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Integrated petroleum geosciences study of Attahaddy Gas Field (Sirte basin, Libya)

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The Attahaddy field is one of the most important fields that belong to Sirte Oil Company. The field is producing gas from the upper cretaceous, gargaf formation as a major pay zone in the area of study. The integrated study focused on exploring new potential areas, solving the field production problems (water invasion), field development and work reservoir management. During the seismic interpretation stages the depth map of the gargaf formation were constructed in order to determine the exploration locations and faults trends. 3D seismic data interpretation has high quality which allowed applying some advance seismic attributes such as coherency volume and time slices. Most of the major and minor faults were identified. The reservoir parameters (effective porosity, permeability and shale volume and water saturation) were calculated in order to show the petrophysical parameters distribution. Facies reservoir model has been built to see the facies distribution in the Atthaday field. Some cross plots were generated to analyze the reservoir interval. Building the property reservoir models helped in the development of the field and can recognize the low risk areas. The study will help in decreasing the risk and uncertainty of drilling infill wells in the field. By integrating all these data the gargaf reservoir will be more controlled and managed.

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