

# THE ADVENTURES OF **WELL WANDA**

STANDOFF WELL





*This comic is the seventh in a series of comic books created by First Nations Technical Services Advisory Group to teach students in grade 3-6 about the Superheroes that make and keep our water safe to use.*

*PDF copies of this booklet and other educational materials are available from TSAG.*

*Telephone: 780 486 8601*

*Email: [crtp@tsag.net](mailto:crtp@tsag.net)*

*Address: 18232-102 Ave, Edmonton,  
Alberta. T5S 1S7.*





Wells are holes dug into the earth to get to groundwater stored in aquifers. How deep a well goes depends on how far it has to go to reach the water. A pipe and pump are used to get the water from the aquifer then a filter removes unwanted particles and cleans the water so it can be used.

**New Words to Learn:**

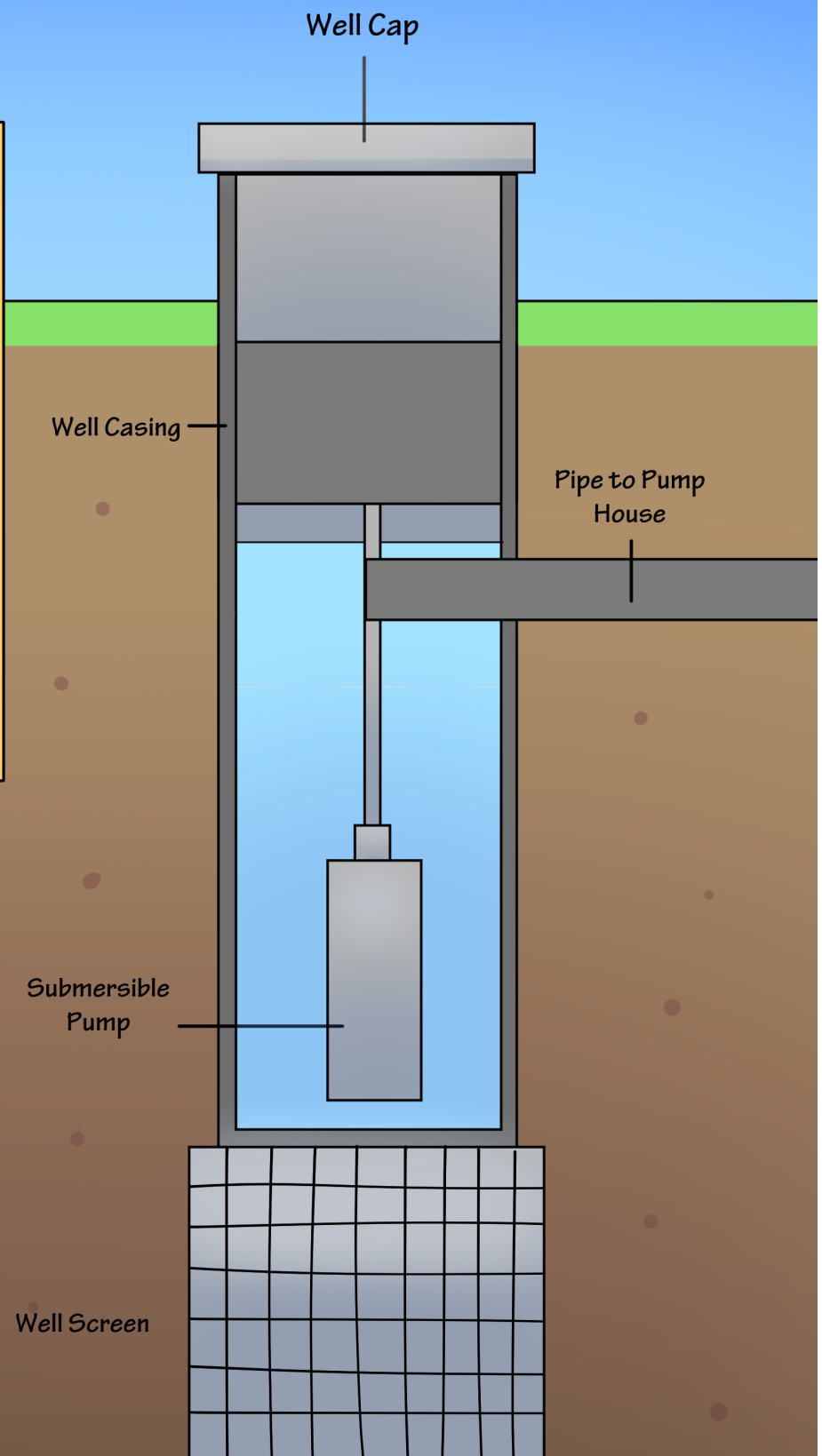
**Coliforms:** A type of bacteria found in the digestive tracks of humans and animals.

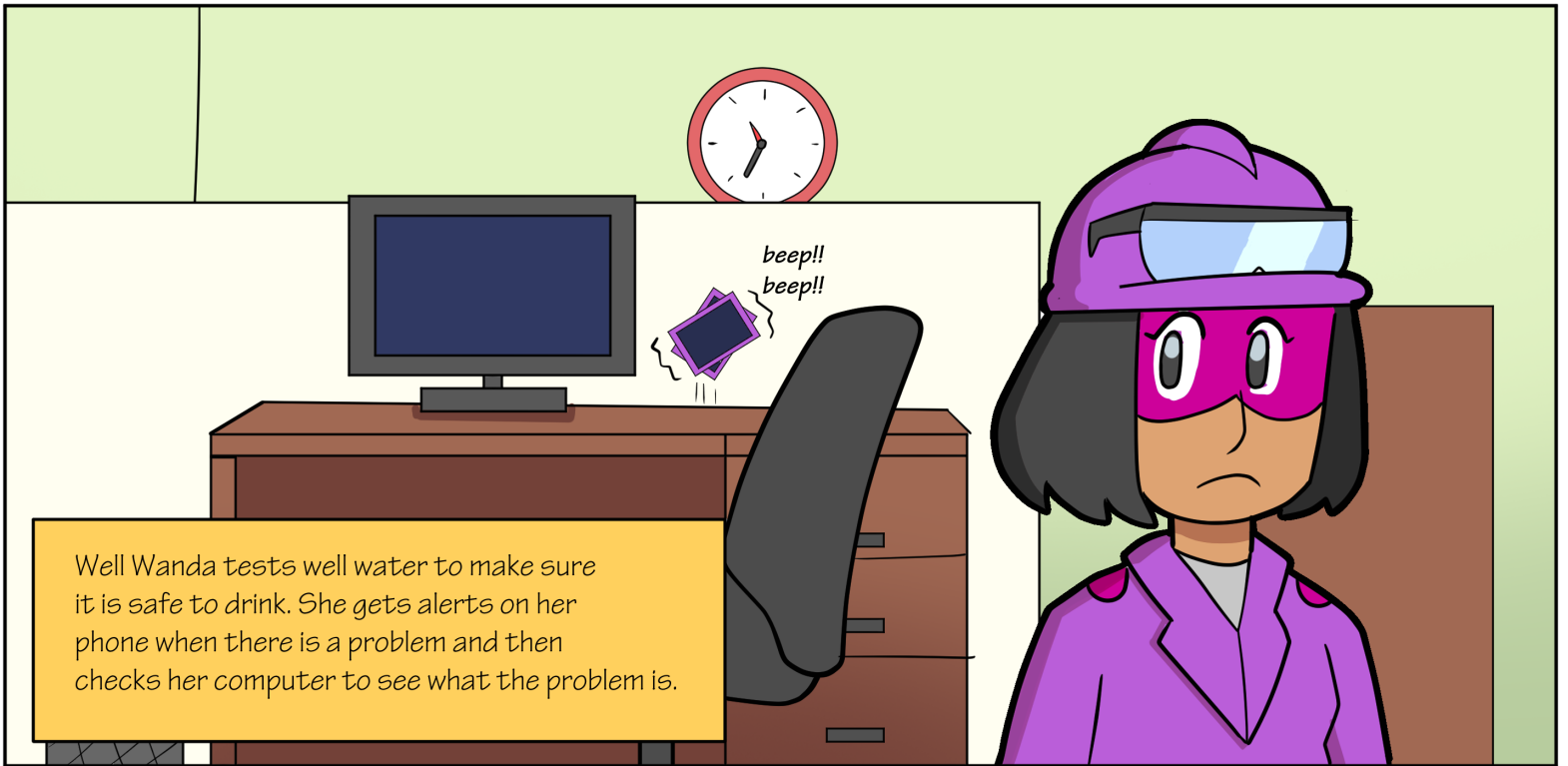
**Groundwater:** The water that is under the ground in the spaces between rocks, soil, and sand.

