Characteristics of Gas Threshold Values & Their Relation to Outburst Management.

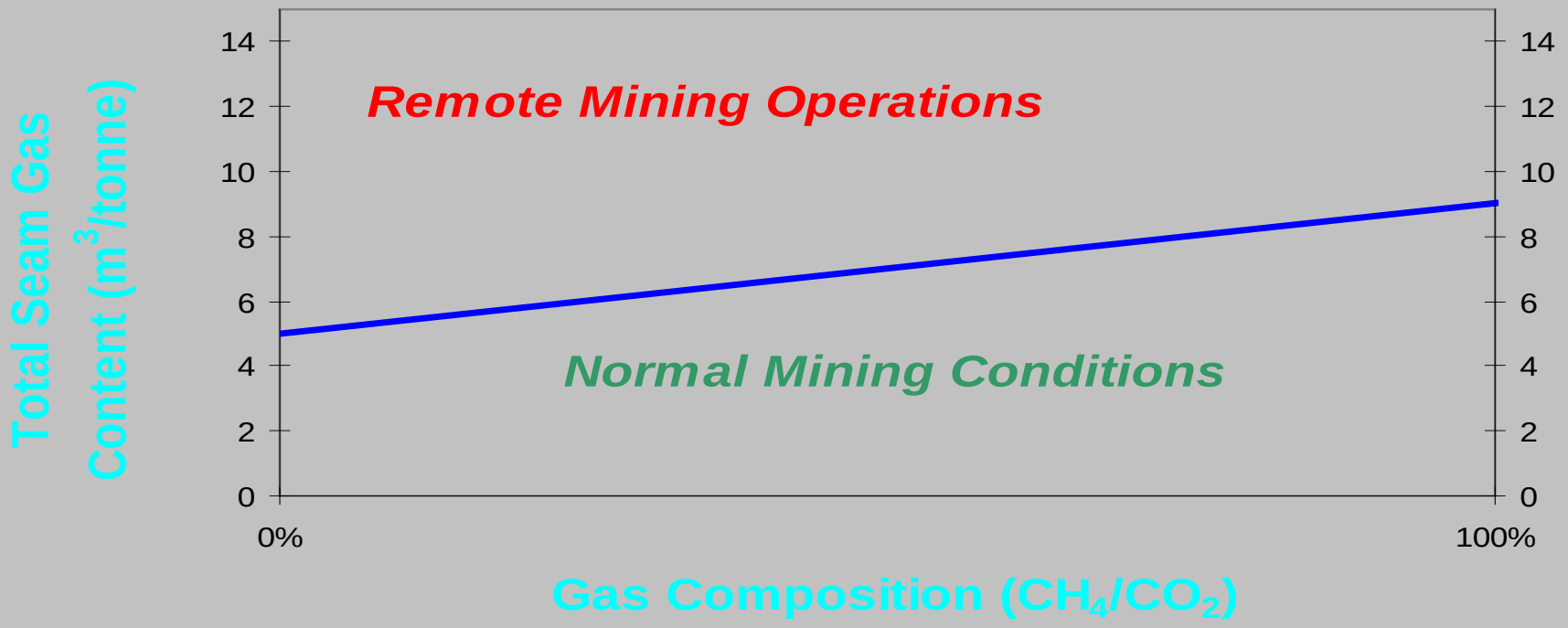
Outburst Seminar 22 June 2005

Gas Threshold Values of Outbursts

- Section 63 notice issued in 1994
- 9 m^3/tonne for 100% CH_4
- 5 m^3/tonne for 100% CO_2
- Related to Total Gas Content
- Based on research by Ripu Lama

Outburst Seminar 22 June 2005

Seam Gas Threshold Values



Outburst Seminar 22 June 2005

Significant Characteristics

Statutory conditions vs Lama's Research

- Based on total gas not desorbable gas
- Assumes presence of structures
- Assumes $Q_3 = 1\ m^3$/tonne

Outburst Seminar 22 June 2005

What is the impact of Q_3?

- Varies from mine to mine
- Varies within a mine from panel to panel
- Varies with coal characteristics
- Is not measured in current sampling practices
- If measured & monitored Q_3 could assist in determining more realistic threshold values.

Outburst Seminar 22 June 2005

Are there any structures?

