



[Go to old article view](#)

Groundwater [Explore this journal >](#)

[View issue TOC](#)
Volume 38, Issue 2
March 2000
Pages 311-314

Simple Analytical Equations for Estimating Ground Water Inflow to a Mine Pit

[Fred Marinelli](#), [Walter L. Niccoli](#)

First published:

March 2000 [Full publication history](#)

DOI:

10.1111/j.1745-6584.2000.tb00342.x [View/save citation](#)

Cited by:

12 articles [Refresh](#) [Citing literature](#)

Abstract

Steady-state analytical solutions are presented for estimating the ground water inflow rate to a mine pit that may contain a pit lake of finite depth. The solutions consider (1) the effect of decreased saturated thickness near the pit walls; (2) distributed recharge to the water table; and (3) upward flow through the pit bottom. While the solutions are not appropriate for all hydrogeologic situations, they are relevant to conditions encountered at many mine sites. An example calculation is presented for an actual mine pit containing a pit lake. The analytical solutions provide an estimated ground water inflow rate that is similar to the rate determined independently from a detailed water balance study.