



Longwall 2010



Centennial Coal

Clarence Colliery – Subsidence Management

Allison Golsby

Hunter Valley

October 2010

FUTURE POWER

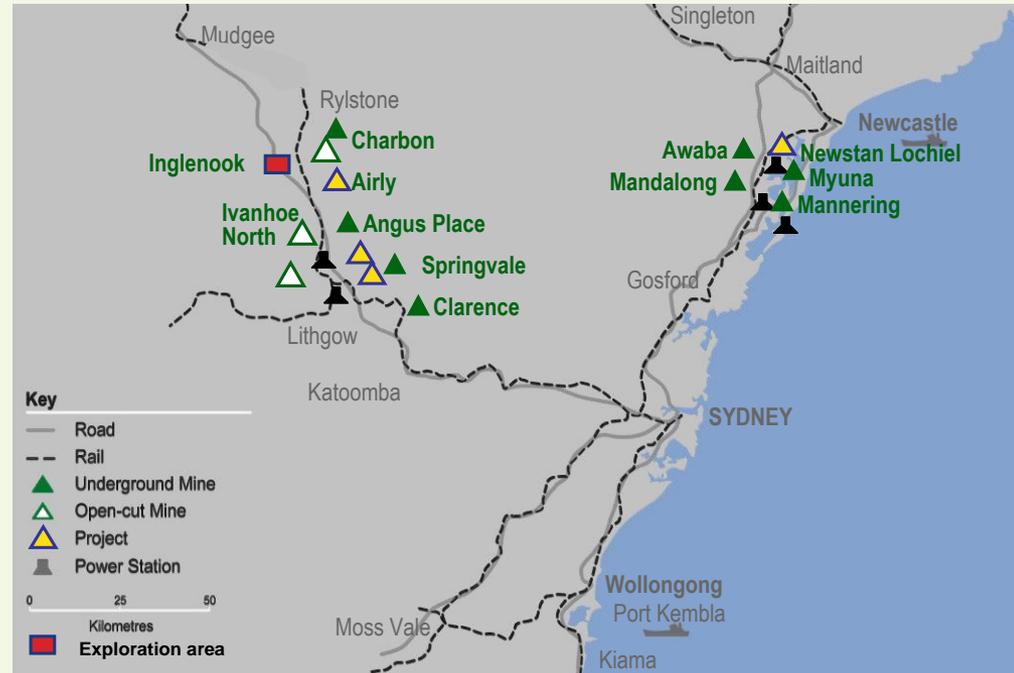


Centennial Coal

Clarence Colliery

Location

- **Western Coal Fields approximately 10km east of Lithgow**
- **One of nine of Centennial Coal's underground operations**
- **Rail connection to Port Kembla Coal Terminal**



The Resource

Clarence has a production capacity of up to 2.1 million tonnes per annum using three continuous miners.

Clarence, currently operates a section, or panel, using a continuous miner, a mobile bolter unit, and 3 shuttle cars.



Cutting the coal

- **The Clarence partial pillar extraction system**
- **A high capacity continuous haulage mining system (Joy 4FCT) has been installed replacing 3 shuttle cars, and a feeder.**



Clarence Colliery

Seam Characteristics

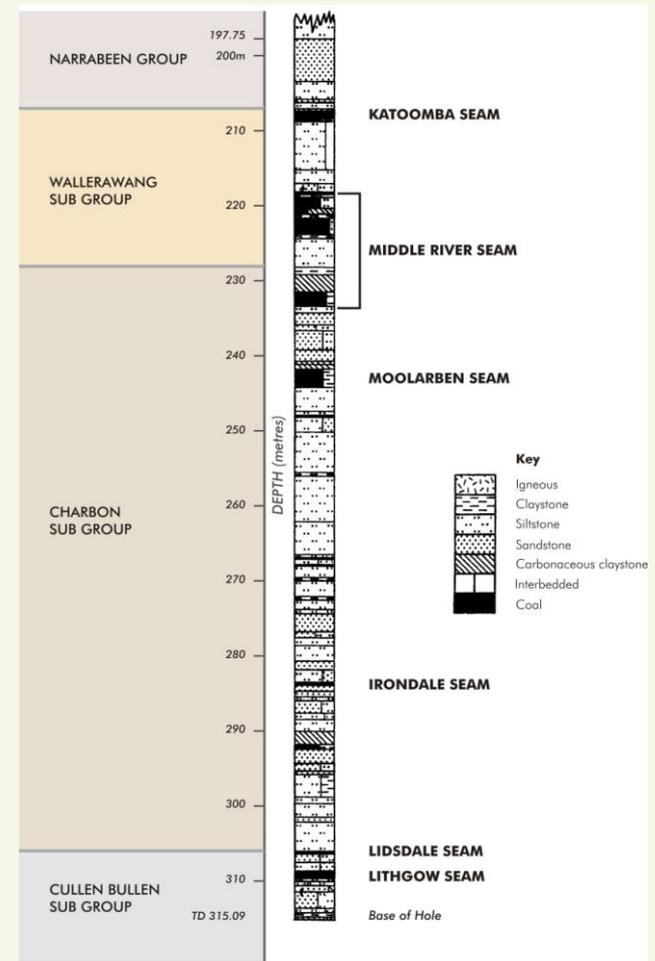
- Mines the Katoomba Seam
- Exports low ash thermal coal
- Generally competent sandstone roof and strong floor



The Petrology

Seam Characteristics

- Averages 2.4m to 4.0m high
- Seam gradient dips at an average of 1° to the ENE. Localised rolls occur around geological structure
- Cover depth is generally less than 200m but reaches 270m
- Small geological faults exist in the projected mining panels



