

# **PRESSURISED INSEAM BOREHOLES**

Garry Horne, United Mine Workers District Check Inspector

Management of the outburst risk has improved greatly over the years. There has been one outburst in recent years, this was of a minor nature, multiple drainage holes were in the area & the event was of a minor nature, valuable lessons were learned from this incident.

Obviously the focus on gas drainage & the management of the outburst risk can not be reduced, the potential is there & only by maintaining high standards will this risk be managed safely.

Awareness by operators of what information an “authority to mine” contains is an area that requires attention, many new starters have a good grasp of the authorities, and I feel many of the long time workforce are now taking these authorities for granted.

## **Pressurised Inseam Boreholes.**

A Relatively New Hazard That Has Occurred in This District in Recent Years Is the Intersection of Pressurised Boreholes, This Is a Risk Which I Feel at Times Is Not Given the Focus That Is Warranted.

I Have Been Involved in Numerous Investigations Involving the Intersection of a Pressurised Borehole. Workers That Have Been Involved in These Incidents Are Certainly Aware of How Volatile a Pressurised Borehole Can Be & It Is Something That Is of Great Concern for Operators at Mines That Have Had This Experience.

In My Opinion the Intersection of a Pressurised Borehole Has the Potential to Cause a Serious Injury or Fatality If a Worker Were to Be in the Firing Line of Debris, There Is Also the Potential for Asphyxiation.

## Appin 1997

My First Involvement With Pressurised Boreholes Was at Appin As L.C.I in 97 When a 12 CM Miner Intersected a Pressurised Borehole.

This Borehole Was Designed to Be a Panel Flanking Hole, but Thru Error Was Over 5 Metres Closer to the Panel Than Planned, It Was Intersected While Driving a Cut - Thru.

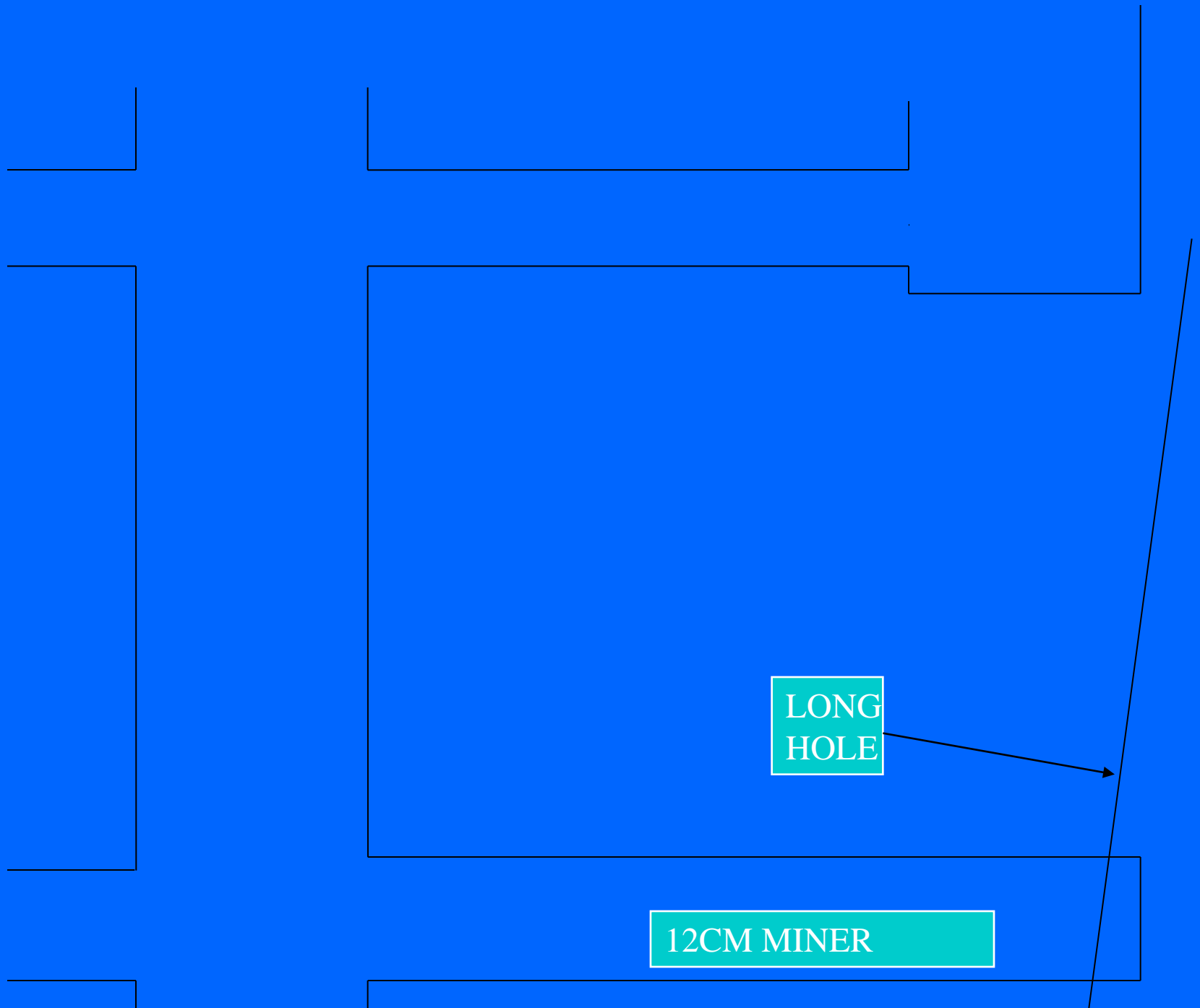
The Operator Whilst Cutting Noticed Bumping From the Face, Nothing That Caused Undue Concern Though. His Recollection of the Event Was That He Thought It Was an Outburst.

