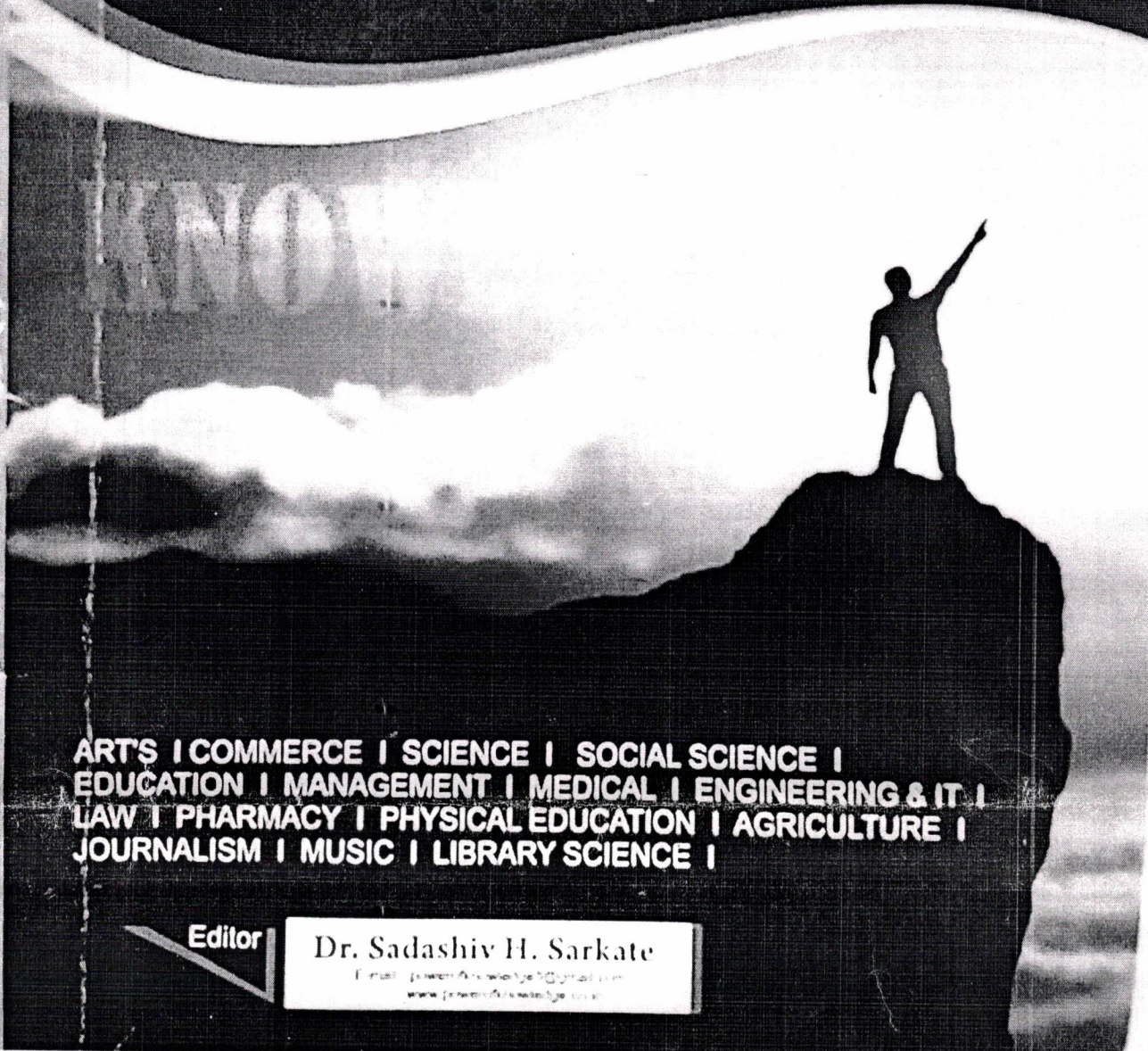


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# POWER OF KNOWLEDGE

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## **Ground Water Quality in Osmanabad city (MS)**

**Dr. Sanjiv Kolpe**  
**Dept. of Geography**  
**ACS College, Gangakhed.**

### **Abstract:**

In India water table has gone down in many areas as a result of indiscriminate and high withdrawal of ground water for drinking and sanitation purposes. With lowering of water table, the cost of ground water extraction has not only increased but also affected the quality of water.

