

Calibration of Uncertainty (P10/P90) in Exploration Prospects

Otis, Robert ¹; Haryott, Paul ² (1) Rose & Associates, LLC, Houston, TX. (2) Chevron Corporation, Houston, TX.

Otis & Haryott (2006) and Haryott & Otis (2009) described a methodology to determine an appropriate P10/P90 (P10-P90 ratio) for both EUR (Estimated Ultimate Recovery) and EUR parameter distributions as a guideline in quantifying uncertainty. The method requires pre and post drill data to calibrate a "target" range of P10/P90 that can be used along with an estimate of the high side of the distribution to calibrate the uncertainty of EUR or EUR parameters. The data used in the 2006 analysis were from the Chevron 1989-94 international exploration program and were largely non-amplitude prospects defined by dense 2D seismic data. The 2009 analysis included an expanded sampling that included prospects that were constrained by amplitudes and step-out opportunities that were covered by 3D seismic data. Since then, we have extended the data set with additional wells and conducted additional analyses. Results, some non-intuitive, are shown for each of these samplings and suggest a potential classification, based on structural definition, for a "target" range of P10/P90.