

January 1985

RKER.85.003

GEOCHEMICAL INVESTIGATION OF AN EXTRACT OF A CORE  
SAMPLE FROM THE SHERWOOD SANDSTONE, MICKLE  
TRAFFORD-1, UNITED KINGDOM

by

F.M. van der Veen and J. Posthuma

Investigation 9.55.236

With co-operation from M. Hageman

This Report has been prepared by Shell in connection with its own internal evaluations and decision-making processes. Shell, its affiliates and each of their respective officers, employees and representatives make no representation or warranty whatsoever as to the accuracy or completeness of the information contained herein, and expressly disclaim any and all liability based on or relating to any information contained in, or errors or omissions from, this Report or based on or relating to the use of this Report. Shell will not enter into any correspondence relating to the contents of this Report.

Copyright is vested in Shell Internationale Research Mij. B.V., The Hague.

**KONINKLIJKE/SHELL EXPLORATIE EN PRODUKTIE LABORATORIUM**

**RIJSWIJK, THE NETHERLANDS**

(Shell Research B.V.)

CONTENTS

	<u>Page</u>
1. Introduction	1
2. Results and conclusions	1
Tables 1 Maceral description	
2 Geochemical data of extract	
Figures 1 Gas chromatogram of saturated hydrocarbons	
2 C15 - and C30 ringdistributions	
3 Sterane and triterpane fragmentograms	

GEOCHEMICAL INVESTIGATION OF AN EXTRACT OF A CORE SAMPLE FROM  
THE SHERWOOD SANDSTONE, MICKLE TRAFFORD-1, UNITED KINGDOM

1. INTRODUCTION

Geochemical analyses have been carried out on an extract from the following sample (request telex ukl 436603 of 6/9/84):

- Mickle Trafford-1, core sample, sherwood sandstone, depth approximately 1000 ft.

2. RESULTS AND CONCLUSIONS

The results which are given in Tables 1-2 and Figures 1-3 indicate the following:

- the amount of organic carbon after extraction with ethyl acetate is 0.5% wt. This is probably caused by the solid hydrocarbons microscopically observed (Table 1).
- this impregnation has not been bacterially degraded.
- it has been expelled from an immature source rock.
- the data suggest that the organic matter of this source rock was of algal origin.

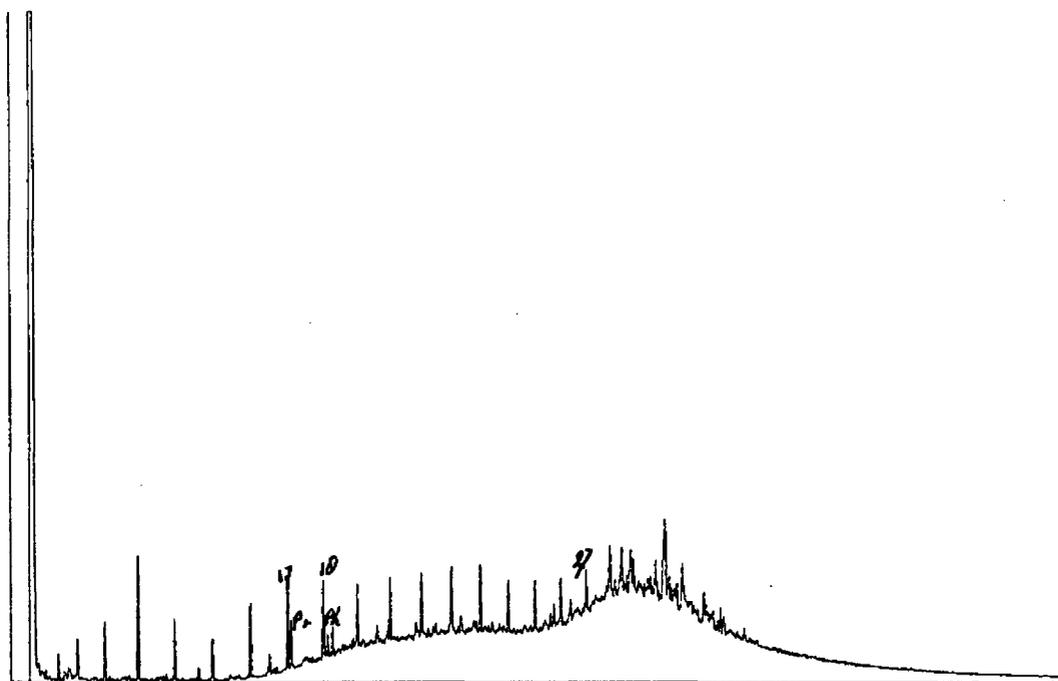


Table 2 - Geochemical data of extract

	Mickle Trafford-1 core sample Sherwood SST about 1000 ft
% ethyl acetate extract	0.3
% organic carbon after extraction	0.5
extract/carbon	0.6
% sulphur	-
ppm V as metals	-
ppm Ni as metals	-
Pristane/phytane	1.8
Pristane/nC17	0.8
Phytane/nC18	0.4
C15 distribution	
1-ring	N.D.
2-ring	N.D.
3-ring	N.D.
C30-distribution	
3-ring	11
4-ring	39
5-ring	50
C29 VR/E (DOM)	0.39 (52)
% saturates	17
% aromatics	45
% heterocompunds	38
$\delta^{13}\text{C}/\text{oo}$	-29.7

