

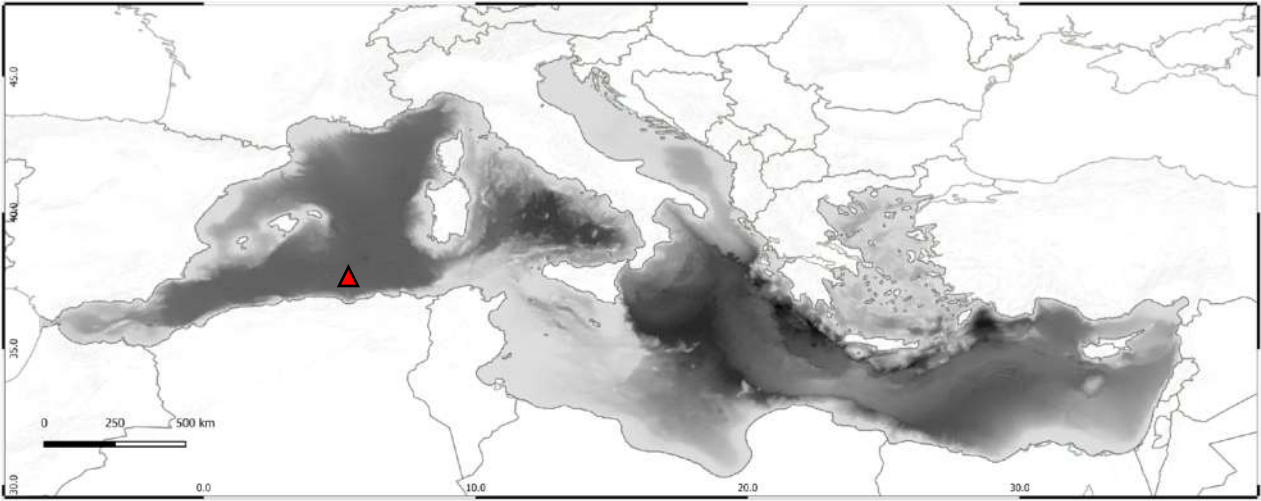
Supplementary Plate P2 – **Deep Sea Drilling Project (DSDP) boreholes analyzed.**

Each well is displayed with its geographical location and simplified stratigraphy in the first page.

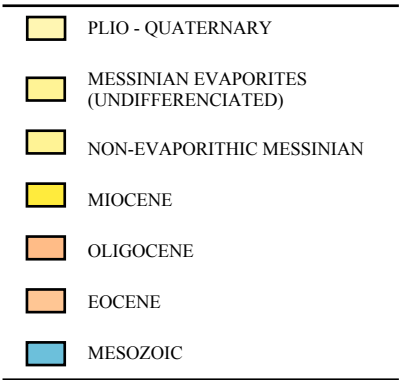
The salinity and temperature profiles and modelling results are displayed in the second page. Note that at the bottom of the second page is a close-up of the modelled hydrate stability in the subsurface.

DSDP LEG 42
SITE 371

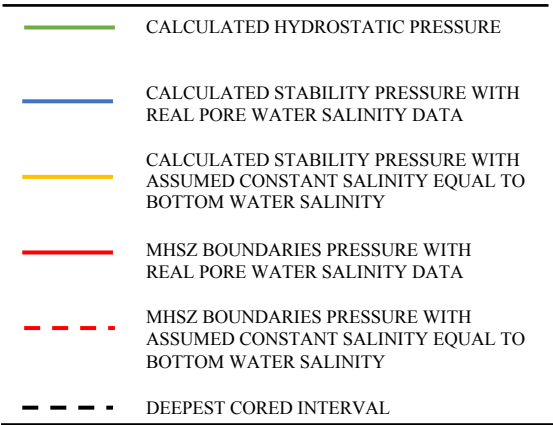
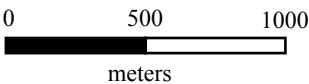
South Balearic Basin
Water depth: 2792 m
Measured geothermal gradient in the borehole: 83.42 °C/ km

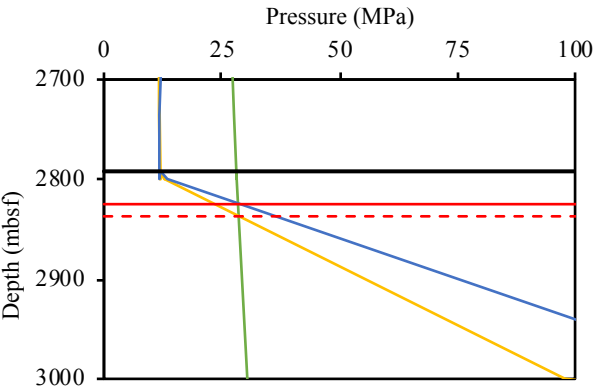
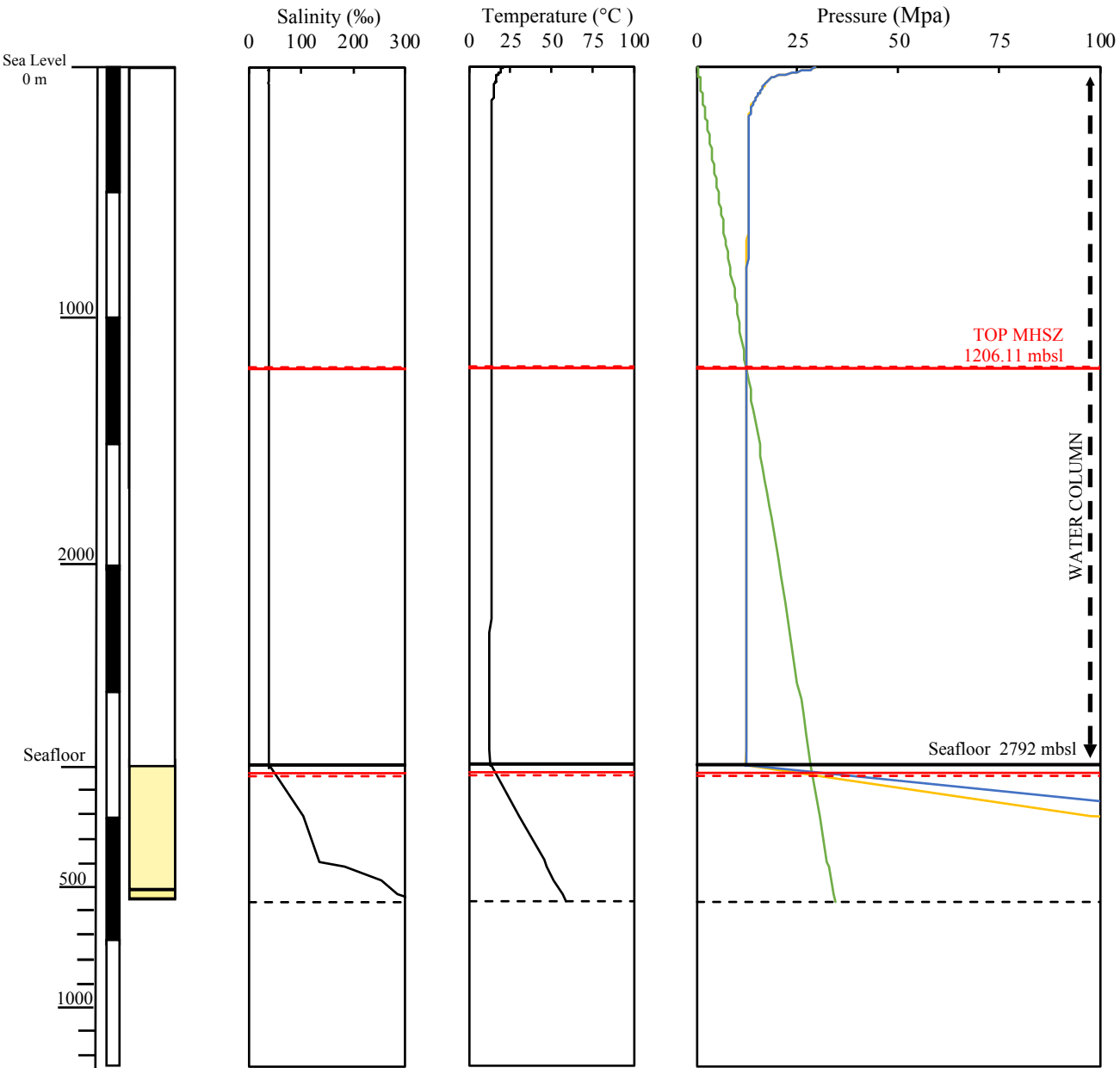


▲ ODP 42 371



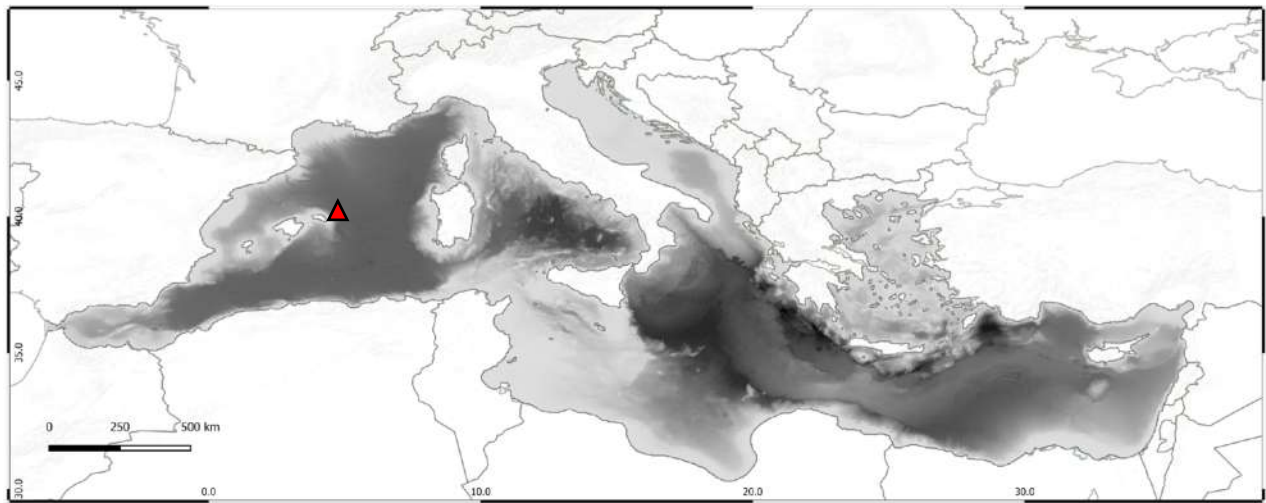
| UNIT | LITHOLOGY | SUBBOTTOM DEPTH | AGE |
|------|--|-----------------|---------------------------|
| I a | Calcareous muds to mudstones | 0-539 | Quaternary and Pliocene |
| I b | Calcareous sand | 539-545 | Quaternary and Pliocene |
| II a | Anhydrite with dolomitic mudstone layers | 546-548.5 | Upper Miocene (Messinian) |
| II b | Sandy and silty dolomitic mudstone | 548.5-551 | Upper Miocene (Messinian) |



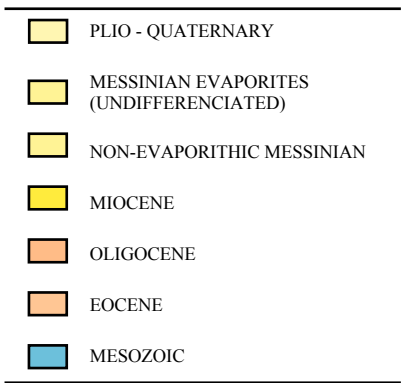


DSDP LEG 42
SITE 372

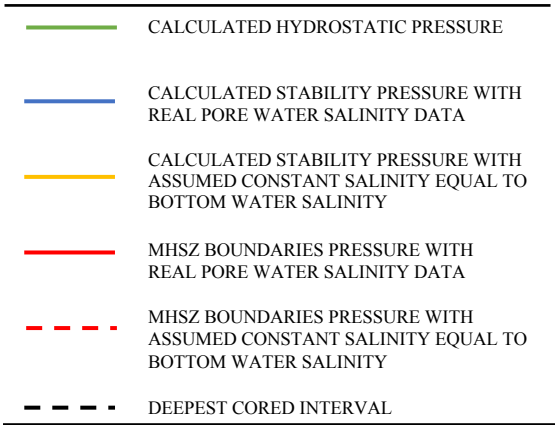
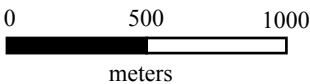
Menorca Rise
Water depth : 2699 m
Measured geothermal gradient in the borehole : 56.00-79.52 °C/ km

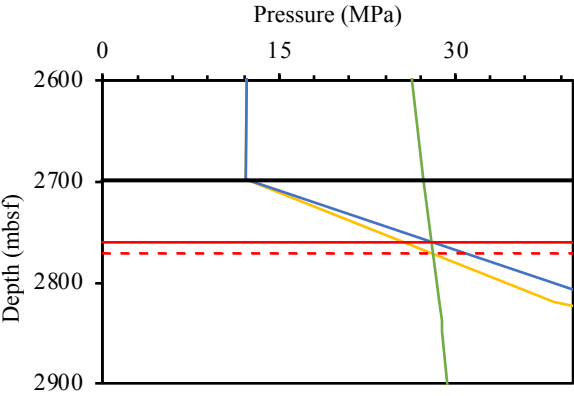
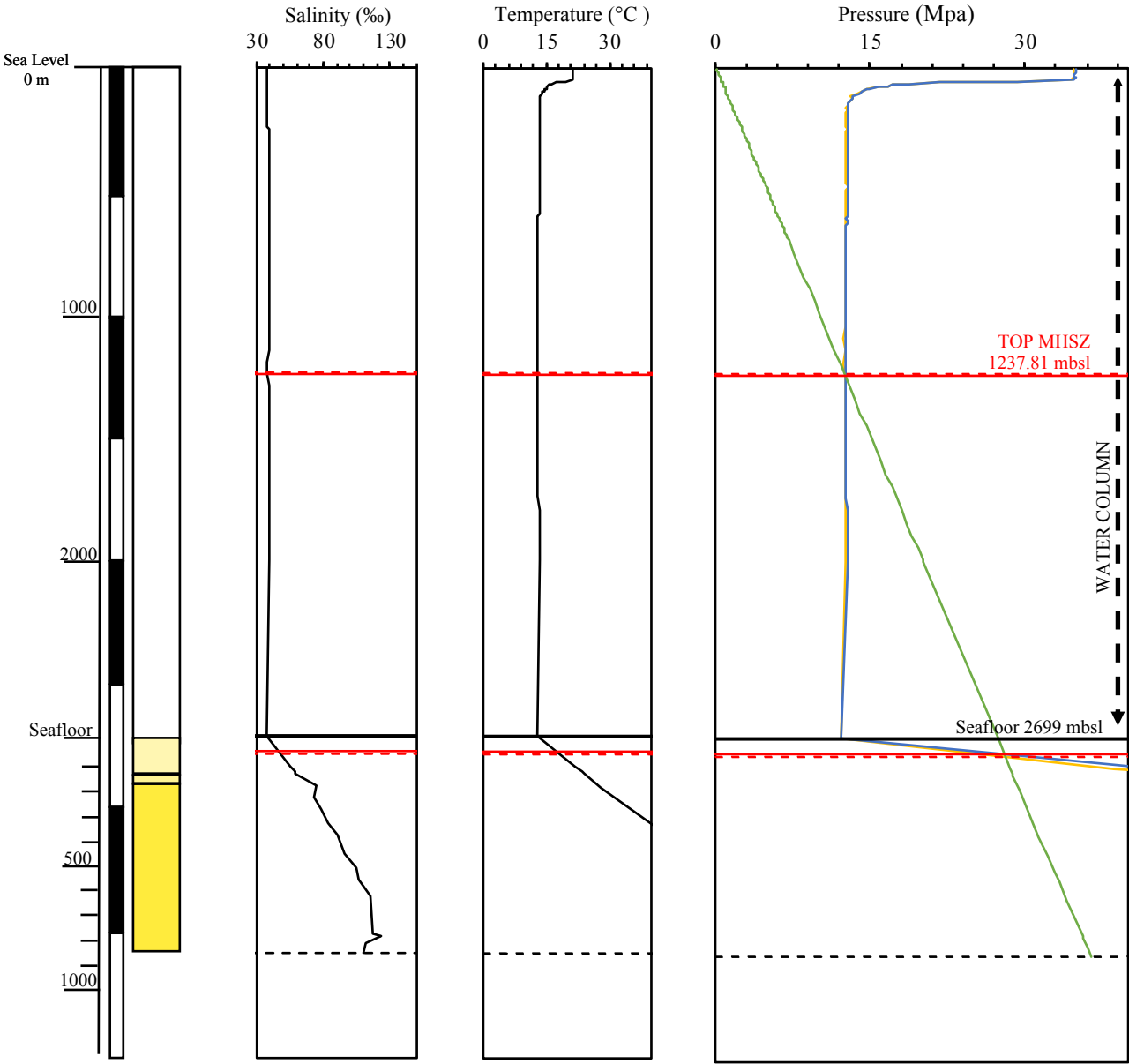


