

**COAL AND GAS OUTBURST COMMITTEE
HALF DAY SEMINAR – Wollongong 1st December, 2010**

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Marc Justen

Questions and Discussion

Ting Ren, University of Wollongong – With your ventilation set-up, is it possible that some part of the circuit can experience recirculation?

Marc – From an underground perspective, there is the same differential pressure between intake and return throughout the circuit. The return is everywhere at a lower pressure than the intake. The risk of recirculation in any ventilation system is the same.

Dennis Black, University of Wollongong - Regarding the gas drainage below the seam, how are you doing it and are you able to successfully drill the underlying seams and what sort of flows do you get?

Marc - Similar to the holes drilled into the Wombo seam in the roof, we are doing vertical well intercepts and they are outside the longwall block. For longwall 1 they are going on the tailgate side and outside the longwall and also into the adjacent longwall 2. When we are finished with them for mining seam pre-drainage, there is a pump for removing the water and they become available for goaf gas removal.

Borys Pobarowski, Austar Coal Mine - What is your management procedure for power failure on all the forcing fans?

Marc – If we get a fault condition on any primary ventilation fan, it defaults to a single forcing fan only. If we had a communications failure between the two fan sites, the upcast exhaust fans automatically turn off and two of the three forcing fans shut down. Other than in a power outage, where all fans stop, the default is to a single forcing fan operation to insure the security of anyone working in the longwall face or tailgate.

Alison Booth, Rock Solid Systems Management – have you done any modelling of the SIS holes with vertical well intercepts to increase pre-drainage?

Marc – No. We have not done any modelling to see if more vertical wells would increase hole flow. I guess they would. One problem we have with any vertical well, let alone ones to intersect horizontal holes is that we have to drill through a goaf. This has been a major issue for us but it is one we have solved. We have drilled about 60 holes through the goaf now, but it takes a large diameter rig and a lot of casing to drill through a goaf. The pre-drainage we now have delivers the gas we expect. Whether we could shorten the drainage time I just don't know. It is the last bit of gas that is the hardest to drain. We are reducing the gas content from 5 to 10 m³/tonne virgin down to 2 to 3 m³/tonne which is impressive, but to reduce that last little bit of gas could take many months.

Bob Kininmonth

Questions and Discussion

Bob Knight, Appin Colliery – The undermanager took the full force of the explosion. It was theorised in the pit that the undermanager was inbye where the deputy was but you have only raised the possibility that the explosion might have been caused by the deputy's lamp. It was theorised that the undermanager's lamp was inbye the deputy and it could have caused the explosion. What do you think?

Bob – The undermanager was actually outbye and was on the exhaust side of the fan. However, that does not make what you have said untrue. His lamp was not tested, only the deputy's was. In the industry at that time there were a number of lamps whose glasses did not have parallel ends. How many lamps need to be tested? Another relevant point is if you put a flame safety lamp into a methane mixture, at 5% methane you get a minor explosion in the lamp. Methane has an explosive range. As the methane percentage increases through that range, the explosion becomes more intense. If the deputy had his lamp in a 7% mixture, it would have been more likely to have breached the security that is given by contact between parts of the lamp. Some gauzes examined during the investigations were found to be in a less than satisfactory condition. The higher the percentage of CH₄ the higher the intensity of the explosion and the more likely to pass it to the external atmosphere.

Bob Knight – There was obviously gas in K Panel and as much as was in Red Panel. There was a CH₄ explosion that did not turn into a coal dust explosion. Do you think the concentrated water barriers stopped the explosion becoming a dust explosion?

Bob Kininmonth - I don't think you can say there was no coal dust involved in the explosion. But the barriers and the stone dusting stopped the explosion propagating to the other panels. It could have been much worse. The people in the panel next door were affected by the gases involved in the explosion. The deputy had enough experience to realise what was happening and to bring them out using their self rescuers.

John Coll

Questions and Discussion

Anon – Why aren't all holes that are intersected by the development headings picked up?

John – It is an operational thing. Sometimes there is not enough time, or the shuttle car is in the way or other things prevent pick up. We have a look each day to try to pick up all holes. The long holes are easy as we can see where they have been managed, but short ones are often just bagged and then can be covered with stone dust which makes them hard to find. Often it is the deputy who points them out to us.

Mark MacCabe

Questions and Discussion

Maarten Velzeboer, retired mining engineer – What hole length can be surveyed?

Mark – The DGS will handle 1000 m. This is somewhat dependent on the quality of the rods (the communication medium) and the experience of the operator.