- Not determinable due to small amount of extract

N.D. not detectable due to low intensities

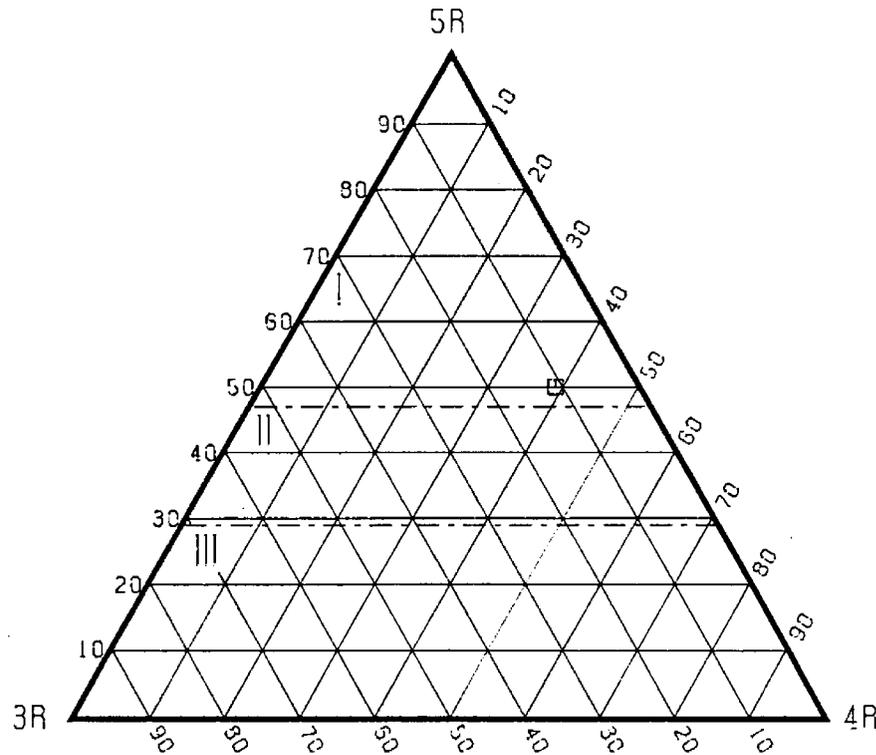
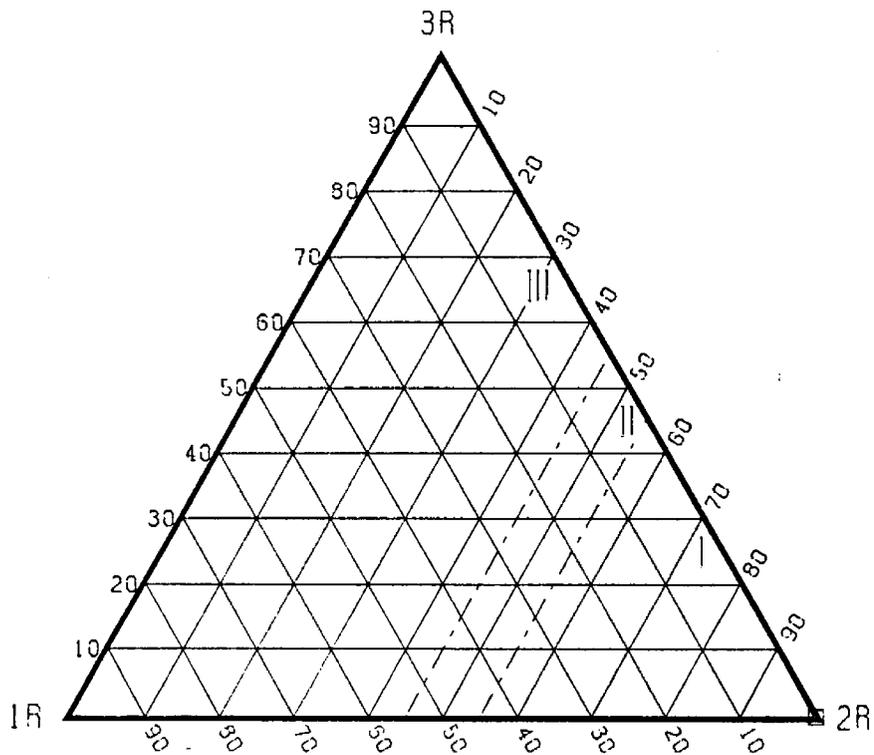


