

SCHEDULE 1

Regulation 2(1) and (4)

PRESCRIBED CONCENTRATIONS AND VALUES

TABLE A

MICROBIOLOGICAL PARAMETERS

<i>(1) Item</i>	<i>(2) Parameter</i>	<i>(3) Concentration or value (maximum)</i>	<i>(4) Units of measurement</i>	<i>(5) Point of compliance</i>
Part 1				
1.	Enterococci	0	Number/100ml	Consumer's tap
2.	<i>Escherichia coli</i>	0	Number/100ml	Consumer's tap
Part 2 ¹				
3.	Coliform bacteria	0	Number/100ml	Service reservoir ²
		0	Number/100ml	Treatment works
4.	<i>Escherichia coli</i>	0	Number/100ml	Service reservoir
		0	Number/100ml	Treatment works

Notes—

¹ The parametric values in Part 2 are not required to protect human health (since the parametric values in Part 1 are sufficient for that purpose). The values in Part 2 are not therefore set for the purposes of Article 5(3) of the Directive.

² Compliance required as to 95% of samples from each service reservoir (regulation 4(4)).

[^{F1}TABLE B

CHEMICAL PARAMETERS

<i>(1) Item</i>	<i>(2) Parameter</i>	<i>(3) Concentration or value (maximum)</i>	<i>(4) Units of measurement</i>	<i>(5) Point of compliance</i>	<i>(6) Notes</i>
Part 1					
1.	Acrylamide	0.10	µg/l	Consumer's tap	Note 1
2.	Antimony	10	µgSb/l	Consumer's tap	
3.	Arsenic	10	µgAs/l	Consumer's tap	
4.	Benzene	1.0	µg/l	Consumer's tap	
5.	Benzo(a)pyrene	0.010	µg/l	Consumer's tap	
6.	Bisphenol A	2.5	µg/l	Consumer's tap	
7.	Boron	1.5	mgB/l	Consumer's tap	Note 2

Changes to legislation: There are currently no known outstanding effects for the The Public Water Supplies (Scotland) Regulations 2014. (See end of Document for details)

(1)	(2)	(3)	(4)	(5)	(6)
8.	Bromate	10	µgBrO ₃ /l	Consumer's tap	
9.	Cadmium	5.0	µgCd/l	Consumer's tap	
10.	Chlorate	0.25	mg/l	Consumer's tap	Note 3
11.	Chlorite	0.25	mg/l	Consumer's tap	Note 3
12.	Chromium	50	µgCr/l	Consumer's tap	
13.	Copper	2.0	mgCu/l	Consumer's tap	
14.	Cyanide	50	µgCN/l	Consumer's tap	
15.	1,2-dichloroethane	3.0	µg/l	Consumer's tap	
16.	Epichlorohydrin	0.10	µg/l	Consumer's tap	Note 1
17.	Fluoride	1.5	mgF/l	Consumer's tap	
18.	HAAs	60	µg/l	Consumer's tap	Note 4
19.	Lead	10	µgPb/l	Consumer's tap	
20.	Mercury	1.0	µgHg/l	Consumer's tap	
21.	Microcystin-LR	1.0	µg/l	Consumer's tap	Note 5
22.	Nickel	20	µgNi/l	Consumer's tap	
23.	Nitrate	50	mgNO ₃ /l	Consumer's tap	Note 6
24.	Nitrite	0.50	mgNO ₂ /l	Consumer's tap	Note 6
		0.10	mgNO ₂ /l	Treatment works	
25.	Pesticides—				
	Aldrin	0.030	µg/l	Consumer's tap	
	Dieldrin	0.030	µg/l	Consumer's tap	
	Heptachlor	0.030	µg/l	Consumer's tap	
	Heptachlor epoxide	0.030	µg/l	Consumers' tap	
	Other pesticide	0.10	µg/l	Consumer's tap	Note 7
26.	Pesticides: total	0.50	µg/l	Consumer's tap	
27.	Sum of PFAS	0.1	µg/l	Consumer's tap	
28.	PAH Total	0.10	µg/l	Consumer's tap	
29.	Selenium	20	µgSe/l	Consumer's tap	Note 8
30.	Tetrachloroethene and trichloroethene	10	µg/l	Consumer's tap	Note 9
31.	THM: Total	100	µg/l	Consumer's tap	
32.	Uranium	30	µg/l	Consumer's tap	
33.	Vinyl chloride	0.50	µg/l		Note 10
Part 2					

Changes to legislation: There are currently no known outstanding effects for the The Public Water Supplies (Scotland) Regulations 2014. (See end of Document for details)

(1)	(2)	(3)	(4)	(5)	(6)
34.	Aluminium	200	µgAl/l	Consumer's tap	
35.	Colour	20	mg/l Pt/Co	Consumer's tap	
36.	Iron	200	µgFe/l	Consumer's tap	
37.	Manganese	50	µgMn/l	Consumer's tap	
38.	Sodium	200	mgNa/l	Consumer's tap	
39.	Tetrachlorometh-ane	3	µg/l	Consumer's tap	
40.	Turbidity	4	NTU	Consumer's tap	

Notes—

Note 1: The parametric value of 0.10 µg/l 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.

Note 2: A parametric value of 2.4 mgB/l must be applied when desalinated water is the predominant water source of the supply system concerned or in regions where geological conditions could lead to high levels of boron in groundwater.

Note 3: A parametric value of 0.70 mg/l must be applied where a disinfection method that generates this parameter, in particular chlorine dioxide, is used for disinfection of water intended for human consumption. This parametric value applies only if such disinfection methods are used.

Note 4: This parameter must be measured only when disinfection methods that can generate HAAs are used for the disinfection of water intended for human consumption.

Note 5: This parameter must be measured only in the event of potential blooms in source water (increasing cyanobacterial cell density or bloom forming potential).

Note 6: See also regulation 4(2)(c).

Note 7: The corresponding parametric value applies to each "other pesticide" individually.

Note 8: A parametric value of 30 µg/l must be applied for regions where geological conditions could lead to high levels of selenium in groundwater.

Note 9: The sum of concentrations of these two parameters.

Note 10: The parametric value of 0.50 µg/l 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.]

F1 [Sch. 1 Table B and notes substituted \(1.1.2023\) by The Public Water Supplies \(Scotland\) Amendment Regulations 2022 \(S.S.I. 2022/387\), reg. 1\(1\), sch. 1](#)

[F2]TABLE C

Indicator Parameters

(1)	(2)	(3)	(4)	(5)	(6)
<i>Item</i>	<i>Parameter</i>	<i>Concentration or value (maximum) or state</i>	<i>Units of measurement</i>	<i>Point monitoring</i>	<i>Notes</i>
Part 1					
1.	Ammonium	0.50	mgNH ₄ /l	Consumer's tap	
2.	Chloride	250	mgCl/l	Supply point	Note 3

Changes to legislation: There are currently no known outstanding effects for the The Public Water Supplies (Scotland) Regulations 2014. (See end of Document for details)

(1)	(2)	(3)	(4)	(5)	(6)
3.	<i>Clostridium perfringens</i> (including spores)	0	Number/100ml	Supply point	Note 4
4.	Coliform bacteria	0	Number/100ml	Consumer's tap	Note 5
5.	Colony count	No abnormal change	Number/1ml at 22°C	Consumer's tap, service reservoir and treatment works	
6.	Colour	Acceptable to consumers and no abnormal change		Consumer's tap	
7.	Conductivity	2500	µS/cm at 20°C	Supply point	Note 6
8.	Hydrogen ion	9.5	pH value	Consumer's tap	Notes 6 and 7
		6.5 (minimum)			
9.	Odour	Acceptable to consumers and no abnormal change		Consumer's tap	
10.	Sulphate	250	mgSO ₄ /l	Supply point	Note 3
11.	Taste	Acceptable to consumers and no abnormal change		Consumer's tap	
12.	Total organic carbon	No abnormal change	mgC/l	Supply point	Note 8
13.	Turbidity	1	NTU	Treatment works	
Part 2					
14.	Indicative dose	0.10	mSv	Supply point	
15.	Radon	100	Bq/l	Supply point	Note 9
16.	Tritium	100	Bq/l	Supply point	Note 10

Notes—

Note 1: Water must not be aggressive or corrosive. This applies particularly to water undergoing treatment (demineralisation, softening, membrane treatment, reverse osmosis, etc.).

