

2018 No. 706

WATER, ENGLAND AND WALES

**The Water Supply (Water Quality) (Amendment) Regulations
2018**

<i>Made</i> - - - -	<i>14th June 2018</i>
<i>Laid before Parliament</i>	<i>18th June 2018</i>
<i>Coming into force</i> - -	<i>11th July 2018</i>

The Secretary of State makes these Regulations in exercise of the powers conferred by section 2(2) of the European Communities Act 1972(a).

The Secretary of State has been designated for the purposes of section 2(2) of the European Communities Act 1972 in relation to the environment(b).

Citation, commencement and interpretation

1.—(1) These Regulations may be cited as the Water Supply (Water Quality) (Amendment) Regulations 2018 and come into force on 11th July 2018.

(2) In these Regulations, “the 2016 Regulations” means the Water Supply (Water Quality) Regulations 2016(c).

Amendment of the 2016 Regulations

2.—(1) The 2016 Regulations are amended as follows

(2) In regulation 2 (interpretation)—

(a) in paragraph (1)—

(i) omit the definitions of “audit monitoring” and “check monitoring”;

(ii) insert in the appropriate places—

““*E. coli*” means *Escherichia coli*”;

““monitoring of a Group A parameter” has the meaning given in regulation 5(1);

“monitoring of a Group B parameter” has the meaning given in regulation 5(3);

“monitoring programme” means a programme for the identification of, and collection of data on, any substance or organism identified during a risk assessment to confirm compliance with the prescribed concentrations set out in Schedule 1 which—

(a) consists of either or both of the following—

(a) 1972 c. 68. Section 2(2) was amended by section 27(1)(a) of the Legislative and Regulatory Reform Act 2006 (c. 51) and by Part 1 of the Schedule to the European Union (Amendment) Act 2008 (c. 7),

(b) S.I. 2008/301.

(c) S.I. 2016/614.

- (i) collection and analysis of discrete water samples;
 - (ii) measurements recorded by a continuous monitoring process, and
- (b) may in addition consist of either or both of the following—
 - (i) inspections of records of the functionality, and maintenance status, of equipment;
 - (ii) inspections of the catchment area, water abstraction, treatment, storage and distribution infrastructure;”;

““suitably accredited body” means the Secretary of State or a person acting on behalf of the Secretary of State;”;
- (b) in paragraph (3)—
 - (i) omit “, other than a structure at a treatment works”;
 - (ii) after “stored for the” insert “sole”.
- (3) In regulation 4(1) (wholesomeness) after “Water supplied to premises” insert “that is intended for human consumption including”.
- (4) In regulation 5 (interpretation and application of Part 4)—
 - (a) for paragraphs (1) to (3) substitute—

“(1) In this Part, “monitoring of a Group A parameter” means monitoring of a Group A parameter for the purpose of obtaining information at regular intervals—

 - (a) as to the organoleptic and microbiological quality of water;
 - (b) where relevant, as to the effectiveness of drinking water treatment, particularly for the purposes of disinfection, for the purposes referred to in paragraph (2); and
 - (c) as regards indicator parameters, whether water supplied for regulation 4(1) purposes meets the specifications for those parameters.

(2) A Group A parameter must be monitored to determine whether its presence in water supplied for regulation 4(1) purposes satisfies the provisions of Part 3 or, if a departure has been authorised under Part 7 in relation to that supply, the provisions of Part 3 as read with the terms of that departure.

(3) In this Part, “monitoring of a Group B parameter” means monitoring of a Group B parameter for the purpose of obtaining information from which it may be established whether water supplied for regulation 4(1) purposes—

 - (a) satisfies the provisions of Part 3 or, if a departure has been authorised under Part 7 in relation to that supply, the provisions of Part 3 as read with the terms of that departure;
 - (b) meets the specifications for indicator parameters;
 - (c) in respect of other parameters identified as relevant by the Secretary of State under regulation 9, meets the specifications for those parameters.”;
 - (b) after paragraph (5) insert—

“(6) In this regulation—

“Group A parameter” means a parameter specified in column 2 of Table 1 in Schedule 3;