GAS CHROMATOGRAM OF SATURATED HYDROCARBONS

FIG. 1. MICKLE TRAFFORD-1, SHERWOOD SST. CORE

# C<sub>15</sub>-RING DISTRIBUTION

# C<sub>30</sub>-RING DISTRIBUTION



- I LANDPLANT-DERIVED CRUDES WITH SUBSTANTIAL RESIN CONTRIBUTION TO SOURCE MATTER
- II CRUDES OF MIXED ORIGIN
- III CRUDES DERIVED FROM SOM AND/OR ALGAL MATTER

LEGEND
□ - MICKLE 159FF060-1, CORE, ca. 1000F1, SHERWOOD SST

FIG. 2

MASS CHROMATOGRAM  
 05/27/84 14:27:00  
 SAMPLE: UK: MICKLE TREFFORD SHERWOOD SST PE 10/100/.4UL  
 RANGE: G 20. 30 LABEL: N 0. 4.0 QUAN: A 0. 1.0 BASE: U 20. 3

DATA: SER8945 #1  
ENHANCED (36B 1N 0T)  
SCANS 1600 TO 2983

78080

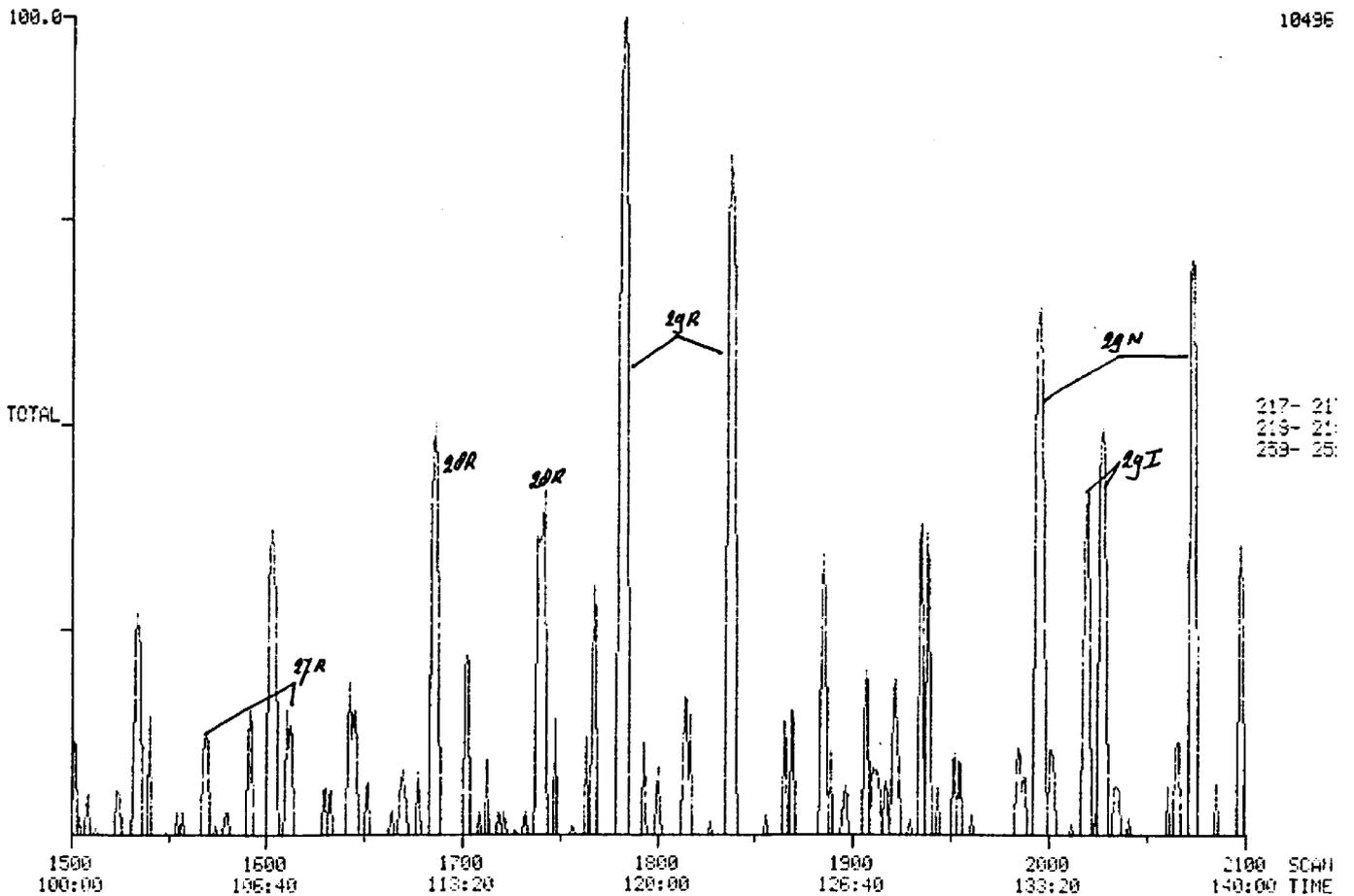
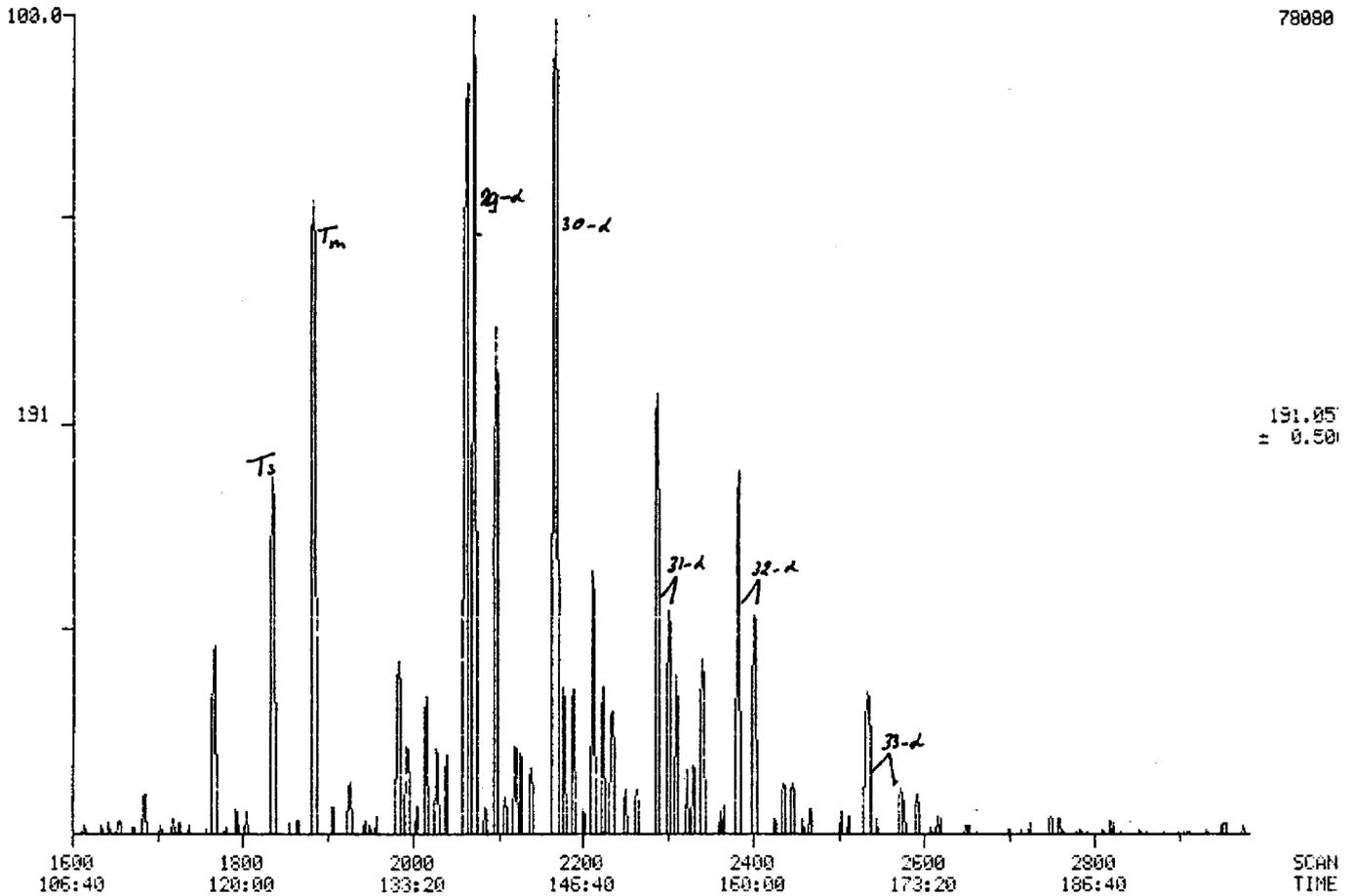


FIG. 3

INITIAL DISTRIBUTION

3 copies

Shell Expro London

Uee/3(Uee/3/92/9)

3 copies

SIPM The Hague EP/11/13