

Appendix X

Preliminary Geochemical and
Petrological Study:
Hunterstone and Zeehan Samples

VITRINITE REFLECTANCE MEASUREMENT

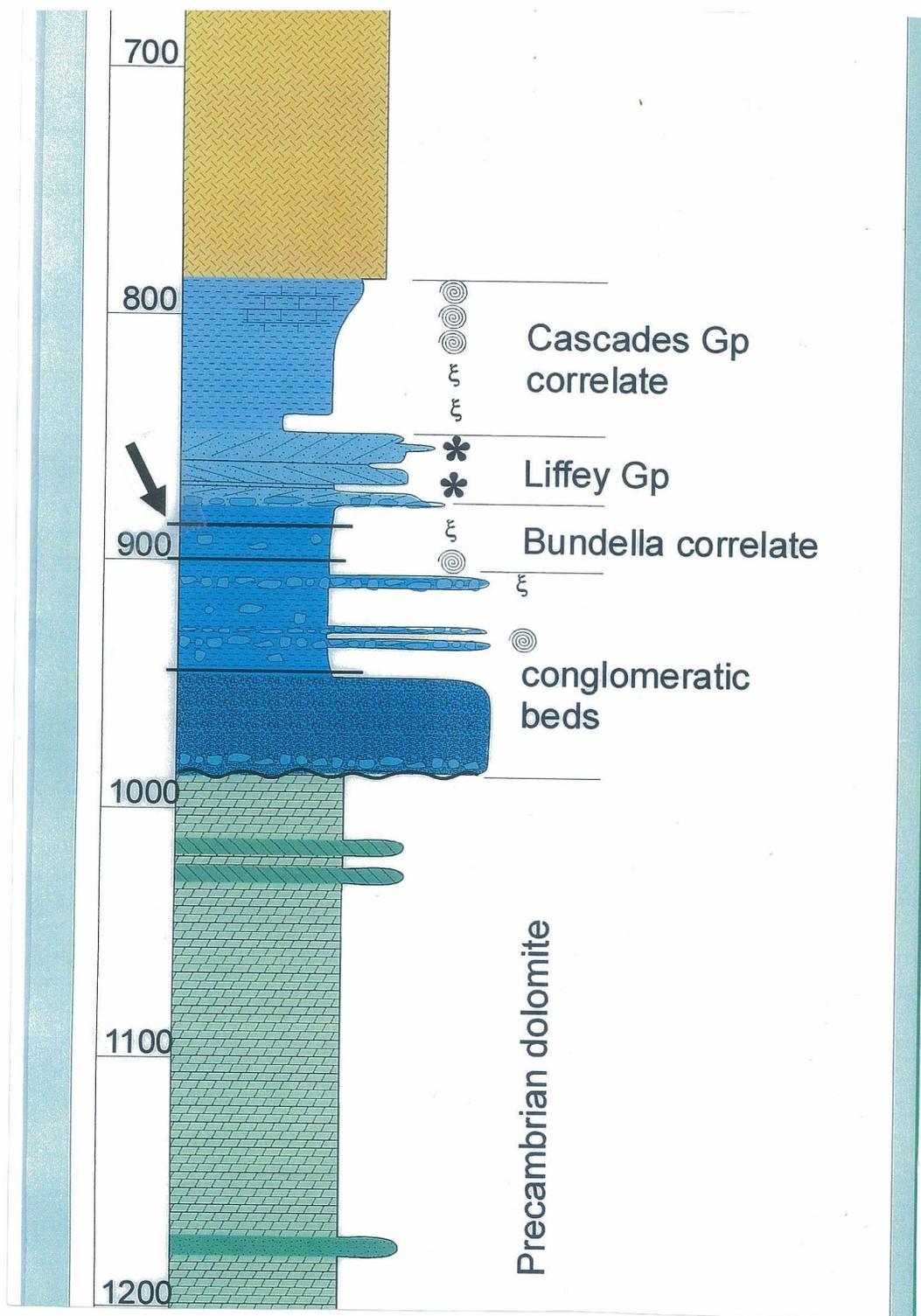
HUNTERSTON S7 MUDSTONE

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Sample Details	Mean	Range	Std Dev	N ^o of Readings	Sample Description Including Liptinite Fluorescence, Maceral Abundances, Mineral Fluorescence
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2,max	1.89	1.38-2.72	0.312	25	Fluorescing liptinite absent. (Silty claystone and siltstone. Dom sparse, l. Inertinite sparse, vitrinite and liptinite absent. Sparse yellow fluorescing oil droplets in fractures in quartz grains. Mineral fluorescence patchy moderate orange. Iron oxides rare. Pyrite abundant.)
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Liptinite absent. Mineral fluorescence indicates a vitrinite reflectance of about 1.0%. The presence of oil suggests that the last of vitrinite and liptinite are not due to weathering. No evidence of tasmanitids, these being very easy to see.



Stratigraphic Log of the Hunterstone Drill Core, Central Tasmania

Location of geochemical sample in black shale shown by black arrows

SOLVENT EXTRACTION DATA



SAMPLE	Weight of Material Extd. (g)	Total Extract (mg)	Total Extract (ppm)
MSS1 SANDSTONE	56.4	6.0	106
HUNTERSTON S7 MUDSTONE	28.1	15.2	541

ANALYSIS OF BRANCHED AND CYCLIC SATURATED HYDROCARBONS BY GC-MS

HUNTERSTON S7 MUDSTONE



	<i>Selected Parameters</i>	<i>Ion(s)</i>	<i>Value</i>
1.	18 α (H)-hopane/17 α (H)-hopane (Ts/Tm)	191	nd
2.	C30 hopane/C30 moretane	191	nd
3.	C31 22S hopane/C31 22R hopane	191	nd
4.	C32 22S hopane/C32 22R hopane	191	nd
5.	C29 20S $\alpha\alpha\alpha$ sterane/C29 20R $\alpha\alpha\alpha$ sterane	217	nd
6.	C29 $\alpha\alpha\alpha$ steranes (20S / 20S+20R)	217	nd
7.	C29 $\alpha\beta\beta$ steranes	217	nd
	C29 $\alpha\alpha\alpha$ steranes + C29 $\alpha\beta\beta$ steranes		
8.	C27/C29 diasteranes	259	nd
9.	C27/C29 steranes	217	nd
10.	18 α (H)-oleanane/C30 hopane	191	nd
11.	C29 diasteranes	217	nd
	C29 $\alpha\alpha\alpha$ steranes + C29 $\alpha\beta\beta$ steranes		
12.	C30 (hopane + moretane)	191/217	nd
	C29 (steranes + diasteranes)		
13.	C15 drimane/C16 homodrimane	123	0.55
14.	Rearranged drimanes/normal drimanes	123	1.46

ANALYSIS OF BRANCHED AND CYCLIC SATURATED HYDROCARBONS BY GC-MS

MSS 1 SANDSTONE



	<i>Selected Parameters</i>	<i>Ion(s)</i>	<i>Value</i>
1.	18 α (H)-hopane/17 α (H)-hopane (Ts/Tm)	191	0.24
2.	C30 hopane/C30 moretane	191	nd
3.	C31 22S hopane/C31 22R hopane	191	nd
4.	C32 22S hopane/C32 22R hopane	191	nd
5.	C29 20S $\alpha\alpha\alpha$ sterane/C29 20R $\alpha\alpha\alpha$ sterane	217	0.67
6.	C29 $\alpha\alpha\alpha$ steranes (20S / 20S+20R)	217	0.40
7.	C29 $\alpha\beta\beta$ steranes	217	0.45
	C29 $\alpha\alpha\alpha$ steranes + C29 $\alpha\beta\beta$ steranes		
8.	C27/C29 diasteranes	259	1.18
9.	C27/C29 steranes	217	0.97
10.	18 α (H)-oleanane/C30 hopane	191	nd
11.	C29 diasteranes	217	0.82
	C29 $\alpha\alpha\alpha$ steranes + C29 $\alpha\beta\beta$ steranes		
12.	C30 (hopane + moretane)	191/217	3.16
	C29 (steranes + diasteranes)		
13.	C15 drimane/C16 homodrimane	123	0.29
14.	Rearranged drimanes/normal drimanes	123	0.26

