



Mesa III Recursos y Reservas
Desarrollo No Convencionales

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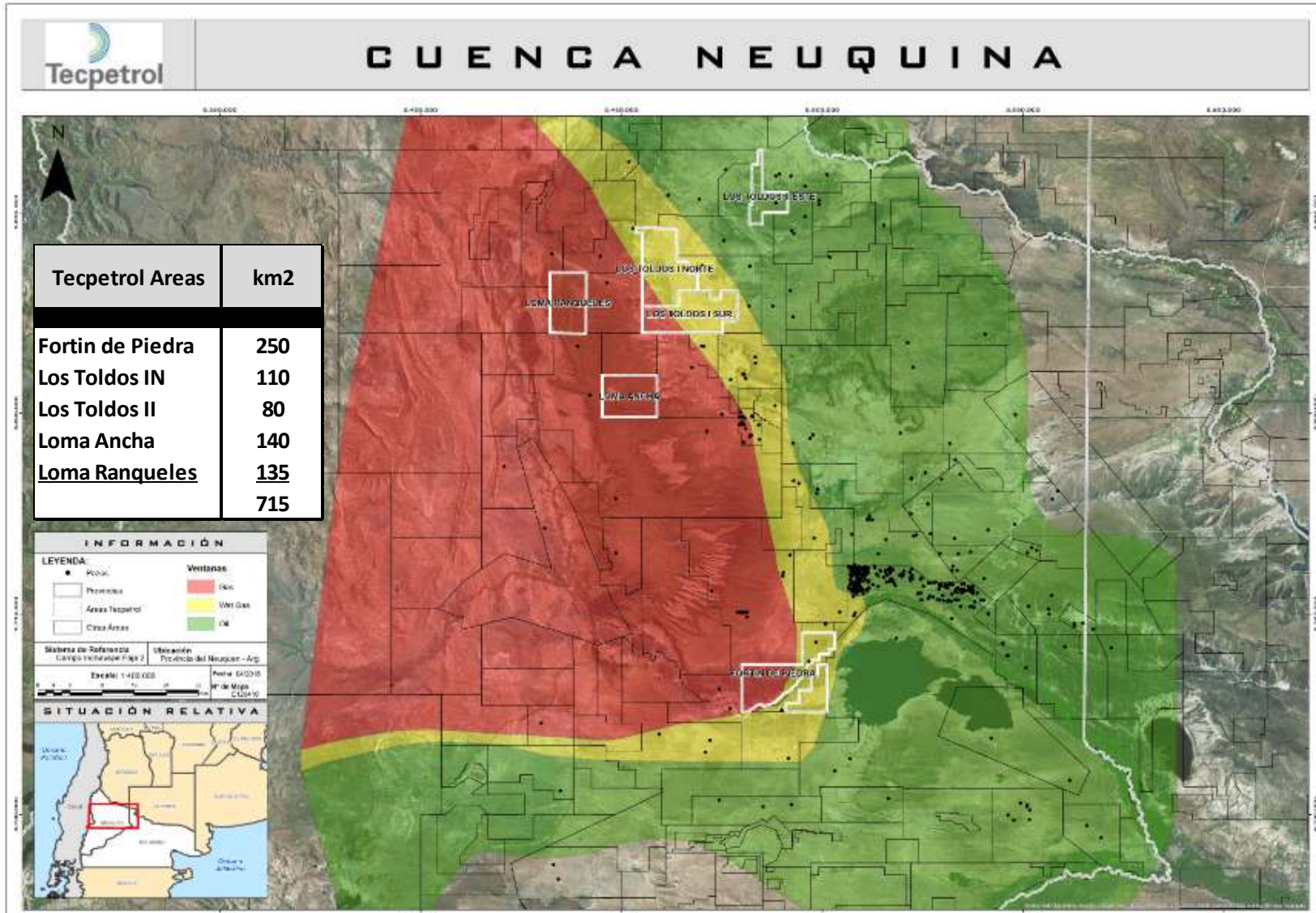
Mayo de 2018



