Mnstrviola's 2012 Awesome Aquifers Test

**Station 1**

1. Describe what an "Aquifer" is. Be as in-depth as you can.

2. List 2 common impermeable layers of rock and 2 common permeable layers of rock.

3. What's the difference between a seep and a spring?

4. What is the dividing boundary between a permeable layer and an impermeable layer?

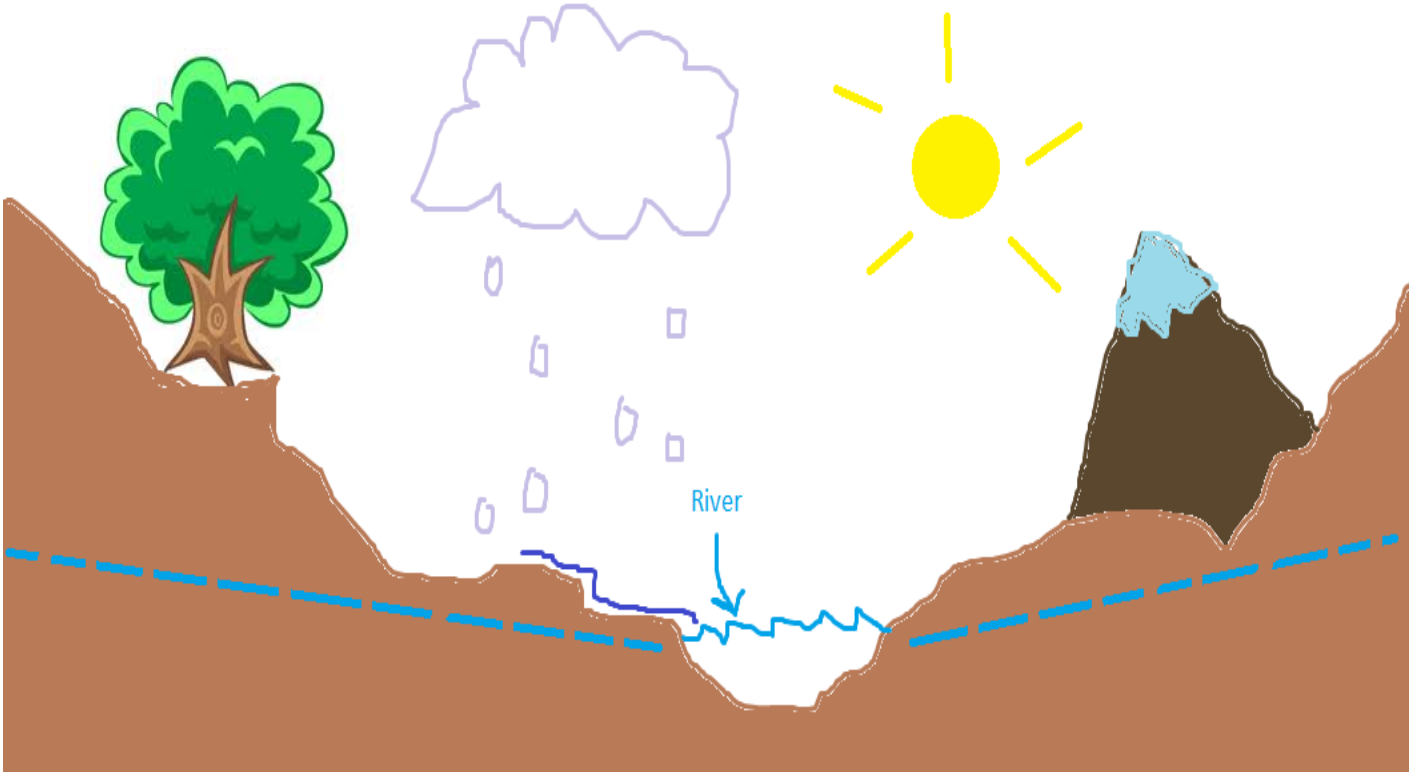
5. Specific yield and specific retention add up to make what?

