



Guide to Drinking Water Quality Standards

The descriptions of parameters listed are common to all water companies in England and Wales and have been in force from 1st January 2004.

Due to the nature of Hartlepool water, borehole sourced from the limestone aquifer in the southeast Durham area, it is unnecessary to carry out any special treatments to remove or add elements or compounds to comply with the standards.

We operate a simple disinfection treatment process enhanced only by the addition of a small dose of phosphorous as part of a legal undertaking given by the company to the Drinking Water Inspectorate.

REGULATORY PARAMETERS		
Parameter	Comment	Standard (PCV)
1,2-dichloroethane	A chemical used in industrial processes. Can be found as a pollutant in underground water sources.	3.0 µg/l
aluminium	In some water sources, aluminium occurs naturally. It can be removed from drinking water by water treatment. Water treatment processes may involve the use of aluminium sulphate and polyaluminium chloride.	200 µg/l
ammonium (ammonia and ammonium ions)	Naturally present in some water sources. The presence of ammonia can indicate contamination of sanitary significance. Can be added following disinfection of water to form chloramine to maintain chlorine in the distribution system.	0.5 mg/l (guide value)
antimony	Antimony is very rarely detected in drinking water. Very small quantities may arise from brass tap fittings and lead free solders.	5 µg/l
arsenic	Low levels of this substance may occur naturally in water after it has passed through various mineral deposits and rock strata. The standards are health-related and have a large safety factor built in.	10 µg/l
benzene	Present in the environment, largely because of its use in petrol with subsequent emission from vehicles. May be present in water from industrial and atmospheric pollution. Benzene can migrate through plastic pipework if petrol is spilled nearby.	1.0 µg/l
benzo(a)pyrene	Benzo(a)pyrene belongs to a group of compounds known as polycyclic aromatic hydrocarbons (PAHs). If detected in drinking water, the usual source is as a result of deterioration of coal tar. Coal tar was used many years ago to line water pipes. Benzo(a)pyrene is seldom detected in drinking water as a result of extensive water mains refurbishment and renewal.	0.010 µg/l
boron	Low levels of this substance may occur naturally in water after it has passed through various mineral deposits and rock strata. The standards are health-related and have a large safety factor built in.	1 mg/l
bromate	Bromate is not normally found in raw water. However during disinfection of drinking water it may be formed due to a reaction between naturally occurring bromide and strong oxidants (usually ozone). Good control of water treatment	10 µg/l

	processes reduce its formation.	
cadmium	Low levels of this substance may occur naturally in water after it has passed through various mineral deposits and rock strata. The standards are health-related and have a large safety factor built in.	5 µg/l
chloride	Chloride can occur naturally in source water and is a component of common salt. The standard is not health-related, but set to avoid taste and corrosion potential. The guide value is assessed as an annual average.	250 mg/l (guide value)
chromium	Low levels of this substance may occur naturally in water after it has passed through various mineral deposits and rock strata. The standards are health-related and have a large safety factor built in. Chromium is rarely found in drinking water.	50 µg/l
<i>Clostridium perfringens</i>	Is a type of bacterium which produces spores and can be present in the gut of warm blooded animals. Spores are particularly resistant to disinfection using chlorine and their presence in drinking water can be used to indicate historic contamination.	0 per 100 ml
coliform bacteria	These bacteria are widely distributed in the environment and provide a sensitive measure of the microbiological quality of the water supply.	0 per 100 ml
colony counts - 2 day at 37°C - 3 day at 22°C	Are general techniques for detecting a wide range of bacteria. They do not have any direct health significance and are used for trending purposes to assess the microbiological quality of drinking water.	No abnormal change
colour	Water should be clear and bright, but natural organic matter may occasionally impart a slight yellowish tint to surface supplies. It can be removed by water treatment. The standard is set for aesthetic reasons.	20 mg/l Pt/Co scale
conductivity	This is a measurement of the mineral salts dissolved in the water. The guide value is assessed as an annual average.	2500 µS/cm at 20°C (guide value)
copper	Copper in drinking water comes mostly from copper pipes and fittings in households. May cause blue/green staining on sanitary fittings. An excess of copper can cause a metallic taste.	2.0 mg/l
<i>Cryptosporidium</i>	Is a parasitic organism which can cause severe gastroenteritis. This organism is particularly resistant to disinfection using chlorine. Any water treatment works which is classified as being at significant risk is continuously monitored for <i>Cryptosporidium</i> .	The treatment standard for continuously monitored works is <1 oocyst per 10 litres*
<p>*Note: The Water Supply (Water Quality) Regulations 2000 (Amendment) Regulations 2007 came into force on 22 December 2007. These regulations removed the standard for <i>Cryptosporidium</i> but instead require water companies to undertake wider assessment to identify whether there is a risk to public health from the water being supplied including from <i>Cryptosporidium</i>. Further information can be obtained from the Drinking Water Inspectorate website at www.dwi.gov.uk.</p>		
cyanide	Low levels of this substance may occur naturally in water after it has passed through various mineral deposits and rock strata. The standards are health-related and have a large safety factor built in. Cyanide is rarely found in drinking water.	50 µg/l
<i>E. coli</i> and Enterococci	These bacteria are found in the gut of humans and warm blooded animals and their presence in water supplies indicates possible faecal contamination. Immediate action is taken if these organisms are detected in drinking water.	0 per 100 ml

