

# Analysis of Mula-Mutha River

Abhinav Harpale<sup>1</sup>, Chinmay Bhade<sup>2</sup>, Atharva Choudhari<sup>3</sup>, Viraj Karanjkar<sup>4</sup>, Prof. Sarika Kale<sup>5</sup>

<sup>1, 2, 3, 4</sup>Dept of Civil Engineering

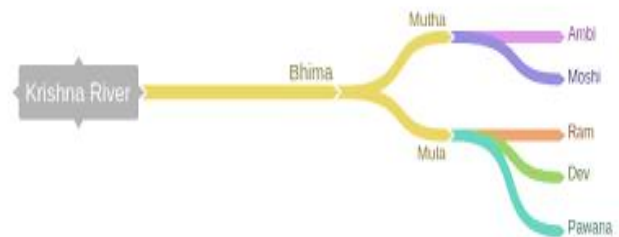
<sup>5</sup>Assistant Professor, Dept of Civil Engineering

<sup>1, 2, 3, 4, 5</sup>Trinity Academy of Engineering, Savitribai Phule Pune University, Pune

**Abstract-** Water is an important resource in day-to-day human life. It is used for various purposes such as domestic life, industrial, agriculture, etc. The main source of water to a city is through its rivers and lakes, these rivers are observed to have drastic degradation of water quality over the past few years Mula-Mutha River situated in Pune is observed to have higher level of contamination due to illegal untreated sewage waste entering the river. Some tests were carried out to analyze different physical, chemical parameters of the river water such as pH, turbidity, odor, temperature, Do, BOD, COD. Results indicated higher level of organic pollution and higher concentration of BOD was observed at selected stations, it means higher rate of sewage disposal was found inside water. The aquatic life is in danger due to decrease in Dissolved Oxygen level in water.

## I. INTRODUCTION

Clean waterway is a myth today. Thus, it fits to Mula-Mutha waterway. On the off chance that you Google as 'the most contaminated waterway in India', Mula-Mutha may gain the primary position. In spite of this, Mula-Mutha bowl is one of the quickly urbanizing watersheds, wherein two significant metropolitan places – Pune and Pimpri-Chinchwad have created at a disturbing rate over the most recent twenty years or somewhere in the vicinity. Water of this waterway is utilized to fulfill the need of water for a quickly developing populace in this bowl. From last numerous many years Mula-Mutha stream goes about as a vein to the Pune city and give water to fundamental necessities of drinking to modern mechanical employments. Be that as it may, maybe we failed to remember the significance of this stream being developed of Pune city and ourselves. Rather than regarding it's anything but a Goddess-a wellspring of life and wellbeing we treat it's anything but a public dumpster. The consistent unloading of sewage and modern waste in stream water has become a peril to the local area and even difficulties the endurance of marine species.



Mula waterway starts at Mula-Devghar, roughly 65 km west of Pune. Dammed at Mulshi during the mid-1920s, it streams further downstream and enters the Pune metropolitan region close to Balewadi. It streams down along the edge of Wakad to Aundh, Bopodi (where Pawana waterway joins her), through Khadki, Vishrantwadi, Wakdewadi to Sangam, where it joins Mutha to shape Mula-Mutha waterway. From Sangam, it flows downstream to Bund Nursery, Yerawada, through Koregaon Park, Kalyani Nagar and Mundhwa. It exits Pune metropolitan region close to Kharadi IT Park.



The municipals are facing huge burden on its treatment plants placed into the city, the waste water discharge is more then the actual capacity of the treatment plants all combined together.

The following study is taken to consider different parameters of the river and compare the results with water

quality standards to determine the pollution status of MulaMutha River.

## II. MATERIAL AND METHODS

### Study Area

The study on MulaMutha was carried out and few locations where the water quality was worse. The location was selected based on criteria where STPs were not present.

### Location

**Station 1:**Manjri

**Station 2:** Theur

### Sample Collection

The samples were collected from Manjri and Theur and the sample bottles were covered with black material.

### Sample Testing

Few tests were performed on the water sample brought from station 1 and station 2.

- Physical Characteristics:  
Temperature, Colour, Odor, Total dissolved solids, pH
- Biochemical Oxygen Demand (BOD)
- Chemical Oxygen Demand (COD)

The analysis of the following parameters was done by following BIS standards.

Table No. 1A shows the parameters studied and the method used with respect to Indian Standards.

Table 1A

Sr No	Parameters	Methods Applied	Indian Standards
1	pH	pH meter	6.5 – 8.5
2	Do (mg/l)	Azide Modification	7.6 – 7.0
3	BOD (mg/l)	Azide Modification	30
4	COD (mg/l)	Dichromate Reflux	250
5	Hardness (mg/l)	EDTA Titration Method	300

## III. RESULT

Sr No	Parameters	Station 1 (Manjri)	Station 2 (Theur)
1	pH	7.44	7.37
2	TDS	400ppm	400
3	Dissolved oxygen	5mg/l	3.75mg/l
4	COD	756mg/l	750mg/l
5	BOD	462.5mg/l	437.5mg/l

BOD of the samples collected from Station 1 and Station 2 is more than the standard limit.

## IV. CONCLUSION

Increasing water pollution is a greater problem affecting the public health as well as the aquatic life, after the physio chemical analysis of MulaMutha River the result shows some points as follows:

- The water quality of the river MulaMutha is being contaminated mainly due to the domestic waste entering the river.
- The higher level of BOD states that water quality is getting harmful and due to this the value of DO is decreasing and its very dangerous for the aquatic life to survive.
- The situation explains the present situation of the river and increasing pollution, there is a need for proper collection of waste water and providing treatment plants to control the pollution.

## REFERENCES

- [1] Study of water quality parameters of MulaMutha River at Pune, Maharashtra (India): - by S.D. Jadhav, M.S. Jadhav Department of basic science & humanities, Bharati Vidyapeeth, College of Engineering, Pune, Maharashtra, India.
- [2] Studies On Water Pollution of Mula, Mutha and Pawana Rivers in Summer Season in The Pune City Region Vinaya V. Fadtare and T.T. Mane, Vasantdada Sugar Institute, Manjari (Bk), Pune 412307, Maharashtra, India Current address: Deptt. of Environmental Science, Fergusson College, Pune-411 004, India Dept. of Botany, Baburaoji Gholap College, Sanghvi, Pune-411 027, Maharashtra, India
- [3] Physico-Chemical and Biological Parameters Investigation of Mula-Mutha River in India: From Source to Sink Ashwini R. Rane, Ashwini H. Supekar, Nitin R. KarmalkarAndsujatha Raman, Department of

Environmental Sciences, Department Geology, Sppu,  
Pune, India Jaim (Elsevier), Interdisciplinary School of  
Health Sciences, Sppu, Pune, India.

- [4] Excreta in Mula-Mutha three times above safe limit:  
MPCB by Hidustan Times
- [5] PUNE RIVER RIJUVENATION PROJECT: - Pune  
Municipal Corporation
- [6] AbhinavGaurav\_:“ReclaimtheRiver”,Pune,Maharashtra,  
India, P. D. Wagner, S. Kumar, K. Schneide