

# Well...

## What's All That Drilling About ?



American Ground Water Trust

Illustrated by Rachel Pender

This story is an illustrated narrative about two young children watching the drilling of a home's water well and the installation of a water pump. In dialog with the well drillers, the children develop an understanding of the process and equipment used to make the well and how water is brought from the ground to the house. A glossary at the end of the story adds explanation of water well drilling specific words.

Watercolor paints and a black pen were used for the full-color art.

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# What's All That Drilling About ?

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My name is Jason and I have a sister named Julie. We live in the country. Our house is next to my dad's workshop. Nearly every day my dad is out in his truck working to make sure that the people who live nearby have water for their homes. Most of them get their water from water wells. My dad is a well driller. His job is drilling deep down underground to reach water in the rocks.



It was very early when the phone rang. I knew it was early because it was still dark outside. I heard my dad say, "Okay, Mr. Hutchins, don't worry, I'll be over in a short while."

A few minutes later I saw the flash of the headlights and heard the growly engine of my dad's truck as it went down our driveway.

"Where did Dad go?" I asked Mom at breakfast.

"There was a storm last night and lightning hit Mr. Hutchins' barn. The pump for his dairy cows stopped working and Dad has gone to fix it," she said.

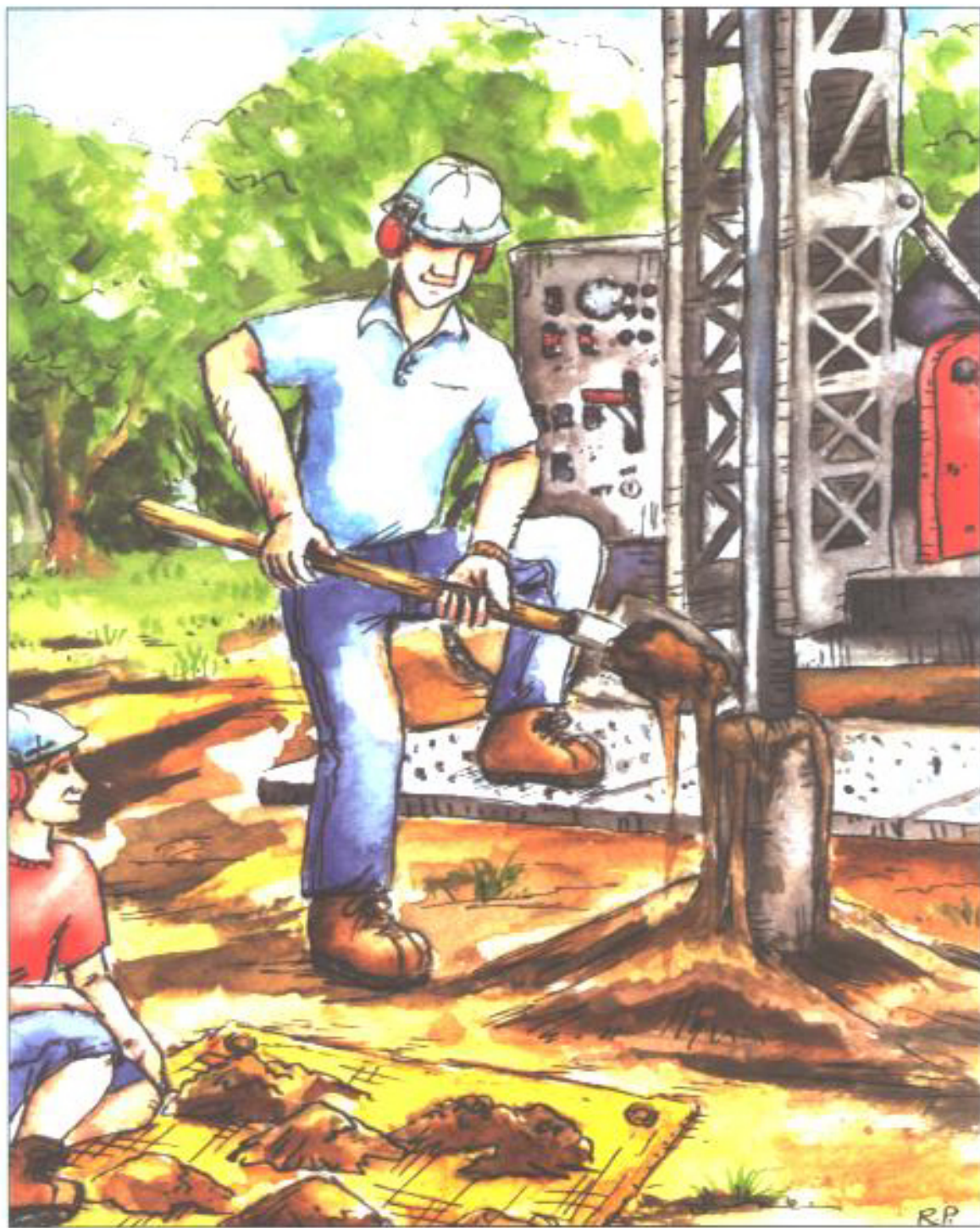
"When will he be back?" I asked. "He said he would take us with him today."

