

NOTE

**Assessment of Water Quality of "Sakegaon Reservoir"
Maharashtra**

S.V. AGARKAR

Department of Chemistry

Anuradha Engineering College

Chikhli-443 201, Distt Buldhana, Maharashtra, India

The suitability of water for drinking and other domestic purposes is studied by collecting samples from Sakegaon reservoir situated in Chikhli area of Buldhana Distt. Maharashtra. Samples were analysed for physico-chemical parameters. The present paper reports a study on its water quality.

The amount of fresh water is huge, but its distribution over the globe is uneven. The demand of water for drinking and other domestic purposes has tremendously increased. As man uses water, he pollutes it inevitably and when the water is returned to open water bodies it contaminates the natural water. The quality of water is now the concern of all experts in all the countries of the world. The quality of water depends on the location of source and the state of environmental protection in a given area. For effective management of water resources, continuous monitoring and appropriate efforts are required. In the present study, water quality of Sakegaon Reservoir has been studied through physico-chemical analysis of water samples.

In the present study, water sampling was done on seasonal pattern. Water samples were collected from surface and sampling time was uniformly maintained in morning hours from 8.00 A.M. to 10.00 A.M. in all the seasons.

The parameters such as temperature, pH and dissolved oxygen were analysed at the site and the samples were brought to the laboratory for further analysis. The samples were analysed for physico-chemical parameters according to standard methods prescribed for this purpose.

The physico-chemical characteristics of Sakegaon Reservoir are presented in Table-1. The physico-chemical parameters analysed for all the samples included temperature, pH, electrical conductivity, total solids, total dissolved solids, total suspended solids, chlorides, salinity, total alkalinity, total hardness, calcium, dissolved oxygen, sulphates and free CO₂.

Temperature in the reservoir varied from 22° to 32.5°C. The pH of water was ranging between 7.19 to 7.32 and decreased pH was observed in rainy season. Conductance ranged from 0.47 to 0.79 millimhos/cm. Total solids varied from 199 mg/L to 152 mg/L. Total dissolved solids varied from 104 to 65 mg/L. Total suspended solids varied from 95 to 52 mg/L.

TABLE-1
PHYSICO-CHEMICAL ANALYSIS OF SAKEGAON RESERVOIR
(Seasonal mean values)

Sr. No.	Parameters	Winter	Summer	Monsoon
1.	Temperature (°C)	22.00	32.00	27.50
2.	pH	7.32	7.27	7.19
3.	Elect. conductivity	0.47	0.79	0.65
4.	Total solids	152.00	199.00	117.00
5.	Total dissolved solids	110.00	144.00	85.00
6.	Total suspended solids	42.00	55.00	32.00
7.	Chlorides	52.00	47.00	42.00
8.	Salinity	90.28	84.86	75.84
9.	Total alkalinity	230.00	212.00	201.00
10.	Total hardness	196.00	220.00	155.00
11.	Calcium	62.07	75.02	69.10
12.	Dissolved oxygen	8.20	6.50	7.40
13.	Sulphate	40.32	29.20	37.57
14.	Free CO ₂	Nil	Nil	Nil

Note: All the above values except temperature, pH, electrical conductivity are in mg/L. Temperature: (°C), Electrical conductivity: mmhos/cm.

Chloride levels in the present study fluctuated from 50 to 42 mg/L. Salinity fluctuated from 90.28 to 75.84 mg/L values of total alkalinity fluctuated from 230 to 201 mg/L. The levels of total hardness fluctuated from 155 to 220 mg/L. Levels of calcium ranged from 75.02 to 62.07 mg/L. The dissolved oxygen ranged from 8.2 to 6.5 mg/L. The range of sulphate was between 40.32 to 29.20 mg/L. The free CO₂ was reported nil during the study.

All the analysed physico-chemical parameters fall within the permissible limit as prescribed by WHO, ISI and ICMR for drinking purpose and other domestic purposes.

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