Fortunately for the CM Operator & the Cable Hand They Were Only a Miner's Length Into the Cut Thru.

It Was the CM Operator's Opinion That With the Amount of Gas Released & the Volatile Nature It Was Released That They Could Have Been in Trouble If They Had Been Any Considerable Distance Down the driveage.

Approximately Two Weeks Before the Incident This Hole Had Been Recorded As Giving a Flow Rate of 70 Litres Per Second, This Hole Had Been Turned off After This Reading Without Authority. Long Holes Can Be One Metre off Line Per 100 Metres of Length.

It Was Estimated Thru Monitoring Taken in the Panel Returns That This Hole Liberated 1,000 Litres of CH<sub>4</sub> Per Second.



## WESTCLIFF 2003

A Surface to Inseam Borehole Was Drilled With the Intent to Drain the Area in Front of the Proposed Workings, 517 Panel, This Area Has Been Difficult to Drain. A Hole Was Drilled From the Surface and Entered the Seam and Then Traveled for 800mts Inseam Where It Intersected Another Hole From the Surface. The Hole Was Then Grouted & the Hole That Was Intersected Was Put on Suction to Drain the Area.

This Hole Ran Down the Center of the Panel Between A & B Headings.



Inseam Holes Were Drilled From an Adjacent Panel to the Area of the Surface to Inseam Borehole, As the Number of Holes Drilled From the Adjacent Panel Increased the Gas Make to the Surface Decreased.

Originally the Surface Borehole Was Making 130 litres Per Second, This Dropped off to Basically Nil As Hole Number 4 Was Drilled From the Adjacent Panel, This Hole Was Making 240 litres Per Second.

## **Intersection of Surface to Inseam Borehole**

The Hole Was Intersected Day Shift in the Left Hand Rib Driving From B to A in 18 Cut Thru, This Was Noted in the Panel Deputies Report, Maximum of 0.5% G.B CH<sub>4</sub> Detected During the Shift.

