



**PHYSICO-CHEMICAL CHARACTERS OF KHANDALA DAM, NALDURG
DIST. OSMANABAD. (M. S.) INDIA.**

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ABSTRACT

During the year June 2015 to May 2016 the analysis of water quality from Khandala Dam was conducted. Present investigation deals with physico-chemical parameters of reservoir. The temp of water ranged between 16 to 33 °C .pH was found to be 7.5 to 8.2 Total Dissolved Solids ranged from 66 to 162 mg/lit. Transparency was found to be 77 to 140. The dissolved oxygen was found to be 5.4 to 9.3 mg/lit Chloride and total hardness varies from 32 to 52 and 52 to 98 mg/lit

Key words - Physico- Chemical Characters, Khandala Dam.

INTRODUCTION

Some Indian workers carried out the Limnological investigation on reservoirs in India such as Kulshrestha et al 1992, Thomas and Aziz 2000 in the state of Maharashtra studies has

been conducted on Limnology by Shashtri and Pendse (2001), Sakhare and Joshi 2002.

There is no such work was carried out on Khandala Dam in Osmanabad District of Maharashtra. Hence the



present investigation was undertaken to study the physico-chemical characters of Khandala Dam.

MATERIAL AND METHODS

For the systematic analysis of water quality, monthly samples were collected from the four sampling stations for a period of one year (Jun-2015 to May 2016) The water samples is used for the collection of sample. The sample was collected for a depth of one meter in the morning period. The sample is of one liter capacity of plastic can. With this samples the samples were brought to laboratory for analysis some parameters like temp, transparency, pH, dissolved oxygen, free carbon dioxide and alkalinity, were analyzed at the Dam site and some parameters like the total hardness, total dissolved solids, and chlorinity were analyzed in the laboratory

The methods used for the analysis of physico-chemical parameters are given as in methodology for water analysis. (Trivedi and Goal (1984),

APHA 1980, & M.S. Kodarkar (1998,) The pH values were recorded the sides with the help of pH pen-meter.

RESULT AND DISSCUSIONS

- 1) **Water Temperature:-** The temperature is very important factor which influence the aquatic life. The temp. of air and water affects the conc. Of dissolved gasses and chemical solutes. During the present investigation. The temp. Varied between 16 to 33 °c. The lowest (16 °C) temp. was recorded in the month of January and highest temp (33 oc) was recorded in the month of may.
- 2) **pH :-** The pH in the reservoir ranged between 7.5 to 8.2 .The minimum pH was recorded in the month of December, while the maximum was in February. It shows that the nature of water during the period of investigation is alkaline.
- 3) **Transparency:-** The most important physical parameter is



transparency which is important for production. With the help of sacchi disc, the transparency of 77 was the recorded in October and 140 cm was recorded during March. Transparency is inversely proportional to turbidity which created by inorganic and organic matter.

- 4) **TDS:-** The investigation of total dissolved solids shows that the TDS values peak in summer less in Monsoon. It is observed that TDS value varied from 66 -162 mg/lit. The TDS value 66 mg/lit. in monsoon where as 162 mg/lit. in summer.
- 5) **DO:-** It is clearly shows the dissolved oxygen ranged between 5.4 to 9.3 mg/Lit. It found that, the high dissolved oxygen was reported in the monsoon (August) and lower values where recorded in summer (April).
- 6) **Alkalinity:-** The alkalinity in the water mainly due to the salts of carbonates, bicarbonates, phosphates, nitrates, borates,

silicates etc. Total alkalinity is the major of the capacity of water to neutralize a strong acid. The minimum value was observed in the month of August (24) where as maximum value in the month of January. (106).

- 7) **CO₂:-** During the period of investigation the free carbon dioxide was not recorded.
- 8) **Chlorides:-** The Chlorides was recorded during the investigation such as the minimum and maximum values of chlorides were 32 mg/lit. and 52 mg/lit. in the month February and April respectively According to Subbamma and Rama Sarma.(1992), the fluctuation in the chloride values of various water bodies is minimum in the monsoon period. Calcium and Magnesium is the important factor which gives the hardness to the water, maximum values recorded during summer and lowest during winter.



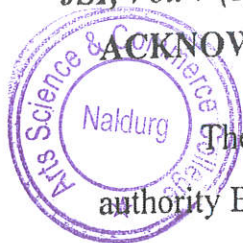
9) **Hardness:-** During present work it is observed that the maximum hardness (98) was found in the may and minimum (52) in the month of January.

In the present study period, the higher values were recorded in winter and lower values in monsoon.

Table No. – I
Physico-chemical parameters of Khandala Dam
(From Jun-2015 to May 2016).

Sr. No.	Parameters	Range
1.	Water temperature (°C)	16 to 33
2.	pH	7.5 to 8.2
3.	Transparency (cm)	77 to 140
4.	Dissolved Oxygen (mg/lit)	5.4 to 9.3
5.	Total dissolved solids (mg/lit)	66 to 162
6.	Total alkalinity (mt/lit)	24 to 106
7.	Free carbon dioxide (mg/lit)	Nil
8.	Chlorides (mg/lit)	32-52
9.	Total hardness (mg/lit)	52-98

ACKNOWLEDGEMENT



The authors are thankful to authority Balaghat Shikshan Sanstha, Naldurg, Principal Dr. S.D. Peshwe, A.S.C. College, Naldurg. For providing the laboratory and library facilities during the present work.

REFERENCES

- 1) A.P.H.A. (1980) : Standard Methods for the Examination of water and wastewater, new york, 15th ed ,pp 1134.
- 2) Kodarkar M. S, N. D. Diwan, N. Murugan, K.M. Kulkarni (1998): Methodology for water analysis (Physico-chemical) biological and microbiological , Indian-Ass of Aqua. Bio. Hyderabad A.P. pp 102.
- 3) Kulshrestha S. K, M.P. George, Rashmi Saxena, Malini Johri, Manish Shrivastava, (1992): Seasonal Variations in the limnochemical characteristics of manasarovar reservoir of Bhopal. In aquatic Ecology (S.R. Mishra and D.N. Saksena Eds.) Pp 275 -

292 Ashish Publishing house, New Delhi.

- 4) Sakhare V.B. and P.K. Joshi (2002): Ecology of palas Nilegaon reservoir in Osmanabad District Maharashtra, J.Aqua, Bio-17(2) : 17-22.
- 5) Shastri Yogesh and D.C. Pendse, (2001) : Hydrobiological Study of Danikunta reservoir. Environ Bio.22(1) : 67-70
- 6) Subbamma D.V, Rama Sarma, D.V. (1992) : Studies on the Water quality characteristics of a temple pond near machillipatanam. Andhara Prades. J. Aqua. Biology 7. (1&2) 22 -27
- 7) Thomas Sabu and Abdul Azis P.K. (2000): Physico Chemical limnology of tropical reservoir in Kerla S. India Ecology and Envi and Cons. 6(2) 159-162.
- 8) Trivedy R.K. and P.K. Goel, (1984): Chemical and biological methods for water pollution studies. Environmental Publications Karad, PP 244.