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GEOCHEMICAL INVESTIGATION OF A CRUDE OIL SAMPLE
FROM WELL 206/1-2, UNITED KINGDOM

by

J.M.A. Buiskool Toxopeus and P.J.R. Nederlof
Sponsor: Shell Expro London Code: 774.103.00

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KONINKLIJKE/SHELL EXPLORATIE EN PRODUKTIE LABORATORIUM

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GEOCHEMICAL INVESTIGATION OF A CRUDE OIL SAMPLE FROM WELL
206/1-2, UNITED KINGDOM

1.0 INTRODUCTION

A geochemical investigation has been carried out on a crude oil sample at 12582-12693 ft from well 206/1-2, United Kingdom. The results are shown in Table 1 and in Figures 1-6.

2.0 RESULTS AND DISCUSSION

The crude oil has not been bacterially degraded (gaschromatograms, Figs. 1-2; C₇-distribution, Fig. 3).

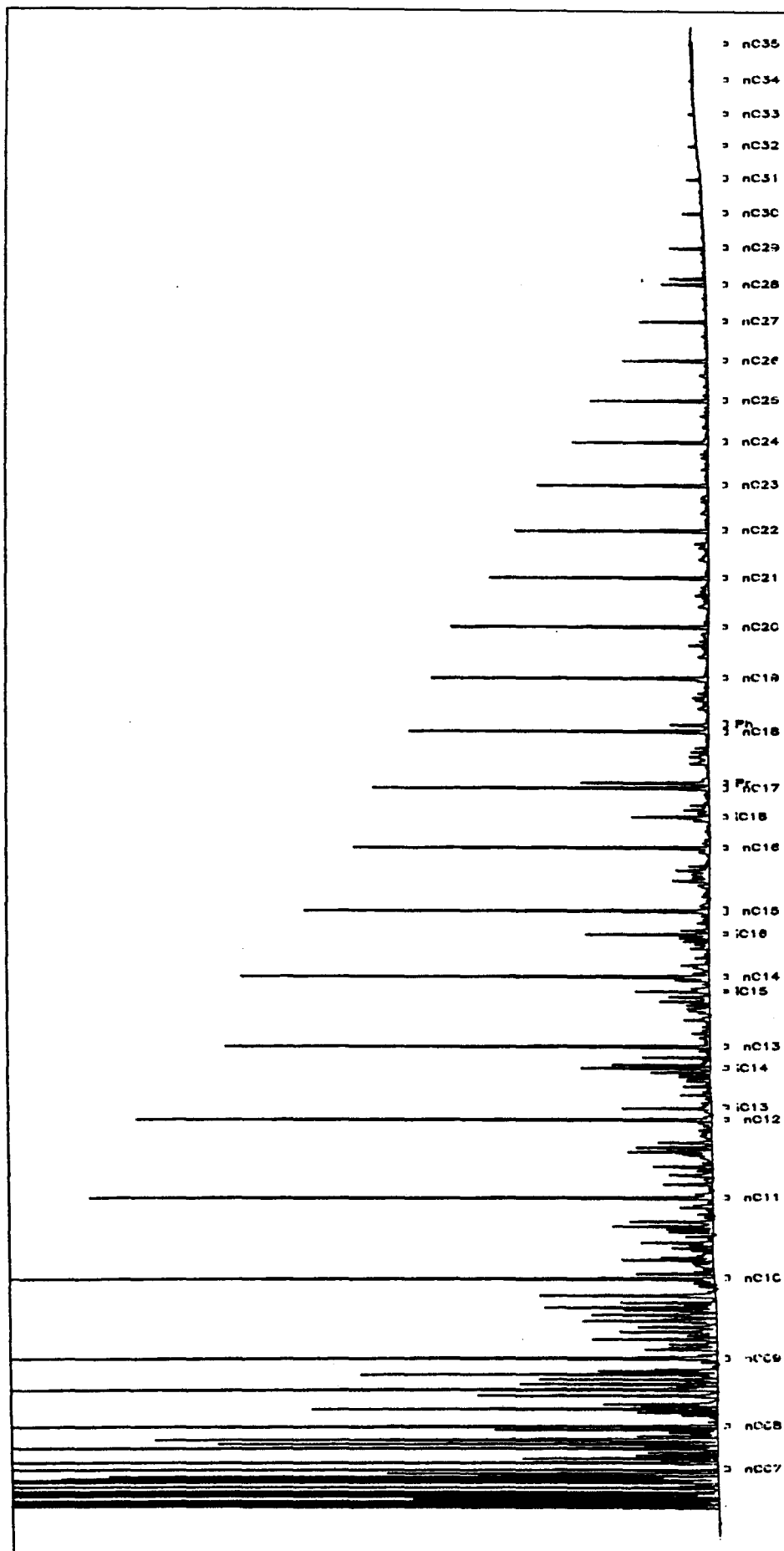
The crude was expelled from a well-mature source rock (API gravity; gaschromatograms, Figs. 1-2; grosscomposition; C₂₉ VRE; complete sterane isomerisation features, Fig. 6). The crude was generated from a shaly source rock (C₇-alkane/naphtene distribution, Fig. 3), that contained partly bacterially reworked algal SOM or a mixture of SOM and landplant matter (sterane/triterpane distributions, Fig. 6).

