

SNEA (P)  
DIRECTION EXPLORATION  
LABORATOIRE DE GEOLOGIE DE BOUSSENS

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GEO/LAB Bss n° 0/1960 RP  
/ca

GEOCHEMICAL ANALYSIS OF CONDENSATE SAMPLES  
FROM 15/5-1 AND 15/5-2 WELLS  
(NORWAY)

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DISPATCHING LIST

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One condensate sample from 15/5-1 (test 3553-3616 m) and one from 15/5-2 (test 4140-4160 m) were analysed ; the gross composition of these products and some calculated indices are given in table 1 and their chromatograms (thermo-vaporized, saturated and aromatic fractions) are given on plates 1 and 2.

These two fluids have been compared with each other and also with the organic extracts previously analysed\*.

- 1 - The main genetical characteristics, given by the chromatograms of the saturated and aromatic (thiophenic) fractions, show the different origins of the two condensates. These origins are clearly defined by the  $A/B = (\text{Pristane}/n\text{C}17)/(\text{Phytane}/n\text{C}18)$  ratios :

15/5-1 ( $A/B = 1.05$ ) Upper Jurassic

15/5-2 ( $A/B = 3.25$ ) Dogger - Lias.

- 2 - The catagenetical characteristics are given by X1 and X2 ratios, Pristane/ $n\text{C}17$  and Phytane/ $n\text{C}18$  ratios. They show that the condensates have been generated :

- 15/5-1 by a low maturity source-rock (first part of the main oil generation zone) ;

- 15/5-2 by a mature source-rock (end of main oil generation zone).

Taking into account the catagenetic levels defined in the two well reports, both condensates have been generated not far from their reservoirs.

For the first time in block 15, we have to note the presence of benzothiophene in thiophenic compounds in the 15/5-1 condensate : this is probably due to a maturation of the upper Jurassic source-rock lower than in the other wells analysed in this block.

#### In brief

- . 15/5-1 Condensate = upper Jurassic source-rock (as for the 15/3 fluids, but with a low maturity),
- . 15/5-2 Condensate = mature Dogger - Lias source-rock.

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\* cf. reports GEO/LAB Bss :

- n° 9/1809 (15/5-1)

- n° 9/1843 (15/5-2).

## 15/5-1 and 15/5-2 condensates

( NORWAY)

## Main Geochemical results

		15/5-1	15/5-2
		3553 - 3616 m	4140 - 4160 m
		Callovian	Lower Dogger
Composition of total product	Distillate : D	44.2	75.6
	Asphaltenes	-	-
	Resins	1.7	0.2
	Saturated HC : S	38.5	16.6
	Aromatic HC : A	15.6	7.5
	S / A	2.46	2.21
	S + D	82.7	92.2
Thermovaporized fraction T.V. (C 5 - C 15)	X1 : n C 6 / MCP	1.69	2.23
	X2 : n C 7 / DMCP	4.34	6.89
	Y1 : n C 7 / TOL	0.87	0.39
	n Alk % TV	26	19
Saturated fraction (C 15 - C 30)	n Alk % Sat	13	48
	Pristane / n C 17 : A	0.66	0.35
	Phytane / n C 18 : B	0.63	0.10
	A / B	1.05	3.25

