

WA.2/7-03.9(1)

Source Rock Analysis of Selected
Samples

at-

12 1973



NR01589288

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707-2670

Samples for Comparison of Source Rock Techniques
(Eldfisk 2/7-3X Well, Er-222-73)

December 14, 1973

C. D. Wilkinson
International Department

In accord with your request, source rock data we have generated on sidewall cores from various wells in the North Sea were examined with the purpose of locating a suitable interval over which a comparison could be made of the conventional and reflectance method of source rock evaluation. The 6400 to 9160 foot interval in the 2/7-3X well is the most logical choice but it is far from ideal because the claystone sidewall cores generally are spaced 150 feet apart. As you know, source rock quality of the Tertiary shales in this area varies vertically over relatively short distances so it would not be valid to assume the source rock quality for any given 150 foot interval for which there are no samples. Therefore, the cuttings on which reflectance technique will be based will have to be accurately lagged back in order that a cutting sample can be obtained that is representative of a given sidewall core depth. This would appear to be difficult to accomplish with this claystone section and therefore it may not be possible to obtain sufficient statistical data on which to test the validity of these two source rock techniques.

ORIGINAL SIGNED BY

D. A. Morris

DAM:gml
Attachment

ELDFISK 2/7-3X WELL

<u>Geochem.</u> <u>Br. Code</u>	<u>Depth</u>		<u>Source Rock</u>	
	<u>meters</u>	<u>feet</u>	<u>Yes</u>	<u>No</u>
JGY	1951	6400		X
JGZ	2012	6600		X
JHA	2057	6750		X
JHB	2103	6900		X
JHC	2149	7050	X	
JHD	2194	7200		X
JHE	2240	7350		X
JHF	2286	7500		X
JHG	2332	7650	X	
JHH	2377	7800	X	
JHI	2423	7950		X
JHJ	2469	8100		X
JHK	2530	8300		X
JHM	2627	8620	X	
JHN	2667	8750	X	
JHO	2728	8950		X
JHP	2758	9050		X
JHQ	2792	9160		X

C. P. Kaiser

February 20, 1975

Re: Thermal Alteration and Source
Rock Potential of Phillips
Pet. Co. 2/7-3X, Norway

Mr. L. M. Rickards
London Office

Attention: Mr. C. F. Darling

A total of 43 composited cutting samples were processed and interpreted for relative abundance amorphous kerogen. Sixteen of these samples were selected for vitrinite reflectance measurements. Attached are copies of a computer printout and plot illustrating these data.

Vitrinite reflectance (R_0) measurements were initiated at 8750' in order to gain some insight into the reflectance gradient for this well and also because of poor recovery of vitrinite from the interval 9160' through 10,980'. Observations of relative abundance amorphous kerogen from all samples were made and are shown on attached computer plot.

Samples of Kimmeridgian strata from this well are interpreted as representing significant accumulations of liquid hydrocarbon source material. A total of seven potential primary, four potential secondary and seven potential tertiary source rock intervals were identified. Approximately + 820 feet of potential primary or secondary liquid hydrocarbon source rocks are represented within Kimmeridgian sediments from this well. Reflectance values over this interval range from a low of .65 R_0 to a high of .87 R_0 . Based on published data and information generally accepted within the oil industry reflectance values from .60 R_0 through 1.30 R_0 are interpreted as the range in which peak generation of liquid hydrocarbons takes place, providing sufficient potential source material is available from which liquids can be generated. In most cases where studies have been completed sediments with a range of values from .60 R_0 through 1.10 R_0 are the range in which the overwhelming majority of commercial oil fields are found. However, light oils do occur up to 1.30 R_0 .

This report letter represents the final well selected for the North Sea Jurassic study. All palynology, thermal alteration and source rock potential data will be assimilated and discussed in the form of a final report within coming weeks.

LU:bjp

Logan Urban

Attachments
cc: Messrs. R. L. Rayl
C. P. Kaiser ✓
H. A. Kuehnert (r) R&EPS Files

SUBMITTED BY LL BURMAN

PPCG 2/7-3 MORWAY

TOP BASE PERCENT RELATIVE
 ABUNDANCE
 AMORPHOUS KEROGENS

6400.	6401.	50.
6600.	6601.	50.
6750.	6751.	50.
6900.	6901.	20.
7050.	7051.	100.
7200.	7201.	20.
7350.	7351.	50.
7500.	7501.	20.
7650.	7651.	20.
7800.	7801.	50.
7950.	7951.	0.
8100.	8101.	20.
8300.	8301.	100.
8620.	8621.	0.
8750.	8751.	50.
8950.	8951.	0.
9050.	9051.	50.
9150.	9151.	50.
10630.	10700.	0.
10740.	10820.	0.
10850.	10910.	0.
10980.	11060.	0.
11100.	11180.	20.
11220.	11300.	0.
11340.	11420.	20.
11460.	11520.	20.
11560.	11640.	50.
11680.	11760.	20.
11800.	11880.	20.
11920.	11970.	20.
12000.	12070.	100.
12180.	12250.	50.
12280.	12360.	100.
12400.	12500.	100.
12500.	12580.	100.
12650.	12740.	100.
12800.	12900.	20.
12950.	13050.	0.

13100.	13140.	50.
13220.	13320.	20.
13380.	13480.	100.
13520.	13620.	50.
13660.	13750.	100.

DEPTH MEAN STD DEV

8750.	0.516	0.048
9050.	0.519	0.033
9160.	0.509	0.065
10980.	0.092	0.074
11100.	0.998	0.067
11220.	1.005	0.050
11460.	0.974	0.071
11680.	0.731	0.050
11920.	0.452	0.069
12180.	0.650	0.068
12400.	0.769	0.084
12800.	0.828	0.047
12950.	0.835	0.071
13220.	0.860	0.066
13520.	0.870	0.071
13660.	0.848	0.062

THERMAL ALTERATION AND SOURCE ROCK POTENTIAL OF PPCO 2/7-3 NORWAY