“Group B parameter” means a parameter specified in column 2 of Table 2 or, as the case may be, Table 3 in Schedule 3.”.
- (5) In regulation 6 (monitoring: general provisions)—
 - (a) for paragraph (3) substitute—

“(3) Except in a case to which paragraph (16) applies, the parameters listed in Tables A and B in Schedule 1 and the indicator parameters must be subject to—

- (a) monitoring of a Group A parameter if the parameter is one listed in column 2 of Table 1 in Schedule 3 and the circumstances specified in column 3 of that Table apply;
- (b) monitoring of a Group B parameter in any other case.”;
- (b) in paragraph (4)—
 - (i) omit “Clostridium perfringens”;
 - (ii) for “3, 10 and 11” substitute “9 and 10”;
- (c) for paragraph (5) substitute—

“(5) Compliance samples for chemical parameters including copper, lead and nickel must take the form of a random daytime sample of one litre volume taken at a consumer’s tap without prior flushing.”;
- (d) in paragraph (7), for “monitoring”, in the second place it appears, substitute “surveillance”;
- (e) in paragraph (15) for “2 and 3” substitute “8 to 13 (as applicable)”;
- (f) in paragraph (16)(a) for “48 hours after” substitute “at”.
- (6) In regulation 8(1) (authorisation of supply points) for “items 7 to 16 and 19 to 28 in column 1 of Table 3” substitute “item 6 in column 1 of Table 1, and as items 1 to 11 and 14 to 21 in column 1 of Table 3”.
- (7) For regulation 9 substitute—

“Number of samples

9.—(1) In each year a water undertaker must take or cause to be taken from its sampling points or, to the extent authorised under regulation 8, from its supply points, the standard number of samples for analysis of residual disinfectant and each parameter listed in—

- (a) column 2 of Table 1 in Schedule 3 (Group A parameters);
- (b) column 2 of Table 2 in Schedule 3 (Group B1 parameters);
- (c) column 2 of Table 3 in Schedule 3 (Group B2 parameters);
- (d) column 2 of Table 4 in Schedule 3 (Group A1 parameters);
- (e) column 2 of Table 5 in Schedule 3 (Group A2 parameters);
- (f) column 2 of Table 6 in Schedule 3 (Group A3 parameters);
- (g) column 2 of Table 7 in Schedule 3 (Group A4 parameters).

(2) In respect of any parameter not referred to in paragraph (1), the Secretary of State may specify—

- (a) the number of samples which a water undertaker must take or cause to be taken from its sampling points in each year;
- (b) its prescribed concentration or value.

(3) Samples required to be taken by this regulation must—

- (a) be taken at regular intervals;
- (b) in respect of sampling for chemical parameters in the distribution network other than sampling at a consumer’s tap, be taken and handled in accordance with international standard ISO 5667-5 entitled “*Water quality. Sampling. Guidance on treatment of drinking water from treatment works and piped distribution systems*”(a); and

(a) This standard was approved by the International Organization for Standardization (ISO) on 15th April 2006. Under reference BS ISO 5667-5:2006 it is published as a UK standard by the British Standards Institution (ISBN 0 580 47140 3).

