



# Assessment of Water Quality Analysis In Kanchipuram District, Using GIS

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**Abstract:** Kanchipuram has many dyeing factories. The study area has no perennial river most of the people use ground water has drinking water. In this study area ground water samples were collected and tested for physico-chemical test such as pH, EC, Chloride, Total Hardness, Total Dissolved Solids, Dissolved oxygen, Fluoride, Turbidity, Alkalinity the results compared to BIS. GIS based analysis has been carried out to find the quality of water.

**Keywords:** GIS, Ground water, physico-chemical parameters.

## I. INTRODUCTION

Water is the most important factor of all living organisms ground water plays a lead role in it the ground water gets contaminated then the environmental affects lot. In kanchipuram region dyeing factories disposing waste water in to lands the water percolated and mixing with ground water .ground water exploitation also leads decrease in the quality of ground water. The quality of ground water is determine by physico-chemical parameters such as pH, EC, chloride, total hardness, total dissolved solids, dissolved oxygen, fluoride, turbidity, alkalinity

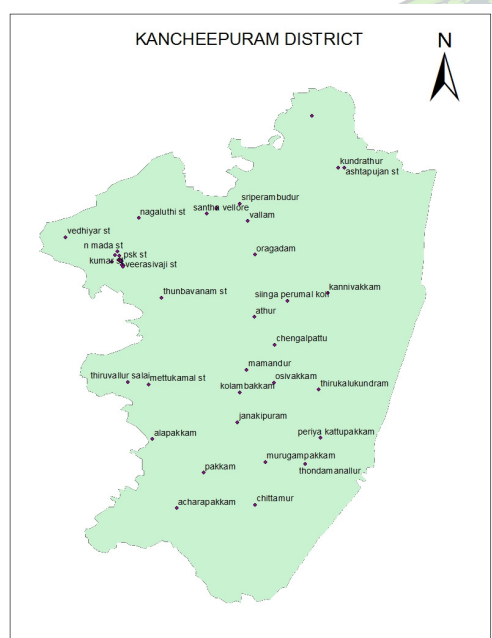
## II. STUDY AREA

The study area was carried out in kanchipuram district, tamil nadu. Which well know most industrialized districts in the country. The study area lies between 12.8756°N, 79.8746° E. 40 samples were collected in different places in kanchipuram district.

Table.1 sampling area

SAMPLE NO	SAMPLE LOCATION	SAMPLE NO	SAMPLE LOCATION
1	KANCHIPURAM BUS STAND	21	EAST RAJA STREET
2	VAIKUNTA PERUMAL STREET	22	MATHAGESWARA KOVIL STREET
3	LINGAPPAN ST	23	BIG KAMALA ST

4	PARANDUR ROAD	24	KANAGA DURKA STREET
5	KRISHNA STREET	25	BALAJI STREET
6	PAPPAN KUZHI	26	KAVANGARI STREET
7	MADAM STREET	27	PSK STREET
8	THIRUPAKUDAL STREET	28	CAR STREET
9	SUBBARAYAN STREET	29	KANCHIPURAM EAST
10	NEAR EB OFFICE	30	KALIASANATHAR TEMPLE
11	SRIPERMBUDUR	31	VALLAM
12	SUNGAVACHATRAM	32	SANTHA VELLORE
13	SINGAPERUMAL KOVIL	33	CHANGAL PATTU
14	MAMANDUR	34	OSIVAKKAM
15	KOLAMBAKKAM	35	PERIYAKATTU PAKKAM





in this study area with in desirable limit as per BIS/IS Standard.

#### 4.7 Fluoride

Fig. 8 shows the spatial variability of fluoride in this study area. The range of fluoride lies in between 0.2 0.9 mg/l to mg/l. The range of fluoride in this study area within desirable limit as per BIS/IS.

#### 4.8 Turbidity

The spatial variation map of turbidity has been showed in figure 9. The range of turbidity lies in between 0.5 NTU to 4.4 NTU. The range of turbidity in this study area within desirable limit as per BIS/IS.

