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Geochemical investigation of a crude oil and an impregnation from
well 206/4-1, United Kingdom

by

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Geochemical investigation of a crude oil and an impregnation from well 206/4-1, United Kingdom

1.0 Introduction

A geochemical investigation has been carried out on two samples from well 206/4-1, United Kingdom:

- 9753 ft, Turonian, dead condensate bled from gas sample, OMC 7278, S185256/2;
- 9853 ft, impregnation in a core sample taken from the Turonian Svarte Fm, S185432/2.

The geochemical parameters are shown on pages 2 to 16, analysis results are presented on the yellow pages.

2.0 Pyrolysis GC

The core sample was chosen for extract analysis following a pyrolysis GC study on samples from the interval 9580-12160 ft:

- 9580-9600 ft, cuttings sample, Turonian Svarte Fm,
- 9790 ft, sidewall sample, Turonian Svarte Fm,
- 9804.1 ft, core sample, Turonian Svarte Fm, no yield,
- 9853.5 ft, core sample, Turonian Svarte Fm,
- 9858.6 ft, core sample, Turonian Svarte Fm, no yield,
- 9920-9940 ft, cuttings sample, Turonian Svarte Fm,
- 10600-10800 ft, cuttings sample, Cenomanian Commodore Fm,
- 10160-10180 ft, cuttings sample, Cenomanian Commodore Fm,
- 10330-10350 ft, cuttings sample, Cenomanian Commodore Fm,
- 11880-11900 ft, cuttings sample, Upper Albian Cruiser Fm,
- 12140-12160 ft, cuttings sample, Upper/Middle Albian.

This study showed that most samples contain non-crude oil-like compounds, probably derived from the Aquacol water based mud (Aquacol is a random EO/PO polymer [EO=ethylene oxide, PO=propylene oxide] of average molecular weight 500). Only the core sample from 9853.5 ft and, to a lesser extent, the sidewall sample from 9790 ft show recognisable hydrocarbons. The core sample was, therefore, chosen for further analysis.

3.0 Conclusions

1. Transformation processes

None of the samples shows indication of bacterial degradation (n-alkane distribution; condensate sample also: C7 distribution).

The condensate sample has been partly evaporated (low n-hexane/n-heptane ratio).

The high extract/TOC ratio for the sample from 9853 ft confirms its impregnated character.

2. Maturity

The condensate sample has been expelled from mature to highly mature source rock (n-alkane- and C7-distributions, API, low amounts of metals and sulphur), whereas the impregnation has been derived from a normal mature source rock (n-alkane distribution).

3. Environment of deposition / Type of organic matter

Both samples have been derived from shaly source rocks (relatively high amounts of rearranged steranes, predominance of C30- over C29-hopane, pristane/phytane > 1; condensate sample also: relatively high amount of cycloalkanes in the C7 distribution, low amount of sulphur).

The source rock of the condensate sample contained structureless organic matter (%triterpanes) with a contribution of landplant matter (presence of oleananes, relatively high amounts of aromatics in the C7 distribution, elevated pristane/phytane ratio), whereas the source rock of the impregnation contained structureless organic matter with some contribution of algal matter (waxy n-alkane distribution) deposited in a marine environment (predominance of C25- over C26-tricyclic terpanes).

Summary of the geochemical data of the oil sample from well 206/04-01 (9753 ft), United Kingdom

Gravity and Gross Composition

API gravity (degrees) :	39.1
Specific gravity (g/ml) :	0.829
Viscosity (centipoise) :	no data
Pourpoint (degrees C) :	no data
Total Acid Number (mgKOH/g) :	no data
Wax content (%) :	no data
Gross Composition (wt%)	
Weight lost on topping :	78.6
Saturates :	59
Aromatics :	25
Heterocompounds :	13
Rest (high molecular) :	2
Gasoline fraction (%) :	8.3
Sulphur (%) :	0.1
Vanadium (ppm) :	1.0
Nickel (ppm) :	6.0

Saturates Distribution

(Gas Chromatography)

Pristane / Phytane :	1.93
Pristane / n-C17 :	0.33
Phytane / n-C18 :	0.21
ACI :	28
Corr. Coeff. :	-0.9978

C7 Distribution

(Gas Chromatography)

C7 Alkanes (%)	
Normal C7 :	57
Monobranched :	34
Polybranched :	9
C7 Alkanes / Cycloalkanes (%)	
Normal C7 :	23
Cycloalkanes :	60
Branched Alkanes :	17
C7 Alkanes / Aromatics (%)	
Alkanes :	27
Cycloalkanes :	40
Aromatics :	33

Biomarkers Distribution

(Gas Chromatography / Mass Spectrometry)

Steranes/Triterpanes (%)	
Iso Steranes :	27
Rearranged Steranes :	52
Triterpanes :	21
Sterane Conversion (%)	
Iso Steranes :	34
Rearranged Steranes :	43
Normal Steranes :	23
Steranes Carbon Numbers (%)	
C27 :	33
C28 :	30
C29 :	37
Triterpanes (%)	
C30 Hopane :	88
Oleanane ($\alpha + \beta$) :	12
W + T :	0
C29 Sterane Ratios	
20S / (20R + 20S) :	0.47
Iso / (Iso + Normal) :	0.57
Triterpane Ratios	
Ts / Tm :	0.80
Ts / (Ts + Tm) :	0.44
3R / (3R + 5R) :	0.17

Aromatics Distribution

(Gas Chromatography / Mass Spectrometry)

Monoaromatic Steroids (%)	
C27 :	26
C28 :	44
C29 :	30
Phenanthrene Ratios	
MPI-1 :	0.68
F-1 :	0.54
F-2 :	0.27

Carbon Isotope Ratios

(Mass Spectrometry)

Total Oil (topped) :	-28.6
Saturates :	-28.7
Aromatics :	-27.4

**Summary of the geochemical data of the extract from
well 206/04-01 (9853 ft), United Kingdom**

Gravity and Gross Composition

% Extract :	0.76
% TOC after extract :	0.1
Extract/TOC :	7.60
Gross Composition (wt%)	
Saturates :	71
Aromatics :	21
Heterocompounds :	6
Rest (high molecular) :	2
Sulphur (%) :	no data
Vanadium (ppm) :	no data
Nickel (ppm) :	no data

Saturates Distribution
(Gas Chromatography)

Pristane / Phytane :	1.27
Pristane / n-C17 :	0.21
Phytane / n-C18 :	0.15
ACI :	16
Corr. Coeff. :	-0.9937

C7 Distribution
(Gas Chromatography)

C7 Alkanes (%)	
Normal C7 :	no data
Monobranched :	
Polybranched :	
C7 Alkanes / Cycloalkanes (%)	
Normal C7 :	no data
Cycloalkanes :	
Branched Alkanes :	
C7 Alkanes / Aromatics (%)	
Alkanes :	no data
Cycloalkanes :	
Aromatics :	

Biomarkers Distribution
(Gas Chromatography / Mass Spectrometry)

Steranes/Triterpanes (%)	
Iso Steranes :	24
Rearranged Steranes :	50
Triterpanes :	26
Sterane Conversion (%)	
Iso Steranes :	31
Rearranged Steranes :	43
Normal Steranes :	26
Steranes Carbon Numbers (%)	
C27 :	32
C28 :	33
C29 :	35
Triterpanes (%)	
C30 Hopane :	100
Oleanane ($\alpha + \beta$) :	0
W + T :	0
C29 Sterane Ratios	
20S / (20R + 20S) :	0.30
Iso / (Iso + Normal) :	0.51
Triterpane Ratios	
Ts / Tm :	0.65
Ts / (Ts + Tm) :	0.39
3R / (3R + 5R) :	0.12

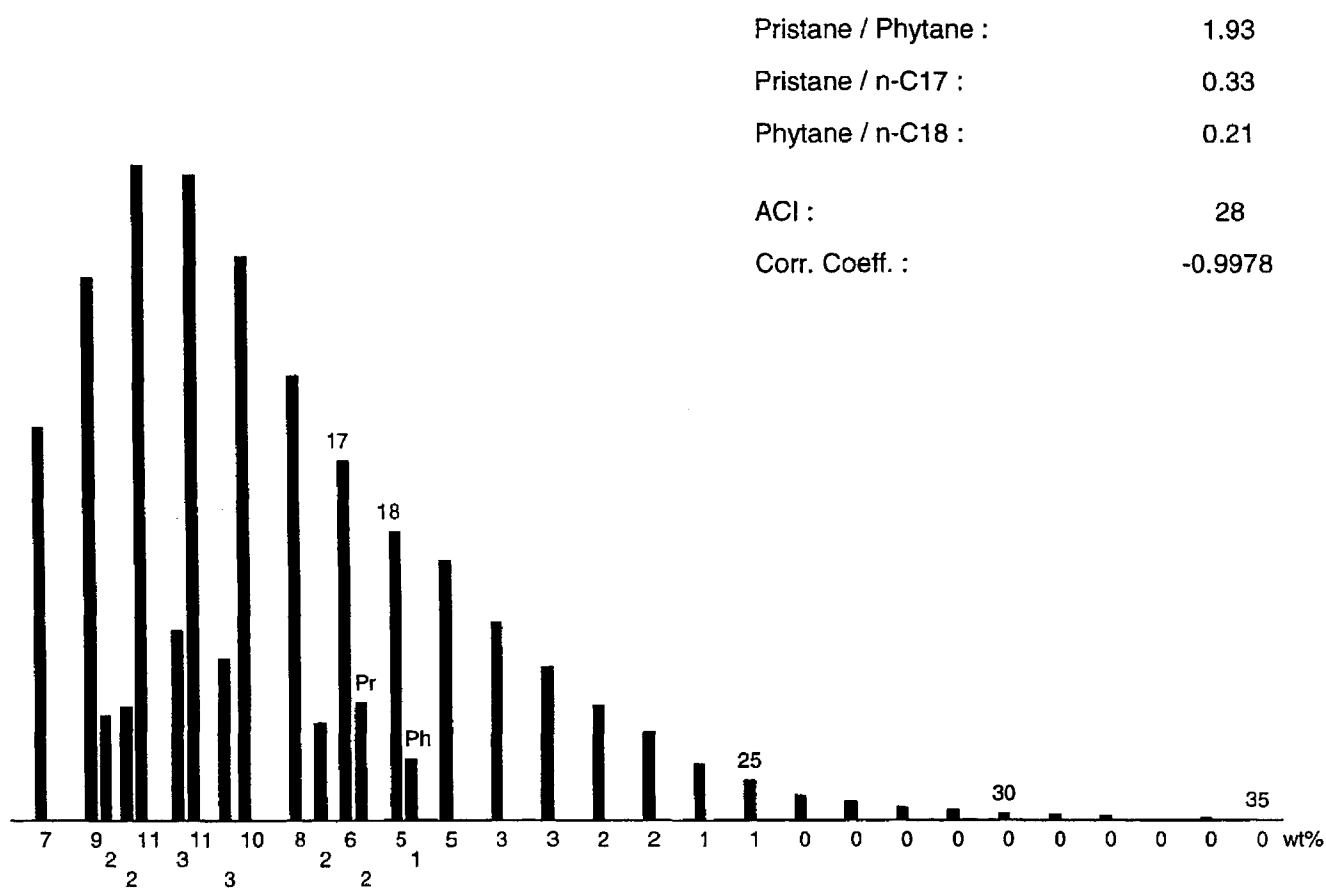
Aromatics Distribution
(Gas Chromatography / Mass Spectrometry)

Monoaromatic Steroids (%)	
C27 :	29
C28 :	39
C29 :	32
Phenanthrene Ratios	
MPI-1 :	0.66
F-1 :	0.47
F-2 :	0.24

Carbon Isotope Ratios
(Mass Spectrometry)

Total Oil (topped) :	-30.1
Saturates :	-30.8
Aromatics :	-28.4

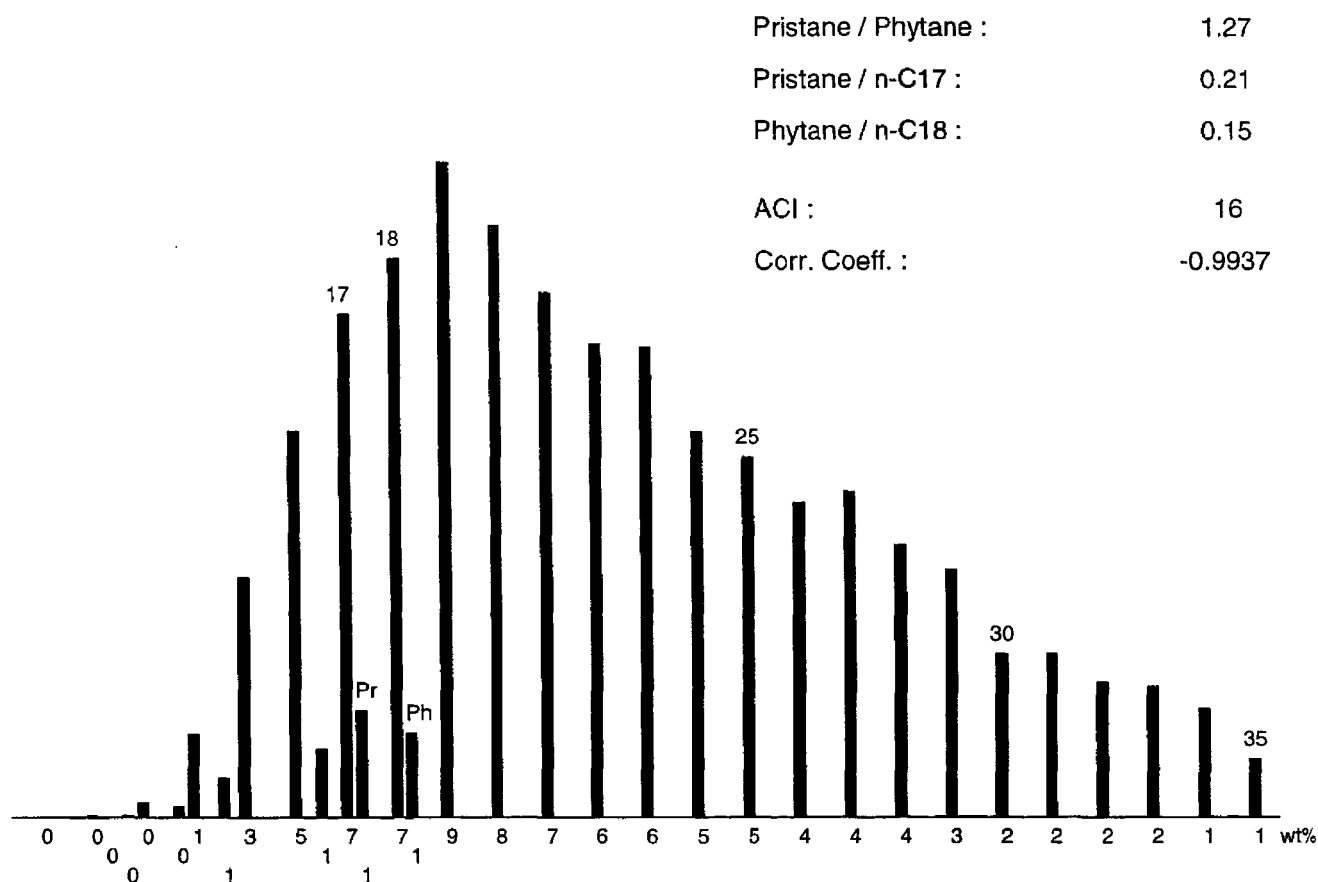
Bar diagram of normal alkanes & isoprenoids of the oil sample from well 206/04-01 (9753 ft), United Kingdom



Conclusions based on saturate fraction :

- 1 : the saturates show no indication of bacterial degradation
- 2 : it is very likely that the n-alkane distribution has a highly mature character

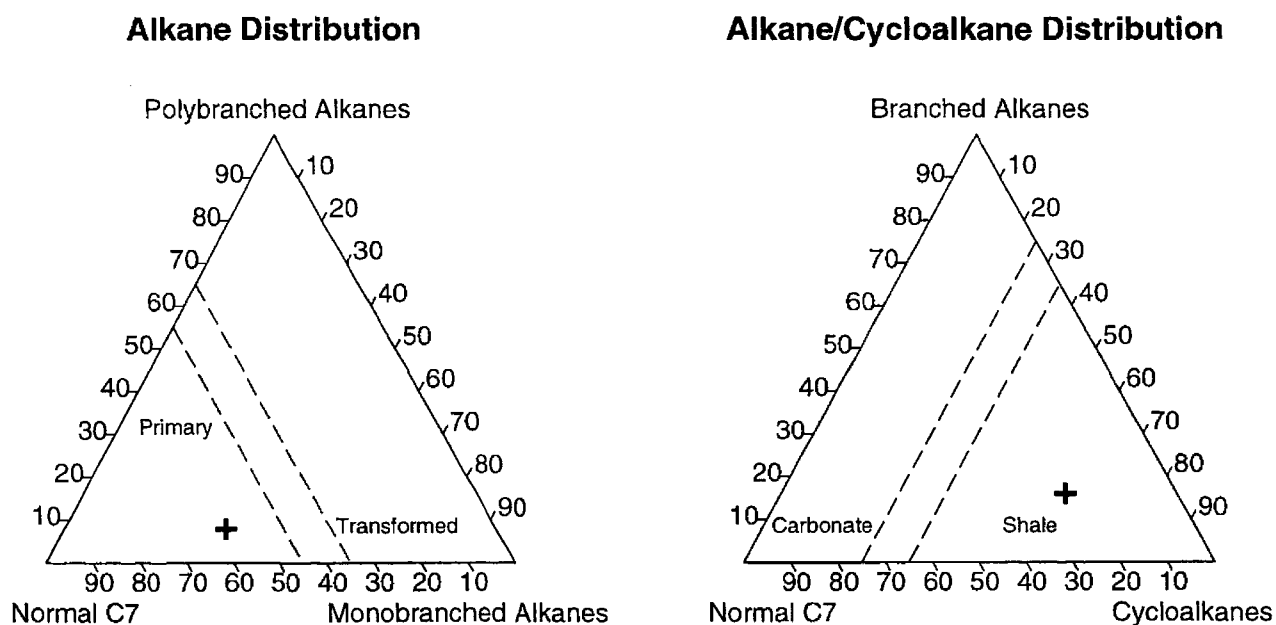
**Bar diagram of normal alkanes & isoprenoids of the extract from
well 206/04-01 (9853 ft), United Kingdom**



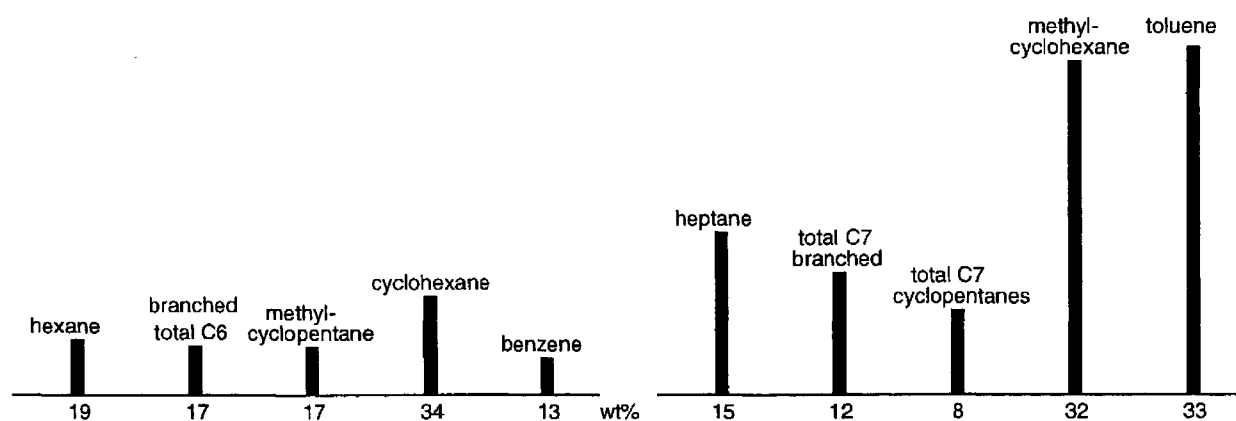
Conclusions based on saturate fraction :

- 1 : the saturates show no indication of bacterial degradation
- 2 : the n-alkane distribution has a mature character
- 3 : the saturates indicate that the oil has been expelled from a source rock containing structureless organic matter with a small contribution of algal matter

The light fraction (< 120 C) of the oil sample from well 206/04-01 (9753 ft), United Kingdom



C6 and C7 Distributions



C7 ALKANES (%)

Normal C7 :	57
Monobranched :	34
Polybranched :	9

C7 ALKANES / CYCLOALKANES (%)

Normal C7 :	23
Cycloalkanes :	60
Branched Alkanes :	17

C7 ALKANES / AROMATICS (%)

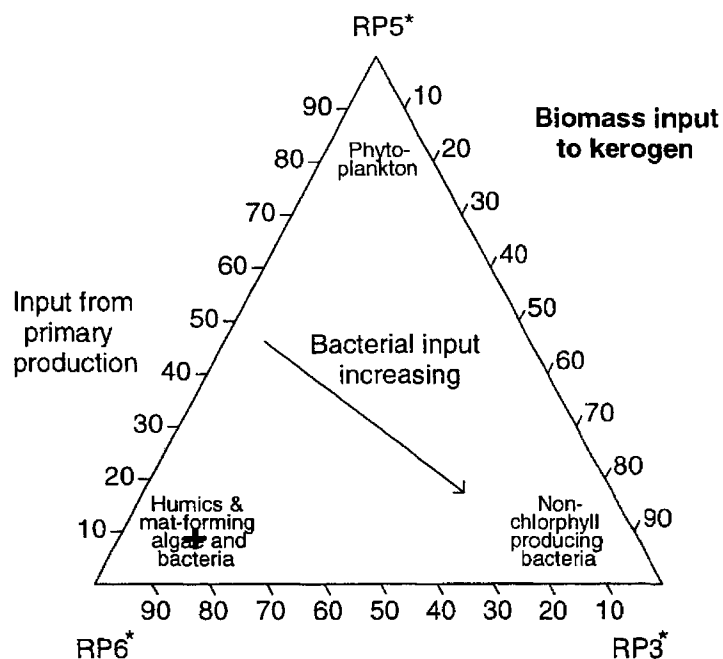
Alkanes :	27
Cycloalkanes :	40
Aromatics :	33

Conclusions based on light fraction :

- 1 : the light fraction shows no indication of bacterial degradation
- 2 : the light fraction of the oil sample has been partly evaporated
- 3 : it is likely that the light fraction has a mature character
- 4 : it is likely that the light fraction indicates a shaly source rock

C7 ring preference index of the oil sample from well 206/04-01 (9753 ft), United Kingdom

C7 Ring Preference Index



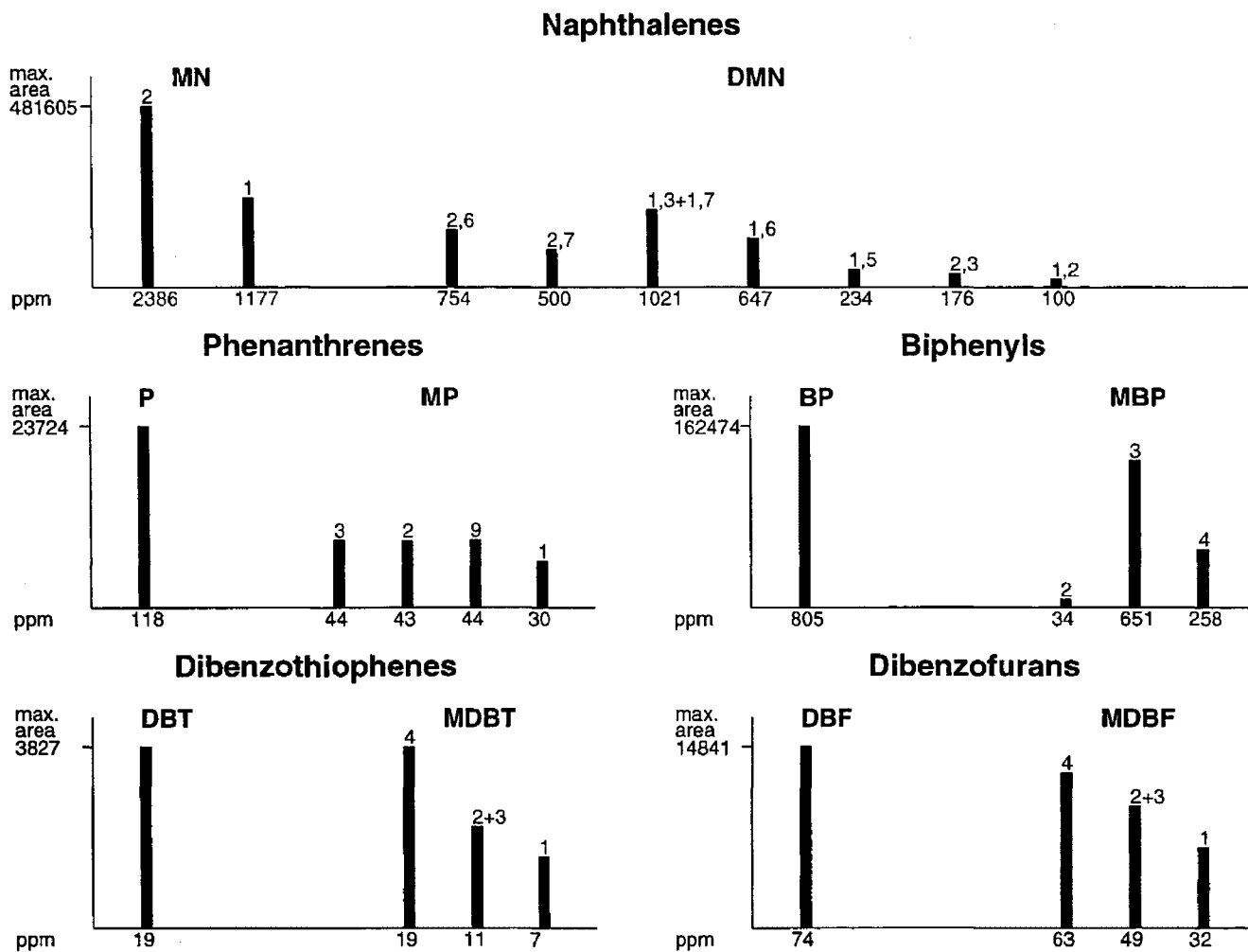
* RP3 = 3-membered rings
 RP5 = 5-membered rings
 RP6 = 6-membered rings

Prime sum :	1.02
New C7 temp :	127
PCI (Petroleum Composition Index) :	0.18

Conclusions based on C7 ring preference index :

1 : See conclusions on page 1.

GC/MS of the aromatic fraction of the oil sample from well 206/04-01 (9753 ft), United Kingdom



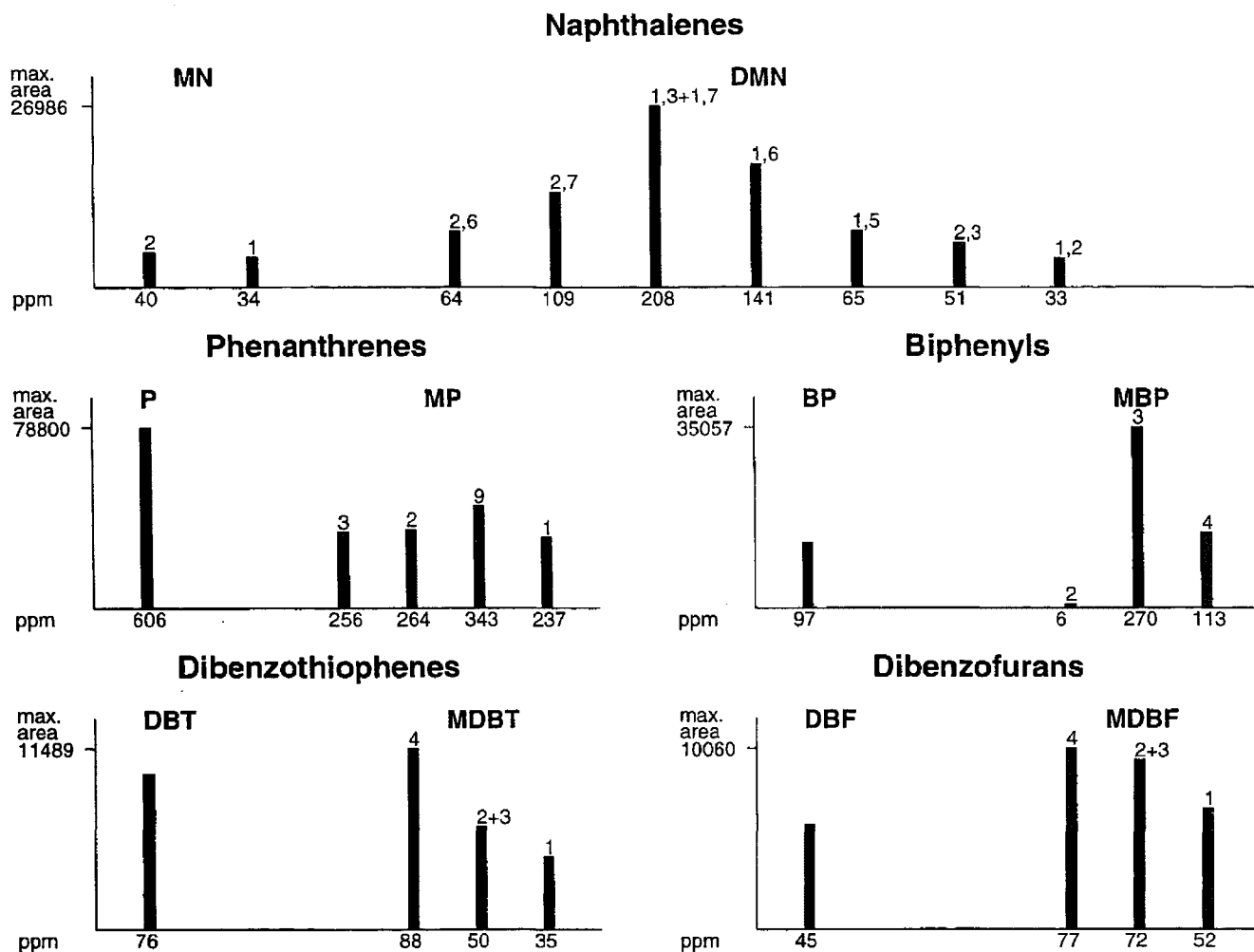
Conclusions based on aromatic fraction :

1 : See conclusions on page 1.

RATIOS	(value)	(VR/E*)
<i>Naphthalenes</i>		
MNR :	2.03	1.16
DNR-1 :	5.36	1.14
TNR-1 :	1.17	1.16
TNR-2 :	2.99	no data
<i>Phenanthrenes</i>		
MPI-1 :	0.68	0.78
MPI-2 :	0.68	0.75
F-1 :	0.54	1.05
F-2 :	0.27	0.90
<i>Overall ratios</i>		
Biphenyls/Naph. :	0.92	
Dibenzothiophenes/Naph. :	0.03	
Dibenzofurans/Naph. :	0.12	

* Calibration based on literature values

GC/MS of the aromatic fraction of the extract from well 206/04-01 (9853 ft), United Kingdom



Conclusions based on aromatic fraction :

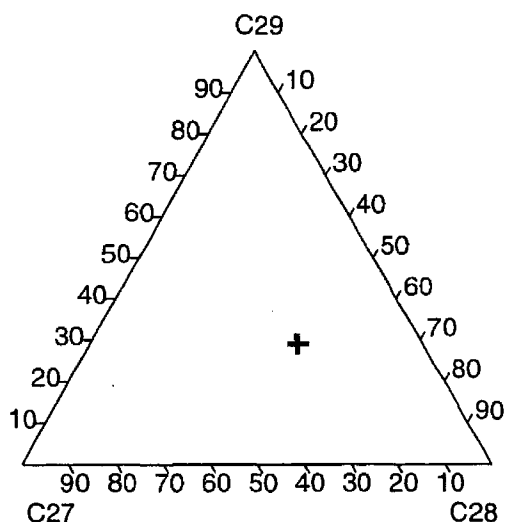
1 : See conclusions on page 1.

