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## The impact of an informal settlement on surface water contamination in the Western Cape

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**Introduction:** The World Health Organisation has set guidelines for ensuring the quality of potable water by assessing the level of faecal contamination and its related toxicity. Faecal matter contains millions of bacteria, some of which are part of the normal microflora, (including *Escherichia coli* and other coliforms), while others are pathogenic and may be implicated in fatal infections such as cholera, typhoid and dysentery.

**Objectives:** The objective of this study was to establish the influence of an informal settlement on water quality by examining for the presence of faecal contamination from three sites along the course of the Plankenbrug River, part of which runs through the settlement.

**Materials and Methods:** Samples were collected from three points: one upstream and distant from human activity, one before and one after the settlement of concern. Samples were collected weekly over a period of 12 weeks. Water chemistry was assessed and the water passed through a sterile membrane filter which was applied to the surface of a coliform differentiating agar medium and incubated at 37°C for 18-24 hours. Post incubation, colonies were counted and the concentrations of total coliforms and *E. coli* calculated.

**Results:** Comparison of sample data before and after the informal settlement yielded significantly higher microbial concentrations ( $p < 0.02$ ) for both total coliforms and *E. coli*, indicating that the informal settlement significantly exacerbated the level of water contamination.