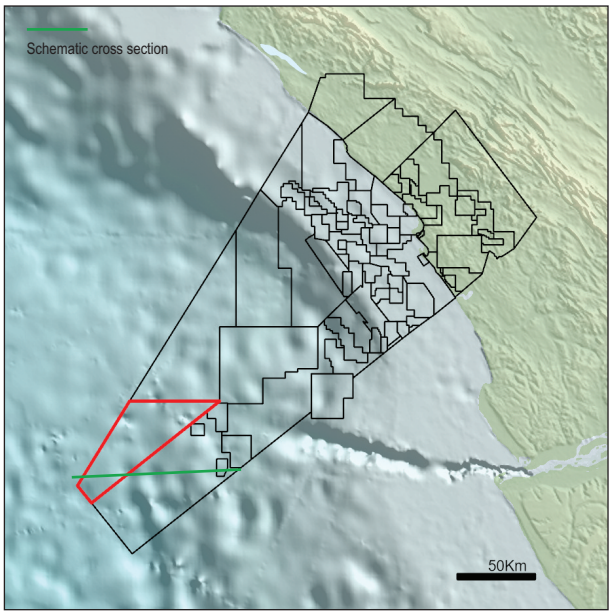
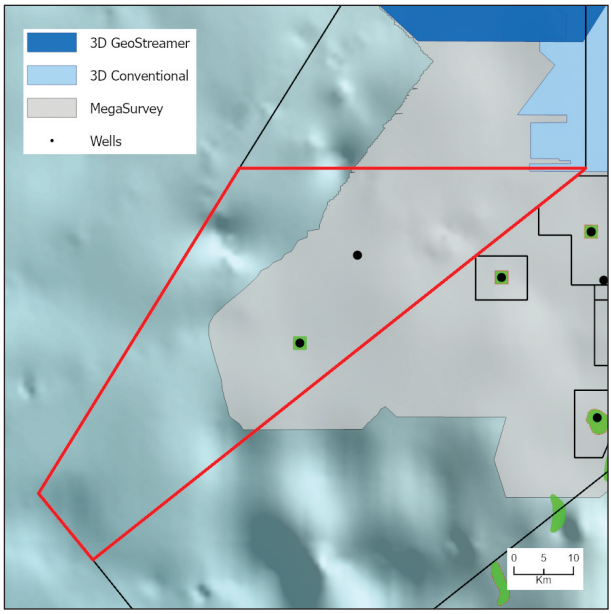
Ministère des Hydrocarbures
République du Congo

SNPC

Permis Marine XXI



Congo Coastal Basin



Seismic available, Permis Marine XXI

Permis Marine XXI is located offshore in the Congo Basin. It borders Permis Marine XXII to the south and east, Permis Marine XX to the north and the maritime border with Gabon to the west. It has an area of 2392 Km². The bathymetry of this ultra-deepwater block ranges from 2000 to >3000 m.

Permis Marine XXI contains two wells which targeted Middle and Lower Miocene turbidite channels. One well yielded the Hivoua oil discovery where oil was encountered in Middle Miocene sandstones while the primary target of Lower Miocene sandstones was found to be water-wet. Hiti Nord Marine-1 also tested Middle Miocene channels and was dry.

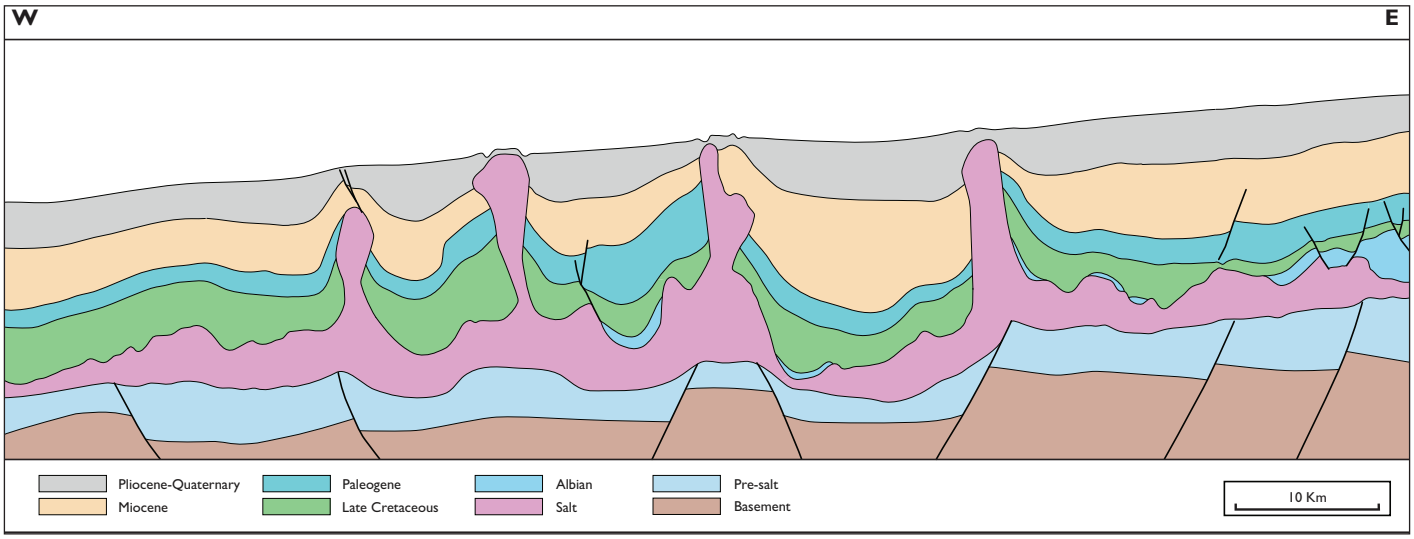
Typical plays expected in Permis Marine XXI include Upper Miocene channel systems, Lower Miocene turbidite channels and Pre-salt sandstones.