Note 2: Where water intended for human consumption is derived from treatment that significantly demineralises or softens water, calcium and magnesium salts could be added to condition the water in order to reduce any possible negative health impact, as well as to reduce the corrosiveness or aggressivity of water and to improve taste. Minimum concentrations of calcium and magnesium or total dissolved solids in softened or demineralised water could be established taking into account the characteristics of water that enters those processes.

Note 3: The water must not be corrosive.

Note 4: This parameter must be measured if a risk assessment under regulation 30(2) indicates that it is appropriate to do so.

Note 5: For water put into bottles or containers (which is not intended for sale for drinking by humans), the unit is number/250ml.

Note 6: The water must not be aggressive.

Note 7: For water put into bottles or containers (which is not intended for sale for drinking by humans), the minimum value is 4.5 pH units.

Note 8: This parameter need not be measured for supplies of less than 10,000 m³ a day.

Note 9: Remedial action is to be deemed justified on radiological protection grounds, without further consideration where radon concentrations exceed 1,000 Bq/l.

Note 10: If the concentration of tritium exceeds this value, an analysis of the presence of other artificial radionuclides must also be carried out by Scottish Water.]

F2 Sch. 1 Table C and notes substituted (1.1.2023) by [The Public Water Supplies \(Scotland\) Amendment Regulations 2022 \(S.S.I. 2022/387\)](#), reg. 1(1), **sch. 2**

In this Schedule—

^{F3}
...

[^{F4}“HAAs” means the sum of the following haloacetic acids: monochloro-, dichloro-, and trichloro-acetic acid, and mono- and dibromo-acetic acid,]

“NTU” means Nephelometric Turbidity Unit;

“PAH: Total” means the sum of the concentrations of the following polyaromatic hydrocarbons: benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(ghi)perylene and indeno(1,2,3-cd)pyrene;

“Pesticide” means an organic insecticide, herbicide, fungicide, nematocide, acaricide, algicide, rodenticide, slimicide, ^{F5}... or related product (including a growth regulator), and includes [^{F6}their metabolites as defined in point (32) of Article 3 of Regulation (EC) No 1107/2009 of the European Parliament and of the Council that are relevant metabolites];

“Pesticides: Total” refers to the sum of the concentrations of each pesticide detected and quantified in the monitoring procedure;

[^{F7}“relevant metabolite” means a pesticide metabolite that has intrinsic properties comparable to those of the parent substance in terms of its pesticide target activity or that either itself or its transformation products generate a health risk for consumers,

Sum of PFAS” means the sum of the following perfluoroalkyl substances considered a concern as regards water intended for human consumption—

- Perfluorobutanoic acid,
- Perfluoropentanoic acid,
- Perfluorohexanoic acid,
- Perfluoroheptanoic acid,
- Perfluorooctanoic acid,
- Perfluorononanoic acid,
- Perfluorodecanoic acid,
- Perfluoroundecanoic acid,
- Perfluorododecanoic acid,
- Perfluorotridecanoic acid,
- Perfluorobutane sulfonic acid,
- Perfluoropentane sulfonic acid,
- Perfluorohexane sulfonic acid,
- Perfluoroheptane sulfonic acid,

Changes to legislation: There are currently no known outstanding effects for the The Public Water Supplies (Scotland) Regulations 2014. (See end of Document for details)

- Perfluorooctane sulfonic acid,
- Perfluorononane sulfonic acid,
- Perfluorodecane sulfonic acid,
- Perfluoroundecane sulfonic acid,
- Perfluorododecane sulfonic acid,
- Perfluorotridecane sulfonic acid.]

“Tetrachloroethene and Trichloroethene” means the sum of the concentrations of tetrachloroethene and trichloroethene; and

“THM: Total” means the sum of the concentrations of the following trihalomethanes: chloroform, bromoform, dibromochloromethane and bromodichloromethane.

- F3** Words in sch. 1 omitted (28.11.2015) by virtue of [The Private and Public Water Supplies \(Miscellaneous Amendments\) \(Scotland\) Regulations 2015 \(S.S.I. 2015/346\)](#), regs. 1(1), **16(c)**
- F4** Words in sch. 1 inserted (1.1.2023) by [The Public Water Supplies \(Scotland\) Amendment Regulations 2022 \(S.S.I. 2022/387\)](#), regs. 1(1), **16(c)(i)**
- F5** Word in sch. 1 omitted (1.1.2023) by virtue of [The Public Water Supplies \(Scotland\) Amendment Regulations 2022 \(S.S.I. 2022/387\)](#), regs. 1(1), **16(c)(ii)(aa)**
- F6** Words in sch. 1 inserted (1.1.2023) by [The Public Water Supplies \(Scotland\) Amendment Regulations 2022 \(S.S.I. 2022/387\)](#), regs. 1(1), **16(c)(ii)(bb)**
- F7** Words in sch. 1 inserted (1.1.2023) by [The Public Water Supplies \(Scotland\) Amendment Regulations 2022 \(S.S.I. 2022/387\)](#), regs. 1(1), **16(c)(iii)**

- F3** Words in sch. 1 omitted (28.11.2015) by virtue of [The Private and Public Water Supplies \(Miscellaneous Amendments\) \(Scotland\) Regulations 2015 \(S.S.I. 2015/346\)](#), regs. 1(1), **16(c)**
- F4** Words in sch. 1 inserted (1.1.2023) by [The Public Water Supplies \(Scotland\) Amendment Regulations 2022 \(S.S.I. 2022/387\)](#), regs. 1(1), **16(c)(i)**
- F5** Word in sch. 1 omitted (1.1.2023) by virtue of [The Public Water Supplies \(Scotland\) Amendment Regulations 2022 \(S.S.I. 2022/387\)](#), regs. 1(1), **16(c)(ii)(aa)**
- F6** Words in sch. 1 inserted (1.1.2023) by [The Public Water Supplies \(Scotland\) Amendment Regulations 2022 \(S.S.I. 2022/387\)](#), regs. 1(1), **16(c)(ii)(bb)**
- F7** Words in sch. 1 inserted (1.1.2023) by [The Public Water Supplies \(Scotland\) Amendment Regulations 2022 \(S.S.I. 2022/387\)](#), regs. 1(1), **16(c)(iii)**

[^{F8}SCHEDULE 1A

Regulation 6(2) and (3)

MONITORING: MINIMUM REQUIREMENTS

- F8** Sch. 1A inserted (27.10.2017) by [The Public Water Supplies \(Scotland\) Amendment Regulations 2017 \(S.S.I. 2017/281\)](#), reg. 1(1), **sch. 1** (as amended by [The Public and Private Water Supplies \(Miscellaneous Amendments\) \(Scotland\) Regulations 2017 \(S.S.I. 2017/321\)](#), regs. 1, **3(2)**)

PART A

Monitoring programmes

1. Each monitoring programme must—

- (a) verify that—
 - (i) the measures in place to control risks to human health throughout the water supply chain (from the catchment area through abstraction, treatment and storage to distribution) are working effectively; and
 - (ii) water at the point of compliance meets the water quality standards;
- (b) provide information on the quality of water supplied to demonstrate that—
 - (i) the water quality standards are being met; and
 - (ii) the prescribed concentration or value for each parameter in Table C is not being exceeded at the point of monitoring for the parameter; and
- (c) identify the most appropriate means of mitigating the risks to human health.