6. Is water in the unsaturated zone considered groundwater? Why / Why not?

7. About how much water we use in America comes from groundwater?

8. Can groundwater be saltwater? Why / Why not?

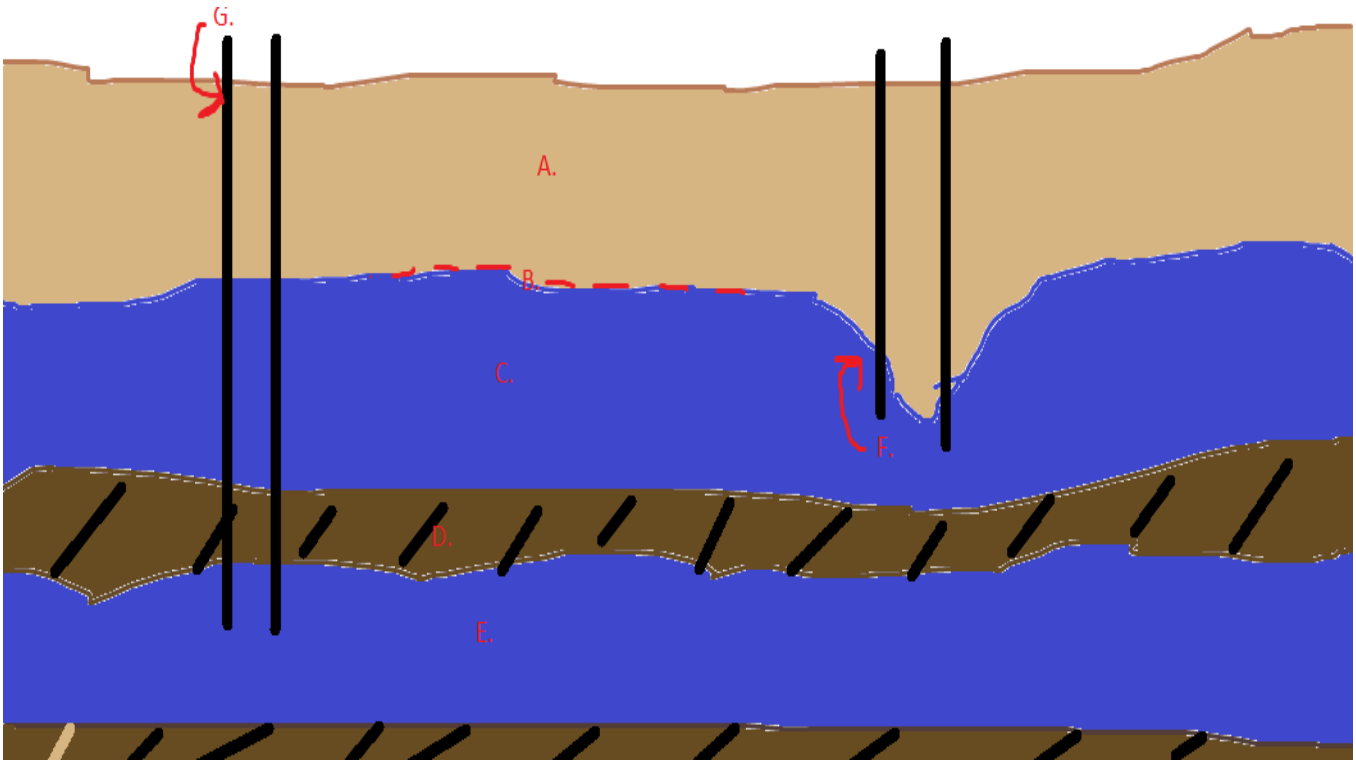
**Station 2.**




Label the diagram above with parts of the water cycle using arrows. . Hint: Every part has a purpose!

