# UNDERSTANDING YOUR WATER QUALITY RESULTS

## Where the water quality standards come from

The water we supply for domestic use or food production must comply with the standards in The Water Supply (Water Quality) Regulations (NI) 2017, which incorporate European Union standards and more stringent UK national standards. These Regulations detail the acceptable levels of certain characteristics, elements and substances allowed in drinking water. Usually, this is a maximum level; but occasionally, a minimum is also set (e.g. pH). This permissible level is known as the Prescribed Concentration or Value (PCV). Some of the regulatory levels are set for aesthetic reasons and not for health (e.g. Colour).

## Where we sample

Samples are taken from our water treatment works, service reservoirs, and taps in customers' homes. Every year, our accredited laboratories carry out nearly 200,000 sophisticated tests to ensure quality standards are met. The Drinking Water Inspectorate (DWI) within the Northern Ireland Department of Agriculture, Environment and Rural Affairs (DAERA) also independently audits these tests and issues a report each year on its findings. DWI ensures that NI Water meets more than 50 legal standards for drinking water quality to match water companies across the rest of the UK. The standards are strict and generally include wide safety margins. They cover: bacteria; chemicals, such as nitrates and pesticides; metals, such as lead; and how water looks and tastes.

## What happens if a test fails?

Sample tests can fail, from time to time, for various reasons. Sometimes, the water in our mains or pipes and in the neighbouring properties is good, but the failure is caused by the householder's own plumbing system. However, we take all failures of these standards very seriously and these are dealt with by a team of specialists. All failures are recorded, investigated and action is taken to resolve the problem. If the test failure is found to be due to the tap or internal plumbing, NI Water will inform the customer in writing of the reason for the failure so that they can take appropriate action.

A copy of the letter is also provided to the Public Health Agency, the local Environmental Health Officer, and the DWI.

All PCV failures are also reported externally to the DWI, respective health boards, Environmental Health departments, the Consumer Council for Northern Ireland (CCNI), Department for Infrastructure Water Policy Unit and the Utility Regulator.

## Units of measurement

The units of measurement used in this factsheet are as follows:

- 1 milligram per litre (mg/l) is one part per million (ppm)
- 1 microgram per litre (µg/l) is 1 part per billion (or thousand million)
- NTU – Nephelometric turbidity units (for turbidity measurement)
- Pt/Co – Platinum-Cobalt units Standard (for colour measurement)
- µS/cm – micro siemens per centimetre (for conductivity measurement)

## Concentration or value

Shown in three ways:

- **Min**(imum), the lowest result during the period.
- **Mean**, the average of the results.
- **Max**(imum), the highest result during the period.
- A '<' symbol means a result was less than the value at which a parameter can be detected.
- A '>' symbol means a result was greater than the range within which a parameter is normally detected.

## Number of samples

- Total taken – the number of samples tested for each parameter
- Contravening – shows the number of samples that exceeded the PCV
- % of samples contravening PCV – the number of samples that contravened the PCV compared to the total number of samples taken expressed as a percentage.

## INDIVIDUAL PARAMETERS/SUBSTANCES

### Hardness (Dishwasher Settings)

Total Hardness is normally caused by dissolved calcium and, to a lesser extent, magnesium in rocks through which the water has passed. In Northern Ireland, our water is predominantly soft to moderately soft or slightly too moderately hard. Hardness means you may have to use more soap when washing as hard water lathers less than soft water. It has not been proven to have adverse effects on health and is safe to drink. There is no standard specified in the current regulations.

Dependent upon the origin and manufacturer of your dishwasher, you may require a specific parameter, such as Clarke degrees (a.k.a. English degrees) or French or German degrees.

GH is general hardness, while KH is Carbonate, or temporary hardness.

### pH (listed under 'Hydrogen Ion')

This is a scientific term used to describe the acidity or alkalinity of a fluid. We need to control the pH of water because:

- if water is too acidic, it may corrode metal pipes in the distribution system
- if water is too alkaline, it may cause deposits to form in the pipes

The standard is to keep water pH levels in the 6.5-9.5range.

### Colour

The colour of drinking water is usually dependent on the presence of naturally-occurring dissolved organic matter. For example, the higher the peat content of a catchment, (e.g. the Mournes Catchment), the higher the level of colour in the raw water. However, colour may also be due to the presence of iron contributed by old cast-iron mains.

- PCV for colour is 20 mg/l Pt/Co.