2.—(1) Each monitoring programme must fulfil the requirements of Part B of this schedule (and, where applicable, Part C of this schedule) by means of—

- (a) the collection and analysis of the quality of discrete water samples; or
- (b) measurements of the quality of water recorded by a continuous monitoring process.

(2) In addition, monitoring programmes may consist of—

- (a) inspections of records of the functionality and maintenance status of equipment; and
- (b) inspections of the catchment area, water abstraction, treatment, storage and distribution infrastructure.

192A.—(1) Each monitoring programme must include an operational monitoring programme that—

- (a) takes into account any parameter, or micro-organism, parasite or substance, identified as relevant—
 - (i) by virtue of regulation 5(2), or
 - (ii) through a risk assessment under regulation 30,
- (b) where appropriate, includes monitoring of parameters in accordance with sub-paragraphs (2) and (3), and
- (c) confirms the effectiveness of all measures in place to control risks to human health throughout the water supply chain (from the catchment area through abstraction, treatment and storage to distribution).

(2) Except where turbidity is caused by iron and manganese in groundwater sources, the operational monitoring programme must include monitoring of the parameter turbidity at the treatment works in accordance with the reference values and frequencies in the following table—

Operational parameter	Reference value	Minimum frequency of sampling and analysis		
Turbidity at the treatment works	0.3 NTU in 95% of samples and none to exceed 1 NTU	<i>Volume (m³) of water distributed or produced each day within a supply zone</i>		
		> 0	≤ 1,000	Weekly

Changes to legislation: There are currently no known outstanding effects for the The Public Water Supplies (Scotland) Regulations 2014. (See end of Document for details)

Operational parameter	Reference value	Minimum frequency of sampling and analysis		
		> 1,000	≤ 10,000	Daily
	> 10,000		Continuous	

(3) The operational monitoring programme must include monitoring of somatic coliphages in raw water in accordance with the following table—

Operational parameter	Reference value	Unit	Notes
Somatic coliphages	50 (for raw water)	PFU/100ml	<p>This parameter must be measured if the risk assessment under regulation 30 indicates that it is appropriate to do so.</p> <p>If it is found in raw water at concentrations > 50 PFU/100ml, it must be analysed after steps of the treatment train in order to determine log removal by the barriers in place and to assess whether the risk of a breakthrough of pathogenic viruses is sufficiently under control.</p>

(4) In this paragraph—

“NTU” means Nephelometric Turbidity Unit, and

“PFU” means Plaque Forming Unit.]

F9 Sch. 1A Pt. A para. 2A inserted (1.1.2023) by The Public Water Supplies (Scotland) Amendment Regulations 2022 (S.S.I. 2022/387), regs. 1(1), 17(2)(a)

3. Scottish Water must ensure that each monitoring programme prepared by it is reviewed on a continuous basis, and updated or reconfirmed at least every [F10]6] years.

F10 Word in sch. 1A Pt. A para. 3 substituted (1.1.2023) by The Public Water Supplies (Scotland) Amendment Regulations 2022 (S.S.I. 2022/387), regs. 1(1), 17(2)(b)

PART B

Standard parameters and frequencies

1.—(1) Each monitoring programme must take into account—

(a) each parameter; and

(b) any other micro-organism, parasite or substance which needs to be monitored by virtue of regulation 5(2) or (3),

including those that are important for assessing the impact of any part of the public water supply system on the quality of water at a point of compliance.

(2) When choosing appropriate parameters and other micro-organisms, parasites or substances for monitoring (as required by, or in accordance with, this schedule), local conditions for the parts of the public water supply system in question must be taken into consideration.

2.—(1) The following parameters (“Group A parameters”) must be monitored at least at the minimum frequencies determined in accordance with the table in paragraph 3:—

- (a) *Escherichia coli*, [^{F11}enterococci,] coliform bacteria, colony count 22 °C, colour, turbidity, taste, odour, hydrogen ion concentration (pH), and conductivity; and
- (b) any other parameter, or other micro-organism, parasite or substance, (except radon, tritium and indicative dose) identified as relevant in the monitoring programme—
 - (i) by virtue of regulation 5(2) (as read with regulation 6(2)(a)); or
 - (ii) where relevant, through a risk assessment.

(2) Ammonium and nitrite must be included as Group A parameters, if chloramination is used.

(3) Aluminium and iron must be included as Group A parameters, if used as water treatment chemicals.

(4) Aluminium, iron and manganese must be included as Group A parameters, if the water in question originates from, or is influenced by surface waters.

F11 Word in sch. 1A Pt. B para. 2(a) inserted (1.1.2023) by The Public Water Supplies (Scotland) Amendment Regulations 2022 (S.S.I. 2022/387), regs. 1(1), 17(3)

3.—(1) Other parameters, except radon, tritium and indicative dose, (“Group B parameters”) must be monitored at least at the frequencies determined in accordance with the table below.

(2) In the table, “Group A parameters” is to be construed in accordance with paragraph 2.

Minimum frequency of sampling and analysis for compliance monitoring

<i>Volume of water (in m³) distributed or produced each day within a water supply zone (Notes 1 and 2)</i>		<i>Group A parameters: number of samples per year</i>	<i>Group B parameters: number of samples per year</i>
> 0	≤ 10	2	1
> 10	≤ 1,000	4	1
> 1,000	≤ 10,000	4 for the first 1,000 m ³ /day of the total volume, plus 3 for each additional 1,000 m ³ /day and part thereof	1 for the first 1,000 m ³ /day of the total volume, plus 1 for each additional 4,500 m ³ /day and part thereof
> 10,000	≤ 100,000	4 for the first 1,000 m ³ /day of the total volume, plus 3 for each additional 1,000 m ³ /day and part thereof	3 for the first 10,000 m ³ /day of the total volume, plus 1 for each additional 10,000 m ³ /day and part thereof
> 100,000		4 for the first 1,000 m ³ /day of the total volume, plus 3 for each additional 1,000 m ³ /day and part thereof	12 for the first 100,000 m ³ /day of the total volume, plus 1 for each additional 25,000 m ³ /day and part thereof

<i>Volume of water (in m³) distributed or produced each day within a water supply zone (Notes 1 and 2)</i>	<i>Group A parameters: number of samples per year</i>	<i>Group B parameters: number of samples per year</i>
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Note 1: The volumes are calculated as averages taken over a year.

Note 2: The number of inhabitants in a water supply zone may be used instead of the volume of water to determine the minimum frequency, assuming water consumption of 200 litres/day per person.

PART C

Deviation from standard parameters and frequencies

1. Scottish Water may (or, where required, must), in accordance with this Part, deviate from the requirements of paragraphs 2 and 3 in Part B of this schedule.

