



“Assessment of Water Quality of Lakha Banjara Lake Sagar by Physico-Chemical Parameter.”

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Abstract—The Historical famous LAKHA BANJARA LAKE is the life line of the SAGAR town as most of the inhabitants of the town particularly living around the lake depends on the lake water for their general use. At present the lake water is full of odour, harmful suspended particles because most of the waste is being discharged directly into it particularly from the population located on the periphery of the lake. Similarly the residents of the hillock areas of the town are also directly discharging the waste into open drain. Sewage is 99 % water carrying domestic wastes originating in kitchen, bathing, laundry, urine, and night soil. A portion of the wastes go into solution and the rest are partly in colloidal suspension and true suspension. Sewage is generated by residential, institutional, commercial and industrial establishments. It includes household waste liquid from toilets, baths, showers, kitchens, sinks and so forth that is disposed of via sewers. In many areas, sewage also includes liquid waste from industry and commerce. The objective of this study is to analyse the water quality of LakhaBanjara Lake in the various points and to identify sources of wastewater degrading quality of water of the lake and to propose sewage treatment plant for Sagar city. Here samples of 4 drains and 4 samples of lake water has been collected and tests were conducted to determine various parameters including pH, colour, temperature, COD, BOD, Conductivity, Sulphate, Nitrite, suspended solids, total solids and Total coliform.

Result of the study indicated that LakhaBanjara lake water is contaminated and not totally safe for consuming purpose. Keywords- Physicochemical parameter; Water Pollution LakhaBanjara Lake; Aquatic life; Water Quality Index.



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1. INTRODUCTION

Water is one of the most significant elements on earth. each and every living being needs water for its survival. Without water, animals, plants, microbes everything will perish. Population growth coupled with urbanization and industrialization has resulted in an increasing demand for water thus leading to water crisis and serious consequences on the environment. In this paper LakhaBanjara Lake of Sagar is considered for the study purpose. LakhaBanjara Lake is situated in sagar city of Madhya Pradesh and is surrounded by various Landforms with majority of population around the lake. Geographic location of Lake can be pointed as between 23⁰50' N and 78⁰45' E and 521.50 meters above sea level.

Most of the locality depends on this lake for their survival. It will not be out of position to mention here that this big lake was also the source of water for the generation of electricity and this town was facilitated with electricity in past. At present the lake water is full of odour, harmful suspended particles because most of the waste is being discharged directly into it particularly from the population located on the periphery of the lake. Similarly the residents of the hillock areas of the town are also directly discharging the waste into open drain. This waste is ultimately contaminating the drinking water through seepage and leaked water pipe line. Therefore the overall situation in the town is not good for human health. In other words we can say that the living environment in the town is not fit, for human habitation.

Therefore, in this present study an Initiative is taken to study the Water quality index of the Lake to provide the basic information for the prediction of water quality. This study is conducted with an objective to evaluate the water quality parameters for the usage in drinking purpose, irrigation, and aquatic lives. The results obtained in the study were evaluated against the standards of WHO

(World Health Organisation and Indian standard guidelines.

2. MATERIALS AND METHODS

2.1 Study area

In In Sagar City, LakhaBanjara Lake is situated in the mid region of the city. The exact location of it can be defined with the help of main bus stand of sagar as the lake is in front side of it. It is the high dominating skyline of the city surrounded by hillyregions.

Area of Full Lake (x10³)	1166.4 m ²
Location	In the front side of Main Bus stand of Sagar, Madhya Pradesh 470001
Latitude	23 ⁰ 50' N
Longitude	78 ⁰ 45' E
Altitude (MSL):	517 m
Maximum Length	1247 m
Maximum Breadth	1207 m
Mean Width	935.2 m

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