International Journal of Science and Research (IJSR)
ISSN: 2319-7064
SJIF (2020): 7.803

Physical Analysis of Water from Various Associated Hospitals of Government Medical College Srinagar (Jammu & Kashmir)

Dr. Abdul Aziz Lone

Post-Graduate Scholar Department of Community Medicine GMC Srinagar, India
Email: *loneaziz7[at]gmail.com*

Abstract: ***Introduction: Water is one of the most important of all natural resources known on earth. It is important to all living organisms, most ecological systems, human health, food production and economic development. The Safety of drinking water is important for the health. Material and methods: water samples were collected from associated hospitals of GMC Srinagar (J&k) and physical analysis was done at Public Heath Lab department of community medicine GMC Srinagar. Results: During the study it was found that maximum numbers of physical characteristics were within the desirable limit, as suggested by WHO (1971).***

Keywords: Potable water, physical analysis

1. Introduction

Water is one of the most important of all natural resources known on earth. It is important to all living organisms, ecological systems, human health, food production and economic development.1The safety of drinking water is important for the health. Water quality is determined by physical, chemical and microbiological properties of water. These water quality characteristics throughout the world are characterized with wide variability. Therefore the quality of natural water sources used for different purposes should be established in terms of the specific water-quality parameters that most affect the possible use of water.

The safety of drinking water is affected by various contaminants which included chemical and microbiological.2 Such contaminants cause serious health problems. Due to these contaminants quality of drinking water becomes poor. Sometimes such poor quality water causes many diseases in the humans, so that quality of water must be tested for both the chemical as well as for the microbial contaminants.

The 5 major Application of water are Hydropower, Domestics uses, Irrigation, Industrial uses, Commercial uses. The rationale of the present research is to provide information on the physical characteristics. In order to discuss it's suitability for human consumption, Physical aspects of the water have been investigated to assess the quality of water.

Aim and Objective
To assess the physical characteristics of water from associated hospitals of GMC Srinagar.

2. Material and methods

Potable water samples were collected in sterilized polyethylene bottles from five different areas of associated hospitals of Government Medical College Srinagar namely Shri Maharaja Hari Singh Hospital (SMHS Hospital), Super-specialty hospital, Lalla-Ded Hospital (LD Hospital), Chest Disease Hospital, Bone and Joint Hospital, Institute of Mental Health and Neuroscience (IMHANS-K) and G-B Pant Hospital from 1/01/2020 to 28/01/2020 and send to Public Health lab Community Medicine GMC Srinagar for analysis. Analysis was done by using water analyzer 371 (Systronics). The major water quality parameters considered for the examination in this study were pH, Odour, Colour, Taste, Temperature, Turbidity, Total Dissolved Solids (TDS), Dissolved oxygen (DO), Dissolved carbon dioxide.

Data Analysis: The data was entered in Microsoft excel (2010) and was analyzed after generating Mean using SPSS version 23.

3. Results

Table 1: Physical analysis of water samples from associated hospitals of GMC Srinagar

Parameter	SMHS Hospital	Super-specialty Hospital	LD Hospital	Bone & joint hospital	Chest disease hospital	Psychiatric hospital	GB Pant hospital
Temperature (degree C)	6.04	6.5	7	6	6.5	6.4	6.2
PH	6.9	7	7.2	7.1	7.3	7.2	7.4
Conductivity	0.8	0.7	1	0.8	0.7	0.6	0.8
Salinity (ppm)	0	0	0	0	0	0	0
TDS (PPM)	150	155	160	150	165	152	160
Turbidity (NTU)	0.1	0.5	0.4	0.3	0.2	0.5	0.1
Dissolved oxygen (ppm)	5.7	5	5.2	5.4	5.4	5.2	5.6
Taste	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
Odor	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable

4. Discussion

Physical parameters like Temperature, Odour, Taste & Colour of water was agreeable in all hospitals. The general ISI standard for Drinking water's Turbidity is <0.1 NTU. Turbidity >5 NTU is considered unhealthy. In Different associated hospitals of GMC Srinagar the Turbidity ranging from 0.1 NTU to 0.5 NTU. The pH range of drinking water should far between 6.5 to 7.5 and in our study water pH observed 6.9-7.4, So it complied with the acceptance criteria of pH range & it was found to be healthy for human use. Dissolved o2 was observed 5-5.7 and TDS was observed ranging from 150 to 165 ppm.

5. Conclusion

The result obtained during study was compared with ISI standards. Potable water is water safe enough to be consumed by humans or used with low risk of immediate or long term harm. After physical analysis we found that the sample of Potable water is free from pollution & ecologically balanced

References

[1] Basavaraja S, Hiremath S, Murthy K, Chandrashekarappa K, Anil N, Puttiah E; Analysis of Water Quality Using Physico-Chemical Parameters Hosahalli Tank in Shimoga District, Karnataka, India; Global Journal of Science Frontier Research, 11 (3), 2011.
[2] Bhaven N, Macwan J, and Chirag K., Assessment of Water Quality Index of Small Lake in South Gujarat Region, India.
[3] Solanki H, Verma H and Chandawat D Evaluating The Water Quality of Malav Lake by Mean of Physico-chemical Analysis, 944-955, 2011.
[4] Hydrology project; Government of India & Government of The Netherlands; Standard Analytical Procedures for Water Analysis May 1999.
[5] Indian Standard Specifications for Drinking Water, IS: 10500, 1992
[6] Jamie Bartram and Richard Ballance, Physical And Chemical Analyses.
[7] Jin H, Lee B, Tae-Hwan L and Park D; Estimation of Biological Oxygen Demand and Chemical Oxygen Demand for Combined Sewer Systems Using Synchronous Fluorescence Spectra; Sensors 2010, 10, 2460-2471.
[8] Kawther F. Abed and Suaad S. Alwakeel; Mineral and Microbial Contents of Bottled and Tap Water in Riyadh, Saudi Arabia; Middle-East Journal of Scientific Research, 2 (3-4): 151-156, 2007.
[9] Krishna V and Mohini G; Evaluation of drinking water quality; African Journal of Pure and Applied Chemistry, 6 (1): 6-9, 10 2012.
[10] Aldaya M and Llamas MR; water foot printing analysis for the Guadiana River basin; November 2008 Value of Water Research Report Series No.35.