Drinking Water Quality Report for Northern Ireland 2016

Derry City and Strabane District Council

Water Quality by Northern Ireland Local Council Area

This local council report is designed to demonstrate water quality by individual council area based on the % Compliance at Customer Tap (including Supply Points) over the water supply zones associated with that council area, as shown on the enclosed map.

For monitoring purposes NI Water's supply area is divided into water supply zones. These are areas serving not more than 100,000 people, each of which are normally supplied from a single water supply source or combination of sources. There are areas where owing to topography and dispersal of population, it is not practicable to provide a mains water supply. Currently over 99.9% of Northern Ireland's population receive public water supplies.

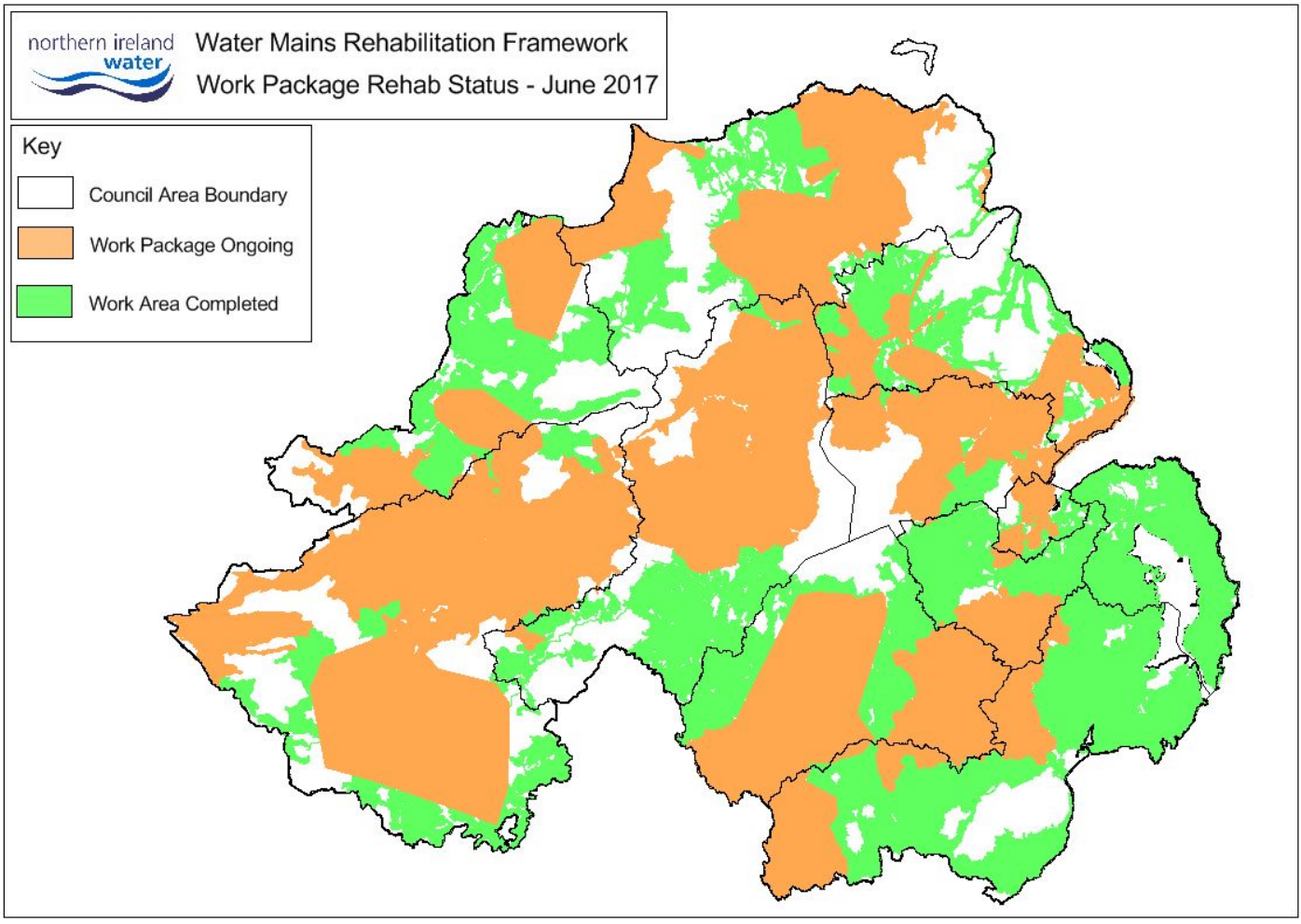
In a number of cases water supply zones overlap council boundaries. The council reports indicate which water supply zones are wholly or partially contained within the council areas, including those zones which may have a relatively small area within the council area. Separation of data within these water supply zones across council boundaries is not practicable, therefore the information used in calculating the zonal compliance relates to the whole zone and not merely the part included within a council boundary. Following discussions with the Drinking Water Inspectorate, water supply zones with fewer than 40 properties within the council area have not been used to calculate the individual council compliance. The information is based on samples taken randomly from customer taps in each water supply zone and from planned samples at authorised supply points. Due to the nature of random sampling, there may be fluctuations in water quality across the water supply zones.

The report also details Capital Work Programmes affecting the council area which directly related to water quality during the reporting period.

Small variations in water quality compliance performance occur across Northern Ireland. This reflects the need to continue to invest in and to maintain water treatment works, and to improve the water mains network.

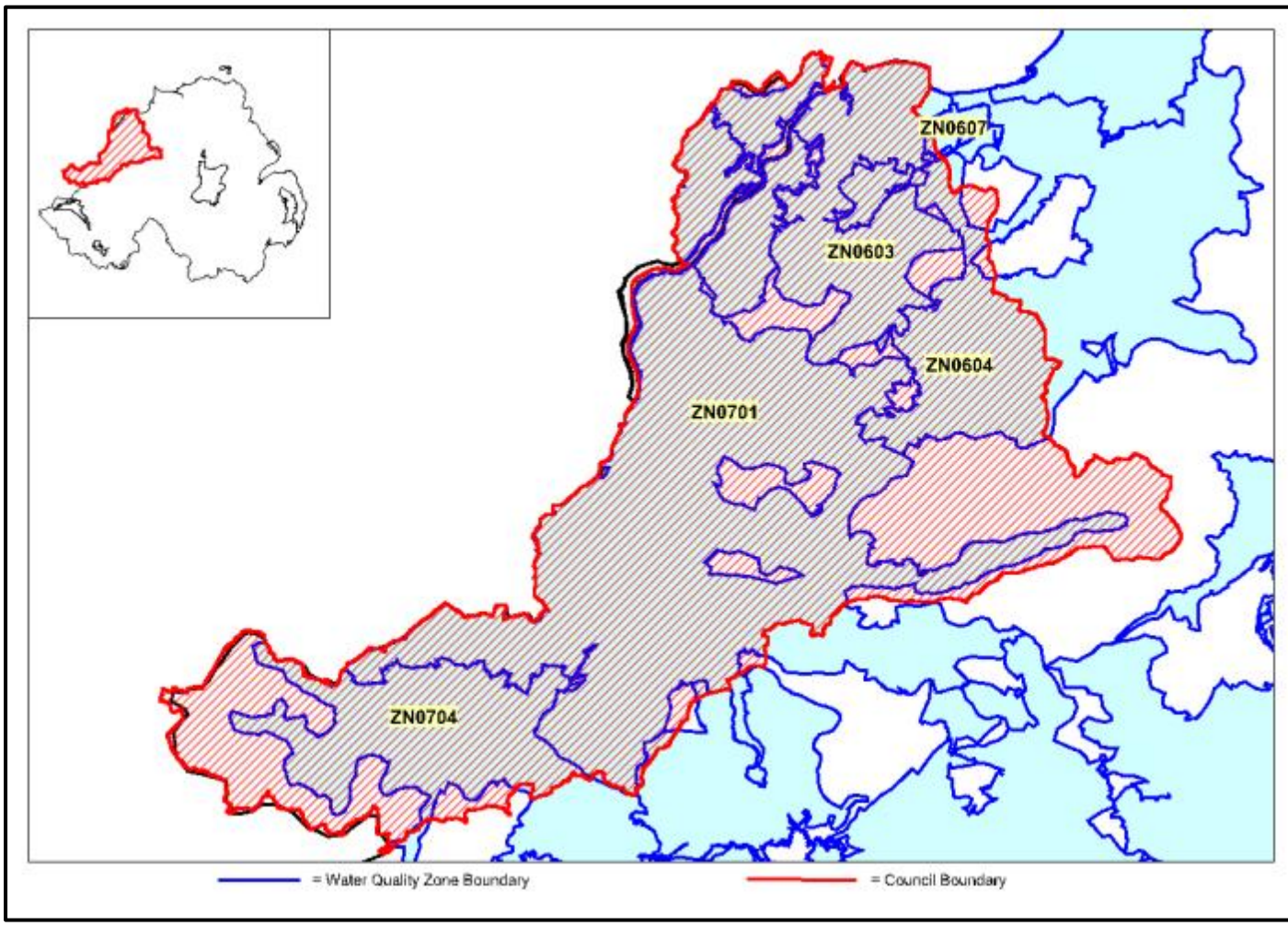
NI Water has identified the need to deliver a significant volume of watermains rehabilitation and other works across its ageing network. The works are necessary to ensure the efficient and cost effective operation of its water supply system in the immediate future and longer term as well as ensuring adequate levels of water quality and customer supply. To achieve this goal, NI Water has implemented a Watermains Rehabilitation Framework, within which it undertakes work on a Northern Ireland wide basis as identified by the zonal study programme of work.