Miocene Sandstones

Miocene channels and turbidites of the Paloukou Formation (Fm) consist largely of medium grained, well sorted sandstones. These sandstones form the reservoir for the nearby Pegase Nord, Persee Nord Est and Andromede fields. Discoveries such as the Pegase Nord Field have de-risked the deep-water Miocene sandstone play.

Pre-salt Sandstones

Pre-salt reservoirs include sandstones within the Chela, Djeno and Vandji formations. No Pre-salt discoveries have been made in the ultra-deepwater. The nearest Pre-salt field lies >100 Km to the NE of this block.

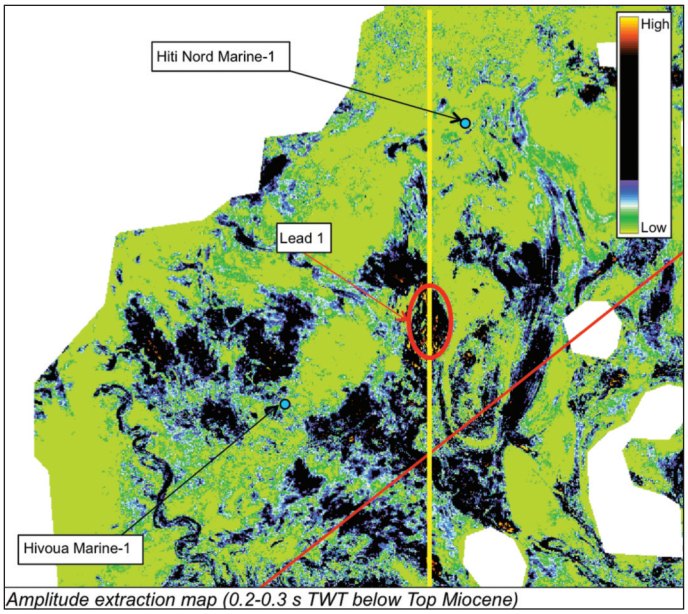


Schematic cross section

Lead 1 – Post-salt (Miocene)

This lead is a high-amplitude Paloukou Fm Miocene turbidite feature sitting on the edge of a structural high. Hydrocarbons are likely sourced from the Neocomian Sialivakou shales, migrating vertically up faults and reservoir sandstones are expected to be sealed by overlying marine shales. The nearby Hivoua Marine-1 well encountered oil in Middle Miocene sands.

High amplitudes in a shallower section above the lead may indicate the presence of shallow gas. Amplitude mapping shows that this lead is part of a channel complex at the same stratigraphic level as the target of the Hivoua Marine-1 well.

