Journal of Environmental Hydrology

ISSN 1058-3912

Electronic journal of the International Association for Environmental Hydrology

On the World Wide Web at http://www.hydroweb.com

JEH Volume 9 (2001), Paper 11, May 2001 Posted May 31, 2001

AQUIFER VULNERABILITY ASSESSMENT: IMPROVEMENT OF THE NEW PARAMETRIC MODEL W.A.T.ER.

R. Spandre
Earth Science Department, University of Pisa, Pisa, Italy
B. Marcolongo
IRPI-CNR (National Research Council of Italy), Padova, Italy
M. Ceragioli
M. Giovannetti
A. Spinicci
Geoidee S.r.l., Camaiore (Lucca), Italy

ABSTRACT
An improvement is proposed for the W.A.T.ER. model, a parametric model for the assessment of aquifer vulnerability to pollution developed within the National Group for Hydrogeological Hazard Prevention of the National Research Council of Italy. The original methodology has been modified to evaluate separately the ihintrinsic vulnerabilityl of every permeable layer, which provides a more reliable representation for a complex aquifer. Insertion of data into a Geographical Information System has made possible a finer calibration of the weight of the different parameters, through several simulations and critical analysis of the results. In particular, the number and distribution density of wells is the most important parameter in the evaluation of aquifer vulnerability. The modeling time has been drastically reduced, and more precise answers are given to the public institutions managing groundwater resources and, broadly speaking, the environment.

Reference: *Spandre, R., B. Marcolongo, M. Ceragioli, M. Giovannetti and A. Spinicci;* ***Aquifer Vulnerability Assessment: Improvement of the New Parametric Model W.A.T.ER.,*** *Journal of Environmental Hydrology, Vol. 9, Paper 11, May 2001.*

CONTACT:

Roberto Spandre
Earth Science Department
University of Pisa
Via Santa Maria, 53
56126 Pisa
Italy

E-mail: spandre@dst.unipi.it

Return to HydroWeb Homepage