
STATUTORY RULES OF NORTHERN IRELAND

2017 No. 212

WATER AND SEWERAGE

**The Water Supply (Water Quality)
Regulations (Northern Ireland) 2017**

Made - - - - *6th October 2017*

Coming into operation *27th October 2017*

The Department of Agriculture, Environment and Rural Affairs⁽¹⁾, in exercise of the powers conferred upon it by Articles 107(1) and (3), 109 and 300(2)(f) of the Water and Sewerage Services (Northern Ireland) Order 2006⁽²⁾ and now vested in it and being a Department designated⁽³⁾ for the purpose of section 2(2) of the European Communities Act 1972⁽⁴⁾ in relation to the environment in exercise of the powers conferred on it by that section, makes the following Regulations:

PART 1

GENERAL

Citation and commencement

1. These Regulations may be cited as the Water Supply (Water Quality) Regulations (Northern Ireland) 2017 and shall come into operation on the 27th October 2017.

Interpretation

2.—(1) In these Regulations—

“appropriate district council”—

- (a) in relation to a departure authorised under regulation 24 or 25 or an application for any such authorisation, means the district council whose area contains any part of the water supply zone to which the authorisation relates or, in the case of an application, would apply if a departure were authorised in the terms sought; or

(1) Formerly the Department of the Environment; see section 1(2) and (11) and Schedule 1 to, the Departments Act (Northern Ireland) 2010 (2016 c.5 (N.I.)). Pursuant to section 1(9) of that Act, the Department of the Environment is dissolved
(2) S.I. 2006/3336 (N.I. 21) as amended by 2016 c.13 (N.I.)
(3) S.I. 2008/301
(4) 1972 c.68

(b) in relation to such an event as is mentioned in regulation 37(6) means the district council in whose area the event occurs;

“appropriate health and social care trust” in relation to a departure authorised under regulation 24 or 25 or an application for any such authorisation, means the social care trust, respectively, whose area contains any part of the water supply zone to which the authorisation relates or, in the case of an application, would apply if a departure were authorised in the terms sought;

“blending point” means a point at which water originating from two or more sources and treated for the purposes of their supply for regulation 5(1) purposes are combined under conditions that are designed to secure that, after such combination, the requirements of regulation 5(2) are met;

“Chapter III” means Chapter III (quality and sufficiency of supply) of part IV (Water Supply) of the 2006 Order;

“consumer” means a person to whom water is supplied for regulation 5(1) purposes by a water undertaker in the discharge of its duties under Part IV of the 2006 Order;

“departure” means a permitted value outside the prescribed concentration or value(s);

“disinfection” means a process of water treatment to remove; or render harmless to human health; every pathogenic micro-organism and pathogenic parasite that would otherwise be present in the water; and “disinfected” shall be construed accordingly;

“District Council” means a District Council as established under Part I of the Local Government Act (Northern Ireland) 1972 (5);

“groundwater” means water contained in underground strata, or in—

(a) a well, borehole or other similar work sunk into underground strata, including any adit or passage constructed in connection with the well, borehole or work for facilitating the collection of water in the well, borehole, or work; or

(b) any excavation into underground strata where the level of water in the excavation depends wholly or mainly on water entering it from the strata;

“Health and Social Care Trust” means a trust established under Article 10 of the Health and Personal Social Services (Northern Ireland) Order 1991(6);

“indicative dose” or “ID” means the committed effective dose for one year of ingestion resulting from all the radionuclides whose presence has been detected in a supply of water intended for human consumption, of natural and artificial origin, but excluding tritium, potassium-40, radon and short-lived radon decay products;

“indicator parameter” means a parameter listed in Schedule 2;

“limit of detection” means the output signal or concentration value above which it can be reasonably determined, with a stated level of confidence that a sample is different from a blank sample containing no determinand of interest;

“limit of quantification” means a stated multiple of the limit of detection at a concentration of the determinand that can reasonably be determined with an acceptable level of accuracy and precision;

“parameter” means a property, element, organism or substance listed in the second column of Table A or Table B in Schedule 1, or in Schedule 2;

“pesticides and related products” means any of the following, and includes their relevant metabolites, degradation and reaction products—

(5) 1972 c.9 (NI)

(6) 1991 No. 194 (N.I. 1)

- (a) any organic insecticide;
- (b) any organic herbicide;
- (c) any organic fungicide;
- (d) any organic nematocide;
- (e) any organic acaricide;
- (f) any organic algicide;
- (g) any organic rodenticide;
- (h) any organic slimacide; and
- (i) any product related to any of (a) to (h) (including any growth regulator);

“prescribed concentration or value”, in relation to any parameter, means the maximum or minimum concentration or value specified in relation to that parameter in Table A or Table B in Schedule 1 as measured by reference to the unit of measurement so specified, and as read, where appropriate, with the notes to those Tables;

“regulation 5(1) purposes”, in relation to the supply of water, means purposes defined in regulation 5(1) of these regulations;

“a risk assessment” is an assessment carried out under regulation 30;

“sampling point” –

- (a) in relation to water supplied from a distribution network, means a point, being a consumer’s tap, that is selected for the purposes of Part 4; or
- (b) in relation to water supplied from a tanker, means the point at which the water emerges from the tanker;

“specification”, in relation to an indicator parameter, means the concentration, value or state, shown as applicable to that parameter in Schedule 2 as measured by reference to the unit of measurement so shown;

“state”, in relation to an indicator parameter, means the state specified in relation to that parameter in Schedule 2 as measured by reference to the unit of measurement so specified;

“supply point” means a blending point, service reservoir, treatment works or other point, not being a sampling point, which the Department authorises for the purposes of regulation 8;

“supply system” is to be construed in accordance with Part I Article 2 (9) of the 2006 Order;

“the Department” means the Department of Agriculture, Environment and Rural Affairs;

“the Directive” means Council [Directive 98/83/EC](#) of 3 November 1998 on the quality of water intended for human consumption⁽⁷⁾ as amended by Commission Directive (EU) 2015/1787 of 6 October 2015⁽⁸⁾;

“the 2006 Order” means the Water and Sewerage Services (Northern Ireland) Order 2006⁽⁹⁾;

“the 2007 Regulations” means The Water Supply (Water Quality) Regulations (Northern Ireland) 2007⁽¹⁰⁾;

“uncertainty of measurement” is defined as a non-negative parameter characterising the dispersion of the quantity values being attributed to a measurand, based on the information used;

(7) OJ No. L 330, 5.12.1998, p.32

(8) OJ No. L 260, 7.10.2015, p.6

(9) S.I. 2006 No. 3336 (N.I. 21)

(10) S.R. 2007/147 as amended by S.R. 2009/246, S.R. 2010/128 and S.R. 2015/ 363

“underground strata” means strata subjacent to the surface of any land, and any reference to water contained in any underground strata is a reference to water so contained otherwise than in a public sewer, pipe, reservoir, tank or underground works contained in any such strata;

“water undertaker” is a relevant undertaker appointed under Article 13 of the 2006 Order;

“water supply zone” in relation to a water undertaker and a year, means an area designated for that year by that water undertaker in accordance with regulation 4; and

“year” means calendar year.

