CHAPTER-III
RESULTS.
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Analyses of water and soil have been carried out to know the status of water including ground water and soil of the Aurangabad city and its vicinity. Analyses are carried out separately for water and soil parameters.

A : Water

Results of water analyses (months) of different sampling stations are recorded in Table-1A and B to 12 A and B. Similarly, seasonal variations are recorded Table No. 34-39, and also by graphically figure 1 to 13.

(1) Naregaon Nullah, MIDC, Chikalthana

Monthly changes in physico-chemical characteristics are recorded in Table No. 1 A and B during the study. pH found minimum at 6.8 to maximum 8.3. Dissolved oxygen content found varied from a minimum of 0.18 mg/l to maximum of 1.33 mg/l. The Biochemical Oxygen Demand (BOD) from a minimum of 8.8 mg/l to maximum of 287.3 mg/l. Chemical Oxygen Demand (COD). Chloride ranging from a minimum of 123.5 mg/l to a maximum of 910.6 mg/l. Total solids from minimum of 400 mg/l to a maximum 3650 mg/l. Total suspended solids are ranging from a minimum of 100 mg/l to a maximum 100 mg/l to a maximum 2830 mg/l. Similarly, sulphate content found ranging from a minimum of 0.17 mg/l to a maximum of 2.8 mg/l. The phosphate content from 0.2 mg/l to a maximum of 5.45
mg/l. Nitrate up to a maximum of 1.2 mg/l.

(2) **Powerloom Nullah, MIDC, Chikalthana.**

Monthly changes in the physico-chemical characteristics of the station are recorded in **Table No. 2 A and B.**

Variations in monthly pH observed in between 6.2 to 8.5, dissolved oxygen 0.16 mg/l to 1.1 mg/l. The Biochemical oxygen demand found minimum at 238 mg/l to a maximum of 1362 mg/l. Chemical oxygen demand values are ranging between 532 to 4500 mg/l, Carbon dioxide 14 52 mg/l to a maximum of 497.2 mg/l. The chloride values found fluctuated from minimum 261.2 mg/l to 2027.7 mg/l. The hardness in between 82 to 1262 mg/l. The values of total solids are ranging from 1900 to 10500 mg/l., total dissolved solids from 1200 mg/l to maximum at 9000 mg/l. Total suspended solids from a minimum of 80 mg/l to 3900 mg/l maximum. The values of sulphate are ranging from a minimum of 1.2 mg/l to 6.9 mg/l. The phosphate in between 0.6 to 6.3 mg/l to 1.27 mg/l.

(3) **Chaudhari Nagar Nullah, MIDC, Chikalthana.**

Monthly variations in physico-chemical characteristics are recorded in **Table No. 3 A and 3 B.**

pH found minimum at 7 to maximum 9, dissolved oxygen 0.13 mg/l to a maximum of 0.973 mg/l, biochemical oxygen demand 271.2 mg/l to 700 mg/l. The chemical oxygen demand from a minimum of 488 mg/l to
a maximum 8920 mg/l. The carbon dioxide up to 264 mg/l. Chloride content in the range of 394 to 1672 mg/l, hardness from of 210 mg/l to maximum 1324 mg/l, total solids from a minimum of 2120 mg/l to a maximum of 7000 mg/l. The phosphate content found ranging from 1.1 mg/l to a maximum of 7.15 mg/l, nitrate from 0.17 mg/l to a maximum of 4.25 mg/l.

(4) **Chikalthana Bridge, Chikalthana.**

The monthly variations in physico-chemical of water are recorded in **Table No. 4 A and B.**

The pH noted 7.5 mg/l to of 8.2, dissolved oxygen 0.2 mg/l to a 0.9 mg/l, biochemical oxygen demand 25 mg/l to 670 mg/l, chemical oxygen demand from 748 mg/l to 4680 mg/l; carbon dioxide at 44 mg/l to a maximum of 134.6 mg/l; chloride content from a minimum 246 mg/l to maximum 565.8 mg/l; hardness minimum at 148 mg/l to maximum 764 mg/l. The values of total solid found a minimum at 1500 mg/l to maximum at 5800 mg/l; total dissolved solids upto 2000 mg/l; total suspended solids from 500 mg/l to 4500 mg/l; sulphate 1.32 mg/l to a 5.35 mg/l; phosphate from a minimum of 0.075 mg/l to a maximum of 4.65 mg/l and nitrate from 0.175 mg/l to a maximum of 1.25 mg/l.

(5) **Babanrao Dhakne High School (Well), Near Chikalthana.**

The monthly changes in physico-chemical characteristics of water samples at the above station are given in the **Table No. 5 A and B.**
pH 7.6 to a maximum of 9.6; dissolved oxygen 3.42 mg/l to 0.85 mg/l, biochemical oxygen demand 0.80 mg/l to 4.8 mg/l; chemical oxygen demand 152.6 mg/l to 744 mg/l; carbon dioxide 10 mg/l to 66 mg/l; chloride 292 mg/l to 442.4 mg/l; hardness 706 mg/l; total solids are found in the range of 1200 mg/l to maximum 9000 mg/l; total dissolved solids 600 mg/l to a 3000 mg/l; total suspended solids 120 mg/l to 7510 mg/l. The values of sulphate are found fluctuated from a minimum of 1.17 mg/l to a maximum of 2.025 mg/l; phosphate to a maximum of 0.15 mg/l; nitrate 0.1 mg/l to a maximum of 3 mg/l.

(6) *Naregaon (Tube well) MIDC, Chikalthana*:

The monthly changes in physico-chemical characteristics of water samples are recorded as follows in Table No. 6A and B.

pH 6.9 to 8.3; dissolved oxygen from 2.419 mg/l to 6.5 mg/l; biochemical oxygen demand from 0.639 mg/l to 6.67 mg/l; chemical oxygen demand from 232 mg/l to 708 mg/l; carbon dioxide minimum at 16.06 mg/l to a maximum 224.64 mg/l; chloride content 113.6 mg/l to 257 mg/l; hardness 42.6 mg/l to 972 mg/l. The values of total solids are recorded minimum at 700 mg/l to 5400 mg/l; total dissolved solids 400 mg/l to 2500 mg/l; suspended solids 100 mg/l to 4450 mg/l; sulphate 1.6 mg/l to 3.825 mg/l, no phosphate is recorded the month of June, August, September, and December, 1996, January, February, September, and October 1997 to a maximum of 0.075 mg/l in April 1996 and July 1997; nitrate from minimum of 0.037 mg/l to a maximum of 2.25 mg/l.