"Oh, don't worry, he will be back in time to take you and Julie with him," said Mom.

We have been out with Dad before, but today we will see Dad and his crew drilling a new water well from start to finish including putting in the water pump. Dad and his helpers, George and Cindy, make wells to bring water to hundreds of the homes and farms around where we live.

We watched as George pulled a lever on the drill rig and the drill rods turned slowly round and we saw dirt begin to pile up as the drill bit went down into the ground. Dad explained that the top layers of the ground were soft but that soon the drill bit would reach hard rock.

George and Cindy stopped the drilling to add another drill rod and then the drilling began again. Every few minutes George used a shovel to remove the muddy sand that was coming up the hole. Dad explained that the drill bit was crushing the rocks into small pieces and that air from the drill was forcing up the pieces of soil and rock from the bottom of the hole.



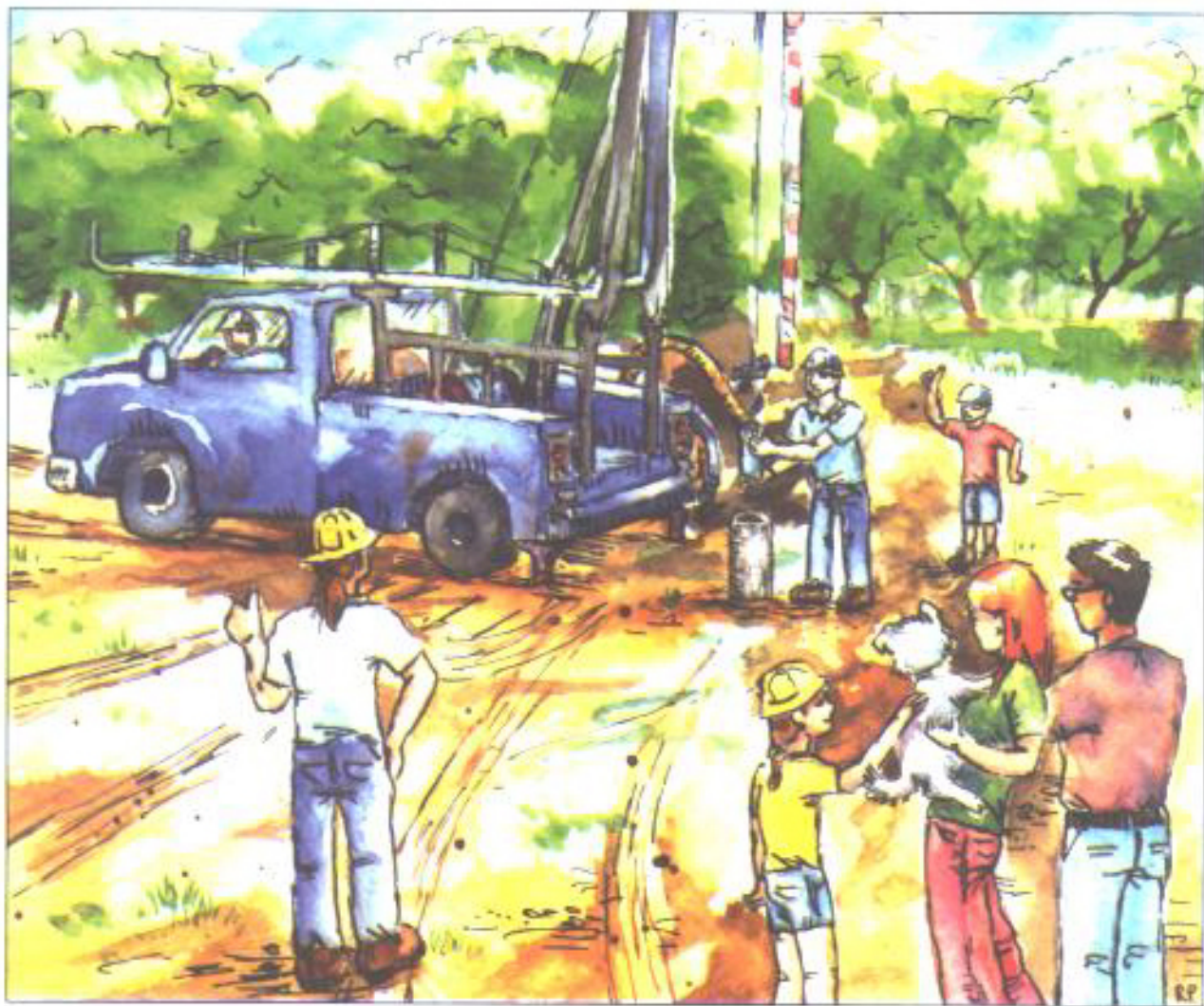




We watched for a while and then suddenly, a spray of water blew up out of the hole.

"Are you going to stop drilling now?" I asked.

"Not yet," said George, "we want to make sure this house has plenty of water. If we drill down deeper, I think there will be a better supply of water."



A shiny, new, silver-colored water pump, long pipe and an electric cable were lowered down into the well by the hoist. When the water pump was down below the water, my dad, George and Cindy set to work to join the pump in the well to the house. The water would go to the bathrooms, the kitchen, the laundry room and to outside faucets for the yard and garden.



After watching the water pump go into the well, we all went to see where the pipe bringing water from the well would go into the new house. In this home, the pipe went into the basement.

"See here," said George, "this water tank stores some of the well water and when you need more, the pump in the well fills it up again. These pipes that are already in the house will take the water to the kitchen, bathrooms and laundry."

As I lay in bed I realized I had learned a lot today. I learned that ground water comes from deep underground and there are millions of homes, like the Johnson's, that have their own water wells. How could we live without water for drinking, cooking, washing dishes and laundry or for watering the garden? I think that drilling wells is a very important job.

As I fell asleep, I thought about all the things a well driller needs to know:

He has to work with machines and engines.

He has to know about soil and rocks.