(2) Subject to paragraph (3), references in these Regulations to a service reservoir are references to any structure, other than a structure at a treatment works, in which a reserve of water that has been treated with a view to complying with the requirements of regulation 5 is contained and stored for the purpose of meeting a variable demand for the supply of water.

(3) Where references in these Regulations to a service reservoir would, but for this paragraph, include references to a structure comprising more than one compartment—

- (a) each compartment which has its own water inlet and water outlet and is not connected hydraulically to any other compartment must be treated as a single service reservoir;
- (b) the compartments that are connected hydraulically must be treated as a single service reservoir; and
- (c) unless all of the compartments are connected hydraulically, the structure as a whole must not be treated as a service reservoir.

(4) The Interpretation Act (Northern Ireland) 1954 shall apply to these Regulations as it applies to an Act of the Northern Ireland Assembly⁽¹¹⁾.

Water Supplies to which these Regulations apply

3. These Regulations apply to all water supplies that supply water intended for human consumption provided by a water undertaker appointed under Article 13 of the 2006 Order.

PART 2

WATER SUPPLY ZONES

Water Supply Zones

4.—(1) Before the beginning of each year in which it intends to supply water for the purposes of regulation 5(1), a water undertaker must designate the names and areas within its area of supply that are to be its water supply zones for that year.

(2) A water supply zone may not comprise an area whose population immediately before the beginning of the year in question is estimated by the water undertaker to exceed 100,000.

(3) The water quality within a water supply zone must be approximately uniform.

(4) A water undertaker may not vary a designation under paragraph (1) after the beginning of the year in relation to which the designation has effect.

(11) 1954 c.33 (N.I.)

PART 3

WHOLESOMENESS

Wholesomeness

5.—(1) Water supplied by a water undertaker that is intended for human consumption including water supplied for —

- (a) such domestic purposes as consist of or include, drinking, cooking, food preparation or washing; or
- (b) food production purposes,

must be wholesome.

(2) Subject to paragraphs (5) and (6), water under paragraph (1) is to be regarded as wholesome if the requirements of paragraph (3) are satisfied.

(3) The requirements of this paragraph are—

- (a) that the water does not contain—
 - (i) any micro-organism (other than a parameter listed in Schedule 1) or parasite; or
 - (ii) any substance (other than a parameter listed in Schedule 1),

which, in numbers or concentrations would constitute a potential risk to human health;

- (b) that the water does not contain any substance (whether or not a parameter) at a concentration or value which, in conjunction with any other substance it contains (whether or not a parameter) would constitute a potential risk to human health;
- (c) that the water does not contain concentrations or values of the parameters listed in Tables A and B in Schedule 1 in excess of the prescribed concentrations or values; and
- (d) that the water satisfies the formula “[nitrate]/50 + [nitrite]/3 ≤ 1”, where the square brackets signify the concentrations in mg/l for nitrate (NO₃) and nitrite (NO₂).

(4) The point at which the requirements of paragraph (3), in so far as they relate to the parameters set out in Part 1 of Table A and in Table B in Schedule 1 are to be complied with is—

- (a) in the case of water supplied from a tanker, the point at which the water emerges from the tanker;
- (b) in the case of water supplied in bottles or containers, the point at which the water emerges from any bottle or container collected from a local distribution point;
- (c) in the case of water used in a food-production undertaking, at the point where the water is used in the undertaking; or
- (d) in any other case the point at which the water emerges from the consumer’s tap that is normally used for human consumption.

(5) Water supplied for regulation 5(1) purposes must not be regarded as wholesome for the purposes of Chapter III if, on transfer from a treatment works for supply for those purposes—

- (a) it contains a concentration of the coliform bacteria or *Escherichia coli* (*E. coli*) parameter (items 1 and 2 in Part II of Table A in Schedule 1) in excess of the prescribed concentrations; or
- (b) it contains a concentration of nitrite in excess of 0.1 mg NO₂/l.

(6) Subject to paragraph (7), water supplied for regulation 5(1) purposes must not be regarded as wholesome for the purposes of Chapter III if, on transfer from a service reservoir for supply for those purposes, it contains a concentration of the coliform bacteria or *Escherichia coli* (*E. coli*) parameter in excess of the prescribed concentrations.

(7) Water transferred from a service reservoir for supply for regulation 5(1) purposes is to be regarded as unwholesome if more than 5% of samples taken, in a year in which the reservoir in question is in use, exceed the prescribed concentration for the coliform bacteria parameter.

PART 4

MONITORING OF WATER SUPPLIES

Monitoring Programmes

6.—(1) A water undertaker must monitor all water it supplies that is intended for human consumption in accordance with this Part and Part 5 and it must discharge that obligation through the establishment of a monitoring programme in accordance with Schedule 3.

(2) A water undertaker must ensure that a monitoring programme established under paragraph (1) is kept under review and updated or reconfirmed at least every 5 years.

Monitoring: Group A and Group B monitoring

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

- (a) as to the organoleptic and microbiological quality of water;
- (b) as to the effectiveness of drinking-water treatment (particularly of disinfection) where it is used;
- (c) as regards indicator parameters, whether water supplied for regulation 5(1) purposes meets the specifications for those parameters; and
- (d) in respect of certain other parameters which may be identified as relevant by a water undertaker in the monitoring programme.

(2) The purpose of monitoring of a Group A parameter is to determine whether the presence of such a parameter in water supplied for regulation 5(1) purposes satisfies the provisions of Part 3 of these Regulations or, if a departure has been authorised under Part 8 in relation to that supply, those provisions as read with the terms of that departure.

(3) In this Part, “monitoring of a Group B parameter” (Group B monitoring) means monitoring each parameter listed in Schedule 1 (other than a parameter being monitored under Group A monitoring) for the purpose of obtaining information from which it may be established—

- (a) whether water supplied for the purposes of regulation 5(1) satisfied the provisions of Part 3 of these Regulations or, if a departure has been authorised under Part 8 in relation to that supply, those provisions as read with the terms of that departure; and
- (b) as regards indicator parameters, whether water supplied for regulation 5(1) purposes meets the specifications for those parameters.

Monitoring: general provisions

8.—(1) For the purpose of determining whether water to which this Part applies, satisfies the provisions of Part 3 or, if a departure has been authorised under Part 8 in relation to that supply, those provisions as read with the terms of that authorisation, a water undertaker must take, or cause to be taken, and analyse, or cause to be analysed, not less than the number of samples of the water within each of its water supply zones specified in, or in accordance with provisions of, this Part.

(2) Except in a case to which paragraph (3) applies, the parameters listed in Tables A and B in Schedule 1 and the indicator parameters in Schedule 2 must be subject—

- (a) to Group A monitoring in the circumstances specified in column (3) of Table 1 in Schedule 3; and
 - (b) in any other case, Group B monitoring.
- (3) Where—
- (a) the distribution of water in any part of a water supply zone is by tanker; and
 - (b) it is or is likely to be an intermittent short-term supply,

samples of water from each tanker from which water is distributed must be taken 48 hours after the commencement of the distribution from that tanker and every 48 hours thereafter until the distribution is discontinued.

