TO STUDY THE PHYSICO-CHEMICAL PARAMETERS OF WATER QUALITY RESOURCES AT SHAHAPUR TAHASIL DIST- THANE

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KEYWORDS: Physico-chemical parameters, Shahapur Tahasil water pollution, industrial developments, seasonal variation.

ABSTRACT
At the world level, 3 fourth of earth surface is roofed with water and total water resources quantity to 138.5 million km3 comprising ninety seven.3% as salt water and balance a pair of.7% as recent seventy two.5% as well water zero.3% in lakes and rivers and one.9% in soil wetness and region vapour. so restricted water is offered for domestics, industrial and agriculture use.

The quality of water can be determined by analysing the water physically and chemically. The data of chemical analysis of water will show whether the water is pure or polluted from the chemical ingredients study. It can be decided for its utility The need of present study is necessary to monitoring the water around the dams of Shahapur Tahasil because the Dam's water supplied for Bruhan Mumbai Municipal Corporation.(B.M.C.).

In present study water samples were collected from Bhatsa and Tansa Dam, Well, River, Tap, Hand-Pump nearby in Shahapur Tahasil. The different para-meters like pH, total soluble solids, carbonates, bi-carbonates, chlorides, sulphates, boron, nitrates, trogen, calcium, magnesium, sodium, potassium, residual sodium, permanent hardness of water, dissolved oxygen etc. were carried out by standard methods (APHA 1989), Trivedi and Goyal-1986). From the result it is observed that the values of various parameters are different than standard. It will be effect of the industrial development nearby Shahapur Tahasil which resulted in water pollution.

INTRODUCTION
Water is an important natural resource and its efficient management is key to success in an augmenting crop production. During the 21St century water would be crucial factor in enhancing food production and in meeting deficit experienced by almost two thirds of world's population and irrigated forming in expected • o continue to develop intensity in future (UNESCO 2000). India has created the highest irrigation potential in the world, but the use of the efficiency of irrigated water resource is quiet low rating from 20% to 40% (Mathew Verghese, 1992). Judicious management of irrigation water resource is important for presentation of salinity, alkalinity, and water lagging and degrading of environment.

In the present study, aims at making an assessment of the water quality of Shahapur Tahasil. In order to assess the suitability of its water for human use and agriculture use of many researchers have done studies on physico-chemical and biological characteristics of river and dam water. (Pendase 2000, DAS D.K, 2002, Ramulu,2003, Raval and shinde 2003, Gupta 2004,)