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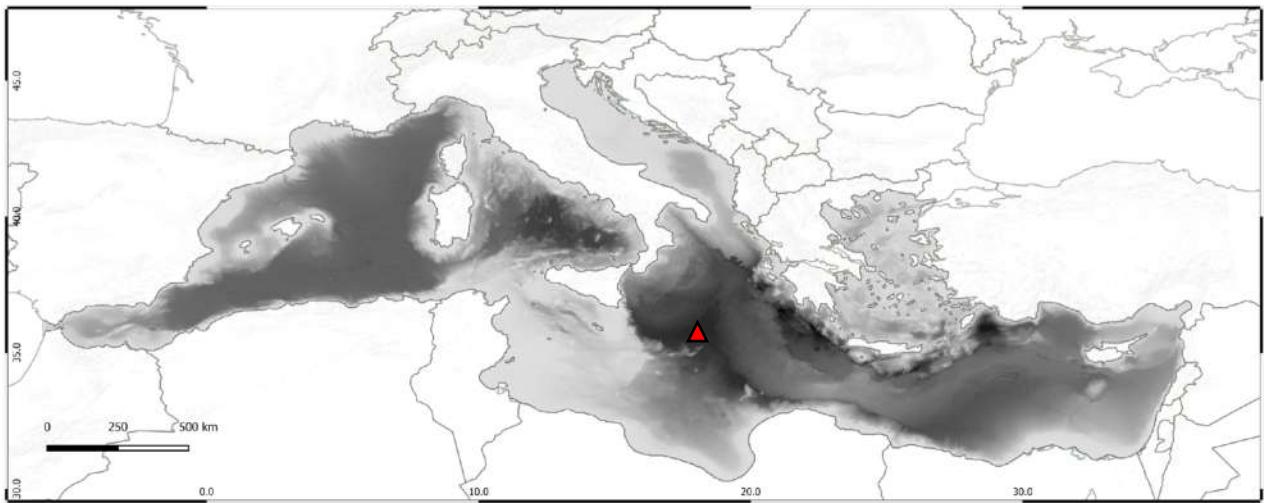
| UNIT | LITHOLOGY | SUBBOTTOM DEPTH | AGE |
|------|--|-----------------|--------------------------|
| I | Nannofossil marls | 0-150 | Quaternary and Pliocene |
| II | Gypsum and dolomitic nannofossil marls | 150-199.5 | Upper Miocene |
| III | Nannofossil marls to marlstones | 199.5-468 | Middle and lower-Miocene |
| IV | Mudstones to nannofossil marlstones | 468-885 | Lower Miocene |



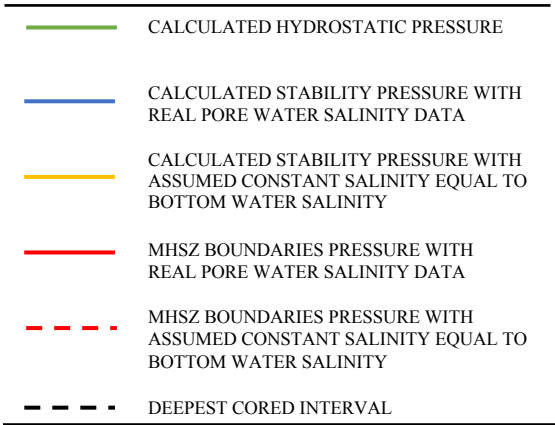
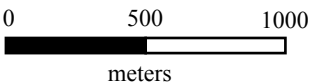
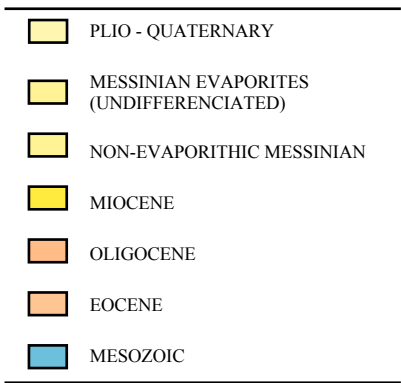


DSDP LEG 42
SITE 374

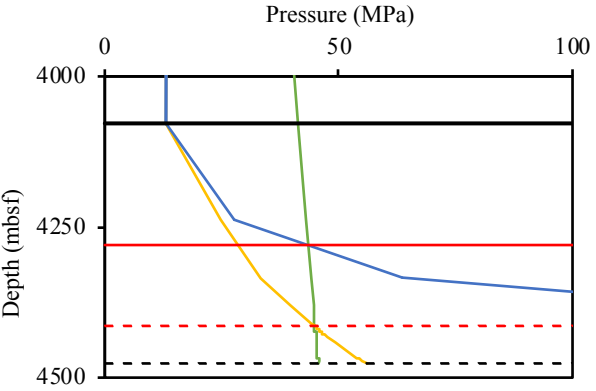
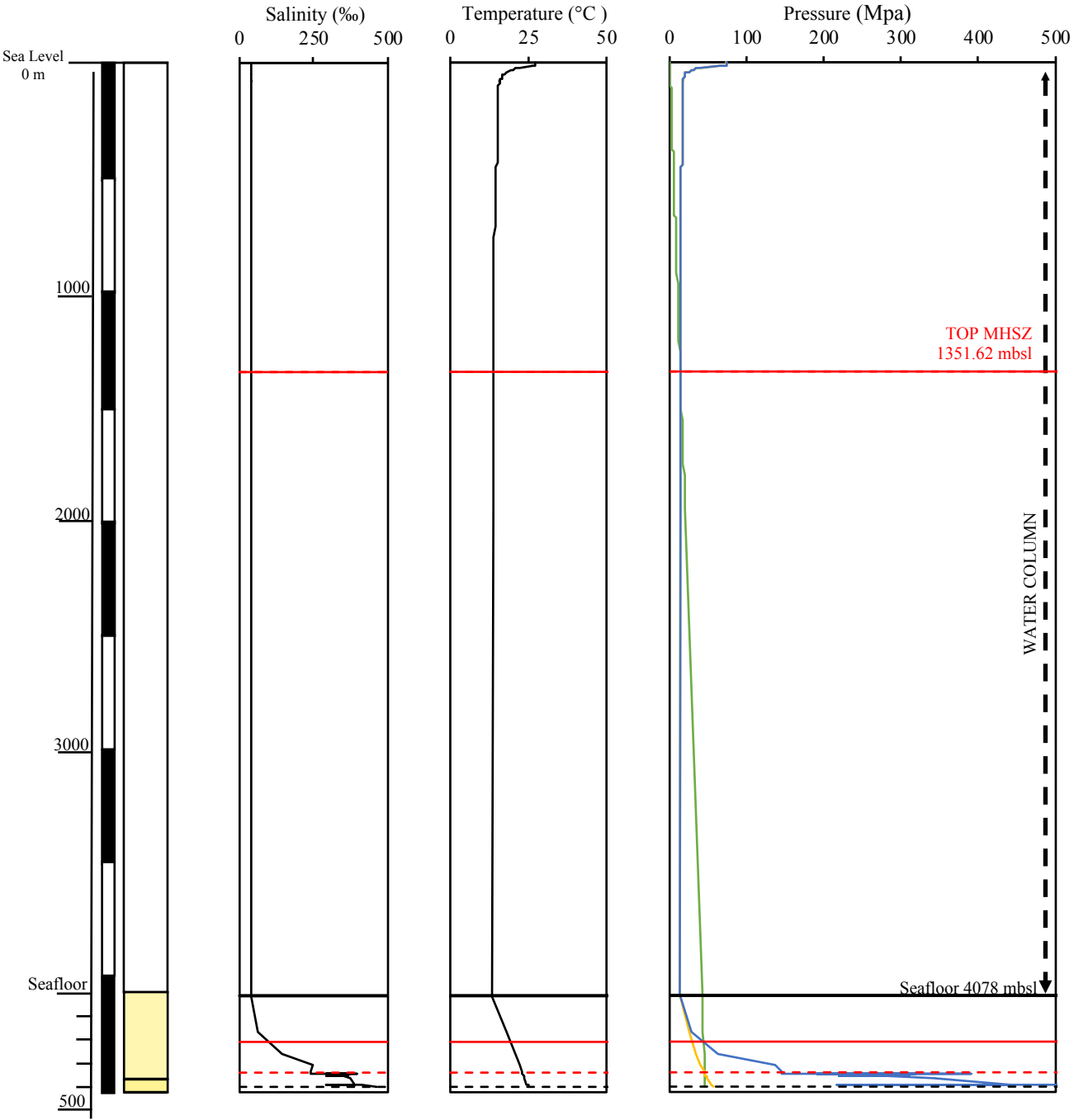
Messina Abyssal Plain
Water depth : 4078
Measured geothermal gradient in the borehole : 24.20-29.58 °C/ km



▲ ODP 42 374

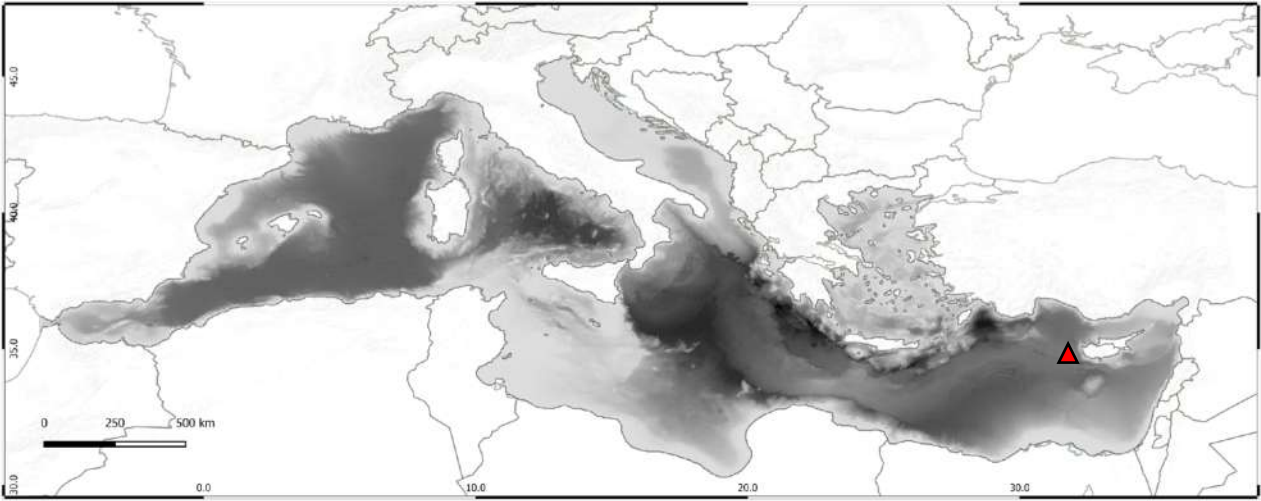


| UNIT | LITHOLOGY | SUBBOTTO M DEPTH | AGE |
|------|---|---------------------|--------------------------|
| I | a) Nannofossil marls with graded unit of foraminiferal quartzose sand to silt | 100.5-110.0 | Quaternary and Pliocene |
| | b) Nannofossil marl and mud | 110-315 | |
| | c) Nannofossil marl and ooze | 315-373 | |
| II | Dolomite | 373-381.5 | Lowermost Pliocene (?) |
| III | a) Dolomitic mudstone with minor gypsum layers | 381.5-406.5 | Late Miocene (Messinian) |
| | b) Gypsum/ dolomitic mudstone cycles | 406.5-436 | |
| | c) Anhydrite and salts | 436-457 | |

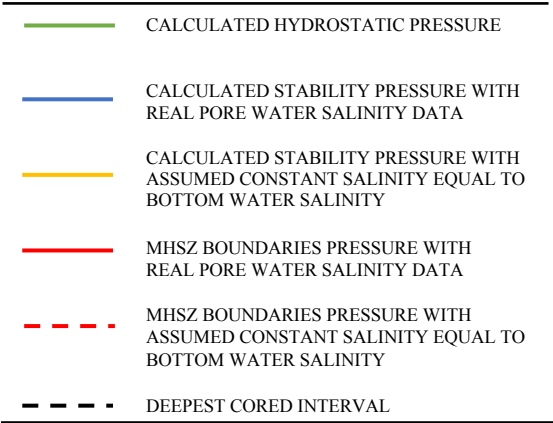
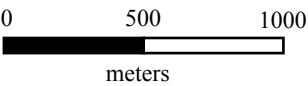
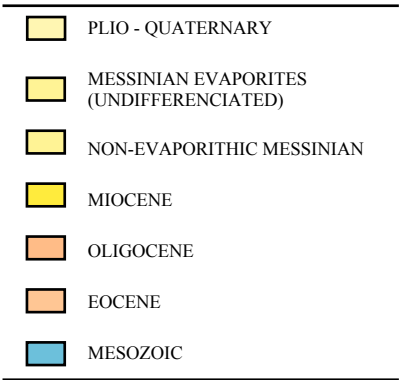


