

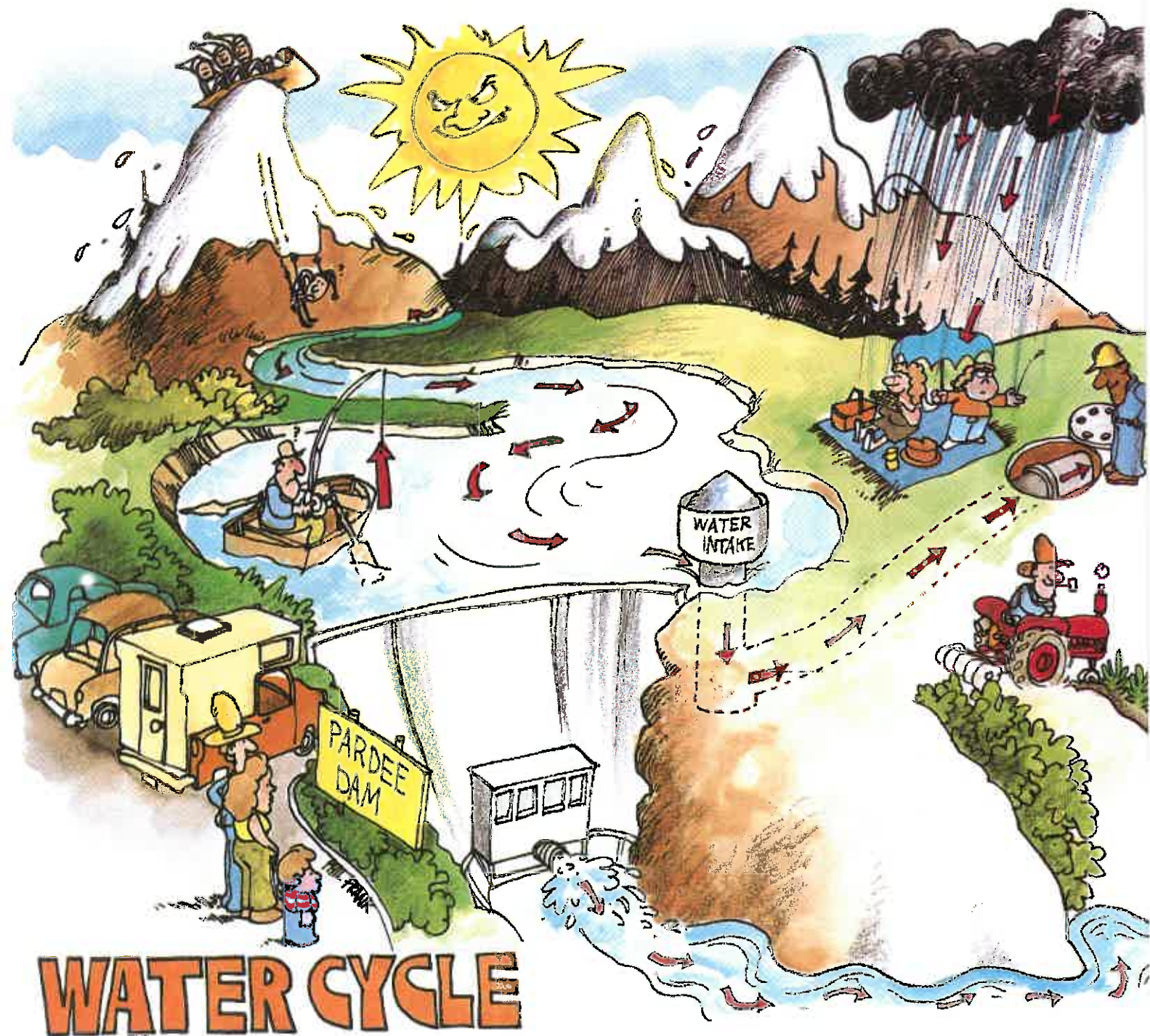
# Water

Where it comes from  
and where it goes!



