

Physico-Chemical Analysis of Ajnal River

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Abstract- Conceptual Water, a remedy of life if not dealt with appropriately could decrease the entire living things. The widespread pursue for modernization has expanded the vulnerability to pernicious maladies, which are generally water conceived. This paper is significantly worried about the physico-compound examination of water of Ajnal waterway, which is en route to Bhopal Raisen street. The region under examination, shows a significant level of contamination because of a few human exercises like washing, washing garments, strict exercises and so forth Also the significant reason for contamination in Ajnal stream is because of homegrown sewage from encompassing environment. In present paper, physico-compound boundaries viz. total hardness, complete alkalinity, pH, chloride content, broken down oxygen, COD, BOD has been dissected.

Keywords: Ajnal, Hardness, COD, BOD, Physico-Chemical.

1. INTRODUCTION

Water is the most basic necessity for all living animals on earth since it is the essential component for the sustenance of life. Great Quality of water is essential for all living life form and any adjustment in its quality may represent a disturbing circumstance for the existence of life. Significance of water is more for individuals than some other life forms as they required water for drinking as healthy as for horticulture, modern and different purposes. In this method, Fresh water is a basic, limited, powerless, inexhaustible regular asset on the ground and assumes as significant part in our living climate without it life is outlandish [1]. Presently, Clean water is considered as an essential right of human beings.[2]

Our current circumstance confronting a fast crumbling in the entirety of its biotic and abiotic resources because of contamination [3]. Nowadays, water contamination is consuming issue everywhere on the world and water quality control is a main concern strategy plan in numerous pieces of the world [4]. Water quality and reasonableness for use are controlled by its taste, scent, shading, and grouping of natural and inorganic issues [5]. The nature of water is of crucial worry for the humankind since it is straightforwardly connected with human

government assistance. [6]. Contaminants in the water influence the water quality and thusly the human wellbeing.

2. MATERIAL AND METHODS

It is important to check the scenery of water before taking it being used particularly for the approval of day by day necessities like washing, washing and so forth The water tests were gathered from Ajnal stream which is en route to Bhopal – Raisen street in the long stretch of Dec. 2017. For testing the water test was gathered in sterile glass bottles from examining station. After assortment of the examples, the containers were firmly covered and were promptly moved to the research center to keep away from any erratic changes in the physico-compound attributes. At that point different physico-synthetic boundaries were assessed to check the personality of water. Assessment of different physico-compound Parameters like Water Temperature, pH were recorded by utilizing Digital Thermometer and Digital pH Meter. Different Parameters Such as Hardness, DO, BOD, COD, Total Alkalinity, Chloride content were assessed in the Laboratory By utilizing Standard lab strategies.

3. RESULTS AND DISCUSSION

Different physico-synthetic boundaries of water of Ajnal supply has been investigated and the outcomes were summed up in Table-1.

3.1 Water Temperature

Water temperature is a physical property communicating how hot or cold water is. Temperature is a significant factor to consider when evaluating water quality. Other than its own belongings, temperature impacts a few different boundaries like movement of creature, dissolvability of gases and so on [7] and can change the physical and substance properties of water. The normal temperature of the current investigation ran is 20 oC .

3.2 pH

pH quantifies the acidic/essential trait of water. The reach goes from 0 - 14, with 7 being unbiased. pH esteem under 7 show sharpness, though a pH of more prominent than 7 demonstrates a fundamental nature of water. The mean pH estimation of the current examination was 7.4.

3.3 Turbidity

Turbidity is the shadiness of water brought about by an assortment of suspended particles that are generally undetectable to the unaided eye. It is likewise identified with the substance of sicknesses causing living beings in water, which may originate from soil overflow, subsequently expands the odds of water borne infections .The mean turbidity estimation of the current examination was NTU.

3.4 Chloride

Chloride is available in all common waters, however generally in low focuses. In most surface streams, chloride fixations are lower than those of sulfate or bicarbonate. Chloride particles might be held in arrangement through a large portion of the cycles which will in general separate out different particles. Chloride esteem acquired in the investigation was discovered to be 89.32 mg/L.

3.5 Hardness

Calcium and magnesium broke up in water are the two most regular minerals that make water "hard." The hardness of water is alluded to by three sorts of estimations: grains per gallon, milligrams per liter (mg/L), or parts per million (ppm). The mean estimation of the all out hardness of the current investigation was discovered 288.9 mg/L.

3.6 Alkalinity

Alkalinity is a proportion of the limit of water to kill acids. The transcendent synthetic framework present in normal waters is one where carbonates, bicarbonates and hydroxides are available. The bicarbonate particle is normally pervasive. In the current examination the absolute alkalinity of the water tests was 276.67 mg/L.

3.7 Total Dissolved Solids

Complete disintegrated solids (TDS) include inorganic salts (chiefly calcium, magnesium, potassium, sodium, bicarbonates, chlorides, and sulfates) and some modest quantities of natural issue that are broken up in water. Normal estimation of the all out broke down solids was 866.6 mg/L.

3.8 Dissolved Oxygen

Broken up oxygen focuses are continually influenced by dispersion and air circulation, photosynthesis, breath and decay. While water equilibrates toward 100% air immersion. The DO esteems acquired in the current investigation was 4.6 mg/L.

3.9 Biochemical Oxygen Demand

Biochemical oxygen interest (BOD) is the measure of broke up oxygen required (for example requested) by high-impact natural life forms to separate natural material present in a given water test at certain temperature over a particular time-frame. This boundary esteem so got was 9.6 mg/L

3.10 Chemical Oxygen Demand (COD)

The synthetic oxygen interest (COD) is a proportion of water and wastewater quality. Substance oxygen interest (COD) is a proportion of the limit of water to burn-through oxygen during the decay of natural issue and the oxidation of inorganic synthetics, for

example, Ammonia and nitrite. Higher estimation of COD shows the presence of contamination in water. In the current investigation, the COD worth was discovered to be 13.3 mg/L.

Table 1: Physico-Chemical Analysis of irrigate of Ajnal Reservoir

Parameters	Standard Values	Sample 1	Sample 2	Sample 3	Mean Value
Temperature	-	20°C	20°C	20°C	20°C
pH	6.5-8.5	7.4	7.7	7.5	7.5
Turbidity	NMT 5 NTU	25 NTU	27 NTU	24 NTU	25 NTU
Total Dissolved Solids (TDS)	500 mg/L	800 mg/L	1000 mg/L	800 mg/L	866.6 mg/L
Chlorides	250 mg/L	88.7 mg/L	88.75 mg/L	90.5 mg/L	89.32 mg/L
Hardness	200 mg/L	266.7 mg/L	300 mg/L	300 mg/L	288.9
Alkalinity	200 mg/L	270 mg/L	300 mg/L	260 mg/L	276.67
Dissolved Oxygen	5 mg/L	4.5	4.6	4.6	4.5
Biological Oxygen Demand (BOD)	6 mg/L	9 mg/L	10 mg/L	10 mg/L	9.6 mg/L
Chemical Oxygen Demand (COD)	10 mg/L	13 mg/L	15 mg/L	16 mg/L	14.6 mg/L

4. CONCLUSION

The current investigation gives the information with deference to the water nature of Ajnal supply arranged while in transit to Bhopal Raisen street. Mainly of the boundaries like turbidity, all out disintegrated solids, alkalinity BOD, COD were found in higher cutoff points. Nonetheless, barely any boundaries were discovered to be in limits yet higher estimation of BOD shows the occurrence of huge measure of natural issue which give supplements to the development of miniature life forms. Higher COD worth demonstrates the infectivity of water and not good for drinking reason.

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