TABLE 1 - GEOCHEMICAL DATA OF CRUDE OF OILS

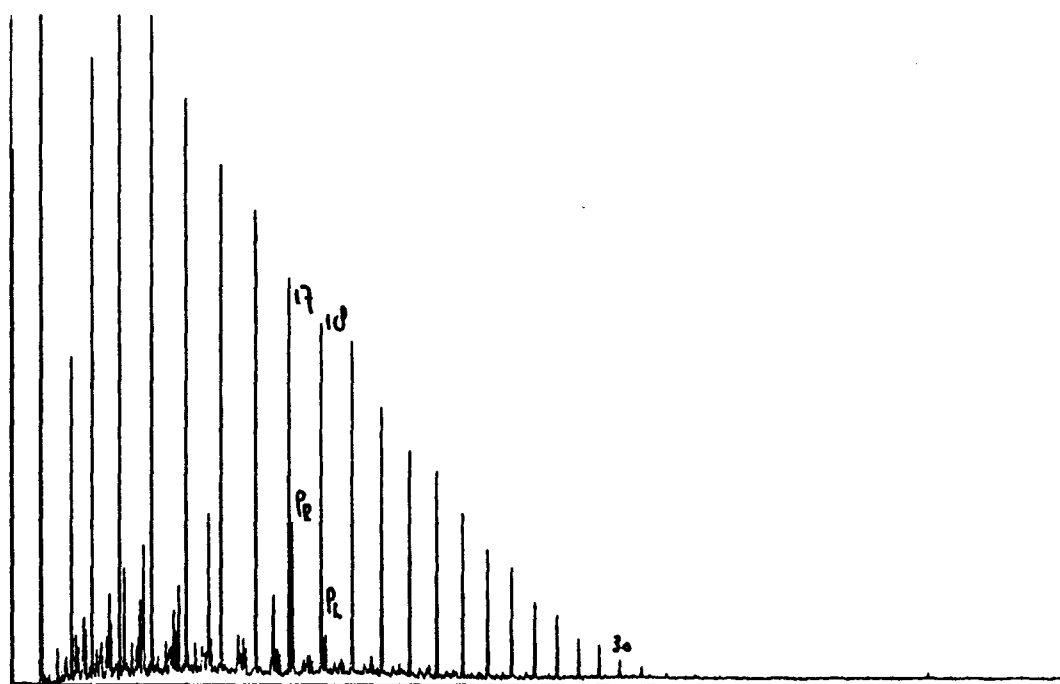
Sample	U.K. 206/1-2 12582-12693 ft OMC 4210
API	55.3
specific gravity	0.7575
%w. boil. <120°C	37.9
% sulphur	0
ppm V as metals	0
ppm Ni as metals	0
pristane/phytane	3.5
pristane/nC17	0.5
phytane/nC18	0.2
C ₇ -distribution	
C ₇ -alkane	
nC7	52
monobranched	34
polybranched	14
C ₇ -alk/naphthene	
nC7	23
naphthenes	56
branched alkanes	21
C ₇ -alk/naphth/arom	
nC7	35
naphthenes	44
aromatics	21
C ₁₅ distribution	
1-ring	
2-ring	
3-ring	
C ₃₀ distribution	
3-ring	
4-ring	
5-ring	
C ₂₉ VR/E	
%asphaltenes	3.8
% saturates	73
% aromatics	17
% heterocompounds	6
δ ¹³ C ^o /oo (whole oil)	-28.4
" (saturates)	-28.6
" (aromatics)	-26.9

