

June 1987

RKER.87.148

GEOCHEMICAL INVESTIGATION OF A CRUDE OIL SAMPLE
FROM PALMERS WOOD, UNITED KINGDOM
by

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Sponsor: Shell Expro London Code: 774.106.10

Investigation: 812204217

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RIJSWIJK, THE NETHERLANDS

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GEOCHEMICAL INVESTIGATION OF A CRUDE OIL SAMPLE FROM
PALMERS WOOD, UNITED KINGDOM

1.0 INTRODUCTION

A geochemical investigation has been carried out on a crude oil sample from Palmers Wood (B/D "Shell Trans"), United Kingdom. The results are shown in Table 1 and in Figures 1-6.

2.0 RESULTS AND CONCLUSIONS

The gaschromatograms (Figs. 1-2) and the C₇-distribution (Fig. 3) indicate that the crude oil sample has not been bacterially degraded.

The crude was derived from a mature source rock (API gravity; grosscomposition; C₂₉ VRE; complete sterane isomerisation features, Fig. 6). The crude was generated from a shaly source rock (C₇-alkane/naphthene distribution, Fig. 3; high amount of rearranged steranes, Fig. 6), that contained predominantly SOM (sterane/triterpane fragmentograms).

The Palmers Wood crude is most probably derived from a Lower Jurassic source rock.

TABLE 1 - GEOCHEMICAL DATA OF CRUDE OILS

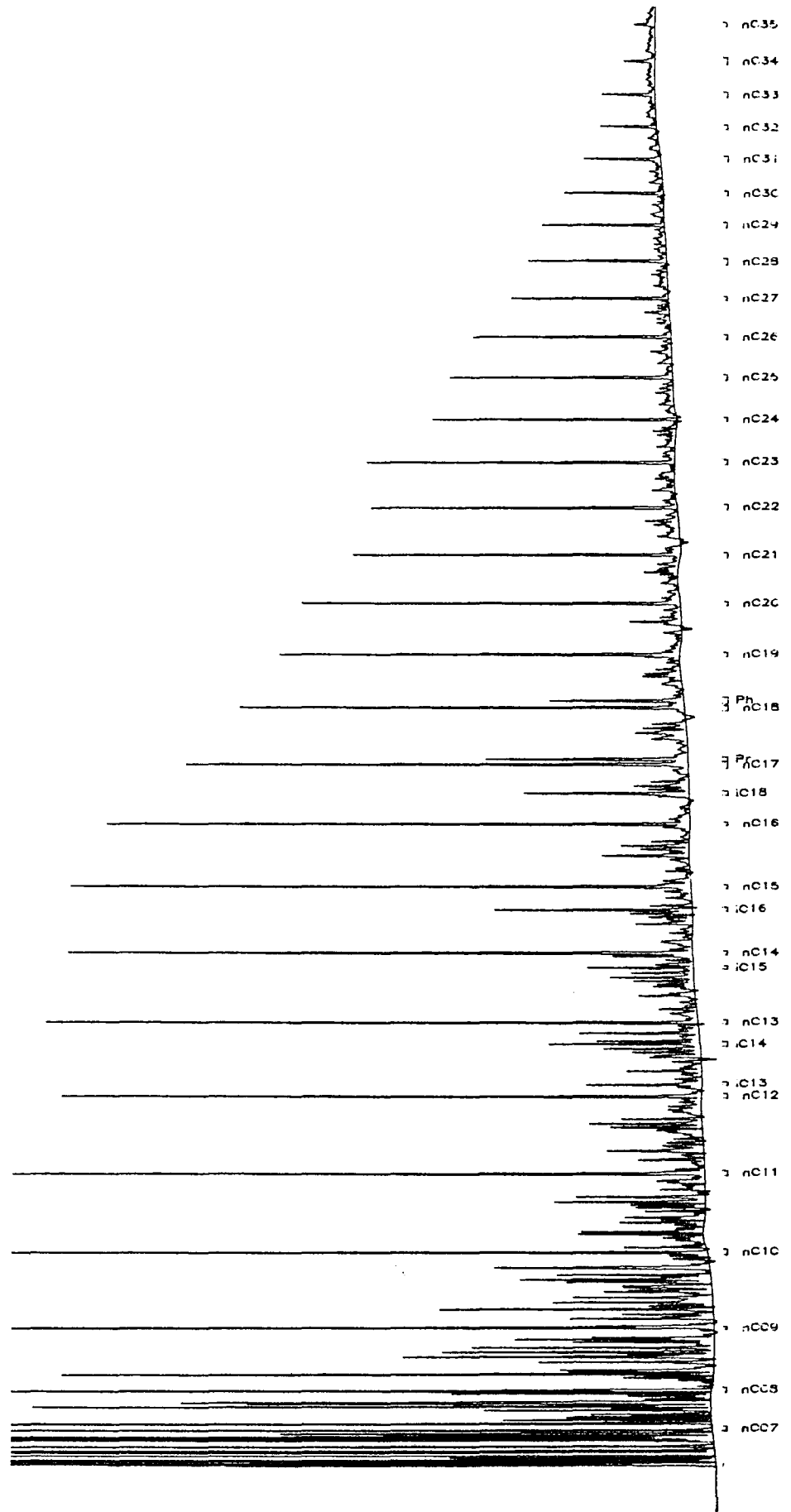
United Kingdom Palmers Wood OMC 4285	
Sample	
API	37.6
specific gravity	0.8366
%w. boil. <120°C	12.7
% sulphur	0.2
ppm V as metals	0
ppm Ni as metals	2
pristane/phytane	1.6
pristane/nC17	0.5
phytane/nC18	0.4
C ₇ -distribution	
C ₇ -alkane	
nC7	50
monobranched	38
polybranched	12
C ₇ -alk/naphthene	
nC7	26
naphthenes	48
branched alkanes	26
C ₇ -alk/naphth/arom	
nC7	51
naphthenes	46
aromatics	3
C ₁₅ distribution	
1-ring	67
2-ring	27
3-ring	6
C ₃₀ distribution	
3-ring	28
4-ring	55
5-ring	17
C ₂₉ VR/E	1.00
weight loss on topping	28
% saturates*	45
% aromatics	47
% heterocompounds	6
% asphaltenes	1.3
δ ¹³ C ^o /oo (whole oil)	-27.9
" (saturates)	-28.8
" (aromatics)	-27.0

