S.P. BHALME , Dr. P.B.NAGARNAIK / International Journal of Engineering Research and Applications (IJERA)ISSN: 2248-9622 www.ijera.com
Vol. 2, Issue 3, May-Jun 2012, pp.3155-3158

"Analysis Of Drinking Water Of Different Places"- A Review

S.P. BHALME[1*], Dr. P.B.NAGARNAIK[2*]

[1*] P G Student – M.Tech (Env. Engg)
[2*] Prof -.Civil Engg. Dept. & Dean Academics
G. H. Raisoni College of Engineering & Technology, NAGPUR, (India) – 440016

ABSTRACT:-
The study is based on the analysis of drinking water parameters in an Educational institute situated in Hingna MIDC area, Nagpur. In this paper, different authors' papers are summarized on water analysis and their treatment processes in different region, which is helpful to know the different treatment processes and parameters used in the study.

***KEY WORDS*: pH, COD, Total Solid, Turbidity, DO**

1. INTRODUCTION:

Increase in urbanization, industrialization, agriculture activity and various human activities has increase the pollution of surface water & ground water. As the safe & potable drinking water is needed. various treatment methods are adopted to raise the quality of drinking water. Water should be free from the various contaminations viz. Organic and Inorganic pollutants, Heavy metals, Pesticides etc. as well as all its parameter like pH, Electrical Conductivity, Calcium, Magnesium, Total Hardness, Carbonate, Bicarbonate, Chloride, Total Dissolved Solid, Alkalinity, Sodium Potassium, Nitrate, DO should be within a permissible limit .

2. REVIEW OF PAST WORK.

Dattatraya Bharti, Isub Ali Sayyad,G. G. Gaikwad, D. R. Taikar and J. Dhore [1] . The study indicates the possible source of contamination in drinking water. a total no of 15 samples of ground water were collected in the month of August-December, and analyzed for physico chemical parameters like, PH, TDS, total alkalinity, total hardness, Dissolved oxygen, turbidity and chloride were analyzed by standard procedure mentioned in IS 10500: 1991.[1] then the following result were found, Some ground water samples are show variation of pH, turbidity, hardness, DO and Chlorides this may be due to different soil texture. Some water samples show Higher pH and Some Higher hardness. Over all some parts of bore well water needed treatment for drinking purpose due to hardness pH, DO, alkalinity and chlorides are present in desirable limit and some sort little variation.

P. Jain, *J. D. Sharma, D. Sohu and P. Sharma.* [2]** In this paper, the Study on Chemical analysis of drinking water of Sanganer Tehsil, Jaipur District. was carried out ***Sharma and they found out certain result as describe below,

The water samples were analysed for pH, Fluoride (F-), Electrical Conductivity (EC), Total Dissolved Solid (TDS), Calcium (Ca), Magnesium (Mg), Total Hardness (TH), Chloride (Cl-), Carbonate (CO3-2),Bicarbonate (HCO3-), Alkalinity, Sodium (Na+), Potassium (K+) and Nitrate (NO3 -using standard techniques in laboratory(APHA, 1985). The results revealed that most of the water samples were below or out of limit; according to the WHO standards (1996). The fluoride concentration ranged from 0.4 to 5.4 ppm, where 42% samples showed fluoride less than permissible limit and 48% water samples were within optimum limit i.e. 1-1.5 ppm while 10% samples contained Fluoride higher than permissible limit. pH of all the samples were within limit (6 to 9.2), while EC of all the water samples were outof limit i.e. 300 µmhos/cm. The alkalinity was greater than permissible limit (200 mg/l) in 98% villages and only 2% villages had below than optimum limit. The NO3- concentration was less than permissible limit (45 mg/l) in 64% villages whereas 26% samples showed higher concentration of NO3-. However only 10% samples contain optimum level of nitrate. Moreover Na concentration was greater than permissible (50 to 60 mg/l) limit in 98% water samples whereas K+concentration was below the optimum (20 mg/l) level in all the samples studied. It was concluded that the drinking water of villages of Sanganer Tehsil is not potable. To maintain quality of groundwater, the continuous monitoring of physicochemical Parameters should be done and can be used for cooking and drinking only after prior treatment.

ARUNABH MISHRA* and VASISHTA BHATT.[3] They have done the experiments on different samples to examine the water quality of various potable water sources in Anand District.