* Determined by thin layer chromatography
N.D. = not detectable

GAS CHROMATOGRAM OF THE WHOLE CRUDE



UNITED KINGDOM 206/01-02 12582.
SAMPLE INTERVAL = 12582.0 - 12693.0 FT

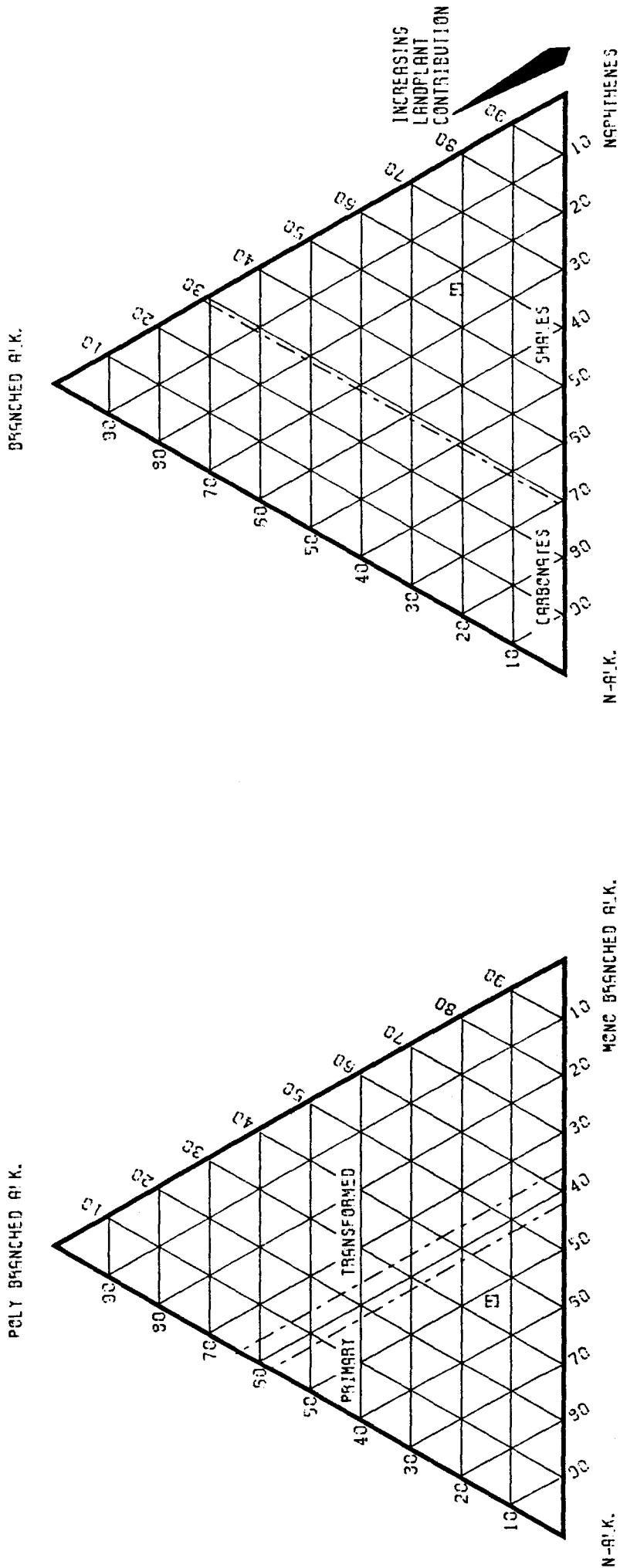


GAS CHROMATOGRAM OF SATURATED HYDROCARBONS

FIG. 2, U.K. 206/1-2 12582 FT OMC 4210