Sometimes, the water coming out of the tap has a milky or cloudy appearance, which is usually caused by excess air dissolved in the water as micro bubbles. This is not harmful and, if the water is left to stand for a few minutes, it will clear from the bottom upwards (i.e. the bubbles of air rise to the top of the glass and escape).

## Turbidity

Turbidity is caused by very fine insoluble materials that may be present in water. Levels are closely monitored during the treatment processes.

- PCV at the customer's tap is 4 NTU

## Odour and taste

Customer complaints quite often relate to taste and odour. Quality control tests are carried out to measure the level of taste and odour and are performed by a specialist testing panel.

- PCV for each = Dilution Number >0

## Conductivity

Conductivity is proportional to the dissolved solids content of the water and is often used as an indication of the presence of dissolved minerals, such as calcium, magnesium and sodium.

- PCV is 2500 µS/cm at 20°C

## Chlorine (Cl - listed under Free-Residual disinfectant)

Chlorine is added to water to ensure water is free from bacteria. When chlorine is added, not all of it is used up in the process. Some remains as 'free chlorine' to make sure the water remains safe as it passes through the distribution system. No PCV is prescribed for chlorine in the regulations and these levels are set to ensure that a small concentration remains at the end of the distribution system to maintain customer safety.

## E. coli and enterococci

If present, these indicate a possible breach in the integrity of the water supply system. An effective treatment process will kill any organisms present.

PCV standards are:

- 0 /100ml for *E. Coli*
- 0 /100ml for Enterococci

## Coliform Bacteria

These are naturally present in the environment. Their presence may indicate a possible breach in the integrity of the supply system or contamination from the kitchen sink or taps.

## Nitrite and Nitrate ($NO_2$ and $NO_3$)

Normally only trace amounts of these compounds are found in water.

- PCV for nitrite = 0.5 mg $NO_2$/l
- PCV for nitrate = 50 mg $NO_3$/l

## Chloride (Cl)

Chloride in water originates from natural sources such as mineral deposits. It can contribute to taste which may be unacceptable to customers if the standard is exceeded.

- PCV = 250 mg Cl/l

## Fluoride (F)

NI Water does not add fluoride to any water supply in Northern Ireland. Fluoride can occur naturally in some raw water supplies at low levels.

- PCV = 1.5 mg F/l

## Sulphate ($SO_4$)

Sulphate occurs naturally in water and originates from mineral deposits. High concentrations may give rise to taste problems and, in the long-term, damage pipe work.

- PCV = 250 mg $SO_4$/l

## Copper (Cu)

Copper can occur naturally in some water sources and is normally found in low concentrations in drinking water. Any significant amount of copper is likely to come from corrosion of customers' pipes or fittings.

- PCV = 2 mg Cu/l

## Iron (Fe)

This is one of the most abundant metals found naturally in surface and ground waters. After treatment, it is normally reduced to trace concentrations in drinking water. Increased levels can occur due to the corrosion of old cast-iron water mains. There is no known health risk associated with high iron concentrations, but staining of clothing in washing machines can occur. The standard has been set for aesthetic reasons as levels persistently above the standard can give rise to discoloured water.

- PCV = 200 µg Fe/l

## Manganese (Mn)

Manganese occurs naturally in water. The standard is set for aesthetic reasons as black deposits of manganese dioxide can give rise to discoloured water. High concentrations of manganese in tap water may cause discolouration and possible staining of clothing in washing machines.

- PCV = 50 µg Mn/l

## Aluminium (Al)

Aluminium can occur naturally in water within certain catchments. However, aluminium compounds are used in the treatment process to help remove impurities. Any aluminium compounds added during the treatment process are removed before the final treated water leaves the treatment works.

- PCV = 200 µg Al/l

## Sodium (Na)

Sodium occurs naturally in trace amounts in water. High concentrations may impart a level of taste that is unacceptable to customers.

- PCV = 200 mg Na/l

## Lead (Pb)

Lead is not normally present in water sources, but significant concentrations may be present at customers' taps if lead or copper pipes with lead joints have been used in the plumbing system. More information is available here.

- PCV = 10 µg Pb/l

## Trihalomethanes (THMs)

THMs occur in drinking water as by-products of the reaction of chlorine with naturally occurring dissolved organic materials. In drinking water, only four compounds out of the group of THMs have health significance, the most common of which is chloroform. The PCV is based on the sum of the concentrations of all four constituents.

