

SCHEDULE 1

Regulations 2, 4, 6, 14, 15, 18, 20 and 22

PRESCRIBED CONCENTRATIONS AND VALUES

Table A Microbiological Parameters

Part 1: Directive requirements					
Item	Parameters	Concentration or Value (maximum)	Units Measurement	of Point compliance	of
1	Enterococci	0	number/100 ml	Consumers' taps	
2	<i>E.coli</i>	0	number/100 ml	Consumers' taps	
Part 2: National requirements					
1	Coliform bacteria	0	number/100 ml	Service reservoirs ¹ and water treatment works	
2	<i>E. coli</i>	0	number/100 ml	Service reservoirs and water treatment works	

Note:

¹ Compliance required as to 95% of samples from each service reservoir (regulation 4(6)).

Table B Chemical Parameters**Part 1: National requirements**

Item	Parameters	Concentration or Value (maximum)	Units Measurement	of Point compliance	of
1	Acrylamide	0.10	µg/l	¹	
2	Antimony	5.0	µgSb/l	Consumers' taps	
3	Arsenic	10	µgAs/l	Consumers' taps	
4	Benzene	1.0	µg/l	Consumers' taps	
5	Benzo(a)pyrene	0.010	µg/l	Consumers' taps	
6	Boron	1.0	mgB/l	Consumers' taps	
7	Bromate	10	µBrO ₃ /l	Consumers' taps	
8	Cadmium	5.0	µgCd/l	Consumers' taps	
9	Chromium	50	µgCr/l	Consumers' taps	
10	Copper	2.0	mgCu/l	Consumers' taps	
11	Cyanide	50	µgCN/l	Consumers' taps	
12	1, dichloroethane	2 3.0	µg/l	Consumers' taps	

Status: Point in time view as at 15/06/2018.

Changes to legislation: There are currently no known outstanding effects for the The Water Supply (Water Quality) Regulations 2018. (See end of Document for details)

13	Epichlorohydrin	0.10	µg/l	1
14	Fluoride	1.5	mgF/l	Consumers' taps
15	Lead	10	µgPb/l	Consumers' taps
16	Mercury	1.0	µgPb/l	Consumers' taps
17	Nickel	20	µgNi/l	Consumers' taps
18	Nitrate ²	50	mgNO3/l	Consumers' taps
19	Nitrite ²	0.50	mgNO2/l	Consumers' taps
		0.10		Treatment Works
20	Pesticides ^{3,4}			
	Aldrin	0.030	µg/l	Consumers' taps
	Dieldrin			
	Heptachlor			
	Heptachlor epoxide			
	other pesticides	0.10	µg/l	Consumers' taps
21	Pesticides: Total ⁵	0.50	µg/l	Consumers' taps
22	Polycyclic aromatic hydrocarbons ⁶	0.10	µg/l	Consumers' taps
23	Selenium	10	µgSe/l	Consumers' taps
24	Tetrachloroethene and Trichloroethene ⁷	10	µg/l	Consumers' taps
25	Trihalomethanes: Total ⁸	100	µg/l	Consumers' taps
26	Vinyl chloride	0.50	µg/l	1

Notes:

¹ The parametric value refers to the residual monomer concentration in the water as calculated according to specifications of the maximum release from the corresponding polymer in contact with the water. This is controlled by product specification.

² See also regulation 4(2)(d).

³ See the definition of "pesticides and related products" in regulation 2.

⁴ The parametric value applies to each individual pesticide.

⁵ "Pesticides: Total" means the sum of the concentrations of the individual pesticides detected and quantified in the monitoring procedure.

⁶ The specified compounds are:

benzo(b)fluoranthene

benzo(k)fluoranthene

Status: Point in time view as at 15/06/2018.

Changes to legislation: There are currently no known outstanding effects for the The Water Supply (Water Quality) Regulations 2018. (See end of Document for details)

benzo(ghi)perylene

indeno(1,2,3-cd)pyrene.

The parametric value applies to the sum of the concentrations of the individual compounds detected and quantified in the monitoring process.

⁷ The parametric value applies to the sum of the concentrations of the individual compounds detected and quantified in the monitoring process.

⁸ The specified compounds are:

chloroform

bromoform

dibromochloromethane

bromodichloromethane.

The parametric value applies to the sum of the concentrations of the individual compounds detected and quantified in the monitoring process.