AGENDA

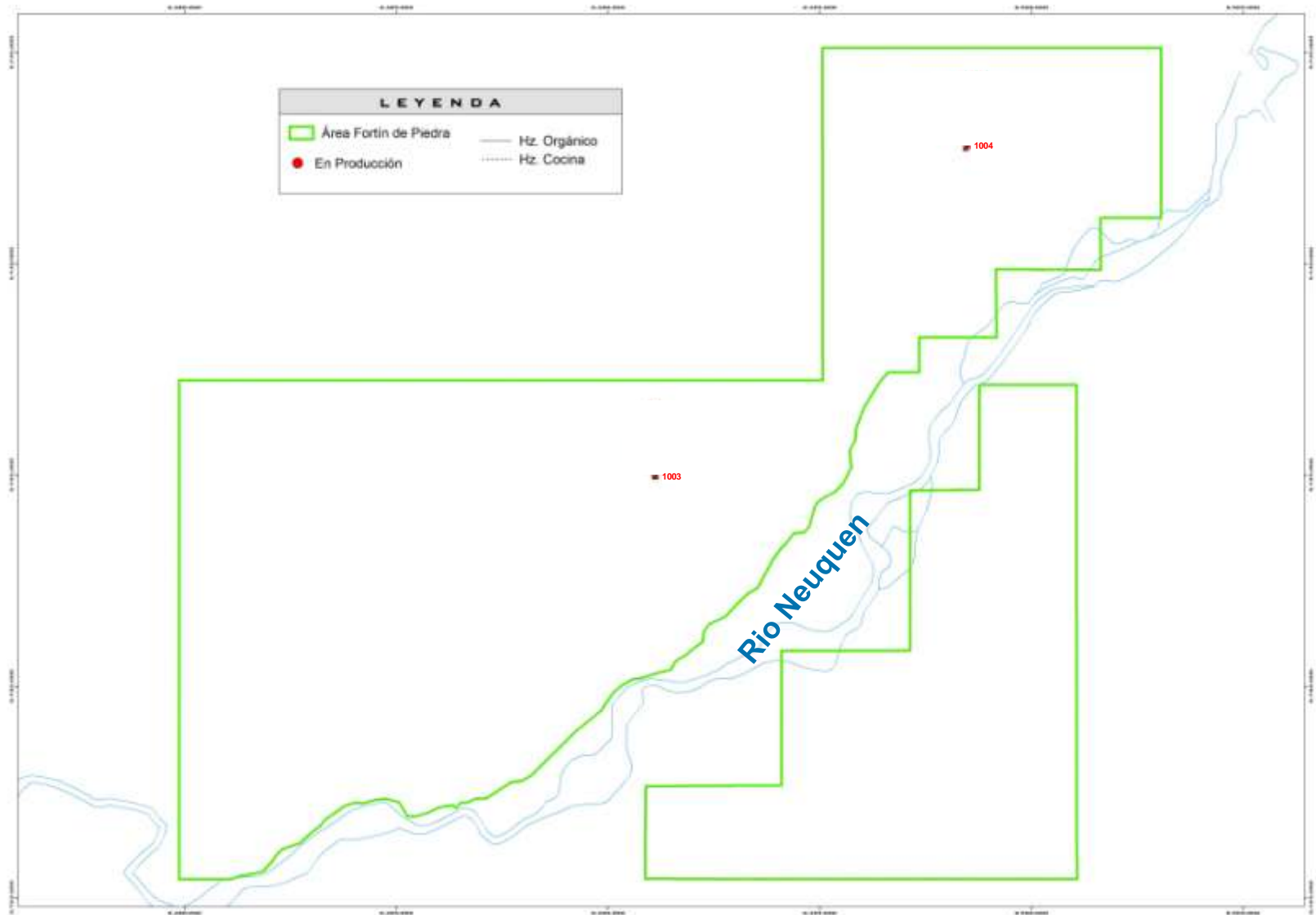
- Tecpetrol Unconventional Resources
- Fortín de Piedra Project
- Operational Challenges
- Reserves Estimation

