

## **RUNOFF ANALYSIS TO DEVELOP A NEW RESERVOIR AT THE UPSTREAM OF KHANPUR DAM**

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### **Abstract**

The main problem in hydrology is to collect field data to describe the hydrological process acting on the earth. Only Remote Sensing is a tool, which produces spatial and temporal information in digital form with high resolution. Remotely sensed data provide spatial information about the various processes of the hydrological cycle. The utilization of remote sensing information along with distributed hydrological model, gives new potential outcomes for inferring spatially distributed time series for input variables. In this work, remote sensing techniques have been used to perform runoff analysis for the development of new reservoir at upstream of Khanpur Dam. Arc Hydro tools were utilized to find out catchments and drainage accumulation points of Haro River at the upstream of Khanpur Dam. The Digital Elevation Model of 30 m resolution is used for this study. By studying past 23 years data of average annual inflows, average annual spills and average utilization of water is 0.228217 MAF, 0.084164 MAF, 0.144053 MAF respectively at Khanpur Dam was also studied to find out the unutilized water at the Khanpur From these facts it is clear that half of water is spilled out from Khanpur Dam yearly at time of excessive rainfall due to less space in Khanpur Dam. To utilize this water there is a need for an additional storage on Haro River. For this purpose a new dam site is proposed at the upstream of Khanpur Dam near Dotara village. The storage capacity of new dam was also found. The results obtained from this research can be effectively utilized, for the construction of Dotara Dam in future.