

L-180
725.3

Organisk geokjemi

4 - 25/2-6

- Brent Sands formation, between 3240 and 3317 m (Dogger)

This sandstony formation contains a few shaly beds, rich in organic matter, and coal beds.

The petroleum quality of the kerogen from the shaly and coaly beds is rather good to good ($240 < IH < 420$). The average present hydrocarbon potential of the shales and of the coals is very high, about 100 and 500×10^3 Tons/Km² × m respectively, but their thickness is very weak. The genetical characteristics of the hydrocarbons from the shales and the coals are quite close ; their main characteristics are the very high predominance of the pristane over the phytane, the abundance of the n-alkanes having a high molecular weight and the predominance of the odd-numbered n-alkanes. The catagenetical characteristics of these hydrocarbons indicate a low maturation (at a maximum at the beginning of the oil generation zone). *onset of oil generation*

- Dunlin Shale formation, between 3317 and 3504 m (Lias)

The total organic carbon contents are relatively high to medium : 1.3 to 2.5 above about 3420, and about 0.9 below this depth.

The present petroleum quality of the kerogen is mediocre to relatively good ($50 < IH < 240$; $35 < IO < 50$). The average present hydrocarbon potential is low, lower than 10×10^3 Tons/Km² × m between 3317 and 3420 m, and lower than 5×10^3 T/Km² × m between 3420 and 3504 m.

The genetical characteristics of the hydrocarbons from two samples of this formation are quite close and make it possible to class them in type 2. Their catagenetical characteristics show a slightly higher maturation than above (beginning of the main oil generation zone ?). *onset of oil-generation*

- Statfjord Sand formation, between 3500 and 3700 m (Liassic)

This formation contains a few shaly beds ; only three shaly samples from core 4 (between 3510.5 and 3518.5 m) were analysed.

The total organic carbon contents are between 0.85 and 3.1 %. The present petroleum quality of the kerogen is mediocre to relatively good ($40 < IH < 200$; $35 > IO > 10$).

The genetical characteristics of one sample are quite close to those of the samples from the Dunlin shale formation (type 2). Its catagenetical characteristics suggest a maturation compatible with the main oil generation zone ; according to this fact, the initial hydrocarbon potential was higher.

According to the knowledge of the geochemical-sedimentological setting of this region, it is presumable that the thicker shaly beds (not studied) had at a minimum the same initial hydrocarbon potential as the Dunlin shale Formation.

