HYDRO

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Title

GEOCHEMICAL EVALUATION OF WELL 25/8-4

Summary/Conclusion/Recommendation

Keywords
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1. INTRODUCTION.

The vitrinite reflectance has been determined by GeoLab UK; TOC and Rock-Eval pyrolysis analyses were carried out at Norsk Hydro Research Center, Bergen. All extractions, group type separations, gas chromatography and gas chromatography-mass spectrometry were carried out by GERG. This report was compiled at Norsk Hydro Research Center in Bergen.

A list of the samples analyzed is given in Table 1.2.

The formation tops with average RockEval and vitrinite reflectance data are given in Table 1.3

from 25/8-4.

3.8. Conclusion

Most of the samples contain less than 1% TOC and the kerogen contents are humic of type III/IV without oil potential or contain significant amounts of oxidised marine organic matter and have only a limited oil potential.
Most of the sediment extracts consist of mature, migrated hydrocarbons.
The sandstones in the main reservoir interval have a high hydrocarbon saturation. These hydrocarbons consist of a biodegraded component mixed with a more recent pulse of non-altered hydrocarbons.

4. CONCLUSION

The well section is immature with respect to hydrocarbon generation based on vitrinite reflectance, Tmax and biological markers from indigenous hydrocarbons.
The source rock potential of the analysed section is generally poor.
Most of the sediment extracts consist of mature, migrated hydrocarbons.
The sandstones in the main reservoir interval have a high hydrocarbon saturation. These hydrocarbons consist of a biodegraded component mixed with a more recent pulse of non-altered hydrocarbons.
The results from the reservoir extracts are very similar to those of the produced oil from the same well, and they also correlate with the oil produced from 25/11-15.

TABLE: 1.2.

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HYLAB DATABASE RESULT SUMMARY

C	Well	Licence	Operator	R-Ev	Extr	MPLC	Iatr	SatGC	PyGC	Isot	Biom	Vitr	VisK	Total
NOR	25/8-4	PL 169		56	18	1	17	10		11		13		126

Total number of results counted	56	18	1	17	10	11	13	126

TABLE: 1.3.

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STRATIGRAPHY, WELL NOR:25/8-4

	TOP (m)	BOTTOM (m)	Simple Mean S1 (kg/t)	S2 (kg/t)	TOC (%)	HI	PI	Tmax	VRo	Weighted Mean S1 (kg/t)	S2 (kg/t)	TOC (%)	HI
	1300.0	1669.0	0.1	0.9	0.4	237	0.1	427		0.1	0.7	0.4	260
	155.0	1669.0	0.1	0.9	0.4	237	0.1	427		0.1	0.7	0.4	260
	1669.0	1710.0	0.1	0.5	0.4	205	0.1	430		0.0	0.4	0.3	157
	1710.0	1719.0	0.1	0.6	0.2	378	0.1	469		0.1	0.6	0.2	368
	1719.0	1780.0	4.2	2.0	0.7	328	0.2	438		5.3	2.5	0.9	237
	1780.0	1830.0	5.5	2.0	0.8	208	0.2	426		7.4	2.7	1.0	223
	1830.0	1836.0	0.0	0.3	0.4	90	0.0	418		0.0	0.3	0.4	95
	1836.0	1841.0			0.1								
	1669.0	1841.0	2.5	1.3	0.5	276	0.1	435		2.8	1.4	0.6	199
	1841.0	1846.0											
	1846.0	1866.0											
	1841.0	1866.0											

BLE 2.1.: Average Vitrinite Reflectance Data.

ll I.D.: Norsk Hydro 25/8-4

mple pth	R.o. Avg.	No. of Determinations
46	0.41	20
87	0.45	11
90	0.39	14
07	NDP	-
11	0.52	4
14	0.41	4
16	NDP	-
18	0.47	1
22	0.41	2
31	NDP	-
33	NDP	-
36	0.44	2
39	NDP	-
64	0.41	1
75.5	0.48	5
79	0.45	2
33	0.42	7

TABLE: 3.1

ROCK EVAL SCREENING DATA, WELL NOR:25/8-4 (cont'd)

Depth (m)	Lithology	Type	Tmax DegC	S1 kg/t	S2 kg/t	TOC %	HI	PI	Analysing Company
1739.00		SWC		0.0	0.5	0.1	392	0.06	F-BERGEN
1739.50	CLYST	COCH		0.0	0.2	0.1	170	0.00	F-BERGEN
1741.00	SST	COCH	420	53.7	25.2	7.1	358	0.68	F-BERGEN
1748.00	CLYST	COCH		0.0	0.1	0.1	79	0.00	F-BERGEN
1750.00	SST	COCH	416	24.8	7.1	2.9	247	0.78	F-BERGEN
1752.00	CLYST	COCH	488	0.1	0.2	0.2	105	0.19	F-BERGEN
1757.00	CLYST	COCH	435	0.1	0.1	0.3	26	0.50	F-BERGEN
1764.00	CLYST	COCH		0.0	0.3	0.3	83	0.04	F-BERGEN
1766.00	SST	COCH	418	24.4	7.4	2.9	259	0.77	F-BERGEN
1768.00	CLYST	COCH	425	0.1	0.3	0.6	56	0.17	F-BERGEN
1768.50	CLYST	COCH	426	0.0	0.1	0.3	15	0.17	F-BERGEN
1771.50	CLYST	COCH	422	0.0	0.1	0.3	48	0.00	F-BERGEN
1775.50	CLYST	COCH	426	0.0	0.3	0.6	49	0.03	F-BERGEN
1779.00	CLYST	COCH		0.0	0.3	0.4	87	0.06	F-BERGEN
1781.00	SST	COCH	415	26.8	8.3	3.2	261	0.76	F-BERGEN
1791.00	SST	COCH	469	0.0	0.0	0.0	400		F-BERGEN
1794.70	SST	COCH		0.9	1.8	0.6	283	0.32	F-BERGEN
1811.00	SST	COCH	466	0.0	0.0	0.0	0		F-BERGEN
1812.50	SST	COCH	354	0.0	0.0	0.0	100		F-BERGEN
1830.50	MDST	COCH		0.0	0.4	0.2	177	0.00	F-BERGEN
1833.00	CLYST	COCH	412	0.0	0.2	0.4	52	0.04	F-BERGEN
1835.00	CLYST	COCH	425	0.0	0.2	0.5	44	0.05	F-BERGEN
1837.50	CLYST	COCH		0.0	0.0	0.1	0		F-BERGEN

TABLE: 3.1

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ROCK EVAL SCREENING DATA, WELL NOR:25/8-4

Depth (m)	Lithology	Type	Tmax DegC	S1 kg/t	S2 kg/t	TOC %	HI	PI	Analysing Company
1646.00		SWC		0.1	1.3	0.5	238	0.07	F-BERGEN
1648.00		SWC	427	0.1	0.8	0.6	131	0.10	F-BERGEN
1658.00		SWC		0.1	0.6	0.2	344	0.10	F-BERGEN
1670.10	CLYST	COCH	472	0.0	0.2	0.2	71	0.06	F-BERGEN
1685.00	CLYST	COCH	425	0.0	0.3	0.4	83	0.03	F-BERGEN
1686.00	CLYST	COCH	426	0.1	0.6	0.8	81	0.07	F-BERGEN
1687.00	CLYST	COCH	426	0.1	1.1	1.0	115	0.07	F-BERGEN
1690.00	CLYST	COCH	426	0.1	1.2	1.1	111	0.10	F-BERGEN
1692.00	CLYST	COCH	478	0.0	0.3	0.3	114	0.03	F-BERGEN
1696.00	CLYST	COCH	423	0.0	0.1	0.2	69	0.21	F-BERGEN
1700.00	CLYST	COCH	425	0.0	0.2	0.3	59	0.14	F-BERGEN
1702.00	CLYST	COCH	396	0.0	0.0	0.0	100		F-BERGEN
1705.00	SST	COCH		0.2	0.4	0.3	154	0.28	F-BERGEN
1707.00		SWC	412	0.1	0.6	0.1	1140	0.14	F-BERGEN
1710.00		SWC		0.1	1.0	0.3	377	0.08	F-BERGEN
1711.00		SWC		0.1	0.9	0.2	414	0.07	F-BERGEN
1712.00		SWC	470	0.1	0.4	0.2	253	0.10	F-BERGEN
1714.00		SWC		0.0	0.6	0.2	344	0.05	F-BERGEN
1715.00		SWC		0.2	0.6	0.1	429	0.20	F-BERGEN
1716.00		SWC		0.1	0.7	0.1	618	0.09	F-BERGEN
1717.00		SWC	469	0.1	0.6	0.2	300	0.08	F-BERGEN
1718.00		SWC		0.1	0.5	0.2	294	0.21	F-BERGEN
1720.00		SWC	500	0.2	0.9	0.6	150	0.18	F-BERGEN
1722.00		SWC		0.1	0.5	0.1	510	0.12	F-BERGEN
1727.00	CLYST	COCH	451	0.0	0.1	0.0	225	0.00	F-BERGEN
1730.00		SWC		0.1	0.8	0.1	963	0.10	F-BERGEN
1731.00		SWC		0.0	0.6	0.1	829	0.05	F-BERGEN
1732.00		SWC		0.0	0.8	0.1	682	0.04	F-BERGEN
1733.00		SWC		0.1	0.6	0.3	175	0.19	F-BERGEN
1734.00		SWC		0.0	0.6	0.1	517	0.06	F-BERGEN
1736.00		SWC		0.0	0.6	0.3	214	0.05	F-BERGEN
1737.00		SWC		0.0	0.7	0.1	1167	0.01	F-BERGEN
1738.00		SWC		0.0	0.7	0.1	825	0.01	F-BERGEN

TABLE: 3.2.1

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SEDIMENT EXTRACTION WEIGHTS, WELL NOR:25/8-4

Depth (m)	Lithology	Type	Rock (g)	EOM (mg)	SAT (mg)	ARO (mg)	POL (mg)	ASP (mg)	Analysing Company
1658.00		SWC	10.0	0.1					GERG
1670.10	CLYST	COCH	10.0	0.3					GERG
1686.00	CLYST	COCH	10.0	1.9					GERG
1696.00	CLYST	COCH	10.0	0.1					GERG
1705.00	SST	COCH	10.0	3.1					GERG
1734.00		SWC	10.0	0.5					GERG
1739.50	CLYST	COCH	10.0	2.0					GERG
1741.00	SST	COCH	10.0	589.5					GERG
1750.00	SST	COCH	10.0	155.4					GERG
1752.00	CLYST	COCH	10.0	1.5					GERG
1766.00	SST	COCH	10.0	221.3					GERG
1768.00	CLYST	COCH	10.0	0.9					GERG
1781.00	SST	COCH	10.0	108.0					GERG
1791.00	SST	COCH	10.0	0.5					GERG
1794.70	SST	COCH	10.0	16.7					GERG
1812.50	SST	COCH	10.0	0.0					GERG
1835.00	CLYST	COCH	10.0	0.2					GERG

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SEDIMENT EXTRACTION PERCENTAGES (GRAVIMETRIC), WELL NOR:25/8-4

Depth (m)	Lithology	Type	EOM (mg)	EOM (%)	Hydrocarbons(%) SAT	ARO	TOTAL	Non Hydrocarbons(%) POL	ASP	TOTAL
1658.00		SWC	0.1	0.00						
1670.10	CLYST	COCH	0.3	0.00						
1686.00	CLYST	COCH	1.9	0.02						
1696.00	CLYST	COCH	0.1	0.00						
1705.00	SST	COCH	3.1	0.03						
1734.00		SWC	0.5	0.01						
1739.50	CLYST	COCH	2.0	0.02						
1741.00	SST	COCH	589.5	5.89						
1750.00	SST	COCH	155.4	1.55						
1752.00	CLYST	COCH	1.5	0.02						
1766.00	SST	COCH	221.3	2.21						
1768.00	CLYST	COCH	0.9	0.01						
1781.00	SST	COCH	108.0	1.08						
1791.00	SST	COCH	0.5	0.00						
1794.70	SST	COCH	16.7	0.17						
1812.50	SST	COCH	0.0	0.00						
1835.00	CLYST	COCH	0.2	0.00						

TABLE: 3.3.1

SEDIMENT EXTRACTION PERCENTAGES (IATROSCAN), WELL NOR:25/8-4

Depth (m)	Lithology	Type	Hydrocarbons (%) SAT	ARO	TOTAL	Non Hydrocarbons (%) POL	ASP	TOTAL	Analysing Company
1658.00		SWC	55.4	26.6	82.0	17.6	0.4	18.0	GERG
1670.10	CLYST	COCH	56.5	24.9	81.4	18.4	0.2	18.6	GERG
1686.00	CLYST	COCH	48.3	24.8	73.1	18.8	8.1	26.9	GERG
1696.00	CLYST	COCH	40.0	18.8	58.8	41.0	0.2	41.2	GERG
1705.00	SST	COCH	51.5	32.5	84.0	13.1	2.9	16.0	GERG
1734.00		SWC	75.0	23.8	98.8	0.6	0.6	1.2	GERG
1739.50	CLYST	COCH	54.7	23.7	78.4	13.4	8.2	21.6	GERG
1741.00	SST	COCH	51.0	30.3	81.3	13.4	5.3	18.7	GERG
1750.00	SST	COCH	50.1	29.5	79.6	13.9	6.5	20.4	GERG
1752.00	CLYST	COCH	59.5	28.7	88.2	5.7	6.1	11.8	GERG
1766.00	SST	COCH	50.0	30.1	80.1	14.3	5.6	19.9	GERG
1768.00	CLYST	COCH	78.8	17.3	96.1	3.9	0.0	3.9	GERG
1781.00	SST	COCH	49.5	29.4	78.9	14.2	6.9	21.1	GERG
1791.00	SST	COCH	59.3	22.6	81.9	17.2	0.9	18.1	GERG
1794.70	SST	COCH	64.0	23.5	87.5	6.6	5.9	12.5	GERG
1812.50	SST	COCH	71.3	13.5	84.8	14.9	0.3	15.2	GERG
1835.00	CLYST	COCH	56.3	20.2	76.5	23.3	0.2	23.5	GERG

TABLE: 3.3.2

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SEDIMENT EXTRACTION RATIOS (IATROSCAN), WELL NOR:25/8-4

Depth (m)	Lithology	Type	TOC (%)	EOM/TOC (%)	SAT/TOC (%)	SAT/ARO (%)	HC/Non HC (%)
1658.00		SWC	0.2		307.8	2.1	4.6
1670.10	CLYST	COCH	0.2		235.4	2.3	4.4
1686.00	CLYST	COCH	0.8		61.9	1.9	2.7
1696.00	CLYST	COCH	0.2		250.0	2.1	1.4
1705.00	SST	COCH	0.3		183.9	1.6	5.3
1734.00		SWC	0.1		625.0	3.2	82.3
1739.50	CLYST	COCH	0.1		547.0	2.3	3.6
1741.00	SST	COCH	7.1		7.2	1.7	4.3
1750.00	SST	COCH	2.9		17.5	1.7	3.9
1752.00	CLYST	COCH	0.2		297.5	2.1	7.5
1766.00	SST	COCH	2.9		17.4	1.7	4.0
1768.00	CLYST	COCH	0.6		125.1	4.6	24.6
1781.00	SST	COCH	3.2		15.6	1.7	3.7
1791.00	SST	COCH				2.6	4.5
1794.70	SST	COCH	0.6		100.0	2.7	7.0
1812.50	SST	COCH				5.3	5.6
1835.00	CLYST	COCH	0.5		117.3	2.8	3.3

TABLE: 3.4

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SATURATED FRACTION MOLECULAR RATIOS (SEDIMENT SAMPLES), WELL NOR:25/8-4

Depth (m)	Lithology	Type	Pristane/ nC17	Pristane/ Phytane	CPI-I	CPI-II	nC17/ nC17+nC27	Analysing Company
1686.00	CLYST	COCH	0.7	2.4	1.1			GERG
1705.00	SST	COCH	0.8	1.6	1.1			GERG
1739.50	CLYST	COCH	0.8	2.3	1.0			GERG
1741.00	SST	COCH	0.7	1.6	1.1			GERG
1750.00	SST	COCH	0.5	1.6	1.0			GERG
1752.00	CLYST	COCH	0.8	2.3	1.1			GERG
1766.00	SST	COCH	0.5	1.6	0.9			GERG
1781.00	SST	COCH	0.3	1.4	0.8			GERG
1794.70	SST	COCH	0.8	1.8	1.1			GERG

TABLE: 3.4

SATURATED FRACTION MOLECULAR RATIOS (OIL SAMPLES), WELL NOR:25/8-4

St.Depth (m)	En.Depth (m)	Name	Pristane/ nC17	Pristane/ Phytane	CPI-I	CPI-II	nC17/ nC17+nC27	Analysing Company
1750.70	1750.70	RFT	1.8	1.9	1.1			GERG

TABLE: 3.6

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ISOTOPE ANALYSIS RESULTS (SEDIMENT SAMPLES), WELL NOR:25/8-4

Depth (m)	Lithology	Type	d13C Extr	d13C SAT	d13C ARO	d13C POL	d13C ASP	d13C Kero	Analysing Company
1658.00		SWC		-28.10	-27.00				GERG
1734.00		SWC		-28.10	-27.30				GERG
1739.50	CLYST	COCH		-28.40	-27.60				GERG
1741.00	SST	COCH		-28.60	-28.00				GERG
1750.00	SST	COCH		-28.70	-27.90				GERG
1752.00	CLYST	COCH		-28.60	-27.10				GERG
1766.00	SST	COCH		-28.80	-28.10				GERG
1768.00	CLYST	COCH		-28.60	-27.20				GERG
1781.00	SST	COCH		-28.80	-28.20				GERG
1835.00	CLYST	COCH		-28.90	-28.50				GERG

TABLE: 3.6

ISOTOPE ANALYSIS RESULTS (OIL SAMPLES), WELL NOR:25/8-4

St.Depth (m)	En.Depth (m)	Name	d13C Oil	d13C Sat	d13C Aro	d13C Pol	d13C Asp	Analysing Company
1750.70	1750.70	RFT	-28.40	-28.40	-28.20			GERG

FIGURES

APPENDICES

I Vitrinite reflectance readings.

Sample ID: 25/8-4 1646
R.o. Aver.: 0.41 (20)
Lithology: Shale - 100%
Phytoclast Content: Low
Vitrinite: 50%
Inertinite: 50%
Exinite: -
UV fluorescence: Spores - low - y-y/o
Bitumen: Stain - mod; wisps - mod
VR populations: 1
Mineralogy: Iron oxide specks
General Comments: -
0.42
0.40
0.32
0.36
0.38
0.39
0.47
0.53
0.45
0.37
0.37
0.36
0.40
0.38
0.39
0.40
0.43
0.44
0.42
0.43

Sample ID: 25/8-4 1687
R.o. Aver.: 0.45 (11)
Lithology: Shale - 100%
Phytoclast Content: Very low
Vitrinite: Trace
Inertinite: Trace
Exinite: -
UV fluorescence: Spores - mod/rich - y + y/o
Bitumen: Stain - light; wisps - mod
VR populations: 1
Mineralogy: -
General Comments: -
0.50
0.41
0.47
0.51
0.43
0.43
0.41
0.44
0.43
0.56
0.38

Sample ID: 25/8-4 1690
R.o. Aver.: 0.39 (14)
Lithology: Shale - 100%
Phytoclast Content: Very low
Vitrinite: Trace
Inertinite: Trace
Exinite: -
UV fluorescence: Spores - mod/rich - y + y/o
Bitumen: Stain - light; wisps & blebs - mod
VR populations: 1
Mineralogy: -
General Comments: -
0.38
0.40
0.42
0.40
0.42
0.39
0.46
0.35
0.42
0.31
0.32
0.31
0.43
0.40

Sample ID: 25/8-4 1707
R.o. Aver.: NDP
Lithology: Shale/marl - 100%
Phytoclast Content: Nil
Vitrinite: -
Inertinite: -
Exinite: -
UV fluorescence: Spores - low - y + y/o
Bitumen: Stain - light; wisps - trace
VR populations: -
Mineralogy: -
General Comments: -

Sample ID: 25/8-4 1711
R.o. Aver.: 0.52 (4)
Lithology: Shale - 100%
Phytoclast Content: Trace
Vitrinite: Trace
Inertinite: Trace
Exinite: -
UV fluorescence: Spores - trace - y/o
Bitumen: Stain - very light; wisps - very low
VR populations: 1
Mineralogy: -
General Comments: -
0.53
0.52
0.52
0.49

Sample ID: 25/8-4 1714
R.o. Aver.: 0.41 (4)
Lithology: Shale - 100%
Phytoclast Content: Trace
Vitrinite: Trace
Inertinite: 100%
Exinite: -
UV fluorescence: Spores - trace - y/o + D.O.
Bitumen: Stain - light; wisps - trace
VR populations: 1
Mineralogy: Iron oxide specks
General Comments: -
0.37
0.43
0.46
0.39

Sample ID: 25/8-4 1716
R.o. Aver.: NDP
Lithology: Red shale - 100%
Phytoclast Content: Trace
Vitrinite: -
Inertinite: Trace
Exinite: -
UV fluorescence: -
Bitumen: Stain - masked by haematite; wisps - trace
VR populations: -
Mineralogy: Overall haematite staining; glauconite
General Comments: No vitrinite located; no oxidation of phytoclasts or pyrite

Sample ID: 25/8-4 1718
R.o. Aver.: 0.47 (1)
Lithology: Shale - 100%
Phytoclast Content: Very low
Vitrinite: One
Inertinite: 100%
Exinite: -
UV fluorescence: Spores - trace - L.O.
Bitumen: Stain - very light; wisps + blebs - trace
VR populations: 1
Mineralogy: Iron oxide specks
General Comments: -
0.47

Sample ID: 25/8-4 1722
R.o. Aver.: 0.41 (2)
Lithology: Shale - 100%
Phytoclast Content: Very low
Vitrinite: Two
Inertinite: 100%
Exinite: -
UV fluorescence: Spores - trace - y-y/o
Bitumen: Stain - light; wisps - low
VR populations: 1
Mineralogy: Overall iron oxide staining
General Comments: -
0.42
0.39

Sample ID: 25/8-4 1731
R.o. Aver.: NDP
Lithology: Shale - 100%
Phytoclast Content: Trace
Vitrinite: -
Inertinite: 100%
Exinite: -
UV fluorescence: -
Bitumen: Masked by Iron oxides
VR populations: -
Mineralogy: Overall light Iron oxide staining
General Comments: -

Sample ID: 25/8-4 1733
R.o. Aver.: NDP
Lithology: White shale - 100%
Phytoclast Content: Trace
Vitrinite: -
Inertinite: Trace
Exinite: -
UV fluorescence: Spores - trace - y-y/o
Bitumen: Wisps - trace
VR populations: -
Mineralogy: Strong mud cake contamination
General Comments: -

Sample ID: 25/8-4 1736
R.o. Aver.: 0.44 (2)
Lithology: Shale - 100%
Phytoclast Content: Very low
Vitrinite: Two
Inertinite: 100%
Exinite: -
UV fluorescence: Spores - trace - y-y/o
Bitumen: Stain - light; wisps - low; degraded
VR populations: 1
Mineralogy: Iron oxide specks; soft
General Comments: -
0.39
0.48

Sample ID: 25/8-4 1739
R.o. Aver.: NDP
Lithology: Shale - 100%
Phytoclast Content: Trace
Vitrinite: -
Inertinite: Trace
Exinite: -
UV fluorescence: Spores - trace - y-y/o
Bitumen: Masked by Iron oxides
VR populations: -
Mineralogy: Iron oxide specks + light staining; soft; degraded glauconite
General Comments: -

Sample ID: 25/8-4 1764
R.o. Aver.: 0.41 (1)
Lithology: Shale - 100%
Phytoclast Content: Low
Vitrinite: One
Inertinite: 100%
Exinite: -
UV fluorescence: Spores - mod - y-y/o; Hydrocarbon specks - mod - y
Bitumen: Stain - trace; wisps - trace
VR populations: 1
Mineralogy: Iron oxide specks
General Comments: -
0.41

Sample ID: 25/8-4 1775.5
R.o. Aver.: 0.48 (5)
Lithology: Shale - 100%
Phytoclast Content: Low - moderate
Vitrinite: Trace
Inertinite: 100%
Exinite: -
UV fluorescence: Spores - mod - y-L.O.
Bitumen: Stain - light; wisps + blebs - low
VR populations: 1
Mineralogy: -
General Comments: -
0.50
0.48
0.49
0.54
0.40

Sample ID: 25/8-4 1779
R.o. Aver.: 0.45 (2)
Lithology: Shale - 100%
Phytoclast Content: Low
Vitrinite: Two
Inertinite: 100%
Exinite: -
UV fluorescence: Spores - mod - y + y/o; Hydrocarbon specks - low - g/y
Bitumen: Stain - trace; wisps - trace
VR populations: 1
Mineralogy: Iron oxide specks
General Comments: -
0.43
0.46

Sample ID: 25/8-4 1833
R.o. Aver.: 0.42 (7)
Lithology: Shale - 100%
Phytoclast Content: Low
Vitrinite: Trace
Inertinite: 100%
Exinite: -
UV fluorescence: Spores - low/mod - y-L.O.
Bitumen: Stain - light; wisps + blebs - low/mod; degraded
VR populations: 1
Mineralogy: -
General Comments: -
0.34
0.37
0.43
0.46
0.51
0.38
0.47

II GC of alkane fractions

Norsk - Hydro Well 25/8-4
Selected Peak Areas

FILE #	DESCRIPTION	n-C10 (area)	n-C11 (area)	n-C12 (area)	n-C13 (area)	n-C14 (area)	n-C15 (area)	n-C16 (area)	n-C17 (area)	PRIST (area)	n-C18 (area)	PHYTA (area)	n-C19 (area)	n-C20 (area)	n-C21 (area)
RX2128	CORE#2 1686M	n.d.	n.d.	n.d.	n.d.	757427	1599330	2059000	1212620	1838554	729641	755063	347047	229699	163159
RX2138	CORE#3 1705M	n.d.	n.d.	33326	248743	1123284	2130546	2510790	2244781	2756542	1668462	1745840	1283068	1037748	729478
RX2143	CORE#4 1740M	n.d.	n.d.	n.d.	n.d.	338496	1065293	1699510	1140781	1494008	689963	642893	390184	237270	129531
RX2148	CORE#4 1741M	n.d.	n.d.	n.d.	n.d.	473932	1763878	2205451	2673616	3879304	2039961	2467109	1936712	1554566	1110452
RX2153	CORE#5 1750M	n.d.	n.d.	n.d.	n.d.	209265	802517	989207	1082484	2073651	1019669	1254759	963311	961936	768689
RX2158	CORE#5 1752M	n.d.	n.d.	n.d.	n.d.	1367053	3601354	4492788	2659138	3393998	1778246	1508524	863607	482472	177838
RX2163	CORE#6 1766M	n.d.	n.d.	n.d.	n.d.	50450	243996	413494	559509	1209823	574645	773443	638834	645119	556606
RX2173	CORE#7 1781M	n.d.	n.d.	n.d.	n.d.	35788	126984	286577	441178	1377118	570370	989152	646245	761341	653330
RX2183	CORE#8 1795M	n.d.	n.d.	14923	23408	126511	222901	263554	205618	272645	153423	153100	114460	89113	66516

n.d. = not determined

Norsk - Hydro Well 25/8-4
Selected Peak Areas

FILE #	DESCRIPTION	n-C22 (area)	n-C23 (area)	n-C24 (area)	n-C25 (area)	n-C26 (area)	n-C27 (area)	n-C28 (area)	n-C29 (area)	n-C30 (area)	n-C31 (area)	n-C32 (area)	n-C33 (area)	n-C34 (area)
RX2128	CORE#2 1686M	89225	61905	53775	77840	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
RX2138	CORE#3 1705M	584577	516185	491948	496056	230408	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
RX2143	CORE#4 1740M	115119	100427	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
RX2148	CORE#4 1741M	873584	601693	506088	387437	244906	168128	112789	60014	49212	36724	17659	13675	14545
RX2153	CORE#5 1750M	658953	575130	525625	530639	371233	314920	294537	180423	171138	114700	74519	62244	57621
RX2158	CORE#5 1752M	117479	84440	48034	50577	35213	36980	30913	17398	25331	22072	11319	n.d.	n.d.
RX2163	CORE#6 1766M	526800	490063	472536	441903	347619	290437	248535	178623	170506	111341	62782	49690	n.d.
RX2173	CORE#7 1781M	606874	531316	504037	426864	304266	281592	248741	163348	136716	117214	71874	62397	45404
RX2183	CORE#8 1795M	48840	32577	40810	70916	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.

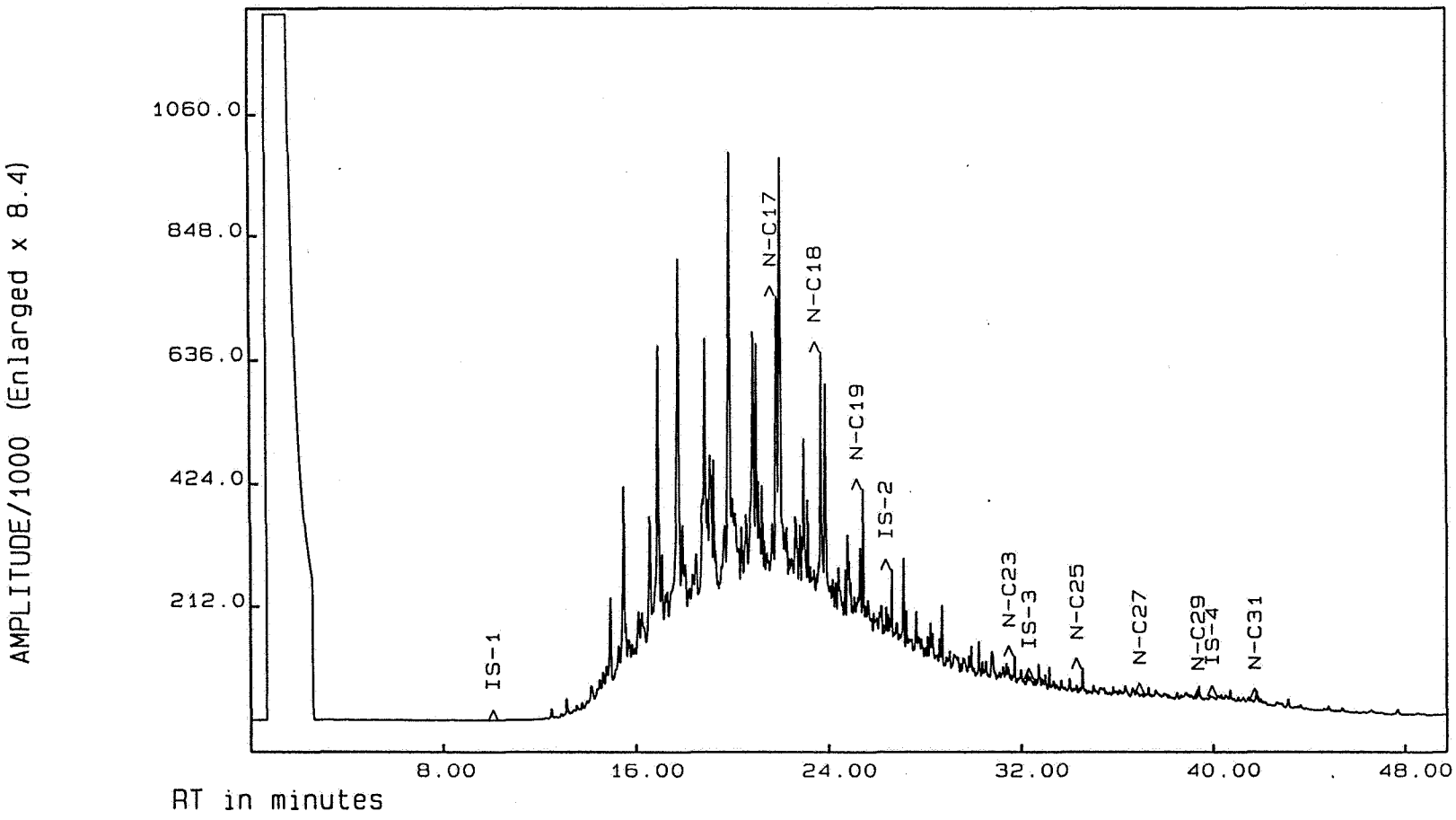
n.d. = not determined

Norsk - Hydro Well 25/8-4
Percent Composition of Selected Peaks

FILE #	DESCRIPTION	n-C10 (%)	n-C11 (%)	n-C12 (%)	n-C13 (%)	n-C14 (%)	n-C15 (%)	n-C16 (%)	n-C17 (%)	PRIST (%)	n-C18 (%)	PHYTA (%)	n-C19 (%)	n-C20 (%)	n-C21 (%)
RX2128	CORE#2 1686M	0.0	0.0	0.0	0.0	7.6	16.0	20.6	12.2	18.4	7.3	7.6	3.5	2.3	1.6
RX2138	CORE#3 1705M	0.0	0.0	0.2	1.3	5.7	10.7	12.7	11.3	13.9	8.4	8.8	6.5	5.2	3.7
RX2143	CORE#4 1740M	0.0	0.0	0.0	0.0	4.2	13.2	21.1	14.2	18.6	8.6	8.0	4.9	2.9	1.6
RX2148	CORE#4 1741M	0.0	0.0	0.0	0.0	2.0	7.6	9.5	11.5	16.7	8.8	10.6	8.4	6.7	4.8
RX2153	CORE#5 1750M	0.0	0.0	0.0	0.0	1.5	5.7	7.0	7.7	14.8	7.3	8.9	6.9	6.8	5.5
RX2158	CORE#5 1752M	0.0	0.0	0.0	0.0	6.6	17.3	21.6	12.8	16.3	8.5	7.3	4.2	2.3	0.9
RX2163	CORE#6 1766M	0.0	0.0	0.0	0.0	0.6	2.7	4.6	6.2	13.4	6.3	8.5	7.1	7.1	6.1
RX2173	CORE#7 1781M	0.0	0.0	0.0	0.0	0.4	1.4	3.1	4.7	14.7	6.1	10.5	6.9	8.1	7.0
RX2183	CORE#8 1795M	0.0	0.0	0.8	1.2	6.7	11.7	13.9	10.8	14.4	8.1	8.1	6.0	4.7	3.5

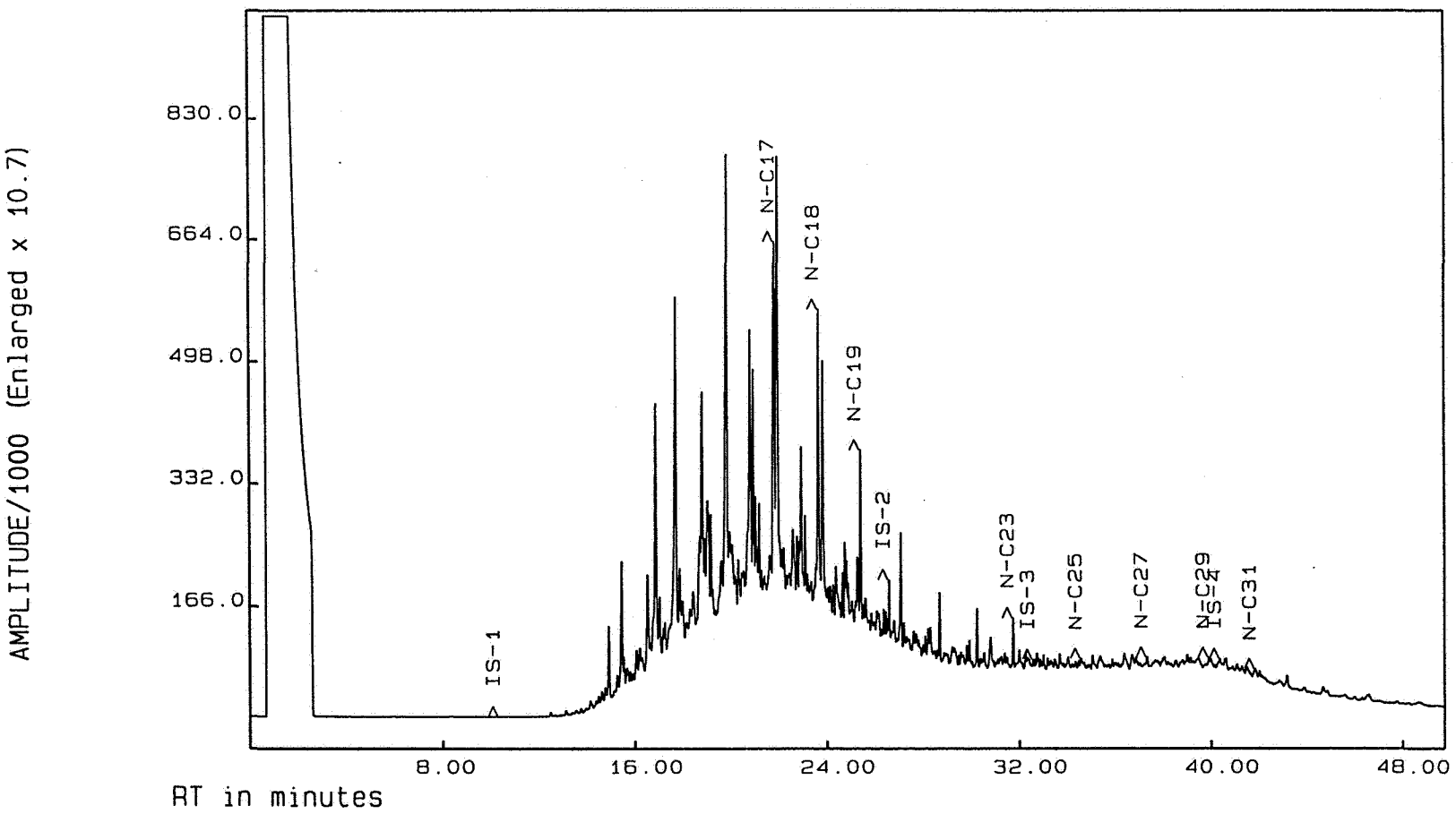
Norsk - Hydro Well 25/8-4
Percent Composition of Selected Peaks

FILE #	DESCRIPTION	n-C22 (%)	n-C23 (%)	n-C24 (%)	n-C25 (%)	n-C26 (%)	n-C27 (%)	n-C28 (%)	n-C29 (%)	n-C30 (%)	n-C31 (%)	n-C32 (%)	n-C33 (%)	n-C34 (%)
RX2128	CORE#2 1686M	0.9	0.6	0.5	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RX2138	CORE#3 1705M	2.9	2.6	2.5	2.5	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RX2143	CORE#4 1740M	1.4	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RX2148	CORE#4 1741M	3.8	2.6	2.2	1.7	1.1	0.7	0.5	0.3	0.2	0.2	0.1	0.1	0.1
RX2153	CORE#5 1750M	4.7	4.1	3.7	3.8	2.6	2.2	2.1	1.3	1.2	0.8	0.5	0.4	0.4
RX2158	CORE#5 1752M	0.6	0.4	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.0	0.0
RX2163	CORE#6 1766M	5.8	5.4	5.2	4.9	3.8	3.2	2.7	2.0	1.9	1.2	0.7	0.5	0.0
RX2173	CORE#7 1781M	6.5	5.7	5.4	4.5	3.2	3.0	2.6	1.7	1.5	1.2	0.8	0.7	0.5
RX2183	CORE#8 1795M	2.6	1.7	2.1	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



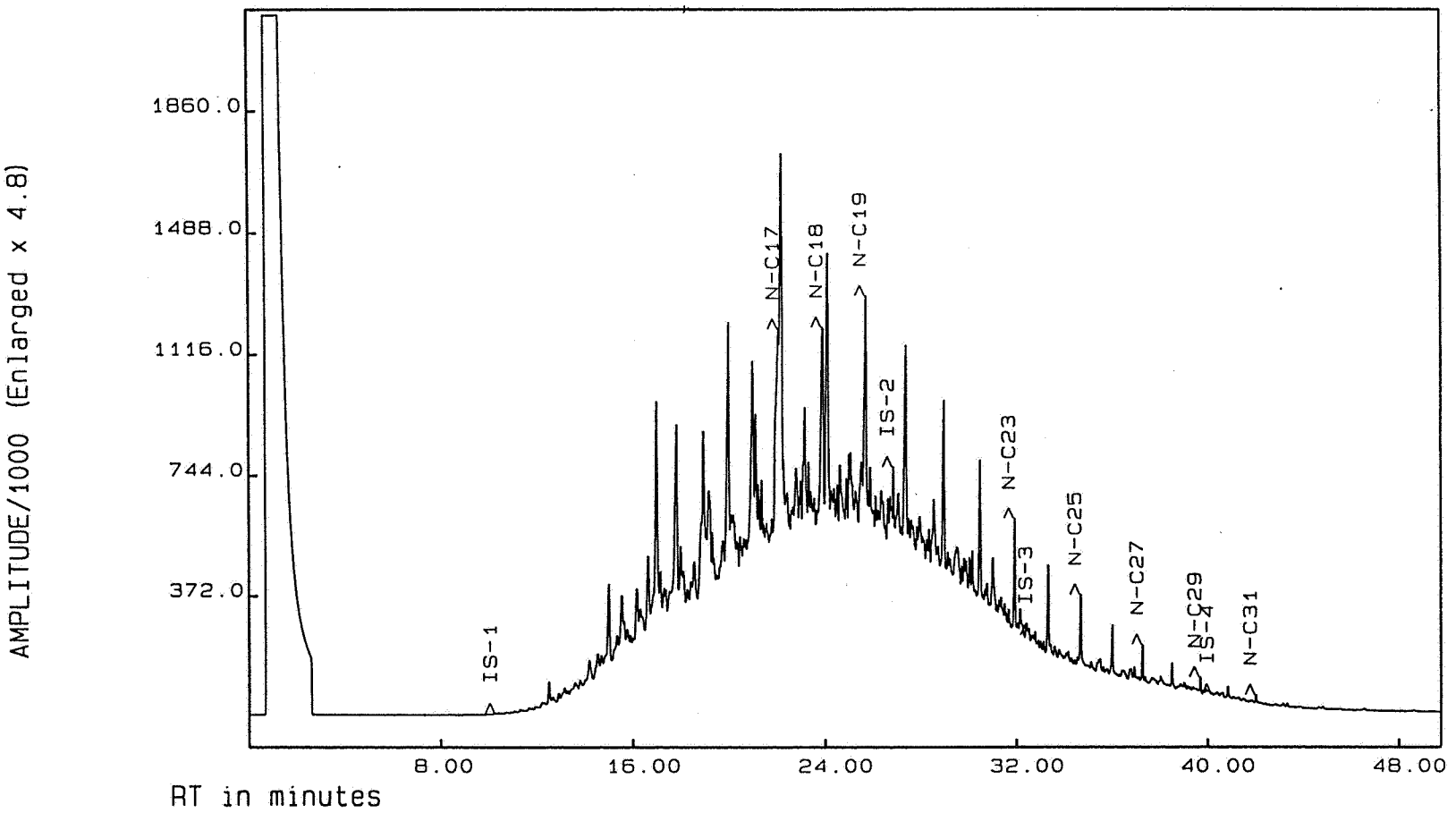
SAMPLE: CORE#2 1686M INJECTED AT 17: 43: 42 ON FEB 17, 1993

Meth: ISTD07 RAW: RX2128. Proc: RX2128.prc



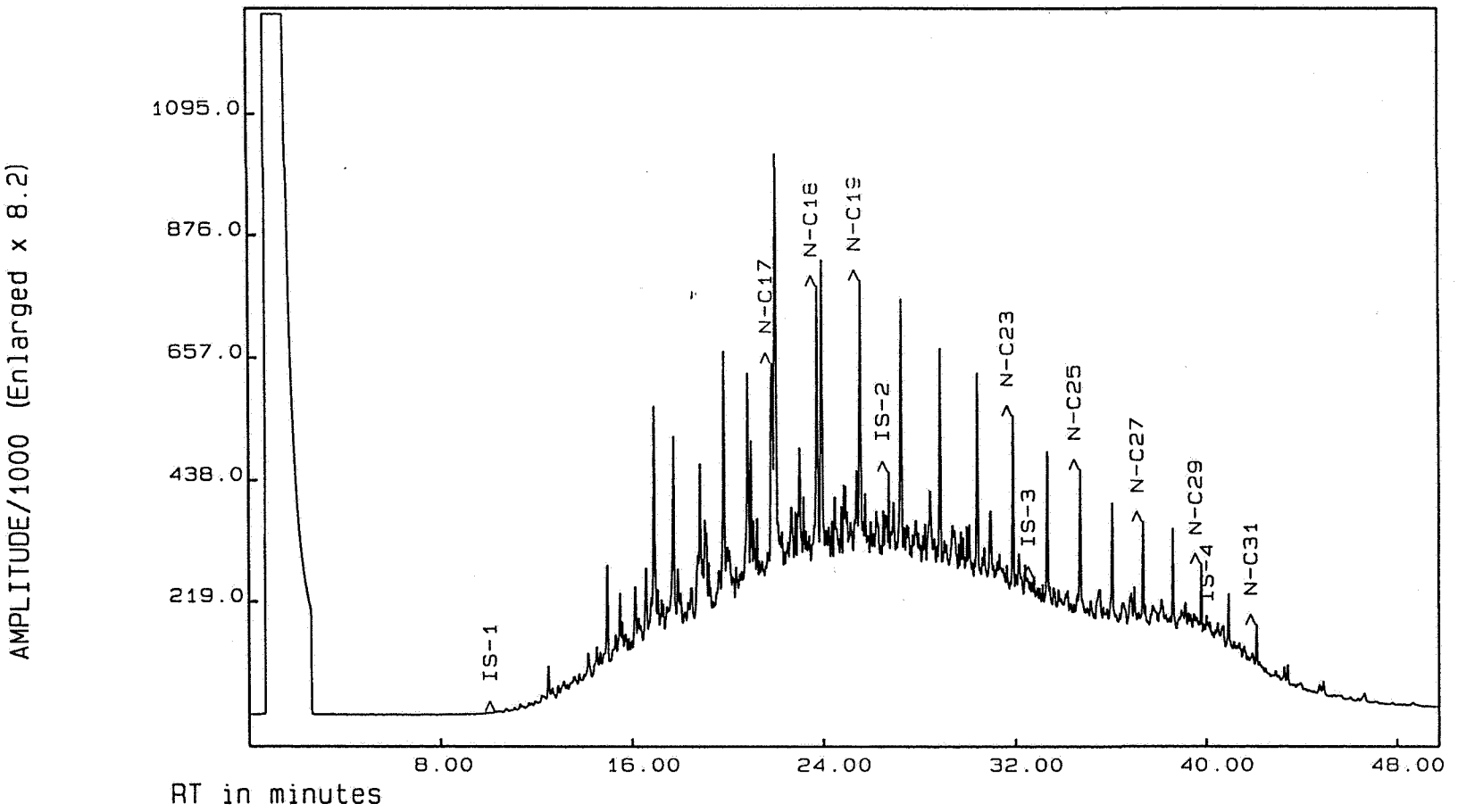
SAMPLE: CORE#4 1740M INJECTED AT 19: 42: 00 ON FEB 17, 1993

Meth: ISTD07 RAW: RX2143. Proc: RX2143.prc



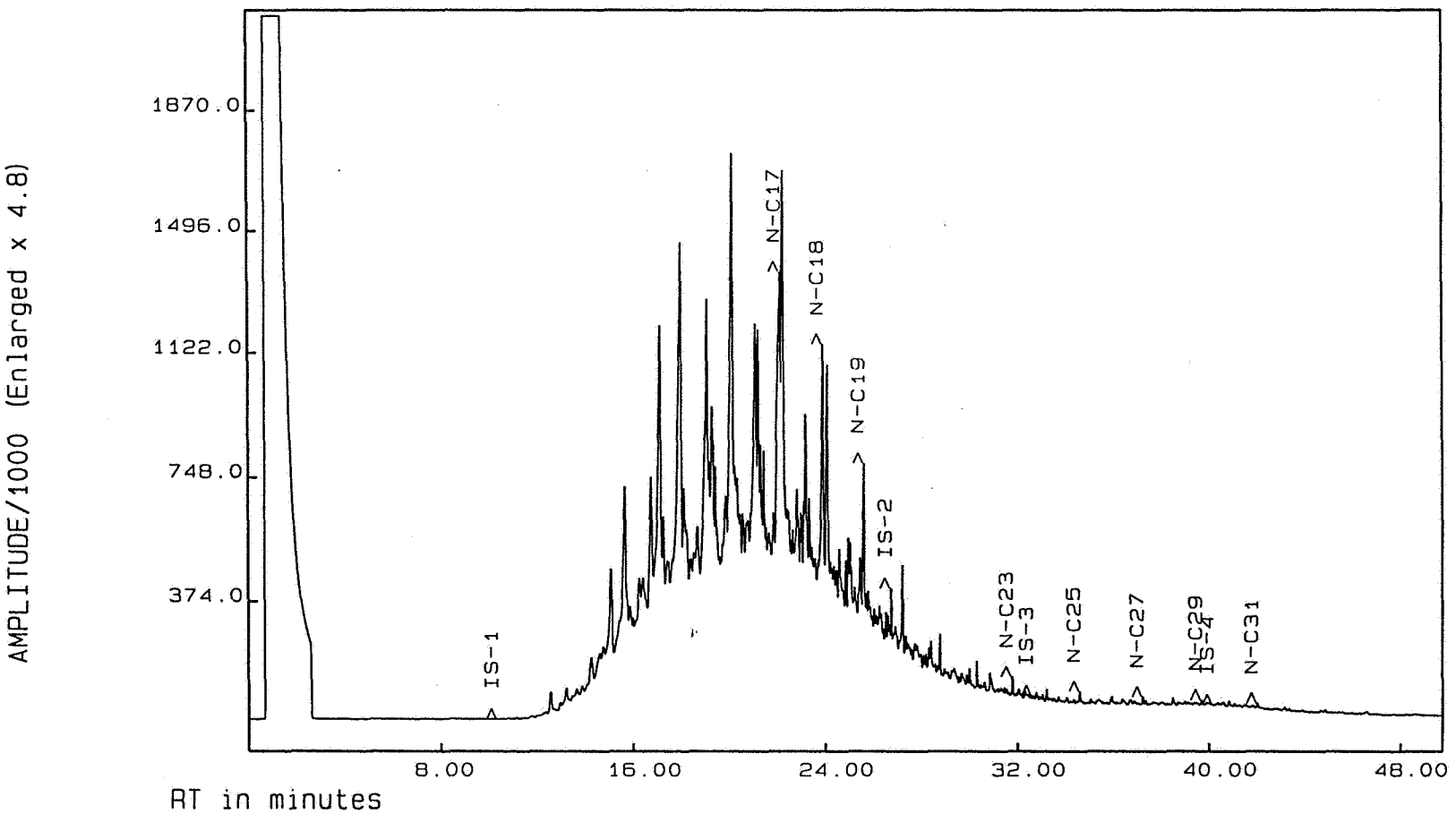
SAMPLE: CORE#4 1741M INJECTED AT 20: 41: 10 ON FEB 17, 1993

Meth: ISTD07 RAW: RX2148. Proc: RX2148.prc



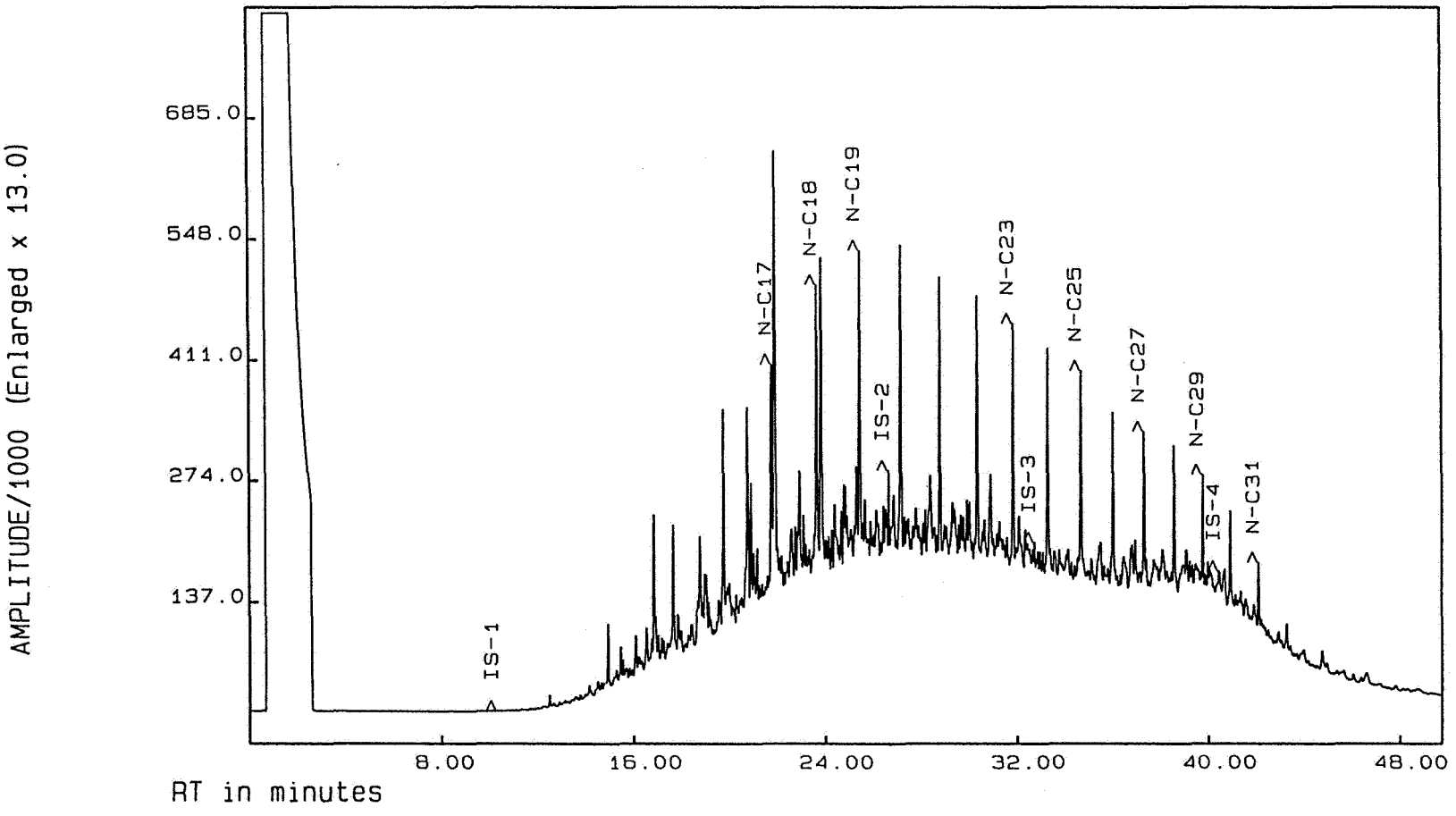
SAMPLE: CORE#5 1750M INJECTED AT 21:40:23 ON FEB 17, 1993

Meth: ISTD07 RAW: RX2153. Proc: RX2153.prc



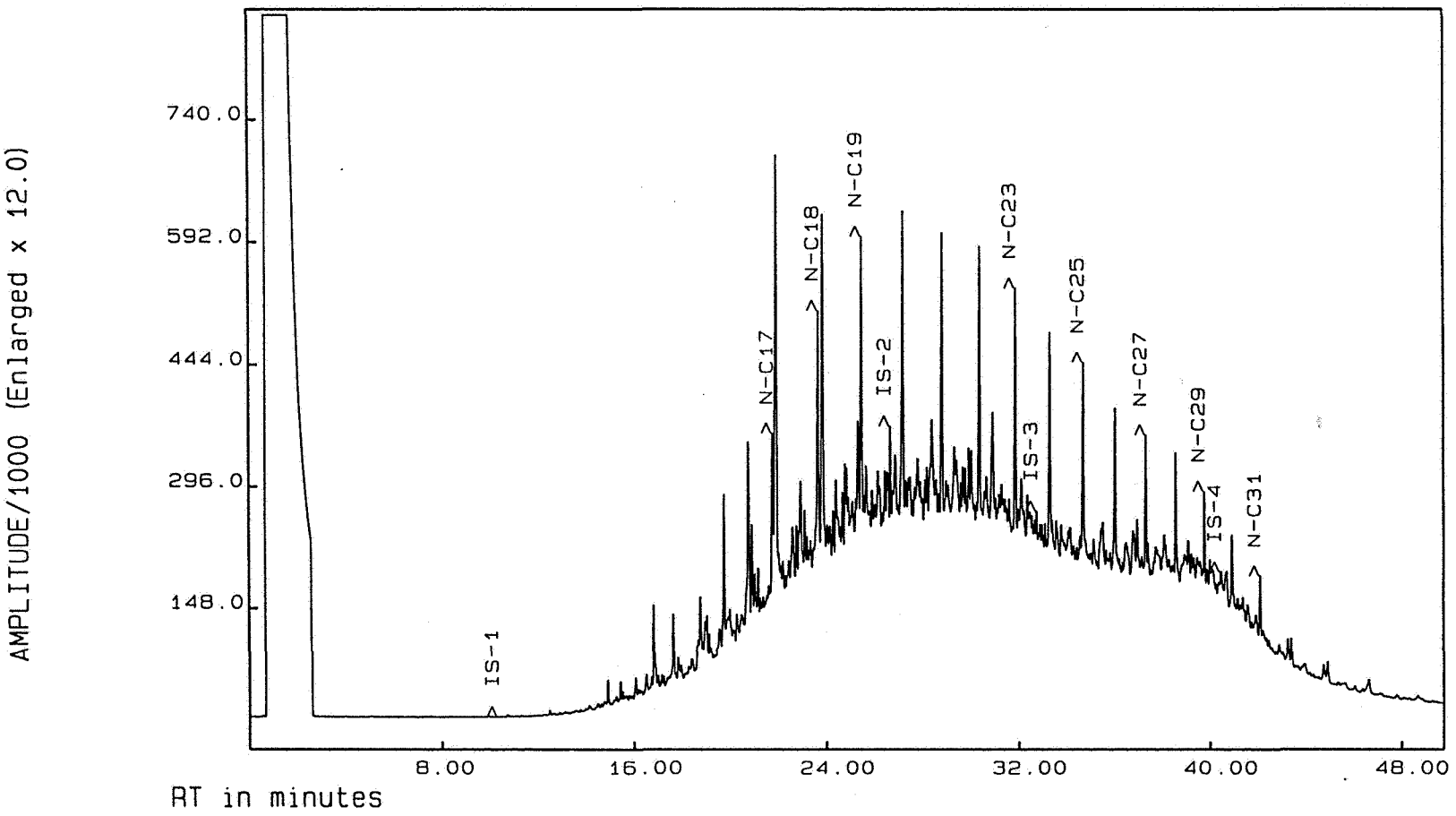
SAMPLE: CORE#5 1752M INJECTED AT 22:39:32 ON FEB 17, 1993