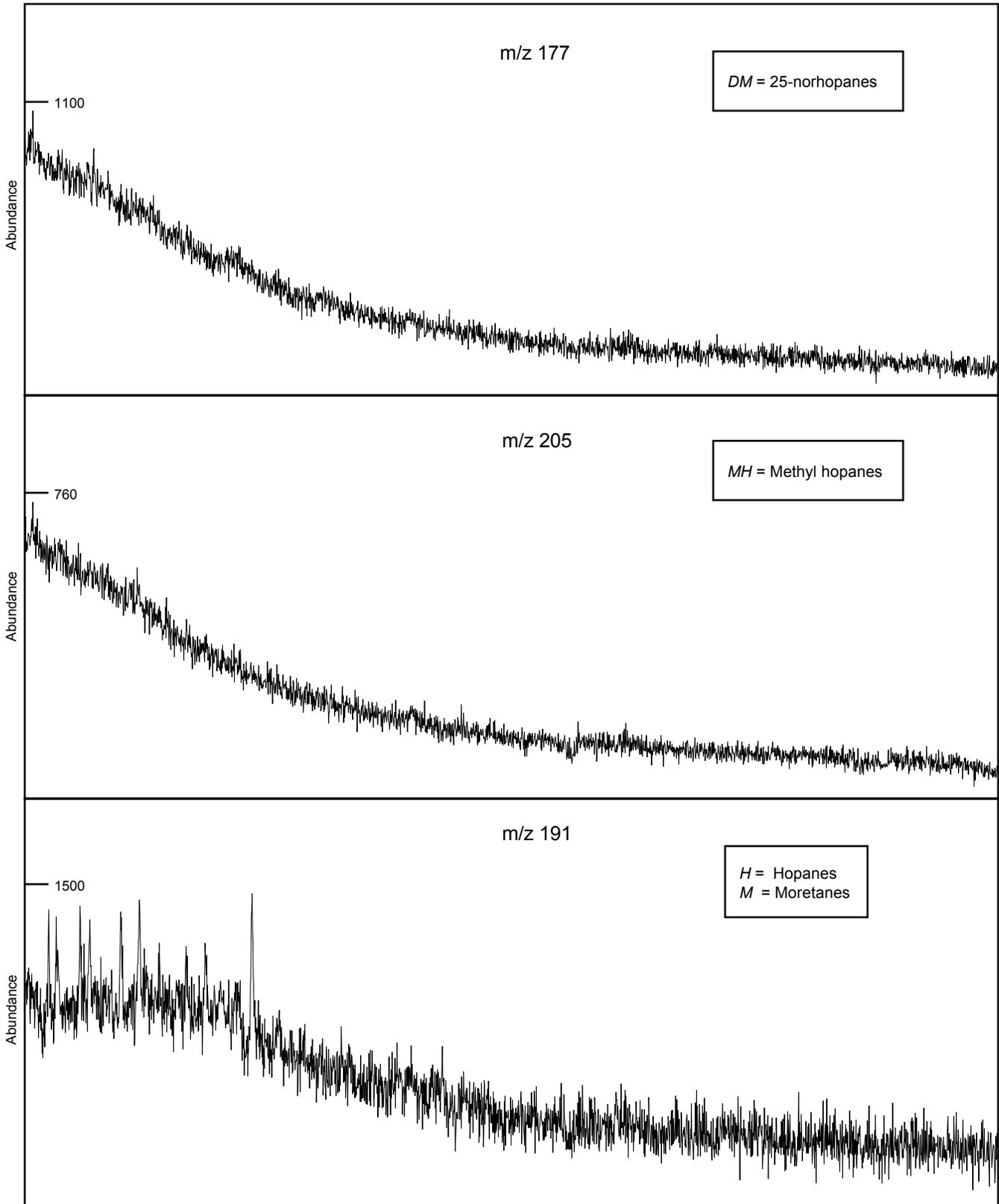
Geochemical Data (Geotech)

Hunterstone

1. Hunterstone Drill Core Hopanes
2. Hunterstone Drill Core Drimanes, ect
3. Hunterstone Drill Core Diasteranes and Steranes
4. Hunterstone Drill Core Steranes
5. Hunterstone Drill Core Terpanes
6. Hunterstone Drill Core Hopanes
7. Hunterstone Drill Core Whole Extract