2. Based on the results of a risk assessment, the list of parameters in Part B of this schedule (including any micro-organism, parasite or substance referred to in paragraph 2(1)(b) of that Part), must be extended and/or the minimum sampling frequencies under that Part increased if—

- (a) the list of parameters or frequencies required to be monitored under that Part B is not sufficient to fulfil the obligations imposed by regulation 5(1), (3) and (4);
- (b) additional monitoring is required by regulation 5(2); ^{F12}...
- (c) this is necessary to verify the matters in paragraph 1(a) of Part A of this schedule]^{F13},
- (d) a risk assessment has established that raw water—
 - (i) in the catchment area used to abstract water for human consumption purposes, or
 - (ii) as a result of abstraction through the public water supply system,
 contains a parameter at a concentration or value which would (whether in conjunction with another parameter in the water or otherwise) constitute a potential danger to human health, or
- (e) a risk assessment has identified extension of the list of parameters and/or increase of the minimum sampling frequencies as the most appropriate means of mitigating a risk to human health]

F12 Word in sch. 1A Pt. C para. 2 omitted (1.1.2023) by virtue of The Public Water Supplies (Scotland) Amendment Regulations 2022 (S.S.I. 2022/387), regs. 1(1), 17(4)(a)(i)

F13 Sch. 1A Pt. C paras. 2(d)(e) inserted (1.1.2023) by The Public Water Supplies (Scotland) Amendment Regulations 2022 (S.S.I. 2022/387), regs. 1(1), 17(4)(a)(ii)

3. Subject to paragraph 4, based on the results of a risk assessment the list of parameters in Part B of this schedule (including any micro-organism, parasite or substance referred to in paragraph 2(1)(b) of that Part) and the sampling frequencies under that Part B may be reduced, provided that the following conditions are met:—

- (a) the frequency of sampling for *Escherichia coli* [^{F14}and enterococci] must not be reduced below the minimum frequency required by that Part B; and
- (b) for other parameters in the list—
 - ^{F15}(i) a risk assessment has established that the parameter to be removed from the list of parameters to be monitored under Part B of this schedule, or for which the minimum

sampling frequencies are to be reduced, is not present or, as the case may be, is not likely to be present in raw water—

- (aa) in the catchment area used to abstract water for human consumption purposes, and
- (bb) as a result of abstraction through the public water supply system, at a concentration or value which would (whether in conjunction with another parameter in the water or otherwise) constitute a potential danger to human health,
- (ii) where a parameter from the list of parameters to be monitored under Part B of this schedule can only occur as a result of the treatment technique or disinfection method, that technique or method is not used by Scottish Water, or
- (iii) the specifications in paragraph 3A are complied with.]

F14 Words in sch. 1A Pt. C para. 3(a) inserted (1.1.2023) by The Public Water Supplies (Scotland) Amendment Regulations 2022 (S.S.I. 2022/387), regs. 1(1), **17(4)(b)(i)**

F15 Sch. 1A Pt. C paras. 3(b)(i)-(iii) substituted for sch. 1A Pt. C paras. 3(b)(i)-(iv) (1.1.2023) by The Public Water Supplies (Scotland) Amendment Regulations 2022 (S.S.I. 2022/387), regs. 1(1), **17(4)(b)(ii)**

3A. The specifications are that—

- (a) the location and frequency of sampling must be determined in relation to the parameter's origin, as well as the variability and long-term trend of its concentration, taking into account the water quality standards,
- (b) to reduce the minimum sampling frequency for a parameter under Part B of this schedule, the results obtained from samples collected at regular intervals over a period of at least 3 years from sampling points representative of the whole water supply zone must all be less than 60% of the prescribed concentration or value for the parameter,
- (c) to remove a parameter from the list of parameters to be monitored under Part B of this schedule, the results obtained from samples collected at regular intervals over a period of at least 3 years from points representative of the whole water supply zone must all be less than 30% of the prescribed concentration or value of the parameter,
- (d) the removal of a parameter from the list of parameters to be monitored under Part B of this schedule must be based on the result of the risk assessment, informed by the results of monitoring of sources of water and confirming that human health is protected from the adverse effects of any contamination of water, and
- (e) for a reduction in the minimum sampling frequency for a parameter under Part B of this schedule or removal of a parameter from the list of parameters to be monitored under that Part, the risk assessment confirms that no factor (that can be reasonably anticipated) is likely to cause deterioration of the quality of the water.

F16 Sch. 1A Pt. C paras. 3A, 3B inserted (1.1.2023) by The Public Water Supplies (Scotland) Amendment Regulations 2022 (S.S.I. 2022/387), regs. 1(1), **17(4)(c)**

3B. Any parameter removed from the list of parameters to be monitored in Part B of this schedule under paragraph 3(b) must be monitored—

- (a) at least once every six years, and
- (b) in cases where—
 - (i) a new water source is integrated into the water supply chain (from the catchment area through abstraction, treatment and storage to distribution), or

- (ii) changes made to the water supply chain are expected to have a potentially adverse effect on the quality of water.]

F16 Sch. 1A Pt. C paras. 3A, 3B inserted (1.1.2023) by The Public Water Supplies (Scotland) Amendment Regulations 2022 (S.S.I. 2022/387), regs. 1(1), 17(4)(c)

4.—^{F17}(1) The minimum sampling frequency for a parameter under Part B of this schedule (including for a micro-organism, parasite or substance referred to in paragraph 2(1)(b) of that Part) may be reduced or any such parameter may be removed from the list of parameters to be monitored under paragraph 3(b), only if the Drinking Water Quality Regulator for Scotland, by notice to Scottish Water, consents in accordance with sub-paragraph (2) to the reduction or removal, and that consent has not been revoked under sub-paragraph (4).]

^{F18}(2) The Drinking Water Quality Regulator for Scotland may consent, under sub-paragraph (1), if the Regulator is satisfied that to do so would not compromise the quality of the water.]

(3) The Drinking Water Quality Regulator for Scotland may not consent, under paragraph ^{F19}(1)], to the removal of any of the following from the list of parameters to be monitored:—

- (a) enterococci, *Escherichia coli*, coliform bacteria, colony count 22 °C, colour, turbidity or hydrogen ion concentration (pH);
- (b) iron, lead or manganese;
- (c) where the water is supplied to premises within a nitrate vulnerable zone, nitrate; or
- (d) any other parameter, or other micro-organism, parasite or substance, identified (for the time being) as relevant in the monitoring programme in relation to a supply of water—
 - (i) by virtue of regulation 5(2); or
 - (ii) where relevant, through a risk assessment.

(4) The Drinking Water Quality Regulator for Scotland may, by notice to Scottish Water, revoke with immediate effect any consent given by it under sub-paragraph ^{F20}(1)].

(5) In sub-paragraph (3) “nitrate vulnerable zone” means any area of land designated as a nitrate vulnerable zone by regulation 2 of the Designation of Nitrate Vulnerable Zones (Scotland) Regulations 2015.

F17 Sch. 1A Pt. C para. 4(1) substituted (1.1.2023) by The Public Water Supplies (Scotland) Amendment Regulations 2022 (S.S.I. 2022/387), regs. 1(1), 17(4)(d)(i)

F18 Sch. 1A Pt. C para. 4(2) substituted (1.1.2023) by The Public Water Supplies (Scotland) Amendment Regulations 2022 (S.S.I. 2022/387), regs. 1(1), 17(4)(d)(ii)

F19 Word in sch. 1A Pt. C para. 4(3) substituted (1.1.2023) by The Public Water Supplies (Scotland) Amendment Regulations 2022 (S.S.I. 2022/387), regs. 1(1), 17(4)(d)(iii)

F20 Word in sch. 1A Pt. C para. 4(4) substituted (1.1.2023) by The Public Water Supplies (Scotland) Amendment Regulations 2022 (S.S.I. 2022/387), regs. 1(1), 17(4)(d)(iii)

PART D

Sampling methods and sampling points

1.—(1) Sampling points, in relation to water, must be determined by Scottish Water so as to ensure that the results of the analysis of discrete water samples collected at those points will establish whether or not the water meets the water quality standards at each point of compliance.

