



## Over View of the Hydrology of Tiruchirapalli District

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### Abstract

Tiruchirappalli District is located centrally in Tamilnadu and surrounded by Namakkal, Salem, Karur, Ariyalur, Pudukkottai, Thanjavur and Dindigul Districts. Being the central District of the state the district has so many advantages. Basically an agrarian district with industrial growth supported by the public sector companies like BHEL, HAPP, OFT and Railway workshop. The district is pioneer in fabrication industry and frontrunner in the fabrication of windmill towers in the country.

**Keywords:** Agrarian, Pioneer, Frontrunner

### Introduction

The Geographical area of Tiruchirappalli district is 4, 40,383 hectares (4403.83 sq.km) accounting for 3.38 percent of geographical area of Tamil Nadu State. The district has well laid out roads and railway lines connecting all major towns within and outside the state. For administrative purpose, this district has been bifurcated into 8 Taluks, 14 Blocks and 41 Firkas.

### Geomorphology of Tiruchirapalli

The entire Tiruchchirappalli district constitutes The Kolli Hills in the north-western part and Pachchamalai Hills in the north-eastern parts of the district constitute the remnants of the denuded Eastern Ghats and rise to a height of more than 100 m above the Mean Sea Level.

### Important Rivers/ Canals

1. The Cauvery and Coleroon River
2. Koraiyar River
3. Ariyar River
4. Upper Anicut
5. Grand Anicut

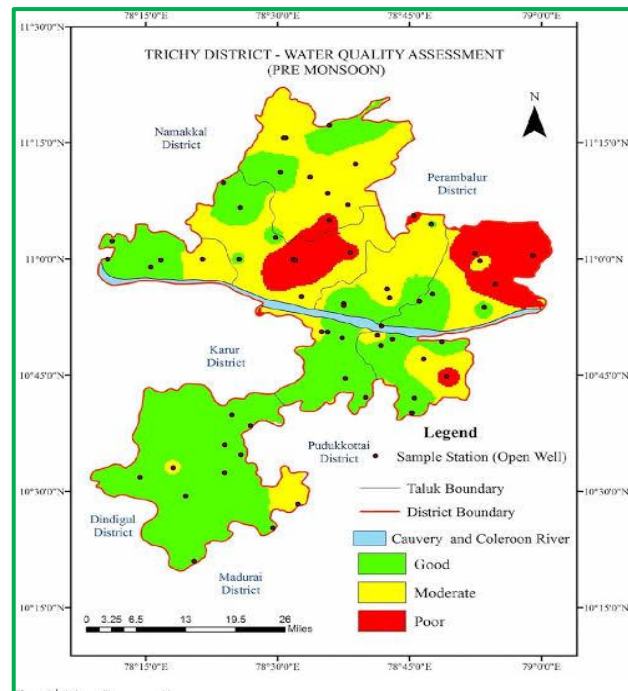
### Groundwater Quality of Tiruchirapalli

Ground water in phreatic aquifers in Tiruchchirappalli district, in general, is colourless, odourless and slightly alkaline in nature. The electrical conductivity of ground water in phreatic zone (in Microsiemens at 25°C) during May 2006 was in the range of 570 to 4550  $\mu\text{S}/\text{cm}$  and major parts of the district are having the electrical conductivity above 1700  $\mu\text{S}/\text{cm}$ . It is observed that in general the ground water is suitable for drinking and domestic uses in respect of all the constituents except Fluoride of higher concentration at Siruganallur (1.85 mg/L) and at few places are having higher concentration of  $\text{NO}_3$  than BIS permissible limit.

## Drilling of Boreholes

Generally in hard rock regions the occurrence of weathered thickness is discontinuous both in space and depth. Hence, the recharge of groundwater is influenced depending upon the intensity of weathering. The sub surface hydrogeological conditions can be ascertained by drilling exploratory boreholes and conducting pump tests. The sedimentary tract of Cauvery alluvium is restricted on either side of the river Cauvery and Coleroon and the thickness of alluvium is estimated to be around 15.0 to 30.0 meters.

There are almost 187 boreholes drilled spread over the entire Tiruchirapalli district out of which 182 borewells are drilled in the hard rock formations.



## Range of Aquifer Parameters

FORMATIONS	SPECIFIC YIELD %	TRANSMISSIVITY $m^2/d$	PERMEABILITY $m/d$	YIELD OF WELLS in Ips
Alluvium	7.2	49-216	2-5	10-20
Cretaceous	0.3 – 2.56	33-782	10-66	1.1-3.5
Gondwana	0.3	33-43	10-20	1-2
Weathered crystalline	0.8 – 2.5	32-80	5-10	1-2

## Conclusion

From the article it is clear that Tiruchirapalli possess high ground water potential and has good water quality. Aquifers are healthy and productive.