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Technical Report

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SIMULATION OF SOIL MOISTURE MOVEMENT IN A HARD ROCK WATERSHED USING SWIM MODEL

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PREFACE

In many arid and semi-arid regions, surface water resources are limited and ground water is the major source for agricultural, industrial and domestic water supplies. Because of lowering of water tables and the consequently increased energy costs for pumping, it is recognized that ground water extraction should balance ground water recharge in areas with scarce fresh water supplies. This objective can be achieved either by restricting ground water use to the water volume which becomes available through the process of natural recharge or by recharging the aquifer artificially with surface water. Both options require knowledge of the ground water recharge process through the unsaturated zone from the land surface to the regional water table.

This report entitled "*Simulation of Soil Moisture Movement in a Hard Rock Watershed using SWIM Model*" is a part of the research activities of 'Hard Rock Regional Centre' of National Institute of Hydrology, Roorkee, India. The purpose of this study is to simulate the soil moisture movement in a hard rock watershed through a numerical model and determine the ground water recharge from rainfall. The study has been carried out by Mr. C. P. Kumar, Scientist 'F' and Dr. B. K. Purandara, Scientist 'E'.

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