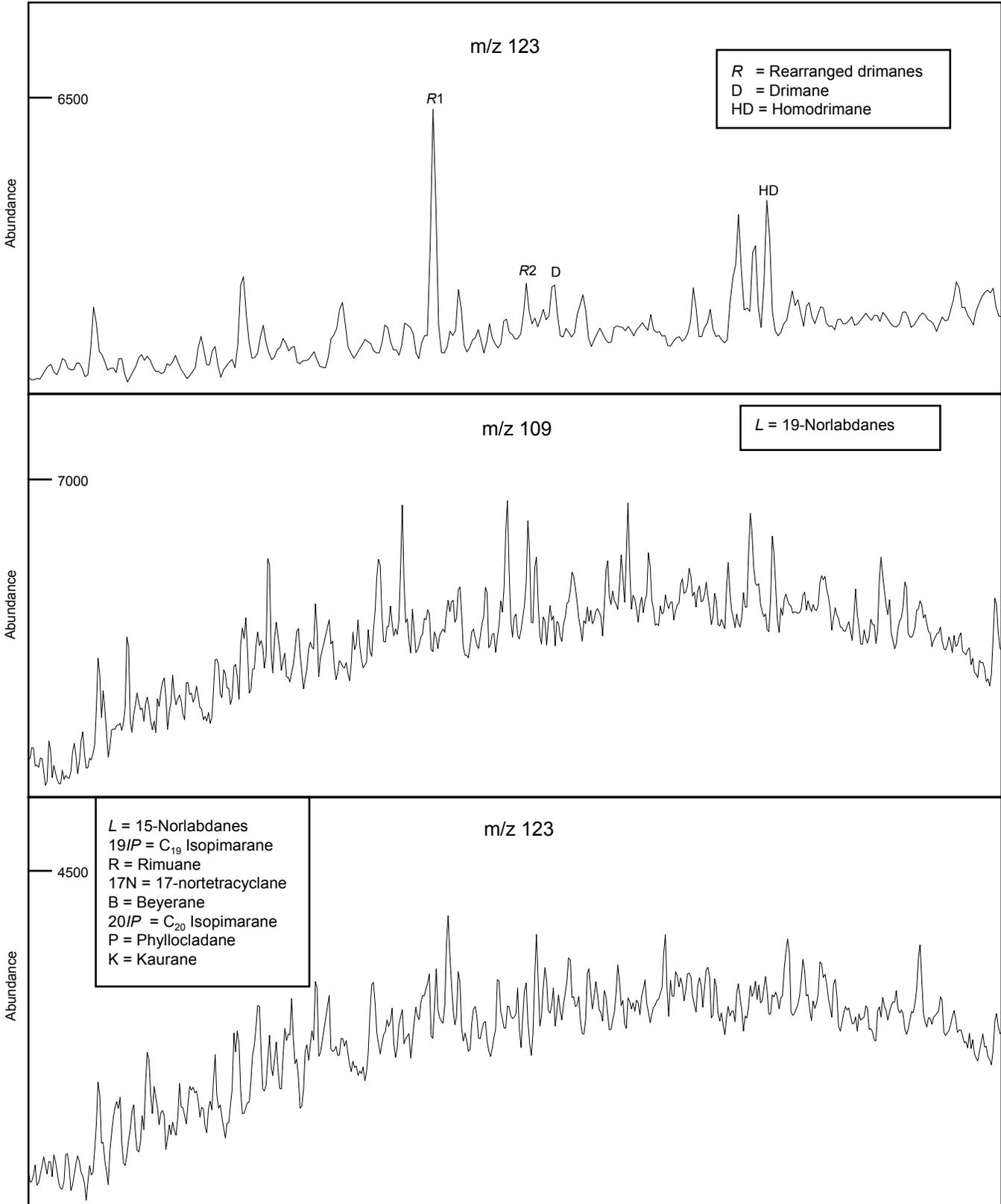
Sample: HUNTERSTON S7, Mudstone

File ID: 369302B



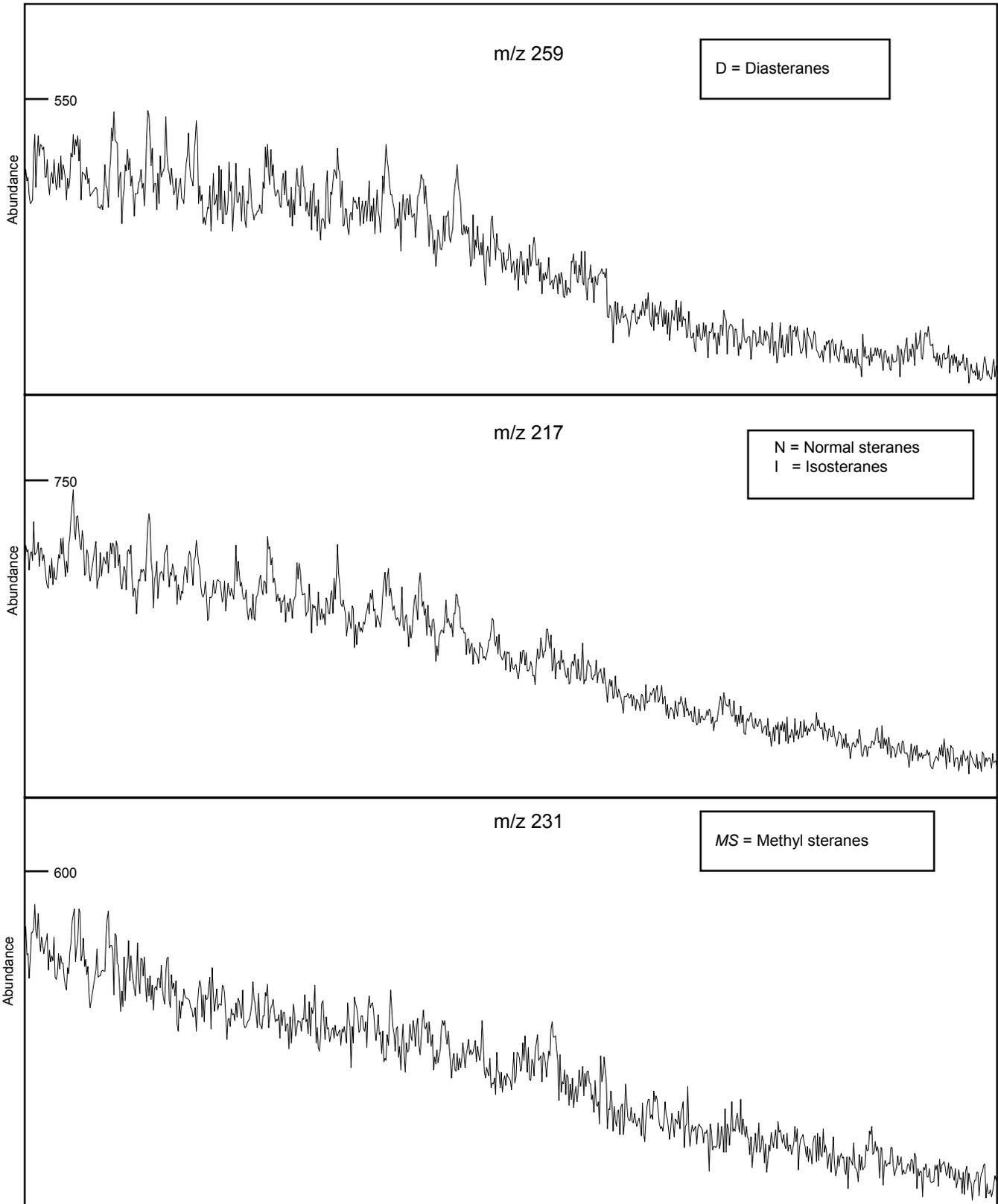
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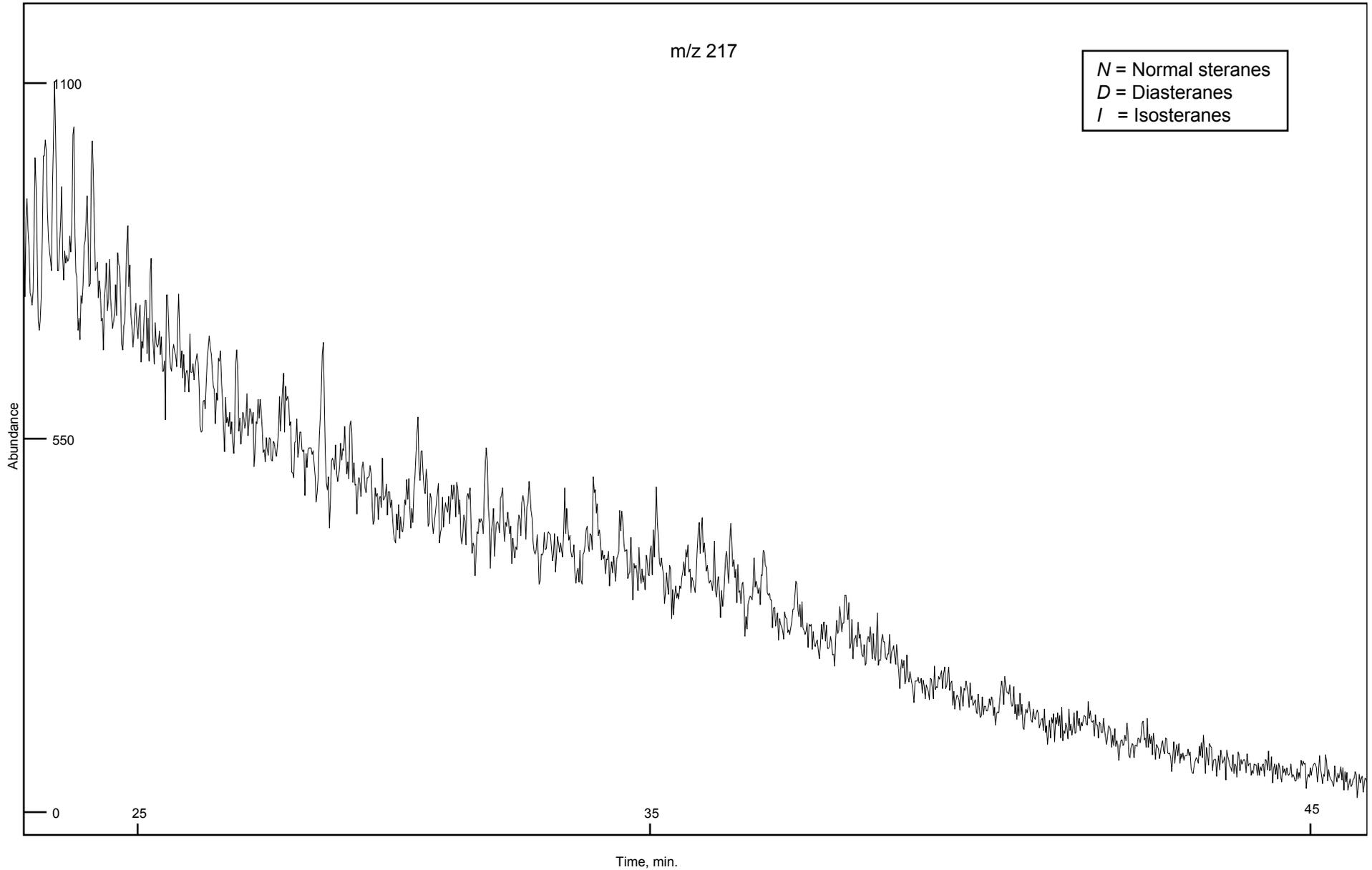
