

Recurrent Issues in the Evaluation of Unconventional Resources

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There is significant current commitment within the industry to develop and implement methods to assess the prospectivity of Unconventional Resource opportunities. The purpose of this paper is to identify some of the common recurring errors in both numerical evaluation and operational priorities, with specific examples.

Efficient planning and evaluation of Unconventional opportunities is critical due to the low margin, high capital nature of the business. Converting the Conventional exploration and development mindset over to one that places high value on project management and manufacturing efficiency is difficult. Appropriate evaluation and applied operational learning are critical to go-no go and downside risk mitigation decisions.

Specific trouble points are:

- Attempting to model future program results with a single distribution of individual well EUR results - predicting the unpredictable with unwarranted precision.
- Force fitting a lognormal distribution through datasets that are decidedly non-lognormal, particularly in the outer portions of the probability space. This 'double whammy' results in overestimation of results... often significantly so.
- Overemphasis placed upon assessment of chance of geologic success, when the key questions to resolve are what is the chance that my significant risked (pre-pilot) investment will lead to a 'go' decision, and how often does a particular pilot design correctly predict viability or non-viability?
- Failure to recognize the critical success factor - production profile uncertainty - and model this correctly, and develop appropriate prioritized learning objectives for the pilot.

The failure to link the statistical assessment to operational priorities on project assessment or Play entry relegates business sense to an after-thought. The unfettered, unfocused "drill it and see what happens" approach results in sub-optimal pilots that fail to provide appropriate confidence for critical business decisions, destroys value, and risks loss of competitive advantage in the Play.