MATERIAL'S AND METHODS
In order to study water quality data in and around Shahapur Tahasil, Dist Thane in Maharastra State which is 70 km from Mumbai. The height of shahapur 174 meters. From the Sea level. Latitude is 19°17'00''(N) and longitude 73°19'28 "(E). theWater samples were collected from various sources and analysed by standard method by (APHA-1989). All parameters were analyzed for per monsoon, monsoon and post monsoon period of 2015-16. pH measure by pH meter. The amount of total solids may be assessed from electrical conductivity by conductivity method. The carbonates and bi-carbonates are present as salts of strong base and weak base are alkaline in reaction. These ions are estimated by titration. The chloride content is estimated by Mohr's method. Sulphate in water can be estimated phenol-dysphonic acid method. Calcium and magnesium both estimated by gravimetrically gives a measure of sodium hazard. The temperature of water samples is taken at each site by using thermometers.
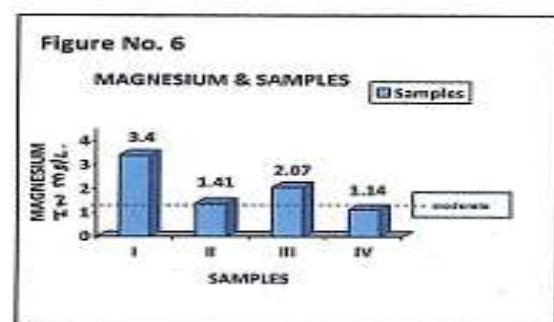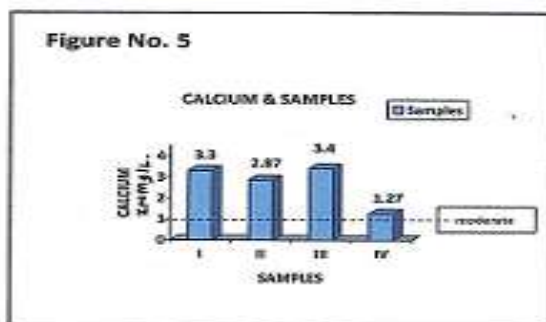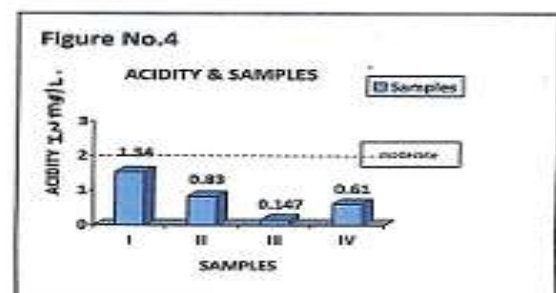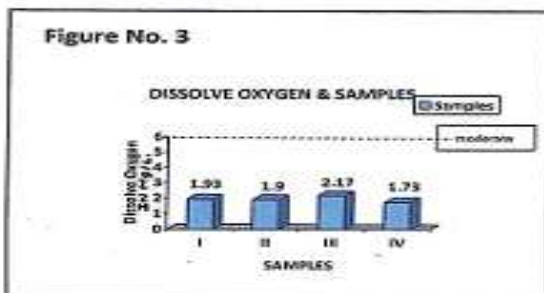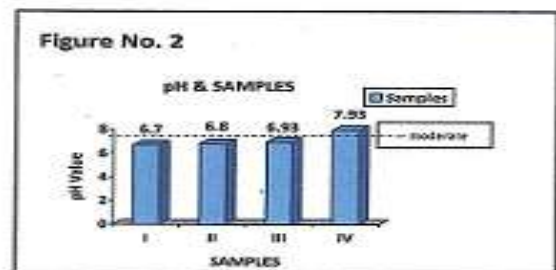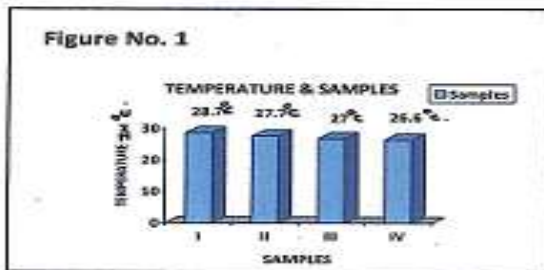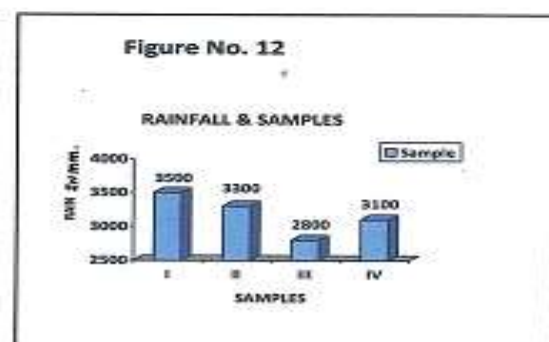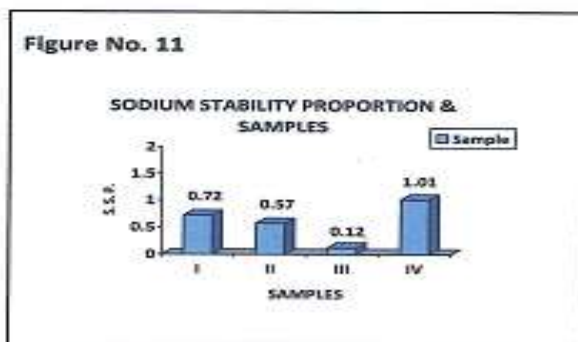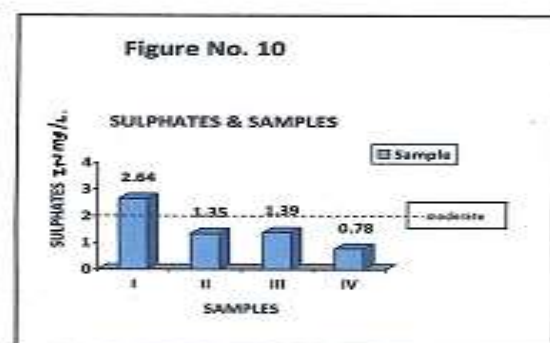
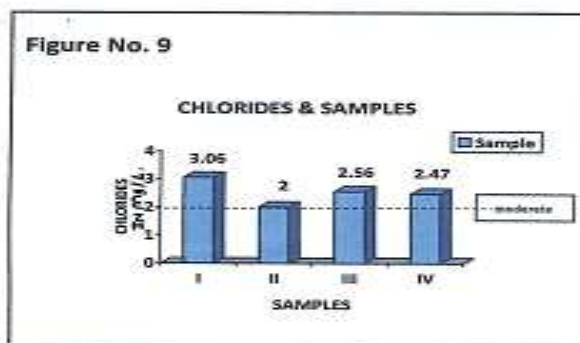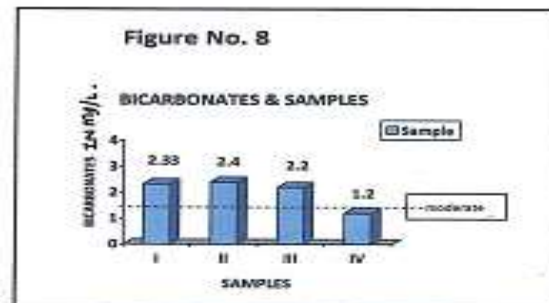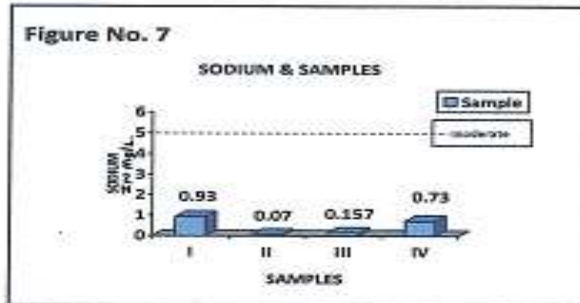Global Journal of Engineering Science and Research Management

