



Shuakhevi Hydro Power Project Adjaristsqali Georgia LLC

Location: Georgia

Date: February 2018 - ongoing

Structure: Transfer Tunnels (6km and 9km),
Headrace Tunnel (17.9km), Access
Adits, Pressure Shaft (250m)

Length: 6/9/17.9 km

Cross-Section: 4m/6m span (transfer and headrace
tunnels); 6.4m DIA Pressure Shaft

Geology: Volcanic series including Pyroclastic
sediments (tuff, ash), breccias (very
sensitive to water), basalt, andesites,
shallow angle fault zones; locally high
content of sulfate minerals

Cost: Est. \$ 400m

Client: Mott MacDonald

Owner: Adjaristsqali Georgia LLC



Figure 1. Resulting Cavern from tunnel collapse.



Figure 2. Repaired section of major rock fall.

Expert Advice and Site Support:

The Shuakhevi HPP is a 185 MW hydropower project currently under construction in Adjara, Georgia. The scheme comprises two Powerhouses (175 MW and 10 MW), three dams and weirs and two transfer tunnels (4m and 5.15m span) to transfer water (6.25km, 9.2km), a headrace tunnel (16.6km, 6.22m span) to the main Powerhouse, a 250m high 6.4m diameter vertical Pressure shaft (6.4m DIA), a 800m long high-pressure headrace tunnel and a 500m long, 3.25m DIA steel lined penstock. The tunnels pass through a volcanic series consisting of basalts, andesites, ashes and mudflow sediments and breccias, partially highly impacted by tectonics, slickensides and fault gauges.

Gall Zeidler Consultants (GZ) is involved in the root cause analyses and rehabilitation of tunnel instabilities along the various tunnels. GZ provides the lead expert for the root cause investigation and the Peer Reviewer for the repair and final support measures. Furthermore, GZ provides the site Tunnel Lead engineer and a site tunnel engineer during the re-construction and repair work.