* Determined by thin layer chromatography

N.D. = not detectable

Reference nr. 872084 Recorded BRETT SAT-1 10-05-87 GFS nr. / Calibration nr.

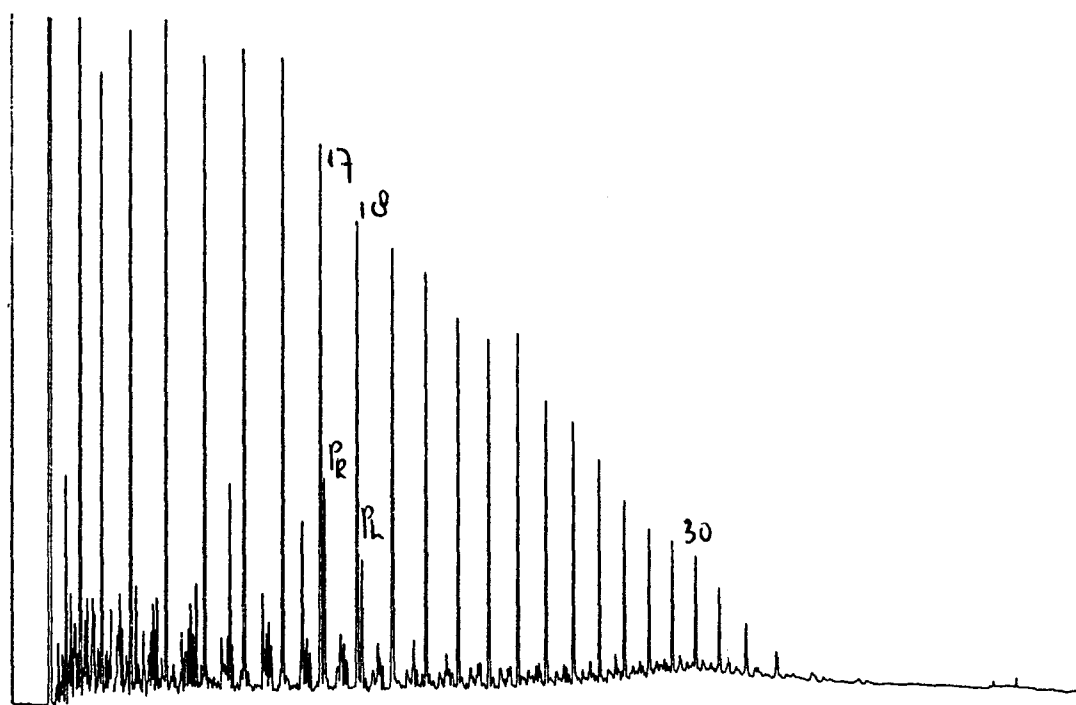
GAS CHROMATOGRAM OF THE WHOLE CRUDE



CUTTED KINGDOM PALMERS WOOD

FIG. 1.