(4) Of the samples taken in accordance with paragraph (3) in relation to each distribution, the first must be analysed for compliance with the parameters *Escherichia coli* (*E. coli*), and conductivity (item 2 in Table A in Schedule 1, and item 6 in Schedule 2, respectively), and the second and any subsequent samples must be analysed for compliance with those and every other parameter.

(5) The copper, lead and nickel parameters and, subject to regulation 19, the parameters relevant to radioactivity (indicative dose, radon, and tritium), must be monitored in such manner as the Department may determine and specify by notice in writing given to a water undertaker.

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

(7) Indicative dose must be monitored in accordance with Schedule 5.

Sampling points

9. Except in relation to water supplied from a tanker, sampling points in respect of every parameter, other than a parameter for which samples are taken from a supply point authorised by or under regulation 10, must be selected at random unless, by notice in writing to a water undertaker (whether or not on the application of the water undertaker), the Department otherwise determines.

Authorisation of supply points

10.—(1) For those parameters specified as items 7 to 19, and 21 to 30 in column 1 of Table 3 in Schedule 3 samples may be taken by a water undertaker from—

- (a) any blending point;
- (b) the water leaving any service reservoir which receives water from a treatment works before its supply to any consumer; and
- (c) the water leaving any treatment works.

(2) If the Department is satisfied that analysis of those samples taken under paragraph (1) will produce data which are unlikely to differ in material respect from the data that would be produced from analysis of samples obtained from sampling points, the Department may authorise the use for the purposes of regulation 8 of samples in relation to those parameters taken from a water supply zone from a blending point, a service reservoir of the description in paragraph (1) or a treatment works.

(3) Subject to paragraph (5), the Department may, in relation to any parameter not covered by the authorisation in paragraph (2), on the written application of a water undertaker, authorise the use for the purposes of regulation 8 of samples taken from a water supply zone otherwise than from a sampling point.

(4) An authorisation under paragraph (3) may extend to all samples in relation to that parameter or to such number or proportion of those samples as is specified in the authorisation.

(5) The Department must not grant an authorisation under paragraph (3) unless it is satisfied that analysis of samples taken from a point other than a sampling point will produce data in respect of the

parameter in question which are unlikely to differ in any material respect from the data that would be produced in respect of that parameter from analysis of samples obtained from sampling points.

(6) Subject to paragraph (7), the Department may at any time modify or revoke an authorisation under paragraph (3).

(7) Unless it appears to the Department that the immediate modification or revocation of an authorisation under paragraph (3) is required in the interests of public health, it must not modify or revoke such an authorisation without giving the water undertaker at least six weeks' notice of the Department's intention to modify or revoke.

(8) A water undertaker must notify the Department as soon as it has reasonable grounds for believing that an analysis of samples taken from a water supply zone from a point other than a sampling point would produce data in respect of the parameter in question which would differ in a material respect from the data produced by an analysis of samples taken from any of the sampling points within that zone.

(9) On being notified under paragraph (8) and without the need for prior notice to the water undertaker, the Department must revoke the authorisation.

Number of samples

11.—(1) Subject to paragraphs (2) and (3) in each year a water undertaker must take, or cause to be taken—

- (a) from its sampling points; or
- (b) to the extent authorised by or under regulation 10 from its supply points,

the number of samples per year for analysis as regards residual disinfectant and each parameter listed in Table 2 in Schedule 3 or, as the case may be, Table 3 in that Schedule.

(2) Samples required to be taken by this regulation must be taken at regular intervals.

(3) In this regulation—

- (a) in relation to sampling points, residual disinfectant or a parameter, and the supply of water to an estimated population within the range shown in Table 2 in Schedule 3, “the number of samples per year” means the number shown in that Table as applicable to that substance or parameter by reference to a population within that range;
- (b) in relation to supply points, each of the parameters specified as items 7 and 12 to 30 in Table 3 in Schedule 3, and the supply of a volume of water within the range shown in column (3) of that Table, “the number of samples per year” means the number shown in column (4), of that Table as applicable to that parameter by reference to a volume supplied within that range; and
- (c) where a particular supply point is in use for only part of a year, “the number of samples per year” means the number that bears to the number shown in column (4) of Table 3, the same proportion as the number of days in that year in which the supply point has been in use bears to 365.

Sampling: further provisions

12. As soon as a water undertaker has reasonable grounds (such as the findings of a risk assessment) for believing that any element, organism or substance, other than residual disinfectant or a parameter (whether alone or in combination with a parameter or any other element, organism or substance) may cause the supply within any of its water supply zones to be a supply which does not satisfy—

- (a) the provisions of Part 3; or

- (b) if a departure has been authorised under Part 8, those provisions as read with the terms of that authorisation,

it must take, or cause to be taken, sufficient samples from water within that zone (whether from a service reservoir, a treatment works or otherwise) in respect of that element, organism or substance, in order to establish whether that water is wholesome.

PART 5

MONITORING – ADDITIONAL PROVISIONS

Interpretation of Part 5

13. In this Part, in relation to residual disinfectant or a parameter specified as item 1, 2, 3, 4 or 6 in column (1) of Table 3 in Schedule 3, and the supply of a volume of water within one of the ranges shown in column (3) of that Table “the number of samples per year” means the applicable number shown in column (4) of that Table.

Sampling for particular substances and parameters

14. For the purposes of establishing the quality of water to be supplied to any of its water supply zones, a water undertaker must take, or cause to be taken, and analyse, or cause to be analysed, not less than the number of samples specified in this Part.

Sampling at treatment works

15.—(1) Subject to paragraph (3), in each year a water undertaker must take, or cause to be taken, from the point at which water leaves each treatment works which it uses to supply water to water supply zones, the number of samples per year for analysis—

- (a) for determining the concentration of residual disinfectant;
- (b) for determining whether, in relation to the colony counts and turbidity parameters, water leaving treatment works meets the specifications for those parameters set out in Schedule 2; and
- (c) for testing for compliance with the prescribed concentrations or values in respect of the coliform bacteria, *Escherichia coli* (*E. coli*), and nitrite parameters for water leaving treatment works.

(2) Samples required to be taken by this regulation must be taken at regular intervals.

(3) Where a particular treatment works is in use for part only of a year, the minimum number of samples to be taken from that works in that year must bear to “the number of samples per year” the same proportion as the number of days in that year in which the treatment works has been in use bears to 365.

Sampling at service reservoirs

16. A water undertaker must take, or cause to be taken, from each of its service reservoirs in each week in which the reservoir is in use, one sample for analysis—

- (a) for testing for compliance with the prescribed concentrations or values in respect of the coliform bacteria and *Escherichia coli* (*E. coli*) parameters;
- (b) for determining the concentration of residual disinfectant; and
- (c) for determining whether the specification in relation to the colony counts parameter is met.