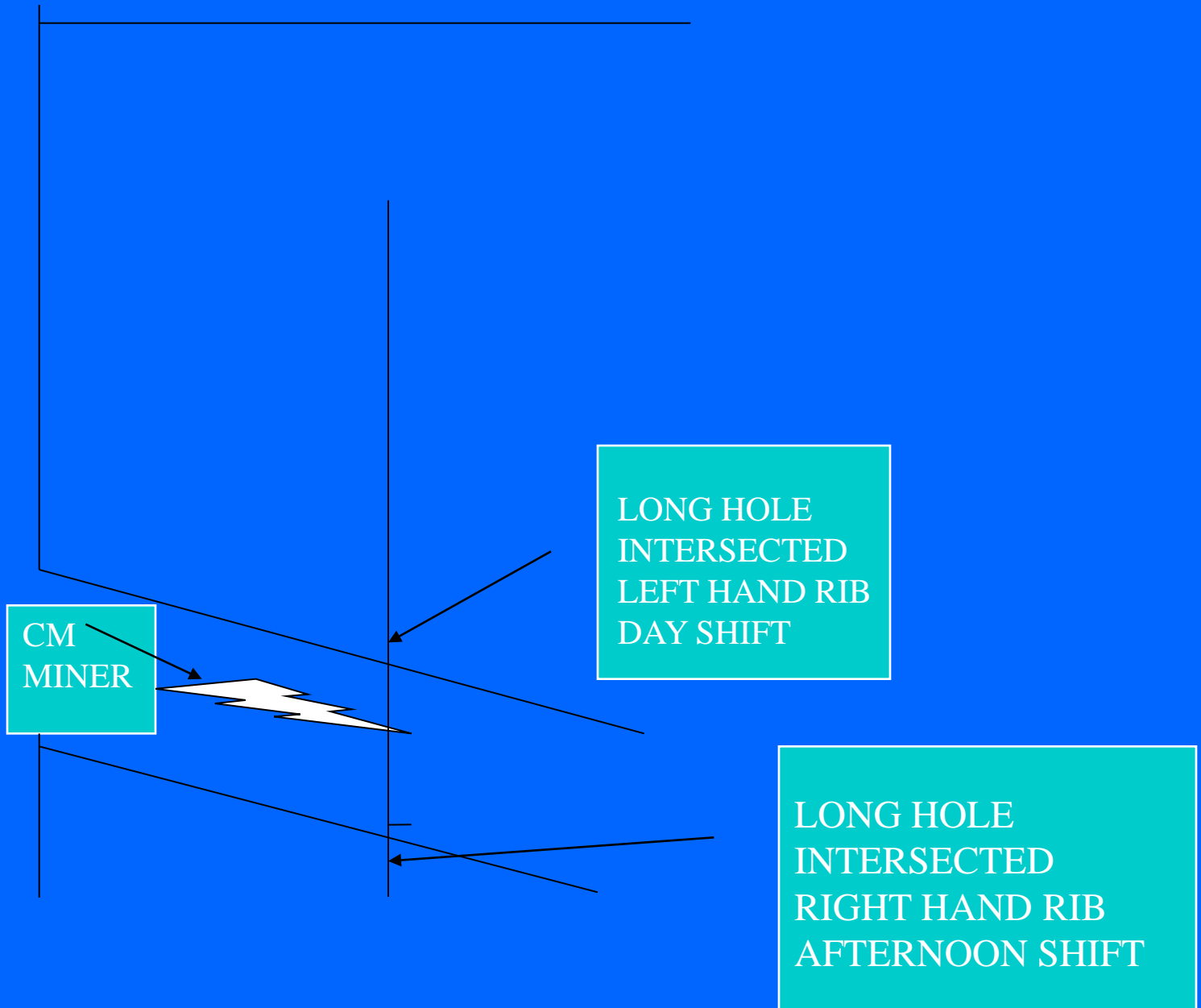
The Hole Was Intersected on Afternoon Shift in the Right Hand Rib (Grouted Hole Surface to Seam), It Was Not Making Much Gas. The Crew Was Sent to Crib While a Drainage Line Was Extended to the Face to Place the Holes on Suction.

The Panel Deputy Was Standing on the Miner When the Hole on the Right Hand Side Erupted Issuing Huge Amounts of CH<sub>4</sub>, > 5% CH<sub>4</sub> G.B at the Face, 4.5% in 17 C/t (Panel Deputies' Report).

The Hole Also Ejected Water & Solid Material of Considerable Size Under Great Pressure.

The Deputy Was Sprayed With Material; It Was the Consensus of All Concerned in the Investigation That If the Deputy Had Been in the Direct Firing Line That This Incident Could Have Been a Fatality.





# Tahmoor Colliery

## Sequence of Events.

1. Turning Away for a Left Hand Breakaway at the Time of Incident, Cleaning up & Squaring the Face for a Bolting Cycle.
2. The Incident Occurred, the Face Bumped Out Ejecting Coal, the Miner Tripped off on CH<sub>4</sub>.
3. The Four Workers Present Moved As Quickly As Possible outbye, Approximately Ten metres, Around the Corner of Intersection.
4. The Four Workers Present Were of the Opinion That an Outburst Had Occurred.
5. Investigation Revealed That It Was Not an Outburst but a pressurised Borehole in the Left Hand Corner of the Face Ejecting the Coal.
6. During the Interview Process Which Took Place Some Time After the Incident the Workers Involved Were Still Shaken, One Worker in Particular Stilled Showed a High Level of Distress.

## 802 panel 4.5.04

\*A drainage hole in the right hand rib at the face of B heading, inbye 15 c/t was sealed after being exposed during grunching. After a period of time a drainage hole between this hole & 15 c/t which had been hosed into the return blew out, releasing gas & material under pressure, this led to withdrawal of workers from the area.

## Investigation & inspection of area.

- \*A Una – hauler parked opposite the blown out hole was covered in coal & fines as a result of the blowout.
- \*Considerable gas was issuing from the hole at the time of the inspection; the following day after the event.

Workers stated quantities had reduced significantly from earlier in the shift, dayshift 5.3.04,

- \*The heading was bratticed from 15 c/t to inbye of the una – hauler, the auxiliary fan was running. Gas levels issuing from the fan exhaust, 1.16%  $\text{CO}_2$ , 0.46%  $\text{CH}_4$ , gas levels around the una – hauler were under control.

\*The una – Hauler Was Removed From the Area After Inspection, by Towing outbye With an Eimco.

\*The Hole Plugged at the Face in “B” Heading Had Been Previously Intersected in “A” Heading.

A Plug Had Been Pushed up This Hole From “A” Heading to Approximately 30 metres Into the Virgin Side of “B” Heading & on the Virgin Side of Holes Flanking “B” Heading.

It Would Appear Pressure Built up on This Plug, Moving It & Releasing Gas Out of the Flanking Hole, Which Had Intersected the longhole.