Part 2: National requirements

Item	Parameters	Concentration or Value (maximum unless otherwise stated)	Units of Measurement	Point of compliance	of
1	Aluminium	200	µgAl/l	Consumers' taps	
2	Colour	20	mg/l Pt/Co	Consumers' taps	
3	Iron	200	µgFe/l	Consumers' taps	
4	Manganese	50	µgMn/l	Consumers' taps	
5	Odour	Acceptable to consumers and no abnormal change		Consumers' taps	
6	Sodium	200	mgNa/l	Consumers' taps	
7	Taste	Acceptable to consumers and no abnormal change	...	Consumers' taps	
8	Tetrachloromethane	3	µg/l	Consumers' taps	
9	Turbidity	4	NTU	Consumers' taps	

Status: Point in time view as at 15/06/2018.
Changes to legislation: There are currently no known outstanding effects for the The Water Supply (Water Quality) Regulations 2018. (See end of Document for details)

SCHEDULE 2

Regulations 2, 6, 12, 15 and 19

INDICATOR PARAMETERS

Item	Parameters	Specification	Concentration or Value (maximum unless stated) or State	Units or Measurement	of Point of compliance
1		Ammonium	0.50	µgAl/l	Consumers' taps
2		Chloride ¹	250	mgCl/l	Supply point ⁵
3		Clostridium perfringens (including spores)	0	Number/100 ml	Supply point ⁵
4		Coliform bacteria	0	Number/100 ml	Consumers' taps
5		Colony counts	No abnormal change	Number/1 ml at 22°C	Consumers' taps, service reservoirs and treatment works
6		Conductivity ¹	2500	µS/cm at 20°C	Supply point ⁵
7		Hydrogen ion	9.5 6.5 (minimum)	pHvalue	Consumers' taps
8		Indicative dose ²	0.10	mSv	Supply point ⁵
		(a) gross alpha	0.1	Bq/l	Supply point ⁵
		(b) gross beta	1	Bq/l	Supply point ⁵
9		Radon ³	100	Bq/l	Supply point
10		Sulphate 1	250	mgSO4/l	Supply point ⁵
11		Total organic carbon (TOC)	No abnormal change	mgC/l	Supply point
12		Tritium (for radioactivity) ⁴	100	Bq/l	Supply point
13		Turbidity	1	NTU	Treatment works

Notes:

¹ The water should not be aggressive.

² Where treatment to reduce the level of radionuclides in water intended for human consumption has been taken, monitoring must be carried out to ensure the continued efficacy of the treatment.

³ Remedial action may be taken by the Welsh Ministers on radiological protection grounds without further consideration and deemed to be justified where radon concentrates exceed 1,000 Bq/l.

⁴ If tritium concentration exceeds its parametric value, an investigation (which may include analysis) of the presence of artificial radionuclides is required.

⁵ May be monitored from samples of water leaving treatment works or other supply point, as no significant change during distribution.

SCHEDULE 3

Regulations 2, 6, 8 and 9

MONITORING

Part 1

Group A and Group B Parameters

Table 1**Group A parameters and circumstances for monitoring**

<i>Item number (1)</i>	<i>Parameter (2)</i>	<i>Circumstances (3)</i>
1	Aluminium	Where used as a water treatment chemical or where the water originates from, or is influenced by, surface waters
2	Ammonium	Where chloramination is practised
3	Coliform bacteria	In all circumstances
4	Colony counts 22 ° C	In all circumstances
5	Colour	In all circumstances
6	Conductivity ¹	In all circumstances
7	<i>E. coli</i>	In all circumstances
8	Hydrogen ion	In all circumstances
9	Iron	Where used as a water treatment chemical or where the water originates from, or is influenced by, surface waters
10	Manganese	Where the water originates from, or is influenced by, surface waters
11	Nitrate	Where chloramination is practised
12	Nitrite	Where chloramination is practised
13	Odour	In all circumstances
14	Residual disinfectant	In all circumstances
15	Taste	In all circumstances
16	Turbidity	In all circumstances

Note:

¹ Sampling for this parameter in water supply zones may be substituted by sampling at supply points.

Status: Point in time view as at 15/06/2018.