**Neutralize:** To make something harmless.

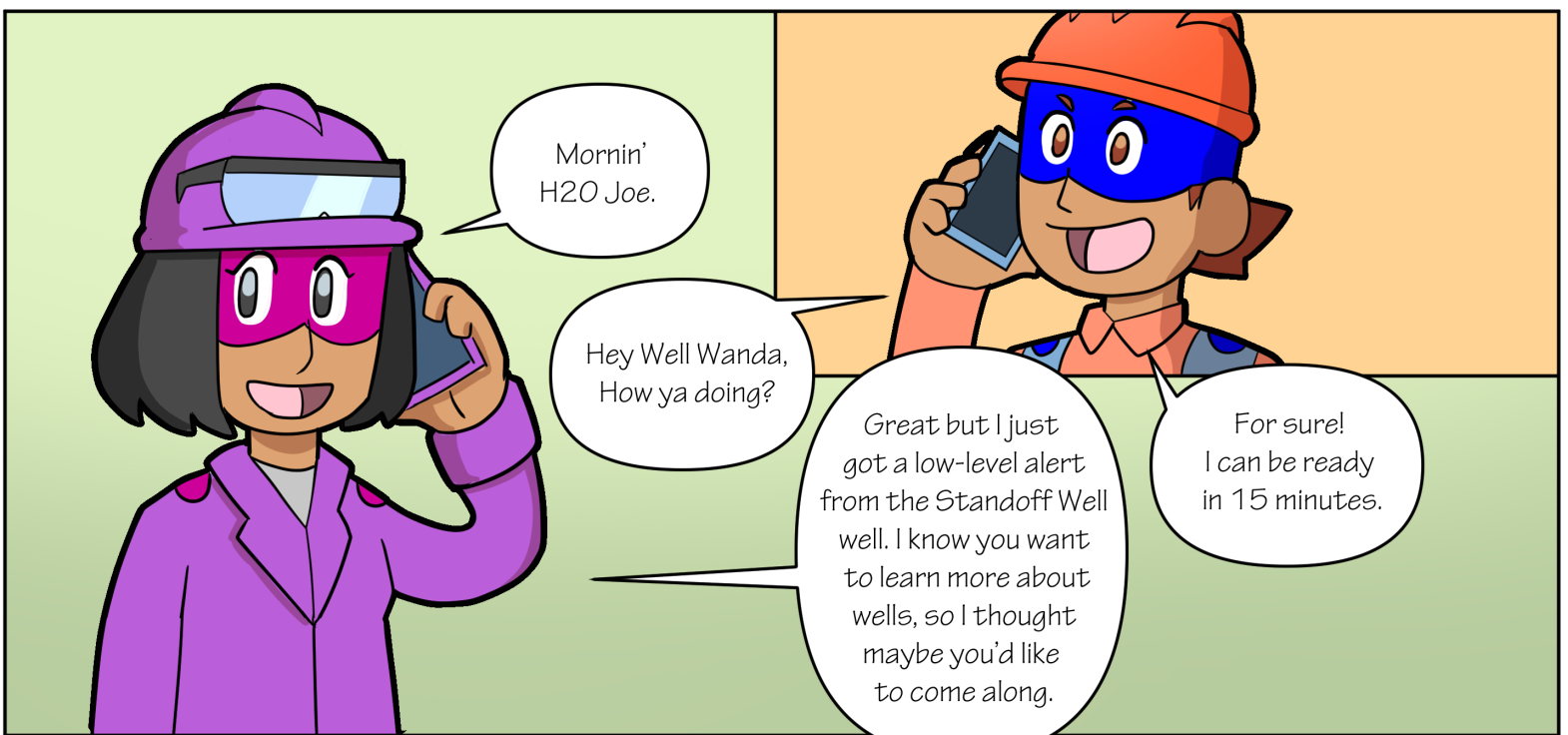
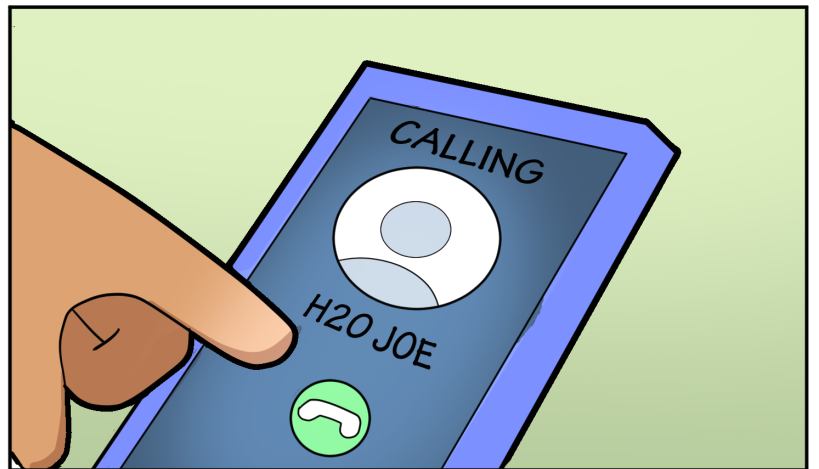
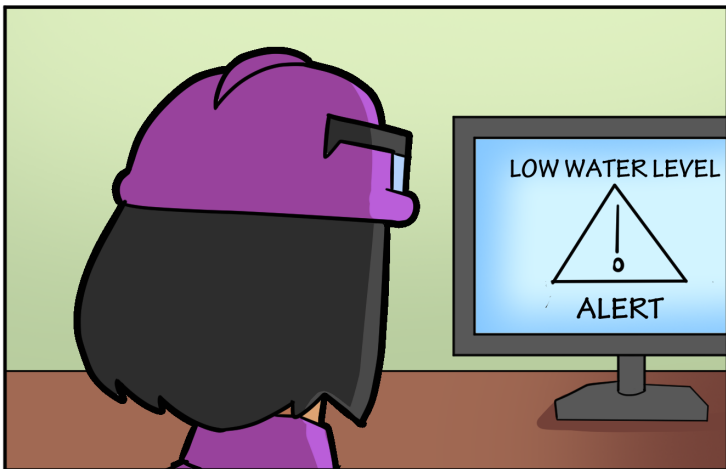
**Submersible:** Something that is made to work underwater.

**Aquifer:** an underground layer of rock, clay, sand, or gravel that holds water. The water can be taken out by using a well.





Well Wanda tests well water to make sure it is safe to drink. She gets alerts on her phone when there is a problem and then checks her computer to see what the problem is.



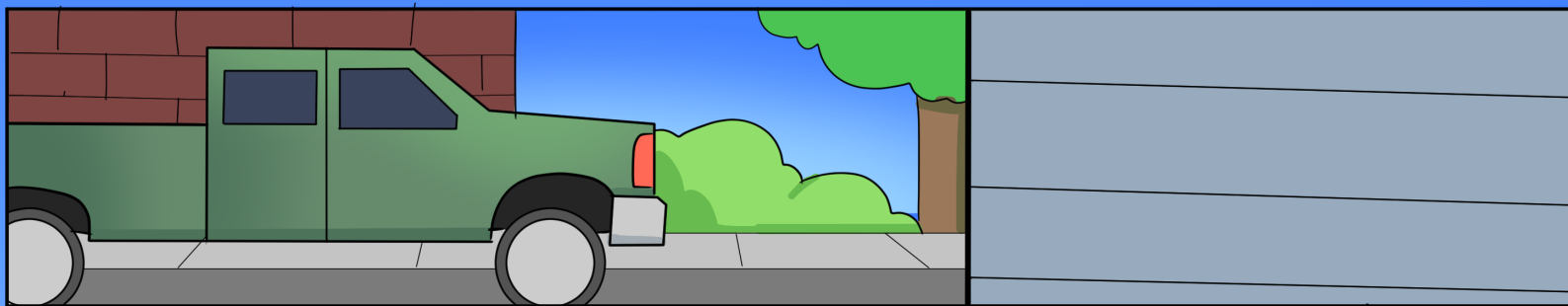
Mornin' H2O Joe.

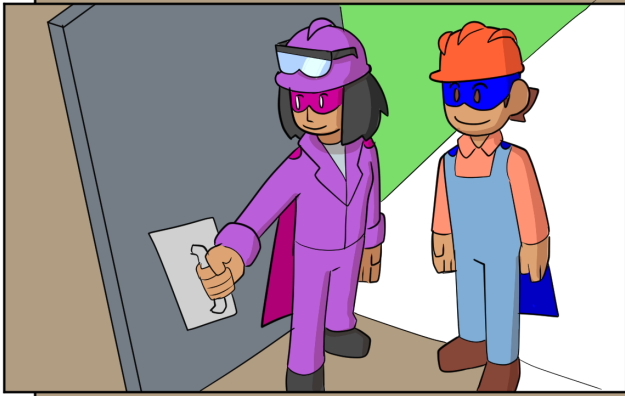
Hey Well Wanda, How ya doing?

