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GEOCHEMICAL INVESTIGATION OF A SOURCE ROCK EXTRACT  
FROM WELL 12/28-2, UNITED KINGDOM  
by

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Investigation: 812204212

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GEOCHEMICAL INVESTIGATION OF A SOURCE ROCK EXTRACT FROM  
WELL 12/28-2, UNITED KINGDOM

1. INTRODUCTION

A geochemical investigation has been carried out on a combined set of Devonian sidewall samples (6520 + 6530 + 6540 + 6560 + 6570 ft) in well 12/28-2, U.K. The results are shown in Table 1 and in Figures 1-5.

2. RESULTS AND CONCLUSIONS

The low SRI value (120 units), low organic carbon content (0.8 %), maceral description (Fig. 5) and the high extract/organic carbon ratio point all to a marginal, impregnated source rock. Maceral description indicates an inhomogenous sample that contains few excellent, just-mature algal source rock particles (Fig. 5). It is therefore plausible that the impregnation was derived from the same source rock.

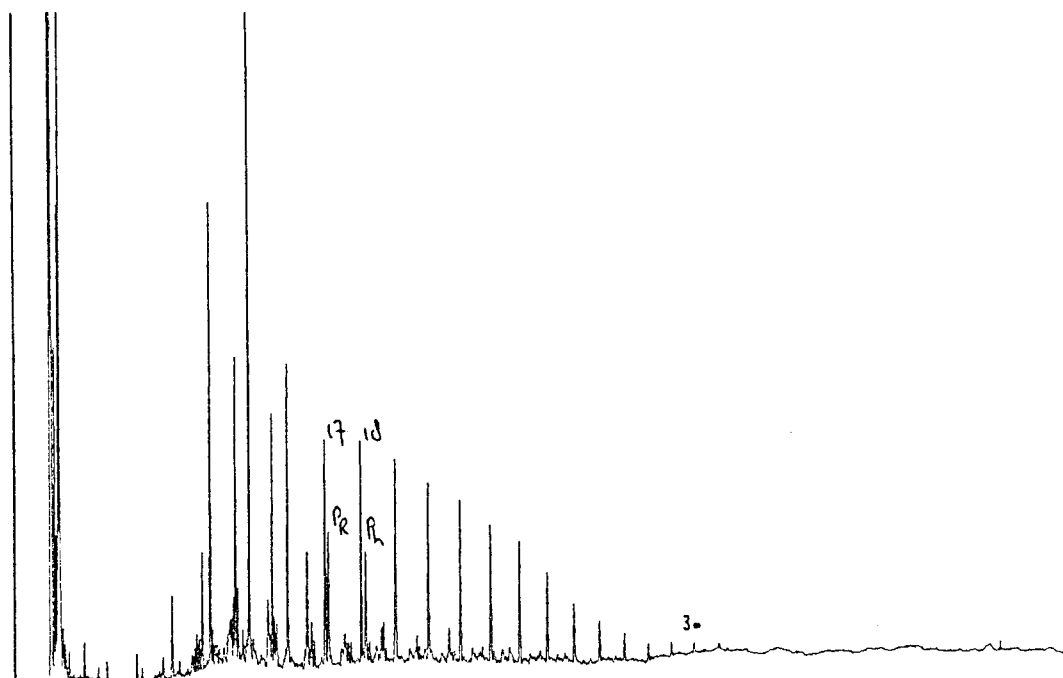
The extract has a just-mature character (gaschromatogram, Fig. 1; sterane fragmentogram showing nearly complete isomerisation features, Fig. 4). The high amounts of rearranged steranes (Fig. 4) indicate a shaly character of the source rock. The C<sub>27</sub>-sterane predominance may indicate algal matter (Fig. 4).