fluoride	Occurs naturally in water at varying concentrations. Several sources in the Anglian Water area which contain naturally high fluoride are blended with a low fluoride source before entering supply. Some 20 per cent of Anglian Water's supplies are artificially fluoridated as required by the local Strategic Health Authority as a dental health measure.	1.5 mg/l
gross alpha activity gross beta activity	Both of these are measured as part of the calculation of the Total Indicative Dose (TID) for radiation (see below).	0.1 Bq/l 1 Bq/l
iron	The standard for iron has been set for aesthetic rather than health reasons to minimise occurrences of discoloured (brown/orange) water. Iron is a commonly occurring and natural element in most water sources which can be removed by a simple treatment process. Iron compounds can also be used as a water treatment chemical. Corrosion of old iron water mains is one of the most common sources of iron in drinking water.	200 µg/l
lead	Not present in the water entering supply, but may be dissolved after contact with lead pipework which is sometimes present in properties built before 1970. Anglian Water dose phosphate to water supplies in areas where lead could leach from pipework, but the only permanent solution for householders is replacement of any lead pipework.	25 µg/l to 2013. Then 10 µg/l on and after 25/12/2013.
manganese	Occurs naturally in many waters but is usually removed during treatment. Black deposits of manganese dioxide can cause discoloured water and the standard is set for aesthetic reasons.	50 µg/l
mercury	Low levels of this substance may occur naturally in water after it has passed through various mineral deposits and rock strata. The standards are health-related and have a large safety factor built in. Mercury is rarely found in drinking water.	1 µg/l
nickel	Occurs naturally in very few groundwaters and where necessary water can be blended with sources containing low nickel. A more common source of nickel in drinking water is the coatings on modern taps and other plumbing fittings.	20 µg/l
nitrate	Inorganic fertilisers from agricultural run off are the main source of nitrate in water supplies but it can occur from natural sources. A commonly used method of nitrate reduction is to blend with a low nitrate source, however it can be removed by treatment using an ion exchange process.	50 mg/l
nitrite	Occurs naturally at low levels in the environment. It is sometimes produced as a by-product when chloramine is used as a disinfectant. Careful control of the disinfection process reduces formation of nitrite.	0.50 mg/l (at customer taps), 0.1 mg/l (at water treatment works)
odour / taste	A measure of the aesthetic quality of drinking water. Unusual odours and tastes may indicate a problem which needs investigating.	Acceptable to customers and no abnormal change
PAH (sum of 4)	Polycyclic aromatic hydrocarbons is a group name for several substances present in petroleum based products such as coal tar which was used to line iron mains many years ago. Due to extensive water mains refurbishment and renewal it is now unusual to detect these substances in drinking water.	0.1 µg/l (total of 4 named PAHs)

