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SOURCE ROCK AND CARBONISATION EVALUATION

WELL 30/5-1, NORWAY

by

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OLJEDIREKTORATET

Investigation

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Throughout the report the words 'Shell' and 'Group' are used collectively in relation to companies associated together under the name of the Royal Dutch/Shell Group of Companies.

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EXPLORATIE EN PRODUKTIE LABORATORIUM
RIJSWIJK, THE NETHERLANDS

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I. INTRODUCTION

Geochemical investigations have been carried out on a suite of samples from the well as mentioned on the title page.

These investigations have been carried out to evaluate the presence and quality of source-rock layers, to establish the trend in fixed-carbon content, and to indicate the zone of possible oil and/or gas generation at the location of the well.

II. EVALUATION OF SOURCE-ROCK PROPERTIES

a. Source-rock indications

These indications have been determined for the original samples and, for those showing a high source-rock indication; also after extraction with warm chloroform.

The results are given in the geochemical log (enclosure 1). For the location of the well see figure 1.

The bars on the geochemical log are an approximate measure of the organic-carbon content of the samples. The column on the left represents indication of the organic-carbon content of the untreated samples, while the column on the right shows the organic-carbon content of the samples after chloroform extraction.

Moderate to high indications obtained for the original samples may indicate genuine source-rock properties or migrated oil, or may be due to the presence of contaminants such as diesel oil used in the drilling fluid. To distinguish between the first possibility and the latter two, original samples with strong indications are remeasured after extraction with chloroform. Intervals or samples with high indications after extraction are investigated microscopically to ensure that the high values indicate genuine source-rock properties and are not due to contaminants insoluble in chloroform (such as walnut shells or other lost circulation material of an organic nature).

b. Type of organic matter

Knowledge of the type of organic matter is important because it is known that organic matter rich in hydrogen¹ (kerogen, kerogenous) is a precursor of oil. Organic matter poor in hydrogen (humic) yields only gas. The types of organic matter recognised range from kerogenous, through mainly kerogenous, mixture and mainly humic, to humic. In this order, the type indicates decreasing concentrations of hydrogen in the organic matter.

The type of organic matter was determined by gas chromatography² as well as by microscopic inspection. Organic matter of humic type is a precursor of gas. Organic matter of mainly humic type is also considered to be a precursor of gas; if sufficient quantities are present it may also yield oil. Organic matter of mixed type is a precursor of light oil (usually of a paraffinic nature) and gas. Organic matter of mainly kerogenous and kerogenous types are precursors of oil and gas.

The results have been included in the geochemical log.

III. MATURITY OF THE ORGANIC MATTER

a. General remarks and results

It is important to determine the effect of temperature on the organic matter present in source rocks, since the generation of oil and gas is closely connected with the influence of relatively high temperatures. The effect of temperature (or the degree of maturity) was established by determining the rank of constituent coal particles³ by measurement of vitrinite reflectance⁴⁻⁶. Some 50 (maximum) reflectance measurements have been made for each sample, provided there was sufficient vitrinite present. The average value of these reflectances has been converted to fixed-carbon content (100 - volatile matter).

The results are plotted as function of depth in figure 2 in the form of fixed-carbon histograms. Any histogram that could not be accommodated on figure 2 is given in subsequent figures.

In general, the mode value of the histogram may or may not represent the true-layer fixed-carbon content (coal rank) of the stratum from which the sample is taken. The rank obtained from cuttings may have been influenced by vitrite

from cavings. Alternatively, the rank may refer to reworked, resedimented or allochthonous vitrinite. However, it is probable that the coal rank obtained for samples with fixed-carbon histograms that have a rather sharp mode value does represent the true rank of the stratum from which the sample originates.

b. Compatible fixed-carbon content

The compatible fixed-carbon content (compatible FCC) is that which is in accordance with the present depth of burial and age of the formation in question. Knowledge of the compatible FCC is required to indicate the zone of possible oil generation (so-called cooking pot)^{7,8}.

The dashed line in figure 2 indicates the compatible FCC. If only a solid line is given, the compatible FCC coincides with the so-called true-layer fixed-carbon content (true-layer FCC).

The compatible FCC values 60 and 75 indicate the limits of the zone in which oil generation may take place. Oil source rocks located within these limits are expected to generate oil. The major gas generation takes place below the level indicated by the compatible FCC 75.

In those cases where it can be assumed that the strata are presently at their maximum depth of burial, the compatible FCC also indicates the predicted true-layer FCC.

c. True-layer fixed-carbon content

The true-layer fixed-carbon content (true-layer FCC) is the FCC that a humic coal would have when subjected to the same burial as the formation in question.

The solid line in figure 2 is considered to indicate the trend of the true-layer FCC. It is based on those FCC values that are believed to be reliable. In this connection, it can be remarked that the standard deviation in the FCC measurement, including the variability occurring in nature, is 4 FCC units. The shape of the line, that is the rate of increase as a function of FCC is based on accumulated experience.

If the area has been uplifted, in the sense that the strata were once at greater depth, the true-layer FCC is higher than the compatible FCC. Source rocks with a true-layer FCC between 60 and 75 are mature for oil. If these source rocks have been uplifted, the true layer FCC is incompatible.

Mature source rocks for oil have generated oil when the relevant strata have dropped below the level of the compatible FCC 60. Mature source rocks for oil lying outside the interval between the compatible FCC 60 and 75 levels are not expected to generate oil at present.

