South East Water

healthy water for life

FACTSHEET

Sewage treatment

Have you ever wondered where the water goes once it leaves your home? It goes to a treatment plant to be cleaned. But how is all that waste removed? Find out more!

Where does the wastewater go?

The water you flush down the toilet or wash down the drain is called wastewater or sewage. Wastewater needs to be transported to a treatment plant to be cleaned, which is done by an underground network of pipes, mains and sewage pump stations. Sewage pump stations enable sewage to travel through pipes from a lower level to a higher level, allowing it to continue its journey to the treatment plant even if it needs to travel up steep ground.

What does a sewage pump station look like?

Sewage pump stations are quite deceptive in their appearance as they have equipment below ground level that you can't see. Above ground there is a secure electrical cabinet that houses the power supply and pump controls. There is also a communications pole with an antenna that helps South East Water monitor the sewerage network remotely. Below ground level are the pumps and their associated valves.

Did you know?

There are currently more than 240 sewage pump stations in South East Water's network area to help get the wastewater to the right location.

How does sewage get treated?

Once the sewage arrives at the treatment plant it needs to undergo a number of processes to ensure it is safe for re-use, or release back into the environment.

Stage one: Large objects that should not have gone down the sewer, such as nappies, cotton buds, wood, plastics and gravel are removed by screens.

Stage two: Other solids are allowed to settle to the bottom of the treatment tanks before being removed.

Stage three: Good bacteria, or bugs, are used to decompose or breakdown other wastes in the water. These bugs eat as much of the organic matter as possible and once they are finished they are removed through a clarification process.

Stage four: Water is disinfected in large storage ponds before it is re-used or released back into the environment.

Not so smelly!

Did you know? South East Water reduces potential smells from our sewerage network with the use of various techniques. Some are designed to reduce odours from the underground pipeline, while others involve treating the air before it gets smelly!

Activity time!

Mix two cups of water with a lot of different shaped objects such as food scraps, cotton buds, match sticks and oil. What would you do to remove these objects before tipping out the waste water? What would you do with what you removed?

Delicious diarrhoea

In this activity we make fake poo. We are very lucky that every day our waste is cleanly and quickly taken away from our home by pipes to a sewage treatment plant... this wasn't always the case. You will see by making this delicious treat that we are lucky our waste does not flow down the streets but is cleaned for the water to be recycled or returned to the environment.

This experiment is edible, so make sure you use clean equipment. Warning: Never eat real poo of any kind! You will need:

- 300 mL of cold milk
- a sachet of instant chocolate pudding mix
- ½ cup chopped marshmallows
- ½ cup crushed wafers
- ½ cup shredded coconut
- measuring cup
- large bowl
- whisk
- 2 spoons
- 2 plastic cups for serving

What to do?

1. Pour the milk into the bowl.
2. Add the instant chocolate pudding mix and whisk for two minutes.
3. Add the marshmallows, wafers and coconut. Stir well.
4. Let the mix sit for five to ten minutes to thicken, then spoon it into the cups.
5. Serve immediately.
6. Please remember the fake version we're making here is safe to eat but, like any sugary snack, in moderation.

What's happening?

In this experiment the milk reacts with gelling agents in the powder to create an instant pudding. This means pudding is a type of gel. Gels are a type of colloid, which is a mixture of two or more states – if a substance is a mixture of solids, liquids and gases, it is called a colloid. Gels are an example of solids with liquids through them. Other gels include jelly and glue.

Fortunately for us, instant pudding is a very tasty colloid. We've mixed coconut, crushed wafers and marshmallows in as well to give it a slightly lumpy consistency, like some cases of diarrhoea! The brown colour of the chocolate helps too!

This activity was reproduced with the permission of CSIRO, 'Science by email'.

Want to know more?

More information about South East Water and our sewerage network can be found at **southeastwater.com.au**

South East Water Corporation ABN 89 066 902 547
WatersEdge 101 Wells Street Frankston VIC 3199 Australia
education@sew.com.au southeastwater.com.au

SEW_03/2012