Meth: ISTD07 RAW: RX2158. Proc: RX2158.prc



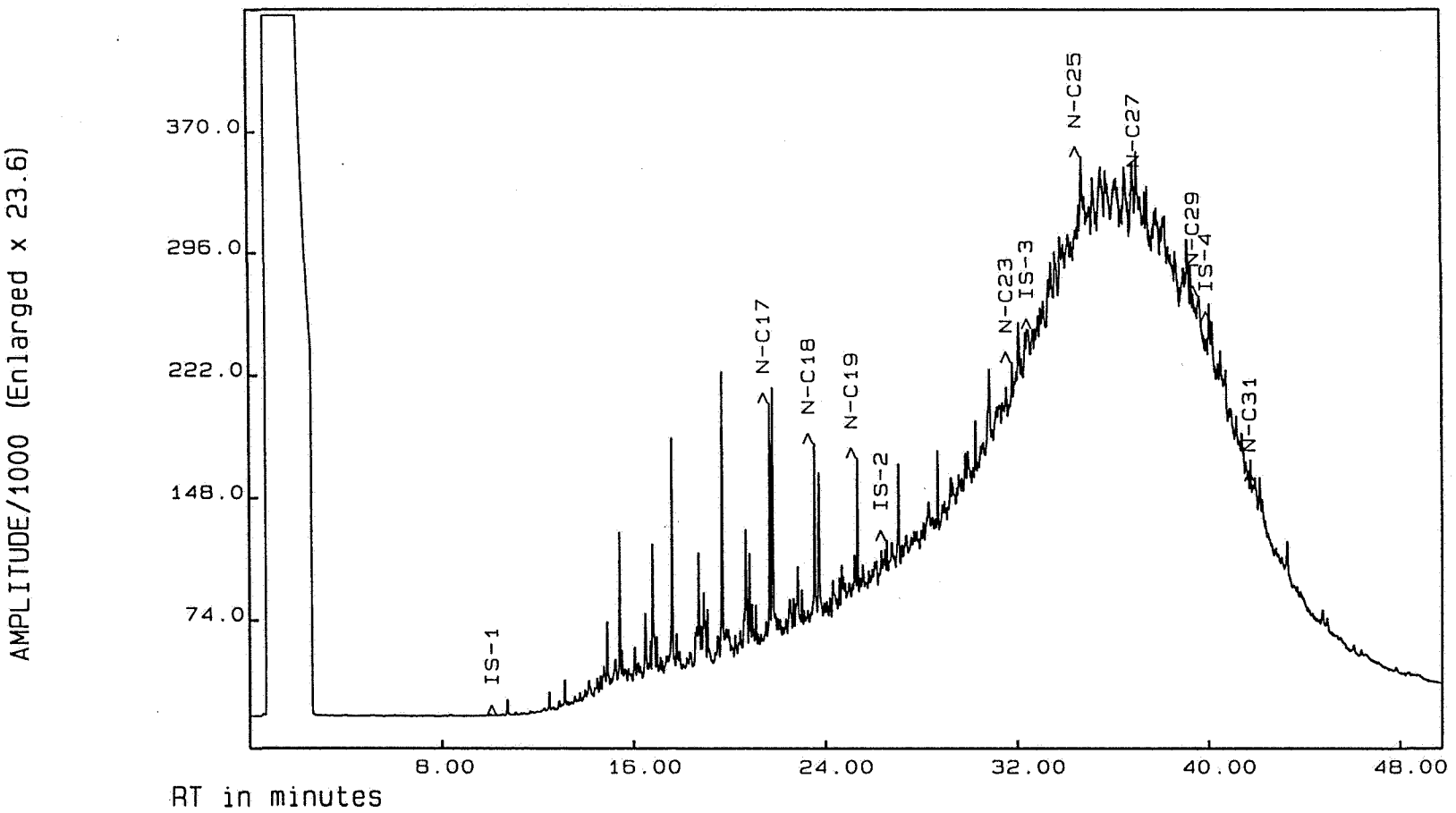
SAMPLE: CORE#6 1766M INJECTED AT 23:38:42 ON FEB 17, 1993

Meth: ISTD07 RAW: RX2163. Proc: RX2163.prc



SAMPLE: CORE#7 1781M INJECTED AT 0:37:52 ON FEB 18, 1993

Meth: ISTD07 RAW: RX2173. Proc: RX2173.prc

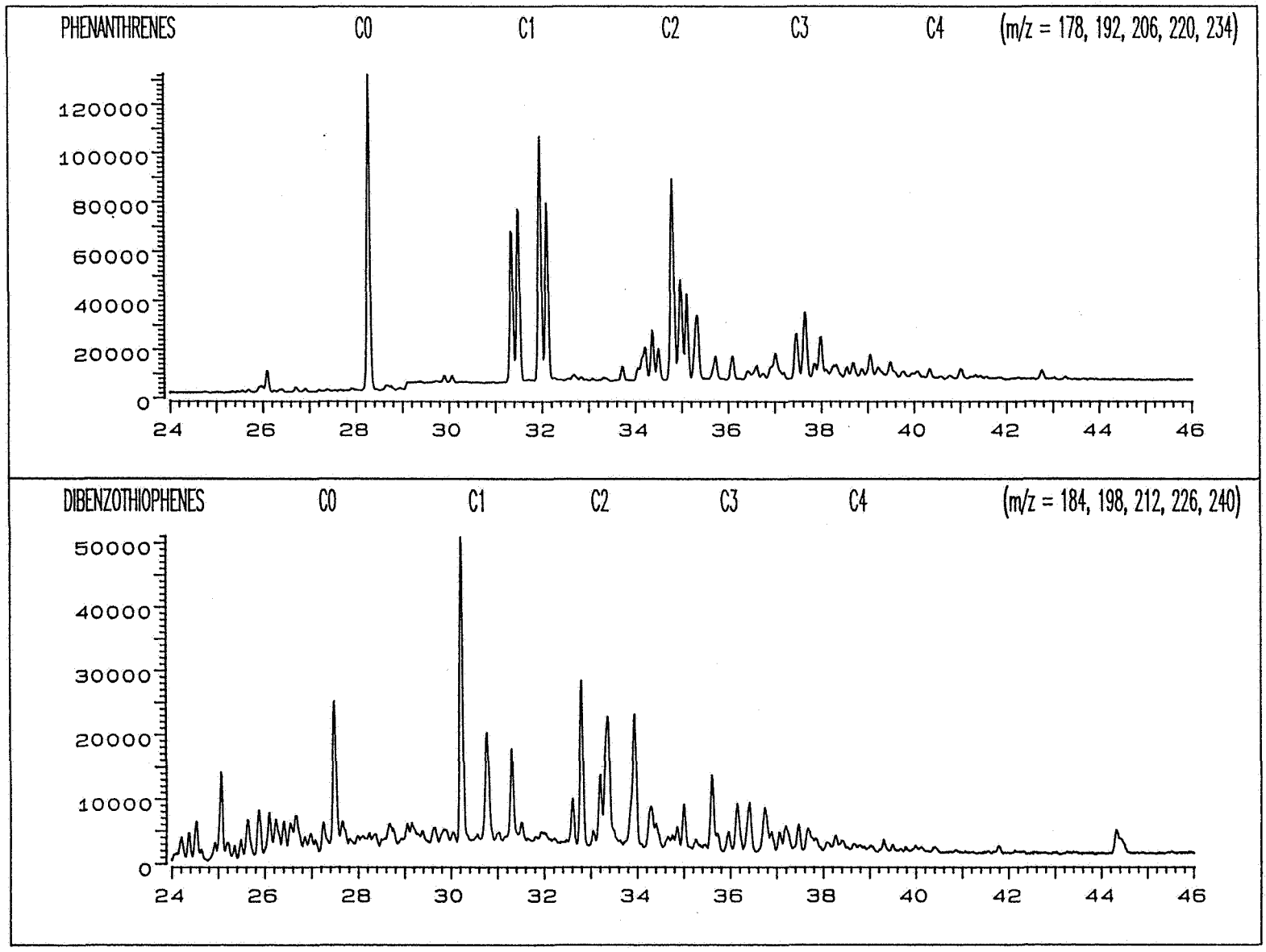


SAMPLE: CORE#8 1795M INJECTED AT 1:37:01 ON FEB 18, 1993

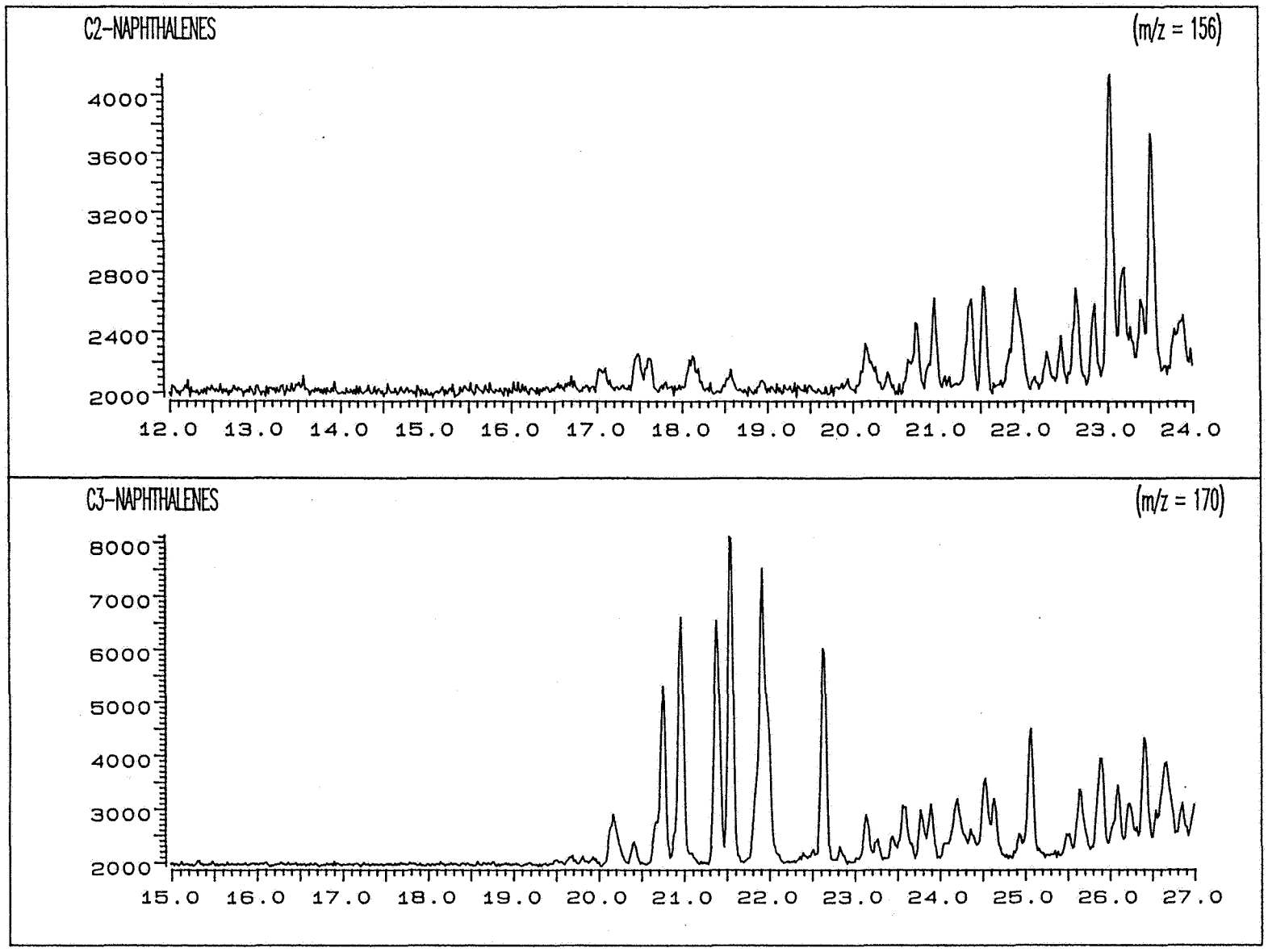
Meth: ISTD07 RAW: RX2183. Proc: RX2183.prc

III GC-MS of aromatic fractions

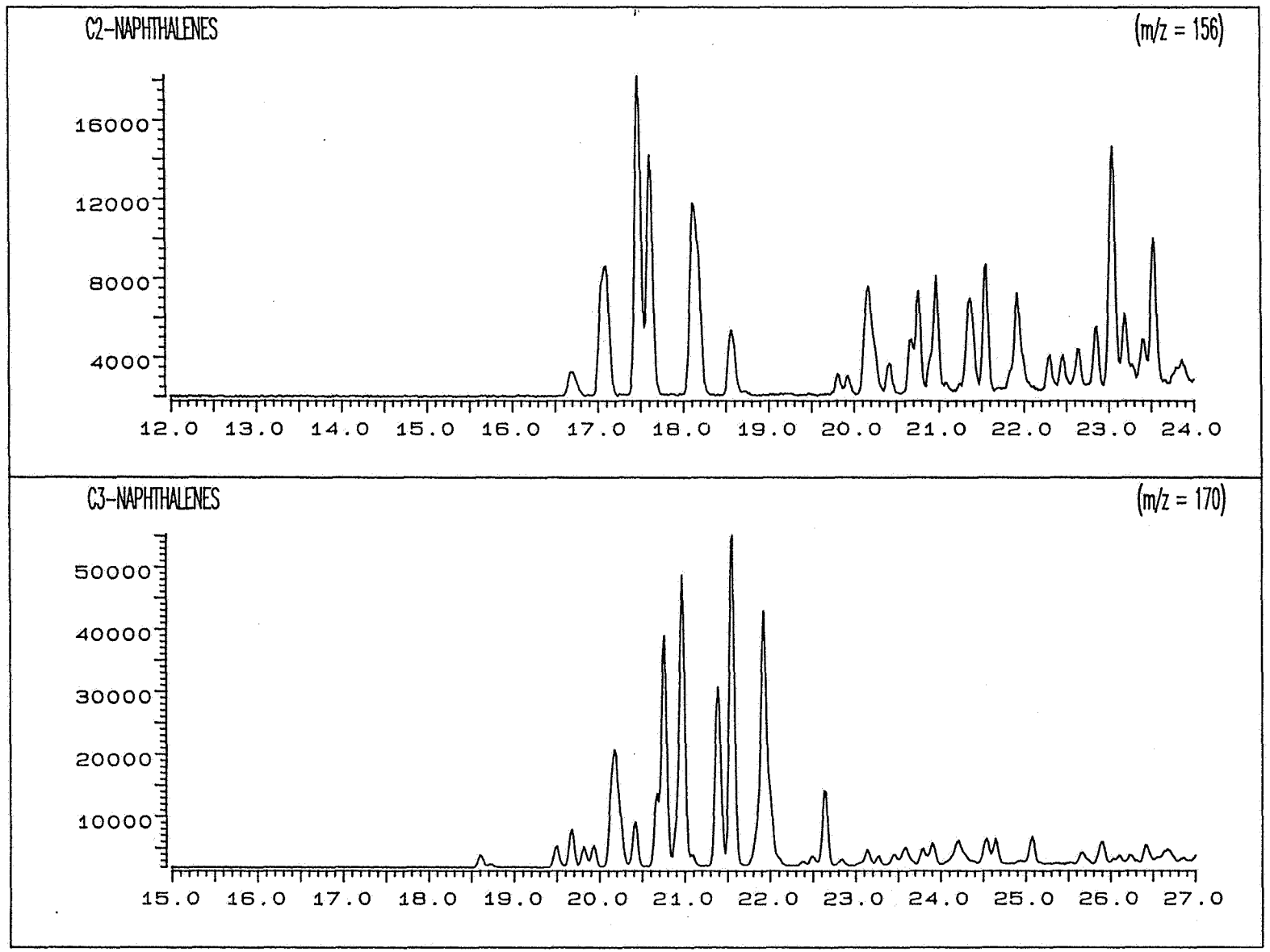
FILE: >X2130 X2126 Well 25/8-4 Core # 2 CC (Depth = 1686m)



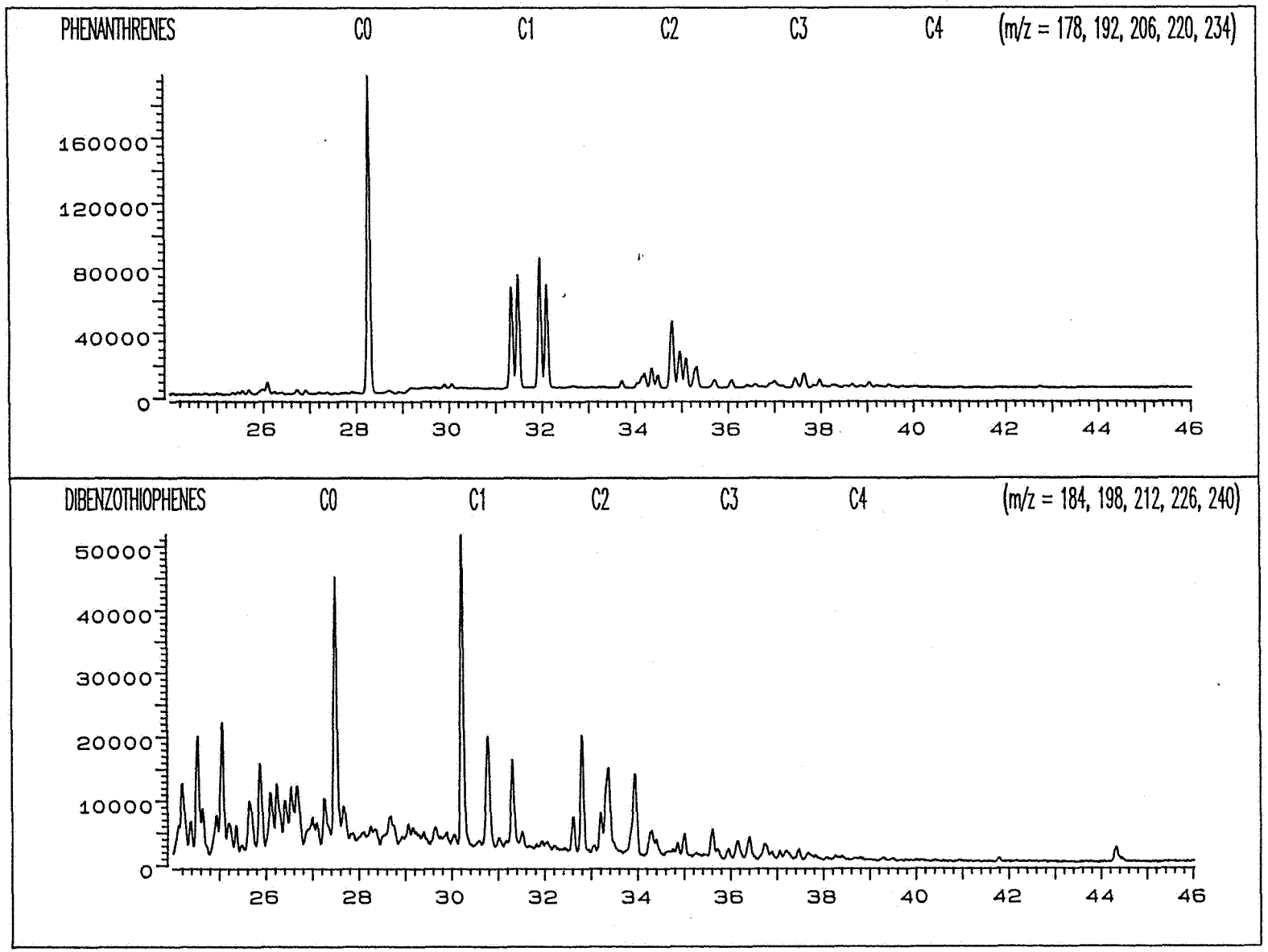
FILE: >X2130 X2126 Well 25/8-4 Core # 2 CC (Depth = 1686m)



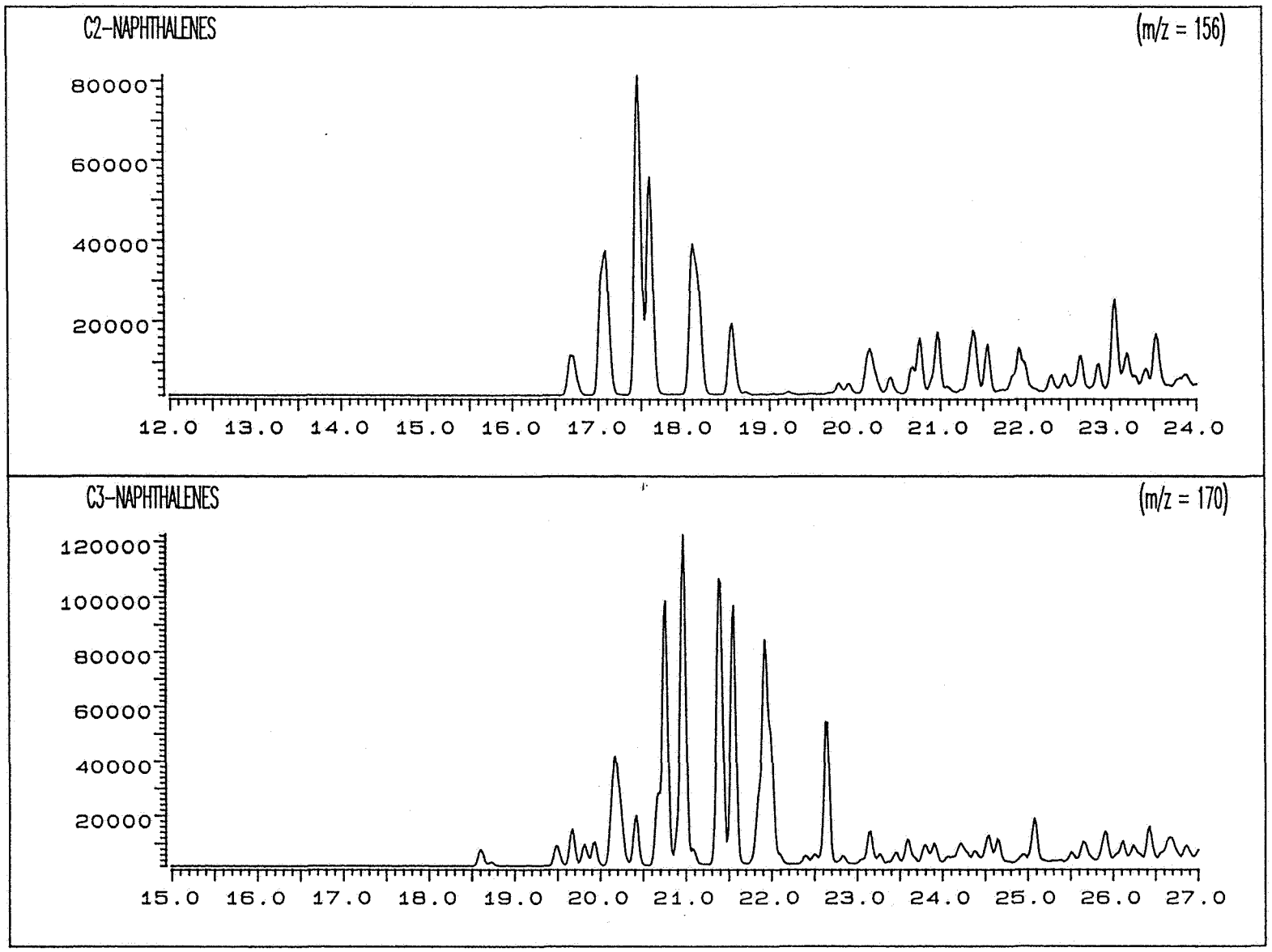
FILE: >X2140 X2136 Well 25/8-4 Core #3 C.C. (Depth = 1705m)



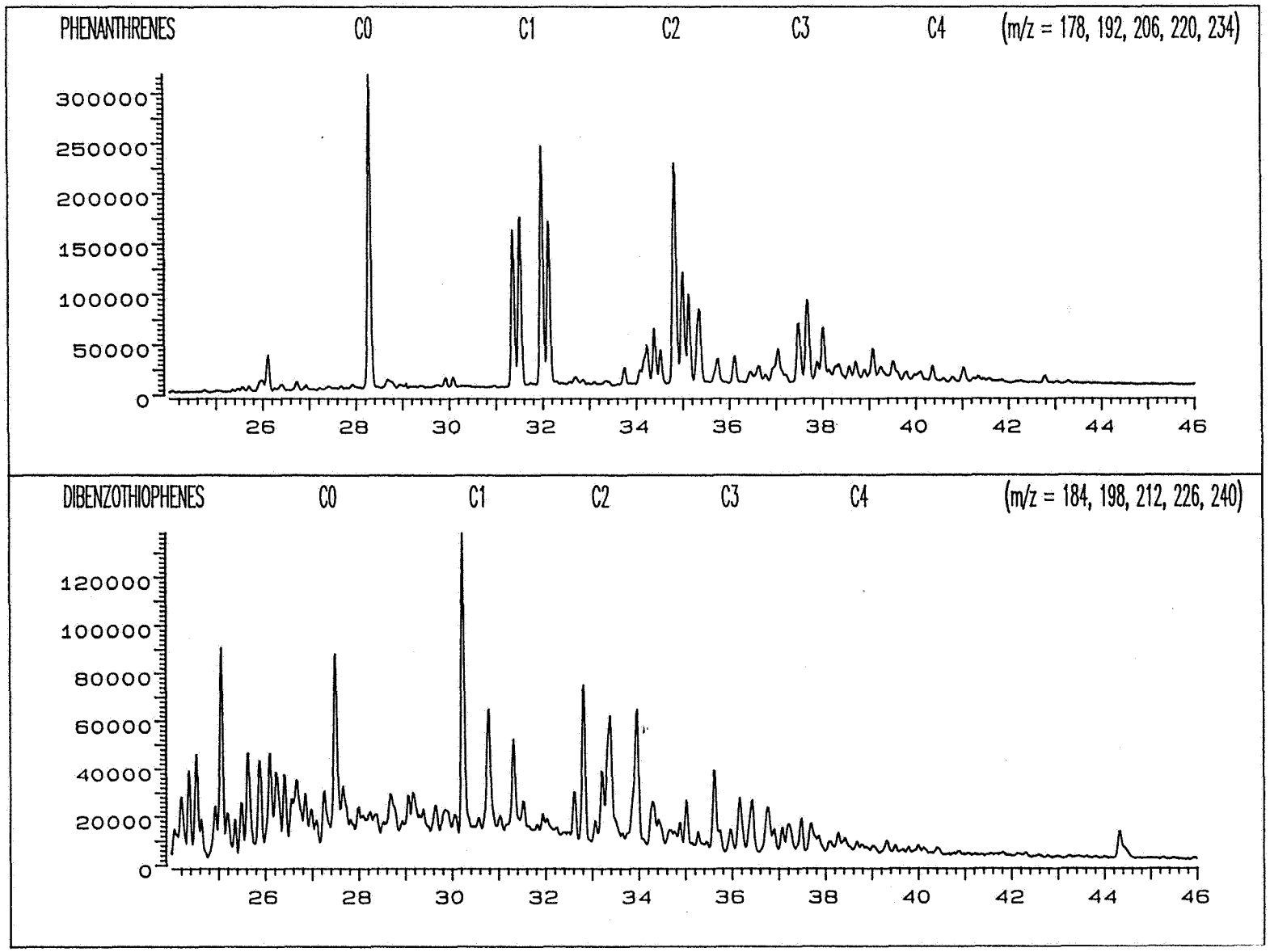
FILE: >X2140 X2136 Well 25/8-4 Core #3 C.C. (Depth = 1705m)



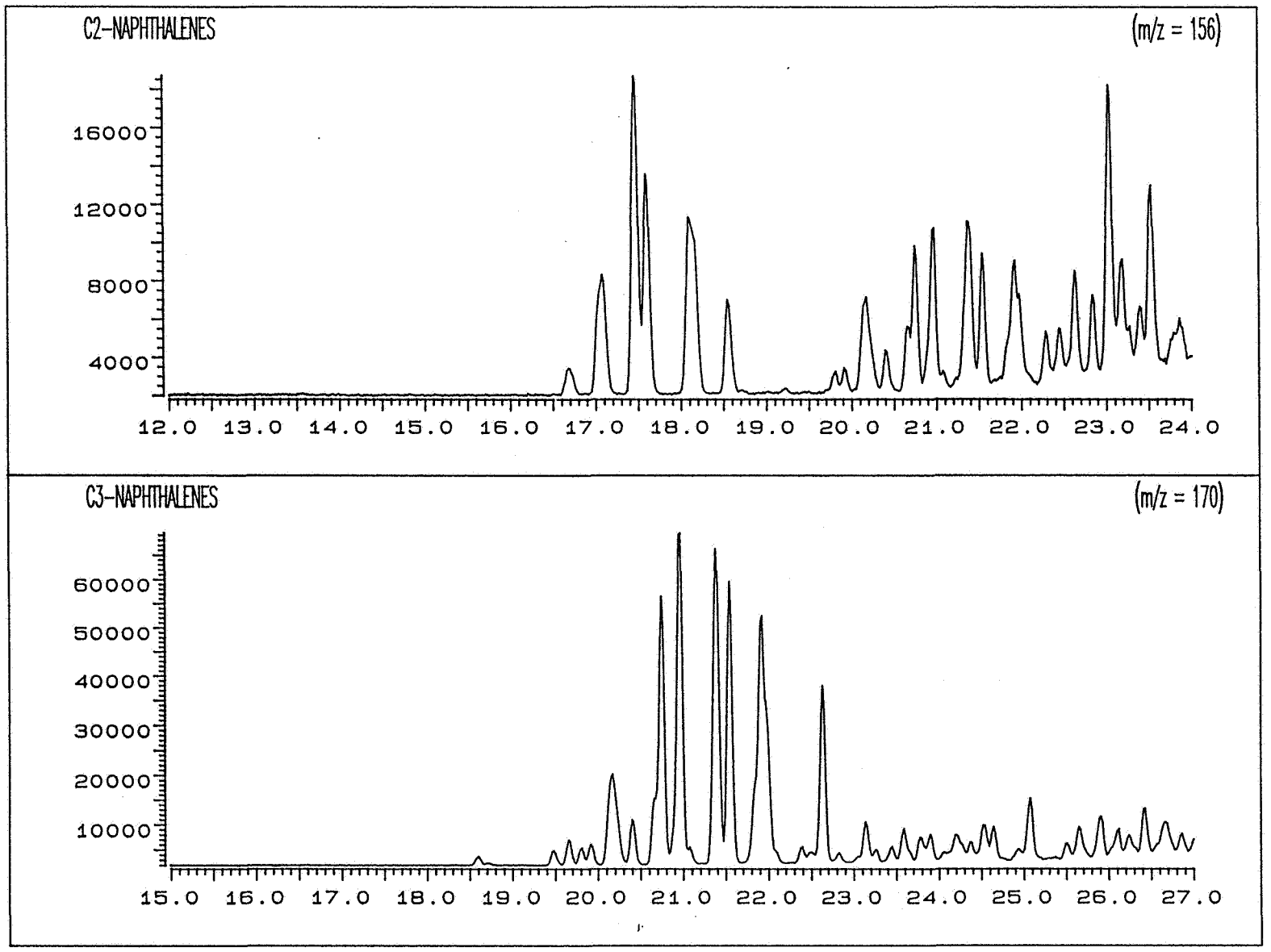
FILE: >X2145 X2141 Well 25/8-4 Core #4 (Depth = 1739.5m)



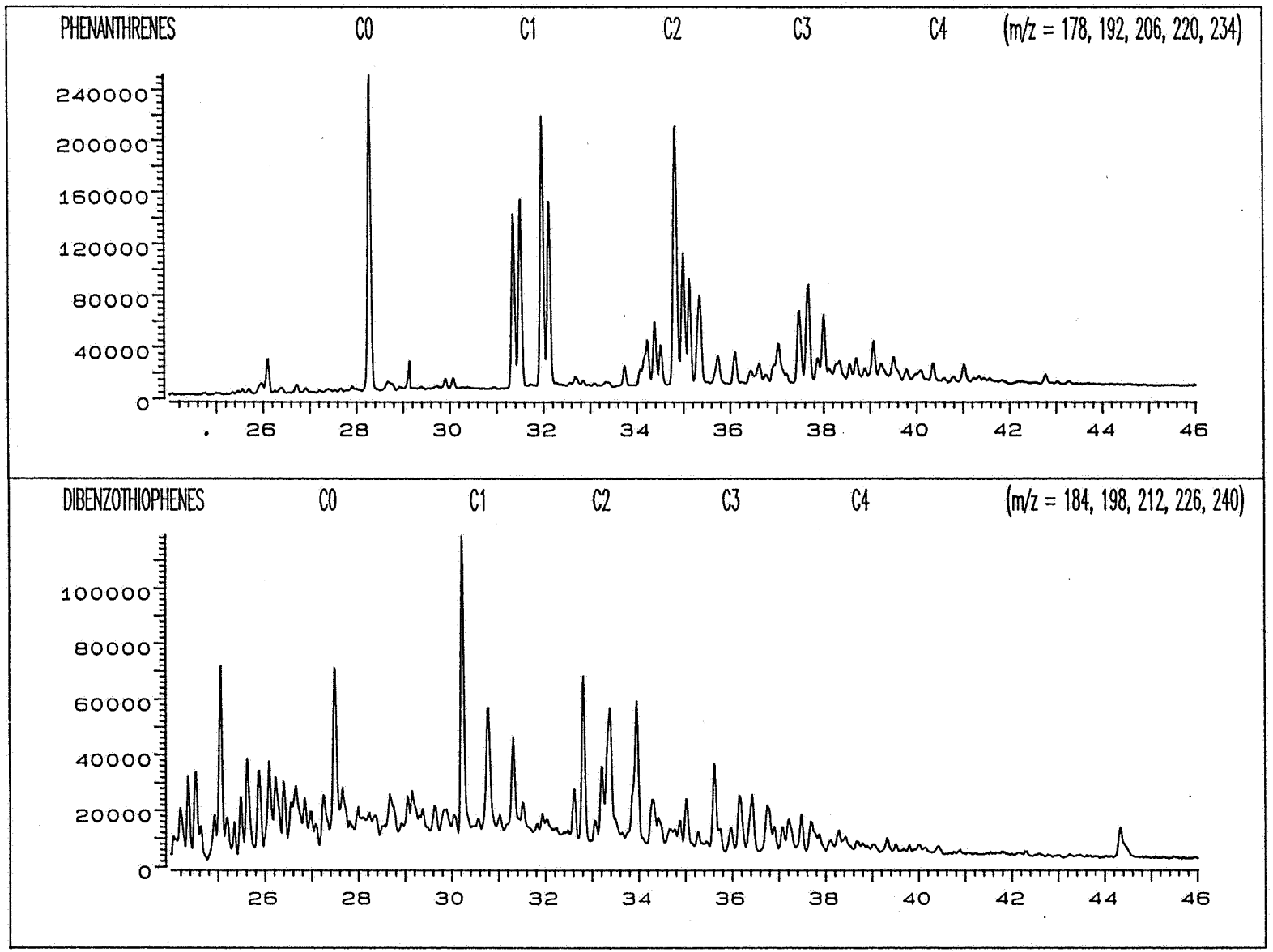
FILE: >X2145 X2141 Well 25/8-4 Core #4 (Depth = 1739.5m)



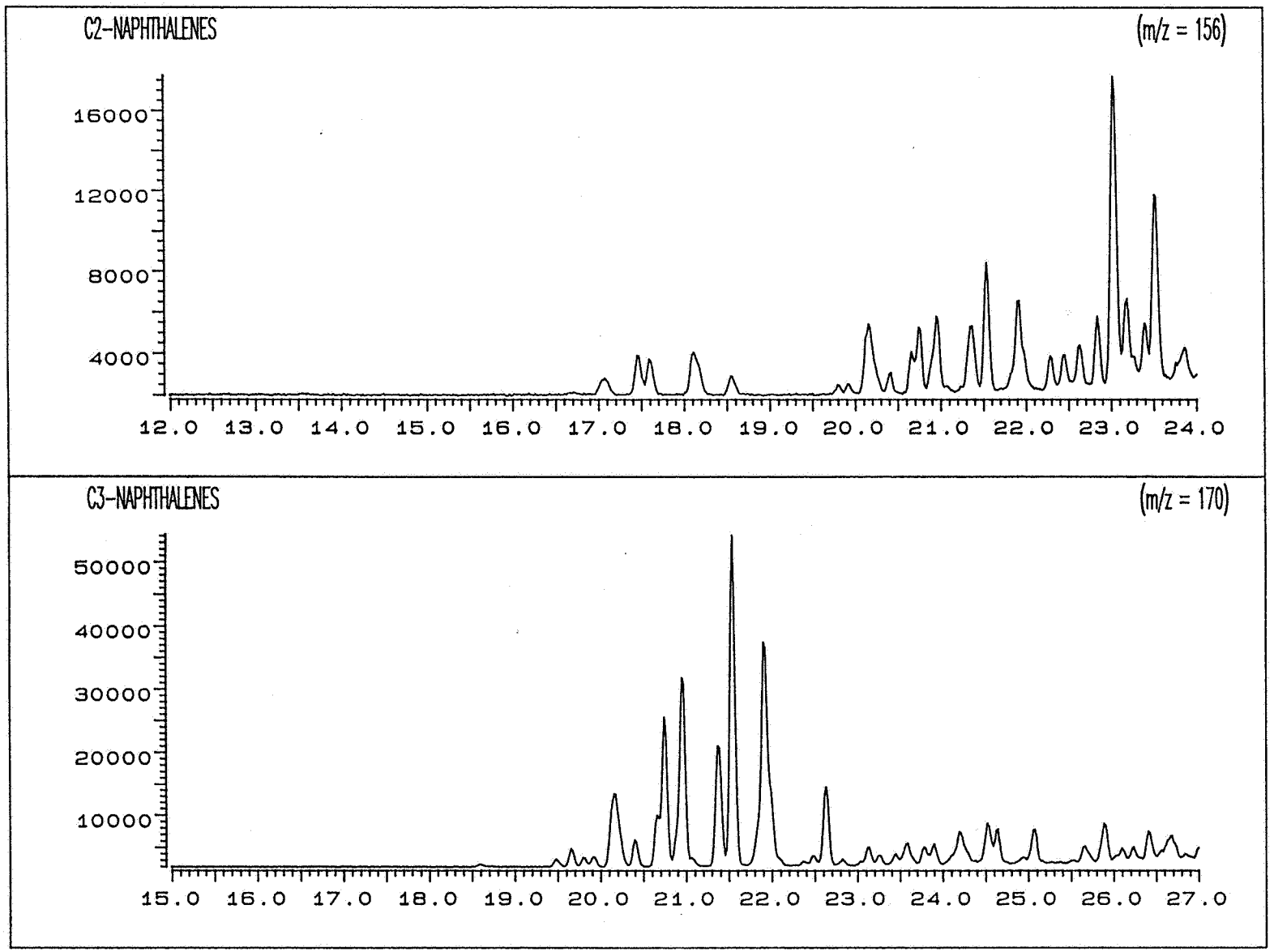
FILE: >X2150 X2146 Well 25/8-4 Core #4 (Depth = 1741m)



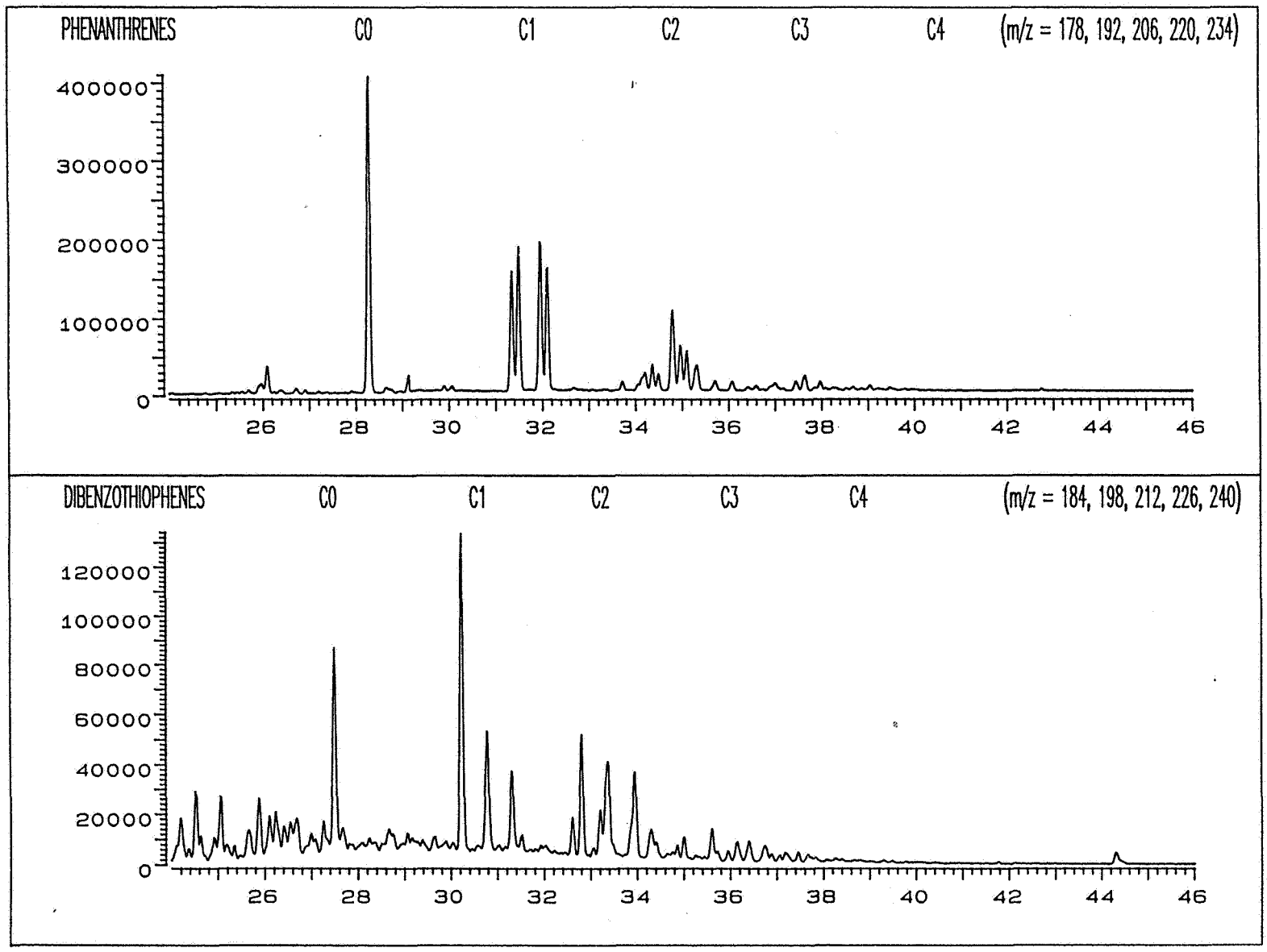
FILE: >X2150 X2146 Well 25/8-4 Core #4 (Depth = 1741m)



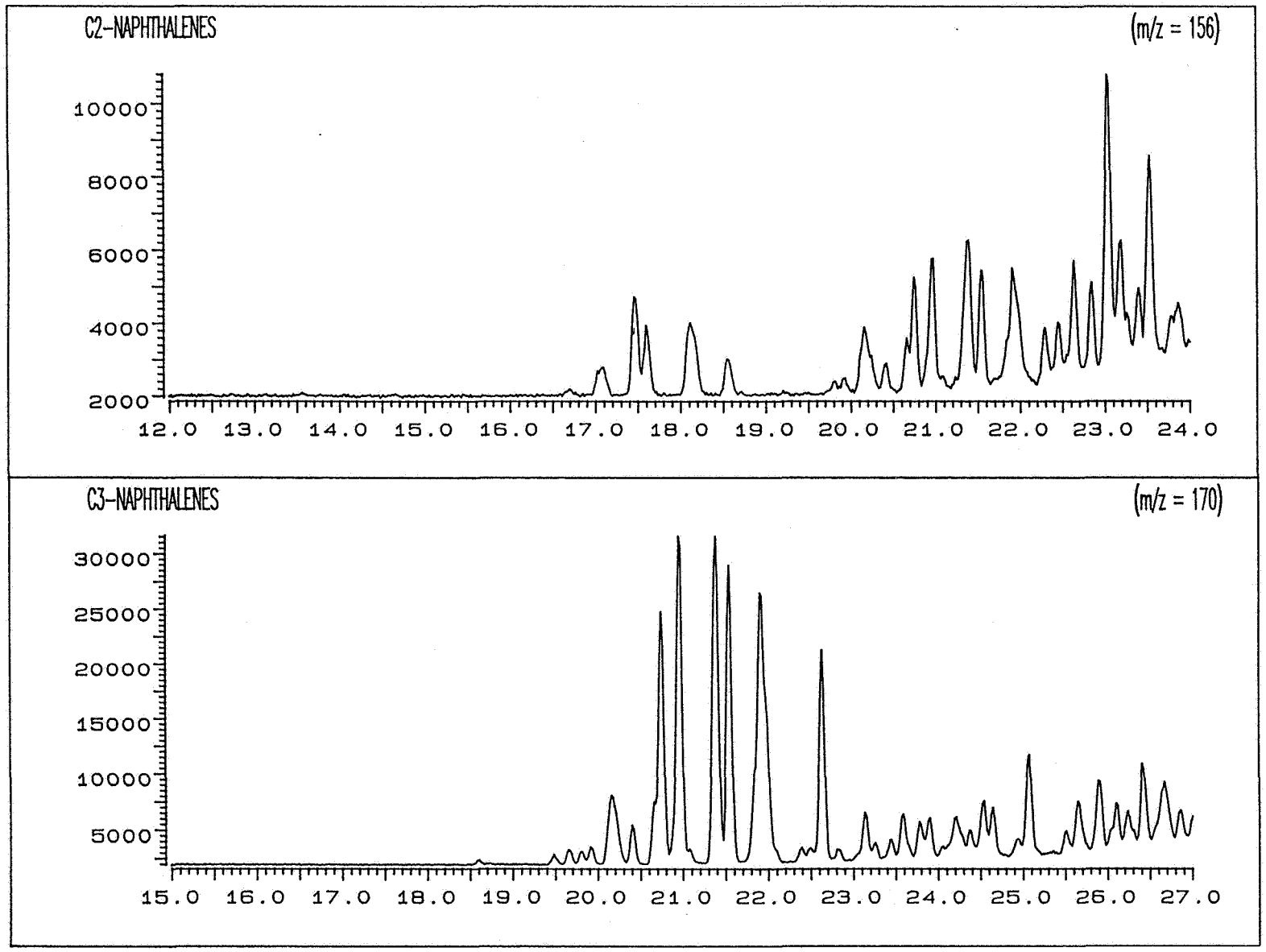
FILE: >X2155 X2151 Well 25/8-4 Core #5 (Depth = 1750m)



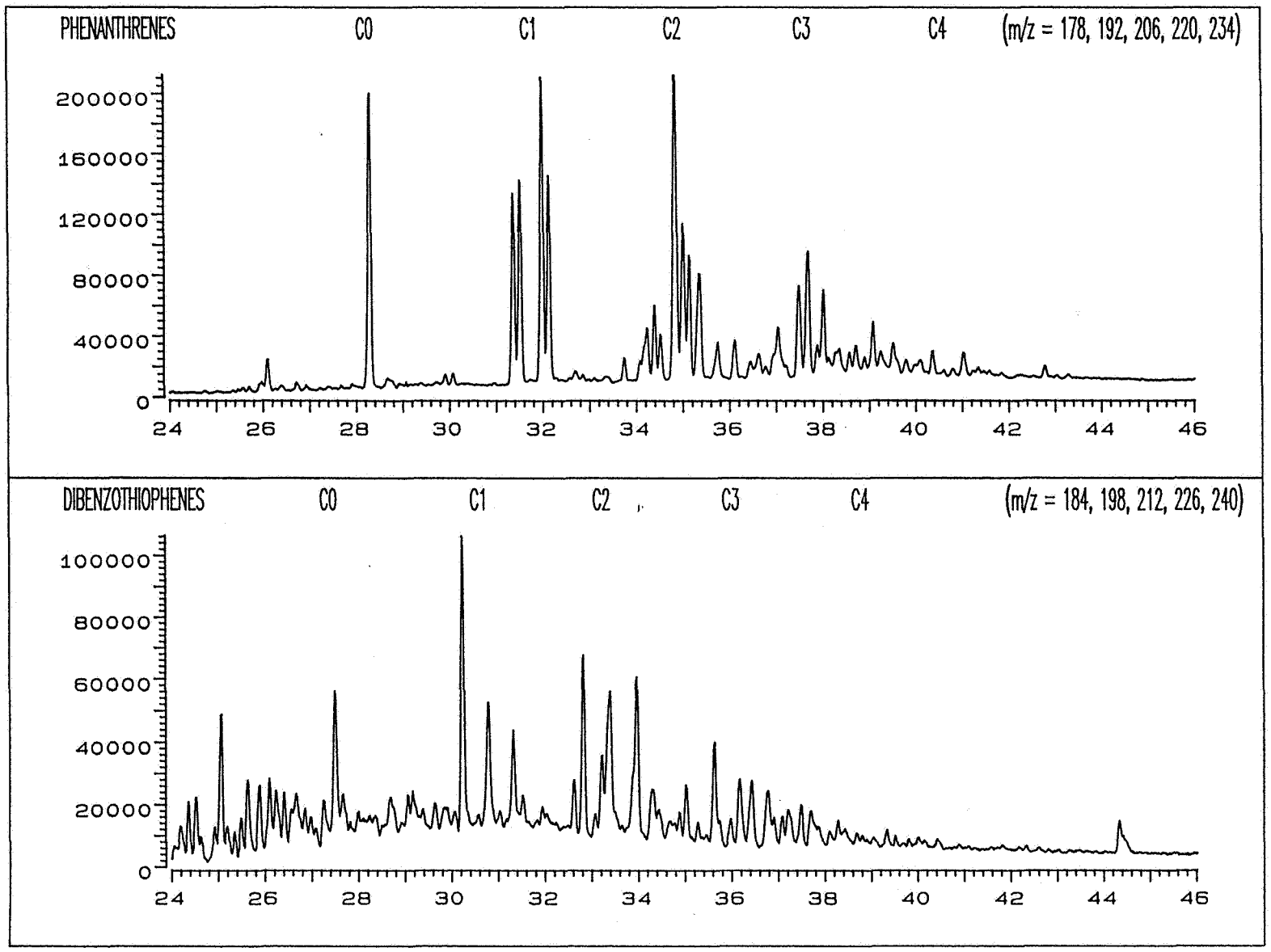
FILE: >X2155 X2151 Well 25/8-4 Core #5 (Depth = 1750m)



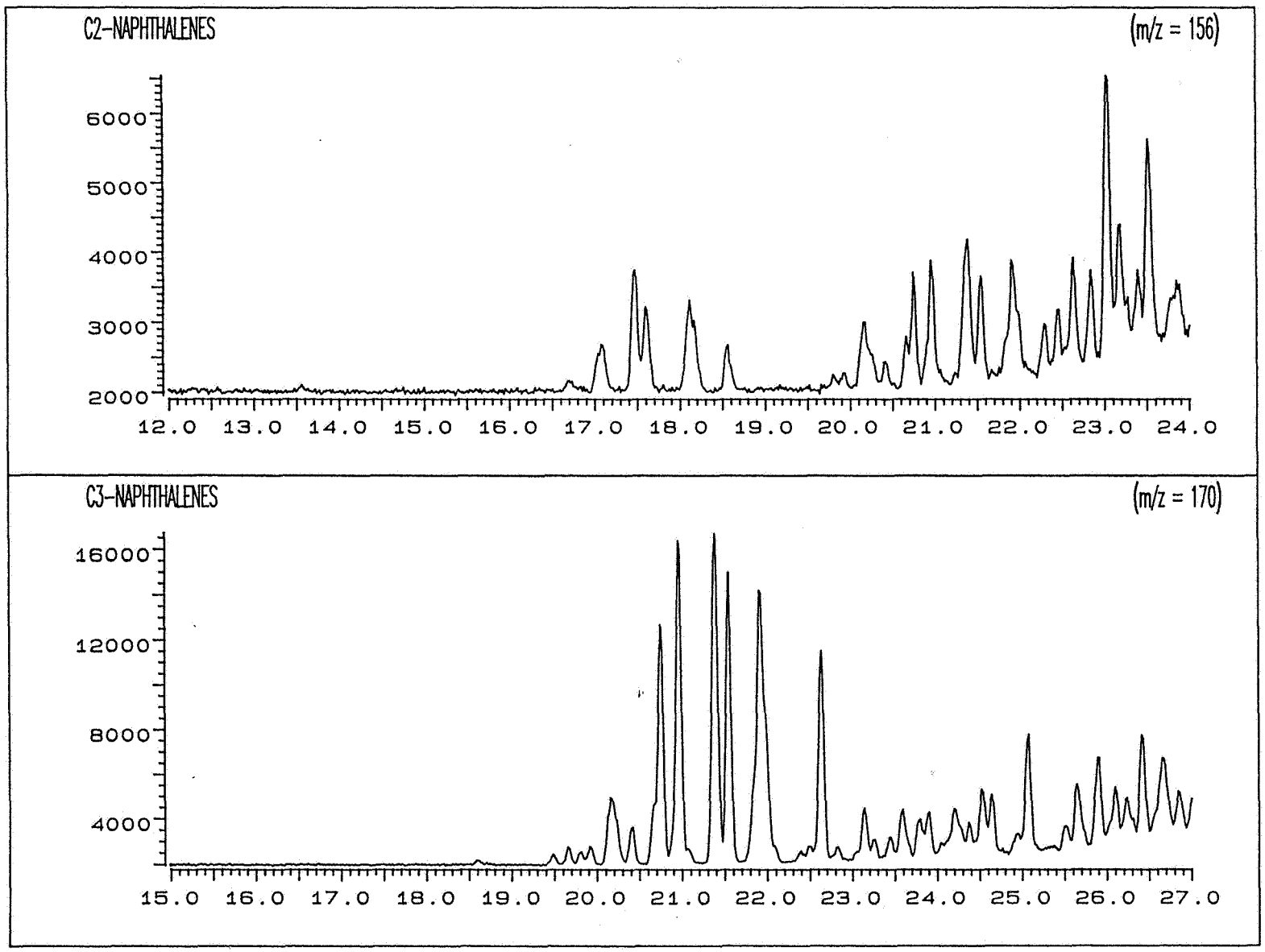
FILE: >X2160 X2156 Well 25/8-4 Core #5 (Depth = 1752m)



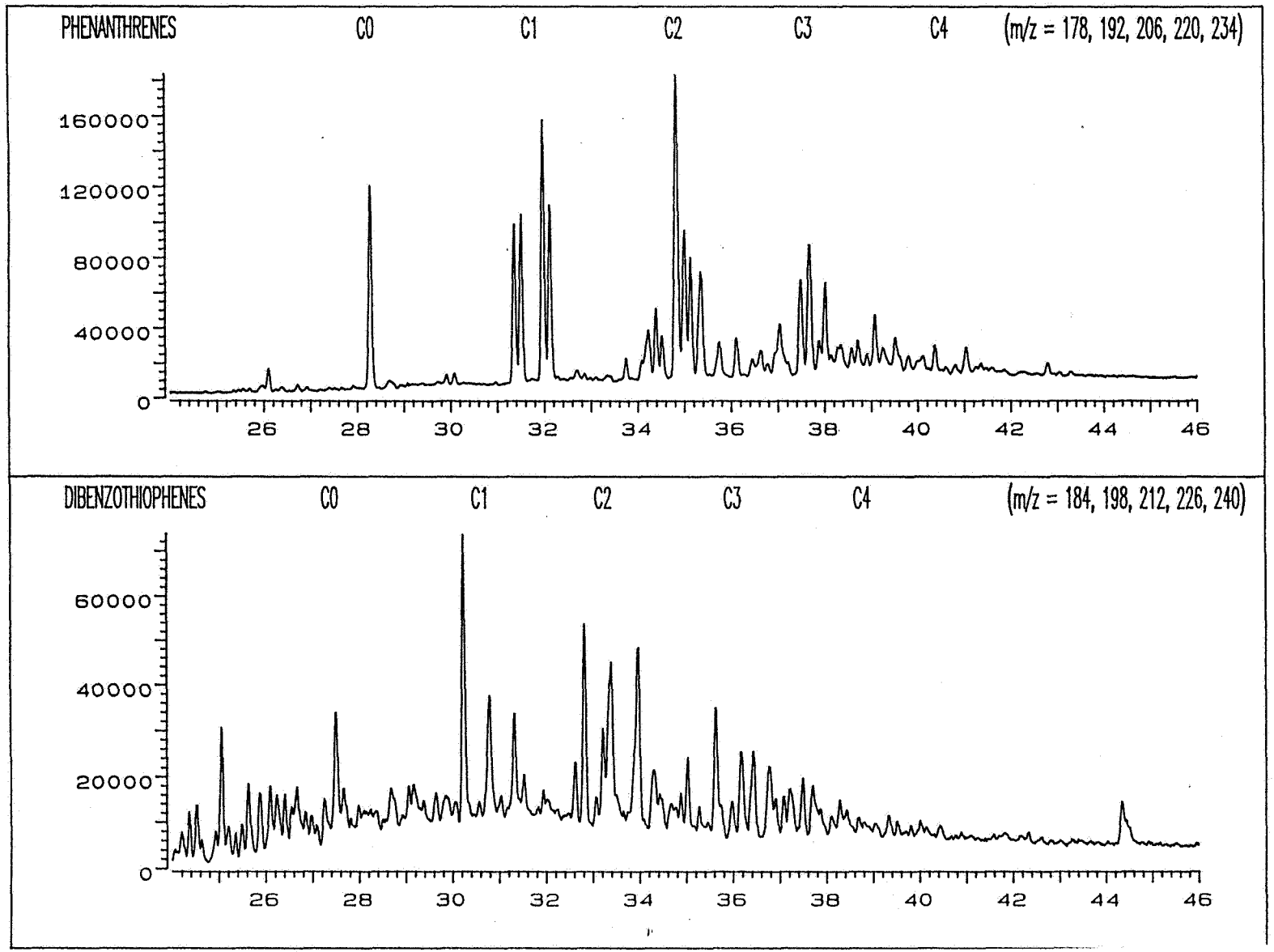
FILE: >X2160 X2156 Well 25/8-4 Core #5 (Depth = 1752m)



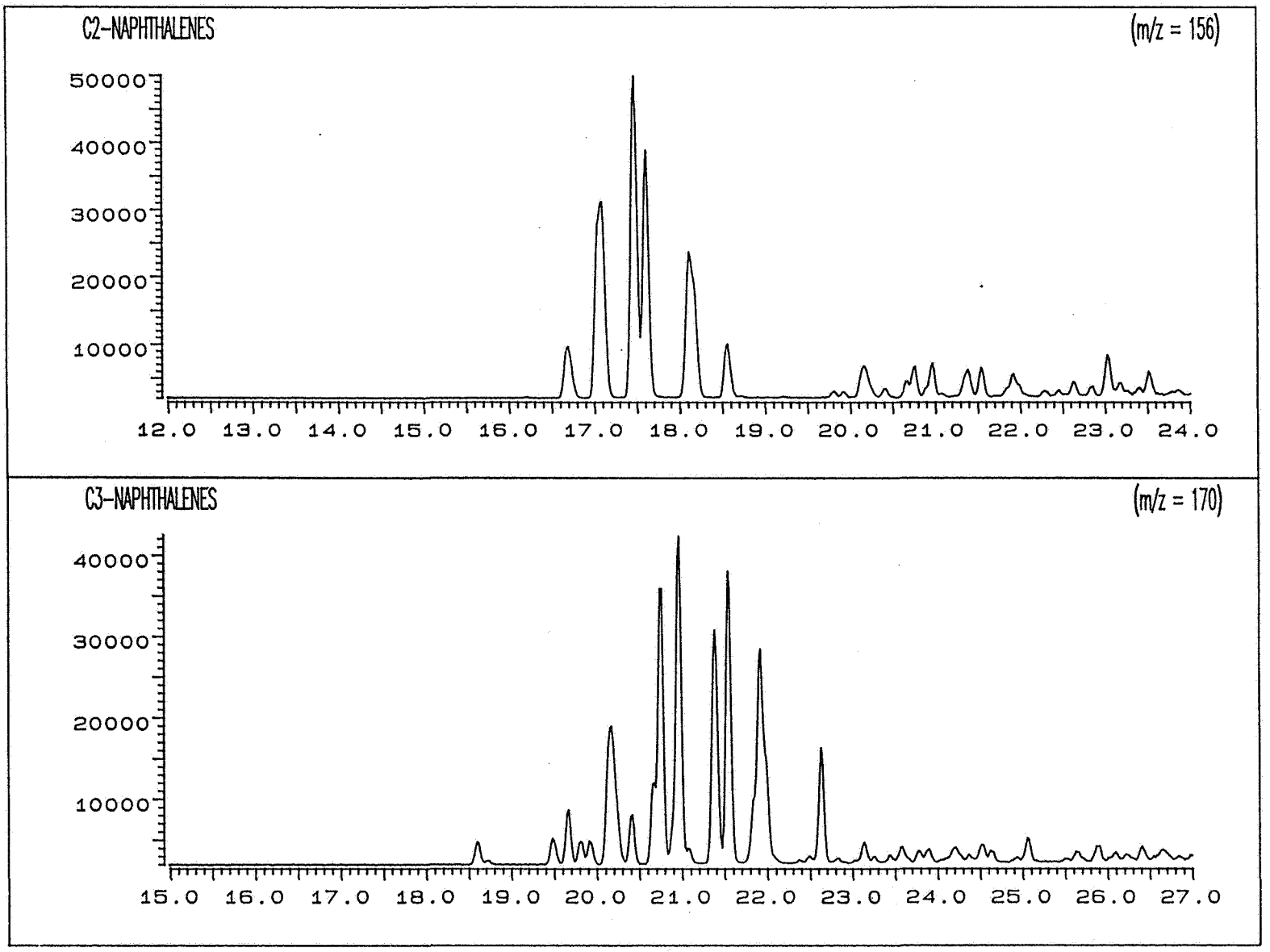
FILE: >X2165 X2161 Well 25/8-4 Core #6 (Depth = 1766m)