Tecpetrol Unconventional Resources



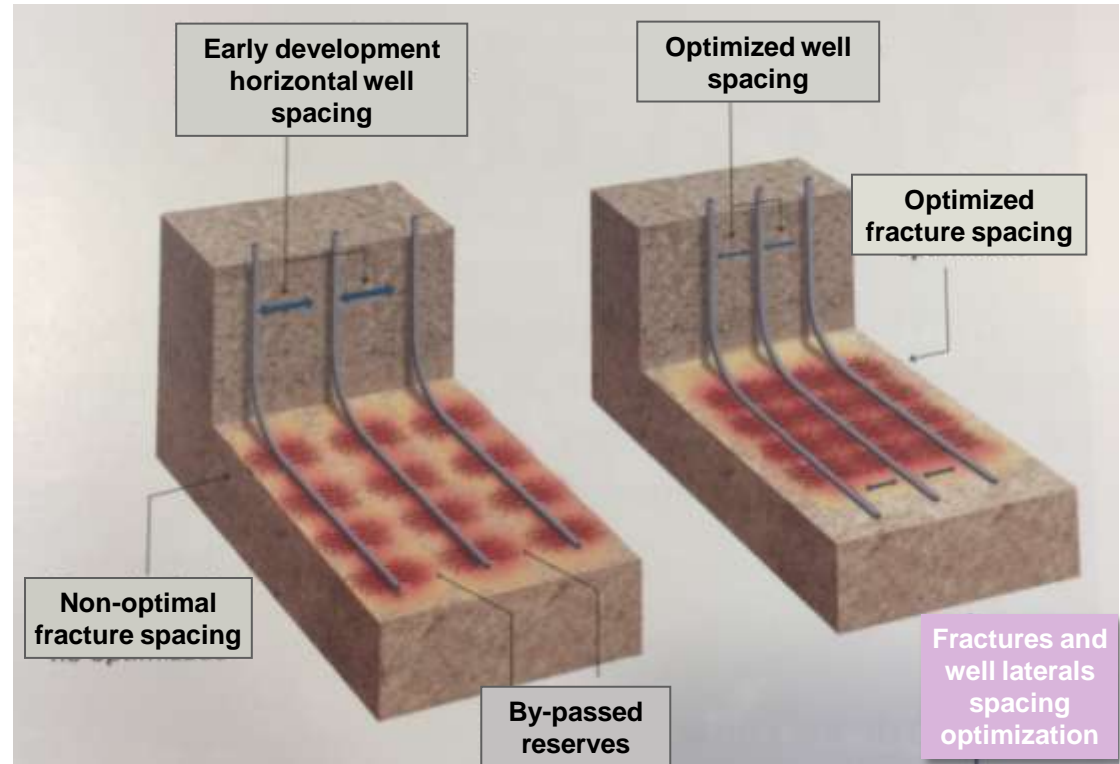
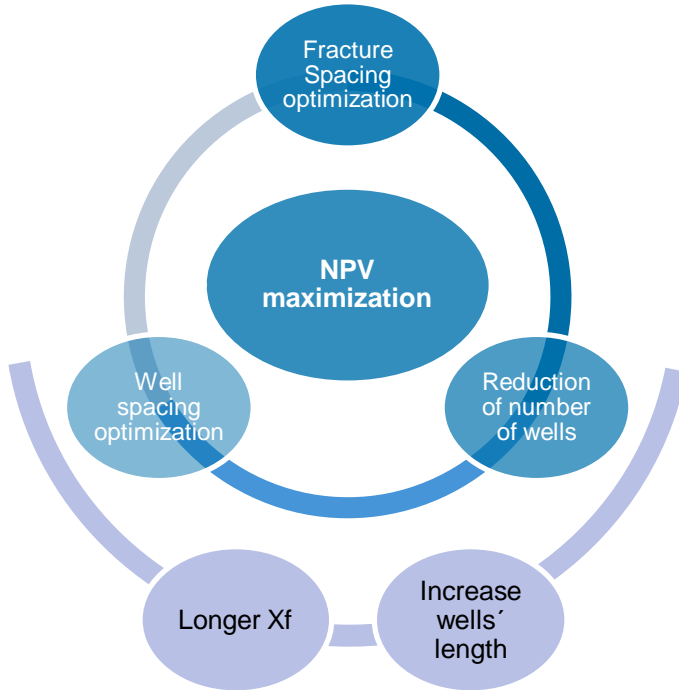
Fortín de Piedra Project

2016: 2 Vertical Wells

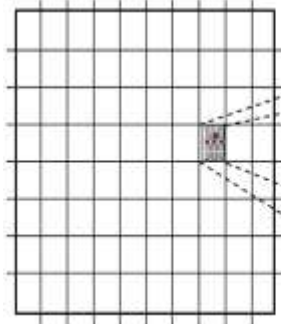


Development Plan Definition

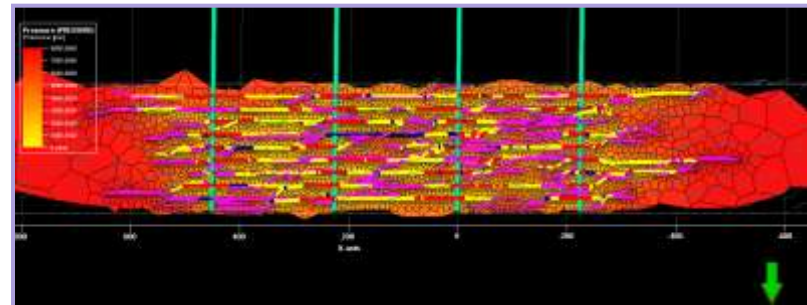
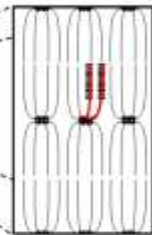
Well spacing optimization- NPV maximization