- PCV = 100 µg/l

## Other substances

In addition to those listed and explained above, we also test for substances such as hydrocarbons, pesticides and herbicides, phenols and organic carbon – see below.

| Parameters | PCV | What it means |
|---|---|---|
| Ammonium | 0.5 mg NH4/l | May be naturally present in some waters and is not harmful. |
| Antimony | 5 µg Sb/l | Very low levels of these substances may occur naturally in source waters, but higher amounts could be associated with industrial pollution. |
| Arsenic | 10 µg As/l | |
| Cadmium | 5 µg Cd/l | |
| Cyanide | 50 µg CN/l | |
| Chromium | 50 µg Cr/l | |
| Mercury | 1 µg Hg/l | |
| Selenium | 10 µg Se/l | |
| Boron | 1 mg B/l | |
| Nickel | 20 µg Ni/l | Very low levels may occur naturally in source waters, but higher amounts could be associated with industrial pollution.<br>Nickel may be present in samples taken at customer taps due to construction materials used during manufacture. |
| Benzene | 1 µg/l | Benzene may be introduced into source water by industrial effluents or atmospheric pollution. |
| Polycyclic Aromatic Hydrocarbons - PAH - Sum of four substances | 0.1 µg/l | PAHs may be introduced into source water by industrial effluents or atmospheric pollution. |
| Benzo(a)pyrene | 0.01 µg/l | Benzo(a)pyrene is a polycyclic aromatic hydrocarbon (PAH) that occurs ubiquitously in the environment, as a consequence of incomplete combustion. Elevated levels can occasionally be detected in |

| Parameters | PCV | What it means |
|---|---|---|
| | | drinking water as a result of contact with coal tar pitch linings. |
| Bromate | 10 µg BrO3/l | Can occur as a by-product of the disinfection process or can be associated with industrial pollution. |
| Tetrachloroethene/Trichloroethene – Sum | 10 µg/l | The presence of these organic solvents may be an indication of industrial pollution. |
| Tetrachloromethane | 3 µg/l | |
| 1,2 Dichloroethane | 3 µg/l | |
| Total organic carbon (TOC) | No abnormal change mg C/l | This parameter assesses the organic content of the water. |
| Individual pesticides | 0.1 µg/l | Associated with the use of these plant protection substances within drinking water catchments for weed control by agriculture, industry and local authorities. The standards are set well below the levels which might cause health problems, but levels should be minimised by good practice and appropriate controls.<br><br>We measure the wide range of substances that may be present. |
| Total Pesticides | 0.5 µg/l | |
| Total indicative dose (for radioactivity) | 0.1 mSv/year | These parameters are measured as part of initial screening for radioactivity in drinking water. NI Water sources have been assessed as very low risk. |
| Tritium (for radioactivity) | 100 Bq/l | |

We also carry out extensive monitoring of our supplies for cryptosporidium through sampling of raw and final treated water. **Home-brewers** may be interested in the Calcium, Magnesium, Carbonate, Sodium, Sulphate, Chloride and pH levels of their water supply.

If you cannot locate the information you require, please contact us at waterline@niwater.com.

