Wastewater Characterization Of Treatment Plant In Nishat,J&K India

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Abstract: Water exaggerated physically, chemically as well as biologically is known as wastewater. Thrown away process of solid waste and its treatment has been the foremost environmental setback for most of the cities in India especially in rural area. To make people aware about the level of contaminants in wastewater and to suggest the ways of treatment of wastewater which will result in disposing off of domestic effluents without any danger to human health, a study on characteristics of wastewater in Nishat Jammu and Kashmir was conducted. Concentrations of various physicochemical parameters like Total dissolved solids (TDS), pH, Turbidity, Biochemical Oxygen Demand (BOD) , Chemical Oxygen Demand(COD), Alkalinity, Hardness Chloride Content, and E-coli bacteria were determined.. All the parameters were found to be within the limits set by W.H.O.

Keywords: Wastewater,BOD,NTU,Nishat.

Introduction

1.1 General

In water and waste water treatment unit operations are those procedures in which the changes produced are physical,chemical or biological. The unit operation approach in water and waste water treatment has following advantages.

1) It gives better understanding of the process inherent in the treatment and the capacities of the processes in attaining the objective.

2) It helps in the development of mathematical and physical modes of treatment mechanisms and the consequent design of treatment plants.

3) It helps in the coordination of effective treatment procedure to attain desired plant performance and effluent quality.

1.2 Parameters of study

Following parameters were determined in this research:

1. PH
2. Alkalinity
3. COD
4. Total solids
5. BOD
6. Turbidity
7. Chloride concentration
8. Hardness
9. E.Coli

1.3 Results and Discussions

Month (2018)	Date	Parameters								
		pH	Alkalinity	COD	Total solids	B.OD	Turbidity	Chloride Conc.	Hardness	E.coli
Jan	5	7.85	14.2	20.2	1675	102.3	34	390	108.3	3.2
	15	7.9	12.2	18.2	1403	103.5	33	421	107.2	2.8
	25	8.1	12.7	19.1	1552	104.2	33.7	408	107.9	3.1
Feb	5	8.1	12.6	21.3	1655	114	32	402	111.2	2.9
	15	7.28	12.9	22.3	1635	110	34	398	115	3.3
	25	7.93	13.1	19.8	1627.3	109.7	33.2	401.2	113.4	3.27
Mar	5	7.6	11.7	25.1	1752	113	36	385	112	2.90
	15	8.5	13.2	20.1	1562	105	34	387	106.2	293
	25	8.3	12.7	19.7	1573	106.2	34.1	401.2	107.3	3.1
Apr	5	9.1	12.9	21.6	1678	109	38	399	105.4	3.2
	15	8.7	11.9	24.3	1836	112	39	415	109	3.33
	25	7.9	13.1	2.1	1732	111.3	35	408.1	108.7	2.93
May	5	8.8	12.8	23.2	1894	115	32	421	116	2.89
	15	8.3	14.0	22.0	1932	113.5	31	416	107.2	3.45
	25	8.9	21.9	21.9	1878	112.8	36	424	106.8	3.3
June	5	8.25	13.6	25.9	1958	112	33	417	105.6	2.67
	15	8.9	12.3	24.8	1989	115	32.7	422	109	2.73
	25	7.8	13.2	113.2	1078	113	34.1	418	108	2.93

1.4 Monthly variation of various parameters
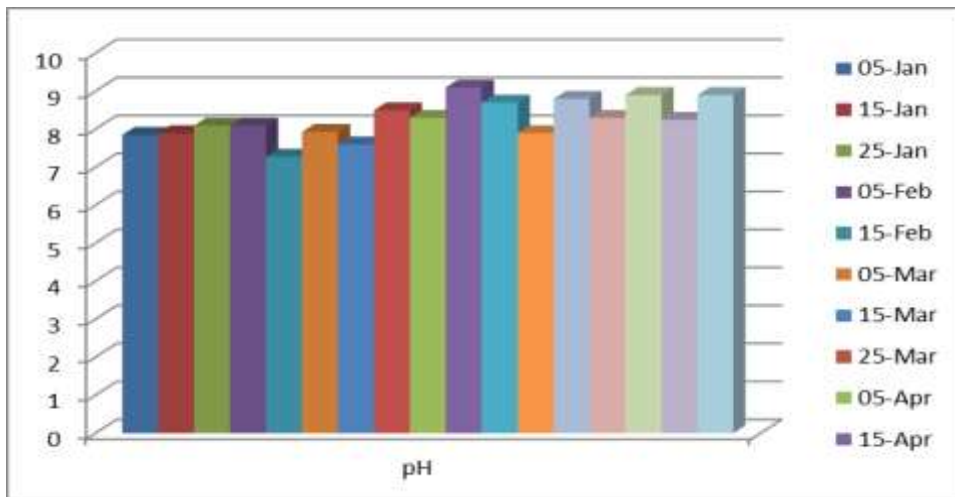The above variation of parameters can be graphically shown as below:

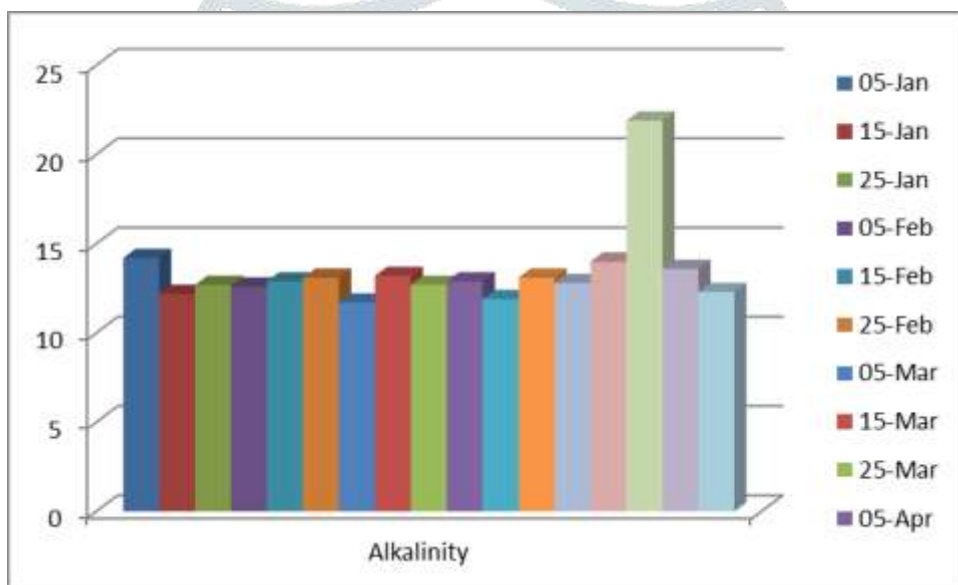Fig.1 Graph showing monthly variation of pH

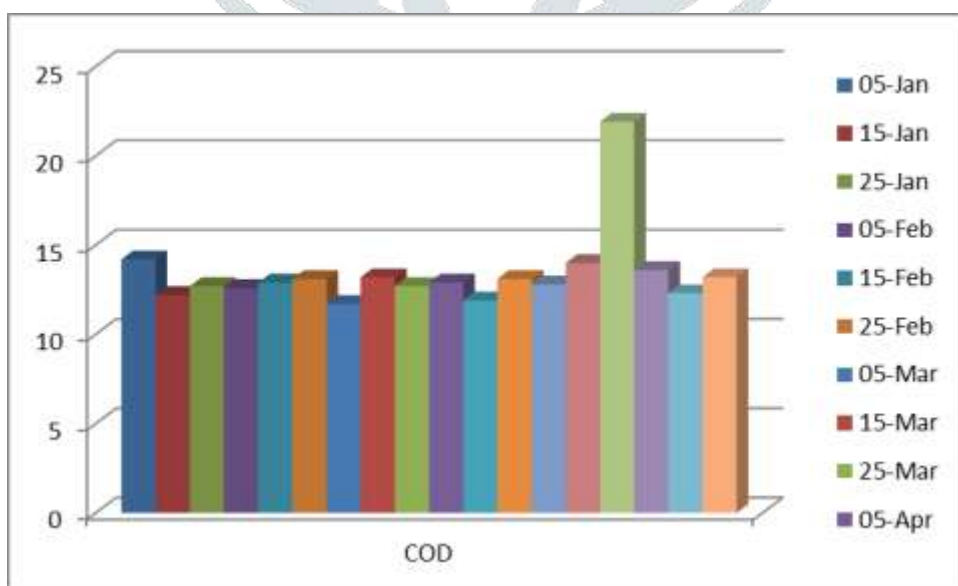Fig .2 Graph showing monthly variation of Alkalinity

