

# ETAH DISTRICT



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## Basic Information

Geographical Area :	4446 Sq. Km.	No. of Blocks:	15
Basin/Sub-basin:	Ganga/ Kali	Population:	2788270
Availability of Ground Water :	132761.82 ham.	Stage of G.W. development:	76.34%

## Introduction

Etah district is a Central part of Indo-Gangatic Plain lies in Ganga Yamuna doab of the state covering an area of 4446 sq.km. and lies between North latitudes 27°18' and 28°02' and East longitudes 78°11' and 79°17' with total population of 2788270 as per 2001 census (density: persons/sq.km.). The district is bounded on the south by Mainpuri and Agra districts, on the east by Farrukhabad and on the west by Aligarh and Mathura districts and on the north by Badaun district. In general the district exhibits a flat topography with few gentle undulations. The drainage system of the district is controlled by the river Ganga and its tributaries namely Kali, Isan, Burhi Ganga Arind and Bargash. The Kali nadi is perennial and the remaining tributaries are ephemeral. Etah district fall under the category of agricultural dominated district occupying mainly the area between the Ganga and Kali river. About 70% irrigation potential of the district depend mainly upon ground water resources but a limited area also receive the surface water

irrigation mainly through Lower Ganga canal and Upper Ganga canal. The lower Ganga canal bifurcates into two branches namely Bewar and Bhognipur branch. The maximum beneficiary of having surface water irrigation in the district is Jalesar block followed by Awagarh, Ganj Dundwara blocks receives practically insignificant facility of irrigation through canal system.

The district receives a normal rainfall of 722.60 mm with 40 rainy days experiences sub-tropical climate. The economy of the district mainly depends upon agriculture.

**Top**



## **Hydrogeology**

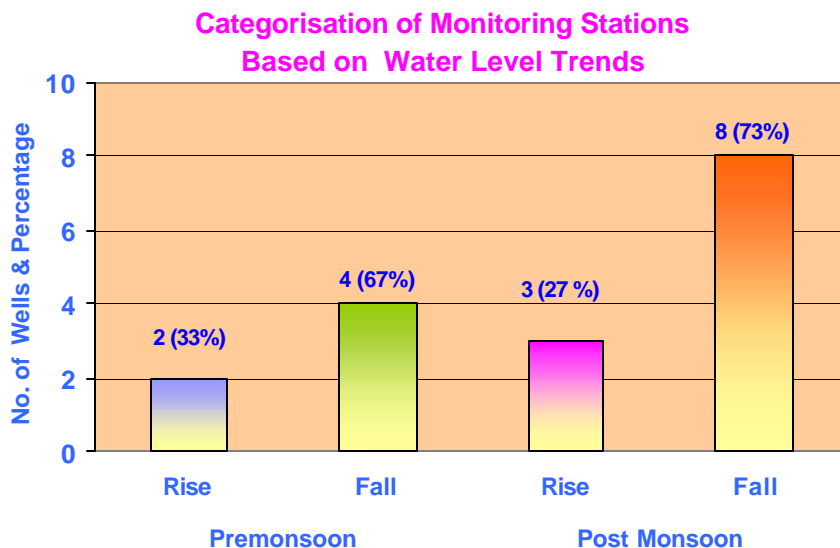
The area is underlain by Quaternary alluvium consisting of clays, occasional kankar, sand of various grades and gravels in different proportions. The results of 3 exploratory bore holes and 2 slim holes drilled by CGWB ranging in depth from 237 mbgl to 435 mbgl reveal that the following four aquifer groups exist in the district.

I Aquifer Group	25-80 mbgl
II Aquifer Group	110-160 mbgl
III Aquifer Group	240-290 mbgl
IV Aquifer Group	340-390 mbgl

The ground water occurs under unconfined to confined conditions. The pre-monsoon depth to water level ranges from 8.00 to 12.00 m.bgl while post-monsoon depth to water level varies from 3.00 to 9.00 m.bgl shallow water level occurs (less than 5 metres) in the Northern Eastern part of the district in the part of Awagarh, Nidhauri Kalan, Sheetalpur, Patiali, Sidhpura and Sakit block. The regional flow of direction of Ground water is from North west to south east which is in conformity with the regional topography. Seasonal water level fluctuation is between 2.0 m and 6.0m.