C7-ALKANE DISTRIBUTION

C7-ALKANE/NAPHTHENE DISTRIBUTION



LEGEND
E - 205/1-2. 12582-12533 Ff

CONFIDENTIAL

FIG. 3

FIELD IONISATION MASS SPECTRUM

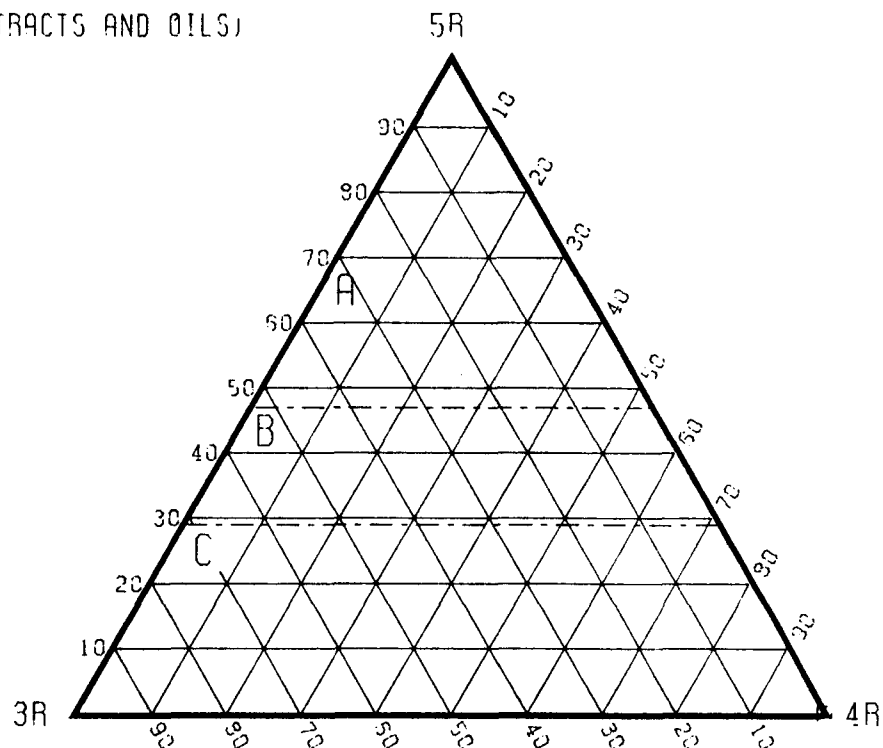
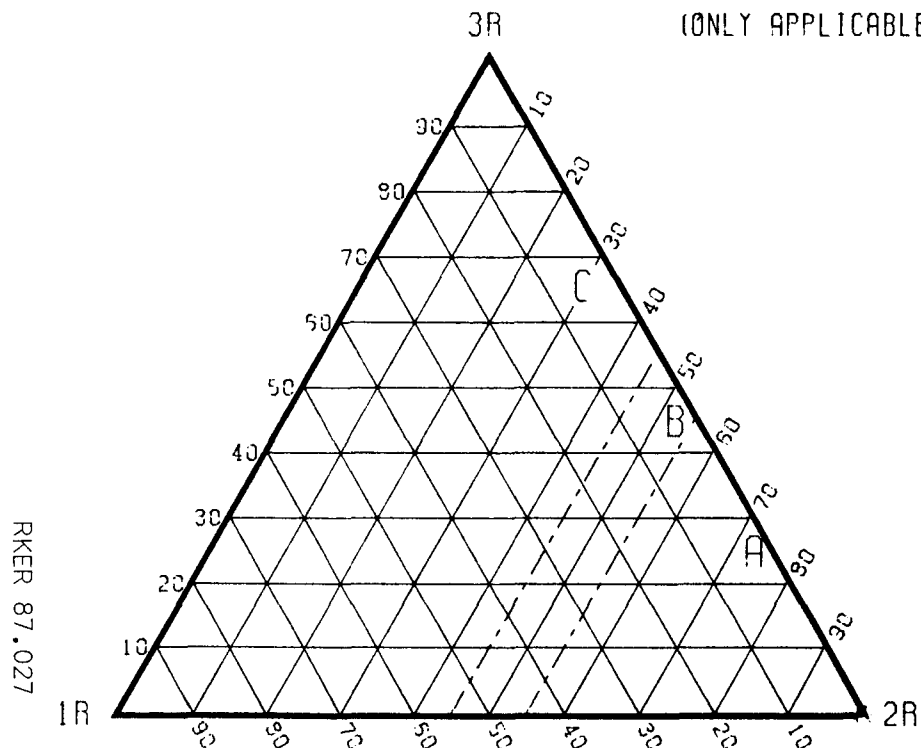
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FIG. 4.

