GAS AND COAL OUTBURST COMMITTEE
HALF DAY SEMINAR – WOLLONGONG 17th NOVEMBER, 2004

Contents

Editor's Comments, John Hanes

Speakers have checked the notes for accuracy. I apologise if I have misquoted anyone in the Questions sections.

Feedback

Your feedback will be appreciated. Please email comments, or suggestions for future seminar topics or speakers to:

the Chairman, Bob Kininmonth bobk@uow.edu.au or

the Secretary, Chris Harvey chris.harvey@minerals.nsw.gov.au

Frank Hungerford

Questions

Ken Mills, SCT – What were your options for stabilizing the hole?
Frank – We would typically ream out the hole. We used polymer muds. In china, we used a bentonite mixture. In Queensland, we used a bentonite mud mix to drill through a shear zone, but this was very expensive as the mud is lost and not recycled.

Mark Blanche, GeoGas – Does the bentonite create a skin effect?
Frank – Some people think the drainage is affected, but the gas pressure should usually be sufficient to allow the gas to cross the bentonite skin. It could be a problem at low gas pressure or flow.

Peter Hatherly

Questions

John Hanes – does anyone have plans to advance the tools or to provide logging services?
Peter – We gave recommendations on this in our report to ACARP, but we have not yet had a reply from the ACARP monitors. If ACARP wish to advance borehole logging, it can be done, but I am not sure of the mechanics of doing so.

Henk Verhoef, AMT – The tools you described were pump-down tools which need to be run after drilling finishes. I do not believe they can be incorporated into the string for use while drilling.
Peter – I agree. In the context of petroleum drilling, the tools sit behind the bit. In our trial, the aim was to test the technology.
Henk – It is a very difficult task to downsize oilfield technology.
Peter – Adapting the gamma tool should be relatively easy.
Henk – In underground drilling, the tool needs to be incorporated into the string and used while drilling. We already can incorporate gamma in our survey tool, but the others are very difficult if not impossible to incorporate into the string. The big problem is that the market for any devices is very small.
Peter – If the gamma can be used, it will generate some useful data, but if a density tool could be run it would be even better. The concern is with a density tool and its radioactive source becoming stuck. However, the potential for this problem exists in vertical hole exploration drilling and it hardly occurs. If a density tool is stuck in a vertical hole, it must be recovered or the coal around it is sterilised for mining.

David Carey – If you can prove that the coal to be mined is free from structures, then outburst management is easier with higher thresholds. Surely this is a good incentive for mining companies to support development of geophysical logging in underground holes.
Peter – In the trial, several dykes had been predicted from surface geophysics in the ground to be covered. The logging showed that only a couple of the predicted dykes actually occurred. So the mine got good financial benefit from the logging of the hole.

David Cliff

Questions

Bob Myatt, Metropolitan Colliery – Did you try different camera and lighting scenarios?
David – We can use high powered diodes or concentrated beams. We can also wash an area with light to “paint” a picture as used to be done using cap lamps to illuminate areas for still photos.

Les Lunarzewski

Questions

Bob Kininmonth, Outburst Seminar Committee Chairman – How successful in the longer term are your predictions?

Les – Accuracy of prediction depends on availability and quality of input data, including production and background gas emission record. The optimum utilisation will have to consider gas from operating mines, however, some abandoned mines could utilise coal mine gas up to 15 years since cease coal production. From the operating mines we should be able to utilise up to 90% of rich gas recovered by gas drainage system, however, future ventilation air utilisation (CH4<1%) would be 10-20% only.

The Lunagas 'Gas decline curves' could predict how long the gas emission will last for and could be used as a tool for planning of coal mine methane utilisation from sealed goaves and abandoned coal mines.

Des White – Is there any history or data from England or Europe of gas make after mine closure?
Les – There are many areas where gas is used from closed mines especially in UK, Germany, Poland, France and Czech Republic, where gas turbines and gas engines are used. The 1 MW units used at Appin and Tower are very efficient and flexible. Before the use of these units, the 5 to 20 MW turbines that were used were inflexible. Because 80% of the gas is from ventilation air, people are interested in developing commercial methods to use ventilation air for coal dryers, power plant burning coal, water heating, power generation etc. In coal burning power generating plants, ventilation air can be added to the energy supply. The world trend is to use the coal mine methane from operating mines for power generation. Abandonded mines might or might not be economical to use for generation of power. They might well be suitable for use with 1 MW gas engines/generators, but not for creating another Appin with around 50 units.

Alan Fisher – I have doubts about the CO2 equivalents used when discussing benefits to the environment. When CH4 is burned and it is converted to CO2, the CO2 is said to be 21 times more harmful to the environment than the CH4. Why then is it beneficial to burn the CH4 to produce CO2 which goes into the atmosphere?
Les – The CO2 can be taken up by trees and other vegetation which convert it to O2, or it can be absorbed by the ocean. CH4 contaminates the atmosphere more straightforwardly.

David Carey

Questions

Bob Myatt, Metropolitan Colliery – Why has the process taken so long?
David – The Act went through in 2002. The last state election caused a hiccough, changes in parliamentary draftsmen caused more delays as well as other problems. Mining Resources does not write the regulations. The Parliamentary Draftsman writes what he thinks other parties mean. The move to Maitland has also delayed matters. The coal industry section is only part of the Act. It is hoped that the Act will be finalized by March 2005.

Ken Cram – The 1992 Act came out in 1994.
David - The aim is to simplify the Regulations as much as possible by incorporating the OHS Act.

Alan Fisher – Delays often come about due to conservatives who want to hold onto their privileges and power.
David – Developing regulations for the coal industry is a difficult process as we have to deal with strong minded groups of people such as the unions, mine managers, government, etc. It is a very complicated process. It is the Government's legislation and they are ultimately responsible. The final decision is with the minister.