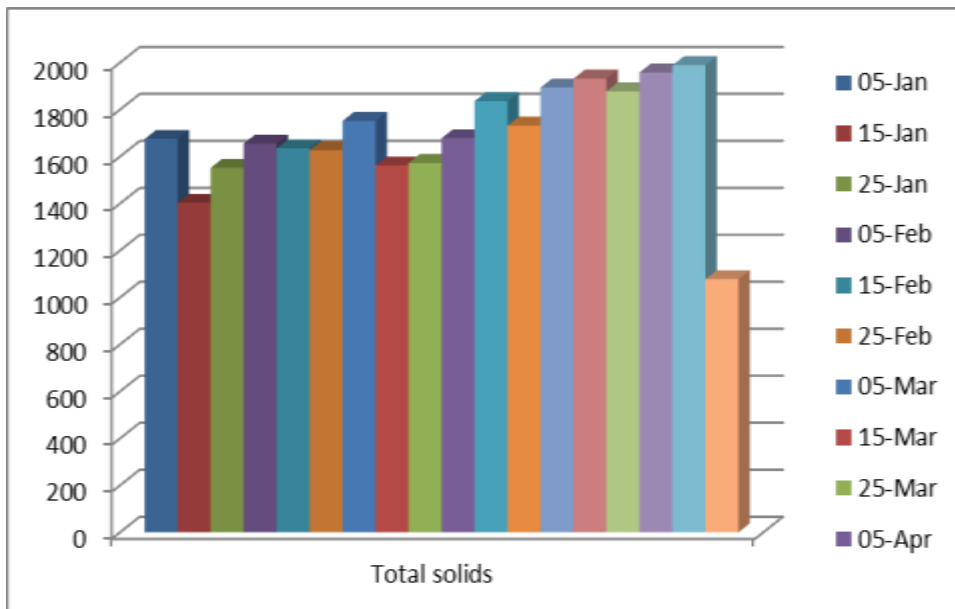Fig.3 Graph showing monthly variation of COD

