

# Quarterly Journal of Engineering Geology and Hydrogeology

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**Cover Photograph.** Metsovitikos River training works in northwestern Greece built for the twin cut-and-cover tunnel in the background and the berm above it stabilizing two 10 million cubic metres' landslides on either side of the river in Pindos Flysch leading to delivery of the last part of Egnatia Highway on the right. Egnatia Highway is the main highway connecting eastern to western Greece along the north part of the country and is approximately 670 km long. It was constructed in a region of locally very adverse geological conditions especially in the western part where it crosses the mountain range of Pindos. The particular area of the photograph is located in the mélange of the Pindos Siltstone phase of the Flysch where the highway crossed a 650m long by 650m wide landslide along the north bank of the Metsovitikos river with movements recorded in inclinometers at a maximum depth of 55 m, in order to avoid a 70 m deep landslide along the south bank. The landslide on the north bank was a retrogressive palaeo-landslide with substantial movements leading to burial of the river bed at the toe and latent sliding surfaces within the landslide mass readily mobilized as an effect of local earthworks or heavy rainfall incidents. This was one of the most difficult landslides crossed along the path of Egnatia Highway and required meticulous geological mapping, very extensive geotechnical investigation and heavy stabilization works including deep drainage wells, large size toe berms (the highway embankments), landslide stabilization piles and an 800 m long drainage tunnel.

Photograph by: Michael Bardanis