

1 Parameters and Standards of the Water Supply (Water Quality) Regulations 2016



We continuously monitor the quality of the water leaving our treatment works using on-line instrumentation. We also collect and test samples to ensure the water complies with the water quality standards set in the Water Supply (Water Quality) Regulations 2016.

Testing takes place on samples of water collected from treatment works, the water distribution system and customers' taps at frequencies determined by the Regulations.

Tests: Depending on the type of sample, tests for bacteria, metals, inorganic substances (such as ammonium) or a physical property such as taste will be carried out.

Standards: The Regulations state the compliance level or standard for each parameter. These are the regulatory limits or in most cases the maximum amount of each parameter allowed in drinking water supplies.

Some of these standards are set to help assess the wholesomeness of the water, while others are used to measure other aspects of quality, for example, efficacy of water treatment, the operation of the water distribution network, or the condition of customer plumbing.

Any breach of the standards has to be fully investigated in accordance with the guidance issued by the Drinking Water Inspectorate (DWI).

The DWI monitor our compliance with the standards.

Units: Most test results are measured in mg/l (milligrams per litre, or parts per million) or µg/l (micrograms per litre, or parts per billion). Descriptions of other units are provided below.

The following is a list of the parameters SES Water monitor for, along with their relevant standard.

Key	Description
mg/l	<i>Milligrammes per Litre (one part per million)</i>
µg/l	<i>Microgrammes per Litre (one part per billion)</i>
NTU	<i>Nephelometric Turbidity Units</i>
Pt/Co	<i>Platinum-Colbalt Scale</i>
Bq/l	<i>Becquerels per Litre</i>
mSv/year	<i>Millisieverts per Year</i>
Blue text	<i>Chemical Parameters</i>
Green Text	<i>Microbiological Parameters</i>

2 Parameters and Standards of the Water Supply (Water Quality) Regulations 2016

Parameter	Description	Standard
1,2 - dichloroethane	A chemical used in industrial solvents that can be detected in trace amounts within groundwater. If necessary, this chemical can be removed by water treatment.	3µg/l
Acrylamide, Epichlorohydrin & Vinyl Chloride	Found in polyacrylamides which are used to help remove impurities from raw source waters during the water treatment process. No testing is carried out for this parameter, instead, polyacrylamide dosing is controlled to restrict the amount used.	0.1µg/l
Aluminium	Can naturally occur in raw waters and can be removed in the water treatment process. Aluminium salts can also be used to help remove impurities from the source waters.	200µg/l
Ammonium	Can naturally be found in raw waters. Ammonia can also be added as part of the treatment process to help keep chlorine, used for disinfection, in the water.	0.5mg/l
Antimony	Not normally found in raw waters. If detected in drinking water, likely sources include solders and brass fittings within the domestic plumbing system.	5µg/l
Arsenic	Very low concentrations can naturally be found in some raw water sources.	10µg/l
Benzene	Present in chemicals used within the plastics and petrochemical industry. Can be removed during water treatment if present in raw water sources. Can be introduced into water supplies if plastic pipework runs through ground that has had petrol spilled on it.	1µg/l
Benzo(a) pyrene	Can be introduced into the water by the bitumen or coal tar that used to be used to line pipes. Replacement or lining of these old pipes has limited the presence of this compound.	0.01µg/l

3 Parameters and Standards of the Water Supply (Water Quality) Regulations 2016

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Boron	Can naturally occur in some raw water sources or be introduced via industrial and detergent discharges. Not removed by treatment processes but generally, if detected, the levels are very low.	1mg/l
Bromate	Not normally found in raw water sources. Can be formed during the disinfection process but good control of the process limits its formation.	10µg/l
Cadmium	Very low concentrations can naturally be found in some raw water sources. Can also be introduced by plumbing fittings.	5µg/l
Chloride	Naturally occurs but can also be introduced into raw water sources by the local use of salt, for example road gritting in winter months.	250mg/l
Chromium	Very low concentrations can naturally be found in some raw water sources. If detected in drinking water, source likely to be plumbing fittings.	50µg/l
<i>Clostridium Perfringens</i>	Present in the gut of warm blooded animals. Can be removed from raw water using conventional disinfection processes. Their presence in water means further investigation is required, as they can indicate that historical and / or current faecal contamination may be present.	0/100ml
Colony Counts after 3 days at 22°C	Of no specific health significance but help to determine the general microbiological quality or cleanliness of the water.	No Abnormal Change in No./ml
Colour	Naturally occurring and often yellow / brown due to organic material being present in the raw water. Colour can easily be removed during the water treatment process.	20mg/l Pt/Co Scale
Conductivity	Measurement of the amount of dissolved inorganic material in water.	2500µS/cm at 20°C