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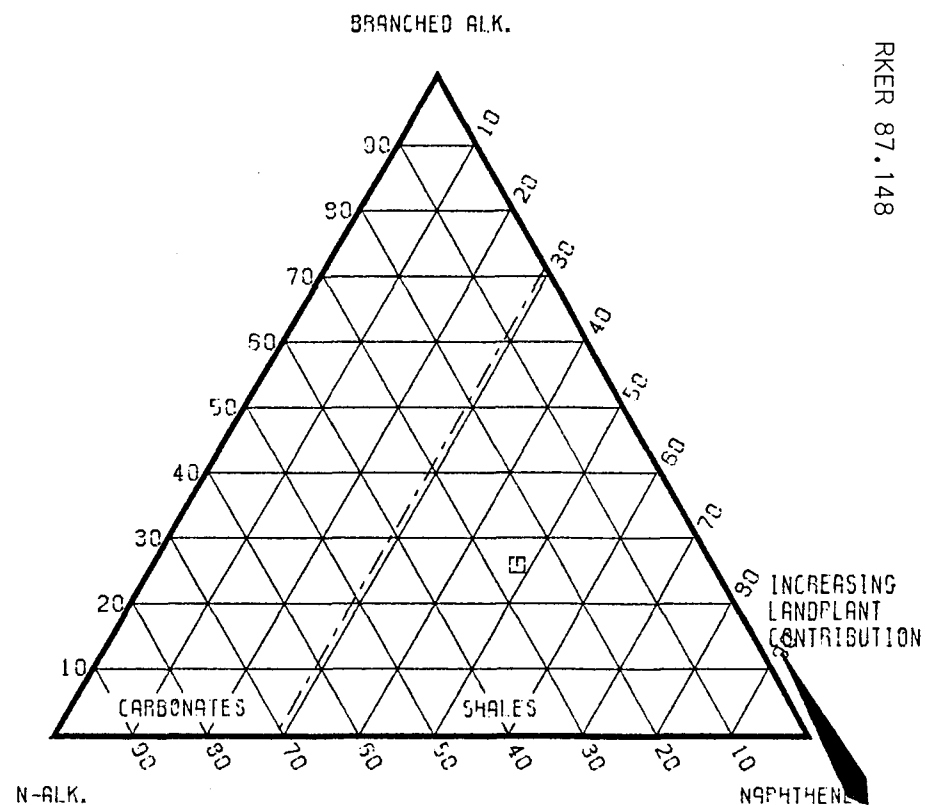
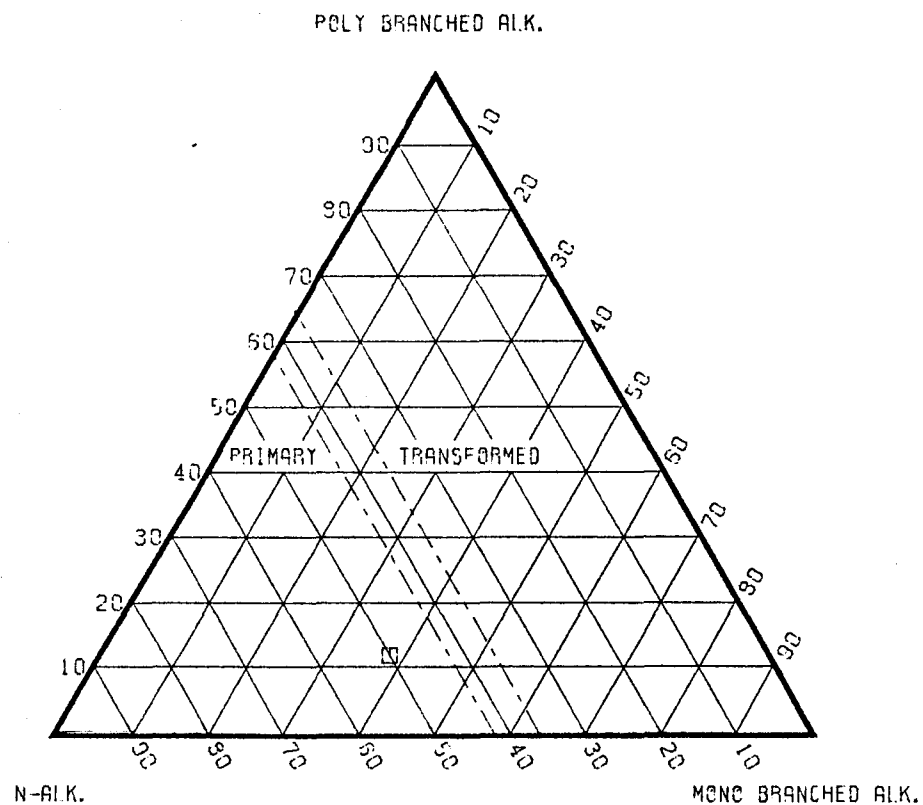