C₁₅-RING DISTRIBUTION

(ONLY APPLICABLE FOR MATURE EXTRACTS AND OILS)

C₃₀-RING DISTRIBUTION



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

LEGEND

16512.

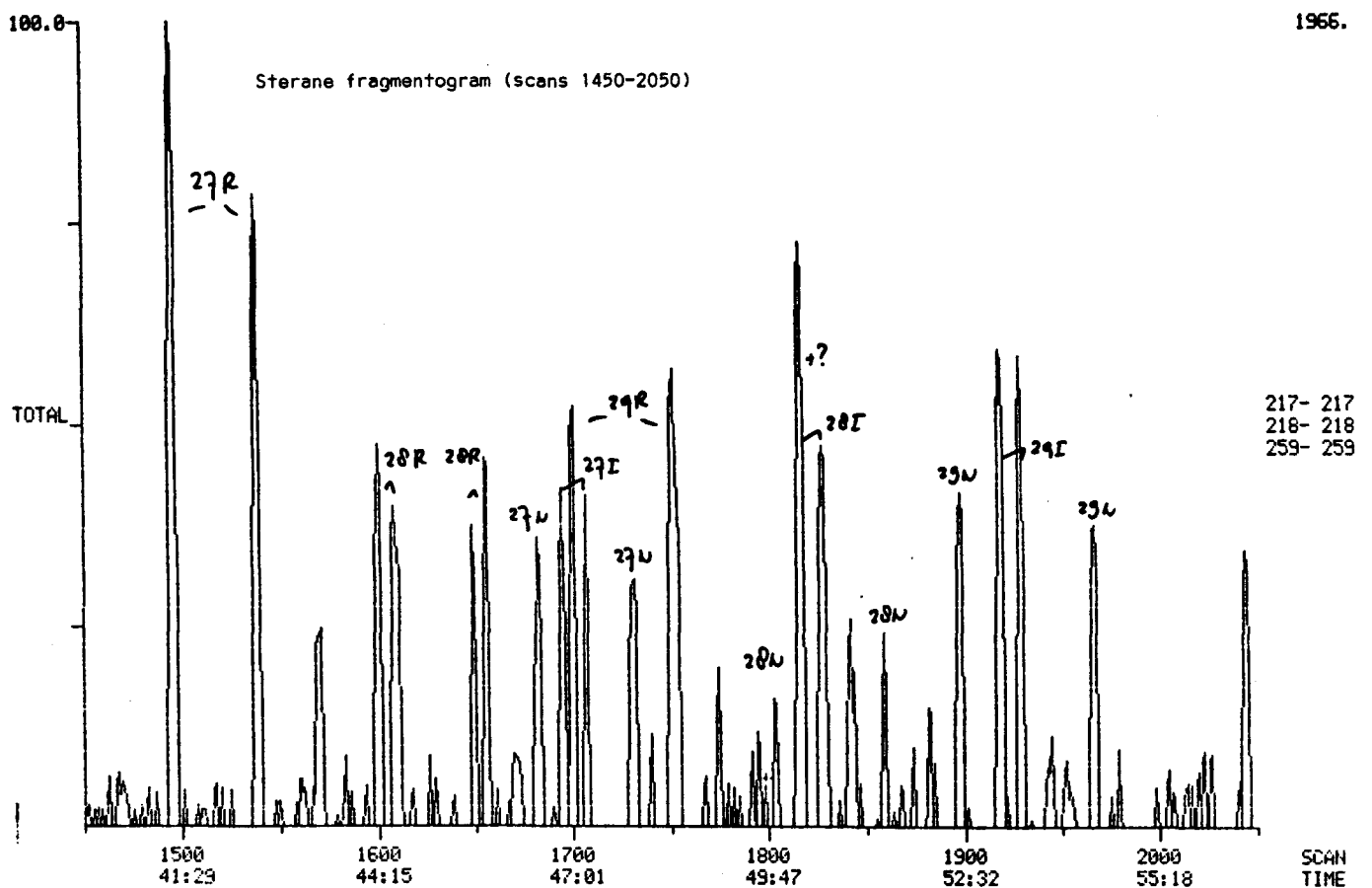
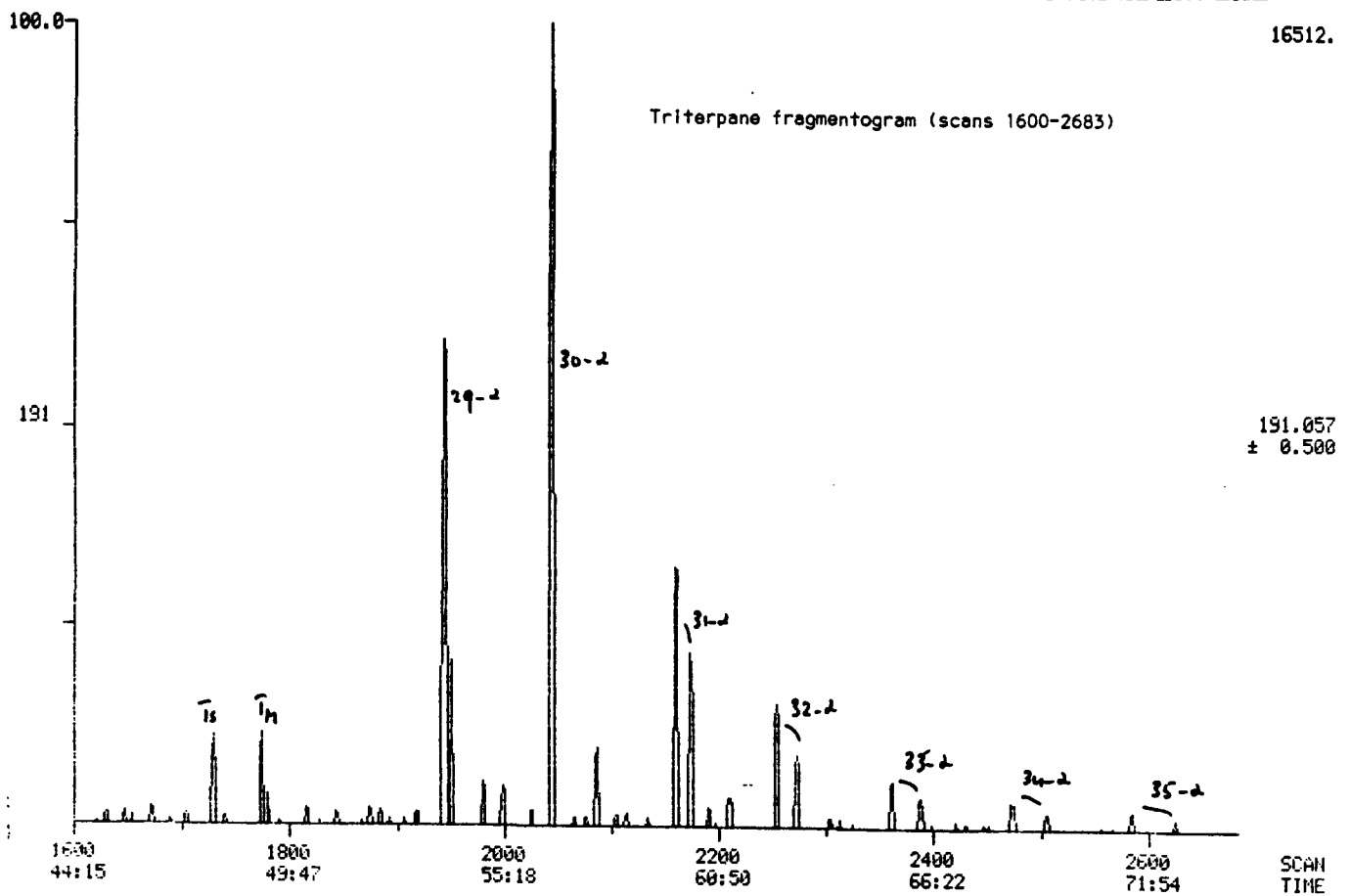


FIG. 6A. GC-MS analysis 206/1-2, 12582-12693 ft, crude oil.