TABLE 1 - GEOCHEMICAL DATA OF EXTRACT

Sample	UK 12/28-2 6520-6570 ft
% ethyl acetate extract	0.3
% organic carbon after ethyl acetate extraction	0.8
extract/original carbon (after extraction)	0.38
% sulphur	-
ppm V as metals	-
ppm Ni as metals	-
pristane/phytane	1.2
pristane/nC17	0.8
phytane/nC18	0.7
C <sub>15</sub> distribution	
1-ring	
2-ring	
3-ring	
C <sub>30</sub> distribution	
3-ring	
4-ring	
5-ring	
C <sub>29</sub> VR/E	
% saturates*	33
% aromatics	17
% heterocompounds	51
% asphaltenes	0
$\delta^{13}\text{C}^{\text{o}}/\text{oo}$ (whole oil)	NEM
" (saturates)	-29.2
" (aromatics)	-28.6

\* Determined by thin layer chromatography

N.D. = not detectable



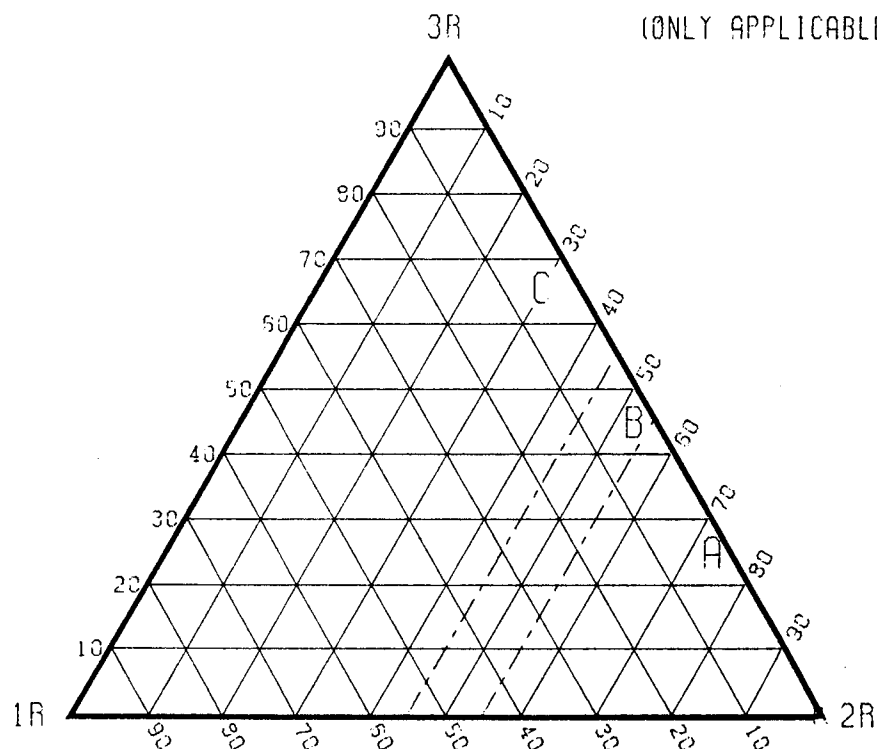
GAS CHROMATOGRAM OF SATURATED HYDROCARBONS