GAS CHROMATOGRAM OF SATURATED HYDROCARBONS

FIG. 2, U.K. PALMERS WOOD OMC 4285

C7-ALKANE DISTRIBUTION

C7-ALKANE/NAPHTHENE DISTRIBUTION



LEGEND
□ - PALMERS WOOD

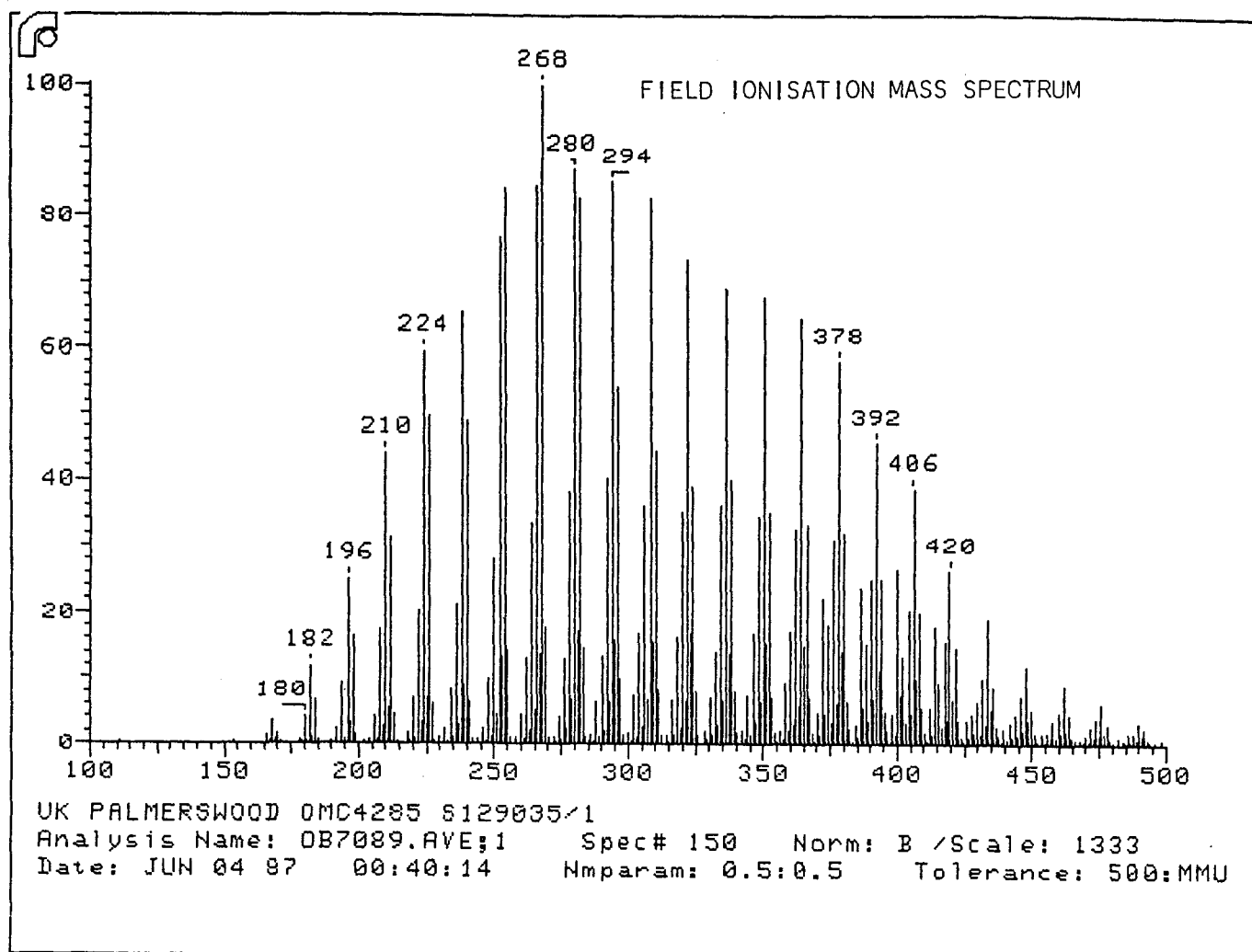
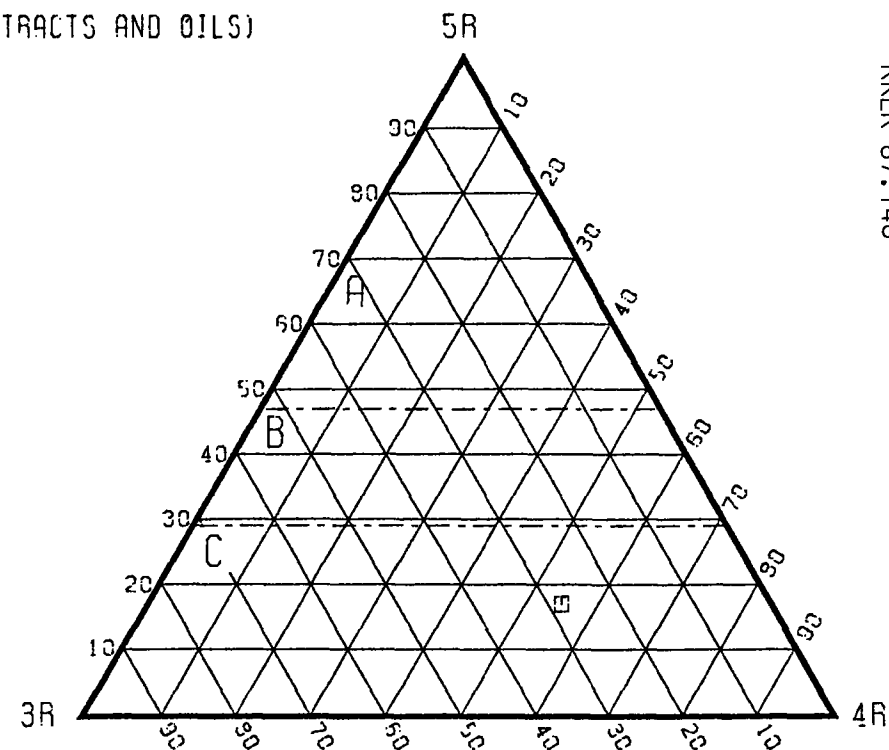
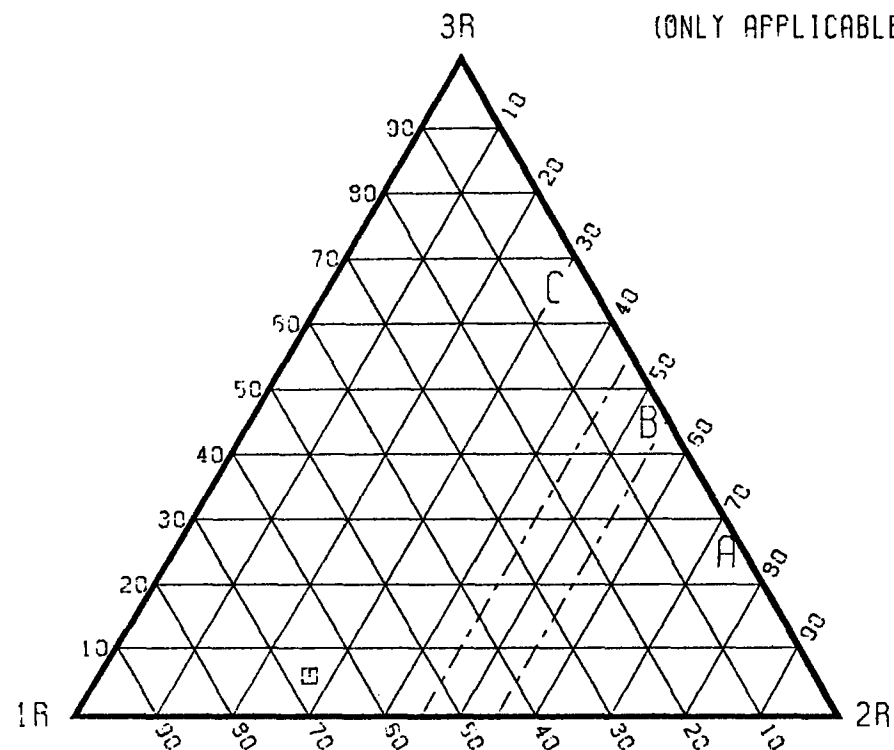


