aß

Ratio 5: 29aß / 29aß+30aß

Ratio 6: 30d / 30aß

Ratio 7: 28aß / 30aß

Ratio 8: 28aß / 29aß

Ratio 9: 28aß / 28aß+30aß

Ratio 10: 24/3 / 30aß

Ratio 11: 30aß / 30aß+30ßa

Ratio 12: 29aß+29ßa / 29aß+29ßa+30aß+30ßa

Ratio 13: 29ßa+30ßa / 29aß+30aß

Ratio 14: 32aßS / 32aßS+32aßR (%)

Table 11b: Variation in Sterane Distribution (peak height) SIR for Well NOCS 6710/10-1

Depth unit of measure: m

Depth	Lithology	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Ratio6	Ratio7	Ratio8	Ratio9	Ratio10	Sample
1901.20	Sh/Clst	0.16	-	36.90	0.07	1.00	0.31	0.13	0.23	-	0.29	0010-1
1998.00	S/Sst	0.33	38.90	70.29	1.20	0.75	0.62	0.50	0.54	0.64	1.94	0011-1
2253.80	S/Sst	0.52	42.71	69.00	1.31	0.72	0.41	0.30	0.53	0.75	1.94	0012-1

List of Sterane Distribution Ratios

- Ratio 1: $27\text{d}\beta\text{S} / 27\text{d}\beta\text{S}+27\text{aaR}$
- Ratio 2: $29\text{aaS} / 29\text{aaS}+29\text{aaR} \text{ (\%)}$
- Ratio 3: $2 \times (29\beta\beta\text{R}+29\beta\beta\text{S}) / (29\text{aaS}+29\text{aaR} + 2 \times (29\beta\beta\text{R}+29\beta\beta\text{S})) \text{ (\%)}$
- Ratio 4: $27\text{d}\beta\text{S}+27\text{d}\beta\text{R}+27\text{daR}+27\text{daS} / 29\text{d}\beta\text{S}+29\text{d}\beta\text{R}+29\text{daR}+29\text{daS}$
- Ratio 5: $29\beta\beta\text{R}+29\beta\beta\text{S} / 29\beta\beta\text{R}+29\beta\beta\text{S}+29\text{aaS}$
- Ratio 6: $21\text{a}+22\text{a} / 21\text{a}+22\text{a}+29\text{aaS}+29\beta\beta\text{R}+29\beta\beta\text{S}+29\text{aaR}$
- Ratio 7: $21\text{a}+22\text{a} / 21\text{a}+22\text{a}+28\text{daS}+28\text{aaS}+29\text{daR}+29\text{aaS}+29\beta\beta\text{R}+29\beta\beta\text{S}+29\text{aaR}$
- Ratio 8: $29\beta\beta\text{R}+29\beta\beta\text{S} / 29\text{aaS}+29\beta\beta\text{R}+29\beta\beta\text{S}+29\text{aaR}$
- Ratio 9: $29\text{aaS} / 29\text{aaR}$
- Ratio 10: $29\beta\beta\text{R}+29\beta\beta\text{S} / 29\text{aaR}$

Table 11c: Raw triterpane data (peak height) m/z 191 SIR for Well NOCS 6710/10-1

Page: 1

Depth unit of measure: m

Depth	Lithology	23/3	24/3	25/3	24/4	26/3	27Ts	27Tm	28aß	25nor30aß	Sample
		29aß	29Ts	30d	29ßa	30O	30aß	30ßa	30G	31aßS	
		31aßR	32aßS	32aßR	33aßS	33aßR	34aßS	34aßR	35aßS	35aßR	
1901.20	Sh/Clst	242.2	91.7	69.3	277.7	40.4	499.4	1690.5	10978.2	344.6	0010-1
		2344.9	308.8	95.4	1283.1	0.0	3774.4	1758.3	0.0	823.6	
		3647.0	219.2	660.7	110.4	207.8	69.6	93.7	91.6	92.9	
1998.00	S/Sst	14240.8	6550.7	2280.7	5552.7	1288.7	4148.6	5607.2	1259.0	1224.1	0011-1
		14083.5	2833.5	512.7	1409.5	0.0	12193.4	1296.3	0.0	4320.1	
		3310.6	2156.9	1637.2	1286.8	856.7	707.9	493.0	555.3	422.4	
2253.80	S/Sst	5854.3	2978.2	1124.3	10662.2	1223.0	18582.1	20564.3	3823.9	0.0	0012-1
		64953.7	20955.4	5349.1	10870.8	0.0	93670.2	12277.1	0.0	33663.0	
		23202.9	15820.7	10292.6	7902.1	5147.9	3912.9	2359.9	1711.8	1039.7	