pesticides	<u>individual pesticides</u> The standard for individual pesticides is set at 1 part per 10,000,000,000 which is in effect a zero standard well below safety levels for the commonly used pesticides. Use on farmlands, highways, railway tracks and in gardens are the main sources of pesticides in water supplies. Compliance with the standards is achieved by treatment of water using granular activated carbon.	0.1 µg/l All pesticides apart from: aldrin, dieldrin, heptachlor, heptachlor epoxide which are 0.03 µg/l where measured
	<u>total pesticides</u> Individual pesticides in the Water Supply (Water Quality) Regulations 2000 are defined as organic insecticide, herbicide, fungicide, nematocide, acaricide, algicide, rodenticide, slimicide and related products. The standard for total pesticides refers to the sum of the detected concentrations of the individual pesticides.	0.5 µg/l
pH (hydrogen ion)	A measure of the acidity or alkalinity of water; pH <7.0 is acidic and pH >7.0 is alkaline. Waters should preferably be slightly alkaline to protect metallic fittings and pipework from corrosion.	6.5 (min)–9.5
selenium	Low levels of this substance may occur naturally in water after it has passed through various mineral deposits and rock strata. Selenium is an essential element and is required as part of the diet.	10 µg/l
sodium	Is a component of common salt and occurs naturally in water after passing through certain mineral deposits and rock strata or in brackish groundwater. Sodium salts are used extensively in the home and in industrial processes. Domestic water softeners regenerated with brine produce water containing an increased concentration of sodium. Always use unsoftened mains water for drinking, cooking and for preparing babies' feeds.	200 mg/l
solvents (sum of 2)	This standard is the sum of the concentration of trichloroethene and tetrachloroethene. The presence of these organic solvents is an indication of industrial pollution. These standards are assessed as annual average concentrations.	10 µg/l for the sum of both
sulphate	Occurs naturally in many source waters after contact with particular mineral deposits and rock strata. The concentrations normally found in drinking water do not represent a risk to health.	250 mg/l (guide value)
tetrachloromethane	The presence of this organic solvent is an indication of industrial pollution. These standards are assessed as annual average concentrations.	3 µg/l
total indicative dose (TID)	Is a measure of the effective dose of radiation the body may receive from drinking water. TID is only measured if the screening values for gross alpha or beta activity are exceeded (see above). Radiation exposure from drinking water is very small.	0.10 mSv/year (guide value)
total organic carbon	Represents the total amount of organic matter present in water.	no abnormal change (guide value)
trihalomethanes (THMs)	THMs are formed by the reaction of chlorine added as a disinfectant with naturally occurring organic compounds in the water.	total trihalomethanes 100 µg/l

tritium	Is a radioactive isotope of hydrogen which occurs naturally in the environment in very low concentrations. Regular monitoring of radioactivity in surface waters is carried out nationally.	100 Bq/l (guide value)
turbidity	This is due to fine particles suspended in the water, causing cloudiness. Turbidity can sometimes arise following burst mains. Sometimes minute air bubbles give the supply a milky appearance but on standing for a few minutes these will clear from the bottom of the glass upwards.	4 NTU at customer taps 1 NTU at treatment works

NON REGULATORY PARAMETERS FOR CUSTOMER INFORMATION

Parameter	Comment	Standard (PCV)
alkalinity	Alkalinity is normally due to bicarbonate salts of calcium and magnesium, but very occasionally sodium bicarbonate may contribute. In the former case the alkalinity is sometimes called the "temporary hardness" as it is removed by boiling.	No standard
calcium	Occurs naturally in water after passage through mineral deposits and rock strata. Calcium contributes to the total hardness of water.	No standard
chlorine free chlorine total	Anglian Water disinfects all water supplies using chlorine. The concentration of chlorine used is carefully controlled and is set to ensure that water is adequately disinfected, while minimising any taste or odour issues for consumers.	No standard
magnesium	Occurs naturally in water after passage through mineral deposits and rock strata. Magnesium contributes to the total hardness of water.	No standard
phosphorus	Occurs naturally in water but can be added during water treatment to minimise the pick up of lead from lead pipework.	No standard
potassium	Occurs naturally in water after passing through certain mineral deposits and rock strata.	No standard
total hardness	Hardness is due to calcium and magnesium salts (bicarbonate, chloride, sulphate and nitrate) dissolved in the water. The harder the water, the more soap is required to produce a lather. Almost all Anglian Water supplies are hard due to the natural geology of Eastern England.	No standard

GLOSSARY

	Definition
PCV	Prescribed Concentration or Value
mg/l	Milligrammes per Litre
µg/l	Microgrammes per Litre
Pt/Co	Platinum/Cobalt
µS/cm	Micro Siemens per Centimetre
Bq/l	Becquerel per Litre
mSv/year	Micro Sieverts per Year
NTU	Nephelometric Turbidity Units