- (c) in respect of microbiological parameters in the distribution network and at a consumer's tap, be taken and handled in accordance with European standard EN ISO 19458 entitled "Water Quality – Sampling for microbiological analysis"^(a) using sampling procedure A in the distribution network and sampling procedure B at a consumer's tap.
- (4) Subject to paragraph (5), the Secretary of State may, in respect of any supplies of water by a water undertaker to a water supply zone, treatment works, supply points or a service reservoir, give the water undertaker written notice of any variation of—
- (a) the parameters subject to sampling (by the omission or addition of parameters);
 - (b) the number of samples which the undertaker must take in the period specified in the notice.
- (5) Paragraph (4) does not apply in relation to *E. coli*.
- (6) The Secretary of State may give a notice under paragraph (4)—
- (a) on the Secretary of State's own motion; or
 - (b) where paragraph (8) applies, upon application by a water undertaker.
- (7) A notice under paragraph (4)—
- (a) must specify which parameters are subject to a variation;
 - (b) must specify the extent of any variation from the standard number of samples required to be taken under paragraph (1) or from the number of samples required to be taken under paragraph (2);
 - (c) may require a risk assessment to be undertaken;
 - (d) may be revoked or varied by the Secretary of State.
- (8) This paragraph applies where—
- (a) a risk assessment complying with this regulation has been undertaken and indicates that no factor can be reasonably anticipated to be likely to cause deterioration of the quality of the water;
 - (b) in the case where the water undertaker seeks to cease monitoring a particular parameter, the results from samples taken in respect of the parameter collected at regular intervals over a period of at least three years are all at less than 30% of the parametric value of the parameter; and
 - (c) in the case where the water undertaker seeks to reduce the frequency of monitoring in respect of a particular parameter, the results from samples taken in respect of that parameter collected at regular intervals over a period of at least three years are all at less than 60% of the parametric value of the parameter.
- (9) The Secretary of State must by further written notice withdraw a notice given under paragraph (4) if the Secretary of State believes that any parameter in the water supply to which the notice relates contravenes the prescribed concentration or value or is likely to do so.
- (10) A water undertaker given a notice under paragraph (4) must institute a monitoring programme which must be kept under annual review.
- (11) A risk assessment complies with this regulation where—
- (a) it meets the principles of European Standard EN 15975-2 entitled "Security of drinking water supply – Guidance for risk and crisis management – Part 2: Risk management"^(b) or of other equivalent standards accepted at international level;

(a) This standard was approved by the European Committee for Standardization (CEN) on 1st July 2006. Under reference BS EN ISO 19458:2006, it is published as a UK standard by the British Standards Institution (ISBN 0 5804 49136 6).

(b) This standard was approved by the European Committee for Standardization (CEN) on 1st July 2006. Under reference BS EN ISO 19458:2006, it is published as a UK standard by the British Standards Institution (ISBN 05804 49136 6).

- (b) it is subject to a system of quality control which is checked from time to time by a suitably accredited body; and
- (c) it takes into account the results of monitoring conducted under the second paragraph of Article 7(1) and Article 8 of Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for Community action in the field of water policy^(a).

(12) In this regulation “the standard number” means the number of samples specified in Part 2 or Part 3 of Schedule 3 in respect of a parameter specified in Part 1 of that Schedule.”

(8) Omit regulation 11.

(9) In regulation 13 (sampling at treatment works)—

- (a) in paragraph (1) for “paragraphs (2), (4) and (6)” substitute “paragraph (6)”;
- (b) omit paragraphs (2) to (4);
- (c) in paragraph (6) for “the reduced number” substitute “the number specified in a current notice given by the Secretary of State under regulation 9 which departs from the standard number”;
- (d) after paragraph (6) insert—

“(7) In this regulation, “the standard number” has the same meaning as in regulation 9”.

(10) In regulation 14 (sampling at service reservoirs) after “in use” insert “or as specified in a notice given by the Secretary of State under regulation 9(3)”.

(11) For regulation 16 substitute—

“Collection and analysis of samples

16.—(1) Every water undertaker or wholesale licensee must secure, so far as reasonably practicable, that when it takes, handles, transports, stores or analyses any sample required to be taken for the purposes of Part 4 or this Part, or causes any such sample to be taken, handled, transported, stored or analysed, it complies with the appropriate requirements.

(2) Every water undertaker or wholesale licensee must secure that a suitably accredited body checks from time to time its compliance with the appropriate requirements.

(3) Additionally, any person involved in seeking to discharge the obligation described in paragraph (1) must ensure that—

- (a) the methods of analysis used by that person for the purposes of monitoring and demonstrating compliance with this Part are validated and documented in accordance with European standard EN ISO/IEC 17025 entitled “*General requirements for the competence of testing and calibration laboratories*”^(b) or other equivalent standards accepted at international level; and
- (b) that person applies quality management system practices in accordance with European standard EN ISO/IEC 17025 or other equivalent standards accepted at international level.