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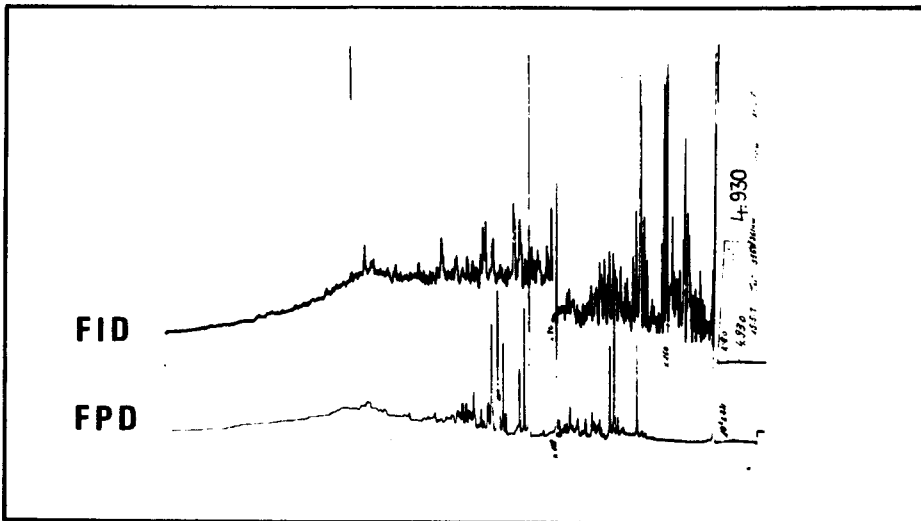
DEPARTEMENT LABORATOIRE DE GEOLOGIE DE BOUSSENS

PAYS : NORWAY  
 Country : NORWAY  
 SONDAGE : 15/5\_1  
 Well : 15/5\_1

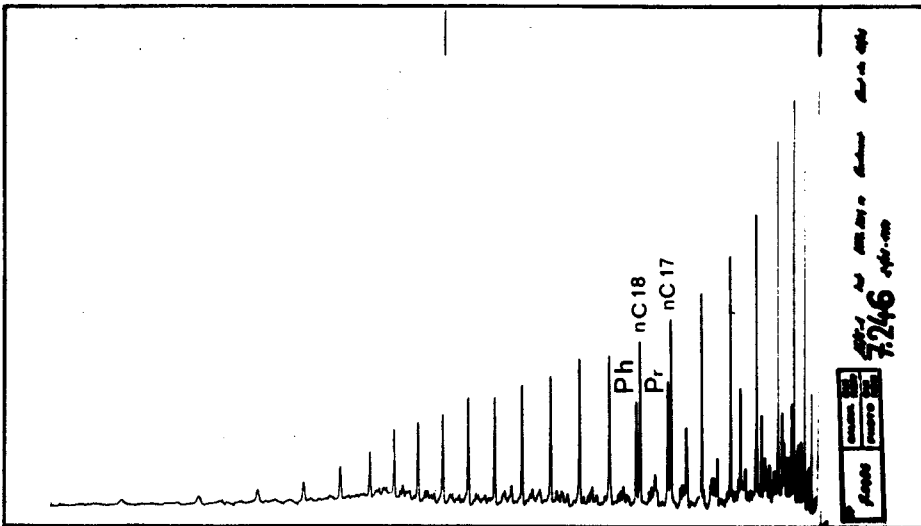
Cote / Depth : 3553 - 3616 m  
 Identification :  
 Formation :  
 Age : Callovian

Composition du produit total (%)  
 Composition of total product

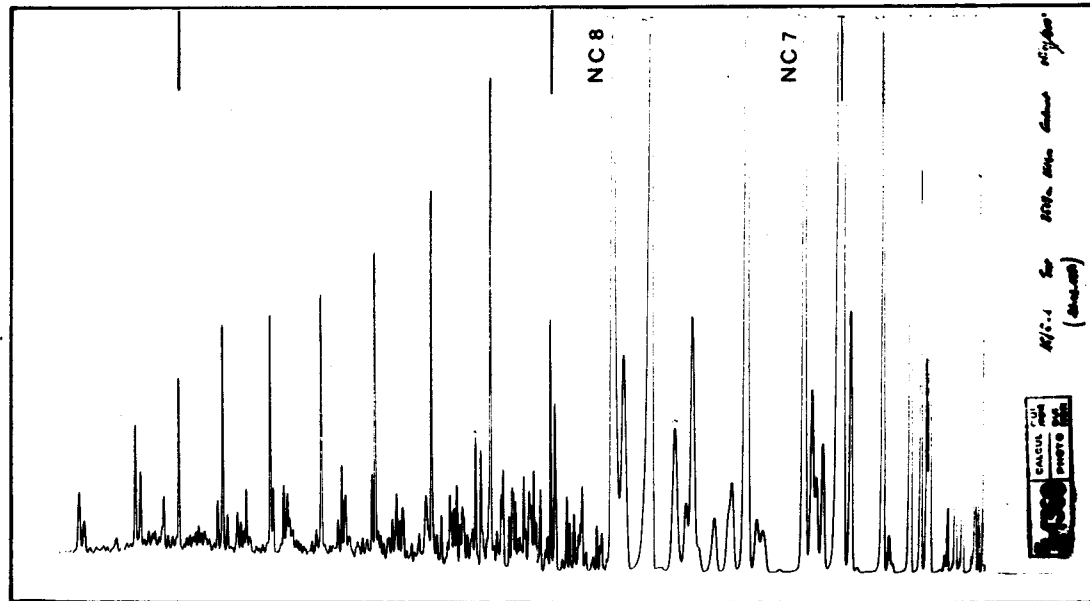
Asphalènes <i>Asphaltenes</i>	As	: -	
Résines <i>Resins</i>	R	: 1,7	
HC saturés <i>Saturated HC</i>	S	: 38,5	$\frac{S}{A} = 2,46$
HC aromatiques <i>Aromatic HC</i>	A	: 15,6	
Distillat <i>Distillate</i>	D	: 44,2	



