Gas Drainage Methodologies at North Goonyella

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North Goonyella Coal
North Goonyella

- Goonyella Middle Seam 6 – 6.5m
- Depth 300 - 450m
- Virgin gas 10 - 14 m$^3$/tonne
- Seam gas is methane
- Seam is liable to spontaneous combustion
North Goonyella

Longwall
  • 250m wide x 3000m long
  • JOY shearer, chocks
  • DBT AFC & BSL

Gateroad development unit
  • 2 x ABM25

Inbye LW development unit
  • JOY 4CM
  • Vacuum plant to extract coal to surface
Gas Drainage

- Inseam drilling
  - Candelabra drilling pattern across LW panel
  - 50m hole centres
  - Gas riser / stub 300m intervals
  - Permeability 2 – 35 mD
Gas vs Distance from end hole

- Gas vs Distance from end hole
- m3/t vs m
Gas Drainage Issues

- Drilling inbye of LW – 1000m
- Single entry
- Controlled GB CH4 emissions from drill stubs by:
  - PUR’d rib (27c/t), grouted rib (30c/t)
  - Shotcrete stub
  - 12m standpipe
  - Drilled to 24m & grouted
- No delays due to gas in 4N
Gas Drainage Issues

- Mining to areas with limited time drainage
- Gas content reduced < 7 m³/t
- Increased emissions from stubs – ventilating stub direct to return
- Drilling flanking holes to stop recharge
- High flowing holes / structures
- Management of Hole intersections
Goaf Drainage

• Compressed air venturi drainage plant
• Gas powered drainage plant
Future

• Surface to Seam

• Inseam gas into goaf