RATIOS	(value)	(VR/E*)
<i>Naphthalenes</i>		
MNR :	1.17	1.02
DNR-1 :	2.67	1.01
TNR-1 :	0.99	0.98
TNR-2 :	1.60	no data
<i>Phenanthrenes</i>		
MPI-1 :	0.66	0.76
MPI-2 :	0.67	0.74
F-1 :	0.47	0.89
F-2 :	0.24	0.79
<i>Overall ratios</i>		
Biphenyls/Naph. :	0.94	
Dibenzothiophenes/Naph. :	0.49	
Dibenzofurans/Naph. :	0.48	

* Calibration based on literature values

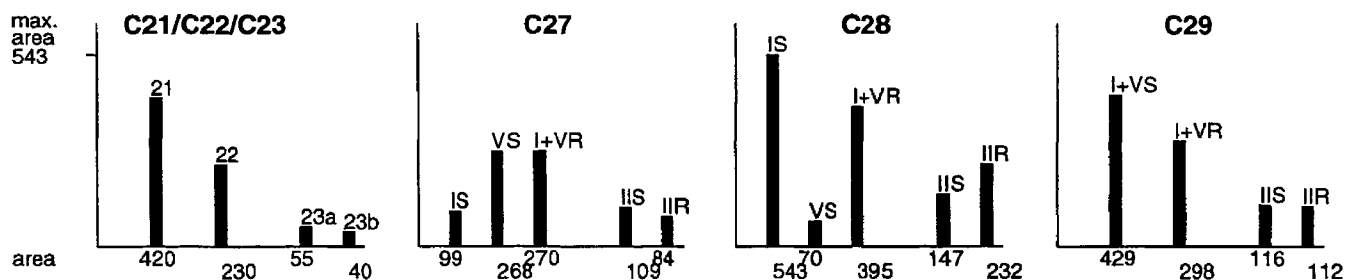
GC/MS of the aromatic steroids of the oil sample from well 206/04-01 (9753 ft), United Kingdom

Monoaromatic Steroids

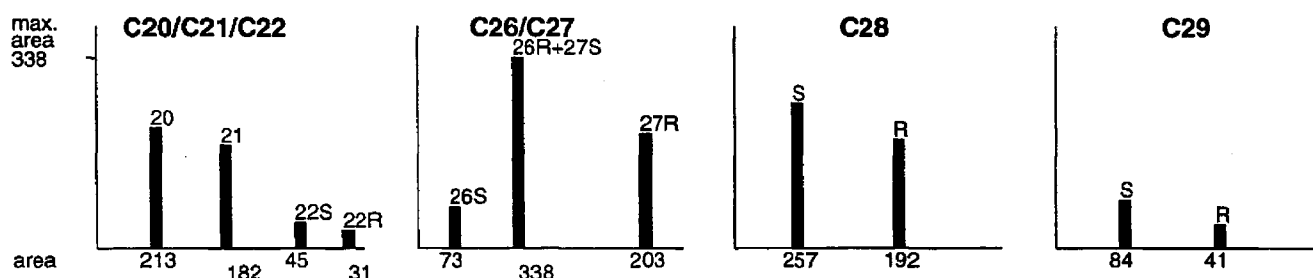


MONOAROMATIC STEROIDS	(ppm)	(%)
C27 :		26
C28 :		44
C29 :		30
RATIOS		
C28TA/(C29MA+C28TA) :		0.32
MA(I)/MA(I+II) :		0.17
TA(I)/TA(I+II) :		0.24
MA C27 V/(I+V) 20S :		0.73
TA C26 20S/C28 20S :		0.28
TA C27 20R/C28 20R :		1.06
3MeTA C28 20R/C29 20R :		1.18
(3/(3+4))MeTA C29 20R :		0.56
(3+4)MeTA C27 20S/C29 20S :		1.02
(3+4)MeTA C28 20R/C29 20R :		1.37
TA Dinosteroid index :		0.80

Monoaromatic Steroids



Triaromatic Steroids

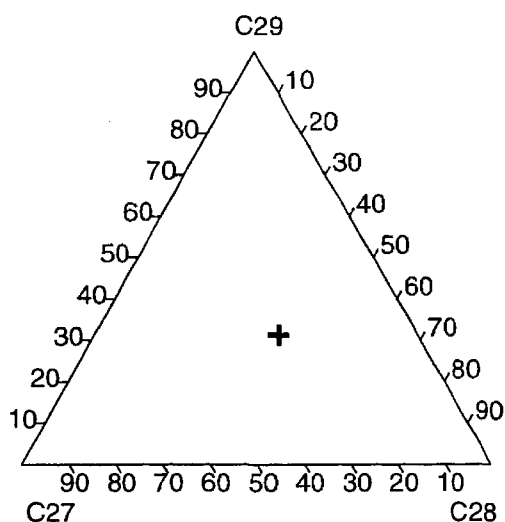


Conclusions based on aromatic steroids data :

1 : See conclusions on page 1.

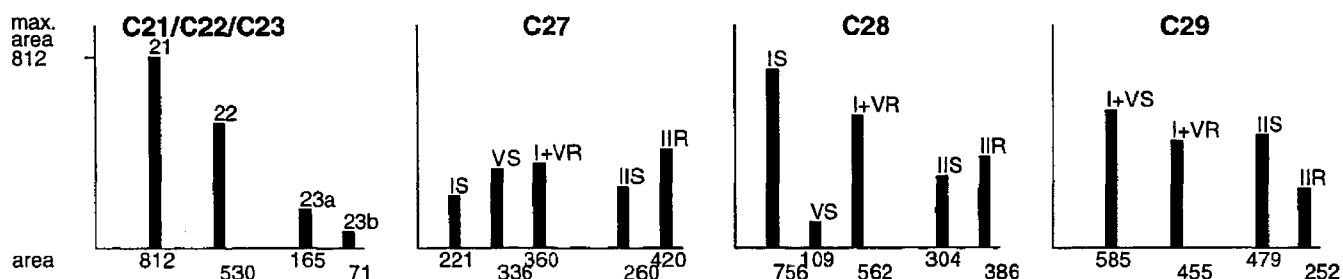
GC/MS of the aromatic steroids of the extract from well 206/04-01 (9853 ft), United Kingdom

Monoaromatic Steroids

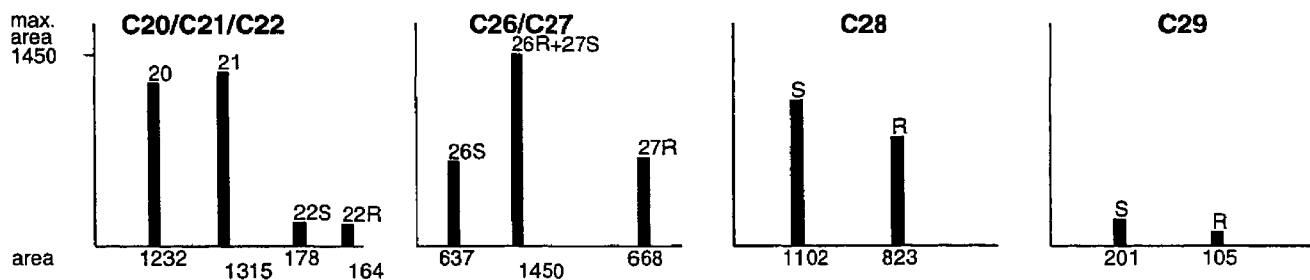


MONOAROMATIC STEROIDS	(ppm)	(%)
C27 :		29
C28 :		39
C29 :		32
RATIOS		
C28TA/(C29MA+C28TA) :		0.52
MA(I)/MA(I+II) :		0.20
TA(I)/TA(I+II) :		0.32
MA C27 V/(I+V) 20S :		0.60
TA C26 20S/C28 20S :		0.58
TA C27 20R/C28 20R :		0.81
3MeTA C28 20R/C29 20R :		0.86
(3/(3+4))MeTA C29 20R :		0.59
(3+4)MeTA C27 20S/C29 20S :		0.97
(3+4)MeTA C28 20R/C29 20R :		1.20
TA Dinosteroid index :		0.71

Monoaromatic Steroids



Triaromatic Steroids

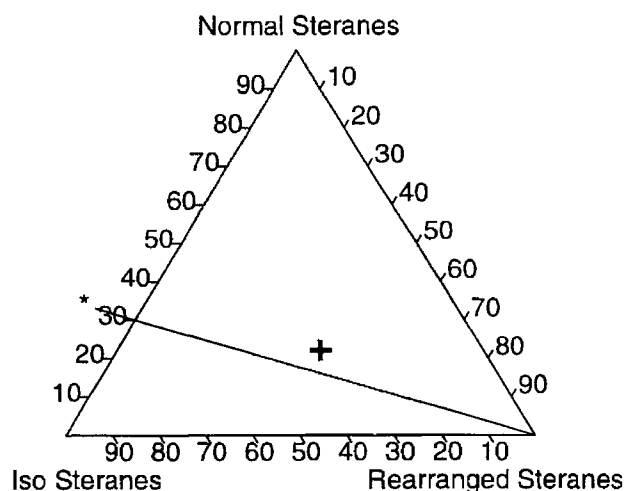


Conclusions based on aromatic steroids data :

1 : See conclusions on page 1.

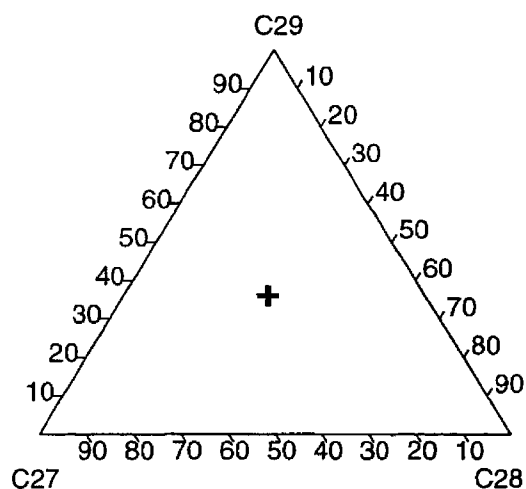
GC/MS sterane typing of the oil sample from well 206/04-01 (9753 ft), United Kingdom

Sterane Conversion Diagram

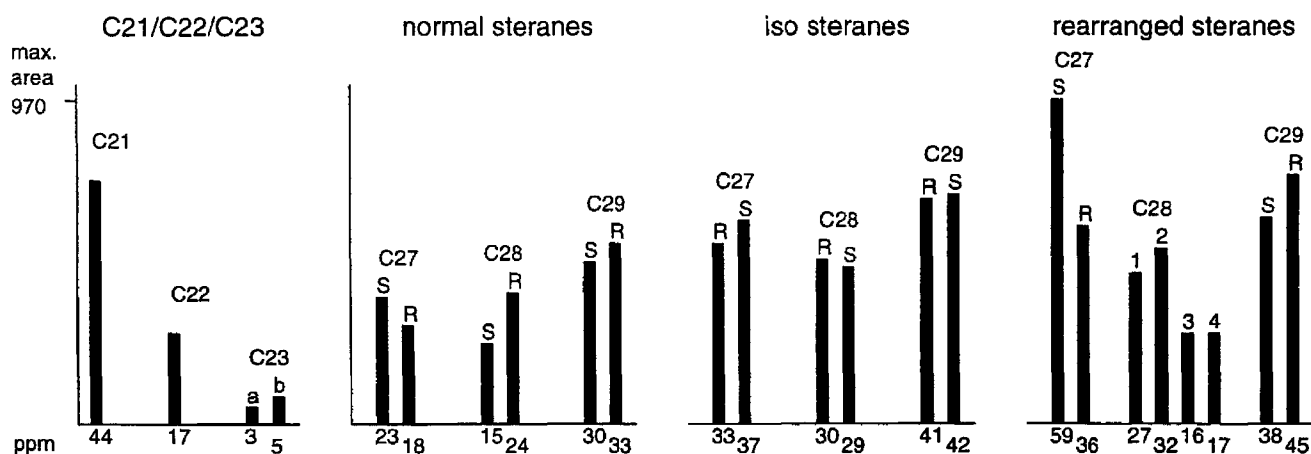


* The line of complete sterane isomerisation indicating a mature character

Sterane Typing Diagram



Sterane Distribution



STERANE DISTRIBUTION	(ppm)	(%)
Iso Steranes :	211	34
Rearranged Steranes :	270	43
Normal Steranes :	142	23

CARBON NUMBER DISTRIBUTION

C27 :	206	33
C28 :	189	30
C29 :	228	37

C29 STERANE CONVERSION RATIOS

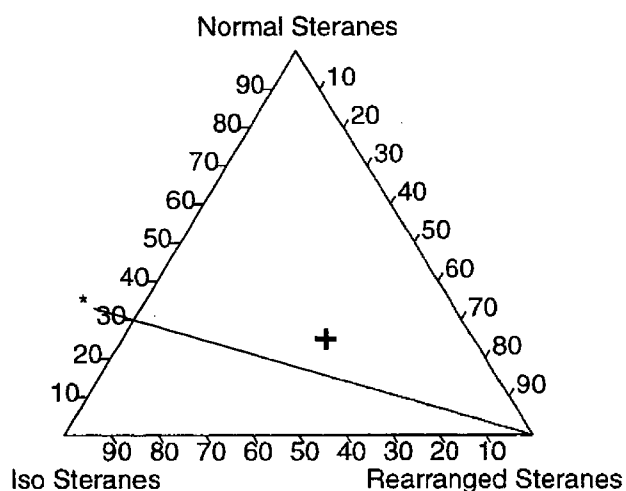
20S / (20R + 20S) :	0.47
Iso / (Iso + Normal) :	0.57

Conclusions based on steranes :

- 1 : the complete sterane isomerisation indicates that this oil has been expelled from a mature source rock
- 2 : the steranes indicate a shaly source rock

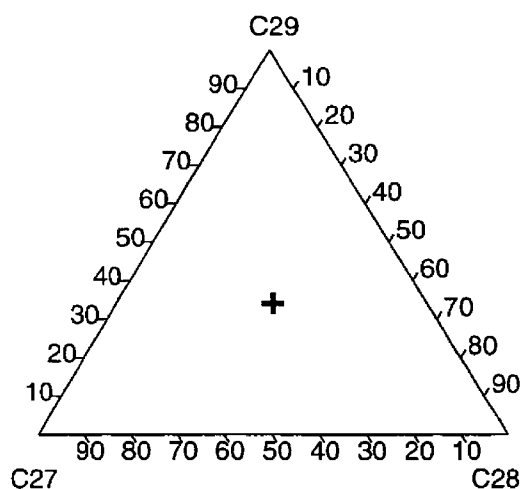
GC/MS sterane typing of the extract from well 206/04-01 (9853 ft), United Kingdom

Sterane Conversion Diagram

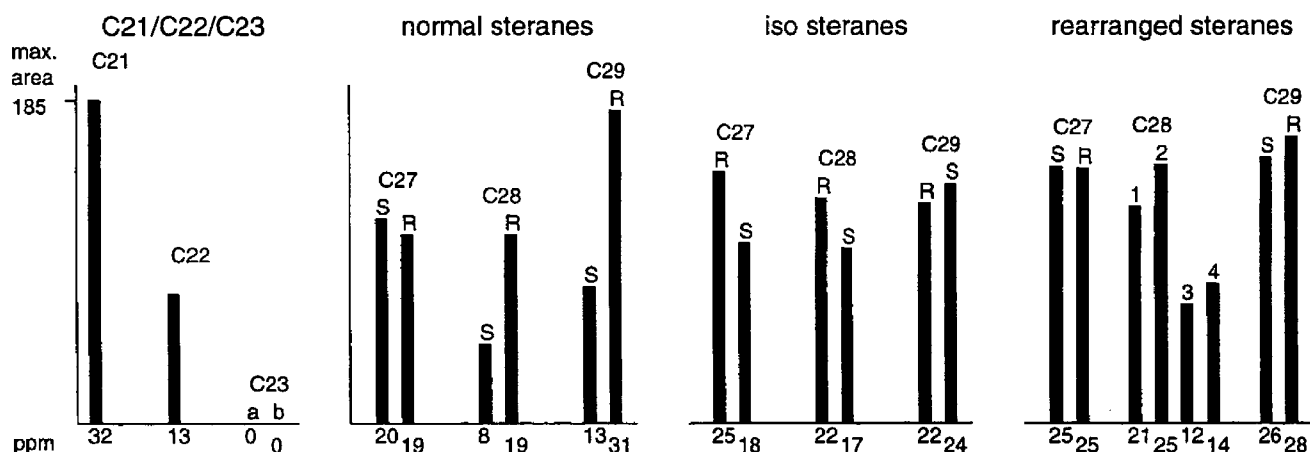


* The line of complete sterane isomerisation indicating a mature character

Sterane Typing Diagram



Sterane Distribution



STERANE DISTRIBUTION	(ppm)	(%)
Iso Steranes :	127	31
Rearranged Steranes :	177	43
Normal Steranes :	109	26

CARBON NUMBER DISTRIBUTION

C27 :	132	32
C28 :	138	33
C29 :	144	35

C29 STERANE CONVERSION RATIOS

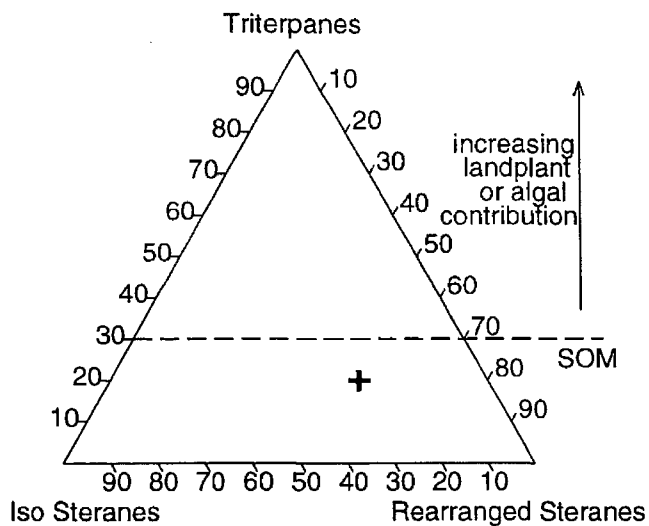
20S / (20R + 20S) :	0.30
Iso / (Iso + Normal) :	0.51

Conclusions based on steranes :

- 1 : the complete sterane isomerisation indicates that this oil has been expelled from a mature source rock
- 2 : the steranes indicate a shaly source rock

GC/MS triterpane typing of the oil sample from well 206/04-01 (9753 ft), United Kingdom

Sterane/Triterpane Diagram



STERANES/TRITERPANES (calculated %)

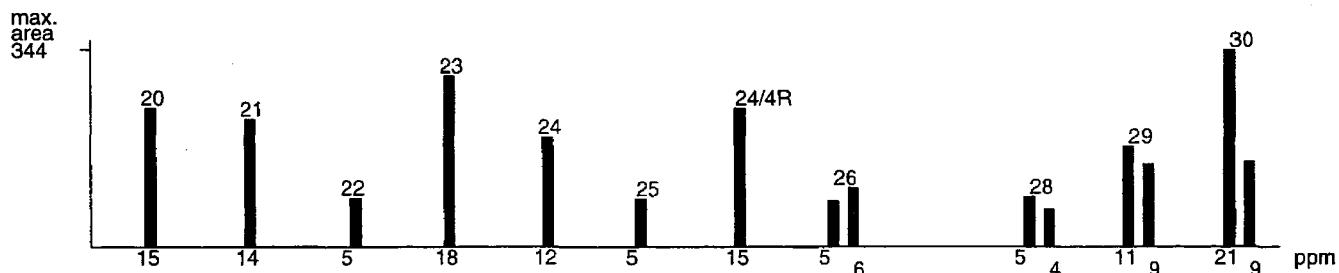
Iso Steranes :	27
Rearranged Steranes :	52
Triterpanes :	21

TRITERPANE CONVERSION RATIOS

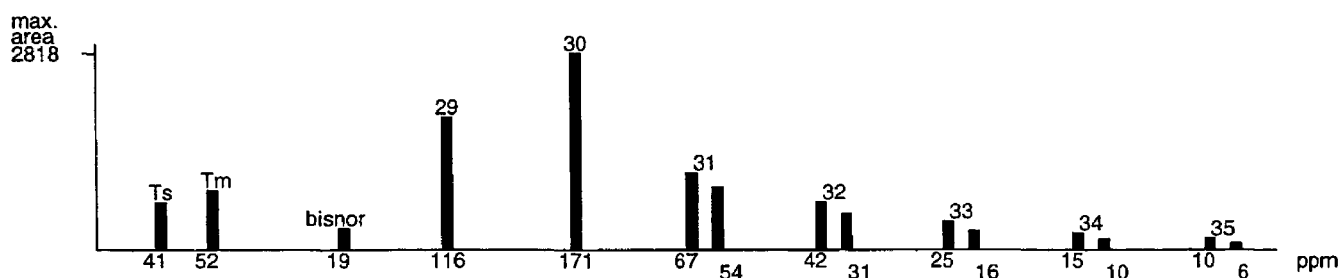
Ts / Tm :	0.80
Ts / (Ts + Tm) :	0.44
3R / (3R + 5R) :	0.17

C30 Hopane (ppm) : 171

Tri- and Tetracyclic Terpanes



Pentacyclic Terpanes

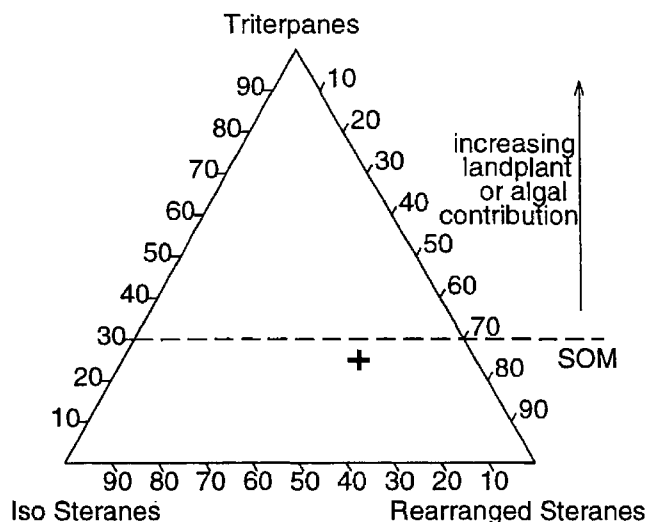


Conclusions based on triterpanes :

- 1 : the triterpane distribution indicates a source rock containing predominantly structureless organic matter

GC/MS triterpane typing of the extract from well 206/04-01 (9853 ft), United Kingdom

Sterane/Triterpane Diagram



STERANES/TRITERPANES (calculated %)

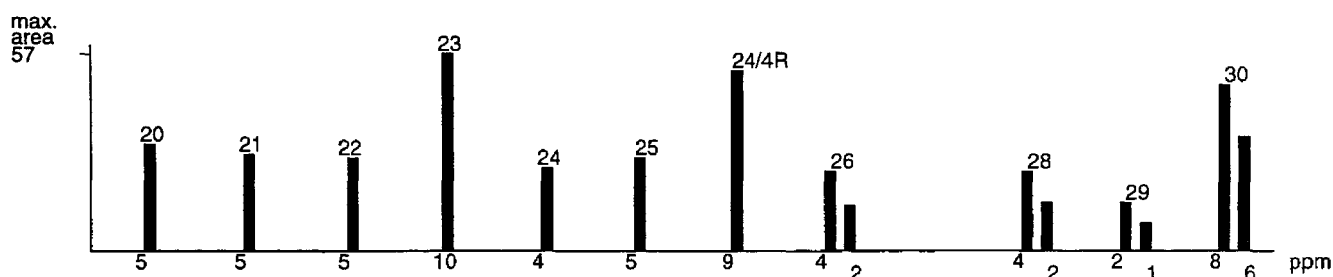
Iso Steranes :	24
Rearranged Steranes :	50
Triterpanes :	26

TRITERPANE CONVERSION RATIOS

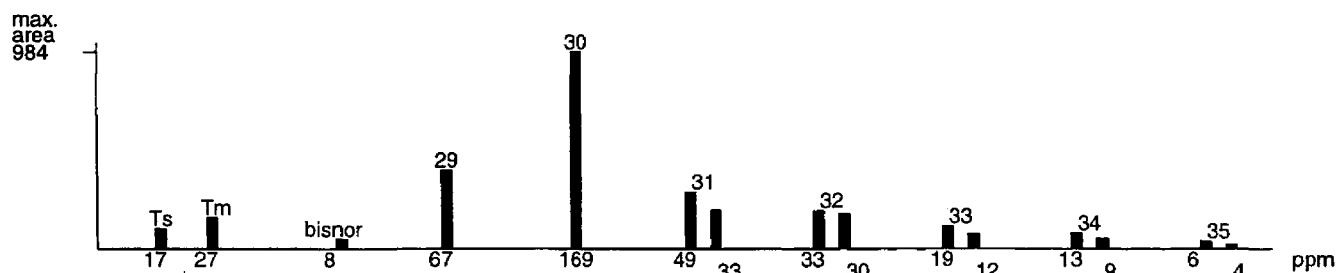
Ts / Tm :	0.65
Ts / (Ts + Tm) :	0.39
3R / (3R + 5R) :	0.12

C30 Hopane (ppm) : 169

Tri- and Tetracyclic Terpanes



Pentacyclic Terpanes

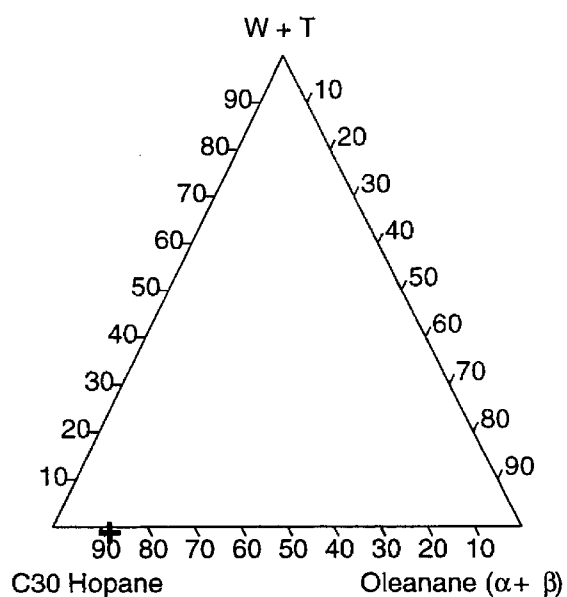


Conclusions based on triterpanes :

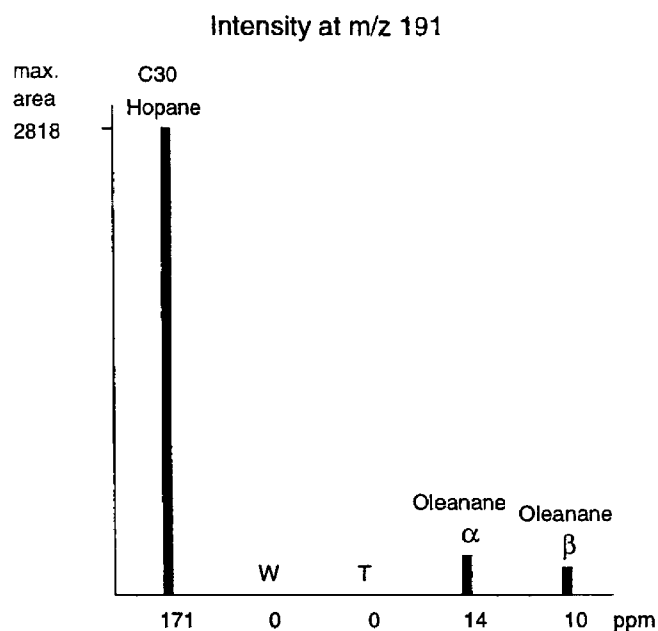
- 1 : the triterpane distribution indicates a source rock containing predominantly structureless organic matter

GC/MS landplant resins of the oil sample from well 206/04-01 (9753 ft), United Kingdom

Triterpane Diagram



Landplant Triterpanes



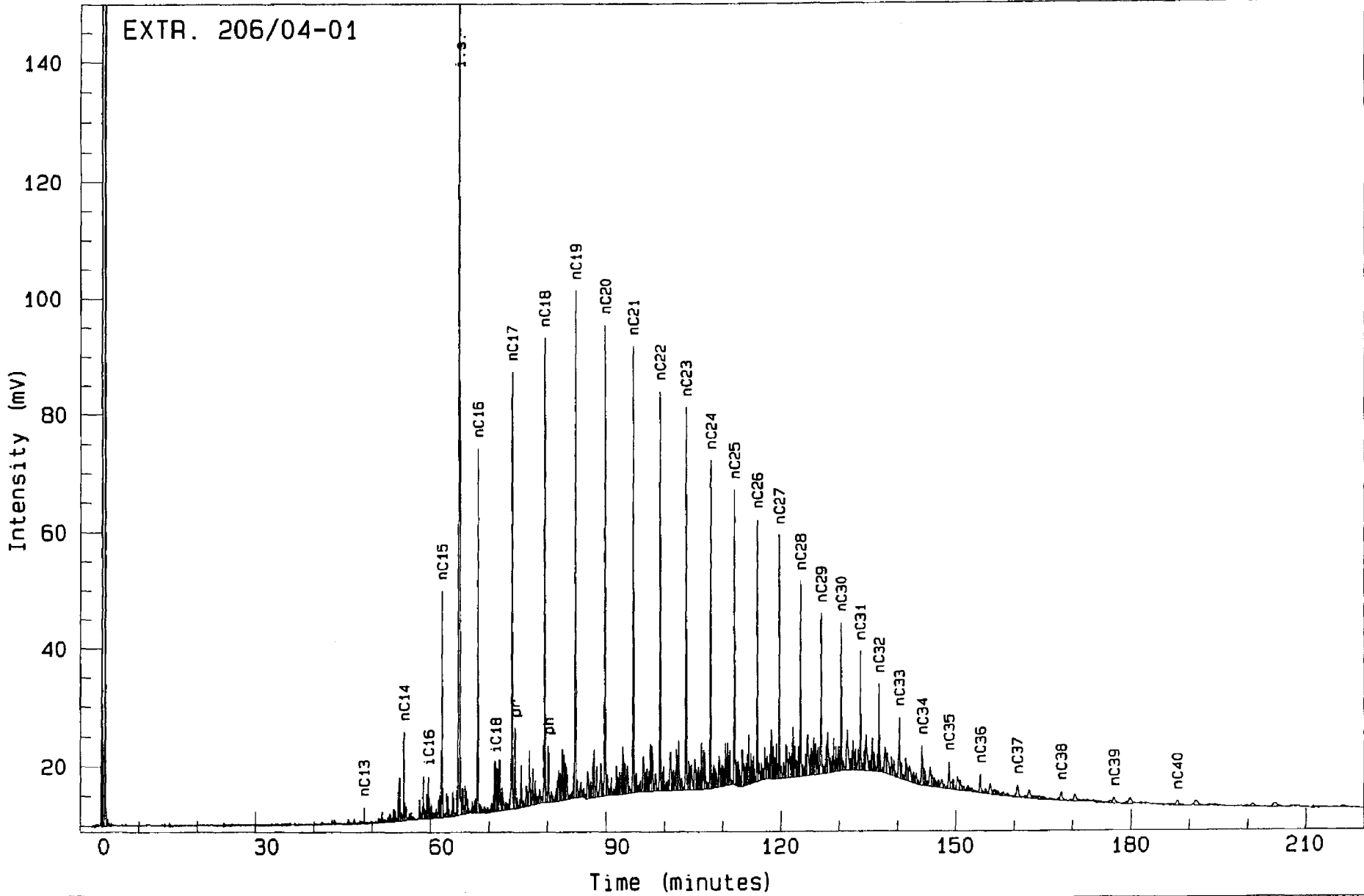
TRITERPANES	(calculated %)	(ppm)
C30 Hopane :	88	171
Oleanane (α+ β) :	12	24
W + T :	0	0

Conclusions based on landplant resins :

1 : the GC/MS landplants show a small contribution of landplant derived resins

ANALYTICAL DATA
well 206/04-01 (9853 ft), United Kingdom

Gas chromatogram of the whole oil sample from
well 206/04-01 (9853 ft), United Kingdom



GC/MS chromatogram of the aromatic fraction from
well 206/04-01 (9853 ft), United Kingdom

SIEP-RTS EPT-HM
Instrument : MD-800
A1854322 Sm(SG,2x3)

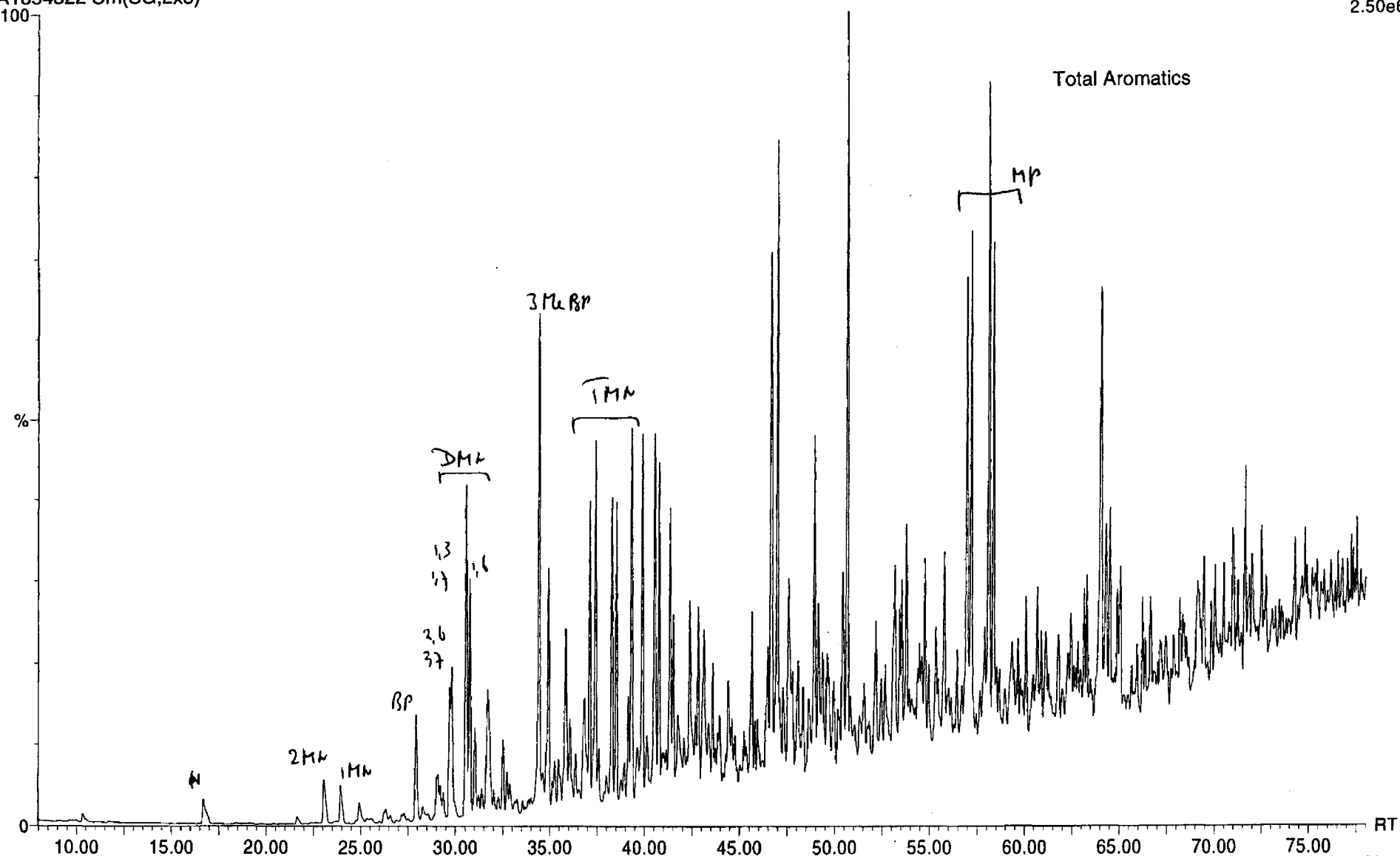
Sample ID : U.K. 206/04-01 9853 ft

Acquired on 11-Jan-1997 at 00:49:33

Operator : Ron

TIC

2.50e6



GC/MS data of the aromatic fraction from well 206/04-01 (9853 ft), United Kingdom

