

PROJECT REPORT ON
“TREATMENT OF DOMESTIC WASTEWATER USING
GRAVEL-BED FLOCCULATOR”

0

Project Associates

Ms. Ashwini L Kudva
(4NM08CV006)

Mr. Sayel C. K.
(4NM08CV052)

Ms. Anita S.
(4NM08CV003)

Mr. Vinay Acharya
(4NM09CV409)

Mr. Mohammed Ansaf Ashraf
(4NM07CV031)

Under the guidance of

1. Srinath Shetty K.
Asst. Professor

2. Anupama
Lecturer

*Project Report Submitted to NMAM Institute of Technology, Nitte an
Autonomous Institution affiliated to VTU Belgaum, in partial fulfillment for the
award of Bachelor of Engineering in Civil Engineering*

DEPARTMENT OF CIVIL ENGINEERING

ABSTRACT

Treatment of wastewater is necessary for the disposal or reuse. The treated water from Nitte Gents Hostel needs more treatment before effective disposal or reuse. Therefore the treated water from the existing plant can be supplied to pebble beds where the formation of algae continues and the treatment action takes place.

The gravel-bed flocculator provides a simple and inexpensive design for flocculation in small water treatment plants (less than 5000 m³/day capacity). It has been tested experimentally and employed successfully in several plants in India. The packed bed of gravel provides ideal conditions for the formation of compact settleable flocs because of continuous recontact provided by the sinuous flow of water through the interstices formed by the gravel.

Samples are analyzed for pH, solids, nitrates, chlorides, COD and BOD. The results are compared with permissible limits.

It is observed that the value of solids COD and BOD in raw sewage is high. However the pH value, nitrates and chlorides content are well within the standards of disposal. There is no DO content in the raw sewage. The wastewater after secondary treatment shows considerable improvement in the quality with respect to DO, pH, nitrates, COD and BOD. However there is no considerable change in the solids and chloride content of the wastewater. The tests conducted on samples collected from reed bed show that the wastewater quality has improved considerably with respect to pH and nitrates. DO content and solids removal efficiency may increase with the complete functioning of reed bed system. COD and BOD valued are reduced, which shows the efficient working of the reed bed.

Hence, it can be concluded that the tertiary treatment of sewage using reed bed has shown good results in improving the quality of sewage. Overall, reed bed offers an easy, cheap and efficient alternative for the final polishing treatment of sewage from NET gent's hostel.