IV. CONCLUSIONS

Source rocks, either for oil or gas, are not present in the investigated interval 3010 - 13446 ft.

The FCC histograms obtained for the Tertiary sediments fit the compatible FCC trend for this interval. Hence this trend also indicates the true layer FCC for the Tertiary sediments.

The FCC histograms obtained for the Cretaceous sediments suggest a roughly constant FCC in the range 70 - 80 for this section. The approximately constant FCC of 70 - 80 over a 6000 ft interval is not consistent with our total experience. Normally, the FCC increases from 70 to 80 within a 2000 ft interval. Hence it is concluded that the FCC histograms obtained for the Cretaceous sediments refer to reworked vitrinite.

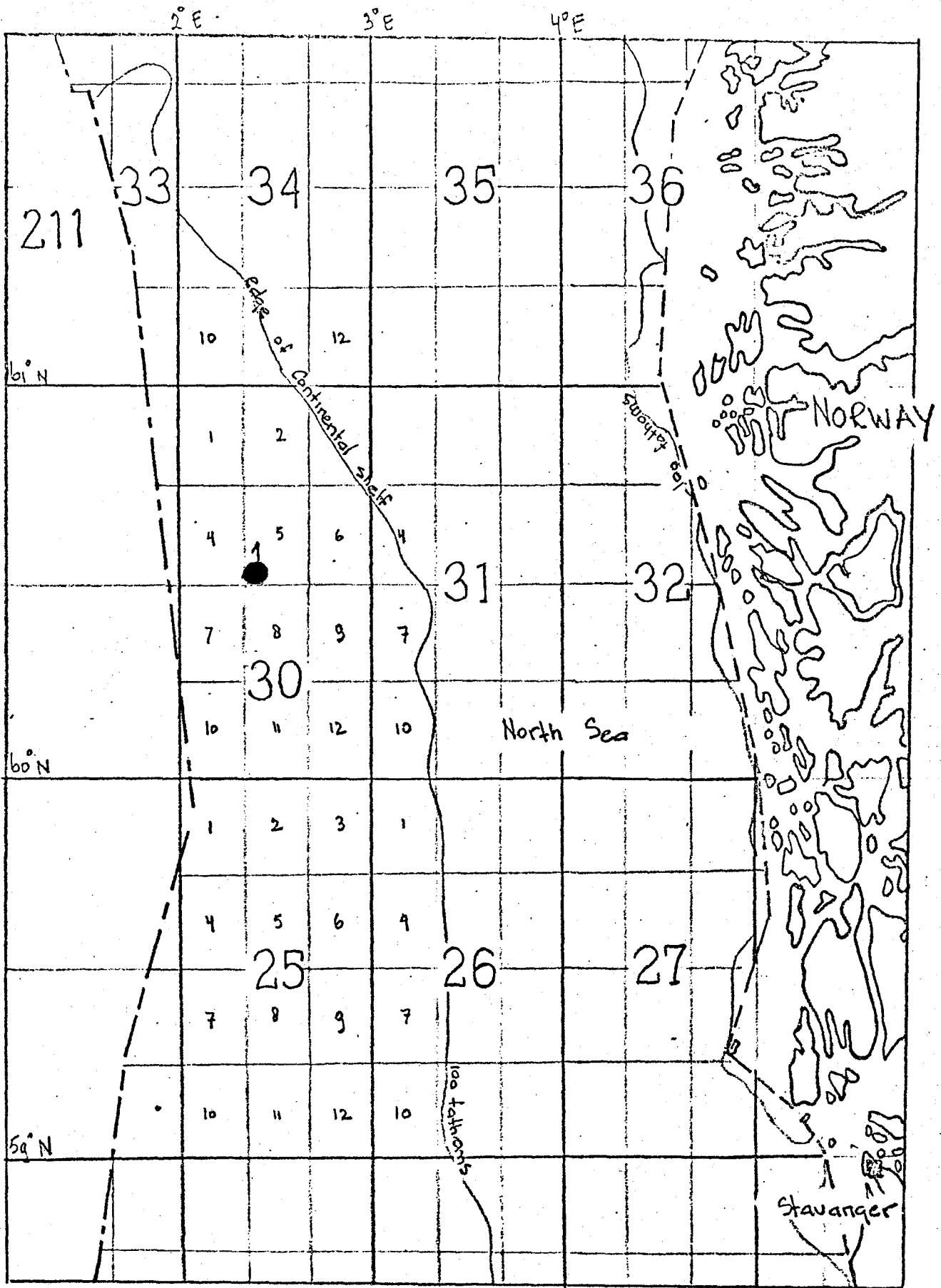
The zone of possible oil generation (socalled cooking-pot) is at present between 12000 ft and about 16000 ft. This is based on the compatible FCC 60 and 75 levels.

Commercial quantities of oil may not be expected below a depth of about 16000 ft (based on the compatible FCC 75 level).