RESULT AND DISCUSSIONS

i)	TEMPERATURE	The temp. At various places varied from 24°C to 31°C showing higher temp. Value 31 C at Kasara and 24°C at Vasind. In the seasonal variation were observed in water temp. This also exhibited a correlation with atmospheric temp. (Zingade 1981), as shown in Fig.1
ii)	pH TEST	pH is one of the most important factors that serve as index for the population. pH value varies from 6.5 (Khardi) to 7.93 (Shahapur) see Fig.2
iii)	DISSOLVED OXYGEN TEST	In the present study the concentration of dissolved oxygen decreases in bore will than the river water. There is relation between temps. and D.O As D.O. increases temp. decreases. The D.O. content highest during winter and lower during Monsoon which may be attributed and reduces photosynthetic activity. (Verghese Mathew, Anil Chauhan and I.P.Naik 1992) as shown in fig 3.
iv)	ACIDITY	It plays an important role in controlling enzyme activity. Water alkalinity means measure of acid present in water. Standard range lies bet. 0 to 0.2mg/L in samples minimum Vasind (0.147 mg/L) and max 0.154 mg/L at Kasara (Pendse D.C., YogeshShashtri 2001) Fig.4.
v)	CALCIUM	The calcium content range is 0 to 10 ppm. It is important element influencing flora of ecosystem. It has an effect on pH and Carbonates. The max. Calcium concentration is 4.2 ppm. In Vasind and 1.0 ppm. This is minimum in Shahapur. Any value above 2.5 ppm. Indicates calcium rich in water see Fig.5
vi)	MAGNESIUM	The magnesium content range is 0 to 1.125 ppm. Maximum value is at Kasara 3.4 ppm. Minimum at Shahapur 1.27 ppm. See Fig.6
vii)	SODIUM	Standard range of sodium is 0 to 5.0 ppm. Max. valu 0.93 ppm. At Kasara and 0.077 ppm. At Khardi. See Fig7
viii)	BI-CARBONATES	The general standard range is 0 to 1.5 ppm. Khardi and min 1.2 ppm. At Shahapur. Fig. 8
ix)	CHLORIDES	The standard range is lies between 0 to 2 ppm. max.3.6 ppm. At Kasara and min 2.0ppm. at Khardi. Munawar (1970) suggested that higher concentration of chloeide in water is an index of pollution of animal origin and there is a direct correlation between chlorides in concentration and pollution level see Fig 9
x)	SULPHATES	The satandard range of sulphate 0 to 2 ppm. At kasara and vashind the ranges is 2.64 ppm and 2.33 ppm which is more than the standard. Shown in the fig.10

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xi)	SODIUM STABILITY PROPORTION (S.S.P)	S.S.P. range lies below 10 in the give n sample max.10 in the given sample max. 101 at Shahapur and min 0.12 at Vasind. Fig:11
xii)	RAIN	The max. rain is observed at Kasara (3500mm appox) and min. obtained is at Vasind (2800mm appox)(yr.2016). Fig 12

Figure No. 1 — TEMPERATURE & SAMPLES

Figure No. 2 — pH & SAMPLES

Figure No. 3 — DISSOLVE OXYGEN & SAMPLES

Figure No.4 — ACIDITY & SAMPLES

Figure No. 5 — CALCIUM & SAMPLES

Figure No. 6 — MAGNESIUM & SAMPLES

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Figure No. 7 — SODIUM & SAMPLES

Figure No. 8 — BICARBONATES & SAMPLES

Figure No. 9 — CHLORIDES & SAMPLES

Figure No. 10 — SULPHATES & SAMPLES

Figure No. 11 — SODIUM STABILITY PROPORTION & SAMPLES

Figure No. 12 — RAINFALL & SAMPLES

CONCLUSION

From various places like Kasara, Vasind, Khardi, Shahapur of Shahapur Taluka four water sample were collected for one year as pre-monsoon (D1) monsoon (D2) and post monsoon (D3) for present investigation. In present situation analysis of water samples showed that certain parameter like Alkalinity, Chlorides were generally within permissible limit. However other parameter such as pH, Total Hardness, Dissolve Oxygen, Sulphate and Calcium were within the permissible standard of drinking water. The water samples from Shahapur and Vasind were of better quality and suitable for drinking purpose and other domestic purpose except nearby Liberty Oil Mill area. Samples from Kasara and Khardi station were moderately polluted and needed proper treatment to minimize the effect of contents the correlation coefficient will help in the choice of water treatment methods to eliminate contamination. It is advisable that drinking water should be chlorinated by the Municipality or Grampanchayat before it is supplied to the residents. However those using personal water pumps should also be chlorinated their water reservoirs before drinking. Public awareness and participation in maintenance of already installed community filter plants is essential. The hardness of water as expressed in various forms was within permissible or relatable limits. It is also concluded that value of calcium is minimum in Shahapur Tehashil water. The water samples were of good quality. The dissolved oxygen level were also within normal range 1.6 to 2.8, standard range 4 to 6 (Mg/L) Bacterial count of water for drinking purpose was within permissible limit.

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