Report of sample: U.K. 206/04-01 9853 ft

Acquired at : 11-Jan-1997

Standard used for calculations: PDP
Discrimination factor : 0.57

I) NAPHTHALENES

a) Concentrations (ppm)

2-MN
1-MN
2,6+2,7-DMN
1,6-DMN
1,5-DMN
1,3,5+1,4,6-TMN
2,3,6-TMN
1,2,5-TMN
C4-NAPH
THN
CAD
Total Naphthalenes

b) Parameters

40 4-MDBT/2+3-MDBT 1.76
34 4-MDBT/1-MDBT 2.50
172 2+3-MDBT/1-MDBT 1.42
141 4-MDBT/DBT 1.16
65 2+3-MDBT/DBT 0.66
139 1-MDBT/DBT 0.47
138

IV) BIPHENYLS

a) Concentrations (ppm)

23 BP 97
4 2-MBP 6
917 3-MBP 270
4-MBP 113
Total Biphenyls 485

b) Parameters

2-MN/1-MN (MNR) 1.17
2,6+2,7-DMN/1,5-DMN (DNR-1) 2.67
2,3,6-TMN/1,3,5+1,4,6-TMN (TNR-1) 0.99
2,3,6-TMN/1,2,5-TMN (TNR-2) 1.60
2,3,6-TMN/THN 5.99
2,3,6-TMN/Cadelene 36.55

b) Parameters

3-MBP/BP 2.78
3-MBP/4-MBP 2.39
3-MBP/2-MBP 48.72

II) PHENANTHRENES

a) Concentrations (ppm)

P
3-MP
2-MP
9-MP
1-MP
Total Phenantrenes

V) DIBENZOFURANS

a) Concentrations (ppm)

DBF 45
606 4-MDBF 77
256 2+3-MDBF 72
264 1-MDBF 52
343 Total Dibenzofurans 246
237

b) Parameters

4-MDBF/2+3-MDBF 1.07
4-MDBF/1-MDBF 1.50
1.11 2+3-MDBF/1-MDBF 1.40
0.66 4-MDBF/DBF 1.73
0.67 2+3-MDBF/DBF 1.62
0.90 1-MDBF/DBF 1.16
0.47

b) Parameters

2-MP/1-MP 1.11
1.5*(2+3-MP/(P+1+9-MP)) (MPI-1) 0.66
3*(2-MP/(P+1+9-MP)) (MPI-2) 0.67
2+3-MP/1+9-MP 0.90
2+3-MP/1+9+2+3-MP 0.47

VI) OVERALL RATIOS

Biphenyls/NAPH* 0.94
Dibenzothiophenes/NAP 0.49
76 Dibenzofurans/NAPH* 0.48

III) DIBENZOTHIOPHENES

a) Concentrations (ppm)

DBT
4-MDBT
2+3-MDBT
1-MDBT
Total Dibenzothiophenes

76
88
50
35
250

MN = methylnaphthalene
DMN = dimethylnaphthalene
TMN = trimethylnaphthalene
THN = tetrahyronaphthalene
DBF = methyldibenzofuran
MDBF = methyldibenzofuran
NAPH* = 2,6+2,7-DMN + 1,5-DMN + 1,4,6+1,3,5-TMN + 2,3,6-TMN

P = phenanthrene
MP = methylphenanthrene
DBT = dibenzothiophene
MDBT = methyldibenzothiophene
BP = biphenyl
MBP = methylbiphenyl

GC/MS data of the aromatic fraction from well 206/04-01 (9853 ft), United Kingdom

VII) Misc. NAPHTHALENES

a) Concentrations (ppm)

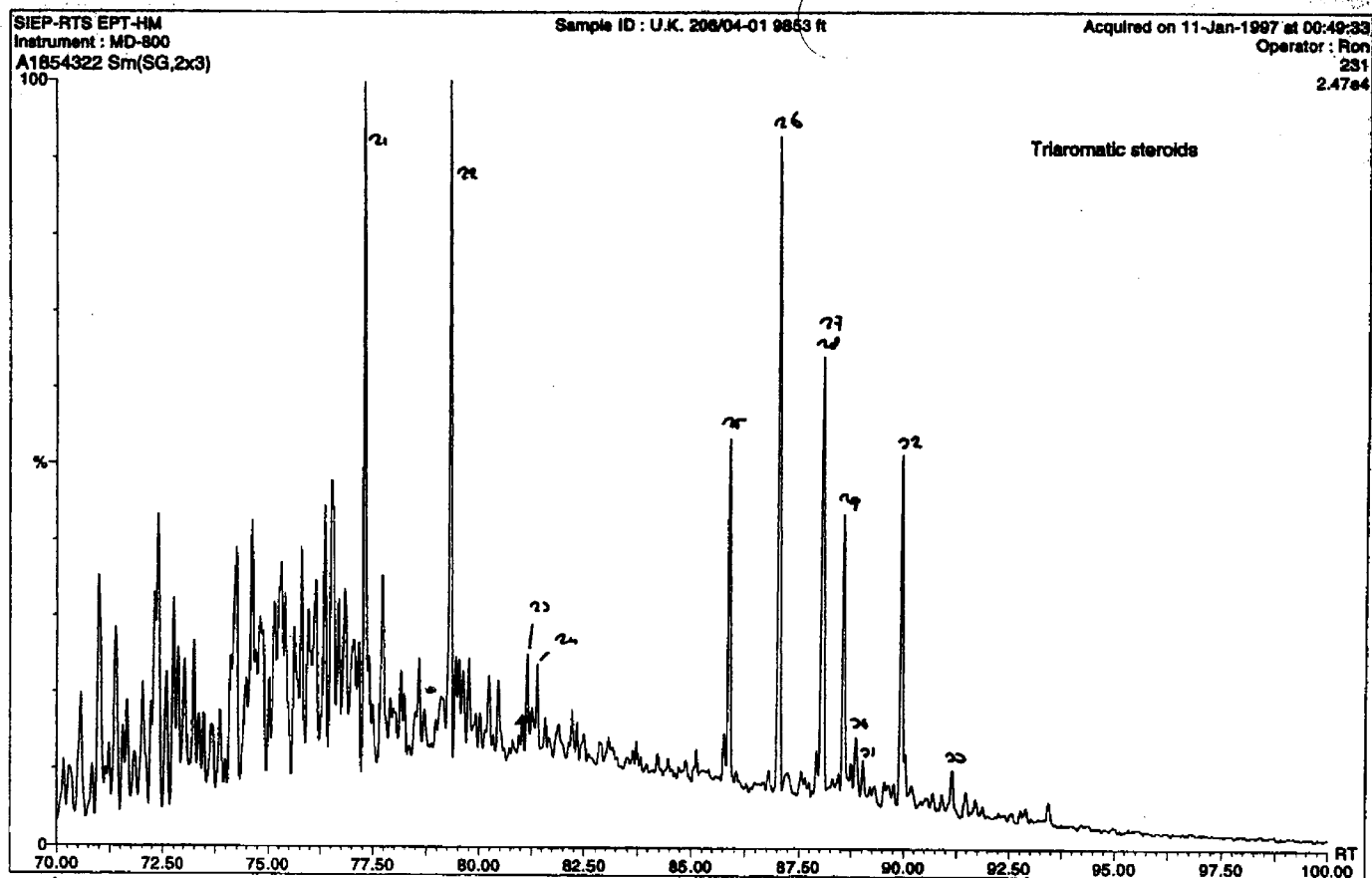
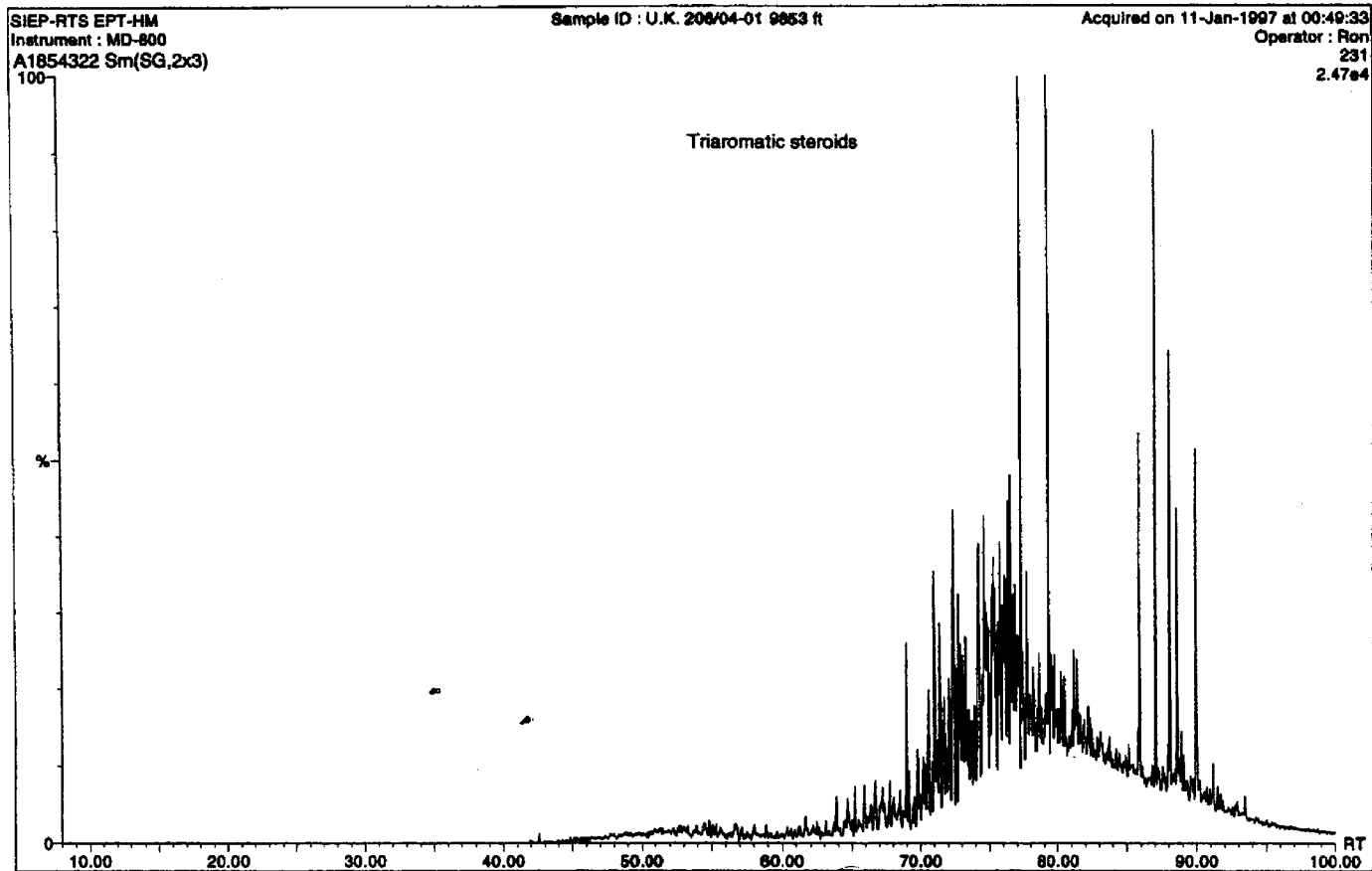
2,6-DMN	64	4,5-DMP	16
2,7-DMN	109	2,6+3,6-DMP	64
1,3+1,7-DMN	208	3,5-DMP	66
1,6-DMN	141	2,7-DMP	41
1,4-DMN	n.d.	3,9-DMP	274
2,3-DMN	51	1,6+2,5+2,9-DMP	124
1,5-DMN	65	1,7-DMP	93
1,2-DMN	33	1,9+4,9-DMP	104
1,4+2,3-DMN	51	1,5-DMP	n.d.
		1,8-DMP	21
		1,2-DMP	16
		9,10-DMP	n.d.
1,3,7-TMN	127	1,2,6-TMP	12
1,3,6-TMN	172	1,2,5-TMP	16
1,3,5+1,4,6-TMN	139	1,2,9-TMP	6
2,3,6-TMN	138	1,2,7-TMP	n.d.
1,2,7-TMN	36	1,2,8-TMP	15
1,6,7-TMN	171		
1,2,6-TMN	5		
1,2,4-TMN	18		
1,2,5-TMN	86		
1,3,5,7-TeMN	49		
1,3,6,7-TeMN	70		
1,2,4,7-TeMN	50		
1,2,5,7-TeMN	32		
2,3,6,7-TeMN	30		
1,2,6,7-TeMN	19		
1,2,5,6-TeMN (C4-NAPH)	75		

b) Parameters

1,2,5-TMN/1,3,6-TMN	0.50
1,2,7-TMN/1,3,7-TMN	0.28

The assignment of some of these peaks is tentative

GC/MS fragmentograms of the aromatic steroids from well 206/04-01 (9853 ft), United Kingdom

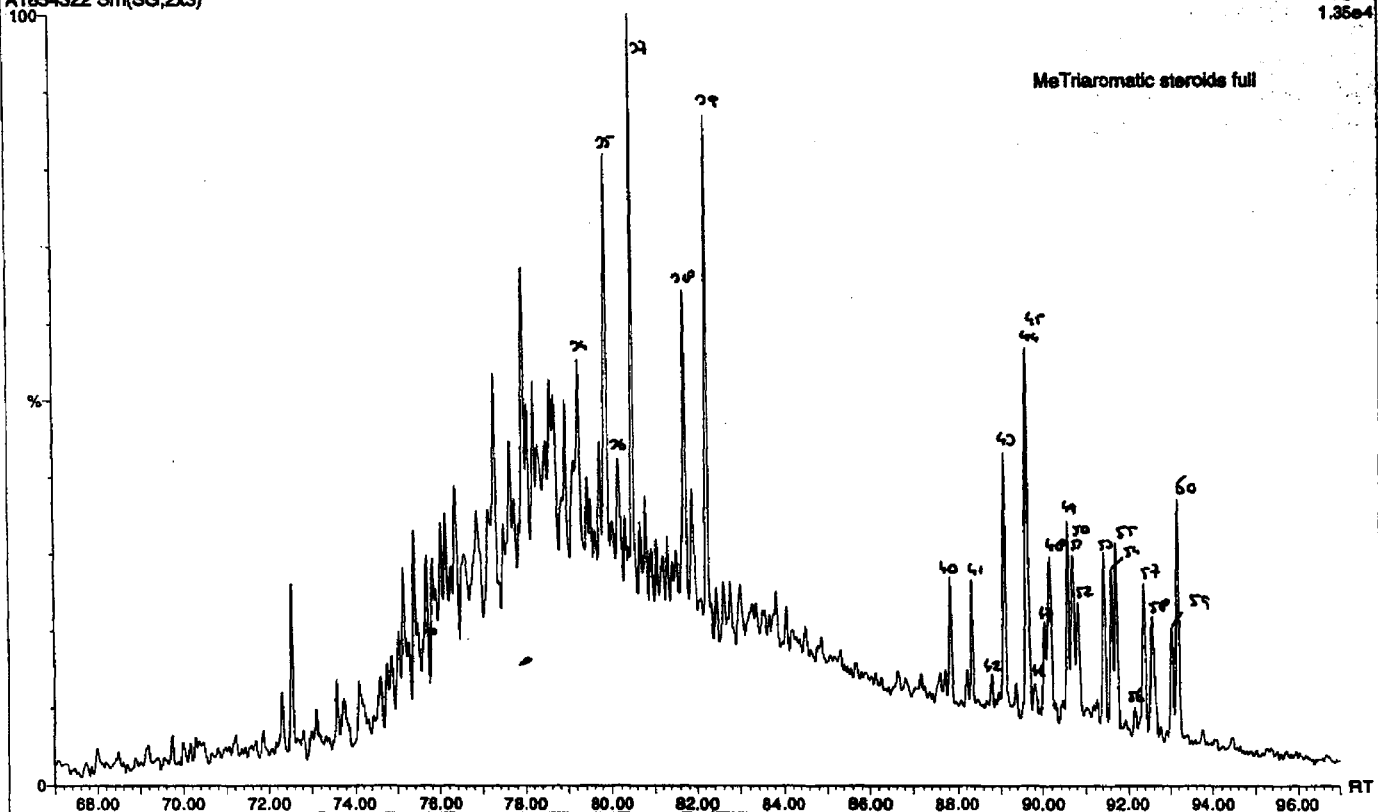


GC/MS fragmentograms of the aromatic steroids from well 206/04-01 (9853 ft), United Kingdom

SIEP-RTS EPT-HM
Instrument : MD-800
A1854322 Sm(SG,2x3)

Sample ID : U.K. 206/04-01 9853 ft

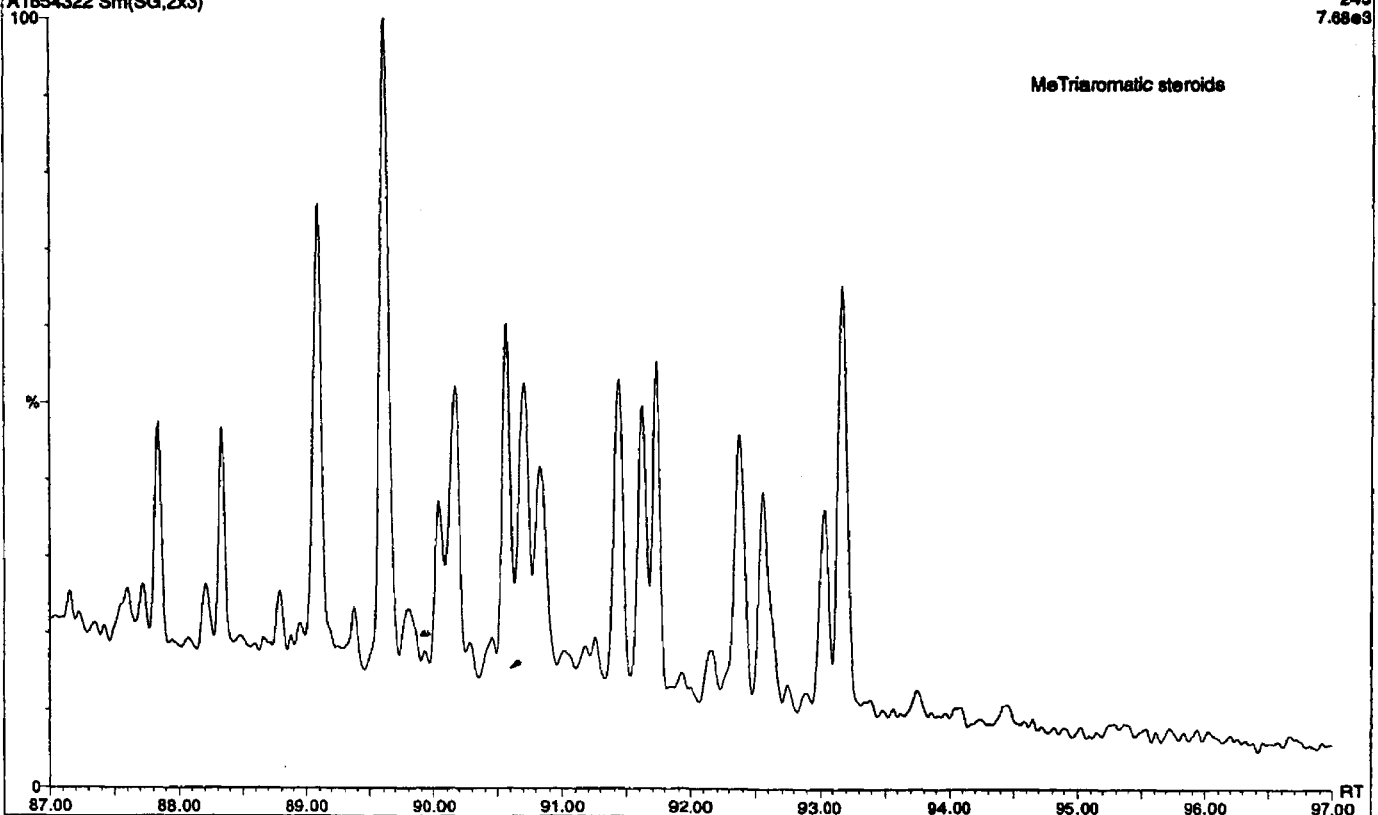
Acquired on 11-Jan-1997 at 00:49:33
Operator : Ron
245
1.35e4



SIEP-RTS EPT-HM
Instrument : MD-800
A1854322 Sm(SG,2x3)

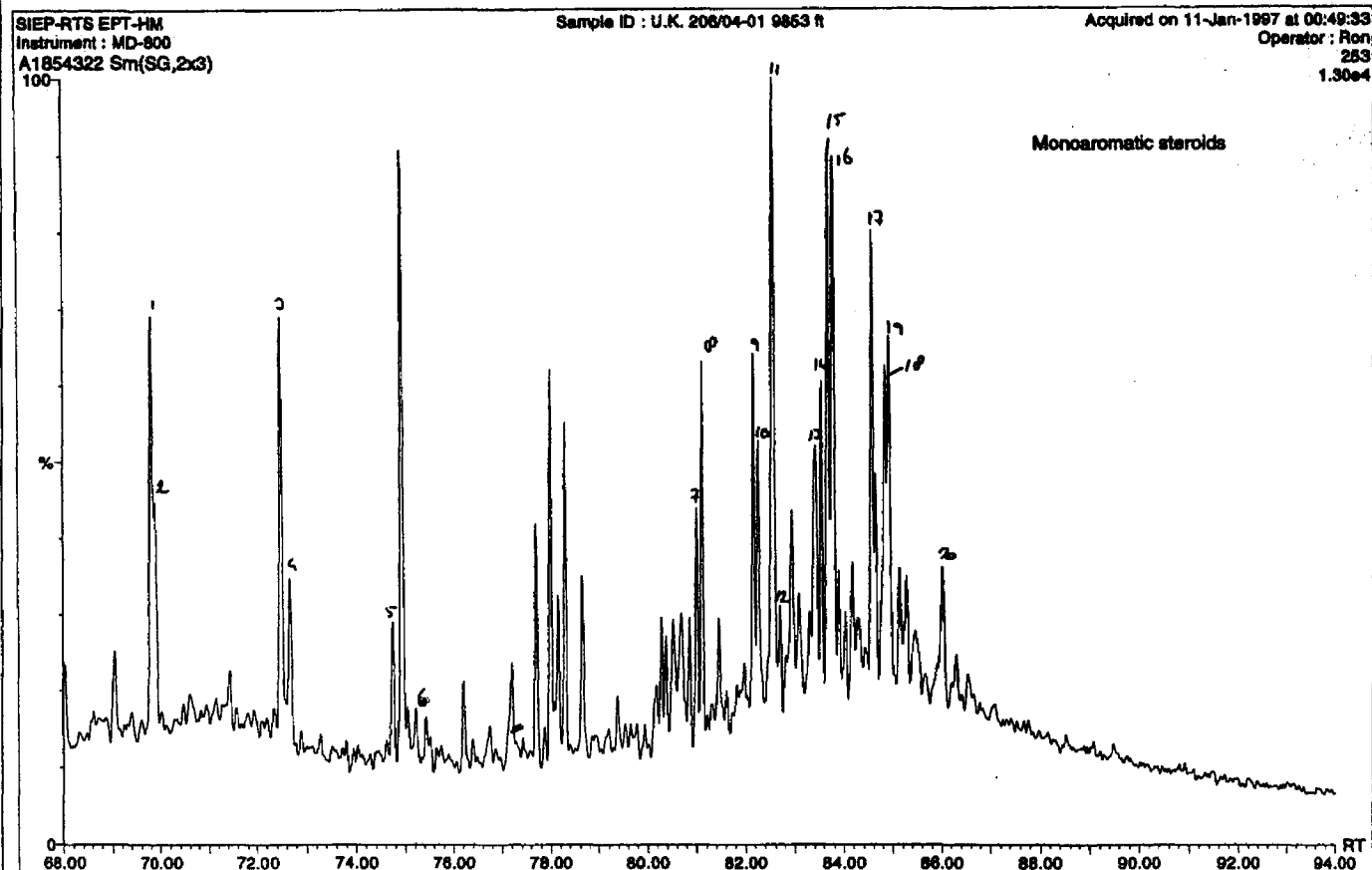
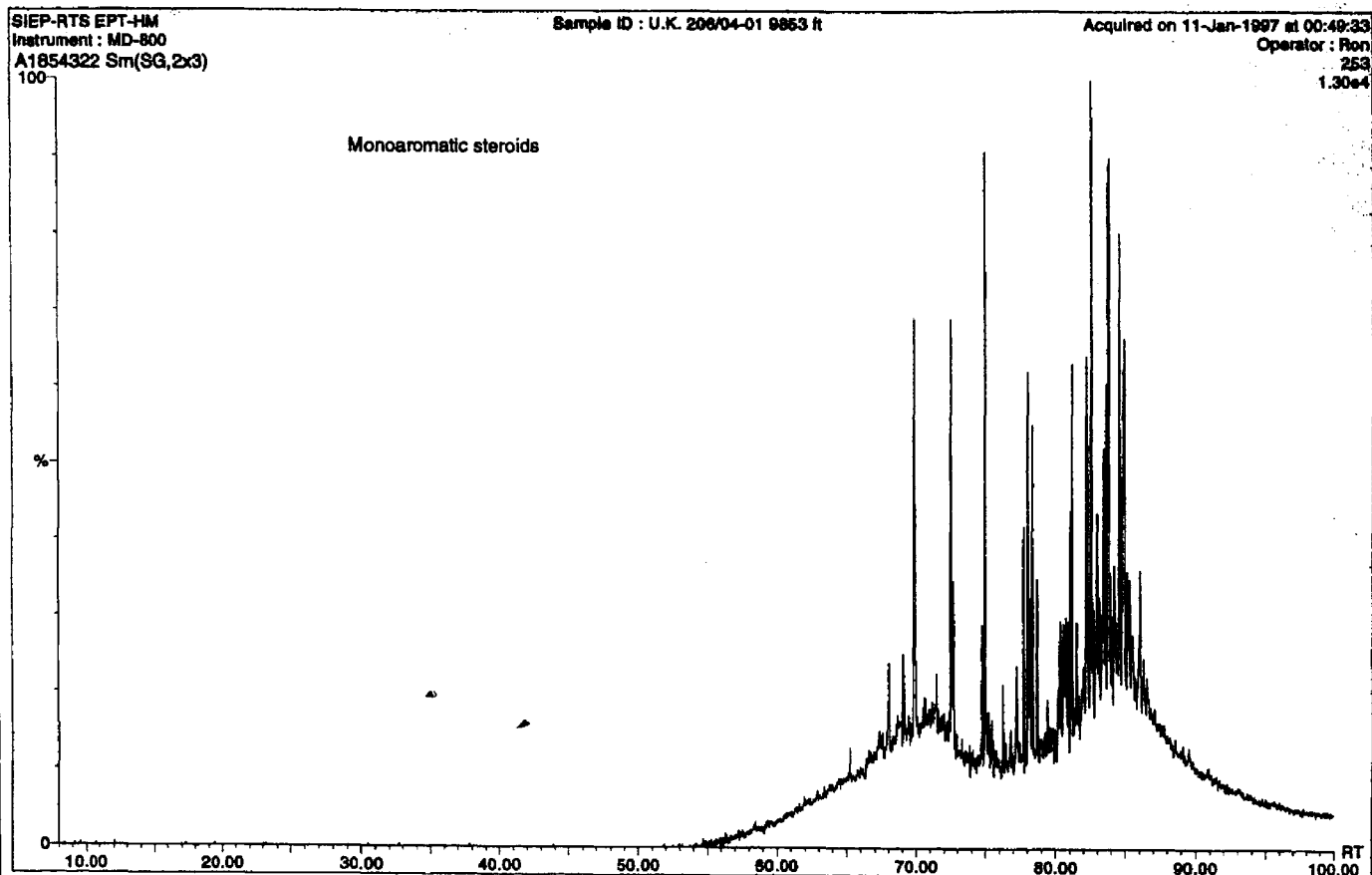
Sample ID : U.K. 206/04-01 9853 ft

Acquired on 11-Jan-1997 at 00:49:33
Operator : Ron
245
7.68e3



S18543202

GC/MS fragmentograms of the aromatic steroids from well 206/04-01 (9853 ft), United Kingdom



GC/MS data of the aromatic steroids from well 206/04-01 (9853 ft), United Kingdom

Report of sample: U.K. 206/04-01 9853 ft

Acquired at: 11-Jan-1997

Standard used for calculations: First
Discrimination factor: 0.64I) Monoaromatic steroids
Intensities (arbitrary units)

MA C21 a ?	102
MA C21 b ?	51
MA C22 a ?	100
MA C22 b ??	40
MA C23 a ?	31
MA C23 b ?	13
MA C27 I 20S	42
MA C27 V 20S	63
MA C27 I 20R + MA C27 V 20R	68
MA C27 II 20S	49
MA C28 I 20S	142
MA C28 V 20S	21
MA C27 II 20R	79
MA C28 II 20S	57
MA C28 I 20R + MA C28 V 20R	106
MA C29 I 20S + MA C29 V 20S	110
MA C29 II 20S	90
MA C28 II 20R	73
MA C29 I 20R + MA C29 V 20R	86
MA C29 II 20R	47

II) Triaromatic steroids
Intensities (arbitrary units)

TA C20	232
TA C21	248
TA C22 20S	34
TA C22 20R	31
TA C26 20S	120
TA C26 20R + TA C27 20S	273
TA C28 20S	208
TA C28 20S	n.d.
TA C27 20R	126
TA C29 20S	26
TA C29 20S	12
TA C28 20R	155
TA C29 20R	20

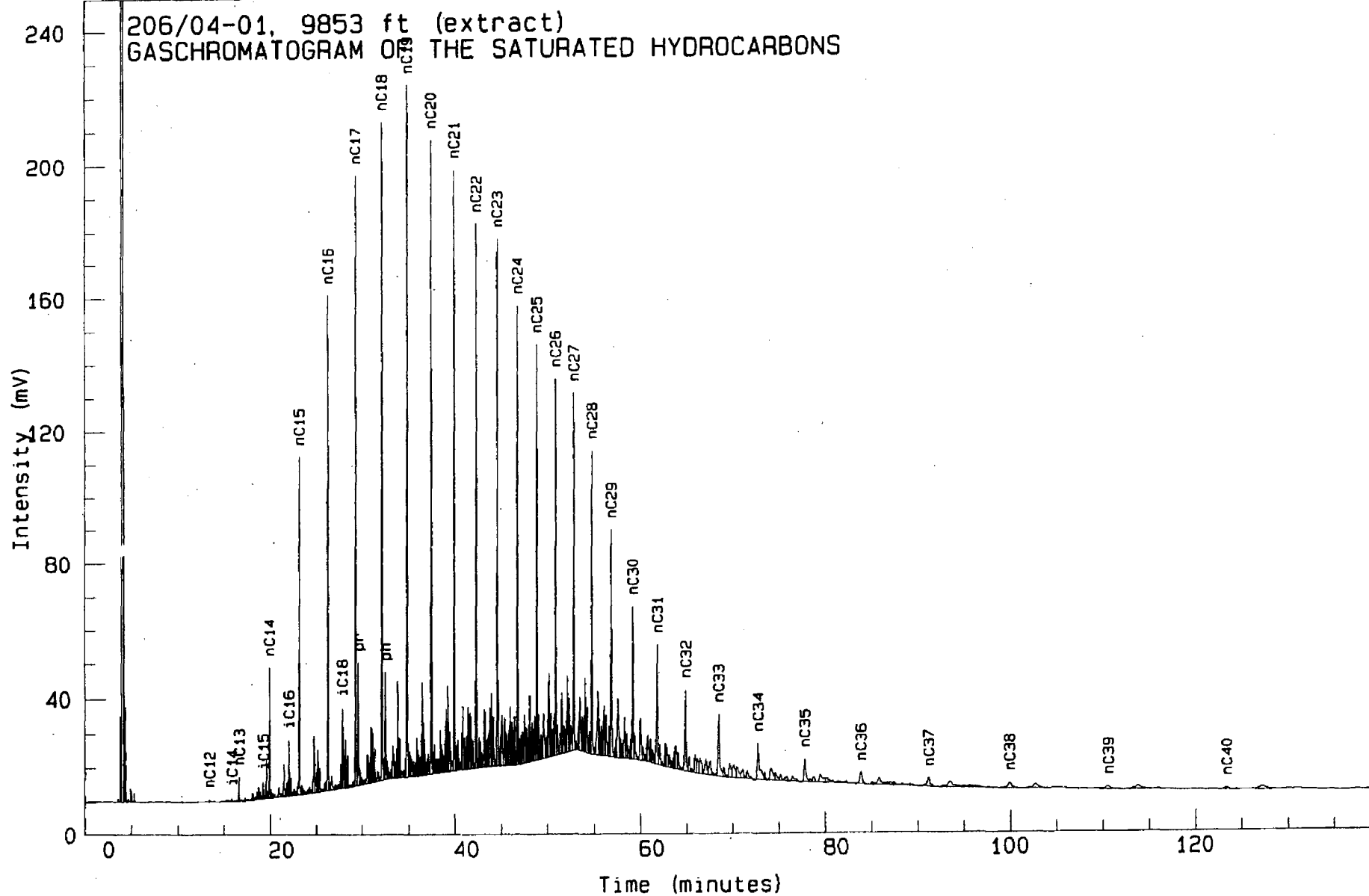
III) Methylated Triaromatic steroids
Intensities (arbitrary units)