Great but I just got a low-level alert from the Standoff Well well. I know you want to learn more about wells, so I thought maybe you'd like to come along.

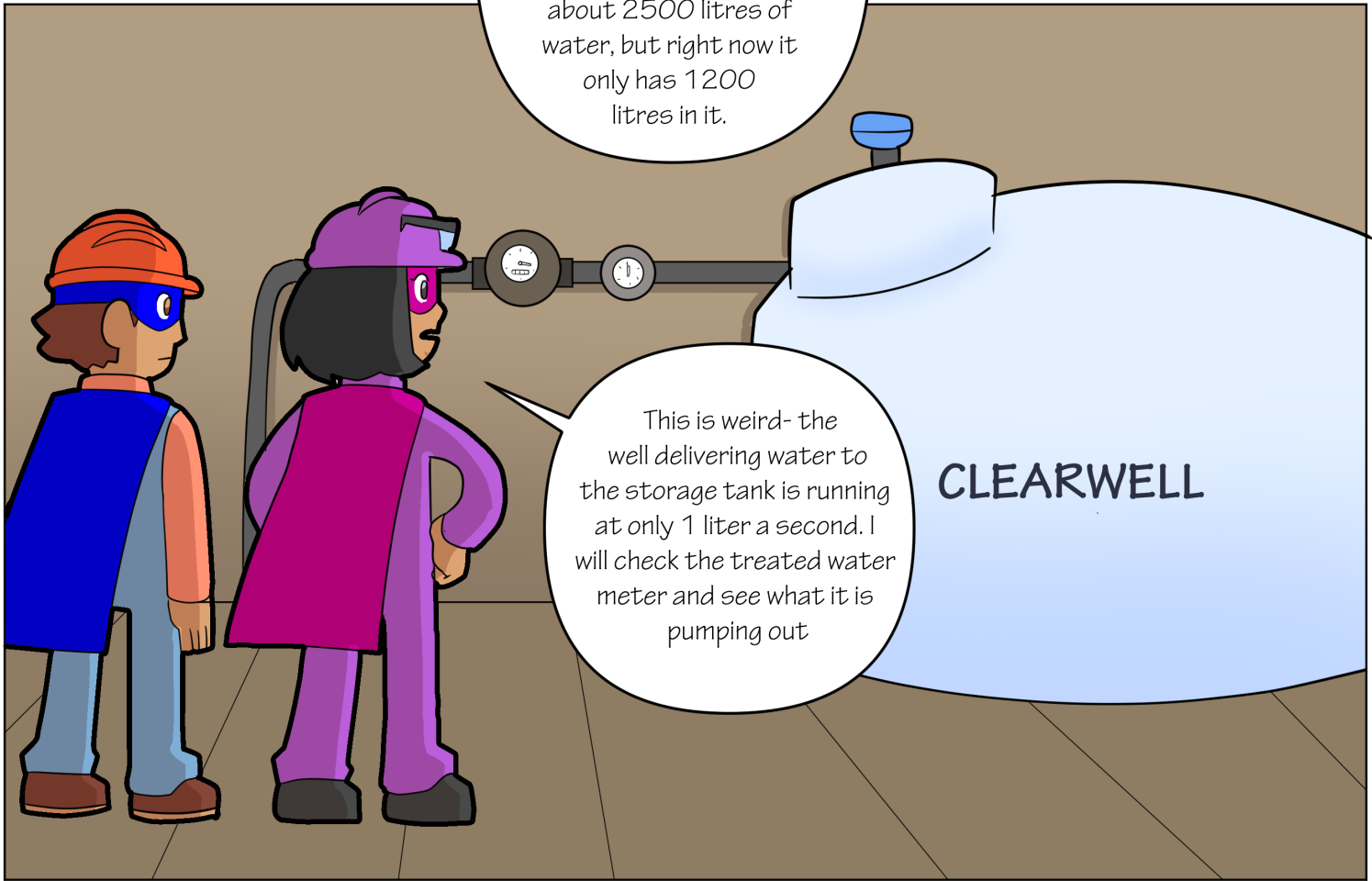
For sure! I can be ready in 15 minutes.







This alarm is showing that the clearwell, which is a plastic storage tank in the pumphouse, has dropped to a low-level condition. They usually hold about 2500 litres of water, but right now it only has 1200 litres in it.



This is weird- the well delivering water to the storage tank is running at only 1 liter a second. I will check the treated water meter and see what it is pumping out

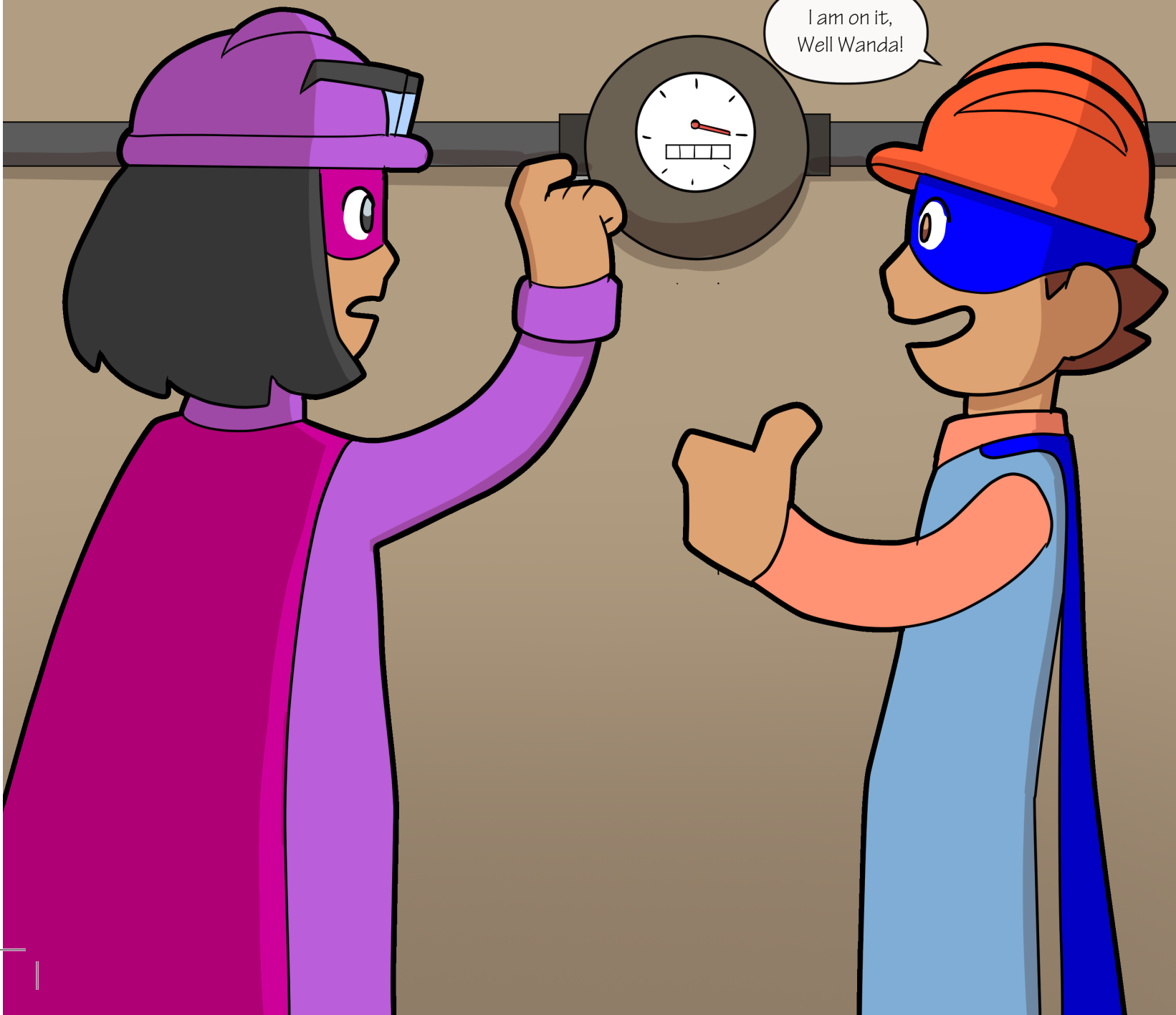
CLEARWELL



The water is going out at 4 liters a second and being delivered at 1 liter a second. That means that the people are using the water faster than it is being made.

