

# A Failure is never Forgotten!

*The pressure to make every SIS Well a Winner*

**Factors to Factors to address in maximising  
successful outcomes from SIS Wells**

The prospect of an severely under-producing or 'written-off' well is an ominous one.



# Protect your Reservoir during the drilling process

## Keep the coal seam as clean as possible.

- Control the annular drilling fluid pressure within a band ‘close’ to the in-situ pore pressure.
- Stay below the ‘Fracture opening pressure’.

**Annular pressure must be measured in real time and logged. The logged data should be presented to the client Mine and I would prefer that the drilling process was interlocked to the annular pressure so that the ‘human factor’ of resisting constraints is removed from the equation.**

- Remove the drill cuttings from the reservoir so that...
  - Fluid removed from the well in the production phase is ‘naturally’ clean, (as free of man made debris as possible), and,
  - The drainage paths in the coal are as near to the pre-drilling condition as is possible (read open for fluid migration).



# Plan

- The chief ally in gas drainage has always been time, so get in early and ‘make hay’. It is the key advantage that SIS has over its underground cousin.
- Position: aim for a situation of ‘initial isolation’ from other wells or mine workings, within the reservoir context. You do not want outside influences to complicate the initial draw down process.
- Survey Control: don’t take a chance on off-line drilling. Either intersect or range a vertical well early on in the path of an SIS well to confirm position. And beware the magnetic anomaly.

# Protect your finished product

## Line the hole:

- The need to maintain an open circuit along the full length of the hole.

## Care and responsibility during the production phase:

- Quality of installation (especially for down-hole equipment).
- A producing SIS Well needs mothering (and fathering for that matter). Leave it to its own devices at your peril!
- The golden rule is to keep the down hole pump running ad infinitum. Avoid stoppages like the plague.
- Life will be so much easier if the legacy of the drilling is a 'clean hole'.

## Beware the external influences:

- Cementing of exploration boreholes after production has begun (i.e. holes that lie within the drainage zone of the in-seam well).

# Fall back options – (box of tricks)

## Information and Access points:

- **Use or provide additional well access points to that of the vertical production well in order to gain information on the integrity of the borehole (eg. SIS well, secondary intersect wells, pressure monitoring wells within the drainage zone).**
- **Provide access points from which to flush blockages or to use as secondary or backup drainage access.**

**You can line a collapsing sump if the need arises.**

**You can resort to manual control if your automatic drive packs it in or your down hole pressure sensor fails.**

# Gas reservoir characteristics and the structure of the coal seam

## Reservoir models:

- A tight reign on Permeability is essential for a green-field site.
- The value of collecting quality production data must be strongly emphasised. Use it to validate and improve the reservoir model, and report on performance.

## Seam physical properties:

- Faulting, rolls, dykes and cindered coal.

We all want to find a pot of gold in every Well