1Me TA C21 ?	41
3Me TA C21	121
6Me TA C21 ?	34
4Me TA C21	113
3Me TA C22	71
4Me TA C22	96
3Me TA C27 20S	27
4Me TA C27 20S	24
2Me TA C28 20S	6
3Me TA (C27 + C28) 20S	65
4Me TA (C27 + C28) 20S ?	98
4Me TA (C27 + C28) 20S ?	n.d.
2Me TA C29 20S	10
TA dinosteroid D1	21
3Me TA C29 20S	52
TA dinosteroid D2	48
2Me TA C28 20R	55
4Me TA C29 20S	n.d.
3Me TA C28 20R	39
4Me TA C28 20R	53
TA dinosteroid D3	40
TA dinosteroid D4	46
2Me TA C29 20R	8
3Me TA C29 20R	45
TA dinosteroid D5	40
4Me TA C29 20R	31
TA dinosteroid D6	63

IV) Parameters

% MA C27	28.53
% MA C28	39.86
% MA C29	31.61
TA C28/(MA C29 + TA C28)	0.52
MA(I)/MA(I+II)	0.22
TA(I)/TA(I+II)	0.34
MA C27 V 20S/(MA C27 (I+V) 2	0.60
TA C26 20S/TA C28 20S	0.58
TA C27 20R/TA C28 20R	0.81
3Me TA C28 20R/3Me TA C29 20	0.86
3Me TA C29 20R/(3+4)Me TA C2	0.59
TA (3+4)Me C27 20S/(3+4)Me C	0.97
TA (3+4)Me C28 20R/(3+4)Me C	1.21

Gas chromatogram of the saturated hydrocarbons of the extract from
well 206/04-01 (9853 ft), United Kingdom



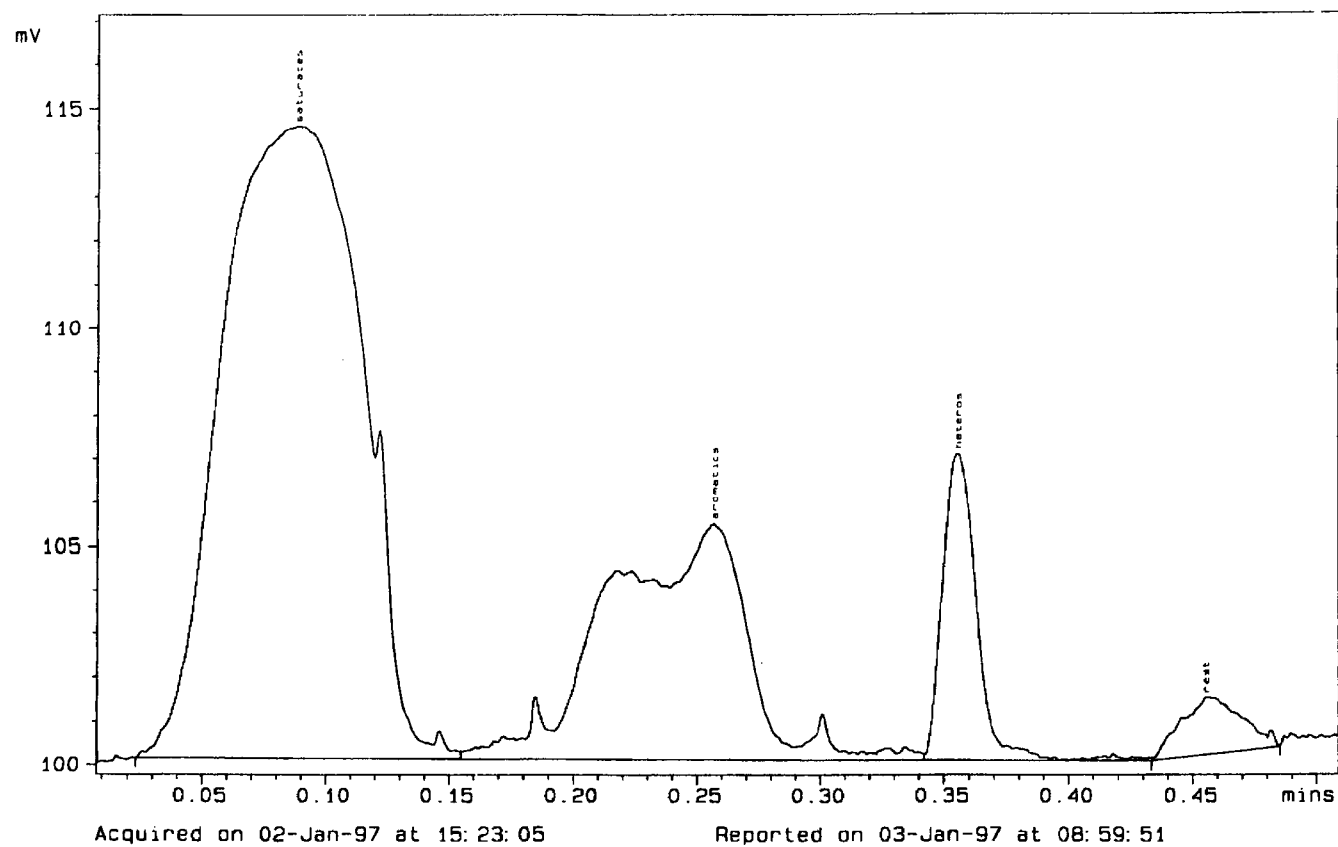
*Gross composition of the extract from
well 206/04-01 (9853 ft), United Kingdom*

ISOLAB Minichrom 1.66

Injection: [DEFPROJ] 4 02019701.2.1

Sample name: 185432/2

Lims ID :

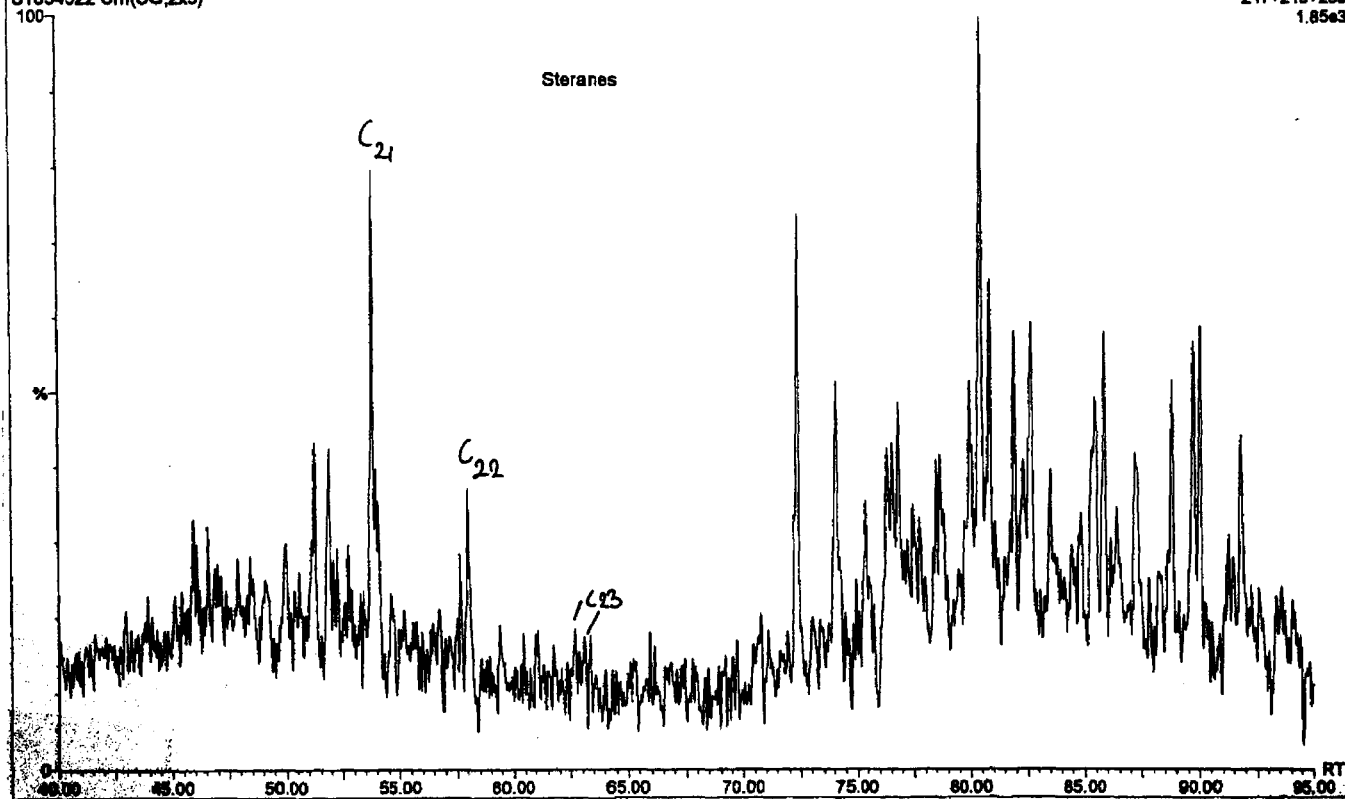


GC/MS fragmentograms of the steranes of the extract from well 206/04-01 (9853 ft), United Kingdom

SIEP-RTS EPT-HM
Instrument : TRIO-1000
S1854322 Sm(SG,2x3)

Sample ID : U.K. 206/04-01 9853 ft

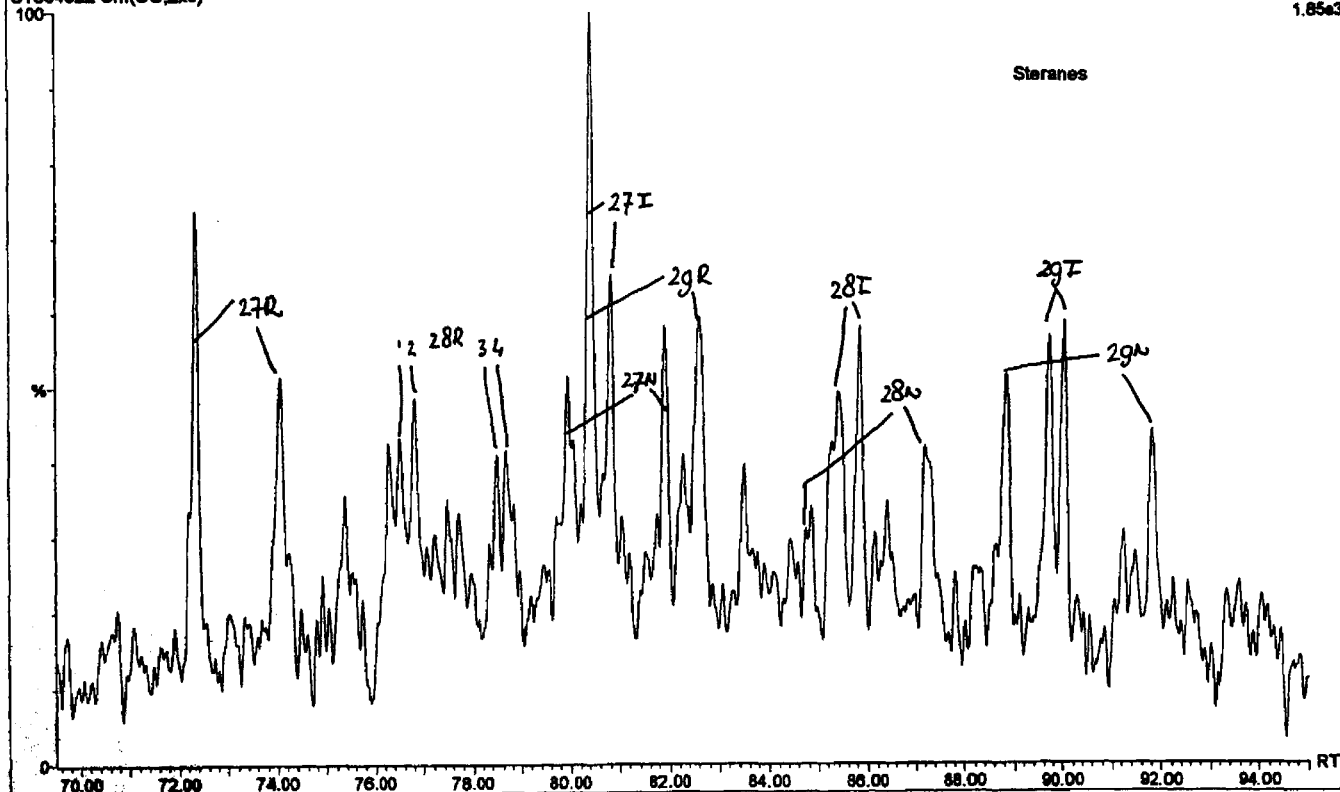
Acquired on 17-Jan-1997 at 04:29:20
Operator : Ron
217+218+259
1.85e3



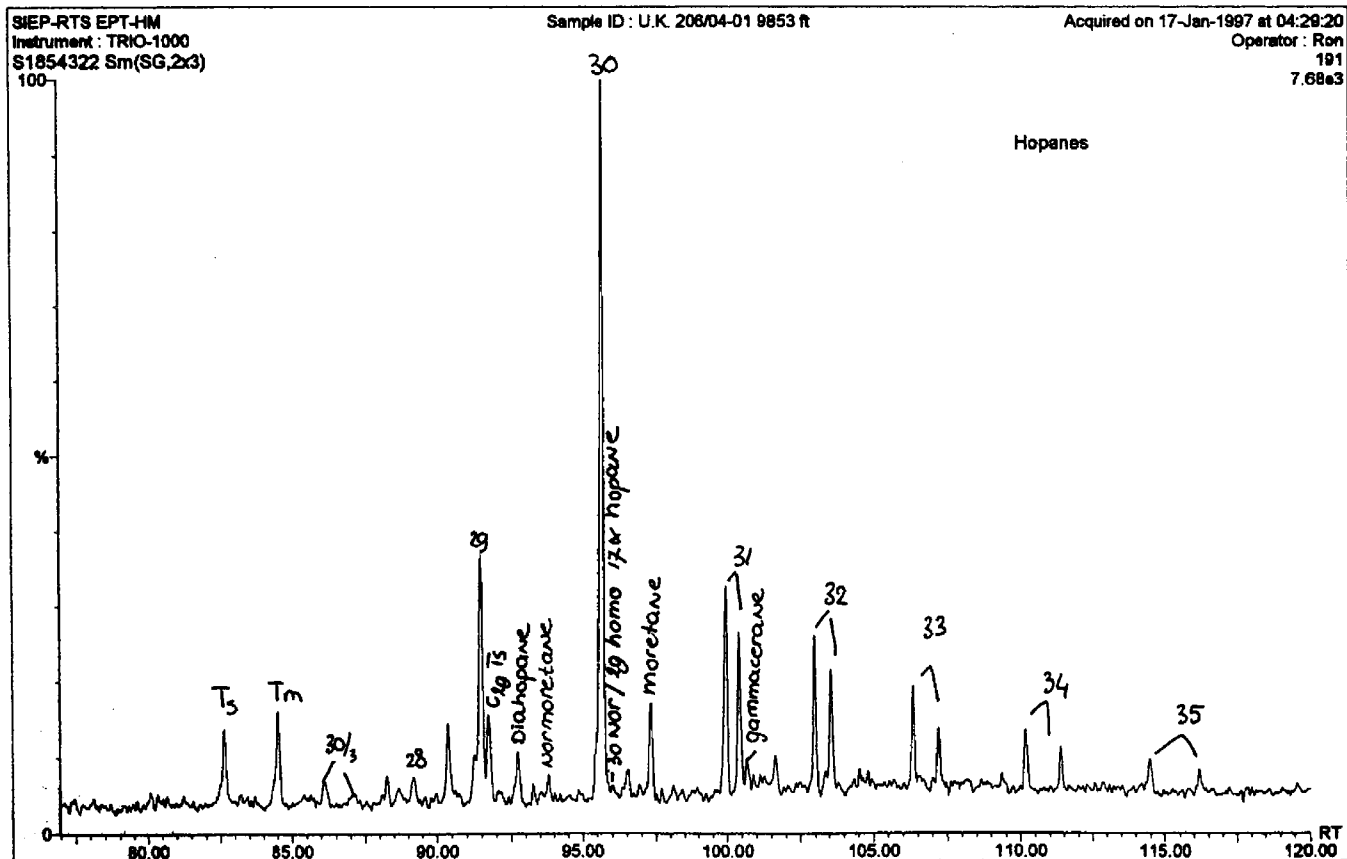
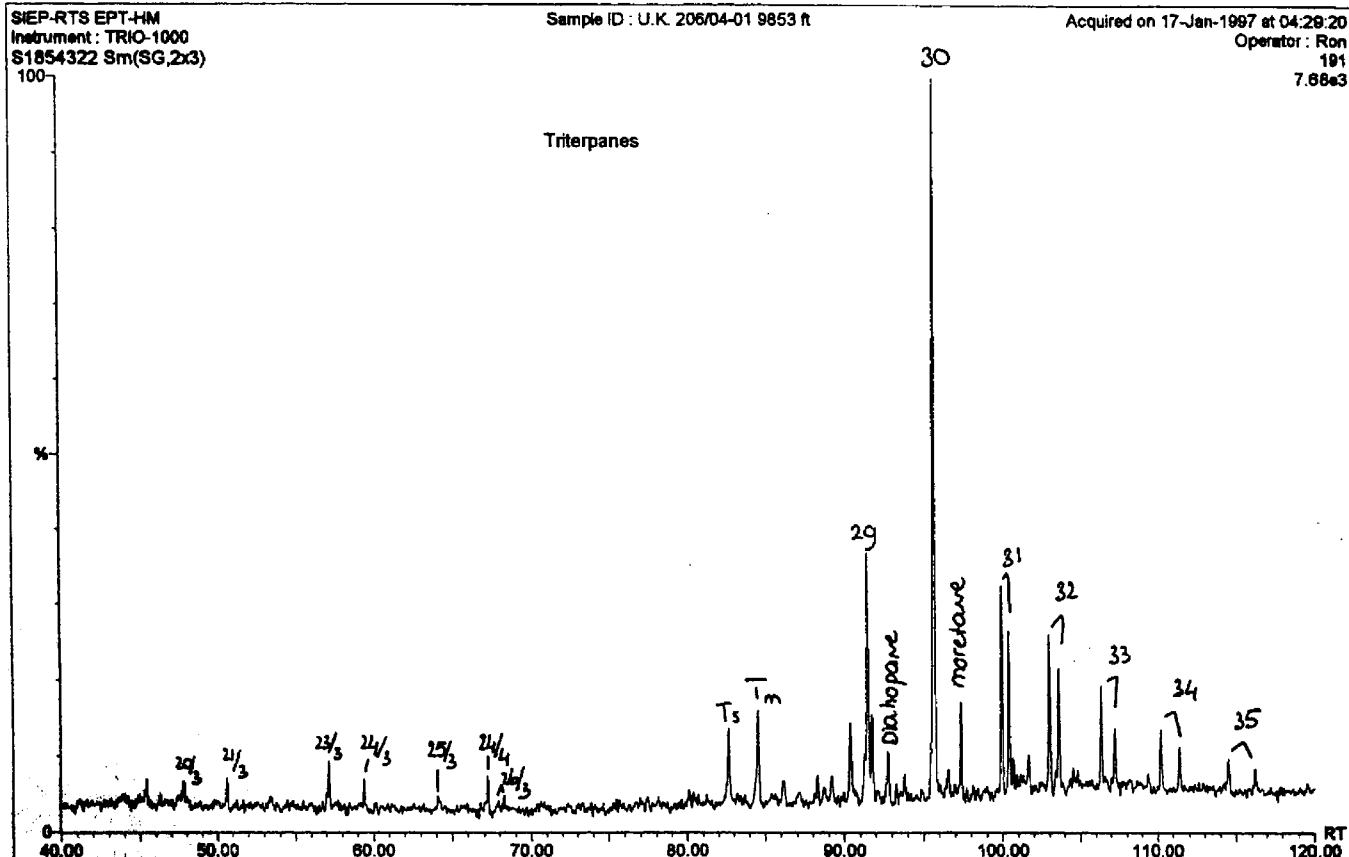
SIEP-RTS EPT-HM
Instrument : TRIO-1000
S1854322 Sm(SG,2x3)

Sample ID : U.K. 206/04-01 9853 ft

Acquired on 17-Jan-1997 at 04:29:20
Operator : Ron
217+218+259
1.85e3

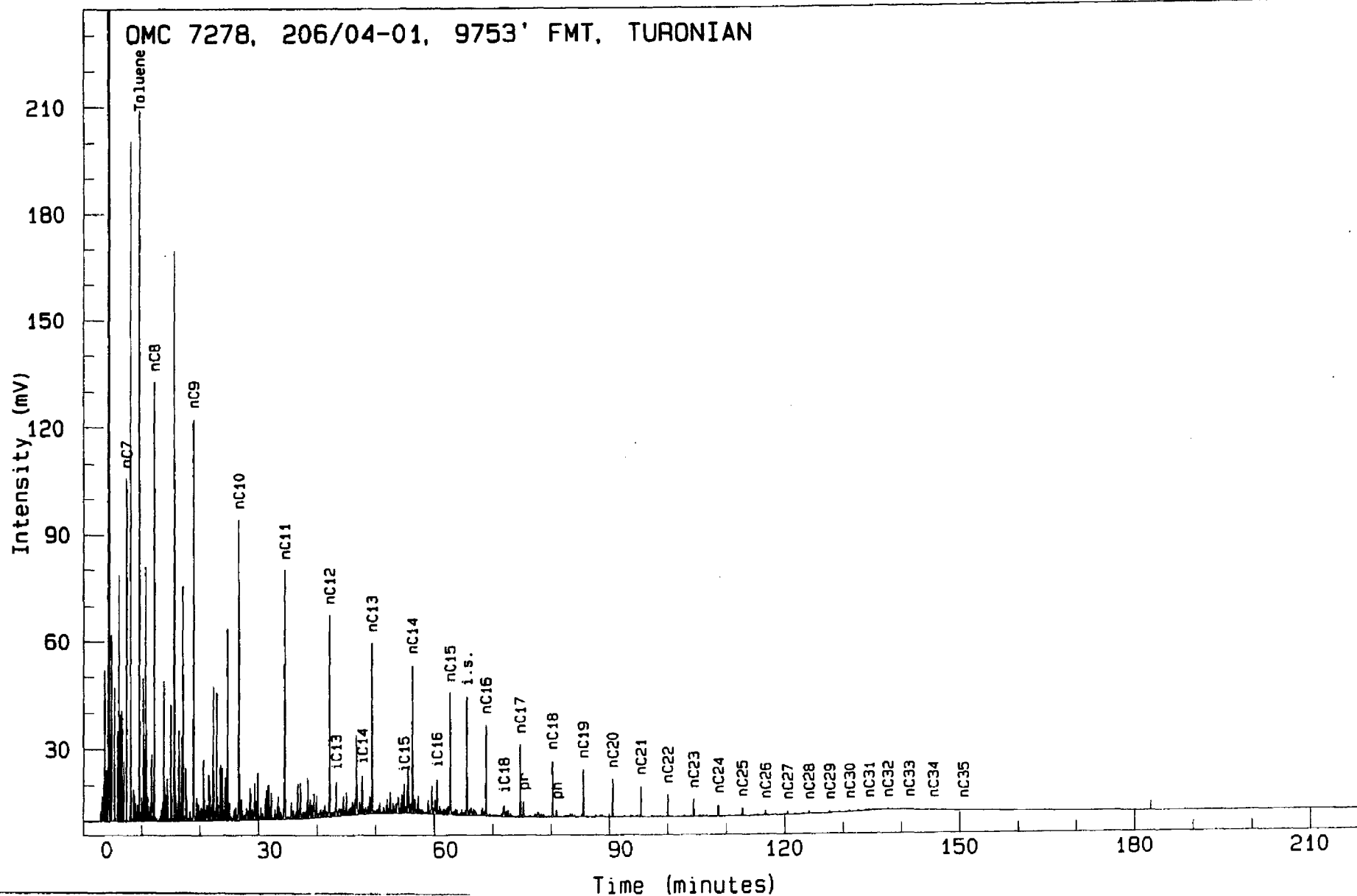


GC/MS fragmentograms of the triterpanes of the extract from well 206/04-01 (9853 ft), United Kingdom

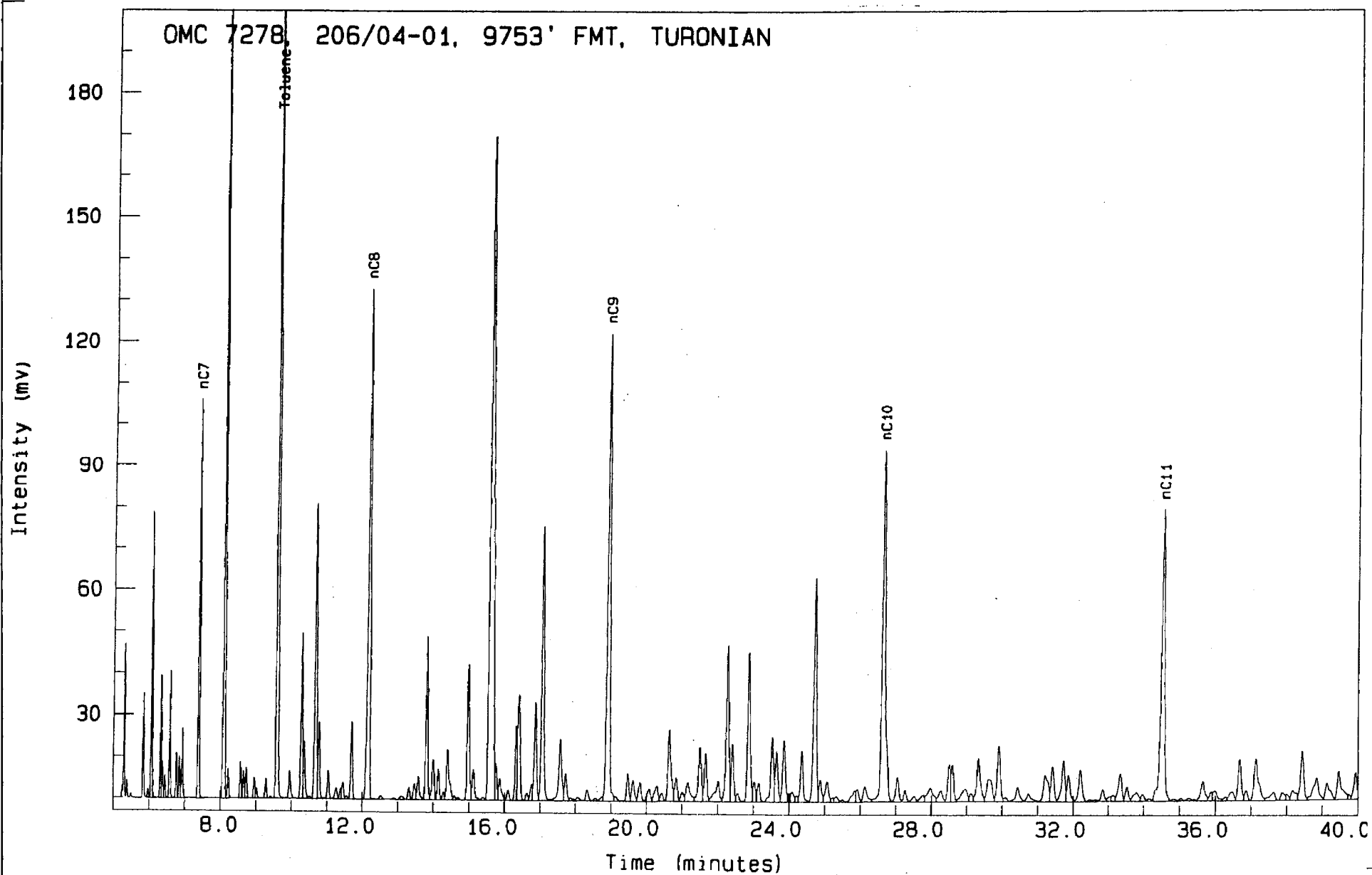


ANALYTICAL DATA
well 206/04-01 (9753 ft), United Kingdom

Gas chromatogram of the whole oil sample from
well 206/04-01 (9753 ft), United Kingdom



*Enlarged part of the whole oil gas chromatogram from
well 206/04-01 (9753 ft), United Kingdom*



Data for the enlarged part of the whole oil gas chromatogram from well 206/04-01 (9753 ft), United Kingdom

Injection Report

Acquired on 5-NOV-1996 at 14:09

Sample Name : OMC 7278, 206/04-01, 9753' FMT, TURONIAN
Sample Id : S185256/2
Sample Type : Sample Amount=0.00000
Bottle No : 3

PEAK INFORMATION				Peak RT mins	Hght uV	Area uVs	Peak name
Peak	RT mins	Hght uV	Area uVs	Peak name			
1	3.611	41979	100420				
2	3.928	14251	29735				
3	3.928	14129	72610				
4	4.432	987737	15194738				
5	5.979	2204	4520				
6	6.069	68571	134718				
7	6.328	29603	57275				
8	6.349	12206	22610				
9	6.445	5510	11660				
10	6.581	30655	65338				
11	6.768	10805	23600				
12	6.853	10223	23773				
13	6.941	16856	42717				
14	7.392	95949	228118	nC7			
15	8.101	190586	511913				
16	8.224	7028	19031				
17	8.573	8798	24184				
18	8.653	6409	18454				
19	8.731	7354	21002				
20	8.955	5047	14654				
21	9.019	2598	7678				
22	9.280	4771	14325				
23	9.416	564	1777				
24	9.595	199112	618702	Toluene			
25	9.952	6642	25372				
26	10.277	39848	131725				
27	10.349	14043	49379				
28	10.509	637	2631				
29	10.669	70999	258632				
30	10.773	18472	63104				
31	11.037	6682	23425				
32	11.264	2773	12275				
33	11.389	2689	8286				
34	11.448	4139	16075				
35	11.547	804	2926				
36	11.691	18650	66839				
37	12.163	122743	493282	nC8			
38	12.512	929	4322				
39	12.880	408	1571				
40	13.085	843	5392				
41	13.307	3049	11945				
42	13.459	3994	15749				
43	13.565	5611	25275				
44	13.803	39101	154104				
45	13.984	9815	42648				
46	14.133	7325	29854				
47	14.280	1903	7456				
48	14.392	11962	65272				
49	14.579	971	4195				
50	14.685	589	2420				
51	14.963	32465	138689				
52	15.120	7326	36021				
53	15.392	636	3595				
54	15.605	159556	1043923				
55	15.749	8869	33340				
56	15.859	5220	28002				
57	16.093	2477	11118				
58	16.320	17770	65377				
59	16.395	25461	120799				
60	16.624	1808	8347				
61	16.752	3932	16003				
62	16.859	23496	108646				
63	17.061	65699	298616				
64	17.565	14653	89093				
65	17.720	6468	31336				
66	17.859	659	3058				
67	17.931	448	1833				
68	18.061	843	5242				
69	18.328	2655	12718				
70	18.552	704	3451				
71	18.752	1031	5320				
72	18.920	112177	581809	nC9			
73	19.128	1126	6154				
74	19.467	6527	29658				
75	19.616	5065	28617				
76	19.808	4551	24593				
77	20.075	2979	19055				
78	20.283	3704	26764				
79	20.427	1991	11363				
80	20.640	17079	100138				
81	20.829	5605	31404				
82	21.005	2267	13905				
83	21.157	4597	38522				
84	21.499	12912	76671				
85	21.651	11369	58973				
86	22.005	4843	45445				
87	22.269	37448	198218				
88	22.405	13757	69218				
89	22.555	1993	10237				
90	22.693	181	547				
91	22.867	35511	184920				
92	23.024	4778	26135				
93	23.147	4572	24031				
94	23.523	15471	85932				
95	23.651	12007	65636				
96	23.859	14699	82193				
97	24.000	2003	9373				
98	24.088	2406	15260				
99	24.213	1472	7579				
100	24.357	12067	64604				
101	24.725	53536	290308				
102	24.872	5238	29411				
103	25.061	4875	33639				

*Data for the enlarged part of the whole oil gas chromatogram from
well 206/04-01 (9753 ft), United Kingdom*

Peak	RT mins	Hght uV	Area uVs	Peak name
104	25.211	936	4943	
105	25.325	1217	8911	
106	25.493	461	2408	
107	25.843	2766	21644	
108	25.915	3028	16471	
109	26.125	3775	29284	
110	26.659	84096	546697	nC10
111	27.045	5824	36279	
112	27.264	2741	14315	
113	27.523	1319	9777	
114	27.763	1584	12146	
115	27.976	3354	39930	
116	28.275	2599	21412	
117	28.509	8875	47836	
118	28.597	8830	46636	
119	28.960	3065	38052	
120	29.131	2038	11364	
121	29.331	10308	77189	
122	29.619	5279	58391	
123	29.904	13185	84995	
124	30.096	992	6098	
125	30.435	3497	26481	
126	30.744	1867	16339	
127	31.208	6251	58317	
128	31.421	8402	52628	
129	31.728	9817	63520	
130	31.869	6209	38716	
131	32.200	7436	50408	
132	32.469	436	2587	
133	32.611	441	2932	
134	32.840	2793	18287	
135	33.024	1194	7440	
136	33.128	1486	9040	
137	33.333	6470	48265	
138	33.517	3397	20677	
139	33.784	2076	22609	
140	33.960	1571	11003	
141	34.144	621	3821	
142	34.533	69591	456806	nC11
143	34.821	548	3889	
144	35.027	606	3793	
145	35.253	606	5367	
146	35.384	349	1934	
147	35.643	4707	38951	
148	35.893	2194	11849	
149	35.981	2435	20958	
150	36.277	856	5594	
151	36.461	2072	20380	
152	36.675	9905	62534	
153	36.856	2374	14180	
154	37.125	10026	87065	
155	37.621	1968	21171	
156	37.872	1869	14548	
157	37.997	1456	8325	
158	38.163	2430	23560	
159	38.424	11583	75319	
160	38.835	5360	58342	
161	39.128	4094	37064	

