

An Introduction to Water Quality Analysis

Abstract -

Water is perhaps the most precious natural resource after air. Though the surface of the earth is mostly consists of water, only a small part of it is usable, which makes this resource very limited. This precious and limited resource, therefore, must be used with prudence. As water is required for different purposes, the suitability of it must be checked before use. Also, sources of water must be monitored regularly to determine whether they are in sound health or not. Poor condition of water bodies are not only the indicator of environmental degradation, it is also a threat to

the ecosystem. In industries, improper quality of water may cause hazards and severe economic loss. Thus, the quality of water is very important in both environmental and economic aspects. Thus, water quality analysis is essential for using it in any purpose. After years of research, water quality analysis is now consists of some standard protocols. There are guidelines for sampling, preservation and analysis of the samples. Here the standard chain of action is discussed briefly so that it may be useful to the analysts and researchers.

Key Words: Water Quality Monitoring, Water Quality Assessment, Water Quality Analysis, Chain of Custody

1. INTRODUCTION

1.1 What is Water Quality?

Water Quality can be defined as the chemical, physical and biological characteristics of water, usually in respect to its suitability for a designated use.

Water can be used for recreation, drinking, fisheries, agriculture or industry. Each of these designated uses has different defined chemical, physical and biological standards necessary to fulfil the respective purpose. For example, there are stringent standards for water to be used for drinking or swimming compared to that used in agriculture or industry. **1.2**

What is Water Quality Analysis?

After many years of research, water quality standards are put in place to ensure the suitability of efficient use of water for a designated purpose. Water quality analysis is to measure the required parameters of water, following standard methods, to check whether they are in accordance with the standard.

1.3 Why Water Quality Analysis is required?

Water quality analysis is required mainly for monitoring purpose. Some importance of such assessment includes:

- (i) To check whether the water quality is in compliance with the standards, and hence, suitable or not for the designated use.
- (ii) To monitor the efficiency of a system, working for water quality maintenance
- (iii) To check whether upgradation / change of an existing system is required and to decide what changes should take place
- (iv) To monitor whether water quality is in compliance with rules and regulations.

Water quality analysis is of extremely necessary in the sectors of:

- Public Health (especially for drinking water)

Industrial Use