Sampling: new sources

- 17.—(1) This regulation applies to—
- (a) any source which has not been used for the supply of water by a water undertaker; and
 - (b) any source which has been so used but not so used for a period of six months preceding the date on which the water undertaker proposes to supply water from it.
- (2) A water undertaker must take or cause to be taken in accordance with paragraphs (3) and (4), such samples of water as enable it to establish—
- (a) whether water can be supplied from that source without contravening Article 108(1) of the 2006 Order; and
 - (b) the treatment necessary to ensure that Article 108(1) of the 2006 Order is complied with in relation to the supply of that water.
- (3) The samples must be taken or cause to be taken—
- (a) before a water undertaker supplies water from a source mentioned in paragraph (1)(a); and
 - (b) as soon as is reasonably practicable after it has begun to supply water from a source mentioned in paragraph (1)(b).
- (4) Samples must be taken—
- (a) in the case of a source mentioned in paragraph (1)(a), in respect of—
 - (i) the parameters listed in Schedules 1 and 2;
 - (ii) any other element, organism or substance which, in the opinion of the water undertaker, may cause the supply to contravene Article 108(1) of the 2006 Order; and
 - (iii) any other element, organism or substance required to be monitored by a risk assessment.
 - (b) in the case of a source mentioned in paragraph (1)(b), in respect of—
 - (i) the parameters listed in Table A in Schedule 1;
 - (ii) the conductivity, hydrogen ion and turbidity parameters; and
 - (iii) any other parameter as regards which the water undertaker is of the opinion that its concentration or value is likely to have altered since the last occasion on which water from that source was analysed.
- (5) Unless the conditions in paragraph (6) are satisfied, a water undertaker must not supply water from a source mentioned in paragraph (1)(a) for regulation 5(1) purposes until one month has passed following the day on which the water undertaker complied with regulation 31(1) with respect to the source.
- (6) The conditions are that a water undertaker—
- (a) must supply water from the source as a matter of urgency in order to prevent an unexpected interruption in piped supply to consumers; and
 - (b) before the supply is made, has carried out a risk assessment specifically with respect to the source.
- (7) For the purposes of paragraph (6)(b), regulation 30 must apply for supplies made as a matter of urgency as if “treatment works” includes a source from which untreated water is supplied.

Collection and analysis of samples

- 18.—(1) A water undertaker must ensure, so far as is reasonably practicable, that in taking, handling, transporting, storing and analysing any sample required to be taken for the purposes of

Part 4 or this Part, or causing any such sample to be taken handled, transported, stored and analysed, the appropriate requirements are satisfied.

(2) In paragraph (1) “the appropriate requirements” means such of the following requirements as are applicable—

- (a) the sample is representative of the quality of the water being supplied at the time of sampling;
- (b) the sample taken for certain chemical parameters (in particular copper, lead and nickel) must be taken at the consumer’s tap without prior flushing as a random daytime sample of one litre volume.
- (c) the sample taken in the distribution network, with the exception of sampling at the consumer’s tap, and with exception to sampling for microbiological parameters must be taken in accordance with EN ISO 5667-5.
- (d) the sample taken for the monitoring of microbiological parameters in the distribution network is taken and handled according to EN ISO 19458, sampling purpose A and for all other samples taken for the monitoring of microbiological parameters at other points of compliance, is taken and handled according to EN ISO 19458, sampling purpose B;
- (e) the sample is not contaminated when being taken;
- (f) the sample is kept at such 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;
- (g) the sample is analysed as soon as may be possible after it has been 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;
- (h) any laboratory at which samples are analysed has a system of analytical quality control in accordance with EN ISO/IEC 17025 or other equivalent standards accepted at international level and by the Department and is subjected from time to time to checking by a person who is—
 - (i) not under the control of either the laboratory or the water undertaker; and
 - (ii) approved by the Department for that purpose;
- (i) the analysis methods used for analysing samples are validated and documented in accordance with EN ISO/IEC 17025 or other equivalent standards accepted at international level and by the Department.

(3) For the purposes of paragraph (2)(h), “laboratory” includes a person who undertakes the analysis of samples for the purposes of Part 4 or this Part, whether at the time and place at which the samples are taken or otherwise.

(4) A water undertaker 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 (12), for the purpose of establishing, within acceptable limits of deviation and detection, whether the sample contains concentrations or values which contravene the prescribed concentrations or values, or exceed the specifications for indicator parameters—

- (a) the method of analysis specified in column (2) of Table A in Schedule 4 “Table A” must be used for the parameter specified in relation to that method in column (1) of Table A;
- (b) the method of analysis must be capable of measuring concentrations equal to the parametric value with a limit of quantification of 30% or less of the relevant parametric

value set in Schedule 2 and an uncertainty of measurement as specified in column (2) of Table B in Schedule 4 “Table B”.

(6) The uncertainty of measurement in Table B must not be used as an additional tolerance to the parametric values set in Schedule 1 and 2.

(7) For hydrogen ion, a method of analysis must be capable at the time of use of measuring a value with a trueness of 0.2 pH unit and a precision of 0.2 pH unit.

(8) The result of analysis of parameters under this regulation must be expressed using at least the same number of significant figures as for the associated parametric values in Schedule 1 and Schedule 2.

(9) For these purposes—

“limit of quantification” is to be calculated using an appropriate standard or sample, and may be obtained from the lowest calibration point on the calibration curve, excluding the blank;

“uncertainty of measurement” is defined as a non-negative parameter characterising the dispersion of the quantity values being attributed to a measure and, based on the information used; and

measurement uncertainty must be estimated at the level of the parametric value, unless otherwise specified.

(10) The Department may, until 31 December 2019, allow the water undertaker to use “trueness”, “precision” and “limit of detection” as specified in Table C Schedule 4 “Table C” as an alternative set of performance characteristics to “limit of quantification” and “uncertainty of measurement” specified in Table B provided that—

(a) the method of analysis specified in column (2) of Table A in Schedule 4 must be used for the parameter specified in relation to that method in column (1);

(b) the method of analysis used for a parameter specified in column (1) of Table C in that Schedule must be capable, at the time of use—

(i) of measuring concentrations and values equal to the parametric value with the trueness and precision specified in relation to that parameter in columns (2) and (3) of that Table; and

(ii) of detecting the parameter at the limit of detection specified in relation to that parameter in column (4) of that Table;

(c) the method of analysis used for determining compliance with the hydrogen ion parameter must be capable, at the time of use, of measuring concentrations equal to the parametric value with a trueness of 0.2 pH unit and a precision of 0.2 pH unit; and

(d) the method of analysis used for the odour and taste parameters must be capable, at the time of use, of measuring values equal to the parametric value with a precision of 1 dilution number at 25°C.

(11) For the purposes of paragraph (10)—

“limit of detection” is to be calculated as—

(a) three times the relative within batch standard deviation of a natural sample containing a low concentration of the parameter; or

(b) five times the relative within batch standard deviation of a blank sample;

“precision” (the random error) is to be calculated as twice the standard deviation (within a batch and between batches) of the spread of results about the mean; and

“trueness” (the systematic error) is to be calculated as the difference between the mean value of the large number of repeated measurements and the true value.

(12) Subject to paragraph (14), the Department may, on the application by a water undertaker, authorise a method of analysis other than that specified in paragraph (5)(a) (“the prescribed Table A method”).

(13) In the absence of an analytical method meeting the minimum performance criteria set out in Table B and Table C of Schedule 4 and subject to paragraph 14, the Department may, on the application by a water undertaker, authorise a method of analysis other than that specified in those Tables (“the prescribed Table B or Table C method”) which are best available techniques not entailing excessive costs

(14) An application for the purposes of paragraph (12) and (13) 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 Table A method; or
- (c) the results of the tests carried out to demonstrate the reliability of that method and its equivalence to the prescribed Table B or Table C method.