Changes to legislation: There are currently no known outstanding effects for the The Water Supply (Water Quality) Regulations 2018. (See end of Document for details)

Table 2

Group B1 parameters and circumstances for monitoring to be used for sampling in water supply zones (or supply points)

<i>Item number</i>	<i>Parameter (2)</i>	<i>Circumstances</i>
1	Aluminium	Where— (i) not used as a water treatment chemical; or (ii) the water neither originates from, nor is influenced by, surface waters.
2	Ammonium	Where chloramination is not practised
3	Antimony	In all circumstances
4	Arsenic	In all circumstances
5	Benzene ¹	In all circumstances
6	Benzo(a)pyrene	In all circumstances
7	Boron ¹	In all circumstances
8	Bromate ²	In all circumstances
9	Cadmium	In all circumstances
10	Chloride ¹	In all circumstances
11	Chromium	In all circumstances
12	<i>Clostridium perfringens</i> (including spores)	In all circumstances
13	Copper	In all circumstances
14	Cyanide ¹	In all circumstances
15	1, 2 dichloroethane ¹	In all circumstances
16	Enterococci	In all circumstances
17	Fluoride ¹	In all circumstances
18	Gross alpha ¹³⁴	In all circumstances
19	Gross beta ¹³⁴	In all circumstances
20	Iron	Where— (i) not used as a flocculant; or (ii) the water neither originates from, nor is influenced by, surface waters.

¹ Sampling for these parameters may be within water supply zones (Group B1) or at supply points (Group B2).

² Monitoring of this parameter in water supply zones is required only where sodium hypochlorite is added after water has left the treatment works. In other circumstances, monitoring is required at supply points, see Group B2.

³ To monitor for indicative dose.

⁴ In the event that a single sample is taken in a year, a further sample must be taken if there is any change in relation to that supply that could affect the concentration of radionuclides in the water supply.

Status: Point in time view as at 15/06/2018.

Changes to legislation: There are currently no known outstanding effects for the The Water Supply (Water Quality) Regulations 2018. (See end of Document for details)

21	Lead	In all circumstances
22	Manganese	Where the water neither originates from, nor is influenced by, surface waters.
23	Mercury ¹	In all circumstances
24	Nickel	In all circumstances
25	Nitrate	Where chloramination is not practised.
26	Nitrite	Where chloramination is not practised.
27	Pesticides and related products ¹	In all circumstances
28	Polycyclic aromatic hydrocarbon	In all circumstances
29	Radon ¹⁴	In all circumstances
30	Selenium	In all circumstances
31	Sodium	In all circumstances
32	Sulphate ¹	In all circumstances
33	Tetrachloroethene ¹	In all circumstances
34	Tetrachloromethane ¹	In all circumstances
	Total organic carbon ¹	
35	Trichloroethene	In all circumstances
	Trihalomethanes: Total	
36	Tritium ¹⁴	In all circumstances

Notes:

¹ Sampling for these parameters may be within water supply zones (Group B1) or at supply points (Group B2).

² Monitoring of this parameter in water supply zones is required only where sodium hypochlorite is added after water has left the treatment works. In other circumstances, monitoring is required at supply points, see Group B2.

³ To monitor for indicative dose.

⁴ In the event that a single sample is taken in a year, a further sample must be taken if there is any change in relation to that supply that could affect the concentration of radionuclides in the water supply.

Status: Point in time view as at 15/06/2018.

Changes to legislation: There are currently no known outstanding effects for the The Water Supply (Water Quality) Regulations 2018. (See end of Document for details)

Table 3

Group B2 parameters and circumstances for monitoring to be used for sampling at works or supply points

<i>Item number</i>	<i>Parameter</i> ²	<i>Circumstances</i>
1	Benzene ¹	In all circumstances
2	Boron ¹	In all circumstances
3	Bromate ²	In all circumstances
4	Chloride ¹	In all circumstances
5	<i>Clostridium perfringens</i> (including spores)	In all circumstances
6	Cyanide ¹	In all circumstances
7	1, 2 dichloroethane ¹	In all circumstances
8	Fluoride ¹	In all circumstances
9	Gross alpha ¹³⁴	In all circumstances
10	Gross beta ¹³⁴	In all circumstances
11	Indicative dose	In all circumstances
12	Mercury ¹	In all circumstances
13	Nitrite	When chloramination is not practised.
14	Pesticides and related products ¹	In all circumstances
15	Radon ¹⁴	In all circumstances
16	Sulphate ¹	In all circumstances
17	Tetrachloroethene ¹	In all circumstances
18	Tetrachloromethane ¹	In all circumstances
19	Total organic carbon ¹	
20	Trichloroethene	In all circumstances
21	Tritium ¹⁴	In all circumstances

Notes:

¹ Sampling for these parameters may be within water supply zones (Group B1) or at supply points (Group B2).

² Monitoring is required at supply points where sodium hypochlorite is not added after water has left the treatment works. In other circumstances, see Group B1.