ODP LEG 42
SITE 375

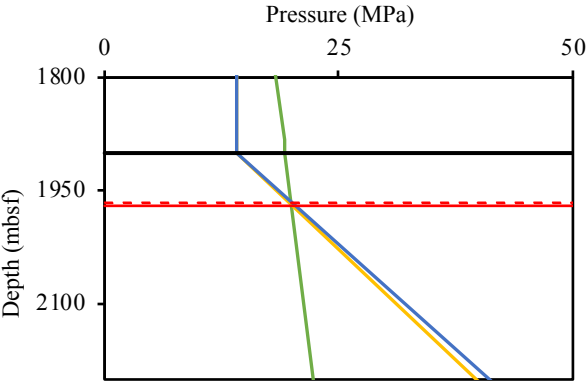
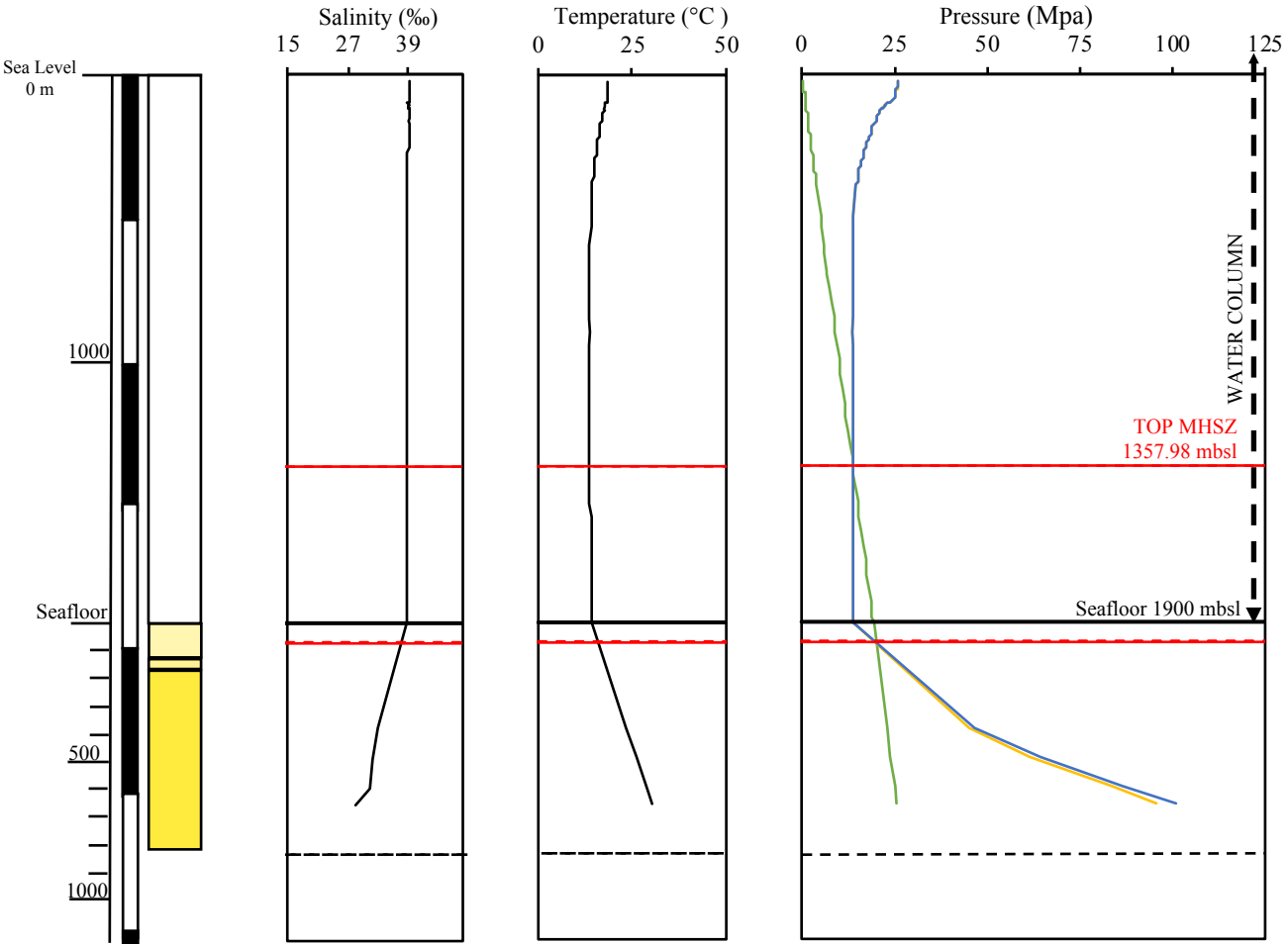
Florence Rise
Water depth : 1900 m
Measured geothermal gradient in the borehole : 25.934 °C/ km



▲ ODP 42 375

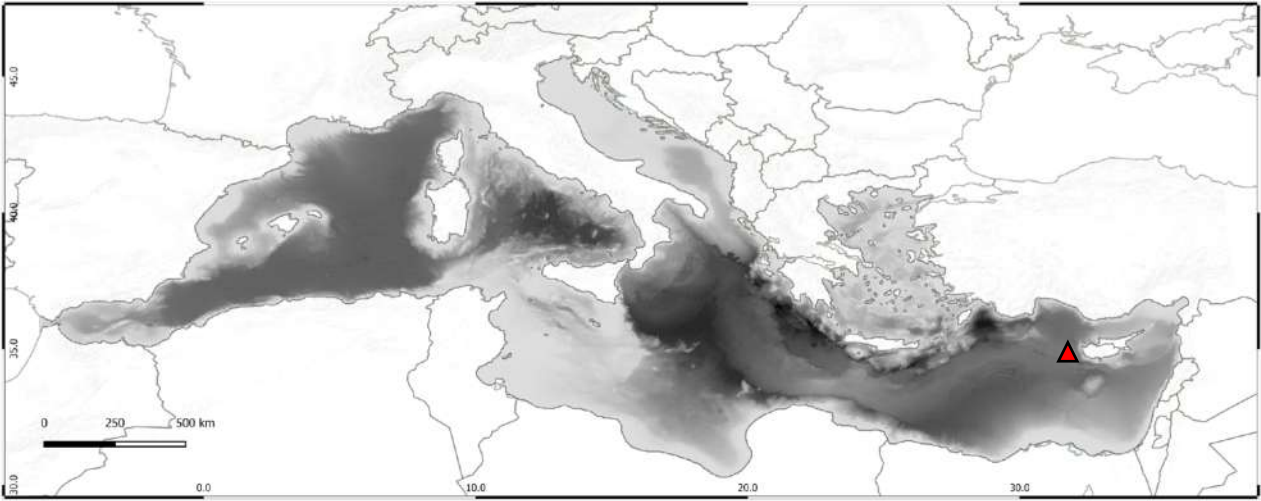


| UNIT | LITHOLOGY | SUBBOTTOM DEPTH | AGE |
|------|---|-----------------|------------------------------|
| III | Brown to orange nannofossil marl with minor sapropelic marl interlayers | 0-137.5 | Early to late Pliocene |
| VI | Evaporites - gypsum and green dolomitic marlstone - Anhydrite and halite | 137.5-185 | Late Miocene, Messinian |
| VII | Marlstones with interbedded graded siltstones and sandstones | 185-600 | Late Miocene, Tortonian |
| VIII | Variegated marlstones to foram nanno limestones | 600-641 | Middle Miocene, Serravallian |
| IX | Dark colored nannofossil marlstones | 641-675 | Middle Miocene, Serravallian |
| X | Reddish-brown nannofossil marlstones with interbedded light gray foraminiferal limestones | 675-760 | Middle Miocene, Langhian |
| XI | Dark green-gray limestones and marlstones | 760-821 | Early Miocene, Burdigalian |

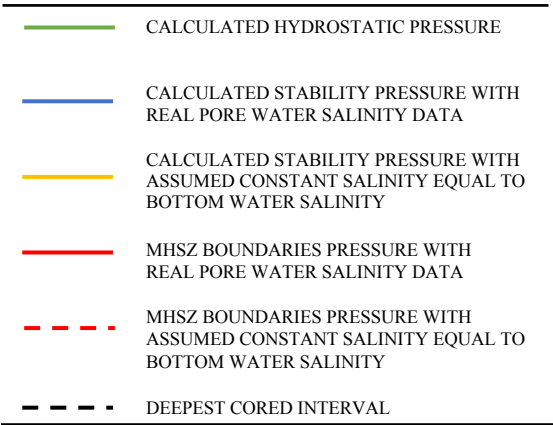
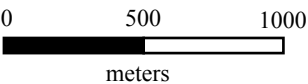
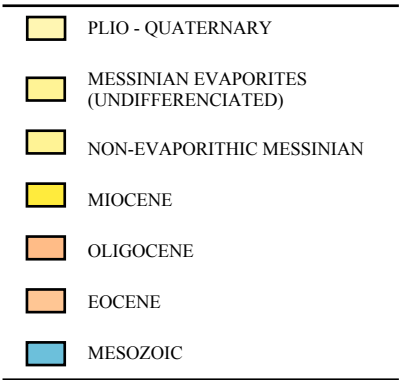


DSDP LEG 42
SITE 376

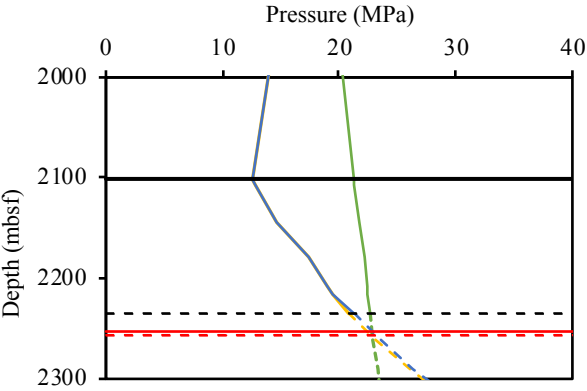
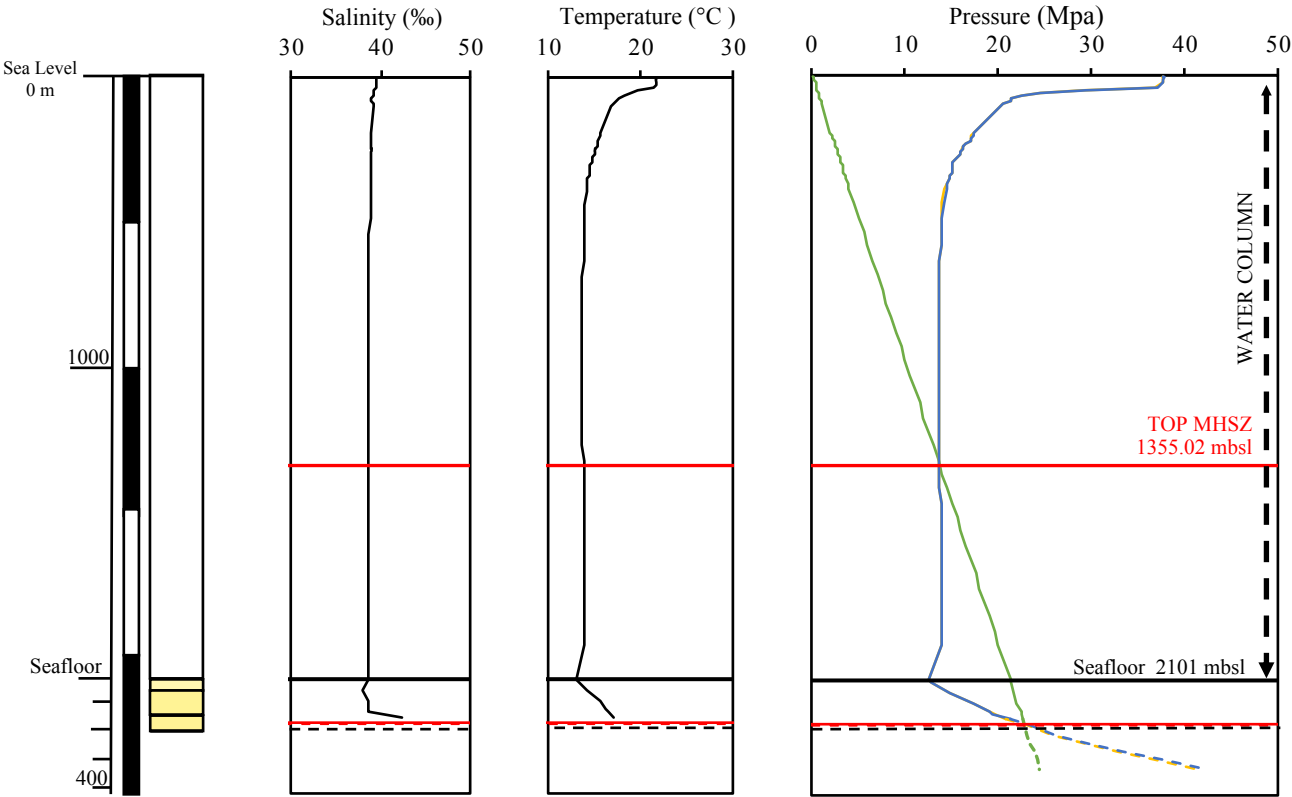
Florance Rise
Water depth : 2101 m
Measured geothermal gradient in the borehole : 26.06 °C/ km



▲ ODP 42 376

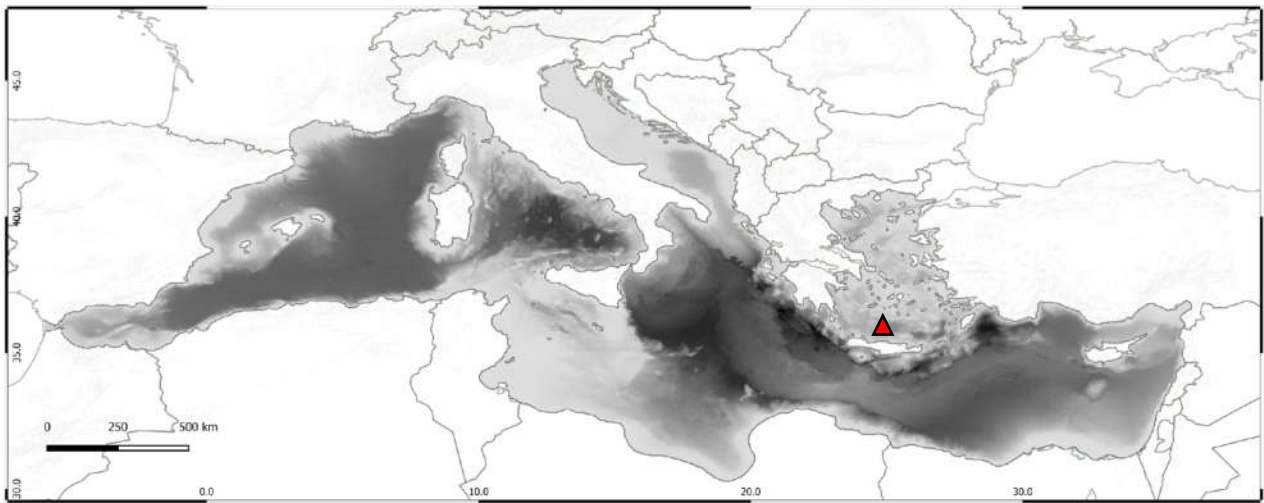


| UNIT | LITHOLOGY | SUBBOTTO M DEPTH | AGE |
|------|---|---------------------|----------------------------|
| I | Gray to brown nannofossil marls with interlayered tephra and sapropels | 0-38.4 | Quaternary |
| II | Gray nannofossil marls with a few sapropelic marl interlayers. | 38.4-42.6 | Late Pliocene |
| III | Brown to orange nannofossil marl with minor sapropelic marl interlayers | 42.6-48.1 | Early to late Pliocene |
| IV | Slumped marls of Miocene and early Pliocene age | 48.1-48.5 | Early Pliocene |
| V | Marlstones with interbedded graded sandstones and siltstones subdivided into 4 subunits | 55-140.5 | Late Miocene Messinian |
| VI | Evaporites - gypsum and green dolomitic marlstone - Anhydrite and halite | 140.5-216.5 | Late Miocene, Messinian |

