

## Water Management of Erdenet Mining Company

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**Abstract :** The life cycle phases of mining projects are described in this guidance document, and includes initial phases (exploration, feasibility and planning), mine development (construction and operations), closure and reclamation. Initial phases relate to field programs and desktop studies intended to build the data and knowledge base, including the design of water management infrastructure and development during these initial phases. Such a model is essential to demonstrate that the water management plan (WMP) will provide adequate water for the mine operations and sufficient capacity for anticipated flows and volumes, and minimize environmental impacts on the receiving environment. The water and mass balance model must cover the whole mine life cycle, from the start of mine development to a date sufficiently far in the future where the reclaimed landscape is considered self-sustaining following complete closure of the mine (i.e., post-closure). The model simulates the movement of water within the components of the water management infrastructure and project operating areas, and calculates chemical loadings to each mine component. At Erdenet Mining company an initial water balance model reflecting the tailings dam, groundwater seepage and mine process water was developed in collaboration with Dr. Scott Kenner (visiting Fulbright scholar). From this preliminary study the following recommendations were made: 1. Develop a detailed groundwater model to simulate seepage from the tailings dam, 2. Establish an evaporation pan for improving evapotranspiration estimates, and 3. Measure changes in storage of water within the tailings dam and other water storage components within the mine processing.

**Keywords :** evapotranspiration, monitoring program, Erdenet mining, tailings dam

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