FIG. 1, U.K. 12/28-2 6530-6570 F1

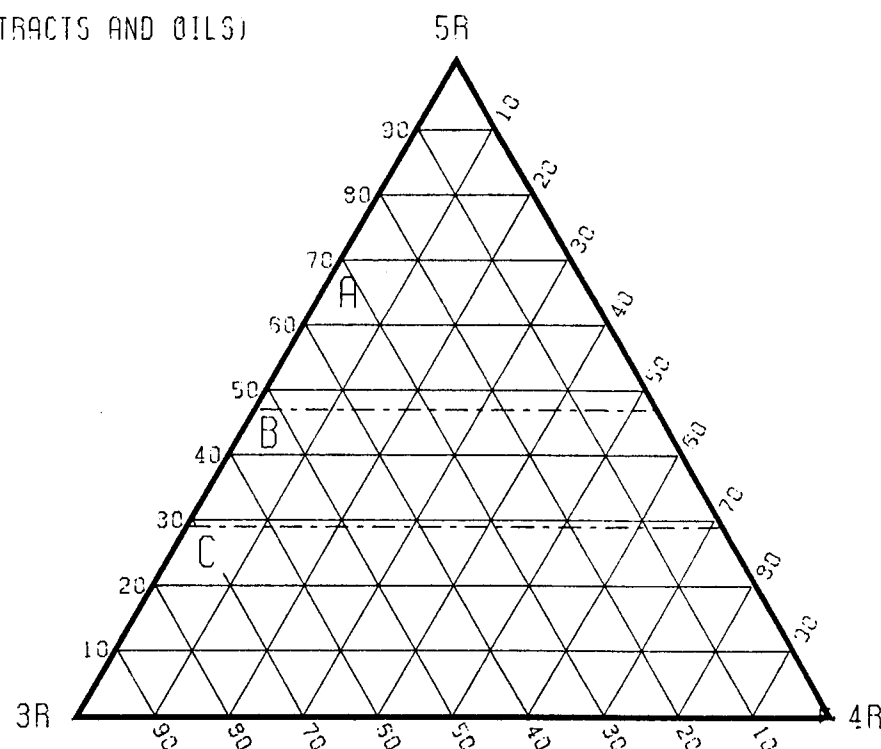
FIELD IONISATION MASS SPECTRUM

# C<sub>15</sub>-RINGDISTRIBUTION

(ONLY APPLICABLE FOR MATURE EXTRACTS AND OILS)