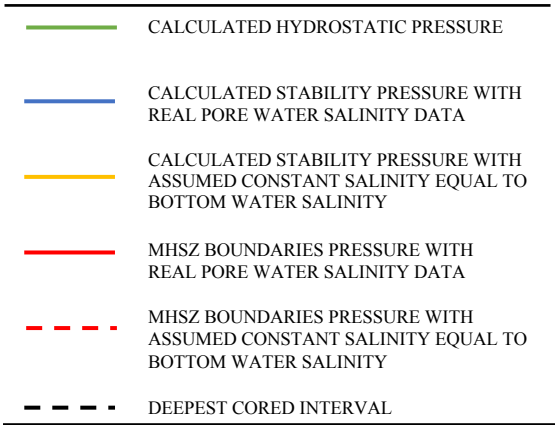
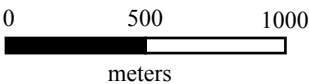
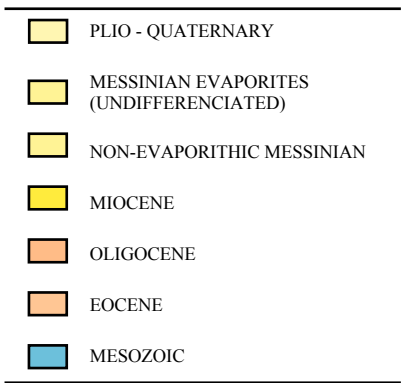


DSDP LEG 42
SITE 378

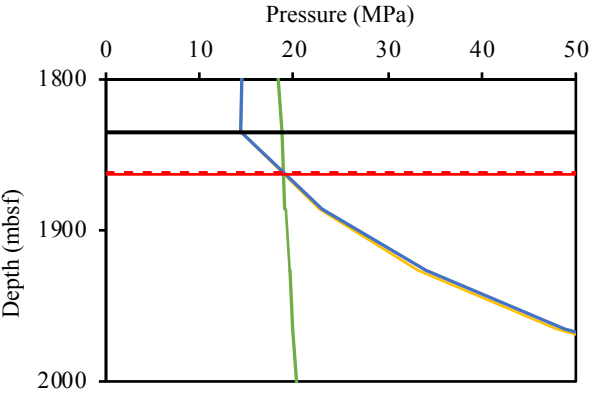
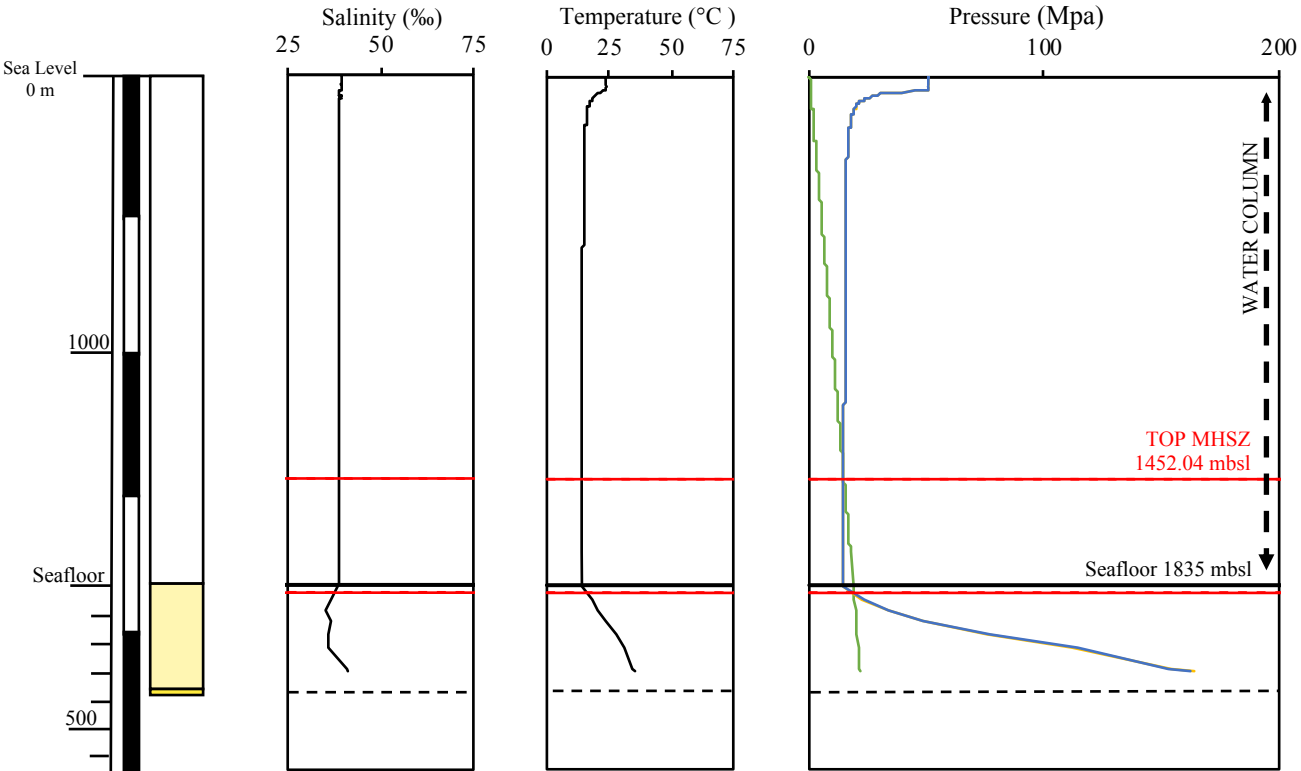
Cretan Basin
Water depth : 1835 m
Measured geothermal gradient in the borehole : 41.18-83.06 °C/ km



▲ ODP 42 378

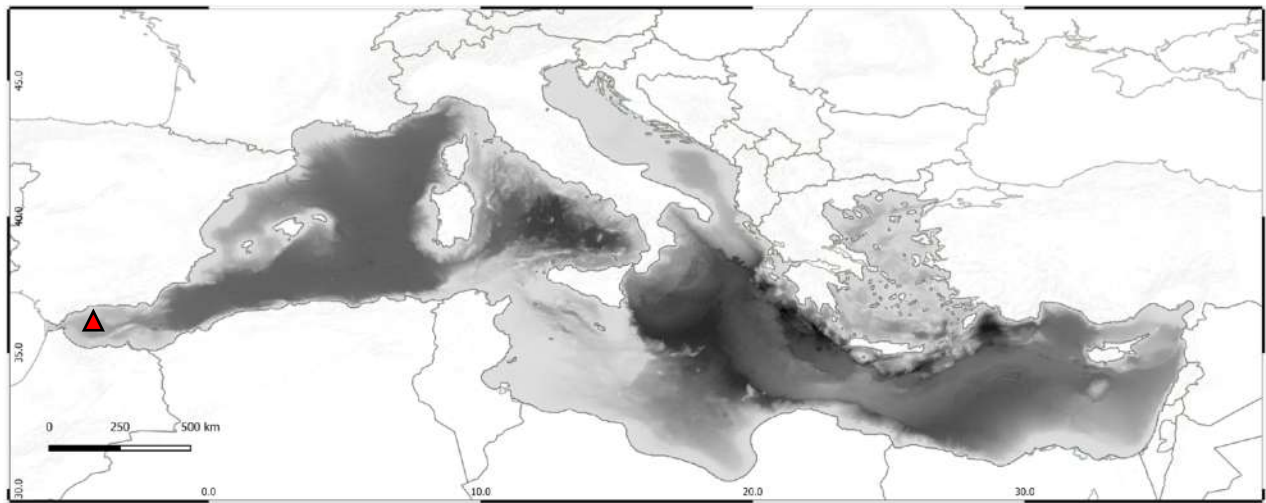


| UNIT | LITHOLOGY | SUBBOTTOM DEPTH | AGE |
|------|---|-----------------|------------------------|
| I | a) Nannofossil marl with interlayers of sapropelic marl and marl conglomerate (b) Nannofossil marl and ooze with sapropelic marl interlayers | 0-131.5 | Quaternary |
| II | Nannofossil marlstone with interlayered sapropelic marlstone | 131.5-286 | Late Pliocene |
| III | Nannofossil marlstone with abundant burrows and numerous sapropelic marlstone interlayers | 286-308 | Early to late Pliocene |
| IV | Selenitic gypsum with minor limestone breccia | 308- | Late Miocene |

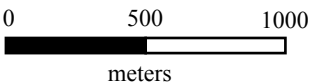
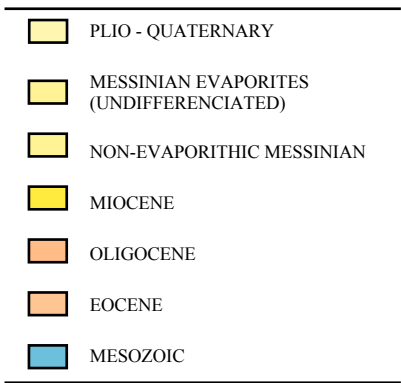


DSDP LEG 13
SITE 121

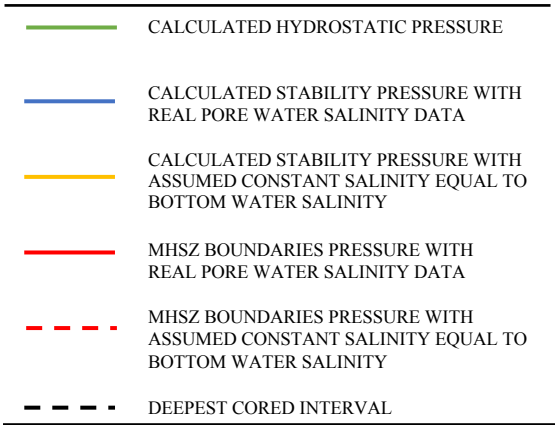
Western Alboran Basin
Water depth : 1163 m
Measured geothermal gradient in the borehole : 72.38 °C/ km

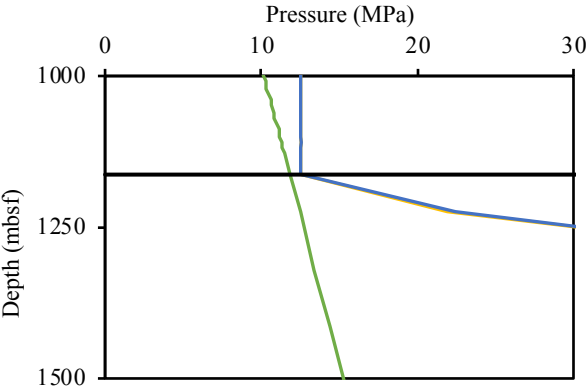
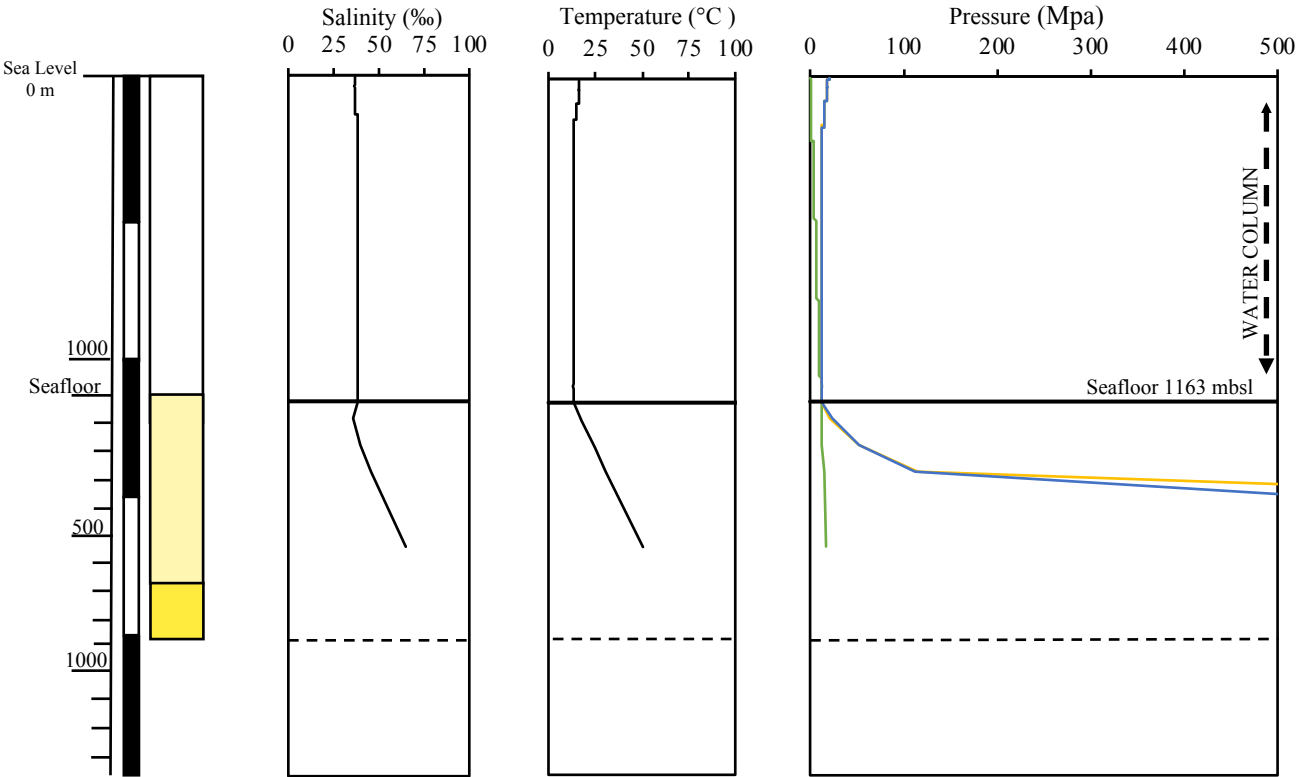


▲ ODP 13 121



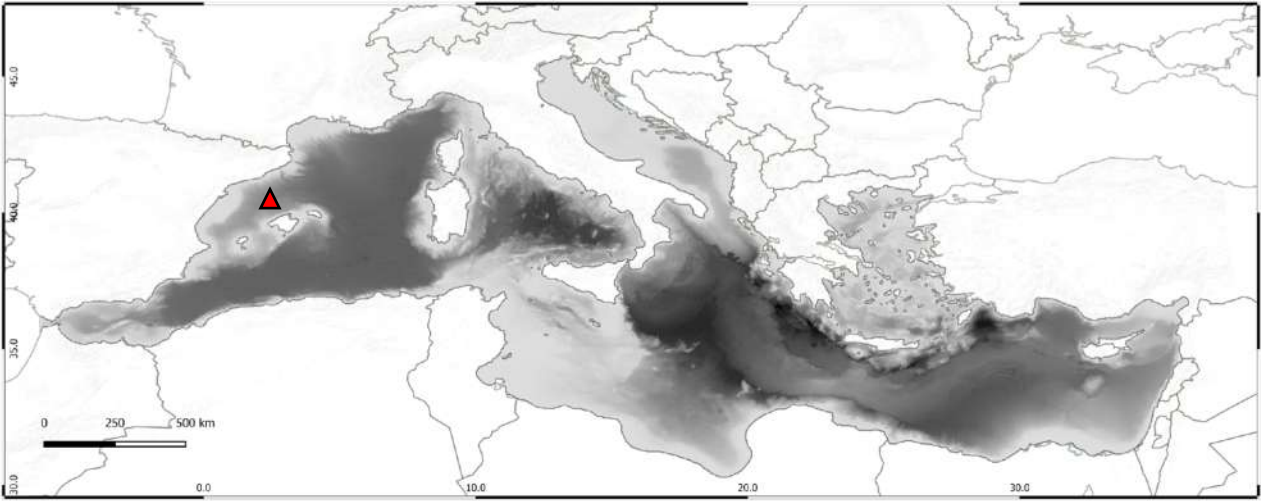
| UNIT | LITHOLOGY | SUBBOTTOM DEPTH | AGE |
|------|--|-----------------|-------------------------------------|
| I | Marl ooze, pelagic | 0-290 | Quaternary |
| II | Marls, sands, and sandstones, turbidities | 290-686 | Lower Pleistocene to Lower Pliocene |
| III | Marls, sands, sandstones, mainly pelagic in the lower part | 686-864 | Upper Miocene (Tortonian) |
| IV | Basement, gneiss, granodiorite, biotite-quartz schist | 864-867 | |



