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Implementation of Fault Trap Analysis Best Practices into the Exploration and Development Cycle

ExxonMobil's fault trap analysis best practices is a set of integrated technical workflows for evaluating trap and seal in specific business environments. The workflows contain recommendations for the application of the latest tools and technologies in fault interpretation, seal evaluation, and volumetric assessment of faulted traps. Implementation of these best practices results in:

- Improved efficiency and quality in fault interpretation and structural mapping.
- Application of appropriate fault seal analysis technologies involving trap and seal definition, analysis of historical drilling results, fault juxtaposition analysis (includes proprietary technology dealing with multiple faults and stratigraphic realizations), and examination of other controls on seal.
- Improved linkage of trap and seal analysis with volumetric assessment.

The best practice has been designed for use by a broad-range of geoscience customers. For example, inexperienced geoscientists use the workflows as a resource for seismic cube interpretation and structural mapping. Fault seal experts use the best practices to ensure traps are risked and sized consistently throughout the upstream. Technical advisors use the best practice to evaluate the applicability of technology in various business and geologic settings, while managers use the workflows in project planning.

This integrated approach to fault trap analysis has impacted ExxonMobil business decisions throughout the exploration and development cycle. Workflows have been applied to frontier and mature basin exploration and to development plans for new and mature fields. Examples and applications of best practice workflow technologies are presented herein.