

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

BELGAUM - 590 010



PROJECT REPORT ON

**INTEGRATED WATER RESOURCE ASSESSMENT AND
DEVELOPMENT FOR JAGALUR TALUK OF DAVANGERE
DISTRICT-A CASE STUDY OF JANAGI HALLA**

SPONSORED BY KSCST

Submitted in partial fulfillment of the requirements for the award of the degree

**MASTER OF TECHNOLOGY
IN
ENVIRONMENTAL ENGINEERING**

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ABSTRACT

Jagalur taluk is one of the six taluks coming under Davangere district. It lies between 14°27'34"N latitude and 76°01'29"E longitude and covers an area about 1005 km². It is located 48 kilometre NE of Davangere and at an altitude of 600m above sea level.

In Jagalur taluk granitic-gneiss and schists are the main water bearing formations. Ground water occurs within the weathered and fractured granitic-gneiss and schists under water table condition and semi-confined condition.

In the present study groundwater samples have been collected from 27 different bore well locations in Jagalur taluk and tests have been conducted to evaluate certain chemical characteristics to find out its suitability, comparing with the groundwater quality standards as per WHO.

The geographical locations of these bore wells have been noted down by using GPS handset and later their positions have been marked over the geological map of Jagalur to ascertain the quality of ground water in terms of various rock formations. Besides, chemical quality for different parameters of groundwater has been plotted using GIS software. The impact of rainfall over ground water fluctuation has also been studied.

The survey of India topo sheets 57B/2, 57B/3, 57B/6, 57B/7 and 57B/10 in 1:50,000 scale has been used to prepare the base map for Jagalur taluk and also some of the thematic maps like drainage map, slope map, soil map, land use and land cover map have been prepared using Arc view GIS 3.2a software.

The study focuses on geometry, more emphasis has been placed on the relationship between morphometric characters, such as stream order, stream length, bifurcation ratio, drainage density, stream frequency, texture ratio, elongation ratio and the area of the drainage basin of both Jagalur taluk as well as Janagi Halla, as case study and recommending suitable sites for groundwater recharge for the study area.