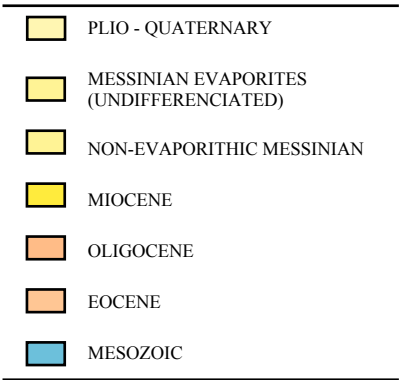


DSDP LEG 13
SITE 123

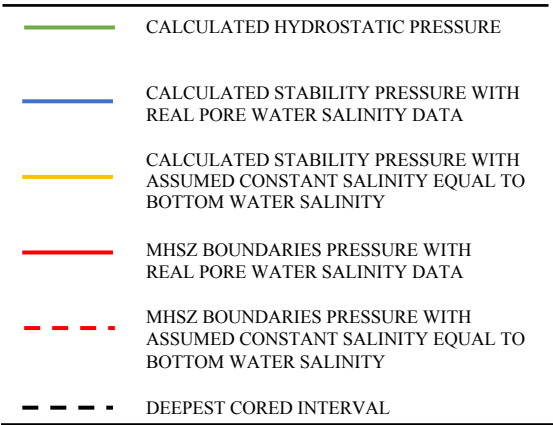
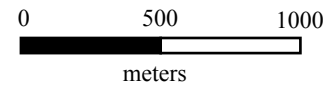
Valencia Basement Ridge
Water depth : 2290 m
Measured geothermal gradient in the borehole : 46.07 °C/ km

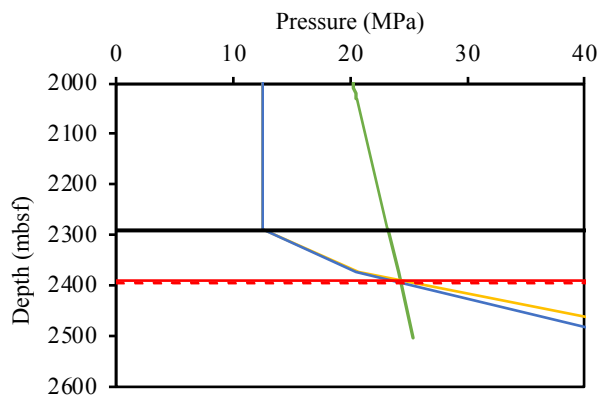
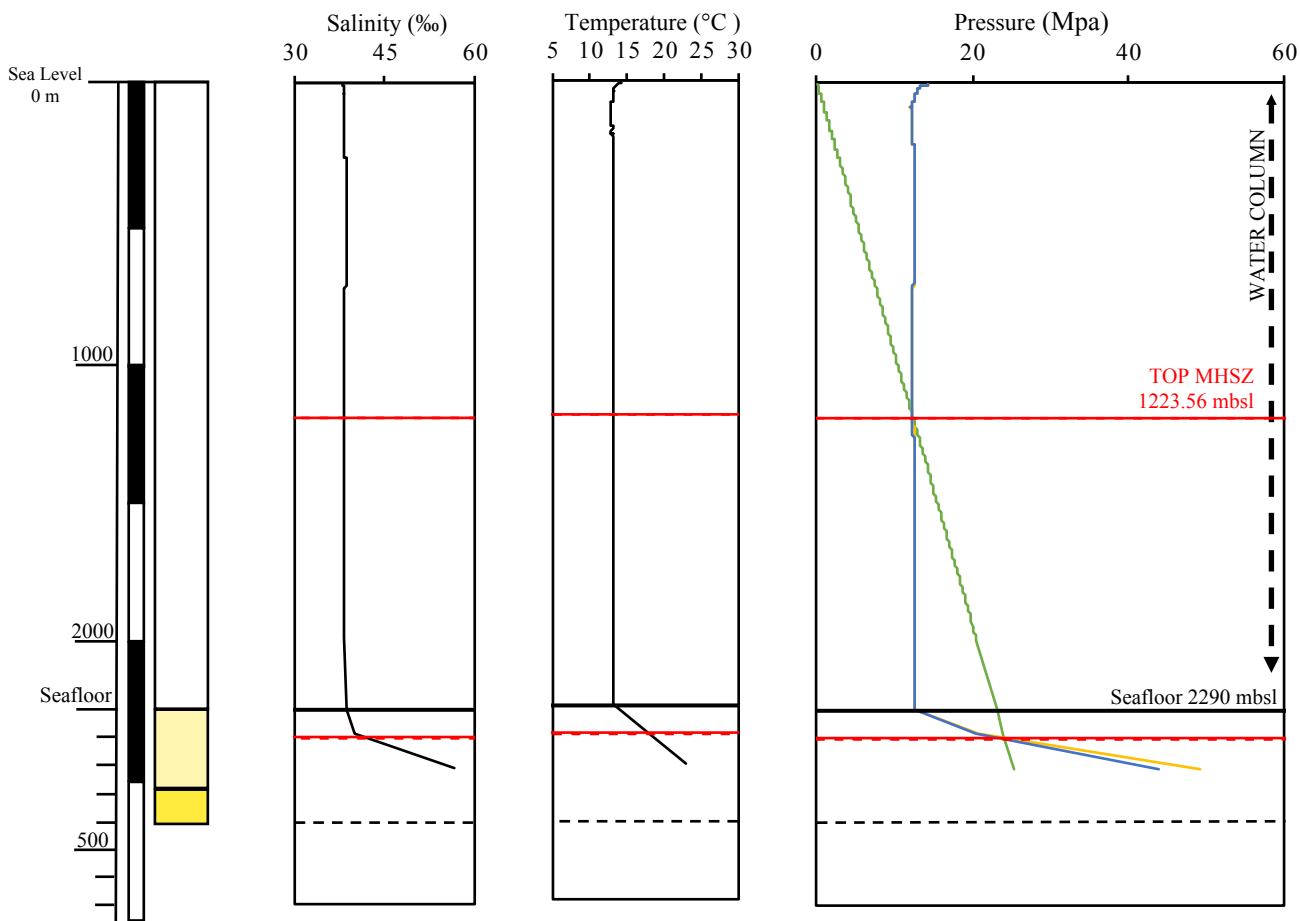


▲ ODP 13 123



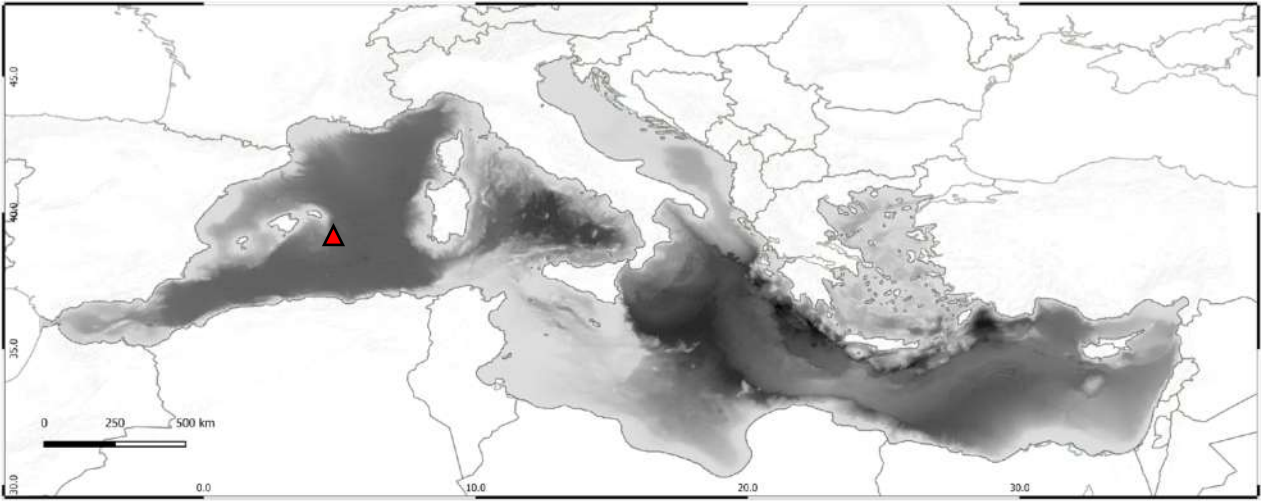
| UNIT | LITHOLOGY | SUBBOTTOM DEPTH | AGE |
|------|--|-----------------|---------------|
| I | Graded sands, marl oozes with gravels at base; mainly turbidites. | 0-116.6 | Quaternary |
| II | Graded sands, silt laminae, marl oozes and nanno-oozes; turbidites with contourite | 116.6-268.5 | Pliocene |
| III | Volcanic ash deposit (acoustic basement) | 268.5-393.2 | Lower Miocene |



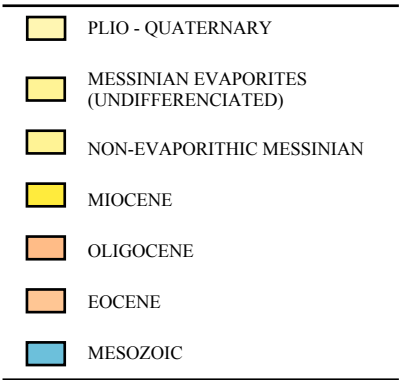


DSDP LEG 13
SITE 124

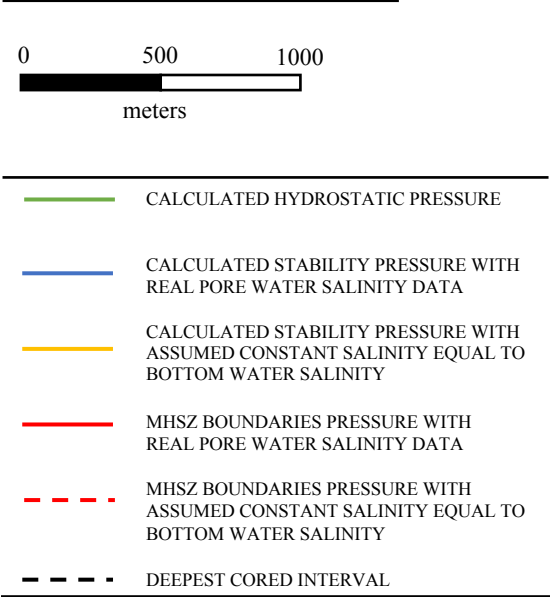
Balearic Rise
Water depth : 2726 m
Measured geothermal gradient in the borehole : 74.57 °C/ km

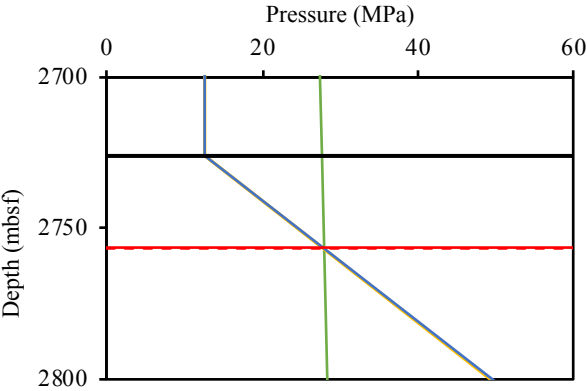
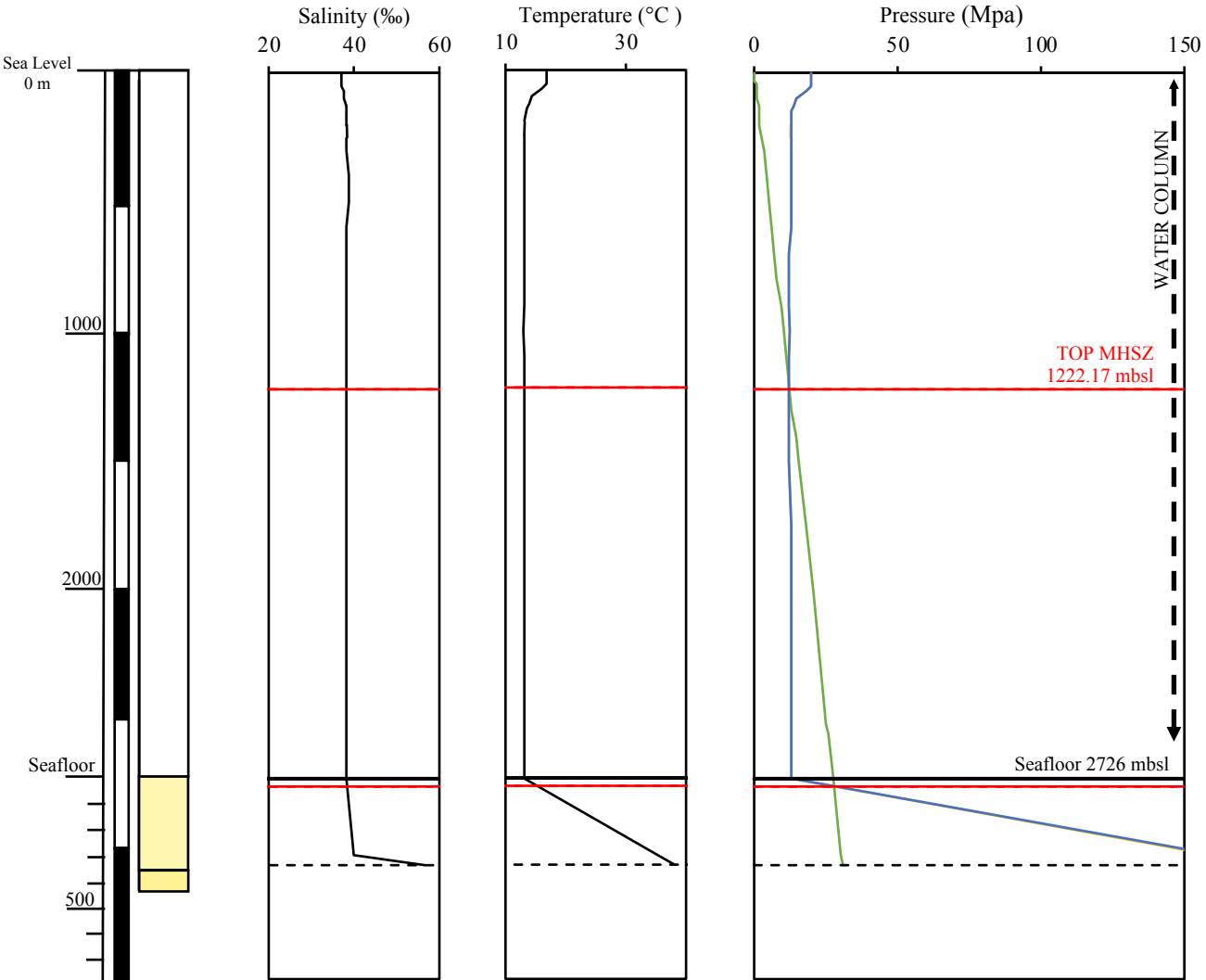