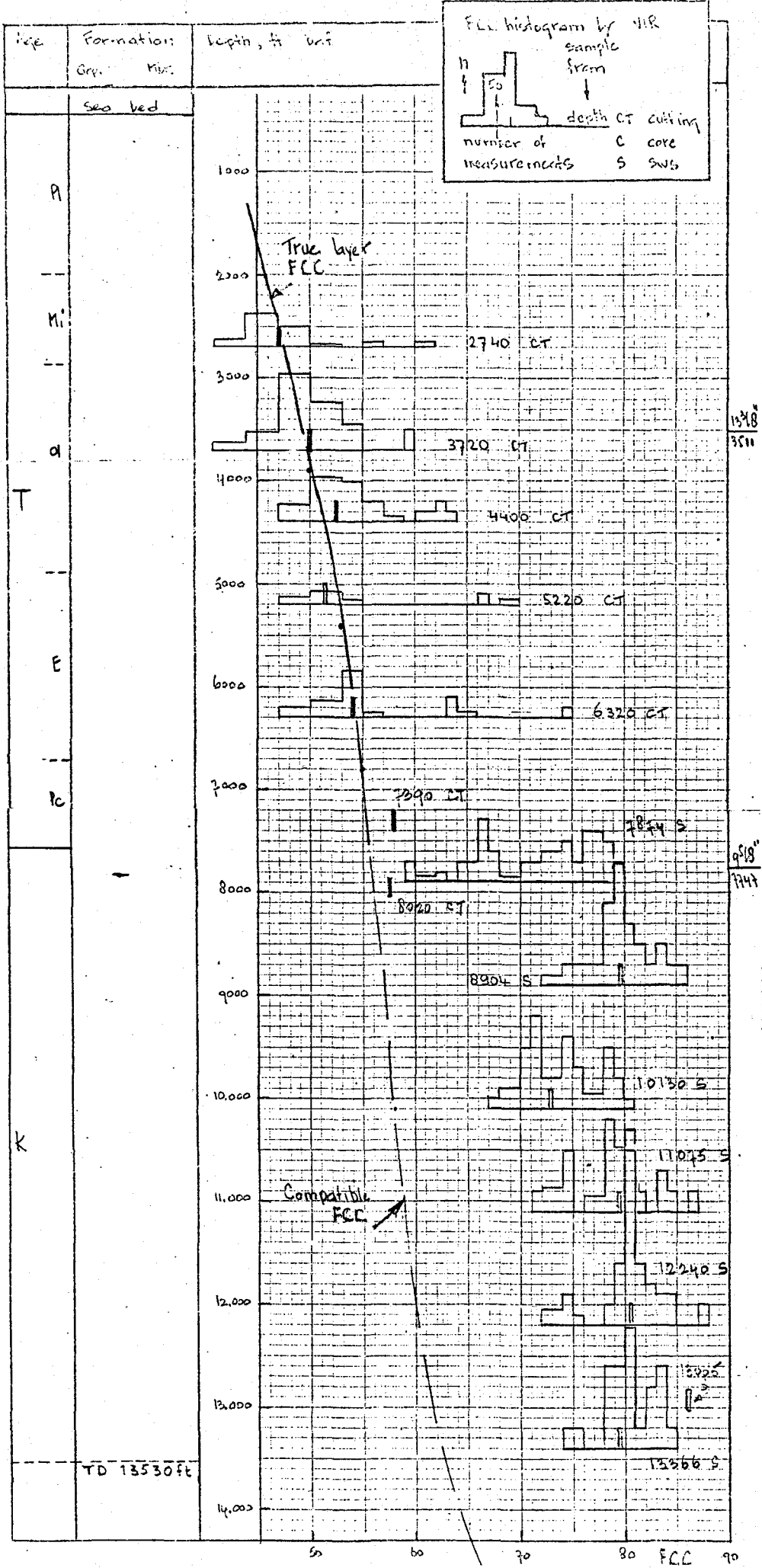
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LOCATION MAP



DOM AS A FUNCTION OF DEPTH, WELL 30/5-1, Norway

compatible FCC 75
1000 ft

fig: 2

DOM BY MEASUREMENT OF VITRINITE REFLECTANCE

Country: Norway

Well : 30/5-1

depth : 7390 FE

FCC: 58

Type of sample: ~~cuttings/SWS/core/surface/coal~~

The FCC of the sample is based on the mode value of the FCC histogram . It is (only) the FCC of the vitrinite mostly present in the sample. It may or may not coincide with the true layer FCC.

Number of measurements:

5	10	15	20	25	30	35	40	45	50
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Analist : Abs

Relative reflectance [diamond = 100]

