

Surge Analysis of Water Transmission Mains in Una, Himachal Pradesh, India

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Abstract : Present paper is an analysis of water transmission mains failed due to surge analysis by using basic software known as Surge Analysis Program (SAP). It is a real time failure case study of a pipe laid in Una, Himachal Pradesh. The transmission main is a 13 kilometer long pipe with 7.9 kilometers as pumping main and 5.1 kilometers as gravitational main. The analysis deals with mainly pumping mains. The results are available in two text files. Besides, several files are prepared with specific view to obtain results in a graphical form. These results help to observe the pressure difference and surge occurrence at different locations along the pipe profile, which help to redesign the transmission main with different but suitable safety measures against possible surge. A technically viable and economically feasible design has been provided as per the relevant manual and standard code of practice.

Keywords : surge, water hammer, transmission mains, SAP 2000

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