

STUDY OF POLLUTION STATUS IN RIVER YAMUNA AT SHERGARH AND BEEJAL PUR IN 2015 IN DISTT. ETAWAH (UP)

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ABSTRACT

Water samples from river Yamuna at Shergarh in Distt. Etawah in UP were collected and Physic-Chemical parameters were determined using standard analytical procedure in Jan – Dec. 2015. pH (7.1 - 8.7), Carbonate and bicarbonate contains of water sample were determined 0.0 – 1.3 ppm and 181 – 206 ppm respectively chloride 48.72 – 298.2 mg/l, Sulphate 40.6 – 98.5 mg/l, Total hardness 85.0 – 150 mg/l. DO of sample were 4.2 – 8.7 mg/l, BOD were 4.3 – 9.9 mg/l and COD were 27.1 – 35.5 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. INTRODUCTION

Water the most essential requisites that nature has provided to sustain life on of water creates 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, transparency, pH, DO, BOD, COD, free CO₂, carbonate, bicarbonate, chloride, sulphate, phosphate, hardness and total dissolved by slandered analytical methods in Jan. to Dec.2016.

III. RESULT AND DESCUTION

The values of different parameters with respect to sampling station Beej Pur and Shergarh are given in table – 1A, 1B and table – 2A, 2B .The transparency values of samples were 20.0-55.5 cm. The maximum is 55.5 cm in jan.at Shergarh, minimum value is 20.0 in Aug.2015 at Shregarh. The temperature of water samples were 6.4-35.4 0C. Maximum value of temperature is 35.40C in Jan.at Shergarh while minimum is 6.04C in Jan. at Shergarh 35.40C in June. The WHO (1992) did not recommended any definite temperature for drinking water. The free CO₂ values are 6.52-14.0 mg /l . The maximum value of ffree CO₂ is 40.0 in May at Shergarh while minimum value is 6.5 in Jan. at Beejalpur the Ph value were 7.1 – 8.7 .The maximum value is 8.7 in Nov. at Beejalpur while minimum value is 7.1 in June at Beejalpur and in March at Shergarh total hardness were 80.0-159.3 mg /l . The maximum value is 159.3 in June at Beejalpur while minimum value is 80.0 in August at Beejalpur.The level of hardness are below the level (300/mg/l) as laid down by Indian Standard and thust water is soft the Chloride contents were 40.0-330.3 mg/l .The maximum values is 330.3 in June at Beejalpur which is higher than prescribed limit (250mg/l) while minimum values is 40.0 mg/l in Jan. Shergarh . The values of Carbonate contents were 0.0-11.55ppm .The maximum value is 1.5 at Beejalpur while minimum value 0.00 in March ,April August ,September & Decemberat Beejalpur as well as in Jan, Feb, April, July, August, November & December at Shergarh .The bicarbonate contents were 181-210.5ppm. The maximum value is 210.5 at in September at Beejalpur while minimum value is 181in Nov. at Shergarh. The sulphate contents were 40.6-98.55 mg/l . The maximum value is 98.5 in May at Shergah while minimum value is 40.6 in Jan at Beejalpur . The phosphate contents were 0.40-4.45 mg/l .The maximum value is 4.45 in June at Beejalpur while minimum value is .4 in Nov. at Shergar.The total dissolved 195-1190 mg /l. The maximum value is 1190 mg/l in August at Beejalpur while minimum values is 195 in Jan at Shergarh which are under limit .The COD value of water sample were 27.1-36.3 mg/l .The maximum value is 36.3 in June at Beejalpur while minimum value is 27.1 inFeb. At Shergarh .The DO values were 4.2-8.7 mg/l .The maximum value is 8.7 in December at Shergarh while miimum value is 4.2 in April at Shergah , which are permissible . The BOD were 4.3-10.5mg/l . The maximum value is 10.5 in Shergarh while minimum value is 4.3 in Feb. at Shergarh as well as in Octber at Beejalpur .

