Underground water in open pit mining at Mae Moh Mine of Thailand

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Abstrak

The groundwater problem at Mae Moh mine has drawn attention as the mining excavation goes deeper, thus resulting in detailed investigation of hydrogeological condition. One of the problems facing the mining is ﬂoor heave inﬂuenced by groundwater. The control of groundwater pressure in
deep-seated aquifers with high elevation becomes important in the mining. In addition, the underground water at Mae Moh mine is naturally contaminated by arsenic. Therefore, the developments of 3D groundwater model of deep pit mine using Modﬂow simulation and the studies of underground water treatment are needed for the future planning. The predictive simulations were carried out for eight years (2007 to 2015). Because stability of the Mae Moh mine shows how can be closely linked to the water environment, this paper aims to report the field Visits to the water related facilities of the mine, which were conducted during 2010-2013. The result reveals that the potentiometric head level is strongly increased, which might be a potential risk for the ﬂoor heave; thus, depressurization is required. Field measurements reveal pH level at 8 and a range of total dissolved solid (TDS) at 870-2020 ppm. Treatment efficiency shows that more than 95% of the arsenic can be successfully removed using ferric chloride.