# *IDEXX*
# Literature Cover Sheet

**IDEXX #**: 4C

**Topic**: Comparison of Colilert and the UK Standard Membrane Filtration Method

**Title**: Use of the Colilert® system in a large U.K. Water Utility

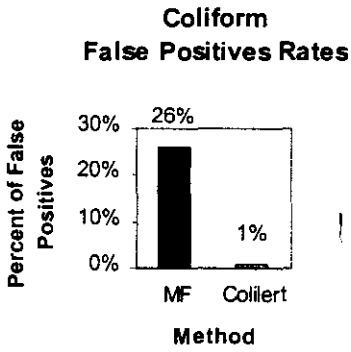
**Author(s)**: C.R. Fricker, J. Cowburn, T. Goodall, K.S. Walter and E.J. Fricker

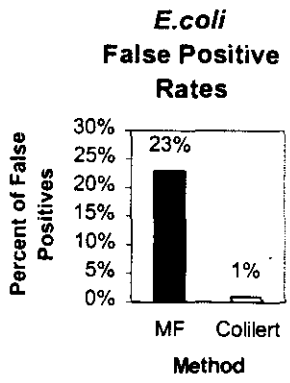
**Date**: 1996

**Source**: Thames Water Utilities, Reading, UK

**Highlights**:

- The UK membrane filtration method was shown to have a very high false rate for both coliforms and *E. coli* when compared to Colilert. This forces utilities to either put the public health at risk by waiting for confirmation results, or risk unnecessarily alarming the public with a false alert.
- Colilert can reduce operational costs by reducing false positives.



# Use of the Colilert system in a large U.K. Water Utility

C.R.Fricker, J.Cowburn, T.Goodall, K.S.Walter & E.J.Fricker

Thames Water Utilities, Manor Farm Road, Reading, U.K.

## Samples

A wide range of samples was used in this study comprising:

- **Raw water (129)**
- **Post slow sand filtration (276)**
- **Pre-chlorinated post coagulation water (220)**
- **Marginally chlorinated water (1070)**
- **Fully treated water (5873)**

## Methods

Each sample was well mixed and water (100 ml) was filtered through two membranes. Membranes were incubated at 30°C for 4 hr followed by 14-18 hr at 37°C or 44°C for coliforms and *E.coli* respectively. A further sample (100 ml) was placed in a sterile glass bottle and the Colilert medium added. Colilert samples were incubated at 35°C in a waterbath followed by 24 hr at 35°C in an incubator.

## Results

| | Membrane pres | Colilert pres | Membrane conf | Colilert conf |
|---|---|---|---|---|
| Post slow sand | 231/119 | 178/98 | 179/92 | 171/92 |
| Raw water | 129/65 | 112/49 | 107/52 | 110/49 |
| Post coagulation | 39/14 | 37/11 | 32/9 | 37/11 |
| Marginally chlorinated | 937/343 | 716/314 | 716/290 | 716/314 |
| Treated water | 295/93 | 216/46 | 163/48 | 216/46 |

## Conclusions

This study has shown that Colilert gives similar results to those obtained with the U.K. standard membrane filtration method. The number of "false positive" coliform and *E.coli* isolations on membranes was far greater than that obtained with Colilert. In fact no false positive *E.coli* results were obtained with Colilert and very few for coliforms. It is concluded that Colilert can be utilised for routine water quality monitoring and the test gives results which are in very close agreement with those obtained by membrane filtration. Furthermore operational expenditure can be reduced due the lower numbers of "false positives".