



## Glossary Game: Problem Pollutants

**Sewage**

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# Sewage



## What is it?

Sewage is anything which flows through a sewer including bath water, industrial waste and toilet waste. The waste is carried through a network of sewers from a residence or workplace to a waste water treatment plant. On arrival at the treatment plant the waste is subjected to several processes to remove contaminants and produce waste water that is safe for release into the natural environment.

## Domestic/ Industry



## Becomes a problem when...

Sewers sometimes block as a result of people flushing items they shouldn't down the toilet e.g. nappies or wet-wipes, or letting food waste, grease and fat go down the sink. When this happens, sewers get blocked causing untreated sewage to flood into homes, gardens, roads and watercourses. Besides being very smelly, untreated sewage is full of bacteria and diseases which can harm wildlife and humans if it gets into watercourses.



# Slurry

## What is it?

Slurry is a mixture of manure (poo) from animals and water. Farmers collect and store slurry in a slurry lagoon, pit or store in order for it to break down over time into a natural fertiliser which can be spread on their land to fertilise and feed crops.

# Agriculture

## Becomes a problem when...

If a slurry store leaks or slurry is spread onto frozen or waterlogged fields, or overspreading occurs, the slurry can find its way into a watercourse. Slurry is high in ammonia, which is toxic to fish, therefore any slurry entering a watercourse can have a detrimental effect on water quality.



# Milk



## What is it?

A nutrient-rich animal product produced by animals such as cows, sheep and goats.

In its raw, untreated state (fresh from the animal), milk contains natural bacteria and micro-organisms. To kill off any harmful bacteria before we pour it on our cereal, milk is heat-treated at a creamery (a process known as pasteurisation) before being bottled and sold.



## Agriculture/ Transport/Industry



## Becomes a problem when...

Milk spilled on a dairy farm can soak into soil and find its way into the nearest watercourse. Milk can also be spilt when a tanker transporting milk from a farm to a creamery overturns or milk escapes during processing at a creamery. In such instances, milk enters the nearest watercourse through a storm drain (a drain, designed to drain excess rain and ground water from streets, pavements, car parks and roads) or through the soil.

Milk is an extremely polluting substance. In watercourses, the bacteria feed on and break down the milk, increasing in number and using up the oxygen that would otherwise be used by fish and other animals living within the watercourse.





# Silage effluent



## What is it?

Silage is grass or other green plants that have been cut, compacted and stored in airtight conditions, without first being dried.

Farmers cut the grass over the summer months, before baling and wrapping it in airtight material to keep oxygen out, essentially preserving the grass. Alternatively the grass can be stored in large silage pits. Making silage is an important way for farmers to feed their animals over winter and at times when the grass doesn't grow much.

Once stored the grass ferments (breaks down) helping to keep as many of the nutrients (the sugars and proteins) in as possible. Fermentation is carried out by microscopic organisms living in the grass.



# Agriculture



## Becomes a problem when...

Once all the oxygen within a bale of silage or within a silage store has been used up, bacteria start to multiply - good news for the production of silage. However, if fermentation juices (effluent) leak from silage bales or stores, soak into soil and find their way into a watercourse, the bacteria held within the effluent can reduce oxygen levels in the water and consequently harm the fish and other aquatic life.

Silage effluent has a high acidity (pH = 3.5 to 5) making it corrosive to steel and damaging to concrete, which makes handling, storage and disposal a challenge.





# Brewers grain effluent



## What is it?

Beer is a fermented drink made from various types of grain. Brewers grain effluent is a left-over product of producing beer mostly containing left over grain.



## Industry



## Becomes a problem when...

Brewers grain effluent contains a large amount of sugar, proteins and minerals. If brewers grain effluent isn't disposed of carefully there is a risk that it might enter a watercourse, reducing oxygen levels at the expense of the fish and animals living in the watercourse.

Brewers grain effluent is a problem pollutant because on entering a watercourse, the bacteria in the water feed on and break down the effluent. The bacteria increase in number and use up the oxygen that would otherwise be used by fish and other animals living within the watercourse.



