

EVALUATION OF ROOF RUNOFF QUALITY USING A SET OF SURROGATE PARAMETERS

Nadeeka Miguntanna¹, Prasanna Egodawatta² and Ashantha Goonetilleke²

¹Faculty of Engineering, University of Ruhuna, Sri Lanka.

²School of Urban Development, Faculty of Built Environment and Engineering, Queensland University of Technology, Brisbane, Queensland 4001, Australia.

Email: nadee830@gmail.com

ABSTRACT

This paper presents the outcomes of a research project, which focused on developing a set of surrogate parameters to evaluate roof runoff quality using simulated rainfall. Use of surrogate parameters to evaluate roof runoff quality has the potential to enhance the rapid generation of harvested rainwater quality data based on on-site measurements and thereby reduce resource intensive laboratory analysis. Pollutant washoff samples were collected from a model roof surface placed in a residential suburb in Gold Coast, Queensland State, Australia. The collected washoff samples were tested for a range of physio-chemical parameters which are key indicators of nutrients, solids and organic matter. The analysis revealed that [total dissolved solids (TDS)]; [electrical

conductivity (EC), turbidity (TTU)] as appropriate surrogate parameters for dissolved total nitrogen (DTN) and total solids (TS) respectively. No surrogate parameters were identified for phosphorus.

Key words- roof surface pollutants, stormwater pollution, surrogate parameters