We need to check that there are no water leaks to the houses. If you check the Badger and the Paul families houses, I can check the other 3. We also need to look at their water lines and check to see that there isn't water coming out of the ground.

I am on it, Well Wanda!







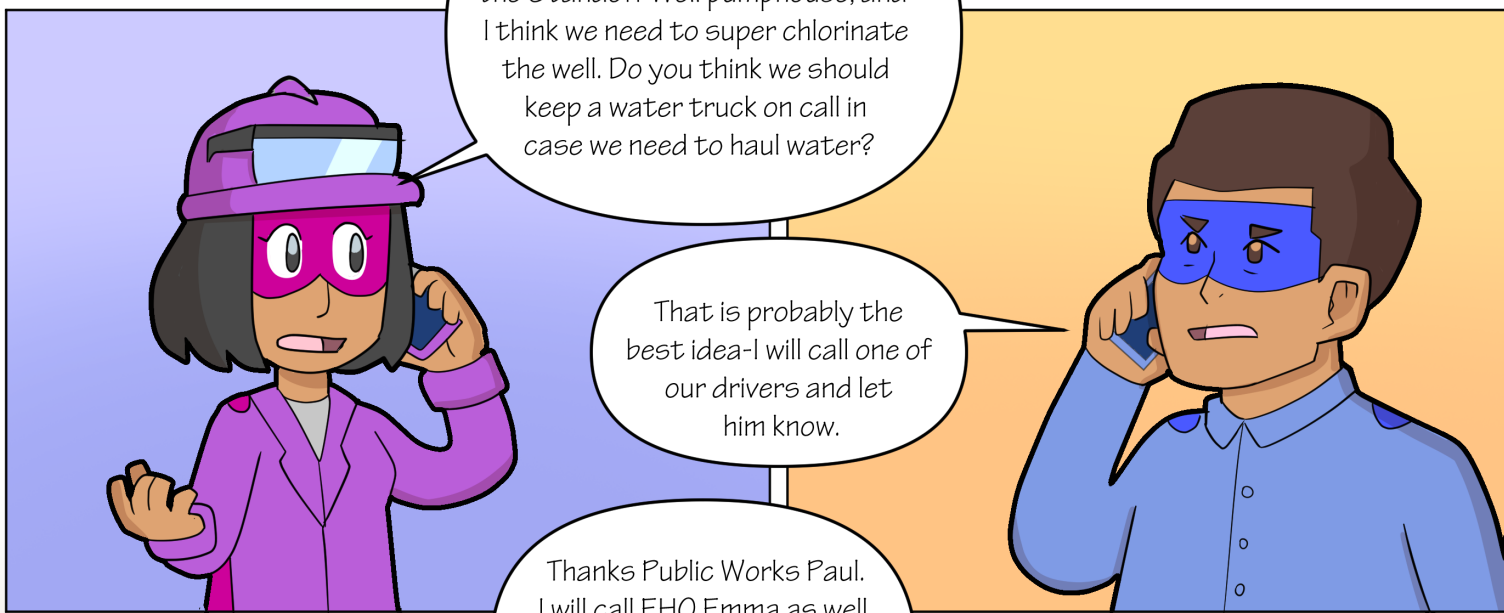


Why does he need to know?

The pressure looks fine here. I think we should super chlorinate the well to clean the screen before calling in a hydrologist. I just gotta call Public Works Paul and let him know what we are doing before I shut off the well.

Just in case we need a water truck.

Afternoon Paul, we got some pressure issues at the Standoff Well pumphouse, and I think we need to super chlorinate the well. Do you think we should keep a water truck on call in case we need to haul water?



That is probably the best idea-I will call one of our drivers and let him know.

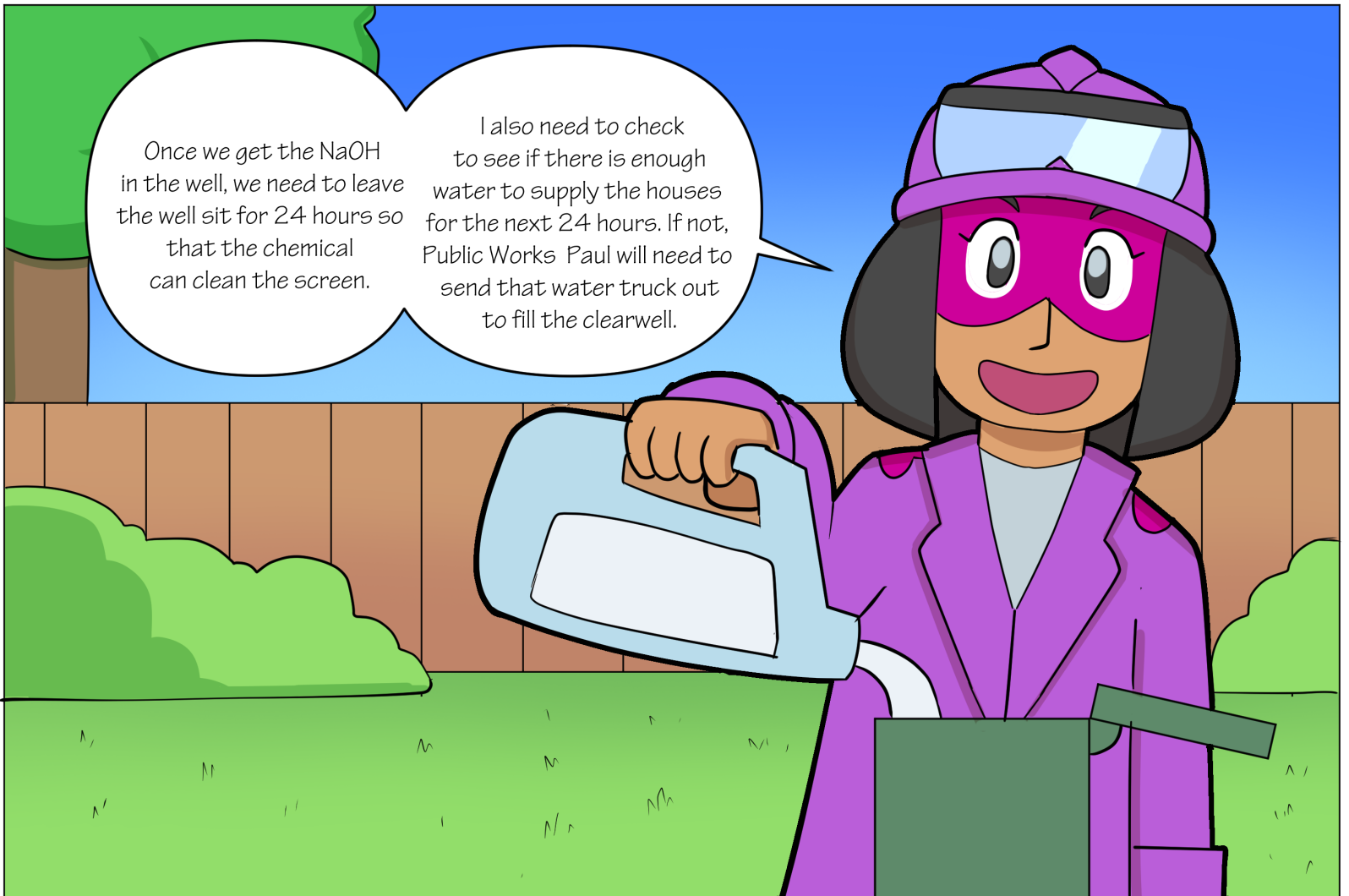
Thanks Public Works Paul. I will call EHO Emma as well. We need to make sure the water is safe to drink-that there aren't any bad bacteria in it.