³ To monitor for indicative dose.

⁴ In the event that a single sample is taken in a year, a further sample must be taken if there is any change in relation to that supply that could affect the concentration of radionuclides in the water supply.

Status: Point in time view as at 15/06/2018.

Changes to legislation: There are currently no known outstanding effects for the The Water Supply (Water Quality) Regulations 2018. (See end of Document for details)

Table 4

Group A1 parameters

<i>Item number</i>	<i>Parameter</i>
1	Coliform bacteria
2	<i>E. coli</i>
3	Residual disinfectant

Table 5

Group A2 parameters

<i>Item number</i>	<i>Parameter</i>
1	Coliform bacteria
2	Colony counts 22° C
3	<i>E.coli</i>
4	Nitrite
5	Residual disinfectant
6	Turbidity

Table 6

Group A3 parameters

<i>Item number</i>	<i>Parameter</i>
1	Conductivity

Table 7

Group A4 parameters

<i>Item number</i>	<i>Parameter</i>
1	Aluminium
2	Ammonium
3	Colony counts 22° C
4	Colour
5	Conductivity
6	Hydrogen ion
7	Iron
8	Manganese
9	Nitrate

Status: Point in time view as at 15/06/2018.

Changes to legislation: There are currently no known outstanding effects for the The Water Supply (Water Quality) Regulations 2018. (See end of Document for details)

10	Nitrite
11	Odour
12	Taste
13	Turbidity

PART 2

Annual sampling frequencies: water supply zones

Table 8

Annual sampling frequencies for Group A4 parameters: water supply zones

Note:

This table and each table which follows it in this Part set out the annual sampling frequencies for all the substances and parameters comprising each of the groups to which they correspond, those groups having been outlined in Part 1 of this Schedule. These are determined for each water supply zone according to its estimated population (as specified in column one of each table in this Part). The number of samples to be taken is the standard number specified in column 2, unless a notice varying this number has been given under regulation 9.

<i>Estimated population of water supply zone</i>	<i>Standard sampling frequency per year</i>
<100	2
100-4,999	4
5,000—9,999	12
10,000-29,999	24
30,000-49,999	36
50,000-79,999	52
80,000-100,000	76

Table 9

Annual sampling frequencies for Group B1 parameters: water supply zones

<i>Estimated population of water supply zone</i>	<i>Standard sampling frequency per year</i>
<100	1
100-4,999	4
5,000-100,000	8

Table 10**Annual sampling frequencies for Group A1: water supply zones**

<i>Estimated population of water supply zone</i>	<i>Standard sampling frequency per year</i>
<100	4
≥100	12 per 5,000 population

Note:

For the purposes of this Table, where the population is not an exact multiple of 5,000, the population figure must be rounded up to the nearest multiple of 5,000.

PART 3**Annual sampling frequencies: treatment works and supply points****Table 11****Annual sampling frequencies for Group A2 parameters: treatment works or supply points**

Note: This table and each table which follows it in this Part set out the annual sampling frequencies for all the substances and parameters comprising each of the groups to which they correspond at treatment works or supply points, those groups having been outlined in Part 1 of this Schedule. The frequencies are determined according to the volume of water supplied at each treatment works or supply point. The number of samples to be taken is the standard number specified in column 2, unless a notice varying this number has been issued under regulation 9.

<i>Volume of water supplied m³/day</i>	<i>Standard sampling frequency per year</i>
<20	4
20-1,999	52
2,000-5,999	104
6,000-11,999	208
≥12,000	365

Table 12**Annual sampling frequencies for Group A3 parameters: treatment works or supply points**

<i>Volume of water supplied m³/day</i>	<i>Standard sampling frequency per year</i>
<20	2
20-999	4

Status: Point in time view as at 15/06/2018.

Changes to legislation: There are currently no known outstanding effects for the The Water Supply (Water Quality) Regulations 2018. (See end of Document for details)

1,000-1999	12
2,000-5,999	24
6,000-9,999	36
10,000-15,999	52
16,000-32,999	104
33,000-49,999	156
50,000-67,999	208
68,000-84,999	260
85,000-101,999	312
102,000-119,999	365
120,000-241,999	730
242,000-484,999	1,460
485,000-728,999	2,190

Table 13

Annual sampling frequencies for Group B2 parameters: treatment works or supply points

<i>Volume of water supplied m³/day</i>	<i>Standard sampling frequency per year</i>
<20	1
20-999	4
1,000-49,999	8
50,000-89,999	12
90,000-299,999	24
300,000-649,999	36
≥650,000	48

SCHEDULE 4

Regulation 6

Monitoring for indicative dose and analytical performance characteristics

Monitoring for compliance with the indicative dose

1.—(1) A water undertaker may use reliable screening strategies to indicate the presence of radioactivity in water intended for human consumption.