Depth unit of measure: m

Depth	Lithology	21a	22a	27d β S	27d β R	27daR	27daS	28d β S	28d β R	28daR*	Sample
		29d β S*	28daS*	27aaR	29d β R	29daR	28aaS	29daS*	28 $\beta\beta$ S		
		28aaR	29aaS	29 $\beta\beta$ R	29 $\beta\beta$ S	29aaR					
1901.20	Sh/Clst	302.1 390.4 683.4	116.5 243.5 0.0	199.4 1085.4 0.0	145.9 4549.8 209.7	73.7 1999.8 717.1	99.9 954.6	123.3 639.5	91.0 231.1	606.7	0010-1
1998.00	S/Sst	7172.5 2830.9 968.5	3228.8 1993.0 1127.3	3250.0 6597.0 1908.7	2358.9 1363.8 1519.4	790.5 555.1 1770.6	795.5 651.6	1253.5 1269.2	710.5 1308.7	1595.3	0011-1
2253.80	S/Sst	5591.2 4558.0 1555.8	2133.4 3082.1 2278.8	6107.5 5551.3 3170.7	4108.2 2448.4 2767.4	1481.6 1107.7 3057.4	1685.9 1228.8	3056.5 2068.0	1815.0 2094.7	2551.0	0012-1

* 28daR coel with 27aaS, 29d β S coel with 27 $\beta\beta$ R, 28daS coel with 27 $\beta\beta$ S, 29daS coel with 28 $\beta\beta$ R

Table 11e: Raw sterane data (peak height) m/z 218 SIR for Well NOCS 6710/10-1

Depth unit of measure: m

Depth	Lithology	27 β β R	27 β β S	28 β β R	28 β β S	29 β β R	29 β β S	30 β β R	30 β β S	Sample
1901.20	Sh/Clst	399.1	276.8	600.4	376.0	0.0	396.0	174.3	308.0	0010-1
1998.00	S/Sst	3706.3	2939.3	1996.5	2043.6	2905.2	2539.7	306.3	311.7	0011-1
2253.80	S/Sst	5536.5	4405.8	3249.0	3420.2	4606.4	4397.7	539.8	570.2	0012-1

Table 11f: Raw triterpane data (peak height) m/z 177 SIR for Well NOCS 6710/10-1

Depth unit of measure: m

Depth	Lithology	25nor28a β	25nor30a β	Sample
1901.20	Sh/Clst	0.0	0.0	0010-1
1998.00	S/Sst	1350.0	806.2	0011-1
2253.80	S/Sst	2811.8	0.0	0012-1

1 Introduction

This report gives the result of routine vitrinite reflectance analyses of 16 samples from well 6710/10-1 offshore Norway.

2 Material

The material was provided from the client as 9 cuttings samples (DC) and 7 core chips (COCH). Information on stratigraphy in well 6710/10-1 was not provided from the client.

3 Analytical techniques

3.1 Preparation

The sample material was embedded in an epoxy resin to make briquettes, dried and then dry grounded to a flat surface. The sample surface was impregnated with a somewhat thinned epoxy, dried and finally polished using 0.25 micron diamond paste and magnesium oxide as the two final steps.

3.2 Analysis

The analytical equipment being used was a Zeiss MPM 03 photometer microscope equipped with an Epiplan-Neofluar 40/0.90 oil objective. The sensitive measuring spot was kept constant for all measurements at about 2.5 micron in diameter. The measurements were made through a green band pass filter (546 nm) and in oil immersion (refractive index 1.515 at 18°C). The readings were made without a polarizer and using a stationary stage. This procedure is called measurement of random reflectance (%Rm). The photometer is calibrated daily against a standard of known reflectance (%Rm= 0.588) and routinely (daily) checked against two other standards of significant different reflectances (%Rm=0.879 and 1.696). A deviation from these values of less than ± 0.01 and ± 0.02 respectively is considered as acceptable. The calibration is routinely checked during the course of measurements at least every hour, and a deviation of less than ± 0.005 is considered as acceptable.