Water Mains Rehabilitation Framework
Current Work Package Status



The map above shows the extent of the current Water Mains Rehabilitation Framework covering most of Northern Ireland. To assist clarity, whilst the council boundaries are shown, the individual councils are not named. Regions in white on the map are largely watercourses or upland areas which do not receive public water supply.

Derry City and Strabane District Council



% Compliance at Customer Tap (including Supply Points)

	Target	2013	2014	2015	2016
Overall Northern Ireland Compliance	99.7%	99.7%	99.8%	99.7%	99.8%
Derry City & Strabane Compliance	99.7%	99.9%	99.8%	99.8%	99.6%

2016 water supply zones wholly or partially within the council area:

Zone Code	Zone Name	Zone Code	Zone Name
ZN0603	Carmoney Eglinton	ZN0701	Derg Strabane
ZN0604	Caugh Hill Dungiven	ZN0704	Lough Bradan Drumquin
ZN0607	Corrody Derry		

2016 water quality Capital Works Programmes affecting the council area:

Ballinrees to Limavady/Londonderry Supply Augmentation
Castletown/Koram WPS Upgrade
Caugh Hill, Carmoney to Strabane Strategic Link Water main
Hydraulic Model Rebuilds & Project Management (PC15 Year 2)
NIW Historic Estate Condition Assessments

Non-Infrastructure Major Works
North Tyrone Zone Water main Improvements
PC15 - PSCEMD (Water)
PC15 Abstraction Monitoring
PC15 Lead Communication Pipe Replacement Programme
PC15 Service Reservoir Sample Taps
PPRA's for Rehab Work Packages 2016/17
SEMD Surveys PC10 Water
Service Reservoir Assessments - Site Access
Service Reservoir Security Phase 1
Sustainable Catchment Area Management Project (SCaMP Ireland)
Water Resource and Supply Resilience Plan
Water Treatment Sites - Water Regulation Compliance & Energy Efficiency Programme
Water Treatment Works Treatability Study
Water mains Rehabilitation, New & Replacement Incorporating First Time Services
WP134 High Priority Water Mains Ph1
WTW Effluent Quality
WTW Resilience Improvement
WTWs Five Treatability Appraisal Studies

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) 2007 (as amended), 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 service reservoirs, water treatment works and taps in customers' homes. Every year, our accredited state-of-the-art laboratories carry out over 100,000 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?

If a sample fails a test, this does not necessarily mean the water is unsafe to drink. 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 contamination 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), DRD Water Policy Unit and the Utility Regulator (NAIUR).

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

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 to 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 6.5-9.5 range.

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

Coliforms

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.

- 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.

- PCV = 200 µg Fe/l

Manganese (Mn)

Manganese occurs naturally in 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. 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

2016 Water SUPPLY COMMENTARY

ZN0603 - Carmoney Eglinton

The water supplied in this zone within the Derry and Strabane council area complied with all the physical-chemical and microbiological standards laid down in the Water Supply (Water Quality) Regulations (Northern Ireland) 2007 (as amended) except for the following parameter(s):-

Total Trihalomethanes (THMs) – single exceedance

Trihalomethanes are chlorination by-products arising from the use of chlorine as a disinfectant in the production of drinking water. The maintenance of the microbiological quality of water is NI Water's main priority. This exceedance was caused by increases in THM levels in the distribution system due to the long retention times within the supply area and seasonal temperature increases within the distribution mains.

WATER SUPPLY ZONE - ZN0603 - Carmoney Eglinton

Printed On 30-JAN-2017 : NI Water : Period 01-JAN-2016 to 31-DEC-2016 incl.

Parameter	U/A & Freq.	No. of samples planned per annum	No. of samples taken in year	PCV Auth Dep	No. Of samples contravening PCV	% of samples contravening PCV	Concentration or value (all samples) Min.	Mean	Max.
1,2 Dichloroethane	ug/l	S	8	8		0	0.000	0.056	< 0.089	< 0.100
2,4-D	ug/l	AS	8	8		0	0.000	< 0.001	< 0.005	0.024
2,4-DB	ug/l	AS	8	8		0	0.000	< 0.003	< 0.003	< 0.003
Aluminium	ug Al/l	S	52	52		0	0.000	5.570	19.484	54.760
Ammonium	mg NH4/l	S	52	52		0	0.000	< 0.012	< 0.012	< 0.012
Antimony	ug/l Sb	S	8	8		0	0.000	0.045	0.059	0.070
Arsenic	ug/l As	S	8	9		0	0.000	0.263	0.328	0.531
Bentazone	ug/l	AS	8	8		0	0.000	< 0.001	< 0.002	< 0.002
Benzene	ug/l	S	8	8		0	0.000	0.016	< 0.020	< 0.020
Benzo(a)pyrene	ug/l	S	8	8		0	0.000	< 0.001	< 0.001	< 0.001
Boron	mg/l B	S	8	8		0	0.000	0.006	0.009	0.015
Bromate	ug/l	S	8	8		0	0.000	0.990	1.274	1.600
Bromoxynil	ug/l	AS	8	8		0	0.000	< 0.004	< 0.005	< 0.007
Cadmium	ug/l Cd	S	8	8		0	0.000	0.006	0.008	0.015
Chloride	mg Cl/l	S	8	8		0	0.000	17.296	21.185	27.041
Chlorotoluron	ug/l	AS	8	8		0	0.000	< 0.002	< 0.002	< 0.002
Chlorpyrifos	ug/l	AS	8	8		0	0.000	< 0.002	< 0.003	< 0.004
Chromium	ug/l Cr	S	8	8		0	0.000	0.073	0.167	0.302
Clopyralid	ug/l	AS	8	8		0	0.000	< 0.004	< 0.012	0.057
Clostridium perfringens (sulph red)	No./100 ml	AS	104	104		0	0.000	0.000	0.000	0.000
Colony Counts 22	No./1 ml	S	52	52		0	0.000	0.000	0.750	35.000
Colony Counts 37 (48hrs)	No./1 ml	S	52	52		0	0.000	0.000	0.442	15.000
Colour	mg/l Pt/Co	S	52	52		0	0.000	0.510	1.583	2.680
Conductivity	uS/cm 20 C	AS	104	105		0	0.000	177.000	250.590	326.000
Copper	mg Cu/l	S	8	8		0	0.000	0.001	0.001	0.002
Cyanide	ug/l	AS	8	8		0	0.000	< 1.700	< 2.638	3.300
Dicamba	ug/l	AS	8	8		0	0.000	< 0.012	< 0.012	< 0.012
Dichlorprop	ug/l	AS	8	8		0	0.000	< 0.001	< 0.003	0.006
Diflufenican	ug/l	AS	8	8		0	0.000	< 0.003	< 0.003	< 0.004
Diuron	ug/l	AS	8	8		0	0.000	< 0.003	< 0.003	< 0.003
E. coli	No./100 ml	S	132	132		0	0.000	0.000	0.000	0.000
Enterococci	No./100ml	S	8	8		0	0.000	0.000	0.000	0.000
Epoxiconazole	ug/l	AS	8	8		0	0.000	< 0.002	< 0.005	< 0.024
Fenpropimorph	ug/l	AS	8	8		0	0.000	< 0.003	< 0.004	< 0.004
Fluoride	mg F/l	S	8	8		0	0.000	0.015	0.021	0.032
Fluroxypyr	ug/l	AS	8	8		0	0.000	< 0.005	< 0.008	0.016
Free - Residual disinfectant	mg Cl/l	S	132	132		0	0.000	< 0.050	< 0.413	1.000
Glyphosate	ug/l	AS	8	8		0	0.000	< 0.003	< 0.003	< 0.003
Hydrogen Ion	pH value	S	52	52		0	0.000	6.930	7.717	8.010
Iron	ug Fe/l	S	52	52		0	0.000	1.500	20.856	191.600
Isoproturon	ug/l	AS	8	8		0	0.000	< 0.002	< 0.002	< 0.002
Lead	ug Pb/l	S	8	9		0	0.000	0.055	0.121	0.337
Linuron	ug/l	AS	8	8		0	0.000	< 0.006	< 0.006	< 0.006
MCPA	ug/l	AS	8	8		0	0.000	0.015	0.027	0.042
MCPB	ug/l	AS	8	8		0	0.000	< 0.004	< 0.004	< 0.004
Manganese	ug Mn/l	S	52	52		0	0.000	0.470	2.102	14.470
Mecoprop	ug/l	AS	8	8		0	0.000	< 0.001	< 0.007	0.010
Mercury	ug/l Hg	S	8	8		0	0.000	< 0.010	< 0.016	< 0.055
Metalaxyl	ug/l	AS	8	8		0	0.000	< 0.004	< 0.004	< 0.005
Metamitron	ug/l	AS	8	8		0	0.000	< 0.003	< 0.003	< 0.003
Metazachlor	ug/l	AS	8	8		0	0.000	< 0.003	< 0.004	< 0.004
Metoxuron	ug/l	AS	8	8		0	0.000	< 0.002	< 0.002	< 0.002
Metribuzin	ug/l	AS	8	8		0	0.000	< 0.002	< 0.003	< 0.004
Nickel	ug Ni/l	S	8	8		0	0.000	0.691	0.951	1.123
Nitrate	mg NO3/l	S	8	8		0	0.000	2.735	4.103	5.000
Nitrite	mg NO2/l	S	8	8		0	0.000	< 0.010	< 0.010	< 0.010
Odour	Diln No	S	52	52		0	0.000	0.000	0.000	0.000
PAH - Sum of four substances	ug/l	S	8	8		0	0.000	< 0.010	< 0.010	< 0.010
Pendimethalin	ug/l	AS	8	8		0	0.000	< 0.003	< 0.003	< 0.004
Pesticides - Total Substances	ug/l	AS	8	8		0	0.000	< 0.050	< 0.060	0.090
Phorate	ug/l	AS	8	8		0	0.000	< 0.004	< 0.004	< 0.004
Pirimicarb	ug/l	AS	8	8		0	0.000	< 0.002	< 0.003	< 0.003
Propachlor	ug/l	AS	8	8		0	0.000	< 0.004	< 0.004	< 0.004