#### 4.9 Alkalinity

Fig. 10 shows the spatial variation map of alkalinity. The range of alkalinity lies in between 30 mg/l to 270 mg/l. The range of alkalinity in this study area within desirable limit as per BIS/IS.

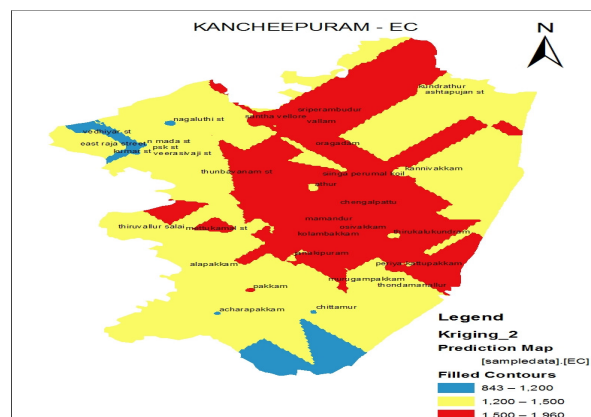


Fig. 3 Spatial distribution of EC

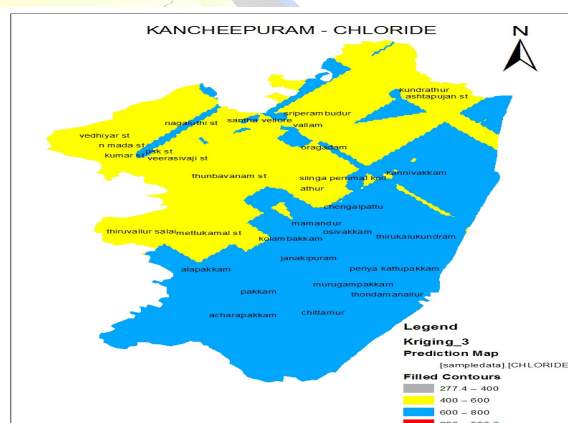


Fig. 4 Spatial distribution of chloride

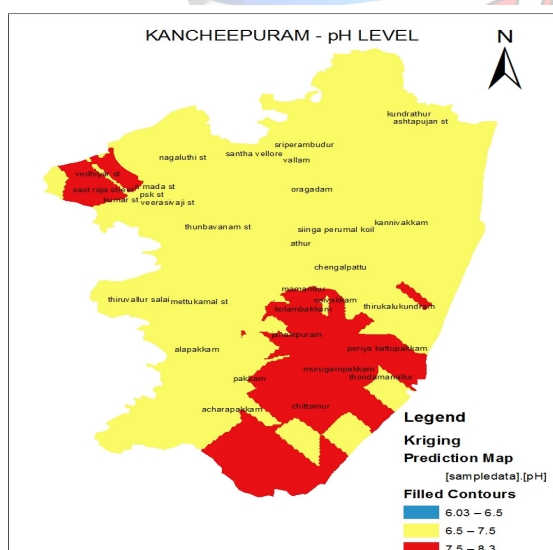


Fig.2 Spatial distribution of pH

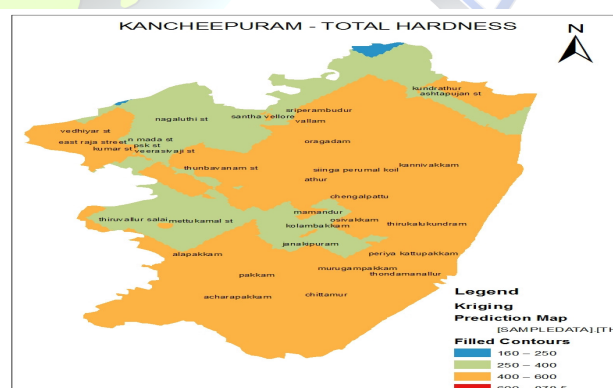