For each sample at least 20 points were measured if possible, and quality ratings are given to various important aspects which may affect the measurements. These aspects are abundance of vitrinite, uncertainties in the identification of indigenous vitrinite, type of vitrinite, particle size, particle surface quality and abundance of pyrite.

3.3 Presentation of results

The raw data from the measurements are presented in appendix for each sample both as tabulated data and histograms. A true vitrinite population is selected among the readings based on observations made during the measurements, and arithmetic mean values and standard deviation are calculated for this population and other populations. A quality rating is given to the true population. There is one data sheet with raw data for each sample. The results are listed in table 1. Figure 1 shows a vitrinite reflectance versus depth plot.

4 Results

The samples contained mostly sufficient vitrinite, but there was a severe problem with hydrocarbon staining on the surfaces. Two of the samples were not measurable (see table). The vitrinite reflectance versus depth plot indicate a maturity trend which must not be weighted too much.

Table 1. Vitrinite reflectance data table well 6710/10-1

Analysis type:			Vitrinite reflectance						
Well:			6710/10-1						
Number of samples:			16						
Time period for analysis:			dec 2000						
Analysis performed by:			K. Aasgaard, IFE						
Analysis ordered by:			Geolab Nor						
IFE sample code	Depth (m)	Sample type	Lithology	Vitr. refl. (%Rm)	Stand. dev.	Number of readings	Sample description	Sample quality	Sample prep.
20002416	926	DC	clyst/sst	0.23	0.04	20	ooo-o+	M	bulk
20002417	1217.5	COCH	clyst	0.22	0.02	22	oooooo	G	bulk
20002418	1286.2	COCH	clyst	0.22	0.04	20	ooo-o+	M	bulk
20002419	1570	DC	clyst	0.39	0.04	7	-±o--o	Pst	bulk
20002420	1627.2	COCH	clyst	0.38	0.04	3	-±o--o	Pst	bulk
20002421	1816.2	COCH	clyst/sst	0.33	0.05	12	-oo--o	P	bulk
20002422	1901.2	COCH	clyst/sst	0.39	0.05	22	ooo-oo	M	bulk
20002604	891	DC	clyst/sst	0.23	0.04	6	-oo--o	Pst	bulk
20002605	1101.32	COCH	clyst	0.21	0.04	20	ooo--o	M	bulk
20002606	1380	DC	clyst	0.24	0.03	26	ooo--o	M	bulk
20002607	1460.23	COCH	clyst	0.31	0.05	20	o±o--o	P	bulk
20002608	1719	DC	clyst/sst	0.27	0.03	21	ooo-oo	M	bulk
20002609	1965	DC	clyst	*				st	bulk
20002610	2061	DC	clyst	0.38	0.04	5	-oo--o	Pst	bulk
20002611	2196	DC	clyst/sst	*				st	bulk
20002612	2265	DC	clyst/sst	0.39	0.02	3	-oo--o	Pst	bulk

*) Vitrinite present in sample, but no measurable surfaces due to excessive HC staining.

Legend to vitrinite reflectance data table

Lithology code					
Sample quality		Sample preparation			
Sandstone	sst	G	good	HF	sample treated with hydrofluoric acid prior to analysis
Siltstone	slst	M	moderate		
Claystone	clyst	P	poor	bulk	sample treated as bulk rock
Shale	sh	st	hydrocarbon staining	DCM	sample washed with dichloromethane
Limestone	lst				
Coal	coal				
Sample description and measurement evaluation (- o +)				Options	
000000		1	Abundance of vitrinite	- o	
123456		2	Identification of vitrinite	- o +	
		3	Type of vitrinite	- o +	
		4	Vitrinite fragment size	- o	
		5	Vitrinite surface quality	- o	
		6	Abundance of pyrite	o +	
Options legend:		-	may give too low vitrinite reflectance sample value		
		o	reliable vitrinite reflectance sample value		
		+	may give too high vitrinite reflectance sample value		

