# Case History:
Central Scotland, coal bed methane

- Working with BG Group to develop a reliable coal bed methane exploration and appraisal survey tool based on Adrok's technology
- Survey Area located onshore United Kingdom
- Adrok trained on 4 drilled well locations (for coal signatures and for sedimentary rock & Igneous rock layer signatures)
- Surface terrain comprised low lying farmland. Survey sites on pads.
- Carboniferous marine sequences
- BG Group is interested in dielectrics as a new measurement to help their subsurface interpretations for tracking coal beds
- The results of the Adrok survey were compared to the actual drilling results (Adrok presented results before drilling commenced).
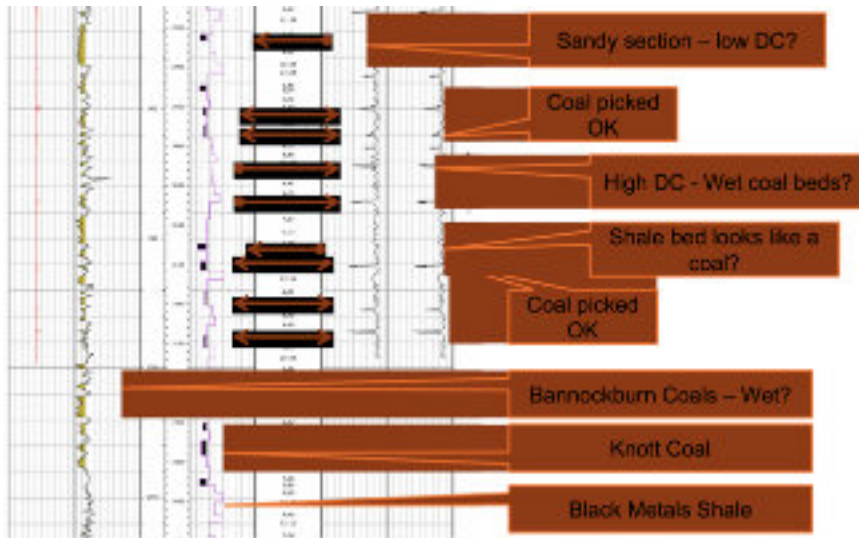- Adrok produced Virtual borehole log charts
- No HSE accidents
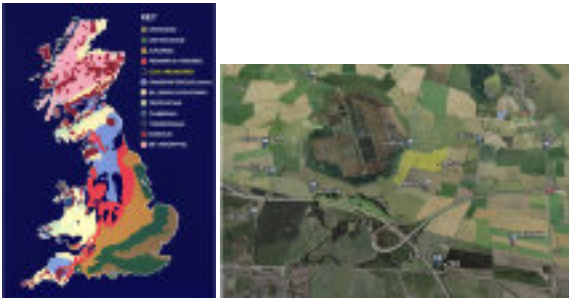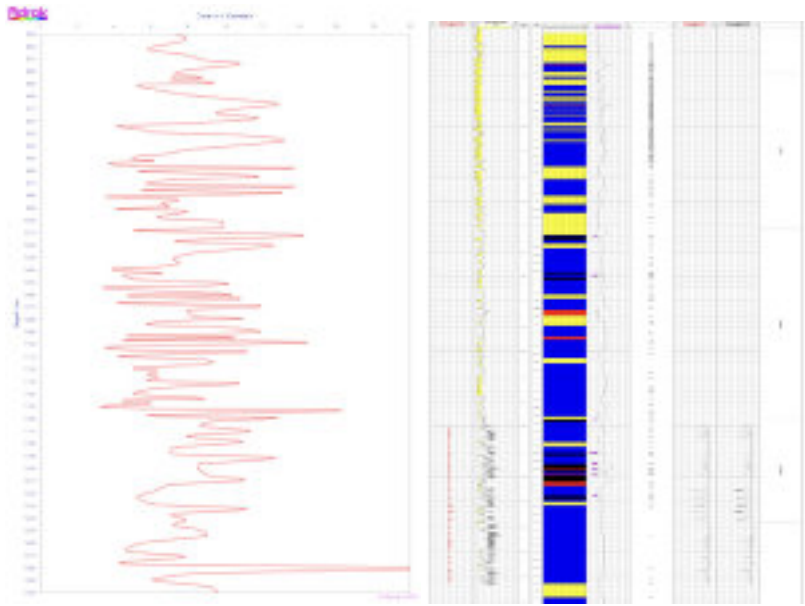
Blind Test – Limestone Coals
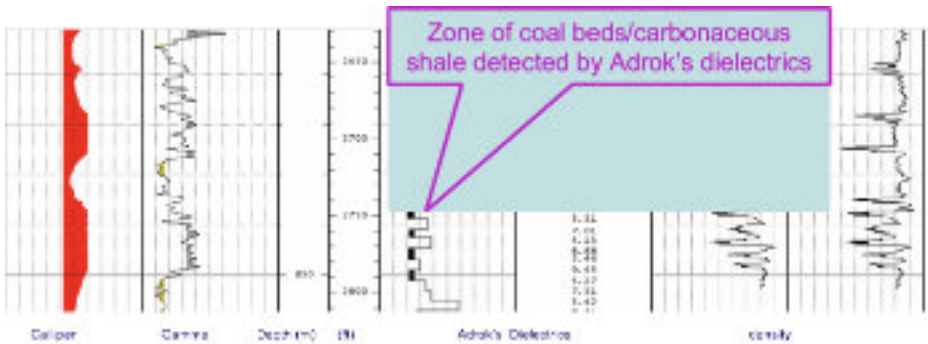
Calibration Well - Black Metal Shales
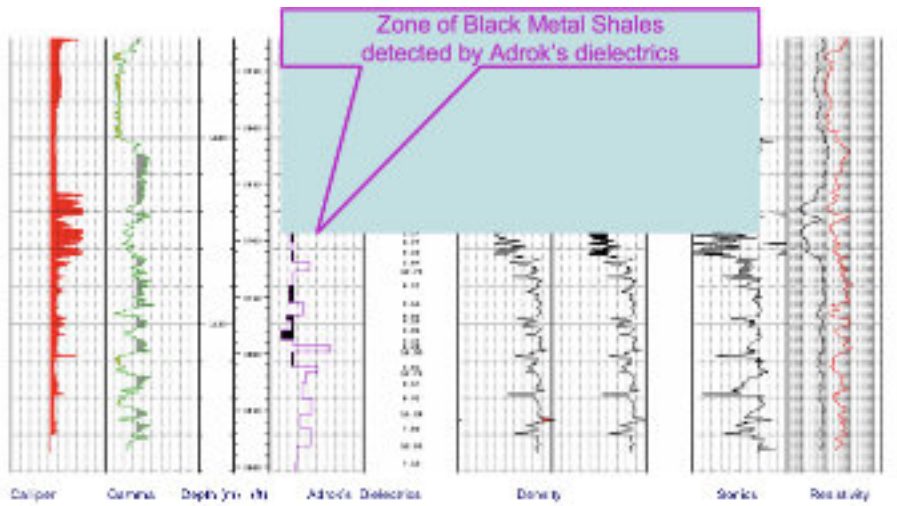
Blind Test Well

BG Group's Conclusions – Dielectric Prof les at Well-sites

- **What is being measured?**
  - Adrok Dielectric responses
    - Coal has low dielectric < 3
    - Water has high dielectric 80-81
    - Calcite has high dielectric 8
- **Depth control**
  - seems good +/- 10 feet
- **Coal beds**
  - prediction is possible but not reliable
  - high dielectric – water f lled?
  - low dielectric- tight? gassy?
- **Sand beds**
  - low dielectric – sands with hydrocarbon?
  - high dielectric- calcite cemented?
- **Volcanics**
  - High dielectric suggesting its presence at a particular depth
- **Shale Gas beds**
  - Low dielectric suggests there is organic material in the Black Metal Shales

Way Forward in Coal Bed Methane

- **What benef t does the Adrok tool provide to coal bed methane exploration?**
  - Answer:
    - Track coal beds
    - Maps water content
    - Accurate depth control +/- 10feet matching to boreholes
- **Next stage is to use ADR's spectral analysis to ascertain coal quality & improve reliability**
  - "good" coals versus wet coals

Contact