FIG. 4.

C_{15} -RINGDISTRIBUTION

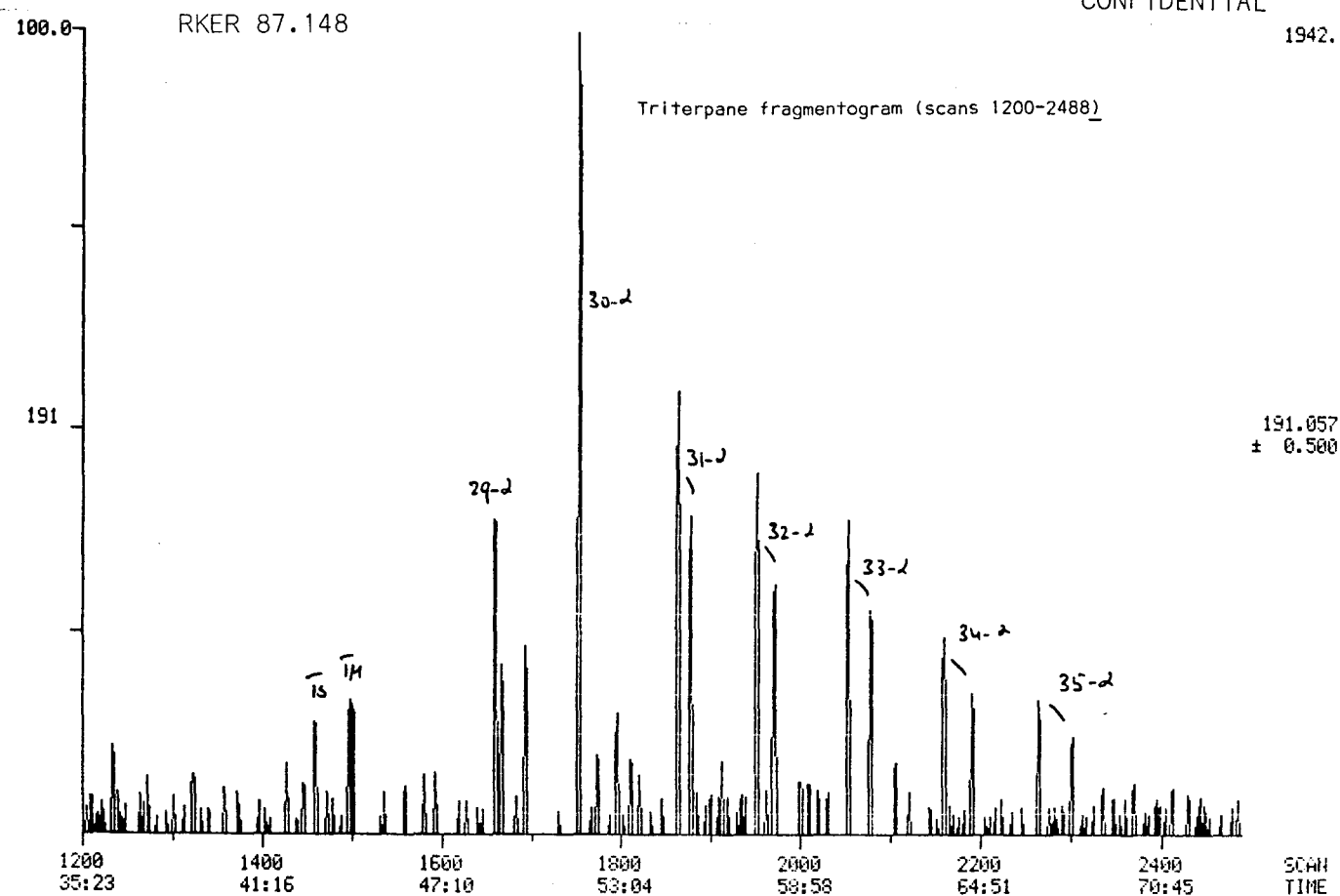
C_{30} -RINGDISTRIBUTION

(ONLY APPLICABLE FOR MATURE EXTRACTS AND OILS)