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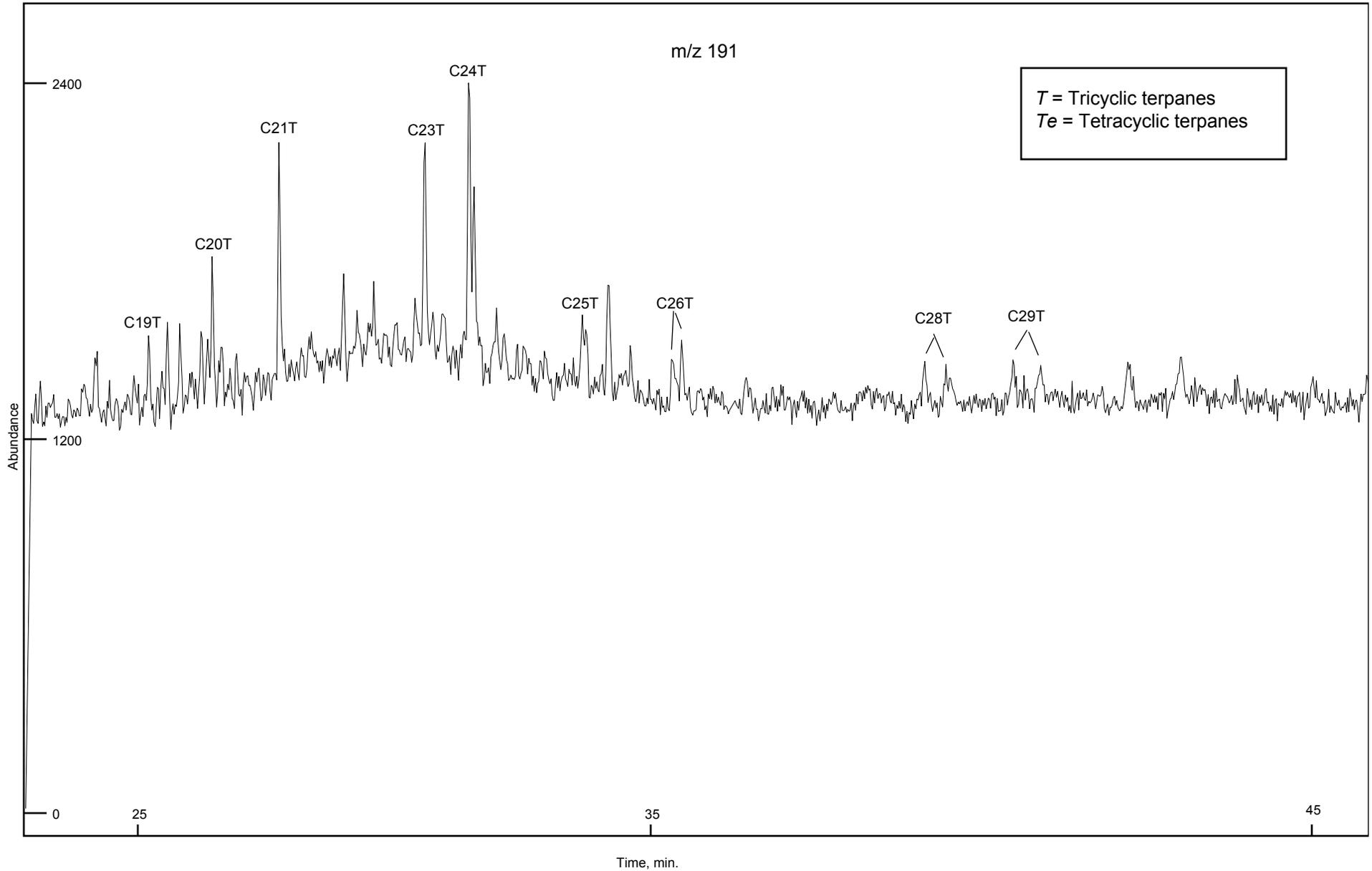
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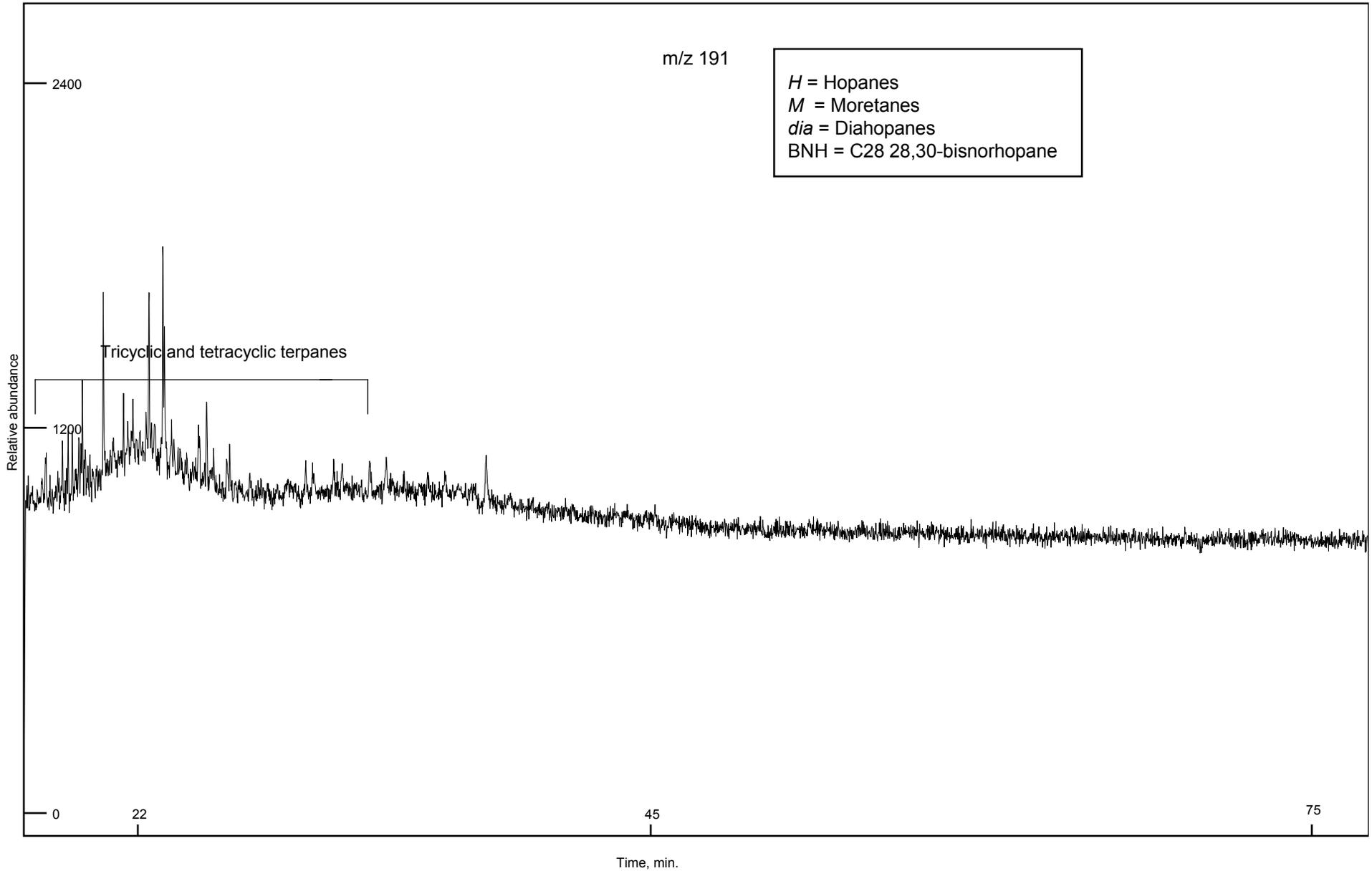
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Sample: HUNTERSTON S7, Mudstone