Samples were collected in the the month of January and analysis was done by following "Standard method of analysis of water and waste water"

After all observation they have reported that pH of water found to be slightly Alkaline and there was minor fluctuation in pH levels within the limit as per APHA also value of TDS were found in the limit but the value of calcium , magnesium and hardness were to high. Presence of anions such as chloride and sulfate was also noted. Dissolved oxygen is reported in the range of 5.7 to 7.2 which is good , but obtain COD value is slightly higher than the acceptable value and MPN colliform reported was exceeded the prescribed limit. So , from all that result they have concluded that quality of water sample sample was acceptable from majority of Physico- chemical parameter but as per bacteriological parameter , water need to be treated before using it in domestic applications.

Sharma Shraddha1, Vishwakarma Rakesh2, Dixit Savita3 and Jain Praveen4.[4] In this paper Evaluation of Water Quality of Narmada River with reference to Physcochemical Parameters at Hoshangabad city, MP, India carried out For this study total one year monitoring of water quality was carried out by selecting four sample stations at downstream of Hoshangabad city. The river water sample were collected in different sampling bottle as per the standard method APHA

pH, electrical conductivity, and turbidity were calculated at site itself, other paremeter were check into laboratory by following APHA standard methods. After the study they got following results,

PARAMETER	VALUE	
	PRE-MANSOON	MANSOON
pH	7.7-8.9	7.6-9.9
Electrical Conductivity	373-462 µmhos/cm	272-364 µmhos/cm
Turbidity	12.11-13 NTU	21.7-29.64 NTU
Calcium hardness	330-353 mg/l	370-396 mg/l
Magnesium hardness	185-316 mg/l	196-293 mg/l
Nitrate	0.063-0.093 mg/l	0.083-0.089 mg/l
Phosphate	0.16-0.19 mg/l	0.19-0.28 mg/l
Sulphate	325-449 mg/l	415-493 mg/l
Chloride	270-289 mg/l	320-342 mg/l
DO	4.2-4.5 mg/l	4.1-4.6 mg/l

It was concluded that river water get polluted as maximum parameter are not in the permissible limit and this condition arise due to the local anthropogenic activity , agricultural runoff and due to the industrial effluent. So, if untreated sewage continuously get discharge into the river then potable nature of Narmada river will be lost.

K. Saravanakumar1 and R. Ranjith Kumar2 [5] They have selected 10 different location for the study and compared Groundwater samples were collected from ten different locations of Ambattur town during the post-rainy season (November2010). Borosilicate glassware, distilled water and E-Merk reagents were used throughout the testing. Samples were collected in sterilized screw-capped polyethylene bottles of one litre capacity and analyzed in laboratory for their physico-chemical parameters. After the study they got following result for the selected city.

PARAMETER	VALUE
pH	7.2-8.5
Total alkalinity	270-320 mg/l
Total hardness	220-310 mg/l
Chloride	Within permissible limit
Sulphate	150-230 mg/l
Fluoride	0.8-1.4 mg/l
TDS	Within permissible limit
Conductivity	750-900 µmhos/cm

So it is concluded that water from the studied area was highly contaminated with TDS also other observed were not in the permissible limit, thus if people drink that water then problem of certain diseases such as stomach diseases, gastric troubles etc arises

P. N. PALANISAMY*, A. GEETHA, M. SUJATHA, P. SIVAKUMAR and K. KARUNAKARAN# [6] In this paper ground water sample collected from different location in and around the town and analyzed result were compared with WHO and ICMR standards of drinking water Water samples from the selected sites were collected during Feb-March 2006 and taken in pre-cleaned polyethylene bottles. The samples after collection were immediately placed in dark boxes and processed within 6 h of collection. From the overall study and data it is concluded that parameters like pH, EC, Cl- ,SO42-, TDS ,Ca2+, Mg2+, Hardness and fluoride lies within the maximum permissible limit prescribed by WHO and ICMR. Except few parameters like DO, few samples were reported with lower DO than the permissible level, but this value does not have any impact for the water to use for drinking purpose. According to this report, the ground water in and around

Gobichettipalayam is suitable for drinking purposes, agricultural utilization, industrial purposes and generally it is not harmful to human beings.

U.S.Pujeri*, A.S.Pujar, S.C.Hiremath and M.S.Yadawe. [7] This paper evaluates and summarized the result of the pollution of surface water of Bijapur by pesticides, as pesticides are used for the agriculture purpose, runoff from agriculture contaminates the source of drinking water.

For this study, water sample was collected from seven sample point by grab sampling technique. Samples were kept in plastic bottle and immediately preserved it, and brought to the laboratory and analytical procedure of APHA, AWWA was adopted.