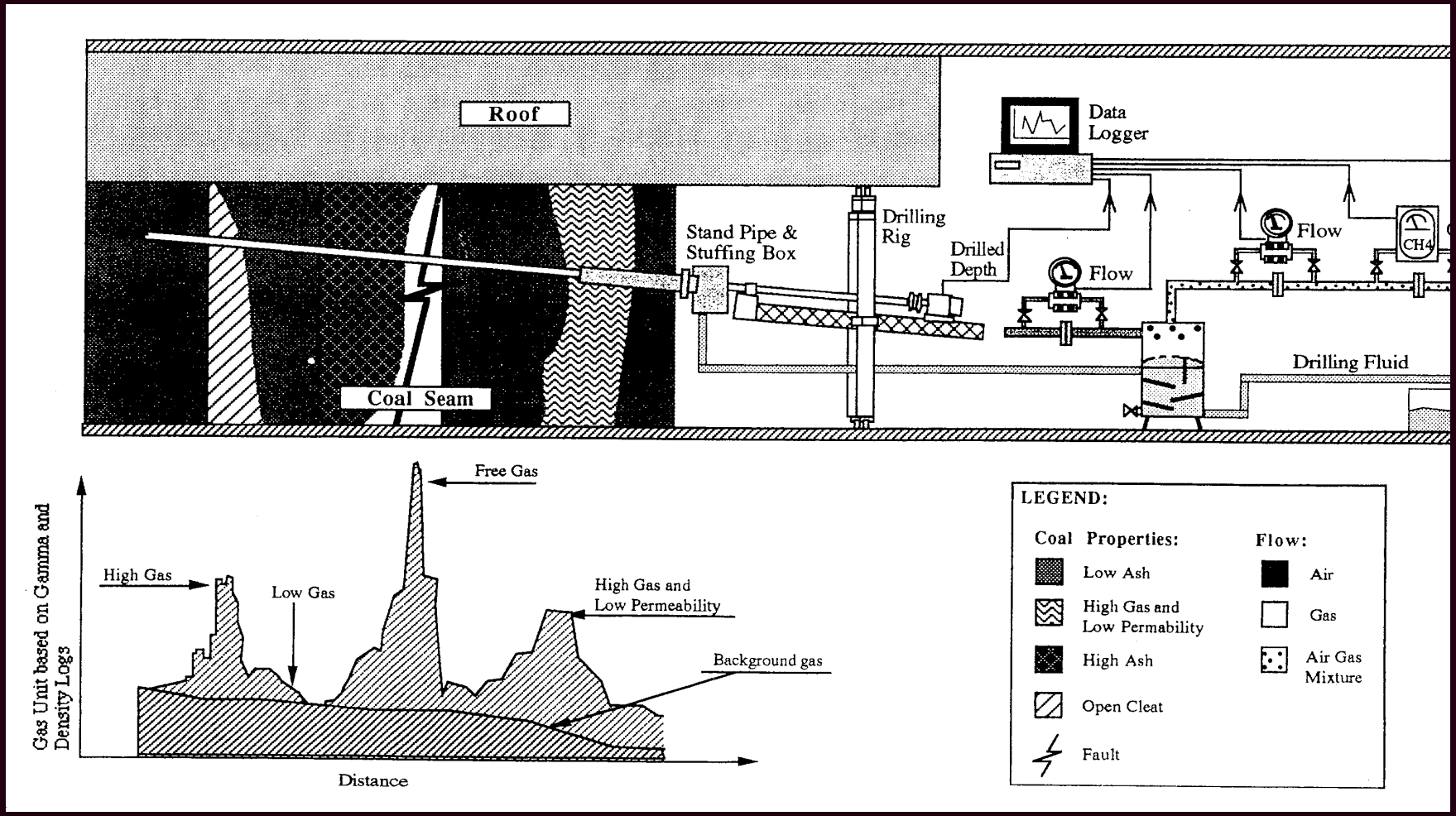
- Based on research, threshold values can increase from 4 to 7 ($C0_2$) and 8 to 10 (CH_4)
- Need better use of current (real time) drilling information
- Utilise other remote sensing technologies

Outburst Seminar 22 June 2005

Utilise drilling Data

- Drilling logs can provide information on seam characteristics, gas content, location of structures etc.
- The reliability of this drilling data must be improved to support any variation to threshold values.