III. 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 charectristrict river Yamuna at Beejal Pur in 2015.

Month	Temperature (0C)	Transparency (cm)	pH	Free Carbon Dioxide (mg/l)	Carbonate (ppm)	Bicarbonate (ppm)
Jan.	6.7	55.0	8.6	6.5	0.2	185.0
Feb.	12.6	52.0	8.3	9.9	1.0	182.0
Mar.	27.0	39.5	7.3	10.4	0.0	187.0
Apr.	32.0	38.5	7.2	12.3	0.0	192.0
May	34.4	32.5	7.4	10.5	1.5	190.0
Jun.	35.3	21.5	7.1	13.7	1.4	193.5
Jul.	28.4	31.0	7.6	12.6	0.0	195.0

Aug.	23.6	21.0	7.8	13.2	0.0	208.0
Sept.	24.8	26.0	7.7	12.3	0.0	210.5
Oct.	18.0	28.0	7.9	9.7	0.2	207.0
Nov.	14.8	34.5	8.7	9.1	0.2	200.0
Dec.	8.5	48.5	8.6	8.5	0.0	187.0

Table- 01B: Physico-chemical charectristict river Yamuna at Beejal Pur 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.	1.36	4.83	110.7	210	99.0	6.6	5.1	30.2
Feb.	1.35	47.2	85.2	225	115.7	6.7	5.3	29.2
Mar.	2.30	49.3	95.6	250	143.5	4.8	6.3	27.3
Apr.	3.85	70.4	178.2	310	150.1	4.3	6.8	28.9
May	4.40	95.0	311.7	350	143.6	5.0	9.8	34.9
Jun.	4.45	97.3	330.3	335	159.3	6.0	10.5	36.3
Jul.	4.12	88.4	115.4	715	81.2	5.1	8.5	35.4
Aug.	1.78	82.3	84.2	1150	80.2	5.3	6.8	30.8
Sep.	0.75	75.0	78.8	600	100.0	6.0	7.2	31.3
Oct.	0.48	71.2	51.5	320	101.3	6.7	4.3	31.3
Nov.	0.75	60.6	40.3	310	100.0	6.8	5.2	27.7
Dec.	0.70	48.6	137.3	280	97.8	8.2	4.5	28.2

Table- 02A: Physico-chemical charectristict river Yamuna at Shergarh in 2015.

Month	Temperature (°C)	Transparency (cm)	pH	Free Carbon Dioxide (mg/l)	Carbonate (ppm)	Bicarbonate (ppm)
Jan.	6.4	55.5	8.7	8.3	0.0	182.5
Feb.	12.8	54.5	8.3	9.8	0.0	187.3
Mar.	23.2	40.0	7.1	8.6	1.0	192.0
Apr.	32.6	39.5	7.6	9.9	0.0	190.0
May	34.0	31.0	7.4	14.0	0.4	193.0
Jun.	36.4	21.0	7.3	11.0	1.3	195.0
Jul.	28.3	30.0	7.3	11.0	0.0	203.0
Aug.	23.5	20.0	7.8	11.6	0.0	206.0
Sept.	24.6	24.5	7.9	11.4	1.0	202.0
Oct.	18.9	27.5	7.6	11.3	1.3	198.0
Nov.	14.3	34.0	8.3	10.6	0.3	180.0
Dec.	8.3	47.5	8.1	10.0	0.0	181.0

Table- 02B: Physico-chemical charectristric river Yamuna at Shergarh 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.	1.34	40.6	118.3	195	98.5	6.1	4.7	32.3
Feb.	1.60	53.3	102.7	235	115.6	6.6	4.3	27.1
Mar.	2.20	59.2	86.3	260	135.0	4.5	6.5	30.5
Apr.	3.60	55.7	210.6	315	150.0	4.2	7.3	32.3
May	4.35	98.5	298.2	370	148.4	5.2	9.9	34.3
Jun.	4.40	95.0	218.4	340	147.0	5.3	9.0	38.7
Jul.	3.83	97.5	83.3	820	87.3	5.8	8.7	35.3
Aug.	1.60	60.1	79.7	1190	85.0	5.2	7.3	33.4
Sep.	0.80	56.2	70.2	650	101.3	5.5	6.5	28.8
Oct.	0.40	49.6	53.7	340	91.3	6.8	5.2	28.7
Nov.	0.73	48.7	48.7	315	93.7	6.8	4.9	30.5
Dec.	0.74	53.7	179.5	275	96.3	8.7	5.0	31.7