Mining Method - Historical

600 Panels Mining Area

900 Panels Mining Area

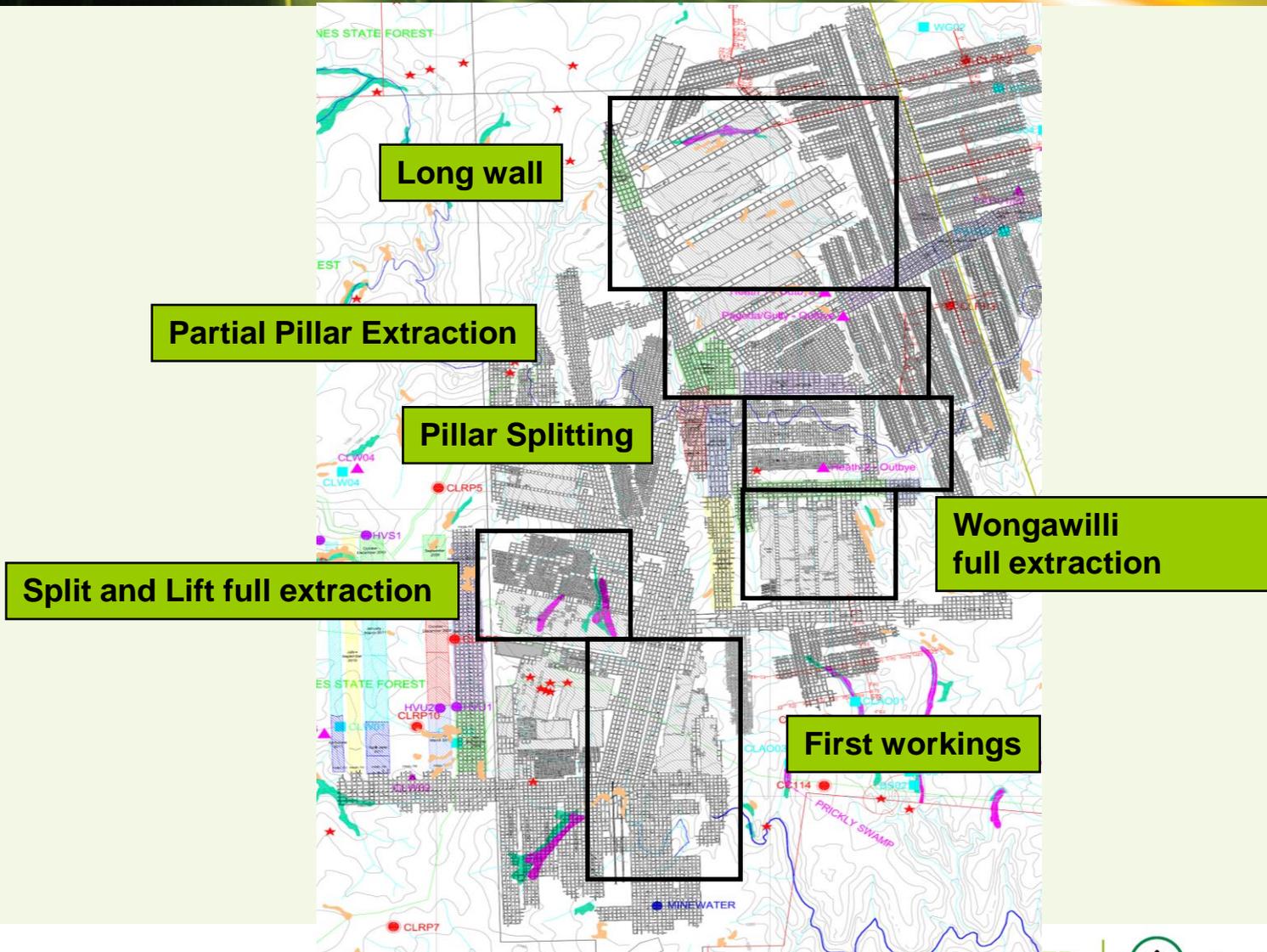
700 Panels Mining Area

Drifts and Pit Bottom

800 Panels Mining Area - Future



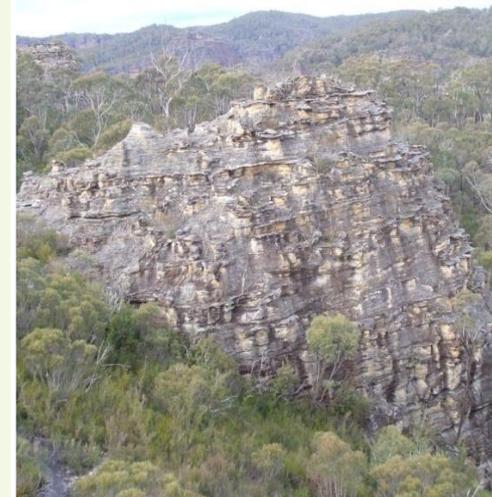
Mining Method - Current



Mine Design

Design Criteria

- **Subsidence Management Plan – Mine design Driver**
- **Maximise resource recovery without fracturing the overburden**
- **Mitigate groundwater inflow and disturbance to aquifers**
- **Minimise surface subsidence under sensitive features**