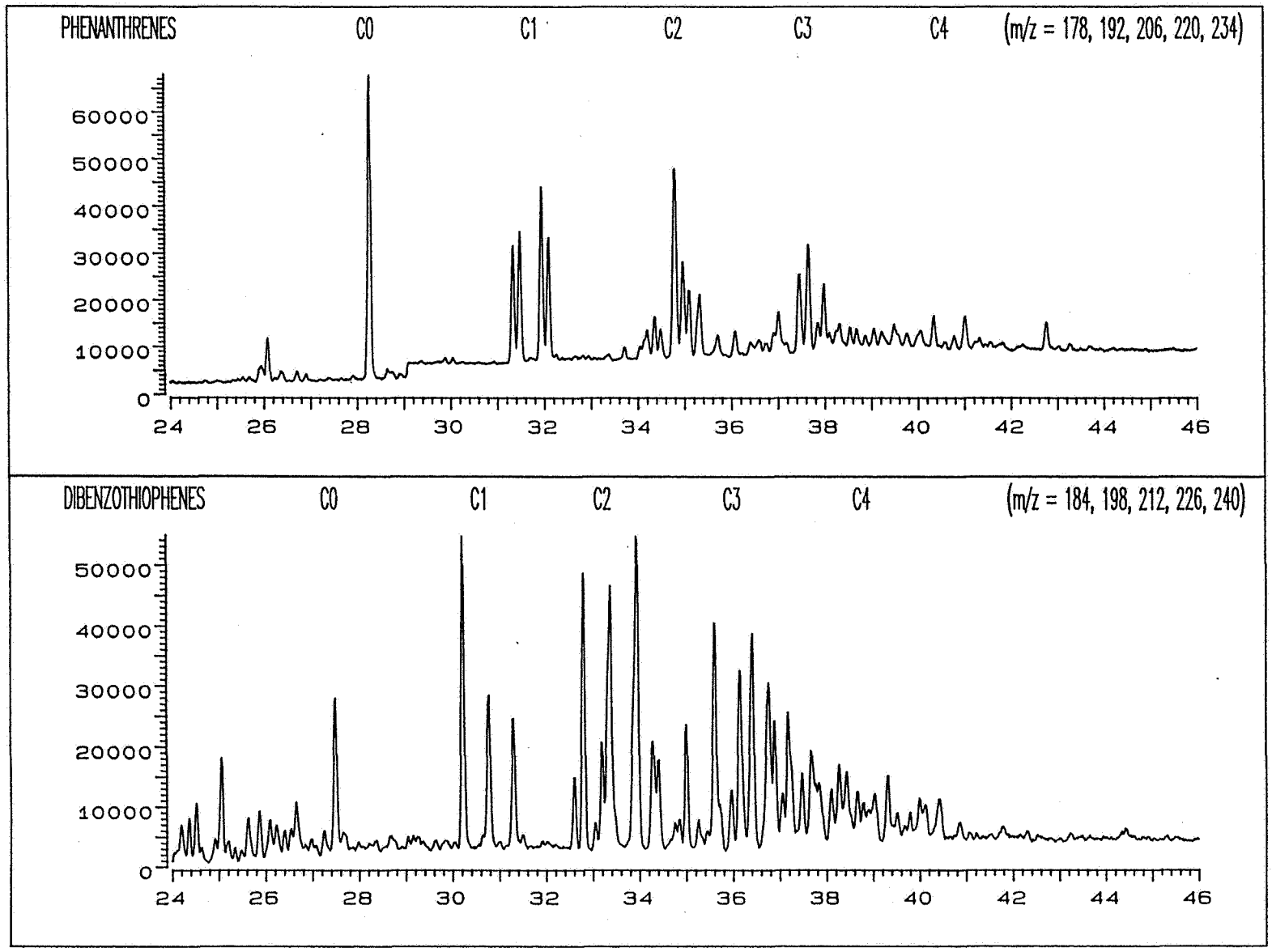
FILE: >X2165 X2161 Well 25/8-4 Core #6 (Depth = 1766m)



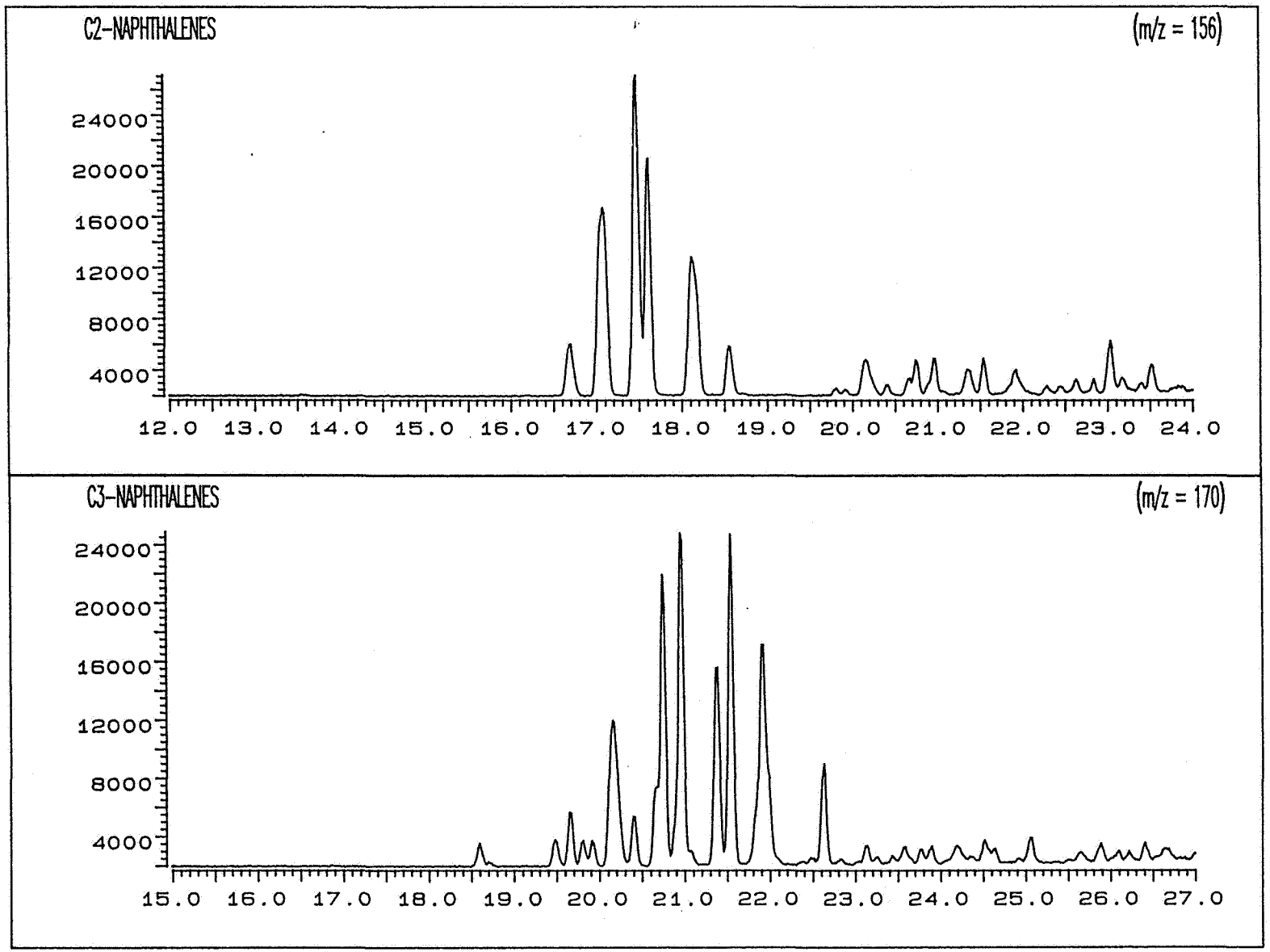
FILE: >X2175 X2171 Well 25/8-4 Core #7 (Depth = 1781m)



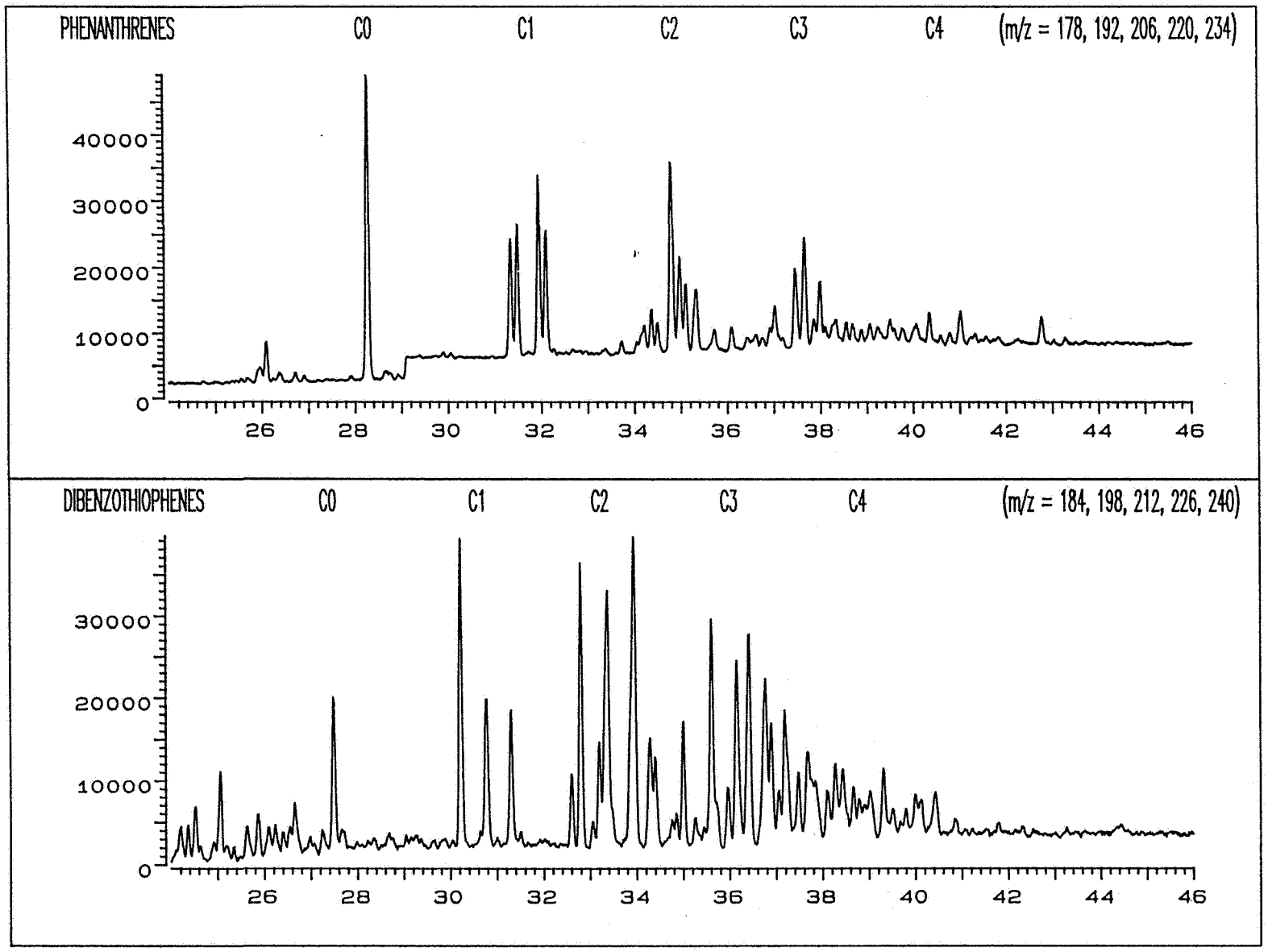
FILE: >X2175 X2171 Well 25/8-4 Core #7 (Depth = 1781m)



FILE: >X2185 X2181 Well 25/8-4 Core #8 (Depth = 1794.7m)



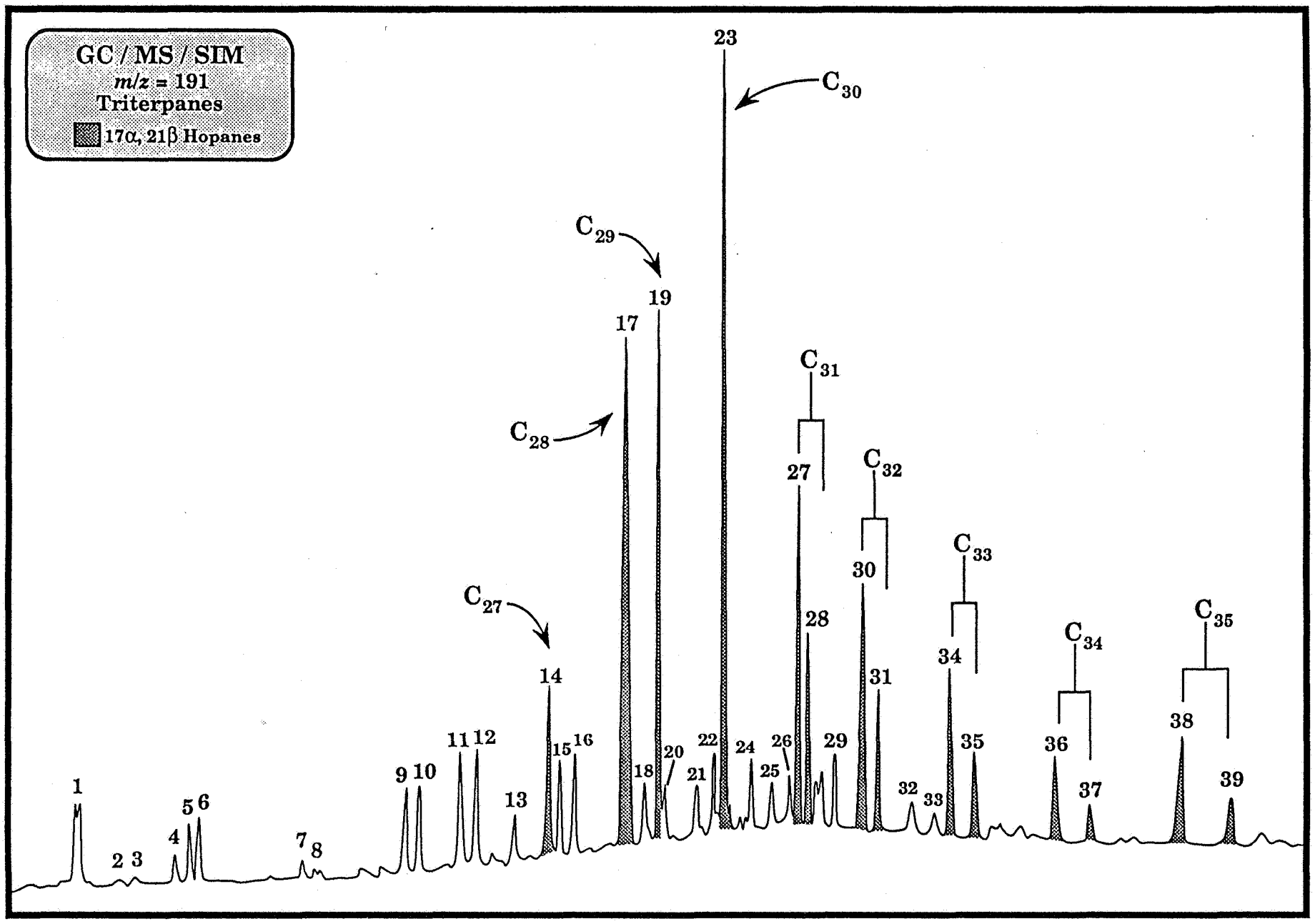
FILE: >X2185 X2181 Well 25/8-4 Core #8 (Depth = 1794.7m)



IV Biomarkers in aliphatic and aromatic fractions.

Identifications of Terpanes (m/z = 191)

Peak Number	Formula	Molecular Weight	Compound
A	$C_{20}H_{36}$	276	Diterpane C_{20}
B	$C_{21}H_{48}$	290	Diterpane C_{21}
C	$C_{22}H_{40}$	304	Diterpane C_{22}
D	$C_{23}H_{42}$	318	Diterpane C_{23}
E	$C_{24}H_{44}$	332	Diterpane C_{24}
1	$C_{25}H_{46}$	346	Diterpane C_{25}
2	--------	-----	Unknown
3	--------	-----	Unknown
4	$C_{24}H_{42}$	330	Tetracyclic terpane C_{24}
5	$C_{26}H_{48}$	360	Tricyclic triterpane C_{26}
6	$C_{26}H_{48}$	360	Tricyclic triterpane C_{26}
7,8	--------	-----	Unknown
9	$C_{28}H_{52}$	388	Tricyclic triterpane C_{28}
10	$C_{28}H_{52}$	388	Tricyclic triterpane C_{28}
11	$C_{29}H_{54}$	402	Tricyclic triterpane C_{29}
12	$C_{29}H_{54}$	402	Tricyclic triterpane C_{29}
13	$C_{27}H_{46}$	370	18α(H)-22,29,30-trisnorhopane (TS)
14	$C_{27}H_{46}$	370	17α(H)-22,29,30-trisnorhopane (TM)
15	$C_{27}H_{46}$	370	17β(H)-22,29,30-trisnorhopane
16	$C_{28}H_{48}$	384	unknown
17	$C_{28}H_{48}$	384	17α(H), 21β(H)-29,30-bisnorhopane
18	----	-----	unknown
19	$C_{29}H_{50}$	398	17α(H),21β(H)-30-norhopane
20	$C_{29}H_{50}$	398	18 α(H) neonorhopane
21	$C_{29}H_{50}$	398	17β(H), 21α(H)-normoretane
22	$C_{30}H_{52}$	412	18α(H)-oleanane
23	$C_{30}H_{52}$	412	17α(H),21β(H)-hopane
24	$C_{30}H_{52}$	412	17β(H),21α(H)-moretane
25,26	--------	-----	unknown
27	$C_{31}H_{54}$	426	17α(H),21β(H)-30-homohopane (22S)
28	$C_{31}H_{54}$	426	17α(H),21β(H)-30-homohopane (22R)
29	$C_{31}H_{54}$	426	17β(H)-21α(H)-homomoretane
30	$C_{32}H_{56}$	440	17α(H),21β(H)-30,31-bishomohopane(22S)
31	$C_{32}H_{56}$	440	17α(H),21β(H)-30,31-bishomohopane (22R)
32	$C_{32}H_{56}$	440	17β(H),21α(H)-30-31-bishomomoretane
33	$C_{31}H_{54}$	426	17β(H),21β(H)-homohopane
34	$C_{33}H_{58}$	454	17α(H),21β(H)-30,31,32-trishomohopane (22S)
35	$C_{33}H_{58}$	454	17α(H),21β(H)-30,31,32-trishomohopane (22R)
36	$C_{34}H_{60}$	468	17α(H),21β(H)-30,31,32,33-tetrakishomohopane (22S)
37	$C_{34}H_{60}$	468	17α(H),21β(H)-30,31,32,33-tetrakishomohopane (22R)
38	$C_{35}H_{62}$	482	17α(H),21β(H)-30,31,32,33,34-pentakishomohopane (22S)
39	$C_{35}H_{62}$	482	17a(H),21β(H)-30,31,32,33,34-pentakishomohopane (22R)


GC / MS / SIM
m/z = 191
Triterpanes
17α, 21β Hopanes
C27
C28
C29
C30
C31
C32
C33
C34
C35
1
2 3
4
5 6
7 8
9 10
11 12
13
14
15 16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
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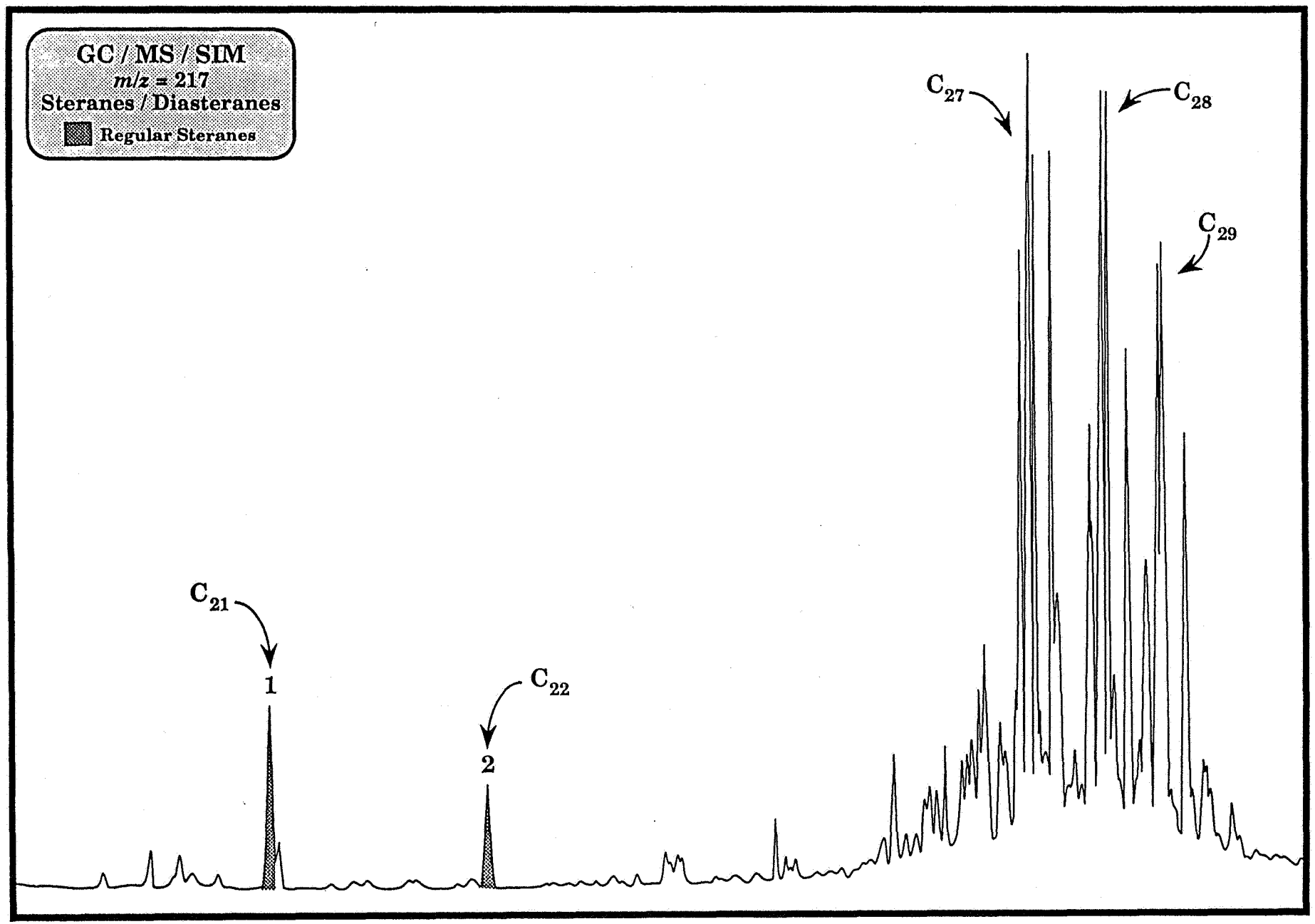
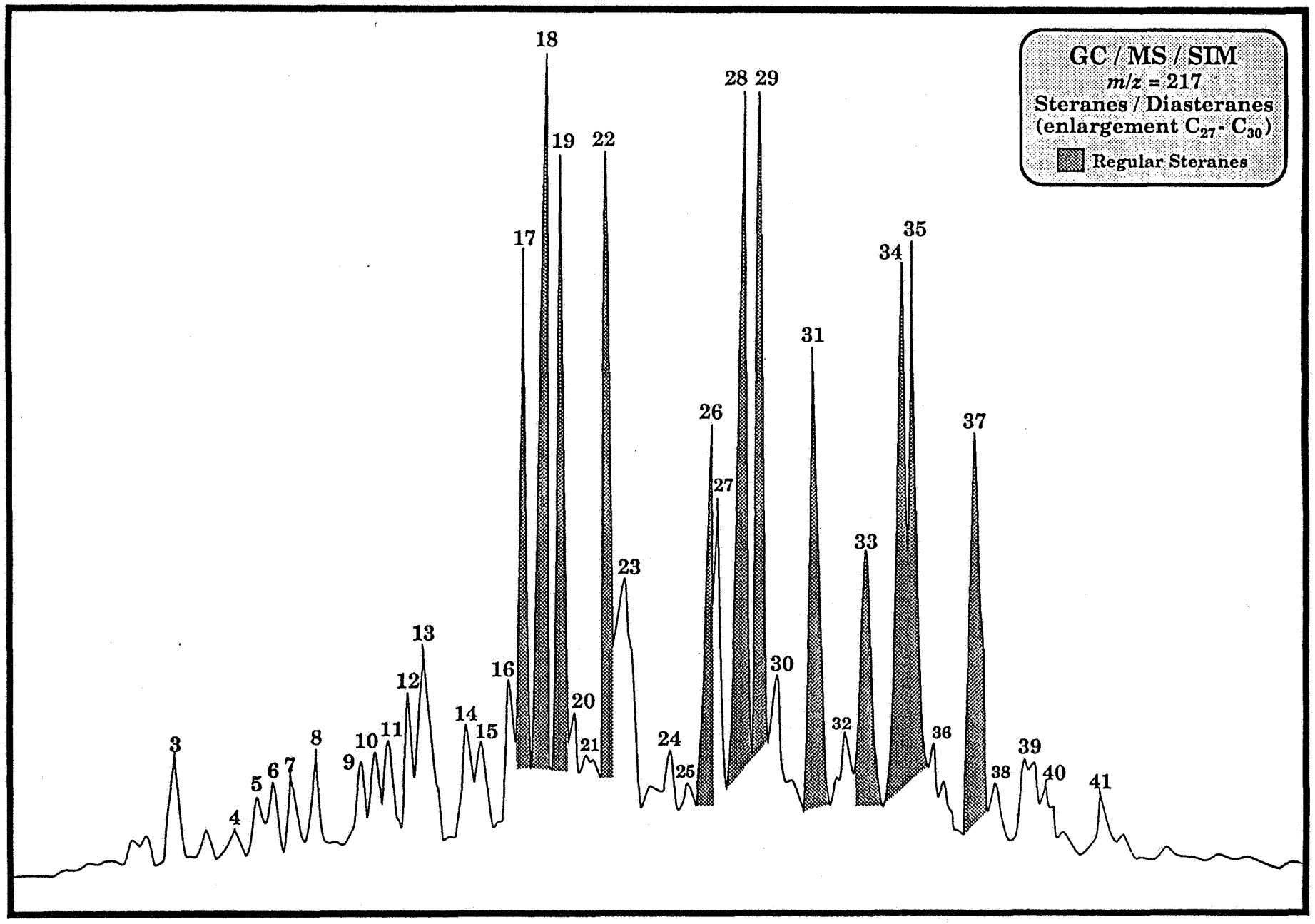
32
33
34
35
36
37
38
39

Identification of Steranes (m/z = 217)

Peak Number	Formula	Molecular Weight.	Compound
1	$C_{21}H_{36}$	288	5α(H),14β(H),17β(H)-pregnane
2	$C_{22}H_{38}$	302	5α(H),14β(H),17β(H),20-methyl pregnane
3	$C_{27}H_{48}$	372	13β(H),17α(H)-diacholestane (20S)
4	$C_{27}H_{48}$	372	13β(H),17α(H)-diacholestane (20R)
5,6,7	-------	-----	unknown (diasteranes ?)
8	$C_{27}H_{48}$	372	13α(H),17β(H)-diacholestane (20S)
9	$C_{27}H_{48}$	372	13α(H)-17β(H)-diacholestane (20R)
10,11	$C_{28}H_{50}$	386	13β(H),17α(H),24-methyldiacholestane (20S) 24 S/R isomers
12,13	$C_{28}H_{50}$	386	C_{28} diasteranes
4,15	$C_{28}H_{50}$	386	13β(H),17α(H),24-methyldiacholestane (20R) 24 S/R isomers
16	-------	-----	Unknown (diasterane ?)
17	$C_{28}H_{50}$	386	13α(H),17b(H),24-methyldiacholestane (20S)
17	$C_{27}H_{48}$	372	5α(H),14α(H),17α(H)-cholestane (20S)
18	$C_{29}H_{52}$	400	13β(H),17α(H),24-ethyldiacholestane (20S)
18	$C_{27}H_{48}$	372	5α(H),14β(H),17β(H)-cholestane (20R)
19	$C_{27}H_{48}$	372	5α(H),14β(H),17β(H)-cholestane (20S)
19	$C_{28}H_{50}$	386	13α(H),17β(H), 24-methyldiacholestane (20R)
20,21	-------	----	unknown (diasteranes ?)
22	$C_{27}H_{48}$	372	5α(H),14α(H),17α(H), cholestane (20R)
23	$C_{29}H_{52}$	400	13β(H),17α(H),24-ethyldiacholestane (20R)
24,25	-------	----	unknown (diasterane?)
26	$C_{28}H_{50}$	386	5α(H),14α(H),17α(H),24-methylcholestane (20S)
27	-------	----	unknown (diasterane ?)
28	$C_{28}H_{50}$	400	5α(H),14β(H),17β(H),24-methylcholestane (20R)
28	$C_{29}H_{50}$	386	13α(H),17β(H),24-methyldiacholestane (20R)
29	$C_{28}H_{50}$	386	5α(H),14β(H),17β(H),24-methylcholestane (20S)
30	-------	----	unknown (diasterane ?)
31	$C_{28}H_{50}$	386	5α(H),14a(H),17α(H),24-methylcholestane (20R)
32	-------	----	unknown (diasterane ?)
33	$C_{29}H_{52}$	400	5α(H),14α(H),17α(H),24-ethylcholestane (20S)
34	$C_{29}H_{52}$	400	5α(H),14β(H),17β(H),24-ethylcholestane (20R)
35	$C_{29}H_{52}$	400	5α(H),14β(H),17β(H),24-ethylcholestane (20S)
36	-------	----	diasterane
37	$C_{29}H_{52}$	400	5α(H),14α(H),17α(H),24-ethylcholestane (20R)
38-41	$C_{30}H_{54}$	414	C_{30} steranes


GC / MS / SIM
m/z = 217
Steranes / Diasteranes
Regular Steranes
C27
C28
C29
C21
1
C22
2


GC / MS / SIM
m/z = 217
Steranes / Diasteranes
(enlargement C27 - C30)
Regular Steranes
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
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36
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38
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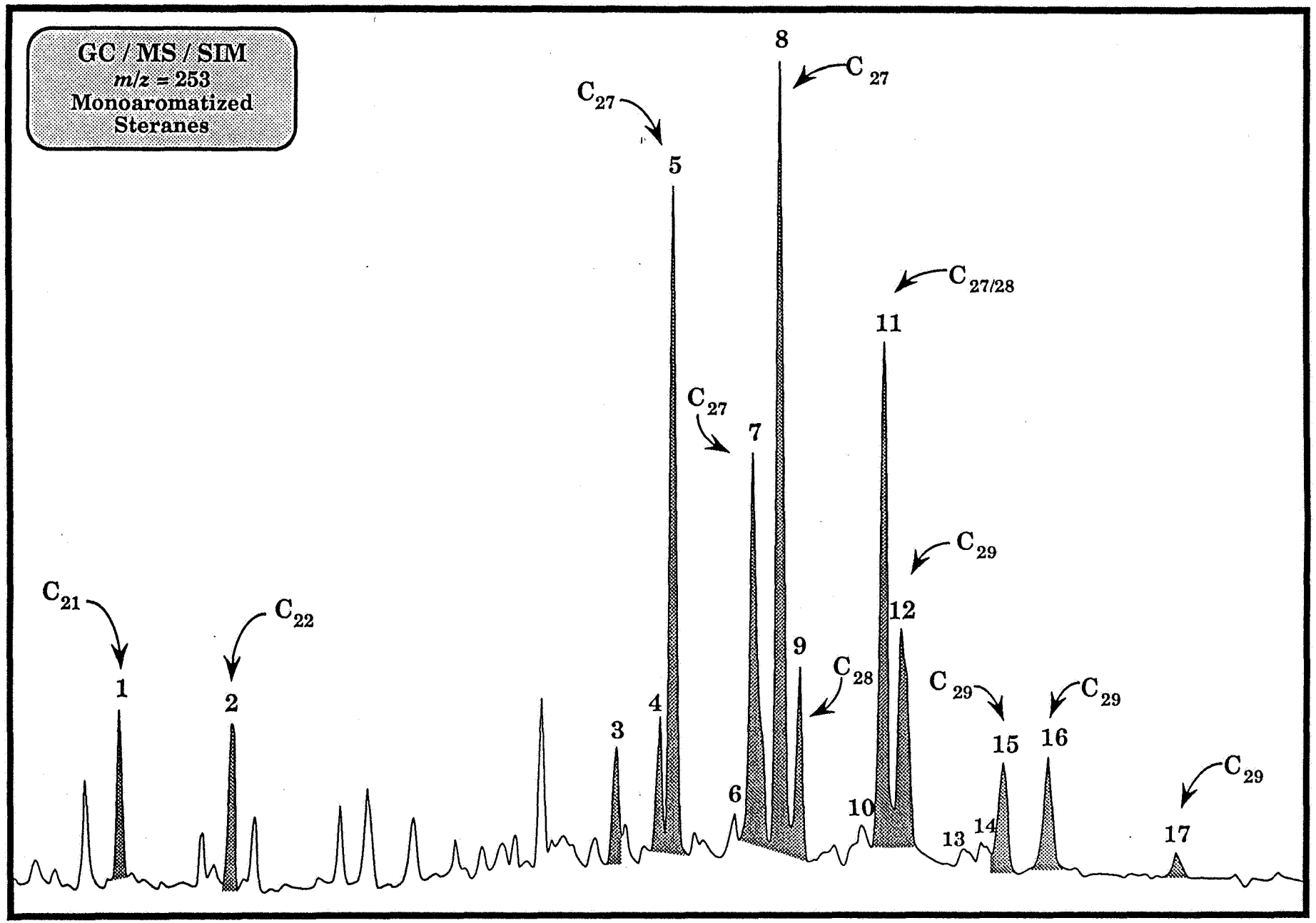
40
41

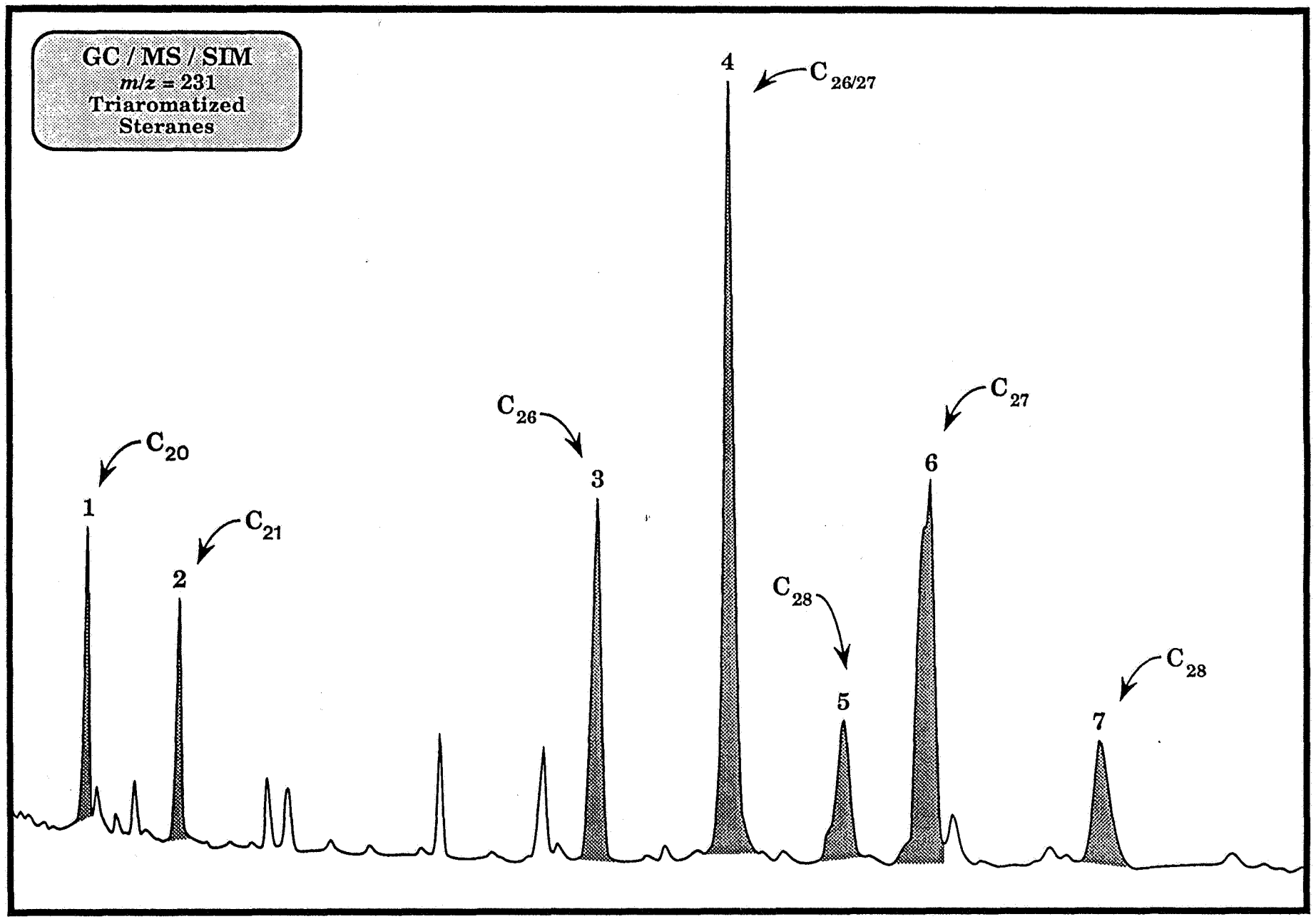
Identification of Monoaromatic Steranes (m/z = 253)

Peak Number	Formula	Molecular Weight	Compound
1	C_{21}	288	
2	C_{22}	302	
3	unknown		
4	$C_{27}H_{42}$	366	
5	$C_{27}H_{42}$	366	5β(H),20S
6	unknown		
7	$C_{27}H_{42}$	366	5β(H),20R
8	$C_{27}H_{42}$	366	5α(H),20S
9	$C_{28}H_{44}$	380	5β(H),20R
10	$C_{27}H_{42} + C_{28}H_{44}$	366/380	5α(H),20R /5α(H),20S
11	$C_{28}H_{44}$	380	5β(H),20R
12	$C_{29}H_{46}$	394	5β(H),20S
13	$C_{29}H_{46}$?	394	
14	$C_{29}H_{46}$?	394	
15	$C_{29}H_{46}$	394	5β(H),20R
16	$C_{28}H_{44}$	380	5α(H),20R
17	$C_{29}H_{46}$	394	5α(H), 20R


GC / MS / SIM
m/z = 253
Monoaromatized
Steranes
C21
C22
C27
C27
C27
C28
C27/28
C29
C29
C29
C29
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17

Identification of Triaromatic Steranes (m/z = 231)

Peak Number	Formula	Molecular Weight	Compound
1	$C_{20}H_{20}$	260	
2	$C_{21}H_{22}$	274	
3	$C_{26}H_{32}$	344	20S
4	$C_{26}H_{32}$, $C_{27}H_{34}$	344/358	20R/20S
5	$C_{28}H_{36}$	372	20S
6	$C_{27}H_{34}$	358	20R
7	$C_{28}H_{36}$	372	20R


GC / MS / SIM
m/z = 231
Triaromatized
Steranes
1
C20
2
C21
3
C26
4
C26/27
5
C28
6
C27
7
C28

Definitions of Selected Biomarker Parameters

Triterpanes (Peak numbers in m/z=191)

Total Diterpanes = Sum of #1 to #8

* Total Triterpanes = Sum of #9 to #39

* % Tricyclics = (#9+#10+#11+#12)*100.0/Total Triterpanes

* % Hopanes = (#13+#15#+17+#19+#23+#27+#28+#30+#31
+ Sum of #34 to #39)*100.0/Total Triterpanes

* % Moretanes = (#21+#24+#29+#32)*100.0/Total Triterpanes

% Unknown = (#16+#18+#20+#25+#26+#33)*100.0/Total Triterpanes

TS/TM = #13/#14

Hopanes C28/C29 = #16/#19

Hopanes C30/C29 = #23/#19

S/(S+R) C31 = #27/(#27+#28)

C32 = #30/(#30+#31)

C33 = #34/(#34+#35)

C34 = #36/(#36+#37)

C35 = #38/(#38+#39)

Hopane/Moretane

C29/C29 = #19/#21

C30/C30 = #23/#24

* Used in ternary plots

Definitions of Selected Biomarker Parameters

Steranes (Peak numbers in m/z=217)

* Total Steranes = Sum of #1 to #41

% Diasteranes = (Sum of of #3 to #16 +#20+#21+#23+#24+#25+#27 +#30+#32+#36)*100.0/TOTAL

* % C21+C22 = (#1+#2)*100.0/Total Steranes

* % C27 = (#17+#18+#19+#22)*100.0/Total Steranes

* % C28 = (#26+#28+#29+#31)*100.0/Total Sternaes

* % C29 = (#33+#34+#35+#37)*100.0/Total Sternaes

* % C30 = (#38+#39+#40+#41)*100.0/Total Sternaes

S/(S+R) C29 = (#33)/(#33+#37)

C28 = (#26)/(#26+#31)

C27 = (#17)/(#17+#22)

aaa/abb C29 = (#33+#37)/(#34+#35)

C28 = (#26+#31)/(#28+#29)

C27 = (#17+#22)/(#18+#19)

* % of aaa 20R C27 = #22*100.0/(#22+#31+#37)

* % of aaa 20R C28 = #31*100.0/(#22+#31+#37)

* % of aaa 20R C29 = #37*100.0/(#22+#31+#37)

* Used in ternary plots

Definitions of Selected Biomarker Parameters

Monoaromatized Steranes (Peak numbers in m/z=253)

* Total = Sum of #1 to #17

(C21+C22)/(C27toC29) = (#1+#2)/Sum of #5 to #17

% of C21/(C21+C28) = #1*100.0/(#1+#11)

Triaromatized Sterane (Peak numbers in m/z=231)

* Total = Sum of #1 to #7

(C20+C21)/(C26toC28) = (#1+#2)/Sum of #3 to #7

% of C20/(C20+C27) = #1*100.0/(#1+#4)

% of C21/(C21+C28) = #2*100.0/(#2+#7)

Tri-/Mono-aromatized Ratios

231(C27)/231(C27)+253(C28) = #4(231)/(#4(231)+#9(253))

231(C28)/231(C28)+253(C29) = #7(231)*100/(#7(231)+#15(253)+#17(253)

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* Used in ternary plots

Norsk - Hydro
Sample Inventory Well 25/8-4
Sterane Concentrations (m/z=217)

File #	Description	Depth (m)	C21 Sterane Peak A (ppm)	C21 Sterane #1 (ppm)	C21 Sterane B (ppm)	C22 Sterane #2 (ppm)	C27 Diaster #3 (ppm)	C27 Diaster #4 (ppm)	Diaster #5 (ppm)
X2126	Core #2 Core Chips	1686	19.94	34.94	18.10	18.02	13.86	9.19	0.78
X2136	Core #3 Core Chips	1705	28.84	36.39	21.74	23.94	59.60	44.20	0.67
X2141	Core #4	1739.5	20.16	24.53	15.92	15.73	38.37	30.31	0.30
X2146	Core #4 Core Chips	1741	25.02	29.04	20.43	22.07	56.41	40.69	0.16
X2151	Core #5	1750	22.82	26.77	18.14	20.50	54.76	38.34	1.37
X2156	Core #5	1752	34.13	33.95	24.56	15.15	14.70	6.57	0.58
X2161	Core #6	1766	24.77	30.08	20.10	21.71	62.67	46.10	0.52
X2171	Core #7	1781	28.41	33.18	22.70	26.18	73.04	50.33	0.68
X2181	Core #8	1794.7	63.99	113.52	55.44	68.93	334.11	237.05	21.42

File #	Description	Depth (m)	Diaster #6 (ppm)	Diaster #7 (ppm)	C27 Diaster #8 (ppm)	C27 Diaster 9 (ppm)	C28 Diaster #10 (ppm)	C28 Diaster #11 (ppm)	C28 Diaster #12 (ppm)	C28 Diaster #13 (ppm)
X2126	Core #2 Core Chips	1686	0.24	14.59	4.00	8.10	4.12	6.18	3.53	4.93
X2136	Core #3 Core Chips	1705	2.83	3.09	17.20	21.24	27.83	28.14	12.84	24.51
X2141	Core #4	1739.5	0.50	1.59	11.96	15.55	17.32	18.58	9.55	18.26
X2146	Core #4 Core Chips	1741	3.36	1.10	17.22	21.37	26.46	25.41	12.70	18.40
X2151	Core #5	1750	1.07	3.60	17.06	18.68	26.44	23.44	12.98	18.17
X2156	Core #5	1752	0.99	1.34	3.81	3.73	5.07	6.73	3.06	8.13
X2161	Core #6	1766	3.24	2.63	19.20	23.31	26.92	31.66	14.57	21.30
X2171	Core #7	1781	3.94	2.69	24.00	28.58	33.87	32.50	16.34	27.34
X2181	Core #8	1794.7	6.49	20.12	96.42	120.92	168.05	152.82	46.86	95.17

Norsk - Hydro
Sample Inventory Well 25/8-4
Sterane Concentrations (m/z=217)

File #	Description	Depth (m)	C28 Diaster Peak #14 (ppm)	C28 Diaster #15 (ppm)	Diaster (?) + Diaster #16 (ppm)	C27 aaaS #17 (ppm)	C27 abbR #18 (ppm)	C27 abbS Sterane #19 (ppm)	Diaster (?) #20 (ppm)	Diaster (?) #21 (ppm)
X2126	Core #2 Core Chips	1686	9.50	4.16	2.30	21.50	12.43	4.97	0.81	1.98
X2136	Core #3 Core Chips	1705	34.40	14.03	0.68	43.36	60.33	30.46	7.51	3.86
X2141	Core #4	1739.5	23.55	9.31	1.04	35.44	40.70	19.99	2.77	4.67
X2146	Core #4 Core Chips	1741	32.21	9.70	0.34	42.30	54.07	23.78	4.70	4.27
X2151	Core #5	1750	32.01	8.15	0.65	39.70	53.13	24.18	5.39	4.29
X2156	Core #5	1752	7.54	2.88	2.82	6.75	12.27	6.27	2.08	1.09
X2161	Core #6	1766	35.90	9.30	6.06	46.65	62.29	28.15	4.71	5.87
X2171	Core #7	1781	41.22	13.07	6.26	56.96	75.97	29.68	3.32	7.56
X2181	Core #8	1794.7	188.21	96.77	44.28	217.81	374.40	170.08	29.33	33.49

File #	Description	Depth (m)	C27 aaaR Sterane #22 (ppm)	C29 Diaster #23 (ppm)	Diaster (?) #24 (ppm)	Diaster (?) #25 (ppm)	C28 aaaS Sterane #26 (ppm)	Diaster (?) #27 (ppm)	C28 abbR Sterane #28 (ppm)	C28 abbS Sterane Peak #29 (ppm)
X2126	Core #2 Core Chips	1686	48.42	9.51	6.17	2.11	4.57	2.34	22.64	6.98
X2136	Core #3 Core Chips	1705	13.76	52.49	11.82	6.89	14.38	3.36	14.24	26.96
X2141	Core #4	1739.5	13.77	31.75	17.97	3.64	12.67	2.75	12.22	21.19
X2146	Core #4 Core Chips	1741	17.39	49.02	12.55	2.92	13.78	2.17	11.57	27.37
X2151	Core #5	1750	13.79	49.56	24.55	4.58	11.28	4.63	15.16	24.80
X2156	Core #5	1752	5.42	9.23	3.96	1.31	3.34	0.89	3.78	4.57
X2161	Core #6	1766	16.26	55.81	26.97	6.38	17.40	3.86	14.40	26.25
X2171	Core #7	1781	24.74	70.33	36.18	4.64	20.04	5.23	19.62	37.68
X2181	Core #8	1794.7	129.68	466.21	87.83	30.27	77.68	43.52	90.88	135.60

Norsk - Hydro
Sample Inventory Well 25/8-4
Sterane Concentrations (m/z=217)

File #	Description	Depth (m)	Diaster (?) #30 (ppm)	C28 aaaR Sterane #31 (ppm)	Diaster (?) #32 (ppm)	C29 aaaS Sterane #33 (ppm)	C29 abbR Sterane #34 (ppm)	C29 abbS Sterane #35 (ppm)	Diaster (?) #36 (ppm)	C29 aaaR Sterane #37 (ppm)
X2126	Core #2 Core Chips	1686	2.01	54.80	1.36	6.21	24.77	5.18	3.53	62.18
X2136	Core #3 Core Chips	1705	21.96	19.70	1.42	30.85	47.05	28.13	3.76	31.24
X2141	Core #4	1739.5	13.54	13.51	1.20	24.52	34.73	23.94	2.34	20.46
X2146	Core #4 Core Chips	1741	14.28	14.36	9.78	29.23	43.97	24.54	2.87	30.01
X2151	Core #5	1750	16.31	13.92	9.72	31.16	41.23	28.87	2.41	27.89
X2156	Core #5	1752	1.22	3.58	1.55	3.98	6.82	3.59	0.83	10.42
X2161	Core #6	1766	24.47	16.50	4.00	34.78	46.28	29.46	1.24	29.87
X2171	Core #7	1781	30.50	20.37	12.82	38.50	60.19	32.29	2.97	38.23
X2181	Core #8	1794.7	122.31	123.85	57.86	245.90	320.29	212.54	8.45	218.83

File #	Description	Depth (m)	C30 Sterane (?) #38 (ppm)	C30 Sterane (?) #39 (ppm)	C30 Sterane (?) #40 (ppm)	C30 Sterane (?) #41 (ppm)	C21 Sterane Peak A (%)	C21 Sterane #1 (%)	C21 Sterane B (%)
X2126	Core #2 Core Chips	1686	2.93	4.62	5.39	12.92	3.93	6.89	3.57
X2136	Core #3 Core Chips	1705	9.53	12.22	13.53	10.84	3.13	3.95	2.36
X2141	Core #4	1739.5	7.65	8.70	9.67	8.79	3.05	3.71	2.41
X2146	Core #4 Core Chips	1741	7.93	12.09	10.04	12.18	2.98	3.46	2.43
X2151	Core #5	1750	8.27	12.99	10.44	10.93	2.74	3.21	2.17
X2156	Core #5	1752	1.17	3.78	4.24	2.31	12.18	12.12	8.77
X2161	Core #6	1766	6.66	15.27	12.52	13.90	2.61	3.17	2.12
X2171	Core #7	1781	12.48	16.75	17.06	15.67	2.46	2.87	1.97
X2181	Core #8	1794.7	39.61	59.70	52.43	55.28	1.20	2.13	1.04

Norsk - Hydro
Sample Inventory Well 25/8-4
Sterane Percent Compositions (m/z=217)

File #	Description	Depth (m)	C22 Sterane #2 (%)	C27 Diaster #3 (%)	C27 Diaster #4 (%)	Diaster #5 (%)	Diaster #6 (%)	Diaster #7 (%)	C27 Diaster #8 (%)	C27 Diaster 9 (%)
X2126	Core #2 Core Chips	1686	3.56	2.73	1.81	0.15	0.05	2.88	0.79	1.60
X2136	Core #3 Core Chips	1705	2.60	6.47	4.79	0.07	0.31	0.34	1.87	2.30
X2141	Core #4	1739.5	2.38	5.80	4.58	0.05	0.08	0.24	1.81	2.35
X2146	Core #4 Core Chips	1741	2.63	6.72	4.85	0.02	0.40	0.13	2.05	2.55
X2151	Core #5	1750	2.46	6.56	4.60	0.16	0.13	0.43	2.05	2.24
X2156	Core #5	1752	5.41	5.25	2.34	0.21	0.35	0.48	1.36	1.33
X2161	Core #6	1766	2.29	6.60	4.85	0.05	0.34	0.28	2.02	2.45
X2171	Core #7	1781	2.27	6.33	4.36	0.06	0.34	0.23	2.08	2.48
X2181	Core #8	1794.7	1.29	6.26	4.44	0.40	0.12	0.38	1.81	2.27

File #	Description	Depth (m)	C28 Diaster #10 (%)	C28 Diaster #11 (%)	C28 Diaster #12 (%)	C28 Diaster #13 (%)	C28 Diaster Peak #14 (%)	C28 Diaster #15 (%)	Diaster (?) #16 (%)	C27 aaaS + Diaster #17 (%)
X2126	Core #2 Core Chips	1686	0.81	1.22	0.70	0.97	1.87	0.82	0.45	4.24
X2136	Core #3 Core Chips	1705	3.02	3.05	1.39	2.66	3.73	1.52	0.07	4.70
X2141	Core #4	1739.5	2.62	2.81	1.44	2.76	3.56	1.41	0.16	5.36
X2146	Core #4 Core Chips	1741	3.15	3.03	1.51	2.19	3.84	1.16	0.04	5.04
X2151	Core #5	1750	3.17	2.81	1.56	2.18	3.84	0.98	0.08	4.76
X2156	Core #5	1752	1.81	2.40	1.09	2.90	2.69	1.03	1.01	2.41
X2161	Core #6	1766	2.83	3.33	1.53	2.24	3.78	0.98	0.64	4.91
X2171	Core #7	1781	2.93	2.82	1.42	2.37	3.57	1.13	0.54	4.94
X2181	Core #8	1794.7	3.15	2.86	0.88	1.78	3.53	1.81	0.83	4.08

Norsk - Hydro
Sample Inventory Well 25/8-4
Sterane Percent Compositions (m/z=217)

File #	Description	Depth (m)	C27 abbR + Diaster #18 (%)	C27 abbS Sterane #19 (%)	Diaster (?) #20 (%)	Diaster (?) #21 (%)	C27 aaaR Sterane #22 (%)	C29 Diaster #23 (%)	Diaster (?) #24 (%)	Diaster (?) #25 (%)
X2126	Core #2 Core Chips	1686	2.45	0.98	0.16	0.39	9.55	1.88	1.22	0.42
X2136	Core #3 Core Chips	1705	6.54	3.30	0.81	0.42	1.49	5.69	1.28	0.75
X2141	Core #4	1739.5	6.16	3.02	0.42	0.71	2.08	4.80	2.72	0.55
X2146	Core #4 Core Chips	1741	6.44	2.83	0.56	0.51	2.07	5.84	1.50	0.35
X2151	Core #5	1750	6.37	2.90	0.65	0.51	1.65	5.94	2.94	0.55
X2156	Core #5	1752	4.38	2.24	0.74	0.39	1.93	3.29	1.41	0.47
X2161	Core #6	1766	6.56	2.96	0.50	0.62	1.71	5.87	2.84	0.67
X2171	Core #7	1781	6.58	2.57	0.29	0.66	2.14	6.09	3.13	0.40
X2181	Core #8	1794.7	7.02	3.19	0.55	0.63	2.43	8.74	1.65	0.57

File #	Description	Depth (m)	C28 aaaS Sterane #26 (%)	Diaster (?) #27 (%)	C28 abbR Sterane #28 (%)	C28 abbS Sterane Peak #29 (%)	Diaster (?) #30 (%)	C28 aaaR Sterane #31 (%)	Diaster (?) #32 (%)	C29 aaaS Sterane #33 (%)
X2126	Core #2 Core Chips	1686	0.90	0.46	4.47	1.38	0.40	10.81	0.27	1.23
X2136	Core #3 Core Chips	1705	1.56	0.36	1.54	2.92	2.38	2.14	0.15	3.35
X2141	Core #4	1739.5	1.92	0.42	1.85	3.21	2.05	2.04	0.18	3.71
X2146	Core #4 Core Chips	1741	1.64	0.26	1.38	3.26	1.70	1.71	1.17	3.48
X2151	Core #5	1750	1.35	0.56	1.82	2.97	1.96	1.67	1.17	3.74
X2156	Core #5	1752	1.19	0.32	1.35	1.63	0.44	1.28	0.55	1.42
X2161	Core #6	1766	1.83	0.41	1.52	2.76	2.58	1.74	0.42	3.66
X2171	Core #7	1781	1.74	0.45	1.70	3.26	2.64	1.76	1.11	3.34
X2181	Core #8	1794.7	1.46	0.82	1.70	2.54	2.29	2.32	1.08	4.61

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nventory Well 25/8-4
t Compositions (m/z=217)

File #	Description	Depth (m)	C29 abbR Sterane #34 (%)	C29 abbS Sterane #35 (%)	Diaster (?) #36 (%)	C29 aaaR Sterane #37 (%)	C30 Sterane (?) #38 (%)	C30 Sterane (?) #39 (%)	C30 Sterane (?) #40 (%)	C30 Sterane (?) #41 (%)
X2126	Core #2 Core Chips	1686	4.89	1.02	0.70	12.27	0.58	0.91	1.06	2.55
X2136	Core #3 Core Chips	1705	5.10	3.05	0.41	3.39	1.03	1.33	1.47	1.18
X2141	Core #4	1739.5	5.25	3.62	0.35	3.09	1.16	1.32	1.46	1.33
X2146	Core #4 Core Chips	1741	5.24	2.92	0.34	3.58	0.94	1.44	1.20	1.45
X2151	Core #5	1750	4.94	3.46	0.29	3.34	0.99	1.56	1.25	1.31
X2156	Core #5	1752	2.43	1.28	0.30	3.72	0.42	1.35	1.51	0.82
X2161	Core #6	1766	4.87	3.10	0.13	3.14	0.70	1.61	1.32	1.46
X2171	Core #7	1781	5.22	2.80	0.26	3.31	1.08	1.45	1.48	1.36
X2181	Core #8	1794.7	6.00	3.98	0.16	4.10	0.74	1.12	0.98	1.04