(15) The Department must not authorise the use of the method proposed in the application unless it 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.

(16) An authorisation under paragraphs (12) and (13) may be subject to such conditions as the Department thinks fit.

(17) The Department may at any time, by notice in writing served on the water undertaker to which an authorisation under paragraphs (12) and (13) has been given, revoke the authorisation, but no such notice must be served later than three months before the date on which the revocation is stated to take effect.

(18) The Department shall provide the European Commission with relevant information concerning such methods authorised in paragraph (12) and their equivalence.

PART 6

DEVIATION FROM MONITORING REQUIREMENTS OF GROUP A AND GROUP B MONITORING

Deviation from standard parameters and frequencies

19.—(1) Subject to a risk assessment being performed in accordance with regulation 30 a water undertaker may (or, where required by the service of a notice under regulation 31 must) and subject to paragraphs (7) and (10), in accordance with this Part, deviate from the requirements of Group A and Group B monitoring required by regulation 7 and Schedule 3.

(2) Based on the results of a risk assessment and in accordance with paragraph (1), the list of parameters in Schedule 3 including any other micro-organism, parasite or substance included in the Group A or Group B parameters (except radon, tritium and indicative dose), must be extended and/or the minimum sampling frequencies in that Schedule increased by a water undertaker —

- (a) in accordance with regulation 12;
- (b) if the list of parameters, substances or microorganisms or frequencies required to be monitored is not sufficient to;
 - (i) be representative of the water consumed throughout the year;
 - (ii) verify that the obligations imposed by regulation 29(2) have been met;

- (iii) ensure the obligations in paragraph 1(a) of Part A of Schedule 3 have been met;
- (iv) verify that the requirements in regulation 5(3)(a) and (b) have been met.

(3) In accordance with paragraph (1) and subject to paragraphs (4) and (5) the sampling frequency for a parameter in Schedule 3 including any other micro-organism, parasite or substance included in the Group A or Group B parameters (except radon, tritium and indicative dose), may be reduced (except sampling frequencies for radon, tritium and indicative dose), or the parameter removed from the list of parameters to be monitored under Schedule 3 provided that the following conditions are met—

- (a) the monitoring for *Escherichia coli* (*E. Coli.*) is not removed from the monitoring programme and the frequency of monitoring is not reduced below the frequency required by Schedule 3; and
- (b) for other parameters in the list—
 - (i) the location and frequency of sampling is determined in relation to the parameter's origin, as well as the variability and long term trend of its concentration, taking into account the prescribed concentration and values in Schedule 1;
 - (ii) to reduce the sampling frequency for a parameter under Schedule 3, 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;
 - (iii) to remove a parameter from the list of parameters to be monitored under Schedule 3 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; and
 - (iv) to remove a parameter from the list of parameters to be monitored under Schedule 3 must be based on the result of a risk assessment, informed by the results of monitoring of sources of water under these Regulations and subject to confirmation that human health is protected from the adverse effects of any contamination of water.

(4) The sampling frequency for a parameter under Schedule 3 including any other micro-organism, parasite or substance included in the Group A or Group B parameters (except radon, tritium and indicative dose) may be reduced under paragraph (3)(b)(ii) only if—

- (a) the risk assessment confirms that no factor (that can be reasonably anticipated) is likely to cause deterioration of the quality of the water; and
- (b) the Department, by notice to a water undertaker, consent to reduce the minimum sampling frequency for a parameter under Schedule 3 in relation to a supply of water (or in relation to more than one supply of water), and that consent has not been revoked under paragraph (6).

(5) Any such parameter may be removed from the list of parameters to be monitored under paragraph (3)(b)(iii) only if—

- (a) the risk assessment confirms that no factor (that can be reasonably anticipated) is likely to cause deterioration of the quality of the water; and
- (b) the Department, by notice to a water undertaker, consent to the removal of the parameter from the list of parameters to be monitored in relation to a supply of water (or in relation to more than one supply of water), and that consent has not been revoked under paragraph (6).

(6) The Department may, by notice to a water undertaker, revoke with immediate effect any consent given by it under paragraphs (4)(b) and (5)(b).

(7) If, in relation to any water supply zone, the water undertaker can submit evidence based on representative surveys, monitoring data, or other reliable information satisfying the Department that water supplied to that zone for regulation 5(1) purposes—

- (a) gives rise to a calculated indicative dose in respect of radioactivity that is well below the specification; or
- (b) contains levels of tritium that are well below the specification; or
- (c) contains levels of radon that are well below the specification.

the Department must, by notice in writing, inform the water undertaker that the indicative dose parameter (item 10 in Schedule 2) or as the case may be the radon parameter (item 8 in that Schedule) or the tritium parameter (item 12 in that Schedule), need not be monitored and notice of this decision and supporting evidence must be communicated to the European Commission.

(8) A representative survey must be designed in such a way—

- (a) as to be capable of determining the scale and nature of likely exposures to radon in water intended for human consumption originating from different types of groundwater sources and wells in different geological areas; and
- (b) that underlying parameters, especially the geology and hydrology of the area, radioactivity of rock and soil, and well type, can be identified and used to direct further action to areas of likely high exposure.

(9) The Department must, by notice in writing—

- (a) withdraw a notice under paragraph (7) given in relation to the indicative dose parameter if it believes that water supplied to the zone in question for regulation 5(1) purposes gives rise to a calculated indicative dose in respect of radioactivity that is not well below the specification;
- (b) withdraw a notice under paragraph (7) given in relation to the tritium parameter if it believes that water supplied to the zone in question for regulation 5(1) purposes contains levels of tritium that are not well below the specification;
- (c) withdraw a notice under paragraph (7) given in relation to the radon parameter if it believes that water supplied to the zone in question for regulation 5(1) purposes contains levels of radon that are not well below the specification;

(10) Should a water undertaker receive a notice under paragraph (9) it must monitor the indicative dose parameter or, as the case may be, the radon parameter, or the tritium parameter in accordance with the notice having effect for the time being under regulation 8(5).

PART 7

DRINKING WATER ABSTRACTION POINTS

Drinking water abstraction points: monitoring sites

20.—(1) A water undertaker must identify every point from which it abstracts water for supply for regulation 5(1) purposes.

(2) At every abstraction point, a water undertaker must take, or cause to be taken, such samples, and analyse, or cause to be analysed, those samples for such properties, organisms and substances as it considers necessary in order to satisfy the requirements of regulations 29 to 31.

(3) In relation to any abstraction point, the Department may, by notice served on a water undertaker, require it—

- (a) to take, or cause to be taken, such numbers of samples of water per year as may be specified; and
 - (b) to analyse, or cause to be analysed, those samples for such concentrations or values of such properties, organisms and substances as may be specified and at such frequencies as may be specified; and
 - (c) to provide the information collected to the Department.
- (4) The Department may, by notice served on a water undertaker, revoke or amend a notice served under paragraph (3).
- (5) Paragraphs (2) and (3) shall be in accordance with such relevant standards as may be specified by the Department by notice served on a water undertaker.
- (6) For the purposes of—
- (a) paragraphs (2) and (3) “abstraction point” means an abstraction point identified under paragraph (1);
 - (b) paragraph (3), “specified” means specified in the notice served under that paragraph.
- (7) Every analysis required under paragraph (2), in relation to every body of surface water which provides more than 100 cubic metres of water per day as an average, must be carried out at no less than the following frequencies—
- (i) 4 per year, where the population so served by the body of surface water is less than 10,000 people;
 - (ii) 8 per year, where the population so served is from 10,000 to 30,000 people;
 - (iii) 12 per year, where the population so served is greater than 30,000 people;
- (8) In paragraph (7), “body of surface water” means a discrete and significant element of surface water such as a lake, a reservoir, a stream, river or canal, part of a stream, river or canal, a transitional water or a stretch of coastal water.