Development acreage

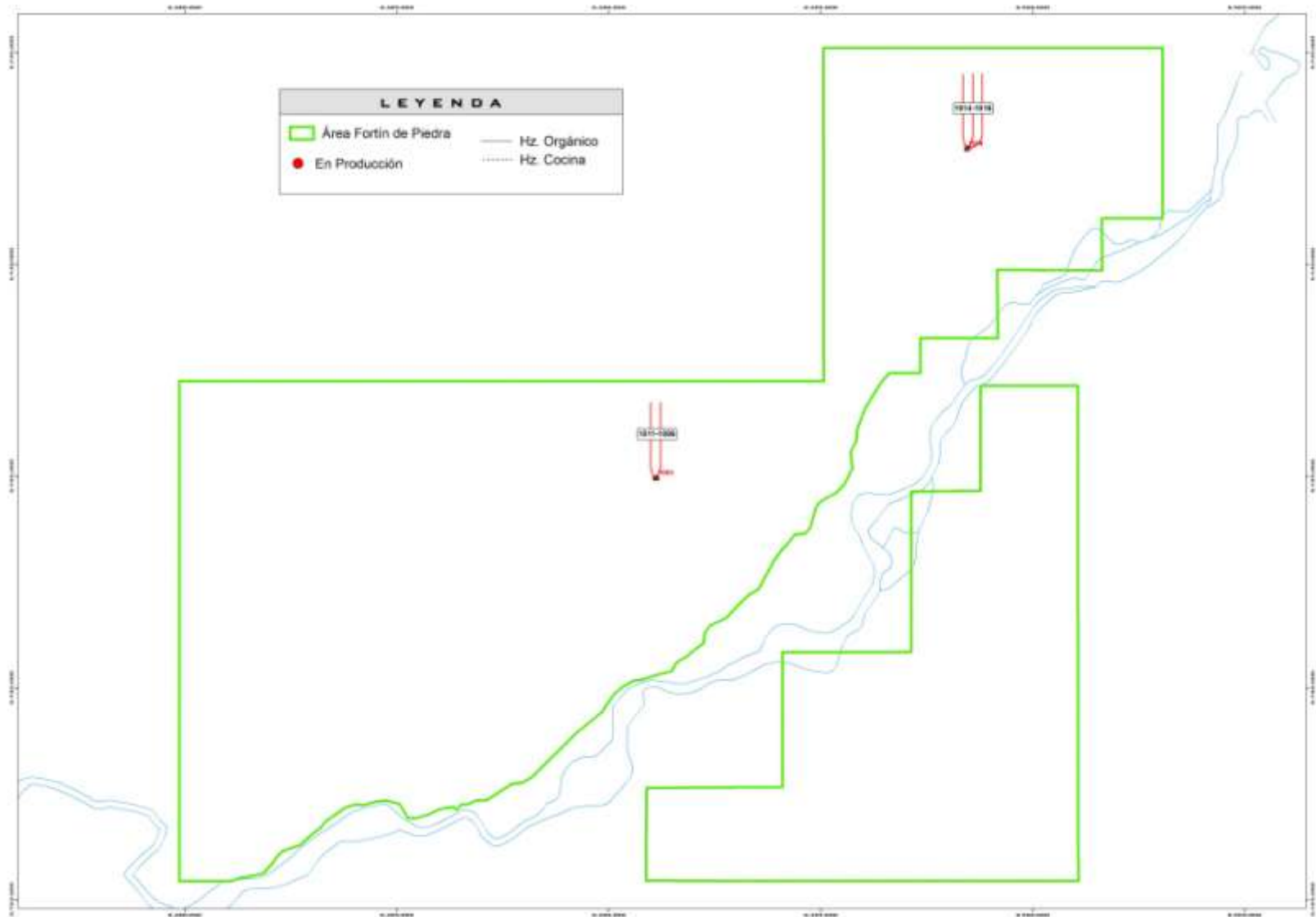


20 km² Unit



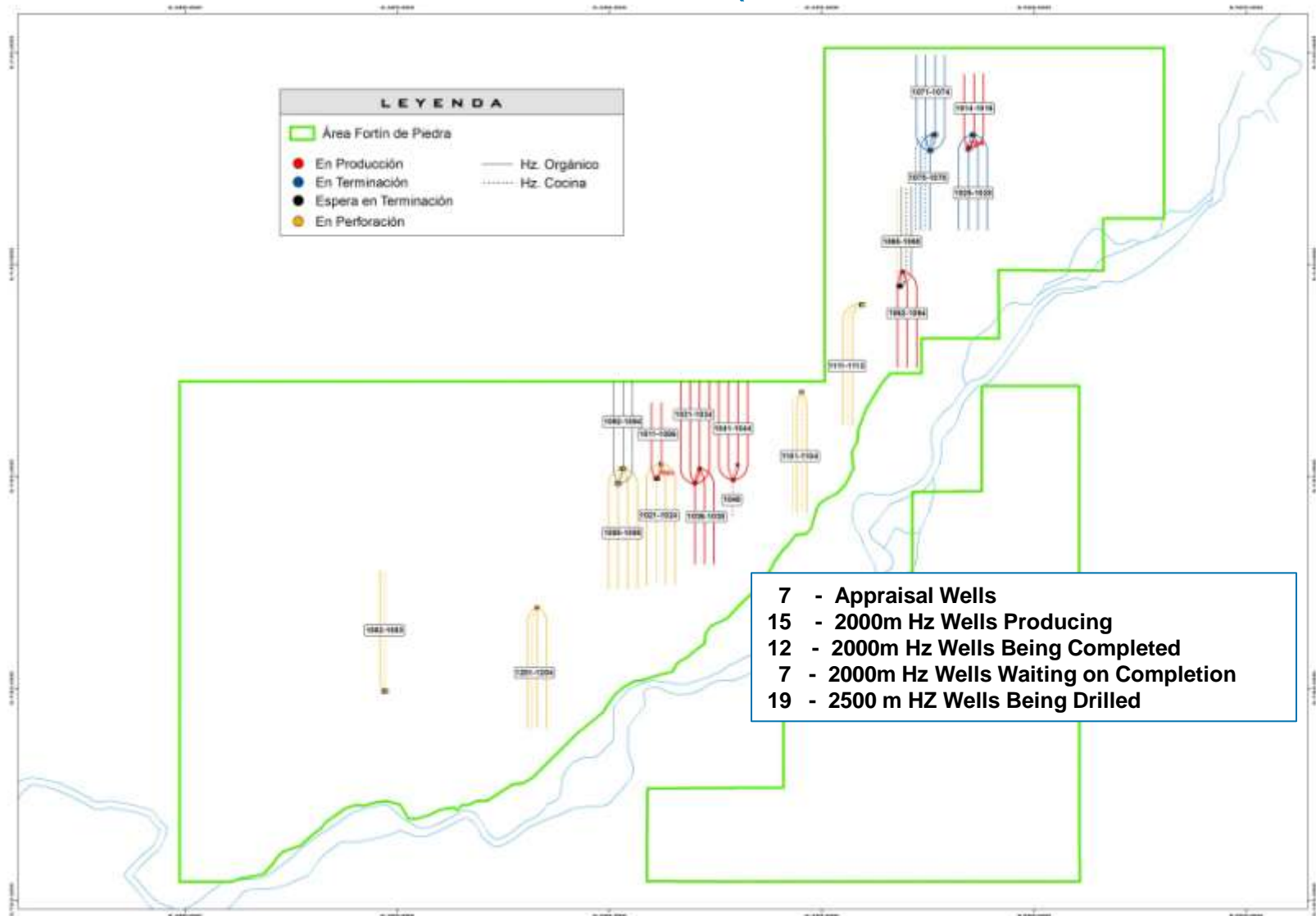
Fortín de Piedra Project

23/Mar/2016: 2V+5 Horizontal Wells (1500m laterals)