Norsk - Hydro
Sample Inventory Well 25/8-4
Total % Composition & Selected Regular Sterane Ra

File #	Description	Depth (m)	Total % Composition						
				Regular Steranes					
			Diasteranes	C21+C22	C27	C28	C29	C30	C29
			(%)	(%)	(%)	(%)	(%)	(%)	
X2126	Core #2 Core Chips	1686	22.8	18.0	17.2	17.6	19.4	5.1	0.09
X2136	Core #3 Core Chips	1705	43.9	12.0	16.0	8.2	14.9	5.0	0.50
X2141	Core #4	1739.5	41.9	11.5	16.6	9.0	15.7	5.3	0.55
X2146	Core #4 Core Chips	1741	43.9	11.5	16.4	8.0	15.2	5.0	0.49
X2151	Core #5	1750	45.3	10.6	15.7	7.8	15.5	5.1	0.53
X2156	Core #5	1752	32.2	38.5	11.0	5.4	8.9	4.1	0.28
X2161	Core #6	1766	46.0	10.2	16.1	7.8	14.8	5.1	0.54
X2171	Core #7	1781	45.7	9.6	16.2	8.5	14.7	5.4	0.50
X2181	Core #8	1794.7	47.0	5.7	16.7	8.0	18.7	3.9	0.53

atios (m/z=217)

File #	Description	Depth (m)	= S/R+S = C28	C27	======= C29	= aa/bb = C28	C27
X2126	Core #2 Core Chips	1686	0.08	0.31	2.28	2.00	4.02
X2136	Core #3 Core Chips	1705	0.42	0.76	0.83	0.83	0.63
X2141	Core #4	1739.5	0.48	0.72	0.77	0.78	0.81
X2146	Core #4 Core Chips	1741	0.49	0.71	0.86	0.72	0.77
X2151	Core #5	1750	0.45	0.74	0.84	0.63	0.69
X2156	Core #5	1752	0.48	0.55	1.38	0.83	0.66
X2161	Core #6	1766	0.51	0.74	0.85	0.83	0.70
X2171	Core #7	1781	0.50	0.70	0.83	0.71	0.77
X2181	Core #8	1794.7	0.39	0.63	0.87	0.89	0.64

Description	Depth (m)	File #	Description	Depth (m)	Terpane Concentrations (m/z=191) Sample C20 Diterp Peak A (ppm)	C21 Diterp B (ppm)	C22 Diterp C (ppm)	C23 Diterp D (ppm)
Core #2 Core Chips	1686	X2126	Core #2 Core Chips	1686	9.38	10.55	4.77	12.38
Core #3 Core Chips	1705	X2136	Core #3 Core Chips	1705	8.09	10.15	5.60	13.19
Core #4	1739.5	X2141	Core #4	1739.5	9.32	10.55	3.52	15.70
Core #4 Core Chips	1741	X2146	Core #4 Core Chips	1741	6.03	7.28	3.27	12.64
Core #5	1750	X2151	Core #5	1750	5.10	7.51	3.58	10.05
Core #5	1752	X2156	Core #5	1752	16.90	14.29	5.16	10.83
Core #6	1766	X2161	Core #6	1766	5.37	7.15	4.36	11.47
Core #7	1781	X2171	Core #7	1781	5.99	9.10	4.17	14.01
Core #8	1794.7	X2181	Core #8	1794.7	27.79	36.91	25.26	135.82

Norsk - Hydro
Inventory Well 25/8-4

Description	Depth (m)	C24 Diterp E (ppm)	C25 Diterp #1 (ppm)	Unknown #2 (ppm)	Unknown #3 (ppm)	C24 Tetra-Cyclic #4 (ppm)	C26 Tricyc #5 (ppm)	C26 Tricyc #6 (ppm)
Core #2 Core Chips	1686	7.93	4.67	1.90	1.29	5.79	2.05	2.91
Core #3 Core Chips	1705	11.86	11.24	1.13	1.07	11.71	3.78	4.98
Core #4	1739.5	11.47	9.73	2.49	1.22	8.75	5.04	4.67
Core #4 Core Chips	1741	10.70	10.33	1.30	1.54	9.42	4.32	4.16
Core #5	1750	9.08	9.46	0.84	0.97	8.13	4.02	4.07
Core #5	1752	5.52	3.93	1.61	2.75	6.33	1.99	5.67
Core #6	1766	11.51	10.88	1.27	1.39	9.56	4.51	5.45
Core #7	1781	12.64	13.38	2.41	1.13	11.31	5.28	5.04
Core #8	1794.7	107.07	128.87	22.02	8.64	95.04	65.54	55.05

Norsk - Hydro

Sample Inventory Well 25/8-4

Terpane Concentrations (m/z=191)

Description	Depth (m)	Unknown #7 (ppm)	Unknown Peak #8 (ppm)	C28 Tricyc 9 (ppm)	C28 Tricyc #10 (ppm)	C29 Tricyc #11 (ppm)	C29 Tricyc #12 (ppm)	C27 Hopane TS #13 (ppm)
Core #2 Core Chips	1686	1.56	1.24	3.90	2.96	4.37	4.73	8.51
Core #3 Core Chips	1705	5.38	1.36	6.54	5.17	11.81	11.55	33.16
Core #4	1739.5	4.81	1.82	7.14	5.79	9.28	9.30	24.25
Core #4 Core Chips	1741	5.89	2.27	6.64	6.11	11.74	8.99	28.20
Core #5	1750	4.06	1.78	6.23	5.51	9.69	10.36	27.20
Core #5	1752	2.35	3.07	3.64	3.30	1.48	3.50	7.40
Core #6	1766	5.62	1.76	6.92	5.84	11.26	11.66	33.71
Core #7	1781	6.43	2.88	8.06	8.53	14.47	15.93	41.31
Core #8	1794.7	45.59	11.04	91.55	83.64	149.13	112.15	264.80

Terpane Concentratior

Description	Depth (m)	C27 Hopane TM #14 (ppm)	C27 Hopane #15 (ppm)	Unknown #16 (ppm)	C28 Hopane #17 (ppm)	Unknown #18 (ppm)	C29 Hopane #19 (ppm)	C29 Norhop Peak #20 (ppm)	Diahopane F (ppm)
Core #2 Core Chips	1686	9.61	1.24	6.11	7.62	3.54	26.64	12.34	2.62
Core #3 Core Chips	1705	22.79	4.21	7.01	38.02	20.66	61.24	37.37	24.14
Core #4	1739.5	17.69	1.62	7.39	23.15	12.49	59.87	19.04	13.75
Core #4 Core Chips	1741	20.19	4.03	5.89	33.13	16.16	58.82	32.02	23.83
Core #5	1750	21.63	0.80	5.73	34.42	17.47	59.76	33.21	21.36
Core #5	1752	9.49	2.92	6.14	5.96	0.67	18.69	9.01	37.58
Core #6	1766	25.08	1.10	7.21	41.38	16.56	68.10	35.96	25.80
Core #7	1781	29.70	6.60	7.13	47.62	25.85	82.27	46.32	33.77
Core #8	1794.7	234.99	65.86	110.01	125.41	339.80	627.16	364.66	98.09

Norsk - Hydro

Sample Inventory Well 25/8-4

ıs (m/z=191)

Description	Depth (m)	C29 Moretane #21 (ppm)	C30 Oleanane #22 (ppm)	C30 Hopane #23 (ppm)	C30 Moretane #24 (ppm)	Unknown #25 (ppm)	Unknown #26 (ppm)	C31 Hopane 22S #27 (ppm)
Core #2 Core Chips	1686	21.04	2.27	52.06	12.59	1.20	5.24	11.03
Core #3 Core Chips	1705	11.60	1.23	132.90	9.85	4.83	12.56	62.30
Core #4	1739.5	9.37	1.43	97.22	5.75	3.39	9.57	49.84
Core #4 Core Chips	1741	13.54	0.56	124.99	11.20	4.85	1.71	58.44
Core #5	1750	11.72	4.31	124.37	9.74	3.98	11.63	59.33
Core #5	1752	6.25	1.56	26.23	4.84	0.98	1.63	15.32
Core #6	1766	12.48	2.30	135.97	11.60	5.82	13.70	65.03
Core #7	1781	18.02	2.36	173.81	16.07	6.35	17.23	80.27
Core #8	1794.7	162.60	80.20	898.64	81.53	16.86	12.92	478.53

Norsk - Hyd

Terpane Concentrations (m/z=191) Sample Inventory W

Description	Depth (m)	C31 Hopane 22R #28 (ppm)	C31 Moretane #29 (ppm)	Gammacerene G (ppm)	C32 Hopane 22S Peak #30 (ppm)	C32 Hopane 22R #31 (ppm)	C32 Moretane #32 (ppm)	C31 bb Homohop #33 (ppm)
Core #2 Core Chips	1686	22.78	31.61	4.42	7.34	8.79	1.93	26.18
Core #3 Core Chips	1705	43.80	9.44	8.32	47.46	37.61	5.11	0.37
Core #4	1739.5	33.47	6.90	4.91	37.07	27.58	3.03	0.77
Core #4 Core Chips	1741	41.73	9.05	6.05	41.70	32.53	4.15	0.78
Core #5	1750	41.67	8.97	6.59	41.99	31.40	3.61	0.71
Core #5	1752	17.68	5.37	2.66	7.09	9.76	1.64	6.51
Core #6	1766	45.41	8.68	8.05	43.06	34.22	4.27	0.75
Core #7	1781	56.39	11.52	8.13	56.32	43.67	5.09	0.92
Core #8	1794.7	325.14	94.98	38.30	361.84	275.04	21.90	5.83

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Description	Depth (m)	C33 Hopane 22S #34 (ppm)	C33 Hopane 22R #35 (ppm)	C34 Hopane 22S #36 (ppm)	C34 Hopane 22R #37 (ppm)	C35 Hopane 22S #38 (ppm)	C35 Hopane 22R #39 (ppm)	C20 Diterp Peak A (%)
Core #2 Core Chips	1686	5.66	4.67	4.12	3.08	1.87	3.83	2.39
Core #3 Core Chips	1705	47.66	26.62	26.33	16.52	25.38	21.37	0.88
Core #4	1739.5	35.07	19.14	20.73	15.97	22.19	14.15	1.30
Core #4 Core Chips	1741	43.61	23.65	26.33	14.66	24.13	18.45	0.72
Core #5	1750	42.67	24.51	24.26	15.22	24.27	16.45	0.61
Core #5	1752	7.68	6.79	1.34	1.71	3.15	3.30	5.25
Core #6	1766	47.22	26.42	30.74	15.27	29.39	22.97	0.57
Core #7	1781	59.18	32.22	33.94	22.32	34.19	27.45	0.51
Core #8	1794.7	311.16	184.45	234.75	169.88	291.41	214.98	0.36

Norsk - Hydro

Sample Inventory Well 25/8-4

pane Percent Compositions (m/z=191)

Description	Depth (m)	C21 Diterp B (%)	C22 Diterp C (%)	C23 Diterp D (%)	C24 Diterp E (%)	C25 Diterp #1 (%)	Unknown #2 (%)	Unknown #3 (%)
Core #2 Core Chips	1686	2.69	1.22	3.16	2.02	1.19	0.48	0.33
Core #3 Core Chips	1705	1.10	0.61	1.43	1.28	1.22	0.12	0.12
Core #4	1739.5	1.47	0.49	2.19	1.60	1.36	0.35	0.17
Core #4 Core Chips	1741	0.87	0.39	1.51	1.28	1.23	0.16	0.18
Core #5	1750	0.91	0.43	1.21	1.09	1.14	0.10	0.12
Core #5	1752	4.44	1.60	3.37	1.72	1.22	0.50	0.85
Core #6	1766	0.77	0.47	1.23	1.23	1.16	0.14	0.15
Core #7	1781	0.78	0.36	1.20	1.08	1.15	0.21	0.10
Core #8	1794.7	0.48	0.33	1.77	1.39	1.68	0.29	0.11

Description	Depth (m)	Terpane Percent Compositions (m/z=191) Sample C24 Tetra-Cyclic #4 (%)	C26 Tricyc #5 (%)	C26 Tricyc #6 (%)	Unknown #7 (%)	Unknown Peak #8 (%)	C28 Tricyc 9 (%)	C28 Tricyc #10 (%)
Core #2 Core Chips	1686	1.48	0.52	0.74	0.40	0.32	0.99	0.75
Core #3 Core Chips	1705	1.27	0.41	0.54	0.58	0.15	0.71	0.56
Core #4	1739.5	1.22	0.70	0.65	0.67	0.25	1.00	0.81
Core #4 Core Chips	1741	1.13	0.52	0.50	0.70	0.27	0.79	0.73
Core #5	1750	0.98	0.48	0.49	0.49	0.21	0.75	0.66
Core #5	1752	1.97	0.62	1.76	0.73	0.95	1.13	1.03
Core #6	1766	1.02	0.48	0.58	0.60	0.19	0.74	0.63
Core #7	1781	0.97	0.45	0.43	0.55	0.25	0.69	0.73
Core #8	1794.7	1.24	0.85	0.72	0.59	0.14	1.19	1.09

Norsk - Hydro
Inventory Well 25/8-4

Description	Depth (m)	C29 Tricyc #11 (%)	C29 Tricyc #12 (%)	C27 Hopane TS #13 (%)	C27 Hopane TM #14 (%)	C27 Hopane #15 (%)	Unknown #16 (%)	C28 Hopane #17 (%)
Core #2 Core Chips	1686	1.11	1.21	2.17	2.45	0.32	1.56	1.94
Core #3 Core Chips	1705	1.28	1.25	3.59	2.47	0.46	0.76	4.11
Core #4	1739.5	1.29	1.30	3.38	2.47	0.23	1.03	3.23
Core #4 Core Chips	1741	1.40	1.07	3.37	2.41	0.48	0.70	3.96
Core #5	1750	1.17	1.25	3.28	2.61	0.10	0.69	4.15
Core #5	1752	0.46	1.09	2.30	2.95	0.91	1.91	1.85
Core #6	1766	1.21	1.25	3.61	2.68	0.12	0.77	4.43
Core #7	1781	1.24	1.37	3.54	2.55	0.57	0.61	4.08
Core #8	1794.7	1.94	1.46	3.44	3.05	0.86	1.43	1.63

Norsk - Hydro

Sample Inventory Well 25/8-4

Terpane Percent Compositions (m/z=191)

Description	Depth (m)	Unknown #18 (%)	C29 Hopane #19 (%)	C29 Norhop Peak #20 (%)	Diahopane F (%)	C29 Moretane #21 (%)	C30 Oleanane #22 (%)	C30 Hopane #23 (%)
Core #2 Core Chips	1686	0.90	6.79	3.15	0.67	5.36	0.58	13.27
Core #3 Core Chips	1705	2.23	6.62	4.04	2.61	1.25	0.13	14.38
Core #4	1739.5	1.74	8.35	2.65	1.92	1.31	0.20	13.55
Core #4 Core Chips	1741	1.93	7.03	3.83	2.85	1.62	0.07	14.93
Core #5	1750	2.11	7.21	4.00	2.58	1.41	0.52	14.99
Core #5	1752	0.21	5.81	2.80	11.68	1.94	0.48	8.15
Core #6	1766	1.77	7.29	3.85	2.76	1.34	0.25	14.55
Core #7	1781	2.22	7.05	3.97	2.89	1.54	0.20	14.90
Core #8	1794.7	4.42	8.15	4.74	1.28	2.11	1.04	11.68

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Description	Depth (m)	C30 Moretane #24 (%)	Unknown #25 (%)	Unknown #26 (%)	C31 Hopane 22S #27 (%)	C31 Hopane 22R #28 (%)	C31 Moretane #29 (%)	Gammacerene G (%)
Core #2 Core Chips	1686	3.21	0.31	1.34	2.81	5.81	8.06	1.13
Core #3 Core Chips	1705	1.07	0.52	1.36	6.74	4.74	1.02	0.90
Core #4	1739.5	0.80	0.47	1.33	6.95	4.67	0.96	0.68
Core #4 Core Chips	1741	1.34	0.58	0.20	6.98	4.99	1.08	0.72
Core #5	1750	1.17	0.48	1.40	7.15	5.02	1.08	0.79
Core #5	1752	1.50	0.30	0.51	4.76	5.50	1.67	0.83
Core #6	1766	1.24	0.62	1.47	6.96	4.86	0.93	0.86
Core #7	1781	1.38	0.54	1.48	6.88	4.83	0.99	0.70
Core #8	1794.7	1.06	0.22	0.17	6.22	4.23	1.23	0.50

Norsk - Hydro

Sample Inventory Well 25/8-4

pane Percent Compositions (m/z=191)

Description	Depth (m)	C32 Hopane 22S Peak #30 (%)	C32 Hopane 22R #31 (%)	C32 Moretane #32 (%)	C31 bb Homohop #33 (%)	C33 Hopane 22S #34 (%)	C33 Hopane 22R #35 (%)	C34 Hopane 22S #36 (%)
Core #2 Core Chips	1686	1.87	2.24	0.49	6.67	1.44	1.19	1.05
Core #3 Core Chips	1705	5.13	4.07	0.55	0.04	5.16	2.88	2.85
Core #4	1739.5	5.17	3.84	0.42	0.11	4.89	2.67	2.89
Core #4 Core Chips	1741	4.98	3.89	0.50	0.09	5.21	2.83	3.15
Core #5	1750	5.06	3.79	0.44	0.09	5.14	2.96	2.92
Core #5	1752	2.20	3.03	0.51	2.02	2.39	2.11	0.42
Core #6	1766	4.61	3.66	0.46	0.08	5.05	2.83	3.29
Core #7	1781	4.83	3.74	0.44	0.08	5.07	2.76	2.91
Core #8	1794.7	4.70	3.58	0.28	0.08	4.04	2.40	3.05

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Total % Compositions & Selected Terpane Ratios (m/z=191)

Description	Depth (m)	C34 Hopane 22R #37 (%)	C35 Hopane 22S #38 (%)	C35 Hopane 22R #39 (%)	centration Diterpanes (ppm)	% Compositions of Triterpanes Triterpanes (ppm)	Tricyclics (%)	Hopanes (%)	Mc
Core #2 Core Chips	1686	0.79	0.48	0.98	50	313	6.7	70.4	
Core #3 Core Chips	1705	1.79	2.75	2.31	60	797	5.5	88.9	
Core #4	1739.5	2.23	3.09	1.97	60	604	6.8	88.2	
Core #4 Core Chips	1741	1.75	2.88	2.20	50	737	5.7	88.3	
Core #5	1750	1.84	2.93	1.98	45	726	5.5	88.9	
Core #5	1752	0.53	0.98	1.03	57	238	8.2	83.0	
Core #6	1766	1.63	3.15	2.46	51	818	5.6	88.9	
Core #7	1781	1.91	2.93	2.35	59	1024	5.6	88.7	
Core #8	1794.7	2.21	3.79	2.79	462	6489	8.6	85.3	

Description	Depth (m)	oretanes (%)	TS/TM	Hopanes C28/C30	Hopanes C30/C29	Ratios C31	Ratios C32	Ratios S/R+S C33	Ratios C34	Ratios C35	ne/Moretane C29/C29	ne/Moretane C30/C30
Core #2 Core Chips	1686	21.5	0.89	0.15	1.95	0.33	0.46	0.55	0.57	0.33	1.27	4.14
Core #3 Core Chips	1705	4.5	1.46	0.29	2.17	0.59	0.56	0.64	0.61	0.54	5.28	13.49
Core #4	1739.5	4.1	1.37	0.24	1.62	0.60	0.57	0.65	0.56	0.61	6.39	16.91
Core #4 Core Chips	1741	5.1	1.40	0.27	2.12	0.58	0.56	0.65	0.64	0.57	4.34	11.16
Core #5	1750	4.7	1.26	0.28	2.08	0.59	0.57	0.64	0.61	0.60	5.10	12.77
Core #5	1752	7.6	0.78	0.23	1.40	0.46	0.42	0.53	0.44	0.49	2.99	5.42
Core #6	1766	4.5	1.34	0.30	2.00	0.59	0.56	0.64	0.67	0.56	5.46	11.72
Core #7	1781	4.9	1.39	0.27	2.11	0.59	0.56	0.65	0.60	0.55	4.57	10.82
Core #8	1794.7	5.6	1.13	0.14	1.43	0.60	0.57	0.63	0.58	0.58	3.86	11.02

						Monoaromatized Steranes (m/z=253)					
Description	)epth (m)	File #	Description	)epth (m)	C21 Peak #1 (ppm)	C22 #2 (ppm)	Unknown #3 (ppm)	Unknown #4 (ppm)	C27 bS #5 (ppm)	Unknown #6 (ppm)
Core #2 Core Chips	1686	X2126	Core #2 Core Chips	1686	3.81	4.55	4.66	16.84	3.67	13.43
Core #3 Core Chips	1705	X2136	Core #3 Core Chips	1705	0.95	0.67	0.88	2.68	0.98	2.54
Core #4	1739.5	X2141	Core #4	1739.5	25.52	22.94	24.58	95.49	26.06	71.94
Core #4 Core Chips	1741	X2146	Core #4 Core Chips	1741	3.59	4.16	4.31	16.51	4.56	12.07
Core #5	1750	X2151	Core #5	1750	0.72	0.59	0.24	0.79	0.14	0.47
Core #5	1752	X2156	Core #5	1752	9.77	10.30	9.41	38.72	9.14	27.42
Core #6	1766	X2161	Core #6	1766	4.55	16.16	5.32	18.91	4.72	16.11
Core #7	1781	X2171	Core #7	1781	8.88	15.61	26.37	68.92	10.74	42.75
Core #8	1794.7	X2181	Core #8	1794.7	15.22	27.78	30.79	119.90	20.22	74.79

Norsk - Hydro
Inventory Well 25/8-4

Concentrations of Monoaromatized Steranes (m/z=253)

Description	Depth (m)	C27 bR #7 (ppm)	C27 aS #8 (ppm)	C28 bS #9 (ppm)	C27+C28 aR+aS #10 (ppm)	C28 bR #11 (ppm)	C29 bS #12 (ppm)	C29 (?) #13 (ppm)	C29 (?) #14 (ppm)	C29 bR #15 (ppm)	C28 aR #16 (ppm)
Core #2 Core Chips	1686	24.77	9.23	3.65	25.49	26.85	9.64	1.70	7.46	7.37	2.01
Core #3 Core Chips	1705	4.95	1.22	1.24	5.25	9.14	1.55	0.67	1.49	0.89	0.65
Core #4	1739.5	133.70	54.99	18.09	120.50	123.98	48.82	6.95	35.62	23.85	13.58
Core #4 Core Chips	1741	21.15	11.04	3.41	21.69	17.20	9.10	1.87	6.14	4.73	2.08
Core #5	1750	1.08	0.44	0.18	1.07	2.67	1.07	0.06	0.48	0.35	0.36
Core #5	1752	57.62	20.46	5.95	48.56	46.53	19.45	5.48	12.57	8.32	4.61
Core #6	1766	31.93	11.64	3.83	26.83	22.99	9.86	2.44	8.98	6.77	3.37
Core #7	1781	90.55	20.65	13.22	91.65	47.56	36.08	1.92	33.65	29.84	9.39
Core #8	1794.7	168.19	81.00	27.49	206.50	137.25	50.21	11.29	72.82	59.11	31.52

Norsk - Hydro
Inventory Well 25/8-4

Concentrations of Monoaromatized Steranes (m/z=253)

Norsk - Hydro
Sample Inventory Well 25/8-4

Monoaromatized Steranes (m/z=253)

Description	Depth (m)	C29 aR #17 (ppm)	C21 Peak #1 (%)	C22 #2 (%)	Unknown #3 (%)	Unknown #4 (%)	C27 bS #5 (%)	Unknown #6 (%)	C27 bR #7 (%)	C27 aS #8 (%)	C28 bS #9 (%)
		Percent Compositions of Monoaromatized Steranes									
Core #2 Core Chips	1686	6.68	2.22	2.65	2.71	9.80	2.14	7.82	14.42	5.37	2.12
Core #3 Core Chips	1705	0.70	2.61	1.84	2.41	7.35	2.69	6.97	13.58	3.35	3.40
Core #4	1739.5	49.61	2.85	2.56	2.74	10.65	2.91	8.03	14.92	6.14	2.02
Core #4 Core Chips	1741	5.93	2.40	2.78	2.88	11.04	3.05	8.07	14.14	7.38	2.28
Core #5	1750	0.39	6.49	5.32	2.16	7.12	1.26	4.23	9.73	3.96	1.62
Core #5	1752	17.79	2.77	2.93	2.67	11.00	2.60	7.79	16.36	5.81	1.69
Core #6	1766	6.58	2.26	8.04	2.65	9.41	2.35	8.02	15.89	5.79	1.91
Core #7	1781	14.63	1.58	2.78	4.69	12.25	1.91	7.60	16.10	3.67	2.35
Core #8	1794.7	31.03	1.31	2.38	2.64	10.29	1.74	6.42	14.44	6.95	2.36

Norsk - Hydro
Sample Inventory Well 25/8-4

Monoaromatized Steranes (m/z=253)

Description	Depth (m)	C29 aR #17 (ppm)	C21 Peak #1 (%)	C22 #2 (%)	Unknown #3 (%)	Unknown #4 (%)	C27 bS #5 (%)	Unknown #6 (%)	C27 bR #7 (%)	C27 aS #8 (%)	C28 bS #9 (%)
		Percent Compositions of Monoaromatized Steranes									

Description	Depth (m)	C27+C28 aR+aS #10 (%)	C28 bR #11 (%)	C29 bS #12 (%)	C29 (?) #13 (%)	C29 (?) #14 (%)	C29 bR #15 (%)	C28 aR #16 (%)	C29 aR #17 (%)	Tri Concentr C-20 Peak #1 (ppm)	Tri Concentr C-21 #2 (ppm)
Core #2 Core Chips	1686	14.84	15.63	5.61	0.99	4.34	4.29	1.17	3.89	29.03	24.63
Core #3 Core Chips	1705	14.40	25.08	4.25	1.84	4.09	2.44	1.78	1.92	5.49	4.84
Core #4	1739.5	13.45	13.83	5.45	0.78	3.97	2.66	1.52	5.54	132.87	116.56
Core #4 Core Chips	1741	14.50	11.50	6.09	1.25	4.11	3.16	1.39	3.97	19.52	16.24
Core #5	1750	9.64	24.05	9.64	0.54	4.32	3.15	3.24	3.51	3.19	2.04
Core #5	1752	13.79	13.21	5.52	1.56	3.57	2.36	1.31	5.05	49.79	43.74
Core #6	1766	13.35	11.44	4.91	1.21	4.47	3.37	1.68	3.27	25.55	22.70
Core #7	1781	16.30	8.46	6.42	0.34	5.98	5.31	1.67	2.60	48.69	26.83
Core #8	1794.7	17.72	11.78	4.31	0.97	6.25	5.07	2.71	2.66	89.88	51.14

Norsk - Hydro
Sample Inventory Well 25/8-4
aromatized Steranes (m/z=231)

Description	Depth (m)	Concentrations of Triaromatized Steranes					Percent composition of Triaromatized Steranes			
		C-26 #3 (ppm)	C-27* #4 (ppm)	C-28 #5 (ppm)	C-27/28 #6 (ppm)	C-28* #7 (ppm)	C-20 Peak #1 (%)	C-21 #2 (%)	C-26 #3 (%)	C-27* #4 (%)

Norsk - Hydro
Sample Inventory Well 25/8-4
aromatized Steranes (m/z=231)

Description	Depth (m)	Concentrations of Triaromatized Steranes					Percent composition of Triaromatized Steranes			
		C-26 #3 (ppm)	C-27* #4 (ppm)	C-28 #5 (ppm)	C-27/28 #6 (ppm)	C-28* #7 (ppm)	C-20 Peak #1 (%)	C-21 #2 (%)	C-26 #3 (%)	C-27* #4 (%)
Core #2 Core Chips	1686	10.17	33.54	19.97	18.72	26.42	17.87	15.16	6.26	20.64
Core #3 Core Chips	1705	1.91	6.33	3.73	3.23	4.58	18.23	16.07	6.34	21.02
Core #4	1739.5	51.07	178.83	108.25	96.32	120.08	16.53	14.50	6.35	22.24
Core #4 Core Chips	1741	6.79	24.12	15.37	13.77	16.87	17.32	14.41	6.03	21.41
Core #5	1750	0.30	1.01	0.66	0.61	0.69	37.53	24.00	3.53	11.88
Core #5	1752	19.45	71.42	41.59	38.28	48.89	15.90	13.97	6.21	22.81
Core #6	1766	10.14	35.19	21.75	19.67	24.89	15.98	14.20	6.34	22.01
Core #7	1781	13.95	75.63	72.92	49.73	68.19	13.68	7.54	3.92	21.25
Core #8	1794.7	28.88	145.01	133.91	93.71	135.00	13.27	7.55	4.26	21.40

Sample :

Selected Ratios of Mono & Triaromatized Steranes

Description	Depth (m)	Monoaromatized Steranes				Triaromatized Steranes		
		C-28 #5 (%)	C-27/28 #6 (%)	C-28* #7 (%)	C21+22/ C27-29	C21/ C21+28 (%)	C20+21/ C26-28	C20/ C20+C27 (%)

Sample :

Selected Ratios of Mono & Triaromatized Steranes

Description	Depth (m)	Monoaromatized Steranes				Triaromatized Steranes		
		C-28 #5 (%)	C-27/28 #6 (%)	C-28* #7 (%)	C21+22/ C27-29	C21/ C21+28 (%)	C20+21/ C26-28	C20/ C20+C27 (%)
Core #2 Core Chips	1686	12.29	11.52	16.26	0.06	12.4	0.49	46.4
Core #3 Core Chips	1705	12.39	10.73	15.21	0.05	9.4	0.52	46.4
Core #4	1739.5	13.46	11.98	14.94	0.07	17.1	0.45	42.6
Core #4 Core Chips	1741	13.64	12.22	14.97	0.06	17.3	0.46	44.7
Core #5	1750	7.76	7.18	8.12	0.15	21.2	1.60	76.0
Core #5	1752	13.28	12.22	15.61	0.07	17.4	0.43	41.1
Core #6	1766	13.60	12.30	15.57	0.13	16.5	0.43	42.1
Core #7	1781	20.49	13.97	19.16	0.06	15.7	0.27	39.2
Core #8	1794.7	19.76	13.83	19.93	0.04	10.0	0.26	38.3

Norsk - Hydro
Inventory Well 25/8-4

Description	Depth (m)	Tri/Monoaromatized Steranes			
		C21/ C21+28 (%)	DTAS 231(C27)+253(C28) (%)	231(C27)/ 231(C28)+253(C29) (%)	231(C28)/ (%)

Norsk - Hydro
Inventory Well 25/8-4

Description	Depth (m)	Tri/Monoaromatized Steranes			
		C21/ C21+28 (%)	DTAS 231(C27)+253(C28) (%)	231(C27)/ 231(C28)+253(C29) (%)	231(C28)/ (%)
Core #2 Core Chips	1686	48.2	33.0	90.2	65.3
Core #3 Core Chips	1705	51.4	34.3	83.6	74.2
Core #4	1739.5	49.3	31.0	90.8	62.0
Core #4 Core Chips	1741	49.0	31.7	87.6	61.3
Core #5	1750	74.7	61.5	84.9	48.3
Core #5	1752	47.2	29.9	92.3	65.2
Core #6	1766	47.7	30.2	90.2	65.1
Core #7	1781	28.2	21.2	85.1	60.5
Core #8	1794.7	27.5	20.8	84.1	60.0

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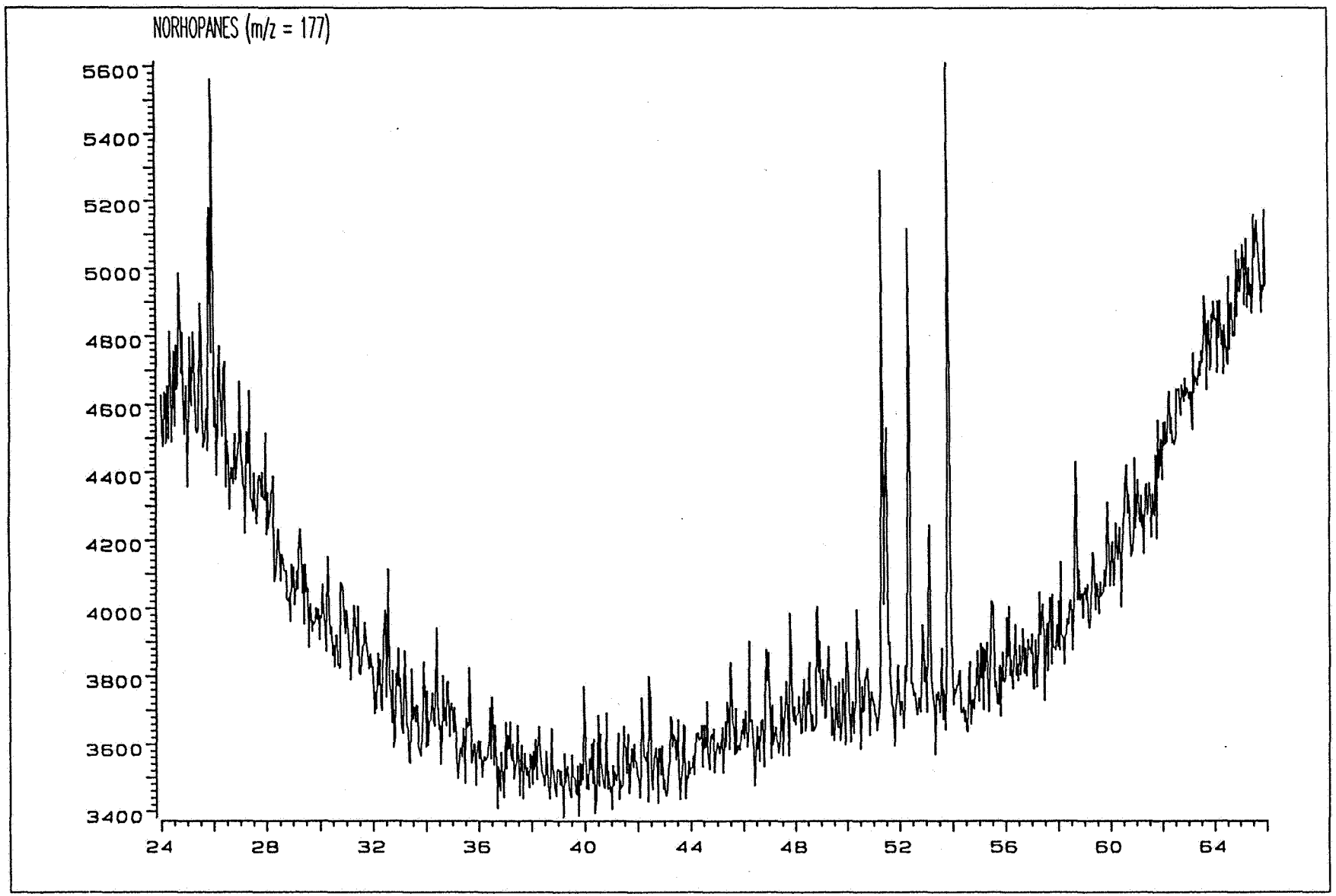

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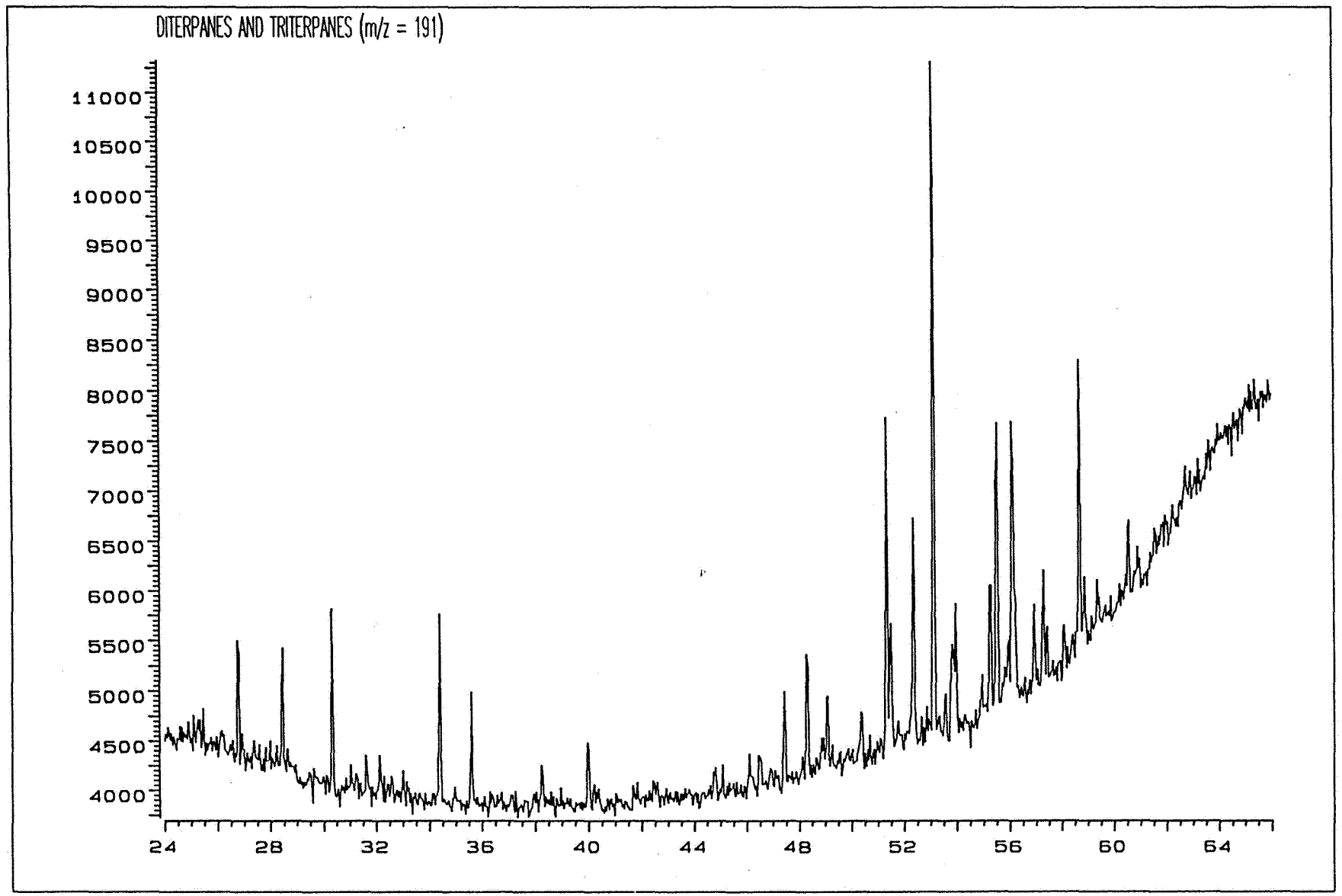

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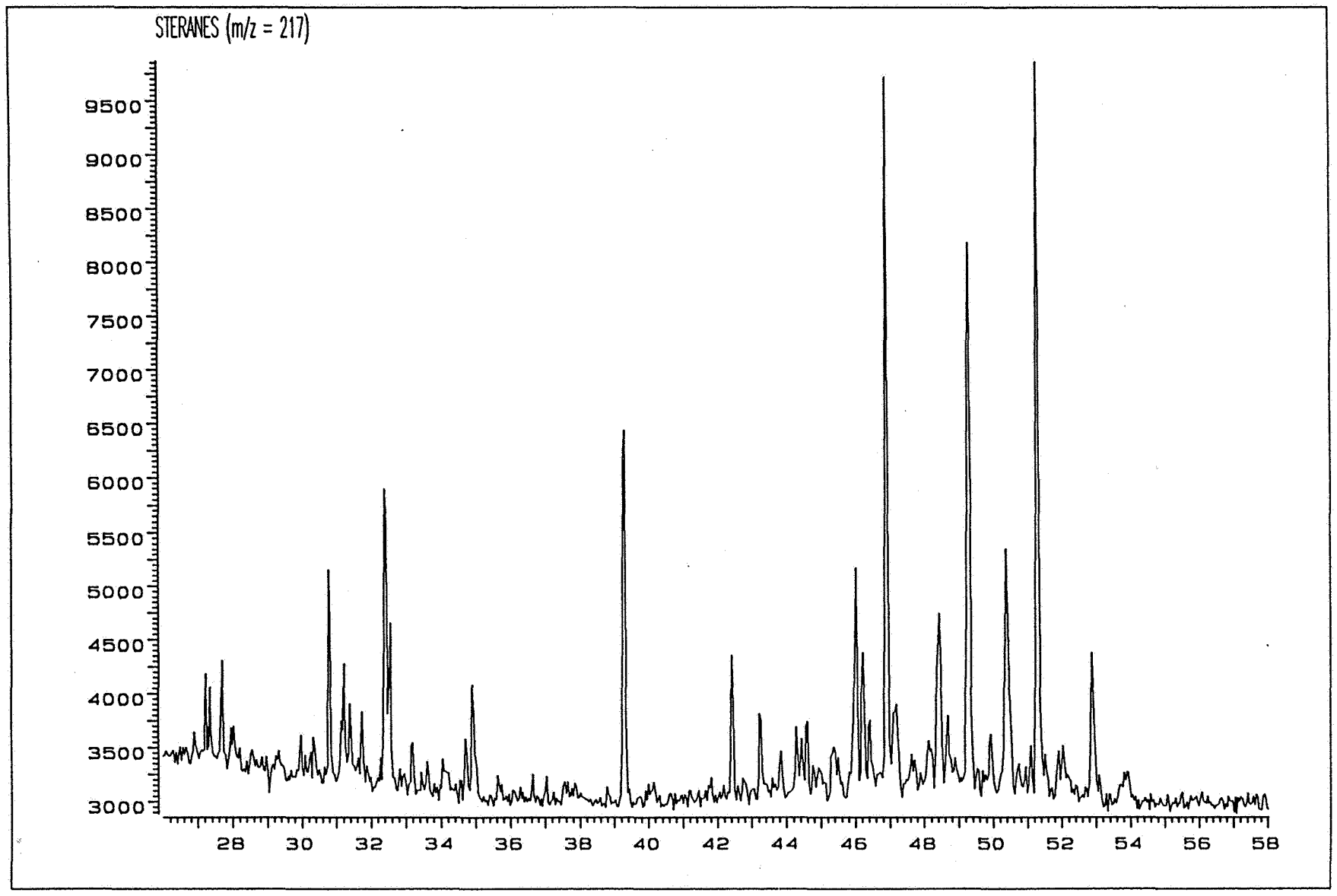

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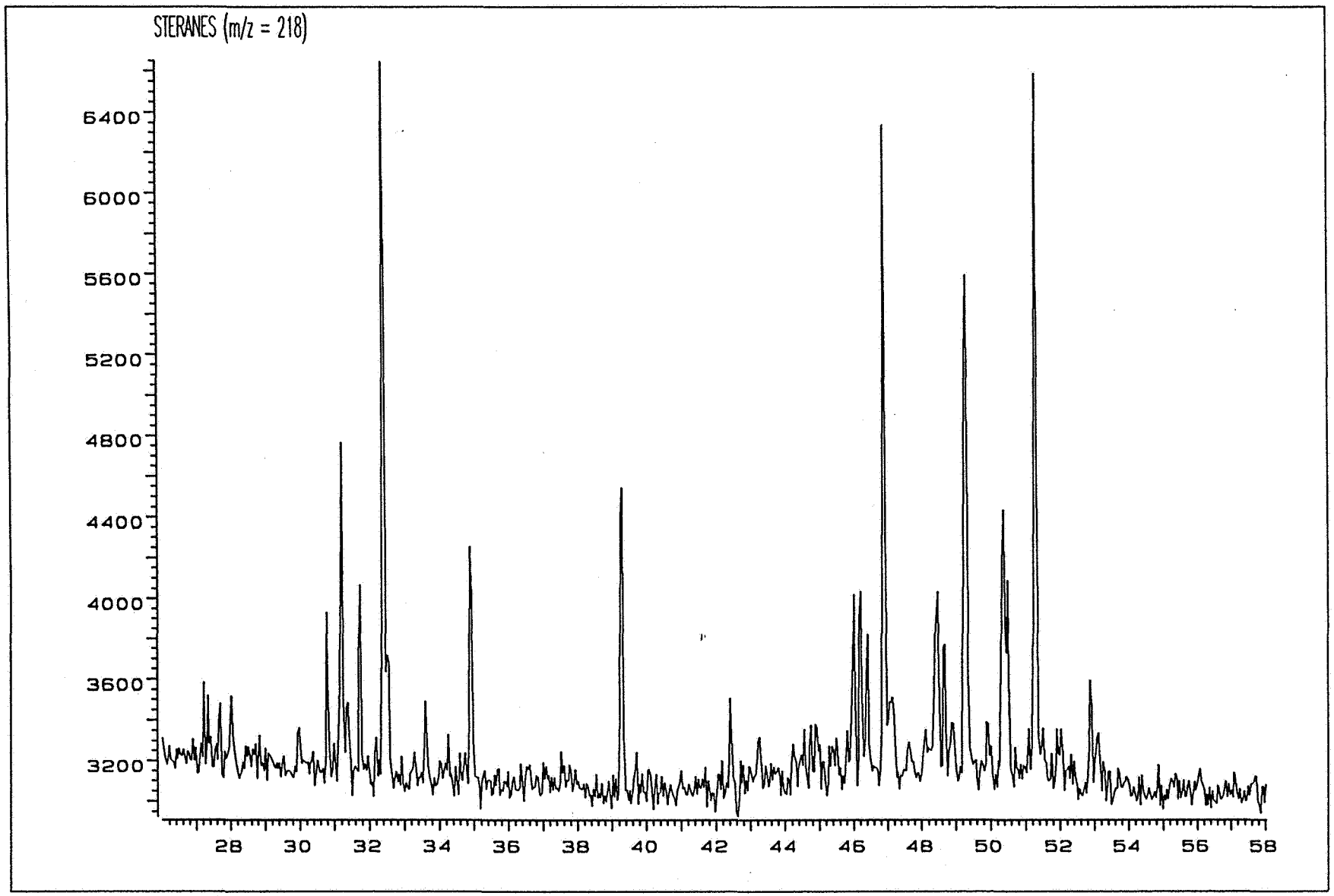

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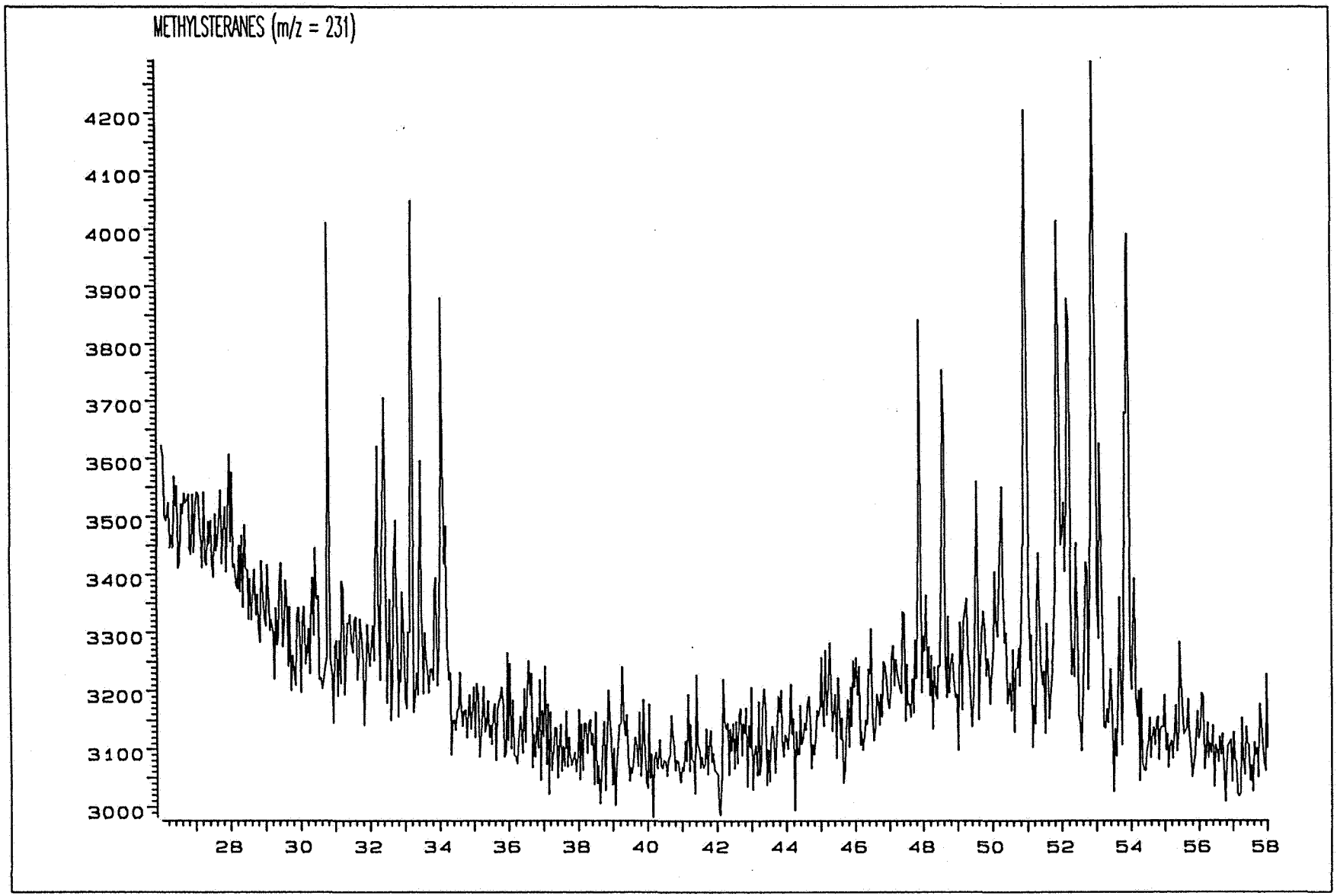

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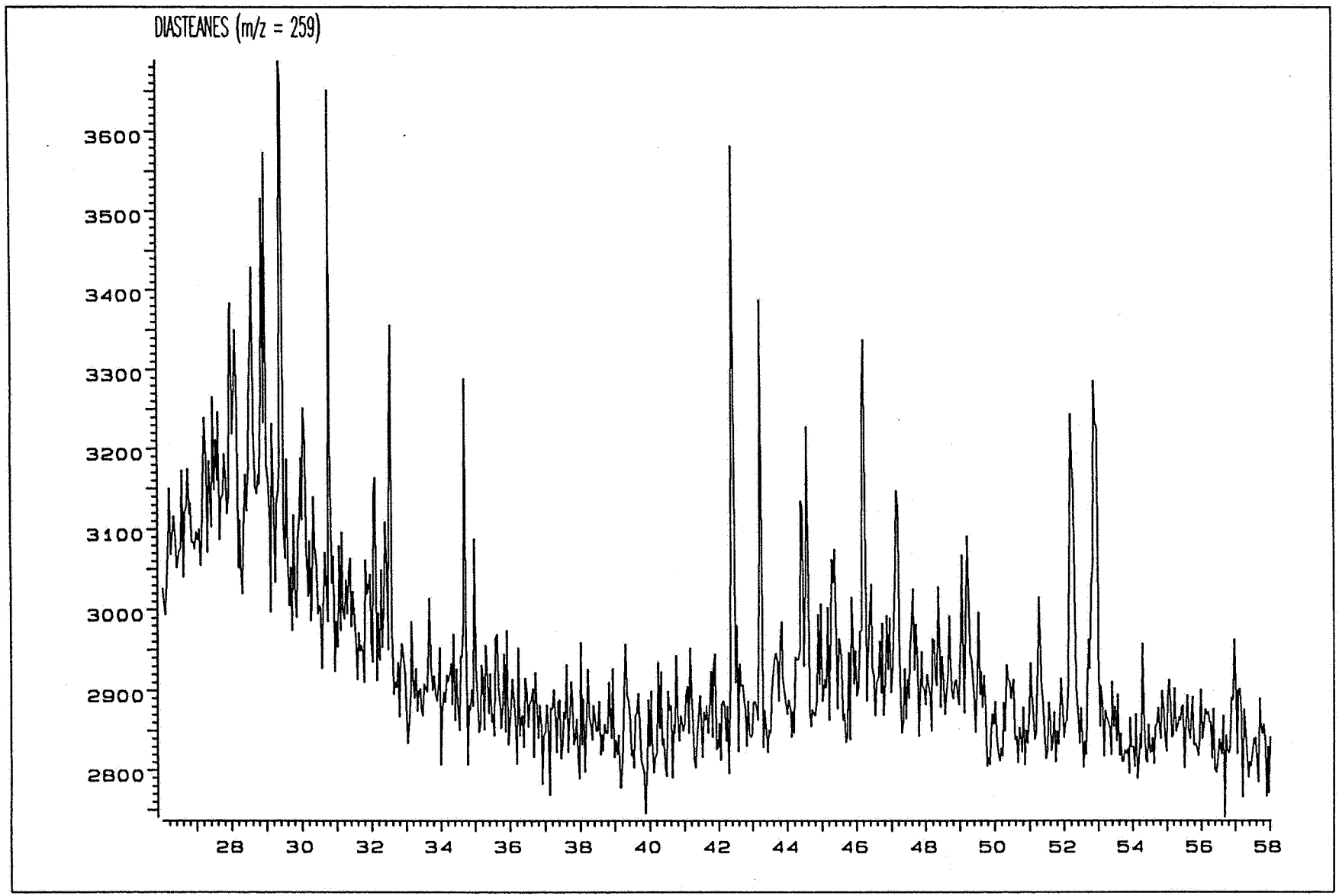

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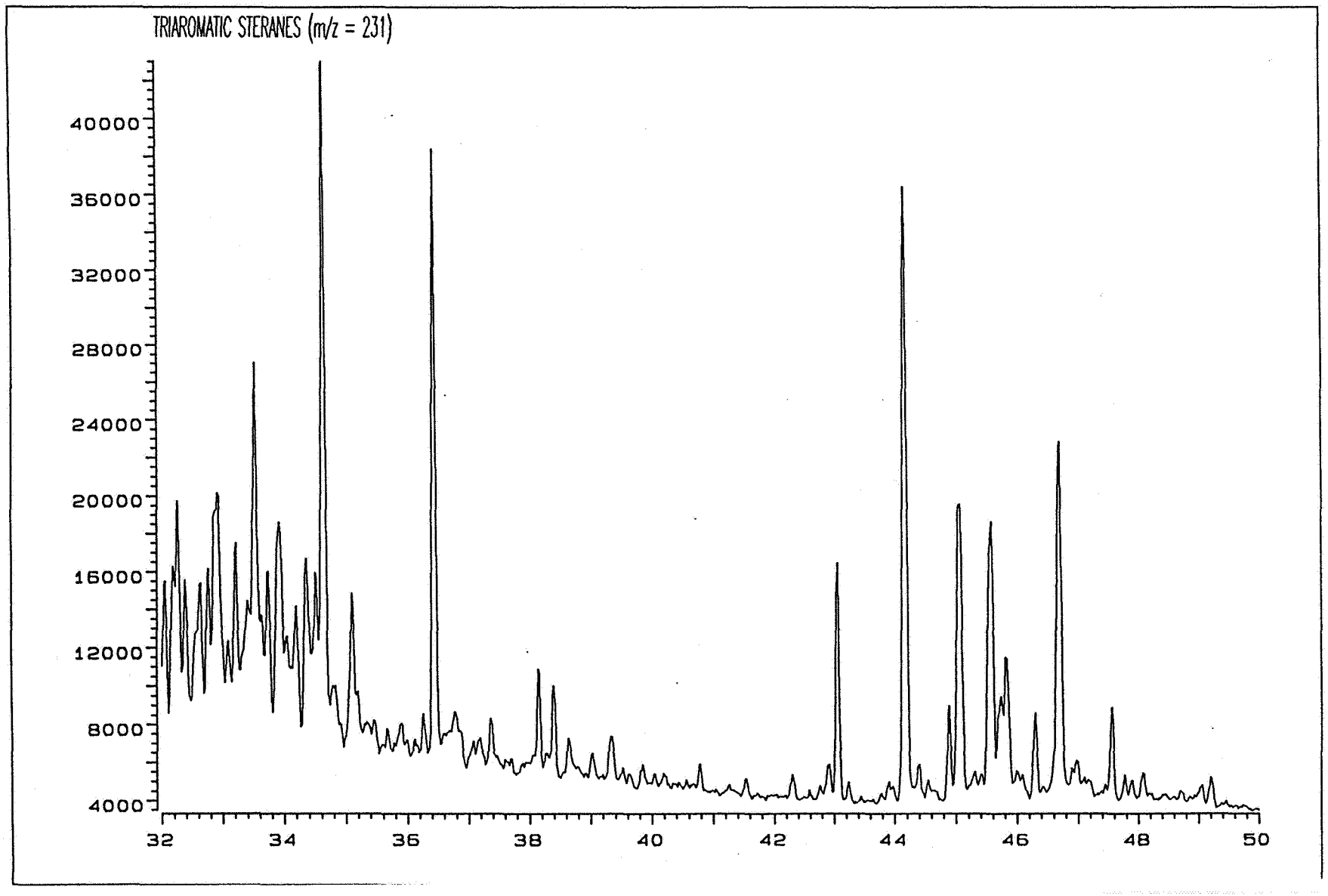

