

**VISVESVARAYA TECHNOLOGICAL UNIVERSITY
BELGAUM -590 014**



**Shri. B. V. V. Sangha's
BASAVESHWAR ENGINEERING COLLEGE,
BAGALKOT-587 102**



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DEPARTMENT OF CIVIL ENGINEERING

A PROJECT REPORT ON

"GROUND WATER ANALYSIS BASED ON GIS"

(Approved by KSCST, Bangalore)

PROJECT GUIDE

Dr. Veena S. Soragavi

HEAD OF DEPT.

Dr. C. V. Shivayogimath

PROJECT ASSOCIATES

Name of the Students	University No
<i>Ms. Kemi Kadu</i>	<i>2BA06CV101</i>
<i>Ms. Ponung Tayeng</i>	<i>2BA06CV051</i>
<i>Mr. Takir Saroh</i>	<i>2BA06CV100</i>
<i>Mr. Sunil A. Gangal</i>	<i>2BA06CV097</i>
<i>Mr. Shivkumar Biradar</i>	<i>2BA05CV070</i>

GROUND WATER ANALYSIS BASED ON GIS

ABSTRACT

Many people take clean water for granted and are hardly aware of what it takes to guarantee a water supply free from pollutants. The uncertainty associated with the availability surface water, both in terms of quantity and quality made people to depend on groundwater. But in recent years depletion of water table, and chemicals like Fluoride and Arsenic are the causes of concern. We have considered some of the bore wells near Krishna basin in the upper stream of Alamatti reservoir. 83 bore wells have been selected in this wide area for chemical analysis.

Our project mainly comprises of determining the chemical parameters. In which we have taken northing and easting by using GPS of each of the bore well points, which were used for locating the sampling point for contour mapping using GIS. The water samples collected from each of the bore wells was tested for total hardness, fluoride, alkalinity, chloride and sulphate. Contour map of each chemical parameter was plotted, which shows the variation of each chemical parameter in our study area.

The results indicate that hardness is very high in almost all the bore wells above 300 mg/l in all of them. But very few exceed the upper limit of 600 mg/l. Sulphate content is a major cause of concern exceeding the upper limit in 400mg/l bore wells of the sample tested. Except these 2 parameters other parameters lie well below the standard limit. The ArcGIS is used to analyse the spatial and temporal variation of chemical parameters. Contour maps of chemical parameters before and after monsoon are used to analyse the effect of rainwater recharge to groundwater on chemical parameters values. It has been observed that the recharge causes the dilution of the chemicals in the groundwater.