VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"Jnana Sangama" Belagavi- 590018

PROJECT REPORT ON

"DOMESTIC WASTEWATER TREATMENT BY LOW-COST NATURAL ADSORBENTS''

Submitted in partial fulfilment of requirements for the award of degree

BACHELOR OF ENGINEERING

IN

CIVIL ENGINEERING

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CERTIFICATE

Certified that the project work entitled **"DOMESTIC WASTEWATER TREATMENT BY LOW-COST NATURAL ADSORBENTS"** has been successfully completed by

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is the bona- field work carried out by Students of Civil Engineering , Alva's Institute of Engineering and Technology to partial fulfilment for the award of **BACHELOR OF ENGINEERING** in **CIVIL ENGINEERING** of **VISVESVARAYA TECHNOLOGICAL UNIVERSITY BELAGAVI** during the academic year 2022-2023, it is certified that all corrections and suggestions indicated for internal assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirement in respect of project work prescribed for the said degree.

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ABSTRACT

Water is one of the most important elements involved in the creation and development of healthy life. As demand for water increased whiles the water resources is limited, there is a growing awareness to treat the domestic waste water and make more efficient use of the domestic waste water. The conventional methods for treating wastewater are expensive. Consequently, the search for contrarily but effective, efficient and economic methods has been on the increase in recent times. Thus, the use of biomaterials, such as agricultural waste as adsorbents for organic and metal ions is being exploited due to their availability and low cost. Filtration technology is the simplest and low cost treatment technology based on the principle of attached growth process. Multimedia Filters represent a significant improvement over single media filters. A multimedia filter model was developed by G.I. sheet for treatment of domestic wastewater. Different packing media are used such as Activated carbon, sugarcane bagasse, Rice husk, Sand and Grass mulch. The waste water samples were physio- chemically characterized before and after treatment according to standard procedure using these adsorbents. The results obtained from the various pollution indicators show an appreciable improvement on the quality of the water. The pH value changed from 7.9 to 7.1, the color changed from soapy and cloudy to colorless, Turbidity was reduced from 163.7 to 28.3NTU while the biochemical oxygen demand BOD was reduced from 117 mg/l to 69.3mg/l and chemical oxygen demand COD was reduced from 232 mg/l to 115.7mg/l. This paper intends to provide an overall vision of multimedia filter technology as an alternative and conventional method for treating waste water. Treated water use for Irrigation, toilet flushing, car washing, gardening, firefighting, etc.