- A. ORGANIC MATTER WITH SUBSTANTIAL LANDPLANT RESIN CONTRIBUTION
- B. MIXED LANDPLANT RESIN/SOM OR MIXED ALGAL/SOM
- C. STRUCTURELESS ORGANIC MATTER (SOM)

LEGEND	
	PALEMS WOOD



1480.

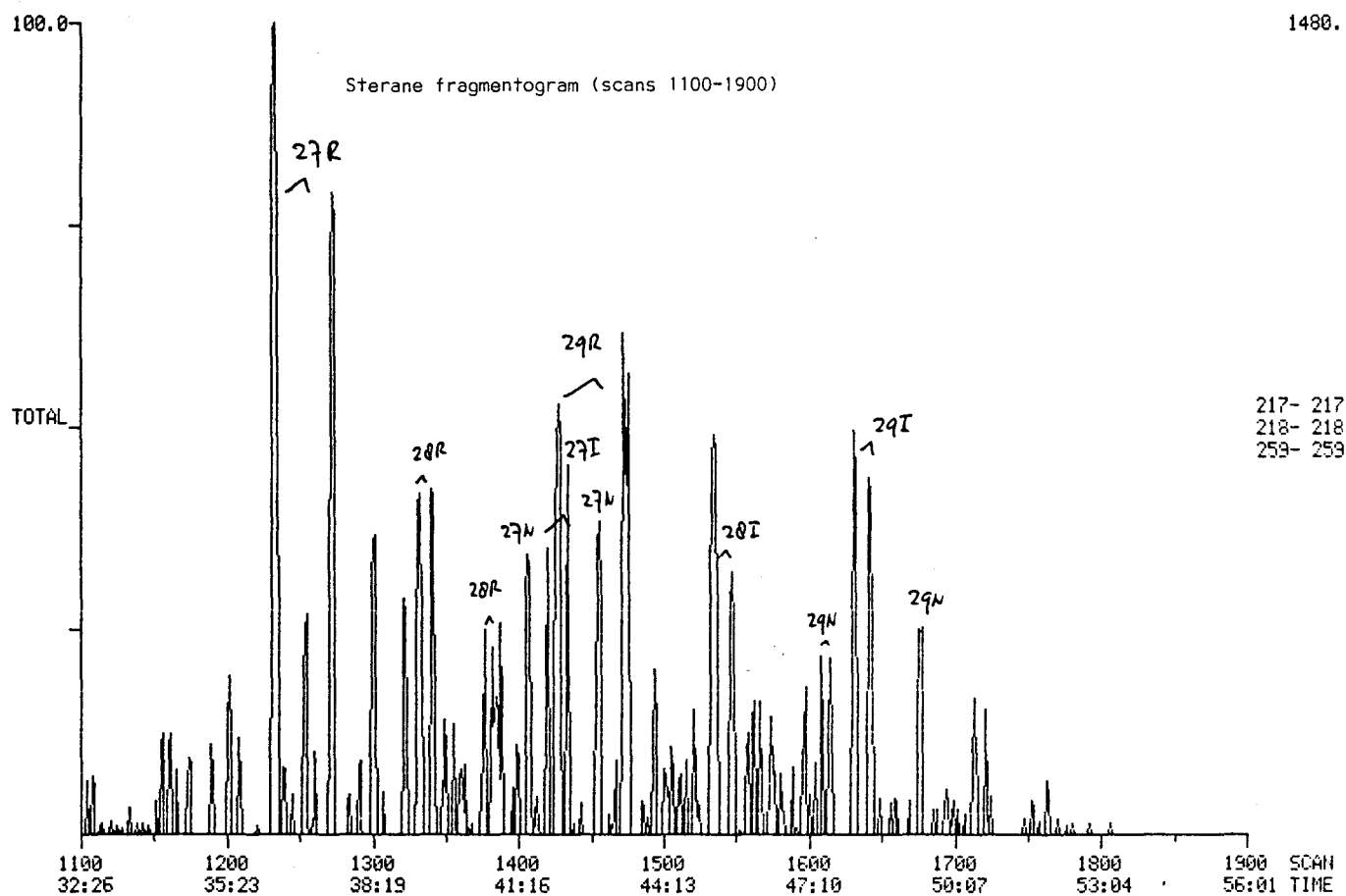


FIG. 6A. GC-MS analysis Palmers Wood crude oil.