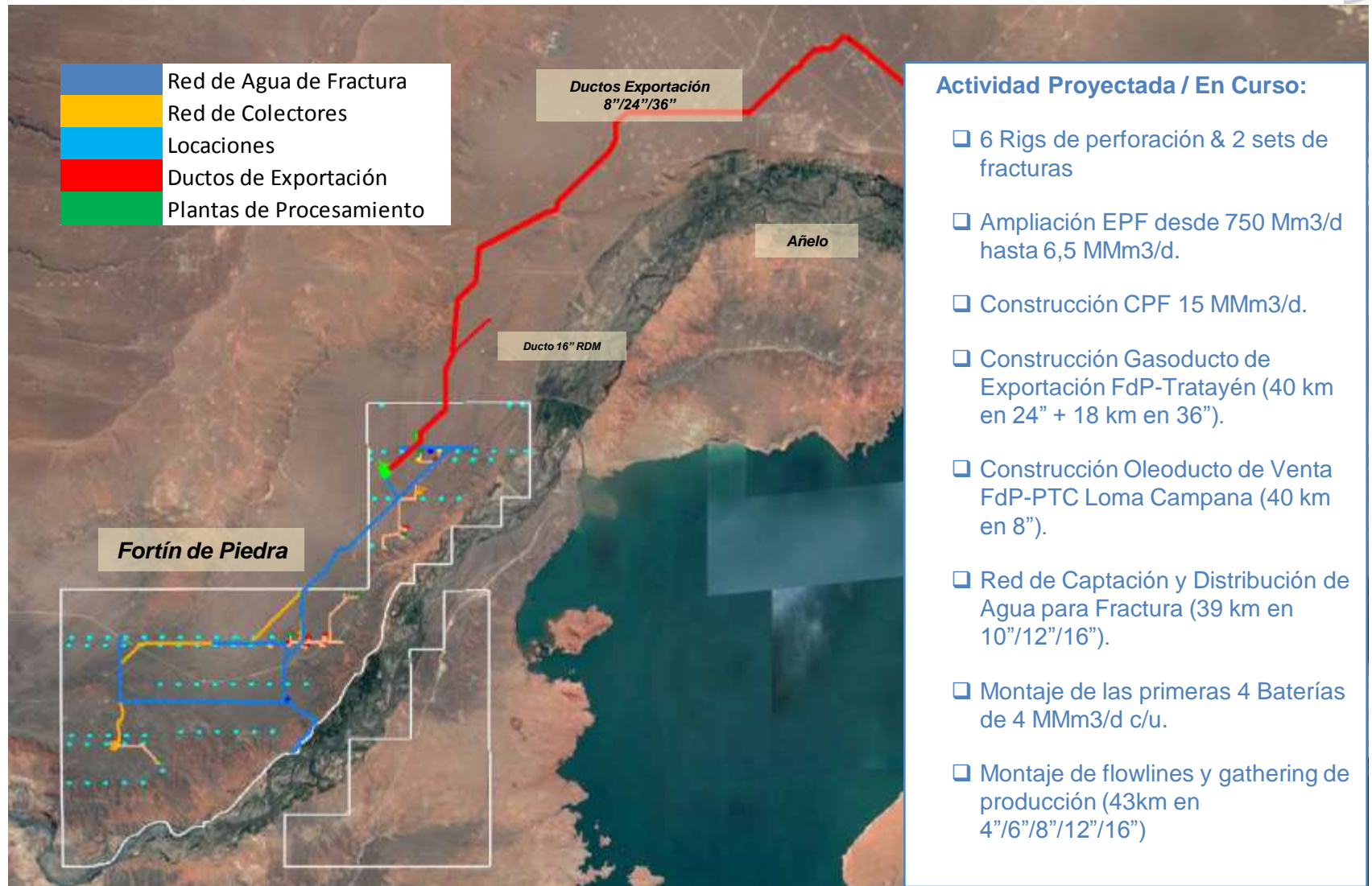


Fortín de Piedra

Current Situation (May/18)