(2) In the case of a supply of water in pipes to any premises used for a commercial or public activity, the sampling points must include a point of compliance within each premises.

(3) In the case of a supply of water in pipes to premises (including any premises used for a commercial or public activity), Scottish Water may take samples of the water within the water supply zone or at a treatment works for a particular parameter—

- (a) if it can be demonstrated that there would be no adverse change to the measured value of the parameter concerned; and
- (b) in the case of any premises used for a commercial or public activity, the Drinking Water Quality Regulator for Scotland, by notice to Scottish Water, consents to the samples being taken within the water supply zone or at the treatment works for the particular parameter, and that consent has not been revoked under sub-paragraph (6).

(4) In a case where Scottish Water may take samples of the water within the water supply zone or at a treatment works for a particular parameter, the point at which the samples are taken is to be treated for the purposes of these Regulations as the point of compliance for the parameter.

(5) As far as possible, the number of samples must be distributed equally in time and location.

(6) The Drinking Water Quality Regulator for Scotland may, by notice to Scottish Water, revoke with immediate effect any consent given by it under sub-paragraph (3)(b).

2. Subject to paragraph 1, sampling at the point of compliance must meet the following requirements:—

- (a) a sample for copper, lead or nickel must be taken at the consumer's tap without prior flushing;
- (b) a sample for any such parameter or any other chemical parameter must—
 - (i) be a random daytime sample of one litre volume; or
 - (ii) use a fixed stagnation time method that better reflects the national situation, provided that, at the water supply zone level, this does not result in fewer cases of non-compliance than using the random daytime method; and
- (c) a sample for microbiological parameters at the point of compliance must be taken and handled in accordance with sampling purpose B of European standard EN ISO 19458:2006 entitled "*Water quality - Sampling for microbiological analysis (ISO 19458:2006)*".

3. Sampling of water in a public water supply system, with the exception of sampling at the consumer's tap, must be in accordance with international standard ISO 5667-5:2006 entitled "*Water quality. Sampling. Guidance on sampling of drinking water from treatment works and piped distribution systems*".

4. For microbiological parameters, sampling of water in a public water supply system must be taken and handled in accordance with sampling purpose A of European standard EN ISO 19458:2006 entitled "*Water quality - Sampling for microbiological analysis (ISO 19458:2006)*".

PART E

Radioactive substances

General principles and monitoring frequencies

1.—(1) Subject to sub-paragraph (2), Scottish Water in relation to a supply of water must ensure that the water is monitored for radon, tritium and indicative dose.

Changes to legislation: There are currently no known outstanding effects for the The Public Water Supplies (Scotland) Regulations 2014. (See end of Document for details)

(2) Where the Scottish Ministers, by notice to Scottish Water, confirm that they have established that radon, tritium or, as the case may be, indicative dose is not likely to be present in relation one or more supplies of water, for a period specified in the notice, in concentrations which could exceed the prescribed concentration or value for the parameter, Scottish Water is not required to monitor any such supply of water for the parameter during the period specified.

(3) In case of naturally occurring radionuclides—

- (a) where previous results show that the concentration of radionuclides in one or more supplies of water is stable, the minimum sampling and analysis frequencies are to be decided by the Scottish Ministers, and confirmed by notice to Scottish Water, taking into consideration the risk to human health; and
- (b) where the Scottish Ministers, by notice to Scottish Water, confirm that they are satisfied (on the basis of representative surveys, monitoring data or other reliable information) that levels of radon, tritium and the calculated indicative dose in one or more supplies of water will, for a period specified in the notice, remain below the prescribed concentration or value for each of these parameters at the point of compliance, Scottish Water is not required to monitor any such supply for these parameters during the period specified.

^{F21}(4)

F21 Sch. 1A Pt. E para. 1(4) omitted (1.1.2023) by virtue of [The Public Water Supplies \(Scotland\) Amendment Regulations 2022 \(S.S.I. 2022/387\)](#), regs. 1(1), **17(5)**

Radon

2.—(1) Subject to paragraphs 5 and 6, Scottish Water must ensure that representative surveys are undertaken to determine the scale and nature of likely exposures to radon in the water originating from different types of ground water sources and wells in different geological areas.

(2) The surveys must be designed in such a way that underlying factors, and especially the geology and hydrology of the area, radioactivity of rock or soil, and well type, can be identified and used to direct further action to areas of likely high exposure.

(3) Monitoring of radon concentrations must be carried out if Scottish Water has reason to believe, on the basis of the results of the representative surveys or other reliable information, that the prescribed concentration or value for radon might be exceeded.

Tritium

3.—(1) Subject to paragraphs 5 and 6, Scottish Water must monitor the water for tritium where—

- (a) an anthropogenic source of tritium or other artificial radionuclides is present within the catchment area for the supply; and
- (b) it cannot be shown on the basis of other surveillance programmes or investigations that the level of tritium is below the prescribed concentration or value for tritium.

(2) Where monitoring for tritium is required by sub-paragraph (1), samples must be taken in accordance with paragraph 6.

(3) If the concentration of tritium in any such sample exceeds the prescribed concentration or value for tritium, Scottish Water must carry out an investigation of the presence of other artificial radionuclides.

Indicative dose

4.—(1) Scottish Water must monitor the water for indicative dose where—

- (a) a source of artificial radioactivity or elevated natural radioactivity is present; and
- (b) it cannot be shown on the basis of other representative monitoring programmes or other investigations that the indicative dose is below the prescribed concentration or value for that parameter.

(2) Where sub-paragraph (1) requires monitoring (of radionuclide levels) only in relation to a source of artificial radioactivity, samples must be taken in accordance with paragraph 6.

(3) Where sub-paragraph (1) requires monitoring (of radionuclide levels) in relation to a source of elevated natural radioactivity, Scottish Water must determine the frequency of the monitoring required of—

- (a) gross alpha activity;
- (b) gross beta activity; or
- (c) individual natural radionuclides,

depending on the screening strategy adopted pursuant to Part F of this schedule.

(4) Where sub-paragraph (3) applies, the frequency determined may vary from a single check measurement to the frequency which would otherwise apply by virtue of paragraph 6.

(5) Where a single check for natural radioactivity is specified under sub-paragraph (3), Scottish Water must carry out a further check if any change occurs in relation to the supply which is likely to influence the concentrations of radionuclides in the supply.

Water treatment

5. Where the water is treated to reduce the level of radionuclides, Scottish Water must monitor the water for indicative dose, radon and tritium in accordance with paragraph 6 to verify the continued efficacy of that treatment.

Minimum sampling and analysis frequencies

6. The minimum sampling and analysis frequency for the monitoring of radon, tritium and indicative dose in water (where required by this schedule) from a public water supply system or from a tanker or used in a food production undertaking is set out in the following table.