▲ ODP 13 124



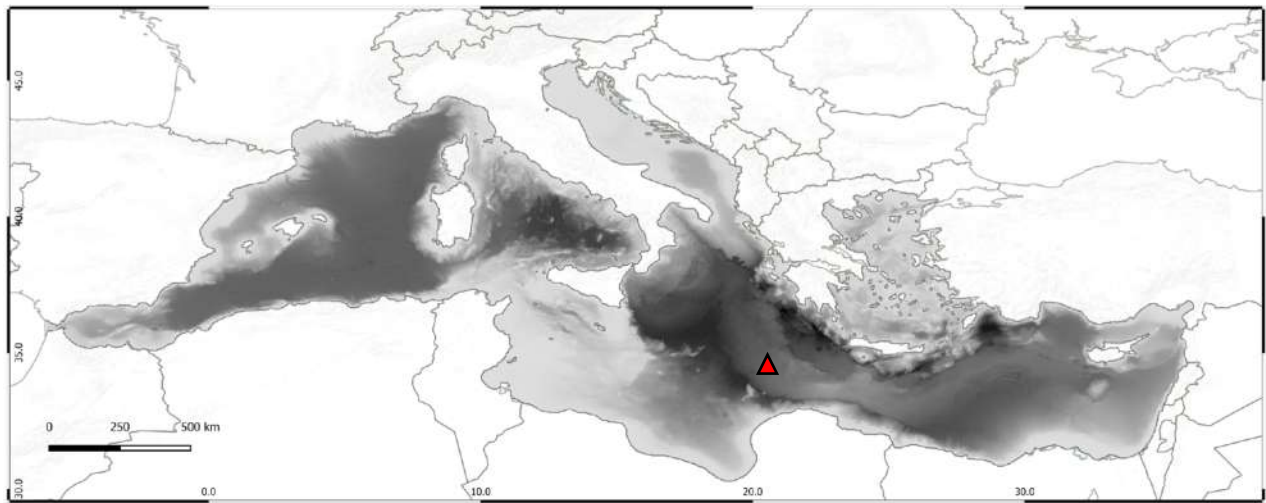
| UNIT | LITHOLOGY | SUBBOTTOM DEPTH | AGE |
|------|---|-----------------|------------------------------|
| I | Graded sands, silts, marl oozes and nannofossil ooze (Turbidites and Contourites) | 0-359 | Quaternary to Lower Pliocene |
| II | Evaporite series | 359-422.2 | Upper Miocene |



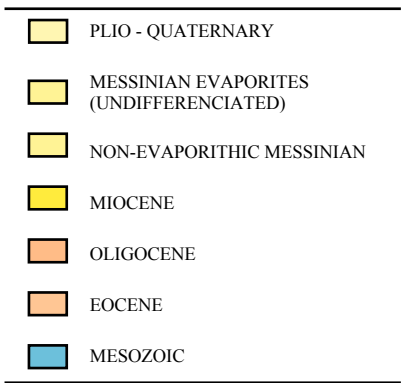


DSDP LEG 13
SITE 125

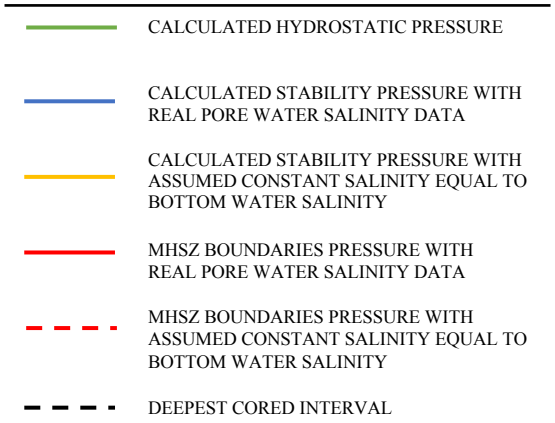
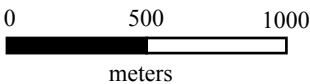
Mediterranean Ridge, Ionian Sea
Water depth : 2782
Measured geothermal gradient in the borehole : 48.76 °C/ km

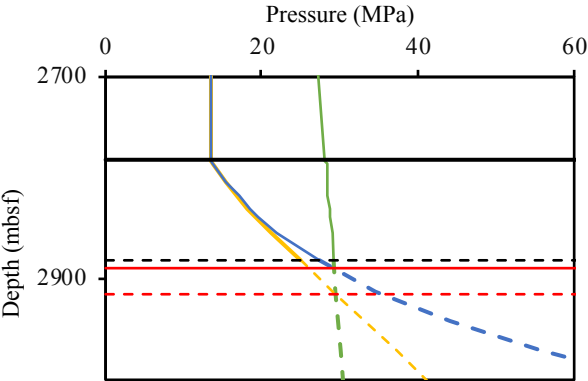
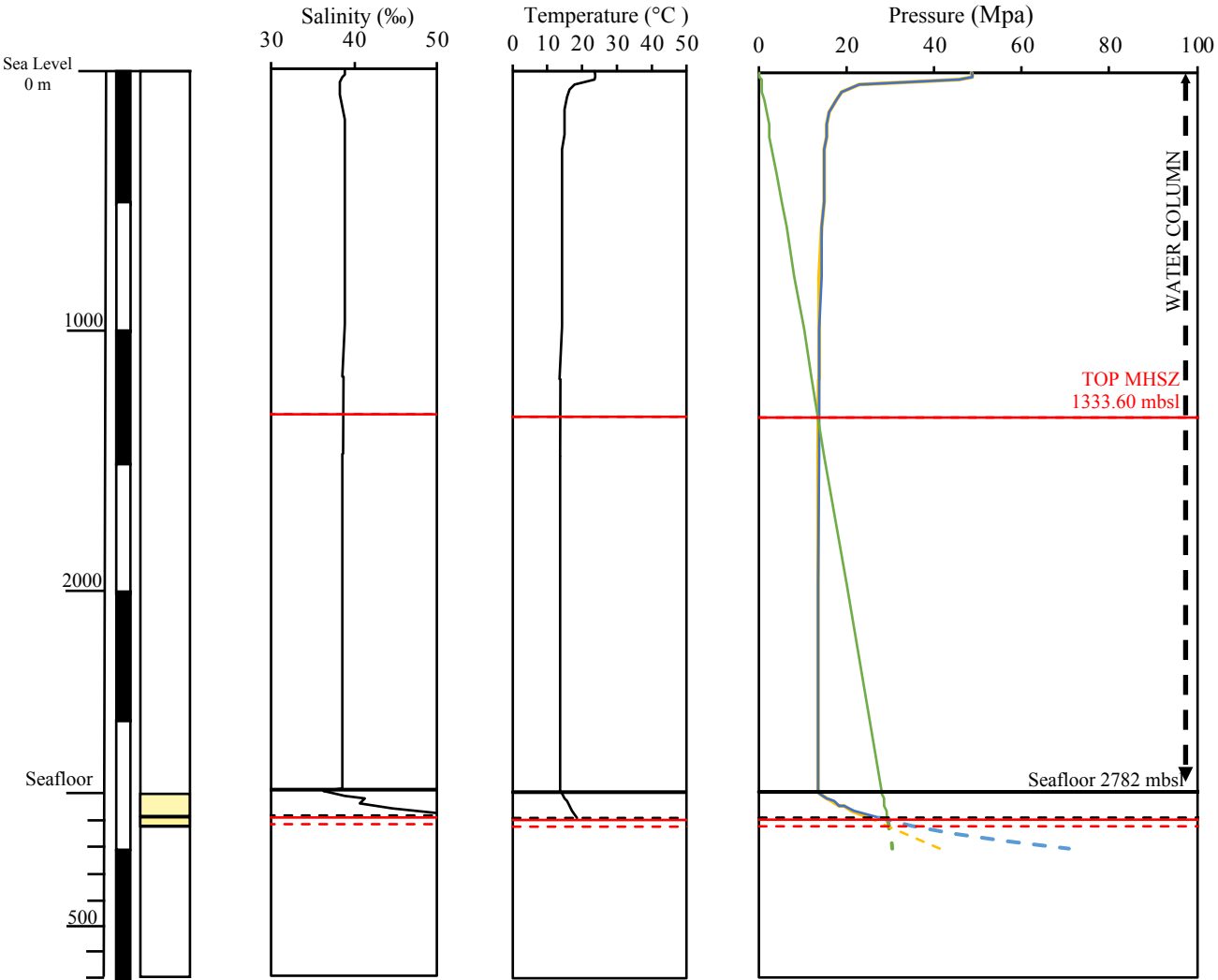


▲ ODP 13 125



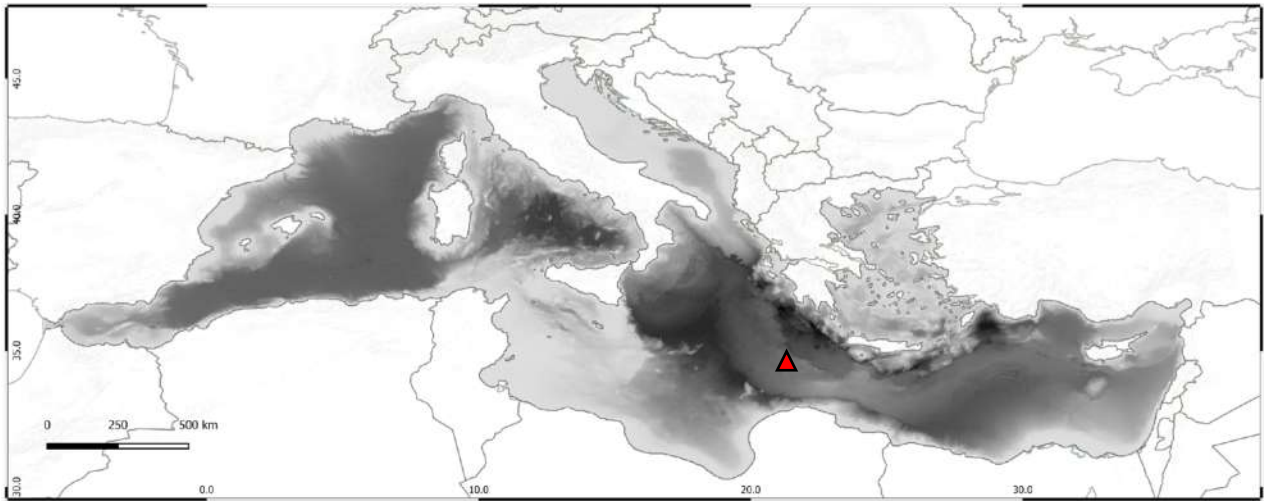
| UNIT | LITHOLOGY | SUBBOTTOM DEPTH | AGE |
|------|---|-----------------|------------------------------|
| I | Plastic marl oozes, sapropels, and ash | 0-17 | Quaternary |
| II | Foraminiferal nanno oozes and sapropels | 17-82 | Early Pliocene to Quaternary |
| III | Evaporites | 82-121 | Late Miocene |



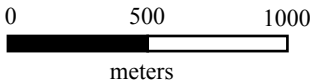
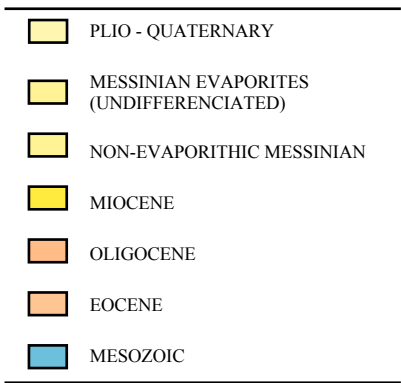


DSDP LEG 13
SITE 126

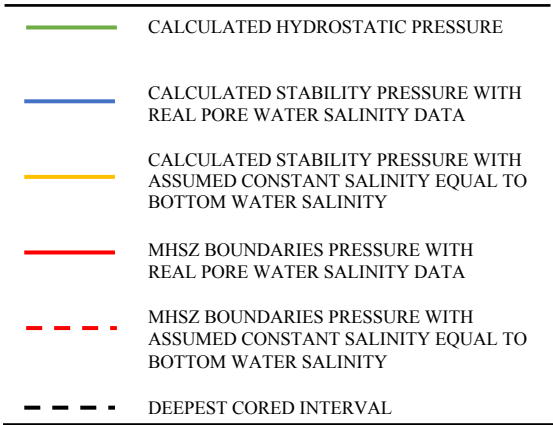
Cleft in Mediterranean Ridge, Ionian Sea
Water depth : 3730
Measured geothermal gradient in the borehole : 102.82 °C/ km