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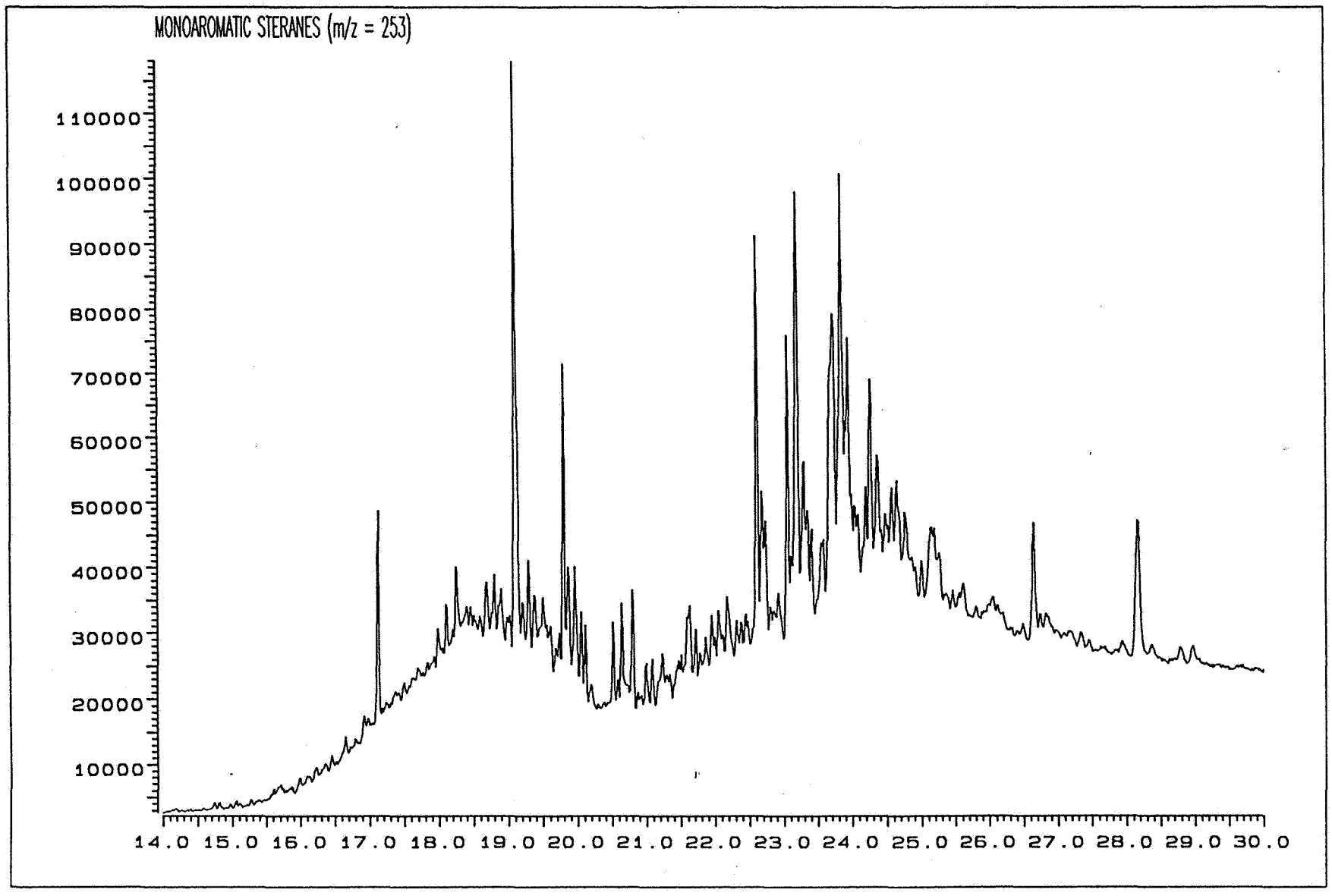
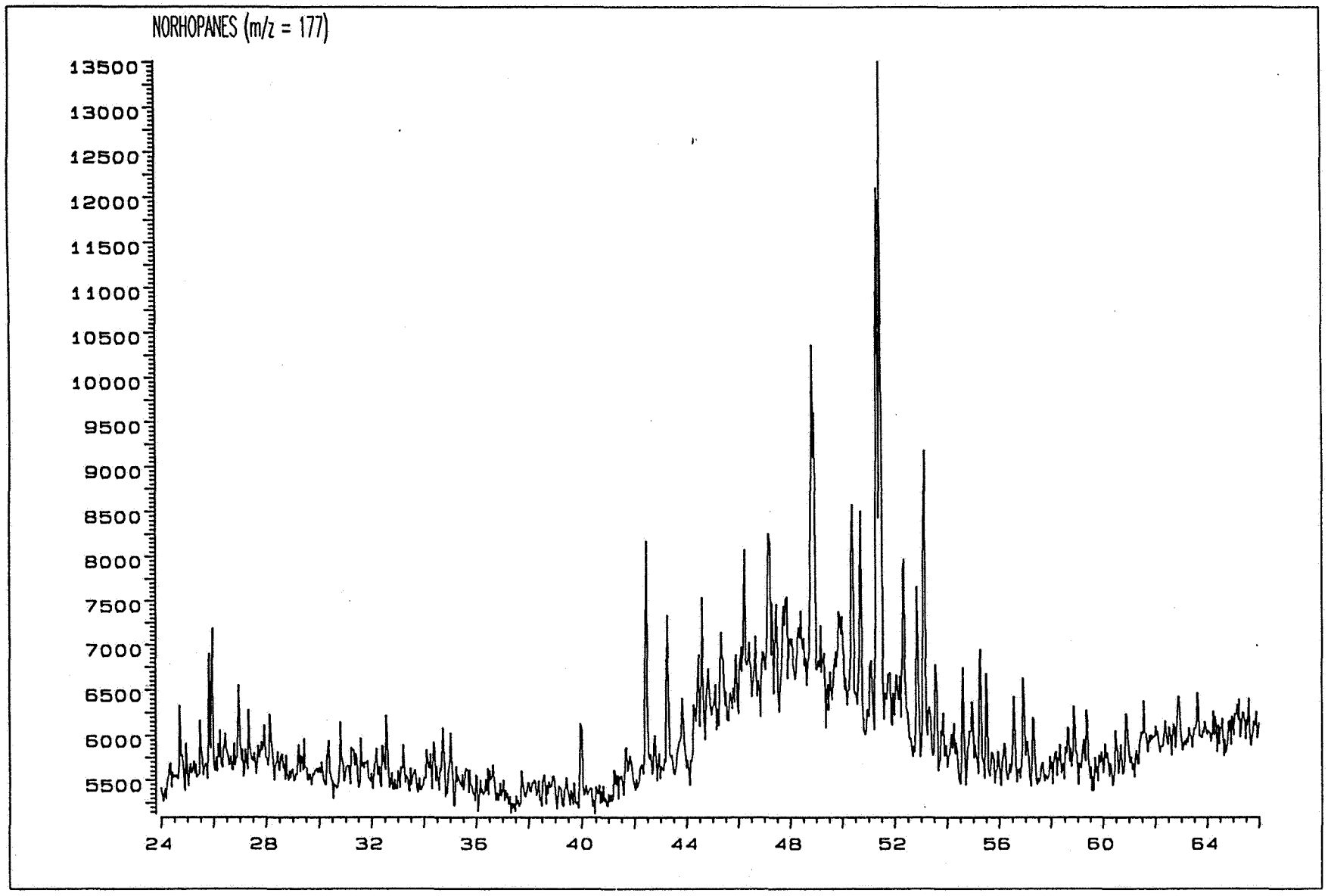
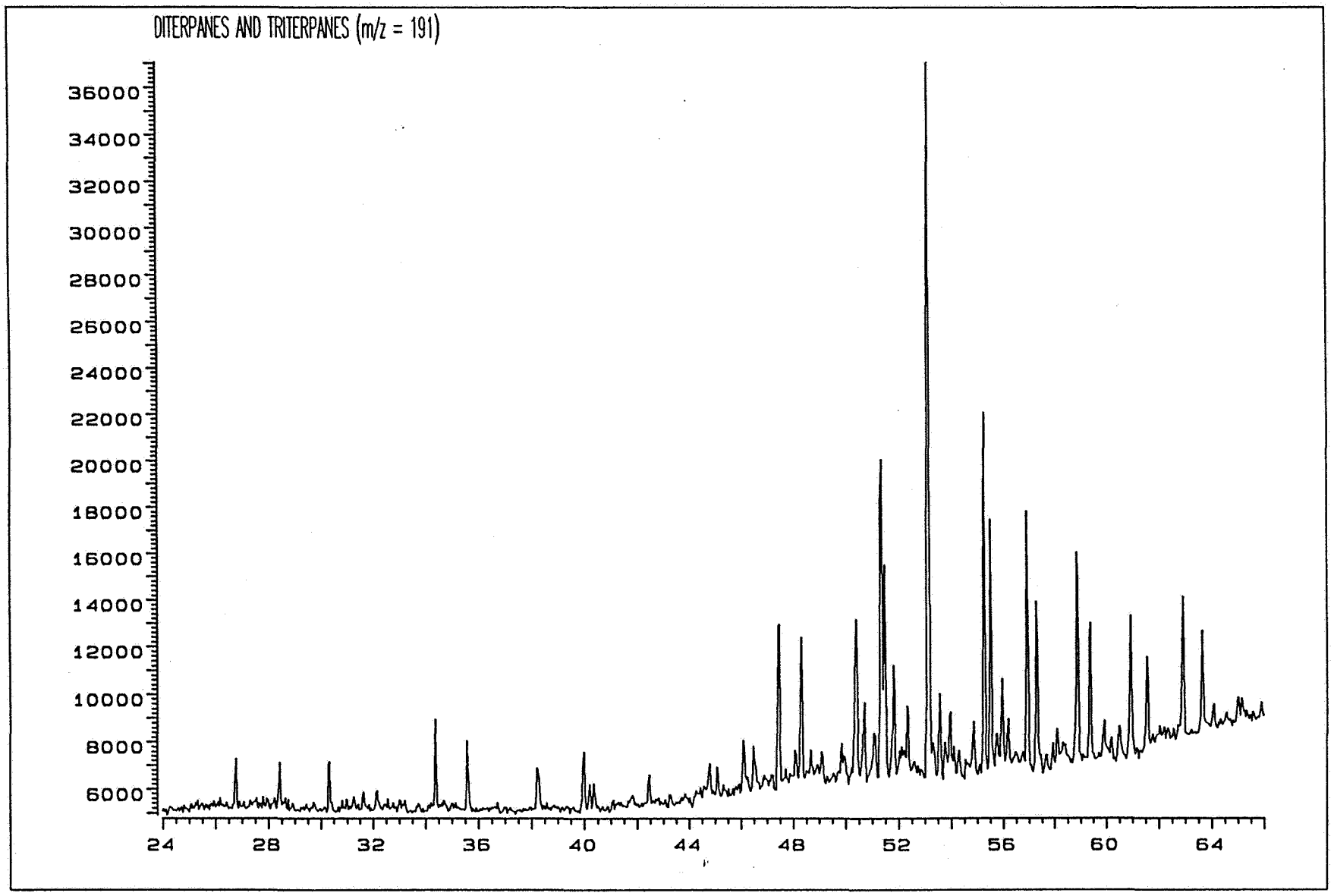


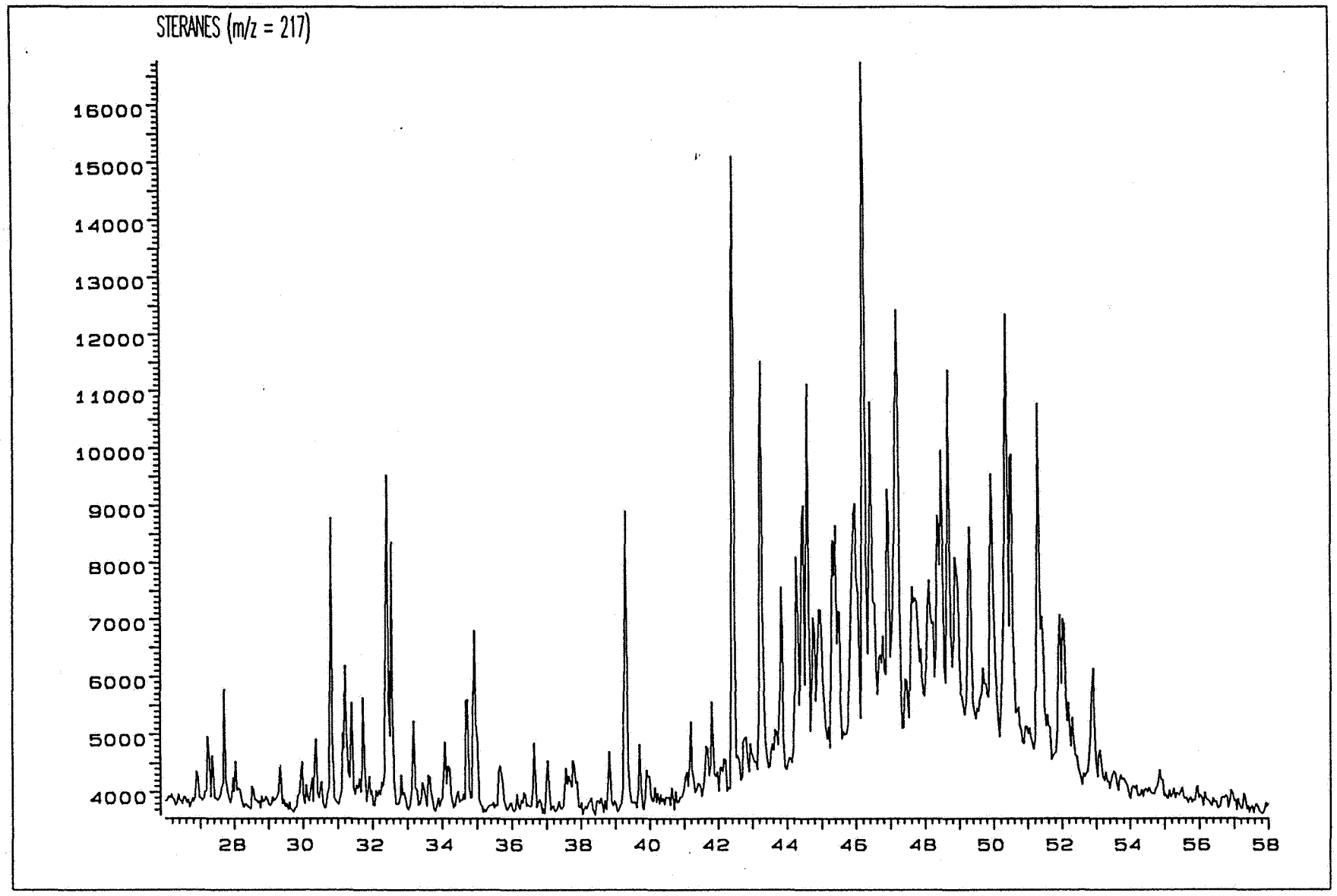
FILE: >X2136 WELL 25/8-4 CORE #3 C.C. (Depth = 1705m)



FILE: >X2136 WELL 25/8-4 CORE #3 C.C. (Depth = 1705m)



FILE: >X2136 WELL 25/8-4 CORE #3 C.C. (Depth = 1705m)



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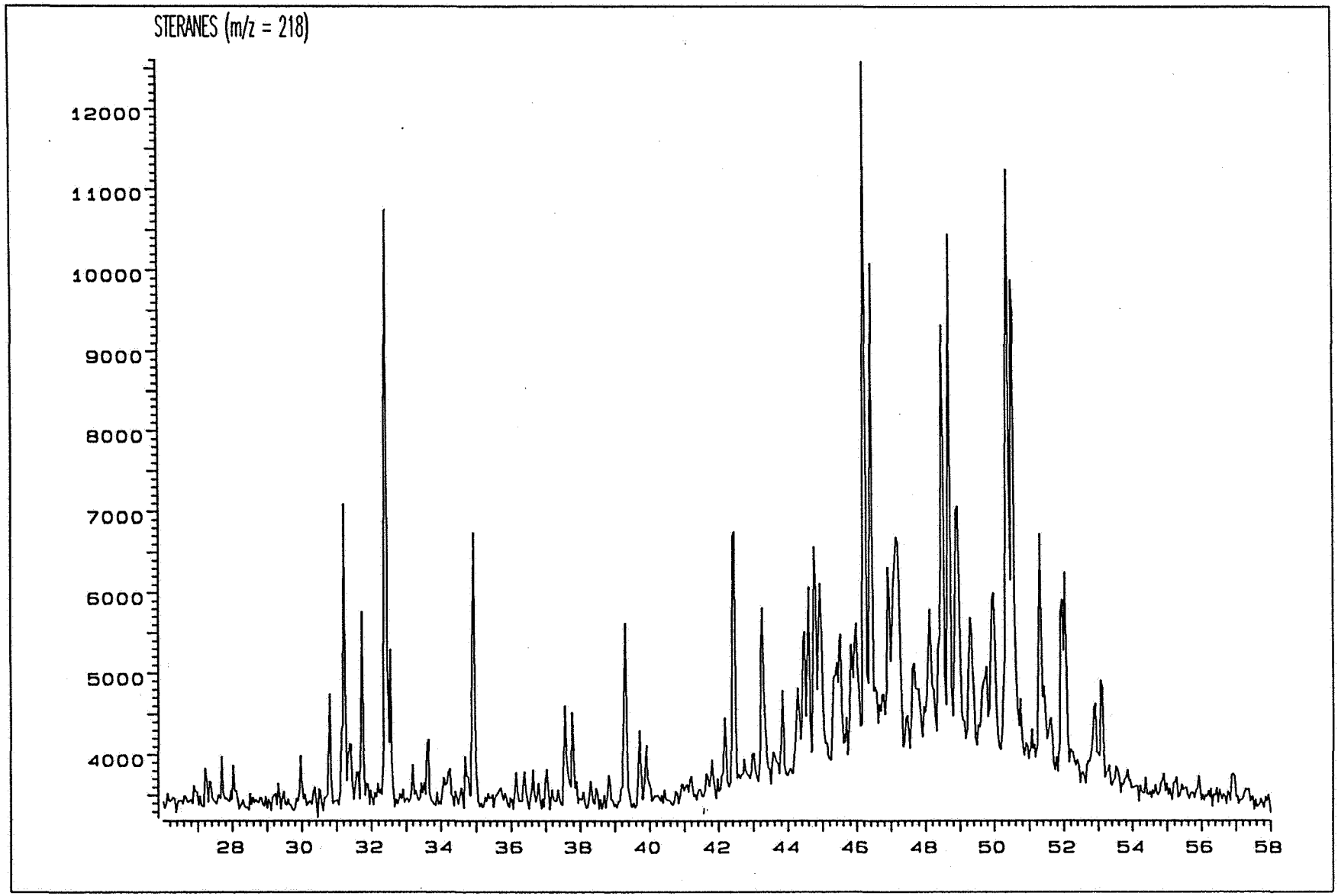

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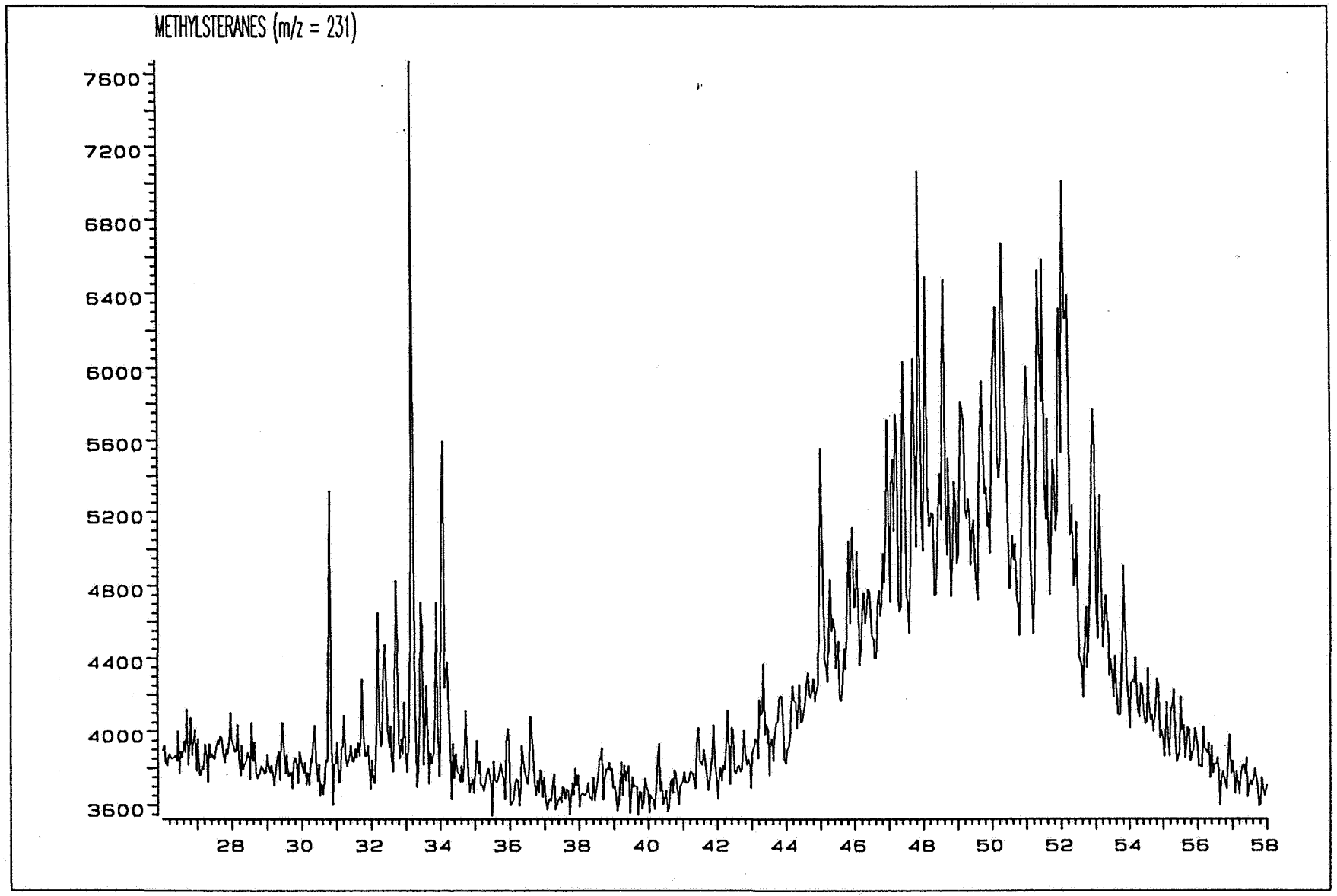

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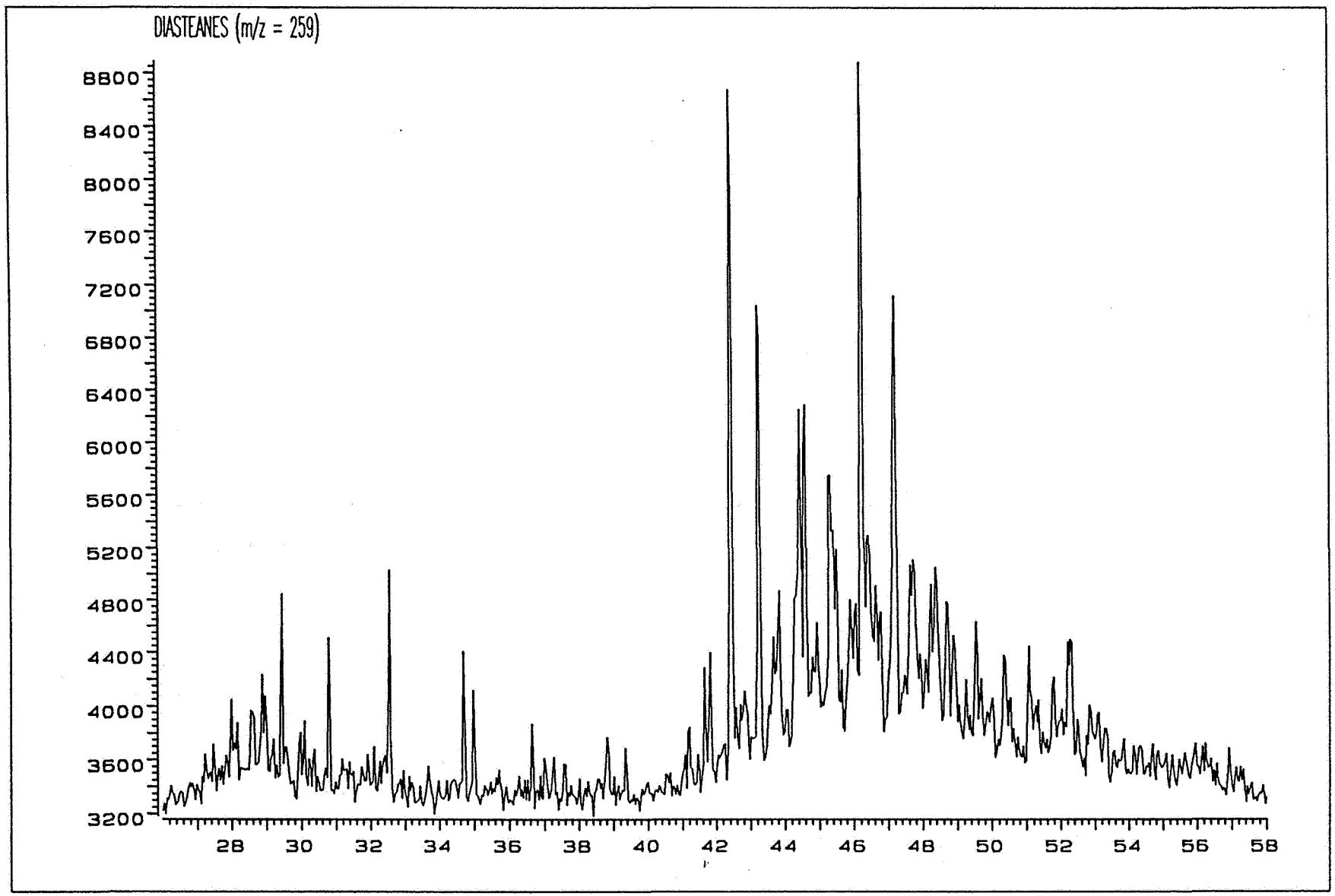
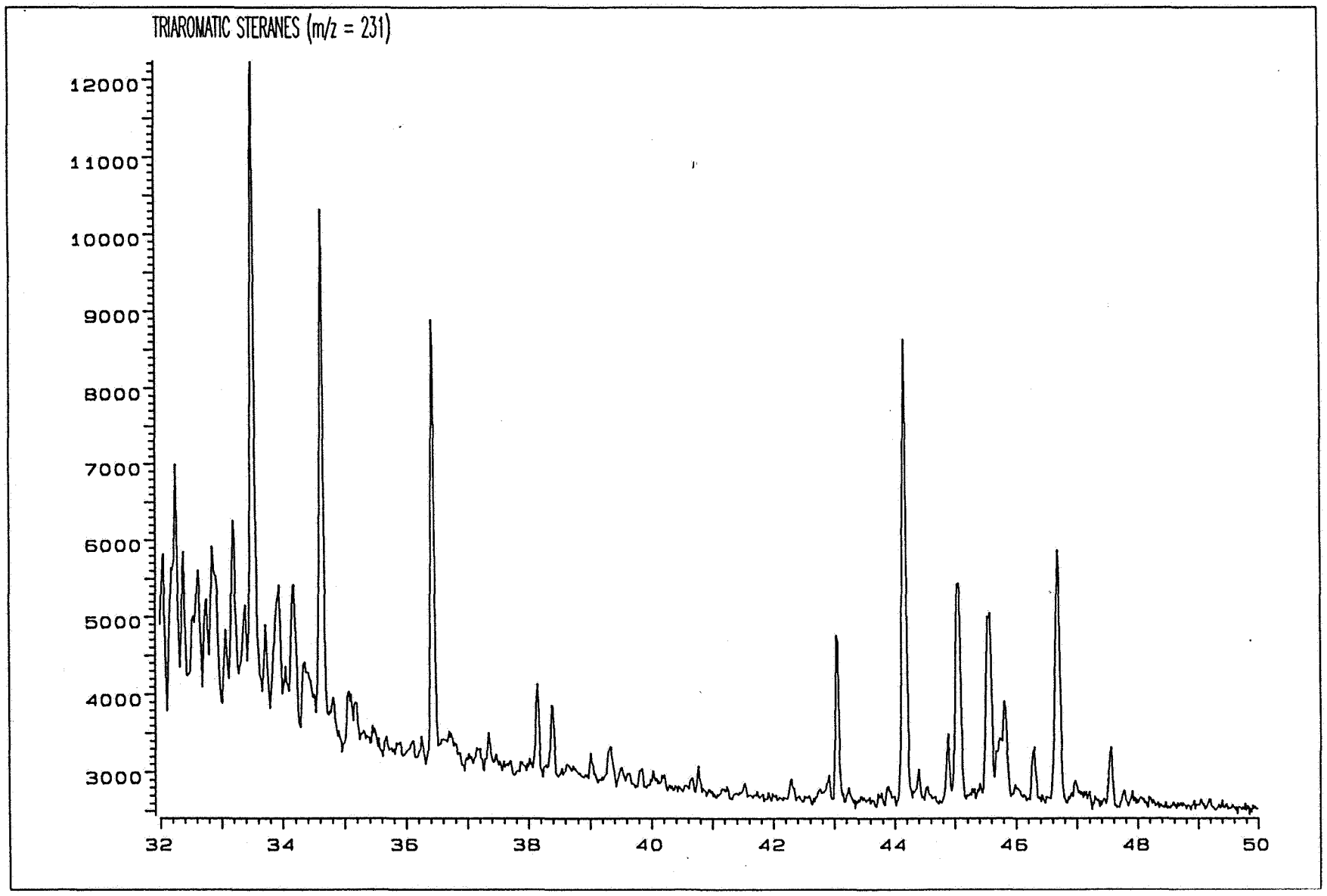
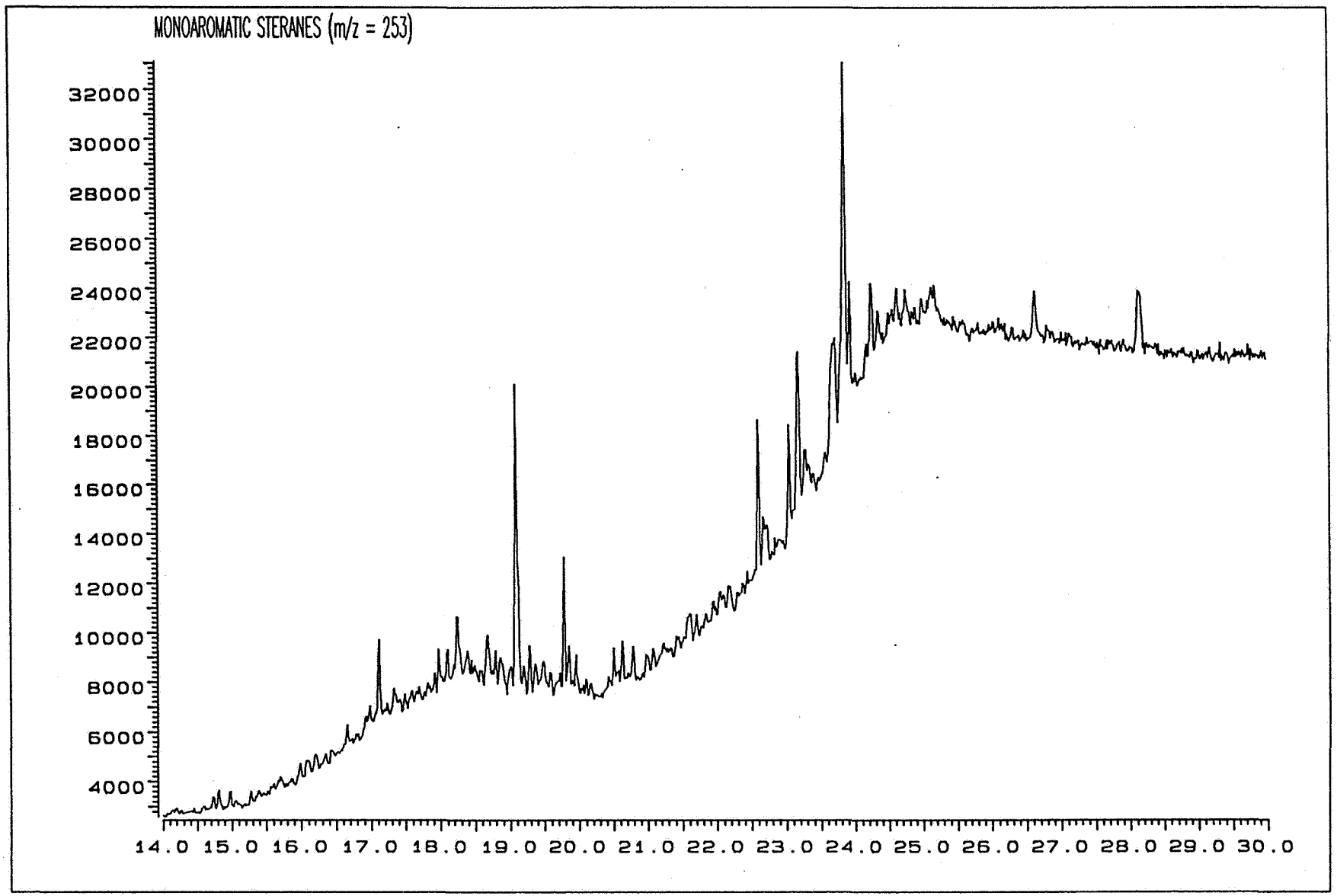


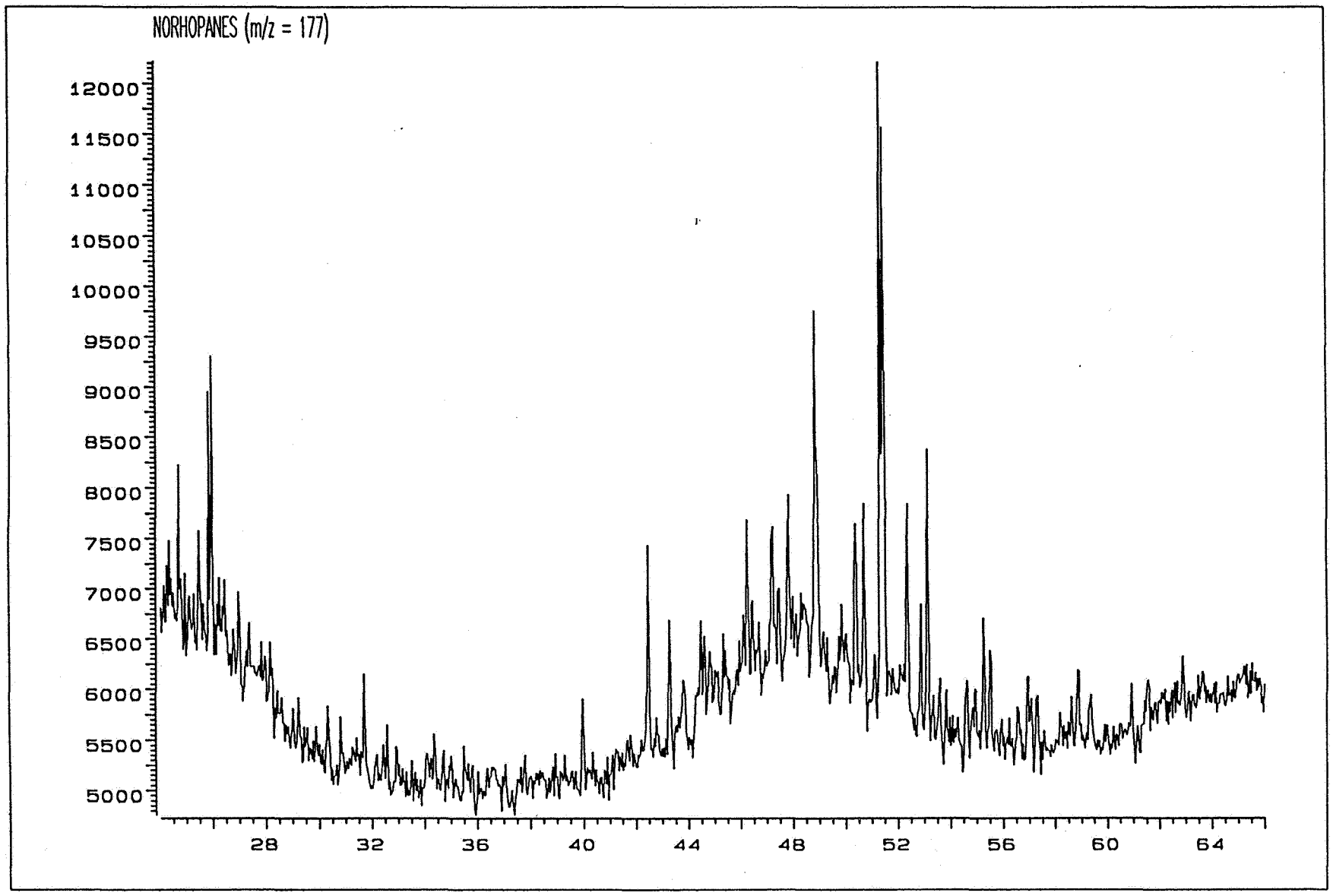
FILE: >X2138 X2136 Well 25/8-4 Core #3 C.C. (Depth = 1705m)



FILE: >X2139 X2136 Well 25/8-4 Core #3 C.C. (Depth = 1705m)



FILE: >X2141 WELL 25/8-4 CORE #4 (Depth = 1739.5m)



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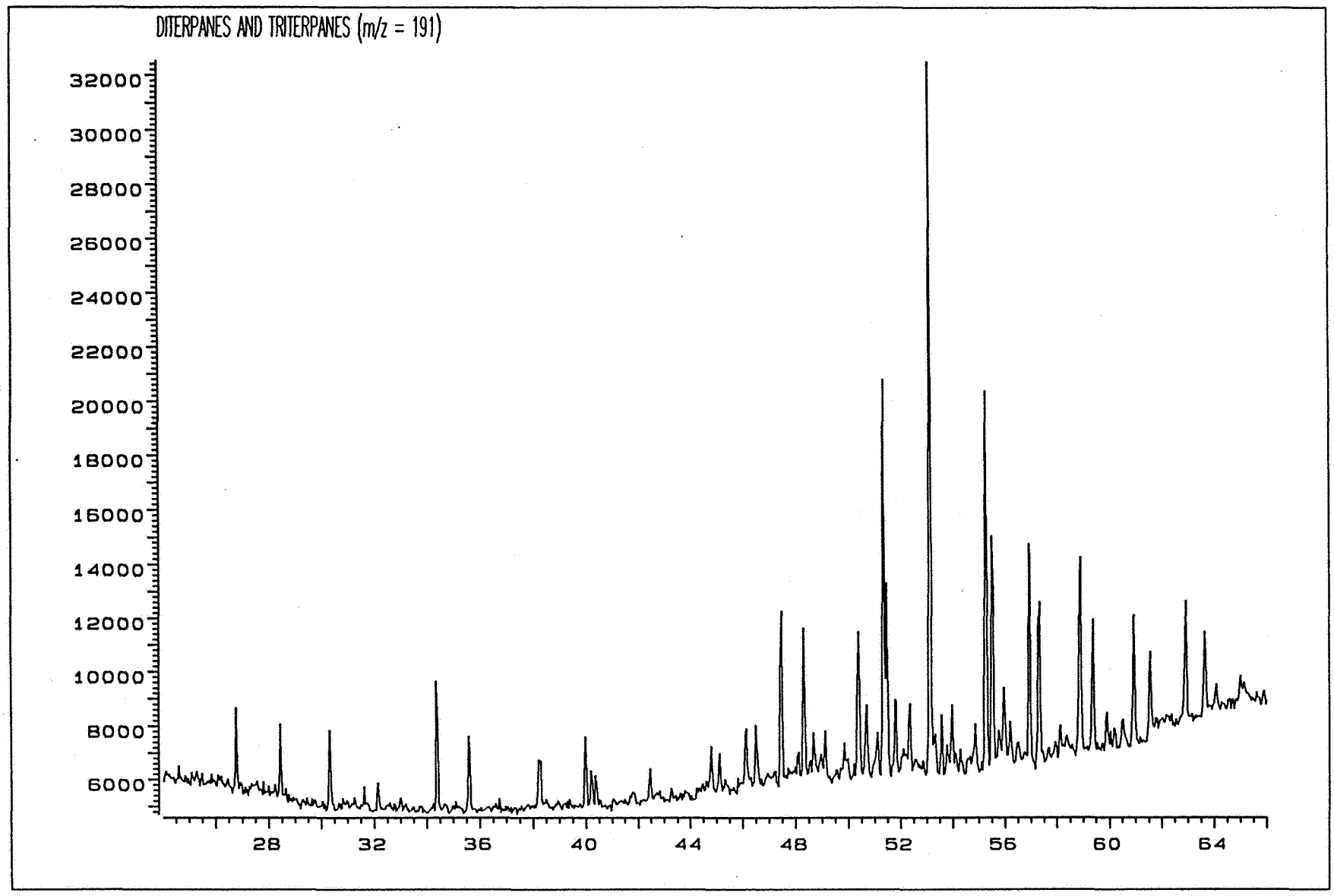
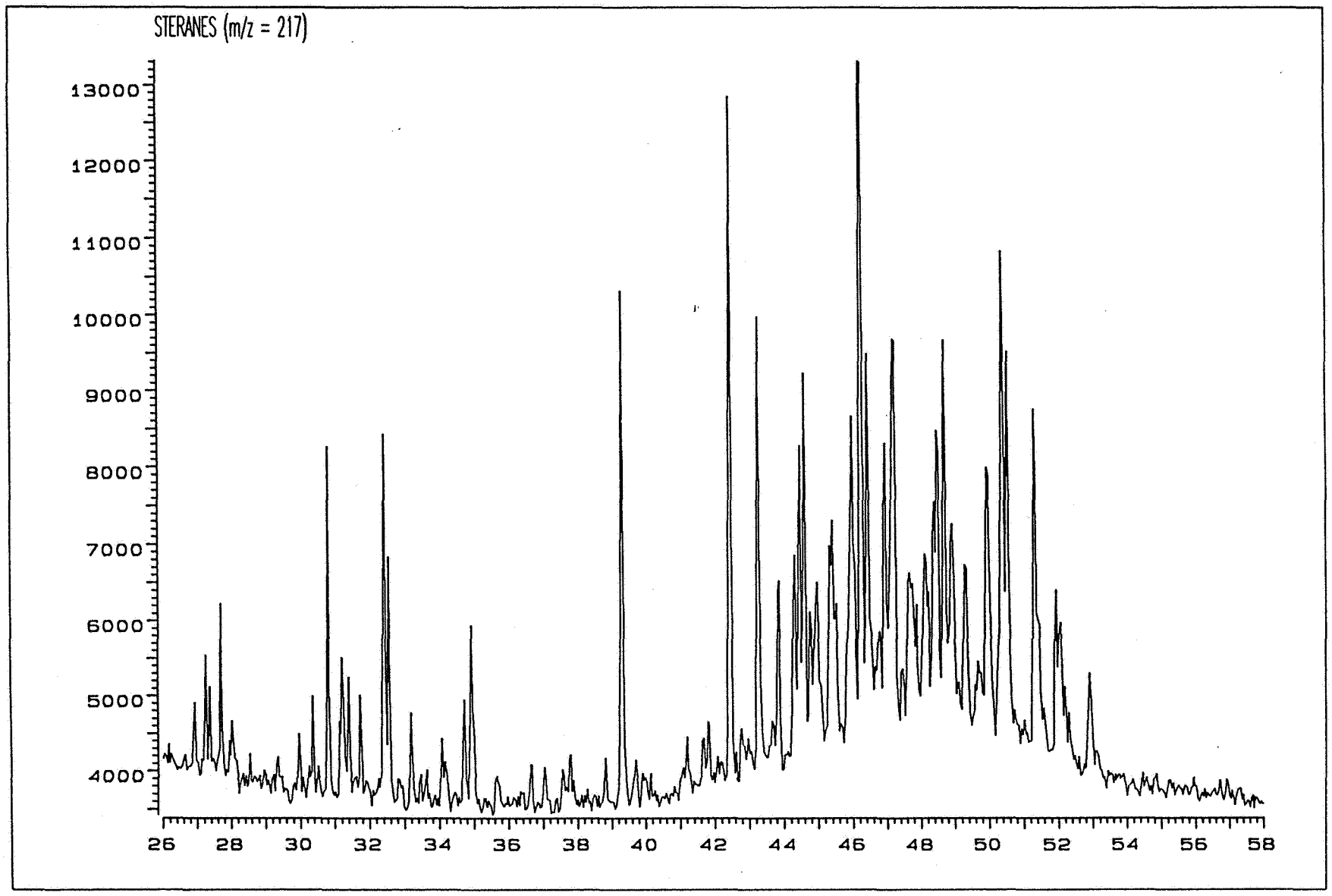


FILE: >X2141 WELL 25/8-4 CORE #4 (Depth = 1739.5m)



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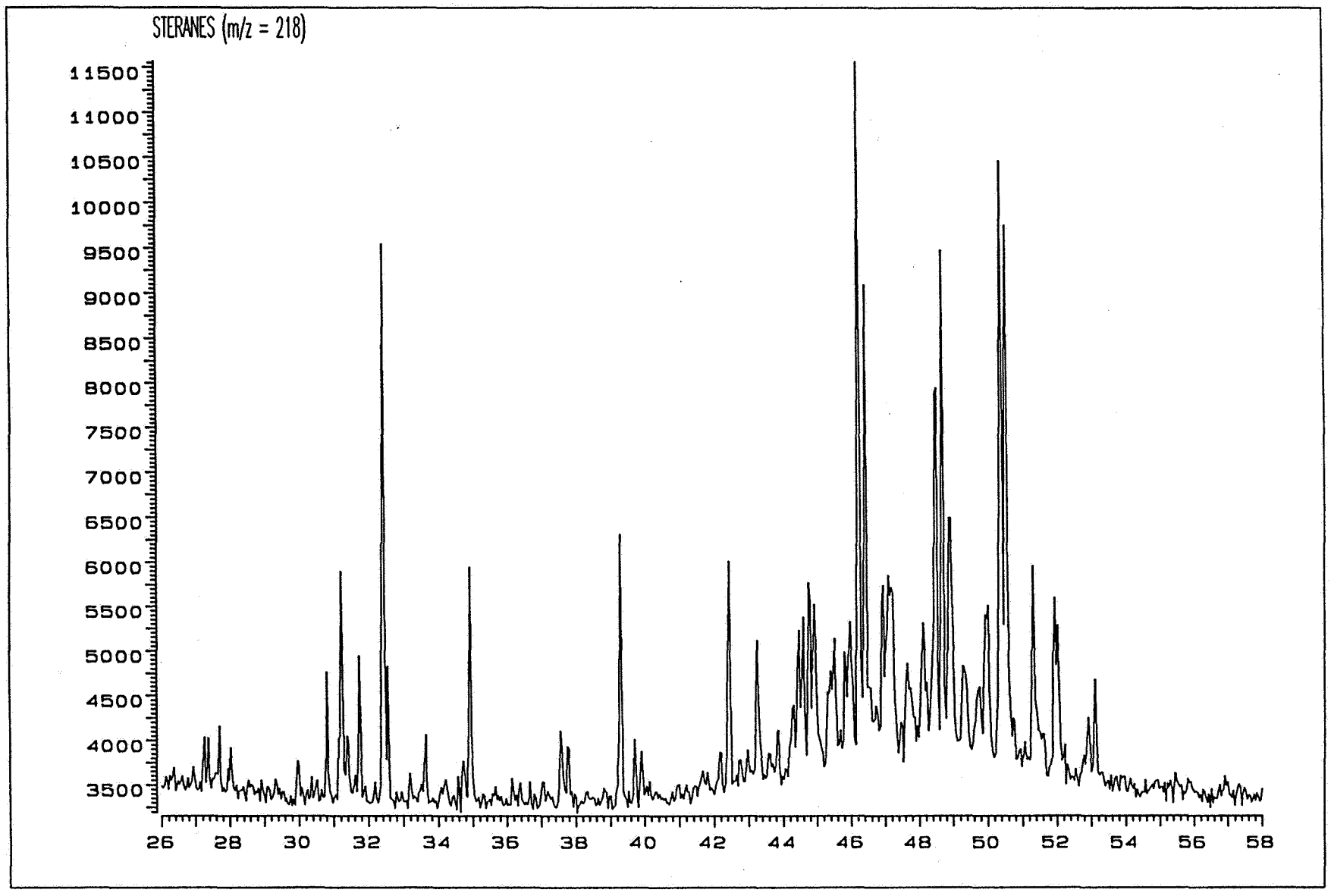
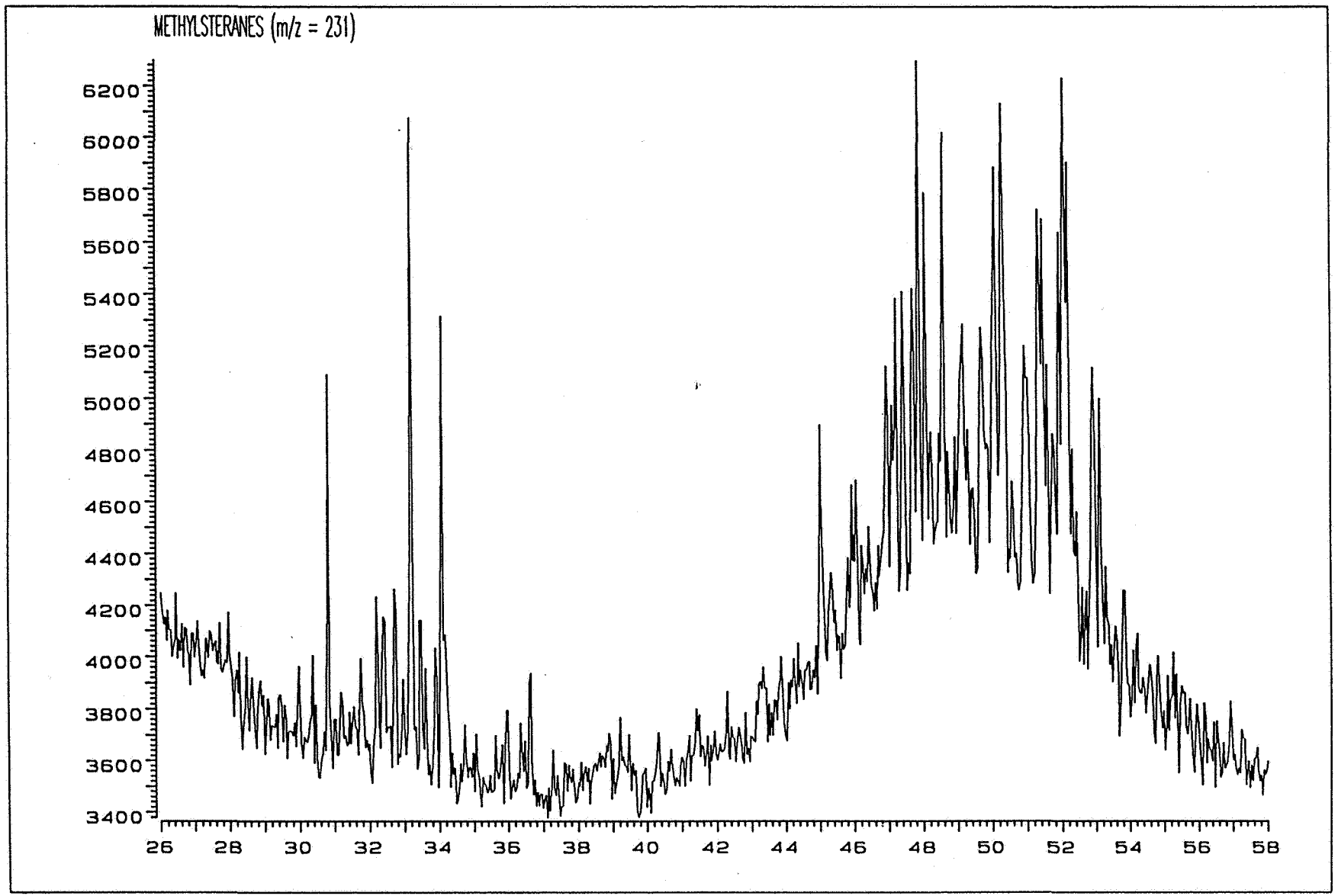


FILE: >X2141 WELL 25/8-4 CORE #4 (Depth = 1739.5m)



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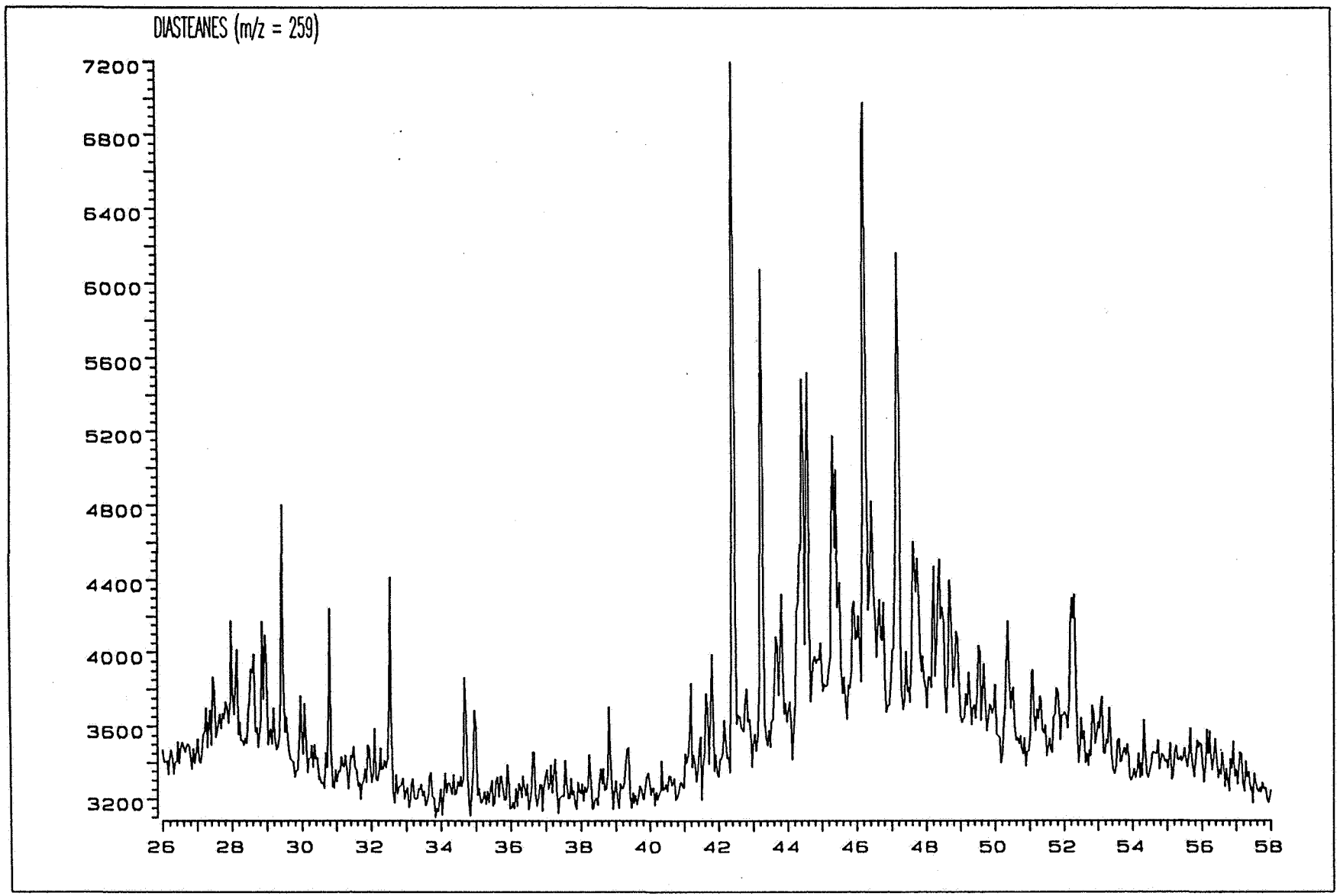
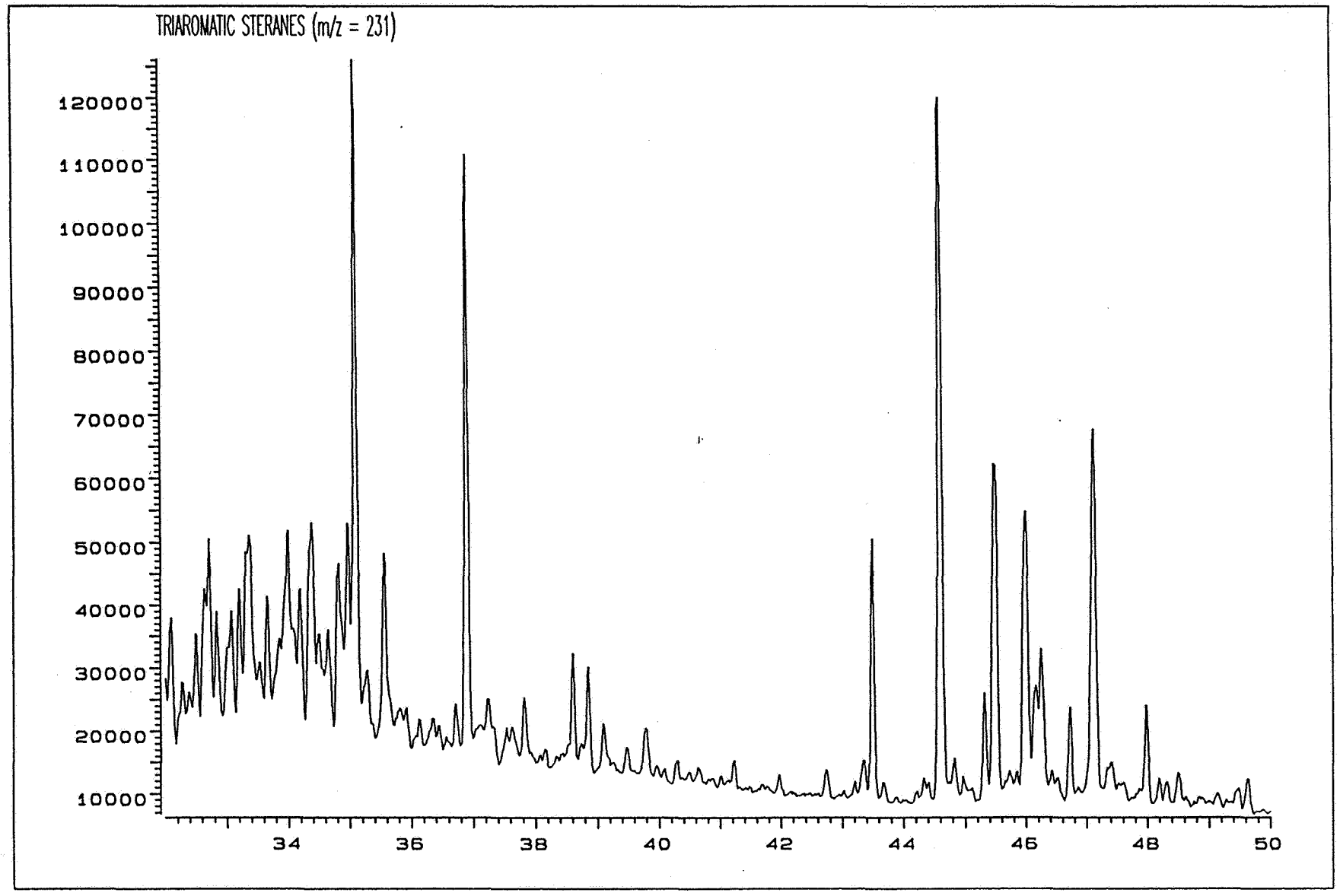
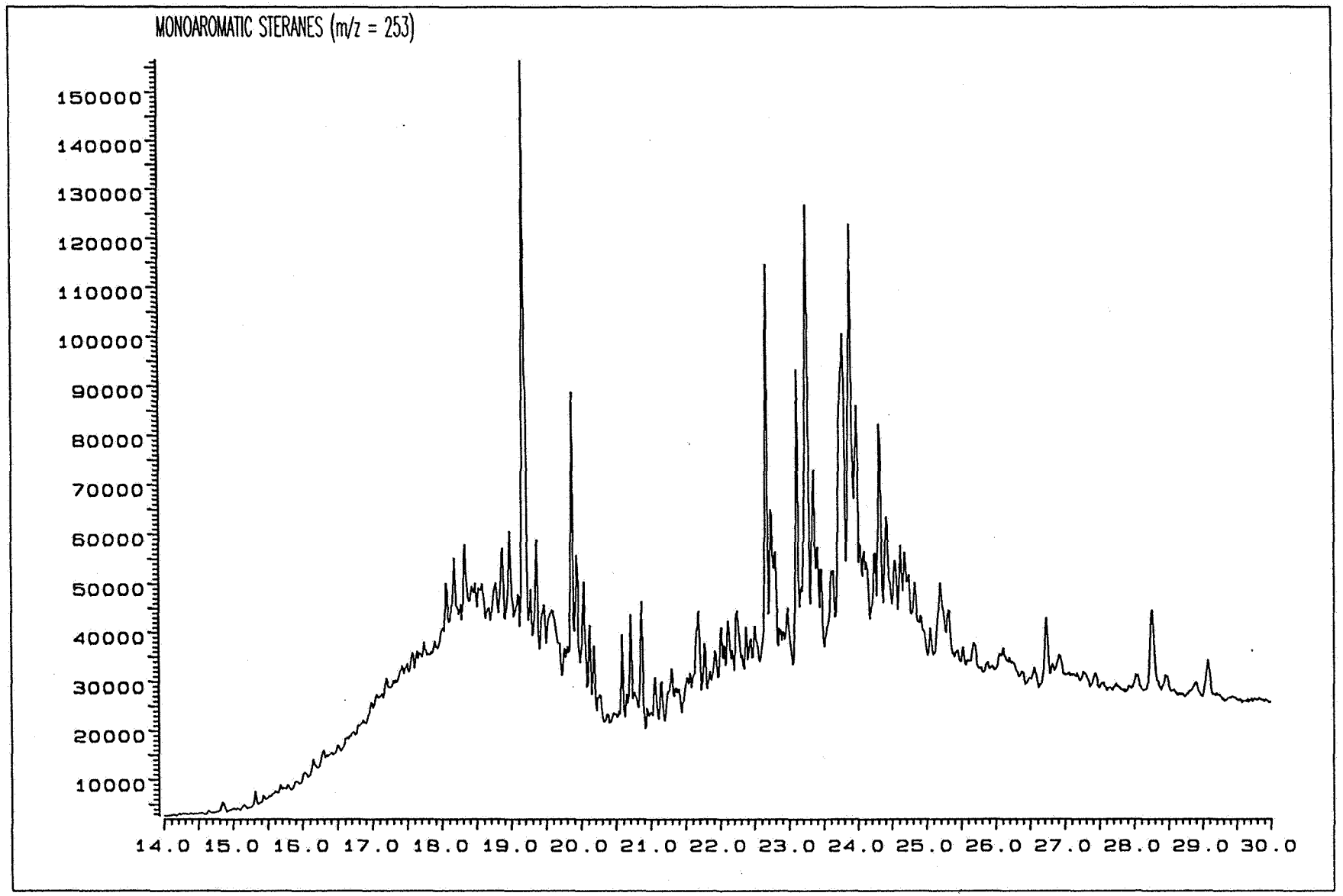


