# **Play, Operator and Value Analysis in the WCSB Foothills**

### WCSB Foothills

The Foothills region is one of very few WCSB regions with a growth trend. The current rate of 1.7 bcfd is double the 1990 rate. Over the 14 year period, to 2004, the region's production rate increased at a compound rate of 5% per year.

The Foothills region is significant within the context of the overall WCSB. The total production of 1.7 bcfd represents



over 10% of WCSB production. Further, the Foothills



region continues to be a strong source of new supply, with 8% of WCSB rate adds since 1990.

Foothills wells are prolific with the highest average deliverability per well, the lowest decline rates, the highest reserves per well and the highest density of rate additions and recoveries per area.

## Forward Energy's Experience

In addition to industry experience (averaging over 30 years for each of the principals), Forward Energy has completed numerous Foothills studies since 2000. These engagements have included value added steps such as large data-set compilation (from disparate sources), data 'cleansing' and filtering, analysis and interpretation, mapping, economic evaluations, etc.

#### **Forward Energy's Study Process**

The Forward Energy process, refined over the past seven years is rigorous, consistent and complete. Commencing with data collection, the overall process includes database development, analysis and interpretation, and ends with output creation. Each of the database and analysis sub-processes is described in more detail.

## **Forward Energy: Database**

As the foundation for the subsequent analysis, Forward Energy has established a well database. Although initiated from public



data sources (geoSCOUT, et al), many value added features are incorporated. Based on years of experience at building similar databases, many shortcuts and enhancements are included. Examples of data enhancement features include:

- Target play and producing play assignment
- Year drilled and year onstream assignment
- Surface loss and producing status



- Producing zone depth, well completion type, well orientation, fracture status
- Initiating and current operator (with succeeding operator as appropriate) assignment
- EUR / IP rate / decline rate estimation

With respect to the WCSB Foothills region, the Forward Energy database currently contains data on over 6200 drilling or production events, for all wells drilled, through all time.

## **Forward Energy's Analysis**

From this proprietary database, Forward Energy develops analysis customized to each client's specifications. There are four phases in the Analysis process, referenced in the sidebar chart.

The outputs from any phase of the Analysis are a mix of graphical charts, summary tables, detailed maps and focused interpretation/commentary. The metrics reported can include, but are not limited to:

- Initial rate/EUR/decline rate grouped by any number of specification criteria (e.g. by play, by period, etc.)
- Trending charts (by play, by operator, by area, by technology, etc.)
- EUR distributions
- Cycle time comparisons and trends

The Plays and Operators phases are typically based on publicly available data. In selected cases this data is supplemented with client data (e.g. well working interest).

The Play Entry/Benchmarking Phase has two components. In the Play Entry component, Forward Energy reverse engineers the entry strategies of selected operator-area combinations based on operator legacy transactions, historical production, well drilling, land acquisitions, etc. The intent is to discern the strategies that successful operators used to enter and build their Foothills positions. Within the Benchmarking component, selected peer operators are compared for their well activity, production, entry timing, efficiency and other physical metrics.

In the Value phase, financial inputs (commodity prices, capital costs, operating expenses, inflation factors, etc.) are integrated with the physical models. From these economic models, value performance indicators such as Rate of Return, Risked F&D cost, and NPV are determined. Interpretation of these results addresses questions of which operators (or plays) are making (how much) money.

The Benchmarking and Value phases of the Analysis are conducted as confidential and exclusive projects. Significant value added can be achieved when incorporating confidential client information on well results/forecasts, capital and operating cost estimates, facility and infrastructure positions, working interest positions, etc.

#### Summary

Forward Energy's consistent and rigorous study process, combined with the experience and insights are a preeminent tool for any client evaluating an existing position within, or considering entry into, the WCSB Foothills region.