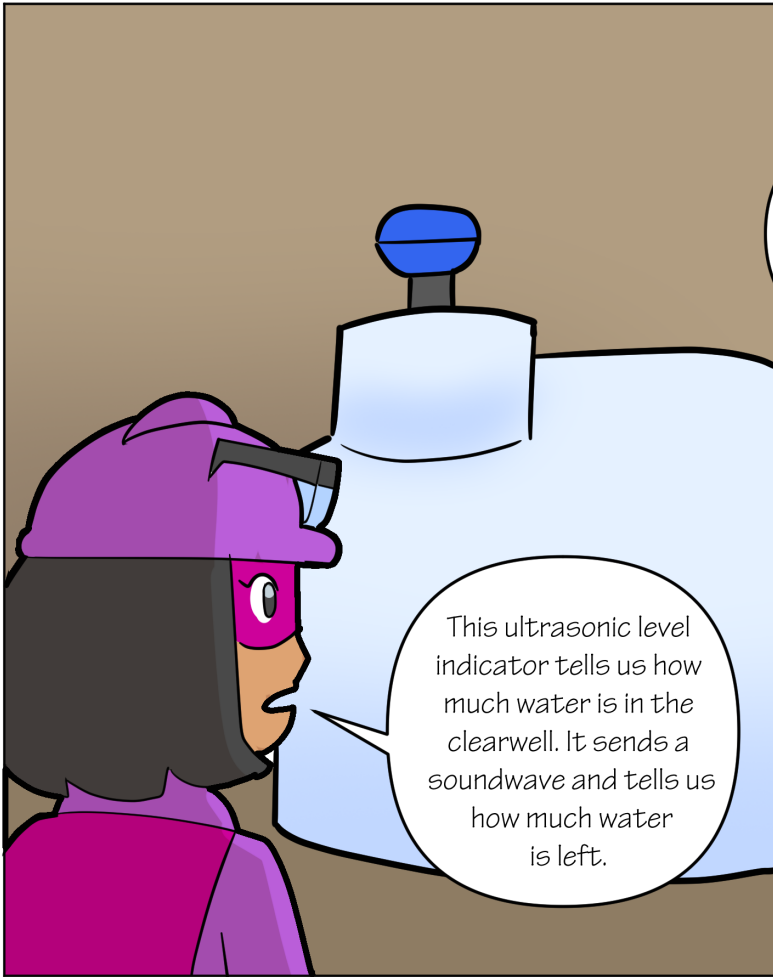


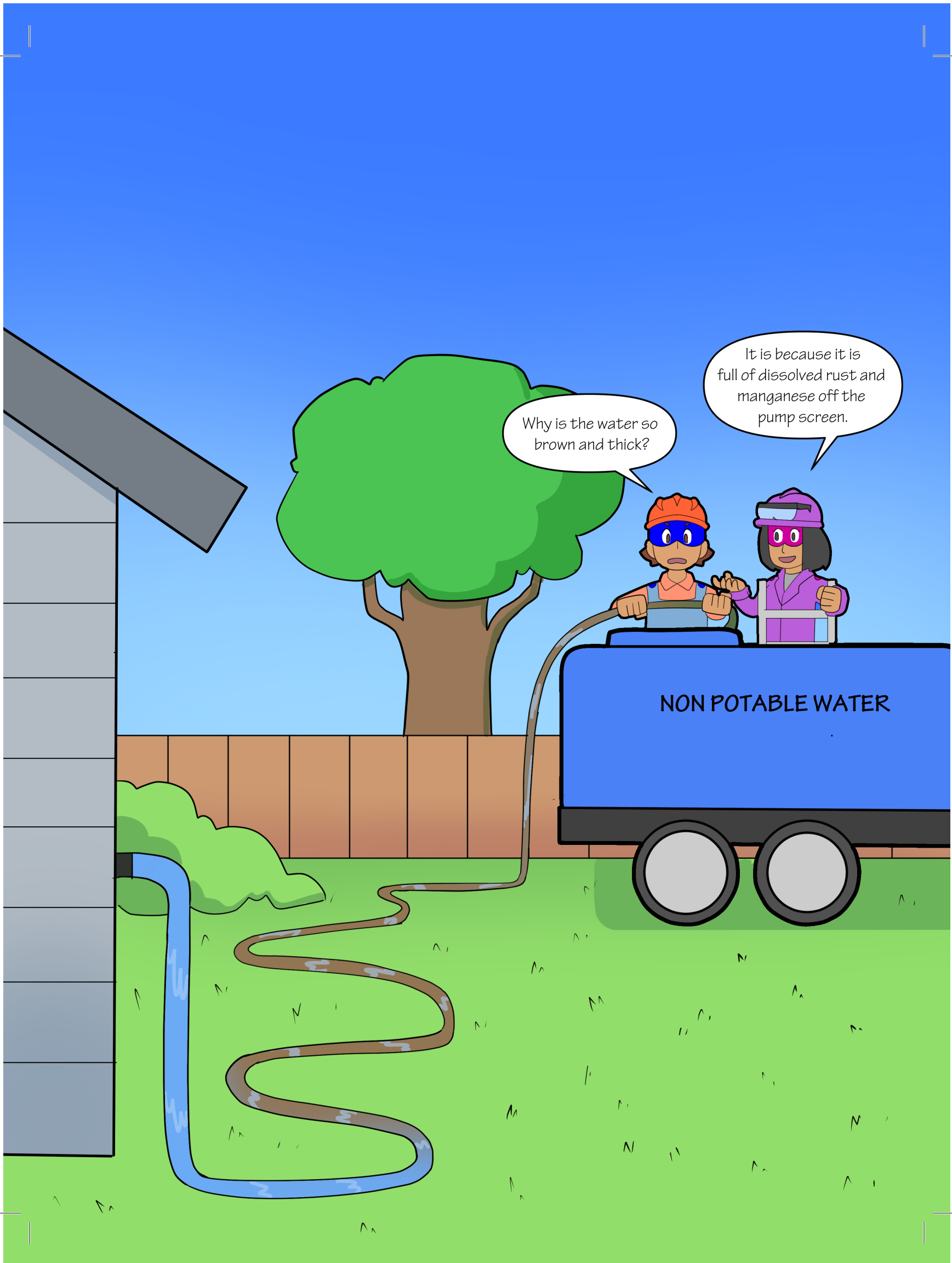
There is so much to learn. I am writing as fast as I can because I want to remember it all.









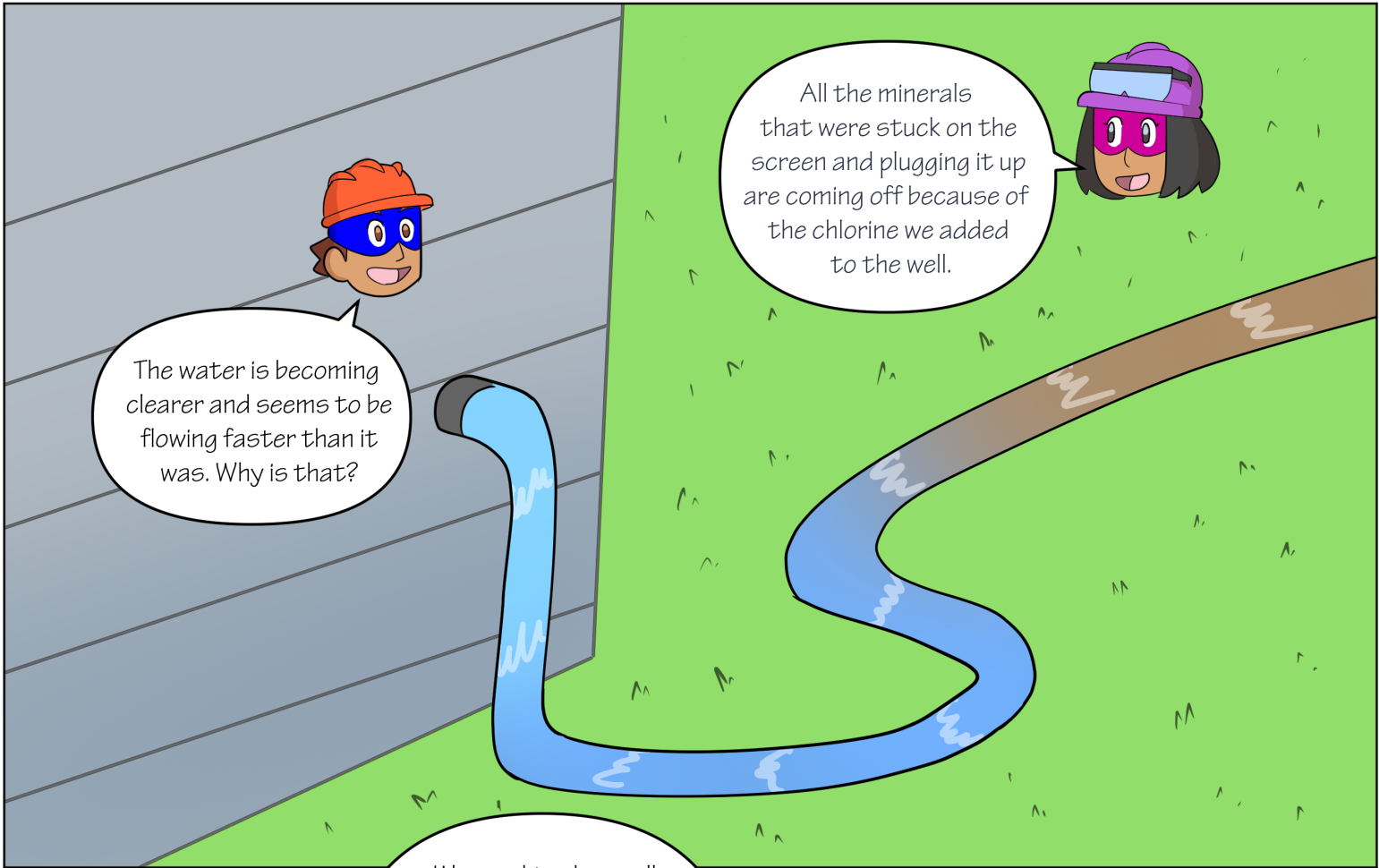


Why is the water so brown and thick?