51852562

GC/MS chromatogram of the aromatic fraction from well 206/04-01 (9753 ft), United Kingdom

SIEP-97-5300

SIEP-RTS EPT-HM
Instrument : MD-800
A1852562 Sm(SG,2x3)

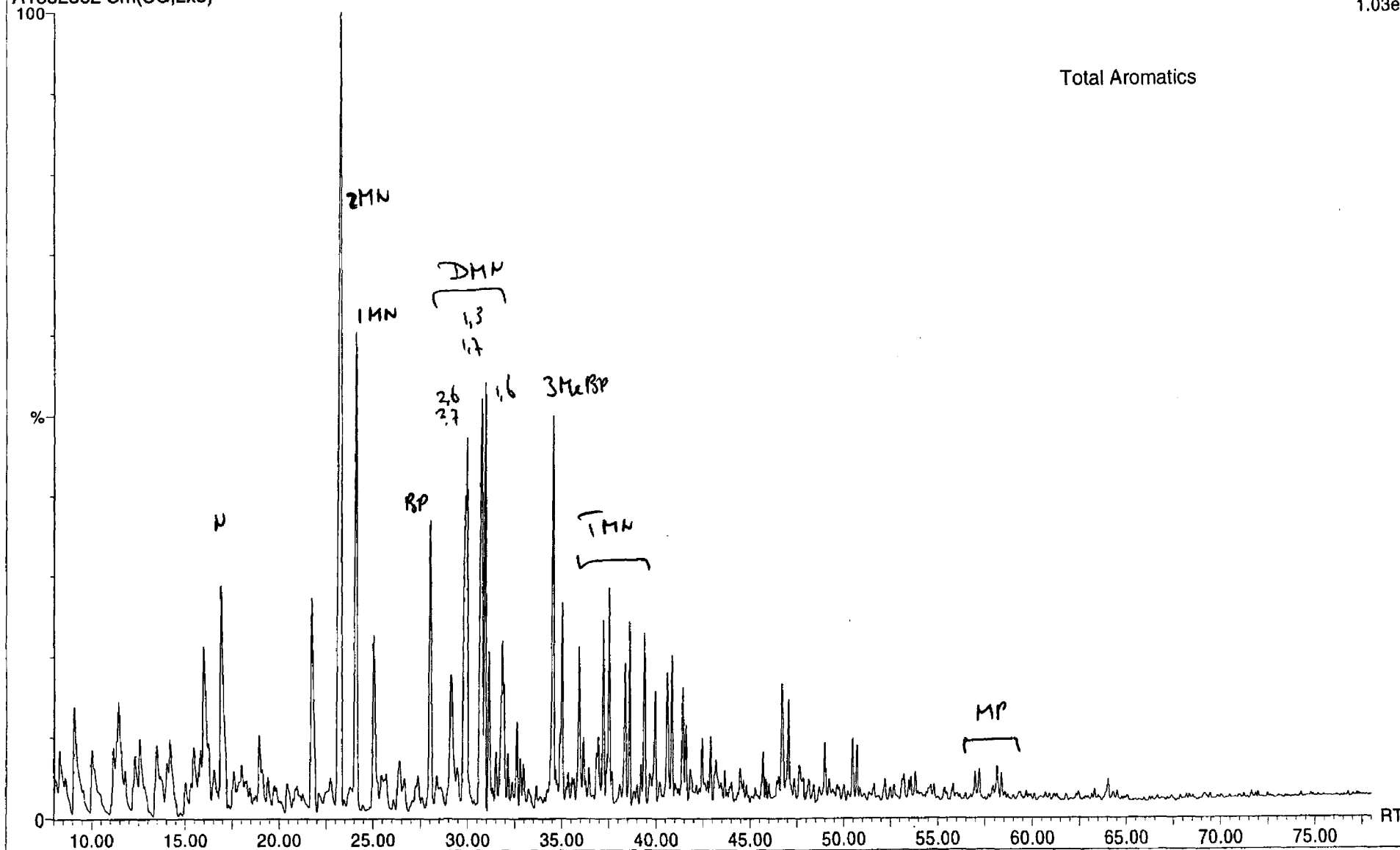
Sample ID : U.K. 206/04-01 9753 ft omc 7278

Acquired on 03-Jan-1997 at 02:29:37

Operator : Ron

TIC

1.03e7



Confidential

GC/MS data of the aromatic fraction from well 206/04-01 (9753 ft), United Kingdom

Report of sample: U.K. 206/04-01 9753 ft omc 7278

Acquired at : 03-Jan-1997

Standard used for calculations: PDP
Discrimination factor : 0.56

I) NAPHTHALENES

a) Concentrations (ppm)

2-MN
1-MN
2,6+2,7-DMN
1,6-DMN
1,5-DMN
1,3,5+1,4,6-TMN
2,3,6-TMN
1,2,5-TMN
C4-NAPH
THN
CAD

Total Naphthalenes *

b) Parameters

2-MN/1-MN (MNR) 2.03
2,6+2,7-DMN/1,5-DMN (DNR-1) 5.35
2,3,6-TMN/1,3,5+1,4,6-TMN (TNR-1) 1.17
2,3,6-TMN/1,2,5-TMN (TNR-2) 2.99
2,3,6-TMN/THN 6.96
2,3,6-TMN/Cadelene n.d.

II) PHENANTHRENES

a) Concentrations (ppm)

P
3-MP
2-MP
9-MP
1-MP
Total Phenantrenes

b) Parameters

2-MP/1-MP
1.5*(2+3-MP/(P+1+9-MP)) (MPI-1)
3*(2-MP/(P+1+9-MP)) (MPI-2)
2+3-MP/1+9-MP
2+3-MP/1+9+2+3-MP

III) DIBENZOTHIOPHENES

a) Concentrations (ppm)

DBT
4-MDBT
2+3-MDBT
1-MDBT
Total Dibenzothiophenes

b) Parameters

2386 4-MDBT/2+3-MDBT 1.79
1177 4-MDBT/1-MDBT 2.56
1254 2+3-MDBT/1-MDBT 1.43
647 4-MDBT/DBT 1.00
234 2+3-MDBT/DBT 0.56
186 1-MDBT/DBT 0.39

IV) BIPHENYLS

a) Concentrations (ppm)

31 BP 805
n.d. 2-MBP 34
6237 3-MBP 651
4-MBP 258
Total Biphenyls 1749

b) Parameters

1.17 3-MBP/BP 0.81
2.99 3-MBP/4-MBP 2.53
6.96 3-MBP/2-MBP 18.89
n.d.

V) DIBENZOFURANS

a) Concentrations (ppm)

DBF 74
118 4-MDBF 63
44 2+3-MDBF 49
43 1-MDBF 32
44 Total Dibenzofurans 218
30

b) Parameters

4-MDBF/2+3-MDBF 1.28
4-MDBF/1-MDBF 1.94
1.44 2+3-MDBF/1-MDBF 1.52
0.68 4-MDBF/DBF 0.86
0.68 2+3-MDBF/DBF 0.67
1.18 1-MDBF/DBF 0.44
0.54

VI) OVERALL RATIOS

Biphenyls/NAPH* 0.92
Dibenzothiophenes/NAP 0.03
19 Dibenzofurans/NAPH* 0.12

MN = methylnaphthalene
DMN = dimethylnaphthalene
TMN = trimethylnaphthalene
THN = tetrahyronaphthalene
DBF = methyldibenzofuran
MDBF = methyldibenzofuran

P = phenanthrene
MP = methylphenanthrene
DBT = dibenzothiophene
MDBT = methyldibenzothiophene
BP = biphenyl
MBP = methylbiphenyl

NAPH* = 2,6+2,7-DMN + 1,5-DMN + 1,4,6+1,3,5-TMN + 2,3,6-TMN

GC/MS data of the aromatic fraction from well 206/04-01 (9753 ft), United Kingdom

VII) Misc. NAPHTHALENES

a) Concentrations (ppm)

2,6-DMN	754	4,5-DMP	2
2,7-DMN	500	2,6+3,6-DMP	9
1,3+1,7-DMN	1021	3,5-DMP	10
1,6-DMN	647	2,7-DMP	6
1,4-DMN	n.d.	3,9-DMP	35
2,3-DMN	176	1,6+2,5+2,9-DMP	16
1,5-DMN	234	1,7-DMP	13
1,2-DMN	100	1,9+4,9-DMP	11
1,4+2,3-DMN	176	1,5-DMP	n.d.
		1,8-DMP	2
		1,2-DMP	2
		9,10-DMP	n.d.
1,3,7-TMN	236	1,2,6-TMP	1
1,3,6-TMN	299	1,2,5-TMP	2
1,3,5+1,4,6-TMN	186	1,2,9-TMP	1
2,3,6-TMN	219	1,2,7-TMP	n.d.
1,2,7-TMN	39	1,2,8-TMP	2
1,6,7-TMN	204		
1,2,6-TMN	8		
1,2,4-TMN	15		
1,2,5-TMN	73		
1,3,5,7-TeMN	41		
1,3,6,7-TeMN	57		
1,2,4,7-TeMN	29		
1,2,5,7-TeMN	16		
2,3,6,7-TeMN	16		
1,2,6,7-TeMN	8		
1,2,5,6-TeMN (C4-NAPH)	29		

b) Parameters

1,2,5-TMN/1,3,6-TMN 0.24

1,2,7-TMN/1,3,7-TMN 0.17

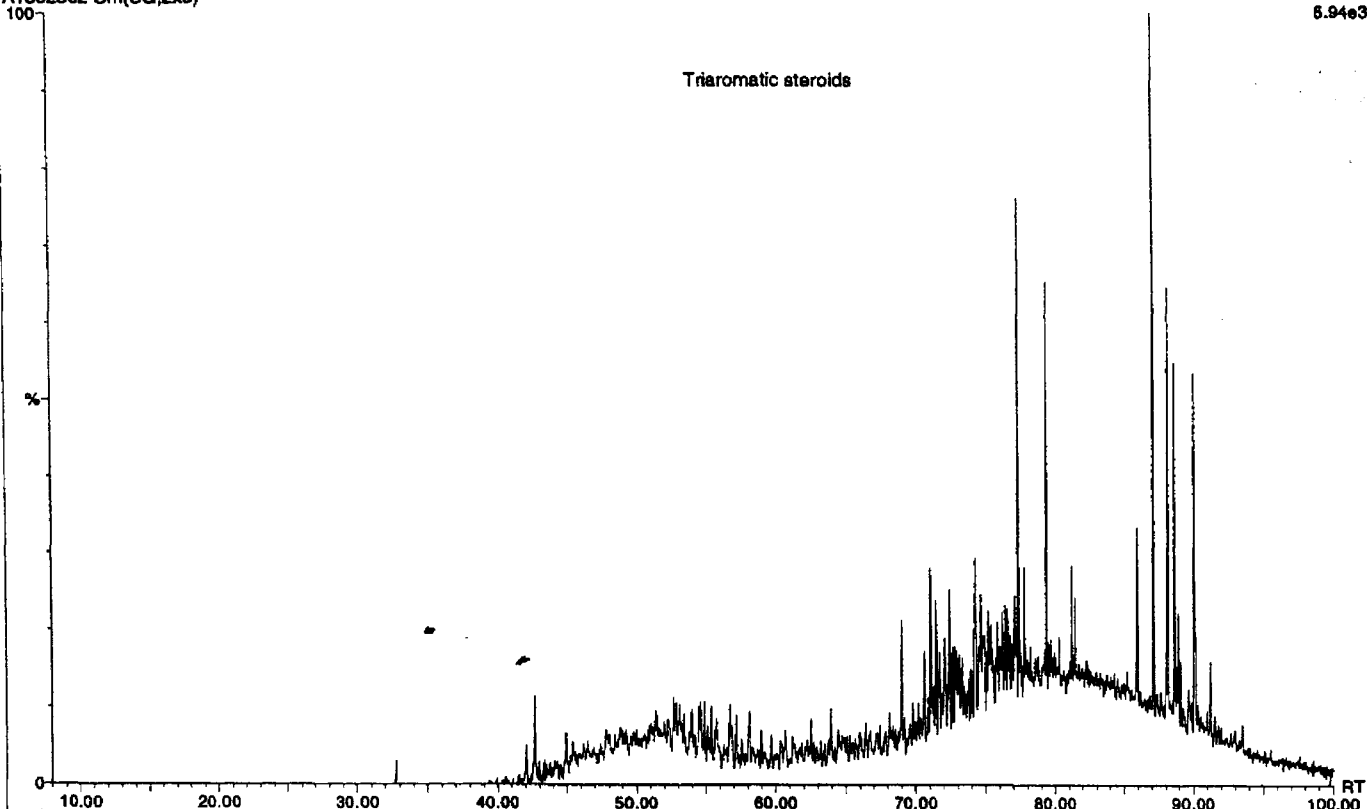
The assignment of some of these peaks is tentative

GC/MS fragmentograms of the aromatic steroids from well 206/04-01 (9753 ft), United Kingdom

SIEP-RTS EPT-HM
Instrument : MD-800
A1852562 Sm(SG,2x3)

Sample ID : U.K. 206/04-01 9753 ft omc 7278

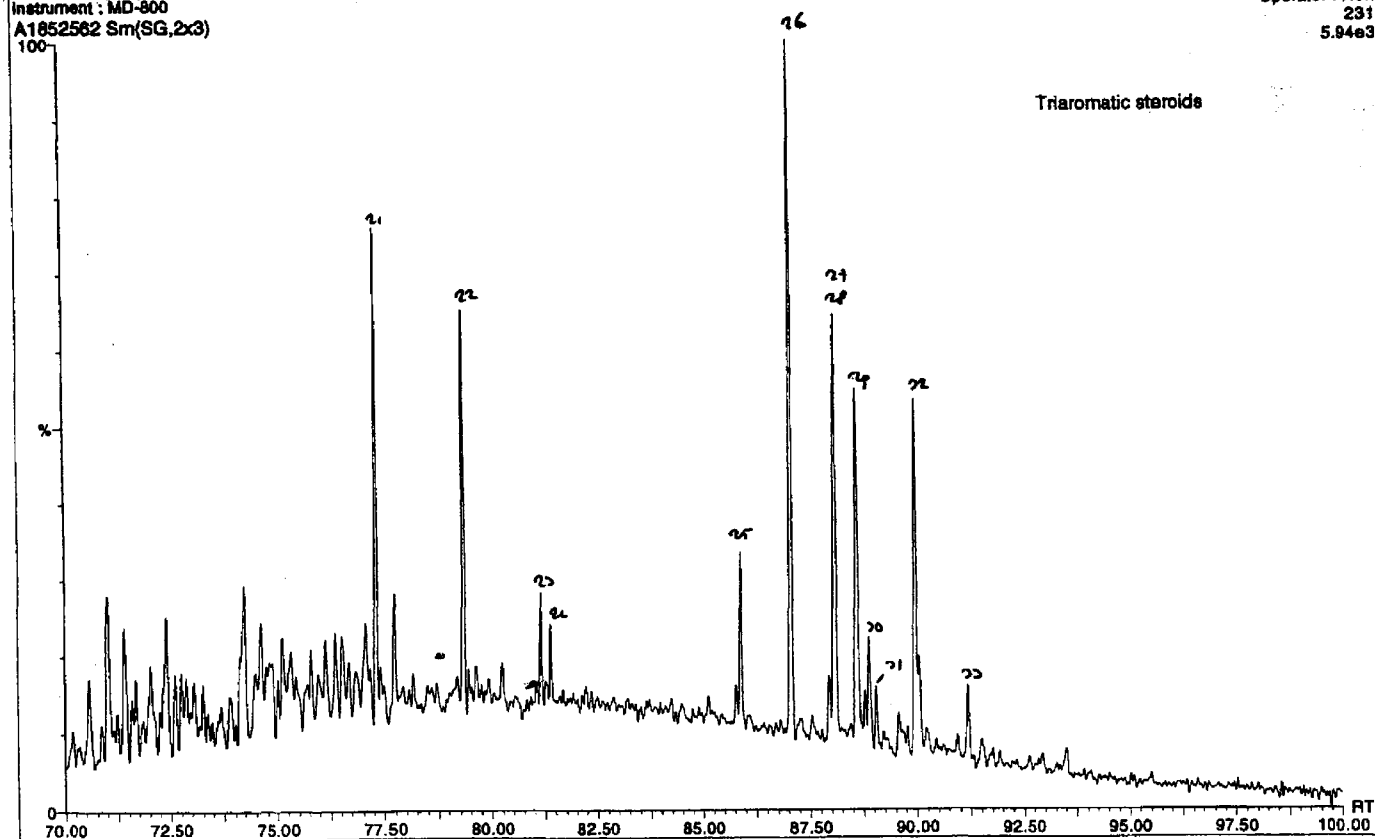
Acquired on 03-Jan-1997 at 02:28:37
Operator : Ron
231
5.94e3



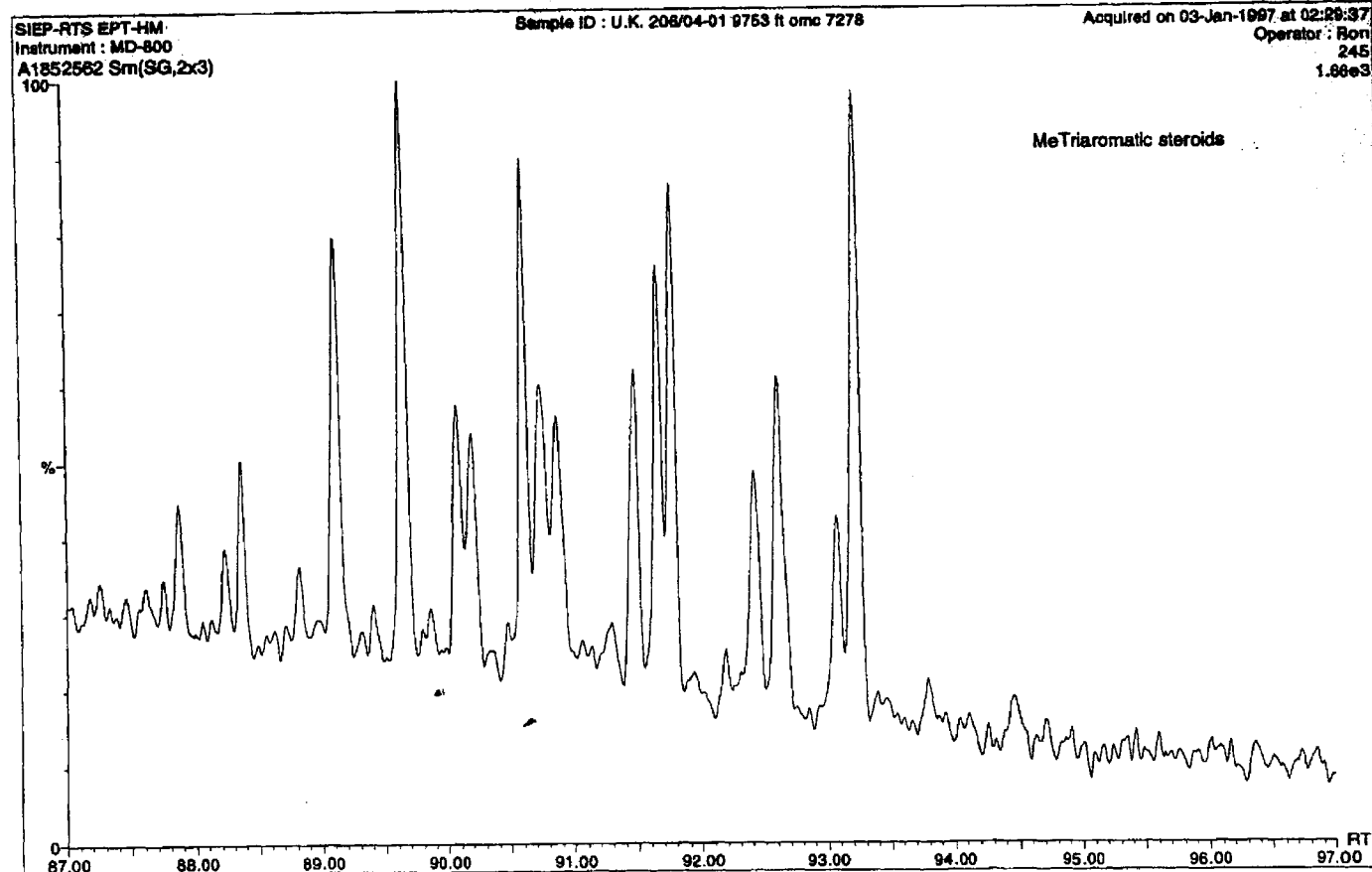
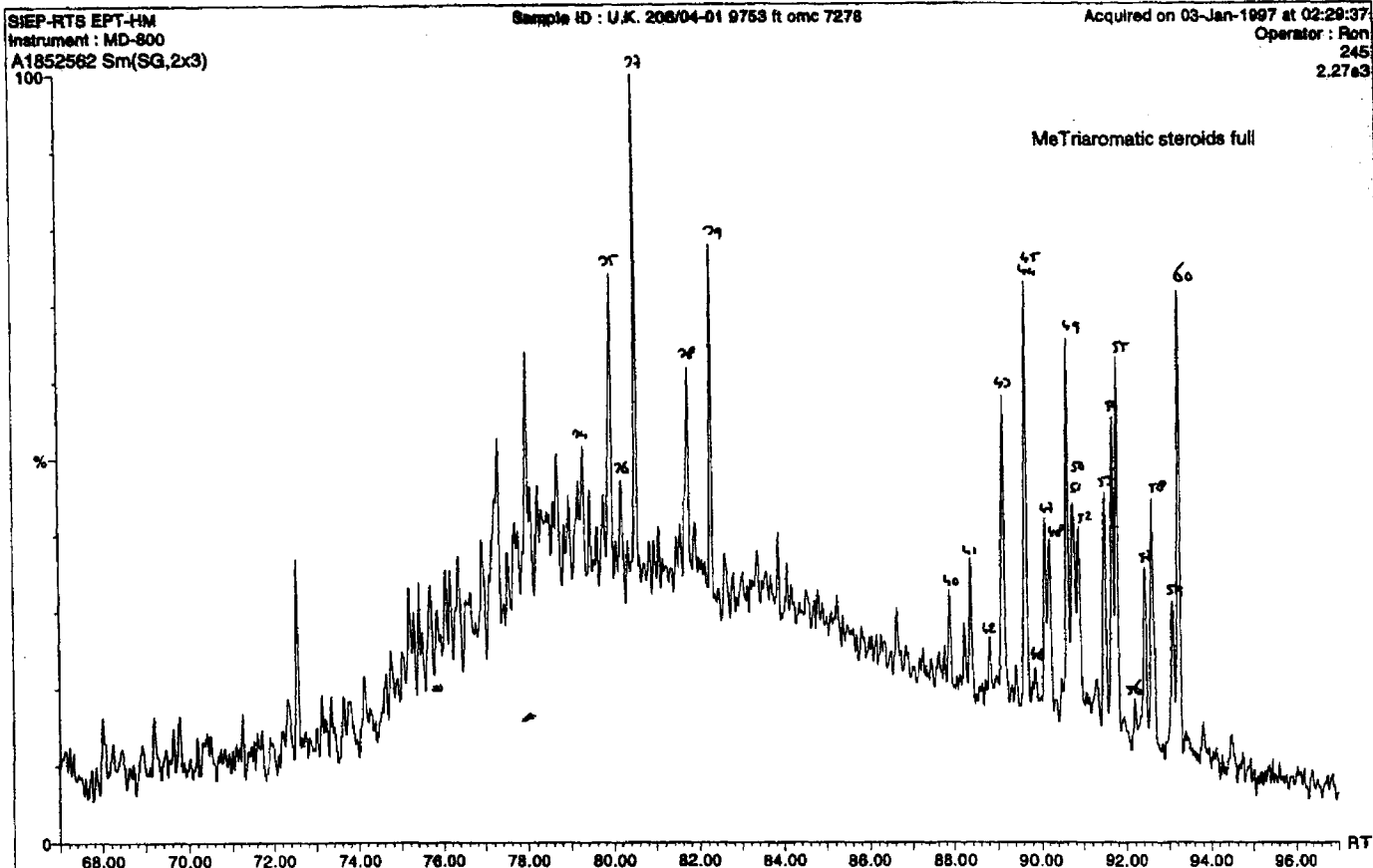
SIEP-RTS EPT-HM
Instrument : MD-800
A1852562 Sm(SG,2x3)

Sample ID : U.K. 206/04-01 9753 ft omc 7278

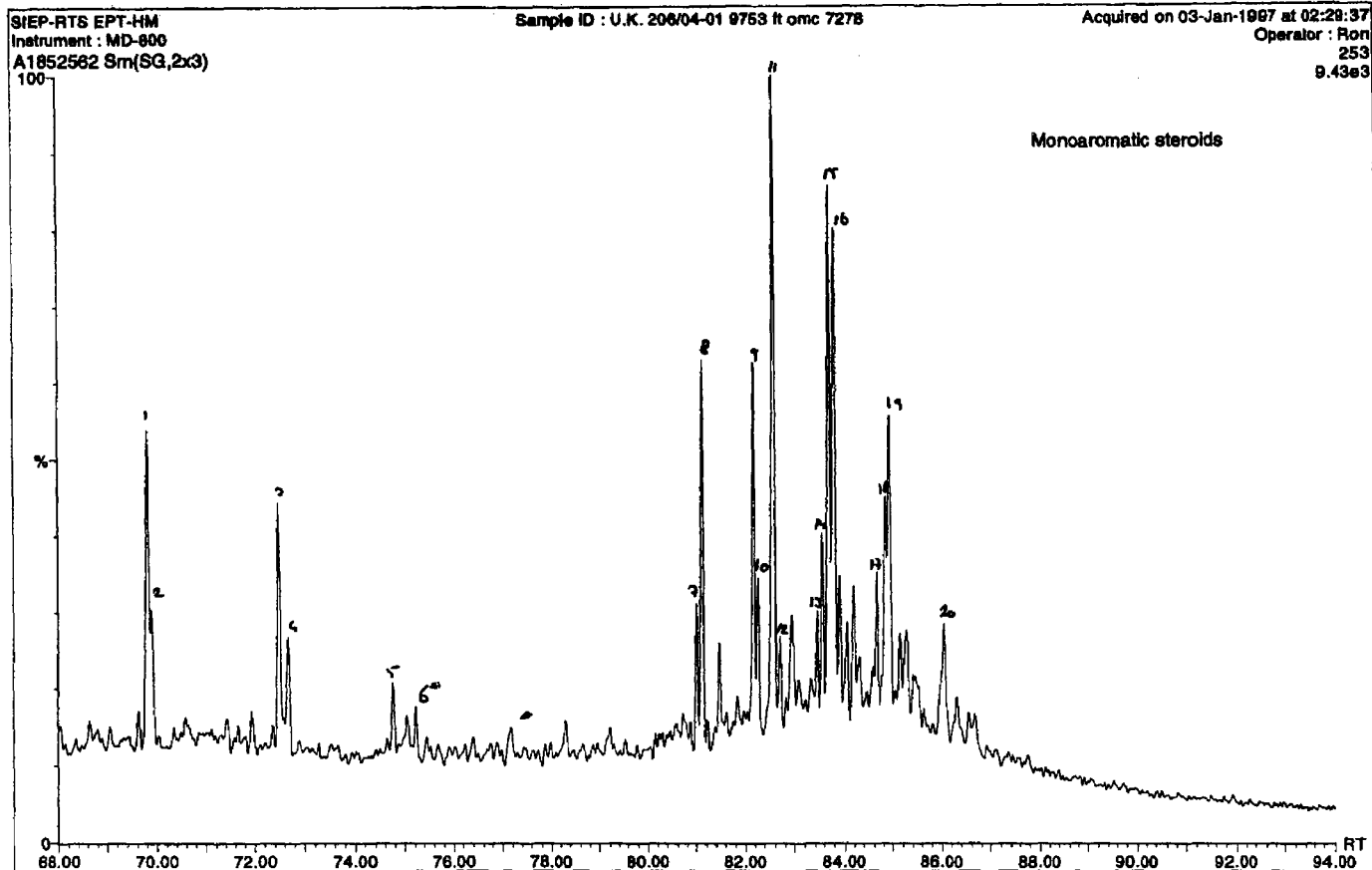
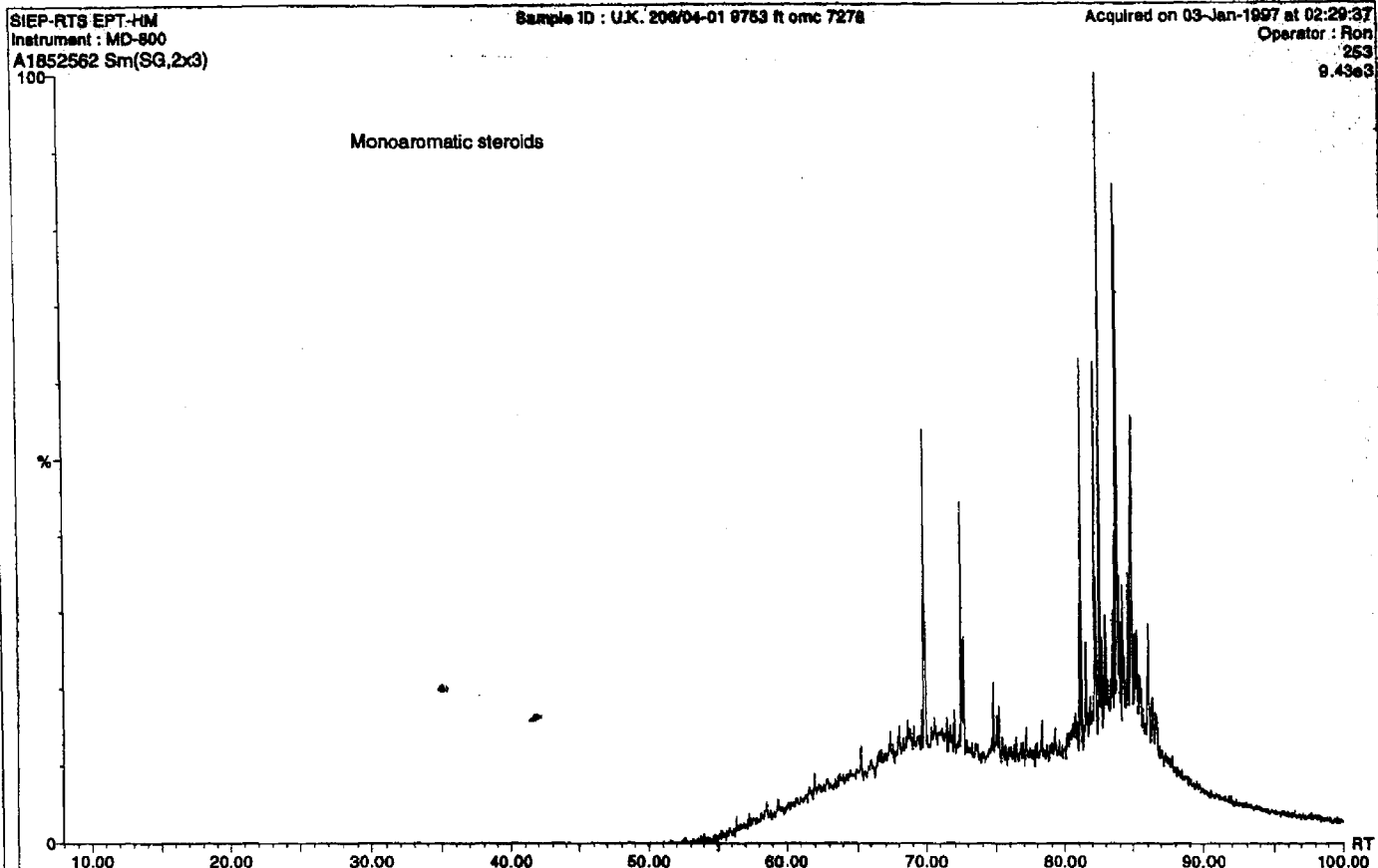
Acquired on 03-Jan-1997 at 02:28:37
Operator : Ron
231
5.94e3



*GC/MS fragmentograms of the aromatic steroids from
well 206/04-01 (9753 ft), United Kingdom*



GC/MS fragmentograms of the aromatic steroids from well 206/04-01 (9753 ft), United Kingdom



GC/MS data of the aromatic steroids from well 206/04-01 (9753 ft), United Kingdom

Report of sample: W.K. 206/04-01 9753 ft ome 7278

Acquired at : 05-Jan-1997

Standard used for calculations: First
Discrimination factor : 1.20

I) Monoaromatic steroids Intensities (arbitrary units)

MA C21 a ?	133
MA C21 b ?	50
MA C22 a ?	100
MA C22 b ??	48
MA C23 a ?	24
MA C23 b ?	17
MA C27 I 20S	43
MA C27 V 20S	117
MA C27 I 20R + MA C27 V 20R	118
MA C27 II 20S	47
MA C28 I 20S	236
MA C28 V 20S	30
MA C27 II 20R	37
MA C28 II 20S	64
MA C28 I 20R + MA C28 V 20R	172
MA C29 I 20S + MA C29 V 20S	187
MA C29 II 20S	51
MA C28 II 20R	101
MA C29 I 20R + MA C29 V 20R	130
MA C29 II 20R	49