(2) The strategies may include screening for—

- (a) certain radionuclides or individual radionuclide; or
- (b) gross alpha activity or gross beta activity (where appropriate gross beta activity may be replaced by residual beta activity after subtraction of the K-40 activity concentration).

Screening for certain radionuclides, or screening for an individual radionuclide

2.—(1) If one of the activity concentrations exceeds 20% of the corresponding derived value or the tritium concentration exceeds its parametric value listed in Schedule 2 an analysis of additional radionuclides is required.

(2) In deciding which radionuclides are required to be measured for each supply, a water undertaker must take into account all relevant information about likely sources of radioactivity.

Screening strategies for gross alpha activity and gross beta activity

3.—(1) A water undertaker may use a screening strategy for gross alpha and gross beta to monitor for the parametric indicator value for indicative dose.

(2) Subject to sub-paragraph (3) the recommended screening values are—

(a) 0,1Bq/l for gross alpha activity; and

(b) 1,0Bq/l for gross beta activity ^{M1}.

(3) If the gross alpha activity exceeds 0,1Bq/l or the gross beta activity exceeds 1,0Bq/l, analysis for specific radionuclides is required.

(4) The Welsh Ministers may set alternative screening levels for gross alpha activity and gross beta activity where it can be demonstrated by the water undertaker that the alternative levels are in compliance with an indicative dose of 0,1 mSv.

(5) The radionuclides to be measured must be based on all relevant information about likely sources of radioactivity.

Marginal Citations

M1 Where appropriate, gross beta activity may be replaced by residual beta activity after subtraction of the K-40 activity concentration.

Calculation of the indicative dose

4.—(1) The indicative dose must be calculated from—

(a) the measured radionuclide concentrations and the dose coefficients referred to as “standard values and relationships” in Article 13, and recommended for the estimation of doses from internal exposure in the definition of “standard values and relationships” in Article 4(96), of Council Directive 2013/59/Euratom laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation ^{M2}; or

(b) more recent information recognised by the Welsh Ministers, on the basis of the annual intake of water (730 l for adults).

(2) Where the following formula is satisfied, it can be assumed that the indicative dose is less than the parametric value of 0,1 mSv and no further investigation is required—

$$\sum_{i=1}^n \frac{C_i(obs)}{C_i(der)} \leq 1$$

where—

“*C_i(obs)*” means observed concentration of radionuclide *i*;

“*C_i(der)*” means derived concentration of radionuclide *i*;

“*n*” means number of radionuclides detected.

Status: Point in time view as at 15/06/2018.

Changes to legislation: There are currently no known outstanding effects for the The Water Supply (Water Quality) Regulations 2018. (See end of Document for details)

Table 1

Derived concentrations for radioactivity in water intended for human consumption

This table includes values for the most common natural and artificial radionuclides: these are precise values, calculated for a dose of 0.1 mSy, an annual intake of 730 litres and using the dose coefficients referred to as “standard values and relationships” in Article 13, and recommended for the estimation of doses from internal exposure in the definition of “standard values and relationships” in Article 4(96), of Council Directive 2013/59/Euratom. Derived concentrations for other radionuclides can be calculated on the same basis, and values can be updated on the basis of more recent information recognised by the Welsh Ministers.

Origin	Nuclide	Derived concentration
Natural	U-238 ¹	3,0 Bq/l
	U-234 ¹	2,8 Bq/l
	Ra-226	0,5 Bq/l
	Ra-228	Ra-228
	Pb-210	0,2 Bq/l
	Po-210	0,1 Bq/l
Artificial	C-14	240 Bq/l
	Sr-90	4,9 Bq/l
	Pu-239/Pu-240	0,6 Bq/l
	Am-241	0,7 Bq/l
	Co-60	40 Bq/l
	Cs-134	7,2 Bq/l
	Cs-137	11 Bq/l
	I-131	6,2 Bq/l

¹ This table allows only for the radiological properties of uranium, not for its chemical toxicity.