He has to work with electricity and well pumps.

He has to know about water tanks and pipes in the home.

He must know about testing water to make sure it is safe.

And he might have to help fix a water pump at any time of the day or night because families and farm animals have to have water to drink every day. If there is one thing that we all must have, it is water.

I think when I grow up I will be a well driller just like my dad . . .



## Glossary

**cracks and spaces:** Places where water can fit in underground rocks.

**drill bit:** Very hard metal tool that can grind up rock.

**drill rods:** Metal rods that are joined together as the well gets deeper.

**drill rig:** Machine that uses drill rods and a drill bit to make water wells.

**ear protectors:** Covers to protect a worker's ears from the loud noises of machinery.

**electric cable:** Thick electric wire that sends electricity to the water pump.

**faucet:** An on and off tap that lets water flow into a sink, bath or hose.

**flows to streams:** Water from rain that goes to streams and rivers.

**ground water:** Water found in cracks and tiny spaces in sand and rocks.

**hard rock:** Solid rocks such as granite, sandstone or limestone.

**hard-hat:** Safety hat worn by workers.

**hoist:** A mast on the back of a truck with a strong wire used to lift or lower heavy pumps and pipes.

**laboratory:** The place where water is tested to make sure it is safe to drink.

**lever:** A handle that starts and stops a machine or motor.

**mast:** The tall upright part of the drill rig that holds the drill rods.

**pump truck:** A truck that can lower the water pump, pipes and cable into the well.

**seeps deep down underground:** Water that soaks down and fills up cracks and spaces in the rocks.

**soaks into the ground:** Rain that goes into the soil. Some will be used by plants.

**spudding:** Special word used for the very start of drilling a well.

**top layers:** Top layers of the ground are usually soft soils. Beneath are rocks.

**water pump:** An electric well pump pushes water from the well to the house.

**water well:** A drilled hole with casing, pipes and a water pump.

**water tank:** A place where water from the well is stored.

**welding torch:** Very hot flame used to melt metal and join two pieces of pipe together.

**well casing pipe:** Steel or plastic used in a water well to keep out soil or dirty water.

**well cap:** The special lid used to keep the well and the pump protected.

**well driller:** Person who uses a drill rig to make water wells.

**wrench:** Tool used to make a tight fit by turning a metal nut on a bolt.

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