## Long Term Water Level Trend

The water level data recorded from National Hydrograph Stations during the period 1980-2003 has been analysed both for Pre-monsoon and Post-monsoon. The number of NHS with their percentage in respect of Rise & fall has been graphically shown below:



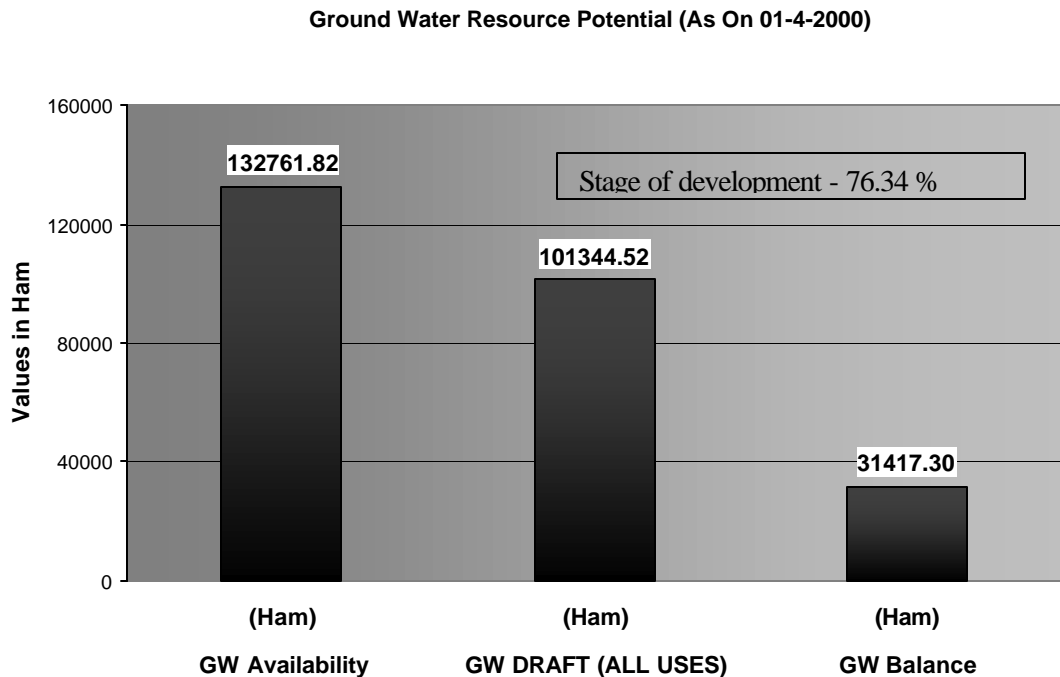
## Ground Water Quality

The ground water quality in the major parts of the district is fresh and suitable both for domestic and irrigation purposes. In few localities in Sidhpura and Jalesar blocks, E.C value is high indicating poor quality of ground water.



## Ground Water Resource Potential

The ground water resource potential has been estimated based on "GEC 1997 Methodology" as on 1.4.2000, which is graphically represented below.



The total ground water available for district is 132761.82 ham and Ground Water draft is 101344.52 ham with the left over ground water balance is 31417.30 ham.

## Ground Water Management

The ground water development needs to be taken up in a planned manner in the district particularly in Marhara and in Soron blocks in order to avoid adverse impact on ground water regime. which suggests that ground water development should be taken up cautiously. The need for implementation of Artificial recharge schemes in the block is imperative which would arrest the declining trend in water levels in due course of time. The water levels should be closely monitored through need based piezometers in Jalesar, Jaithra, Aliganj, Alibramau and in Awagash blocks. For drinking purposes the tubewells should be constructed more than 30 m depth.