How good is the Drinking Water?

A summary of the results arising from the monitoring of drinking water supplies during 2001

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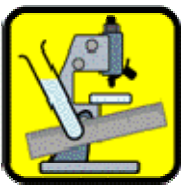

1. Who are we and what do we stand for?

The Drinking Water Inspectorate (DWI) regulates drinking water quality in England and Wales. We were formed following the privatisation of the water industry and operate as an independent body, with technical and support staff experienced in all aspects of water supply. We are dedicated to maintaining standards and protecting public health in the provision of safe drinking water. Our mission is to be recognised as the effective guardians of drinking water quality.

2. What do we do?

Our main job is to check that the water companies in England and Wales supply water that is safe to drink and meets the standards set in the Water Quality Regulations. Inspectors carry out what we call technical audits of each water company. These have two main parts:

- an annual assessment of the quality of drinking water supplied by the companies
- inspections of the individual companies

The assessment of water quality is based on information received regularly from the water companies. This information includes the results of the millions of tests made each year to see if the water meets the standards. Tests are carried out at water

treatment works, in the distribution systems and at consumers' taps in designated areas of the water supply distribution system called water supply zones. We check the test results against the standards and carry out inspections to ensure that the results are reliable and give a true picture of the quality of the water supplied.

We also investigate complaints from consumers and incidents that affect or could affect drinking water quality. The investigations of incidents can lead to water companies being prosecuted. A leaflet about consumer complaints, investigating incidents and prosecutions called 'Problems with your drinking water', can be obtained free of charge from us.

3. What happens in an inspection?

A typical inspection may cover many things such as checks to ensure that:

- sampling procedures are satisfactory
- samples are tested by trained staff using accurate methods
- the right numbers of tests are carried out
- correct results are entered in the public record
- appropriate water treatment processes are used
- treatment processes and the water distribution system are operated and maintained satisfactorily
- consumer complaints are handled properly

If there is aproblem, action is taken by us to ensure that the particular water company rectifies the situation.

4. What are the standards?

The Government has set legal standards for drinking water in the Water Quality Regulations. Most of these standards come directly from an obligatory European Community Directive and are based on World Health Organisation guidelines. The UK has adopted additional standards to ensure an extremely high quality of water in England and Wales. The standards are strict and generally include wide safety margins. There are standards for:

- bacteria
- chemicals such as nitrate and pesticides
- metals such as leadthe way water looks and how it tastes

A European Community Directive which came into force in 1998 contained new standards and some changes to existing standards. New regulations were made at the end of 2000 to implement this new Directive. These regulations required the Water Companies to meet the new standards by the end of 2003. The improvements needed to meet these new standards have been agreed between the DWI and the water companies.

5. How good is our drinking water?

Drinking water is of a very high quality.

In 2001 the water companies in England and Wales carried out approximately 2.8 million tests on drinking water samples of which 99.86% passed. This is better than in 2000 and continues the trend of continuous year on year improvement. The charts below show the percentages of tests, which passed the standards and also the number of tests, which failed to meet the standards.

6. What about the failures to meet the standards?

Each failure is assessed: some are considered trivial or unlikely to happen again, so no further action is needed. Some failures will be rectified by improvements already being carried out by water companies on treatment works and distribution systems.

We require the water companies to address any remaining failures by committing to immediate improvements. As part of the inspection process, a check is made to ensure that required improvements are carried out in a timely and appropriate manner.

7. What about bacteria in drinking water?

Almost all untreated water contains bacteria, although these are not necessarily harmful. Disinfection kills bacteria in water. Chlorine is used to disinfect drinking water and has been used successfully for almost one hundred years. Water companies check the effectiveness of disinfection and possible deterioration in the mains i.e. following a burst, by looking for harmless bacteria. If these are found, the water companies always investigate immediately. Consumers may be advised to boil water as a precaution while investigations are being carried out. In 2001, the standard for bacteria was met in 99.83% of water supply zones. This is similar to the result achieved in 2000

8. What about pesticides?

Traces of pesticides can be found in some drinking water. When found, the levels are very low, are not harmful to health and are usually the result of pesticide usage by farmers, gardeners and highway authorities. Where necessary, water companies have been installing treatment to remove pesticides from drinking water. In 2001, 99.99% of over 750,000 tests carried out met the standard.

9. What about lead?

Lead in the environment comes from a variety of sources and may be present in air, food or water. Lead can have a slight effect on the mental development of children and may also be a factor in behavioural problems. In drinking water it comes mostly from lead pipes that may be in people's houses. Where necessary, water companies treat water to prevent it picking up lead from pipe work. There is a separate leaflet that gives advice on how to reduce exposure to lead from drinking water, this may be obtained free of charge from the DWI. In 2001, the standard for lead was met in

95.44% of water supply zones compared with 94.29% in 2000. New and more stringent standards have been set for lead. An interim standard has to be met by 2003, and a final standard by 2013. Water companies are now working towards meeting these tighter standards.

10. What about nitrate?

Nitrate comes from fertilizers and too much nitrate can sometimes be harmful to very young babies. However, a safety margin built into the drinking water standards for nitrate so that even if it is breached, babies' health is unlikely to be harmed. Where necessary, water companies have been taking action to control nitrate levels in drinking water. In 2001, the standard for nitrate was met in 99.6% of zones, which is about the same as that achieved in 2000.

11. What about iron?

Iron can discolour water and this discolouration is often a source of consumer complaints. Iron occurs naturally in many water sources, but may also be derived from the corrosion of iron mains. Any discolouration of water by iron is unlikely to be harmful to health.

The standard for iron was met in 85.03% of water supply zones in 2001. This is better than in 2000 when 83.8% of zones met the standard. The position will improve further as water companies have major refurbishment programmes in hand to replace or reline corroded mains. These improvement programmes will take a number of years to complete, with the worst affected areas being given priority.

12. What about *Cryptosporidium*?

Cryptosporidium is a micro-organism found in man and animals in many parts of the world. It can cause a disease called cryptosporidiosis. Water can be a source of the organism as can food, milk, contact with animals, particularly lambs and calves, other infected persons and swimming pools. In infected animals it multiplies in the gut forming tiny spores called oocysts, which are then excreted in faeces in very large numbers capable of transmitting the infection. Oocysts can survive for months in clean water or moist cool soil.

In humans, cryptosporidiosis is a diarrhoeal illness usually lasting about two weeks from which most people fully recover. It is not very common. However, in people who are severely immunocompromised, the disease becomes more serious, and such people should always boil all water before drinking, whether tap or bottled.

Much has been learned about Cryptosporidium in water in the last few years. In 1999, the Government introduced new regulations for improving water treatment and minimising the risk of Cryptosporidium contaminating drinking water. These regulations required water companies to assess each of their water treatment works for risk from Cryptosporidium. From April 2000, the companies were required by law to monitor the effectiveness of the treatment at those sites that were identified to be

potentially at risk. Water supplied from these sites has to meet a specific treatment standard for Cryptosporidium. During 2001 water companies fulfilled the regulations to carry out continuous monitoring at the relevant sites. There have been no known outbreaks of cryptosporidiosis in relation to drinking water in England and Wales. Regulation of Cryptosporidium in drinking water in England and Wales is now the most advanced in the world, bringing strong public health protection. DWI experts offer advice and give lectures on Cryptosporidium in different countries around the world.

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