PART 8

INVESTIGATIONS, AUTHORISATION OF DEPARTURES AND REMEDIAL ACTION

Investigations: Schedule 1 parameters

21.—(1) Subject to paragraph (3), where a water undertaker has reason to believe that water supplied by it for regulation 5(1) purposes—

- (a) fails, or is likely to fail, to satisfy a requirement of regulation 5(3); or
- (b) is to be regarded as unwholesome by virtue of regulation 5(5); or
- (c) if regulation 5(7) were ignored, would be regarded as unwholesome by virtue of regulation 5(6),

the water undertaker must immediately take such steps as are necessary to identify the matters specified in paragraph (2).

- (2) The matters referred to in paragraph (1) are—
 - (a) the cause and extent of the failure or, as the case may be, the apprehended failure;
 - (b) the Schedule 1 parameters in respect of which the prescribed concentration or value has not been, or is unlikely to be, achieved; and

- (c) in relation to each parameter so identified, whether the failure, or apprehended failure, to achieve the prescribed concentration or value is attributable—
 - (i) to the domestic distribution system;
 - (ii) to the maintenance of that system; or
 - (iii) to neither of those matters.
- (3) Where a departure has been authorised under this Part—
 - (a) paragraph (1) must apply only in respect of the Schedule 1 parameters (if any) that are not specified in the authorisation; and
 - (b) if a water undertaker has reason to believe that water supplied by it for regulation 5(1) purposes fails, or is likely to fail, to satisfy the concentration or value required by the authorisation in relation to any Schedule 1 parameter, a water undertaker must immediately take such steps as are necessary to identify the matters specified in paragraph (4).
- (4) The matters referred to in paragraph (3) are—
 - (a) the cause and extent of the failure or, as the case may be, the apprehended failure;
 - (b) the Schedule 1 parameters in respect of which the required concentration or value has not been, or is unlikely to be, achieved; and
 - (c) in relation to each parameter so identified, whether the failure, or apprehended failure, to achieve that concentration or value is attributable—
 - (i) to the domestic distribution system;
 - (ii) to the maintenance of that system; or
 - (iii) to neither of those matters.
- (5) After the matters specified in paragraphs (2) or (4), as the case may be, have been identified, the water undertaker must immediately notify the Department—
 - (a) of those matters;
 - (b) in relation to each parameter identified in accordance with paragraphs (2)(b) or (4)(b), whether it is the opinion of the water undertaker that a failure in respect of that parameter is likely to recur; and
 - (c) of the action (if any) taken by the water undertaker in relation to a failure which is attributable to the domestic distribution system or the maintenance of that system.
- (6) Where a water undertaker has identified a failure attributable to the domestic distribution system or to the maintenance of that system, it must, at the same time as notification is given under paragraph (5)—
 - (a) by notice in writing to those of its consumers—
 - (i) to whom it supplies water for regulation 5(1) purposes; and
 - (ii) who are likely to be affected by the failure,inform them of the nature of the failure and provide details of the steps (if any) that, in the opinion of the water undertaker, it is necessary or desirable for those consumers to take in the interests of their health; and
 - (b) send a copy of that notice to the Department and to each appropriate district council.
- (7) Where such a failure as is mentioned in paragraph (1) relates to the copper or lead parameter, the water undertaker must, as soon as reasonably practicable after the occurrence, modify or replace such of its pipes and their associated fittings as it knows or has reason to believe have the potential for contributing to copper or lead in the water supplied to the premises, so as to eliminate that potential (whether or not the presence of copper or lead in those pipes contributed to the failure).

Investigations: indicator parameters

22.—(1) Where the water undertaker has reason to believe that water supplied by it for regulation 5(1) purposes does not meet the specifications for indicator parameters set out in Schedule 2, it must immediately take such steps as are necessary to identify—

- (a) the reason why the specifications are not met;
- (b) the indicator parameters in respect of which the specifications are not met; and
- (c) if the specification for the coliform bacteria or colony count parameter (items 4 and 5 in Schedule 2) is not met, whether the inability to meet that specification is attributable—
 - (i) to the domestic distribution system;
 - (ii) to the maintenance of that system; or
 - (iii) to neither of those matters.

(2) Immediately after the matters specified in paragraph (1) have been identified, the water undertaker must notify the Department—

- (a) of those matters; and
- (b) in relation to each parameter identified in accordance with paragraph (1)(b), whether it is the opinion of the water undertaker that a recurrence of the inability to meet the specification in respect of that parameter is likely.

(3) Where, in a case to which paragraph (1)(c) applies, the inability to meet the specification has been identified as attributable to the domestic distribution system or to the maintenance of that system, the water undertaker must, at the same time as notification is given under paragraph (2)—

- (a) by notice in writing to those of its consumers—
 - (i) to whom it supplies water for regulation 5(1) purposes; and
 - (ii) who are likely to be affected,

inform them of the nature of the failure and provide details of the steps (if any) that, in the opinion of the water undertaker, it is necessary or desirable for those consumers to take in the interests of their health; and

- (b) send a copy of that notice to the Department and to each appropriate district council.

Action by the Department

23.—(1) Where—

- (a) a notification given in accordance with paragraph (5) of regulation 21 in the circumstances mentioned in paragraph (1) of that regulation (including that paragraph as read with paragraph (3)(a)) discloses—
 - (i) a failure in respect of a parameter specified in Table B in Schedule 1; and
 - (ii) that the failure is not attributable to the domestic distribution system or the maintenance of that system; and
- (b) it appears to the Department that the failure is not trivial and is likely to recur,

the Department may, by notice in writing to the water undertaker, require the undertaker to seek a departure in accordance with regulation 24.

(2) Where—

- (a) a notification given in accordance with paragraph (5) of regulation 21 in the circumstances mentioned in paragraph (3)(b) of that regulation discloses —
 - (i) a failure in relation to any parameter specified in Table B in Schedule 1; and

- (ii) that the failure is not attributable to the domestic distribution system or the maintenance of that system; and
- (b) it appears to the Department that the failure in respect of that parameter is not trivial and is likely to recur,

the Department must consider whether the terms of the authorisation under regulation 24 should be modified.

(3) Where—

- (a) a notification given in accordance with regulation 22(2) discloses an inability to meet the specification applicable to an indicator parameter; and
- (b) the Department considers that the inability poses a potential risk to human health,

the Department must, by notice in writing, require a water undertaker to take such steps as may be determined by the Department and specified in the notice.

(4) Should notice be given under paragraph (3) it shall be the duty of the water undertaker to take the steps specified in the notice.