# 2025 Public Register

**WATER SUPPLY ZONE - ZS0106 - Dunore Belfast North**

**Printed On 30-JAN-2026 : NI Water : Period 01-JAN-2025 to 31-DEC-2025 incl.**

niwater
Delivering what matters

| Parameter | Units | Type | No samples planned for year | No samples taken in year | No samples contraven ing PCV | % samples contraven ing PCV | Concentration or value (all samples) | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Min | Mean | Max |
| 1,2 Dichloroethane | ug/l | S | 8 | 8 | 0 | 0.000 | < 0.120 | < 0.193 | < 0.410 |
| 2,4-D | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.011 | < 0.011 | < 0.012 |
| 2,4-DB | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.016 | < 0.016 | < 0.017 |
| Aluminium | ug Al/l | S | 52 | 52 | 0 | 0.000 | < 3.089 | < 13.992 | 38.000 |
| Ammonium | mg NH4/l | S | 8 | 8 | 0 | 0.000 | < 0.010 | < 0.010 | < 0.010 |
| Antimony | ug/l Sb | S | 8 | 8 | 0 | 0.000 | 0.094 | 0.199 | 0.490 |
| Arsenic | ug/l As | S | 8 | 8 | 0 | 0.000 | 0.180 | < 0.256 | < 0.310 |
| Asulam | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.015 | < 0.015 | < 0.016 |
| Bentazone | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.004 | < 0.004 | < 0.004 |
| Benzene | ug/l | S | 8 | 8 | 0 | 0.000 | < 0.020 | < 0.053 | < 0.150 |
| Benzo(a)pyrene | ug/l | S | 8 | 8 | 0 | 0.000 | < 0.002 | < 0.002 | < 0.002 |
| Boron | mg/l B | S | 8 | 8 | 0 | 0.000 | < 0.038 | < 0.052 | < 0.059 |
| Bromate | ug BrO3/l | S | 8 | 8 | 0 | 0.000 | < 0.500 | < 1.388 | 3.000 |
| Bromoxynil | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.008 | < 0.008 | < 0.008 |
| Cadmium | ug/l Cd | S | 8 | 8 | 0 | 0.000 | < 0.042 | < 0.137 | < 0.300 |
| Chloride | mg Cl/l | S | 8 | 8 | 0 | 0.000 | 22.000 | 23.375 | 25.000 |
| Chlorotoluron | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.003 | < 0.003 | < 0.003 |
| Chlorpyrifos | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.007 | < 0.007 | < 0.007 |
| Chromium | ug/l Cr | S | 8 | 8 | 0 | 0.000 | < 0.260 | < 0.313 | 0.410 |
| Clopyralid | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.010 | < 0.010 | < 0.010 |
| Clostridium perfringens (sulph red) | CFU/100 ml | AS | 32 | 32 | 0 | 0.000 | 0.000 | 0.000 | 0.000 |
| Colony Counts 22 | CFU/1 ml | S | 52 | 52 | 0 | 0.000 | 0.000 | 0.000 | 0.000 |
| Colony Counts 37 (48hrs) | CFU/1 ml | S | 52 | 52 | 0 | 0.000 | 0.000 | 0.000 | 0.000 |
| Colour | mg/l Pt/Co | S | 52 | 52 | 0 | 0.000 | < 4.563 | < 4.563 | < 4.563 |
| Conductivity | uS/cm 20 C | S | 52 | 52 | 0 | 0.000 | 340.000 | 359.231 | 380.000 |
| Copper | mg Cu/l | S | 8 | 6 | 0 | 0.000 | < 0.043 | < 0.378 | < 0.546 |
| Cyanide | ug/l CN | AS | 32 | 32 | 0 | 0.000 | < 5.500 | < 5.500 | < 5.500 |
| Dicamba | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.028 | < 0.028 | < 0.029 |
| Dichlorprop | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.011 | < 0.011 | < 0.012 |
| Diflufenican | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.007 | < 0.007 | < 0.007 |
| Dimethenamid | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.006 | < 0.006 | < 0.006 |
| Diuron | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.006 | < 0.006 | < 0.006 |
| E. coli | CFU/100 ml | S | 132 | 132 | 0 | 0.000 | 0.000 | 0.000 | 0.000 |
| Enterococci | CFU/100ml | S | 8 | 8 | 0 | 0.000 | 0.000 | 0.000 | 0.000 |
| Epoxiconazole | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.005 | < 0.005 | < 0.005 |
| Fenpropimorph | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.008 | < 0.008 | < 0.008 |
| Flufenacet | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.005 | < 0.005 | 0.007 |
| Fluoride | mg F/l | S | 8 | 8 | 0 | 0.000 | < 0.150 | < 0.150 | < 0.150 |
| Fluroxypyr | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.006 | < 0.007 | 0.009 |
| Free - Residual disinfectant | mg Cl/l | S | 132 | 132 | 0 | 0.000 | 0.190 | 0.513 | 0.920 |
| Glyphosate | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.008 | < 0.008 | 0.029 |
| Hydrogen Ion | pH value | S | 52 | 52 | 0 | 0.000 | 7.000 | 7.333 | 7.700 |
| Iron | ug/l Fe | S | 52 | 52 | 0 | 0.000 | < 1.538 | < 6.643 | 37.000 |
| Isoproturon | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.003 | < 0.003 | < 0.003 |
| Lead | ug Pb/l | S | 8 | 6 | 0 | 0.000 | < 0.090 | < 0.093 | < 0.095 |
| Linuron | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.003 | < 0.003 | < 0.003 |
| Manganese | ug Mn/l | S | 52 | 52 | 0 | 0.000 | < 0.642 | < 1.025 | 7.900 |
| MCPA | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.009 | < 0.012 | 0.021 |
| MCPB | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.015 | < 0.015 | < 0.015 |
| Mecoprop | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.011 | < 0.011 | < 0.011 |
| Mercury | ug per l | S | 8 | 8 | 0 | 0.000 | < 0.041 | < 0.041 | < 0.041 |
| Metalaxyl | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.010 | < 0.010 | < 0.010 |
| Metamitron | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.007 | < 0.007 | < 0.007 |
| Metazachlor | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.015 | < 0.015 | < 0.015 |
| Metoxuron | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.008 | < 0.008 | < 0.008 |
| Metribuzin | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.006 | < 0.006 | < 0.006 |
| Nickel | ug Ni/l | S | 8 | 6 | 0 | 0.000 | < 0.625 | < 0.868 | 1.100 |
| Nitrate | mg/l | S | 8 | 8 | 0 | 0.000 | 1.600 | 3.244 | 5.200 |
| Nitrate/Nitrite Formula | | S | 8 | 8 | 0 | 0.000 | < 0.032 | < 0.064 | < 0.100 |
| Nitrite | mg/l | S | 8 | 8 | 0 | 0.000 | < 0.030 | < 0.030 | < 0.030 |
| Odour | Diln No | S | 52 | 52 | 0 | 0.000 | 0.000 | 0.000 | 0.000 |
| Oxamyl | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.002 | < 0.002 | < 0.002 |