Performance characteristics and methods of analysis

For the following parameters and radionuclides, the method of analysis used must, as a minimum, be capable of measuring activity concentrations with a limit of detection specified below:

Parameters radionuclides	and Limit of detection (Notes ^{1,2})	Notes
Tritium	10 Bq/l	Note ³
Radon	10 Bq/l	Note ³
gross alpha	0,04 Bq/l	Note ⁴
gross beta	0,4 Bq/l	Note ⁴
U-238	0,02 Bq/l	
U-234	0,02 Bq/l	

Status: Point in time view as at 15/06/2018.**Changes to legislation:** There are currently no known outstanding effects for the The Water Supply (Water Quality) Regulations 2018. (See end of Document for details)

Ra-226	0,04 Bq/l	
Ra-228	0,02 Bq/l	Note ⁵
Pb-210	0,02 Bq/l	
Po-210	0,01 Bq/l	
C-14	20 Bq/l	
Sr-90	0,4 Bq/l	
Pu-239/Pu-240	0,04 Bq/l	
Am-241	0,06 Bq/l	
Co-60	0,5 Bq/l	
Cs-134	0,5 Bq/l	
Cs-137	0,5 Bq/l	
I-131	0,5 Bq/l	

Notes:

¹ The limit of detection must be calculated according to the ISO standard 11929: Determination of the characteristic limits (decision threshold, detection limit, and limits of confidence interval) for measurements of ionising radiation – Fundamentals and application, with probabilities of errors of 1st and 2nd kind of 0,05 each.

² Measurement uncertainties must be calculated and reported as complete standard uncertainties, or as expanded uncertainties with an expansion factor of 1,96 according to the ISO Guide for the Expression of Uncertainty in Measurement.

³ The limit of detection for tritium and for radon is 10% of its parametric value of 100 Bq/l.

⁴ The limit of detection for gross alpha activity and gross beta activities are 40% of the screening values of 0,1 and 1,0 Bq/l respectively.

⁵ This limit of detection applies only to initial screening for indicative dose for a new water source; if initial checking indicates that it is not plausible that Ra-228 exceeds 20% of the derived concentration, the limit of detection may be increased to 0,08 Bq/l for routine Ra-228 nuclide specific measurements, until a subsequent re-check is required.

Marginal Citations

M2 OJ No L 13, 17.1.2014, p.1. For the estimation of doses from internal exposure, Article 4(96) refers to chapter 1 of ICRP (International Commission on Radiological Protection) Publication 119. See Table F.1 in Annex F. A copy of ICRP Publication 119 can be obtained from the ICRP website (www.icrp.org) or from the Welsh Government Water Branch, Welsh Government, Cathays Park, Cardiff, CF10 3NQ.

SCHEDULE 5

Regulations 15 and 16

ANALYTICAL METHODOLOGY

Table A1**Parameters for which, subject to Regulation 15(7), methods of analysis are specified**

(1) Parameter	(2) Method of analysis
E. coli and coliform bacteria	EN ISO 9308-1

Status: Point in time view as at 15/06/2018.

Changes to legislation: There are currently no known outstanding effects for the The Water Supply (Water Quality) Regulations 2018. (See end of Document for details)

	M3 or EN ISO 9308-2 M4
Enterococci	EN ISO 7899-2 M5
Pseudomonas aeruginosa	EN ISO 16266 M6
Enumeration of culturable microorganisms – colony count 22°C	EN ISO 6222 M7
Enumeration of culturable microorganisms – colony count 36°C	EN ISO 6222
<i>Clostridium perfringens</i> including spores	EN ISO 14189 M8