(4) Every water undertaker or wholesale licensee must maintain such records as are sufficient to enable it to establish, in relation to each sample taken for the purposes of Part 4 or this Part, that such of the appropriate requirements as are applicable to that sample have been satisfied.

(5) Subject to paragraph (6), for the purpose of establishing, within acceptable limits of deviation and detection, whether the sample contains concentrations or values which

(a) OJ L 327, 22.12.2000, p.1, last amended by Commission Directive 2014/101/EU (OJ L 311, 31.10.2014, p.32).

(b) This standard was approved by the European Committee for Standardization (CEN) on 10th November 2017. Under reference BS EN ISO/IEC 17025:2017, it is published as a UK standard by the British Standards Institution (ISBN 0 580 46330 3).

contravene the prescribed concentrations or values, or exceed the specifications for indicator parameters—

- (a) the method of analysis specified in column 2 of Table A1 in Schedule 5 must be used for the parameter specified in relation to that method in column 1;
- (b) the method of analysis in respect of the parameters listed in column 1 of Table A3 in Schedule 5 must be capable of measuring concentrations equal to the parametric value with a limit of quantification of 30% or less and an uncertainty of measurement as specified in column 2 of that Table and the result must be expressed—
 - (i) using at least the same number of significant figures as the parametric value, and
 - (ii) in the same units laid down in these Regulations; and
- (c) the method of analysis used for the odour and taste parameters (items 5 and 7 in Part 2 of Table B in Schedule 1) must be capable, at the time of use, of measuring values equal to the parametric value with a precision or uncertainty of measurement of 1 dilution number at 25°C.

(6) The Secretary of State may, on the application of any person, authorise a method of analysis other than that specified in paragraph (5)(a) (“the prescribed method”).

(7) An application for the purposes of paragraph (6) must be made in writing and must be accompanied by—

- (a) a description of the method of analysis; and
- (b) the results of the tests carried out to demonstrate the reliability of that method and its equivalence to the prescribed method.

(8) But the Secretary of State must not authorise the use of the method proposed in the application unless the Secretary of State is satisfied that the results obtained by the use of that method are at least as reliable as those produced by the use of the prescribed method.

(9) An authorisation under paragraph (6) may be subject to such conditions as the Secretary of State considers appropriate.

(10) The Secretary of State may at any time, by notice in writing served on the water undertaker or wholesale licensee to which an authorisation under paragraph (6) has been given, revoke the authorisation, but any such notice must be served no later than 3 months before the date on which the revocation is stated to take effect.

(11) In this regulation, “appropriate requirements” means such of the following requirements as are applicable—

- (a) the sample is representative of the quality of the water at the time of sampling;
- (b) the person taking the sample is doing so in accordance with a system of quality control to an appropriate standard;
- (c) the sample is not contaminated in the course of being taken;
- (d) the sample is kept at such a temperature and in such conditions as will secure that there is no material alteration of the concentration or value for the measurement or observation of which the sample is intended;
- (e) the sample is analysed, whether at the time and place it is taken or as soon as reasonably practicable after it is taken—
 - (i) by or under the supervision of a person who is competent to perform that task; and
 - (ii) with the use of such equipment as is suitable for the purpose”.

(12) In regulation 34 (maintenance of records) in paragraphs (1)(h) and (2)(ca)(a) omit “made”.

(a) Paragraph (2)(ca) was inserted by article 32(5) of S.I. 2017/506.

“SCHEDULE 3

Monitoring

PART 1

Group A and Group B parameters

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

<i>(1) Item number</i>	<i>(2) Parameter</i>	<i>(3) Circumstances</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

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

Table 2**Group B1 parameters and circumstances for monitoring to be used for sampling in water supply zones (or supply points)**

<i>(1) Item number</i>	<i>(2) Parameter</i>	<i>(3) Circumstances</i>
1	Aluminium	Where not used as a water treatment chemical or where 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 ^{(1) (3) (4)}	In all circumstances
19	Gross beta ^{(1) (3) (4)}	In all circumstances
20	Iron	Where not used as a water treatment chemical or where the water neither originates from, nor is influenced by, surface waters
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 ^{(1) (4)}	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
35	Total organic carbon ⁽¹⁾	In all circumstances
36	Trichloroethene	In all circumstances
37	Trihalomethanes: Total	In all circumstances
38	Tritium ^{(1) (4)}	In all circumstances

⁽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.