It is because it is full of dissolved rust and manganese off the pump screen.

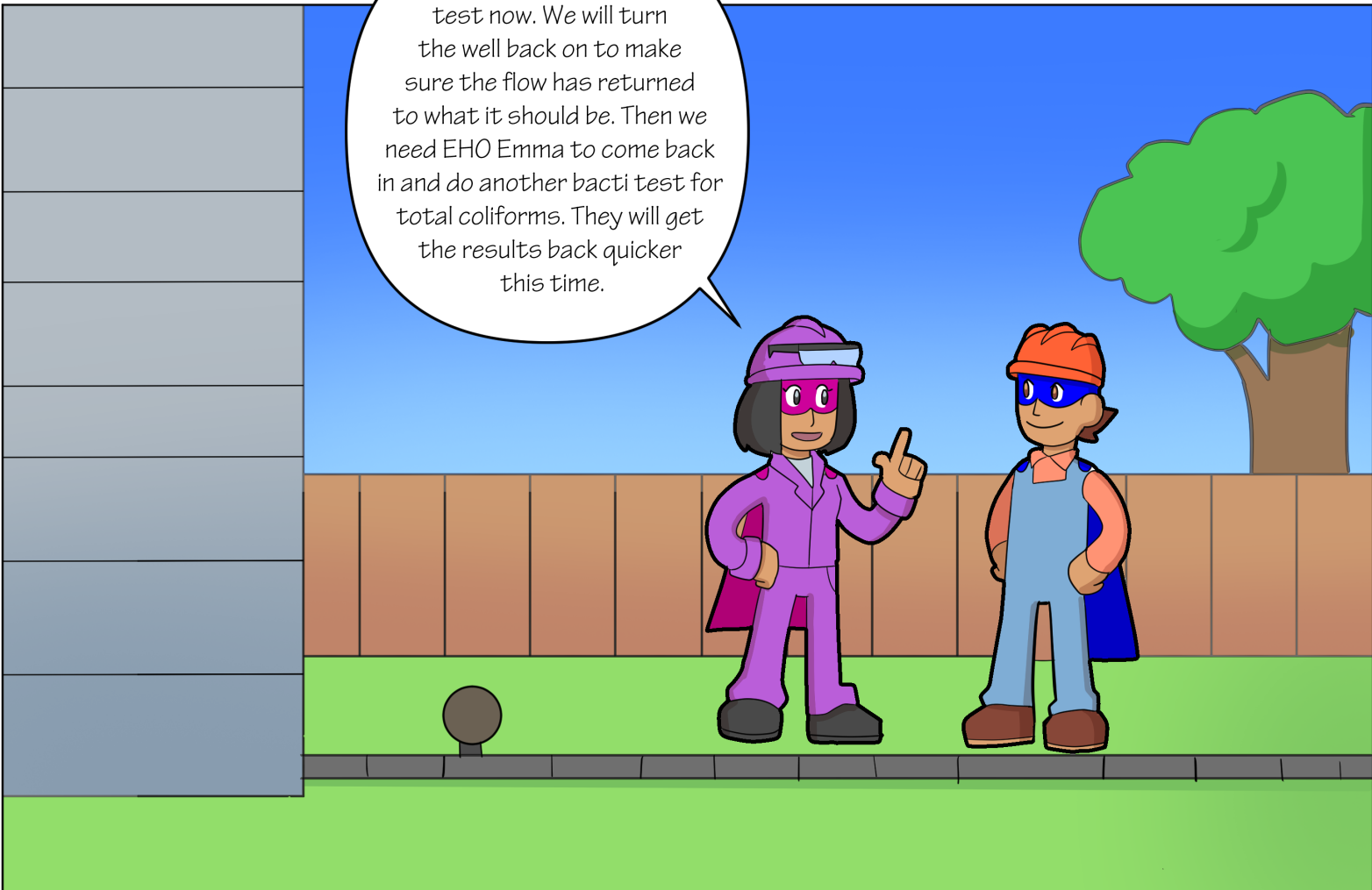
NON POTABLE WATER





The water is becoming clearer and seems to be flowing faster than it was. Why is that?

All the minerals that were stuck on the screen and plugging it up are coming off because of the chlorine we added to the well.

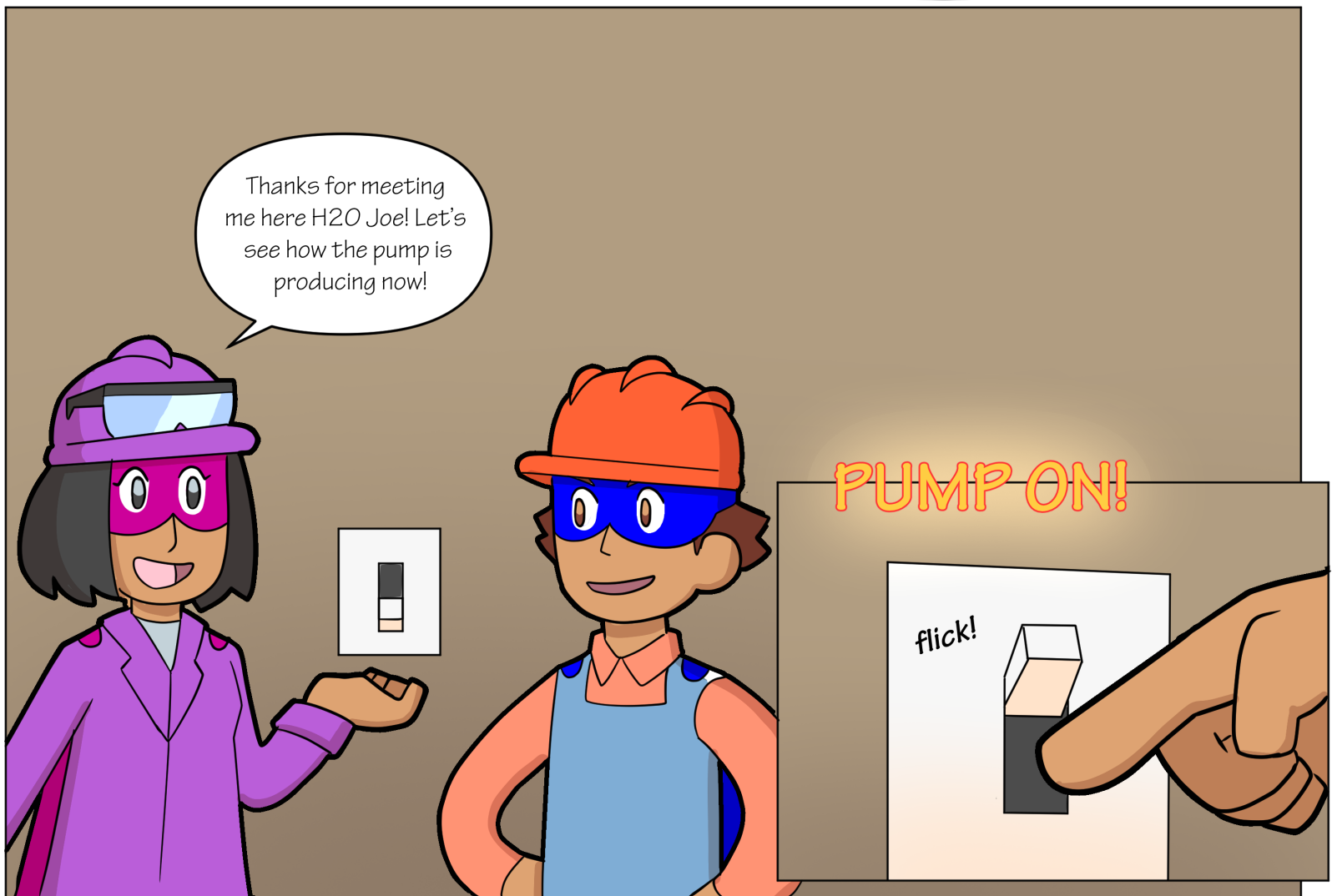


We need to do a well test now. We will turn the well back on to make sure the flow has returned to what it should be. Then we need EHO Emma to come back in and do another bacti test for total coliforms. They will get the results back quicker this time.



