



Project: THREDBO LANDSLIDE
Hydrogeological Investigation

Location: Snowy Mountains, NSW
Client: NSW Police Department

Background

The Thredbo landslide occurred on 30 July 1997. It resulted in the deaths of eighteen people, making it the worst natural disaster in Australian history. In the aftermath of the landslide an intense and complex rescue operation occurred, resulting in the recovery of one survivor nearly three days after the slide.

Hydrogeological Setting

The landslide occurred on a steep valley side, natural profile of colluvial and residual soils, including gravels and gravelly clays and peat deposits, overlying variably weathered granodiorite, had been modified by the placement of poorly compacted fill. Groundwater seepage occurs through all of these units and is controlled by both lithology and the orientation and character of defects.

Scope

A forensic investigation into the causes of the landslide began in parallel with the rescue operation, and continued for over two years. This investigation focussed on the dynamics of the landslide, the history of the site, the geotechnical properties of the natural and fill materials involved, and the complex hydrogeology of the site. It culminated in an inquest that ran to 180 sitting days and over 12,000 pages of transcript. The inquest was conducted in an adversarial manner, with much of the evidence being subjected to vigorous legal and technical scrutiny. One of the technical witnesses gave oral evidence for thirty days, much of that under cross-examination.

The inquest found that the landslide was triggered by water leaking from a pipe, flowing through and changing the saturation and cohesion of the soils forming the foundation of the Alpine Way.

Chris Jewell became involved in the investigation, carried out on behalf of the NSW police service, which began four days after the landslide occurred, and was the penultimate witness at the inquest.

C. M. Jewell & Associates provided hydrogeological support throughout the investigation. This work included groundwater sampling, hydraulic conductivity testing, tracer testing and modelling of partially saturated groundwater flow using SEEP-W.