# 2025 Public Register

**WATER SUPPLY ZONE - ZS0106 - Dunore Belfast North**

**Printed On 30-JAN-2026 : NI Water : Period 01-JAN-2025 to 31-DEC-2025 incl.**

Delivering what matters

| Parameter | Units | Type | No samples planned for year | No samples taken in year | No samples contravening PCV | % samples contravening PCV | Concentration or value (all samples) | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Min | Mean | Max |
| PAH - Sum of four substances | ug/l | S | 8 | 8 | 0 | 0.000 | 0.000 | 0.000 | 0.000 |
| Pendimethalin | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.006 | < 0.006 | < 0.006 |
| Pesticides - Total Substances | ug/l | AS | 32 | 32 | 0 | 0.000 | 0.000 | 0.008 | 0.062 |
| Phorate | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.009 | < 0.009 | < 0.009 |
| Pirimicarb | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.006 | < 0.006 | < 0.006 |
| Propachlor | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.010 | < 0.010 | < 0.010 |
| Propiconazole | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.003 | < 0.003 | < 0.003 |
| Propyzamide | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.012 | < 0.012 | < 0.012 |
| Prothioconazole | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.002 | < 0.002 | < 0.002 |
| Selenium | ug/l Se | S | 8 | 8 | 0 | 0.000 | < 0.057 | < 0.196 | < 0.410 |
| Sodium | mg Na/l | S | 8 | 8 | 0 | 0.000 | 16.000 | 16.625 | 18.000 |
| Sulphate | mg SO4/l | S | 8 | 8 | 0 | 0.000 | 69.000 | 72.125 | 74.000 |
| Taste | Diln No | S | 52 | 52 | 0 | 0.000 | 0.000 | 0.000 | 0.000 |
| Tebuconazole | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.004 | < 0.004 | < 0.004 |
| Tetrachloroethene/Trichloroethene - Sum | ug/l | S | 8 | 8 | 0 | 0.000 | < 0.250 | < 0.380 | < 0.770 |
| Tetrachloromethane | ug/l | S | 8 | 8 | 0 | 0.000 | < 0.110 | < 0.185 | < 0.410 |
| Total - Residual disinfectant | mg Cl/l | S | 132 | 132 | 0 | 0.000 | 0.230 | 0.632 | 1.170 |
| Total coliforms | CFU/100 ml | S | 132 | 132 | 0 | 0.000 | 0.000 | 0.000 | 0.000 |
| Total Indicative Dose | mSv/year | AS | 2 | 2 | 0 | 0.000 | < 0.100 | < 0.100 | < 0.100 |
| Total Organic Carbon | mg C/l | S | 8 | 8 | 0 | 0.000 | 2.100 | 2.550 | 3.000 |
| Total Trihalomethanes | ug/l | S | 8 | 8 | 0 | 0.000 | 34.000 | 46.125 | 56.000 |
| Triclopyr | ug/l | AS | 32 | 32 | 0 | 0.000 | < 0.012 | < 0.012 | < 0.012 |
| Tritium | Bq/l | AS | 2 | 2 | 0 | 0.000 | < 10.000 | < 10.000 | < 10.000 |
| Turbidity | NTU | S | 52 | 52 | 0 | 0.000 | < 0.090 | < 0.109 | 0.420 |

PCV Exceedances:
Water Quality was satisfactory

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Notes:
PCV = Prescribed Concentration or Value
U = Undertaking
S = Standard Sampling Frequency
R = Reduced Sampling Frequency
A = Authorised Supply Point
Commentary on Water Quality:

A: Supply point authorisation for pesticides and related products.

Population of zone = 50662

This zone has a surface water source :R3301