

# **Stochastic Modeling Workflow for Well Drilling Zones Delineation: Integrating Probabilistic Models and Production Data to Reduce Risk**

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## **ABSTRACT**

To build a robust reservoir model, integration of both data and disciplines is key. To define drilling spacing, injection patterns and associated reserves it is necessary to evaluate the uncertainty of the reservoir distribution. To reduce risk in decision making and planning it is necessary to combine multiple stochastic models and production data. The classic workflow previously used by our company was based on deterministic volumetric models, adding a recovery factor and well type to estimate the necessary number of wells to develop the studied area. The limitation was that it did not take into account the geological model, sand distribution or uncertainty estimation. By integrating a 3D model (Petrel) with an analytic reservoir model (SAHARA) we were able to generate multi-realizations, evaluate different development cases, optimizing calculation time and economic return. The resulting models are not only an integration of technology but also a collaborative work of reservoir engineers and geoscientists