Table 1 Analytical Program for Muds for NOCS well 6710/10-1

Sample Depth (m)	Sample Type	Sample Code	Lithology Description	Picking for screening	Prøvepreparering (Kjemematriale)	Prøvepreparering (Losningsmiddel-Ekstraksjon)	Leco TOC	RockEval	GHM Pyrolysis-GC	Picking for Extraction	Topping	Iaroscan	SOXTEC Extraction	MPLC & Deasphaltene	EOM GC	Whole Oil GC	Sat GC (non-Q)	Aro GC (Non Quantitative)	Sat GCMS (non-Q)	Aro GCMS (Non-Q)	Isotope of EOM/fractions	API Gravity (Westlab)	Vitrinite Reflectance	Visual Kerogen	Gas composition and isotopes (IFE)
Table nos			3				5	5				8	8	8		13	9	9	11	12	10	17	4	7	14
1050	m -												x		x										
1641	m U32/0001												x	x	x		x		x						
2267	m -												x		x										
Total													3	1	3		1		1						
Sample type key c = Cuttings s = SWC p = Conv core/ plug o=oil g= gas m=mud																									

Table 8a: MPLC Bulk Composition: Weight of EOM and Fraction for well 6710/10-1 MUD

Depth unit of measure: m

Depth	Typ	Lithology	Rock Extracted (g)	EOM (mg)	Sat (mg)	Aro (mg)	Asph (mg)	NSO (mg)	HC (mg)	Non-HC (mg)	TOC (e) (%)	Sample
1641.00	mud	bulk	-	78.4	0.4	0.4	0.4	77.1	0.9	77.5	-	0001-0B

Table 8d: MPLC Bulk Composition: Material extracted from the rock (%) for well 6710/10-1 MUD

Depth unit of measure: m

Depth	Typ	Lithology	Sat	Aro	Asph	NSO	Total	HC	Non-HC	Recov. MPLC	Recov. Asph	Sample
1641.00	mud	bulk	0.54	0.54	0.51	98.41	100.00	1.08	98.92	1.11	1.00	0001-0B

Table 8e: MPLC Bulk Composition: Ratios for well 6710/10-1 MUD

Depth unit of measure: m

Depth	Typ	Lithology	Sat Aro	HC Non-HC	Asp NSO	Sample
1641.00	mud	bulk	1.00	0.01	0.01	0001-0B

Table 9B: Saturated Hydrocarbon Ratios (peak area) for well 6710/10-1 MUD

Depth unit of measure: m

			Pristane	Pristane	Pristane/nC17	Phytane	nC17		Sample
Depth	Typ	Lithology	nC17	Phytane	Phytane/nC18	nC18	CPI1	nC17+nC27	
1641.00	mud	bulk	0.80	4.64	1.34	0.60	1.18	1.00	0001-0B

Table 11a: Variation in Triterpane Distribution (peak height) SIR for Well 6710/10-1 MUD

Depth unit of measure: m

Depth	Lithology	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Ratio6	Ratio7	Ratio8	Ratio9	Rat.10	Rat.11	Rat.12	Rat.13	Rat.14	Sample
1641.00	bulk	0.93	0.48	0.26	0.97	0.49	0.08	0.20	0.20	0.16	0.17	0.88	0.50	0.15	59.60	0001-0

List of Triterpane Distribution Ratios

- Ratio 1: 27Tm / 27Ts
- Ratio 2: 27Tm / 27Tm+27Ts
- Ratio 3: 27Tm / 27Tm+30aß+30ßa
- Ratio 4: 29aß / 30aß
- Ratio 5: 29aß / 29aß+30aß
- Ratio 6: 30d / 30aß
- Ratio 7: 28aß / 30aß
- Ratio 8: 28aß / 29aß
- Ratio 9: 28aß / 28aß+30aß
- Ratio 10: 24/3 / 30aß
- Ratio 11: 30aß / 30aß+30ßa
- Ratio 12: 29aß+29ßa / 29aß+29ßa+30aß+30ßa
- Ratio 13: 29ßa+30ßa / 29aß+30aß
- Ratio 14: 32aßS / 32aßS+32aßR (%)

Table 11b: Variation in Sterane Distribution (peak height) SIR for Well 6710/10-1 MUD

Depth unit of measure: m

Depth	Lithology	Ratio1	Ratio2	Ratio3	Ratio4	Ratio5	Ratio6	Ratio7	Ratio8	Ratio9	Ratio10	Sample
1641.00	bulk	0.59	47.34	74.07	0.98	0.75	0.34	0.23	0.59	0.90	2.71	0001-0