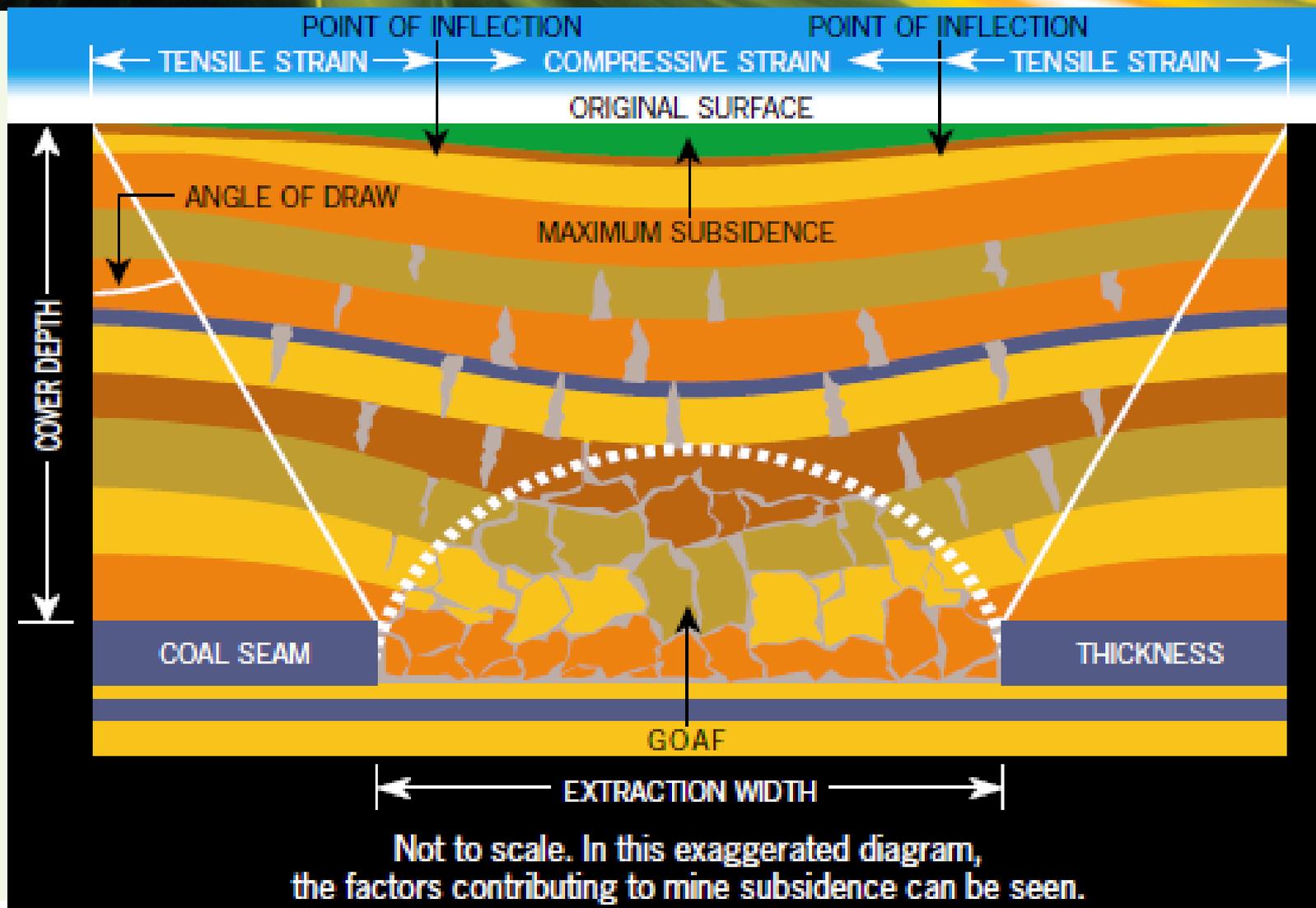
What is Subsidence?

Subsidence

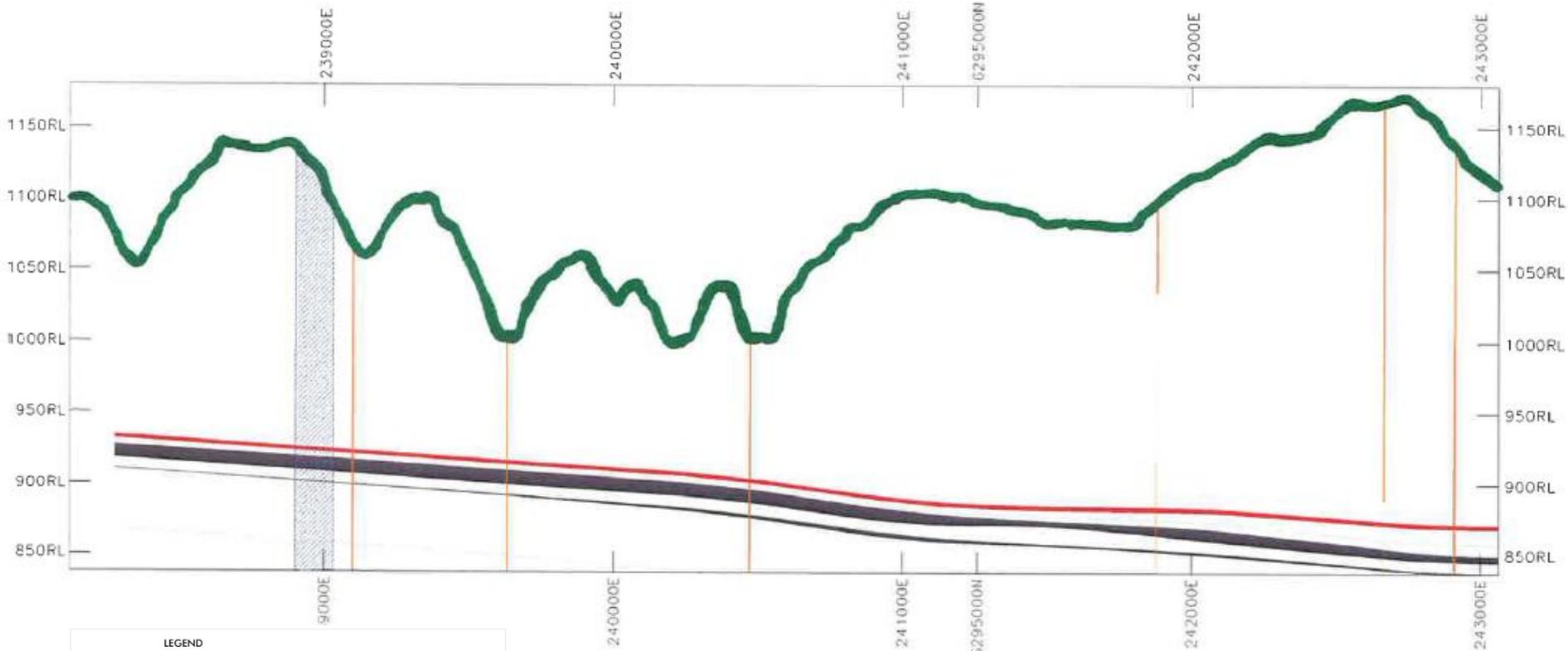
- Lowering or settling down of the lands surface



What influences Subsidence?