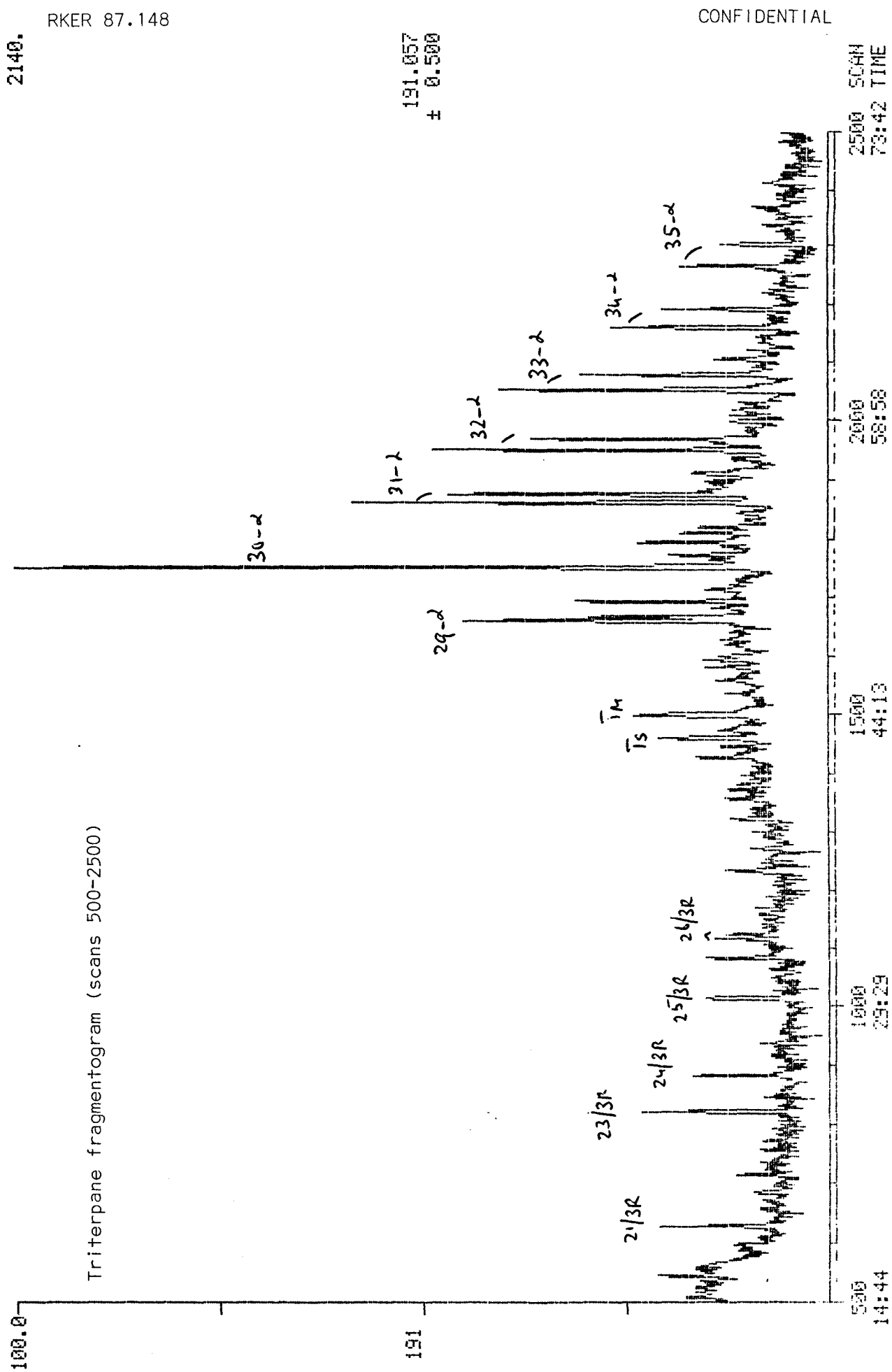


FIG. 6B. GC-MS analysis Palmers Wood crude oil.

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