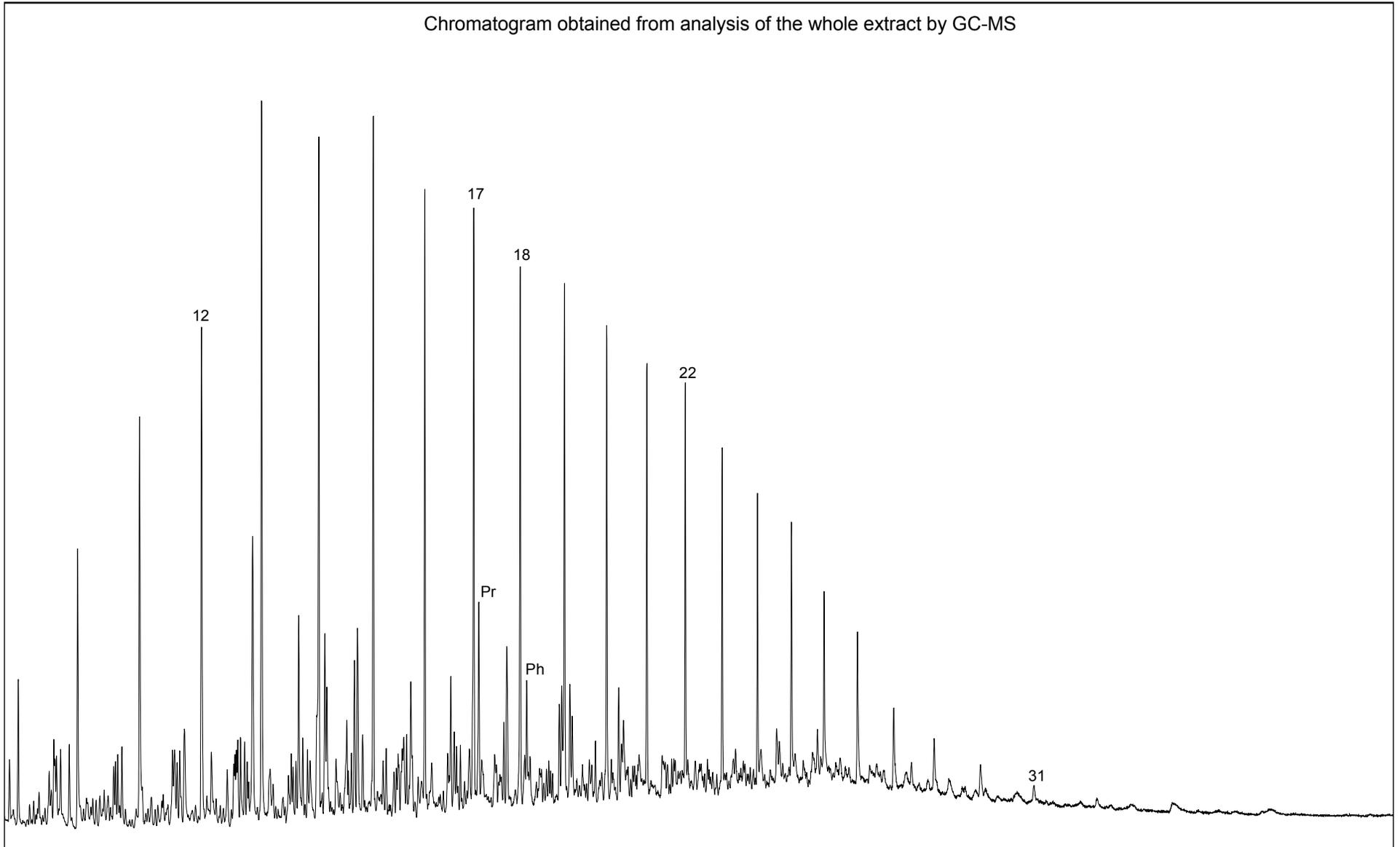
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Sample : HUNTERSTON S7 MUDSTONE
File ID : 369302X



Chromatogram obtained from analysis of the whole extract by GC-MS



Geochemical Data (Geotech)