Outburst Seminar 22 June 2005



Outburst Seminar 22 June 2005

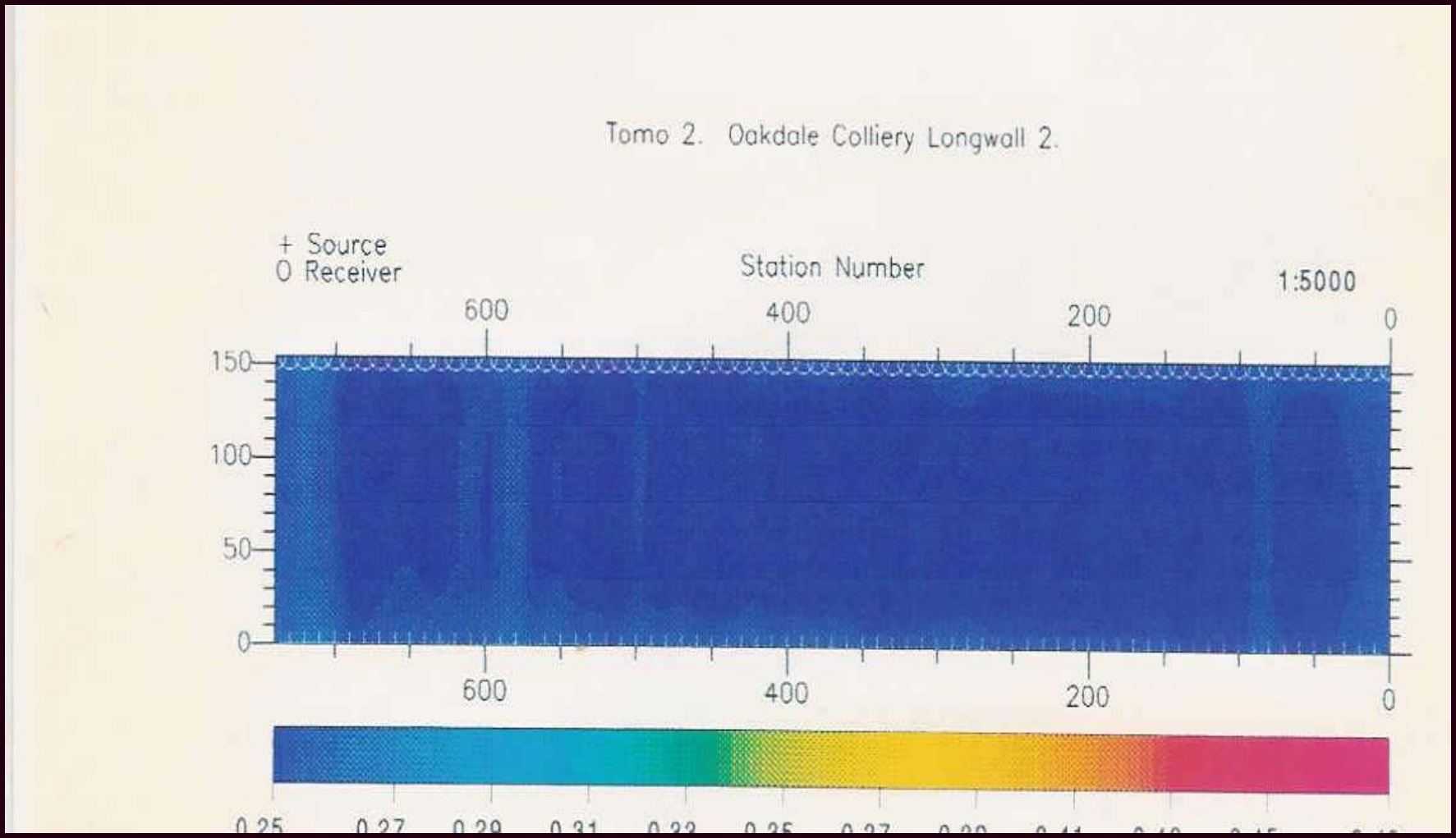
Remote sensing technologies

RIM

- Does work but is not user friendly
- Can detect structures down to 50 mm
- Can detect changes in gas concentrations
- Can detect changes in strength and permeability
- Can provided information for targeted drilling