WATER SUPPLY ZONE - ZN0603 - Carmoney Eglinton

Printed On 30-JAN-2017 : NI Water : Period 01-JAN-2016 to 31-DEC-2016 incl.

Parameter		U/A & Freq.	No. of samples planned per annum	No. of samples taken in year	PCV Auth Dep	No. Of samples contravening PCV	% of samples contravening PCV	Concentration or value (all samples) Min.	Mean	Max.
Propiconazole	ug/l	AS	8	8		0	0.000	< 0.002	< 0.002	< 0.002
Propyzamide	ug/l	AS	8	8		0	0.000	< 0.002	< 0.006	< 0.010
Prothioconazole	ug/l	AS	8	8		0	0.000	< 0.006	< 0.006	< 0.006
Selenium	ug/l Se	S	8	8		0	0.000	0.177	0.289	0.468
Sodium	mg Na/l	S	8	8		0	0.000	11.682	12.921	13.813
Sulphate	mg SO4/l	S	8	8		0	0.000	27.147	49.559	64.800
Taste	Diln No	S	52	52		0	0.000	0.000	0.000	0.000
Tebuconazole	ug/l	AS	8	8		0	0.000	< 0.002	< 0.004	< 0.018
Tetrachloroethene/Trichloroethene - S	ug/l	S	8	8		0	0.000	< 0.200	< 0.294	0.630
Tetrachloromethane	ug/l	S	8	8		0	0.000	< 0.100	< 0.100	< 0.100
Total - Residual disinfectant	mg Cl/l	S	132	132		0	0.000	0.150	0.498	1.120
Total Indicative Dose	mSv/year	AS	1	1		0	0.000	< 0.100	< 0.100	< 0.100
Total Organic Carbon	mg C/l	AS	8	8		0	0.000	1.110	1.995	2.730
Total Trihalomethanes	ug/l	S	8	8		1	12.500	34.700	59.438	101.100
Total coliforms	No./100 ml	S	132	132		0	0.000	0.000	0.000	0.000
Triclopyr	ug/l	AS	8	8		0	0.000	< 0.004	< 0.006	0.012
Tritium	Bq/l	AS	1	1		0	0.000	< 5.000	< 5.000	< 5.000
Turbidity	NTU	S	52	52		0	0.000	0.060	0.147	2.110

Commentary on Water Quality:

A: Supply point authorisation for pesticides and related products.

Population of zone = 51470

This zone has a surface water source :R4301

PCV Exceedances:
Sample failed 30-AUG-2016 (ZN0603AE) Total Trihalomethanes = 101.1 ug/l.

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

2016 Water SUPPLY COMMENTARY

ZN0604 - Caugh Hill Dungiven

The water supplied in this zone within the Derry and Strabane council area complied with all the physical-chemical and microbiological standards laid down in the Water Supply (Water Quality) Regulations (Northern Ireland) 2007 (as amended) except for the following parameter(s):-

Aluminium – single exceedance

A single sample failed for aluminium. Investigations found that no clear cause for this. Resamples were clear after flushing. NI Water has in place an extensive Mains Rehabilitation Programme, which favours mains replacement and zones are prioritised according to need.

Iron – single exceedance

Investigations found that this exceedance was most likely caused by a disturbance of mains deposits from older iron mains, with resamples being satisfactory after flushing if required. NI Water has in place an extensive Mains Rehabilitation Programme, which favours mains replacement and zones are prioritised according to need. This programme will continue to maintain and improve the quality of water in your council area over the next few years.