II) Triaromatic steroids Intensities (arbitrary units)

TA C20	93
TA C21	79
TA C22 20S	19
TA C22 20R	14
TA C26 20S	32
TA C26 20R + TA C27 20S	147
TA C28 20S	112
TA C28 20S	n.d.
TA C27 20R	88
TA C29 20S	26
TA C29 20S	26
TA C28 20R	11
TA C29 20R	84
TA C29 20R	18

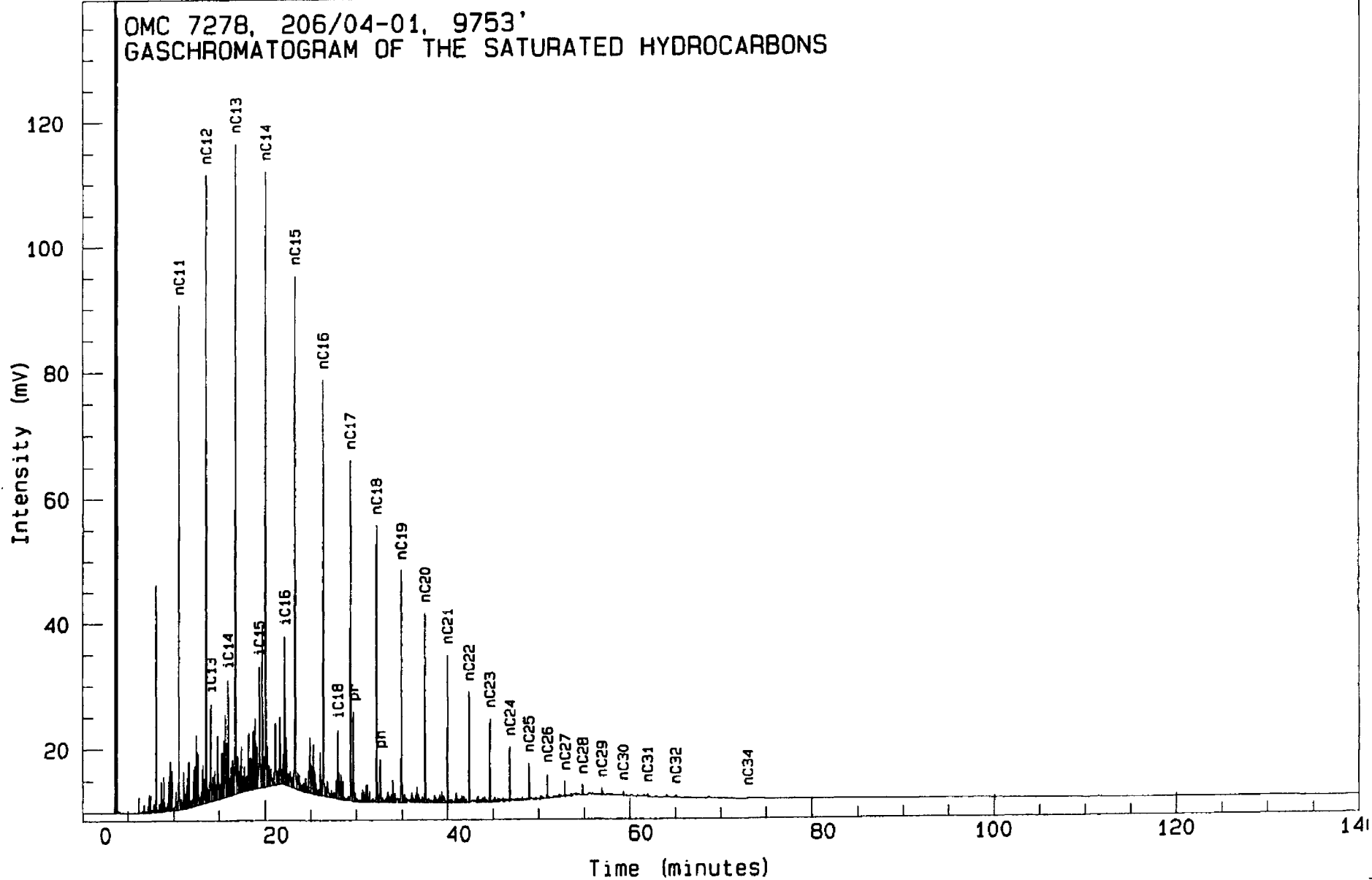
III) Methylated Triaromatic steroids Intensities (arbitrary units)

1Me TA C21 ?	14
3Me TA C21	34
6Me TA C21 ?	10
4Me TA C21	36
3Me TA C22	17
4Me TA C22	27
3Me TA C27 20S	10
4Me TA C27 20S	11
2Me TA C28 20S	6
3Me TA (C27 + C28) 20S	32
4Me TA (C27 + C28) 20S ?	42
4Me TA (C27 + C28) 20S ?	n.d.
2Me TA C29 20S	3
TA dinosteroid D1	18
3Me TA C29 20S	21
TA dinosteroid D2	34
2Me TA C28 20R	29
4Me TA C29 20S	n.d.
3Me TA C28 20R	25
4Me TA C28 20R	27
TA dinosteroid D3	30
TA dinosteroid D4	36
2Me TA C29 20R	3
3Me TA C29 20R	21
TA dinosteroid D5	31
4Me TA C29 20R	16
TA dinosteroid D6	48

IV) Parameters

% MA C27	26.70
% MA C28	42.55
% MA C29	30.75
TA C28/(MA C29 + TA C28)	0.32
MA(I)/MA(I+II)	0.20
TA(I)/TA(I+II)	0.25
MA C27 V 20S/(MA C27 (I+V) 2	0.73
TA C26 20S/TA C28 20S	0.28
TA C27 20R/TA C28 20R	1.06
3Me TA C28 20R/3Me TA C29 20	1.18
3Me TA C29 20R/(3+4)Me TA C2	0.56
TA (3+4)Me C27 20S/(3+4)Me C	1.03
TA (3+4)Me C28 20R/(3+4)Me C	1.37

Gas chromatogram of the saturated hydrocarbons of the oil sample from
well 206/04-01 (9753 ft), United Kingdom

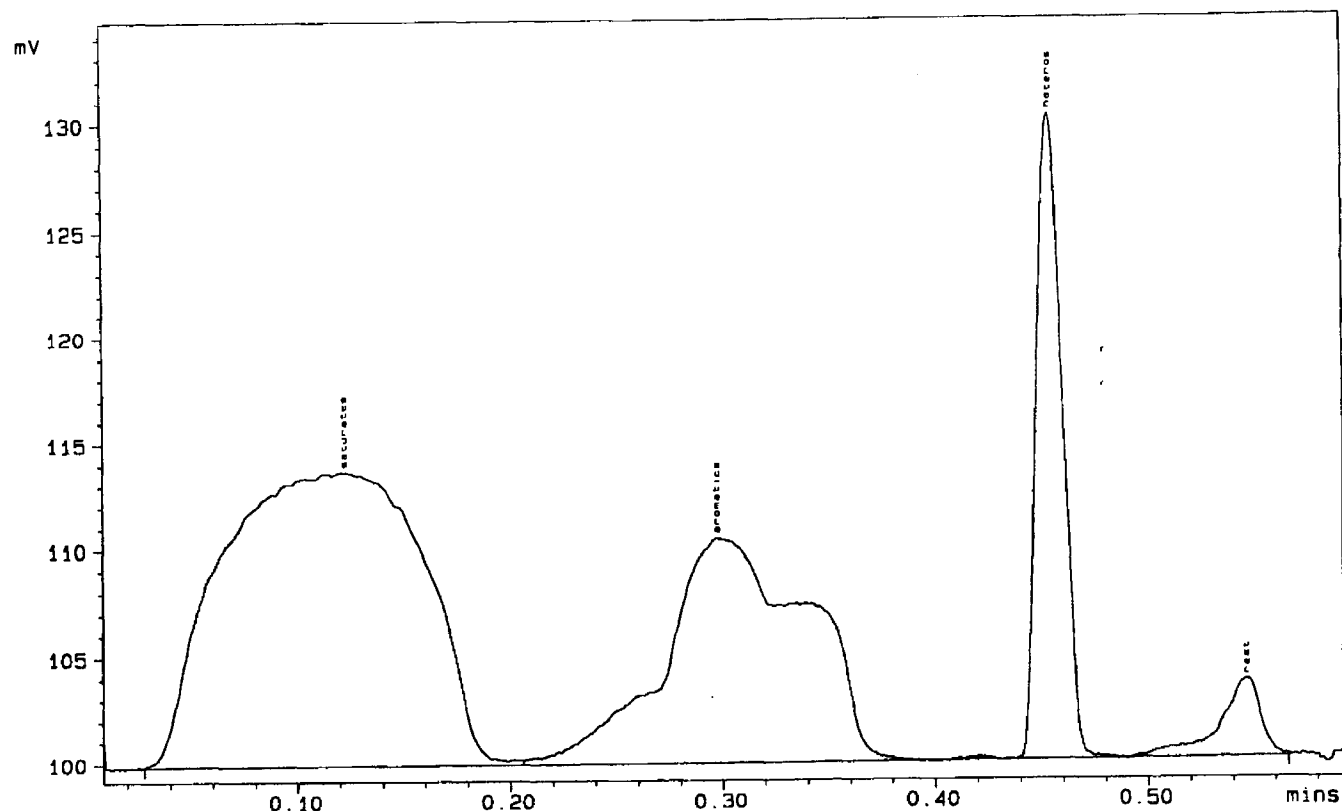


*Gross composition of the oil sample from
well 206/04-01 (9753 ft), United Kingdom*

ISOLAB Minichrom 1.66

Injection: [DEFPROJ] 4 18119601.5, 1
Sample name: 7278

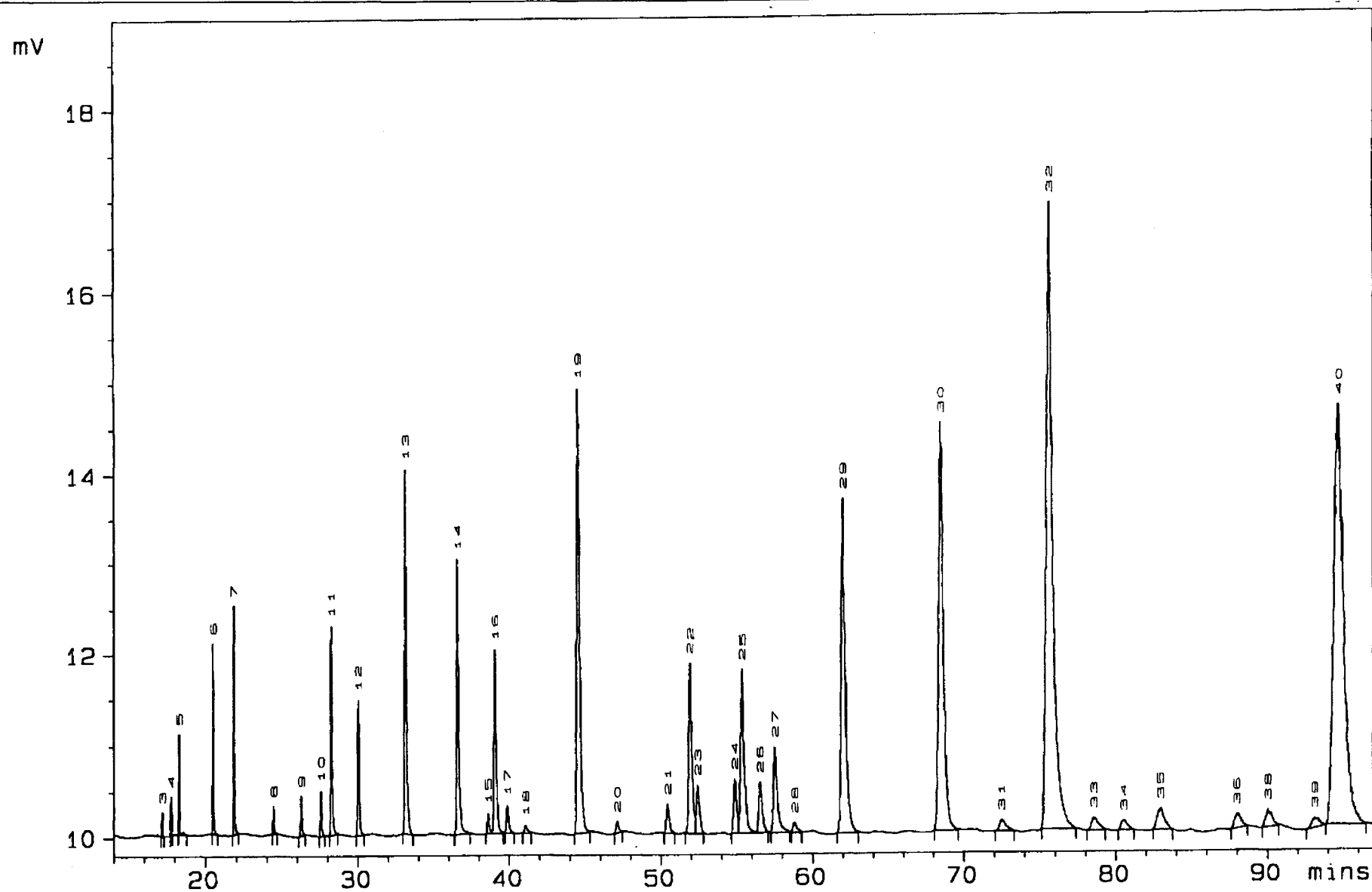
Lims ID :



Acquired on 18-Nov-96 at 16:09:43

Reported on 19-Nov-96 at 09:52:30

Gas chromatogram of the light fraction (< 120 C) of the oil sample from
well 206/04-01 (9753 ft), United Kingdom



GC data of the light fraction (< 120 C) of the oil sample from well 206/04-01 (9753 ft), United Kingdom

GAS CHROMATOGRAPHICS ANALYSIS OF THE FRACTION BOILING BELOW 120 DEGREES CENTIGRADE

Sample: 185256/2

COMPONENT No.	Name	RET.TIME (min)	HEIGHT (uV)	AREA (uVs)
1	methane	0.00	0	0
2	ethane	0.00	0	0
3	propane	17.18	266	767
4	i-butane	17.75	428	1180
5	n-butane	18.29	1094	3512
6	i-pentane	20.51	2092	7597
7	n-pentane	21.87	2512	10150
8	2,2-dimethylbutane	24.44	309	1520
9	cyclopentane	26.28	437	2546
10	2,3-dimethylbutane	27.58	496	2907
11	2-methylpentane	28.26	2293	14226
12	3-methylpentane	30.04	1475	9839
13	n-hexane	33.15	4019	32348
14	methylcyclopentane	36.59	3024	27871
15	2,2-dimethylpentane	38.61	220	1892
16	benzene	39.07	2011	21304
17	2,4-dimethylpentane	39.89	309	3218
18	2,2,3-trimethylbutane	41.08	84	1053
19	cyclohexane	44.55	4892	57504
20	3,3-dimethylpentane	47.10	129	1516
21	1,1-dimethylcyclopentane	50.43	324	4404
22	2-methylhexane	51.94	1862	25494
23	2,3-dimethylpentane	52.43	533	7739
24	1-c-3-dimethylcyclopentane	54.87	600	8599
25	3-methylhexane	55.38	1793	28559
26	1-tr-3-dimethylcyclopentane	56.54	556	8953
27	1-tr-2-dimethylcyclopentane	57.51	934	16413
28	3-ethylpentane	58.82	111	1979
29	standard	62.05	3687	66213
30	n-heptane	68.51	4489	95035
31	1-c-2-dimethylcyclopentane	72.46	127	3455
32	methylcyclohexane	75.67	6884	195124
33	1,1,3-trimethylcyclopentane	78.54	143	4377
34	2,2-dimethylhexane	80.51	108	2941
35	ethylcyclopentane	82.94	238	7656
36	2,5-dimethylhexane	87.98	162	4434
37	not present	0.00	0	0
38	2,2,3-trimethylpentane	90.04	193	5319
39	1-tr-2-c-4-trimethylcyclopentane	93.11	115	3639
40	toluene	94.73	4605	202976

total area excluding i.s.: 828043

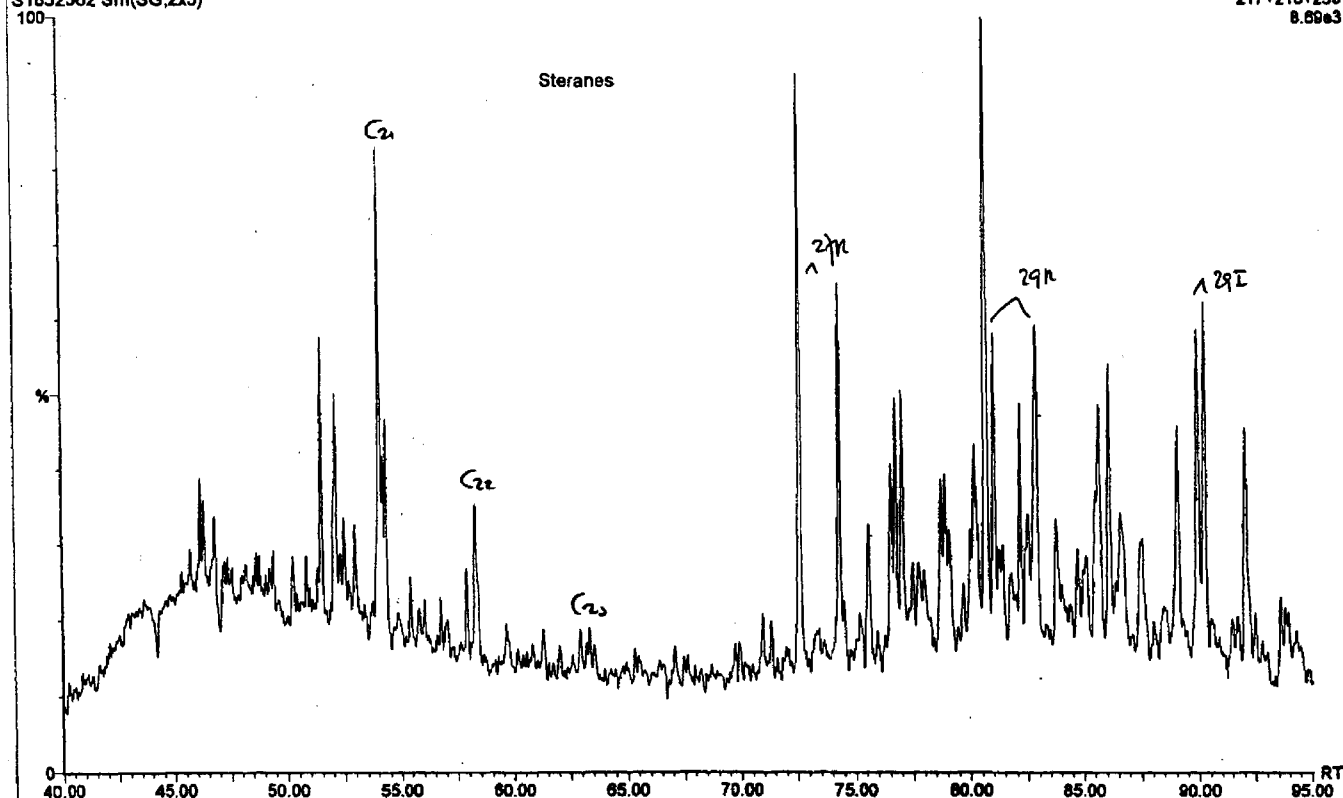
Weight percentage internal standard: 0.66
Weight percentage C7 fraction : 8.25

GC/MS fragmentograms of the steranes of the oil sample from well 206/04-01 (9753 ft), United Kingdom

SIEP-RTS EPT-HM
Instrument: TRIO-1000
S1852562 Sm(SG,2x3)

Sample ID: U.K. 206/04-01 9753 ft omc 7278

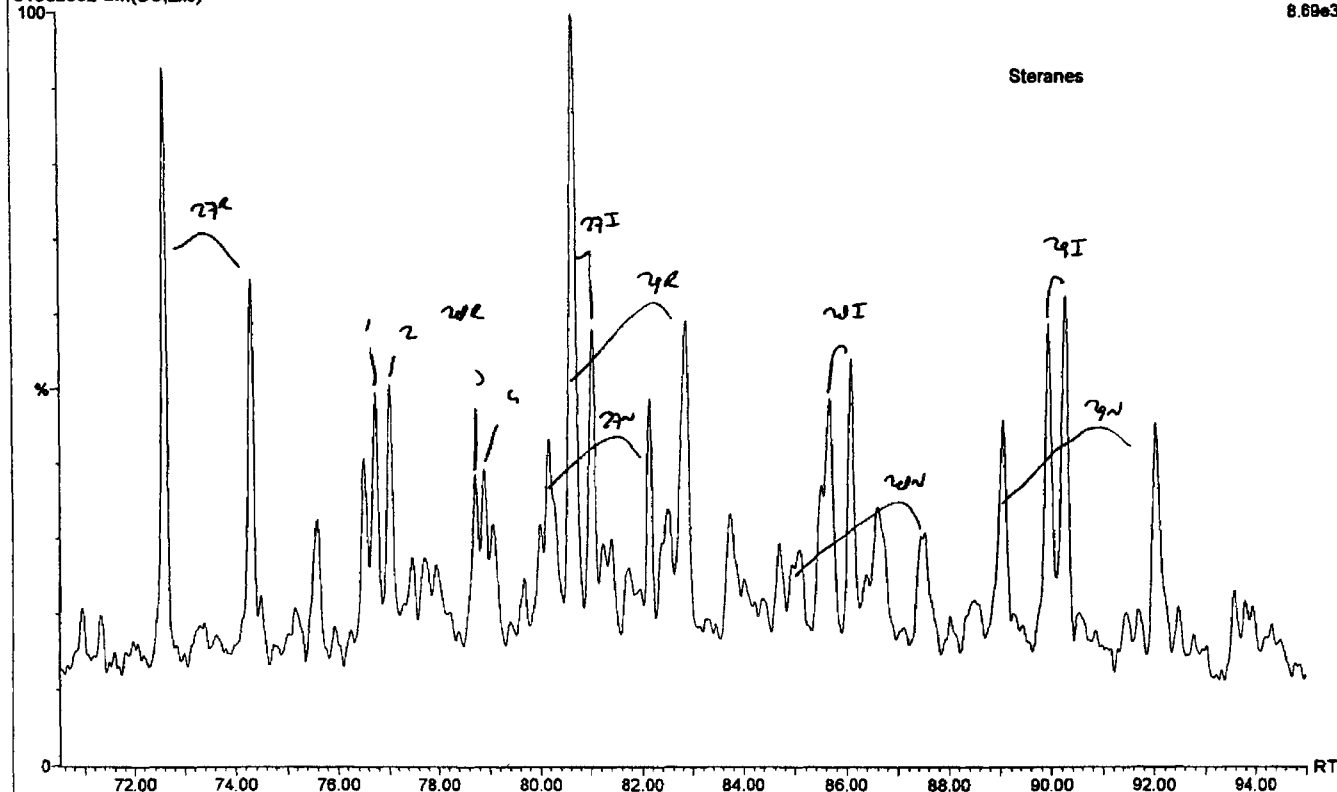
Acquired on 07-Dec-1996 at 15:42:37
Operator: Ron
217+218+259
8.69e3



SIEP-RTS EPT-HM
Instrument: TRIO-1000
S1852562 Sm(SG,2x3)

Sample ID: U.K. 206/04-01 9753 ft omc 7278

Acquired on 07-Dec-1996 at 15:42:37
Operator: Ron
217+218+259
8.69e3

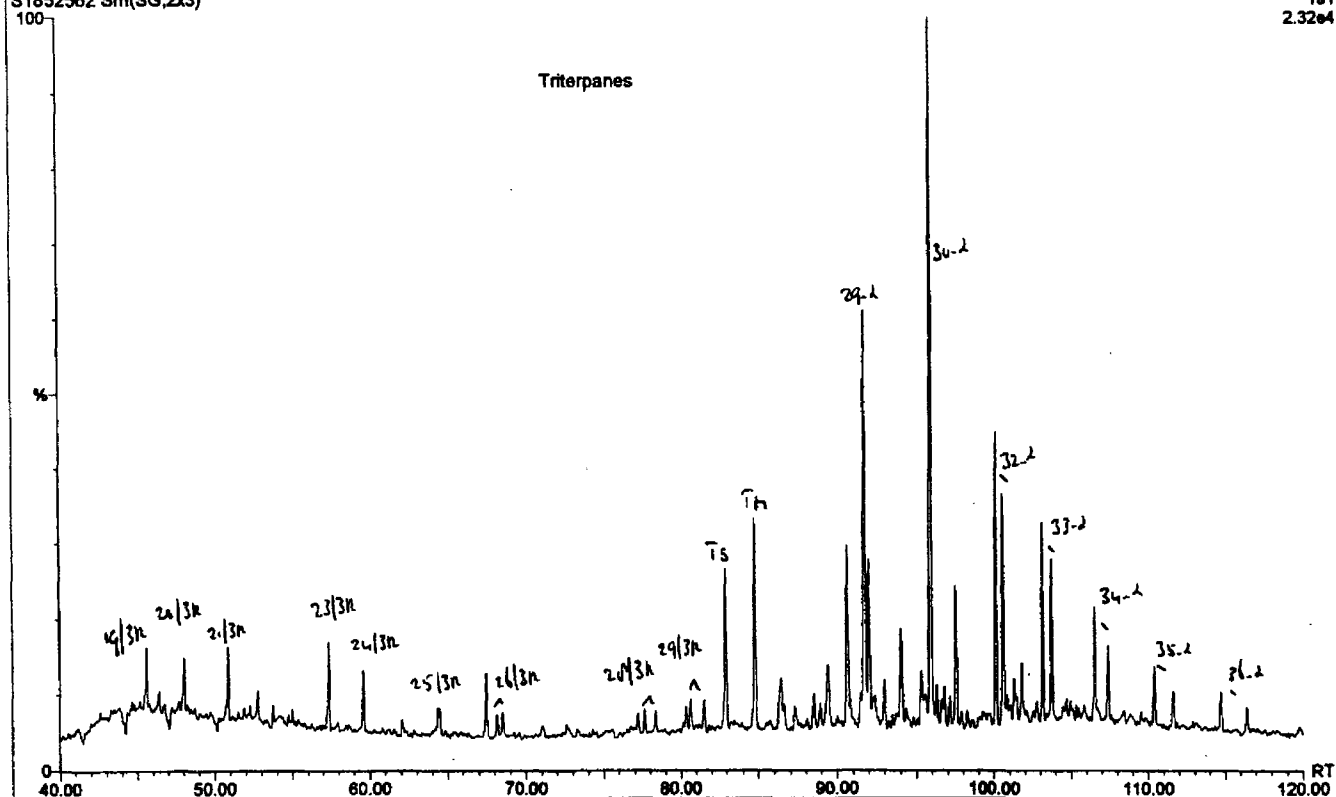


GC/MS fragmentograms of the triterpanes of the oil sample from well 206/04-01 (9753 ft), United Kingdom

SIEP-RTS EPT-HM
Instrument: TRIO-1000
S1852562 Sm(SG,2x3)

Sample ID: U.K. 206/04-01 9753 ft omc 7278

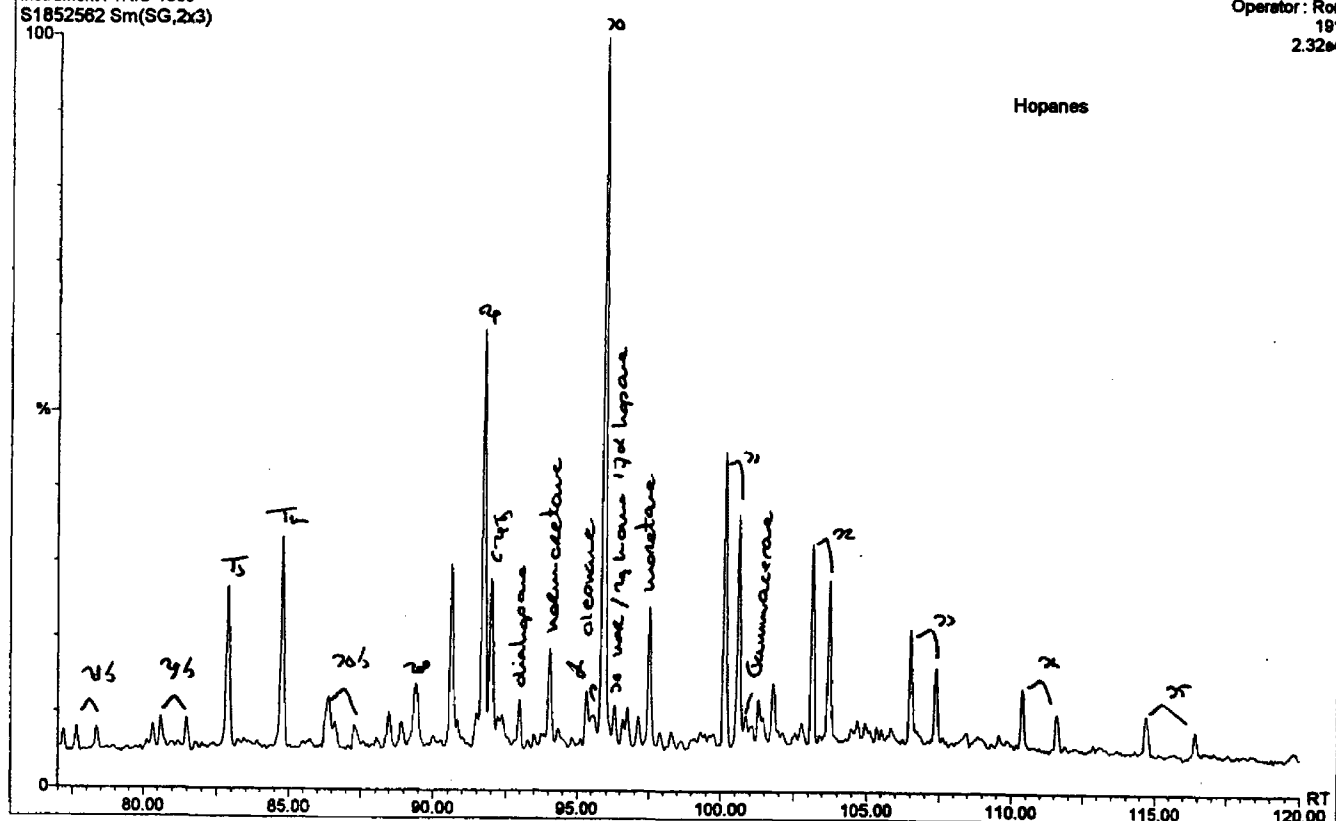
Acquired on 07-Dec-1998 at 15:42:37
Operator: Ron
181
2.32e4



SIEP-RTS EPT-HM
Instrument: TRIO-1000
S1852562 Sm(SG,2x3)

Sample ID: U.K. 206/04-01 9753 ft omc 7278

Acquired on 07-Dec-1998 at 15:42:37
Operator: Ron
181
2.32e4



Pyrolysis GC data
well 206/04-01, United Kingdom

NOTE

To: J. Buiskool Toxopeus
Copy: N. Frewin
From: J. Links
Date: 6 November 1996
Subject: Pyrolysis-GC UK 206/4-1

Pyrolysis-GC of some wet cuttings and one side-wall sample from well 206/4

The results of a quick screening of some samples with Py-GC shows predominantly a non-crude oil-like fingerprint with mainly peaks in the C7-C11 area (aromatics?) and low amounts of sulfur. Only core sample G2(9853.6 ft) contains a crude oil fingerprint, maybe derived from the fine stylolitic? kerogen laminae.

The wet cuttings appear to be very similar and also show an immature character. This is proved by running the samples with the PFID method (non-isothermal heating with a gradient of 30°C/min in a quartz tube), where the T_{max} lies around 400°C.

In general the wet cuttings are very poor in quality and probably contaminated with mud additives. From the core sample only G2 (although lean) show kerogen characteristics.

The side-wall sample contains also some aliphatic compounds, but very minor.

To assess the amount of the total hydrocarbons, RE analysis should be applied.

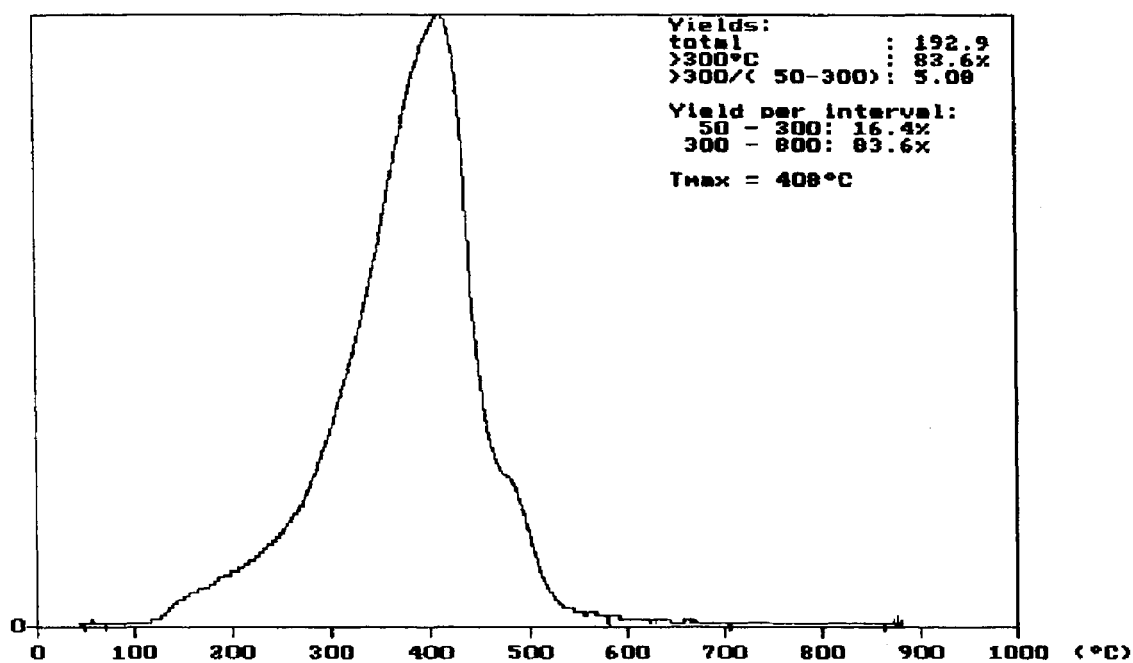
For extract analysis only the core sample should be suitable.