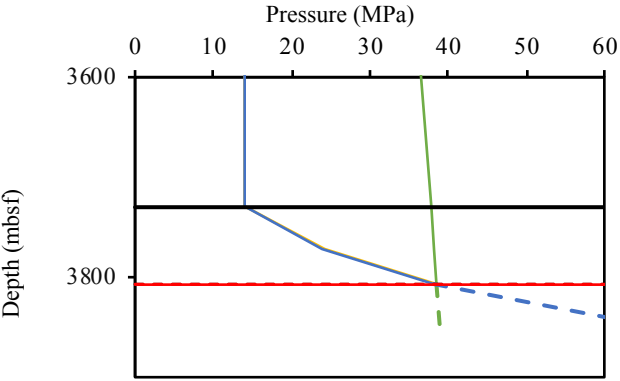
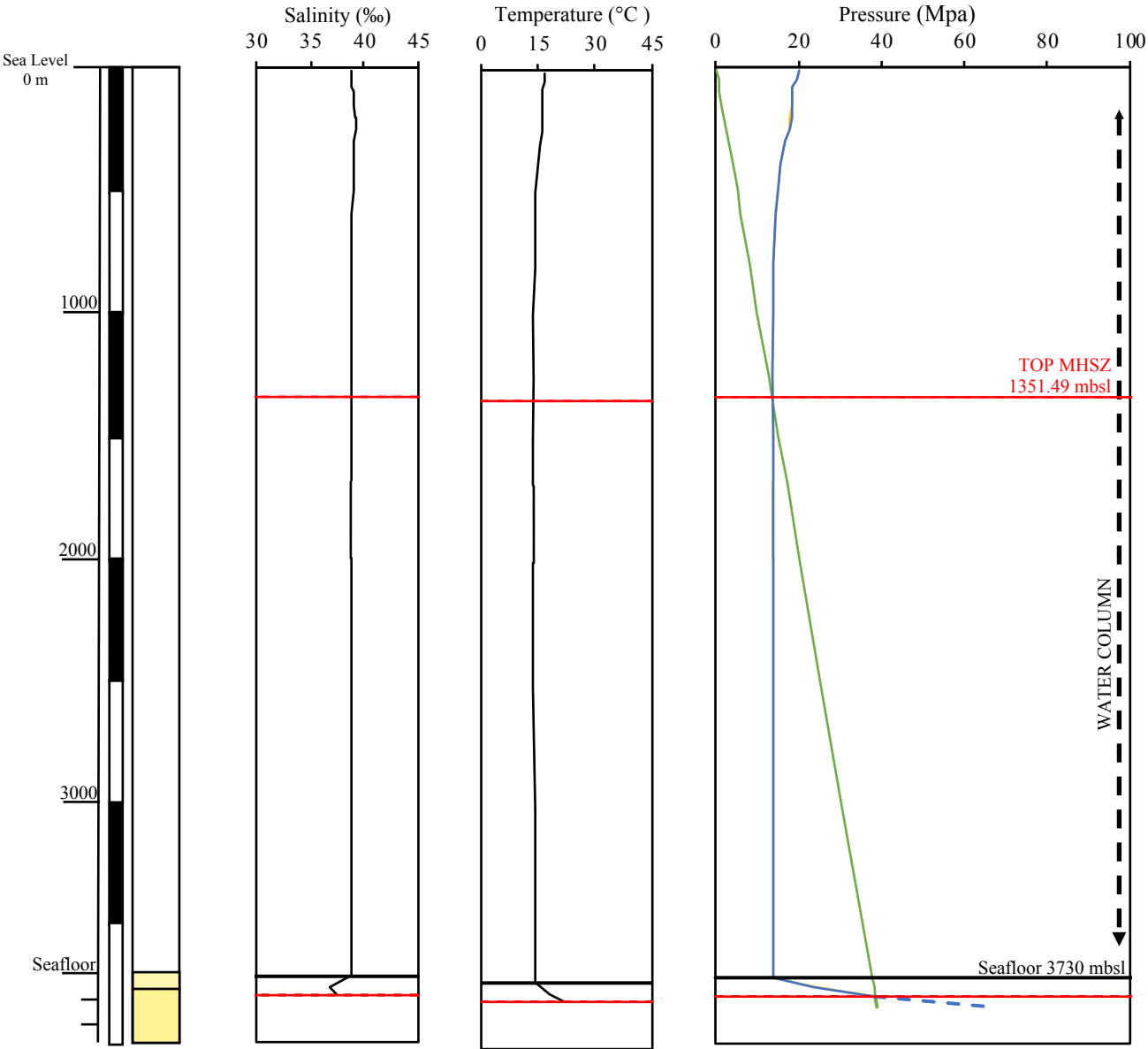


▲ ODP 13 126



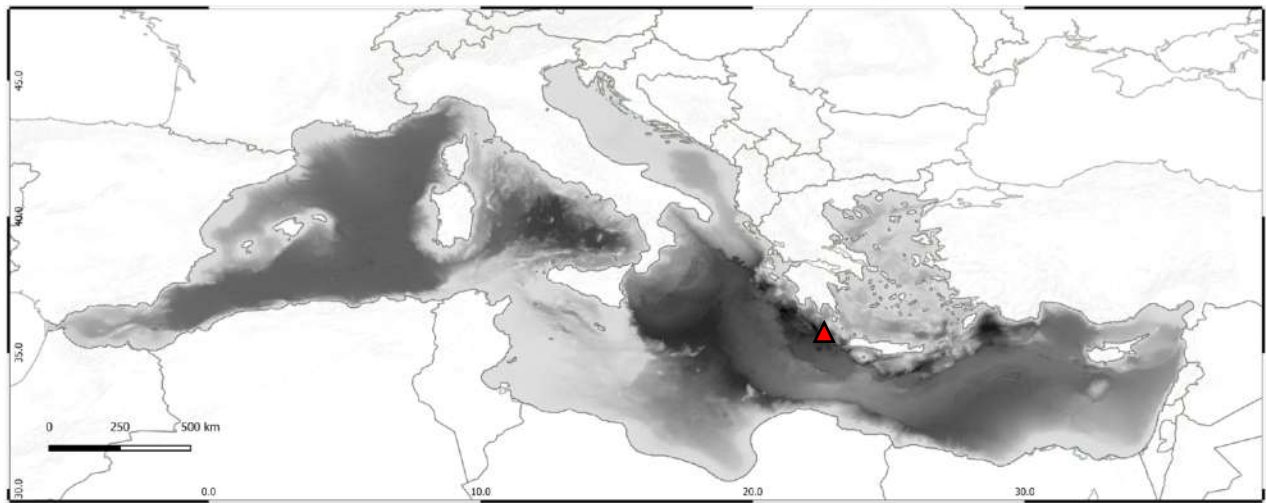
| UNIT | LITHOLOGY | SUBBOTTOM DEPTH | AGE |
|------|--|-----------------|-------------------------|
| I | Marl oozes, sands, silts, sapropels and breccias | 0-108 | Quaternary and Pliocene |
| II | Dolomite | 373-381.5 | Lowermost Pliocene (?) |



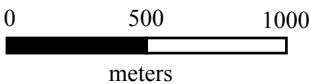
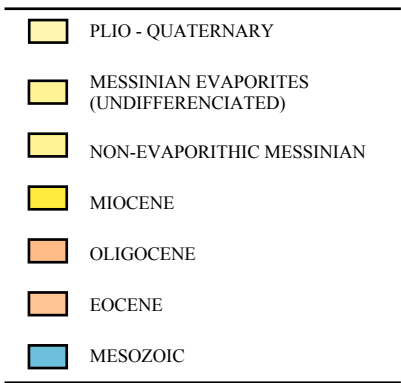


DSDP LEG 13
SITE 127

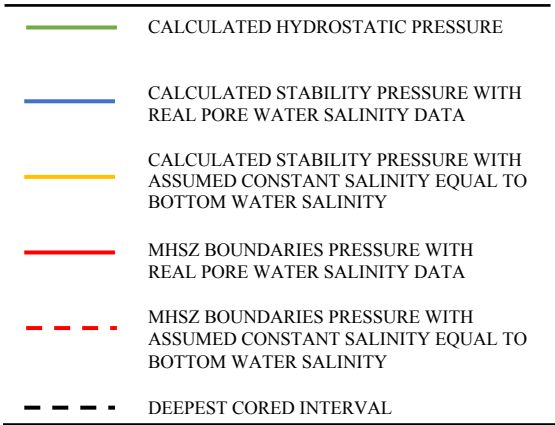
Hellenic Trench
Water depth : 4654
Measured geothermal gradient in the borehole : 117.192 °C/ km

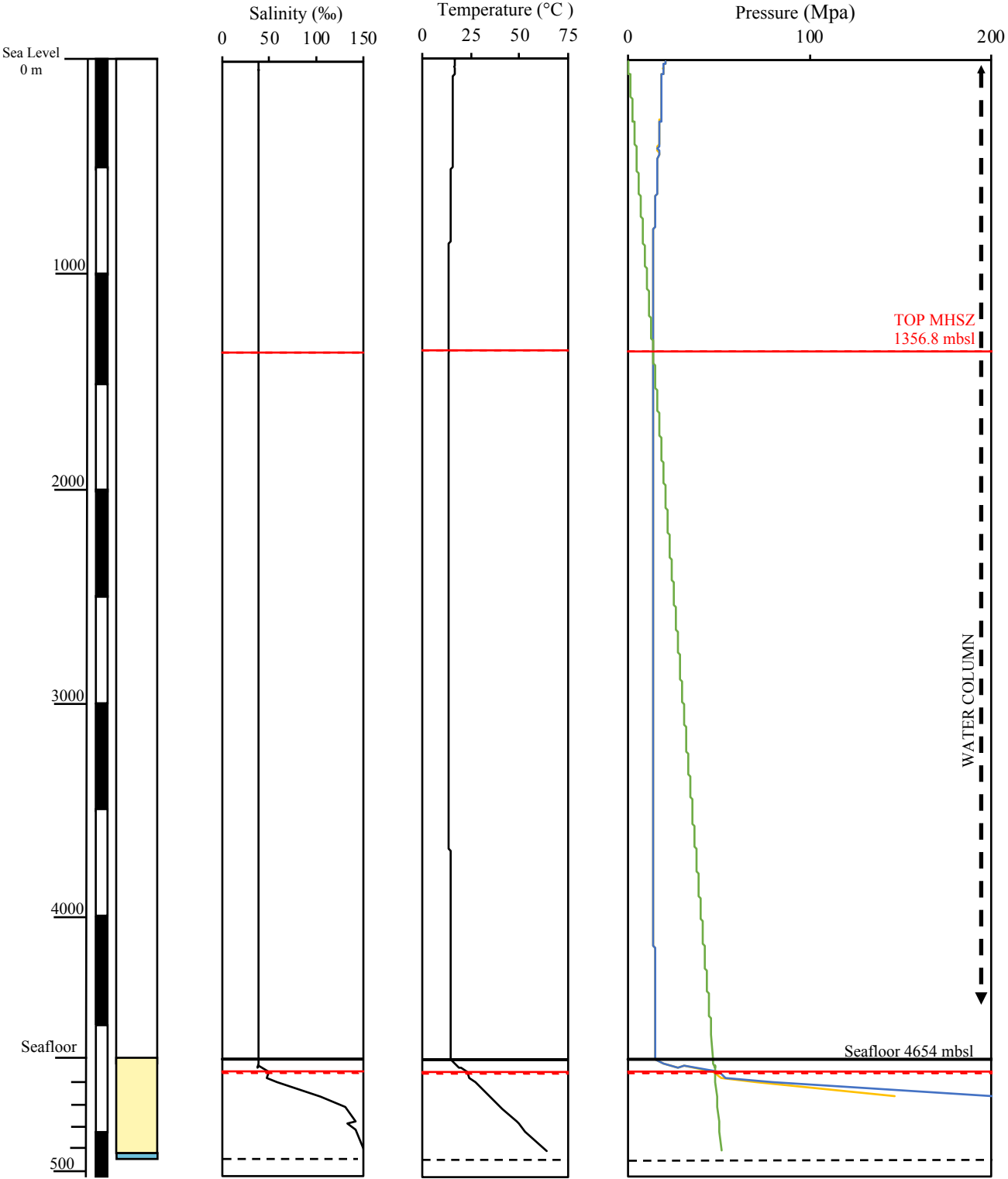


▲ ODP 13 127



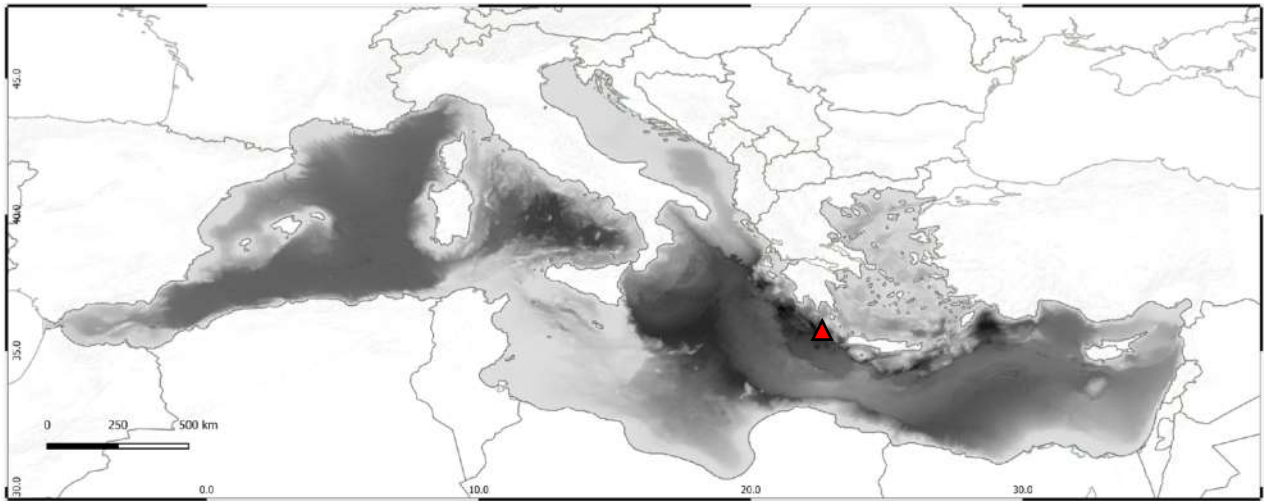
| UNIT | LITHOLOGY | SUBBOTTOM DEPTH | AGE |
|------|--|-----------------|------------------|
| I | Graded sands and marl oozes Marl oozes Ash | 1-98 | Quaternary |
| II | Graded sands and marl oozes Marl oozes Sapropels | 98-200 | Quaternary |
| III | Sand-silt laminae Marl oozes | 200-350 | Quaternary |
| IV | Sand-silt laminae Marl oozes Sapropels | 350-427 | Quaternary |
| V | Blocks: dolomite, limestone | 427-437 | Lower Cretaceous |



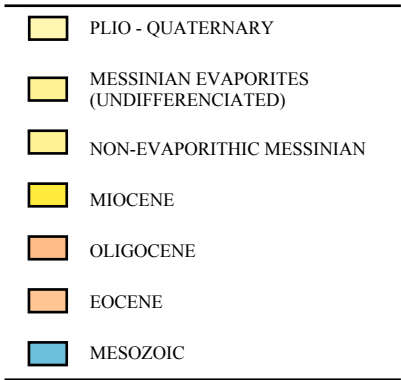


DSDP LEG 13
SITE 128

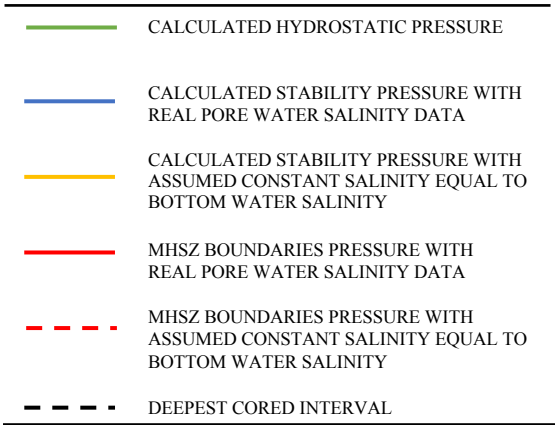
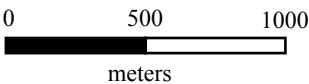
Hellenic Trench
Water depth : 4640
Measured geothermal gradient in the borehole : 117.01 °C/ km