List of Sterane Distribution Ratios

- Ratio 1: $27\beta S / 27\beta S + 27\alpha\alpha R$
- Ratio 2: $29\alpha\alpha S / 29\alpha\alpha S + 29\alpha\alpha R$ (%)
- Ratio 3: $2 * (29\beta\beta R + 29\beta\beta S) / (29\alpha\alpha S + 29\alpha\alpha R + 2 * (29\beta\beta R + 29\beta\beta S))$ (%)
- Ratio 4: $27\beta S + 27\beta R + 27\alpha R + 27\alpha S / 29\beta S + 29\beta R + 29\alpha R + 29\alpha S$
- Ratio 5: $29\beta\beta R + 29\beta\beta S / 29\beta\beta R + 29\beta\beta S + 29\alpha\alpha S$
- Ratio 6: $21\alpha + 22\alpha / 21\alpha + 22\alpha + 29\alpha\alpha S + 29\beta\beta R + 29\beta\beta S + 29\alpha\alpha R$
- Ratio 7: $21\alpha + 22\alpha / 21\alpha + 22\alpha + 28\alpha S + 28\alpha\alpha S + 29\alpha R + 29\alpha\alpha S + 29\beta\beta R + 29\beta\beta S + 29\alpha\alpha R$
- Ratio 8: $29\beta\beta R + 29\beta\beta S / 29\alpha\alpha S + 29\beta\beta R + 29\beta\beta S + 29\alpha\alpha R$
- Ratio 9: $29\alpha\alpha S / 29\alpha\alpha R$
- Ratio 10: $29\beta\beta R + 29\beta\beta S / 29\alpha\alpha R$

Table 11c: Raw triterpane data (peak height) m/z 191 SIR for Well 6710/10-1 MUD

Depth unit of measure: m

Depth	Lithology	23/3	24/3	25/3	24/4	26/3	27Ts	27Tm	28aß	25nor30aß	Sample
		29aß	29Ts	30d	29ßa	30O	30aß	30ßa	30G	31aßS	
		31aßR	32aßS	32aßR	33aßS	33aßR	34aßS	34aßR	35aßS	35aßR	
1641.00	bulk	5929.1	3551.1	1665.0	5506.6	1491.7	8954.6	8339.0	4090.5	4158.8	0001-0
		20095.9	6681.2	1599.9	3176.9	1647.9	20741.8	2805.4	941.7	6916.2	
		4894.1	3490.8	2366.0	2009.5	1180.7	1017.0	629.3	692.2	442.1	

Table 11d: Raw sterane data (peak height) m/z 217 SIR for Well 6710/10-1 MUD

Depth unit of measure: m

Depth	Lithology	21a	22a	27dßS	27dßR	27daR	27daS	28dßS	28dßR	28daR*	Sample
		29dßS*	28daS*	27aaR	29dßR	29daR	28aaS	29daS*	28ßßS		
		28aaR	29aaS	29ßßR	29ßßS	29aaR					
1641.00	bulk	3628.5	1757.5	5178.0	3268.5	1469.3	1700.6	2525.5	1545.2	2724.7	0001-0
		5051.6	3562.7	3529.7	2897.3	1464.5	1556.3	2414.0	2571.8		
		1446.6	2007.1	3356.4	2698.8	2232.4					

* 28daR coel with 27aaS, 29dßS coel with 27ßßR, 28daS coel with 27ßßS, 29daS coel with 28ßßR

Table 11e: Raw sterane data (peak height) m/z 218 SIR for Well 6710/10-1 MUD

Depth unit of measure: m

Depth	Lithology	27ΒΒR	27ΒΒS	28ΒΒR	28ΒΒS	29ΒΒR	29ΒΒS	30ΒΒR	30ΒΒS	Sample
1641.00	bulk	5889.5	4515.6	3127.4	3325.5	4500.4	4109.3	575.0	585.5	0001-0

Table 11f: Raw triterpane data (peak height) m/z 177 SIR for Well 6710/10-1 MUD

Depth unit of measure: m

Depth	Lithology	25nor28aβ	25nor30aβ	Sample
1641.00	bulk	4146.9	2198.9	0001-0