Authorisation of temporary supply of water that is not wholesome

24.—(1) Subject to paragraph (2), the Department may, upon the written application of the water undertaker, authorise in accordance with regulation 25 a departure from the provisions of Part 3 in so far as they relate to—

- (a) a parameter specified in Table B in Schedule 1; and
- (b) the supply of water by the water undertaker in any of its water supply zones.

(2) The Department must not authorise a departure under paragraph (1) unless it is satisfied that—

- (a) the authorisation is necessary to maintain in that zone a supply of water for regulation 5(1) purposes;
- (b) a supply of water for those purposes cannot be maintained in that zone by any other reasonable means; and
- (c) the supply of water in accordance with the authorisation does not constitute a potential risk to human health.

(3) The water undertaker must provide with its application—

- (a) a statement—
 - (i) of the grounds on which the authorisation is sought;
 - (ii) of the water supply zone in respect of which the authorisation is sought;
 - (iii) of the parameters in respect of which the prescribed concentration or value cannot be met;
 - (iv) in respect of each parameter to which paragraph (iii) applies, of the results of the analysis of the samples taken in the water supply zone in question during the 12 months immediately preceding the first day on which the prescribed concentration or value could not be met;
 - (v) in respect of each parameter to which paragraph (iii) applies, of the results of the analysis of the samples (if any) taken in the water supply zone in question between the first day on which the prescribed concentration or value could not be met and the date of the application;

- (vi) of the average daily quantity of water supplied to that zone or, if that quantity cannot readily be ascertained, of the average daily quantity of water supplied from the treatment works that supplies water to that zone;
- (vii) of the estimated population of that zone;
- (viii) as to whether, if a departure were authorised in the terms sought, any relevant food-production undertaking would be affected;
- (ix) of the period for which the authorisation is sought; and
- (x) of the reasons why the supply cannot be maintained by other reasonable means;
- (b) a scheme for monitoring the quality of water supplied in the zone during the period for which the authorisation is sought; and
- (c) a summary of the steps that it proposes to take in order to ensure that the supply fully satisfies the requirements of Part 3, including—
 - (i) a timetable for the work;
 - (ii) an estimate of the cost of the work; and
 - (iii) provisions for reviewing the progress of the work and for reporting the result of the review to the Department.
- (4) At the same time as it makes an application for an authorisation under paragraph (1), the water undertaker must serve on—
 - (a) every appropriate district council; and
 - (b) every appropriate health and social care trust,
 a copy of the application and of the statement, scheme and summary referred to in paragraph (3).
- (5) A body on whom documents have been served in accordance with paragraph (4) may make representations to the Department in connection with the application; and any such representations must be made not later than the end of the period of 30 days beginning with the date on which the application for the authorisation is made.

Authorisations: terms and conditions

- 25.**—(1) Subject to paragraph (2), a departure may be authorised under regulation 24 for such period as is in the Department’s opinion reasonably required for securing a supply of water for regulation 5(1) purposes that fully satisfies the requirements of Part 3 (“the departure period”).
- (2) No departure period may exceed three years.
 - (3) Subject to paragraph (4), an authorisation under regulation 24—
 - (a) must specify—
 - (i) the grounds on which it is granted;
 - (ii) every water supply zone in respect of which it is granted;
 - (iii) the extent to which a departure from the prescribed concentration or value of any parameter is authorised;
 - (iv) in respect of each parameter to which paragraph (iii) applies, the results of the analysis of the samples taken in each water supply zone in question during the 12 months immediately preceding the first day on which the prescribed concentration or value could not be met;
 - (v) in respect of each parameter to which paragraph (iii) applies, the results of the analysis of the samples (if any) taken in each water supply zone in question between

- the first day on which the prescribed concentration or value could not be met and the date of the application;
- (vi) the average daily quantity of water supplied from each of those zones or, if that quantity cannot readily be ascertained, the average daily quantity of water supplied from the treatment works that supplies water to that zone;
 - (vii) the estimated population of each of those zones;
 - (viii) whether or not any relevant food-production undertaking would be affected; and
 - (ix) the departure period; and
- (b) must require the implementation of a scheme for monitoring the quality of water supplied in each of those zones during the departure period (which may be, but need not be, the scheme submitted in accordance with regulation 24(3)(b)); and
- (c) must require the carrying out of the steps which, in its opinion, are reasonably required in order to secure that the supply fully satisfies the requirements of Part 3 (whether or not the steps are those proposed in the summary submitted in accordance with regulation 24(3)(c)); and
- (d) must specify, in relation to those steps—
- (i) the timetable for the work;
 - (ii) an estimate of the cost of the work; and
 - (iii) provisions for reviewing the progress of the work and for reporting to it the result of the review;
- (e) must require the taking of such steps as may be specified to give to the population within the water supply zones to which the authorisation applies and, in particular, to those groups of that population for which the supply of water in accordance with the authorisation could present a special risk, advice as to the measures (if any) that it would be advisable in the interests of their health for persons within that population or those groups to take for the whole or any part of the departure period.
- (4) Where the Department is of the opinion—
- (a) that the extent of the contravention of requirements of Part 3 as respects any parameter is trivial; and
 - (b) that the prescribed concentration or value as respects that parameter is likely to be achieved within the period of 30 days beginning with the day on which the prescribed concentration or value in respect of that parameter was contravened,
- the particulars to be specified in the authorisation must be those required by paragraph (3)(a) (iii) and (ix), and sub-paragraphs (b) to (d) of that paragraph shall not apply.
- (5) Where it appears to the Department that a supply of water that fully satisfies the requirements of Part 3 cannot be restored by the end of the departure period, it may authorise a further departure.
- (6) Paragraphs (1) to (5) shall apply to a further departure as they apply to a departure authorised under regulation 24.
- (7) Where it appears to the Department that a supply of water that fully satisfies the requirements of Part 3 cannot be restored by the end of the departure period relevant to an authorisation under paragraph (5), it may, in accordance with Article 9(2) of the Directive, authorise a third departure.
- (8) Paragraph (3) shall apply to a departure authorised under paragraph (7) as it applies to a departure authorised under regulation 24 but with the substitution for the words “Subject to paragraph (4)” of the words “Subject to any direction of the Commission”.

Authorisations: other limitations

26. An authorisation under regulation 24 or regulation 25 may be limited to water supplied—
- (a) from particular sources or classes of source; or
 - (b) to particular water supply zones or to zones of particular descriptions.

Publicity for authorisations

27.—(1) As soon as reasonably practicable after a departure has been authorised, the water undertaker must—

- (a) publish in a newspaper circulating in the area in which the supply zone to which the authorisation relates is situated—
 - (i) except in a case to which regulation 25(5) applies, a notice containing a statement of the matters specified in paragraph (3)(a)(ii), (iii), (viii) and (ix) of that regulation;
 - (ii) in a case to which 25(5) applies, and if the Department so requires, a notice containing a statement of the matters specified in paragraph (3)(a)(ii), (iii) and (ix) of that regulation;
- (b) give such other public notice of the authorisation and of its terms and conditions as the Department may, by notice in writing to the water undertaker, reasonably require.

