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EXECUTIVE SUMMARY

Oils from the Solimões and Amazonas Basins have been analyzed geochemically to assess source rock characteristics, establish genetic relationships, and evaluate the extent of post-generative alteration. Solimões oils are light, paraffin-rich and compositionally and isotopically uniform, suggesting a common source. The oils lack biological marker compounds due to advanced thermal evolution, precluding any conclusions regarding source lithofacies and paleo-depositional environment. However, shales of the Upper Devonian Jandiatuba Formation are the most likely source candidate given their reported thickness, organic richness and thermal maturity.

Amazonas Basin oils are geochemically similar to the Solimões oils and have biomarker distributions characteristic of marine calcareous shale or marl source rocks deposited in a highly anoxic environment. These are attributes of Upper Devonian (Frasnian) shales of the Barreirinha Formation and suggest the existence of Barreirinha - Curuá and Barreirinha - Itaituba petroleum systems in the eastern Amazonas Basin. The similarity between Solimões and Amazonas oils suggests that organic-rich, Upper Devonian shales are major source rocks in both basins.

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