17312.

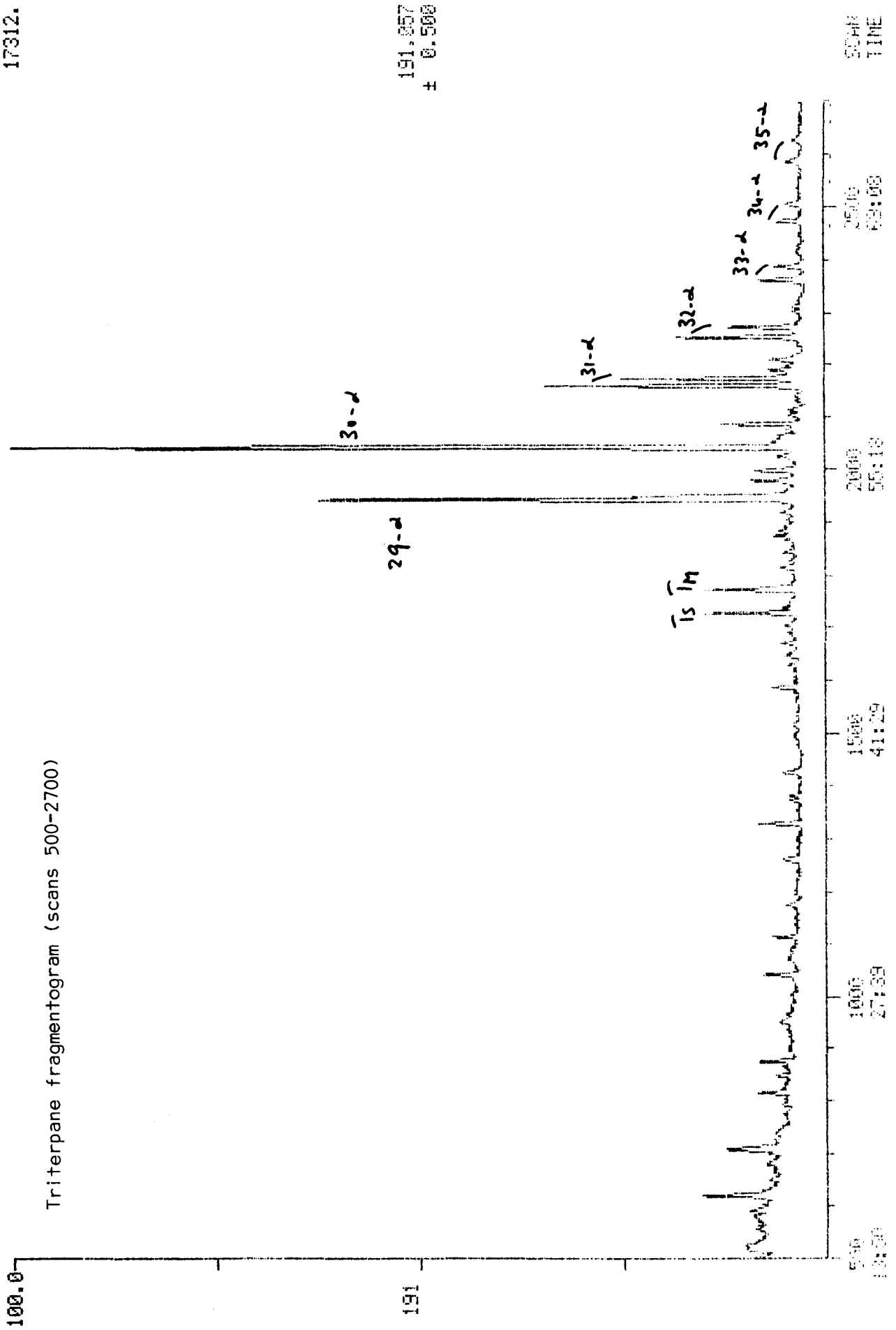


FIG. 6B. GC-MS analysis 206/1-2, 12582-12693 ft, crude oil.

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