

STUDY OF POLLUTION STATUS IN RIVER YAMUNA

AT ETAWAH s IN 2015 IN DISTT. ETAWAH

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ABSTRACT

Water samples from river Yamuna at Etawah in Distt. Etawah in UP were collected and Physic-Chemical parameters were determined using standard analytical procedure in Jan – Dec. 2015. pH (7.1 - 9.1), Carbonate and bicarbonate contains of water sample were determined 0.0 – 4.0 ppm and 180.5 – 218 ppm respectively chloride 35.0 – 352.3 mg/l, Sulphate 40.0 – 110.0 mg/l, Total hardness 90.0 – 158.0 mg/l. DO of sample were 4.2 – 6.8 mg/l, BOD were 3.5 – 16.5 mg/l and COD were 26.0 – 45.5 mg/l. These results were said to their agreed with the limits set by World Health Organization (WHO) for drinking water.

Key word - Pollution status, drinking water, WHO.

I. INTODUTION

Water the most essential requisites that nature has provided to sustan life on of water create various problems for mankind. The growth in population, about 90% of which occur in urban area, increases the demand for water for domestic and industrial uses. Water pollution from domestic and human waste is the main cause of human being water born disease. The industrial waste pollution is due to inadequate measure adopted in the industry for the abatement of pollution. it is need of time to protect environment for present and future generations. The purpose of study in to prepare qualitative assessment of abiotic and biotic conditions prevailing in river Ganga.

II. MATERIAL AND METHOD

The Etawah on National Highway No.1 and falls on Broad Gauge NR Railway line between Delhi and Kolkata. Water samples were collected in clean polythene bags and subjected to chemical analysis for measurement of different parameters such as temperature, transperancy,pH, DO, BOD, COD,free CO₂,carbonate,bicarbonate, chloride, sulphate, phosphate, hardness and total dissolved by standered analytical methods in Jan. to Dec.2016.

III. RESULT AND DESCUTION

The values of different parameters with respect to sampling station Etawah are given in table – 1A & 1B .The transparency values of samples were 20.0-55.0 cm. The maximum is 55.0 cm in jan.while minimum value is 20.0 in Aug.2015 . The temperature of water samples were 8.2-35.0 °C. Maximum value of temperature is 35.0°C in Jun. while minimum is 8.2°C in Jan.2015. The WHO (1992) did not recommended any definite temperature for drinking water.

The free CO₂ values are 9.2-17.6 mg /l . The maximum value of free CO₂ is 17.6 in Apr. while minimum value is 9.2 in Jan.2015. The ph value were 7.1 – 9.1 .The maximum value of pH is 9.1 in Nov. while minimum value is 7.1 in June 2015. Total hardness were 90.0-158.0 mg /l . The maximum value is 158.0 in June while minimum value is 90.0 in Oct.2015.The level of hardness are below the level (300/mg/l) as laid down by Indian Standard and thus water is soft. the Chloride contents were 35.0-352.3 mg/l . The maximum values is 352.3 in June while minimum value is 35.0 in Nov.2015 which is higher than prescribed limit (250mg/l) . The values of Carbonate contents were 0.0-4.0ppm .The maximum value is 4.0 in Oct. while minimum value 0.00 in Jan.,March, Apr.,Jul., August,September & December2015.The bicarbonate contents were 180.5-218.0ppm. The maximum value is 218.0 in June 2015 while minimum value is 180.5 in Dec.2015. The sulphate contents were 40.0-110.0 mg/l . The maximum value is 110.0 in June while minimum value is 40.0 in Oct.2015 . The phosphate contents were 0.60-4.80 mg/l .The maximum value is 4.80 in June while minimum value is 0.60 in Oct.2015. The total dissolved 190.0-1625.0 mg /l. The maximum value is 1625.0 mg/l in August while minimum values is 190.0 in Feb.2015 which are under limit .

The COD value of water sample were 26.0-45.5. The maximum value is 45.5 in June while minimum value is 26.0 in Nov.2015 .The DO values were 4.2-6.8 mg/l .The maximum value is 6.8 in Jan.while minimum value is 4.2 in Mar.2015 , which are permissible . The BOD were 3.5-16.5 mg/l . The maximum value is 16.5 in June while minimum value is 3.5 in Dec.2015.

IV. CONCLUSION

It is need of time to protect environment for present and future generation. The purpose of study is to prepare qualitative assessment of biotech and a biotic conditions prevailing in river Yamuna.

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Table- 01A: Physico-chemical charectristict river Yamuna at Etawah in 2015.

Month 2015	Temperature (^o C)	Transparency (cm)	pH	Free Carbon Dioxide (mg/l)	Carbonate (ppm)	Bicarbonate (ppm)
Jan.	8.5	55.0	8.2	9.2	0.0	181.0
Feb.	12.7	54.0	8.4	9.3	1.0	184.0
Mar.	23.2	40.0	7.3	10.7	0.0	198.0
Apr.	32.5	38.5	7.5	12.6	0.0	200.0
May	34.1	31.5	7.2	11.5	3.0	215.0
Jun.	35.0	20.5	7.1	13.7	2.0	218.0
Jul.	28.2	30.0	7.7	16.5	0.0	183.5
Aug.	23.3	20.0	7.8	15.1	0.0	185.5
Sept.	24.7	25.0	7.9	13.1	0.0	190.0

Oct.	18.2	28.5	7.8	10.2	4.0	188.0
Nov.	14.1	35.0	9.1	10.2	3.0	183.5
Dec.	8.2	48.0	8.6	10.3	0.0	180.5

Table- 01B: Physico-chemical charectristict river Yamuna at Etawah in 2015.

Month	Phosphate (mg/l)	Sulphate (mg/l)	Chloride (mg/l)	TDS (mg/l)	Total Hardness (mg/l)	DO (mg/l)	BOD (mg/l)	COD (mg/l)
Jan.	1.35	46.5	121.2	200	95.5	6.8	5.4	30.5
Feb.	1.70	42.0	118.0	190	100.0	6.2	6.2	26.6
Mar.	2.50	98.5	114.3	220	140.5	4.2	5.8	27.3
Apr.	4.12	97.0	217.5	360	148.0	4.6	6.3	30.5
May	4.56	99.5	316.7	290	150.0	4.8	8.3	40.7
Jun.	4.80	110.0	352.3	250	158.0	4.5	16.5	45.5
Jul.	4.10	108.0	105.2	660	90.5	4.6	7.8	37.3
Aug.	1.80	95.0	87.6	1625	92.0	5.0	6.4	33.5
Sep.	0.85	48.0	75.3	500	95.5	6.1	5.8	28.7
Oct.	0.60	40.0	68.8	290	90.0	6.5	5.2	30.6
Nov.	0.80	46.0	35.0	340	100.0	5.3	4.5	26.0
Dec.	0.85	49.5	180.0	210	110.0	6.8	3.5	28.6