2.2 - CRUDE OIL

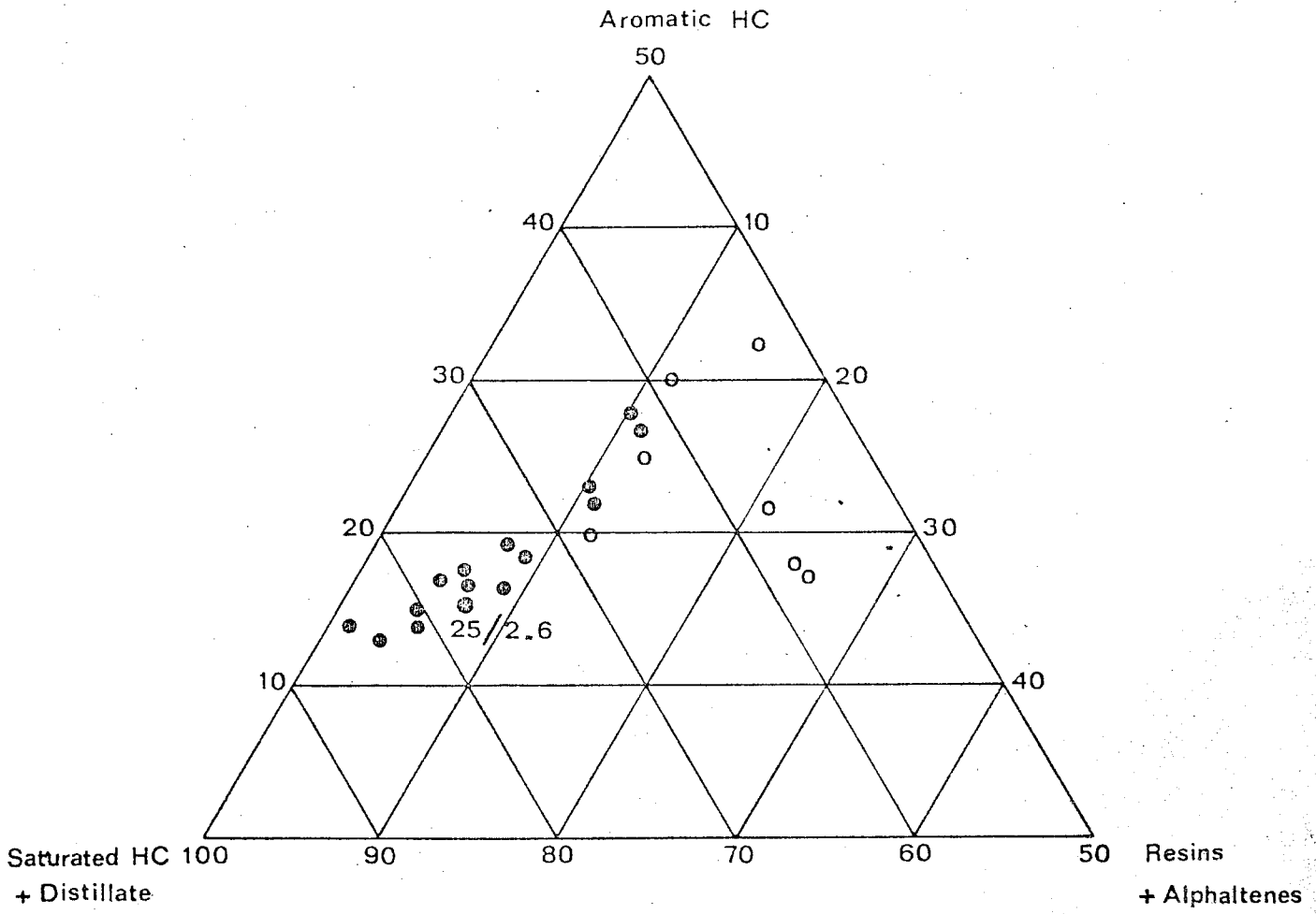
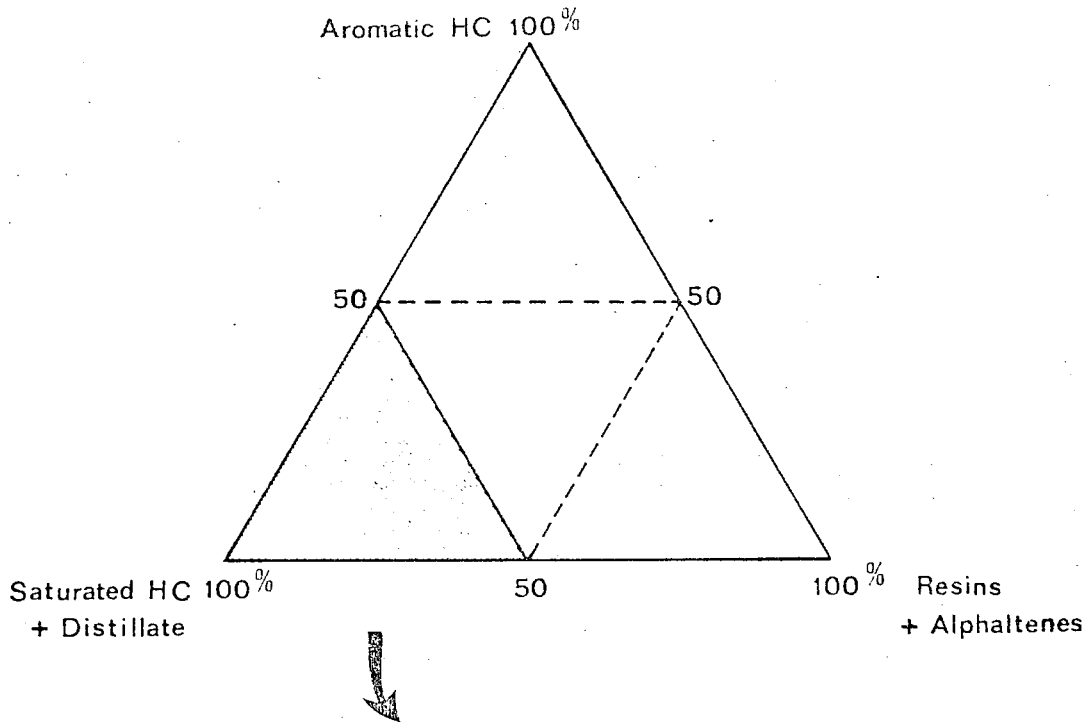
The crude oil analysed corresponds to the RFT n° 22 from 3563.1 m, in Statfjord Sand formation. Its gross composition and chromatograms are on plate 18 ; its gross composition is plotted on a triangular diagram (Pl. 19) with the composition of the crude oils from Norwegian Sea, previously studied. This oil is non degraded. It correlates with the crude oils from this region, especially the oils from 25/2-5 and 25/2-4 ; it is also classed in type 2.

Not degraded oil

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REGISTRERT



- Non degraded oils
- Degraded oils

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DIRECTION GENERALE DES PRODUCTIONS	
DIRECTION EXPLORATION	
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Auteur PHILIPPE	
N° Class. A. 3075	
PL. 19	NORTH SEA - 25/2.6 Crude oil. Gross composition Comparison with crude oils previously studied