WATER SUPPLY ZONE - ZN0604 - Caugh Hill Dungiven

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Parameter		U/A & Freq.	No. of samples planned per annum	No. of samples taken in year	PCV Auth Dep	No. Of samples contravening PCV	% of samples contravening PCV	Concentration or value (all samples) Min.	Mean	Max.
1,2 Dichloroethane	ug/l	S	8	8		0	0.000	0.086	< 0.098	< 0.100
2,4-D	ug/l	AS	8	8		0	0.000	< 0.001	< 0.003	0.006
2,4-DB	ug/l	AS	8	8		0	0.000	< 0.003	< 0.004	0.009
Aluminium	ug Al/l	S	24	25		1	4.000	5.080	215.577	4630.00
Ammonium	mg NH4/l	S	24	25		0	0.000	< 0.012	< 0.012	< 0.012
Antimony	ug/l Sb	S	8	8		0	0.000	0.019	0.073	0.340
Arsenic	ug/l As	S	8	8		0	0.000	0.264	< 0.293	< 0.300
Bentazone	ug/l	AS	8	8		0	0.000	< 0.001	< 0.002	< 0.002
Benzene	ug/l	S	8	8		0	0.000	< 0.020	< 0.021	0.031
Benzo(a)pyrene	ug/l	S	8	8		0	0.000	< 0.001	< 0.001	< 0.001
Boron	mg/l B	S	8	8		0	0.000	0.003	0.005	0.010
Bromate	ug/l	S	8	8		0	0.000	1.000	1.963	2.800
Bromoxynil	ug/l	AS	8	8		0	0.000	< 0.004	< 0.005	< 0.007
Cadmium	ug/l Cd	S	8	8		0	0.000	0.005	0.010	0.017
Chloride	mg Cl/l	S	8	8		0	0.000	14.970	18.316	23.721
Chlorotoluron	ug/l	AS	8	8		0	0.000	< 0.002	< 0.002	< 0.002
Chlorpyrifos	ug/l	AS	8	8		0	0.000	< 0.002	< 0.003	< 0.004
Chromium	ug/l Cr	S	8	8		0	0.000	0.073	0.179	0.321
Clopyralid	ug/l	AS	8	9		0	0.000	< 0.004	< 0.010	0.052
Clostridium perfringens (sulph red)	No./100 ml	AS	104	104		0	0.000	0.000	0.000	0.000
Colony Counts 22	No./1 ml	S	24	25		0	0.000	0.000	4.280	107.000
Colony Counts 37 (48hrs)	No./1 ml	S	24	25		0	0.000	0.000	4.640	116.000
Colour	mg/l Pt/Co	S	24	25		0	0.000	0.970	1.488	2.030
Conductivity	uS/cm 20 C	AS	104	105		0	0.000	159.000	206.905	304.000
Copper	mg Cu/l	S	8	8		0	0.000	< 0.001	< 0.008	0.047
Cyanide	ug/l	AS	8	9		0	0.000	1.100	1.689	2.700
Dicamba	ug/l	AS	8	8		0	0.000	< 0.012	< 0.012	< 0.012
Dichlorprop	ug/l	AS	8	8		0	0.000	< 0.001	< 0.002	< 0.003
Diflufenican	ug/l	AS	8	8		0	0.000	< 0.003	< 0.003	< 0.004
Diuron	ug/l	AS	8	8		0	0.000	< 0.003	< 0.003	0.003
E. coli	No./100 ml	S	48	49		0	0.000	0.000	0.000	0.000
Enterococci	No./100ml	S	8	8		0	0.000	0.000	0.000	0.000
Epoxiconazole	ug/l	AS	8	8		0	0.000	< 0.002	< 0.008	< 0.024
Fenpropimorph	ug/l	AS	8	8		0	0.000	< 0.003	< 0.004	< 0.004
Fluoride	mg F/l	S	8	8		0	0.000	0.015	0.021	0.025
Fluroxypyr	ug/l	AS	8	8		0	0.000	< 0.005	< 0.005	< 0.005
Free - Residual disinfectant	mg Cl/l	S	48	49		0	0.000	0.070	0.388	0.890
Glyphosate	ug/l	AS	8	8		0	0.000	< 0.003	< 0.003	< 0.003
Hydrogen Ion	pH value	S	24	25		0	0.000	6.930	7.834	9.230
Iron	ug Fe/l	S	24	25		3	12.000	< 2.000	< 49.690	290.100
Isoproturon	ug/l	AS	8	8		0	0.000	< 0.002	< 0.002	< 0.002
Lead	ug Pb/l	S	8	9		0	0.000	0.060	0.195	0.757
Linuron	ug/l	AS	8	8		0	0.000	< 0.006	< 0.006	< 0.006
MCPA	ug/l	AS	8	8		0	0.000	< 0.001	< 0.003	0.007
MCPB	ug/l	AS	8	8		0	0.000	< 0.004	< 0.004	< 0.004
Manganese	ug Mn/l	S	24	25		0	0.000	0.380	3.802	25.010
Mecoprop	ug/l	AS	8	8		0	0.000	< 0.001	< 0.002	< 0.003
Mercury	ug/l Hg	S	8	8		0	0.000	< 0.010	< 0.021	< 0.055
Metalaxyl	ug/l	AS	8	8		0	0.000	< 0.004	< 0.004	< 0.005
Metamitron	ug/l	AS	8	8		0	0.000	< 0.003	< 0.003	< 0.003
Metazachlor	ug/l	AS	8	8		0	0.000	< 0.003	< 0.004	< 0.004
Metoxuron	ug/l	AS	8	8		0	0.000	< 0.002	< 0.002	< 0.002
Metribuzin	ug/l	AS	8	8		0	0.000	< 0.002	< 0.003	< 0.004
Nickel	ug Ni/l	S	8	8		0	0.000	0.547	1.122	3.220
Nitrate	mg NO3/l	S	8	8		0	0.000	< 0.400	< 1.653	4.256
Nitrite	mg NO2/l	S	8	8		0	0.000	0.006	< 0.009	< 0.010
Odour	Diln No	S	24	25		0	0.000	0.000	0.000	0.000
PAH - Sum of four substances	ug/l	S	8	8		0	0.000	< 0.010	< 0.010	< 0.010
Pendimethalin	ug/l	AS	8	8		0	0.000	< 0.003	< 0.003	< 0.004
Pesticides - Total Substances	ug/l	AS	8	8		0	0.000	< 0.050	< 0.051	0.059
Phorate	ug/l	AS	8	11		0	0.000	< 0.004	< 0.004	< 0.004
Pirimicarb	ug/l	AS	8	8		0	0.000	< 0.002	< 0.003	< 0.003
Propachlor	ug/l	AS	8	8		0	0.000	< 0.004	< 0.004	< 0.004

WATER SUPPLY ZONE - ZN0604 - Caugh Hill Dungiven

Printed On 30-JAN-2017 : NI Water : Period 01-JAN-2016 to 31-DEC-2016 incl.

Parameter		U/A & Freq.	No. of samples planned per annum	No. of samples taken in year	PCV Auth Dep	No. Of samples contravening PCV	% of samples contravening PCV	Concentration or value (all samples) Min.	Mean	Max.
Propiconazole	ug/l	AS	8	8		0	0.000	< 0.002	< 0.002	0.002
Propyzamide	ug/l	AS	8	8		0	0.000	< 0.002	< 0.006	< 0.010
Prothioconazole	ug/l	AS	8	8		0	0.000	< 0.006	< 0.006	< 0.006
Selenium	ug/l Se	S	8	8		0	0.000	0.154	0.230	0.396
Sodium	mg Na/l	S	8	8		0	0.000	< 0.300	< 9.860	13.413
Sulphate	mg SO4/l	S	8	8		0	0.000	28.801	61.496	90.600
Taste	Diln No	S	24	25		0	0.000	0.000	0.000	0.000
Tebuconazole	ug/l	AS	8	8		0	0.000	< 0.002	< 0.006	< 0.018
Tetrachloroethene/Trichloroethene - S	ug/l	S	8	8		0	0.000	< 0.200	< 0.216	0.330
Tetrachloromethane	ug/l	S	8	8		0	0.000	< 0.100	< 0.100	< 0.100
Total - Residual disinfectant	mg Cl/l	S	48	49		0	0.000	0.180	0.482	0.930
Total Indicative Dose	mSv/year	AS	1	1		0	0.000	< 0.100	< 0.100	< 0.100
Total Organic Carbon	mg C/l	AS	8	8		0	0.000	0.961	1.599	2.390
Total Trihalomethanes	ug/l	S	8	8		1	12.500	30.800	64.166	137.610
Total coliforms	No./100 ml	S	48	49		0	0.000	0.000	0.000	0.000
Triclopyr	ug/l	AS	8	8		0	0.000	< 0.004	< 0.004	0.008
Tritium	Bq/l	AS	1	1		0	0.000	< 6.000	< 6.000	< 6.000
Turbidity	NTU	S	24	25		0	0.000	0.060	0.160	0.830

Commentary on Water Quality:

A: Supply point authorisation for pesticides and related products.

Population of zone = 16628

This zone has a surface water source :R4306

PCV Exceedances:
Sample failed 03-FEB-2016 (ZN0604AE) Aluminium = 4630 ug Al.
Sample failed 04-MAY-2016 (ZN0604AE) Iron = 290 ug Fe/.
Sample failed 25-OCT-2016 (ZN0604AE) Iron = 251 ug Fe/.
Sample failed 05-DEC-2016 (ZN0604AE) Iron = 239 ug Fe/.
Sample failed 12-SEP-2016 (ZN0604AE) Total Trihalomethanes = 137.6 ug/l.

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

2016 Water SUPPLY COMMENTARY

ZN0607 - Corrody Derry

The water supplied in this zone within the Derry and Strabane council area complied with all the physical-chemical and microbiological standards laid down in the Water Supply (Water Quality) Regulations (Northern Ireland) 2007 (as amended) except for the following parameter(s):-

Aluminium, Iron, Manganese – single sample exceedance

Investigations found that this exceedance was most likely caused by a disturbance of mains deposits from older iron mains, with resamples being satisfactory after flushing if required. NI Water has in place an extensive Mains Rehabilitation Programme, which favours mains replacement and zones are prioritised according to need. This programme will continue to maintain and improve the quality of water in your council area over the next few years.

Iron – single exceedance

Investigations found that this exceedance was most likely caused by a disturbance of mains deposits from older iron mains, with resamples being satisfactory after flushing if required. NI Water has in place an extensive Mains Rehabilitation Programme, which favours mains replacement and zones are prioritised according to need. This programme will continue to maintain and improve the quality of water in your council area over the next few years.

Total Trihalomethanes (THMs) – single exceedance

Trihalomethanes are chlorination by-products arising from the use of chlorine as a disinfectant in the production of drinking water. The maintenance of the microbiological quality of water is NI Water's main priority. This exceedance was caused by treatment issues at Caugh Hill WTW increasing the final water THMs. Further monitoring and replacement of capital equipment is to be prioritised to enable improved treatment optimisation.

WATER SUPPLY ZONE - ZN0607 - Corrody Derry

Printed On 30-JAN-2017 : NI Water : Period 01-JAN-2016 to 31-DEC-2016 incl.