Mine Design

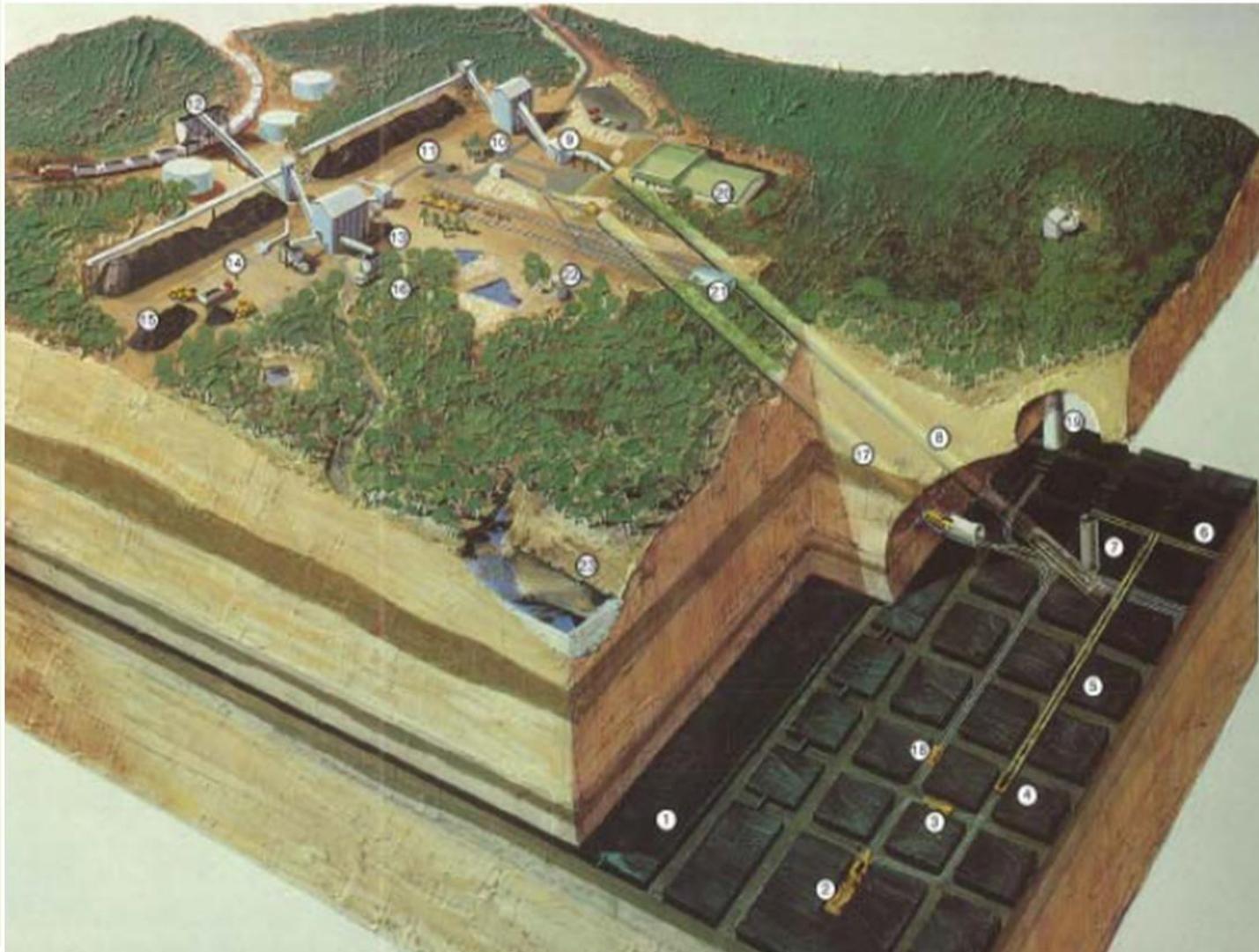


LEGEND

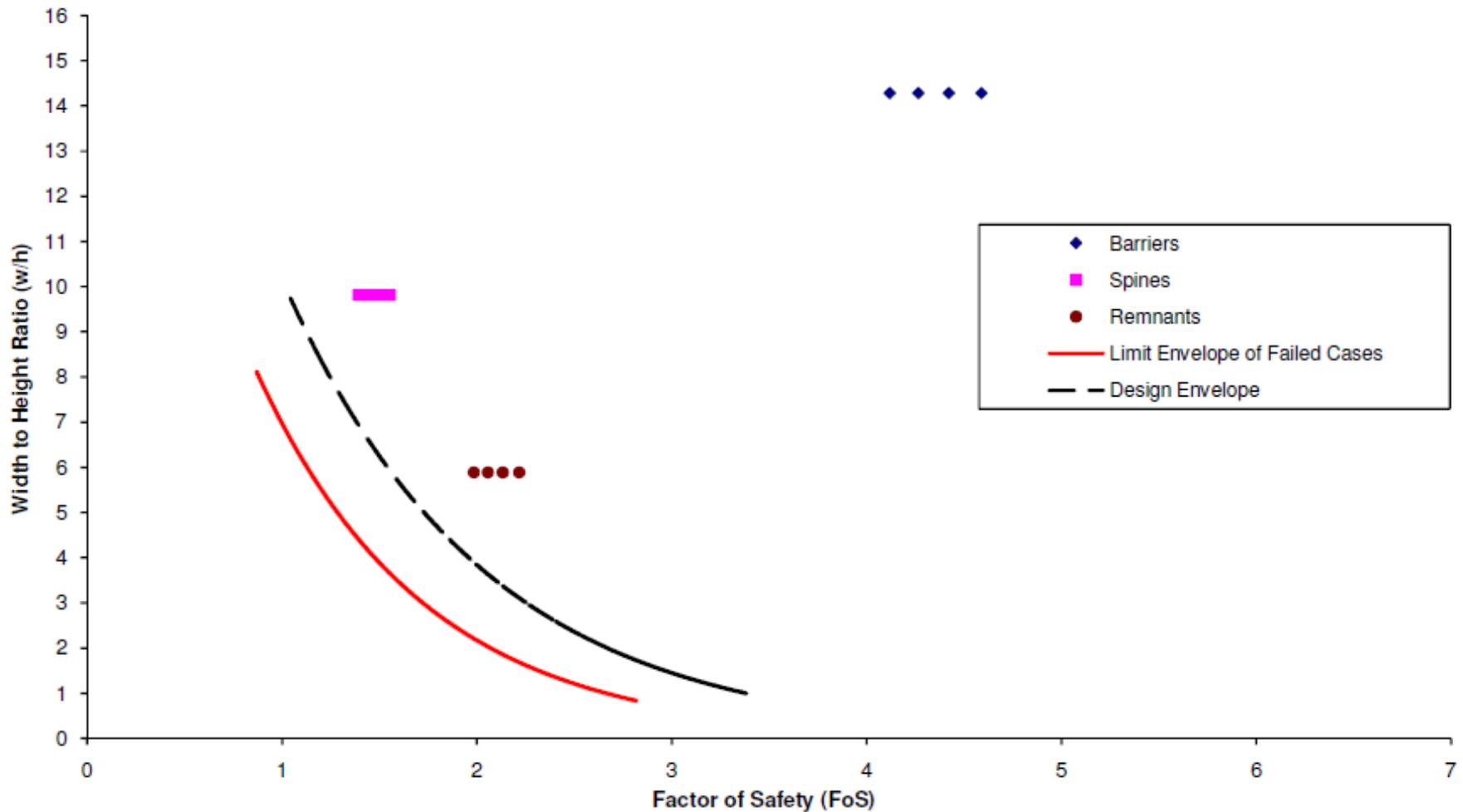
	SRK Magnetic Study Interpreted Faults Coal Level (Blue Vertical Lines)
	SRK Magnetic Study Interpreted Faults Basement Level (Cyan Vertical Lines)
	SRK Magnetic Study - Surface Features (Orange Vertical Lines)
	Mapped Underground Faults
	Graben Fault Zone
	Katoomba Seam
	Seams beneath Katoomba Seam (Middle River - Irondale)