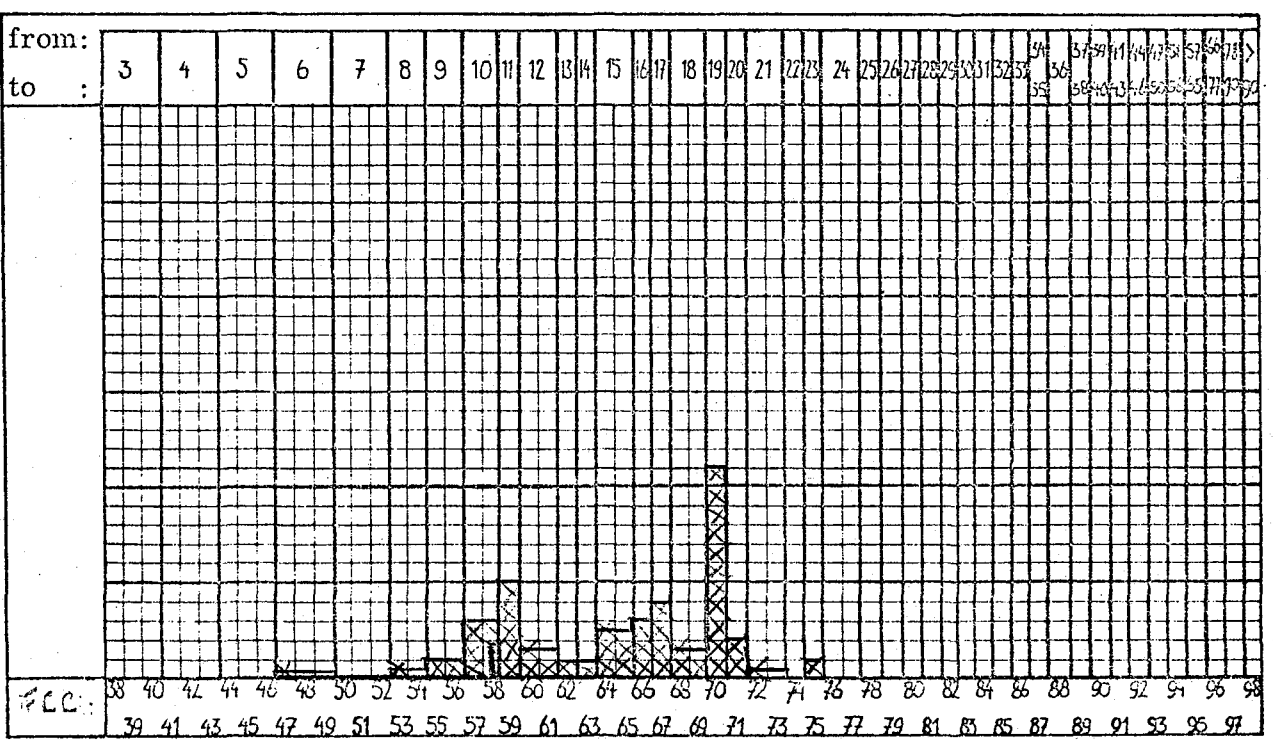


Fig. 3

DOM BY MEASUREMENT OF VITRINITE REFLECTANCE

Country: Norway

Well : 30/5-1

depth : 8020 FE

FCC: 62

Type of sample: ~~cuttings/SWS/core/surface/coal~~

The FCC of the sample is based on the mode value of the FCC histogram . It is (only) the FCC of the vitrinite mostly present in the sample. It may or may not coincide with the true layer FCC.

Number of measurements: 50

Analyst : Abs

Relative reflectance [diamond = 100]

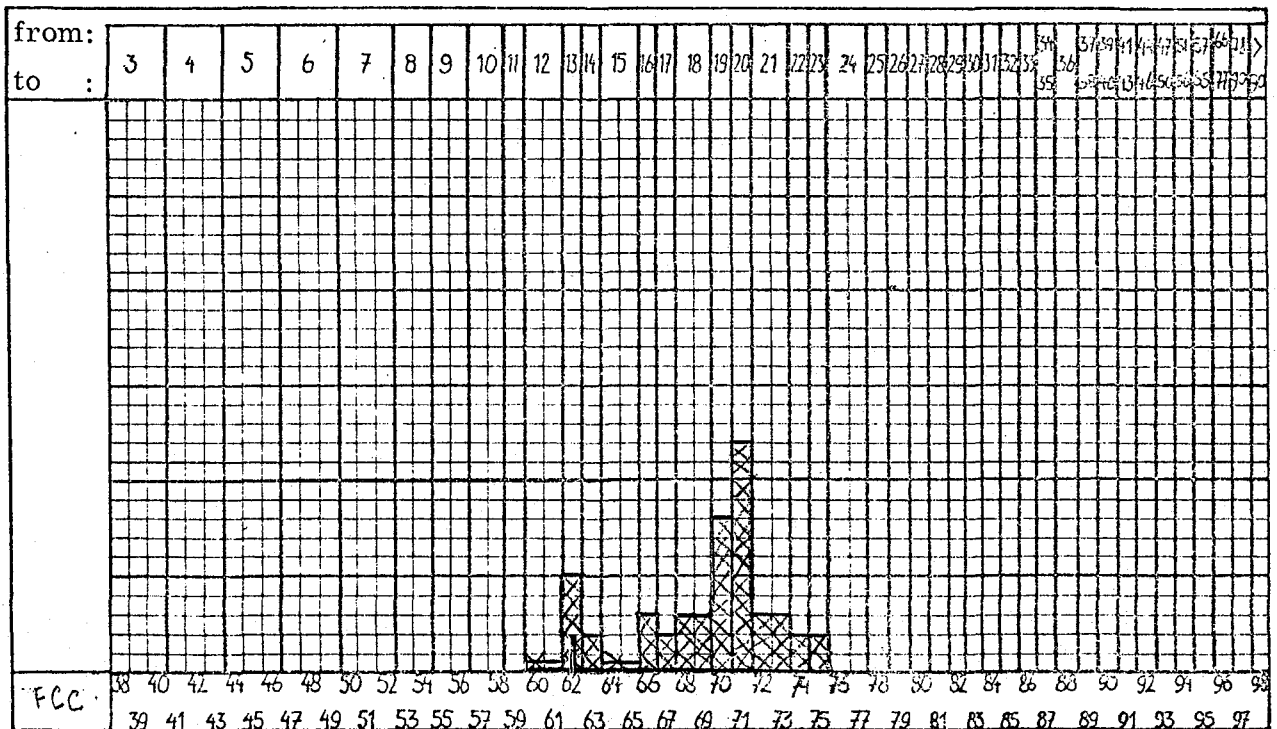


Fig. 4

DOM BY MEASUREMENT OF VITRINITE REFLECTANCE

Country: Norway

Well : 30/5-1

depth : 13005 Ft

FCC: 86

Type of sample: ~~cuttings/SWS/core/surface/coal~~

The FCC of the sample is based on the mode value of the FCC histogram . It is (only) the FCC of the vitrinite mostly present in the sample. It may or may not coincide with the true layer FCC.

