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Petroleum Systems Response to the Gas Injection Projects in the Talara Basin, Offshore Fields, Northwest Peru

The study area is located between the parallels 04°10' to 04°45', and the meridians 81°05' to 81°45', towards West of Greenwich Meridian, where the stratigraphic sequence recorded is approximately 23,000 feet of clastic sediments, characterized by a shaly- sand sequence which includes formations of Paleozoic, Cretaceous, Tertiary and Quaternary age.

The production mechanism is gas drive solution, characterized by a fast increasing of the Gas- oil ratio, fast declining of the production rate and pressure. The water produced comes from high water saturation sands, where the oil production response is directly proportional to the net pay and the porosity, being affected by the clay volume, water saturation and size of the structural block.

Presently, there are 19 active gas injection projects located in three offshore fields named Peña Negra, Lobitos and Litoral, where a total of 28 MMSCFPD is injected, recovering 2970 BOPD of secondary oil, which represents the 25% of the total production of the field.

The best producer reservoirs in offshore fields of the Talara Basin, which correspond to a Pull apart basin, belong to Eocene age and they are locally named Mogollon, Peña Negra, Cabo Blanco and Helico in Peña Negra field, Basal Salina, Rio Bravo, Pariñas, and Helico in Lobitos field and finally Pariñas in Litoral field.

Finally, it is important to mention that in reservoirs with similar sedimentary characteristics, the enhanced recovery projects need to be implemented not too much long after completing the development of the reservoir.

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