SMG Consultants. Section 1 Over proposed workings (2006)

Mine Design



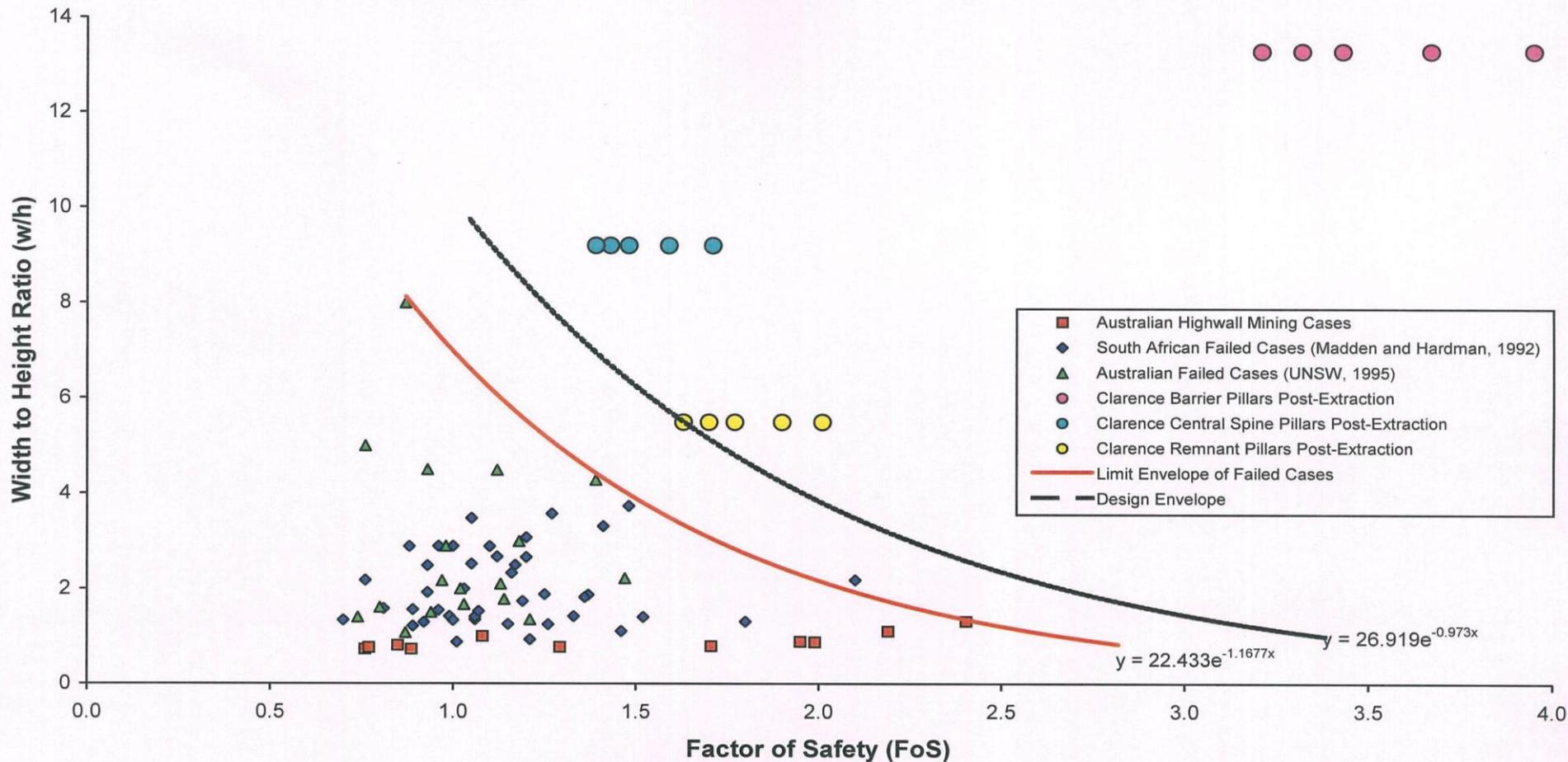
Pillar Design



Strata Engineering (2008)