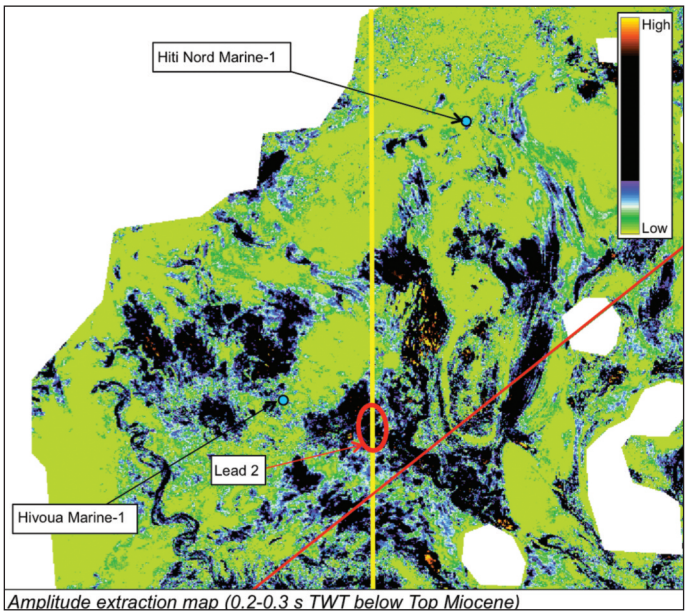


Amplitude extraction map (0.2-0.3 s TWT below Top Miocene)

Lead 2 – Post-salt (Miocene)

This lead is a chaotic high-amplitude Paloukou Fm Miocene turbidite channel complex. Hydrocarbons are likely sourced from the Neocomian Sialivakou shales, migrating along faults.

Reservoir sandstones are predicted to be sealed by overlying marine shales. The Hivoua Marine-1 well, to the west, encountered oil in Middle Miocene sands.

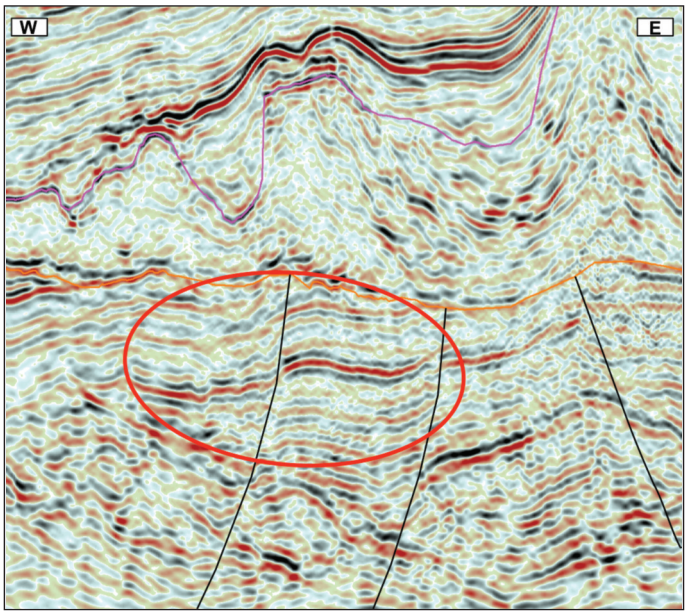


Amplitude extraction map (0.2-0.3 s TWT below Top Miocene)

Lead 3 – Pre-salt

This lead is a Pre-salt tilted fault block with sediments truncated below the Loeme salt. This is likely to be the sandstones of the Djeno and Vandji formations.

The Pointe Noire Marl and lacustrine shales of the Djeno Sandstone Fm provide effective source rocks. The Loeme salt acts as a seal in addition to intraformational shales.



