Integrated Asset Management
Flow Modeling from the Reservoir to the Delivery Point

Field Development Planning from Reservoir to Delivery Point Using:
- Geographical referencing.
- On-screen editing.
- Shape files.
- Image files.
- Analytical reservoir models.
- Compression modeling.
- Proposed development forecasting.
- Economic forecasting.

Production Optimization:
Diagnostics for easy identification of:
- Additional system losses.
- Liquid loading.
- Data errors.
- Bottlenecks.
- Uplift potential.

Production Forecasting and Development Justification:
Use Piper to determine:
- Pipeline, compression and wellbore requirements.
- Impact of proposed development (i.e. infill wells, compression, pipeline expansion).
- If proposed development is economic.

Import IHS Markit’s Harmony Reservoir Models:
- Quantify flush production on a daily or monthly basis.
- Identify production back-out.
- Identify potential problems due to liquid loading.
- Evaluate impact of re-completion.
Evaluate Upside Potential in Debottlenecking

**Objectives:**
Determine if there is potential for system optimization and quantify the potential revenue

**Background:**
- 44 wells.
- Average operating pressure of 230 psia.
- Total gas rate of 39 MMscfd.
- Compression is currently utilized.
- Bottlenecks upstream of compressors.
- Uplift curve reveals potential by lowering suction pressure and reducing frictional pressure losses.

**Analysis:**
- Add two miles of 6” pipe.
- Account for additional gas volumes through compressors; increase compressor capacity curves to reflect full load conditions.
- Input economic parameters.

**Results:**
- Reduced wellhead pressure by 50 – 100 psi.
- 1.9 MMscfd incremental rates.
- Cumulative incremental production of 1 Bcf over five years.
- NPV = $2,114,300 over 5 years.

**Other Studies:**
- Piper is currently being used to model:
  - 7,000 wells over 30 years.
  - Shale gas developments in the Barnett, Marcellous, Montney and Woodford.
  - Gathering systems in tight gas basins such as Picenace, Washakie.

For more information ihsmarkit.com/energyengineering

---

About IHS Markit

IHS Markit (Nasdaq: INFO) is a world leader in critical information, analytics and solutions for the major industries and markets that drive economies worldwide. The company delivers next-generation information, analytics and solutions to customers in business, finance and government, improving their operational efficiency and providing deep insights that lead to well-informed, confident decisions. IHS Markit has more than 50,000 key business and government customers, including 85 percent of the Fortune Global 500 and the world’s leading financial institutions. Headquartered in London, IHS Markit is committed to sustainable, profitable growth.