Table 3**Group B2 parameters and circumstances for monitoring to be used for sampling at works or supply points**

<i>(1) Item number</i>	<i>(2) Parameter</i>	<i>(3) 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 ^{(1) (3) (4)}	In all circumstances
10	Gross beta ^{(1) (3) (4)}	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 ^{(1) (4)}	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⁾	In all circumstances
20	Trichloroethene	In all circumstances
21	Tritium ^{(1) (4)}	In all circumstances

⁽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.

Table 4**Group A1 parameters**

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

Table 5**Group A2 parameters**

<i>(1) Item number</i>	<i>(2) 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>(1) Item number</i>	<i>(2) Parameter</i>
1	Conductivity

Table 7

Group A4 parameters

<i>(1) Item number</i>	<i>(2) Parameter</i>
1	Aluminium
2	Ammonium
3	Colony counts 22°C
4	Colour
5	Conductivity
6	Hydrogen ion
7	Iron
8	Manganese
9	Nitrate
10	Nitrite
11	Odour
12	Taste
13	Turbidity

PART 2

Annual sampling frequencies: water supply zones

Annual sampling frequencies for Group A4 parameters: water supply zones

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 1 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.

Table 8

Annual sampling frequencies for Group A4 parameters: water supply zones

<i>(1) Estimated population of water supply zone</i>	<i>(2) 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
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Table 9

Annual sampling frequencies for Group B1 parameters: water supply zones

<i>(1) Estimated population of water supply zone</i>	<i>(2) Standard sampling frequency per year</i>
<100	1
100-4,999	4
5000-100,000	8

Table 10

Annual sampling frequencies for Group A1: water supply zones

<i>(1) Estimated population of water supply zone</i>	<i>(2) Standard sampling frequency per year</i>
<100	4
≥100	12 per 5,000 population

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

Annual sampling frequencies for Group A2 parameters: treatment works or supply points

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 given under regulation 9.

Table 11

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

Table 12

Annual sampling frequencies for Group A3 parameters: supply points

<i>(1) Volume of water supplied m³/day</i>	<i>(2) Standard sampling frequency per year</i>
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<20	2
20-999	4
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>(1) Volume of water supplied m³/day</i>	<i>(2) 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 ^{a)}

(14) In Schedule 4 (monitoring for indicative dose and analytical performance characteristics)—

(a) in paragraph 4(1) (calculation of the ID), for paragraph (a) substitute—

“(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(a), or”;

(b) in the text immediately following the title to Table 1, for the words from “laid down” to “96/29/Euratom” substitute “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”.

(15) In Schedule 5 (analytical methodology)—

(a) for Table A1, substitute—

“Table A1

(a) 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 Water Quality Team, Department for Environment, Food and Rural Affairs, 3rd Floor, Seacole Block, 2 Marsham Street, London SW1P 4DFBS.

Microbiological parameters for which, subject to regulation 16(6), methods of analysis are specified

<i>(1) Parameter</i>	<i>(2) Method of analysis</i>
<i>E. coli</i> and coliform bacteria	EN ISO 9308-1(a) or EN ISO 9308-2(b)
<i>Enterococci</i>	EN ISO 7899-2(c)
<i>Pseudomonas aeruginosa</i>	EN ISO 16266(d)
Enumeration of culturable microorganisms – colony count 22°C	EN ISO 6222(e)
Enumeration of culturable microorganisms – colony count 36°C	EN ISO 6222
<i>Clostridium perfringens</i> (including spores)	EN ISO 14189(f);

(b) omit Table A2;

(c) at the end insert—

“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 value set out in Schedules 1 and 2.

