3. Il y a une liaison étroite entre le débit de la source et la pluviométrie, exprimée par l'équation exponentielle:

$$\Sigma Q = 57{,}4\ e^{1.84} \cdot 10^{-3} \cdot \Sigma I$$

La croissance du débit devient essentielle quand la pluviométrie dépasse les 600-700 mm. Le 80% du débit annuel de la sourse est ruisselé quand les précipitations s'approchent des 1600 mm.

4. Les réserves régulatrices de l'aquifère karstique de la source varient essentiellement d'une année à l'autre, comme d'ailleurs les débits saisonniers. Par conséquent une régularisation du débit de l'aquifère est indispensable, mais difficile à cause de sa géométrie et la type de la source.

5. À partir des essais de pompages du lac on a constaté qu'il est possible d'aquérir une quantité de 150-180 m^3/h avec un rabetement de 0,5-0,6 m. À le période de maximum on peut pomper additionellement 150 m^3/h, et les conduire dans un petit réservoir. Ces quantités peuvent couvrir les besoins en eaux de la région de Sami, où il y a intrusion de la mer aux aquifères souterraines.

COMBINED RESEARCH FOR THE EVALUATION OF GROUND AND SURFACE WATERS IN NAXOS ISLAND, GREECE

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The hydrogeology and the water balance of the plain of Livadi, the greatest in Naxos island Greece, were studied in coordination with the construction of Tsikelario's reservoir at the side drainage basin of Potamia-Chalki.

The main recharge of the aquifer comes from infiltration. It was also confirmed that despite minor percolations, Paratrechos, the joint outlet of the two catchment areas of Ag. Thalelaiou – Melanes and Potamias – Chalki, is the main source of underground replenishment in the form of influent recharge. Detailed geomorphological and hydrological elements for the three basins are given.

It was verified that the reservoir site displays favourable geological, geotechnical and hydrogeological conditions.

Field work on the piezometry of the alluviel deposits and of the granodiorite of Livadi, showed a unique aquifer in depletion. Hydrogeochemistry revealed that the process of salt-water intrusion is intense in the area resulting in saline groundwater. Also polution phenomena heve been observed due to fertilizers and various waste discharges.

The groundwater budget turns out to be deficient, in particular during tha dry period where the low dynamic aquifer becomes nearly dewatered initiating phenomena such as

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seawater encroachment. The retainment of winter runoff in the Tsikalario's reservoir will contribute to a better management of water budget, releasing water according to dificient and providing part of it for artificial groundwater recharge, irrigation etc.

ENGINEERING GEOLOGY CONDITIONS ENCOUNTERED AT THE PROJECT SITES OF THE ACHELOOS RIVER DIVERSION TO THESSALY PLAIN SCHEME

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– The majority of the Pindos rocks presented a good mechanical behaviour, regarding the undarground excavations, resulted in a very satisfactory average daily drilling, under the Austrian method, comparable to the one of the tunnels drilled in solid flysch sandstones of excellent quality during the construction of the W. Greece's hydros.

– The required temporary support measures were limited, increased only in small zones of tectonized rocks.

– Considarable water appearances were confined only at those places, where certain sheer zones were encountered, during the drilling, connected with en aquifer or the surface water of a river or a torrent bed. That means, evary fault encountered during the tunnel drilling was not necessarily water-bearing.

Since the aquifer in the deepest points of the rock mass is limited and the existing conditions do not favour the formation of strong one, we consider, that the possibilities of fault appearances, discharging considerable water volumes, will be decreased during the drilling of the Acheloos main diversion tunnel to Thessaly.

Our experience from the drilling of similar tunnels in other areas has proved, that small water appearances of high pressure are occasionally observed.

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