From above analysis it shows that the water samples from Bijapur lakes contained significantly higher levels of Endosulphan, 4-bromo-2-chlorophenol, chloropyrifos respectively. From the results it can be seen endosulphan was detected in the range of 0.00025 to 0.005mg/L. The concentration of 4-bromo-2-chlorophenol ranged from 0.01 to 0.009mg/L. The concentration of captan was bellow the limit of WHO .The concentration of chlorpyriphos ethyl ranged from 0.0002 to 0.004mg/L which was above the WHO limit. The Fipronil was detected in only one sample i.e. 0.004mg/L. The concentration of oxyfluorfen was 0.0025 mg/L which bellow the limit while monochrotophos was not detected in all the samples. Thus from the result it is conducted that lakes of the bijapur get contaminated due to the pesticides used in the agriculture

Sandeep K.Pandey1 *, Shweta Tiwari2 [8] They were monitor the ground water quality of selected sites of Gazipur city by examine the various Physico-chemical parameters.

For the study A fluorinated plastic bottle of capacity 2 litre has been used to collect the sample, before sampling evacuation of the stored water in the pipelines has been made to take the fresh ground water sample, all the parameters were analyzed by standard procedure mention in APHA .

Following result were obtain from the above study

PARAMETER	VALUE
pH	6.8-8.3
TDS	145-245 mg/l
Total hardness	235-304 mg/l
Calcium hardness	99-158 mg/l
DO	3.4-5 mg/l
Chloride content	78-106 mg/l
Alkalinity	110-149 mg/l
Carbon dioxide	7.02-7.92 ppm

After observing all results it was concluded that quality of ground water under study area is nearly fit for drinking purpose.

3. CONCLUSION.

From the above papers we have concluded that due to increase in industrialization water quality of drinking water get decreases, and hence there is a need of proper analysis of water and prior treatment.

4. REFERENCES.

[1] Dattatraya Bharti(1), Isub Ali Sayyad(2),G. G. Gaikwad(3), D. R. Taikar(3) and J. Dhore(4) **"PHYSICO-CHEMICAL CHARACTERISTICS OF BORE WELL WATER QUALITY IN NAGPUR REGION (SOUTH ZONE)"** *J. Chem. Pharm. Res., 2011, 3(2):922-927*

[2] *P. Jain, *J. D. Sharma, D. Sohu and P. Sharma* **"CHEMICAL ANALYSIS OF DRINKING WATER OF VILLAGES OF SANGANER TEHSIL, JAIPUR DISTRICT"** Int. J. Environ. Sci. Tech. © Winter 2006, Vol. 2, No. 4, pp. 373-379

[3] ARUNABH MISHRA* and VASISHTA BHATT **"PHYSICO-CHEMICAL AND MICROBIOLOGICAL ANALYSIS OF UNDER GROUND WATER IN V.V NAGAR AND NEAR BY PLACES OF ANAND DISTRICT,GUJARAT, INDIA"**ISSN: 0973-4945; CODEN ECJHAO E-Journal of Chemistry Vol. 5, No.3, pp. 487-492, July 2008

[4] **Sharma Shraddha1, Vishwakarma Rakesh2, Dixit Savita3 and Jain Praveen4 "EVALUATION OF WATER QUALITY OF NARMADA RIVER WITH REFERENCE TO PHYSCOCHEMICAL PARAMETERS AT HOSHANGABAD CITY, MP, INDIA"** *Research Journal of Chemical Sciences* Vol. **1(3)** June **(2011)** ISSN 2231-606X

[5] K. Saravanakumar1 and R. Ranjith Kumar2 **"ANALYSIS OF WATER QUALITY PARAMETERS OF GROUNDWATER NEAR AMBATTUR INDUSTRIAL AREA, TAMIL**

NADU, INDIA" Indian Journal of Science and Technology Vol. 4 N. 5 (May 2011) ISSN: 0974-6846

[6] P. N. PALANISAMY*, A. GEETHA, M. SUJATHA, P. SIVAKUMAR and K. KARUNAKARAN# **"ASSESSMENT OF GROUND WATER QUALITY IN AND AROUND GOBICHETTIPALAYAM TOWN ERODE DISTRICT, TAMILNADU"** E-Journal of Chemistry Vol. 4, No.3, pp. 434-439, July 2007

[7] U.S.Pujeri*, A.S.Pujar, S.C.Hiremath and M.S.Yadawe **"THE STATUS OF PESTICIDE POLLUTION IN SURFACE WATER (LAKES) OF BIJAPUR"** Volume: I: Issue-2: Aug-Oct -2010 *ISSN 0976-4550*

[8] Sandeep K.Pandey1 *, Shweta Tiwari2 "**PHYSICO-CHEMICAL ANALYSIS OF GROUND WATER OF SELECTED AREA OF GHAZIPUR CITY-A CASE STUDY"** Nature and Science, 2009;7(1), ISSN 1545-0740