Hey Well Wanda.  
I got the results back  
and the water is good to  
drink! I will let the families  
know that the boil water  
advisory is lifted.

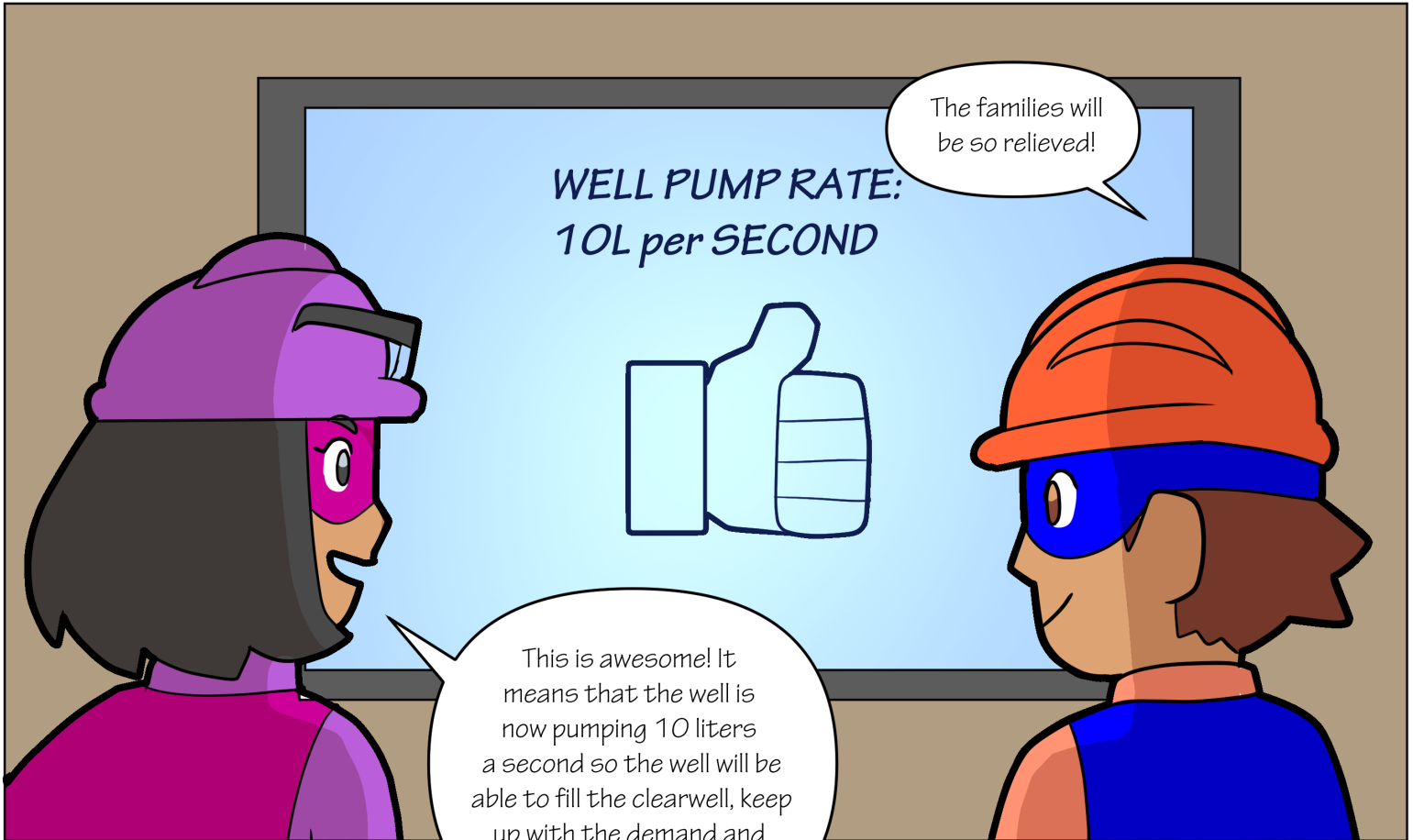
Thanks so much EHO Emma.  
I just have to do an iron, manganese  
and free chlorine test on the water  
to make sure the free chlorine is between  
.5 and 1 mg/litre. If it is between those  
numbers, we know if it good for people  
to use to drink and cook with because  
the chlorine levels are not too high. Then  
I will turn on the well and see how many  
liters per second it is pumping.



Thanks for meeting  
me here H2O Joe! Let's  
see how the pump is  
producing now!

**PUMP ON!**

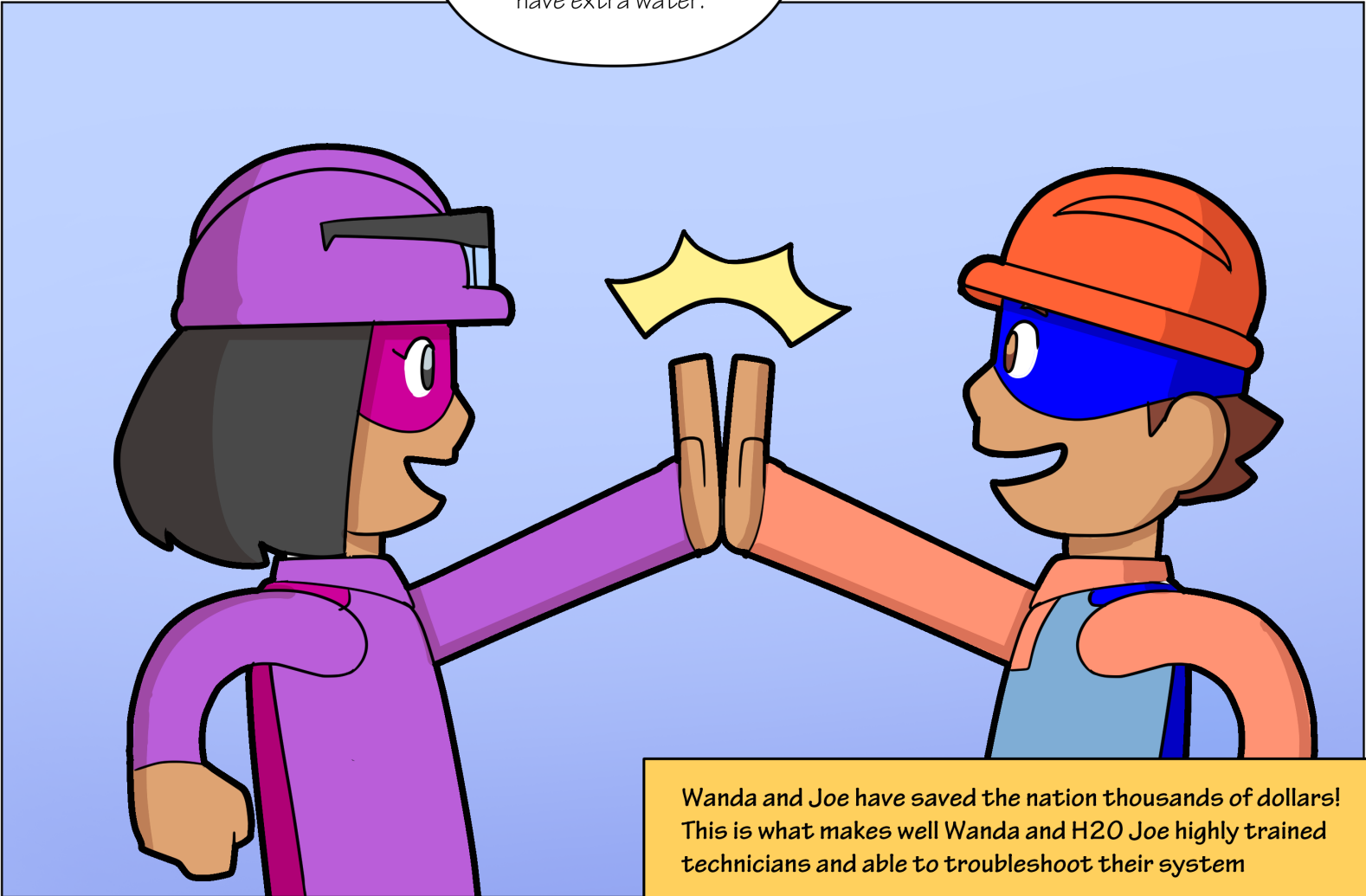
flick!



This is awesome! It means that the well is now pumping 10 liters a second so the well will be able to fill the clearwell, keep up with the demand and have extra water.

The families will be so relieved!