UK206/4-1 9580-9600' Svarte Fm original

30.1 mg

S 104213/1

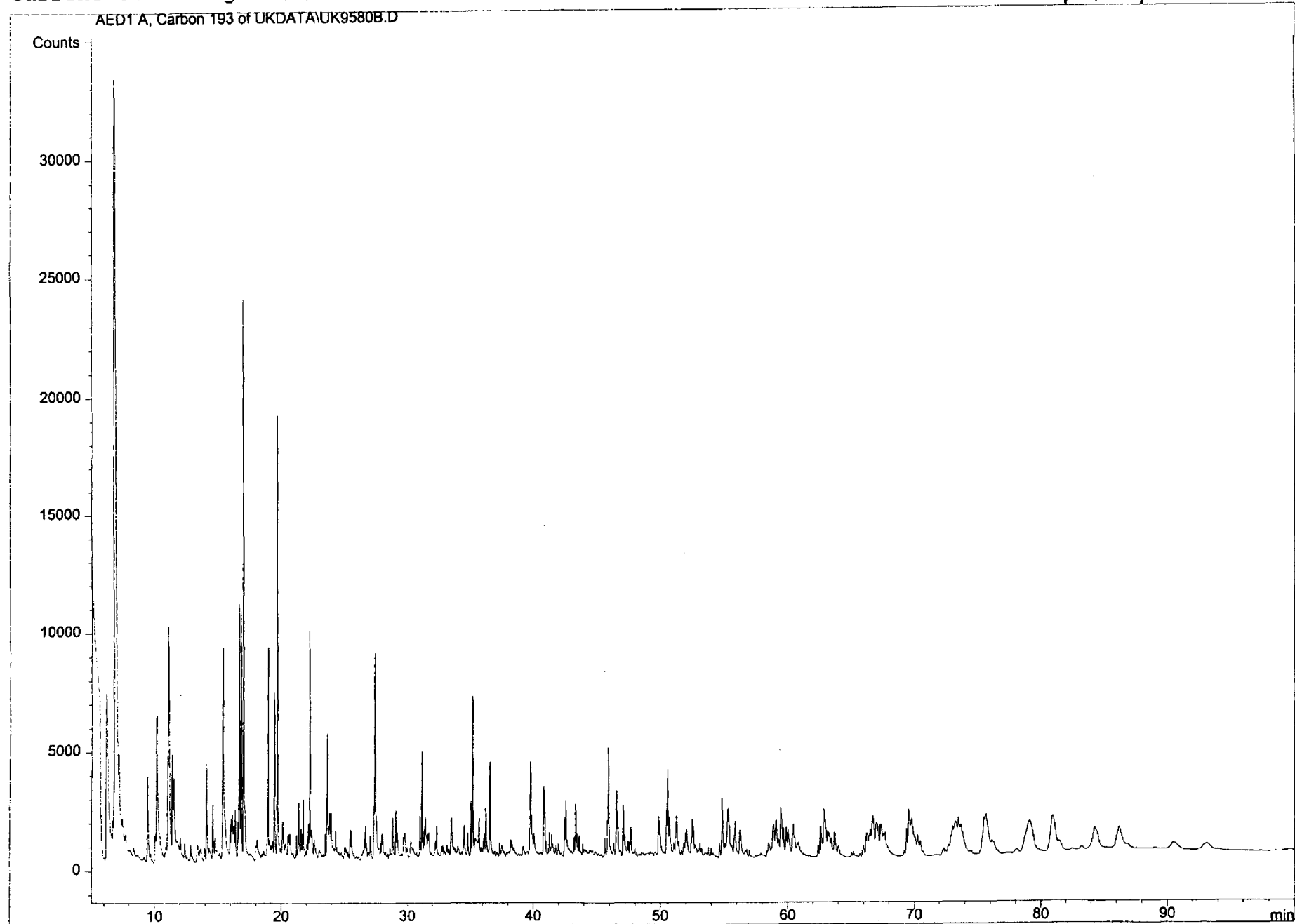
mU



$$P_{\text{red}} \text{ wt/mg} = \frac{192.9}{30.1} = 6.4$$

Current Chromatogram(s)

pyrogran



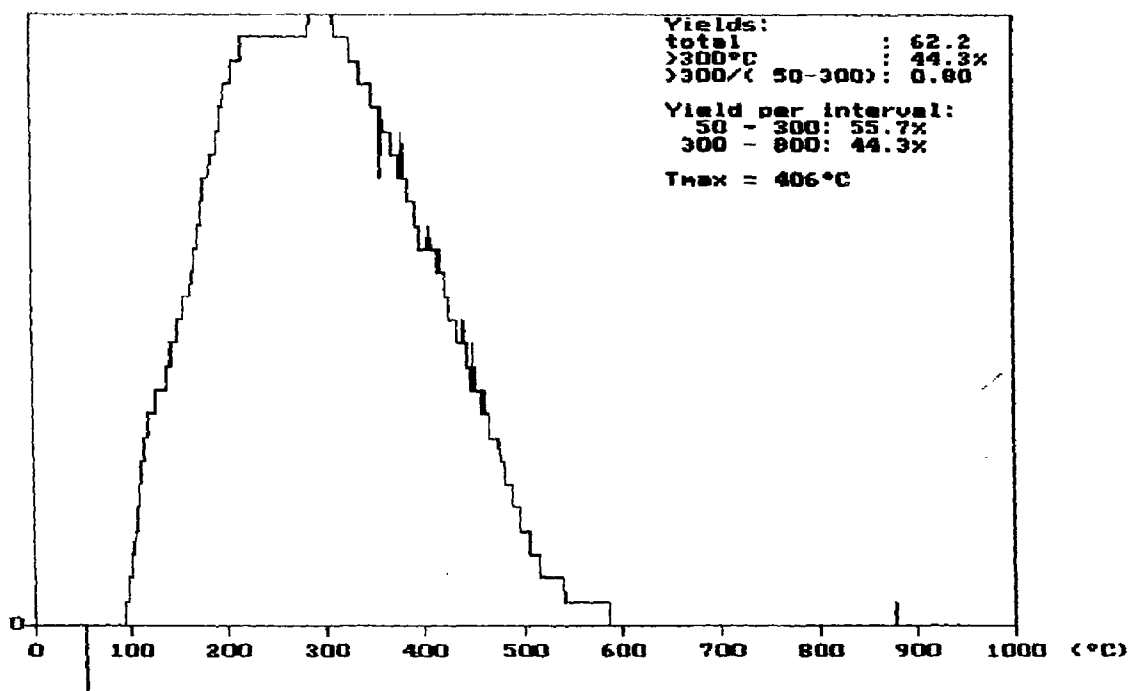
UK 206/4-1 9790FT Svarte Fm

21.8 mg

S184219/1

SWS

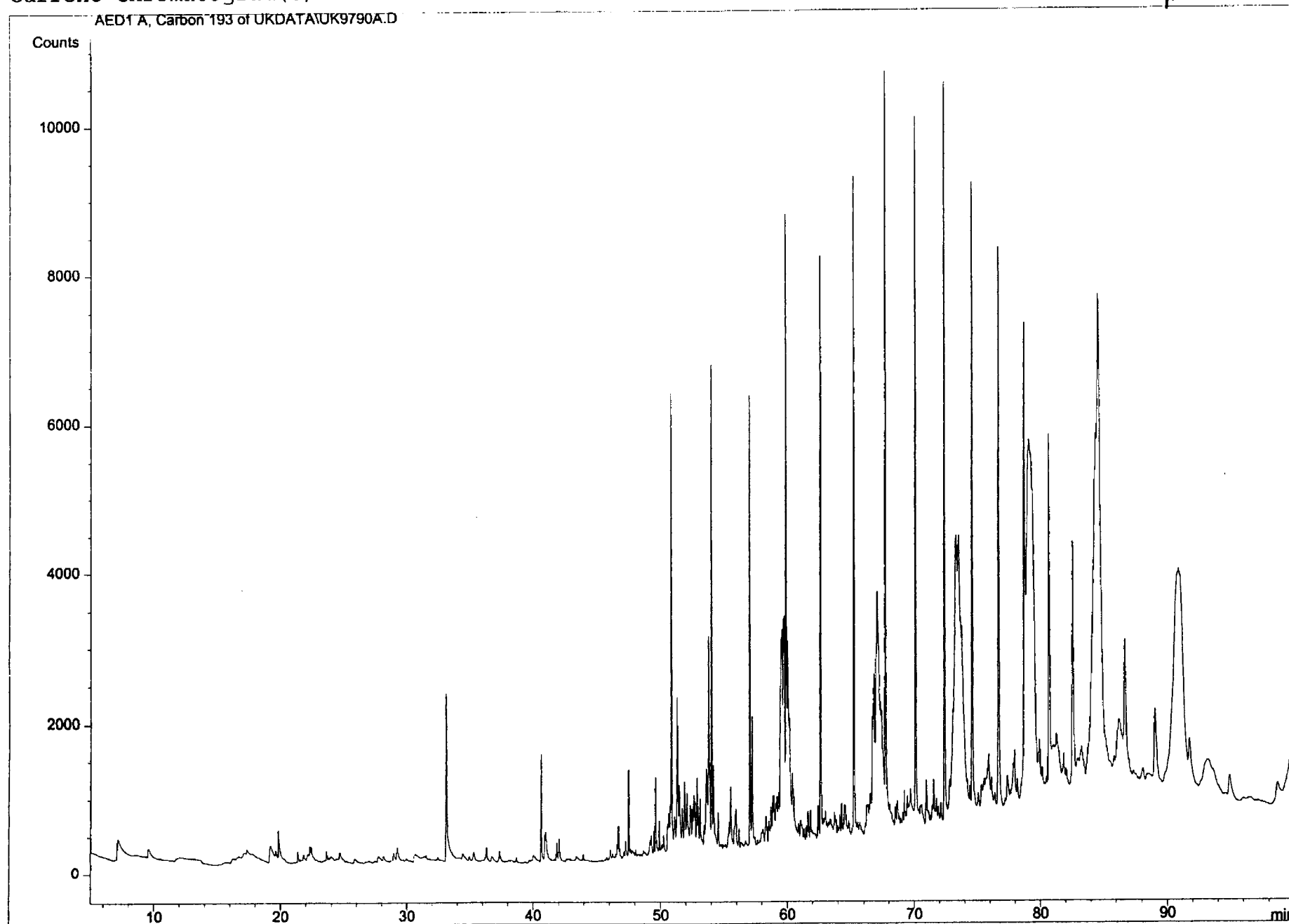
nU

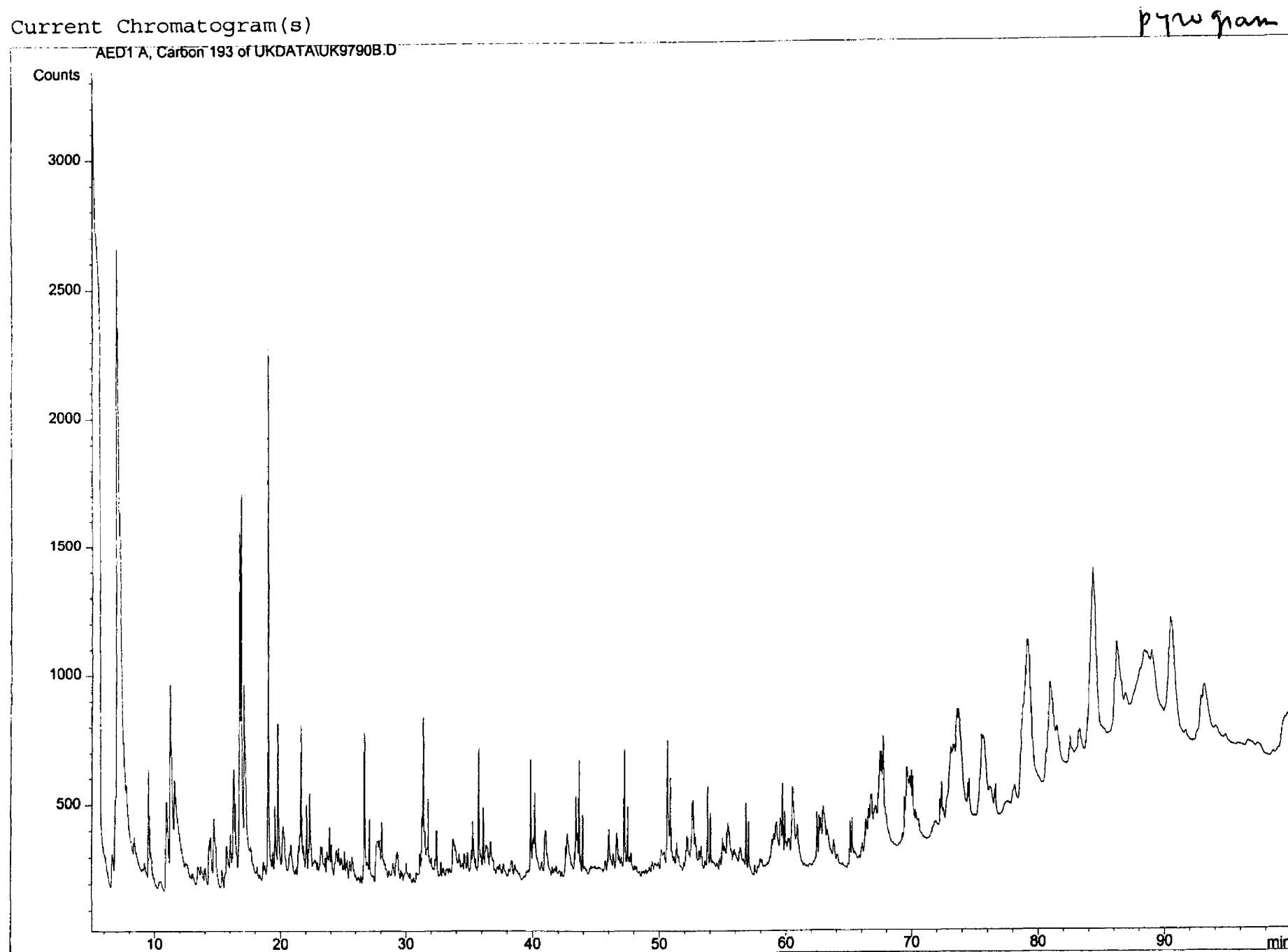


$$\text{Prod Yield / mg} = \frac{12.2}{5.5} = 2.2$$

Current Chromatogram(s)

description



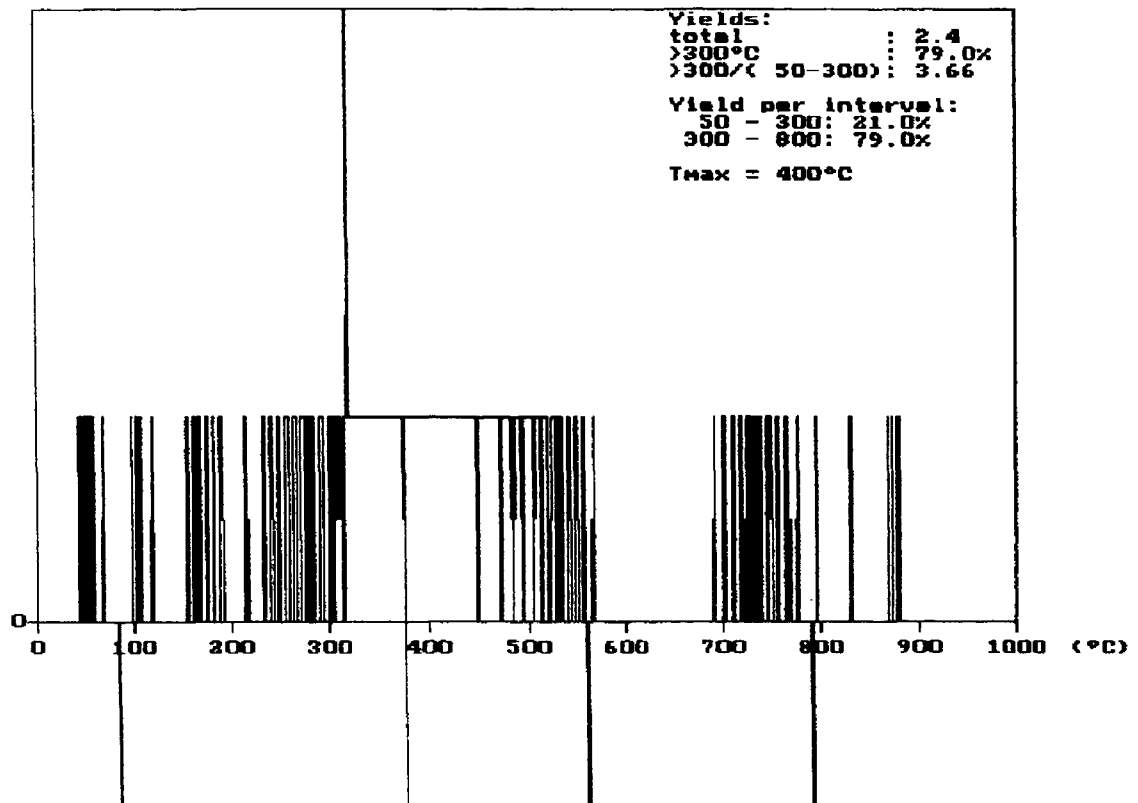


UK 206/4-1 9804.1FT G1 CORE SAMPLE ORIGI

37.6 MG

S 184 223/1

NU

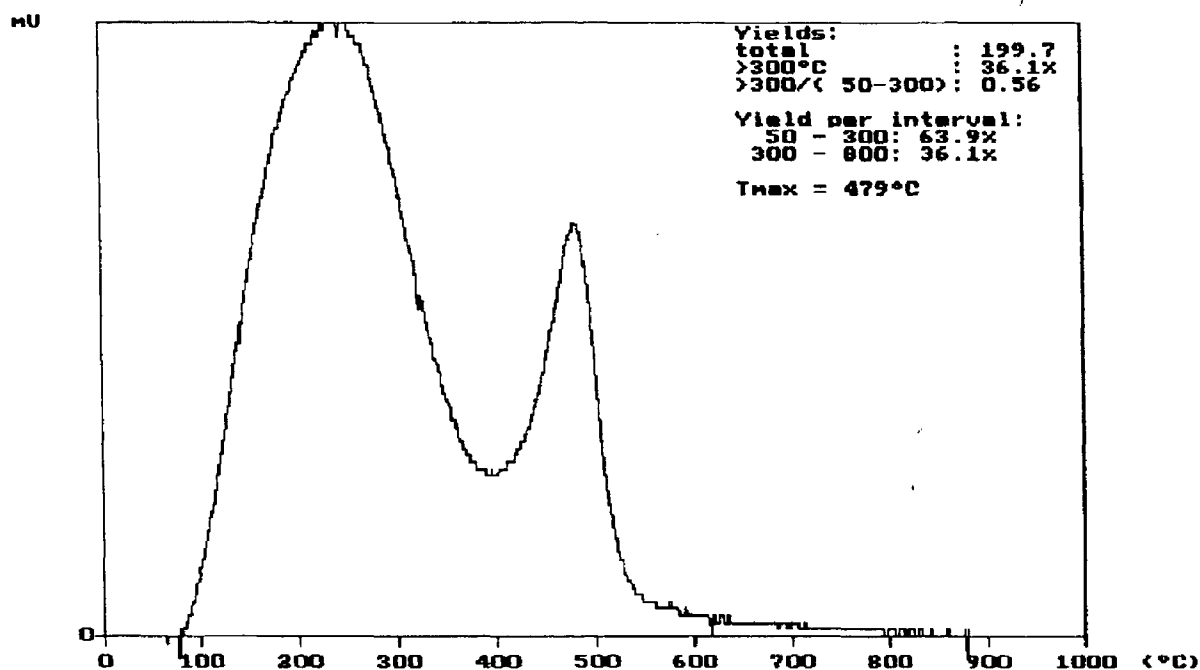


N) Hydrocarbon

UK 206/4-1 9853.5 FT CORE SAMPLE ORIGINAL

35.5 MB

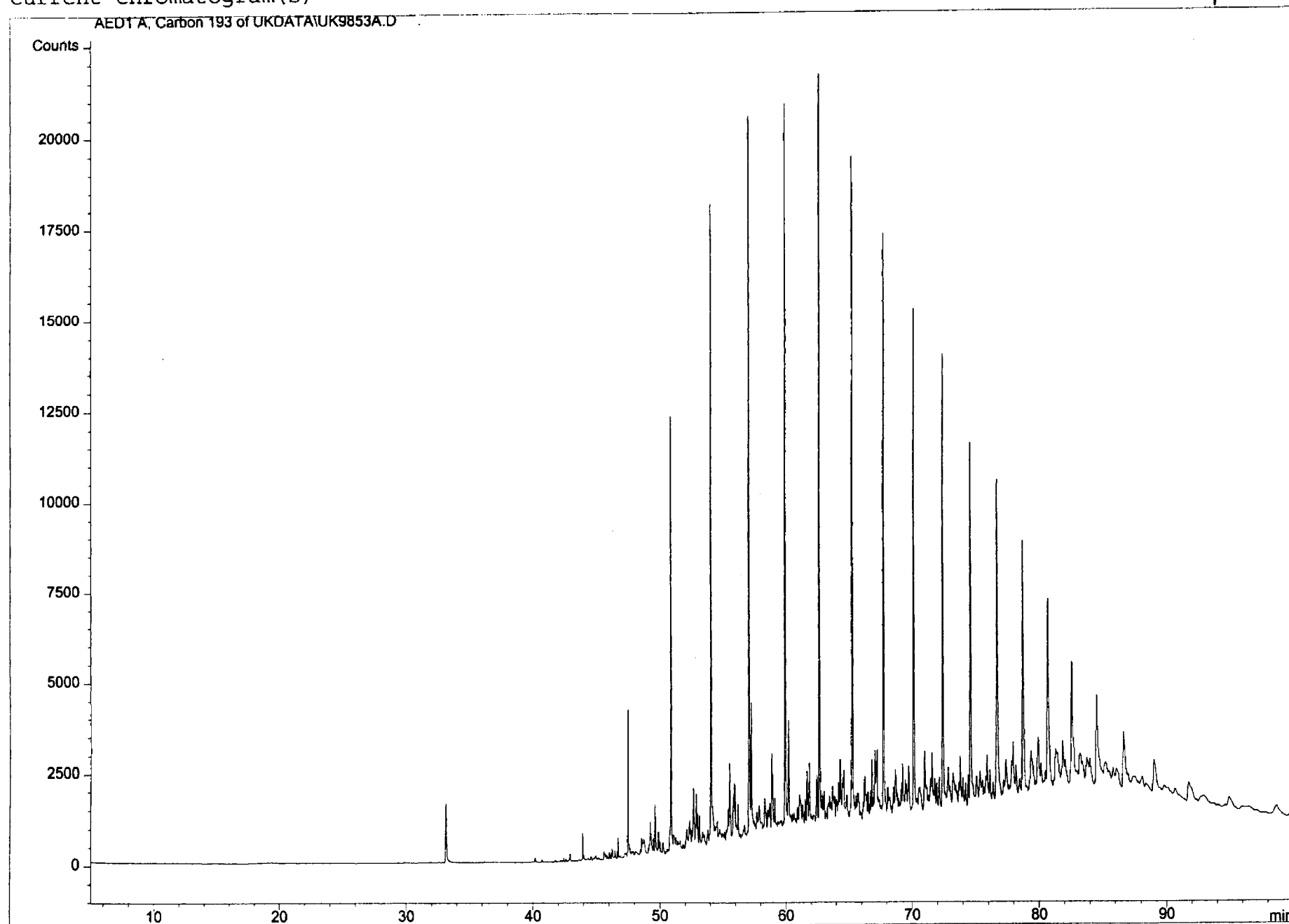
S 104220/1



$$\text{P6.3 Yield/mg} = \frac{0.361 \times 199.7}{500 \text{ g}} = 2$$

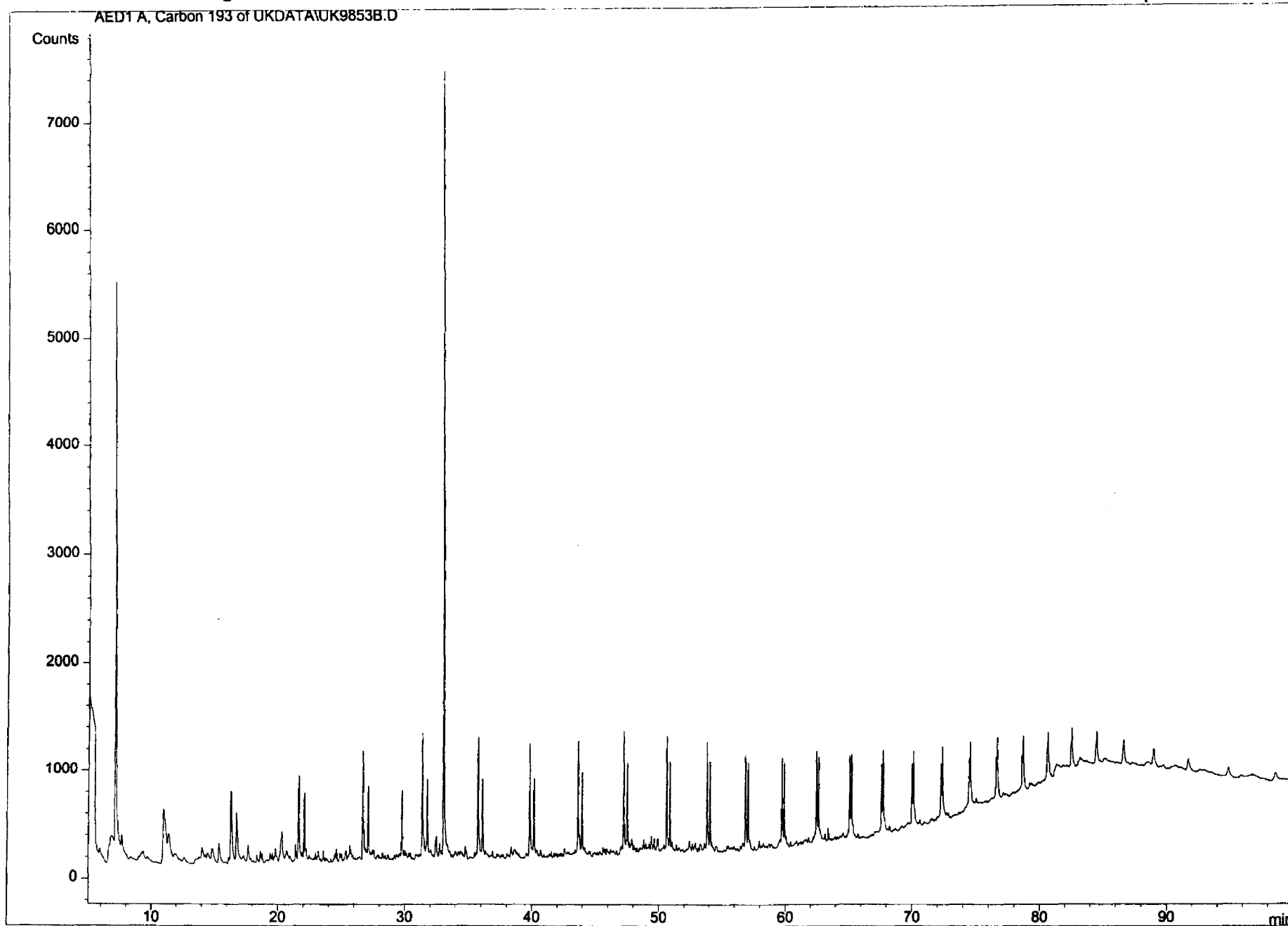
Current Chromatogram(s)

desaplic



Current Chromatogram(s)

pyrogram

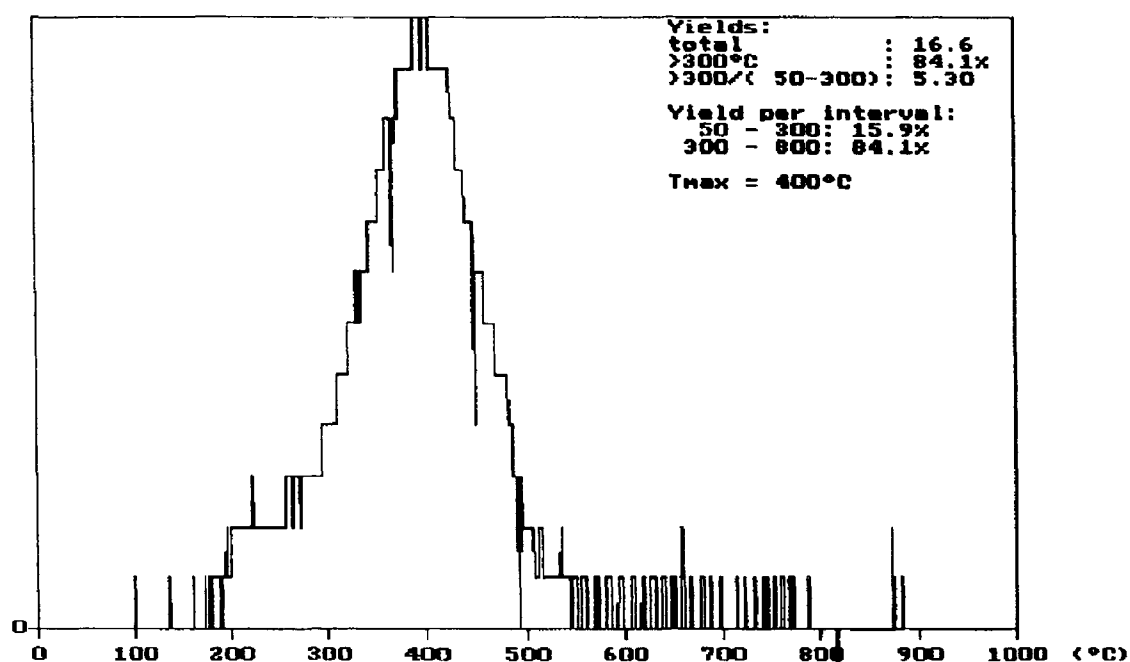


UK 206/4-1 9858.6 FT CORE SAMPLE ORIGINAL

34.4 MG

S 184221/1

NU

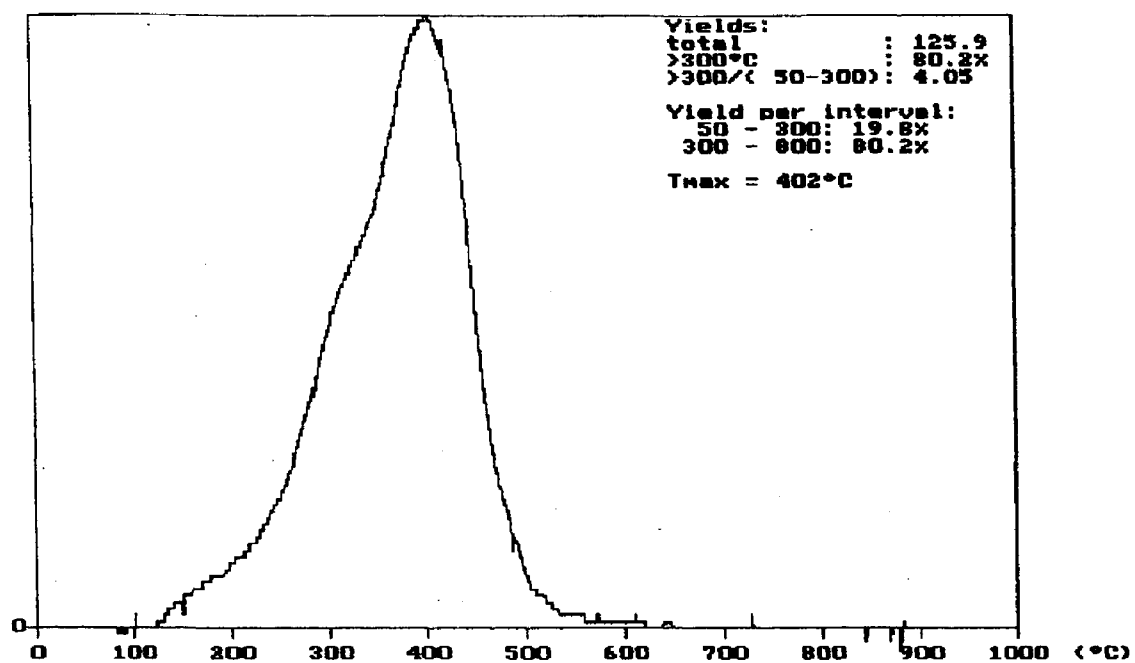


uk206/4-1 9920-9940' original

33.0 mg

S, P4 212/1

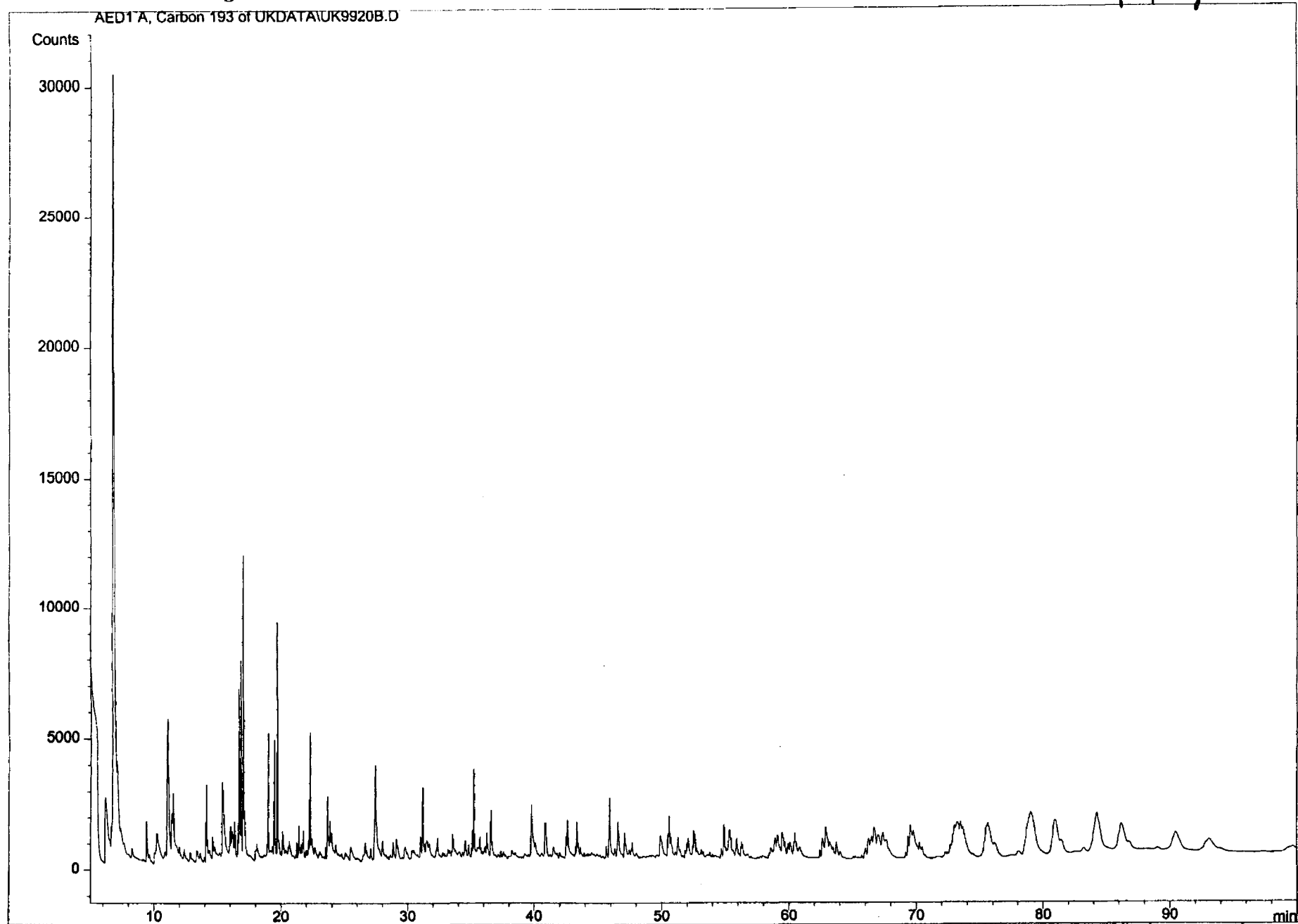
NU



$$\text{Pfid Yield/mg} = \frac{125.9}{33.0} = 3.8$$

Current Chromatogram(s)

