CERSIS—Bridging the Gap in the PEMEX/PEP Integrated Process between Petroleum Systems Analysis and Play Risk Analysis

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CERSIS is an executive information system and GIS tool that provides a rapid evaluation of the geologic probability of an effective play fairway. "Effective" in this sense means that there is adequate charge, reservoir, top seal, and structure to hold at least some minimum threshold of accumulated oil or gas in the play fairway. CERSIS follows a basin framework and petroleum systems analysis and uses results from these studies.

CERSIS is an integral part of the PEP exploration and development integrated process workflow. Explorationists in PEP asset groups who analyze plays create a "living" (updated as new data is acquired) interpretation that includes a series of probability maps. PEP management has a consistent product created by a consistent methodology that allows them to quickly evaluate those plays that qualify for further economic analysis with CERPlay.

CERSIS leverages the existing ARC licenses at PEP by creating the ability to produce probabilistic maps based on parameters calculated from petroleum systems modeling and produces maps of the probability of effective top seal and reservoir. A composite map of the effective probability of reservoir is calculated from the minimum value, across the play fairway of the following component probability maps: 1) presence of reservoir, 2) porosity, 3) permeability, 4) net thickness, and 5) data confidence. Similarly a composite map of the probability of effective top seal is calculated from these components: 1) presence of top seal, 2) fracture, 3) pore pressure, 4) thickness, and 5) data confidence.