

Upstream

Announcer: [0:00] This film is brought to you by 4-H, America's largest youth development organization, in collaboration with Montana State University and TerraPod. Made possible by a grant from Toyota.

[water running]

Suzy: [00:35] Have you ever thought about water and how important it is? I'm Suzy, and I hadn't really thought about it either, until this one day. It started out like any other day, I was sleeping in and my dad was up early working on some home improvement project.

[sound of banging]

Suzy: [00:56] Dad!

[music]

Suzy: [01:05] Like I said, it started out like any other day. After I was done with my shower, I gave my dog his bath. And that's when things started to get a little weird.

[banging]

Suzy: [01:31] Dad! What did you do?

Suzy's Dad: [01:36] Well, there's a little bit of a problem here, so I had to turn the water off.

Suzy: But Petey's all soapy.

Suzy's Dad: [01:42] Why is the dog all soapy, Suzy?

Suzy: I was giving him his daily bath.

Suzy's Dad: What?

Suzy: [01:48] He's all soapy, out in the front yard.

Suzy's Dad: You're giving the dog a bath every day?

Suzy: [01:51] Usually just in the morning.

Suzy's Dad: Suzy, there's a water shortage, you know?

Suzy: [01:57] Water shortage? Was I using too much water? I guess I'd never thought about how much water I used or where that water comes from. My friends didn't know very much either. So I did some research, and devised a plan.

[music]

Suzy: [02:18] I was determined to find out where our water came from. I didn't even know there was a stream running through the city. But no wonder I never knew it was there, because it didn't really run through the city, more like under the city. My dad drove me out to a creek that fed into the river. There was a farmer we knew out there who knew a lot about water.

Farmer: [02:38] Well, my name is Phil, and I pump about 25,000 gallons of water every day out of this creek to irrigate my crops out here.

Suzy: [02:47] Does everyone use that much?

Farmer: [02:48] Well, no. You're average American only uses about a thousand gallons of water a day. That's about 3,000 bottles this size right here.

Suzy: [02:59] That still seems like a lot.

Farmer: [03:00] Well, you've got to remember, everything takes water. It's not just the water you drink or shower with or flush down the toilet. Everything takes water. Like in here, what have you got in your lunch bag here? Ah, this apple. I bet this apple, that's about 20 gallons to grow an apple like that. And this sandwich, I'd say that's about a 200-gallon sandwich right there.

Suzy: [03:27] 200 gallons of water for a sandwich?

Farmer: [3:30] Oh, yeah. You've got to consider, this bread here is made from wheat. It takes a lot of water to grow wheat. I bet there's 10 gallons of water in each slice of bread in this sandwich. Then you've got to consider the cheese. Mmmm, is that Swiss?

Suzy: [03:44] Provolone.

Farmer: [03:45] Well, cheese, first of all you've got to grow the grass to feed the cow, then you've got to water the cow, and then still you get milk, but it takes a lot of milk to make a little bit of cheese.

Suzy: [03:58] What about the meat?

Farmer: [04:00] That's cattle, again. The feed to grow that much beef in this sandwich, it might have taken 100 gallons of water just to grow the feed to make the beef in this sandwich.

Suzy: [04:05] Wow, 200 gallons for a sandwich.

Farmer: [04:10] Yeah, well that's nothing. You know that shirt you have on right there? A shirt like that might take 500 gallons to make a shirt like that. I don't even want to guess how much water it would take to make your camera there. Mmmm, I'm thirsty, what have we got in here to drink? Oh, how about OJ? OJ takes a lot of water to grow the oranges to make this juice. I bet a bottle of juice like this took 40 gallons of water. Would you like some?

Suzy: [04:40] No thanks. I'm going to stick with water. Speaking of water, what about the stream? Do you drink out of it?

Farmer: [04:45] I sure do, as well as everybody else in the city up here. But it comes through the purification plant first.

Suzy: [04:50] Where's that?

Farmer: You just go on upstream, you'll find it.

Suzy: OK.

Farmer: [04:54] Sorry about your lunch here, do you want it back?

Suzy: [04:57] Thanks for the help, Phil, but you can keep my lunch.

[music]

Suzy: [05:01] My next stop was the water treatment plant. I met Rick, the supervisor, and he answered some of my questions.

Rick: [05:07] What we do here is take water that isn't clean enough to drink and make it clean enough to drink. We do that by bringing it in through large pipes and passing it through filters. After it goes through the filters, we add a small amount of chemical that kills any bacteria that are still alive.

Suzy: [05:23] Why do you have to use so much stuff to treat the water? It looked pretty clean.

Rick: [05:27] Most of the things that are in water that make people sick are too small to see, and it takes so much equipment because we process a very large amount of water.

Suzy: [05:36] Where does the water come from to get here?

Rick: [05:39] Our city gets the water from a reservoir. It looks like a natural lake, except there's a dam at one end. The reservoir is low this year, and that's why there's a water shortage.

[music]

Suzy: [05:50] I followed Rick's instructions upstream and pretty soon I came to a dam and a beautiful reservoir. You could tell it was low, but we met a woman named Tammy who was studying the water in the reservoir. She helped me understand some of the reasons why it was low. So we get our water from this reservoir, that goes through a purification plant, but what about the water in the reservoir? Where does it come from?

Tammy: [06:18] It comes from the rain and snow that falls in this watershed.

Suzy: [06:21] What's a watershed?

Tammy: [06:22] A watershed is an area of land where all the water that falls into it drains out from one location. Think of the ridge-tops of these mountains like a bathtub, the rims of a bathtub. Most of the water in the reservoir actually came from up there.

That snow fell last winter, and then it melts in the spring and summer to keep the reservoir full.

Suzy: [06:42] Why isn't the reservoir full now?

Tammy: [06:44] It didn't rain or snow much this year, and the city keeps getting bigger and bigger. Plants, animals, fish, and people need clean, healthy, and plentiful water. We can't control how much water we get, so it's really important that we conserve and use the water that we do have wisely.

[music]

Suzy: [07:04] So water's pretty important. Pretty much everything we care about needs it. It's sort of scary how important water is to the whole world, and how not very many people think about it. I felt pretty good about finally knowing where my water came from, but there was something that was missing, that I didn't think about until I was washing Petey off. All that water we use, where does it go? What happens to it?

[music]

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