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Contamination Sources of Bomuruella Reservoir at Nuwara Eliya

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ABSTRACT

Bomuruella Reservoir in Nuwara Eliya is an important water source in the area which indirectly contributes to the drinking water supply of the downstream people. Many agricultural lands obtain water from this reservoir and consume its water for washing and cleaning purposes. This research was focused on identifying the contamination sources of Bomuruella reservoir and to investigate the suitability of the reservoir as a drinking water source.According to the water quality analysis, BOD5 and CODMn values of most sample points did not satisfy the specified standards of Central Environmental Authority, Sri Lanka. Municipal wastewater stream and the stream from the cultivated area recorded high BOD5 levels of 7.65 mg/l and 6.55 mg/l respectively in the period of low water level of the reservoir. The stream from the cultivated area reported a high CODMn value of 595.74 mg/l during March and the stream from Kandapola plantation recorded a CODMn value of 74.44 mg/l during May. This concludes that the reservoir was contaminated with significant loads of organic wastes. Furthermore, the effluent from the leachate treatment plant recorded higher conductivity, nitrate and CODMn values which indicated that the leachate treatment plant was malfunctioning.The main cause of pollution of the reservoir is the discharge of agricultural runoff, raw sewage and wastes which include domestic, industrial and hospital waste directly into the feeder streams. It can be concluded that if the reservoir is to be used as a source of drinking water stringent measures have to be taken to control effluents.

KEYWORDS

Water Quality, Contamination Sources, Bod5, Codmn, Leachate

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