Tunnelling for the OK Menga Hydroelectric Project

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Abstract:
The Ok Menga Hydroelectric project is nearing completion in the remote Western Province of Papua New Guinea (Figure 1). When completed in May 1988, it will supply electrical power for Ok Tedi Mining Ltd. The generating plant will have a capacity of 52 MW, utilizing a net head of 171 m and run-of-river flow of 35 m³/s on a 2.4 km reach of the Ok (river) Menga. The history and development of the project have been described previously by Berg, Portfors and Lampa (1987).

This paper deals with the design concepts and construction aspects of the power tunnel and shafts. The layout of the tunnel and shafts is shown on Figure 2. Also shown on Figure 2 are the geologic formations which host the underground structures.

Keywords: hydraulic head; Ok Menga hydropower site; Ieru formation of Cretaceous Age; Darai formation of Upper Eocene to Miocene Age; Pnyang formation of Miocene Age; Intake shaft; Headrace shaft; Surge Shaft; Watering up.