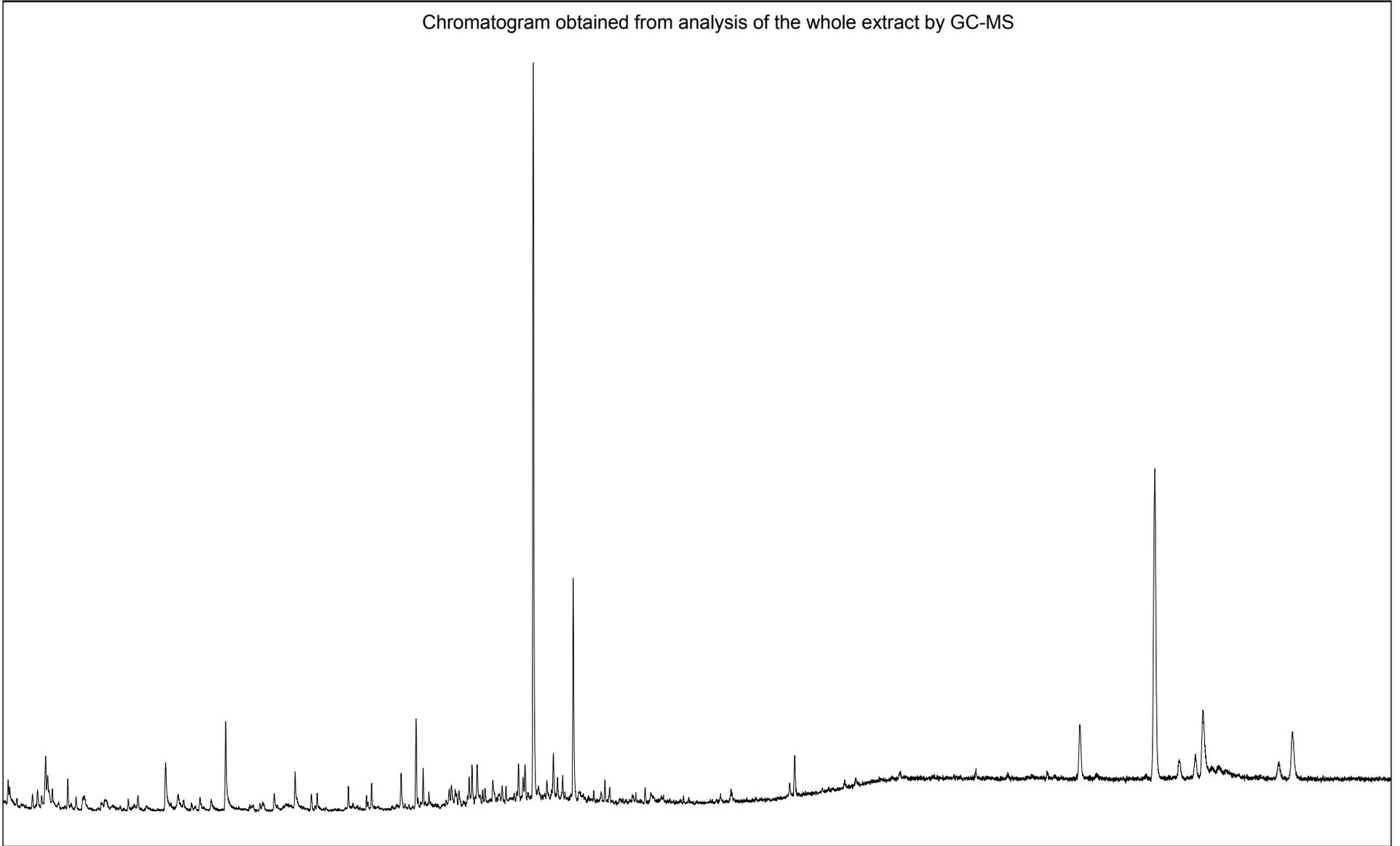
**Zeehan – MSS1 Sandstone
Permian
Oil**

1. Whole Extract
2. Hopanes
3. Drimanes
4. Steranes
5. Steranes
6. Terpanes
7. Hopanes
8. Whole Extract

Sample : **MSS1 SANDSTONE**
File ID : 369301X

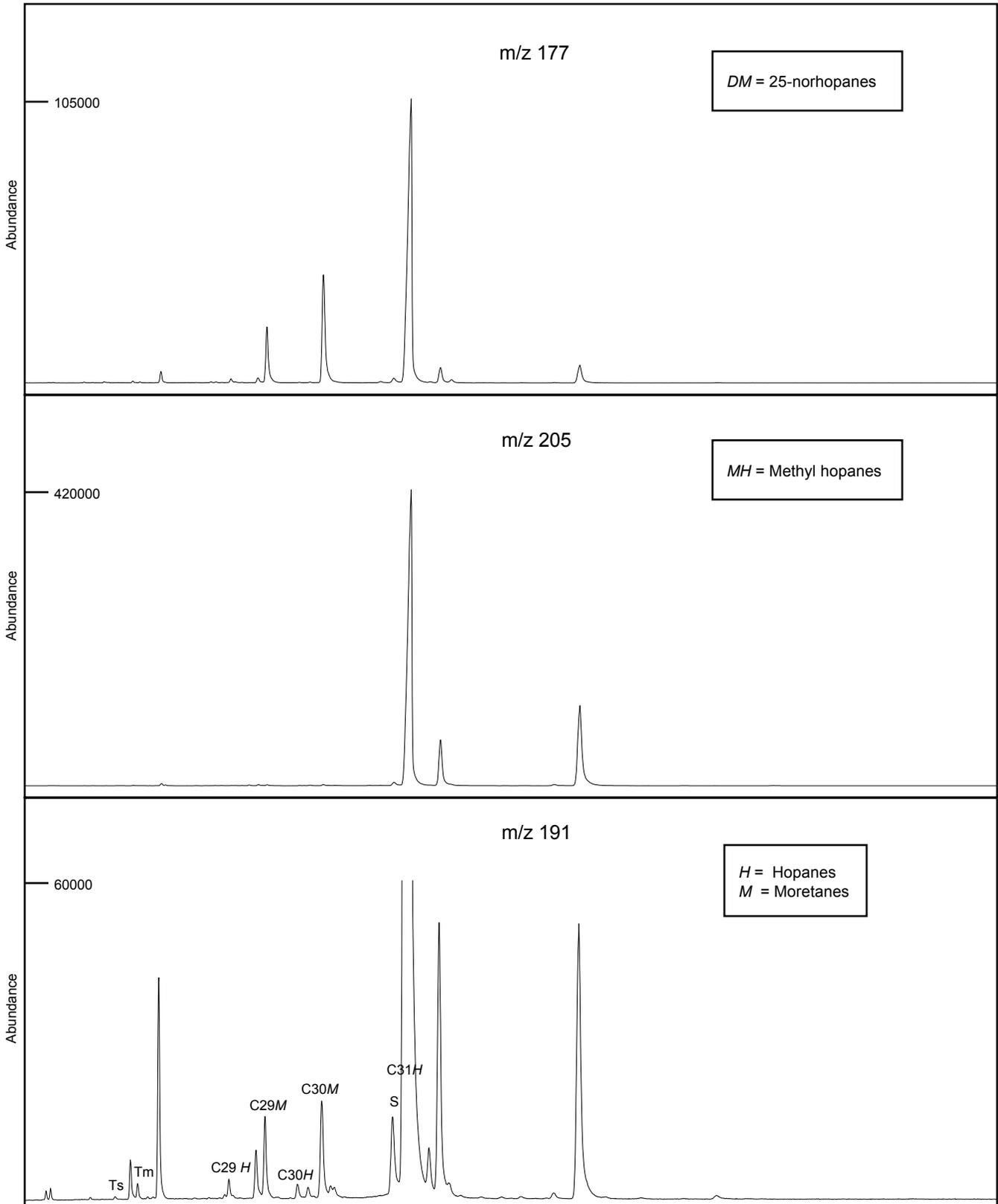