Parameter		U/A & Freq.	No. of samples planned per annum	No. of samples taken in year	PCV Auth Dep	No. Of samples contraven ing PCV	% of samples contraven ing PCV	Concentration or value (all samples) Min.	Mean	Max.
1,2 Dichloroethane	ug/l	S	8	8		0	0.000	0.055	< 0.094	< 0.100
2,4-D	ug/l	AS	16	16		0	0.000	< 0.001	< 0.006	0.014
2,4-DB	ug/l	AS	16	16		0	0.000	< 0.003	< 0.004	0.009
Aluminium	ug Al/l	S	52	52		1	1.923	7.400	31.043	212.000
Ammonium	mg NH4/l	S	52	52		0	0.000	< 0.012	< 0.012	< 0.012
Antimony	ug/l Sb	S	8	8		0	0.000	0.024	0.049	0.059
Arsenic	ug/l As	S	8	8		0	0.000	0.269	0.328	0.592
Bentazone	ug/l	AS	16	16		0	0.000	< 0.001	< 0.002	0.002
Benzene	ug/l	S	8	8		0	0.000	0.015	0.021	0.029
Benzo(a)pyrene	ug/l	S	8	8		0	0.000	< 0.001	< 0.001	< 0.001
Boron	mg/l B	S	8	8		0	0.000	0.004	0.007	0.011
Bromate	ug/l	S	8	8		0	0.000	0.880	1.468	2.100
Bromoxynil	ug/l	AS	16	16		0	0.000	< 0.004	< 0.005	< 0.007
Cadmium	ug/l Cd	S	8	8		0	0.000	0.006	0.009	0.014
Chloride	mg Cl/l	S	8	8		0	0.000	16.000	20.409	26.071
Chlorotoluron	ug/l	AS	16	16		0	0.000	< 0.002	< 0.002	< 0.002
Chlorpyrifos	ug/l	AS	16	16		0	0.000	< 0.002	< 0.004	< 0.004
Chromium	ug/l Cr	S	8	8		0	0.000	0.113	0.191	0.364
Clopyralid	ug/l	AS	16	17		0	0.000	< 0.004	< 0.013	0.069
Clostridium perfringens (sulph red)	No./100 ml	AS	104	104		0	0.000	0.000	0.000	0.000
Clostridium perfringens (sulph red)	No./100 ml	AS	104	104		0	0.000	0.000	0.000	0.000
Colony Counts 22	No./1 ml	S	52	52		0	0.000	0.000	1.231	60.000
Colony Counts 37 (48hrs)	No./1 ml	S	52	52		0	0.000	0.000	0.019	1.000
Colour	mg/l Pt/Co	S	52	52		0	0.000	0.770	1.537	2.150
Conductivity	uS/cm 20 C	AS	104	105		0	0.000	159.000	206.905	304.000
Copper	mg Cu/l	S	8	8		0	0.000	0.001	0.007	0.036
Cyanide	ug/l	AS	16	17		0	0.000	< 0.700	< 1.465	2.700
Dicamba	ug/l	AS	16	16		0	0.000	< 0.012	< 0.012	< 0.012
Dichlorprop	ug/l	AS	16	16		0	0.000	< 0.001	< 0.002	< 0.003
Diflufenican	ug/l	AS	16	16		0	0.000	< 0.003	< 0.003	< 0.004
Diuron	ug/l	AS	16	16		0	0.000	< 0.003	< 0.003	0.003
E. coli	No./100 ml	S	144	145		0	0.000	0.000	0.000	0.000
Enterococci	No./100ml	S	8	8		0	0.000	0.000	0.000	0.000
Epoxiconazole	ug/l	AS	16	16		0	0.000	< 0.002	< 0.006	< 0.024
Fenpropimorph	ug/l	AS	16	16		0	0.000	< 0.003	< 0.004	< 0.004
Fluoride	mg F/l	S	8	8		0	0.000	0.019	0.021	0.030
Fluroxypyr	ug/l	AS	16	16		0	0.000	< 0.005	< 0.008	0.018
Free - Residual disinfectant	mg Cl/l	S	144	145		0	0.000	0.070	0.391	1.310
Glyphosate	ug/l	AS	16	16		0	0.000	< 0.003	< 0.003	< 0.003
Hydrogen Ion	pH value	S	52	52		0	0.000	7.080	7.684	8.110
Iron	ug Fe/l	S	52	52		2	3.846	1.530	33.201	383.000
Isoproturon	ug/l	AS	16	16		0	0.000	< 0.002	< 0.002	< 0.002
Lead	ug Pb/l	S	8	8		0	0.000	0.087	0.144	0.336
Linuron	ug/l	AS	16	16		0	0.000	< 0.006	< 0.006	< 0.006
MCPA	ug/l	AS	16	16		0	0.000	< 0.001	< 0.020	0.076
MCPB	ug/l	AS	16	16		0	0.000	< 0.004	< 0.004	< 0.004
Manganese	ug Mn/l	S	52	52		1	1.923	0.430	4.356	70.720
Mecoprop	ug/l	AS	16	16		0	0.000	< 0.001	< 0.005	0.012
Mercury	ug/l Hg	S	8	8		0	0.000	0.007	< 0.015	< 0.055
Metalaxyl	ug/l	AS	16	16		0	0.000	< 0.004	< 0.004	< 0.005
Metamitron	ug/l	AS	16	16		0	0.000	< 0.003	< 0.003	< 0.003
Metazachlor	ug/l	AS	16	16		0	0.000	< 0.003	< 0.004	< 0.004
Metoxuron	ug/l	AS	16	16		0	0.000	< 0.002	< 0.002	< 0.002
Metribuzin	ug/l	AS	16	16		0	0.000	< 0.002	< 0.003	< 0.004
Nickel	ug Ni/l	S	8	8		0	0.000	0.754	1.191	2.260
Nitrate	mg NO3/l	S	8	8		0	0.000	0.377	2.480	4.738
Nitrite	mg NO2/l	S	8	8		0	0.000	0.005	< 0.009	< 0.010
Odour	Diln No	S	52	52		0	0.000	0.000	0.000	0.000
PAH - Sum of four substances	ug/l	S	8	8		0	0.000	< 0.010	< 0.010	< 0.010
Pendimethalin	ug/l	AS	16	16		0	0.000	< 0.003	< 0.003	< 0.004
Pesticides - Total Substances	ug/l	AS	16	16		0	0.000	< 0.050	< 0.070	0.130
Phorate	ug/l	AS	16	19		0	0.000	< 0.001	< 0.003	< 0.004
Pirimicarb	ug/l	AS	16	16		0	0.000	< 0.002	< 0.003	< 0.003

WATER SUPPLY ZONE - ZN0607 - Corrody Derry

Printed On 30-JAN-2017 : NI Water : Period 01-JAN-2016 to 31-DEC-2016 incl.