<i>(1) Parameters</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

(a) This standard entitled “Water quality – Enumeration of *Escherichia coli* and coliform bacteria – Part 1: Membrane filtration method for waters with low bacteria background flora (ISO 9308-1:2014)” was approved by the European Committee for Standardization (CEN) on 18th 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).

(b) 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 11th 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).

(c) This standard entitled “Water quality – Detection and enumeration of intestinal enterococci – Part 2: Membrane filtration method for (ISO 7899-2:2000)” was approved by the European Committee for Standardization (CEN) on 11th 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).

(d) 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 11th January 2018. 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).

(e) 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 16th 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).

(f) This standard entitled “Water quality – Enumeration of *Clostridium perfringens* – Method using membrane filtration (ISO 14189:2013)” “Water quality – Enumeration of *Clostridium perfringens* – Method using membrane filtration (ISO 14189:2013)” was approved by the European Committee for Standardization (CEN) on 15th 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).

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 ⁽⁷⁾	30
Tetrachloromethane	30
Trichloroethene ⁽⁷⁾	40
Trihalomethanes: total ⁽⁶⁾	40
Total organic carbon ⁽⁸⁾	30
Turbidity ⁽⁹⁾	30

⁽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.

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

⁽³⁾ The method determines total cyanide in all forms.

⁽⁴⁾ Reference method: European standard EN ISO 8467 entitled “Water quality – Determination of permanganate index (ISO 8467)”**(a)**.

⁽⁵⁾ 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.

⁽⁶⁾ The performance characteristics apply to individual substances, specified at 25% of the parametric value in Part I of Table B in Schedule 1.

⁽⁷⁾ The performance characteristics apply to individual substances, specified at 50% of the parametric value in Part I of Table B in Schedule 1.

⁽⁸⁾ 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”**(b)**.

⁽⁹⁾ 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 entitled “Water quality – Determination of turbidity – Part 1: Quantitative methods (ISO 7027-1”**(c)**.”.

(a) This standard was approved by the European Committee for Standardization (CEN) on 3rd November 1994. Under reference EN ISO 8467:1995, it is published as a UK standard by the British Standards Institution (ISBN 0580 23435 5).

(b) This standard was approved by the European Committee for Standardization (CEN) on 6th 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).

(c) This standard was approved by the European Committee for Standardization (CEN) on 15th April 2016. Under reference BS EN ISO 7027-1:2016, it is published as UK standard by the British Standards Institution (ISBN 978 0 580 81961 2).

Transitional and saving provisions

3.—(1) Despite regulation 2(11) and (15), the following provisions of the 2016 Regulations as in force immediately before 11th July 2018 remain in force in the transitional period with the modifications to those provisions in paragraph (2) and for the purposes set out in paragraph (3)—

- (a) regulation 16(5) and (6);
- (b) Table A2 in Schedule 5.

(2) The modifications are that—

- (a) regulation 16(5) is to be read as if—
 - (i) “Subject to paragraph (7),” were omitted;
 - (ii) sub-paragraph (a) were omitted;
 - (iii) in sub-paragraph (b), for “that Schedule” there were substituted “Schedule 5”;
- (b) regulation 16(6) is to be read as if for “limit of detection” to the end there were substituted—

““limit of detection” is to be calculated as—

- (a) three times the standard deviation within a batch of a natural sample containing a low concentration of the parameter; or
- (b) five times the standard deviation within a batch of a blank sample;

“precision” is to be calculated as a measure of random error and may be expressed as the standard deviation (within and between batches) of the spread of results from the mean. A precision measurement of twice the relative standard deviation is acceptable. The term “precision” is further specified in international standard ISO 5725 entitled “Accuracy (trueness and precision) of measurement methods and results”(a), as amended by the technical corrigendum entitled “Accuracy (trueness and precision) of measurement methods and results - Part 1: General Principles and Definitions TECHNICAL CORRIGENDUM 1”(b);

“trueness” is to be calculated as a measure of systematic error which is the difference between the mean value of the large number of repeated measurements and the true value. This term “trueness” is further specified in international standard ISO 5725 entitled “Accuracy (trueness and precision) of measurement methods and results”, as amended by the technical corrigendum entitled “Accuracy (trueness and precision) of measurement methods and results - Part 1: General Principles and Definitions TECHNICAL CORRIGENDUM 1”.”;

- (c) in Table A2, the entry in column 4 (limit of detection) which relates to 1,2-dichloroethane is to be read as if for “25” there were substituted “10”.