# C<sub>30</sub>-RINGDISTRIBUTION



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

LEGEND

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FIG. 3

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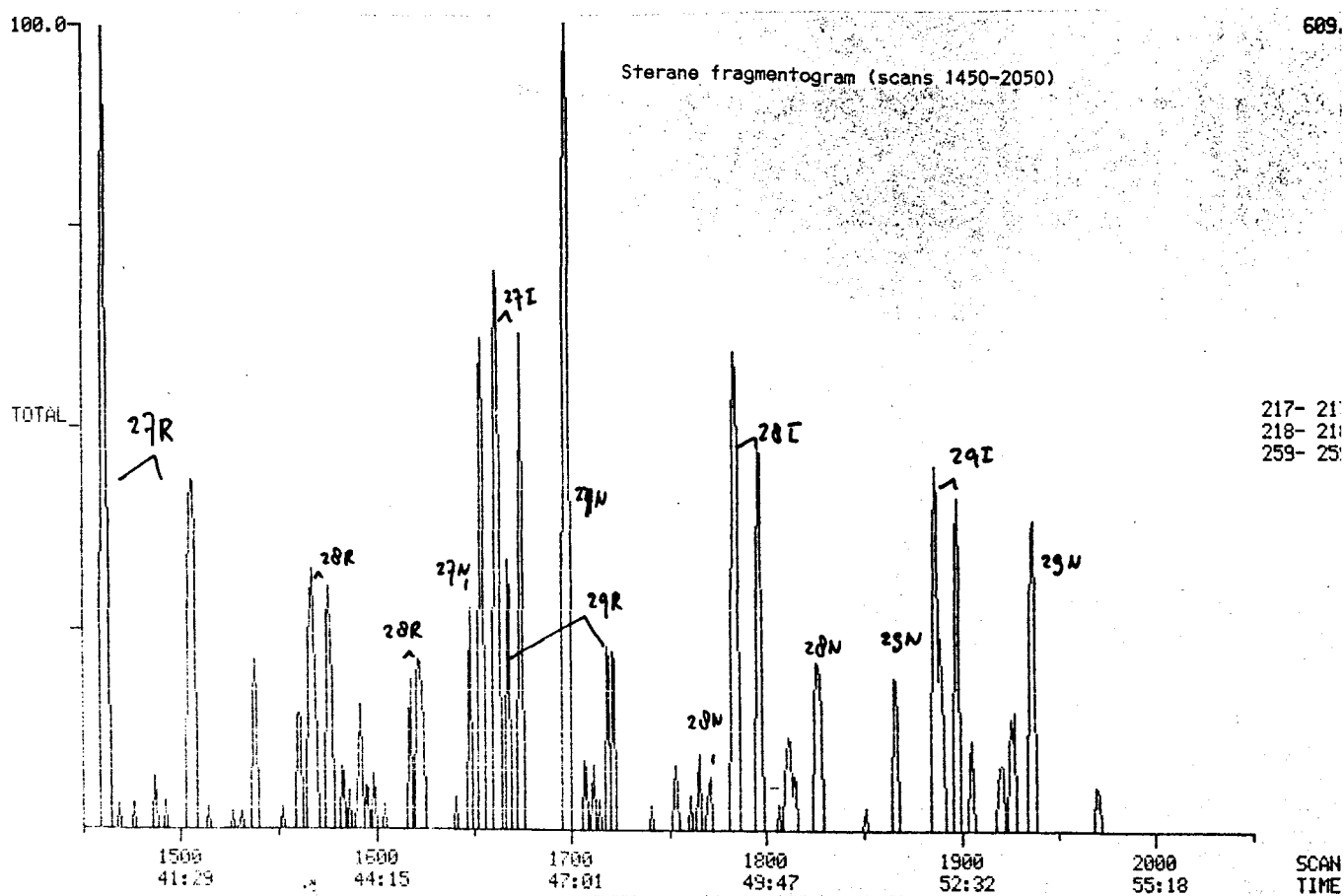
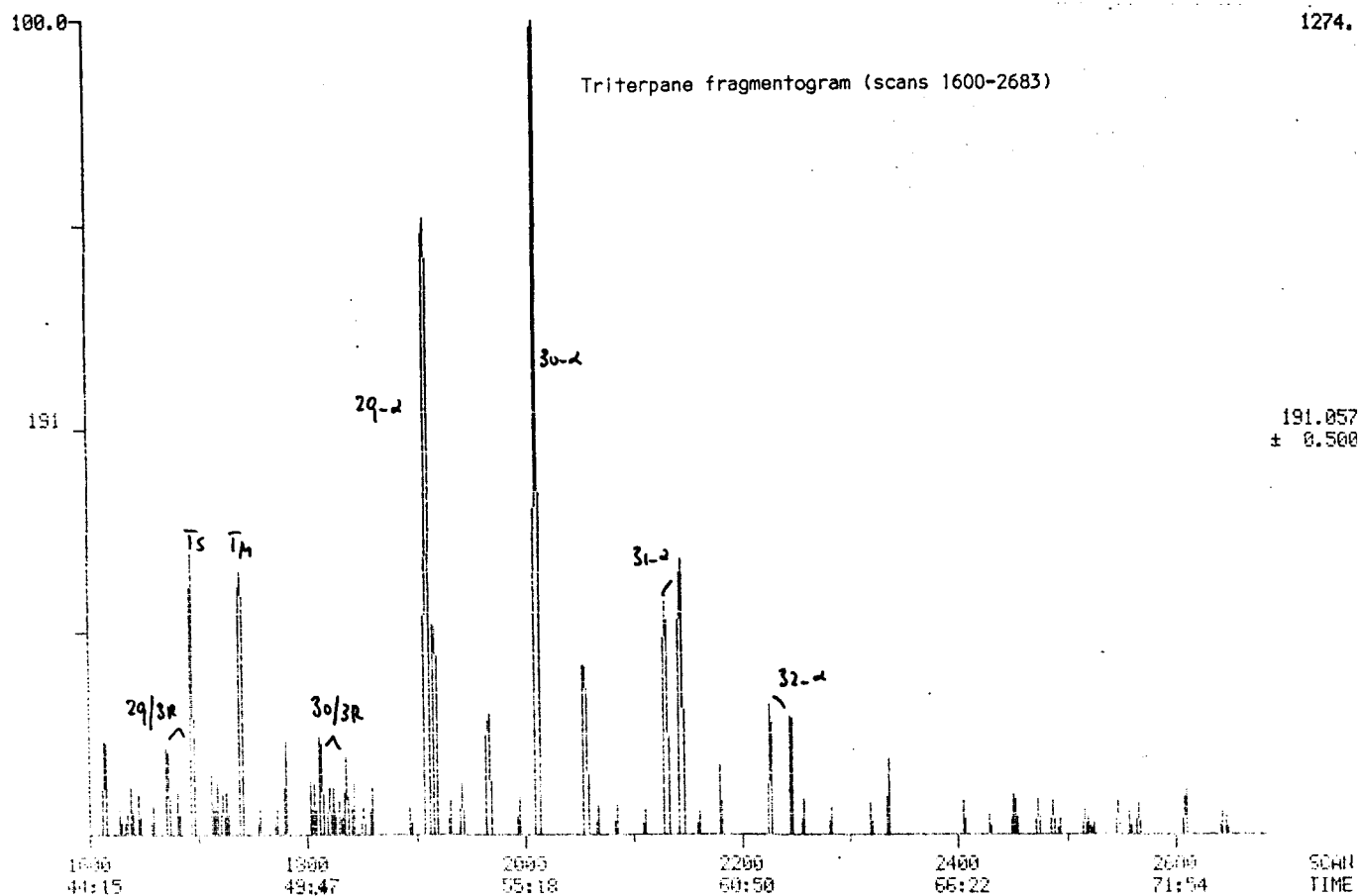


