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JWARP > Vol.2 No.4, April 2010

OPEN ACCESS

## Aquifer Vulnerability Assessment Methods: The Non-Independence of Parameters Problem

PDF (Size: 8676KB) PP. 298-308 DOI: 10.4236/jwarp.2010.24034

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### ABSTRACT

This paper investigates the relationship between the two parameters, aquifer media and hydraulic conductivity, and assesses their reliability for aquifer vulnerability assessment. To evaluate the possible non-independence of the parameters in question, sensitivity analysis procedure was used in a GIS environment. The procedure was tested in three areas where aquifer vulnerability was assessed, corresponding to three different hydrogeological settings. The applications demonstrate that non-independence is confirmed and is more evident in alluvial and volcano-pyroclastic aquifers.

### KEYWORDS

Aquifer Pollution Vulnerability, GIS, Sensitivity Analysis, Southern Italy

### Cite this paper

D. Ducci, "Aquifer Vulnerability Assessment Methods: The Non-Independence of Parameters Problem," *Journal of Water Resource and Protection*, Vol. 2 No. 4, 2010, pp. 298-308. doi: 10.4236/jwarp.2010.24034.

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