Number of measurements: 50

Analist : Als

Relative reflectance [diamond = 100]

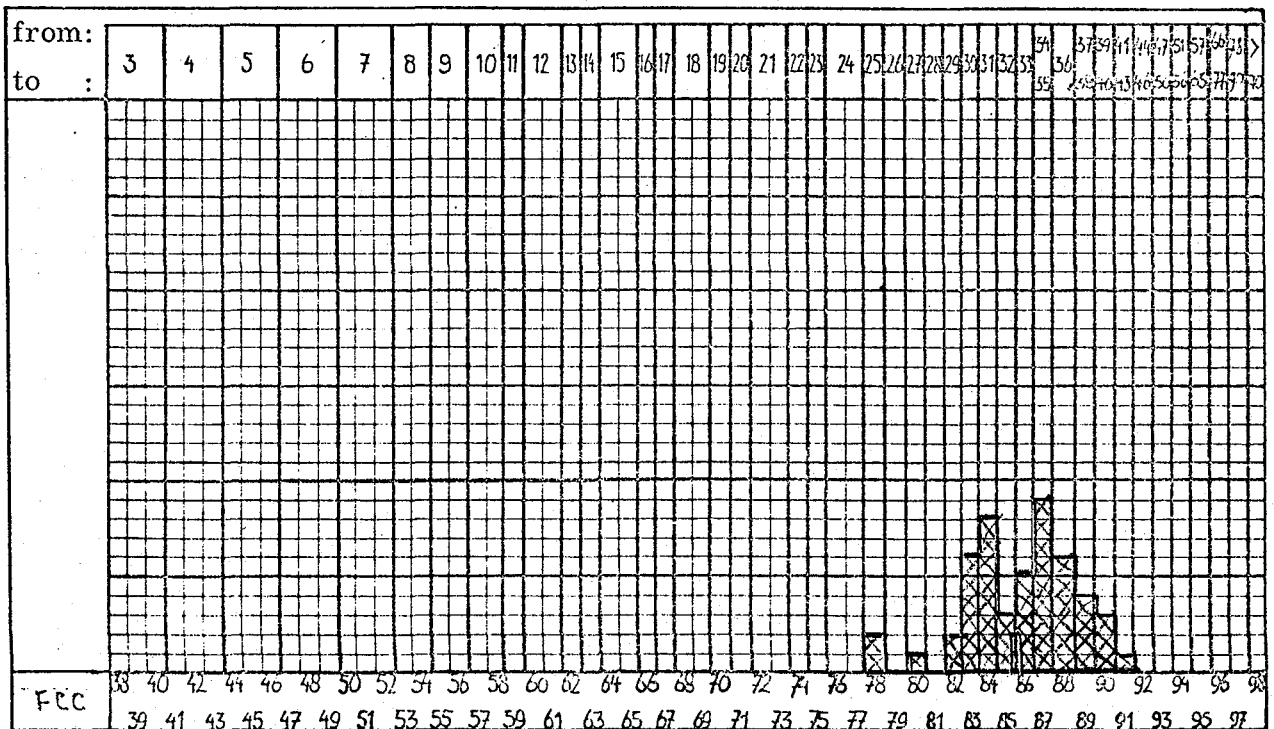


Fig. 5

TABLE I (PART 1)

WELL: 30/5-1

DEPTH	TYPE OF SAMPLE	SOURCE ROCK INDICATION	SOURCE ROCK INDICATION	TYPE OF ORGANIC MATTER	ORGANIC CARBON CONTENT
F		BEFORE EXTR.	AFTER EXTR.		%W
3010	C	20	-		-
3040	C	15	-		-
3070	C	10	-		-
3100	C	10	-		-
3130	C	10	-		-
3150	C	10	-		-
3190	C	15	-		-
3220	C	25	-		-
3250	C	10	-		-
3290	C	15	-		-
3310	C	20	-		-
3340	C	15	-		-
3370	C	20	-		-
3400	C	25	-		-
3430	C	20	-		-
3460	C	25	-		-
3490	C	20	-		-
3520	C	20	-		-
3540	C	20	-		-
3560	C	20	-		-
3580	C	20	-		-
3600	C	25	-		-
3620	C	25	-		-
3640	C	20	-		-
3660	C	15	-		-
3680	C	25	-		-
3700	C	20	-		-
3720	C	25	-		-
3740	C	25	-		-
3760	C	25	-	MH	-

TABLE 1 (PART 2)

WELL: 30/5-1

DEPTH	TYPE OF SAMPLE	SOURCE ROCK INDICATION	SOURCE ROCK INDICATION	TYPE OF ORGANIC MATTER	ORGANIC CARBON CONTENT
F		BEFORE EXTR.	AFTER EXTR.		%W
3800	C	25	-		-
3820	C	25	-		-
3840	C	20	-		-
3860	C	25	-		-
3900	C	20	-		-
3940	C	25	-		-
3960	C	25	-		-
3980	C	25	-		-
4000	C	25	-	H	-
4020	C	25	-		-
4040	C	25	-		-
4060	C	25	-		-
4080	C	25	-		-
4100	C	25	-		-
4120	C	25	-		-
4140	C	25	-		-
4160	C	25	-		-
4180	C	25	-		-
4200	C	25	-		-
4220	C	25	-		-
4240	C	25	-		-
4260	C	25	-		-
4280	C	25	-		-
4300	C	25	-		-
4320	C	25	-		-
4340	C	25	-		-
4360	C	25	-		-
4380	C	25	-		-
4400	C	15	-		-
4420	C	25	-		-