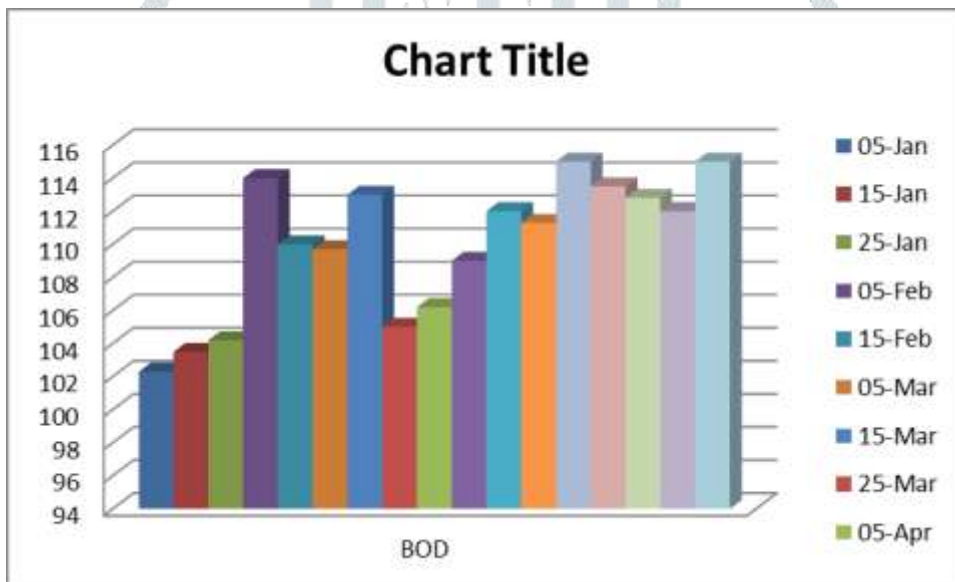Fig.4 Graph showing monthly variation of Total solids
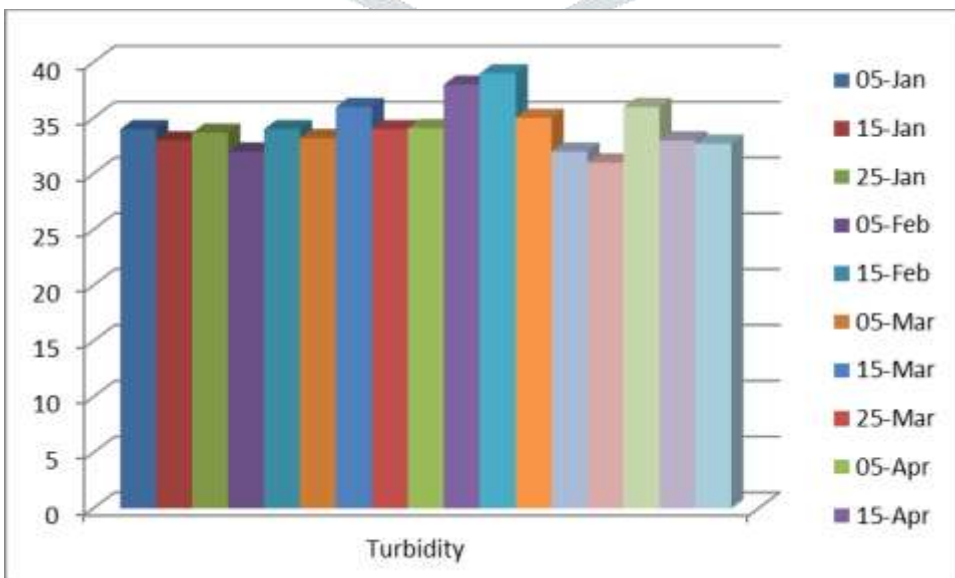

Fig.5 Graph showing monthly variation of BOD

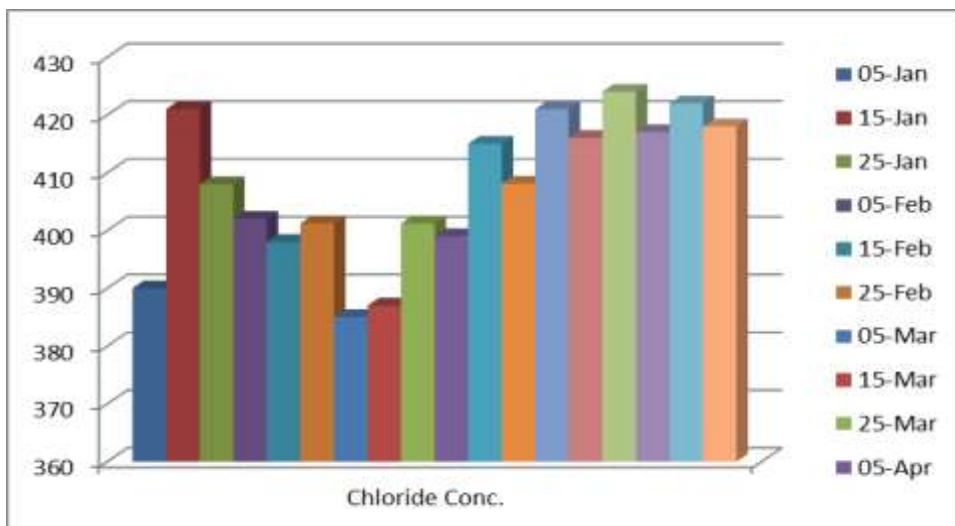Fig.6 Graph showing monthly variation of Turbidity

