Indian Journal of Ecology (2019) 46(4): 845-849

Manuscript Number: 2929
NAAS Rating: 4.96

Assessment on the Water Quality of Tsurang River, Nagaland Affected by Coal Mining Drainage

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Abstract: The present study aims to investigate the affects of coal mining in the water quality of Tsurang river. Water samples were collected from September, 2018 to August, 2019 covering the four seasons; winter, spring, summer and autumn. The physico-chemical parameter values recorded are temperature (20-23.6^{O}C), pH (3.3-6.3) TDS (113-177.6 mg l^{-1}), DO (4.5-8.3 mg l^{-1}), BOD (2.2-4.1 mg l^{-1}), chloride (34-74.7 mg l^{-1}), potassium (3.2-9.1 mg l^{-1}), conductivity (181.6-230.4 µS cm^{-1}), total hardness (86-135.3 mg l^{-1}), calcium hardness (40.8-62.6 mg l^{-1}), magnesium hardness (9.5-17.3 mg l^{-1}), alkalinity (125-208.3 mg l^{-1}), phosphorus (0.23-0.45 mg l^{-1}), nitrate (2.53-4.7 mg l^{-1}), sulphate (174.3-293.3 mg l^{-1}) and free CO_2 (8.8-25.6 mg l^{-1}). The present study revealed that sulphate in spring, summer and autumn, pH and BOD throughout the four seasons, alkalinity in winter (S3) and free CO_2 in summer (S1, S2) were not in the drinking water permissible limit given by BIS (2012) and WHO (2017).

***Keywords*:** Coal mining, Water quality, Tsurang river, Permissible limit