TABLE I (PART 3)

WELL: 30/5-1

DEPTH	TYPE OF SAMPLE	SOURCE ROCK INDICATION	SOURCE ROCK INDICATION	TYPE OF ORGANIC MATTER	ORGANIC CARBON CONTENT
F		BEFORE EXTR.	AFTER EXTR.		%W
4440	C	25	-		-
4460	C	25	-		-
4480	C	25	-		-
4500	C	25	-		-
4540	C	25	-		-
4560	C	25	-		-
4580	C	25	-		-
4600	C	25	-		-
4620	C	25	-		-
4640	C	25	-		-
4660	C	25	-		-
4680	C	25	-		-
4700	C	25	-		-
4720	C	25	-		-
4740	C	25	-	H	-
4760	C	25	-		-
4780	C	25	-		-
4800	C	25	-		-
4820	C	25	-		-
4840	C	25	-		-
4860	C	25	-		-
4880	C	25	-		-
4900	C	25	-		-
4920	C	25	-		-
4940	C	25	-		-
4960	C	25	-		-
4980	C	25	-		-
5000	C	25	-		-
5020	C	25	-		-
5040	C	25	-		-

TABLE 1 (PART 4)

WELL: 30/5-1

DEPTH	TYPE OF SAMPLE	SOURCE ROCK INDICATION	SOURCE ROCK INDICATION	TYPE OF ORGANIC MATTER	ORGANIC CARBON CONTENT
F		BEFORE EXTR.	AFTER EXTR.		%W
5060	C	25	-		-
5080	C	25	-		-
5100	C	25	-		-
5120	C	25	-		-
5140	C	25	-		-
5160	C	25	-		-
5180	C	25	-		-
5200	C	25	-		-
5220	C	25	-		-
5240	C	25	-		-
5260	C	25	-		-
5280	C	25	-	H	-
5300	C	25	-		-
5320	C	25	-		-
5340	C	25	-		-
5360	C	25	-		-
5380	C	25	-		-
5400	C	25	-		-
5420	C	25	-		-
5440	C	25	-		-
5460	C	25	-		-
5480	C	25	-		-
5500	C	25	-		-
5520	C	25	-		-
5540	C	25	-		-
5560	C	25	-		-
5580	C	25	-		-
5600	C	25	-		-
5620	C	25	-		-
5640	C	25	-		-

TABLE I (PART 5)

WELL: 30/5-1

DEPTH	TYPE OF SAMPLE	SOURCE ROCK INDICATION	SOURCE ROCK INDICATION	TYPE OF ORGANIC MATTER	ORGANIC CARBON CONTENT
F		BEFORE EXTR.	AFTER EXTR.		%W
5660	C	25	-		-
5680	C	25	-		-
5700	C	25	-		-
5720	C	25	-		-
5740	C	25	-		-
5760	C	25	-		-
5780	C	25	-		-
5800	C	25	-		-
5820	C	25	-		-
5840	C	25	-		-
5860	C	25	-		-
5880	C	25	-		-
5900	C	25	-		-
5920	C	25	-		-
5940	C	25	-		-
5960	C	25	-		-
5980	C	25	-		-
6000	C	25	-		-
6020	C	25	-		-
6040	C	25	-		-
6060	C	25	-		-
6080	C	25	-		-
6100	C	25	-		-
6120	C	25	-		-
6140	C	25	-		-
6160	C	25	-		-
6180	C	25	-		-
6200	C	25	-		-
6300	C	25	-	MH	-
6320	C	25	-		-

TABLE I (PART 6)

WELL: 30/5-1

DEPTH	TYPE OF SAMPLE	SOURCE ROCK INDICATION	SOURCE ROCK INDICATION	TYPE OF ORGANIC MATTER	ORGANIC CARBON CONTENT
F		BEFORE EXTR.	AFTER EXTR.		%W
6340	C	25	-		-
6360	C	25	-		-
6380	C	25	-		-
6400	C	25	-		-
6420	C	25	-		-
6440	C	25	-		-
6460	C	25	-		-
6480	C	25	-		-
6500	C	25	-		-
6520	C	25	-		-
6540	C	25	-		-
6560	C	20	-		-
6580	C	25	-		-
6600	C	25	-		-
6620	C	25	-		-
6640	C	25	-		-
6660	C	25	-		-
6680	C	25	-		-
6700	C	20	-		-
6720	C	25	-		-
6740	C	25	-		-
6760	C	25	-		-
6780	C	25	-		-
6800	C	25	-		-
6820	C	25	-		-
6840	C	25	-		-
6860	C	25	-		-
6880	C	25	-		-
6900	C	15	-		-
6920	C	20	-		-

TABLE I (PART 7)