Chromatogram obtained from analysis of the whole extract by GC-MS



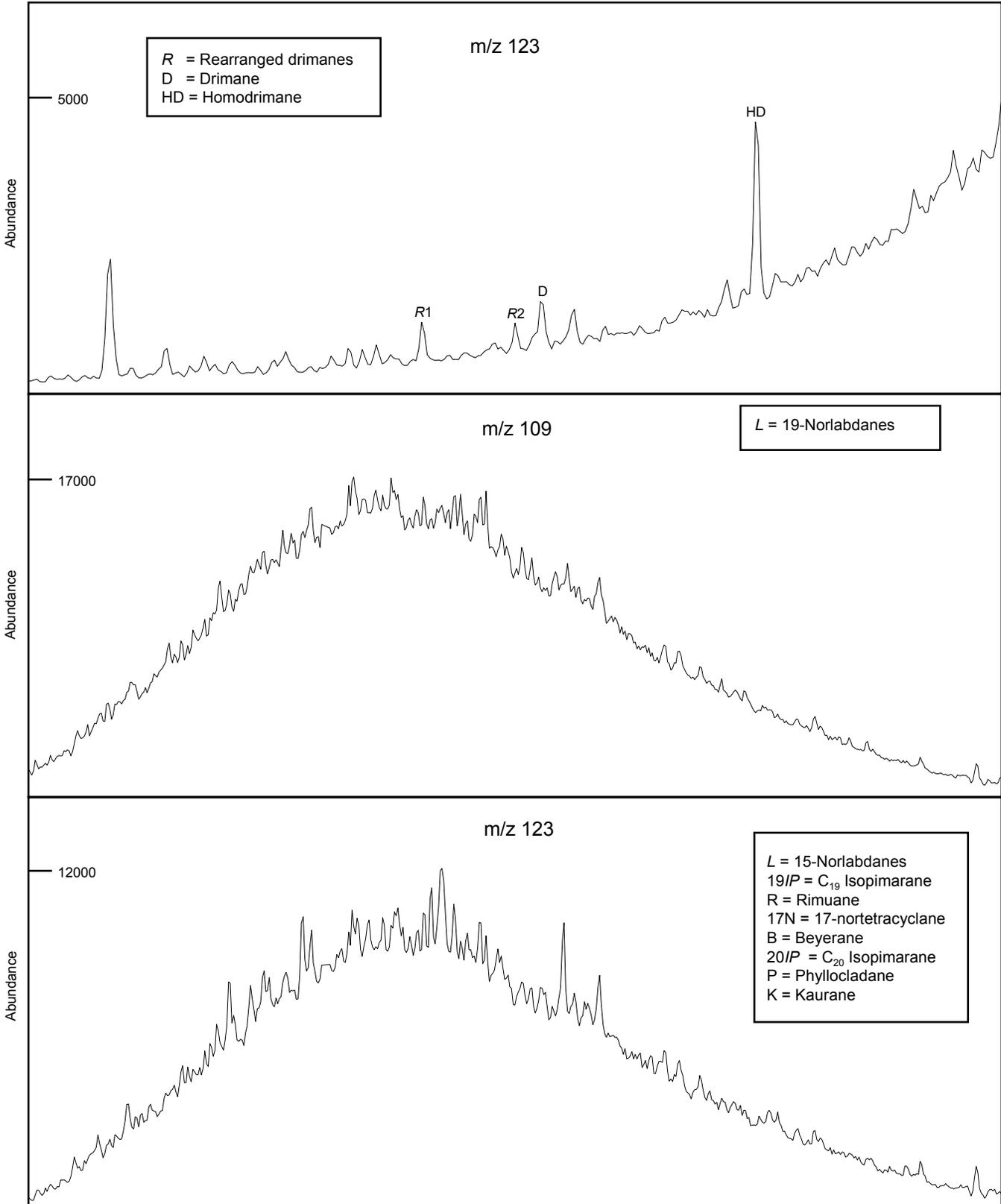
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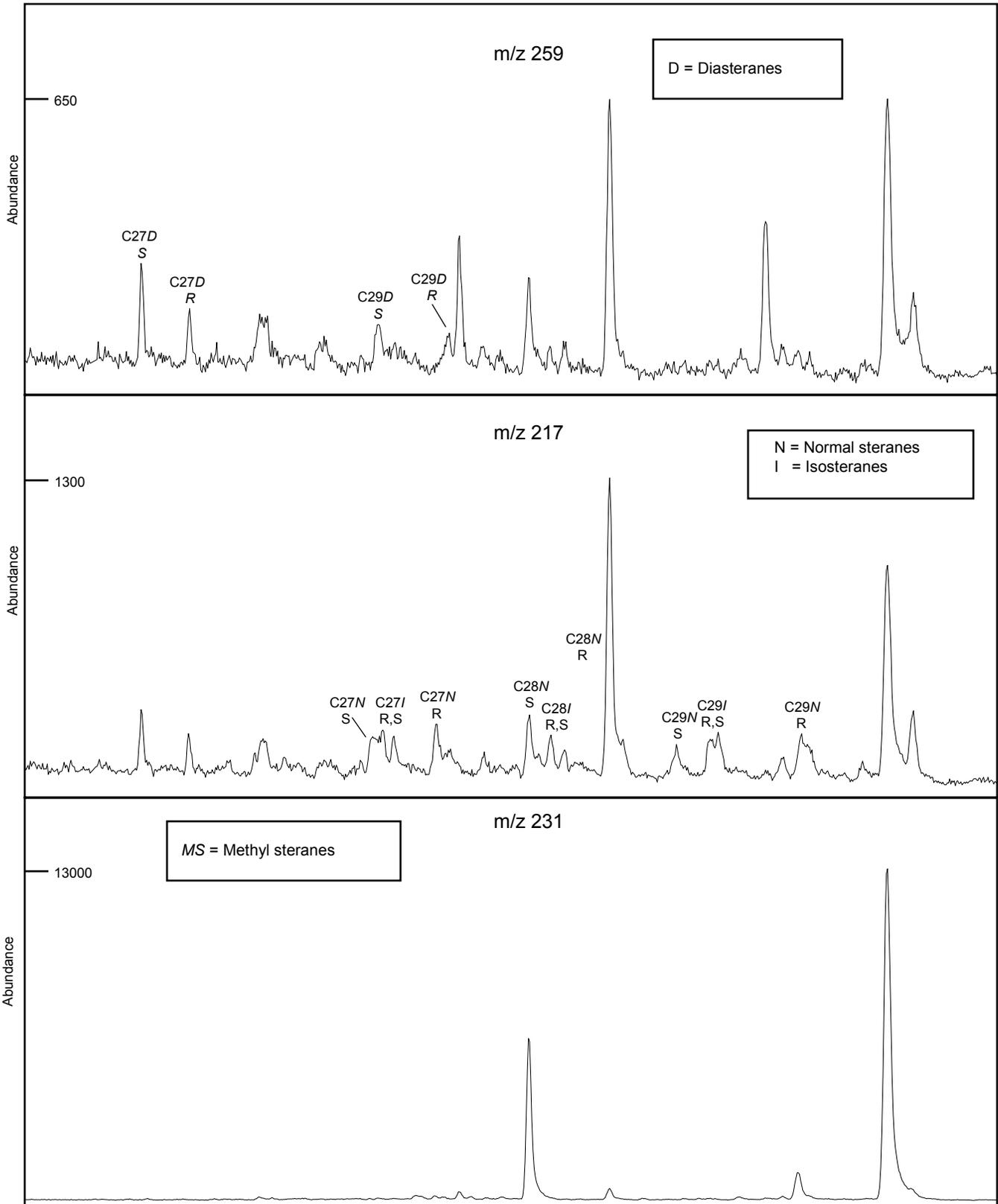
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