

Diagnosis of the Hydrological and Hydrogeological Potential in the Mancomojan Basin for Estimations of Offer and Demand

Authors : J. M. Alzate, J. Baena

Abstract : This work presents the final results of the 'Diagnosis of the hydrological and hydrogeological potential in the Mancomojan basin for estimations of offer and demand' with the purpose of obtaining solutions of domestic supply for the communities of the zone of study. There was realized the projection of population of the paths by three different scenes. The highest water total demand appears with the considerations of the scene 3, with a total demand for the year 2050 of 59.275 m³/year (1,88 l/s), being the path San Francisco the one that exercises a major pressure on the resource with a demand for the same year of the order of 31.189 m³/year (0,99 l/s). As for the hydrogeological potential of the zone and as alternative of supply of the studied communities, the stratigraphic columns obtained of the geophysical polls do not show strata saturated with water that could be considered to be a potential source of supply for the communities. The water registered in the geophysics tests presents very low resistances what indicates that he presents ions, this water meets in the rock interstices very thin granulometries which indicates that it is a water of constitution, and the flow of this one towards more permeable granulometries is void or limited. The underground resource that is registered so much in electrical vertical polls (SEV) as in tomography and that is saturating rocks of thin granulometry (clays and slimes), was demonstrated by content of ions, which is consistent with the abundant presence of plaster and the genesis marinades with transition to continental of the geological units in the zone. Predominant rocks are sedimentary, sandy rocks of grain I die principally, in minor proportion were observed also sandstones of thick grain to conglomerate with clastic rock of quartz, chert and siltstone of the Formation Mess and sandstones (of thin, average and thick grain) alternating with caps conglomerate whose thickness is, in general, between 5 and 15 cm, the nodules of sandstones are frequent with the same composition of the sandstones that contain them, in some cases with calcareous and crossed stratification of the formation Sincelejo Miembro Morroa.

Keywords : hydrological, hydrogeological potential, geotomography, vertical electrical sounding (VES)

Conference Title : ICWES 2016 : International Conference on Water and Environmental Sciences

Conference Location : Vancouver, Canada

Conference Dates : August 04-05, 2016