

Assessment of Ground Water of Villages Located in Western Zone of Bikaner (Rajasthan)

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Abstract: *The subsurface water generally includes chemical and physical properties, geological environment, natural movement, recovery and utilizations. The groundwater is reserved for the sub surface water that occurs beneath the water table in soils and geological formations that are fully saturated. Not all underground water is ground water it a hole is dug, moist or even saturated soil may be encountered. Assessment of Chemical characteristics of ground water is necessary because the physical and chemical parameters of ground water determine its suitability for drinking, agricultural, industrial and domestic purposes. The groundwater in three district physiographic and hydrologic belts the Bhabai the terai and the axial.*

Key Words: Chemical, Total Dissolved Solids, Electrical Conductivity etc.

Introduction:

Water is the most vital source for all kind of life. The ground water is considered to be the most ancient source of water. In Bikaner district ground water is the sole source of drinking and agricultural uses because there is no perennial and no seasonal river in this area. For present study the ground water samples were collected from some villages around raisar, situated at NH-11, District Bikaner. In my research work chemical characteristics like Total Dissolved Solid, Hardness, Alkalinity, Calcium, Chloride, and Pathogenic Bacteria were analyzed. It is found that some water samples are not suitable for drinking and agricultural purpose due to high concentration of some parameters. The high value of these parameters may have health implications and therefore, needs attention. Groundwater development dates from ancient times, in the Dry region of Asia, There is dense on population and the dominance of agriculture resulted in an early development of the art of constructing wells and infiltration galleries.

As regard the technology of constructing tanks as in Ramayana. During that period the tanks were small reservoirs built by constructing earthen dams and were among the oldest methods of irrigation through systematic storage of runoff water or water diverted from streams. Occurrence of Ground Water the main source of water on this earth is rainfall a portion of it is penetrated beneath the surface, a portion is evaporated into the atmosphere and source of it runs off, a portion which is penetrated into the earth is called the Ground Water. The upper surface of this Ground Water is called the water table. The sub surface occurrence of Ground Water can be divided into zone of saturation and aeration. In the zone of saturation all the interstices are filled with water. Vadose water, which occurs in zone of aeration and is in a state of downward movement under the influence of gravity, Its movement is called as infiltration.

Ground Water: All the sub surface water reaching a depth below which all the pore spaces, openings and other cavities of the soil and rock are completely filled with water. In arid, semi arid and dry regions, this may be the only source of water supply.

Engineering aspect

Civil Engineers have to deal with Ground Water in one way or another throughout their professional career.

The stability, Safety and economy of costly structure are all influenced with the presence of ground water in and around the sites. The consumers can use the water directly by installing pumping sets or even hand pumps. The economy, safety design and construction of all major engineering projects like dams and reservoirs, tunnels and highways are intimately related to the Ground Water of the area in which projects are located. A dam is built across a river primarily to the store water in the form of reservoirs. The whole idea become irrelevant if the foundation on which it is built are made up of porous rocks.

The leaking water may failure at the abutment all tunnels are passages either for traffic of one type or are another for the conduct of water. The construction of tunnels depend on a full knowledge of the Ground Water. Parameters of the rocks in and around the proposed alignment of the tunnel. Regarding highways and cuts the site is considered unsafe and unstable if the water table is very high-some sort of reliable drainage system must be provided if the site has to be selected at any cost. Groundwater is a major source of trouble for the stability of slopes. Soil,

creep and solifluction are caused mainly due to Groundwater. The lubricant action of water causes massive landslides. A rise in the water table to the root zone of Plants causes water logging. The root system of crops in water logged areas gets decomposed. The rising Groundwater may be reach in some undesirable salts this increased salt content of the soil makes it most useless for cultivation.

Site Details: Bikaner is a city in the northwest of the state of Rajasthan in northern India. It is located 330 kilometers (205 mi) northwest of the state capital, Jaipur with a coordinates 28°01'00"N_73°18'43"E. Bikaner District having an total area around 155 km² (60 sq mi) with a total population more than 4.3 lakhs. Major sources of water is underground water.