WELL: 30/5-1

DEPTH	TYPE OF SAMPLE	SOURCE ROCK INDICATION	SOURCE ROCK INDICATION	TYPE OF ORGANIC MATTER	ORGANIC CARBON CONTENT
F		BEFORE EXTR.	AFTER EXTR.		%W
6940	C	20	-		-
6960	C	20	-		-
6980	C	20	-		-
7000	C	25	-		-
7020	C	25	-		-
7040	C	20	-		-
7060	C	20	-		-
7080	C	25	-		-
7100	C	25	-		-
7120	C	25	-		-
7140	C	25	-		-
7160	C	25	-		-
7180	C	25	-	H	-
7220	C	10	-		-
7240	C	25	-		-
7260	C	25	-		-
7280	C	25	-		-
7300	C	25	-		-
7320	C	25	-		-
7340	C	25	-		-
7360	C	25	-		-
7380	C	25	-		-
7400	C	25	-		-
7420	C	25	-		-
7460	C	20	-		-
7480	C	25	-		-
7500	C	20	-		-
7520	C	20	-		-
7540	C	25	-		-
7560	C	20	-		-

TABLE I (PART 8)

WELL: 30/5-1

DEPTH	TYPE OF SAMPLE	SOURCE ROCK INDICATION	SOURCE ROCK INDICATION	TYPE OF ORGANIC MATTER	ORGANIC CARBON CONTENT
F		BEFORE EXTR.	AFTER EXTR.		%W
7580	C	25	-		-
7600	C	25	-		-
7620	C	25	-		-
7640	C	25	-		-
7660	C	20	-		-
7680	C	20	-		-
7700	C	20	-		-
7720	C	25	-		-
7740	C	15	-		-
7760	C	10	-		-
7780	C	20	-		-
7800	C	25	-	H	-
7830	C	25	-		-
7860	C	25	-		-
7890	C	25	-		-
7920	C	25	-		-
7950	C	25	-		-
7980	C	25	-		-
8020	C	25	-		-
8040	C	25	-		-
8070	C	25	-		-
8100	C	25	-		-
8130	C	25	-		-
8160	C	25	-		-
8210	C	25	-		-
8240	C	25	-		-
8270	C	25	-		-
8300	C	25	-		-
8330	C	25	-		-
8360	C	25	-		-

TABLE I (PART 9)

WELL: 30/5-1

DEPTH	TYPE OF SAMPLE	SOURCE ROCK INDICATION	SOURCE ROCK INDICATION	TYPE OF ORGANIC MATTER	ORGANIC CARBON CONTENT %W
F		BEFORE EXTR.	AFTER EXTR.		
8390	C	25	-		-
8420	C	25	-		-
8450	C	25	-		-
8480	C	25	-		-
8510	C	25	-		-
8540	C	25	-		-
8570	C	25	-		-
8600	C	25	-		-
8630	C	25	-		-
8630	C	25	-		-
8690	C	25	-		-
8720	C	25	-		-
8750	C	25	-		-
8780	C	25	-		-
8810	C	25	-		-
8840	C	25	-		-
8870	C	25	-		-
8900	C	25	-		-
8930	C	25	-		-
8960	C	25	-		-
8990	C	25	-	H	-
9020	C	25	-		-
9050	C	25	-		-
9080	C	25	-		-
9110	C	25	-		-
9140	C	25	-		-
9170	C	25	-		-
9200	C	25	-		-
9230	C	25	-		-
9260	C	25	-		-

TABLE I (PART 10)

WELL: 30/5-1

DEPTH	TYPE OF SAMPLE	SOURCE ROCK INDICATION	SOURCE ROCK INDICATION	TYPE OF ORGANIC MATTER	ORGANIC CARBON CONTENT
F		BEFORE EXTR.	AFTER EXTR.		%W
9290	C	25	-		-
9320	C	25	-		-
9350	C	25	-		-
9380	C	25	-		-
9410	C	25	-		-
9440	C	25	-		-
9470	C	25	-		-
9500	C	25	-		-
9530	C	25	-		-
9560	C	25	-		-
9590	C	25	-		-
9620	C	25	-		-
9650	C	25	-		-
9680	C	25	-		-
9710	C	25	-		-
9740	C	25	-		-
9770	C	25	-		-
9800	C	25	-		-
9830	C	25	-		-
9860	C	25	-		-
9890	C	25	-		-
9920	C	25	-		-
9950	C	25	-		-
9980	C	25	-		-
10010	C	20	-		-
10040	C	25	-		-
10070	C	25	-		-
10100	C	25	-		-
10130	C	25	-		-
10160	C	25	-		-

TABLE 1 (PART 11)

WELL: 30/5-1

DEPTH	TYPE OF SAMPLE	SOURCE ROCK INDICATION	SOURCE ROCK INDICATION	TYPE OF ORGANIC MATTER	ORGANIC CARBON CONTENT
F		BEFORE EXTR.	AFTER EXTR.		%W
10200	C	25	-		-
10230	C	25	-		-
10260	C	25	-		-
10300	C	25	-		-
10330	C	25	-	H	-
10360	C	25	-		-
10390	C	25	-		-
10420	C	25	-		-
10450	C	25	-		-
10480	C	25	-		-
10520	C	25	-		-
10550	C	25	-		-
10580	C	25	-		-
10610	C	25	-		-
10640	C	25	-		-
10680	C	25	-		-
10710	C	25	-		-
10740	C	25	-		-
10770	C	25	-		-
10800	C	25	-		-
10830	C	25	-		-
10860	C	20	-		-
10890	C	15	-		-
10920	C	20	-		-
10950	C	20	-		-
10980	C	25	-		-
11010	C	25	-		-
11040	C	25	-		-
11070	C	25	-		-
11110	C	15	-		-

TABLE I (PART 12)