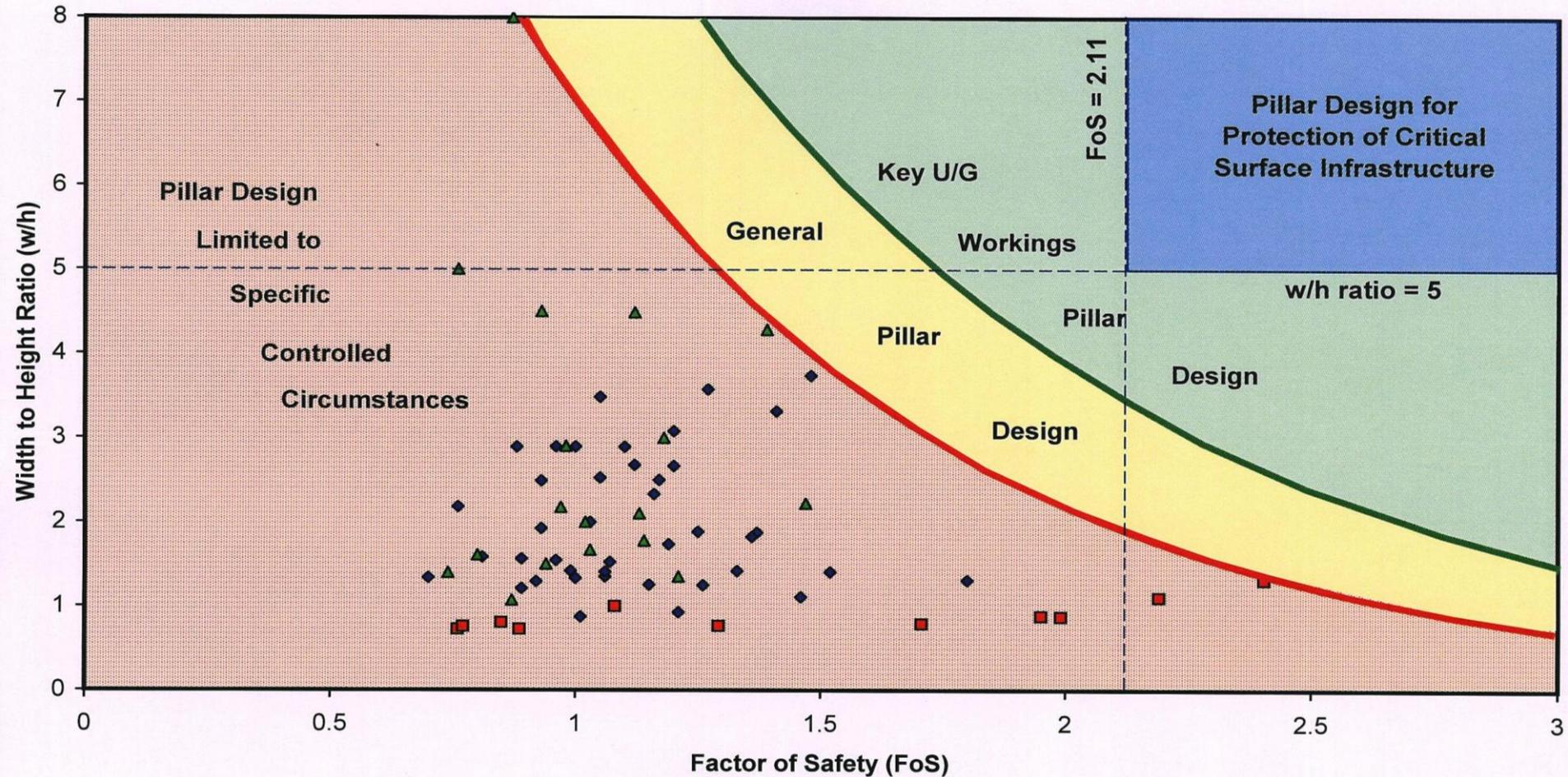


Pillar stability



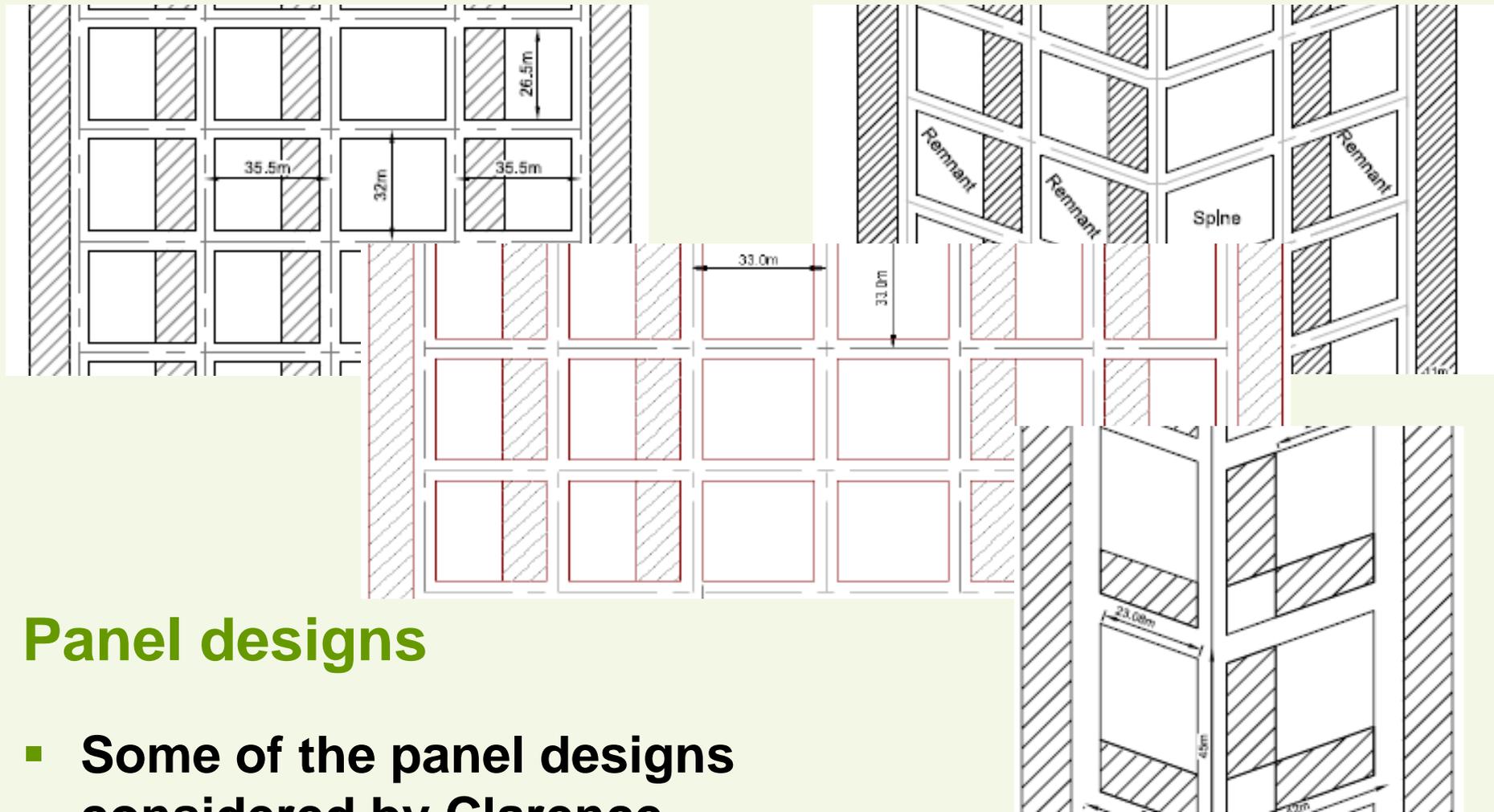
Strata Engineering (2005)