Parameter		U/A & Freq.	No. of samples planned per annum	No. of samples taken in year	PCV Auth Dep	No. Of samples contraven ing PCV	% of samples contraven ing PCV	Concentration or value (all samples) Min.	Mean	Max.
1,2 Dichloroethane	ug/l	S	8	8		0	0.000	0.055	< 0.094	< 0.100
2,4-D	ug/l	AS	16	16		0	0.000	< 0.001	< 0.006	0.014
2,4-DB	ug/l	AS	16	16		0	0.000	< 0.003	< 0.004	0.009
Aluminium	ug Al/l	S	52	52		1	1.923	7.400	31.043	212.000
Ammonium	mg NH4/l	S	52	52		0	0.000	< 0.012	< 0.012	< 0.012
Antimony	ug/l Sb	S	8	8		0	0.000	0.024	0.049	0.059
Arsenic	ug/l As	S	8	8		0	0.000	0.269	0.328	0.592
Bentazone	ug/l	AS	16	16		0	0.000	< 0.001	< 0.002	0.002
Benzene	ug/l	S	8	8		0	0.000	0.015	0.021	0.029
Benzo(a)pyrene	ug/l	S	8	8		0	0.000	< 0.001	< 0.001	< 0.001
Boron	mg/l B	S	8	8		0	0.000	0.004	0.007	0.011
Bromate	ug/l	S	8	8		0	0.000	0.880	1.468	2.100
Bromoxynil	ug/l	AS	16	16		0	0.000	< 0.004	< 0.005	< 0.007
Cadmium	ug/l Cd	S	8	8		0	0.000	0.006	0.009	0.014
Chloride	mg Cl/l	S	8	8		0	0.000	16.000	20.409	26.071
Chlorotoluron	ug/l	AS	16	16		0	0.000	< 0.002	< 0.002	< 0.002
Chlorpyrifos	ug/l	AS	16	16		0	0.000	< 0.002	< 0.004	< 0.004
Chromium	ug/l Cr	S	8	8		0	0.000	0.113	0.191	0.364
Clopyralid	ug/l	AS	16	17		0	0.000	< 0.004	< 0.013	0.069
Clostridium perfringens (sulph red)	No./100 ml	AS	104	104		0	0.000	0.000	0.000	0.000
Clostridium perfringens (sulph red)	No./100 ml	AS	104	104		0	0.000	0.000	0.000	0.000
Colony Counts 22	No./1 ml	S	52	52		0	0.000	0.000	1.231	60.000
Colony Counts 37 (48hrs)	No./1 ml	S	52	52		0	0.000	0.000	0.019	1.000
Colour	mg/l Pt/Co	S	52	52		0	0.000	0.770	1.537	2.150
Conductivity	uS/cm 20 C	AS	104	105		0	0.000	159.000	206.905	304.000
Copper	mg Cu/l	S	8	8		0	0.000	0.001	0.007	0.036
Cyanide	ug/l	AS	16	17		0	0.000	< 0.700	< 1.465	2.700
Dicamba	ug/l	AS	16	16		0	0.000	< 0.012	< 0.012	< 0.012
Dichlorprop	ug/l	AS	16	16		0	0.000	< 0.001	< 0.002	< 0.003
Diflufenican	ug/l	AS	16	16		0	0.000	< 0.003	< 0.003	< 0.004
Diuron	ug/l	AS	16	16		0	0.000	< 0.003	< 0.003	0.003
E. coli	No./100 ml	S	144	145		0	0.000	0.000	0.000	0.000
Enterococci	No./100ml	S	8	8		0	0.000	0.000	0.000	0.000
Epoxiconazole	ug/l	AS	16	16		0	0.000	< 0.002	< 0.006	< 0.024
Fenpropimorph	ug/l	AS	16	16		0	0.000	< 0.003	< 0.004	< 0.004
Fluoride	mg F/l	S	8	8		0	0.000	0.019	0.021	0.030
Fluroxypyr	ug/l	AS	16	16		0	0.000	< 0.005	< 0.008	0.018
Free - Residual disinfectant	mg Cl/l	S	144	145		0	0.000	0.070	0.391	1.310
Glyphosate	ug/l	AS	16	16		0	0.000	< 0.003	< 0.003	< 0.003
Hydrogen Ion	pH value	S	52	52		0	0.000	7.080	7.684	8.110
Iron	ug Fe/l	S	52	52		2	3.846	1.530	33.201	383.000
Isoproturon	ug/l	AS	16	16		0	0.000	< 0.002	< 0.002	< 0.002
Lead	ug Pb/l	S	8	8		0	0.000	0.087	0.144	0.336
Linuron	ug/l	AS	16	16		0	0.000	< 0.006	< 0.006	< 0.006
MCPA	ug/l	AS	16	16		0	0.000	< 0.001	< 0.020	0.076
MCPB	ug/l	AS	16	16		0	0.000	< 0.004	< 0.004	< 0.004
Manganese	ug Mn/l	S	52	52		1	1.923	0.430	4.356	70.720
Mecoprop	ug/l	AS	16	16		0	0.000	< 0.001	< 0.005	0.012
Mercury	ug/l Hg	S	8	8		0	0.000	0.007	< 0.015	< 0.055
Metalaxyl	ug/l	AS	16	16		0	0.000	< 0.004	< 0.004	< 0.005
Metamitron	ug/l	AS	16	16		0	0.000	< 0.003	< 0.003	< 0.003
Metazachlor	ug/l	AS	16	16		0	0.000	< 0.003	< 0.004	< 0.004
Metoxuron	ug/l	AS	16	16		0	0.000	< 0.002	< 0.002	< 0.002
Metribuzin	ug/l	AS	16	16		0	0.000	< 0.002	< 0.003	< 0.004
Nickel	ug Ni/l	S	8	8		0	0.000	0.754	1.191	2.260
Nitrate	mg NO3/l	S	8	8		0	0.000	0.377	2.480	4.738
Nitrite	mg NO2/l	S	8	8		0	0.000	0.005	< 0.009	< 0.010
Odour	Diln No	S	52	52		0	0.000	0.000	0.000	0.000
PAH - Sum of four substances	ug/l	S	8	8		0	0.000	< 0.010	< 0.010	< 0.010
Pendimethalin	ug/l	AS	16	16		0	0.000	< 0.003	< 0.003	< 0.004
Pesticides - Total Substances	ug/l	AS	16	16		0	0.000	< 0.050	< 0.070	0.130
Phorate	ug/l	AS	16	19		0	0.000	< 0.001	< 0.003	< 0.004
Pirimicarb	ug/l	AS	16	16		0	0.000	< 0.002	< 0.003	< 0.003

2016 Water SUPPLY COMMENTARY

ZN0701 - Derg Strabane

The water supplied in this zone within the Derry and Strabane council area complied with all the physical-chemical and microbiological standards laid down in the Water Supply (Water Quality) Regulations (Northern Ireland) 2007 (as amended) except for the following parameter(s):-

Iron – single exceedance

Investigations found that this exceedance was most likely caused by a disturbance of mains deposits from older iron mains, with resamples being satisfactory after flushing if required. NI Water has in place an extensive Mains Rehabilitation Programme, which favours mains replacement and zones are prioritised according to need. This programme will continue to maintain and improve the quality of water in your council area over the next few years.

Total Trihalomethanes (THMs) – three exceedances

Trihalomethanes are chlorination by-products arising from the use of chlorine as a disinfectant in the production of drinking water. The maintenance of the microbiological quality of water is NI Water's main priority. These exceedances were caused by treatment issues at Derg WTW increasing the final water THMs. Further monitoring, replacement of capital equipment and a treatability study are to be prioritised to enable improved treatment optimisation.

Pesticides – Monitored at Authorised Supply point

NI Water analyses for 30 individual pesticides, herbicides and algaecides, with an exceedance of the individual standard detected for MCPA. This herbicide is in common usage in the Derg WTW catchment. NI Water is actively working with a stakeholder partnership to reduce the likelihood of future contamination into the supply for Derg WTW. Regulatory enforcement is in place at the Derg WTW for MCPA contraventions and NI Water will be carrying out capital investment in 2018/19 for enhanced water treatment to reduce the risk of MCPA contraventions.

WATER SUPPLY ZONE - ZN0701 - Derg Strabane

Printed On 30-JAN-2017 : NI Water : Period 01-JAN-2016 to 31-DEC-2016 incl.