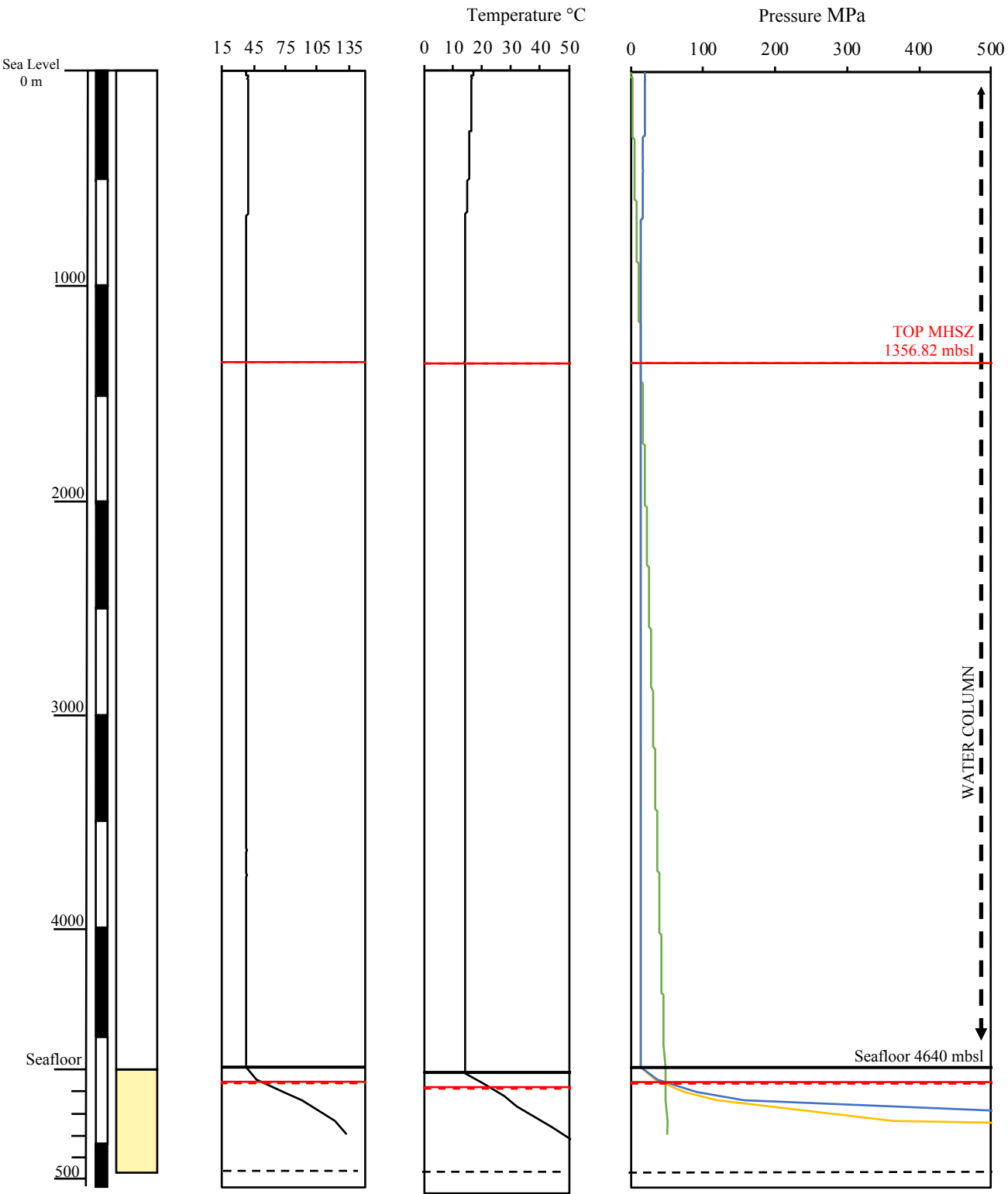


▲ ODP 13 128



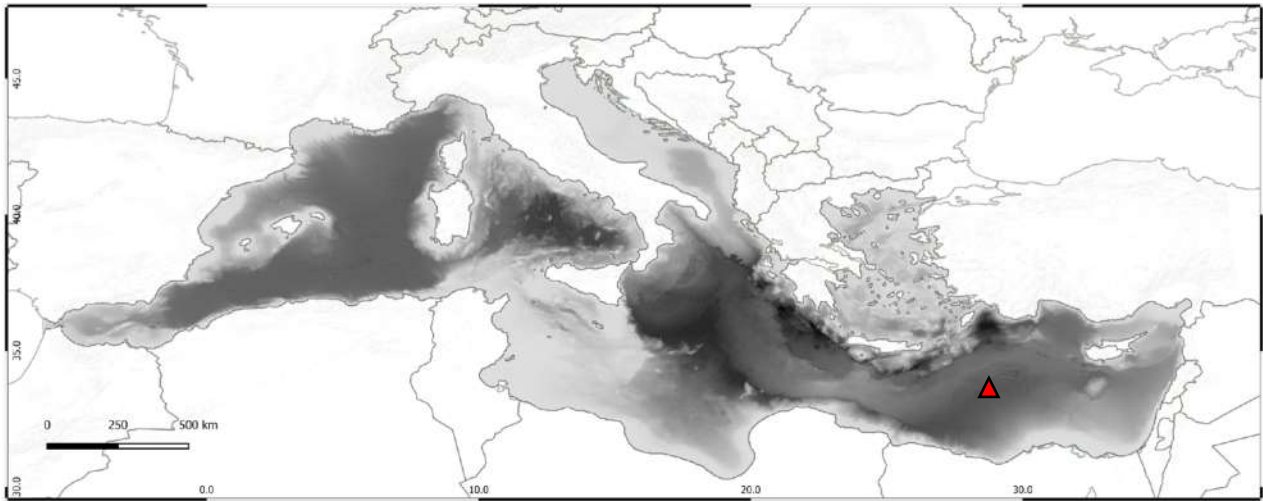
| UNIT | LITHOLOGY | SUBBOTTOM DEPTH | AGE |
|------|--|-----------------|------------|
| I | Graded sands and marl oozes Marl oozes Ash | 1-84.7 | Quaternary |
| II | Graded sands and marl oozes Marl oozes Sapropels | 84.7-172 | Quaternary |
| III | Sand-silt laminae Marl oozes | 172-281 | Quaternary |
| IV | Sand-silt laminae Marl oozes Sapropels | 281-480 | Quaternary |



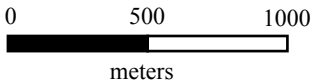
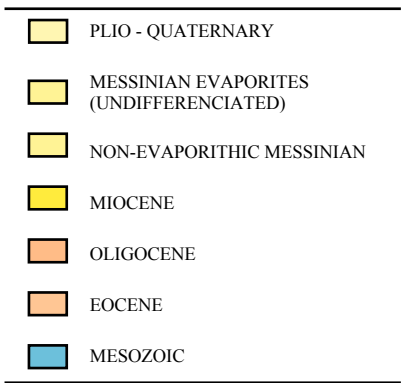


DSDP LEG 13
SITE 130

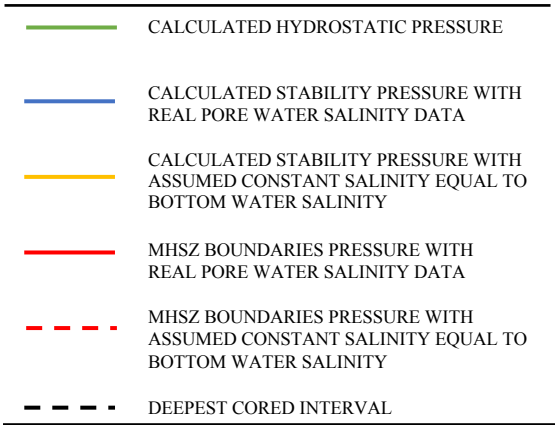
Mediterranean Ridge, Levantine Sea
Water depth : 2979 m
Measured geothermal gradient in the borehole : 20.56 °C/ km

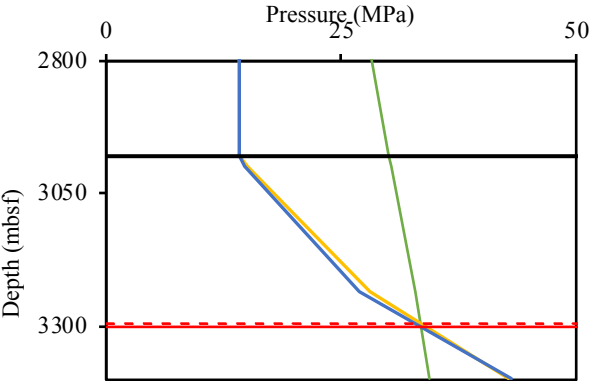
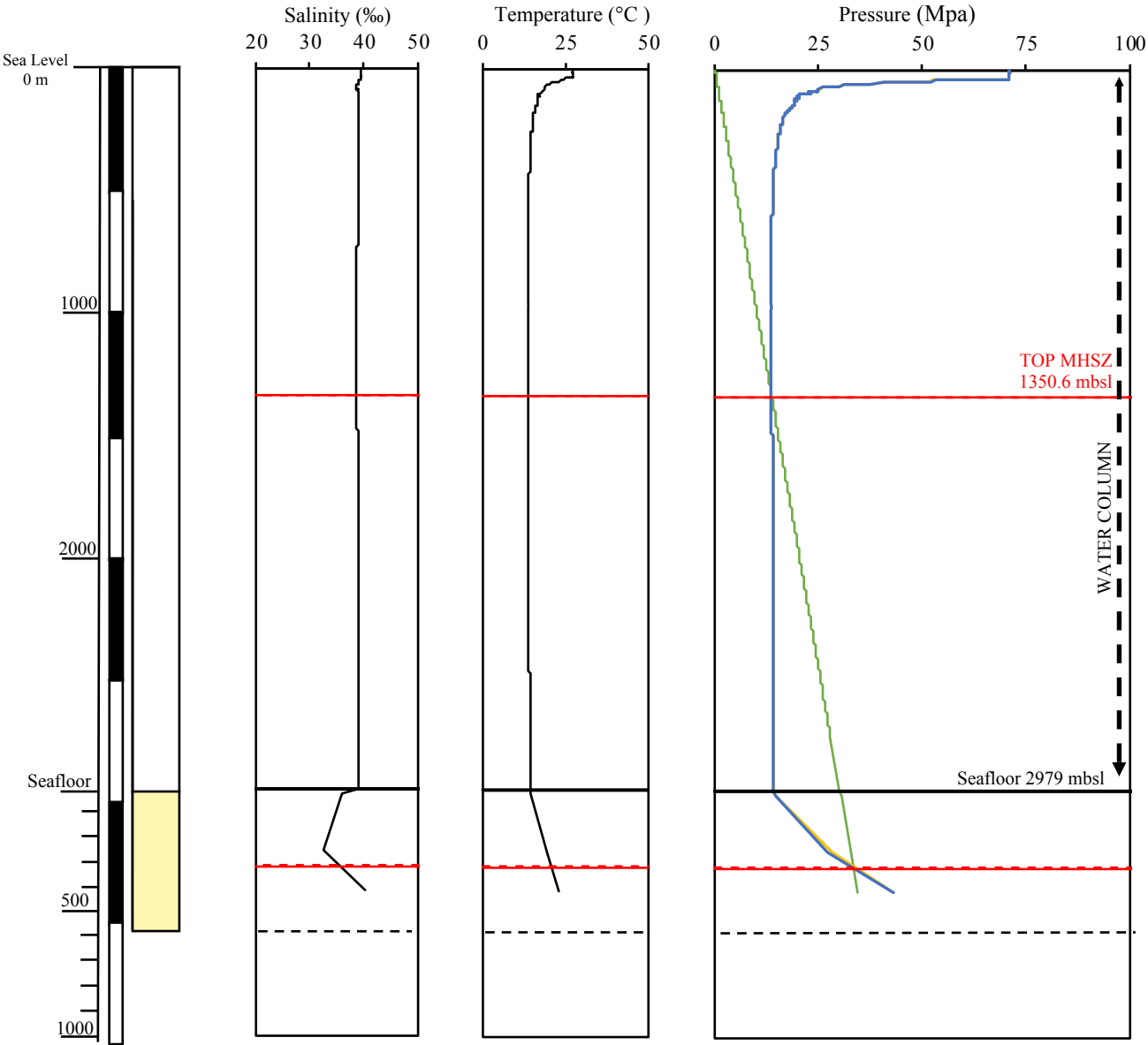


 ODP 13 130



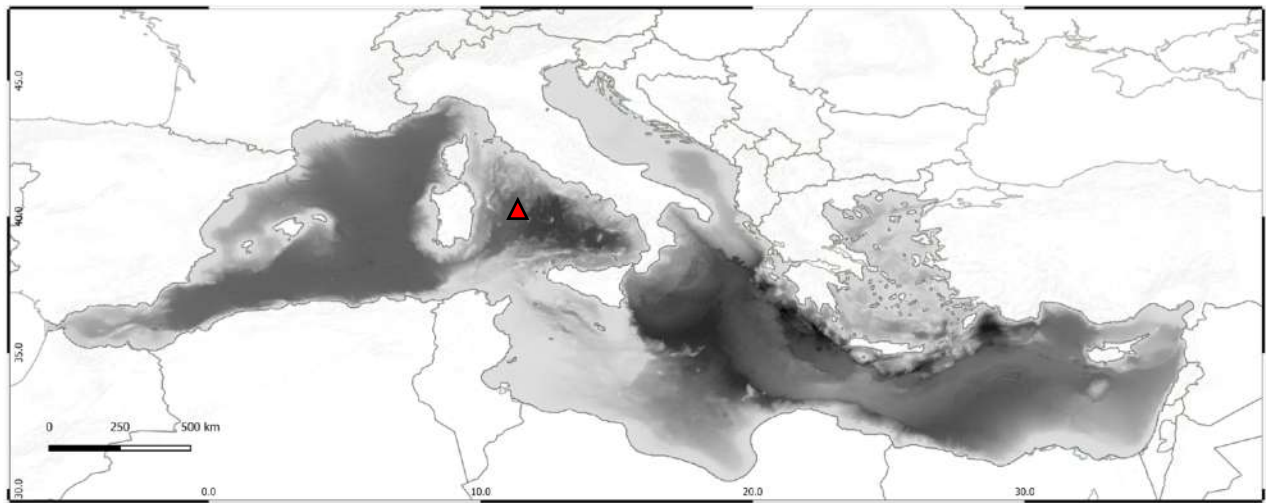
| UNIT | LITHOLOGY | SUBBOTTOM DEPTH | AGE |
|------|---|-----------------|------------|
| I | Pelagic foraminiferal marl ooze, sapropel, tephra. | 1-14.5 | Quaternary |
| II | Terrigenous black muds, sands, and sandstones, mainly turbidites, with intercalated foraminiferal marl ooze and sapropel. | 14.5-563 | Quaternary |



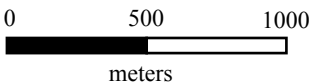
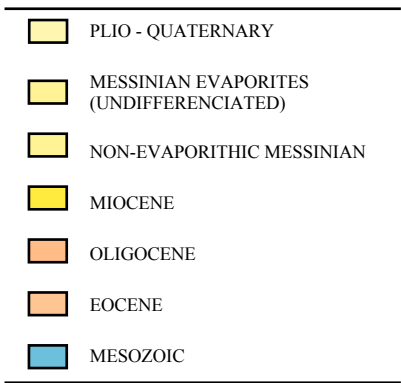


DSDP LEG 13
SITE 132

Tyrrhenian Rise
Water depth : 2835 m
Measured geothermal gradient in the borehole : 126.40 °C/ km



▲ ODP 13 132



| UNIT | LITHOLOGY | SUBBOTTOM DEPTH | AGE |
|------|---|-----------------|--------------------------------------|
| I | Foraminiferal marl oozes with discrete layers of volcanic ash (tephra) and sands | 1-50 | Pleistocene |
| II | Foraminiferal oozes with only scattered occurrence of volcanic ash | 50-183 | Pre-glacial Pleistocene and Pliocene |
| III | Evaporites including pyritic marls, gypsiferous and dolomitic sands, dolomitic marls, chert, terrestrial soils, and massive recrystallized gypsum | 183-223 | Upper Miocene |