<i>Volume of water (in m³) distributed or produced each day within a water supply zone (Note 1)</i>		<i>Number of samples per year</i> <i>(Notes 2 and 3)</i>
> 0	≤ 100	1
> 100	≤ 1,000	1
> 1,000	≤ 10,000	1, plus 1 for each 3,300 m ³ /day and part thereof of the total volume
> 10,000	≤ 100,000	3, plus 1 for each 10,000 m ³ /day and part thereof of the total volume
> 100,000		10, plus 1 for each 25,000 m ³ /day and part thereof of the total volume

Note 1: The volumes are calculated as averages taken over a year. The number of inhabitants in a water supply zone may be used instead of the volume of water to determine the minimum frequency, assuming water consumption of 200 litres/day per person.

Changes to legislation: There are currently no known outstanding effects for the The Public Water Supplies (Scotland) Regulations 2014. (See end of Document for details)

<i>Volume of water (in m³) distributed or produced each day within a water supply zone (Note 1)</i>	<i>Number of samples per year (Notes 2 and 3)</i>
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Note 2: As far as possible, the number of samples must be distributed equally in time and location.

Note 3: In the event of intermittent short-term supply the monitoring frequency of water distributed by tankers must be decided by Scottish Water in relation to the water.

Averaging

7. Where the prescribed concentration or value for radon, tritium or, as the case may be, indicative dose is exceeded in a sample of the water, the Drinking Water Quality Regulator for Scotland must specify, by notice to Scottish Water, the extent of resampling necessary to ensure that the measured values are representative of an average activity concentration for a full year.

PART F

Indicative dose

Monitoring for compliance with the indicative dose

1.—(1) Scottish Water, in relation to water, may use reliable screening strategies to indicate the presence of radioactivity in the water.

(2) These strategies may include screening for—

- (a) certain radionuclides or an individual radionuclide; or
- (b) gross alpha activity or gross beta activity.

Screening for certain radionuclides or for an individual radionuclide

2.—(1) Where screening of the water is carried out for certain radionuclides or for an individual radionuclide, Scottish Water must carry out an analysis of additional radionuclides if, in relation to any supply referred to in paragraph 1—

- (a) one of the activity concentrations of a radionuclide referred to in the second column of the table below exceeds 20% of the corresponding derived concentration in the third column; or
- (b) the tritium concentration exceeds the prescribed concentration or value for tritium.

(2) Scottish Water must, in deciding which radionuclides require to be measured for each supply, take into account all relevant information about likely sources of radioactivity.

<i>Origin</i>	<i>Radionuclide (Note 1)</i>	<i>Derived concentration (Bq/l)</i>	<i>Notes</i>
Natural	U-238	3.0	Note 2
	U-234	2.8	Note 2
	Ra-226	0.5	
	Ra-228	0.2	
	Pb-210	0.2	
	Po-210	0.1	

<i>Origin</i>	<i>Radionuclide (Note 1)</i>	<i>Derived concentration (Bq/l)</i>	<i>Notes</i>
Artificial	C-14	240	
	Sr-90	4.9	
	Pu-239 / Pu-240	0.6	
	Am-241	0.7	
	Co-60	40	
	Cs-134	7.2	
	Cs-137	11	
	I-131	6.2	

Note 1: This table includes values for the most common natural and artificial radionuclides. These are precise values, calculated for a dose of 0.1 mSv, an annual intake of 730 litres and using the dose coefficients laid down in Table (A) of Annex III to Council Directive 96/29/Euratom laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionizing radiation. Derived concentrations for other radionuclides may be calculated on the same basis.

Note 2: This allows only for the radiological properties of uranium, not for its chemical toxicity.

Screening for gross alpha activity and gross beta activity

3.—(1) Scottish Water may use screening strategies for gross alpha activity and gross beta activity (or, where appropriate, residual beta activity after subtraction of the potassium-40 activity) to monitor the water for indicative dose.

(2) Subject to sub-paragraph (3), screening levels must be set at—

- (a) 0.1 Bq/l for gross alpha activity; and
- (b) 1.0 Bq/l for gross beta activity.

(3) Scottish Water may set alternative levels to those specified in sub-paragraph (2) if it can demonstrate that these will ensure that an indicative dose of 0.1 mSv is not exceeded.

(4) If the gross alpha activity is less than 0.1 Bq/l and the gross beta activity is less than 1.0 Bq/l, Scottish Water may assume that the indicative dose is less than 0.1 mSv.

(5) Where sub-paragraph (4) applies, Scottish Water is not required to carry out a radiological investigation unless it is aware—

- (a) that specific radionuclides are present in the water; and
- (b) that these are liable to cause an indicate dose in excess of 0.1 mSv.

(6) If the gross alpha activity exceeds 0.1 Bq/l or the gross beta activity exceeds 1.0 Bq/l, Scottish Water must carry out an analysis for specific radionuclides.

(7) Scottish Water must, in deciding which radionuclides require to be measured for the purposes of sub-paragraph (6), take into account all relevant information about likely sources of radioactivity.

(8) If elevated levels of tritium are detected in a sample, Scottish Water must also measure the gross alpha activity and gross beta activity in that sample.

Calculation of the indicative dose

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

Changes to legislation: There are currently no known outstanding effects for the The Public Water Supplies (Scotland) Regulations 2014. (See end of Document for details)

- (a) the measured radionuclide concentrations and the dose coefficients laid down in Table (A) of Annex III to Council Directive 96/29/Euratom laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionizing radiation; or
 - (b) more recent information recognised by the Scottish Ministers,
- on the basis of an annual intake of water of 730 litres for adults.
- (2) Where the following formula is satisfied, Scottish Water may assume that the indicative dose is less than 0.1 mSv and that no further investigation is required:—

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

where—

- “ $C_i (obs)$ ” refers to the observed concentration of radionuclide “ i ”;
- “ $C_i (der)$ ” refers to derived concentration of radionuclide “ i ”; and
- “ n ” refers to the number of radionuclides detected.]

SCHEDULE 2

Regulations 2(1), 2(4), 9 and 11

[^{F22}Monitoring: treatment works]

F22 Sch. 2 heading substituted (27.10.2017) by [The Public Water Supplies \(Scotland\) Amendment Regulations 2017 \(S.S.I. 2017/281\)](#), regs. 1(1), **8(a)**

TABLE 1

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Changes to legislation: There are currently no known outstanding effects for the The Public Water Supplies (Scotland) Regulations 2014. (See end of Document for details)

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F23 Sch. 2 Table 1 omitted (27.10.2017) by virtue of [The Public Water Supplies \(Scotland\) Amendment Regulations 2017 \(S.S.I. 2017/281\)](#), regs. 1(1), **8(b)(i)**

TABLE 2

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Changes to legislation: There are currently no known outstanding effects for the The Public Water Supplies (Scotland) Regulations 2014. (See end of Document for details)

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Changes to legislation: There are currently no known outstanding effects for the The Public Water Supplies (Scotland) Regulations 2014. (See end of Document for details)

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Changes to legislation: There are currently no known outstanding effects for the The Public Water Supplies (Scotland) Regulations 2014. (See end of Document for details)

TABLE 3

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Changes to legislation: There are currently no known outstanding effects for the The Public Water Supplies (Scotland) Regulations 2014. (See end of Document for details)

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F25 Sch. 2 Table 3 and notes omitted (27.10.2017) by virtue of The Public Water Supplies (Scotland) Amendment Regulations 2017 (S.S.I. 2017/281), regs. 1(1), **8(b)(iii)**