Prepared by the East Bay Municipal Utility District. Revised: 1988





Most of the water we use begins as snow on the mountains called the Sierra Nevada. In winter, storm clouds form over the ocean and are blown over the mountains. These clouds have water in them that falls to the ground as rain and snow. The snow on the Sierra Nevada does not melt right away. It gets deeper and deeper from many winter storms. The snow usually gets as deep as six feet. Sometimes it gets 10 feet deep.

In the spring, the weather gets warmer and the snow melts. The water from the melted snow will run into creeks and rivers for a long time. The rivers will still have lots of water in the summer.

### Where Our Water Comes From

The East Bay Municipal Utility District, called East Bay MUD or EBMUD, built a dam on one of the rivers of water from the melted snow. The dam is named Pardee Dam. It holds back water on the Mokelumne River to make a big lake called a reservoir. A reservoir is a place where water is saved. The Pardee Dam was built in 1929 to save the pure water from the mountains in Pardee Reservoir for use by people in the cities on the east side of San Francisco Bay.



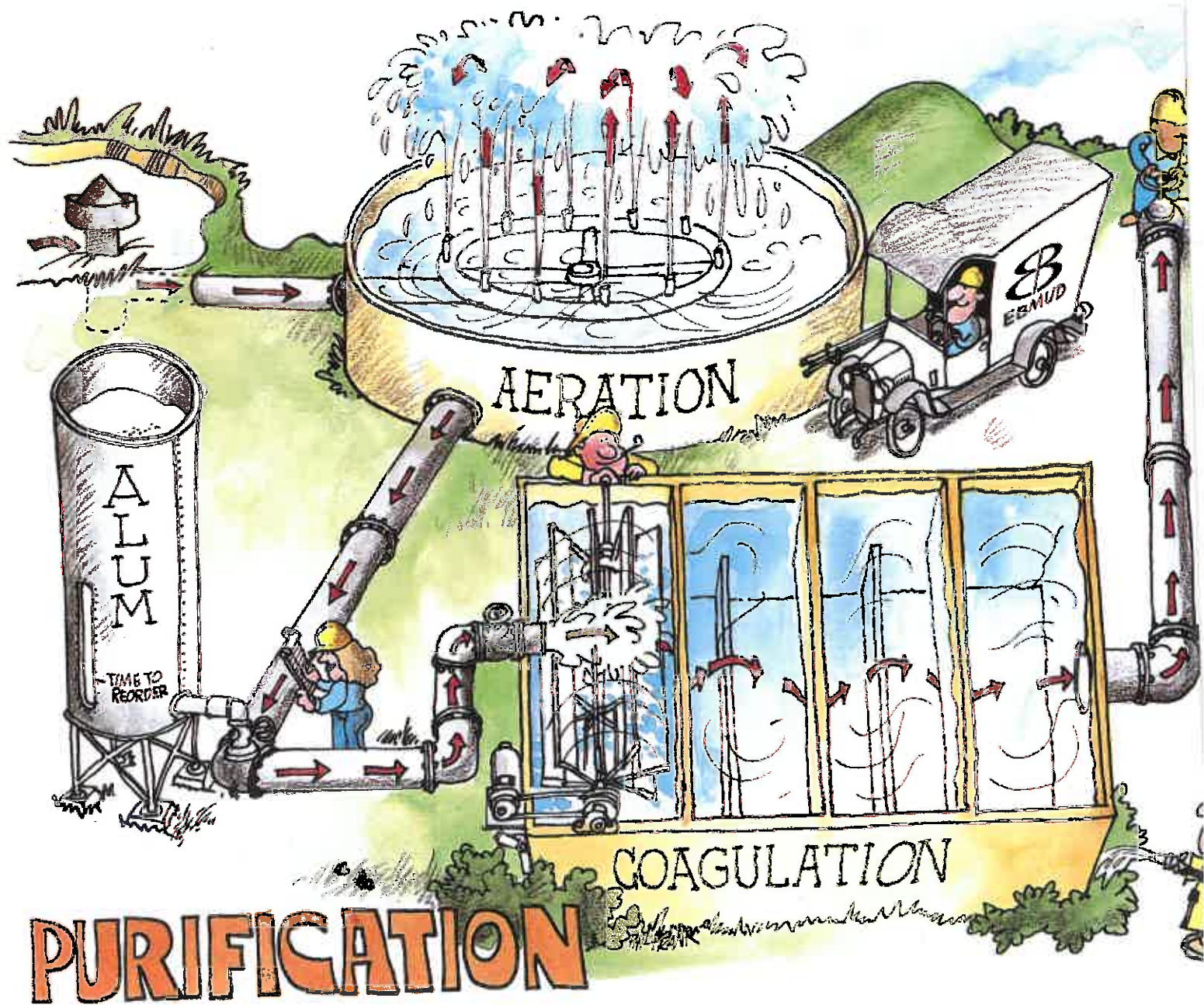