Fig. 5 spatial distribution of Total Hardness

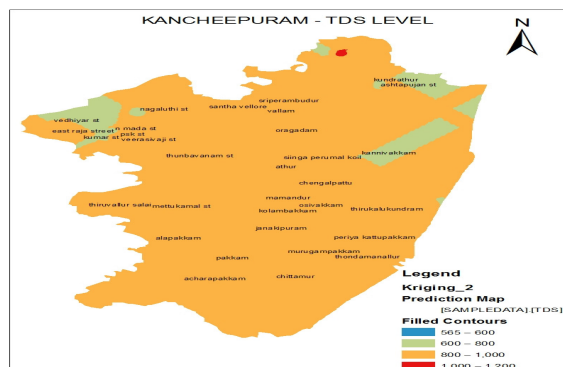


Fig. 6 Spatial distribution of TDS

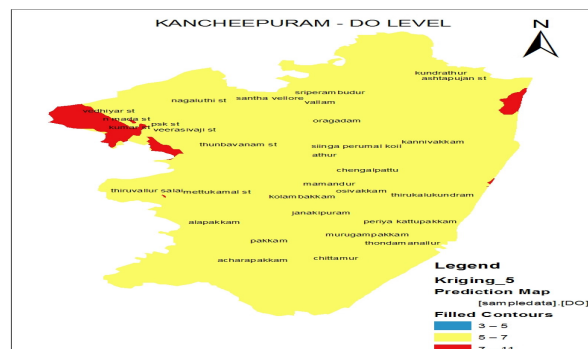


Fig. 7 Spatial distribution of DO

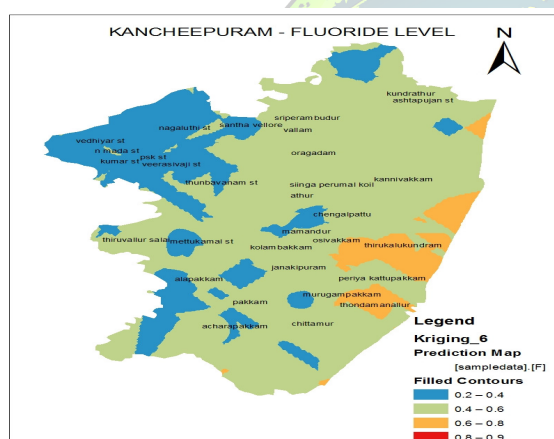


Fig. 8 Spatial distribution of Fluoride

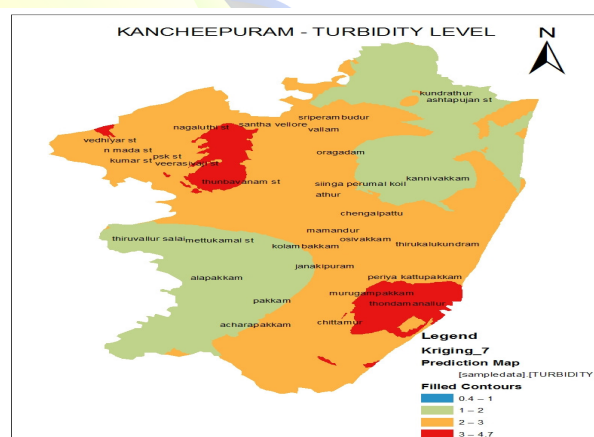


Fig. 9 Spatial Distribution of Turbidity

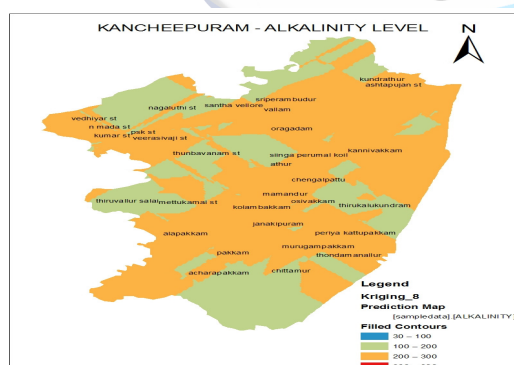


Fig. 10 Spatial distribution of Alkalinity





TABLE 2 VARIOUS PHYSICO-CHEMICAL PARAMETERS OF SAMPLES.