Marginal Citations

- M3** This standard entitled “*Water quality - Enumeration of Escherichia coli and coliform bacteria - Part 1: Membrane filtration method for waters with low bacterial background flora (ISO 9308-1:2014)*” was approved by the European Committee for Standardization (CEN) on 18 January 2017. Under reference BS EN ISO 9308-1:2014+A1:2017, it is published as a UK standard by the British Standards Institution (ISBN 978 0 580 92379 1).
- M4** This standard entitled “*Water quality - Enumeration of Escherichia coli and coliform bacteria - Part 2: Most probable number method (ISO 9308-2:2012)*” was approved by the European Committee for Standardization (CEN) on 11 April 2014. Under reference BS EN ISO 9308-2:2014, it is published as a UK standard by the British Standards Institution (ISBN 978 0 580 84023 4).
- M5** This standard entitled “*Water quality - Detection and enumeration of intestinal enterococci - Part 2: Membrane filtration method (ISO 7899-2:2000)*” was approved by the European Committee for Standardization (CEN) on 11 April 2014. Under reference BS EN ISO 7899-2:2000, it is published as a UK standard by the British Standards Institution (ISBN 0 580 34953 5).
- M6** This standard entitled “*Water quality - Detection and enumeration of Pseudomonas aeruginosa - Method by membrane filtration (ISO 16266:2006)*” was approved by the European Committee for Standardization (CEN) on 11 January 2008. Under reference BS EN ISO 16266:2008, it is published as a UK standard by the British Standards Institution (ISBN 978 0 580 59736 7).
- M7** This standard entitled “*Water quality - Enumeration of culturable micro-organisms - Colony count by inoculation in a nutrient agar culture medium (ISO 6222:1999)*” was approved by the European Committee for Standardization (CEN) on 16 March 1999. Under reference BS EN ISO 6222:1999, it is published as a UK standard by the British Standards Institution (ISBN 0 580 32495 8).
- M8** This standard entitled *Water quality - Enumeration of Clostridium perfringens - Method using membrane filtration (ISO 14189:2013)*” was approved by the European Committee for Standardization (CEN) on 15 July 2016. Under reference BS EN ISO 14189:2016, it is published as a UK standard by the British Standards Institution (ISBN 978 0 580 92184 1).

Table A2**Parameters in relation to which methods of analysis must satisfy prescribed characteristics**

<i>(1) Parameters</i>	<i>(2)Trueness % of prescribed concentration or value or specification</i>	<i>(3)Precision % of prescribed concentration or value or specification</i>	<i>(4)Limit of detection % of prescribed concentration or value or specification</i>
Aluminium	10	10	10
Ammonium	10	10	10
Antimony	25	25	25
Arsenic	10	10	10
Benzene	25	25	25
Benzo(a)pyrene	25	25	25
Boron	10	10	10
Bromate	25	25	25
Cadmium	10	10	10
Chloride	10	10	10
Chromium	10	10	10
Colour	10	10	10
Conductivity	10	10	10
Copper	10	10	10
Cyanide ¹	10	10	10
1,2-dichloroethane	25	25	10
Fluoride	10	10	10
Hydrogen ion concentration (expressed in pH units)	0.2 pH	0.2	
Iron	10	10	10
Lead	10	10	10
Manganese	10	10	10

¹ The method of analysis should determine total cyanide in all forms.² The performance characteristics apply to each individual pesticide and will depend on the pesticide concerned.³ The performance characteristics apply to the individual substances specified at 25% of the parametric value in Part 1 of Table B in Schedule 1.⁴ The performance characteristics apply to the individual substances specified at 50% of the parametric value in Part 1 of Table B in Schedule 1.⁵ The performance characteristics apply to the prescribed value of 4NTU.⁶ The performance characteristics apply to the specification of 1NTU for water leaving treatment works.

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Mercury	20	10	20
Nickel	10	10	10
Nitrate	10	10	10
Nitrite	10	10	10
Pesticides and related products ²	25	25	25
Polycyclic aromatic hydrocarbons ³	25	25	25
Selenium	10	10	10
Sodium	10	10	10
Sulphate	10	10	10
Tetrachloromethane	20	25	10
Trichloroethene ⁴	25	25	10
Trihalomethanes:	25	25	10
Total ³			
Turbidity ⁵	10	10	10
Turbidity ⁶	25	25	25

Notes:

¹ The method of analysis should determine total cyanide in all forms.

² The performance characteristics apply to each individual pesticide and will depend on the pesticide concerned.

³ The performance characteristics apply to the individual substances specified at 25% of the parametric value in Part 1 of Table B in Schedule 1.

⁴ The performance characteristics apply to the individual substances specified at 50% of the parametric value in Part 1 of Table B in Schedule 1.

⁵ The performance characteristics apply to the prescribed value of 4NTU.

⁶ The performance characteristics apply to the specification of 1NTU for water leaving treatment works.

Table A3

Minimum performance characteristic “uncertainty of measurement”

The uncertainty of measurement laid down in this table must not be used as an additional tolerance to the parametric values set out in Schedules 1 and 2.