Water from Pardee Reservoir travels to the East Bay cities through three big pipes (called the Mokelumne Aqueducts). The pipes go 90 miles across California. The biggest pipe is seven feet across—big enough for a grown-up to walk in. The water flows through the pipes without being pushed through. It takes two days for the water to go from Pardee Reservoir to the East Bay. Sometimes big pumps push the water through the pipes faster when more water is needed in the East Bay.

When the water gets to the East Bay, it is either cleaned right away at a filter plant (a place where any dirt and germs are taken out of the water) or it is

put into one of five big reservoirs and saved until people need it. These reservoirs save rain that falls in the East Bay, too. Most of the water these reservoirs save for us comes from the Mokelumne River through the big pipes. Because they are big lakes, East Bay MUD lets people sail boats and go fishing on three of the reservoirs in the East Bay. Nobody can swim in them because the water we drink must be clean and healthy. Swimming can put germs in the water.





## How Water Is Cleaned

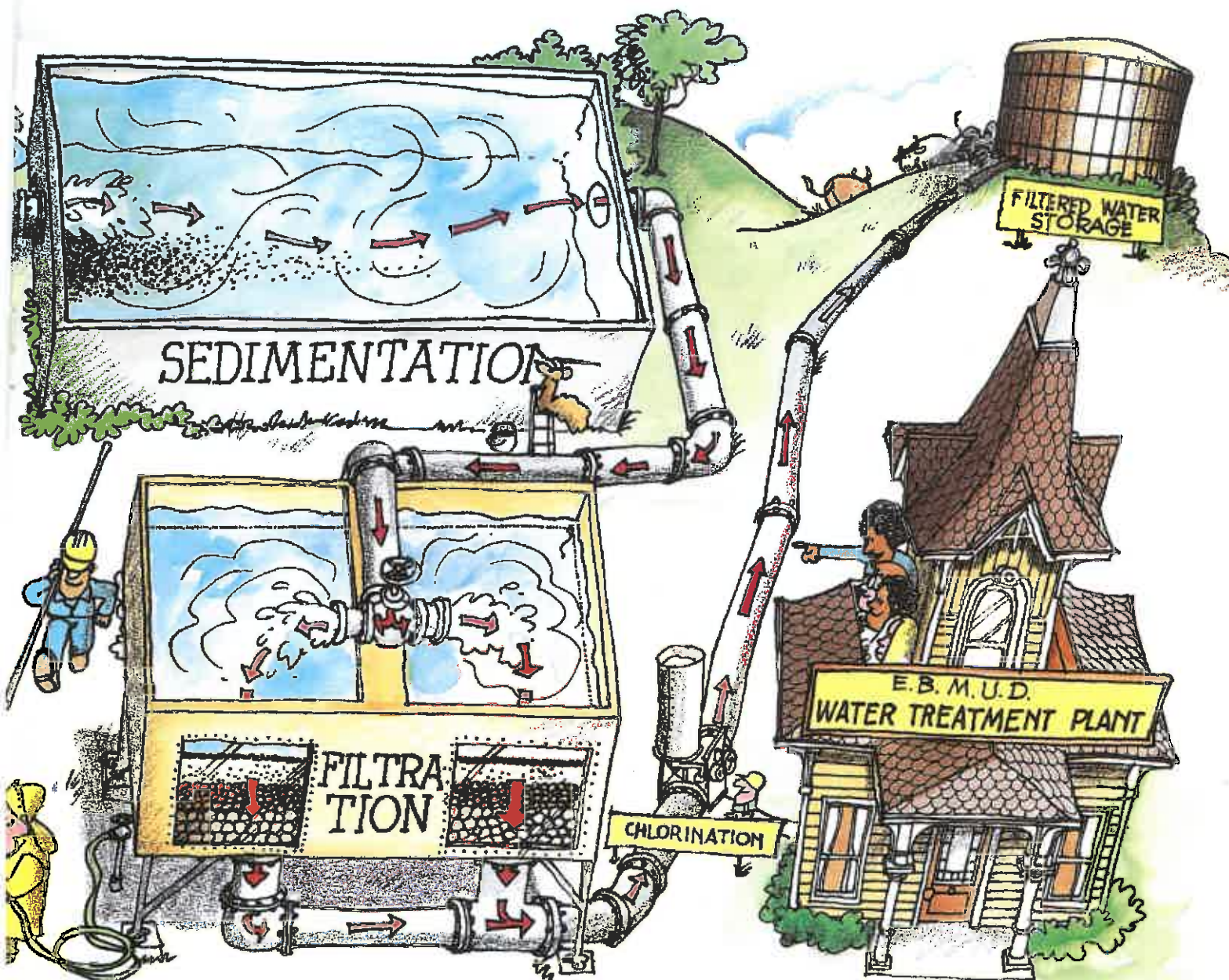
The water EBMUD gets from the Mokelumne River is very pure. But some dirt is still in the water and must be taken out to be sure the water is safe to drink.