Pillar stability



Strata Engineering (2005)

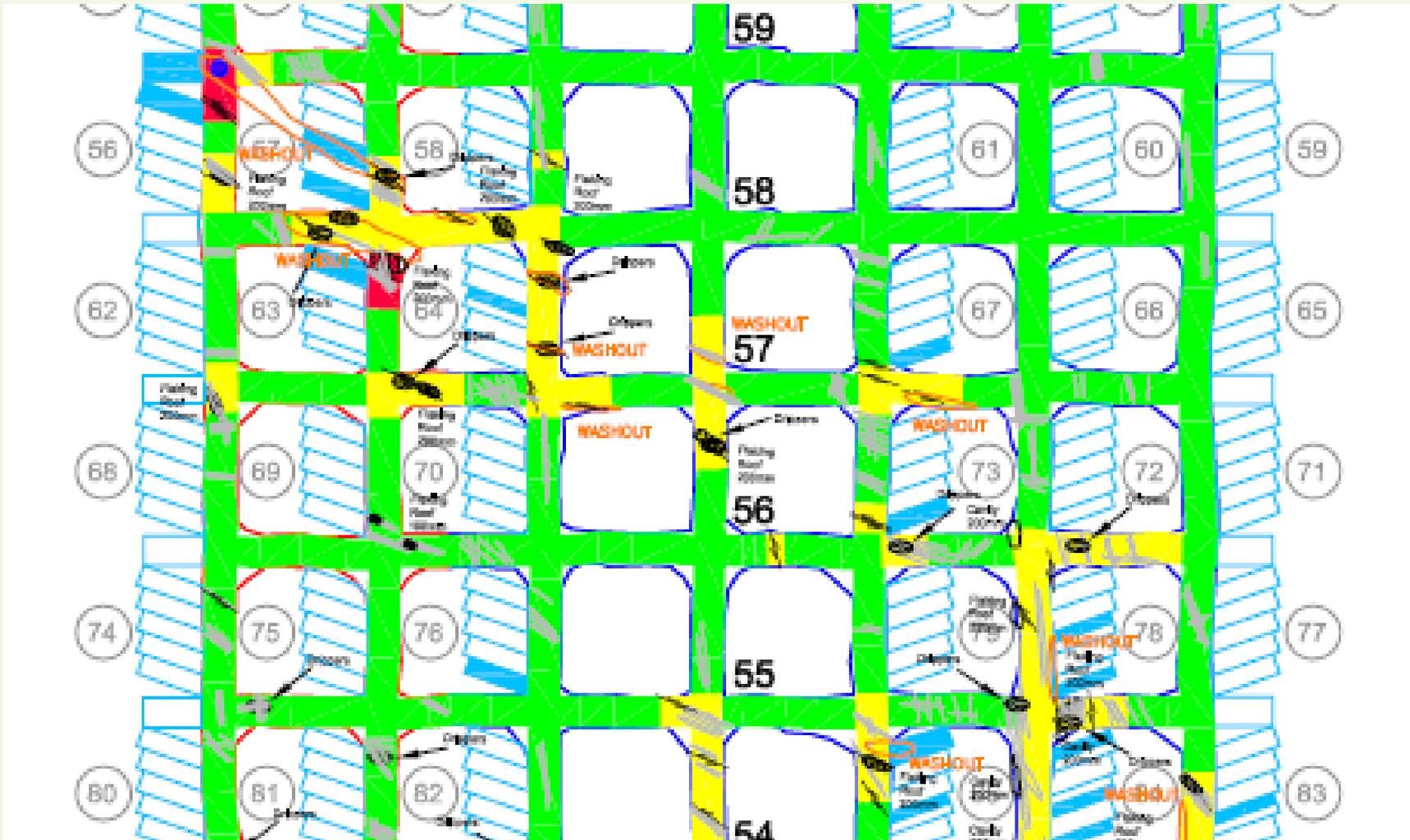
Panel designs



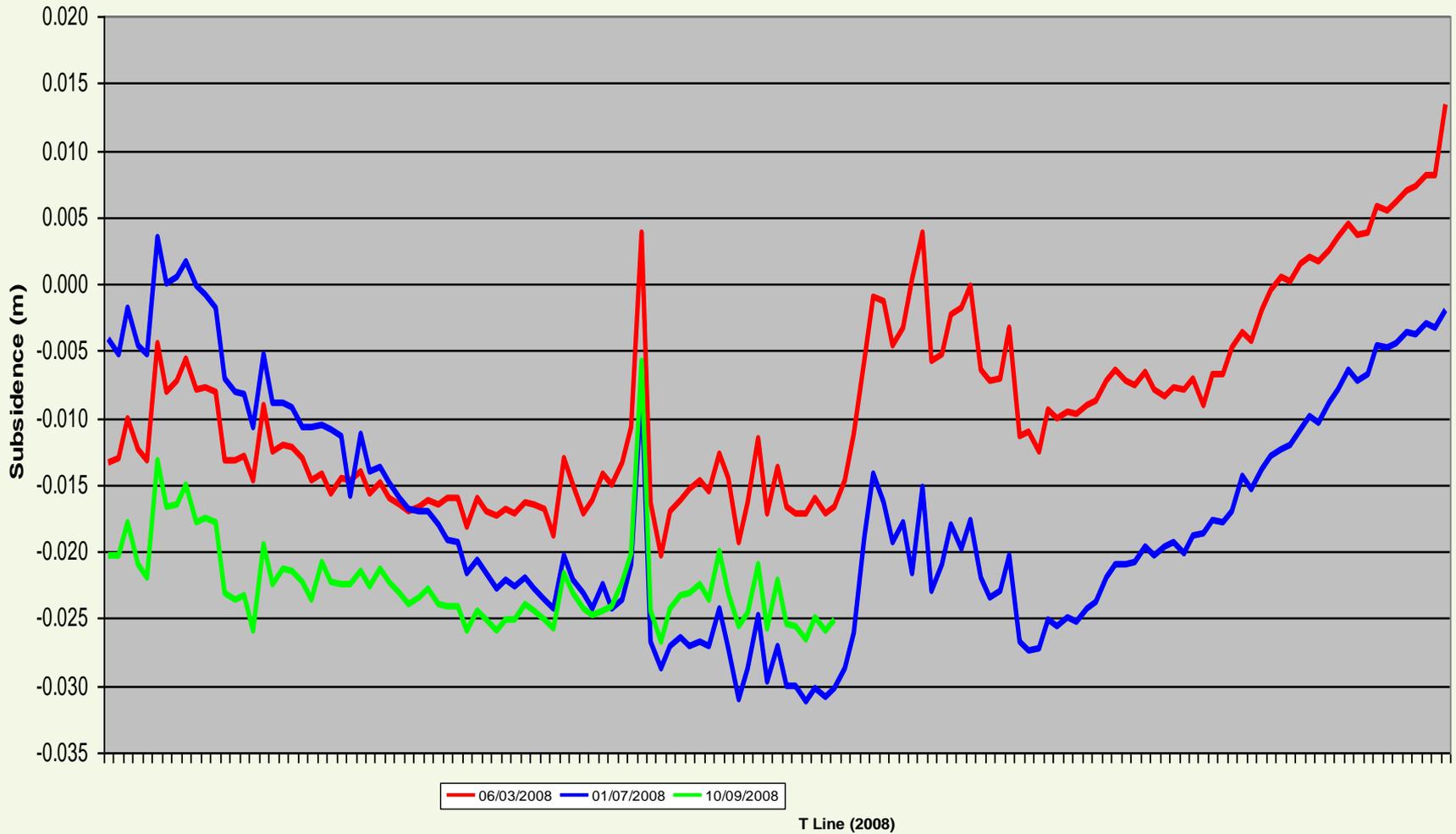
Panel designs

- Some of the panel designs considered by Clarence

Extraction analysis