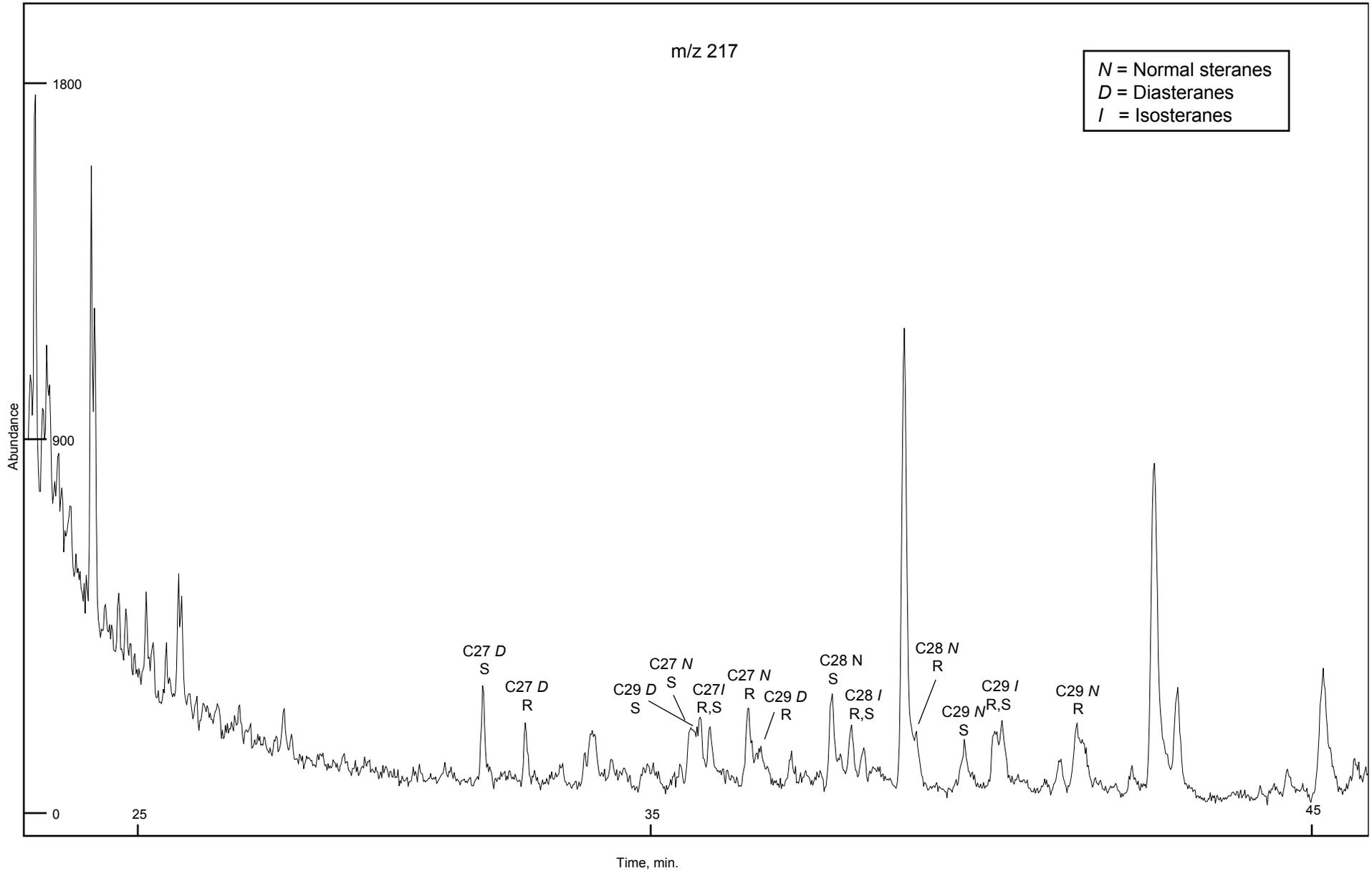
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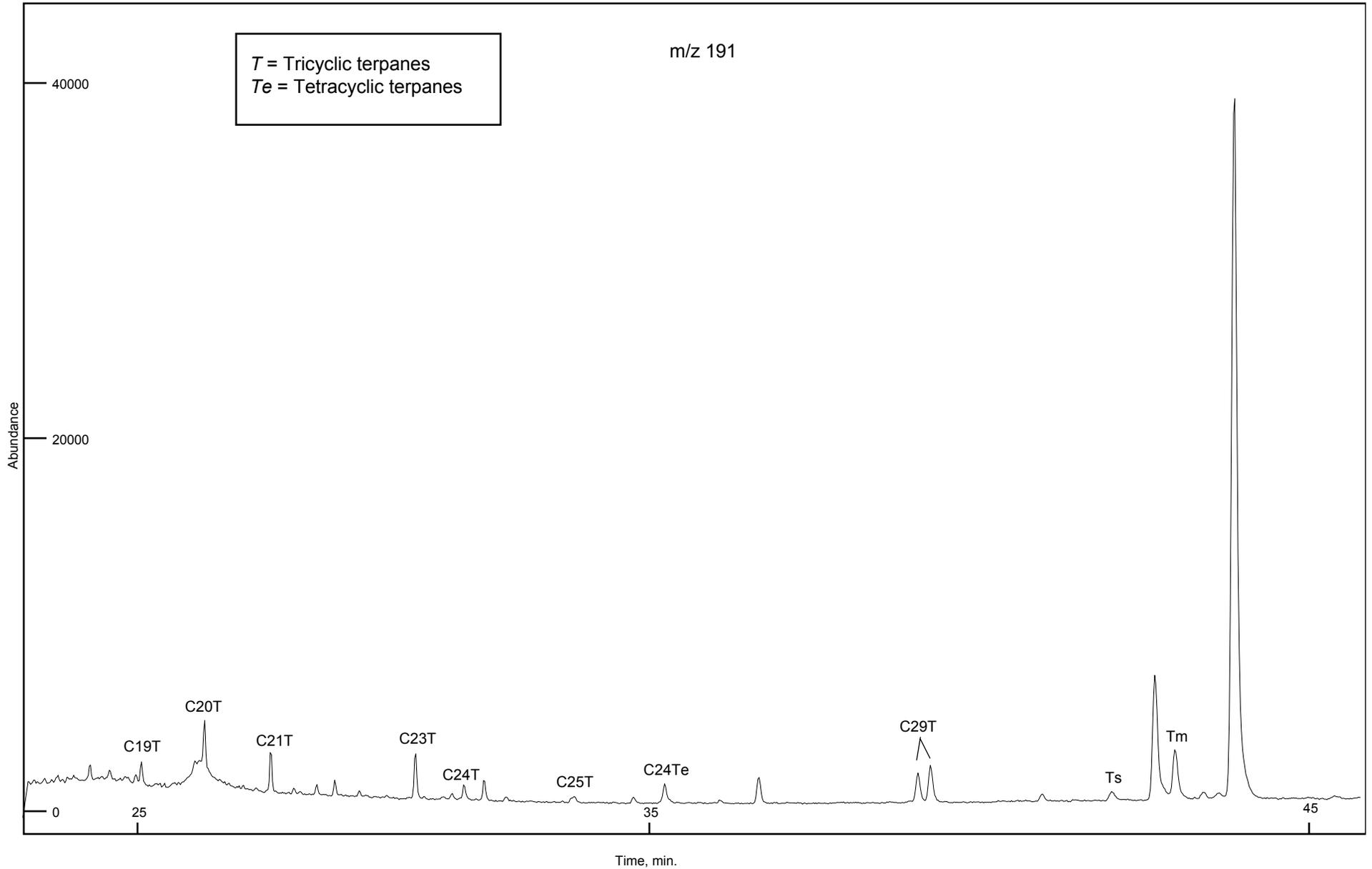
Sample: MSS 1 SANDSTONE

File ID: 369301B



Sample: MSS 1 SANDSTONE

File ID: 369301B



Sample: MSS 1 SANDSTONE

File ID: 369301B