TABLE 4**ANNUAL SAMPLING FREQUENCIES: TREATMENT WORKS ^{M1}**

(1) Item	(2) Parameter	(3) Volume of water supplied m ³ /d	(4) Reduced	(5) Standard
<i>F28</i>				
...				
1.	Coliform bacteria	< 20	–	4
2.	Colony count	20-1,999	12	52
3.	<i>Escherichia coli</i>	2,000-5,999	52	104
4.	Residual disinfectant	6,000-11,999	104	208
		≥12,000	208	365
5.	Nitrite ¹	< 20	–	2
6.	Turbidity	20-999	2	4
		1,000-1,999	6	12
		2,000-5,999	12	24
		6,000-9,999	18	36
		10,000-15,999	26	52
		16,000-32,999	52	104
		33,000-49,999	78	156
		50,000-67,999	104	208
		68,000-84,999	130	260
		85,000-101,999	156	312
		102,000-119,999	183	365
		120,000-241,999	365	730
		242,000-484,999	730	1,460
		485,000-728,999	1,095	2,190
<i>F29</i>				
...				
7.	Nitrite ¹	< 20	–	1
		20-999	–	4
		1,000-49,999	–	8

¹ Sampling at the frequencies specified in this table for [F26: item 5] is required only when chloramination is practised. When this is not the case, this parameter must be sampled instead at the frequencies specified in this table for [F27: item 7] .

Changes to legislation: There are currently no known outstanding effects for the The Public Water Supplies (Scotland) Regulations 2014. (See end of Document for details)

50,000-89,999	–	12
90,000-299,999	–	24
300,000-649,999	–	36
≥650,000	–	48

Notes—

¹ Sampling at the frequencies specified in this table for [^{F26}item 5] is required only when chloramination is practised. When this is not the case, this parameter must be sampled instead at the frequencies specified in this table for [^{F27}item 7] .

F26	Words in sch. 2 Table 4 Notes substituted (27.10.2017) by The Public Water Supplies (Scotland) Amendment Regulations 2017 (S.S.I. 2017/281) , regs. 1(1), 8(d)(i)
F27	Words in sch. 2 Table 4 Notes substituted (27.10.2017) by The Public Water Supplies (Scotland) Amendment Regulations 2017 (S.S.I. 2017/281) , regs. 1(1), 8(d)(ii)
F28	Words in sch. 2 Table 4 omitted (27.10.2017) by virtue of The Public Water Supplies (Scotland) Amendment Regulations 2017 (S.S.I. 2017/281) , regs. 1(1), 8(c)(i)
F29	Words in sch. 2 Table 4 omitted (27.10.2017) by virtue of The Public Water Supplies (Scotland) Amendment Regulations 2017 (S.S.I. 2017/281) , regs. 1(1), 8(c)(ii)
Marginal Citations	
M1	This table specifies the number of samples to be taken at treatment works for the purposes of regulation 11.

In this Schedule ^{F30}... “Pesticide”, “PAH: Total”, “Tetrachloroethene and Trichloroethene” and “THM: Total” have the same meanings as they have in Schedule 1.

F30	Words in sch. 2 omitted (28.11.2015) by virtue of The Private and Public Water Supplies (Miscellaneous Amendments) (Scotland) Regulations 2015 (S.S.I. 2015/346) , regs. 1(1), 17(c)
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F30	Words in sch. 2 omitted (28.11.2015) by virtue of The Private and Public Water Supplies (Miscellaneous Amendments) (Scotland) Regulations 2015 (S.S.I. 2015/346) , regs. 1(1), 17(c)
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^{F31}SCHEDULE 2A

Regulation 6(6A)

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F31	Sch. 2A omitted (27.10.2017) by virtue of The Public Water Supplies (Scotland) Amendment Regulations 2017 (S.S.I. 2017/281) , regs. 1(1), 9
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[^{F32}SCHEDULE 3

Regulation 14A(1) and (2)

METHODS OF ANALYSIS

F32 Sch. 3 substituted (27.10.2017) by [The Public Water Supplies \(Scotland\) Amendment Regulations 2017 \(S.S.I. 2017/281\)](#), reg. 1(1), **sch. 2** (as amended by [The Public and Private Water Supplies \(Miscellaneous Amendments\) \(Scotland\) Regulations 2017 \(S.S.I. 2017/321\)](#), regs. 1, **3(3)(a)(b)**)

1.—(1) Scottish Water must ensure that the methods of analysis used for the purposes of monitoring and demonstrating compliance with these Regulations are validated and documented in accordance with European standard EN ISO/IEC 17025:2005 entitled “*General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025:2005)*”, or other equivalent standards accepted at international level.

(2) Scottish Water must ensure that laboratories or parties contracted by laboratories apply quality management system practices in accordance with European standard EN ISO/IEC 17025:2005 entitled “*General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025:2005)*”, or other equivalent standards accepted at international level.

[^{F33}(3) For the purposes of assessing the equivalence of alternative methods with methods specified in this schedule, Scottish Water may use European standard EN ISO 17994:2014 entitled “*Water quality - Requirements for the comparison of the relative recovery of microorganisms by two quantitative methods*”, or European standard EN ISO 16140:2003 entitled “*Microbiology of food and animal feeding stuffs - Protocol for the validation of alternative methods*”, or any other similar internationally accepted protocols, to establish the equivalence of methods based on principles, other than culturing, which are beyond the scope of European Standard EN ISO 17994:2014.]

F33 Sch. 3 para. 1(3) inserted (1.1.2023) by [The Public Water Supplies \(Scotland\) Amendment Regulations 2022 \(S.S.I. 2022/387\)](#), regs. 1(1), **18(2)**

2. In the absence of an analytical method meeting the minimum performance criteria set out in Part B of this schedule, Scottish Water must ensure that monitoring is carried out using best available techniques not entailing excessive costs.

PART A

Microbiological parameters

1.—(1) Subject to sub-paragraph (2), the methods in paragraph 2 are given for reference.

(2) Scottish Water may use other methods, providing the provisions of regulation 14A are met.

2. The methods for microbiological parameters are—

(a) for *Escherichia coli* and coliform bacteria—

(i) European standard EN ISO 9308-1:2014 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)*”; or

(ii) European standard EN ISO 9308-2:2014 entitled “*Water quality - Enumeration of Escherichia coli and coliform bacteria - Part 2: Most probable number method (ISO 9308-2:2012)*”;

Changes to legislation: There are currently no known outstanding effects for the The Public Water Supplies (Scotland) Regulations 2014. (See end of Document for details)

(b) for enterococci, European standard EN ISO 7899-2:2000 entitled “*Water quality - Detection and enumeration of intestinal enterococci - Part 2: Membrane filtration method (ISO 7899-2:2000)*”;

^{F34}(c)

(d) for colony count 22 °C (the enumeration of culturable microorganisms — colony count after aerobic incubation at 22 °C), European standard EN ISO 6222:1999 entitled “*Water quality - Enumeration of culturable micro-organisms - Colony count by inoculation in a nutrient agar culture medium (ISO 6222:1999)*”;

^{F35}(e)

(f) for *Clostridium perfringens* including spores, European standard EN ISO 14189:2016 entitled “*Water quality - Enumeration of Clostridium perfringens - Method using membrane filtration (ISO 14189:2013)*”

[^{F36}(g) for *somatic coliphages*, European Standard EN ISO 10705-2:2000 entitled “*Water quality — Detection and enumeration of bacteriophages — Part 2: Enumeration of somatic coliphages*” and European Standard EN ISO 10705-3:2003 entitled “*Water quality — Detection and enumeration of bacteriophages — Part 3: Validation of methods for concentration of bacteriophages from water*” can be used].