FIG. 4A. GC-MS analysis 12/28-2, 6520-6570 ft, source rock.



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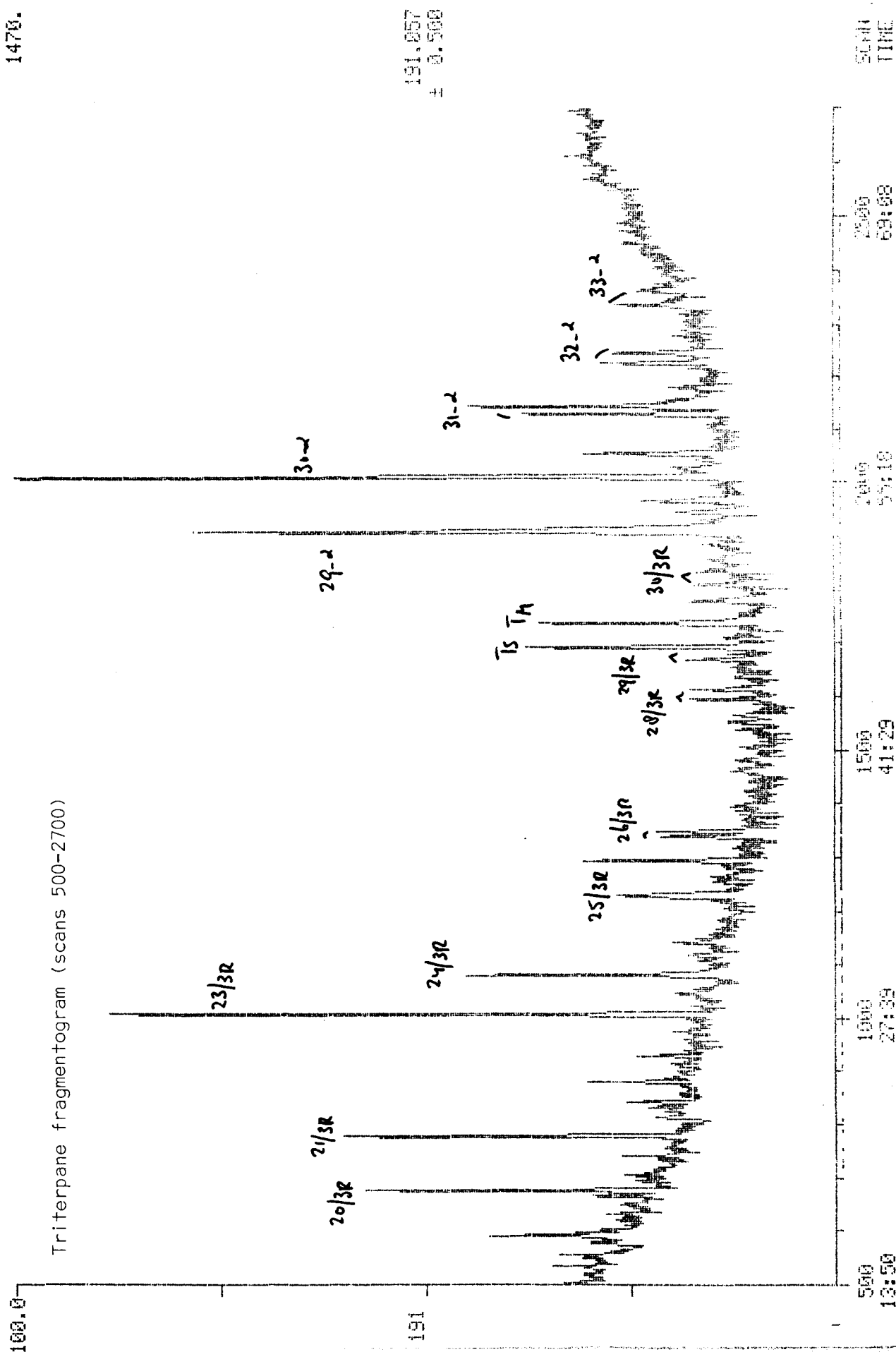


FIG. 4B. GC-MS analysis 12/28-2, 6520-6570 ft, source rock.

DEPTH IN FT	SAMPLE TYPE
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		ORGANIC		
		S. O. M.		
		LAYERS OF S. O. M.		
		LENSES OF S. O. M.		
		DIFFUSE S. O. M.		
		INTERGRANULAR S. O. M.		
		PATCHES OF S. O. M.		
		LAYERS OF TELOCOLLINITE		VITRINITE-1
		LENSES OF TELOCOLLINITE		
		DETRITAL TELOCOLLINITE		
		LAYERS OF TELINITE		
		LENSES OF TELINITE		VITRINITE-2
		DETRITAL TELINITE		
		LAYERS OF VITRINITE-2		
		LENSES OF VITRINITE-2		
		DETRITAL VITRINITE-2		LIPTINITE
		SPORINITE		
		CUTINITE		
		RESINITE		
		LIPTODETRINITE		ALGAE
		BOTRYOCOCCUS		
		TASMANITES		
		OTHER ALGAE		
		MICROPLANKTON		INERT.
		EXSUDATINITE		
		SCLEROTINITE		
		FUSINITE		
		MACRINITE		INORG.
		MICRINITE		
		UNDEFINED MINERALS		
		FRAMBOIDAL PYRITE		
		AGGREGATES OF PYRITE		
		CRYSTALS OF PYRITE		

6520.0	S. W. S.
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[illegible]

LEGEND

* + / - ..	ABUNDANT COMMON FEW RARE
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COMMENT LINES FROM WELL/DUTY/ROP : 12/28-2

6520.0 F : LAMINATED S.O.M. PROBABLY OF ALGAL ORIGIN  
INDOGENOUS SAMPLES GOOD ALGAL SR PARTICLES  
CHCL3 EXTRACTED

CONFIDENTIAL

[illegible][illegible][illegible]

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