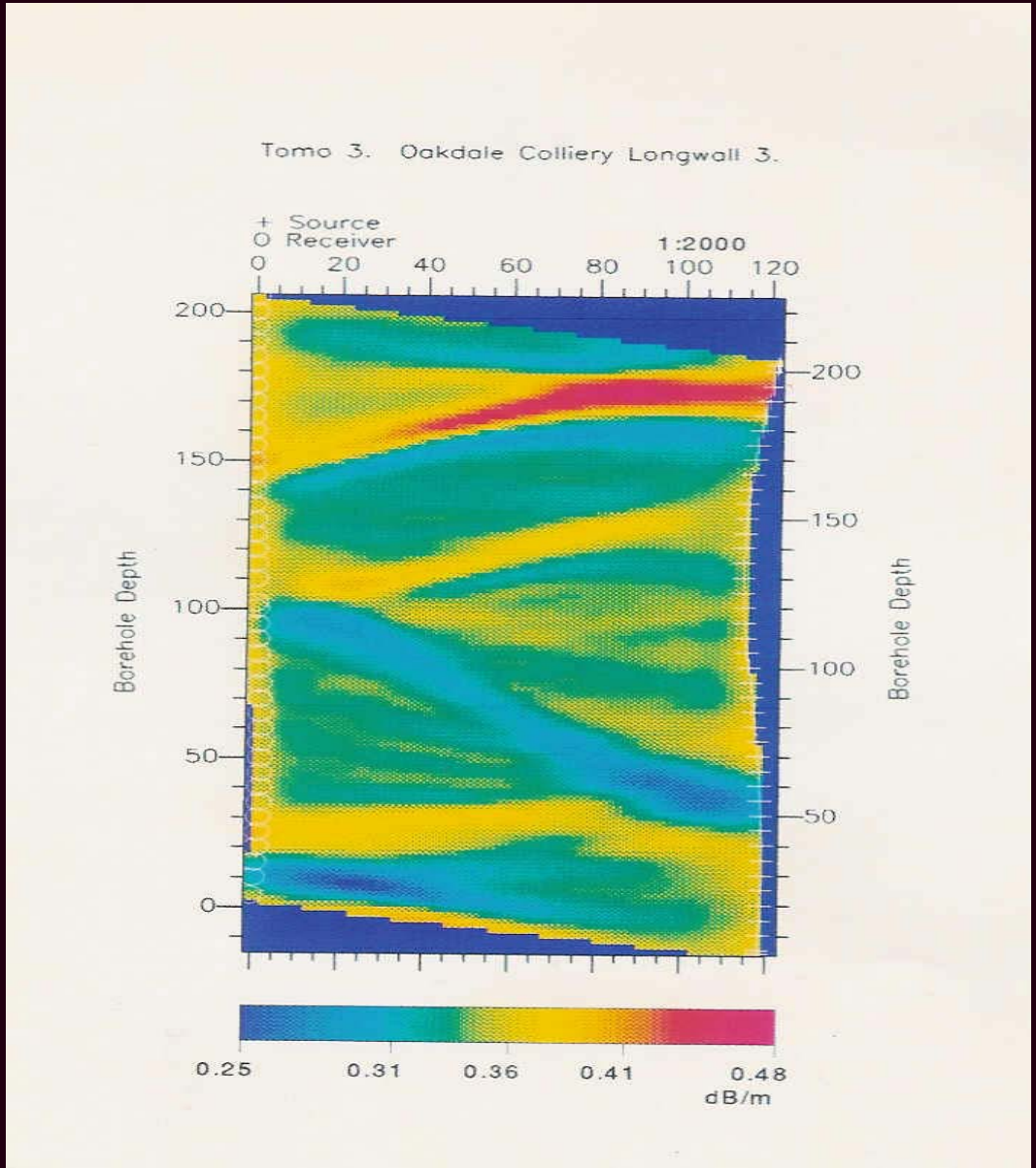
Outburst Seminar 22 June 2005

RIM Survey – No Structures



Outburst Seminar 22 June 2005

RIM Survey – With Structures



Outburst Seminar 22 June 2005

SUMMARY

- Better understanding of the gas regime for Q_3 can enhance outburst management
- Better use of drilling data in a more reliable format can verify structures
- Use RIM to confirm structures and provide drilling targets.

Outburst Seminar 22 June 2005

- This all means realistic threshold values that more accurately reflect seam & mining conditions.
- A more systematic approach to Outburst Management.
- Safe and viable mining.