Fortín de Piedra Project



- Desarrollo de Infraestructura 2017/2019 – Capex: 700 MMu\$

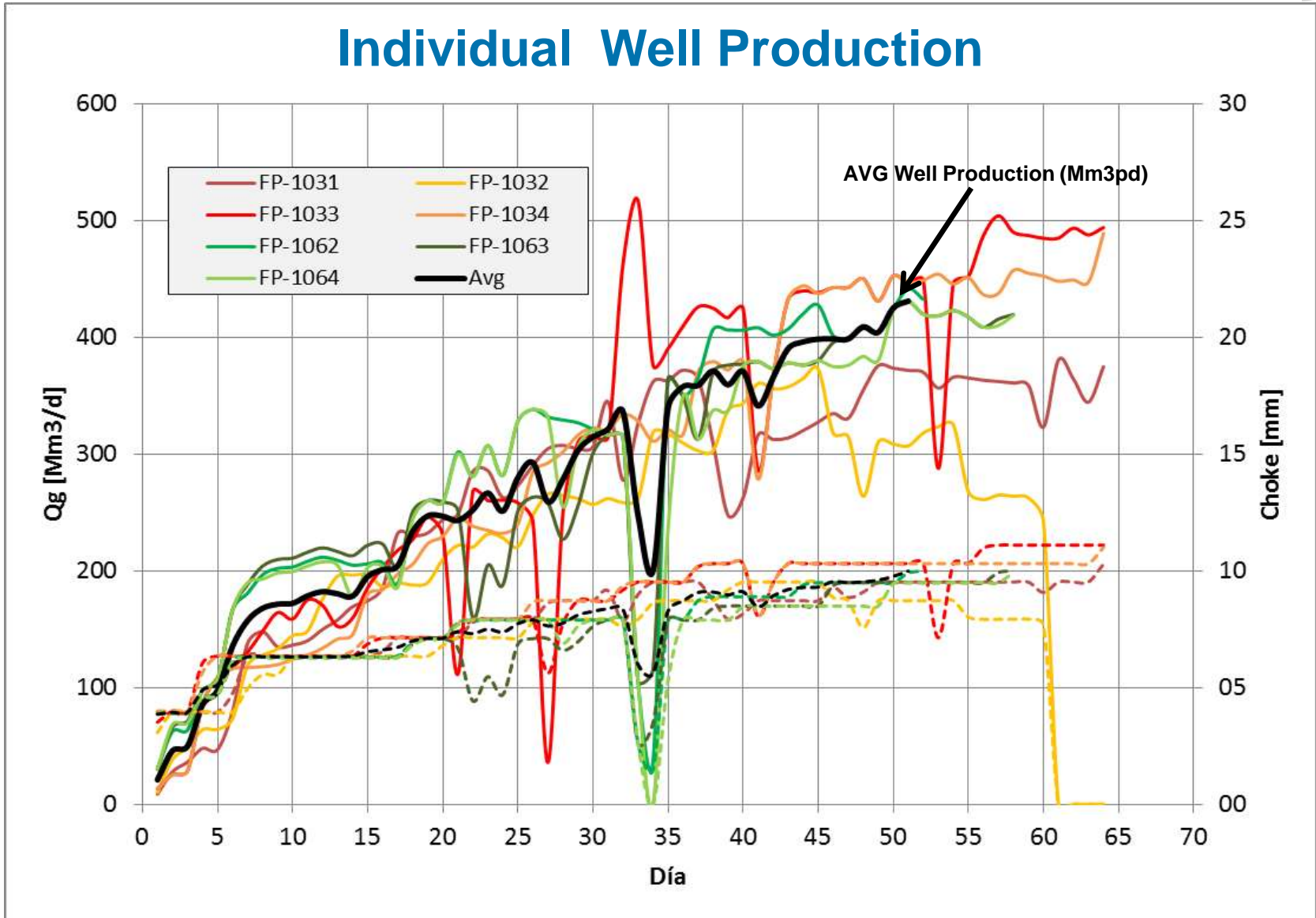
Fortín de Piedra Project



Fortín de Piedra Project

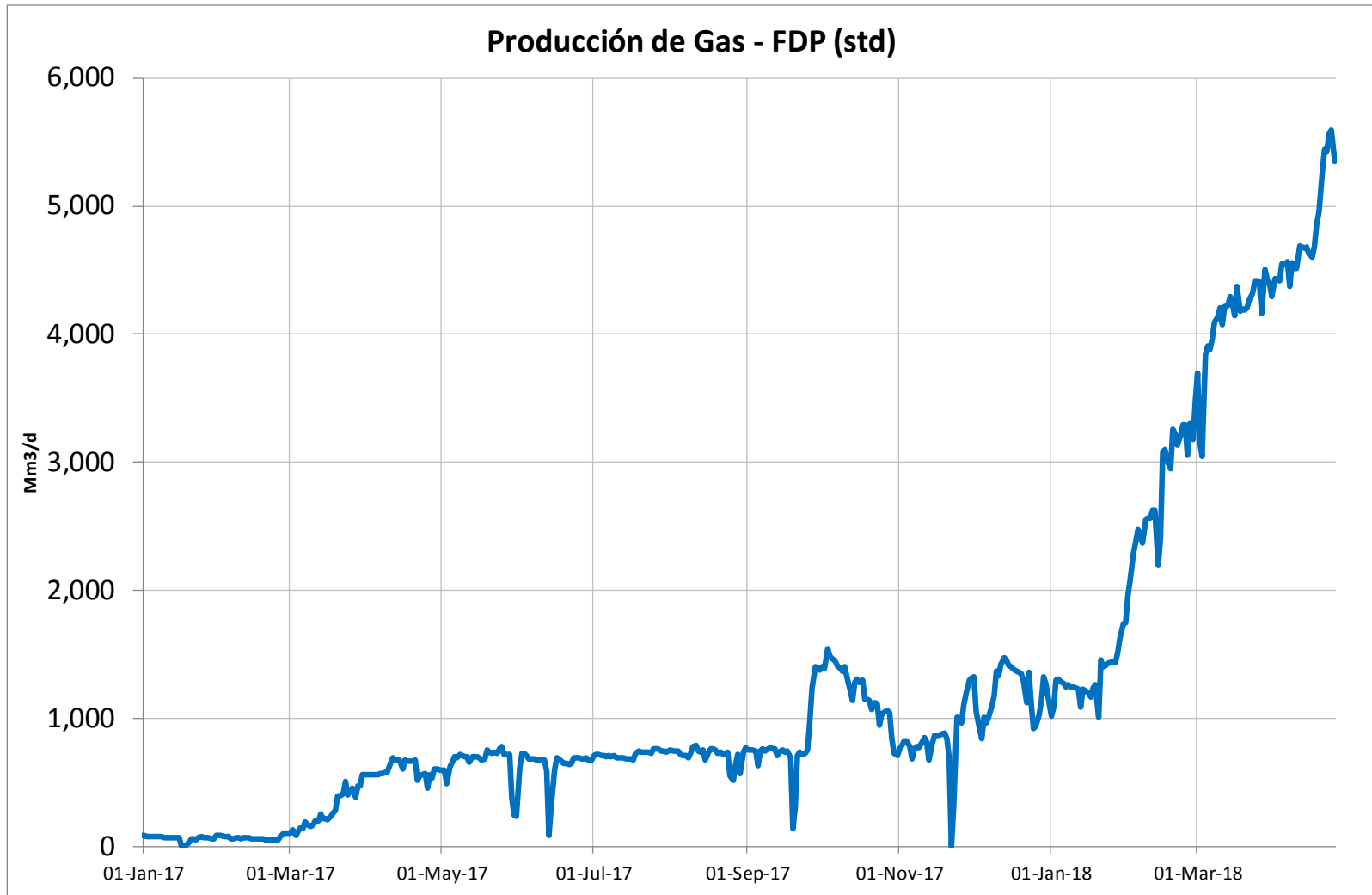


Individual Well Production



Fortín de Piedra Project

Daily Production

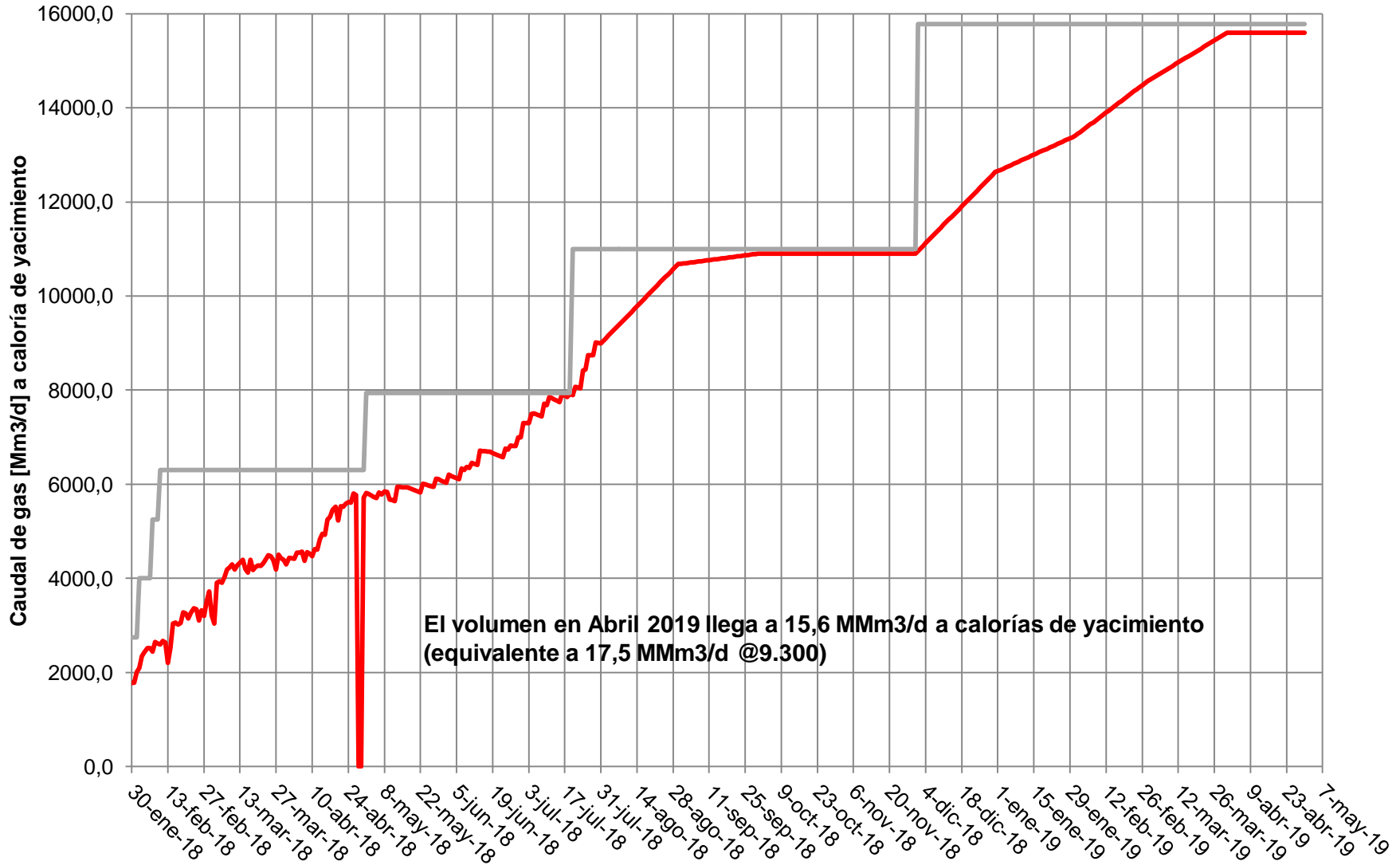


Fuente: Elaboración Propia

Fortín de Piedra Project



Pronóstico de Producción de Gas @ Calorías de Yacimiento



El volumen en Abril 2019 llega a 15,6 MMm³/d a calorías de yacimiento (equivalente a 17,5 MMm³/d @9.300)

Operational Challenges



- Choke Management / Sand Productions
- Well Construction Optimizations
- Process Efficiencies (Big Scales)



Reserves Estimation – SEC Rules



- No SEC special rules for unconventional estimation and classification
- Volumetric Method required a multidisciplinary approach
 - No industry standards currently exist for analysis and interpretation in shale gas/oil reservoirs.
 - Methods and models are still evolving and adapting.
- It is best practice to check volumetric against by back calculating the (recovery efficiency) and evaluate its reasonability.
- In general, the combination of a well defined volumetric method and performance with decline curve analysis type Arps modified can sufficient to support reserves reporting before SEC



Muchas Gracias