<i>(1) Parameter</i>	<i>(2) Uncertainty of measurement % of the parametric value (except for pH)¹</i>
Aluminium	25
Ammonium	40
Antimony	40
Arsenic	30

Benzene	40
Benzo(a)pyrene ²	50
Boron	25
Bromate	40
Cadmium	25
Chloride	15
Chromium	30
Colour	20
Conductivity	20
Copper	25
Cyanide ³	30
1,2-dichloroethane	40
Fluoride	20
Hydrogen ion concentration pH (expressed in pH units)	0.2
Iron	30
Lead	25
Manganese	30
Mercury	30
Nickel	25
Nitrate	15
Nitrite	20
Oxidisability ⁴	50
Pesticides ⁵	30
Polycyclic aromatic hydrocarbons ⁶	50
Selenium	40
Sodium	15
Sulphate	15
Tetrachloroethene ⁶	30
Tetrachloromethane	30
Trichloroethene ⁷	40
Trihalomethanes: total ⁶	40
Total organic carbon ⁸	30
Turbidity ⁹	30

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Notes:

¹ “Uncertainty of measurement” is a non-negative parameter characterising the dispersion of the quantity values being attributed to a measurement, based on the information used. The performance criterion for measurement uncertainty ($k = 2$) is at least the percentage of the parametric value stated in the table. If the value of uncertainty of measurement cannot be met, the best available technique must be selected (up to 60 % of the parametric value).

² The method determines total cyanide in all forms.

³ Reference method: European standard EN ISO 8467 entitled “Water quality - Determination of permanganate index (ISO 8467)”^{M9}.

⁴ The performance characteristics for individual pesticides are given as an indication. Values for the uncertainty of measurement as low as 30% can be achieved for several pesticides, higher values up to 80% may be allowed for a number of pesticides.

⁵ The performance characteristics apply to individual substances, specified at 25% of the parametric value in Part 1 of Table B in Schedule 1.

⁶ The performance characteristics apply to individual substances, specified at 50 % of the parametric value in Part 1 of Table B in Schedule 1.

⁷ The uncertainty of measurement must be estimated at the level of 3 mg/l of the total organic carbon (TOC) in accordance with European standard EN 1484 entitled “Water analysis - Guidelines for the determination of total organic carbon and dissolved organic carbon”^{M10} and dissolved organic carbon (DOC) shall be used.

⁸ The uncertainty of measurement must be estimated at the level of 1,0 NTU in accordance with European standard EN ISO 7027-1 entitled “Water quality - Determination of turbidity - Part 1: Quantitative methods (ISO 7027-1)”^{M11}.

Marginal Citations

- M9** This standard was approved by the European Committee for Standardization (CEN) on 3 November 1994. Under reference EN ISO 8467:1995, it is published as a UK standard by the British Standards Institution (ISBN 0 580 23435 5).
- M10** This standard was approved by the European Committee for Standardization (CEN) on 6 April 1997. Under reference BS EN 1484:1997, it is published as a UK standard by the British Standards Institution (ISBN 0 580 28372 0).
- M11** This standard was approved by the European Committee for Standardization (CEN) on 15 April 2016. Under reference BS EN ISO 7027-1:2016, it is published as a UK standard by the British Standards Institution (ISBN 978 0 580 81961 2)

SCHEDULE 6

Regulation 40

Amendments and revocations

Table 1

<i>(1) Regulations to be amended</i>	<i>(2) Reference</i>	<i>(3) Provision to be amended</i>	<i>(4) Amendments</i>
The Water Quality and Supply (Fees) (Undertakers or Mainly in Wales) Order 2016	S.I. 2016/843 (W. 213)	The Schedule	In the English language text, in each place it occurs, for “Water Supply (Water Quality) Regulations 2010” substitute “Water Supply (Water

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Quality) Regulations
2018”

In the Welsh language text, in each place it occurs for “Rheoliadau Cyflenwi Dŵr (Ansawdd Dŵr) 2010” substitute Rheoliadau Cyflenwi Dŵr (Ansawdd Dŵr) 2018”

Table 2

<i>(1) Regulations revoked</i>	<i>(2) Reference</i>	<i>(3) Extent of revocation</i>
The 2010 Regulations	S.I. 2010/994 (W. 99)	The whole Regulations
The National Treatment Agency (Abolition) and the Health and Social Care Act 2012 (Consequential, Transitional and Savings Provisions) Order 2013 M12	S.I. 2013/235	Paragraph 152 of Schedule 2
The Construction Products Regulations 2013	S.I. 2013/1387	Paragraph 7 of Schedule 5
The Private Water Supplies (Wales) Regulations 2017	S.I. 2017/1041 (W. 270)	Regulation 25
The Water Act 2014 (Consequential Amendments etc.) Order 2017	S.I. 2017/506	Article 28

Marginal Citations

M12 There are amendments not relevant to these Regulations.

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