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by Mark A. McLane,
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Converting Your Geotechnical Prospect to an Economic Business Venture

Independent oil and gas prospectors recognize that their prospects compete with counterpart ventures in the E&P market place. Increasingly, prospects that are purchased and drilled, generally by larger firms, have been scrutinized for geotechnical soundness, and evaluated objectively and consistently with respect to reserves potential, chance of success, cost, and profitability, in order to qualify for the firm's annual drilling portfolio. More and more, even small or midsize E&P firms are employing portfolio principles to systematically coordinate and manage their exploration activities.

Inescapably, the motives of the independent prospector and the purchasing firm are not parallel. The prospector wants to sell the prospect, whereas the purchaser wants to evaluate it objectively. Obviously, this can present ethical dilemmas. However, regardless of an understandable desire to present the prospect in the most favorable light, the wise prospector will seek to understand how the purchaser will analyze it, in relation to the portfolio, and will provide objective, documented data facilitating such evaluation (as well as countering the inevitable drawbacks that attend any prospect).

Key geotechnical and economic parameters and analyses that should accompany any submitted prospect are: 1) current field size distribution for the trend; 2) objective, documented, probabilistic cost estimates; 3) probabilistic prospect reserves distribution (P90, P50, P10, Mean); 4) DCF analysis of P90, P50, P10, Mean cases, yielding PV10, with assumptions; 5) chance of geologic, commercial, and economic success; and 6) economic yardsticks utilizing key performance parameters (Expected Net Present Value, Risk Investment Efficiency, DCF, ROR, Payout, Risked Cost-of-Finding).

Biographical Sketch
MARK A. McLANE (BS with honors, petroleum engineering, University of Texas at Austin) is a petroleum engineer with a diverse technical, operations and business background spanning 20 years in the petroleum industry. He joined Rose & Associates in January 2000 after 3 years with Pioneer Natural Resources and almost 17 years with Exxon Company, USA. Mr. McLane started with Exxon in 1980 and worked in a variety of drilling, subsurface production, and reservoir engineering assignments throughout the western United States. He taught at several Exxon Corporation schools and received an Outstanding Instructor award in 1995. In his last assignment with Exxon he focused on developing and implementing reservoir depletion and field level business plans. Mr. McLane joined Pioneer in 1997 and worked in the Business Development Group, evaluating and advising Pioneer's management on exploration and acquisition projects in North America, China, South America and West Africa. He coordinated Pioneer's risk analysis and portfolio management processes and worked with geotechnical staff in implementing risk analysis, especially in the application of R&A licensed software. He also worked with Pioneer's management to apply risk and portfolio management principles in managing the company's business portfolio. He is a Partner and Manager of Lognormal Solutions, Inc., the software company owned by Rose and Associates, LLP. ☐