



# **PTAC Shallow Gas Production Technology Forum**

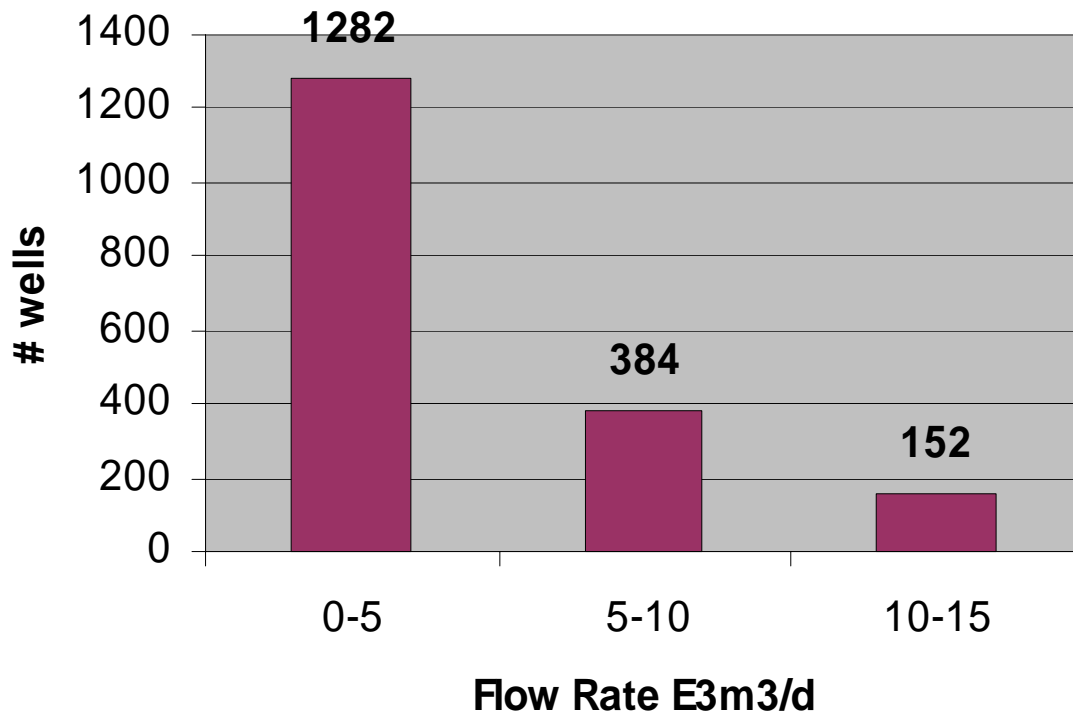


## **Gas Property Pitfalls (reactive mode)**

- **1) Failure to recognize optimal liquid lifting conditions throughout the life of the well and adapt accordingly in a timely manner (leads to premature abandonment, sub-optimal recovery and increased well maintenance costs).**
- **2) Design and installation of facilities (wells, flowlines, compression) for the short term with little consideration for the projected production profile of the well/ field.**
- **3) Failure to capture pertinent reservoir surveillance information at discovery /appraisal/ development phases to understand reservoir heterogeneity / compartmentalization.**
- **4) Poor integration of geological understanding (baffles, barriers, faults) with production practices (impacts completion strategies).**

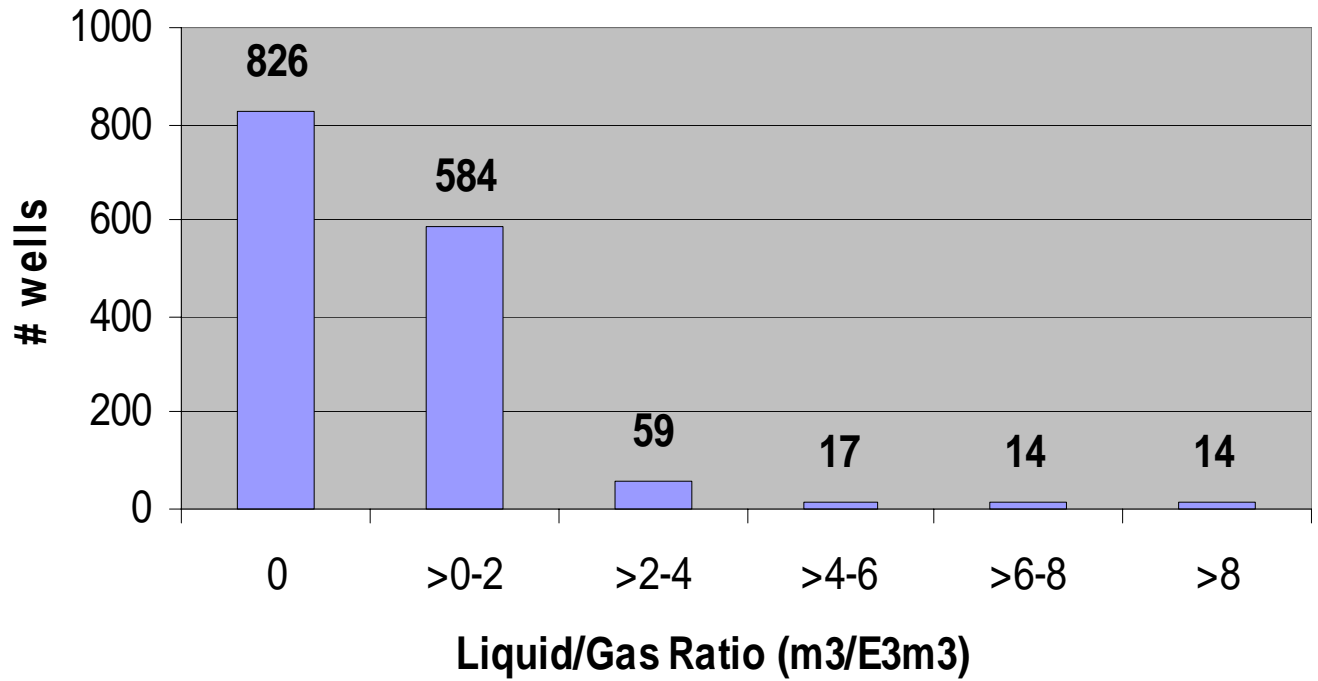


## Husky Gas Well Population (Q<15 E3m3/d)



Alberta only  
shallow & deep

### Husky Gas Wells (Q<7.5 E3m3/d)





# Liquid Loading Remedial Solutions

## • **Critical Rate Modifiers**

- Change conduit size
- Add Chemicals (e.g. soap)
- Change the pressure profile

## • **Liquid Separation and Removal**

- Intermitters
- Plungers
- Pumps (liquid phase)
- Concurrent production/disposal

## • **Other**

- Gas Lift
- Multiphase pumps
- Change the dew point (wellbore heating)
- Sandface mods (Water shut-off & Stimulation)



# Where are we?

- ◆ On the tip of the iceberg
  - ◆ The future is here
- ◆ Need more innovative, cost effective solutions
  - ◆ There are no “One fits all” solutions
- ◆ Operating company management must recognize the need to act early with solutions to maximize gas recovery at economic rates.