Sample No.	pH	EC mS/cm	Chloride mg/l	Total hardness mg/l	TDS mg/l	DO mg/l	Fluoride mg/l	Turbidity NTU	Alkalinity mg/l
1	8.1	1671	942.2	510	1120	3	0.6	0.8	130
2	7.9	1488	819.2	451.5	997	5.5	0.3	2.3	210
3	7.5	1144	499.8	878.5	767	10	0.4	2.2	200
4	7.4	1397	674.8	490	936	11	0.3	1.6	30
5	7.7	1684	624.8	330	1130	9	0.3	2.8	230
6	7.8	1050	534.8	425	704	4.5	0.3	4.4	200
7	7.6	1250	487.3	495	838	7	0.2	3.2	220
8	7.9	1034	389.9	200	693	9	0.5	3.6	190
9	7.25	1382	497.3	410	926	6	0.2	2.4	190
10	7.3	1258	584.4	285	843	8	0.7	1.3	290
11	6.8	1253	789.7	650	840	9	0.2	4.3	200
12	6.2	1597	427.3	405	1070	8	0.3	1.6	390
13	6.1	1205	502.3	280	808	6	0.4	4.6	270
14	6.23	916	352.4	160	614	7.5	0.4	2.9	210
15	6.0	1420	607.3	365	952	6.5	0.3	3.1	230
16	6.7	1479	324.9	565	991	6	0.3	0.6	230
17	6.21	843	277.4	420	565	9.5	0.4	0.4	170
18	7.3	1791	547.3	315	1200	7	0.2	0.9	250
19	7.2	1138	449.8	635	763	9	0.4	0.5	250
20	6.9	1247	439.8	490	854	8	0.9	1.9	320
21	6.9	1630	547.3	635	839	9	0.5	0.5	250
22	7.3	1138	687.1	365	829	6	0.5	0.6	210
23	6.5	1620	665.6	456	932	4.5	0.2	3.5	136
24	7.2	1850	658.5	258	988	5	0.4	2	190
25	7.9	1806	583.4	365	955	6.5	0.5	4.6	240
26	6.7	1802	457.3	368	987	8	0.2	0.5	170
27	7.8	1792	853.2	398	1001	4	0.3	4.7	230
28	7.6	1890	635.8	347	744	7.5	0.5	2.3	210
29	7.7	1930	876.9	258	758	6	0.7	4	200
30	8.1	1960	687.1	456	801	4	0.6	.05	170
31	7.9	1950	965	423	931	8.5	0.7	3.2	150
32	8.3	1178	768.1	536	987	6	0.2	4.3	140
33	6.5	1125	655.2	587	834	5	0.5	2.6	240
34	8.3	1148	578.5	642	830	4.5	0.6	4.1	230
35	7.9	1253	789.1	258	998	5.5	0.4	2.2	180
36	6.7	1630	698.8	354	893	8	0.2	0.6	150
37	6.3	1169	574.4	463	954	7	0.6	0.9	180
38	6.8	1456	649.5	214	897	6.5	0.7	0.5	150
39	6.9	1369	498.7	763	865	7.5	0.5	3.5	210
40	7.3	1658	984.5	247	857	5	0.4	4.3	220
BIS/IS (10500-2012)	6.5 - 8.5	2500	250-1000	200-600	500- 2000	10-3	1-1.5	1-5	200-600



## CONCLUSION

In this current study produce the spatial variability maps of nine physic-chemical parameters. The physic-chemical parameters results were clearly compared to BIS standard. In this study area contains potable groundwater.

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