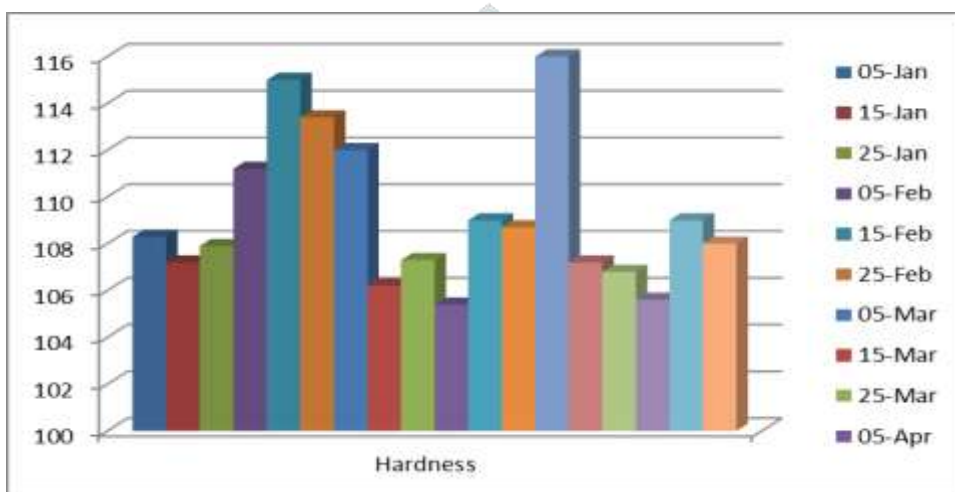Fig.7 Graph showing monthly variation of Chloride Conc.
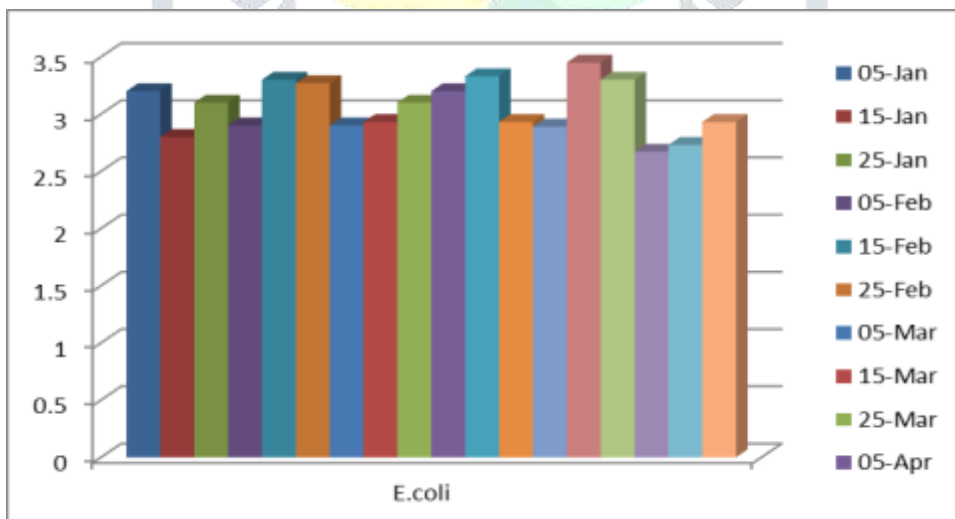

Fig.8 Graph showing monthly variation of Hardness

Fig.9 Graph showing monthly variation of E.Coli

Conclusion:

The following can be concluded:

- The pH values were 7.85, 7.9 and 8.1
- The value of alkalinity were 14.2, 12.2 and 12.7 mg/lt .
- The COD values were found to be 20.2,18.2 and 19.1 mg/lt
- The values of total solids were found as 1675, 1403 and 1552 mg/lt
- The BOD values were found as 102.3, 103.5 and 104.2 mg/lt
- The turbidity values were found to be 34,33 and 33.7 NTU
- The values of chloride conc.were found to be 390, 421 and 408 mg/lt
- The values of hardness were found to be 108.3, 107.2 and107.9 mg/lt

- The values of E.coli were found to be 3.2, 2.8, and 3.1 mg/lt.
- All the parameters that is pH, Alkalinity, COD, Total Solids ,BOD, Turbidity, Chloride Conc.,Hardness, and E.coli were found within permissible limits .

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