



## ***Protect the Stream with a Groundwater Remediation Plan***

Student Name: \_\_\_\_\_

Class: \_\_\_\_\_

***Object:*** Determine a plan for groundwater contamination remediation (clean-up) in order to protect a local stream.

***Time Needed:*** 40-45 minutes

***Simulator Conditions:*** Slide the simulator aquarium pump so that the full amount of flow is being delivered to the recharge area (slide pump to the right). Make sure that the aquifer compartment drain valve at the bottom of the simulator's back water reservoir is closed. Make sure the stream drain valve is open. Make sure the lake drain valve is closed.

***Materials needed:*** color dye; pipette; squirting wash bottle; syringes; siphon.

***Assignment:***

Groundwater contamination by industrial activity has become more recognized in recent years as a problem in developed areas. Remediation (clean-up) of groundwater contamination requires knowledge of geologic conditions and some principles of groundwater. If dye (representing a contaminant) was injected below Well #2, what would be your plan for remediation in order to keep the contaminant from reaching the stream? What specific types of information would you need to know about the aquifer parameters, groundwater flow patterns and characteristics, and contaminant properties? Your plan can utilize existing conditions and wells in the simulator or you can indicate where you would like new wells to be installed if deemed necessary. After you have devised a remediation plan, show it to your teacher. Then, using the simulator, inject dye below well #2 and try to implement as much of your plan as possible to see it works. After your observations, would you revise anything in your plan? How might your plan be different if the pollution started under well #3 instead and you were able to detect it early and take action quickly?