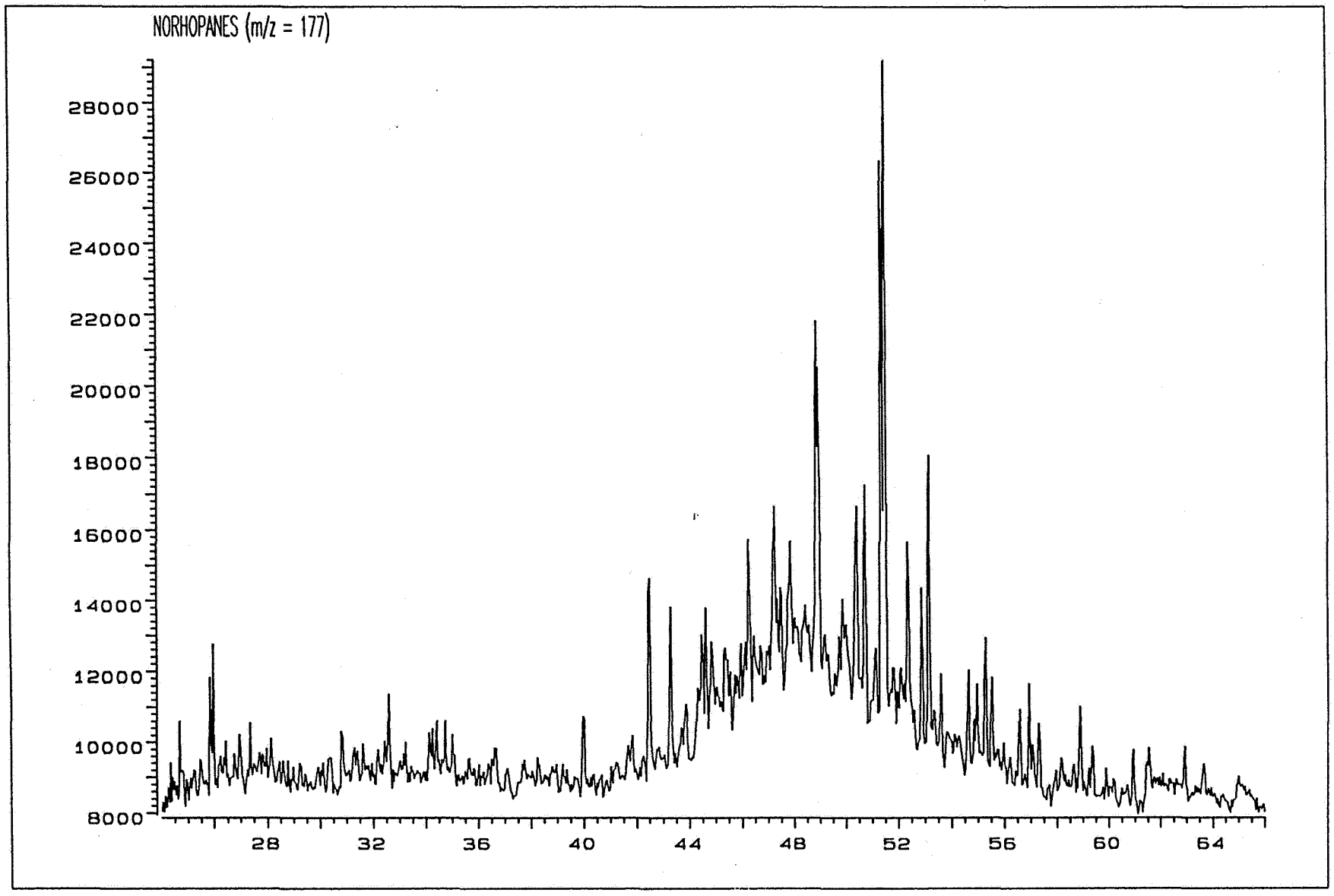
FILE: >X2143 X2141 Well 25/8-4 Core #4 (Depth = 1739.5m)



FILE: >X2144 X2141 Well 25/8-4 Core #4 (Depth = 1739.5m)



FILE: >X2146 WELL 25/8-4 CORE #4 C.C. (DEPTH = 1741m)



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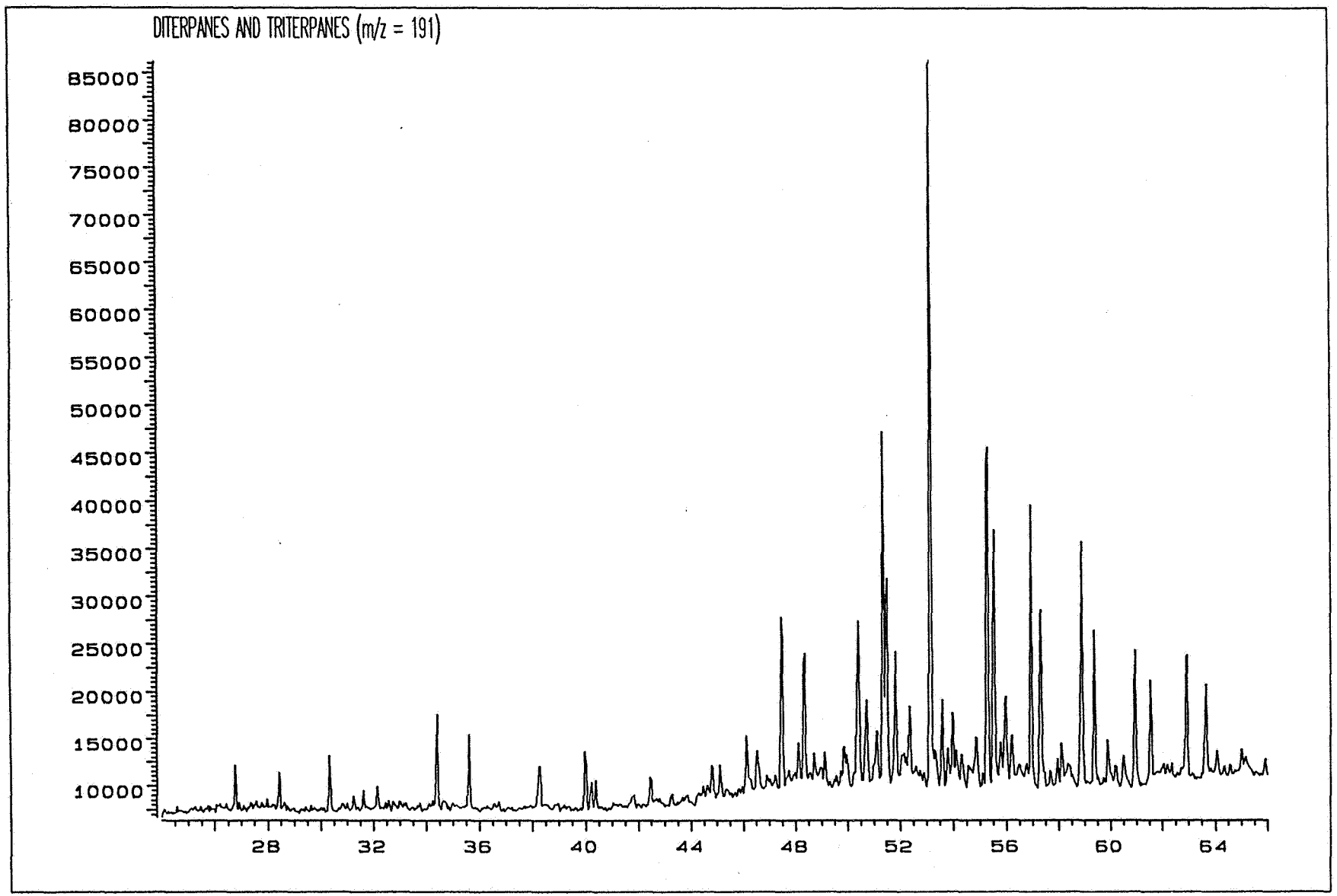

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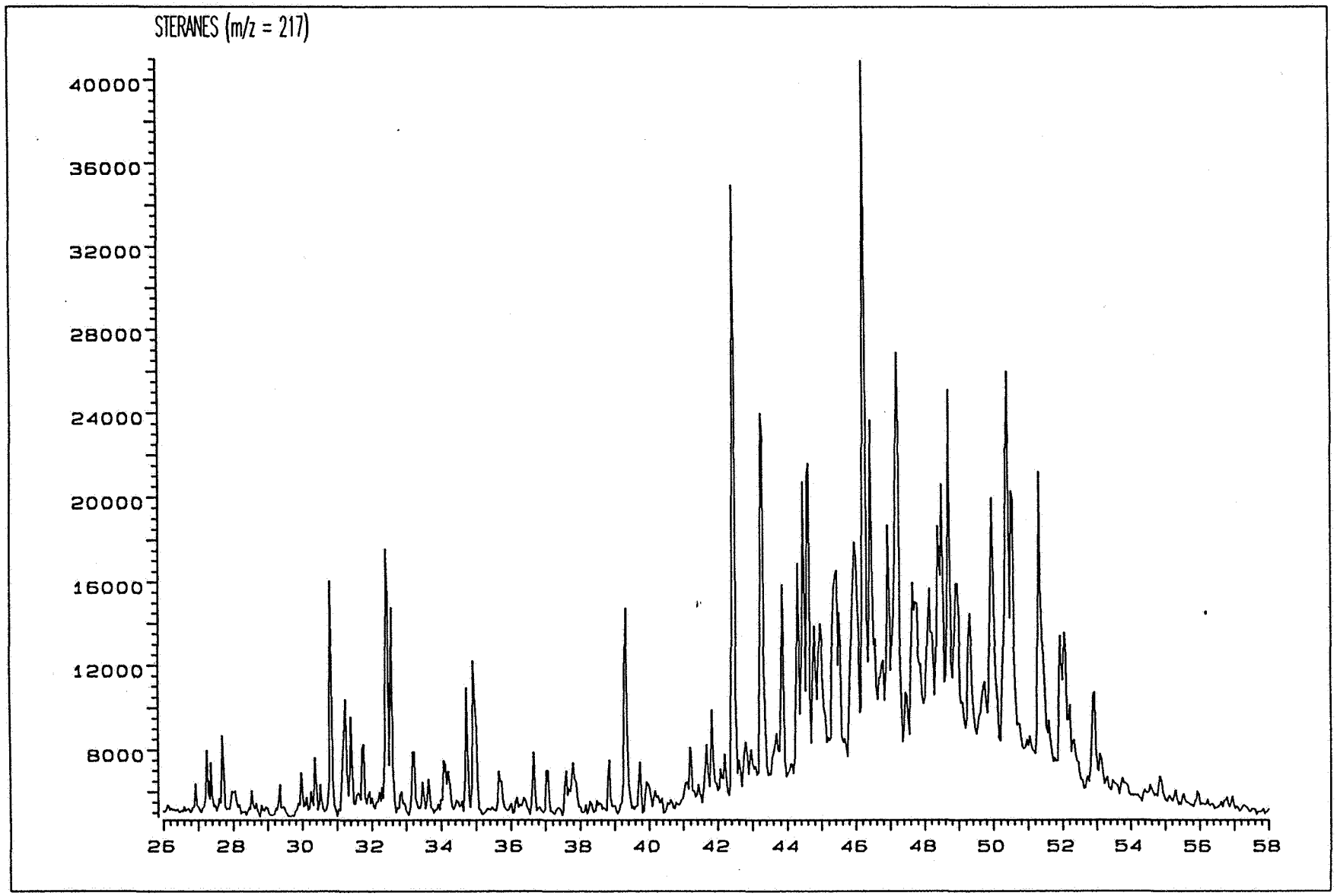

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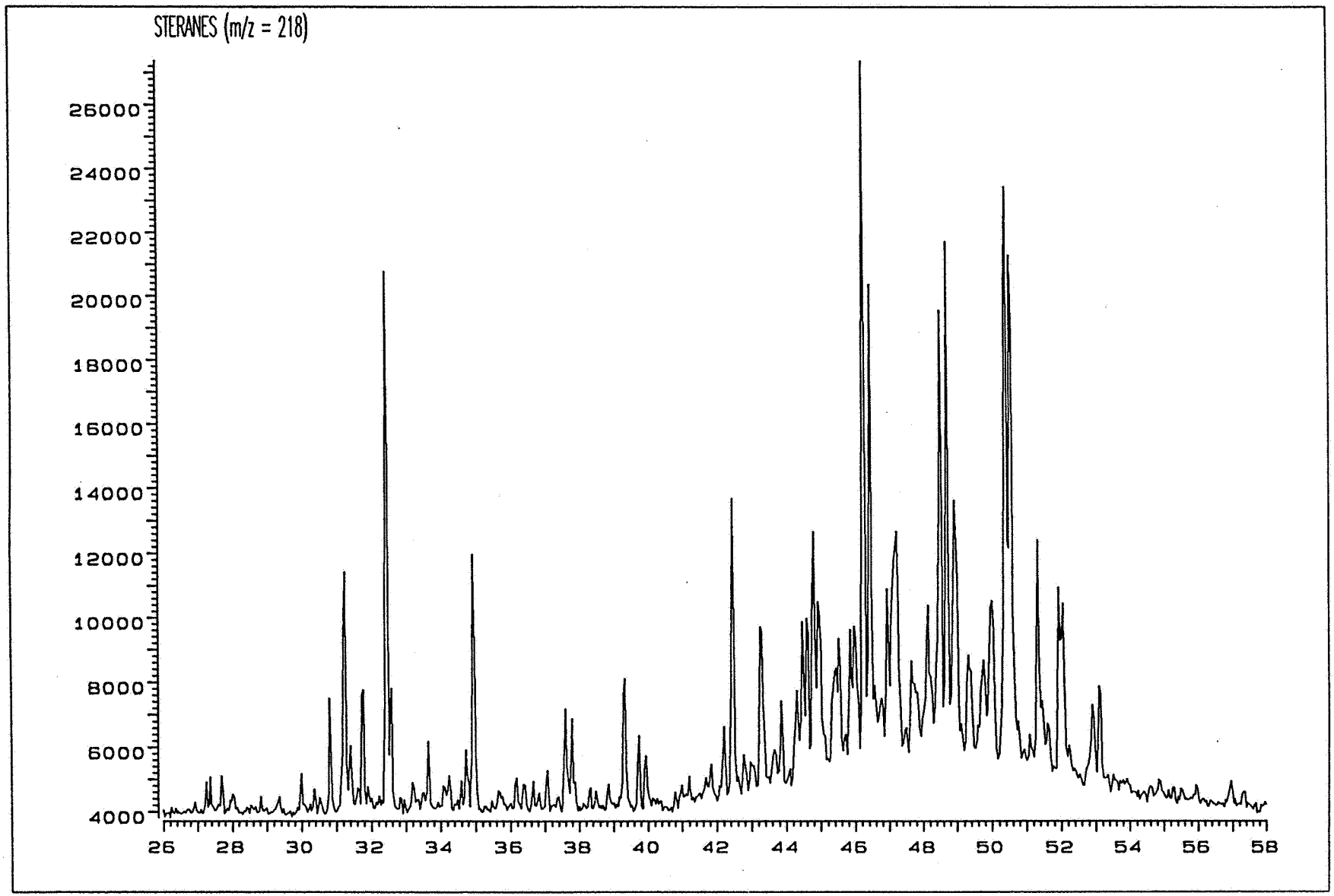

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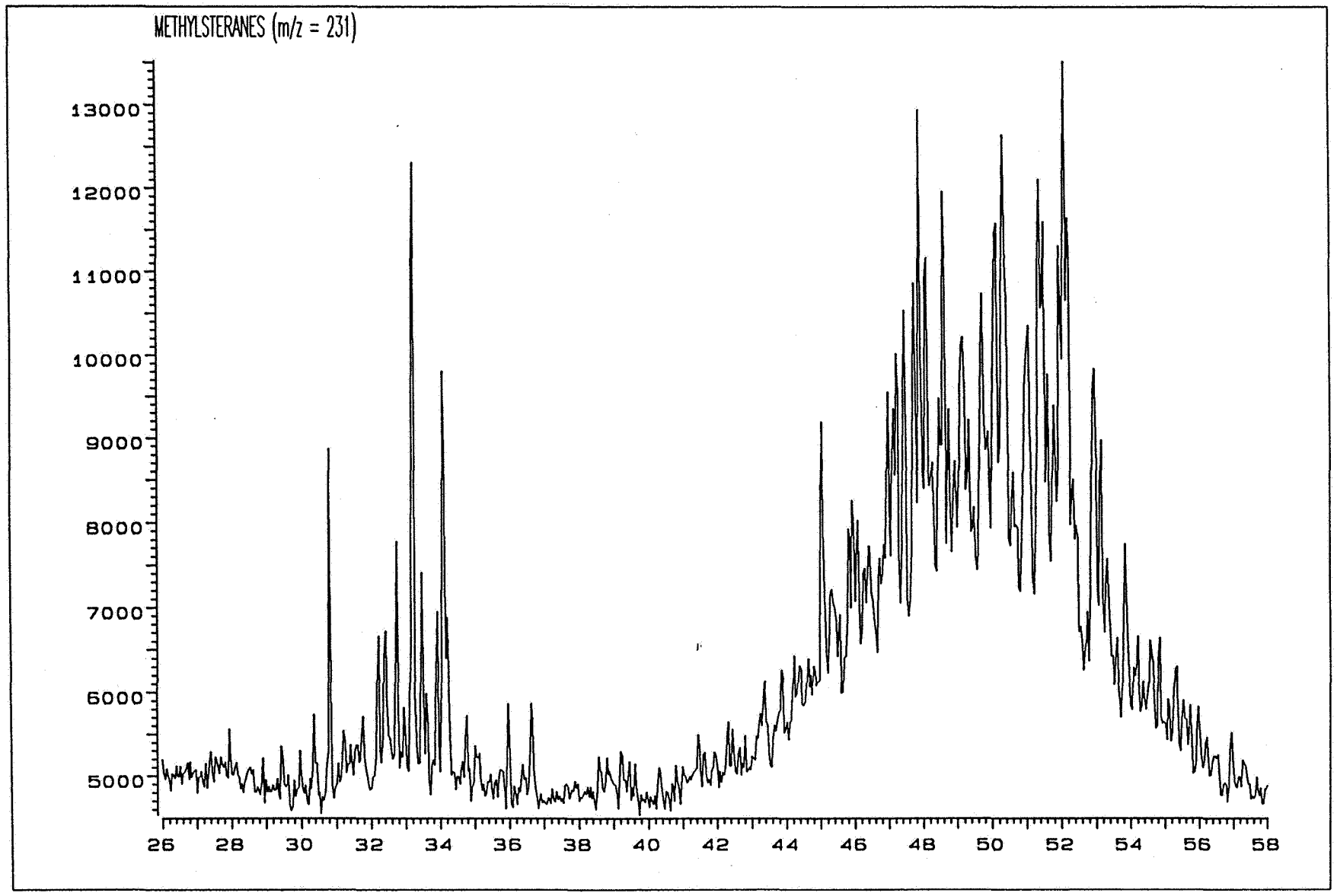

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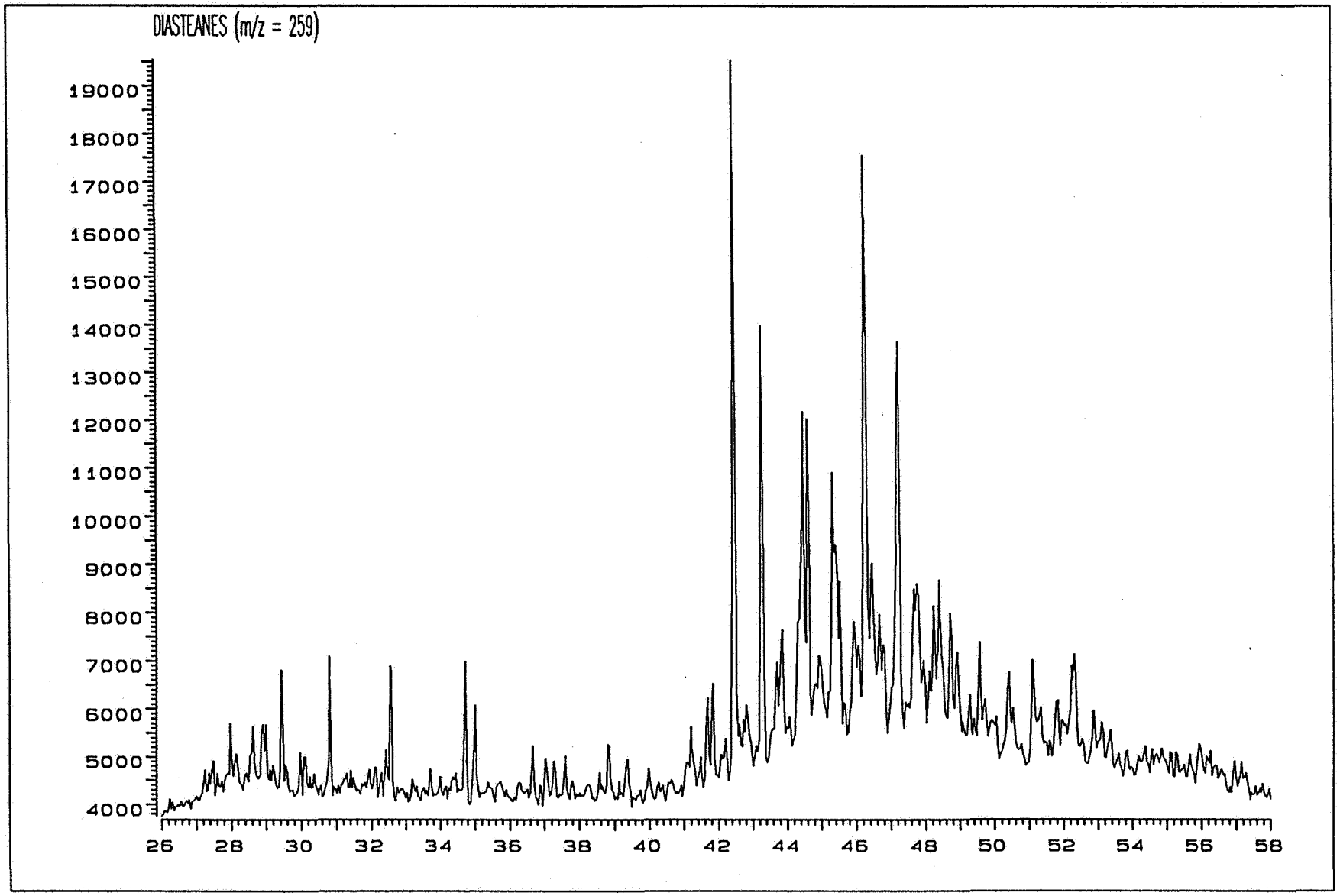
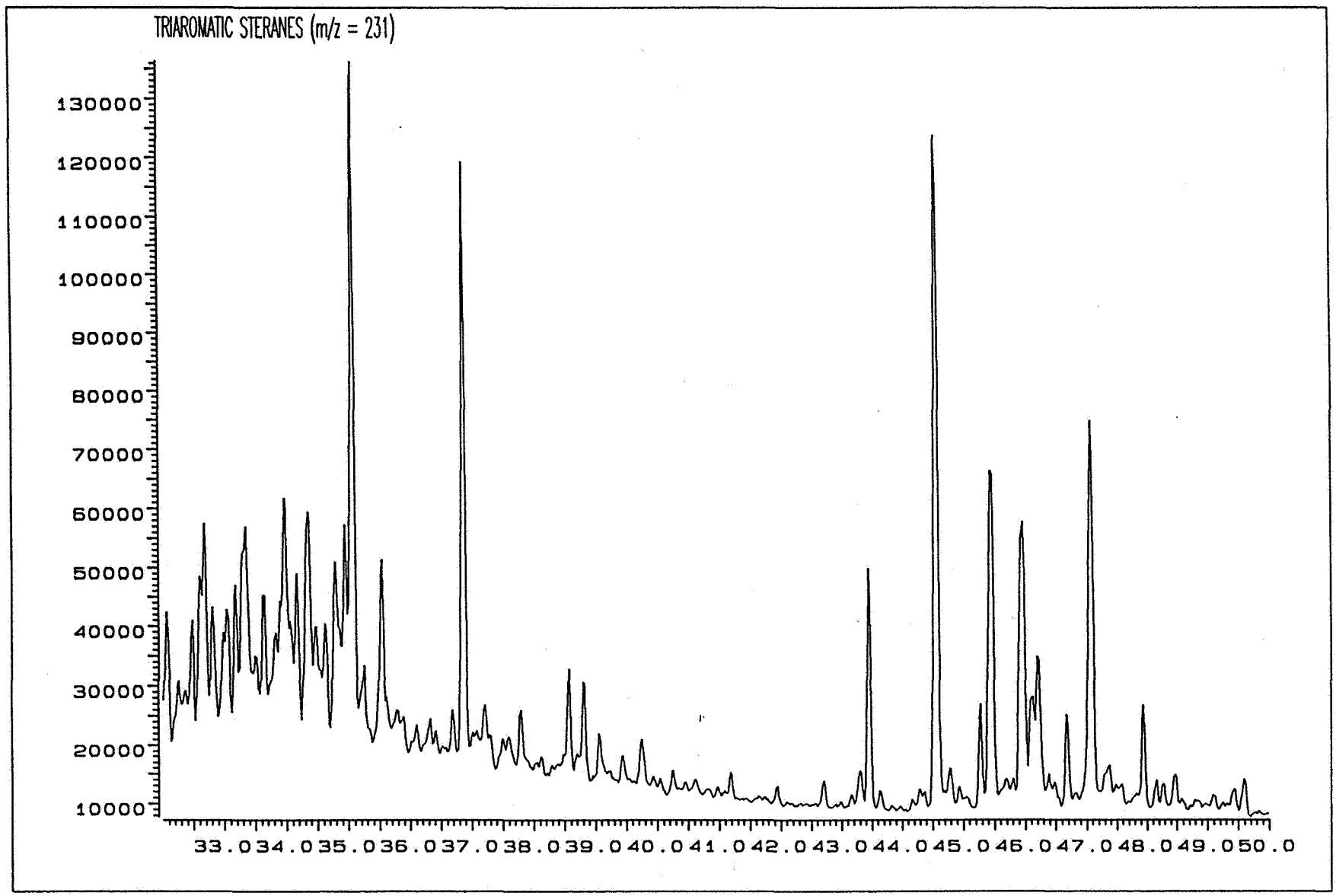
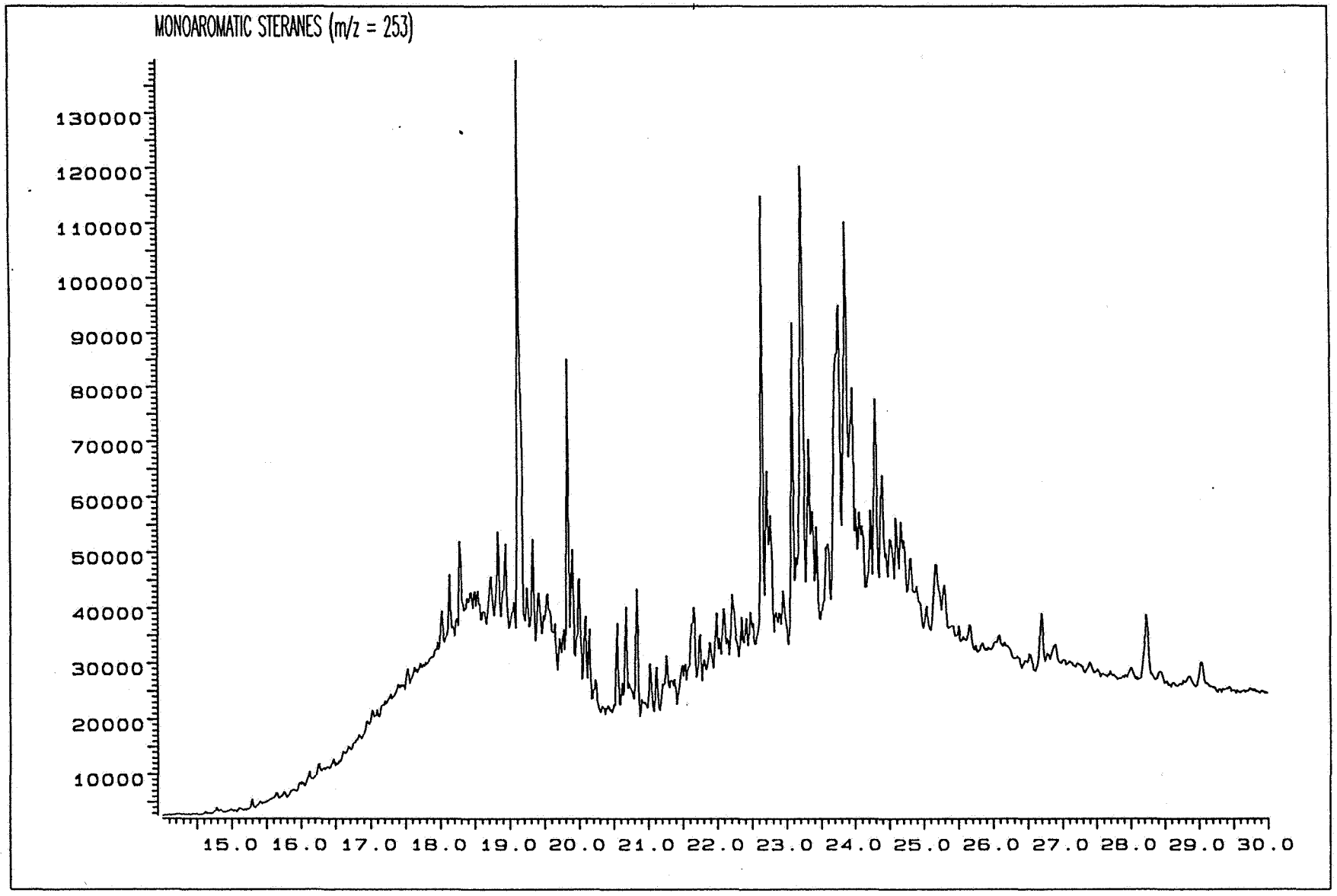


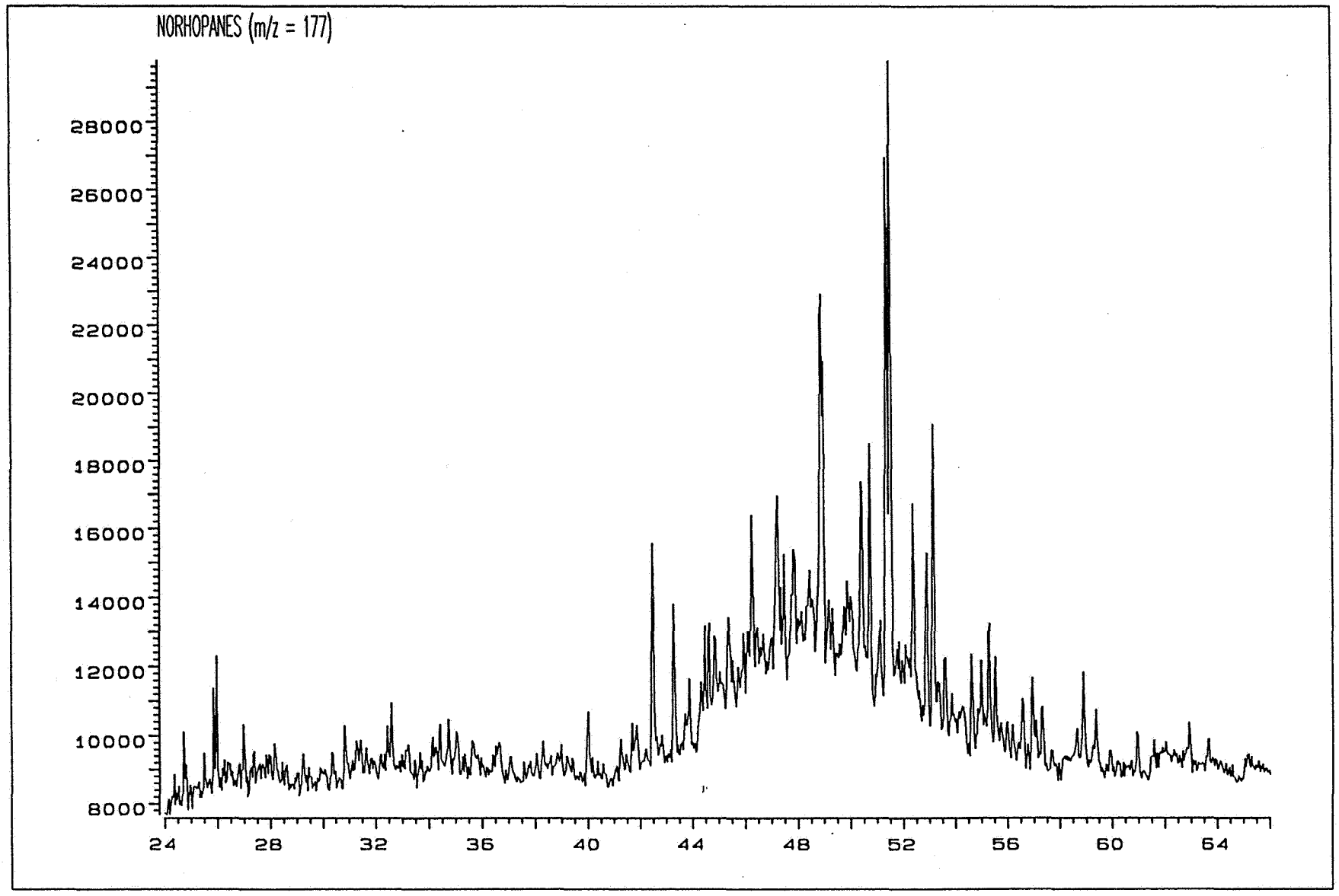
FILE: >X2148 X2146 Well 25/8-4 Core #4 (Depth = 1741m)



FILE: >X2149 X2146 Well 25/8-4 Core #4 (Depth = 1741m)



FILE: >X2151 WELL 25/8-4 CORE #5 (DEPTH = 1750m)



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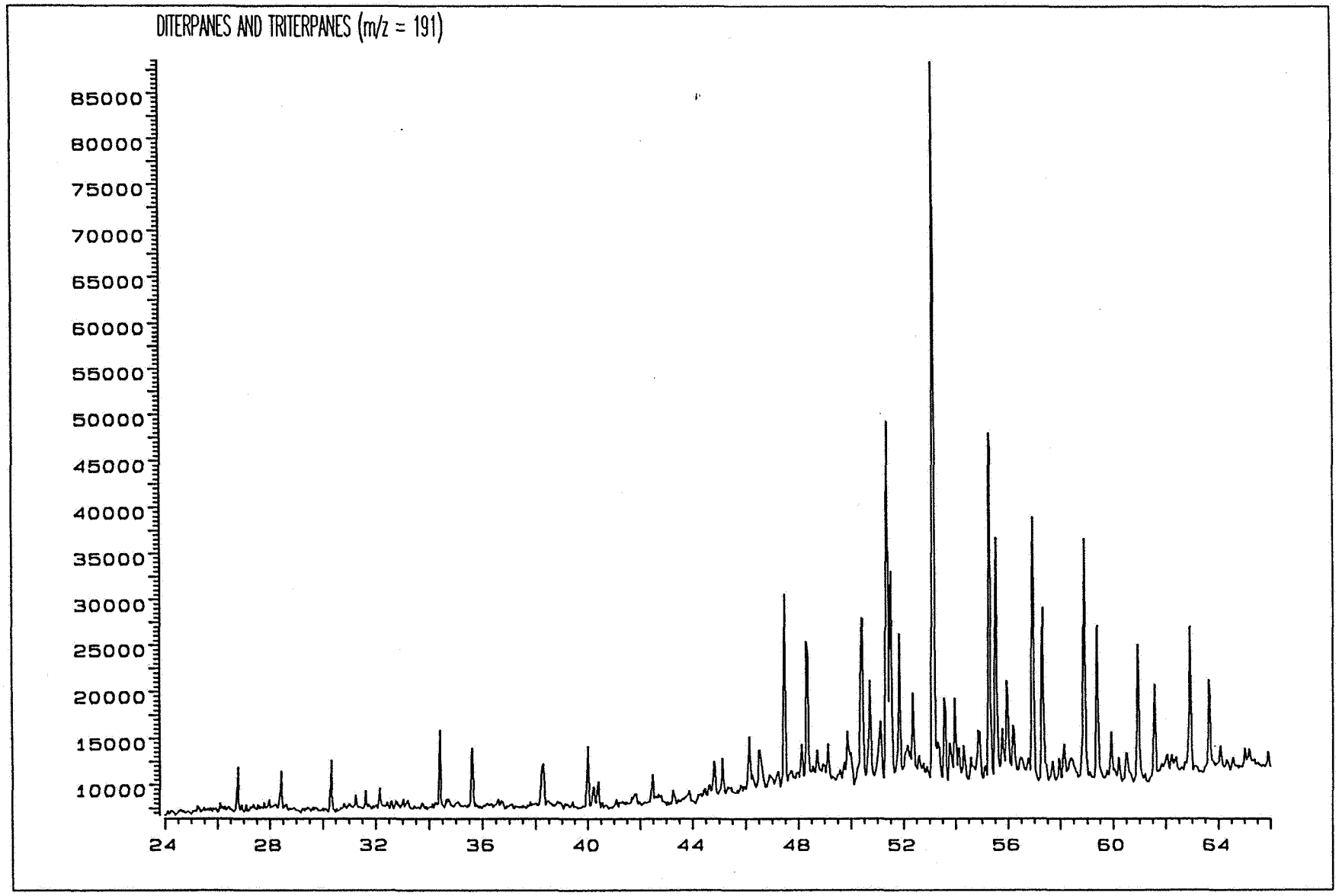

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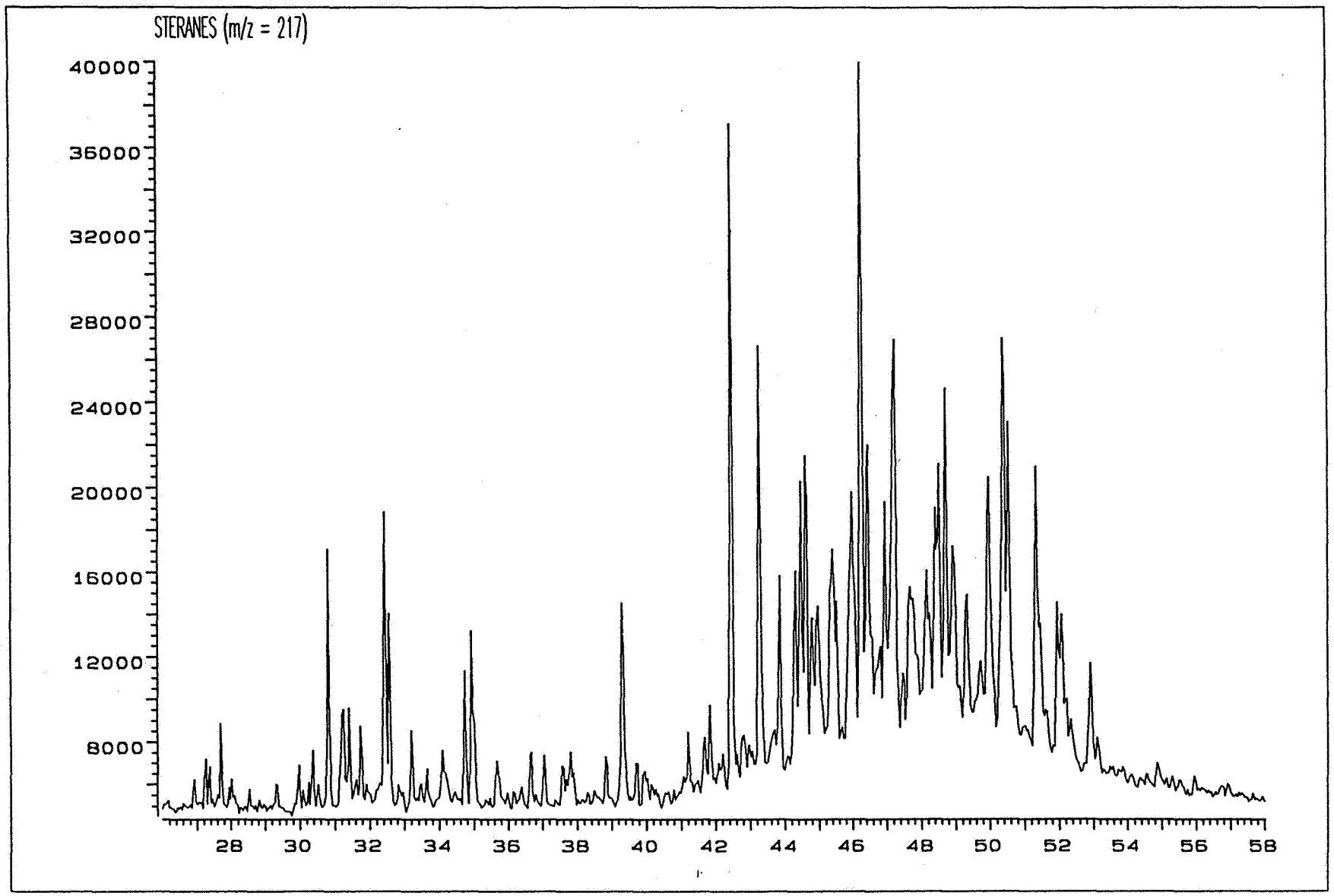

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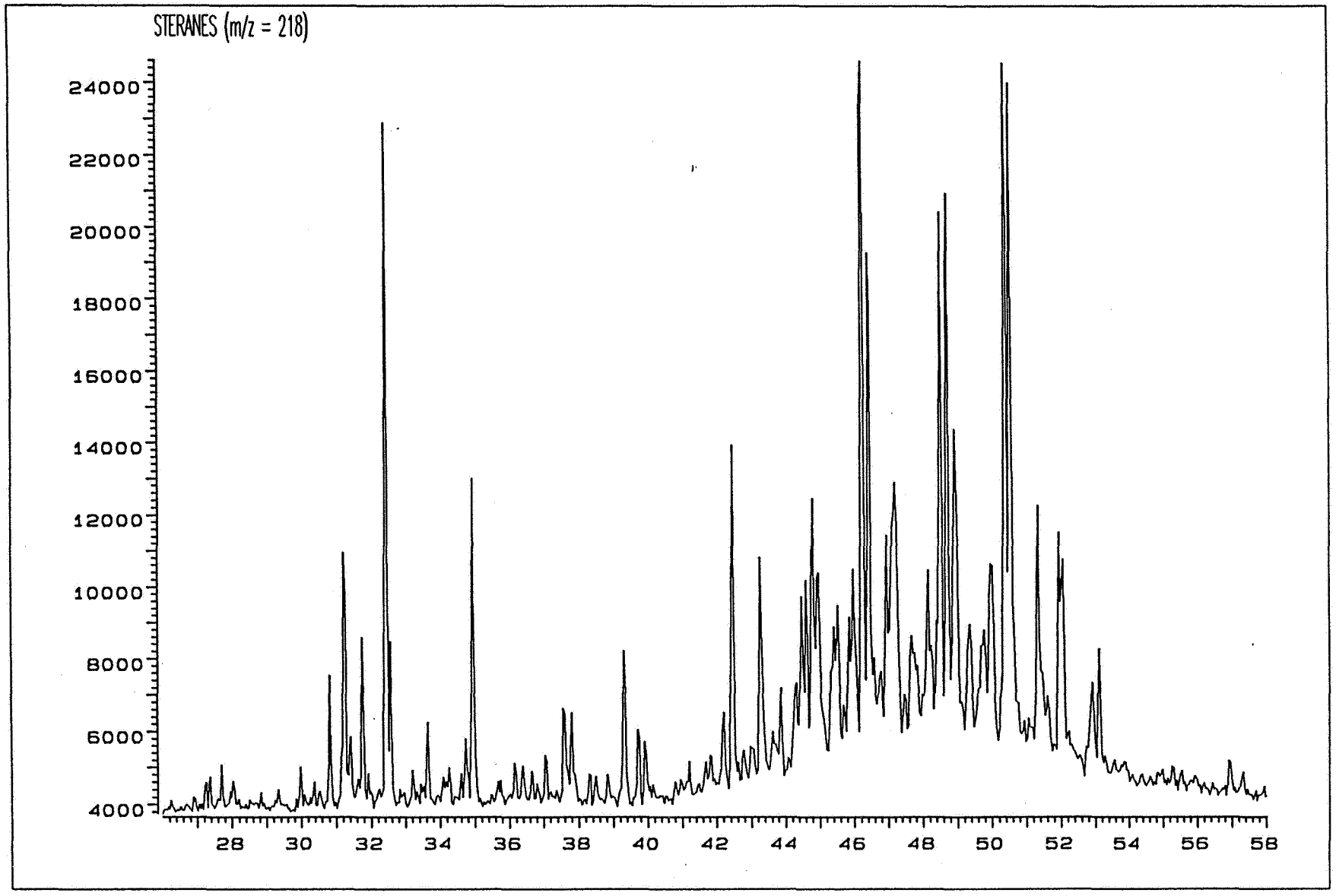

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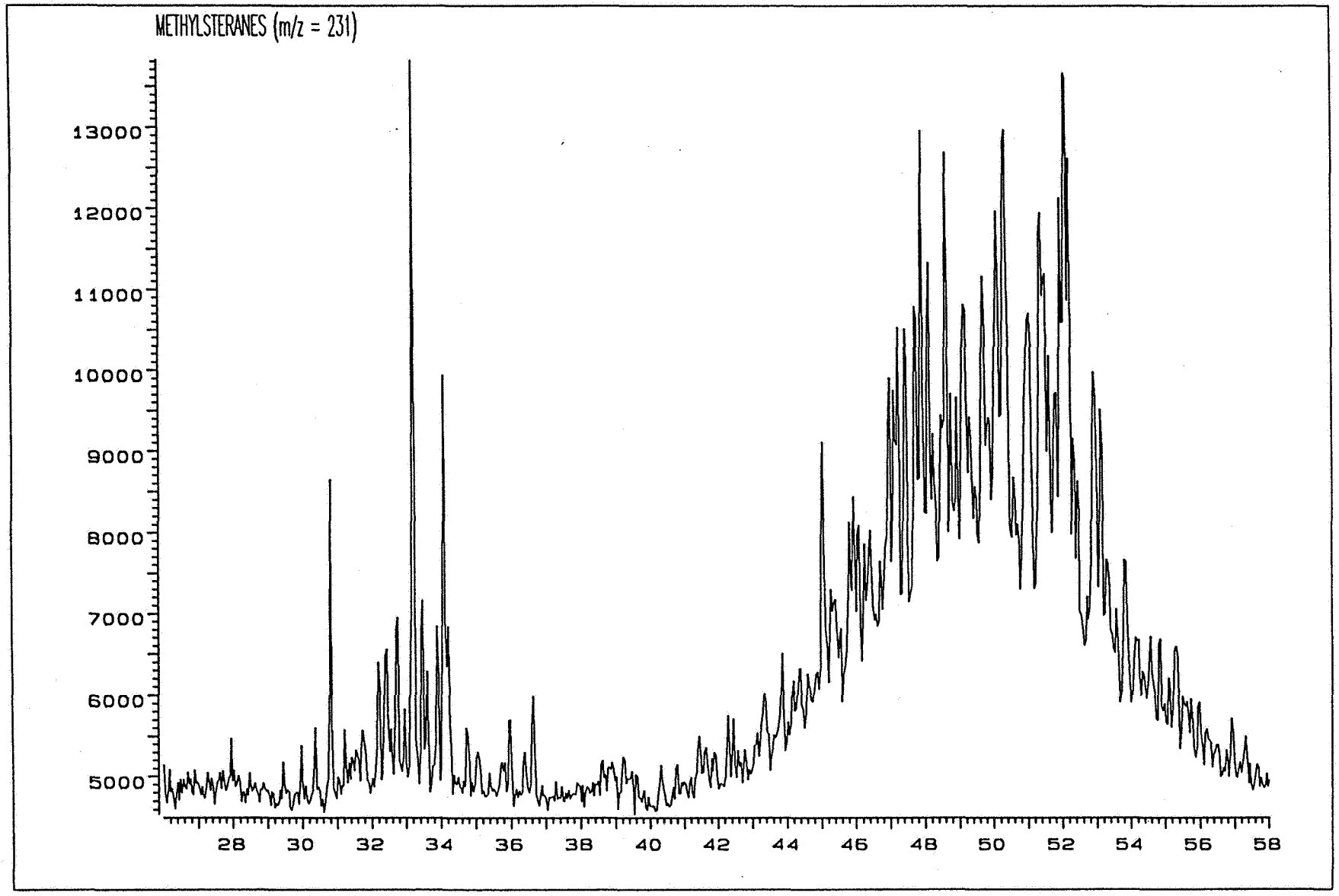

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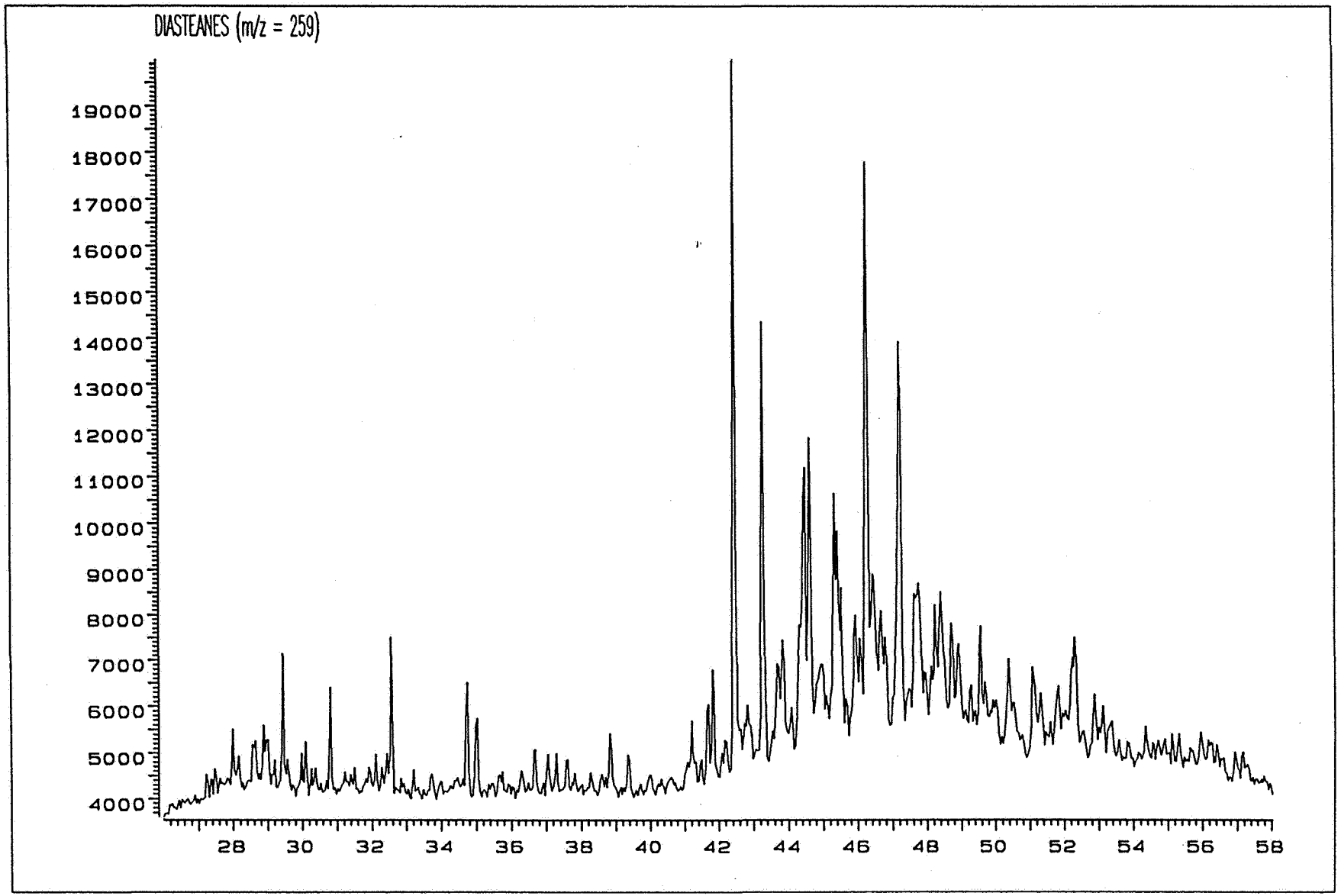

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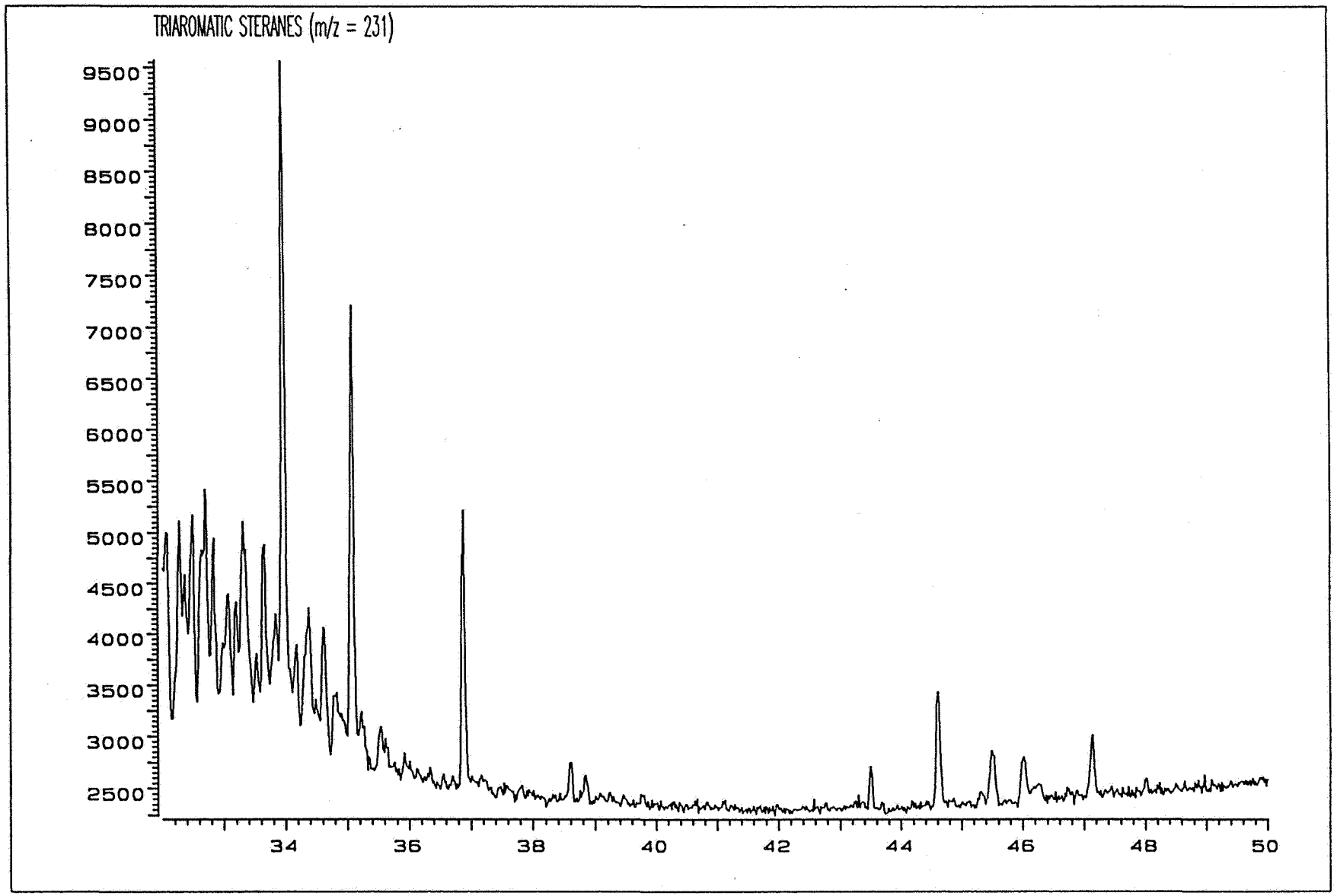