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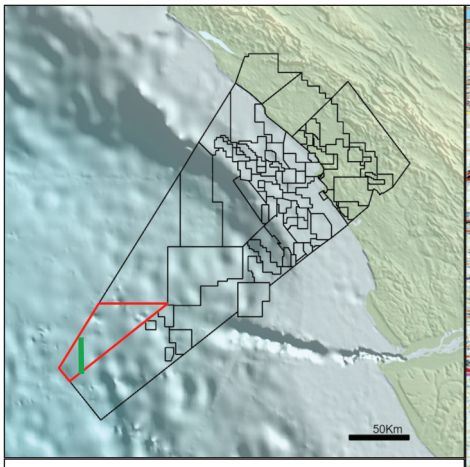
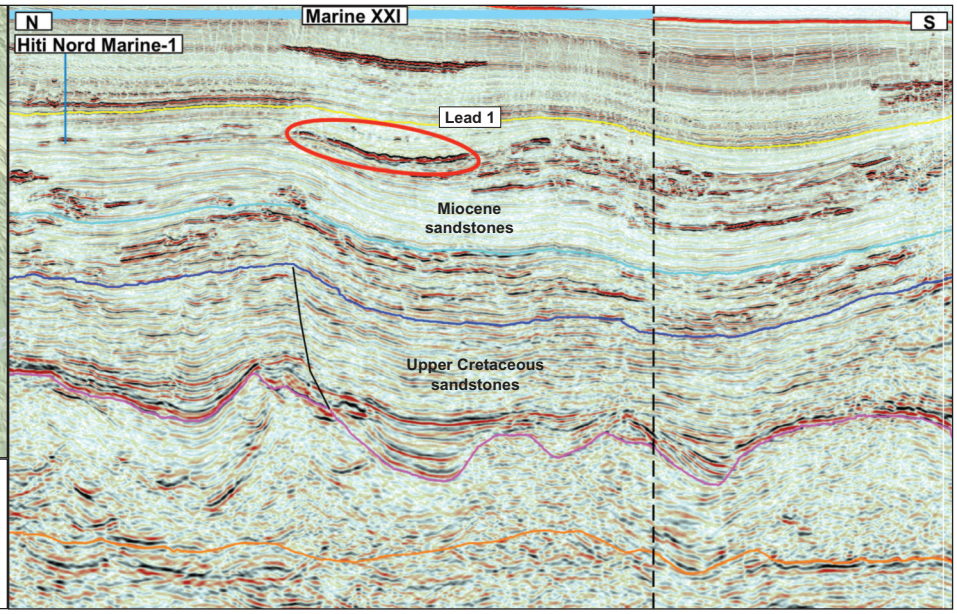
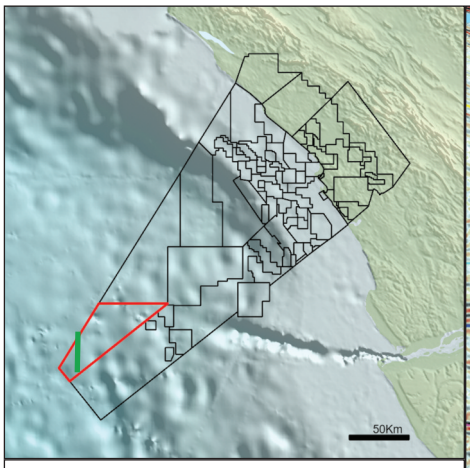


Seabed
Top Miocene
Top Oligocene
Top Cretaceous
Top Albian
Top Salt
Base Salt





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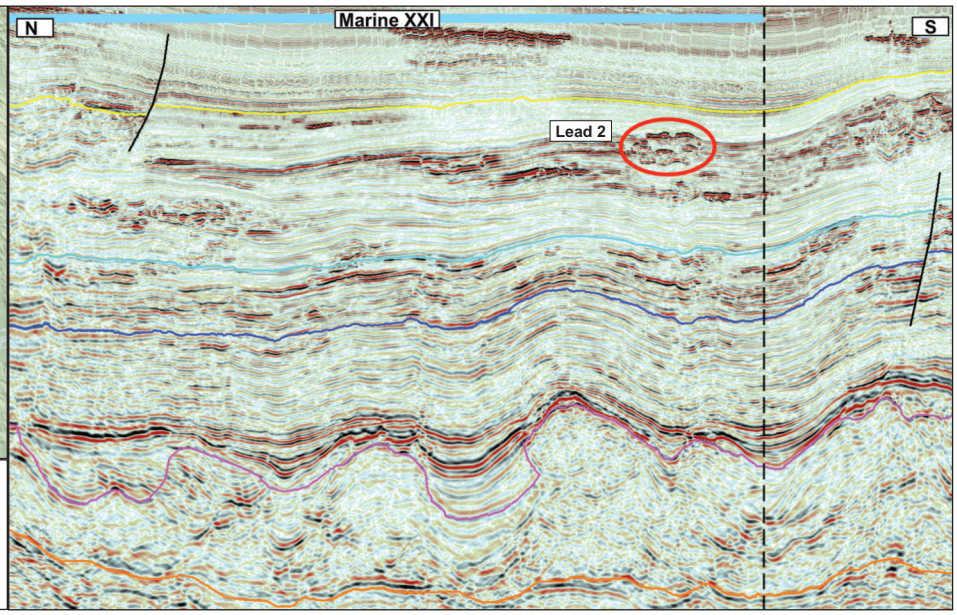

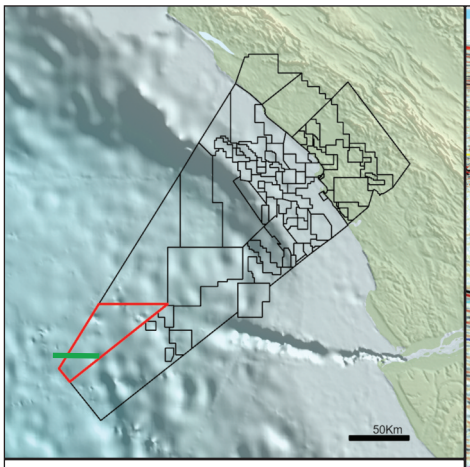

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