Parameter		U/A & Freq.	No. of samples planned per annum	No. of samples taken in year	PCV Auth Dep	No. Of samples contraven ing PCV	% of samples contraven ing PCV	Concentration or value (all samples) Min.	Mean	Max.
1,2 Dichloroethane	ug/l	S	8	8		0	0.000	< 0.100	< 0.100	< 0.100
2,4-D	ug/l	AS	8	8		0	0.000	< 0.001	< 0.004	0.006
2,4-DB	ug/l	AS	8	8		0	0.000	< 0.003	< 0.004	0.009
Aluminium	ug Al/l	S	36	36		0	0.000	5.700	23.680	63.030
Ammonium	mg NH4/l	S	36	36		0	0.000	< 0.012	< 0.012	< 0.012
Antimony	ug/l Sb	S	8	8		0	0.000	0.037	0.044	0.054
Arsenic	ug/l As	S	8	8		0	0.000	0.252	0.320	0.383
Bentazone	ug/l	AS	8	8		0	0.000	< 0.001	< 0.002	0.004
Benzene	ug/l	S	8	8		0	0.000	< 0.020	< 0.020	< 0.020
Benzo(a)pyrene	ug/l	S	8	8		0	0.000	< 0.001	< 0.001	< 0.001
Boron	mg/l B	S	8	8		0	0.000	0.006	0.007	0.008
Bromate	ug/l	S	8	8		0	0.000	0.390	1.836	3.100
Bromoxynil	ug/l	AS	8	8		0	0.000	< 0.004	< 0.005	0.008
Cadmium	ug/l Cd	S	8	8		0	0.000	0.006	0.010	0.017
Chloride	mg Cl/l	S	8	8		0	0.000	16.827	20.891	25.218
Chlorotoluron	ug/l	AS	8	8		0	0.000	< 0.002	< 0.002	< 0.002
Chlorpyrifos	ug/l	AS	8	8		0	0.000	< 0.002	< 0.003	< 0.004
Chromium	ug/l Cr	S	8	8		0	0.000	0.061	0.175	0.312
Clopyralid	ug/l	AS	8	9		0	0.000	< 0.004	< 0.012	0.075
Clostridium perfringens (sulph red)	No./100 ml	AS	104	104		0	0.000	0.000	0.000	0.000
Colony Counts 22	No./1 ml	S	36	36		0	0.000	0.000	0.556	17.000
Colony Counts 37 (48hrs)	No./1 ml	S	36	36		0	0.000	0.000	0.028	1.000
Colour	mg/l Pt/Co	S	36	36		0	0.000	0.830	1.934	4.060
Conductivity	uS/cm 20 C	AS	104	106		0	0.000	133.000	200.557	252.000
Copper	mg Cu/l	S	8	8		0	0.000	0.004	0.017	0.050
Cyanide	ug/l	AS	8	8		0	0.000	1.700	3.888	6.500
Dicamba	ug/l	AS	8	8		0	0.000	< 0.012	< 0.012	0.013
Dichlorprop	ug/l	AS	8	8		0	0.000	< 0.001	< 0.002	< 0.003
Diflufenican	ug/l	AS	8	8		0	0.000	< 0.003	< 0.003	< 0.004
Diuron	ug/l	AS	8	8		0	0.000	< 0.003	< 0.003	0.004
E. coli	No./100 ml	S	96	96		0	0.000	0.000	0.000	0.000
Enterococci	No./100ml	S	8	8		0	0.000	0.000	0.000	0.000
Epoxiconazole	ug/l	AS	8	8		0	0.000	< 0.002	< 0.008	< 0.024
Fenpropimorph	ug/l	AS	8	8		0	0.000	< 0.003	< 0.004	< 0.004
Fluoride	mg F/l	S	8	8		0	0.000	0.017	0.025	0.039
Fluroxypyr	ug/l	AS	8	8		0	0.000	< 0.005	< 0.008	0.014
Free - Residual disinfectant	mg Cl/l	S	96	96		0	0.000	< 0.050	< 0.374	1.090
Glyphosate	ug/l	AS	8	8		0	0.000	< 0.003	< 0.003	< 0.003
Hydrogen Ion	pH value	S	36	36		0	0.000	7.020	7.500	7.840
Iron	ug Fe/l	S	36	36		1	2.778	1.950	24.592	240.900
Isoproturon	ug/l	AS	8	8		0	0.000	< 0.002	< 0.002	< 0.002
Lead	ug Pb/l	S	8	8		0	0.000	0.066	0.408	2.158
Linuron	ug/l	AS	8	8		0	0.000	< 0.006	< 0.006	< 0.006
MCPA	ug/l	AS	8	9		1	11.111	< 0.004	< 0.040	0.125
MCPB	ug/l	AS	8	8		0	0.000	< 0.004	< 0.004	< 0.004
Manganese	ug Mn/l	S	36	36		0	0.000	< 0.100	< 1.259	10.580
Mecoprop	ug/l	AS	8	8		0	0.000	< 0.001	< 0.008	0.022
Mercury	ug/l Hg	S	8	8		0	0.000	< 0.010	< 0.016	< 0.055
Metalaxyl	ug/l	AS	8	8		0	0.000	< 0.004	< 0.004	< 0.005
Metamitron	ug/l	AS	8	8		0	0.000	< 0.003	< 0.003	< 0.003
Metazachlor	ug/l	AS	8	8		0	0.000	< 0.003	< 0.004	< 0.004
Metoxuron	ug/l	AS	8	8		0	0.000	< 0.002	< 0.002	< 0.002
Metribuzin	ug/l	AS	8	8		0	0.000	< 0.002	< 0.003	< 0.004
Nickel	ug Ni/l	S	8	8		0	0.000	0.416	0.612	0.996
Nitrate	mg NO3/l	S	8	8		0	0.000	< 0.400	< 2.929	4.890
Nitrite	mg NO2/l	S	8	8		0	0.000	0.007	< 0.010	< 0.010
Odour	Diln No	S	36	37		0	0.000	0.000	0.000	0.000
PAH - Sum of four substances	ug/l	S	8	8		0	0.000	< 0.010	< 0.010	< 0.010
Pendimethalin	ug/l	AS	8	8		0	0.000	< 0.003	< 0.003	< 0.004
Pesticides - Total Substances	ug/l	AS	8	8		0	0.000	< 0.050	< 0.095	0.183
Phorate	ug/l	AS	8	13		0	0.000	< 0.004	< 0.004	< 0.004
Pirimicarb	ug/l	AS	8	8		0	0.000	< 0.002	< 0.003	< 0.003
Propachlor	ug/l	AS	8	8		0	0.000	< 0.004	< 0.004	< 0.004

WATER SUPPLY ZONE - ZN0701 - Derg Strabane

Printed On 30-JAN-2017 : NI Water : Period 01-JAN-2016 to 31-DEC-2016 incl.

Parameter		U/A & Freq.	No. of samples planned per annum	No. of samples taken in year	PCV Auth Dep	No. Of samples contravening PCV	% of samples contravening PCV	Concentration or value (all samples) Min.	Mean	Max.
Propiconazole	ug/l	AS	8	8		0	0.000	< 0.002	< 0.002	< 0.002
Propyzamide	ug/l	AS	8	8		0	0.000	< 0.002	< 0.006	< 0.010
Prothioconazole	ug/l	AS	8	8		0	0.000	< 0.006	< 0.006	< 0.006
Selenium	ug/l Se	S	8	8		0	0.000	< 0.200	< 0.275	0.404
Sodium	mg Na/l	S	8	8		0	0.000	10.976	13.421	14.925
Sulphate	mg SO4/l	S	8	8		0	0.000	19.421	32.937	46.400
Taste	Diln No	S	36	36		0	0.000	0.000	0.000	0.000
Tebuconazole	ug/l	AS	8	8		0	0.000	< 0.002	< 0.006	< 0.018
Tetrachloroethene/Trichloroethene - S	ug/l	S	8	8		0	0.000	< 0.200	< 0.241	< 0.408
Tetrachloromethane	ug/l	S	8	8		0	0.000	< 0.100	< 0.100	< 0.100
Total - Residual disinfectant	mg Cl/l	S	96	96		0	0.000	0.080	0.473	1.200
Total Indicative Dose	mSv/year	AS	1	1		0	0.000	< 0.100	< 0.100	< 0.100
Total Organic Carbon	mg C/l	AS	8	8		0	0.000	0.983	2.409	3.940
Total Trihalomethanes	ug/l	S	8	8		3	37.500	27.900	80.128	134.400
Total coliforms	No./100 ml	S	96	96		0	0.000	0.000	0.000	0.000
Triclopyr	ug/l	AS	8	8		0	0.000	< 0.004	< 0.008	0.016
Tritium	Bq/l	AS	1	1		0	0.000	< 5.000	< 5.000	< 5.000
Turbidity	NTU	S	36	36		0	0.000	0.060	0.136	1.030

Commentary on Water Quality:

A: Supply point authorisation for pesticides and related products.

Population of zone = 38989

This zone has a surface water source :R4501

PCV Exceedances:
Sample failed 27-JAN-2016 (ZN0701AE) Iron = 241 ug Fe/.
Sample failed 01-JUN-2016 (W4501OUT) MCPA = 0.1250 ug/.
Sample failed 18-JUL-2016 (ZN0701AE) Total Trihalomethanes = 134.4 ug/l.
Sample failed 31-AUG-2016 (ZN0701AE) Total Trihalomethanes = 124.1 ug/l.
Sample failed 24-OCT-2016 (ZN0701AE) Total Trihalomethanes = 105.6 ug/l.

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

2016 Water SUPPLY COMMENTARY

ZN0704 - Lough Bradan Drumquin

The water supplied in this zone within the Derry & Strabane council area complied with all the physical-chemical and microbiological standards laid down in the Water Supply (Water Quality) Regulations (Northern Ireland) 2007 (as amended) except for the following parameter(s):-

Taste – single exceedance

The DWI directed change in the analysis of taste and odour for 2010 onwards has resulted in a number of exceedances that may not previously have failed. This is not normally due to a change in the quality of water supplied, but rather to the change in the method of measurement. The cause of the exceedance was undetermined and all resamples were satisfactory.

Total Trihalomethanes (THMs) – single exceedance

Trihalomethanes are chlorination by-products arising from the use of chlorine as a disinfectant in the production of drinking water. The maintenance of the microbiological quality of water is NI Water's main priority. This exceedance was caused by treatment issues at Derg WTW increasing the final water THMs. Further monitoring and replacement of capital equipment is to be prioritised to enable improved treatment optimisation.

WATER SUPPLY ZONE - ZN0704 - Lough Bradan Drumquin

Printed On 30-JAN-2017 : NI Water : Period 01-JAN-2016 to 31-DEC-2016 incl.

