

Reservoir Safe Yield Sensitivity Analysis

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Abstract. This paper investigates the sensitivity of reservoir safe yield for various generic locations by performing sensitivity tests for all the parameters used in a typical reservoir yield simulation. A yield sensitivity tool will be developed using VBA and Excel with geographic and temporal input flexibility. The specific parameters that will be tested include the hydrologic time-series, minimum flow regime, pump capacity and reservoir net evaporation. Input hydrologic data includes the unimpaired flows (UIFs) and USGS Gage data. Various random locations in Georgia will be used to evaluate commonalities and differences with respected yields and their sensitivities. Results should indicate that certain input parameters can greatly affect the yield while others have very little effect. Finally this tool can be used as a starting platform for more detailed safe yield estimations of existing and potential reservoirs.