WELL: 30/5-1

DEPTH	TYPE OF SAMPLE	SOURCE ROCK INDICATION	SOURCE ROCK INDICATION	TYPE OF ORGANIC MATTER	ORGANIC CARBON CONTENT
F		BEFORE EXTR.	AFTER EXTR.		%W
11150	C	20	-		-
11180	C	20	-		-
11210	C	25	-		-
11240	C	25	-		-
11270	C	20	-		-
11300	C	15	-		-
11330	C	15	-		-
11370	C	15	-		-
11410	C	25	-		-
11440	C	25	-		-
11470	C	25	-		-
11500	C	25	-		-
11530	C	15	-		-
11560	C	15	-		-
11590	C	25	-		-
11620	C	15	-		-
11650	C	20	-		-
11680	C	25	-	H	-
11710	C	25	-		-
11740	C	25	-		-
11770	C	25	-		-
11800	C	25	-		-
11830	C	25	-		-
11860	C	25	-		-
11890	C	25	-		-
11920	C	20	-		-
11950	C	20	-		-
11980	C	20	-		-
12010	C	15	-		-
12040	C	25	-		-

TABLE I (PART 13)

WELL: 30/5-1

DEPTH	TYPE OF SAMPLE	SOURCE ROCK INDICATION	SOURCE ROCK INDICATION	TYPE OF ORGANIC MATTER	ORGANIC CARBON CONTENT
F		BEFORE EXTR.	AFTER EXTR.		%W
12070	C	25	-		-
12100	C	25	-		-
12130	C	25	-		-
12170	C	25	-		-
12200	C	25	-		-
12230	C	25	-		-
12260	C	25	-		-
12290	C	15	-		-
12320	C	25	-		-
12360	C	20	-		-
12380	C	25	-		-
12420	C	25	-		-
12460	C	20	-		-
12500	C	25	-		-
12540	C	15	-		-
12590	C	15	-		-
12630	C	20	-		-
12660	C	20	-		-
12700	C	25	-		-
12730	C	15	-		-
12760	C	25	-		-
12790	C	15	-		-
12820	C	25	-		-
12850	C	15	-		-
12890	C	20	-		-
12920	C	10	-		-
12950	C	15	-		-
12980	C	25	-		-
13010	C	25	-		-
13040	C	25	-		-

TABLE I (PART 14)

WELL: 30/5-1

DEPTH	TYPE OF SAMPLE	SOURCE ROCK INDICATION	SOURCE ROCK INDICATION	TYPE OF ORGANIC MATTER	ORGANIC CARBON CONTENT
F		BEFORE EXTR.	AFTER EXTR.		%W
13070	C	25	-		-
13100	C	25	-		-
13140	C	20	-		-
13170	C	20	-		-
13200	C	20	-		-
13230	C	25	-		-
13260	C	25	-		-
13290	C	10	-		-

TYPE OF SAMPLE C = CUTTINGS, R = CORE, S = SIDEWALL SAMPLE

CONTAMINATION : W = WALNUT FRAGMENTS OR SOME SIMILAR PRODUCT,
E = CELLOPHANE SHREDS, F = FIBRES, P = PLASTIC OR PAINT AND
C = CONTAMINATED BUT KIND NOT SPECIFIED

A DASH (-) INDICATES TEST NOT MADE, ASTERISKS INDICATE THE
ORGANIC CARBON CONTENT IS THE AVERAGE FOR THE SAMPLES CONCERNED

GEOCHEMICAL LOG

SCALE 1:5000

WELL 30/5-1

LOCATION

REGID IDENTIFIER

AGE	FORMATION	DEPTH IN F	LITHOLOGY	D&M	SOURCE ROCK INDICATION OF ORIGINAL SAMPLE						TYPE OF SAMPLE	SOURCE ROCK INDICATION OF SAMPLE AFTER EXTRACTION WITH CHLOROFORM						CONTRIBUTION	DEPTH IN F	ORG. CARBON (PCT. - MT)	TYPE OF ORGANIC MATTER							
					100	200	300	400	500	600		100	200	300	400	500	600											
TERTIARY	PLIOCENE	0																										
		600																										
TERTIARY	MIOCENE	1000																										
		1600																										
TERTIARY	OLIGOCENE	2000																										
		2800																										
TERTIARY	Eocene	3000																										
		3600																										
TERTIARY	PALEOCENE	4000																										
		4800																										
CRETACEOUS?		5000																										
		5600																										
CRETACEOUS?		6000																										
		6800																										
CRETACEOUS?		7000																										
		7600																										
CRETACEOUS?		8000																										
		8600																										
CRETACEOUS?		9000																										
		9600																										
CRETACEOUS?		10000																										
		10600																										
CRETACEOUS?		11000																										
		11600																										
CRETACEOUS?		12000																										
		12600																										
CRETACEOUS?		13000																										
		13600																										
CRETACEOUS?		14000																										
		14600																										

VALUES SMALLER THAN 30 ARE CONSIDERED NOT TO BE OF SIGNIFICANCE

TO AT 13600

SOURCE ROCKS, EITHER FOR OIL OR GAS HAVE NOT BEEN PENETRATED.

NUMBER OF SAMPLES ANALYZED 308

NUMBER OF SAMPLES ANALYZED 0

LEGEND
 TYPE OF SAMPLE ○ = CORE
 ▴ = SIDEWALL SAMPLE
 CONTRIBUTION C = UNSPECIFIED
 H = HALMUTS
 E = CELLOPHANE
 F = FIBRES
 P = PLASTIC OR PAINT

WELL 30/5-1
 GEOCHEMICAL LOG OF
 30/5-1
 NORWAY
 DATE: 23.11.77
 BY: K. E. G. & J. T. G.