

Research Round Up

Title of the project: Fluorescence as a tool for sensitive detection of failures in recycled water treatment and distribution systems

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Collaborating organisations: Sydney Olympic Park Authority, Sydney Water Corporation, Gold Coast Water, Melbourne Water, South East Water Limited, City West Water Limited, Yarra Valley Water Limited, Water Corporation, University of Birmingham.

Key issue/s addressed:

- Exposure to hazardous substances in recycled water due to treatment underperformance/failure or cross connections between potable and non-potable supplies.

Objectives:

- Investigate the use of fluorescence excitation-emission matrix (EEM) spectroscopy as an indicator for recycled water quality
- Undertake a trial using EEM spectroscopy as an on-line water quality monitoring tool
- Undertake a field survey using EEM spectroscopy as a tool for cross-connection detection

Planned Outputs/Outcome (by when):

- Database of EEM characteristics of recycled (and other) waters (2008)
- Protocol for online EEM monitoring of water treatment performance (2009)
- Protocol for EEM-based detection of cross-connections between potable and non-potable water supplies (2009)

Methodological approach:

- Analysis of full EEM spectra and further characterisation of static water samples
- Transfer to portable fluorescence spectrometer
- Analysis of dynamic water samples using a laboratory rig
- Analysis of full-scale treatment and distribution systems

Key findings so far:

- Good PhD students are hard to find.

Please tick the relevant theme below:

Monitoring/ Analysis Exposure assessment Environmental Fate Effects

Treatment Technology Risk Assessment Other