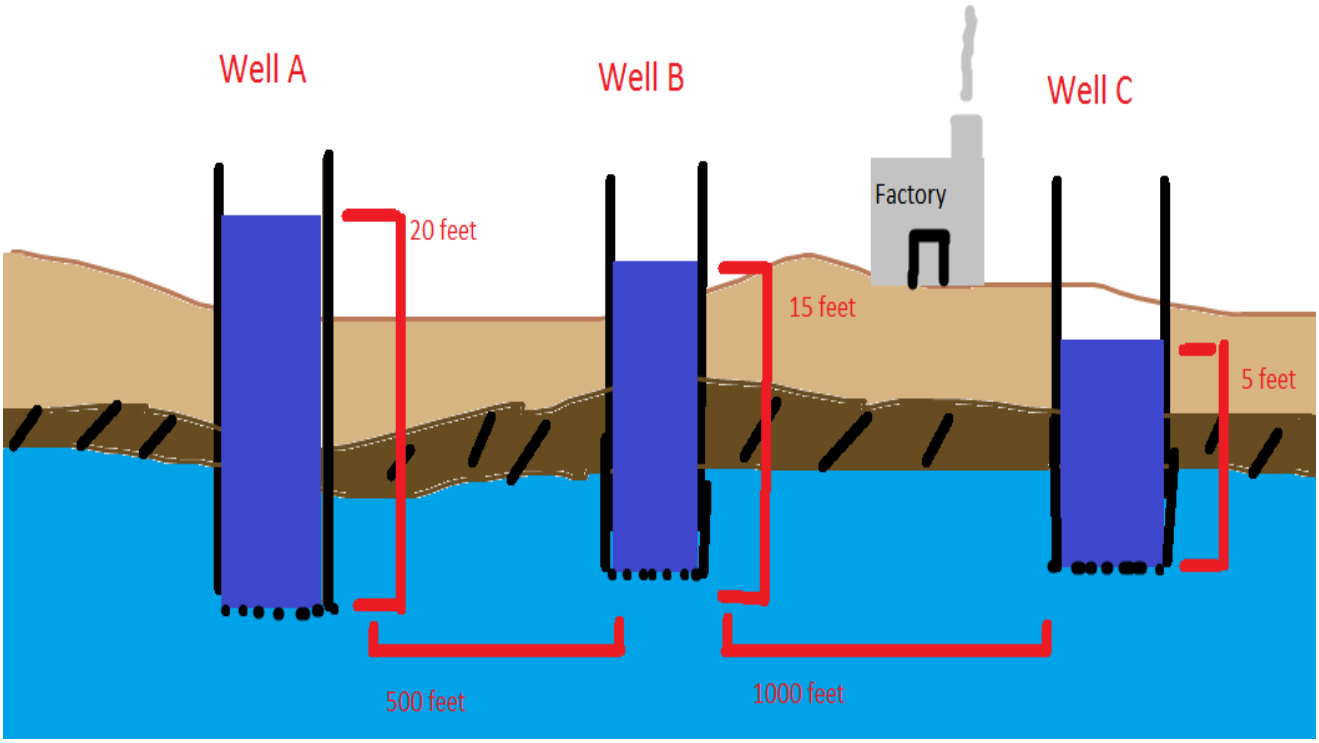
1. Is the stream above an effluent stream or an influent stream? Why?

2. What is the dotted line called? What does it separate?




Fill in the Labels for the diagram above.

A.
B.
C.
D.
E.
F.
G.




1. What kind of aquifer is this?

2. Calculate hydraulic gradient from well A to well B. Show work.

3. Calculate hydraulic gradient from well B to well C. Show work.

4. Draw an arrow in the direction of groundwater flow. How do you know what direction it is in?

5. If a factory were to pollute this aquifer directly under it, which well(s) would be most affected?

**Station 4.**
Demonstrate these concepts in your aquifer model. Remember to go in depth when you

present, some concepts are worth more than one point.

- water cycle
- zone of aeration and saturation, water table
- porosity and permeability
- impermeable layer, confined aquifer
- groundwater recharge and discharge
- interaction between surface water and groundwater
- leacheate
- wells, and effects of overwithdrawal
- contamination, types of pollution
- remediation