(3) For the whole of the transitional period or any part of it beginning with 11th July 2018, a water undertaker or wholesale licensee may, in respect of any parameter specified in column 1 of Table A2 in Schedule 5 to the 2016 Regulations, elect to be subject to the saved provisions instead of regulation 16(5)(b) of, and Table A3 in Schedule 5 to, those Regulations as inserted by regulation 2(11) and (15)(c) respectively of these Regulations.

(4) In this regulation—

- “saved provisions” means the provisions saved by paragraph (1) as modified by paragraph (2);
- “transitional period” means the period beginning with 11th July 2018 and ending with 31st December 2019.

(a) This standard was published by the International Organization for Standardization (ISO) on 22nd December 1994. Under reference BS ISO 5725-1:1994 to BS ISO 5725-6:1994, it is published as UK standards by the British Standards Institution (ISBN 0 580 24034 7, 0 580 24033 9, 0 580 24029 0, 0 580 24028 2, 978 0 580 63299 0 and 0 580 24024 X).

(b) ISO 5725-1:1994/Cor 1:1998 published on 2nd May 1998.

14th June 2018

David Rutley
Parliamentary Under Secretary of State
Department for Environment, Food and Rural Affairs

EXPLANATORY NOTE

(This note is not part of the Regulations)

These Regulations amend the Water Supply (Water Quality) Regulations 2016 (S.I. 2016/614) (“the 2016 Regulations”). The amendments principally implement the requirements of Commission Directive (EU) 2015/1787 which amended Council Directive 98/83/EC on the quality of water intended for human consumption. The purpose of those amendments is to align the principles applying in the EU in respect of risk based sampling and analysis of drinking water with those of the World Health Organisation.

The Regulations in particular update the requirements for monitoring programmes put in place by suppliers of drinking water, which set minimum sampling frequencies in respect of particular parameters in water intended for human consumption. The Regulations also introduce a new risk assessment approach. Where the criteria of that approach are met, suppliers of drinking water are permitted to reduce the frequencies for the sampling and analysis of water. Further, the Regulations provide the specifications for the methods of analysis of certain parameters and performance characteristics of all parameters.

Regulation 3 contains transitional and saving provisions which give a water undertaker or wholesale licensee choice of continuing to use certain pre-existing analytical methods (with modifications) instead of the replacement methods introduced by these Regulations for any period ending before or with 31st December 2019.

Digital and hard copies of the British standards referred to in these Regulations published by the British Standards Institution can be purchased online from the BSI Group at <http://www.bsigroup.com>. Hard copies of the standards can also be purchased by post from the BSI Group Customer Services Department at 389 Chiswick High Road, London W4 4AL (Tel: 0345 086 9001).

Digital and hard copies of the ISO standards referred to in these Regulations can be purchased online from the International Organization for Standardization (<http://www.iso.org>). They can also be purchased online from the BSI Group internet address mentioned above and in hard copy form from the BSI Group at the postal address mentioned above.

Copies of the British and ISO standards referred to in these Regulations are available for inspection free of charge during normal office hours at the offices of the Department for Environment, Food and Rural Affairs at the address mentioned below.

The explanatory memorandum and transposition note in respect of these Regulations are available in hard copy from the Water Quality Team, Department for Environment, Food and Rural Affairs, 3rd Floor, Seacole Block, 2 Marsham Street, London SW1P 4DF and published alongside these Regulations on www.legislation.gov.uk.

An impact assessment has not been prepared in respect of these Regulations as no impact on the private, voluntary or public sectors is foreseen.

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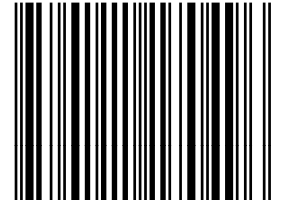
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