Keywords: Physical parameter, ground water quality.

### **Introduction:**

Tremendous increase of population in last two decades has put extra pressure on water source in any area. The ground water quality directly depends upon geology of the area. The sewage water released from city contributes to the pollutant ground water surrounding the area. Therefore, a detailed study of hydrogeological and hydrochemical condition of the area is required to understand the groundwater quality of the area.

In the present investigation the relation between ground water quality and health effect has been studied.

### **Study area:**

Osmanabad city is located in central part of Osmanabad district. The area is spread over 3.57 Sq. km. The whole region is at an average elevation of 548 meters above mean sea level. Ground water is available only in weathered and fractured zones. Most of the people depend on ground water. Average annual rainfall is around 700 mm, which is mostly lost as surface runoff.

### **Aim and Objectives:**

For this study we have chosen the following objectives.

To identify the ground water quality for drinking purposes.

To study the spatio-temporal analysis of ground water.

To understand the geological conditions.

To suggest the measures to improve underground water levels.

Geographical location of Osmanabad is 18° 08' N north latitude and 74° 32' E east longitude.

### **MATERIAL AND METHODS:**

For this study we have collected six samples from different places in Osmanabad city. All samples were kept in pre-cleaned white polythene plastic made Jerrycans. EDTA titrimetric and gravimetric methods were used for the determination of calcium. TDS denote the various types of minerals present in the water in dissolved form. According to BIS the limit of TDS in drinking water is 500 mg/l (Dhembare 1998, Sangeetha 2000) observed higher values of TDS that of is

standard calcium and magnesium are the major cation responsible for hardness.

**RESULT AND DISCUSSION:**

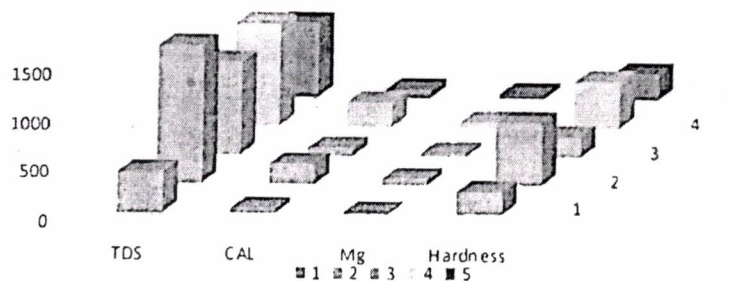
The present study is undertaken to assess the water quality and identify physiochemical analysis of ground water quality. More than 75% population depends upon ground water in study region. We report here this study had been

Obtained result of ground water were within the limit as compare to drinking water standard.

**Physio-chemical Analysis of ground water in Osmanabad city :**

Site	1 Police line-B	2 Tambri area-H	3 Barshi naka-B	4 Ganesh nagar-H	5 Amrut nagar-B
TDS	420	1420	950	1050	760
CAL	50	210	81	251	85
Mg	21	65	35	52	45
Hardness	235	650	208	478	265

Physio-chemical analysis of Ground water



Above table shows that, the contamination of TDS, Cal. Mg, and Hardness are observed in different sites in Osmanabad city. The higher concentration of TDS shows in site no.2 (Tambri area) and site no. 4&5(Ganesh nagar & Amrut nagar).On the other hand higher concentration of calcium has been found in site no.2, whereas site no.1&3 (Police line and Barshi naka) calcium observed under permissible limit. Of BIS. So high content of calcium are undesirable for clothing, bathing and drinking .Above table indicate that Tambri area has more hardness compare to other samples. Hence, this ground water is very hard and not suitable for drinking purposes' K Jain (1992) reported that the content of hardness may be causes kidney problem, high content of mg causes nausea, muscular weakness and paralysis in human being. The study is reveals that, ground water is deteriorate with high level of TDS, Ca. mg. and

hardness. The permeability in the rock formation is high especial Tambri area and Ganesh nagar. City waste water comes and stored in Tambri area. So, it is affecting ground water quality.

**ACKNOWLEDGEMENT:**

We are extremely thankful to Dr. S K Akuskar for giving guidance and support to this research work. I feel deep sense of gratitude of my department colleague for their constant encouragement during the work.

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