

## **Physicochemical Water Analysis of Bindusara river in Beed District,(M.S)**

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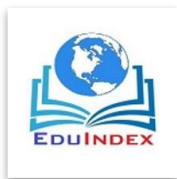
### **Abstract:**

Bindusara river is passed through the Beed city. Bindusara Dam is few kilometer away located near the Beed city. The dam water is used for the drinking water and irrigation facilities etc. and for various purposes in this region. Water has important role in living things like animals, plants and human being for their existence. Physicochemical analysis of water is done for the status of water pollution in the span of the 1<sup>st</sup> November 2019 to 10<sup>th</sup> December 2019 at Bindusara Pali lake and river water. The present investigation is carried out with analyses of some physicochemical parameters of Bindusara Pali lake water and river water in the Beed city area. The physico-chemical parameters of water such as temperature, color, Taste, odor, P<sup>H</sup> , BOD, COD, Total Hardness, TDS etc.

**Keywords:** Bindusara dam, Bindusara river, Physicochemical parameters, pH, COD etc.

### **Introduction:**

Water play important role in human life. The WHO reports the approximately 35% of urban and 65% of rural Indian were without access of safe drinking water. Water fulfills the requirement not only human beings but also animals, crop, and plants. Now about 910 million people around



the world live without improved drinking water. The world health organization estimated that 90% of diarrheal, cholera diseases are caused by unsafe water. Due to increase of population, urbanization, industrialization, agricultural activities and various human activities has increases the pollution of surface and ground water.[1,5]

### **Study area:**

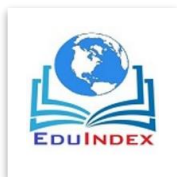
In the present investigation involves the analyses of water quality in terms of physicochemical parameters of Bindusara Pali dam water from Pali, and Bindusara river water entered in Beed city. District: Beed. The lake and river water is basically used for drinking, domestic and agriculture purpose.

### **Methodology:**

Physicochemical analysis of water are done for status of water pollution in the span of 1<sup>st</sup> November 2019 to 10<sup>th</sup> December 2019. Water sample from Bindusara dam/lake and Bindusara river water were collected in the morning hours between 9:30 to 10:30 am in plastic can. Estimation of various physicochemical parameters like water temperature was measured by using thermometer and P<sup>H</sup> of water by digital P<sup>H</sup> meter Systronic. While other parameters such as Total Dissolved Solid, Total hardness, COD, BOD were estimated in the laboratory by using standard methods, as prescribed APHA [4,6].

### **Observation Table: Cite-1: Physicochemical parameters in Bindusara Lake.**

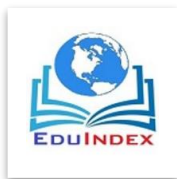
<b>Sr.No.</b>	<b>Parameters</b>	<b>01/11/2019</b>	<b>10/11/2019</b>	<b>20/11/2019</b>	<b>30/11/2019</b>	<b>10/12/2019</b>
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<b>01</b>	<b>Temperature</b>  °c	<b>25</b>	<b>25</b>	<b>24</b>	<b>23</b>	<b>22</b>
<b>02</b>	<b>pH</b>	<b>8.5</b>	<b>7.9</b>	<b>7.8</b>	<b>7.8</b>	<b>7.3</b>
<b>03</b>	<b>BOD</b>	<b>1.28</b>	<b>1.48</b>	<b>1.68</b>	<b>1.75</b>	<b>2.11</b>
<b>04</b>	<b>COD</b>	<b>16</b>	<b>15</b>	<b>13</b>	<b>12</b>	<b>17</b>
<b>05</b>	<b>TDS</b>	<b>215</b>	<b>235</b>	<b>244</b>	<b>254</b>	<b>256</b>
<b>06</b>	<b>Total hardness</b>  ppm	<b>118</b>	<b>120</b>	<b>128</b>	<b>135</b>	<b>145</b>

**Observation Table: Cite 2: Variation in Physicochemical parameters in Bindusara River**

<b>Sr.No.</b>	<b>Parameters</b>	<b>01/11/2019</b>	<b>10/11/2019</b>	<b>20/11/2019</b>	<b>30/11/2019</b>	<b>10/12/2019</b>
<b>01</b>	<b>Temperature</b>  °c	<b>25</b>	<b>24</b>	<b>23</b>	<b>22</b>	<b>22</b>
<b>02</b>	<b>pH</b>	<b>8.4</b>	<b>8.3</b>	<b>8.2</b>	<b>7.8</b>	<b>7.3</b>
<b>03</b>	<b>BOD</b>	<b>1.32</b>	<b>1.54</b>	<b>1.70</b>	<b>1.98</b>	<b>2.41</b>
<b>04</b>	<b>COD</b>	<b>16</b>	<b>15</b>	<b>13</b>	<b>12</b>	<b>17</b>
<b>05</b>	<b>TDS</b>	<b>213</b>	<b>238</b>	<b>264</b>	<b>268</b>	<b>276</b>
<b>06</b>	<b>Total hardness</b>	<b>120</b>	<b>132</b>	<b>138</b>	<b>145</b>	<b>154</b>



	ppm					
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### Result and Discussion:

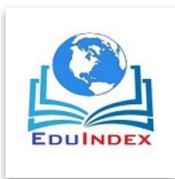
In the present study, the temperature of water sample range from 22<sup>o</sup>c to 25<sup>o</sup>c. Water temperatures plays key role which influence the chemical, biochemical and biological characteristics of water body. The total dissolved solid is in range of 214mg/l to 256 mg/l from cite one and from cite two in range of 213mg/l to 276 mg/l in given time period, it shows high due to rainfall. The **P<sup>H</sup>** is a term used to indicate the alkalinity or acidity of a substance as ranked on side from 1.0 to 14.0. In the present investigation **P<sup>H</sup>** varies from 7.3 to 8.5 which are in desirable limits. The hardness of water is due to the presence of Calcium and Magnesium salts of carbonates, chlorides and sulphates. Total hardness was determined by titrating against EDTA. The total hardness actual present is more than desirable limits.

### Conclusion:-

The present results of water analysis in the cite-1 and cite-2 shows that, the water have greater total dissolved solid, more the total hardness as compared to quality control of water prescribed by Indian standard and WHO. In result of **P<sup>H</sup>** measured of water is slightly alkaline and below the desirable limits. The potability of water should be increased by filtration and aeration.

### References:-

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