EFFECTS OF HOLDING TIME AND TEMPERATURE ON *E. COLI* AND TOTAL COLIFORMS IN SURFACE WATER SAMPLES

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Total coliform and Escherichia coli (*E. coli*) counts are routinely used as microbiological indicators of water quality. For Laboratory results to be compliant with APHA (American Public Health Association), samples must be held at less than 10^{o}C, for a maximum transit period of 6 hours and processed at the lab within 2 hours. With samples taken in many locations in New Zealand it is unlikely that they will reach a laboratory within the time frame to meet the compliance standard.

In an effort to understand the effects of both temperature and storage conditions on Total coliform and *E. coli* recoveries a case study was performed by analysing surface water samples.

Samples were collected from five sites across Hawkes Bay targeting different waterways and transported back to the laboratory within the compliance timeframe. All sites were then analysed in duplicate. The remaining samples from each site were stored in three different conditions either resting at ambient temperature (within the Laboratory), in chilly bins with ice bricks or in the fridge. Samples were analysed over a period of five days at 0, 24, 48, 72 and 96 hours after sample collection. The method used for the analysis was the IDEXX Colilert-18 test kit, which simultaneously detects total coliforms and *E. coli*.

The results obtained for Total Coliform counts across all the sites showed that no substantial difference was observed from the initial zero hour up to 72 hours across all storage conditions. *E. coli* counts showed a sharp drop between the initial testing and 24 hours. This is consistent with work conducted by NIWA (Crump, 2011).

Further analysis is required to expand on this work, in particular additional resolution on the impact to *E. coli* numbers within the first 24 hours post sampling.

Editor's Note: A manuscript has not yet been submitted for this presentation.