Subsidence

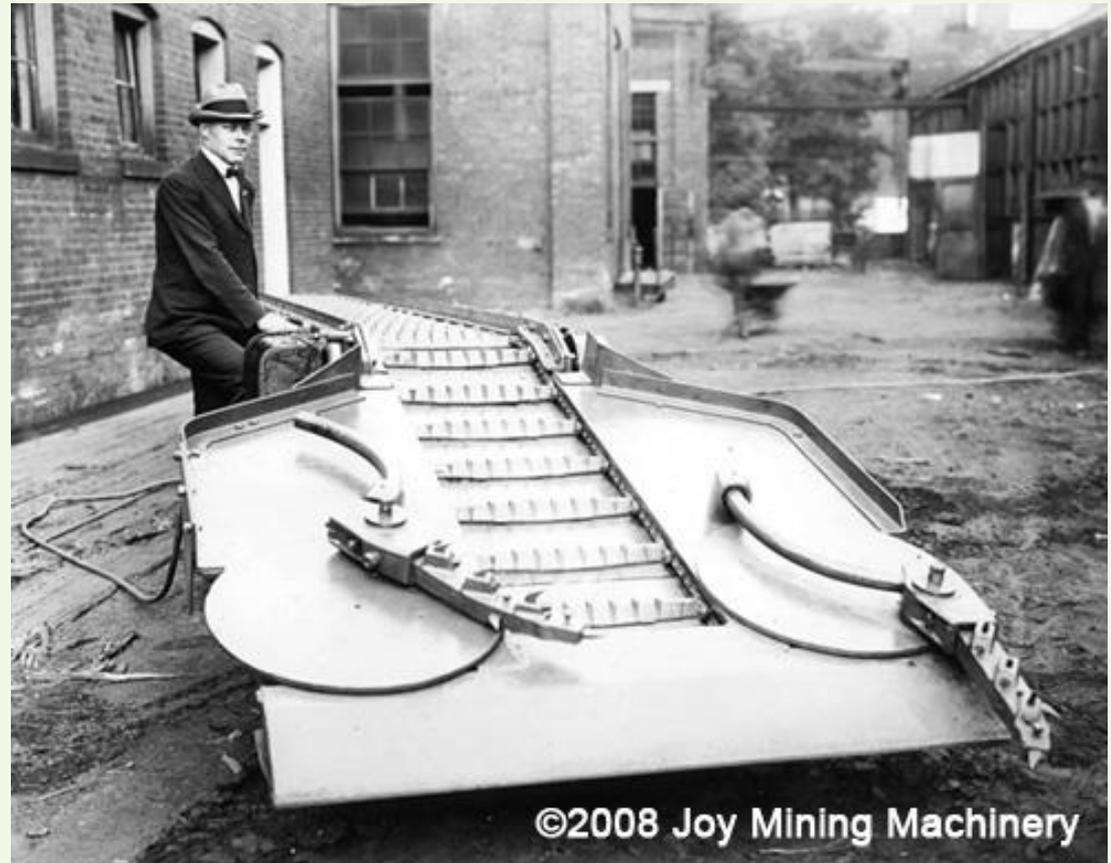


Our Results



Questions

Any Questions



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Thank you.

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