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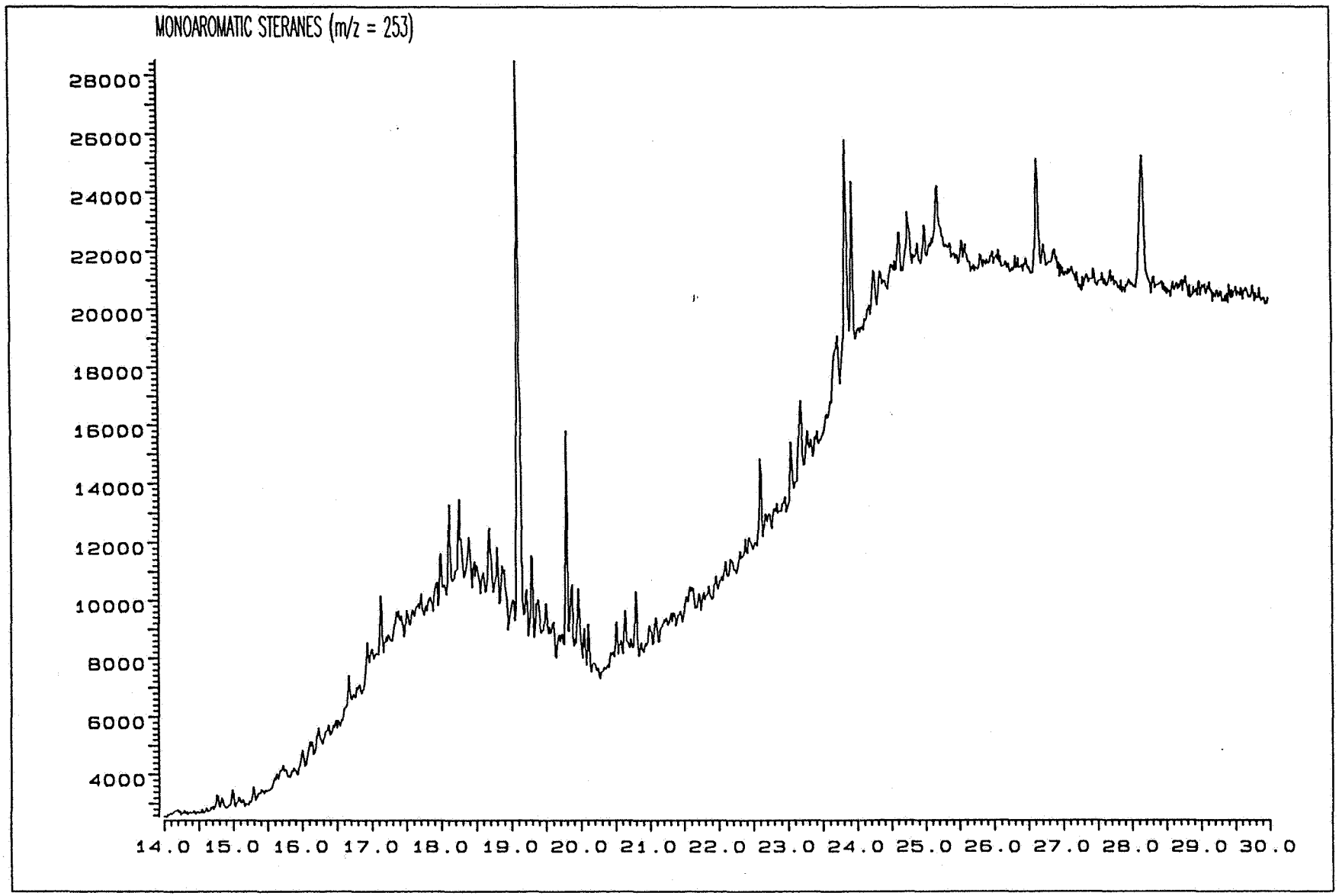
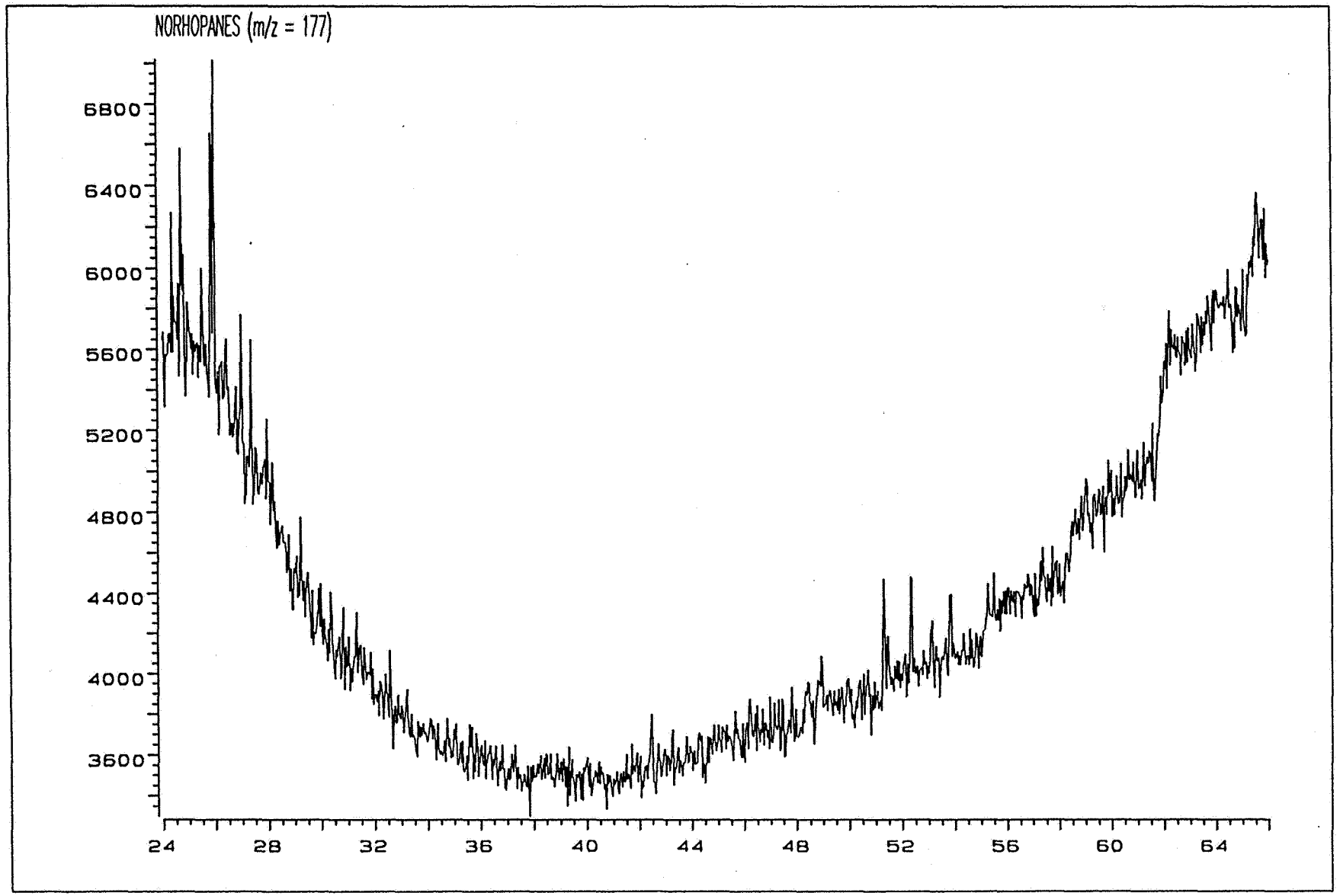
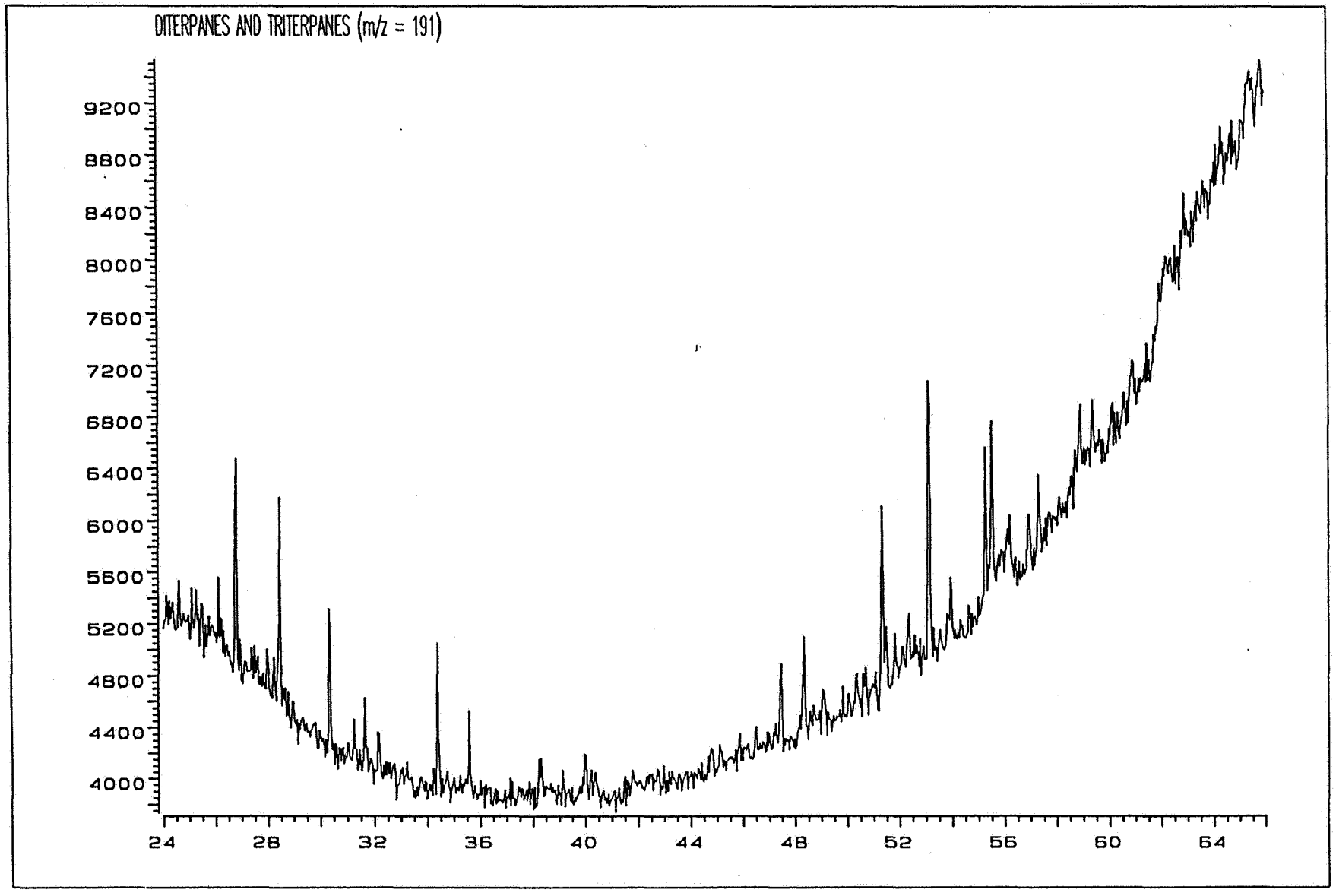


FILE: >X2156 WELL 25/8-4 CORE #5 (DEPTH = 1752m)



FILE: >X2156 WELL 25/8-4 CORE #5 (DEPTH = 1752m)



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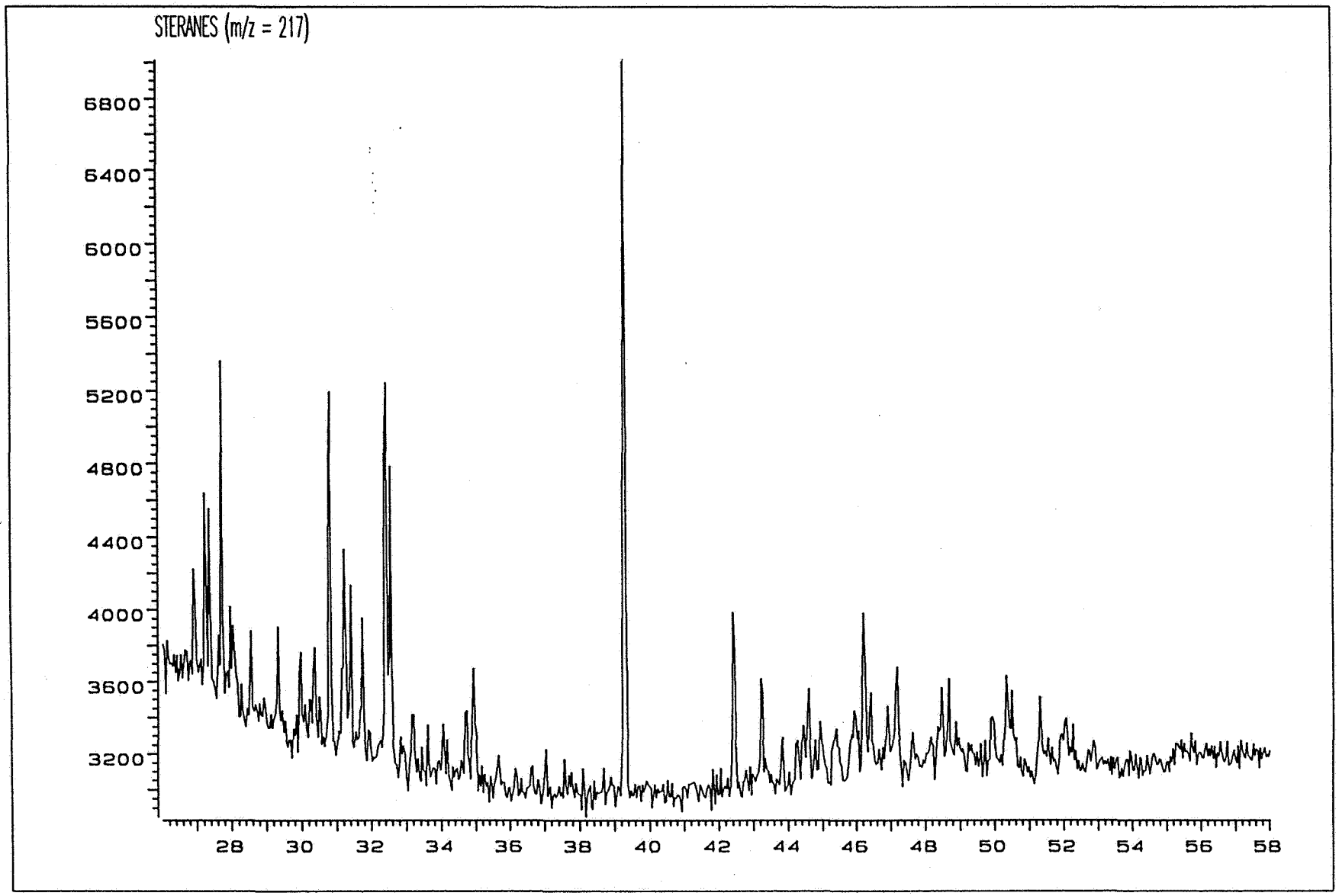

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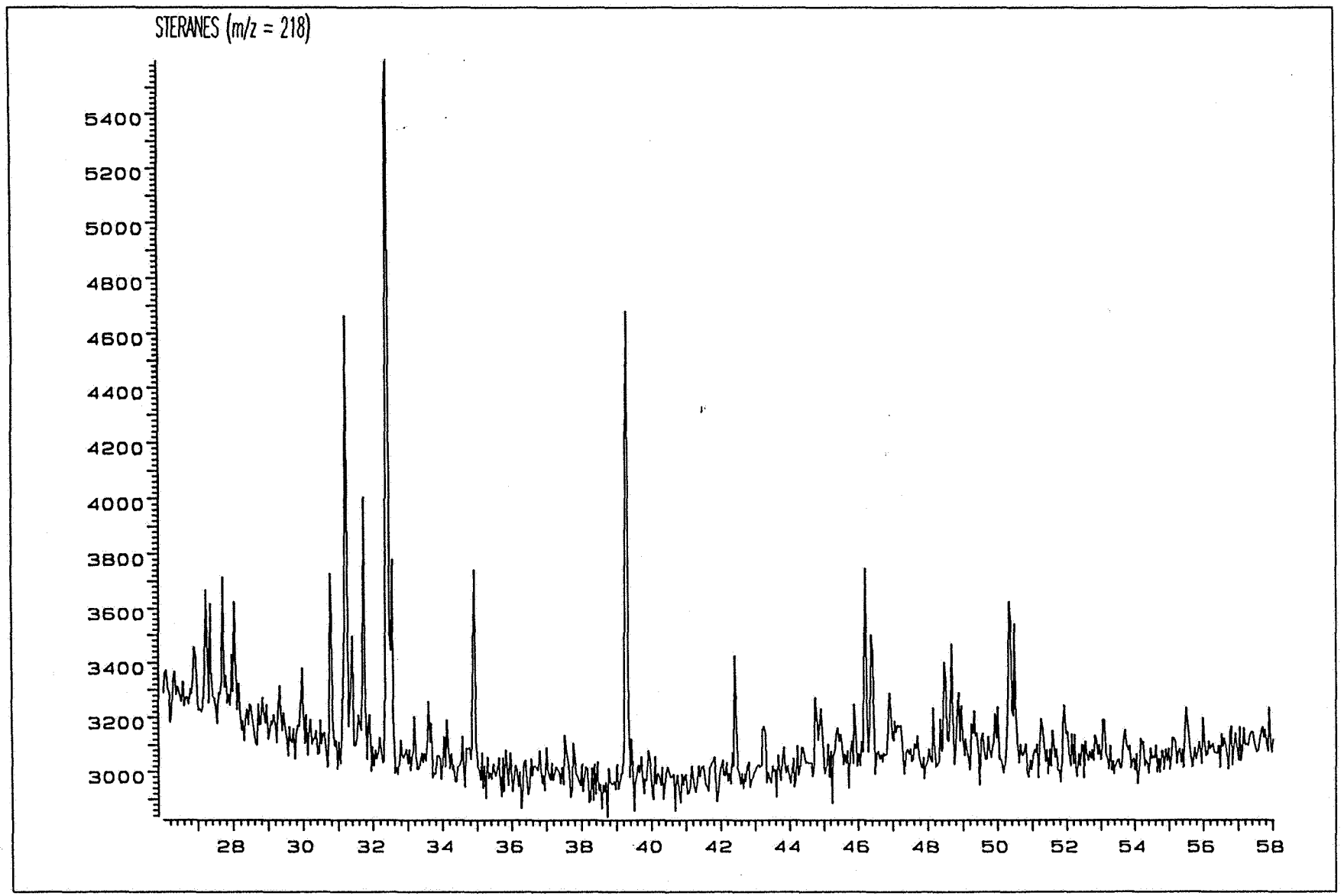
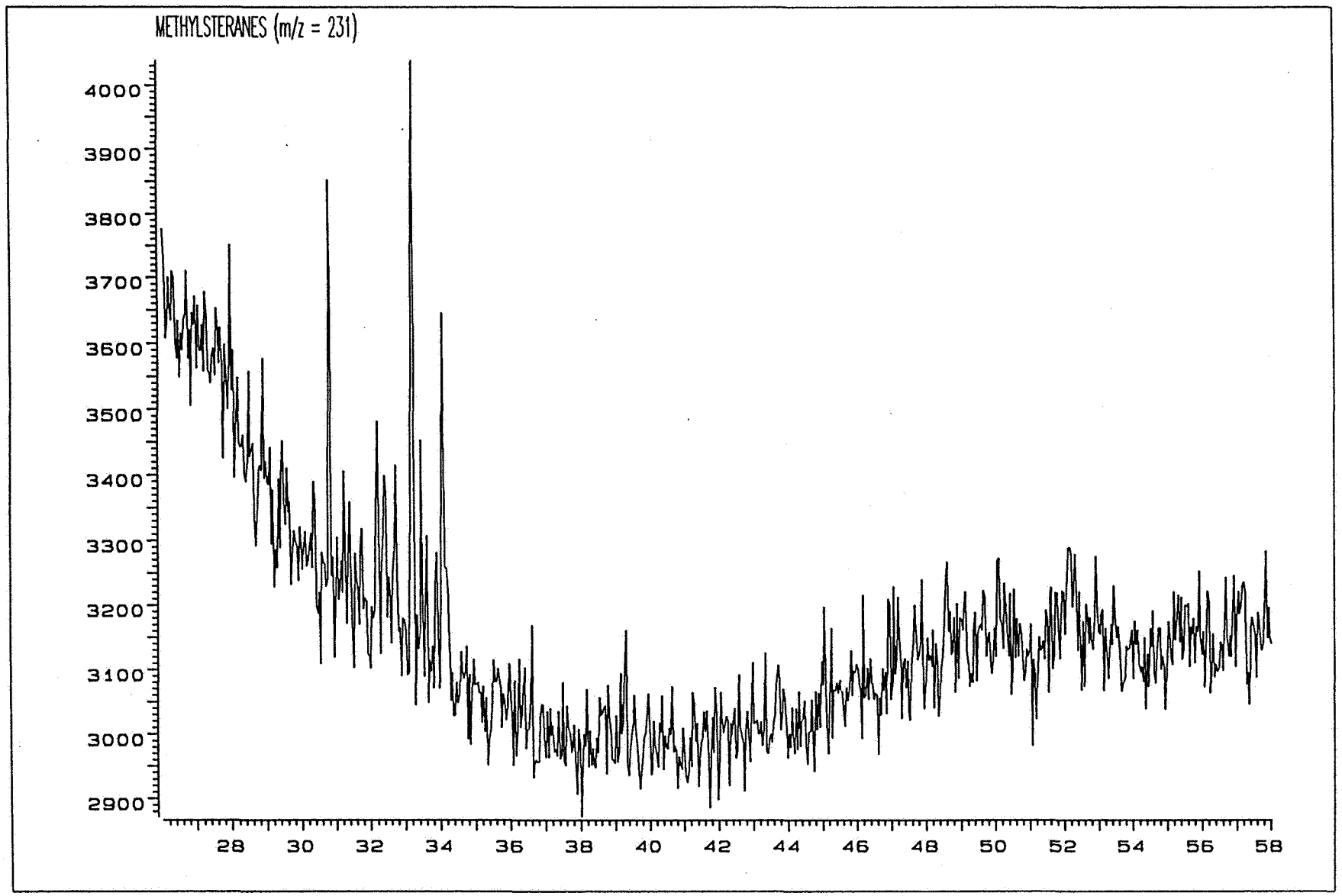
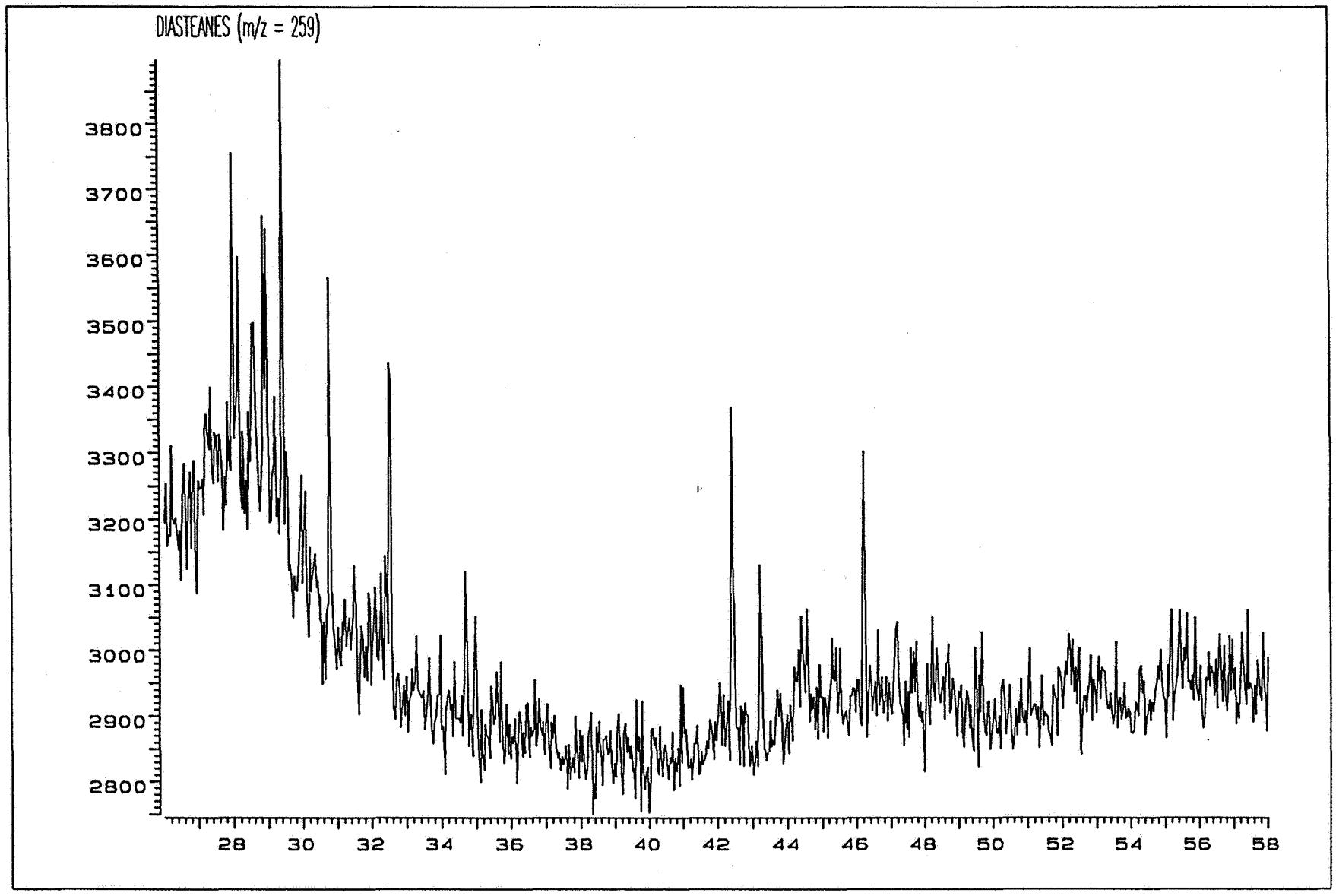


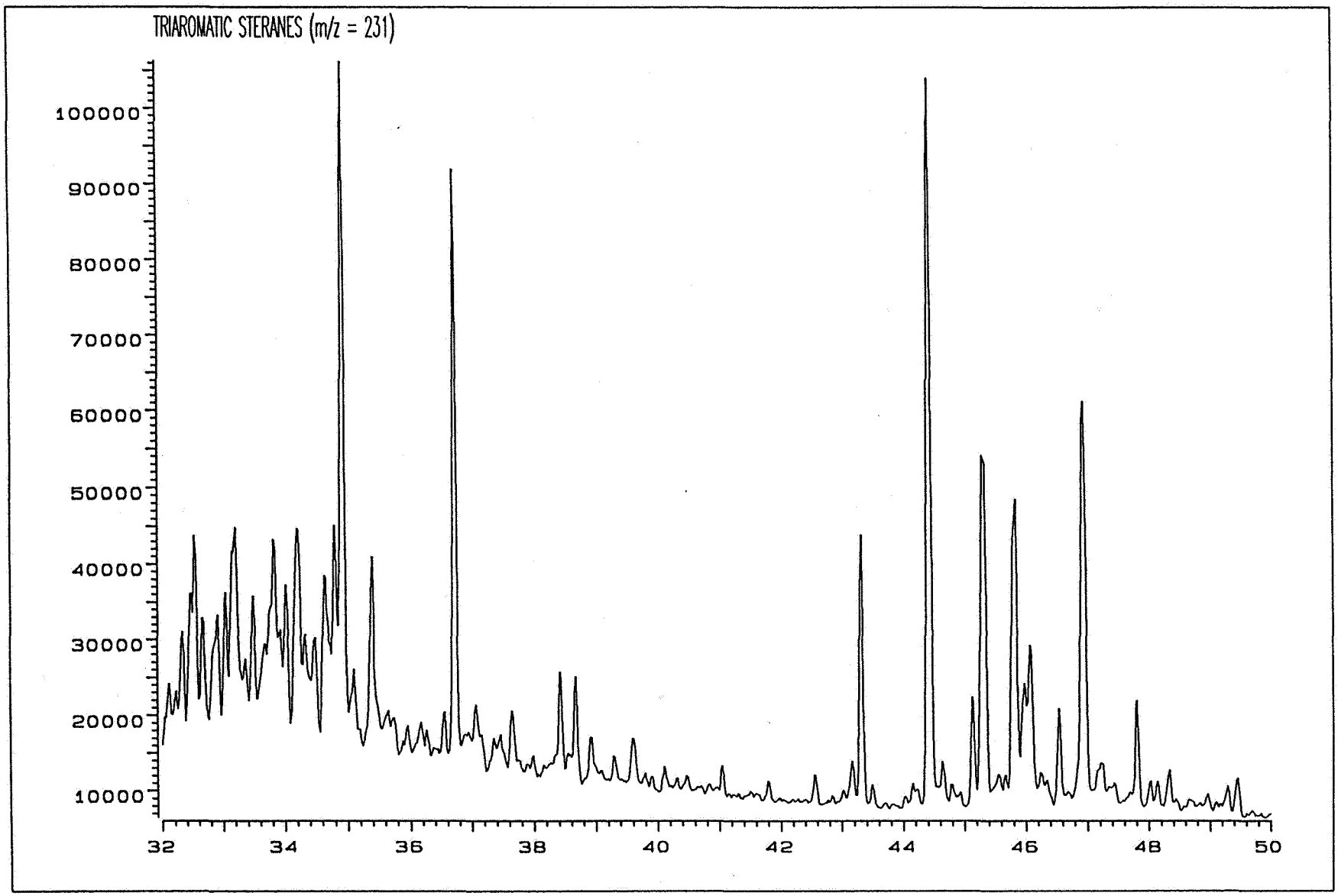
FILE: >X2156 WELL 25/8-4 CORE #5 (DEPTH = 1752m)



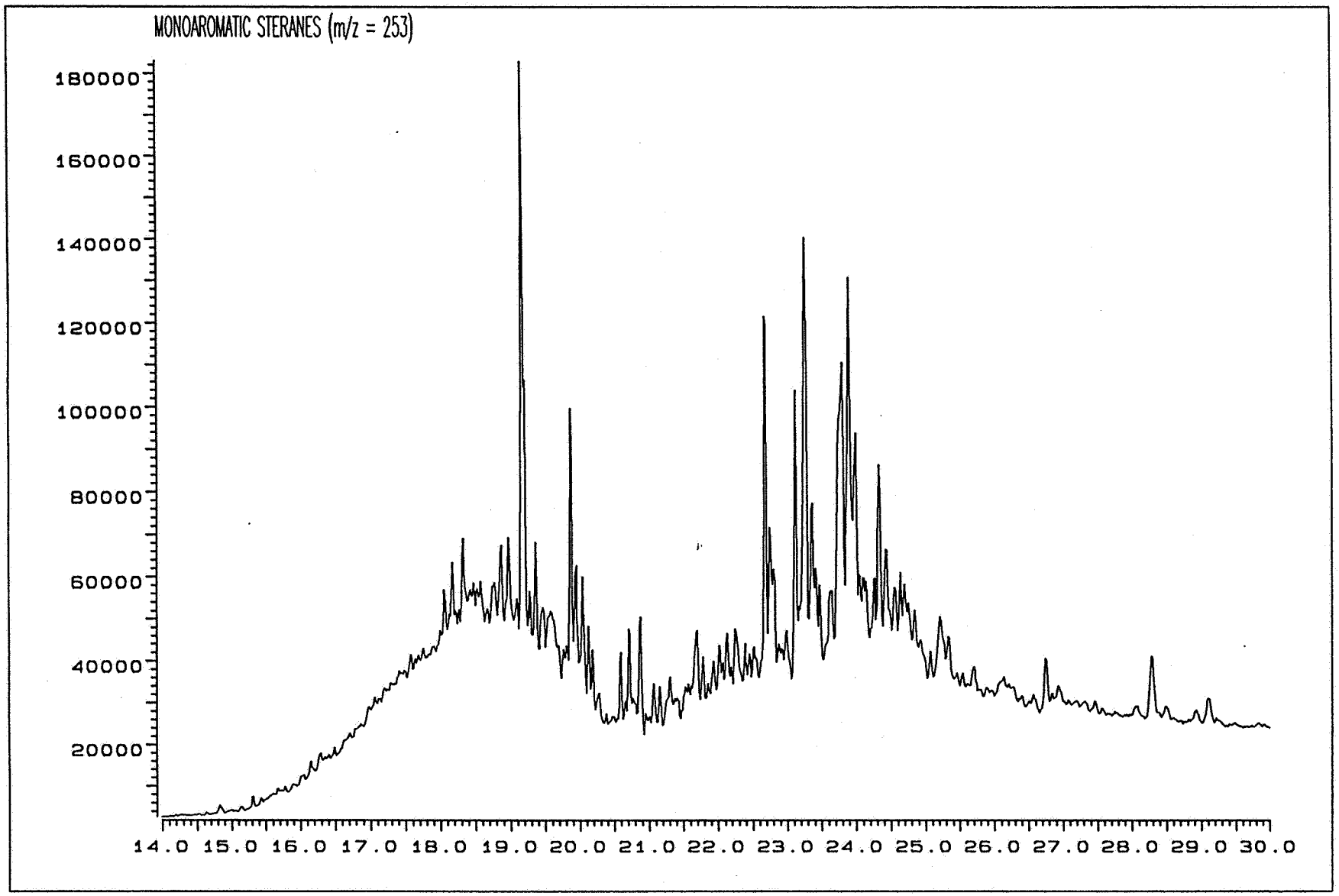
FILE: >X2156 WELL 25/8-4 CORE #5 (DEPTH = 1752m)



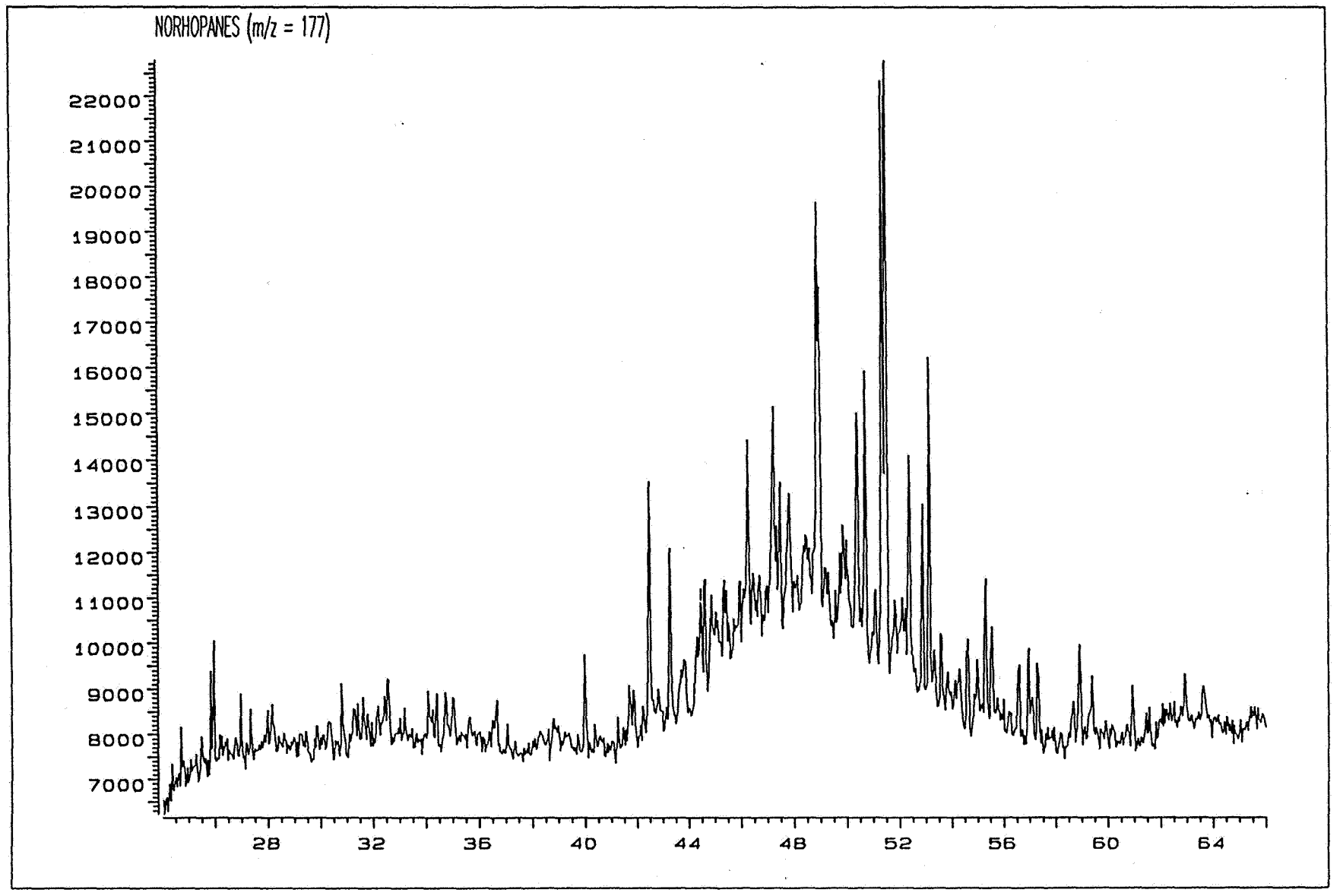
FILE: >X2158 X2156 Well 25/8-4 Core #5 (Depth = 1752m)



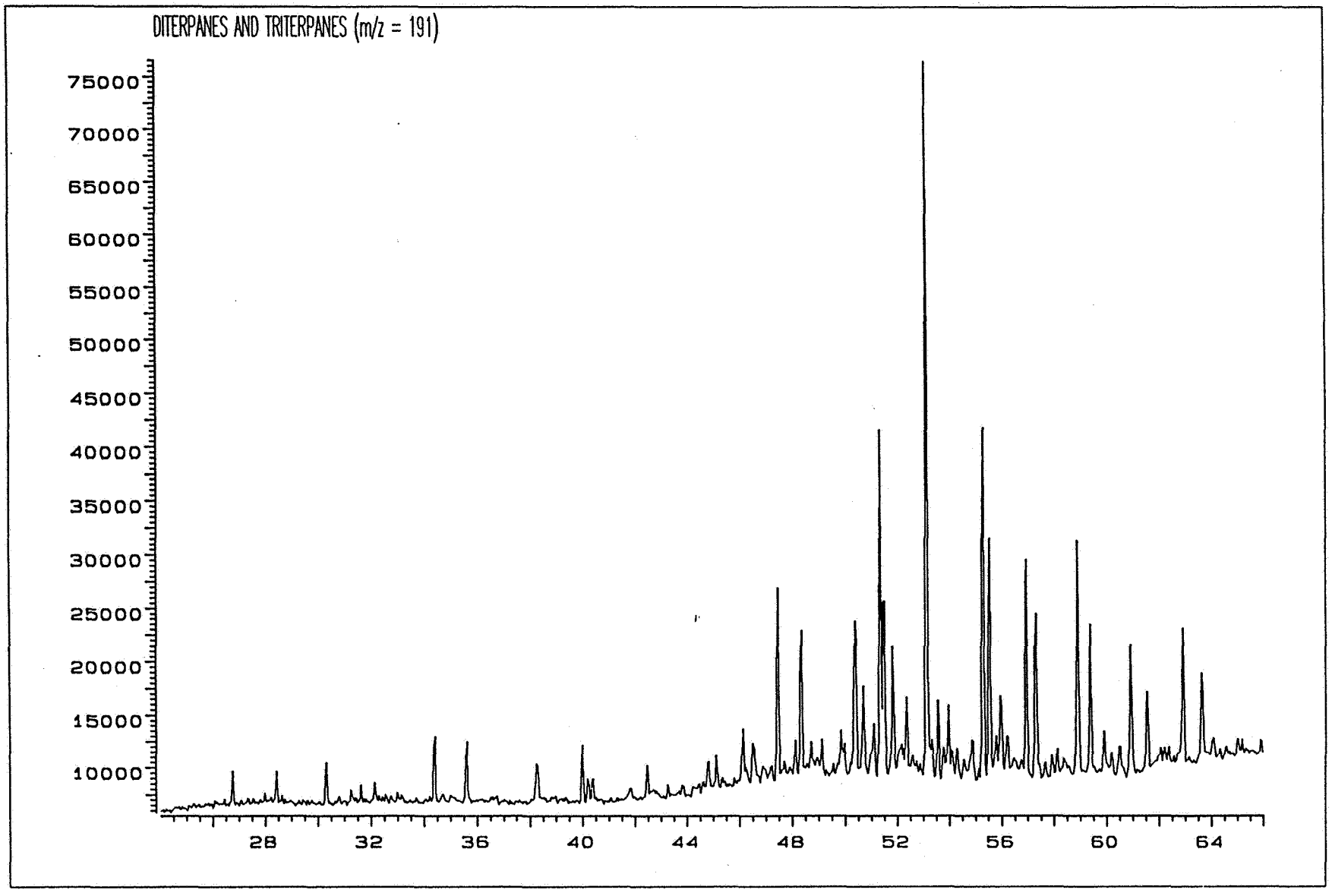
FILE: >X2159 X2156 Well 25/8-4 Core #5 (Depth = 1752m)



FILE: >X2161 WELL 25/8-4 CORE #6 (DEPTH = 1766m)



FILE: >X2161 WELL 25/8-4 CORE #6 (DEPTH = 1766m)



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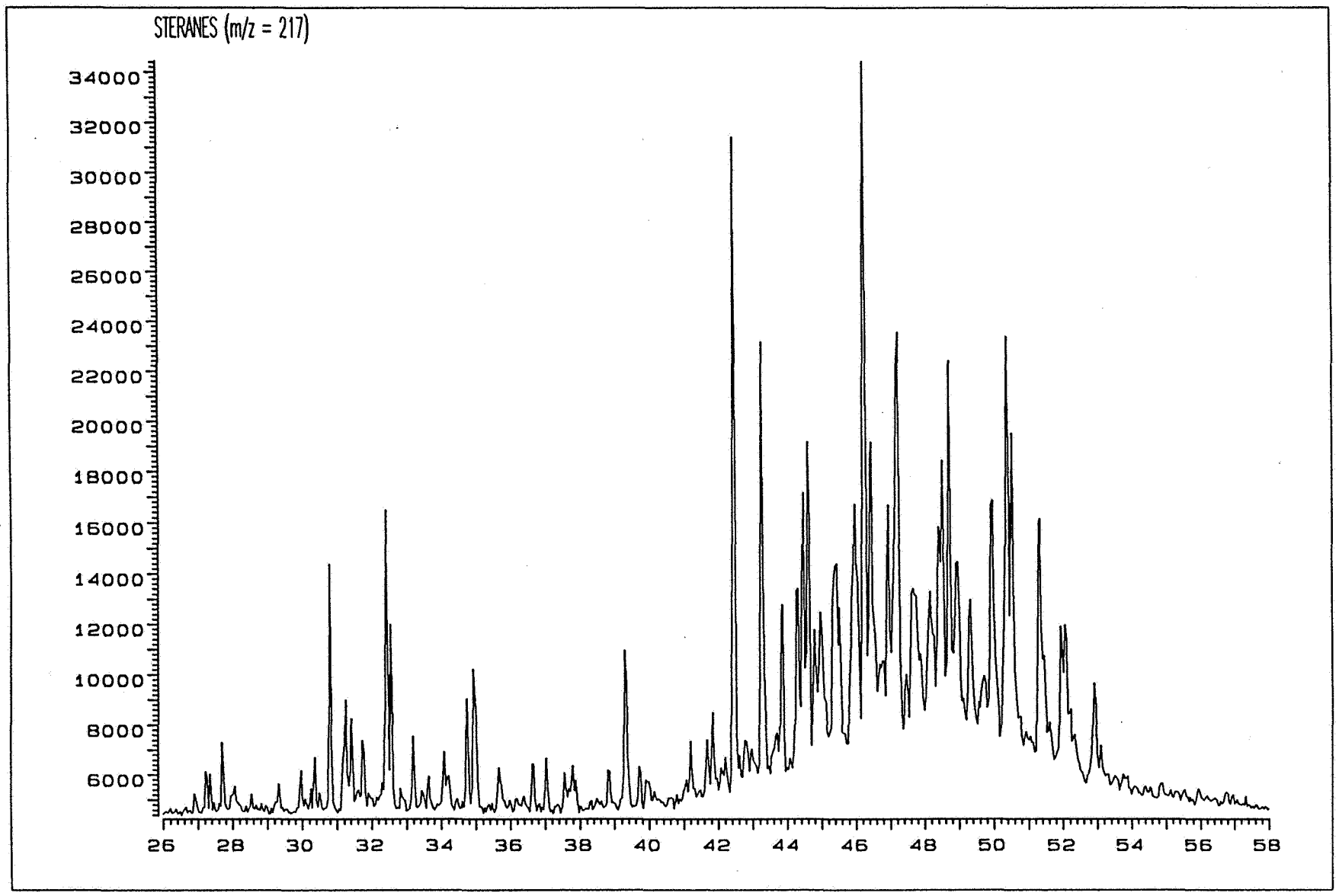

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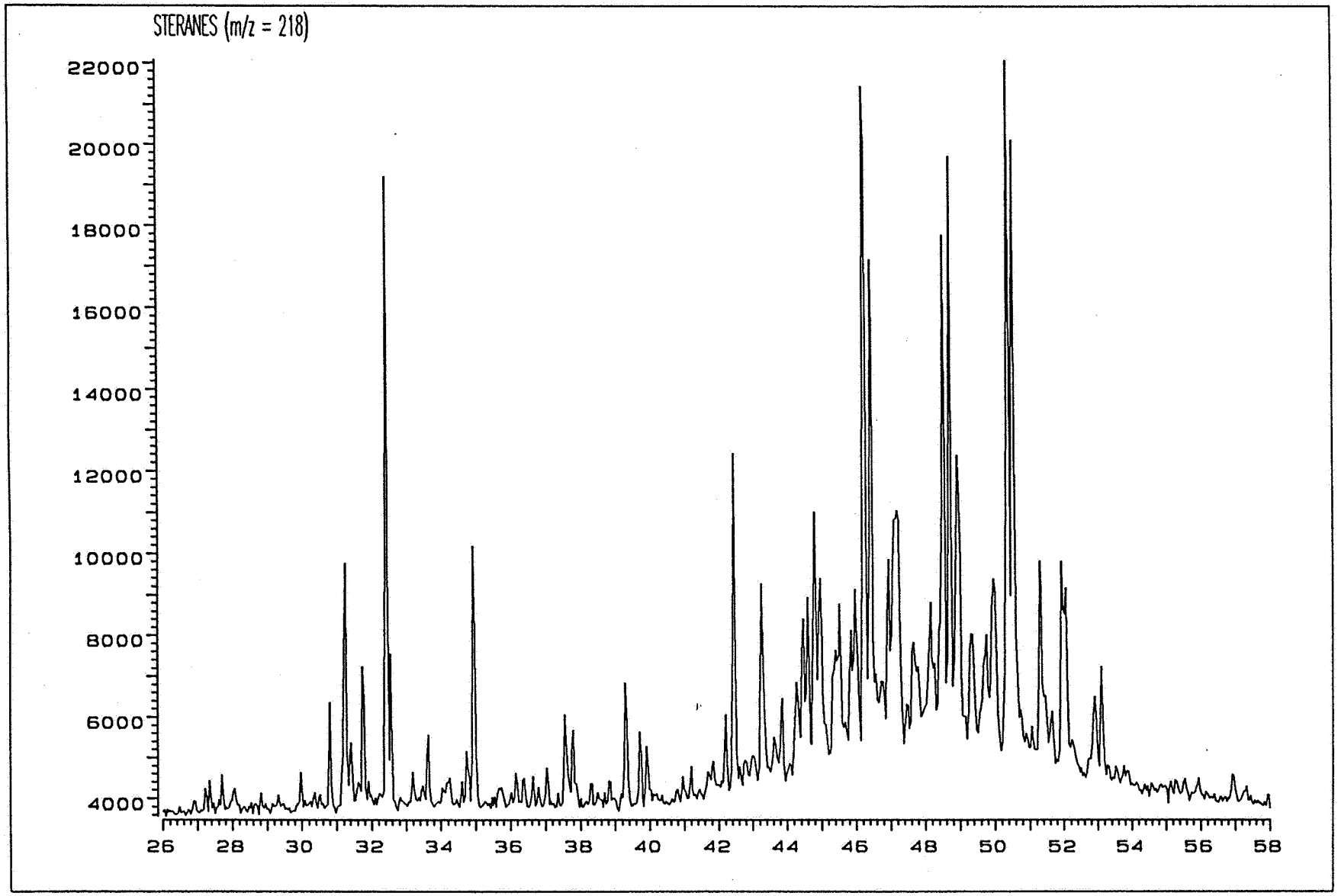
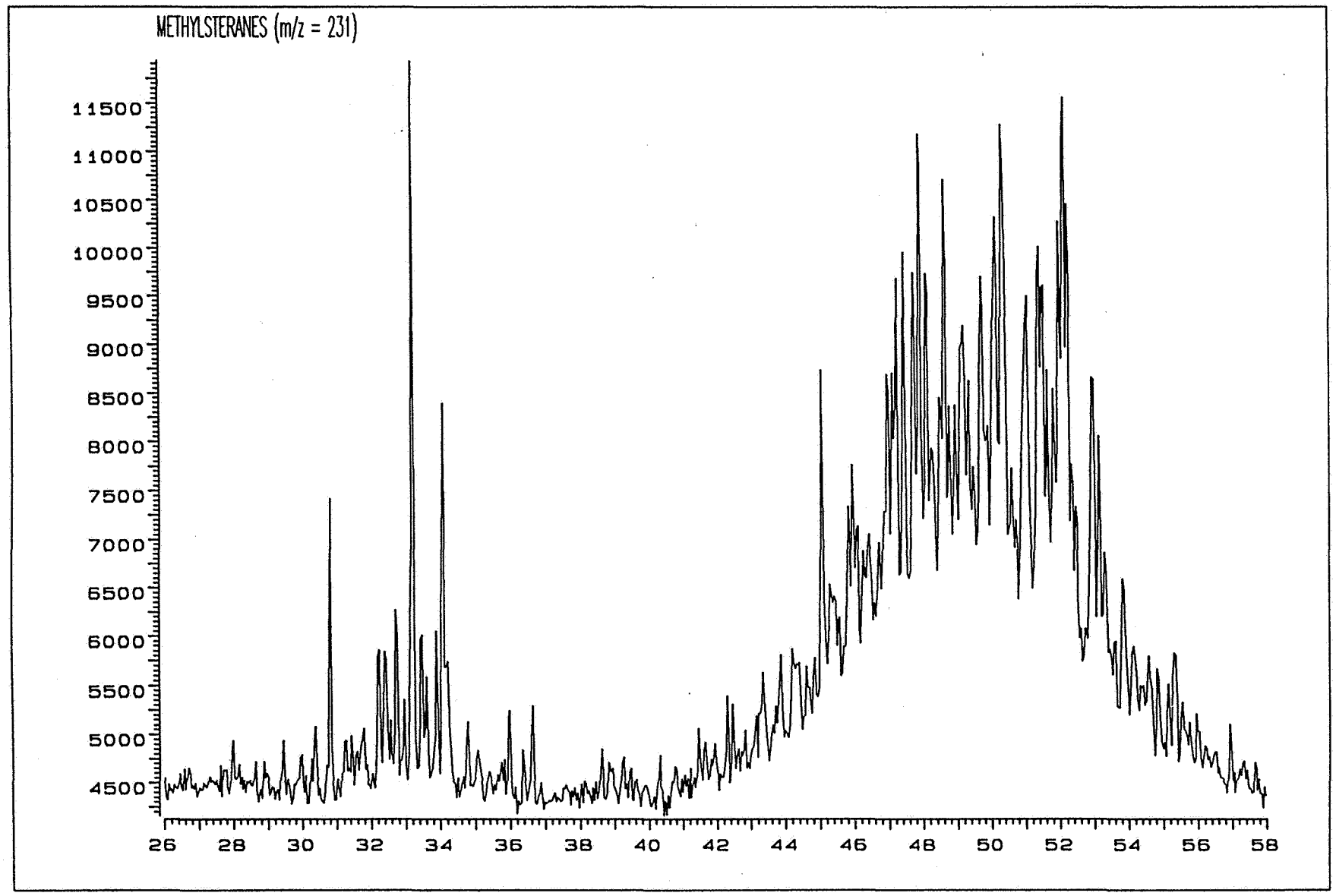
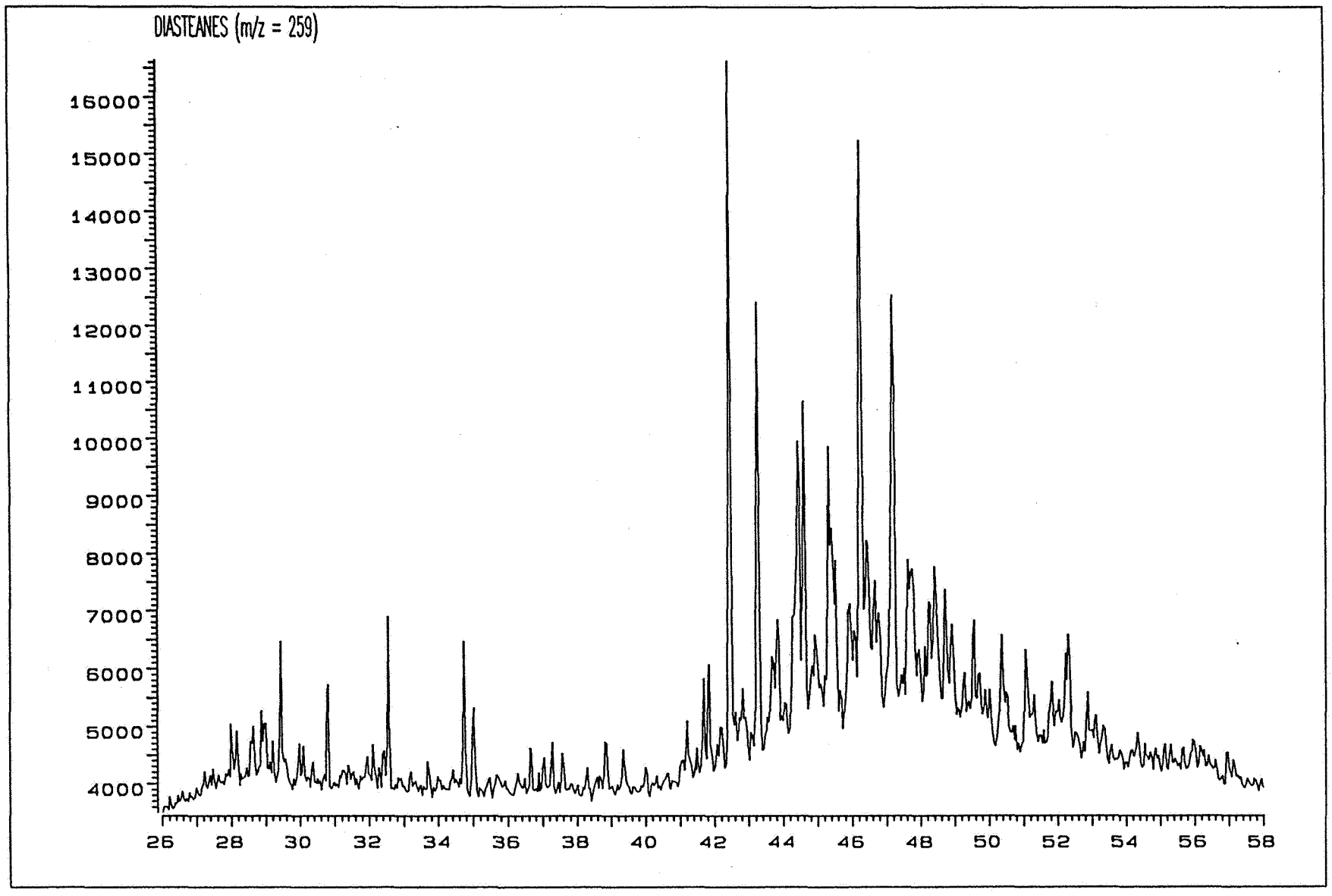


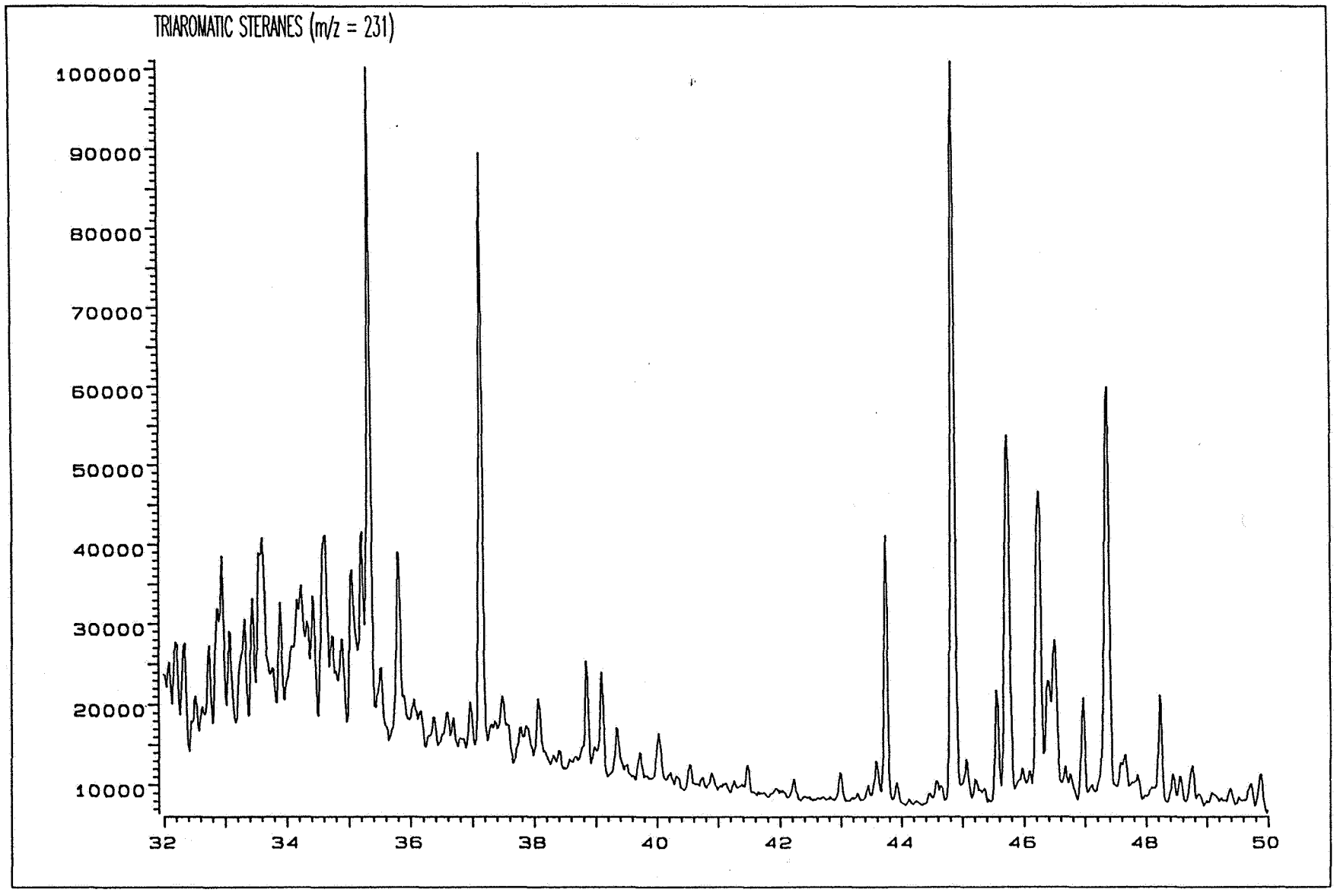
FILE: >X2161 WELL 25/8-4 CORE #6 (DEPTH = 1766m)