Five things are done to the water to make it safe and to get rid of any bad tastes, smells, dirt or germs that could make us sick. The five things are aeration, coagulation, sedimentation, filtration and disinfection.

**Aeration**—Water that comes into the filter plant is sprayed in the air through many small nozzles, like hoses have on them. Aeration looks like a spraying fountain. The water breaks into small drops, which lets gases escape from the water and lets fresh air into the water. This makes the water taste and smell better.

**Coagulation**—In coagulation (making thick) a chemical called alum is added to the water. You can't see the alum in the water. The little pieces of dirt floating in the water stick to the alum in clumps that get heavy enough to sink.





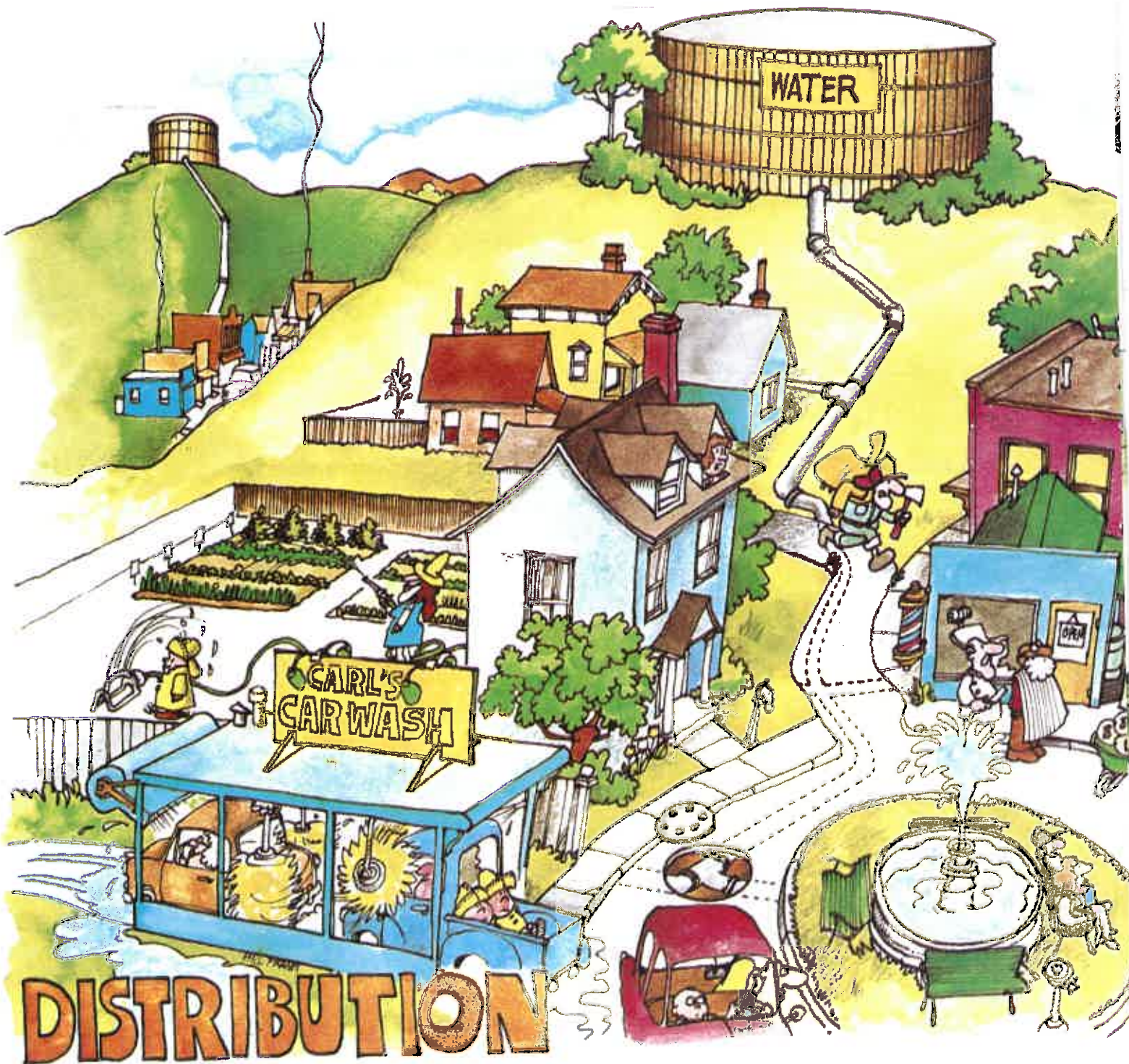
**Sedimentation**—After mixing the alum in the water for about 15 minutes, the water flows into sedimentation basins that look like big pools. The water moves very slowly through the basins so the clumps of alum and dirt called sediment, can sink to the bottom. This leaves clear, nearly clean water on top.

**Filtration**—Filtration takes out any tiny bits of dirt that might still be in the water. It is done by having the water flow through layers of coal, sand and gravel. These layers are the filters, and they trap any dirt left in the water. Very clean water comes out underneath the filters. Filtration is the most important step for getting rid of things in the water.

**Disinfection**—Because some germs can make us sick, a little bit of chloramine is added to the clean water to make sure it doesn't have any germs in it. We can't taste the chloramine that stays in the water.

**Testing**—The water is checked many times every day by scientists at East Bay MUD. Testing helps EBMUD make sure the water is always safe for us to use. All the water from East Bay MUD is clean, and very good and healthful to drink.





## How Water Gets to People

Getting the clean water to people's homes, schools and businesses is a big job. East Bay MUD has to send water to more than one million people in a very big area.

Some people use water at sea level along the Bay shore. Other people use water high in the hills. Some businesses use millions of gallons of water every day. Other businesses and many homes use only a few gallons of water everyday. Some people live close to an EBMUD filter plant. Other people live far away.

East Bay MUD sends water to all these people through more than 3,600 miles of water pipes buried

under the streets. There are 120 pumping stations that push water uphill. About 160 water tanks all around the East Bay hold water that goes through the pipes to our homes, schools and businesses.

People use water every hour of the day and night, so East Bay MUD has to work day and night. Filter plants are always cleaning water. Pumps are always filling water tanks. Water is always flowing through the thousands of miles of pipes so water is there when you need it.







# COLOR ME WASTEFUL!



## CONSERVATION

### Saving Water

We do not have enough water to waste. Sometimes California has droughts (long periods when rain and snow do not fall). When this happens, we may have limits on how much water each of us can use. This is called rationing. It is done to be sure everyone will have some water to use. All living things depend on water to stay alive, just like they depend on air.

There are more houses and companies and people in the East Bay than there used to be. This means we are using more water than we used to. If all of us are careful, we can make sure everybody has water whenever they need it.

Use what you need, and need what you use. Don't waste water.



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