

Water Balance of Medetska River Area

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Objective: Within the remediation measures of the copper mining in the Medet region, in Central Bulgaria it is necessary to carry out the purification of copper and sulphate containing water. The amount of water will be predicted by balancing of water catchment area of the Medetska River.

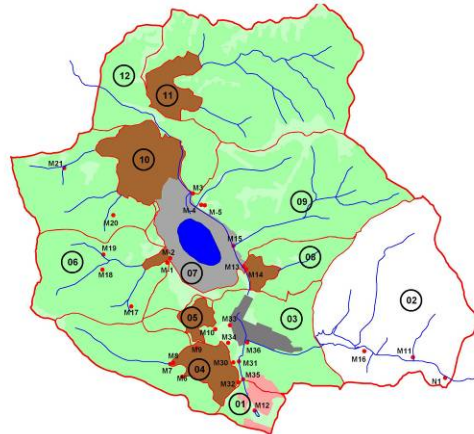
Location: Medet, Central Bulgaria

Client: BTE, Sofia

Beneficiary:
BTE, Sofia

Year: 2006

Budget: 10.000 €



Initial Situation:

In the region Medet there was extracted copper ore in opencast mining until the end of the 1990's. Mining activities did creating a 300 m deep opencast pit with an area of approx. 1 km² in the valley of the Medetska river. The overburden was dumped outside the open pit border. The open pit is under flooding at that moment. The waste rock dumps will be covered and revegetated. Part of the flooding water is affected by seepage water from Waste rock piles. This water contains high concentrations of copper and sulphate. After the end of the flooding process the mine water will be discharged to the Medetska river.



Services Provided:

- GIS-based partitioning of the total area in to 82 Hydrotopes und 357 parcels
- Modelling of water balance using BOWAHALD
- Evaluation of the measurement data (flow rate, concentration)
- Model validation
- Elaboration of the analytical-numerical water balance for this area
- Modelling of mass transport of chemical substances and prognosis of final contaminant concentration in the river system.