pyropan

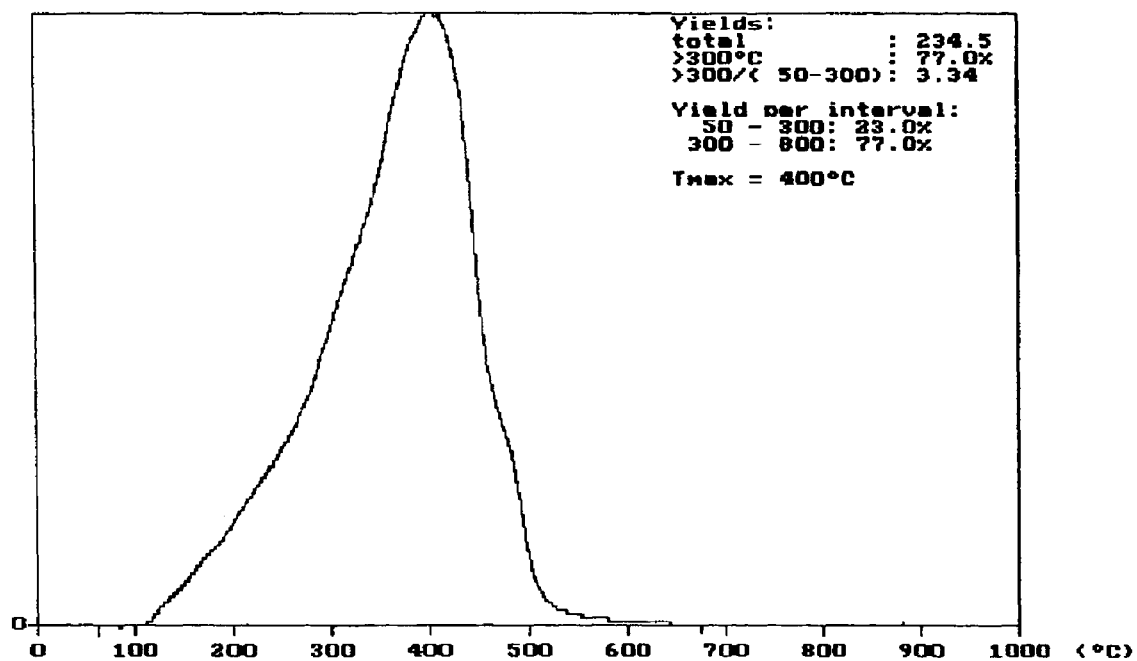


UK 206/4-1 10060-10080' ctgs origenal

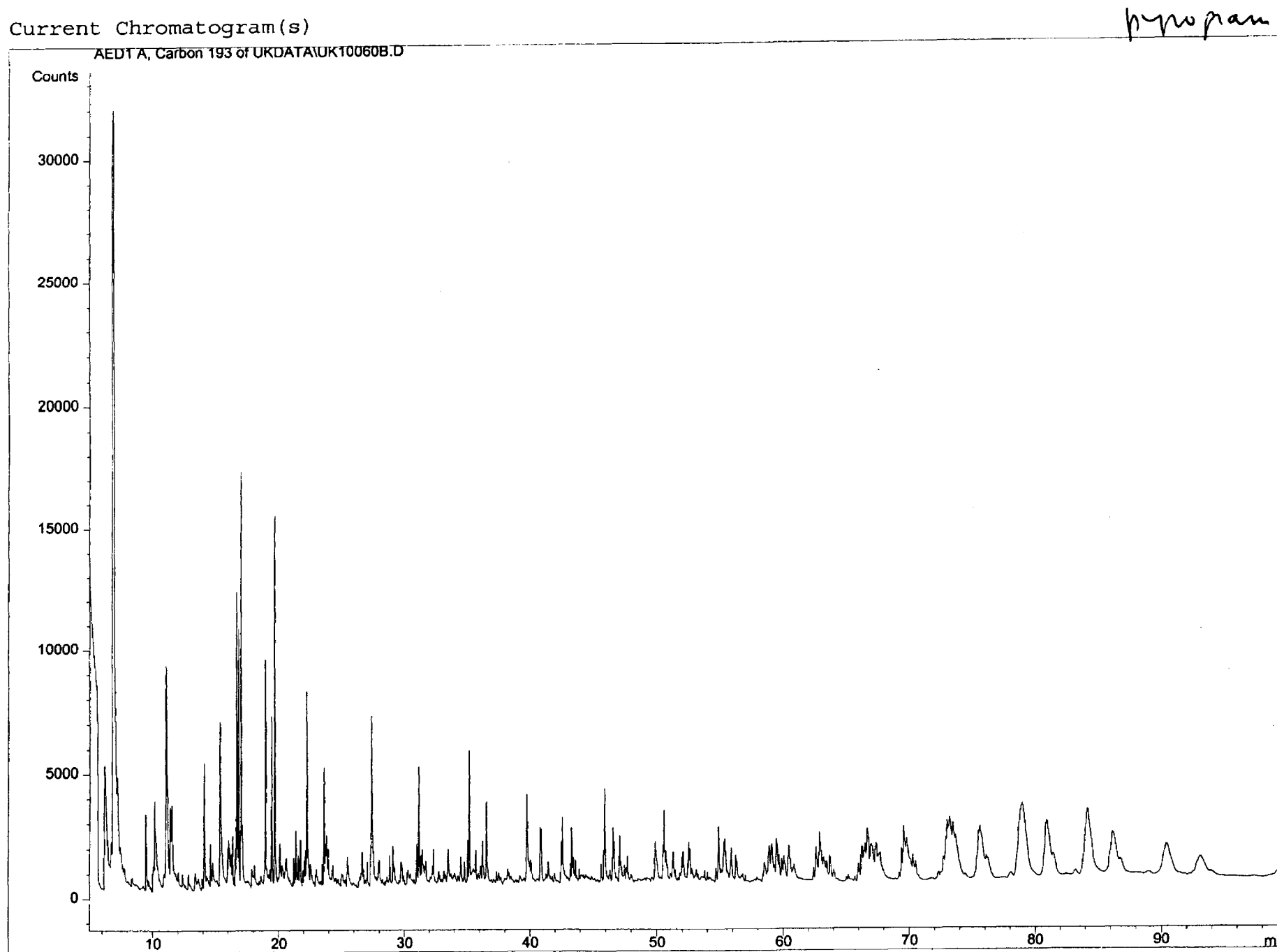
31.1 mg

S104214/1

NU



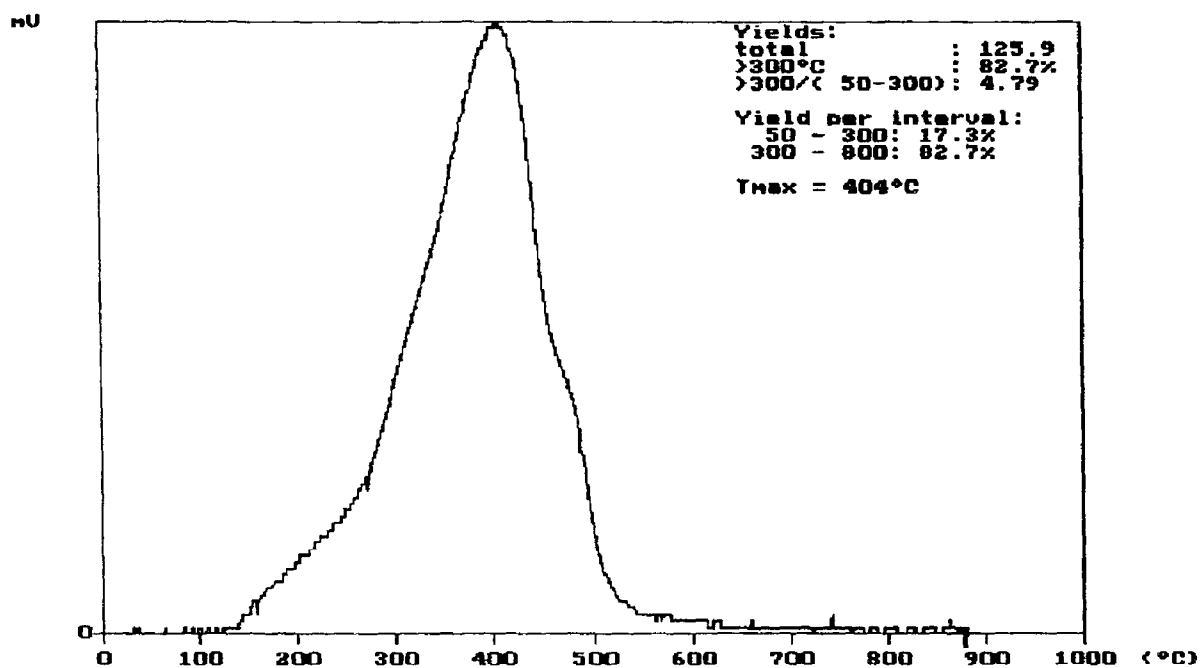
V. long = 1.0



UK 206/4-1 10160-10180' WET CTGS ORIGINA

30.1 MG

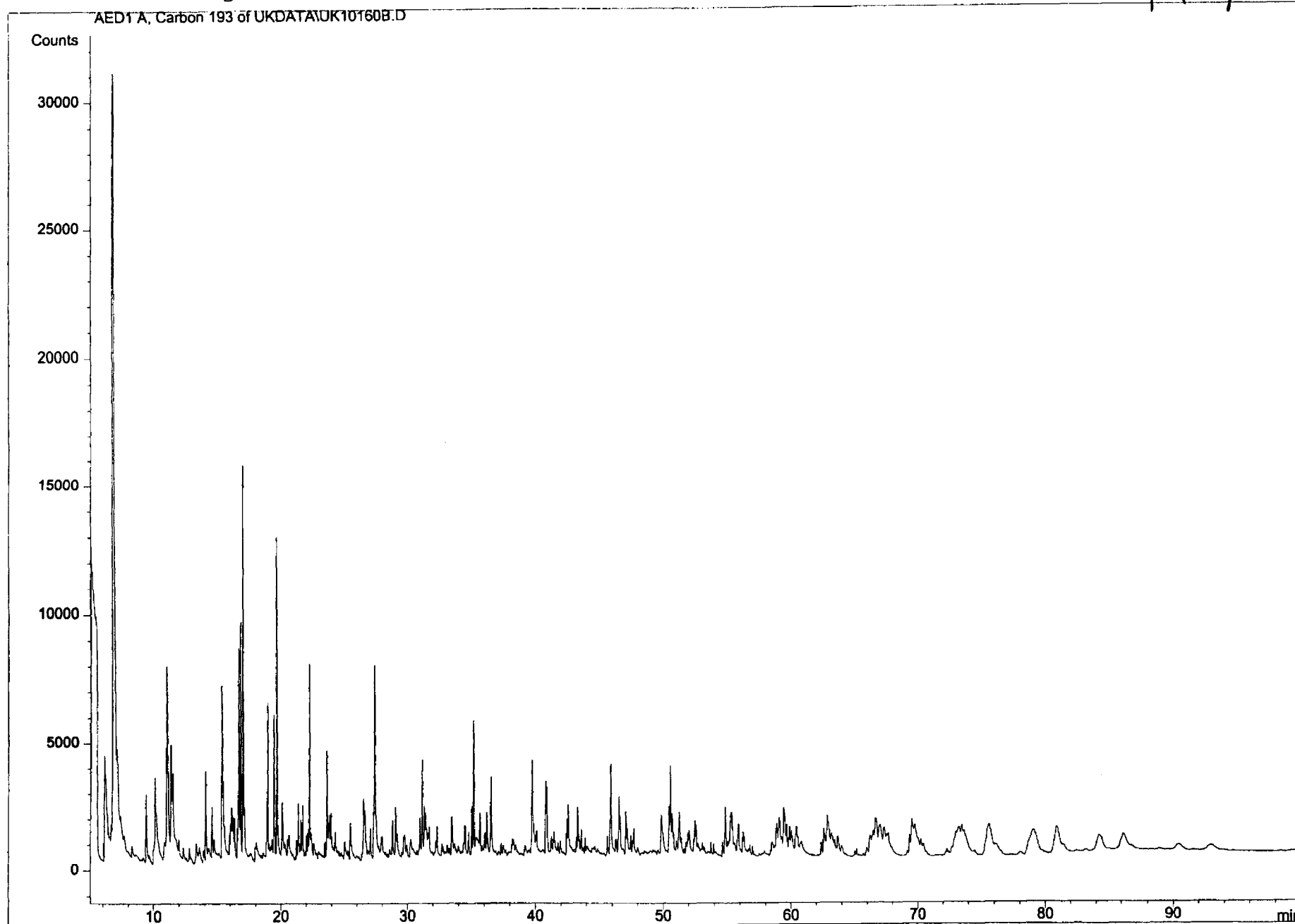
S184211-



100% wt = 3.4

Current Chromatogram(s)

pyrogram

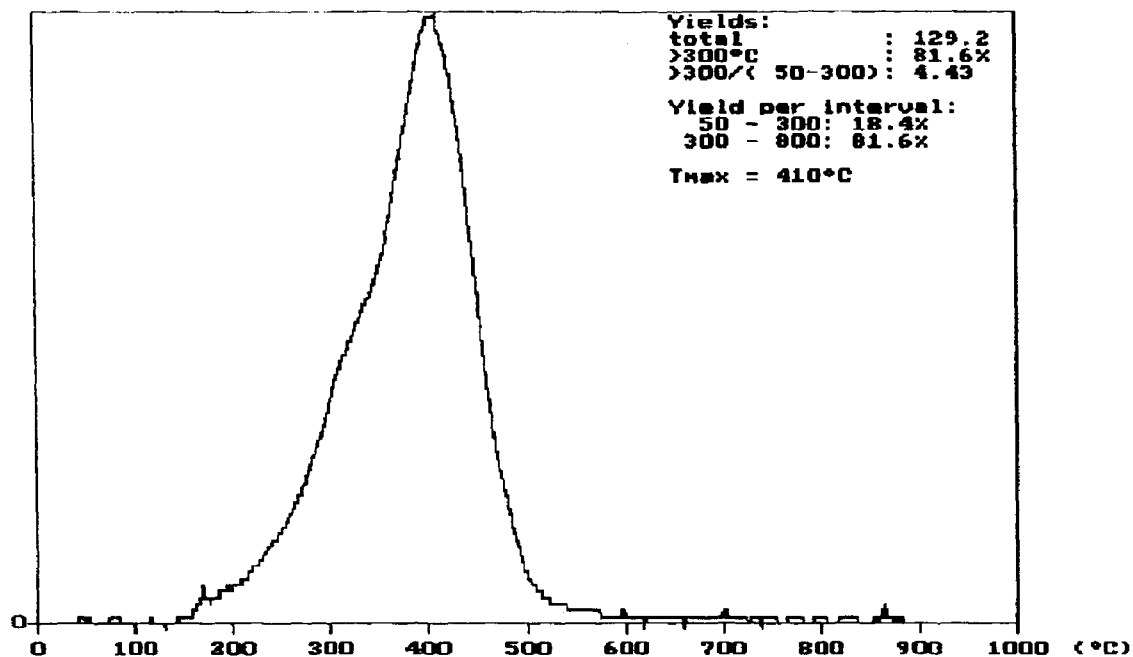


UK 206/4-1 10330-10350' WET CTGS ORIGINAL

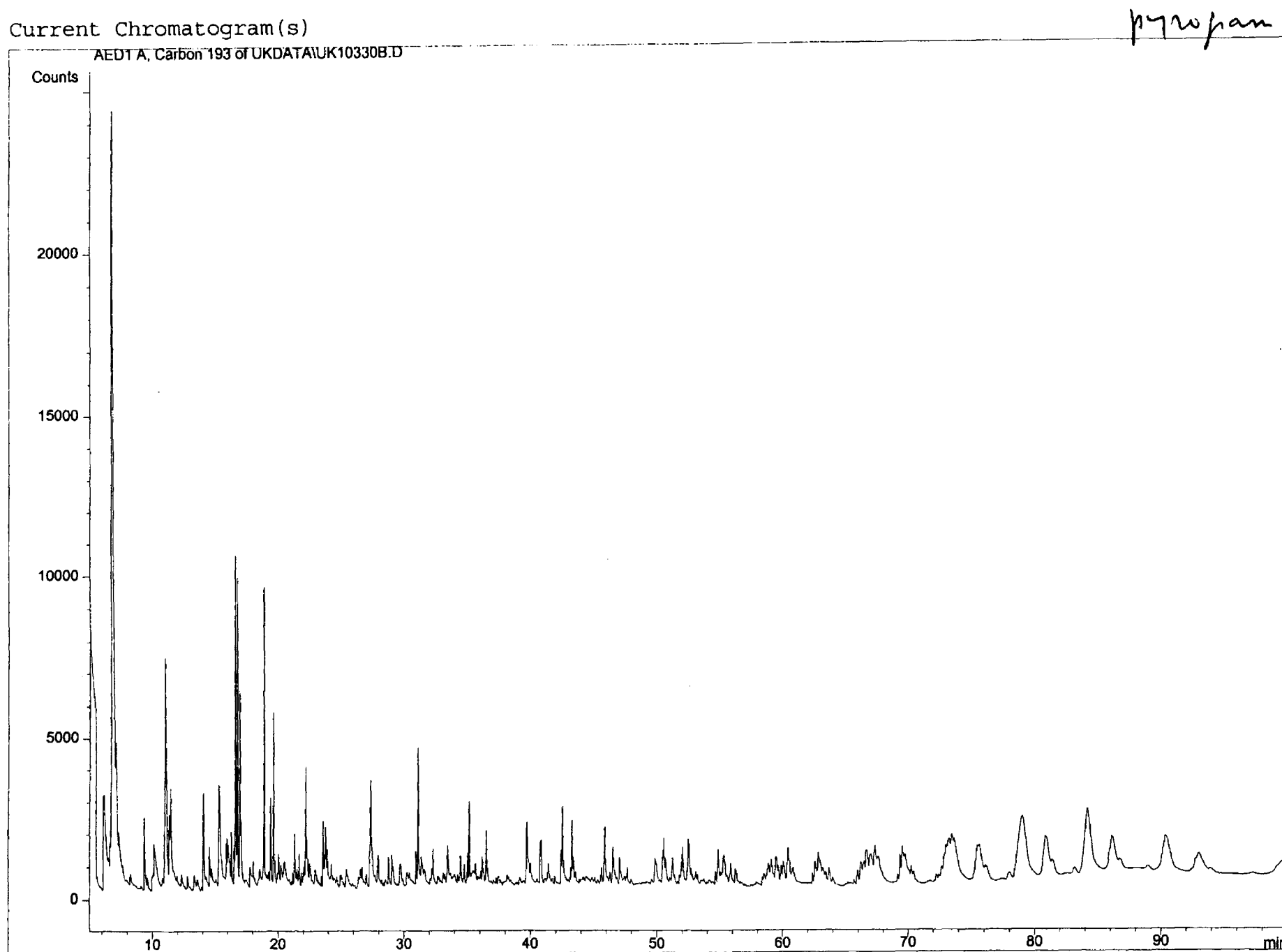
33.2 MG

51042.61

NU



Yield/mg = 32

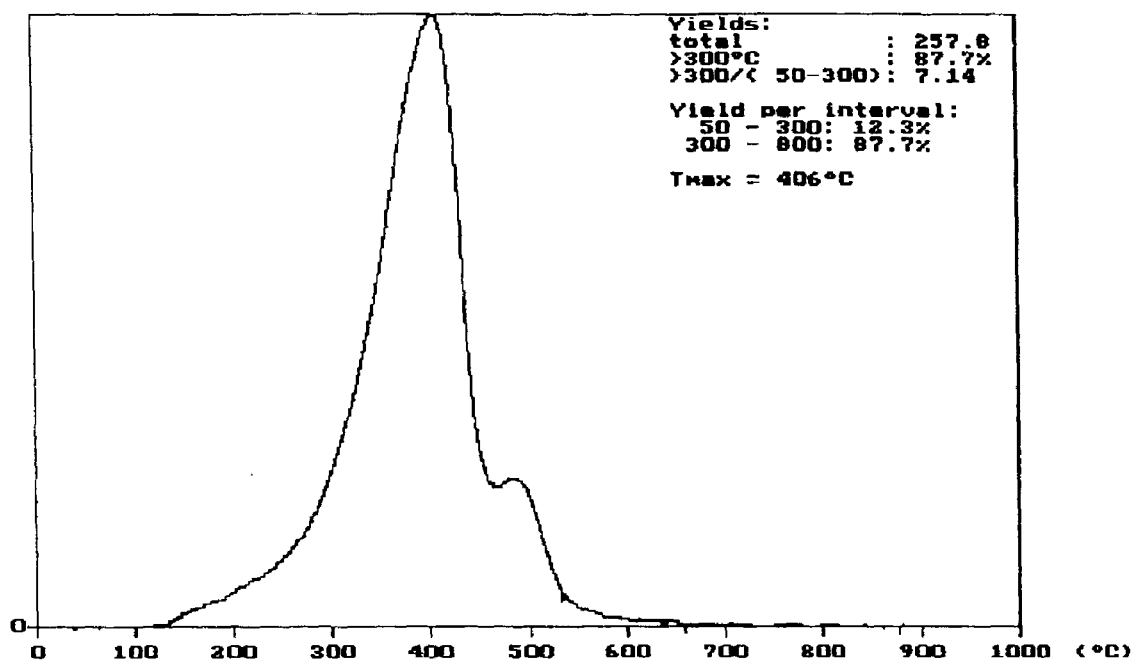


UK 206/4-1 11880-11900' WET CTGS ORIGINAL

30.3 MG

5184217/1

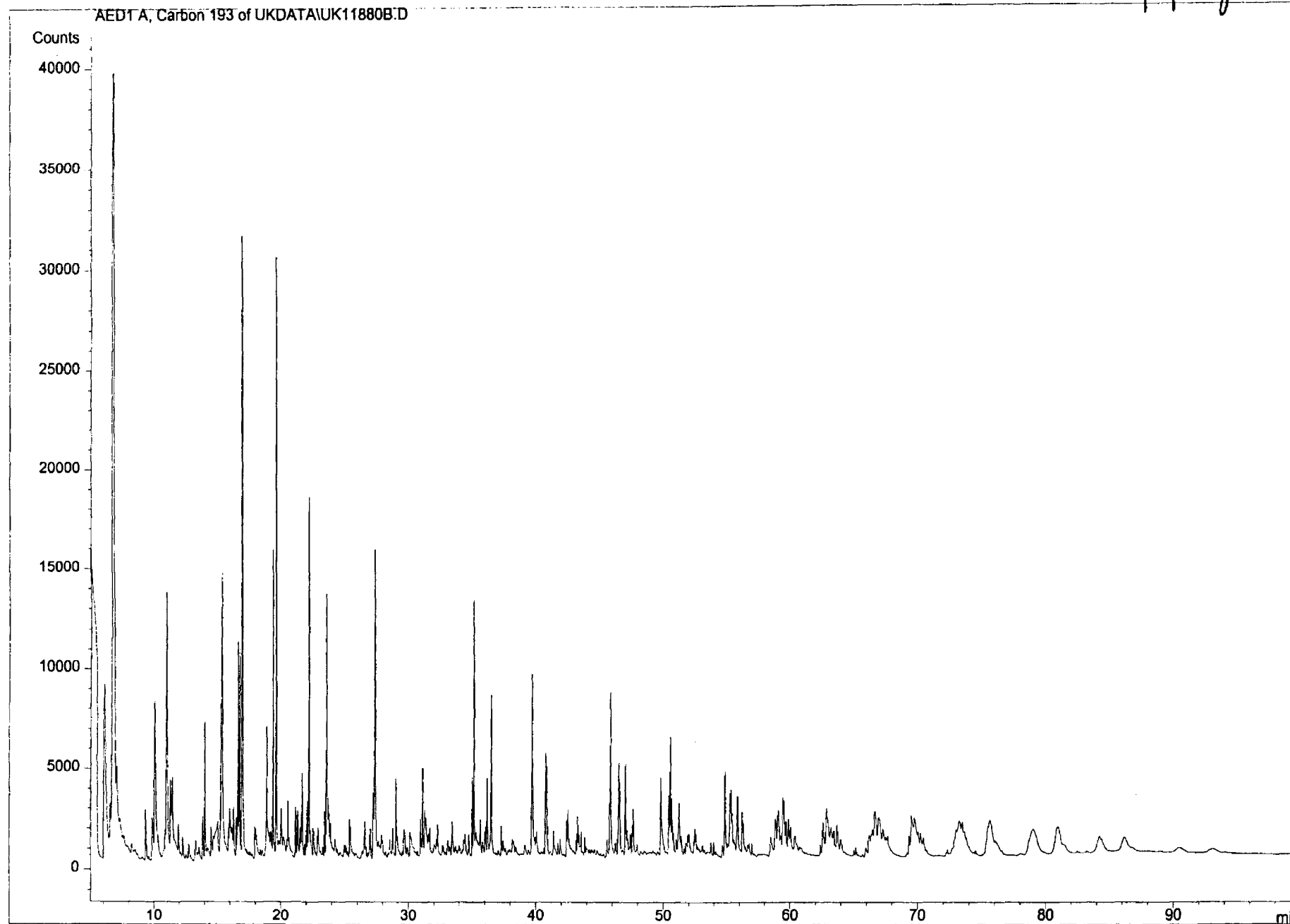
mU



Yield mg = 7.9

Current Chromatogram(s)

hydrogen

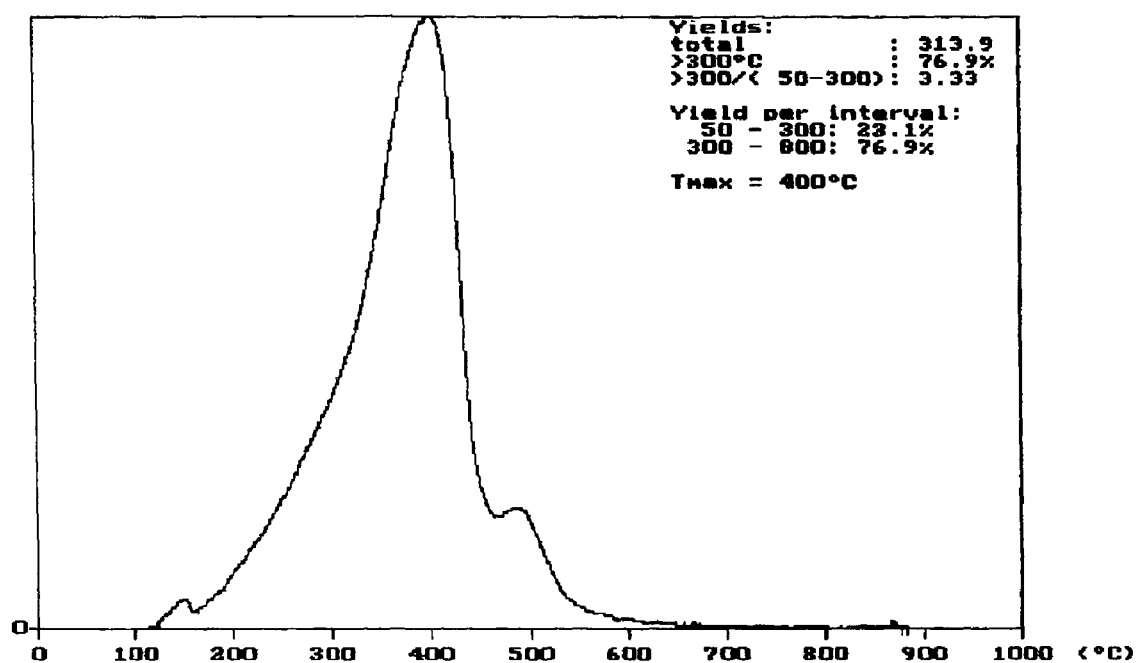


UK 206/4-1 12140-12160' WET CTGS ORIGINA

24.7 MB

5184218

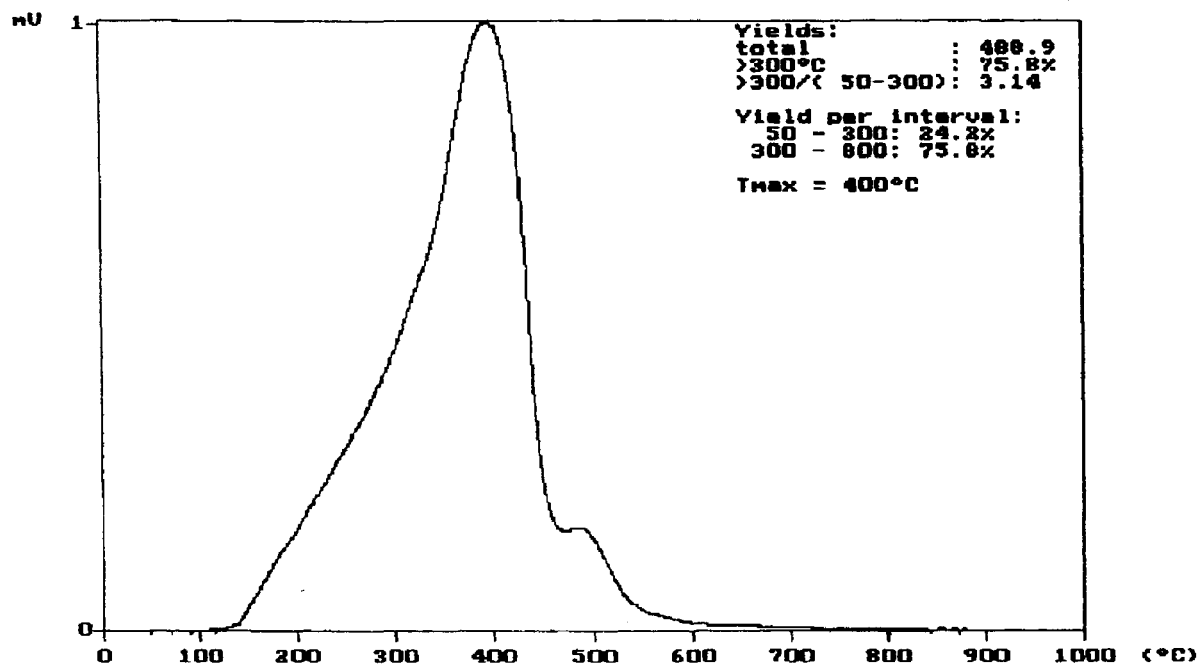
NU



5.01/100 g. 0.3

UK 206/4-1 12140 WET CTGS ORIGINAL(FUME

35.6 MG



Yield loss 12.1

Current Chromatogram(s)

