

Forearc basins off central Chile are characterized by low geothermal gradient and a sedimentary filling of Cretaceous and Tertiary strata. Tertiary sequences are characterized by low organic carbon content, immature humic-type organic matter, and a biogenic gas potential. Cretaceous sequences are characterized by higher organic carbon content, good reservoir rocks, and fair to good source rocks. The organic matter is sapropelic, with vitrinite and lipinites, and is favorable for oil and gas generation. Seismic and well data suggest that Mesozoic and Cenozoic sedimentary rock sequences filling the basins (more than 4,000 m thick at the shelf edge) extend 40-70 km beyond the present shelf edge. Mesozoic rocks deposited on the slope may generate petroleum and gas that could migrate upslope and accumulate in traps associated with the faulted basement highs and graben-type depressions existing at the shelf edge.

This geologic setting favors the development of large petroleum accumulations along the shelf edge and graben on the sedimentary basins off central Chile.

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Petroleum Possibilities in Continental Margin off Central Chile

The continental margin off central Chile, from Valparaíso to Valdivia, encompassing an area of 100,000 km², has been the target of exploratory activity by Empresa Nacional del Petróleo since 1970. Exploratory drilling began in 1972. By August 1984, total exploratory efforts had resulted in drilling 14 offshore wells and acquiring 12,130 km of seismic reflection lines. A biogenic gas accumulation was discovered in the "F" well. Because these attempts to find oil were unsuccessful and because drilling costs have escalated, exploratory activities have been curtailed.