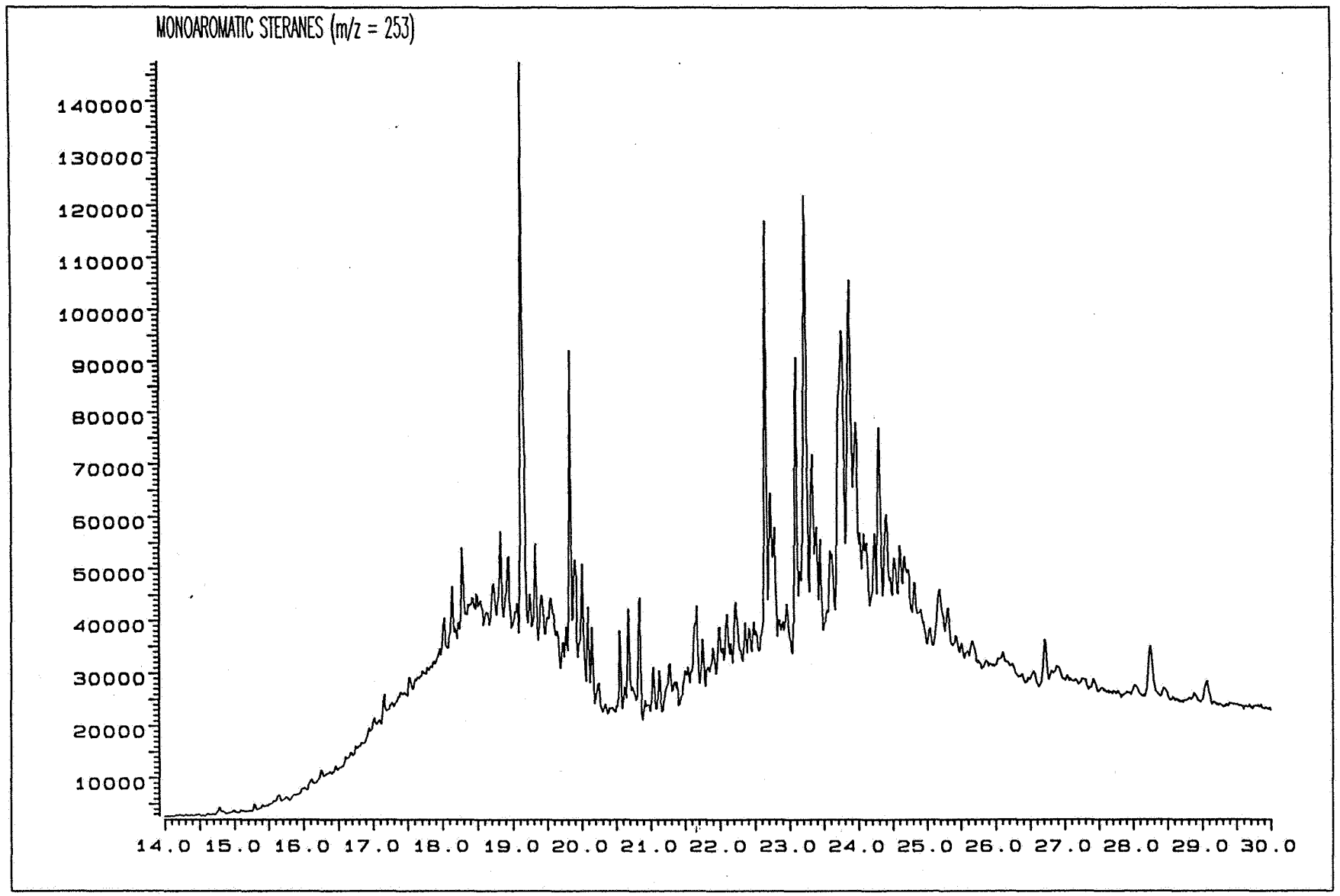
FILE: >X2161 WELL 25/8-4 CORE #6 (DEPTH = 1766m)



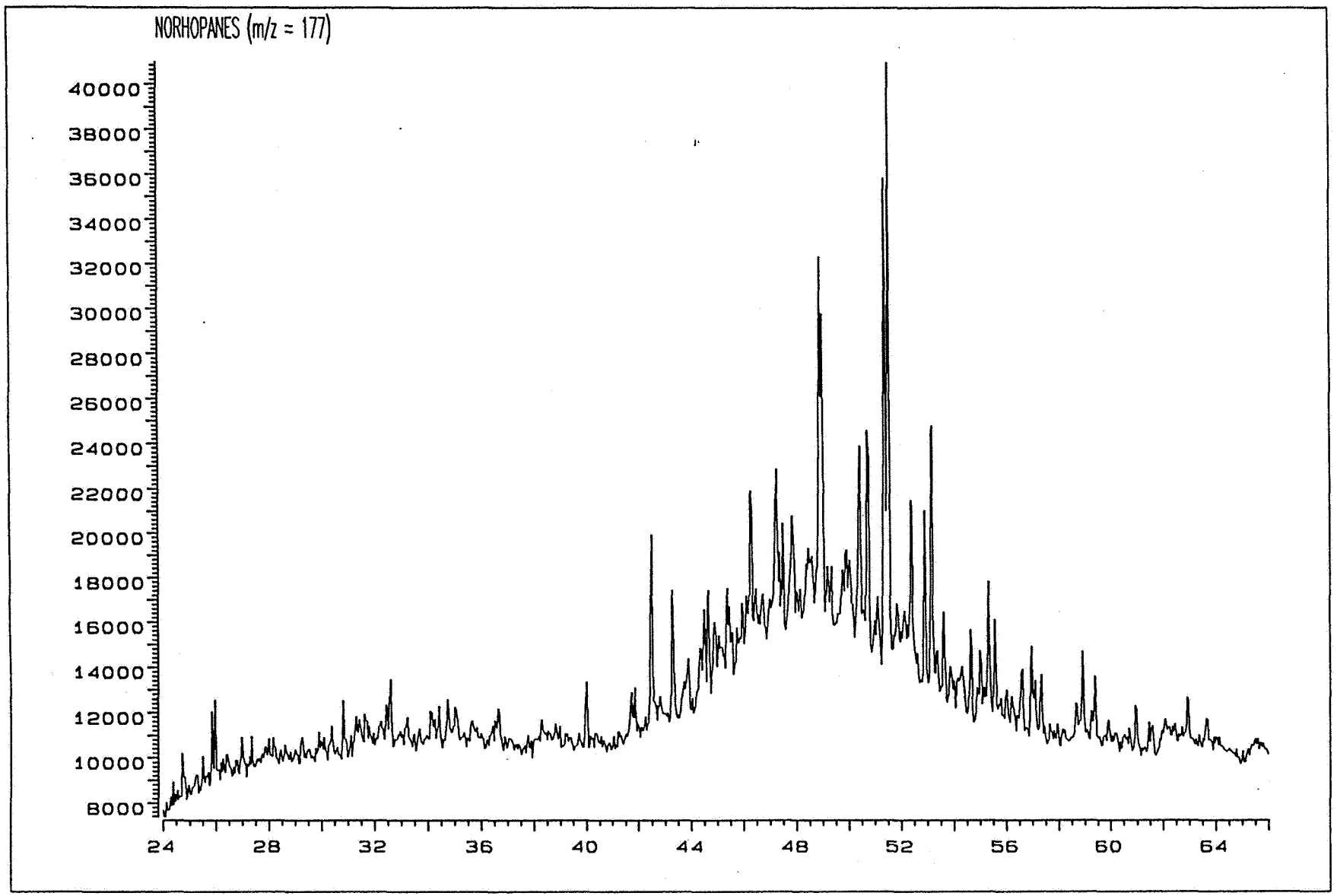
FILE: >X2163 X2161 Well 25/8-4 Core #6 (Depth = 1766m)



FILE: >X2164 X2161 Well 25/8-4 Core #6 (Depth = 1766m)



FILE: >X2171 WELL 25/8-4 CORE #7 (DEPTH = 1781m)



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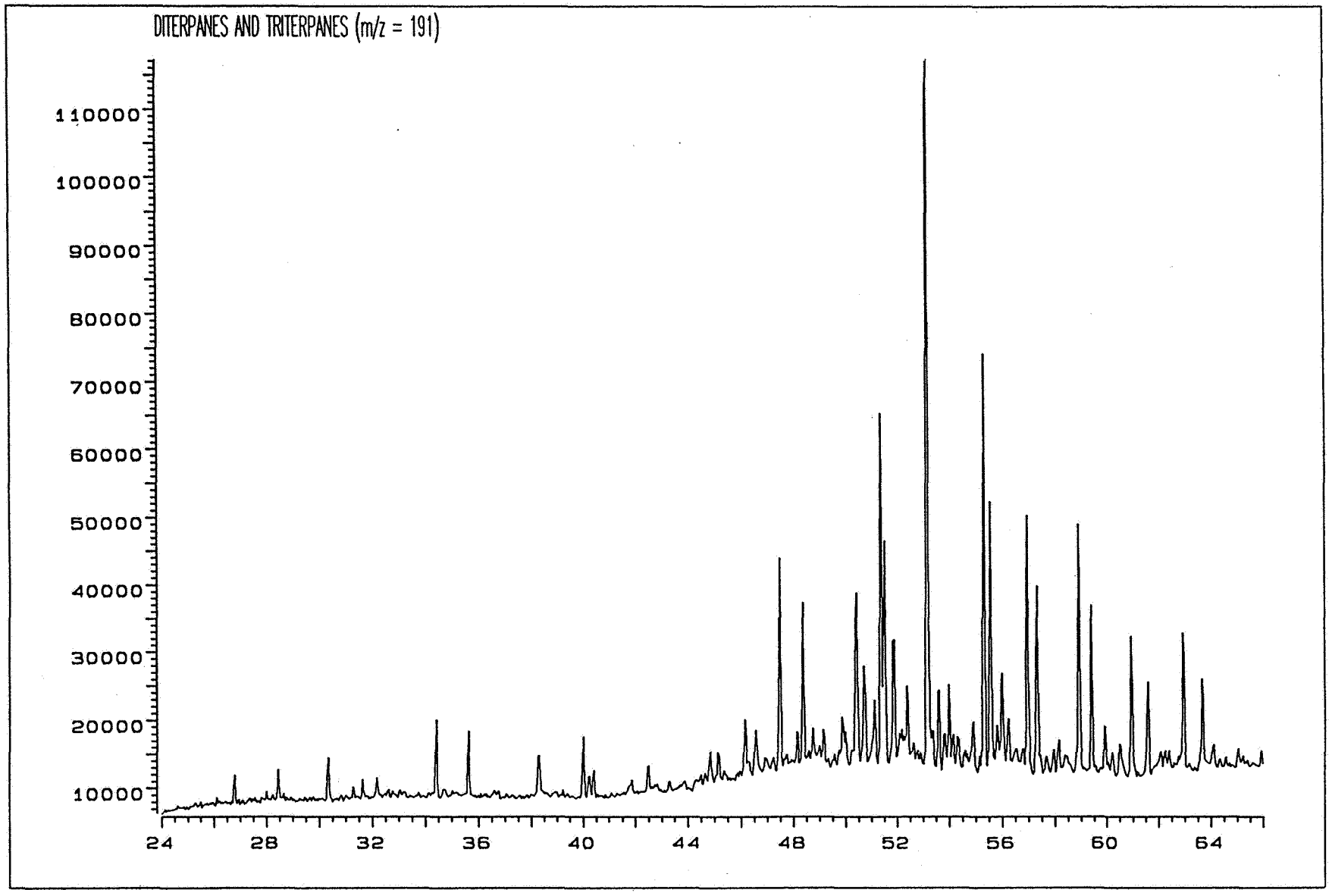

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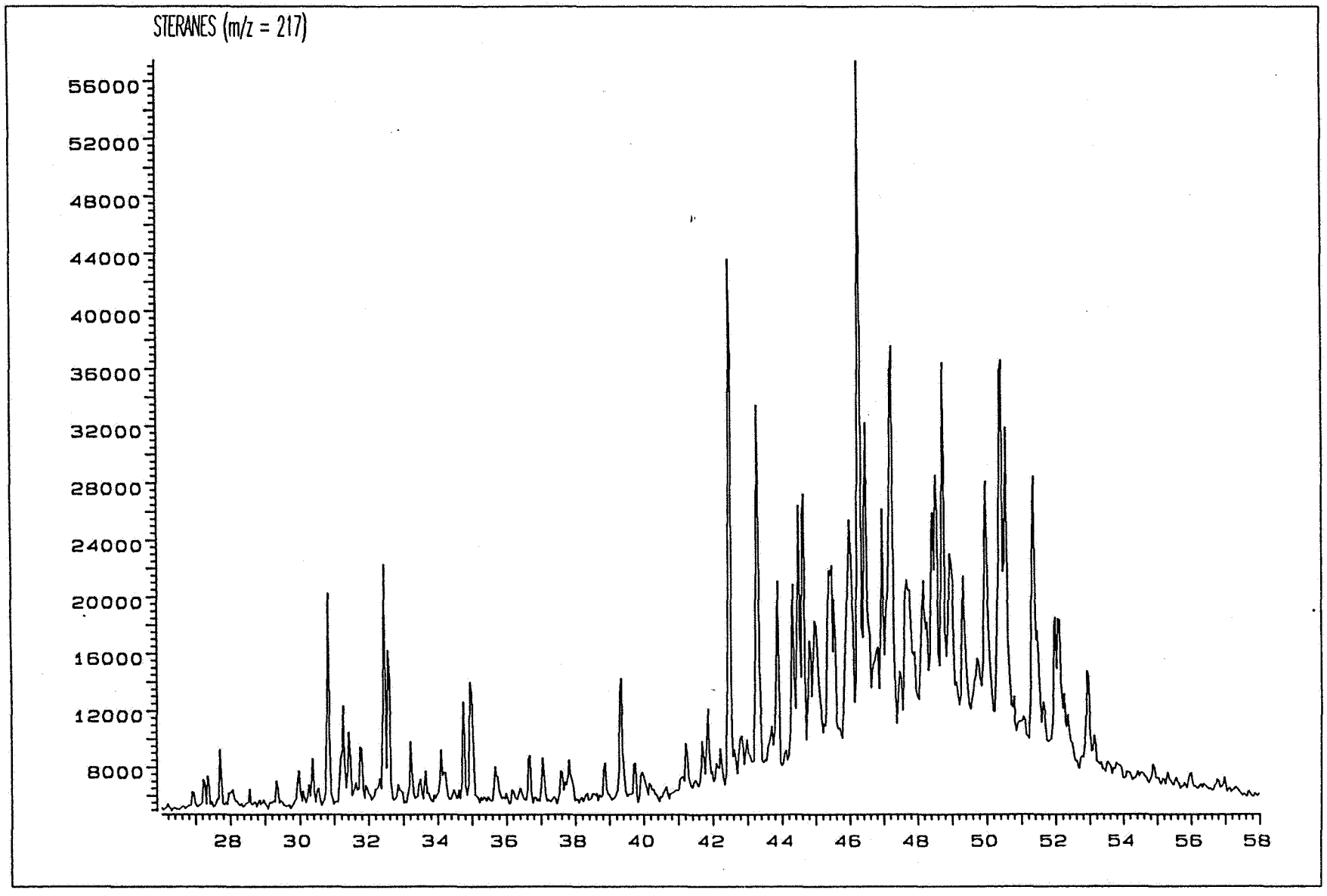
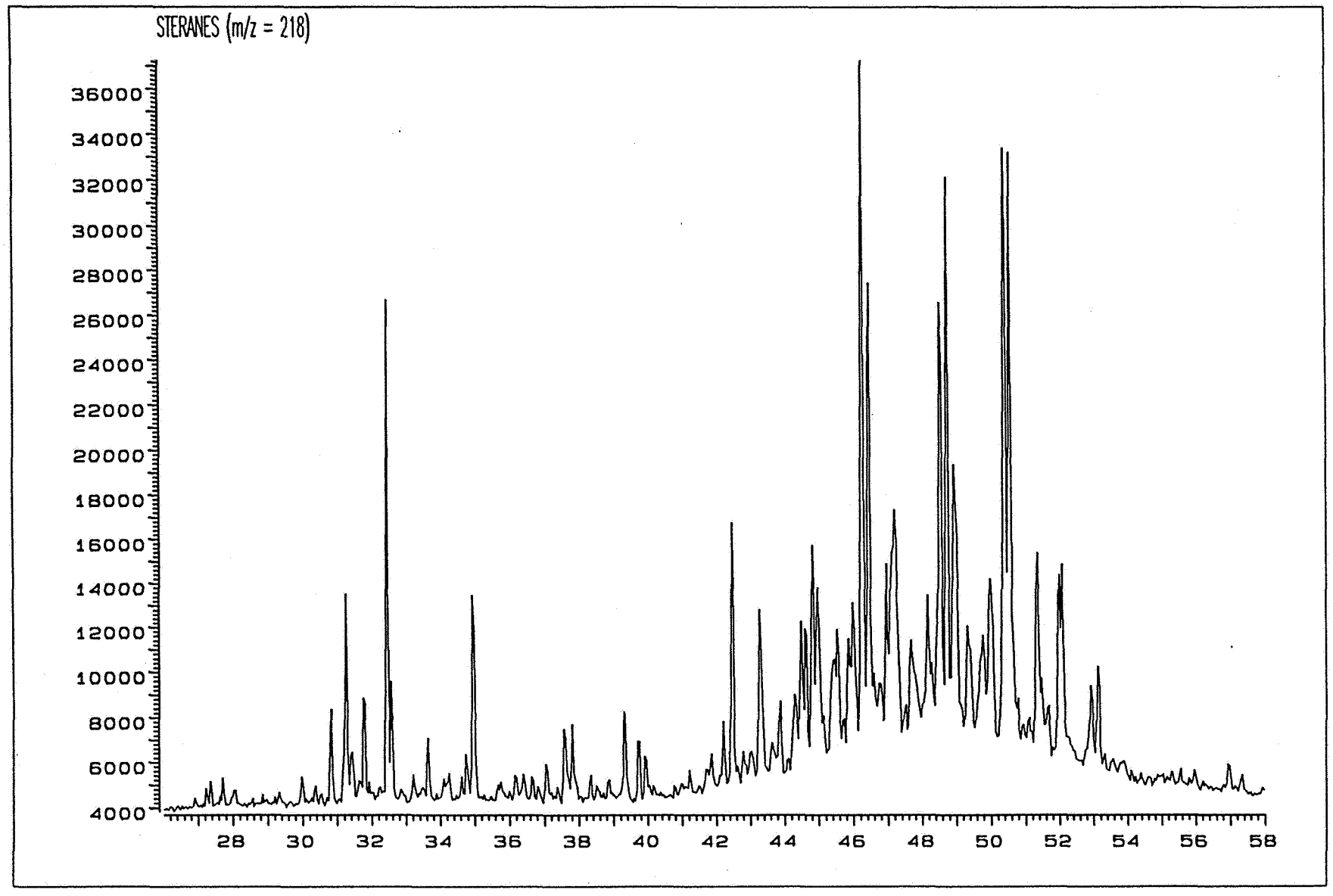
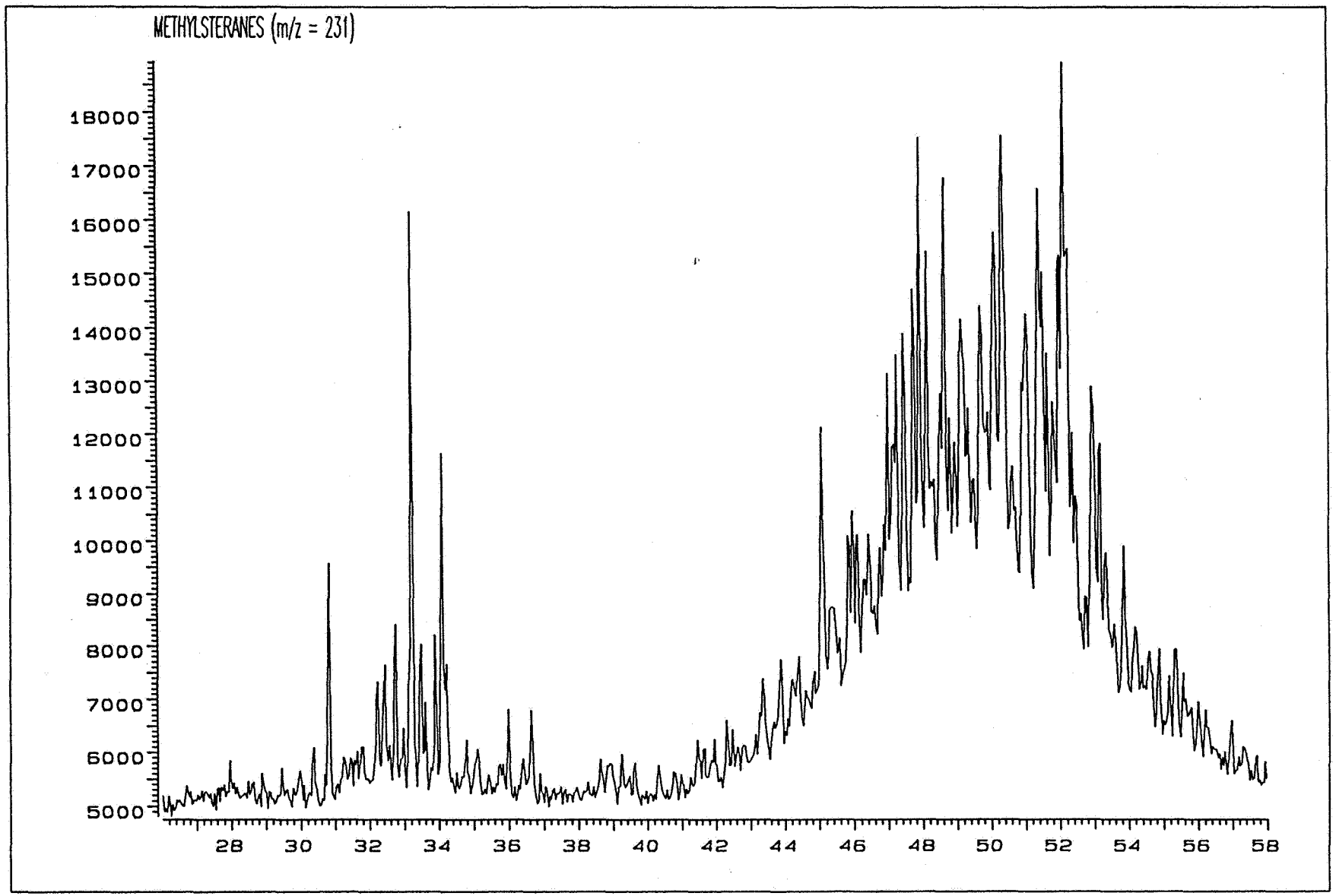


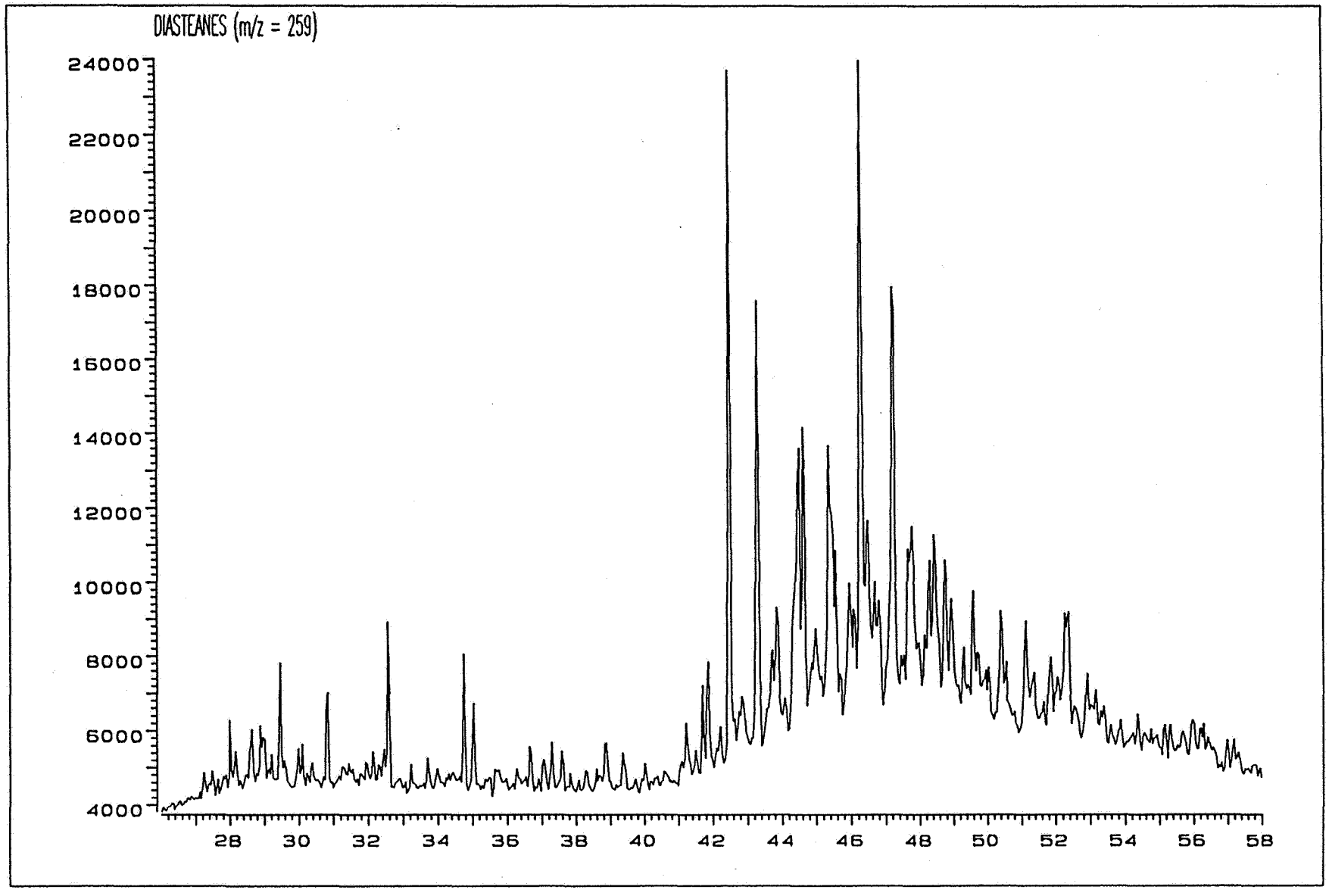
FILE: >X2171 WELL 25/8-4 CORE #7 (DEPTH = 1781m)



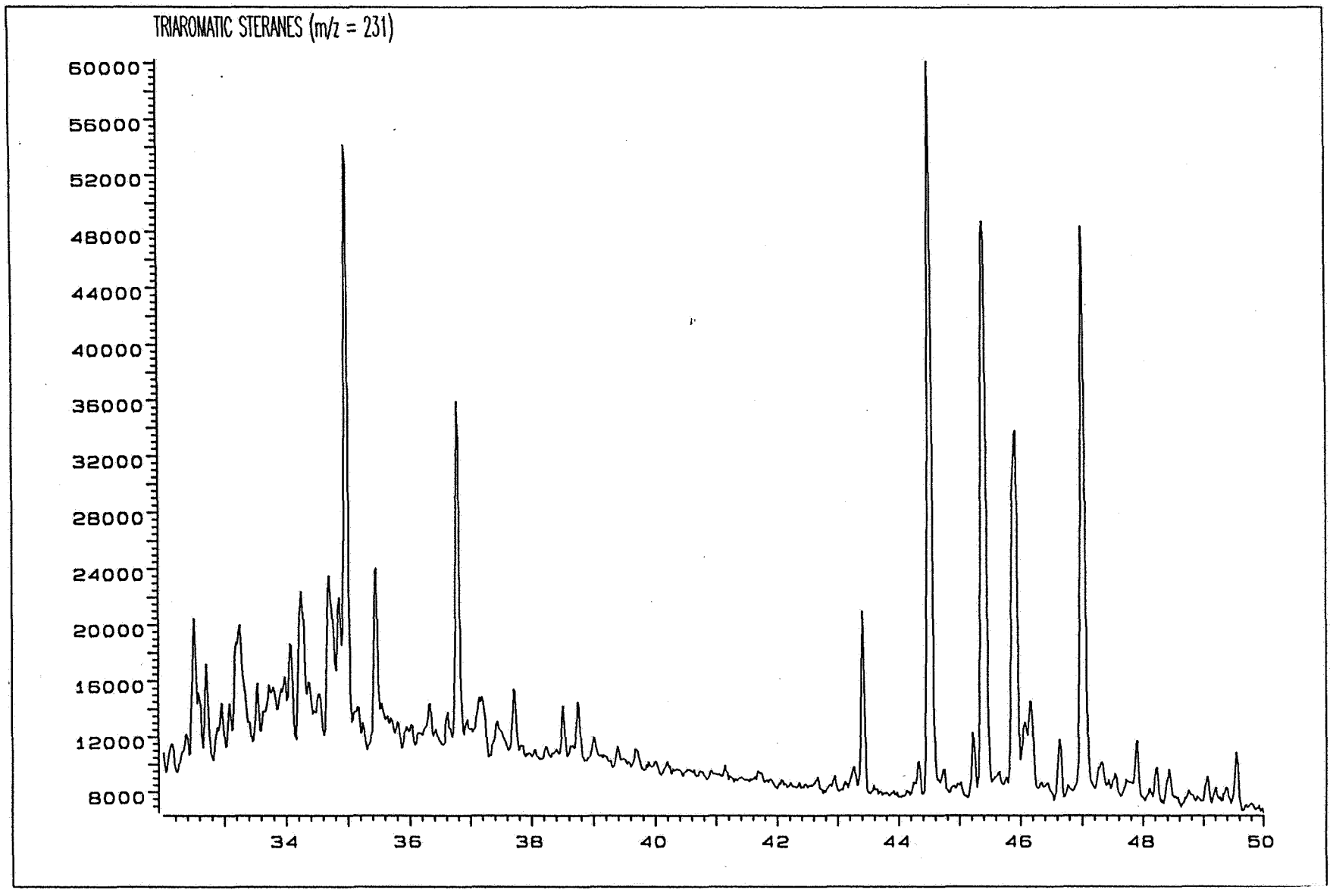
FILE: >X2171 WELL 25/8-4 CORE #7 (DEPTH = 1781m)



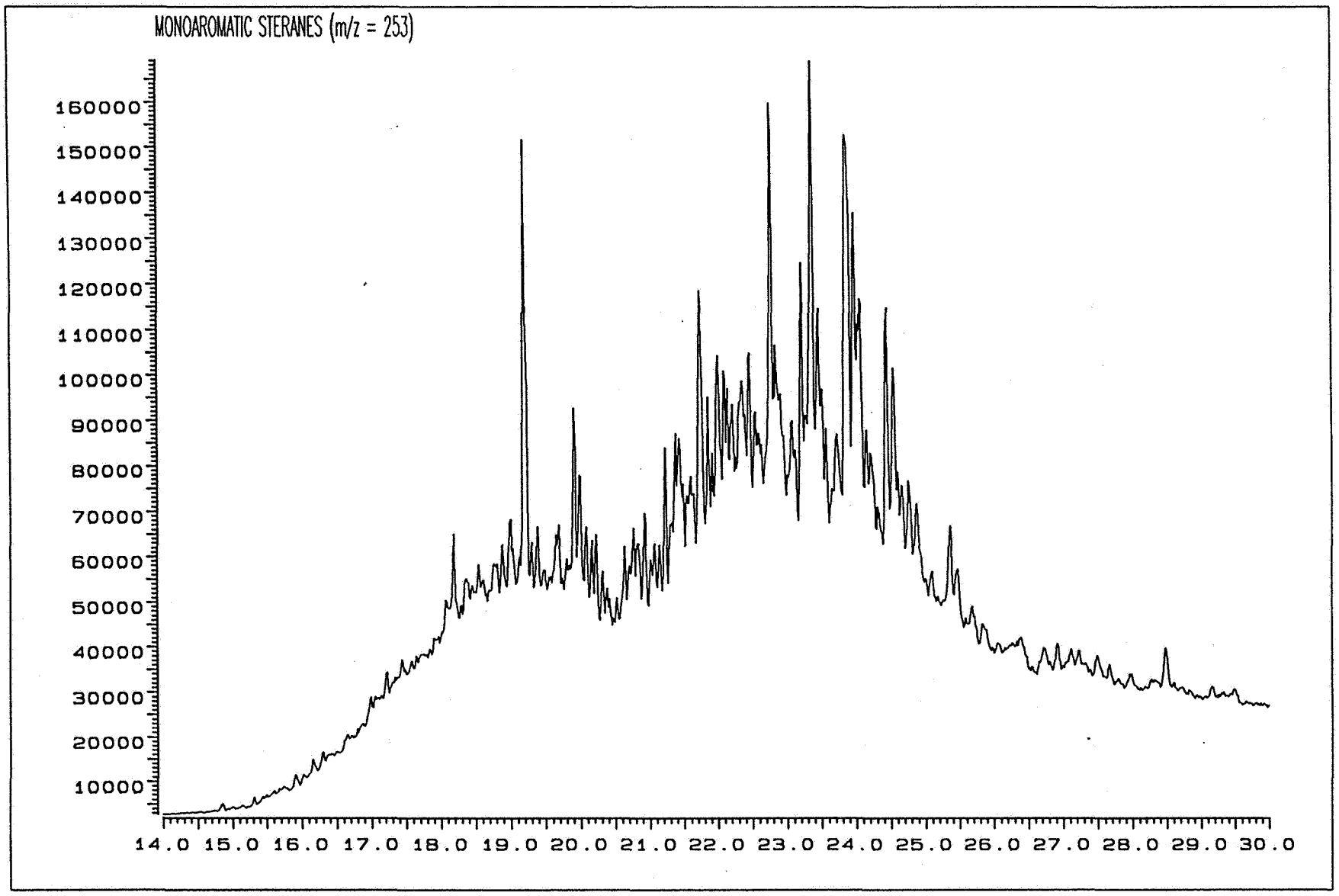
FILE: >X2171 WELL 25/8-4 CORE #7 (DEPTH = 1781m)



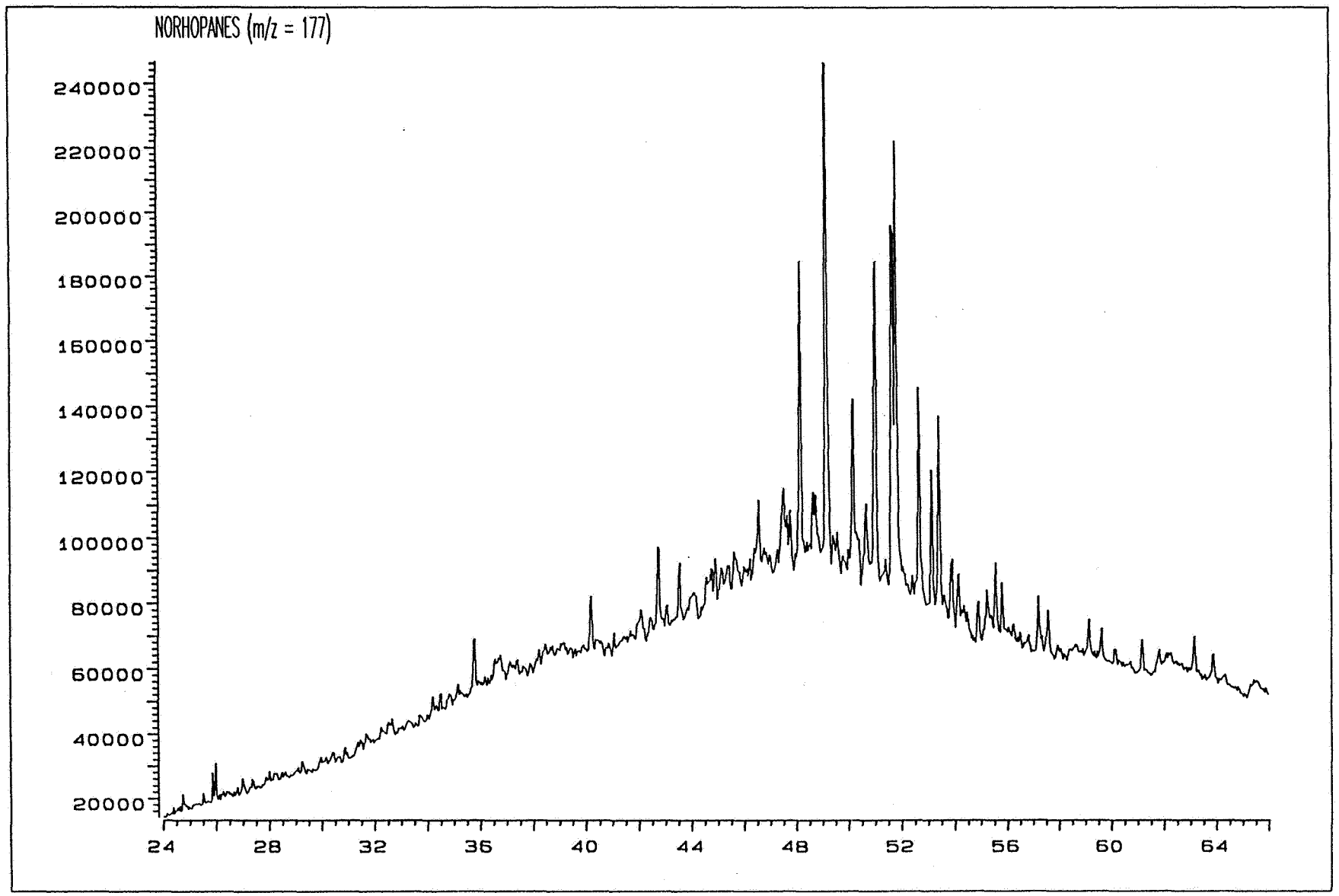
FILE: >X2173 X2171 Well 25/8-4 Core #7 (Depth = 1781m)



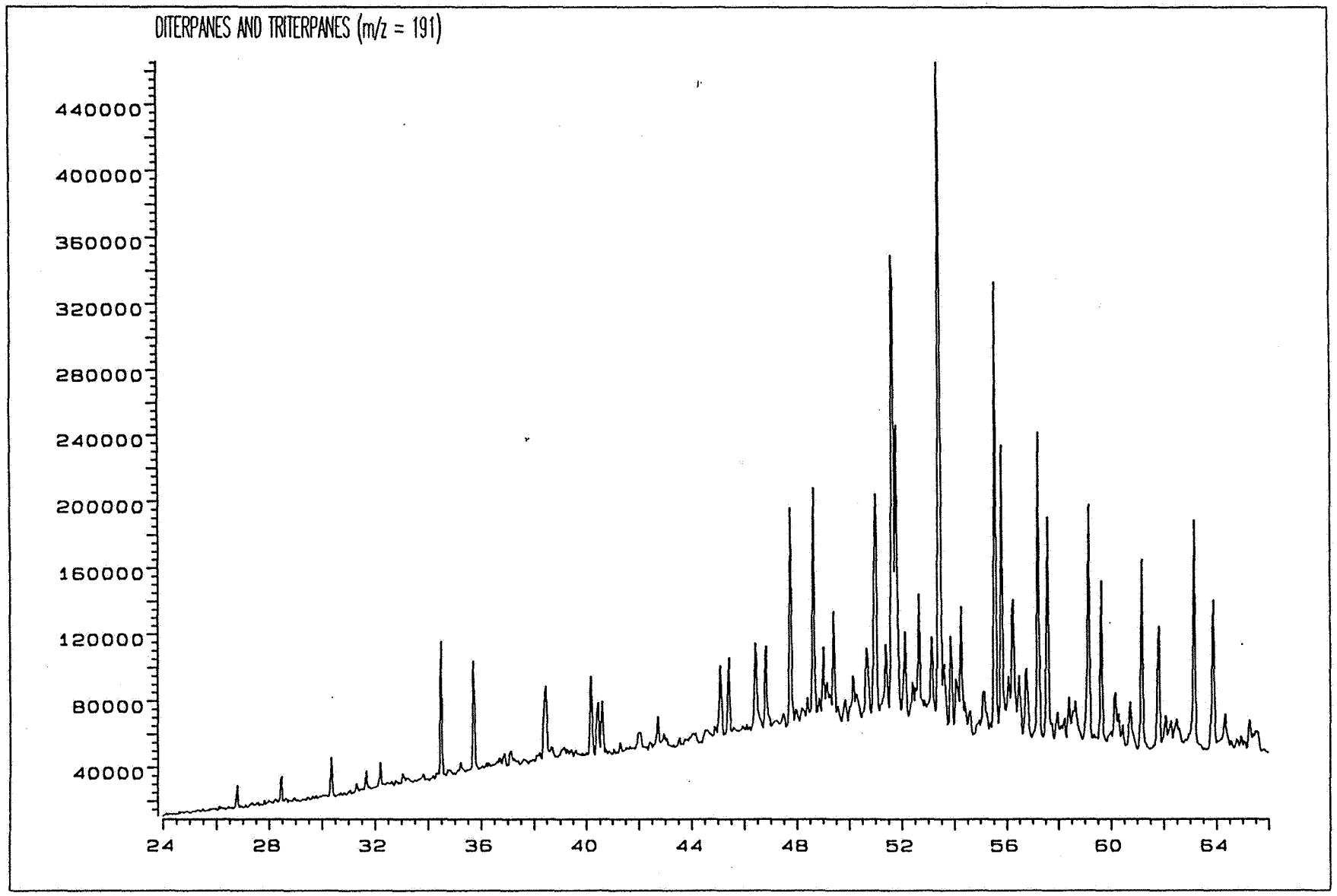
FILE: >X2174 X2171 Well 25/8-4 Core #7 (Depth = 1781m)



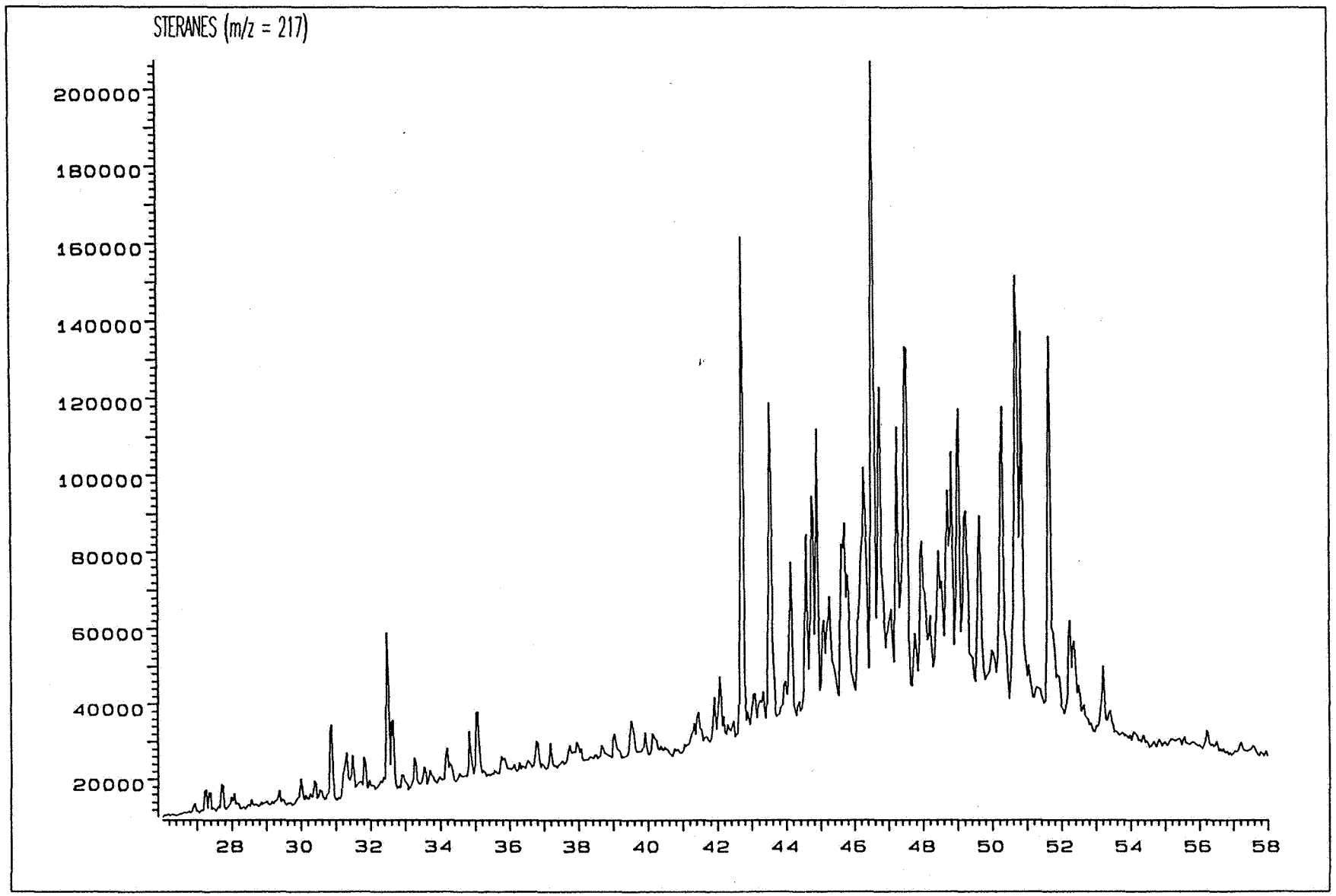
FILE: >X2181 WELL 25/8-4 CORE #8 (DEPTH = 1794.7m)



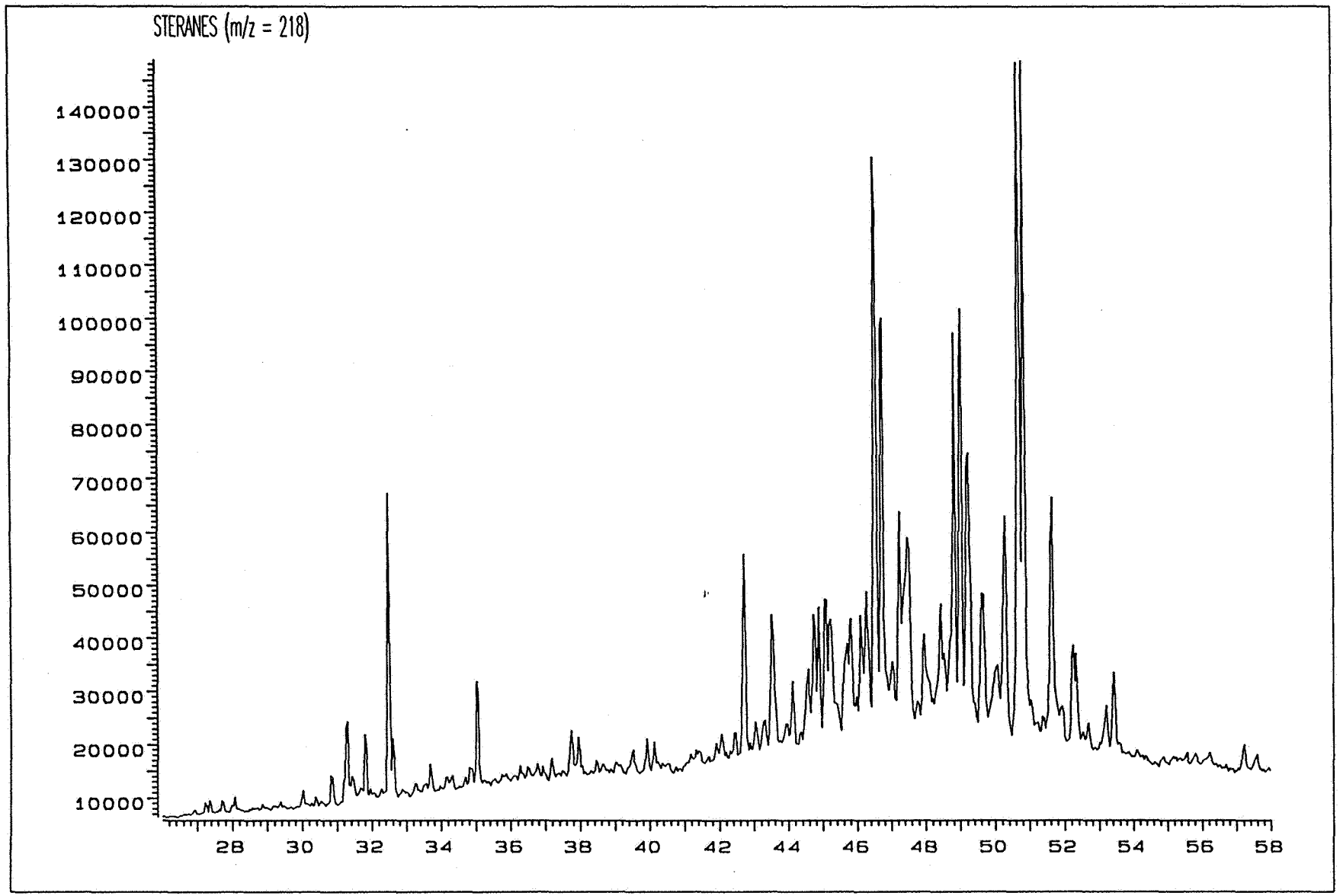
FILE: >X2181 WELL 25/8-4 CORE #8 (DEPTH = 1794.7m)



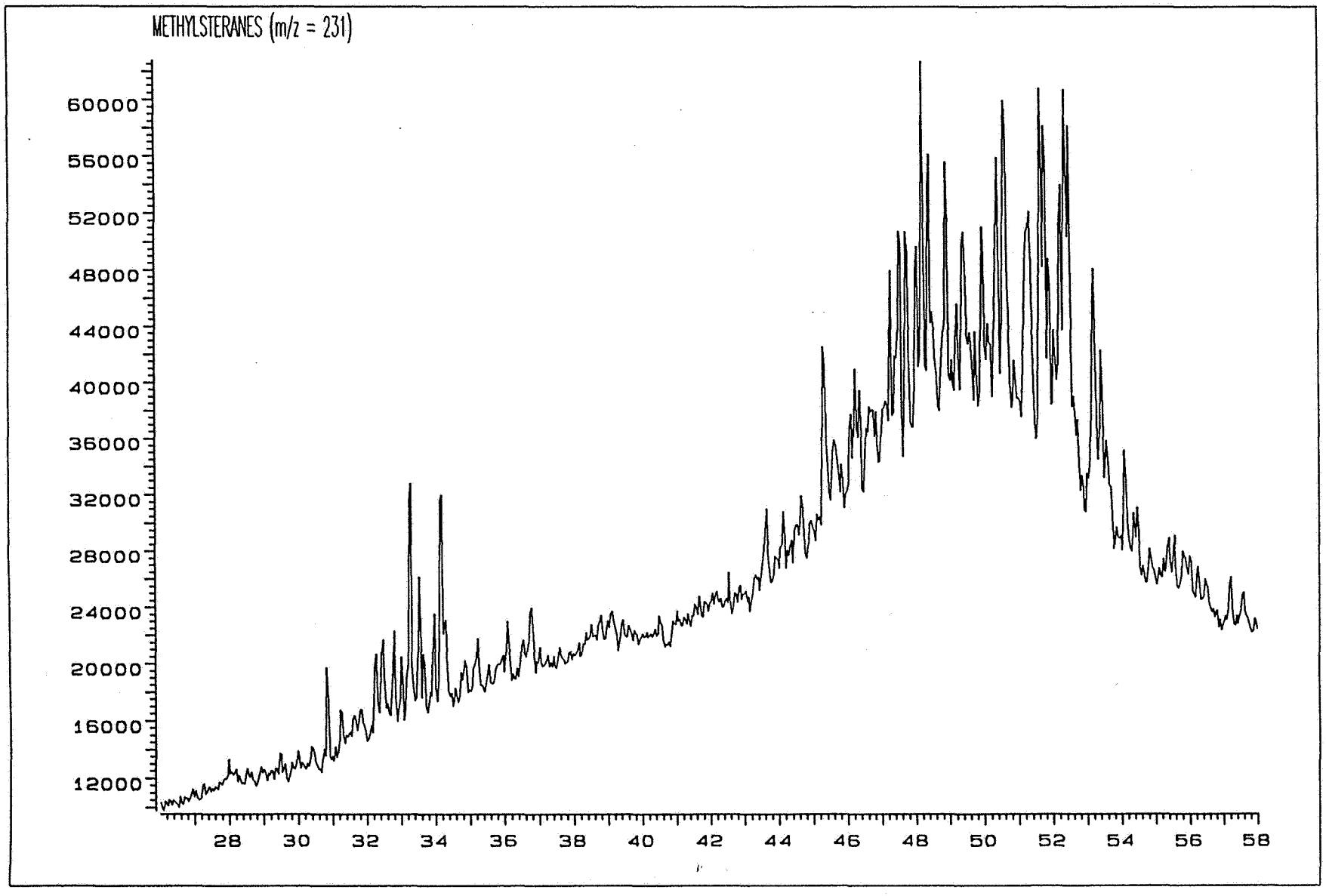
FILE: >X2181 WELL 25/8-4 CORE #8 (DEPTH = 1794.7m)



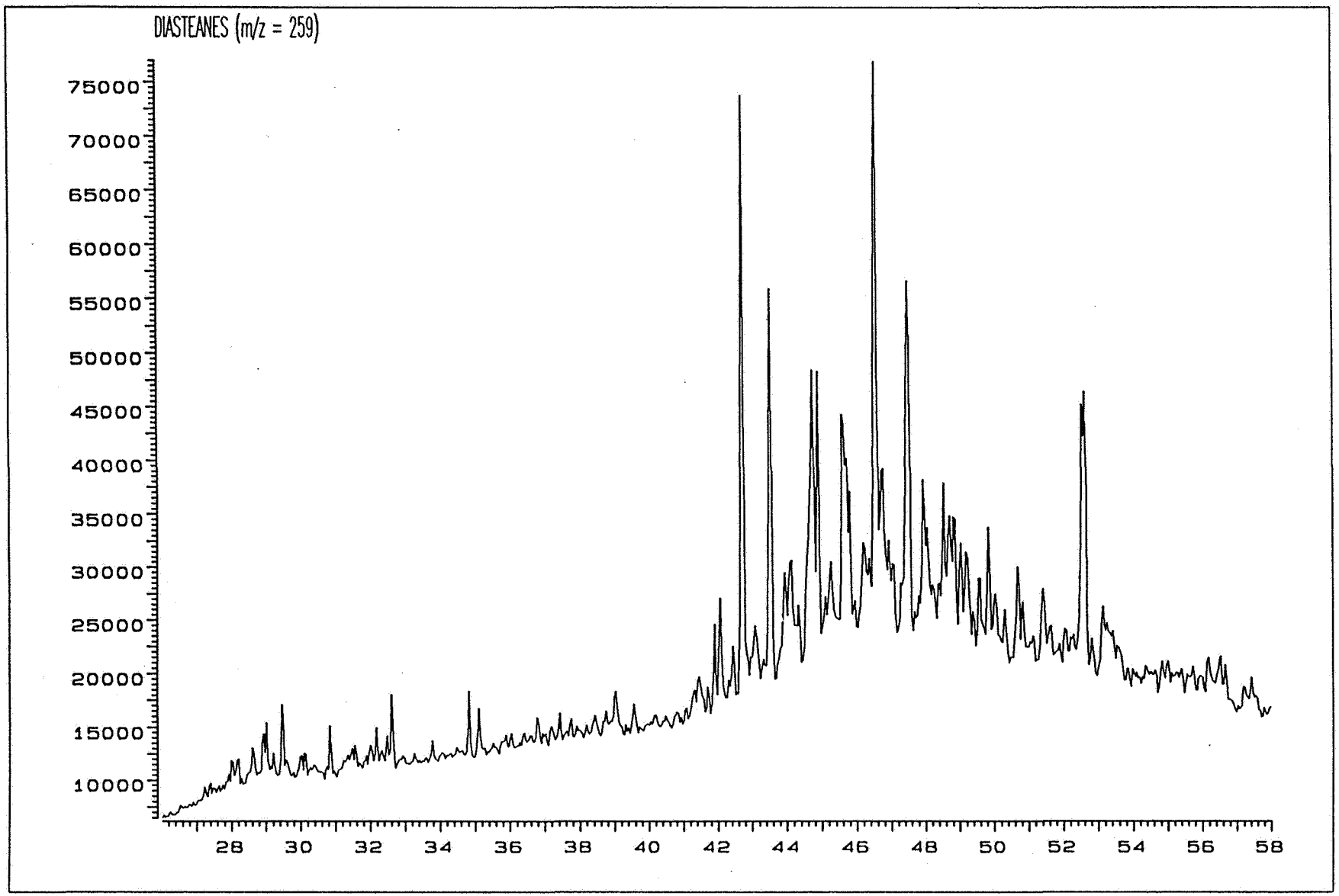
FILE: >X2181 WELL 25/8-4 CORE #8 (DEPTH = 1794.7m)



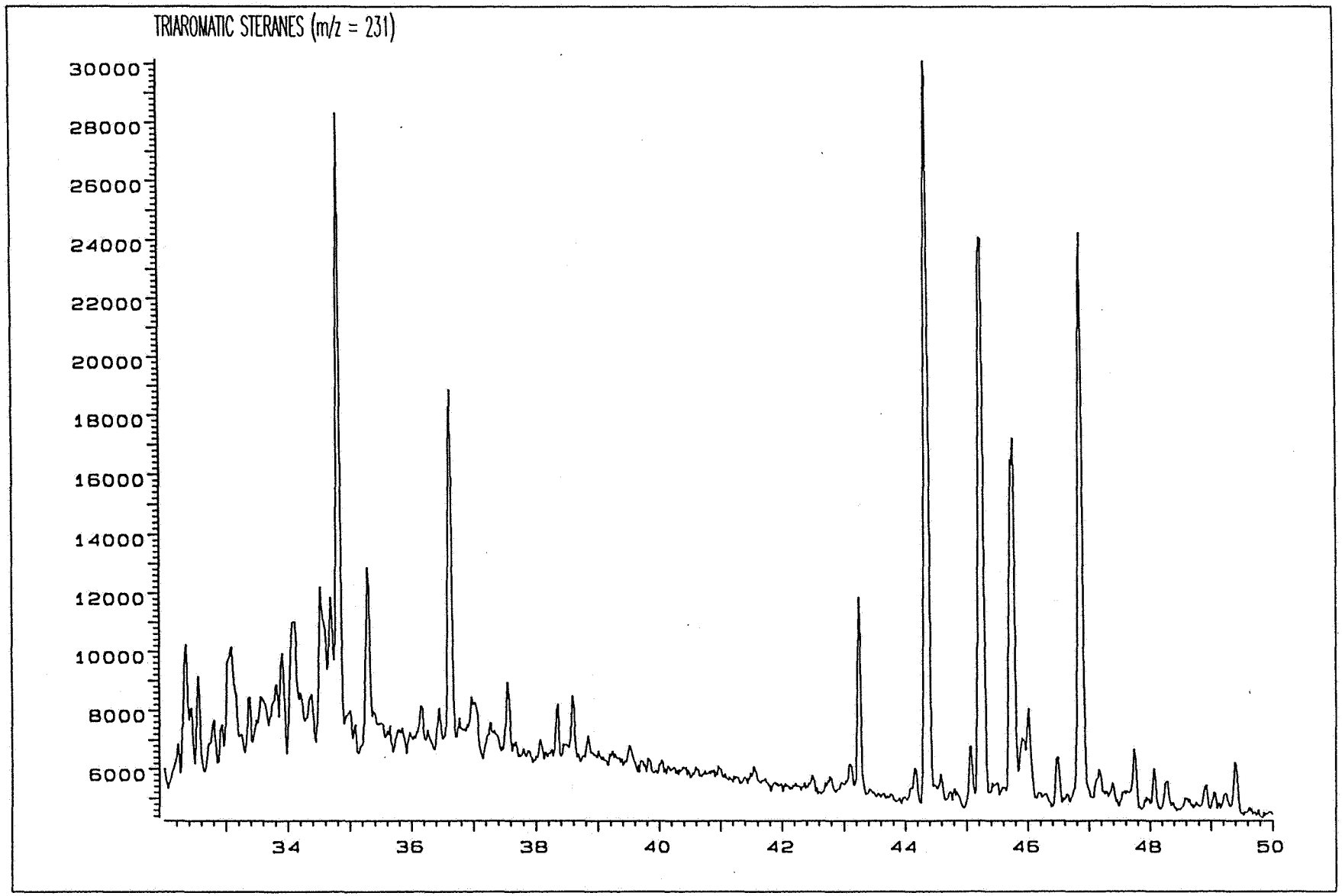
FILE: >X2181 WELL 25/8-4 CORE #8 (DEPTH = 1794.7m)



FILE: >X2181 WELL 25/8-4 CORE #8 (DEPTH = 1794.7m)



FILE: >X2183 X2181 Well 25/8-4 Core #8 (Depth = 1794.7m)



FILE: >X2184 X2181 Well 25/8-4 Core #8 (Depth = 1794.7m)