WELL PUMP RATE:  
10L per SECOND



Wanda and Joe have saved the nation thousands of dollars! This is what makes well Wanda and H2O Joe highly trained technicians and able to troubleshoot their system

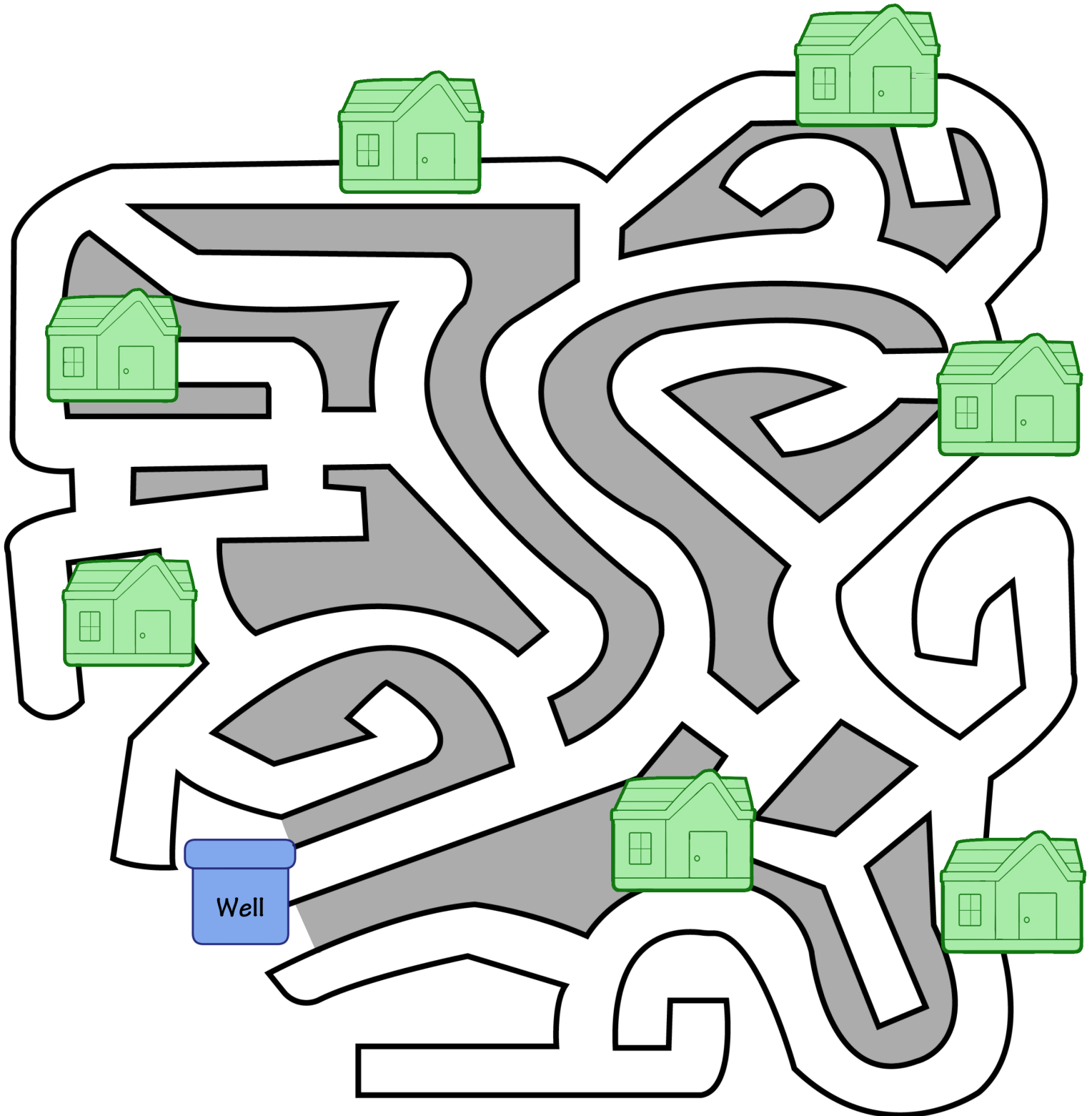


**Tear-Out Page:**  
Well Wanda

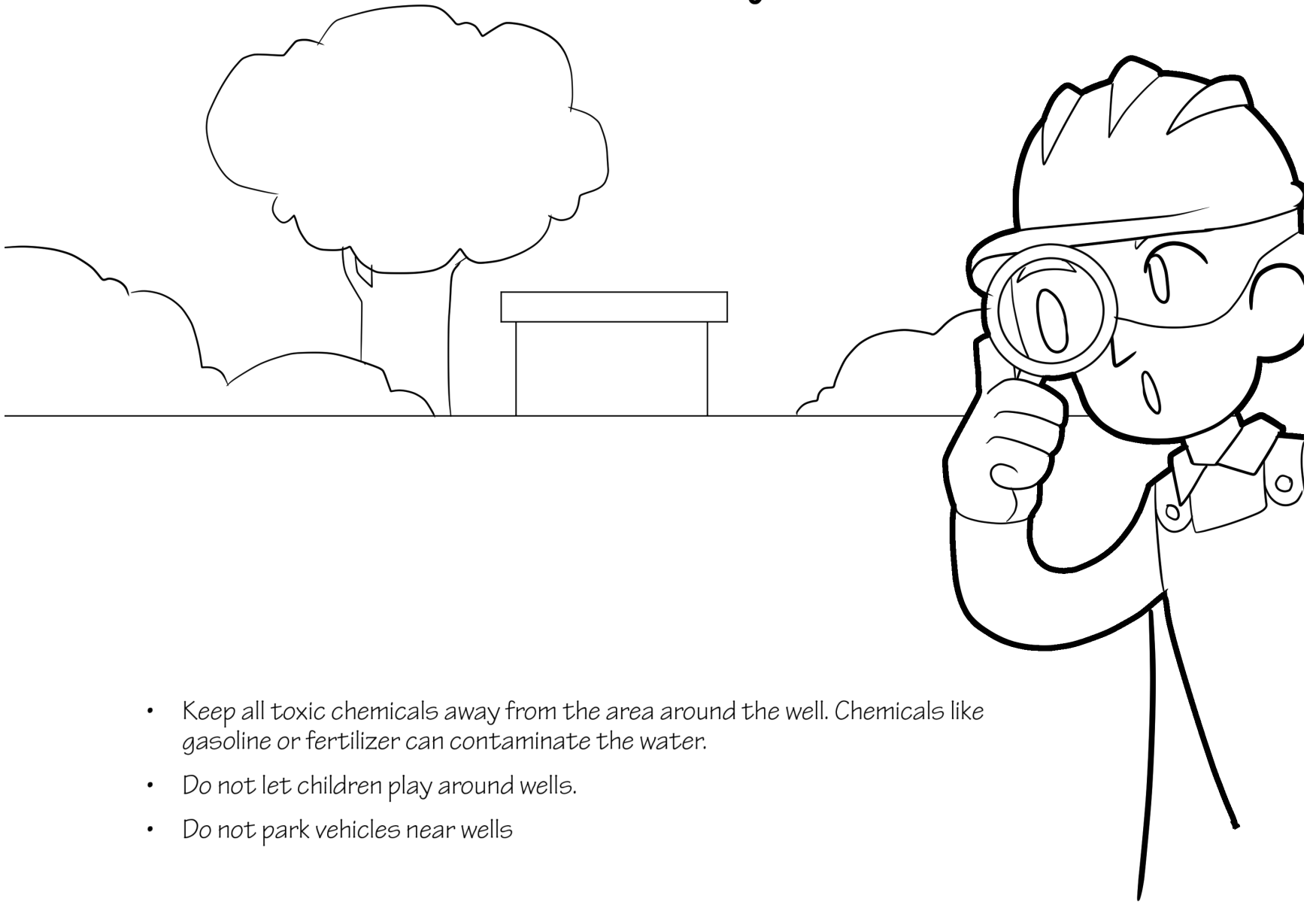


# Home Activity:

Connect all the houses to the well in the water distribution system.



## For Parents and Teachers: Well Safety



- Keep all toxic chemicals away from the area around the well. Chemicals like gasoline or fertilizer can contaminate the water.
- Do not let children play around wells.
- Do not park vehicles near wells

### Fun Facts About Wells

- The oldest well that has been found is 7000 years old and made of wood.
- A well only works if there is an aquifer to supply it with water.
- Today wells need electricity to run the pump that pulls water from the ground.
- Well water usually has more minerals and nutrients in it than city water. It is also fresher because it is coming from an aquifer.
- There are three types of wells: dug (usually dug by hand or a backhoe and lined with bricks or stones), driven (driving pipes into the ground) or drilled (dug by drilling machines and lined with casing)





*See you again for the next H2O Hero adventure!*