HC AROMATIQUES AROMATIC HC



HC SATURES SATURATED HC



HC THERMOVAPORISES THERMOVAPORIZED HC

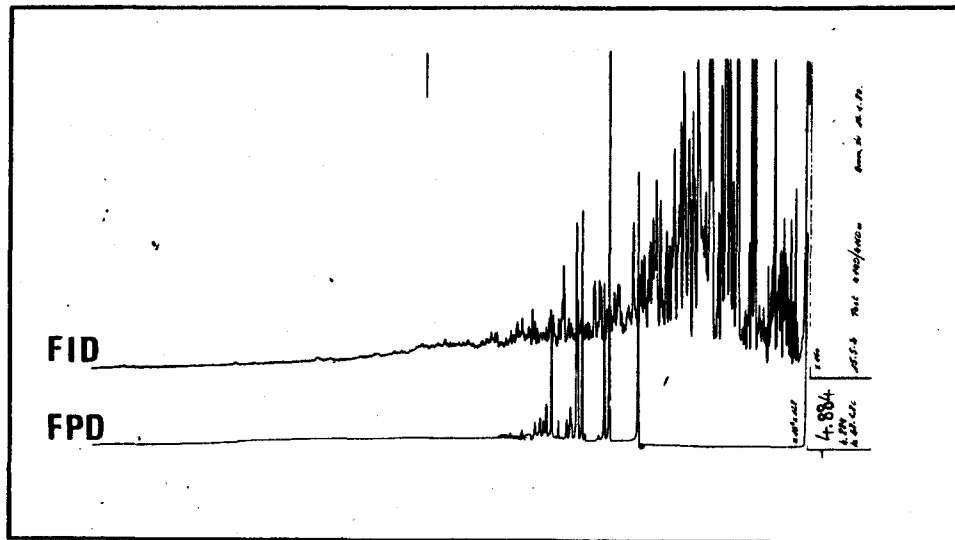
S. N. E. A. (P)

