

Application of visual MODFLOW in simulation of contamination migration in an unconfined aquifer

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Abstract The movement of a phosphorus plume, leaching from a landfill, in groundwater was investigated by Visual MODFLOW. Seri Petalling Landfill was found to be responsible for the pollution of subsurface and surface water (i.e. rivers) in the study area. Visual MODFLOW was used to predict the situation of pollution plume in the next 10 years. The results of phosphorus measurement showed that the concentration of phosphorus in place of landfill is 2.38 mg/L, while the Interim National Water Quality Standard for Malaysia defined the maximum value of phosphorus in groundwater for Class IIA/IIB and III at 0.1 and 0.2 mg/L, respectively. The results of prediction indicated that the phosphorus migrated widely to the river, which could be considered to be an environmental concern.

Key words groundwater flow; MODFLOW; phosphorus; landfill; pollution