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A Milky-White Stream Water Suitability for Drinking Purpose

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Abstract : Drinking water suitability study was conducted for a milky-white stream in remote areas of Ethiopia in order to understand its effect on human health. Water samples were taken from the water source and physicochemical properties were analyzed based on standard methods. The mean values of pH, total dissolved solids, sodium, magnesium, potassium, manganese, chloride, boron, and fluoride were within maximum permissible limits set for health. Whereas turbidity, calcium, irons, hardness, alkalinity, nitrate, and sulfate contents were above the limits. The water is very hard water due to high calcium content. High sulfate content can cause noticeable taste and a laxative (gastrointestinal) effect. The nitrate content was very high and can cause methemoglobinemia (blue baby syndrome) which is a temporary blood disorder in the bottle fed infants. Hence, parents should be advised not to give this water to infants. In conclusion, all physicochemical parameters except for nitrate are safe for health but may affect the appearance and taste, and wear water infrastructures. A high value of turbidity due to suspended minerals is the cause for milky-white colour. However, a mineralogical analysis of suspended sediments is required to identify the exact cause for white colour, and a study on sediment source was recommended.

Keywords : hard water, laxative effect, methemoglobinemia, nitrate, physicochemical, water quality
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