F34	Sch. 3 Pt. A para. 2(c) omitted (1.1.2023) by virtue of The Public Water Supplies (Scotland) Amendment Regulations 2022 (S.S.I. 2022/387) , regs. 1(1), 18(3)(a)
F35	Sch. 3 Pt. A para. 2(e) omitted (1.1.2023) by virtue of The Public Water Supplies (Scotland) Amendment Regulations 2022 (S.S.I. 2022/387) , regs. 1(1), 18(3)(a)
F36	Sch. 3 Pt. A para. 2(g) inserted (1.1.2023) by The Public Water Supplies (Scotland) Amendment Regulations 2022 (S.S.I. 2022/387) , regs. 1(1), 18(3)(b)

PART B

Chemical and indicator parameters

1.—(1) [^{F37}For] a parameter in Table 1, the method of analysis used must, as a minimum, be capable of measuring concentrations equal to the prescribed concentration or value for the parameter with—

- (a) a limit of quantification of 30 % or less of the prescribed concentration or value for the parameter; and
- (b) an uncertainty of measurement as specified in Table 1 for the parameter.

(2) The result of the analysis for a parameter in Table B or Table C must be expressed using at least the same number of significant figures as the prescribed concentration or value for the parameter in the table.

F37	Word in sch. 3 Pt. B para. 1(1) substituted (1.1.2023) by The Public Water Supplies (Scotland) Amendment Regulations 2022 (S.S.I. 2022/387) , regs. 1(1), 18(4)(a)
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2. The uncertainty of measurement specified in Table 1 for a parameter must not be used as an additional tolerance to the prescribed concentration or value for the parameter.

^{F38}3.

[^{F39}Minimum performance characteristic: uncertainty of measurement

<i>Parameter</i>	<i>Uncertainty of measurement (% of prescribed concentration or value, except pH) (Note 1)</i>	<i>Notes</i>
Aluminium	25	
Ammonium	40	
Acrylamide	30	
Antimony	40	
Arsenic	30	
Benzo(a)pyrene	50	Note 2
Benzene	40	
Bisphenol A	50	
Boron	25	
Bromate	40	
Cadmium	25	
Chloride	15	
Chlorate	40	
Chlorite	40	
Chromium	30	
Conductivity	20	
Copper	25	
Cyanide	30	Note 3
1,2-dichloroethane	40	
Epichlorohydrin	30	
Fluoride	20	
HAAs	50	
Hydrogen ion concentration (in pH)	0.20	Note 4
Iron	30	
Lead	30	
Manganese	30	
Mercury	30	
Microcystin-LR	30	
Nickel	25	
Nitrate	15	

Changes to legislation: There are currently no known outstanding effects for the The Public Water Supplies (Scotland) Regulations 2014. (See end of Document for details)

Parameter	Uncertainty of measurement (% of prescribed concentration or value, except pH) (Note 1)	Notes
Nitrite	20	
Oxidisability	50	Note 5
Pesticides	30	Note 6
PFAS	50	
Polycyclic aromatic hydrocarbons	40	Note 7
Selenium	40	
Sodium	15	
Sulphate	15	
Tetrachloroethene	40	Note 8
Trichloroethene	40	Note 8
Trihalomethanes – total	40	Note 7
Total organic carbon	30	Note 9
Turbidity	30	Note 10
Uranium	30	
Vinyl chloride	50	

Notes—

Note 1: Uncertainty of measurement is a non-negative parameter characterising the dispersion of the quantity values being attributed to a measurand, based on the information used. The performance criterion for measurement uncertainty ($k = 2$) is the percentage of the parametric value stated in the table or any stricter value. The uncertainty of measurement must be estimated at the level of the parametric value, unless otherwise specified.

Note 2: If the value of uncertainty of measurement cannot be met, the best available technique must be selected (up to 60%).

Note 3: The method determines total cyanide in all forms.

Note 4: The value for the uncertainty of measurement is expressed in pH units.

Note 5: Reference method European standard EN ISO 8467:1995 entitled “*Water quality - Determination of permanganate index (ISO 8467:1993)*”.

Note 6: 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.

Note 7: The performance characteristics apply to individual substances, specified at 25% of the prescribed concentration or value for the corresponding parameter in Table B.

Note 8: The performance characteristics apply to individual substances, specified at 50% of the prescribed concentration or value for the corresponding parameter in Table B.

Note 9: The uncertainty of measurement must be estimated at the level of 3 mg/l of the total organic carbon in accordance with European standard EN 1484:1997 entitled “*Water analysis - Guidelines for the determination of total organic carbon and dissolved organic carbon*”.

Note 10: The uncertainty of measurement must be estimated at the level of 1.0 nephelometric turbidity units in accordance with European standard EN ISO 7027-1:2016 entitled “*Water quality - Determination of turbidity - Part 1: Quantitative methods (ISO 7027-1:2016)*” or another equivalent standard method.]

- F38** Sch. 3 Pt. B para. 3 omitted (1.1.2023) by virtue of The Public Water Supplies (Scotland) Amendment Regulations 2022 (S.S.I. 2022/387), regs. 1(1), **18(4)(b)**
- F39** Sch. 3 Pt. B Table and notes substituted for sch. 3 Pt. B Table 1, 2 and notes (1.1.2023) by The Public Water Supplies (Scotland) Amendment Regulations 2022 (S.S.I. 2022/387), reg. 1(1), **sch. 3**

PART C

Indicative dose

For each parameter in Table 3, the method of analysis used must be capable of measuring activity concentrations with at least the limit of detection specified for that parameter in the second column of the table.

TABLE 3

Minimum performance characteristics: limit of detection

Parameter	Limit of detection (in Bq/l) (Notes 1 and 2)	Notes
Tritium	10	Note 3
Radon	10	Note 3
gross alpha activity	0.04	Note 4
gross beta activity	0.4	Note 4
U-238	0.02	
U-234	0.02	
Ra-226	0.04	
Ra-228	0.02	Note 5
Pb-210	0.02	
Po-210	0.01	
C-14	20	
Sr-90	0.4	
Pu-239 / Pu-240	0.04	
Am-241	0.06	
Co-60	0.5	
Cs-134	0.5	
Cs-137	0.5	
I-131	0.5	

Notes to Table 3

Note 1: The limit of detection must be calculated in accordance with the international standard ISO 11929:2010 entitled "Determination of the characteristic limits (decision threshold, detection limit

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and limits of the confidence interval) for measurements of ionising radiation - Fundamentals and application”, with probabilities of errors of 1st and 2nd kind of 0.05 each.

Note 2: Measurement uncertainties must be calculated and reported as complete standard uncertainties, or as expanded standard uncertainties with an expansion factor of 1.96, in accordance with international standard ISO/IEC Guide 98-3:2008 entitled “Guide to the expression of uncertainty in measurement”.

Note 3: The limit of detection for tritium and for radon is 10% of the corresponding prescribed concentration or value for the parameter.

Note 4: The limit of detection for gross alpha activity and gross beta activities is 40% of the screening values of 0.1 Bq/l and 1.0 Bq/l respectively.

Note 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 unlikely 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.]

^{F40}SCHEDULE 3A

Regulation 6(6A)

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F40 Sch. 3A omitted (27.10.2017) by virtue of [The Public Water Supplies \(Scotland\) Amendment Regulations 2017 \(S.S.I. 2017/281\)](#), regs. 1(1), **11**

Changes to legislation:

There are currently no known outstanding effects for the The Public Water Supplies (Scotland) Regulations 2014.