



**DEPARTMENT OF MINES
WESTERN AUSTRALIA**

SIGNIFICANT INCIDENT REPORT NO. 11

EMU MINE DISASTER

On 13 June, six men lost their lives in a decline driven underground from the bottom of an open pit, as a result of sudden flooding of the pit following sustained and exceptionally heavy rainfall.

CIRCUMSTANCES AND EVENTS LEADING TO THE DISASTER

A relatively small open pit, (the 450 pit), which was previously mined immediately south of the much larger AG pit from which the decline was driven, had been used to accumulate water for process purposes.

The mine is located in an arid region (average annual rainfall 254 mm), and to supplement groundwater make in the 450 pit, water from an adjacent creek system had been diverted into it when infrequent rains caused a brief run in the creek system.

Prior to commencement of the development of the decline from the base of the main AG pit, a tailings dam wall had been extended to the south and west of the 450 pit so that it obstructed the flow of the main arm of the westerly flowing creek system.

A further significant factor was the mining of a southerly extension of the main AG pit in the upper section, as a result of which the upper sections of both pits were separated by a relatively narrow bridge of weathered surface rock.

On the day of the disaster, exceptionally heavy and sustained rain caused extensive local flooding and the AG pit began to accumulate water.

At the same time, the water level in the 450 pit began to rise as the blocked creek system backed up and began to sheet over into it.

The mining crew made preparation to vacate the decline following an early afternoon blast. The afternoon shift was cancelled and all major equipment was withdrawn from the decline.

At about the time water began to overtop the narrow neck of ground between the two pits and to cascade into the south end of the main AG pit, the mining crew (three men), the electrician and the Underground Manager re-entered the decline in a large front-end loader to retrieve a pump.

As they did so, the neck of ground separating the pits began to erode rapidly, vastly increasing the rate of water flow into the AG pit.

The attention of the Registered Manager was drawn to this by persons standing at the pit top. The Manager drove into the pit and down into the decline to withdraw the men.

During the short time that elapsed after he entered the decline, the water flow became overwhelming and all six men were drowned. Their bodies were subsequently recovered about 100 m from the portal.

The creek water run off which had accumulated in a broad (although relatively shallow) area south of the 450 pit had run into that pit and thence into the AG pit via the eroded neck between the two.

PREVENTATIVE ACTION

- full account must be taken at the design/planning stage of the potential for catastrophic inundation in arid flat regions where infrequent but massive rainfall and run off may take place;
- the integrity of large scale water pondage or storage adjacent to underground mines must be assured, where such a requirement can not be avoided by its placement elsewhere;
- emergency preparedness plans must take account of every conceivable contingency, persons must be practised in such plans, and adequate emergency communication must be provided.

This initial advice is necessarily brief but a more complete illustrated report will be prepared for circulation as soon as practicable.

J M Torlach
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10 April 1990

SAFETY AWARENESS SAVES LIVES