Title:	**Use OF Uranine Fluorescence Trace For The Hydraulic Characterization Of AL-FARAA Groundwater Aquifer System**

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Abstract

Uranine fluorescent tracer was used in a field study to investigate the hydraulic characteristics and hydraulic residence time (HRT) within the Neogene sub-aquifer of Al-Faraa groundwater aquifer system. The need for determining hydraulic characteristics and HRT of Al-Faraa aquifer system is high since all previous studies and investigations of the aquifer system were based on theoretical assumed values. A Pulse single-well tracer method has been adopted and used. The method involves the injection of Uranine water solution over a short duration (15 minutes) followed by water injection allowing the tracer to disperse into the formation and create a drift then the water withdrawal (pumping back) starts and water samples are taken with time. Samples were analyzed for Uranine using fluorometer. The flow velocity and effective porosity were estimated at 9.8 m/day and, 0.04, respectively using a numerical model. This paper describes the single well tracer method, gives details and results of field experiment, presents numerical model results, and a discussion of the scope and limitations of the technique.