4 Parameters and Standards of the Water Supply (Water Quality) Regulations 2016

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Copper	If detected, source most likely to be domestic copper pipes and fittings.	2mg/l
Cyanide	Very low levels can naturally occur in some raw water sources.	50µg/l
<i>E.Coli</i>	Present in the gut of warm blooded animals. Can be removed by the disinfection part of the treatment process. Detection in drinking water requires further investigation as it suggests that faecal contamination may be present.	0/100ml
Enterococci	Present in the gut of warm blooded animals. Is removed in the disinfection part of the treatment process. Its presence in drinking water requires further investigation, as it indicates that faecal contamination may be present.	0/100ml
Fluoride	Naturally occurs in raw water sources. Sutton and East Surrey water do not add any fluoride to protect against dental decay.	1.5mg/l
Hydrogen ion (pH)	Gives an indication of the acidity of water. pH 7 is neutral. Values below 7 are acidic and values above are alkaline. Slightly alkaline values are preferable to protect metallic pipework and fittings from corrosion.	6.5 – 9.5 pH
Iron	Naturally occurs in raw water supplies and can be removed in the water treatment process and can be present in water supplies due to the corrosion of iron pipework. Iron salts can also be used to help remove impurities from raw source waters.	200µg/l
Lead	If detected, source most likely to be lead solder, pipes or fittings.	10µg/l
Manganese	Can naturally occur in raw waters and can be removed in the water treatment process. Occasionally deposits of manganese dioxide within water mains can also be a source of detections.	50µg/l

5 Parameters and Standards of the Water Supply (Water Quality) Regulations 2016

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Mercury	Very low levels can naturally occur in some raw water sources.	1µg/l
Nickel	Very low concentrations can naturally be found in some raw water sources. If detected in drinking water, source likely to be plumbing fittings.	20µg/l
Nitrate	Naturally occurs, but can also be introduced if fertilisers enter the water table. High raw water levels can be reduced by blending with sources that contain lower levels of nitrate	50mg/l
Nitrite	Can be present in the environment but more commonly formed if ammonia is added as part of the disinfection process. Careful control of the ammonia dose and efficient turnover of water helps limit its formation.	0.1mg/l in water leaving treatment works 0.5mg/l at customer taps.
Pesticides (Organochloride)	Include, Aldrin, Dieldrin, Heptachlor and Heptachlor Epoxide. No longer used in the UK but may still be present in the ground to which they were applied. If present they can be removed as part of the water treatment process.	0.03µg/l
Pesticides (All Other Individual)	Can be found in raw waters due to both agricultural and non –agricultural use. Levels can be reduced or removed as part of the water treatment process.	0.1µg/l
Pesticides (Total)	The sum of the individual pesticides detected.	0.5µg/l
Polycyclic Aromatic Hydrocarbons (PAHs)	Can be introduced into the water by the bitumen or coal tar that used to be used to line pipes. Replacement or lining of these old pipes has limited the presence of these compounds. The standard relates to the sum of four names PAH compounds.	0.1µg/l

6 Parameters and Standards of the Water Supply (Water Quality) Regulations 2016



Parameter	Description	Standard
Quantitative Taste and Odour	Tastes and odours can both occur naturally and be introduced into water. The sample is measured and the intensity assigned a number, zero being no taste or odour detected.	Acceptable to consumers /No abnormal change in number.
Radioactivity – Gross Alpha and Gross Beta	Where present is normally due to naturally occurring radioactive species. Used to calculate Total Indicative Dose (TID). Only carried out at sites assessed as needing surveillance.	α: 0.1 Bq/l β: 1.0 Bq/l
Selenium	Very low levels can naturally occur in some raw water sources.	10µg/l
Sodium	Naturally occurs in raw water sources. High levels may be caused by the use of a domestic water softener.	200mg/l
Sulphate	Naturally occurs in raw water sources	250mg/l
Tetrachloroethene and Trichloroethene	Chemicals used in industrial solvents that can be detected in trace amounts within groundwater. The standard relates to the sum of these two compounds. If required, these two compounds can be removed by treatment.	10µg/l
Tetrachloromethane	A chemical used in industrial solvents that can be detected in trace amounts within groundwater. This chemical can be removed by specialist water treatment.	3µg/l
Total Coliforms	Bacteria naturally widely found in the environment and easily removed during the water treatment process. If detected in drinking water, it does not necessarily indicate that the water is unsafe to drink, but it does mean that an investigation into the efficiency of the disinfection part of the treatment process and/or the integrity of the water distribution system is required.	0/100ml

7 Parameters and Standards of the Water Supply (Water Quality) Regulations 2016



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Total Indicative Dose	A measure of the effective dose of radiation the body receives from drinking water. Calculation only required if the screening values of gross alpha or gross beta are exceeded.	0.1mSv/yr
Total Organic Carbon	Measurement of the organic material in water.	No abnormal change mg/l
Trihalomethanes (THMs) (Total)	Formed when chlorine used in the disinfection process reacts with organic matter in the water. If formed, the level of THMs can be reduced by treatment. The standard relates to the sum of four compounds.	100µg/l
Turbidity	A measure of clarity or cloudiness which is caused by fine particles within the water. An increase of turbidity in water leaving the treatment works signals that parts of the treatment process may need assessing. An increase of turbidity in water at customer taps can be due to trapped air or the disturbance of sediment normally found settled within supply mains.	1 NTU in water leaving treatment works 4 NTU at customer taps.