Parameter	U/A & Freq.	No. of samples planned per annum	No. of samples taken in year	PCV Auth Dep	No. Of samples contravening PCV	% of samples contravening PCV	Concentration or value (all samples) Min.	Mean	Max.
1,2 Dichloroethane	ug/l	S	8	8		0	0.000	< 0.100	< 0.100	< 0.100
2,4-D	ug/l	AS	8	8		0	0.000	< 0.001	< 0.002	< 0.004
2,4-DB	ug/l	AS	8	8		0	0.000	< 0.003	< 0.004	0.009
Aluminium	ug Al/l	S	24	24		0	0.000	2.000	15.935	101.800
Ammonium	mg NH4/l	S	24	24		0	0.000	< 0.012	< 0.012	< 0.012
Antimony	ug/l Sb	S	8	8		0	0.000	0.023	0.031	0.050
Arsenic	ug/l As	S	8	8		0	0.000	< 0.300	< 0.300	< 0.300
Bentazone	ug/l	AS	8	8		0	0.000	< 0.001	< 0.002	< 0.002
Benzene	ug/l	S	8	8		0	0.000	< 0.020	< 0.023	0.035
Benzo(a)pyrene	ug/l	S	8	8		0	0.000	< 0.001	< 0.001	< 0.001
Boron	mg/l B	S	8	8		0	0.000	0.004	0.006	0.007
Bromate	ug/l	S	8	8		0	0.000	2.400	3.563	5.100
Bromoxynil	ug/l	AS	8	8		0	0.000	< 0.004	< 0.005	< 0.007
Cadmium	ug/l Cd	S	8	8		0	0.000	0.005	0.009	0.015
Chloride	mg Cl/l	S	8	8		0	0.000	5.580	19.772	25.620
Chlorotoluron	ug/l	AS	8	8		0	0.000	< 0.002	< 0.002	< 0.002
Chlorpyrifos	ug/l	AS	8	8		0	0.000	< 0.002	< 0.003	< 0.004
Chromium	ug/l Cr	S	8	8		0	0.000	0.084	0.168	0.265
Clopyralid	ug/l	AS	8	8		0	0.000	< 0.004	< 0.012	0.050
Clostridium perfringens (sulph red)	No./100 ml	AS	36	36		0	0.000	0.000	0.000	0.000
Colony Counts 22	No./1 ml	S	24	24		0	0.000	0.000	0.000	0.000
Colony Counts 37 (48hrs)	No./1 ml	S	24	24		0	0.000	0.000	0.042	1.000
Colour	mg/l Pt/Co	S	24	24		0	0.000	0.770	1.480	2.210
Conductivity	uS/cm 20 C	AS	36	37		0	0.000	174.000	284.892	401.000
Copper	mg Cu/l	S	8	8		0	0.000	0.006	0.037	0.122
Cyanide	ug/l	AS	8	8		0	0.000	1.400	1.788	2.200
Dicamba	ug/l	AS	8	8		0	0.000	< 0.012	< 0.012	< 0.012
Dichlorprop	ug/l	AS	8	8		0	0.000	< 0.001	< 0.002	< 0.003
Diflufenican	ug/l	AS	8	8		0	0.000	< 0.003	< 0.003	< 0.004
Diuron	ug/l	AS	8	8		0	0.000	< 0.003	< 0.003	0.004
E. coli	No./100 ml	S	60	60		0	0.000	0.000	0.000	0.000
Enterococci	No./100ml	S	8	8		0	0.000	0.000	0.000	0.000
Epoxiconazole	ug/l	AS	8	8		0	0.000	< 0.002	< 0.008	< 0.024
Fenpropimorph	ug/l	AS	8	8		0	0.000	< 0.003	< 0.004	< 0.004
Fluoride	mg F/l	S	8	8		0	0.000	< 0.020	< 0.025	0.057
Fluroxypyr	ug/l	AS	8	8		0	0.000	< 0.005	< 0.005	< 0.005
Free - Residual disinfectant	mg Cl/l	S	60	60		0	0.000	0.100	0.626	1.100
Glyphosate	ug/l	AS	8	8		0	0.000	< 0.003	< 0.003	< 0.003
Hydrogen Ion	pH value	S	24	25		0	0.000	7.340	7.676	7.950
Iron	ug Fe/l	S	24	24		0	0.000	6.670	32.723	187.000
Isoproturon	ug/l	AS	8	8		0	0.000	< 0.002	< 0.002	< 0.002
Lead	ug Pb/l	S	8	8		0	0.000	0.061	0.194	0.294
Linuron	ug/l	AS	8	8		0	0.000	< 0.006	< 0.006	< 0.006
MCPA	ug/l	AS	8	8		0	0.000	< 0.001	< 0.005	0.012
MCPB	ug/l	AS	8	8		0	0.000	< 0.004	< 0.004	< 0.004
Manganese	ug Mn/l	S	24	24		0	0.000	0.180	1.285	7.860
Mecoprop	ug/l	AS	8	8		0	0.000	< 0.001	< 0.002	< 0.003
Mercury	ug/l Hg	S	8	8		0	0.000	< 0.010	< 0.026	0.090
Metalaxyl	ug/l	AS	8	8		0	0.000	< 0.004	< 0.004	< 0.005
Metamitron	ug/l	AS	8	8		0	0.000	< 0.003	< 0.003	< 0.003
Metazachlor	ug/l	AS	8	7		0	0.000	< 0.003	< 0.004	< 0.004
Metoxuron	ug/l	AS	8	8		0	0.000	< 0.002	< 0.002	< 0.002
Metribuzin	ug/l	AS	8	8		0	0.000	< 0.002	< 0.003	< 0.004
Nickel	ug Ni/l	S	8	8		0	0.000	0.373	0.601	1.134
Nitrate	mg NO3/l	S	8	8		0	0.000	< 0.400	< 1.480	3.357
Nitrite	mg NO2/l	S	8	8		0	0.000	0.007	< 0.010	< 0.010
Odour	Diln No	S	24	24		0	0.000	0.000	0.000	0.000
PAH - Sum of four substances	ug/l	S	8	8		0	0.000	< 0.010	< 0.010	< 0.010
Pendimethalin	ug/l	AS	8	8		0	0.000	< 0.003	< 0.003	< 0.004
Pesticides - Total Substances	ug/l	AS	8	8		0	0.000	< 0.050	< 0.050	< 0.050
Phorate	ug/l	AS	8	11		0	0.000	< 0.004	< 0.004	< 0.004
Pirimicarb	ug/l	AS	8	7		0	0.000	< 0.002	< 0.002	< 0.003
Propachlor	ug/l	AS	8	8		0	0.000	< 0.004	< 0.004	< 0.004

WATER SUPPLY ZONE - ZN0704 - Lough Bradan Drumquin

Printed On 30-JAN-2017 : NI Water : Period 01-JAN-2016 to 31-DEC-2016 incl.

Parameter		U/A & Freq.	No. of samples planned per annum	No. of samples taken in year	PCV Auth Dep	No. Of samples contravening PCV	% of samples contravening PCV	Concentration or value (all samples) Min.	Mean	Max.
Propiconazole	ug/l	AS	8	8		0	0.000	< 0.002	< 0.002	0.002
Propyzamide	ug/l	AS	8	8		0	0.000	< 0.002	< 0.006	< 0.010
Prothioconazole	ug/l	AS	8	8		0	0.000	< 0.006	< 0.006	< 0.006
Selenium	ug/l Se	S	8	8		0	0.000	0.164	0.219	0.297
Sodium	mg Na/l	S	8	9		0	0.000	4.250	40.505	74.960
Sulphate	mg SO4/l	S	8	8		0	0.000	1.700	48.244	83.700
Taste	Diln No	S	24	24		2	8.333	0.000	0.292	5.000
Tebuconazole	ug/l	AS	8	8		0	0.000	< 0.002	< 0.006	< 0.018
Tetrachloroethene/Trichloroethene - S	ug/l	S	8	8		0	0.000	< 0.200	< 0.219	< 0.348
Tetrachloromethane	ug/l	S	8	8		0	0.000	< 0.100	< 0.100	< 0.100
Total - Residual disinfectant	mg Cl/l	S	60	60		0	0.000	0.180	0.724	1.220
Total Indicative Dose	mSv/year	AS	1	1		0	0.000	< 0.100	< 0.100	< 0.100
Total Organic Carbon	mg C/l	AS	8	8		0	0.000	1.050	1.923	2.720
Total Trihalomethanes	ug/l	S	8	8		2	25.000	31.200	71.828	110.900
Total coliforms	No./100 ml	S	60	60		0	0.000	0.000	0.000	0.000
Triclopyr	ug/l	AS	8	8		0	0.000	< 0.004	< 0.004	0.009
Tritium	Bq/l	AS	1	1		0	0.000	< 10.000	< 10.000	< 10.000
Turbidity	NTU	S	24	24		0	0.000	0.060	0.108	0.360

Commentary on Water Quality:

A: Supply point authorisation for pesticides and related products.

Population of zone = 23032

This zone has a surface water source :R4513

PCV Exceedances:
Sample failed 21-SEP-2016 (ZN0704AE) Taste = 2 Diln No.
Sample failed 09-NOV-2016 (ZN0704AE) Taste = 5 Diln No.
Sample failed 18-JUL-2016 (ZN0704AE) Total Trihalomethanes = 104.9 ug/l.
Sample failed 31-AUG-2016 (ZN0704AE) Total Trihalomethanes = 110.9 ug/l.

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