PL 2

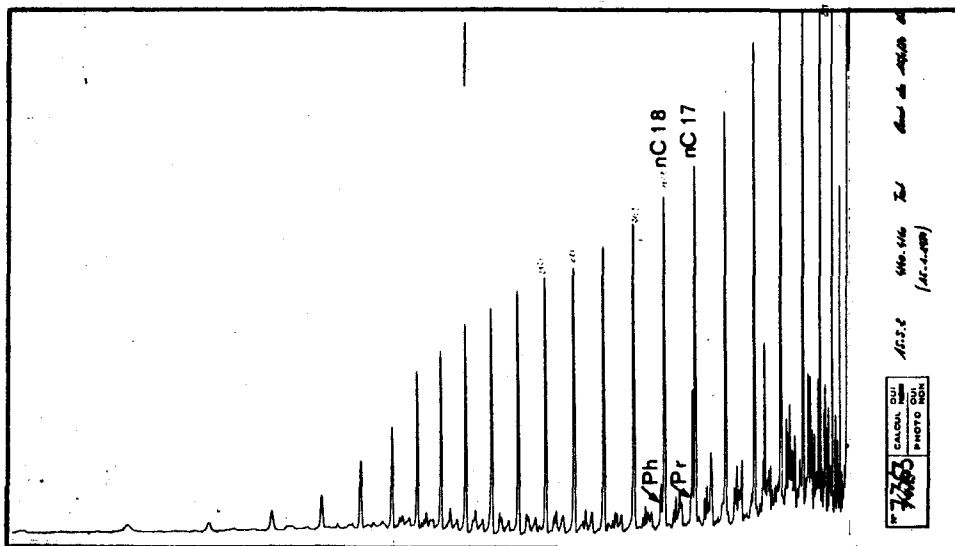
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PAYS : NORWAY  
 Country :  
 SONDAJE : 15/5\_2.  
 Well :

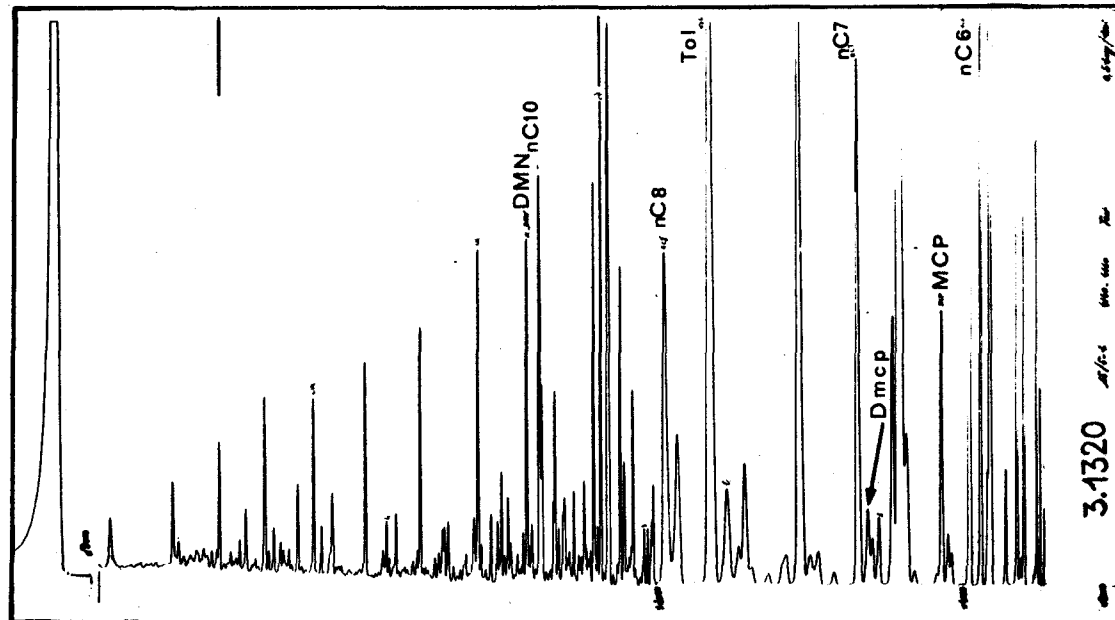
Cote : 4140 - 4160 m  
 Depth :  
 Identification :  
 Condensat Identification :  
 Formation :  
 Formation :  
 Age : lower Dogger  
 Age :



HC AROMATIQUES AROMATIC HC



HC SATURES SATURATED HC



HC THERMOVAPORISES THERMOVAPORIZED HC

Composition du produit total (%)  
 Composition of total product

Asphaltènes Asphaltenes	As	:	—
Résines Resins	R	:	0,2
HC saturés Saturated HC	S	:	16,6
HC aromatiques Aromatic HC	A	:	7,5
Distillat Distillate	D	:	75,6

$$\frac{S}{A} = 2,21$$

$$X_2 = 6,89$$

$$A/B = 3,25$$