(2) As soon as reasonably practicable after a departure has been authorised, a water undertaker must—

- (a) separately publish, by making accessible, free of charge, on its website via a hyperlink maintained on its respective homepage for at least 14 days—
 - (i) except in a case to which regulation 25(5) applies, a notice containing a statement of the matters specified in paragraph (3)(a)(ii), (iii), (viii), and (ix) of that regulation; and
 - (ii) in a case to which 25(5) applies, publish a notice containing a statement of the matters specified in paragraph (3)(a)(ii), (iii), and (ix) of that regulation; and
- (b) give such other public notice of the authorisation and of its terms and conditions as the Department may, by notice served on a water undertaker, reasonably require.

Revocation and modification of authorisations

28.—(1) Subject to paragraphs (2) and (3), the Department may at any time modify or revoke an authorisation under regulation 24.

(2) The Department must not revoke or modify an authorisation under regulation 24 without giving at least six months' notice in writing of its intention to do so to—

- (a) the water undertaker;
- (b) the appropriate district council; and
- (c) the appropriate health and social care trust,

but it may revoke or modify an authorisation without notice if it appears to it that immediate revocation or modification is required in the interests of public health.

(3) A water undertaker on whose application a departure has been authorised under this Part must notify the Department as soon as the circumstances which gave rise to the application cease to exist; and the Department must thereupon revoke the authorisation without the need for prior notice.

PART 9

WATER TREATMENT

Disinfection and other treatment arrangements

29.—(1) Unless the conditions in paragraph (4) are satisfied, before supplying water for regulation 5(1) purposes, a water undertaker must—

- (a) disinfect the water; and
- (b) where necessary, subject the water to sufficient preliminary treatment to prepare it for disinfection.

(2) A water undertaker must—

- (a) design, operate and maintain the disinfection process so as to keep the presence of disinfection by-products as low as possible without compromising the effectiveness of the disinfection; and
- (b) verify the performance of the disinfection process.

(3) Paragraph (4) applies when any property, organism, or substance is present in a water source at a level that may constitute a potential risk to human health.

(4) Unless the conditions in paragraph (5) are satisfied, before supplying water for regulation 5(1) purposes using water from any source, a water undertaker must design and continuously operate an adequate treatment process for water from the source.

(5) The conditions are that a water undertaker—

- (a) must supply water from the treatment works as a matter of urgency in order to prevent an unexpected interruption in piped supply to consumers; and
- (b) before a supply is made, has taken all necessary steps to inform consumers that the water is not disinfected or adequately treated.

(6) For the purposes of this regulation—

- (a) “adequate treatment process” means a process of blending or purification treatment which—
 - (i) removes, or
 - (ii) renders harmless the value or concentration of,

any property of water, organism or substance in water, so that supplies do not constitute a potential risk to human health;

(b) “sufficient preliminary treatment” means the treatment necessary—

- (i) to remove, or to reduce the value or concentration of, any property or substance which would interfere with disinfection; and
- (ii) to reduce turbidity to less than one Nephelometric Turbidity Unit (NTU); and

(c) water is supplied for regulation 5(1) purposes when it leaves a treatment works.

(7) Article 30 of the 2006 Order applies to the enforcement by the Department of the duties under this regulation in the same way as it applies to the enforcement by the enforcement authority of the duties to which that Article applies.

Risk assessment

30.—(1) This regulation applies to every treatment works and its connected supply system from which water is supplied for regulation 5(1) purposes.

(2) A water undertaker must carry out a risk assessment of each of its treatment works and its connected supply system in order to establish whether there is a significant risk of supplying water from those works that would constitute a potential risk to human health or is likely to be unwholesome.

(3) A risk assessment must-

- (a) be carried out in accordance with a method which is approved by the Department;
- (b) be based on the general principles of a risk assessment set out in international standards such as EN 15975-2 concerning “security of drinking water supply, guidelines for risk and crisis management”(12);
- (c) take into account the results from the monitoring programmes-
 - (i) under these regulations; and
 - (ii) under Regulation 11 (monitoring) of the Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2017(13) in respect of bodies of water identified under Regulation 8 of those Regulations (bodies of water used for the abstraction of drinking water).

(4) A water undertaker must keep under review and, where necessary, update the risk assessment.

(5) A water undertaker must review and, where necessary, update the risk assessment when monitoring programmes are reviewed under regulation 6.

(6) The Department may by notice served on a water undertaker require a risk assessment or review to be carried out by a date specified in the notice.

(7) Where a water undertaker becomes aware of any factors which make it likely that a risk assessment under this regulation would establish that there is a significant risk of supplying water that would constitute a potential risk to human health or that is likely to be unwholesome it must serve a notice on the Department specifying the relevant factors.

(8) On the coming into force of these Regulations, a risk assessment carried out under regulation 27 of the 2007 Regulations which had effect immediately before the coming into force of these Regulations continues to have effect subject to paragraph (9) and shall be construed as having been carried out under this regulation, and it must comply with paragraph (4), (5) and (7).

(9) Risk assessments referred to in paragraph (8) must be updated to comply with paragraph (2) and (3) of this regulation by 31 March 2019.

(10) Any new risk assessment carried out under paragraph 2 after the coming into force of these Regulations must after the 31 March 2019 comply with all conditions of this regulation and prior to that date shall comply with paragraphs (4), (5) and (7).

Procedure following risk assessment

31.—(1) As soon as reasonably practicable after a water undertaker has carried out a risk assessment or review of such assessment under regulation 30, it must submit to the Department a report of the assessment.

(2) The report must contain—

- (a) a description of the methods used to carry out the assessment or review;
- (b) a summary of the risk assessment results;

(12) This standard was approved by the European Committee for Standardization (CEN) on 5th July 2013. Under reference BS EN 15975-2:2013, it is published as a UK standard by the British Standards Institution (ISBN 978 0 580 84737 0).

(13) [S.R. 2017 No.81](#)

- (c) where the assessment or review establishes that there is no significant risk of supplying water that could constitute a potential risk to human health or be unwholesome, a statement confirming this; and
 - (d) where the assessment or review establishes that measures have been taken to remove a significant risk of supplying water that could constitute a potential risk to human health or be unwholesome—
 - (i) monitoring data which verifies this; and
 - (ii) details of those measures.
- (3) Where the assessment or review establishes that there is a significant risk of supplying water that could constitute a potential risk to human health or be unwholesome, the report must—
- (a) contain a full explanation including details of every property, organism, or substance that has been identified as contributing to the risk; and
 - (b) specify the measures that a water undertaker—
 - (i) has made operational as at the date of the report, and
 - (ii) intends to make operational,

to mitigate the risk.

(4) Where the Department has received a report which states that there is or has been a significant risk of supplying water that could constitute a risk to human health or be unwholesome, it may, by notice served on a water undertaker, require it—

- (a) to maintain such specified measures for such period of time as it considers appropriate to mitigate the risk;
- (b) to review, revise, or make operational such specified measures by such date as it considers appropriate to mitigate the risk;
- (c) to audit whether the measures have been effective by such means as may be specified;
- (d) not to supply water for regulation 5(1) purposes from specified treatment works, or not to so supply unless specified conditions are satisfied; and
- (e) to give it such information as it may require to monitor progress towards mitigation of that risk.

(5) In paragraph (4), “specified” means specified in the notice served under that paragraph.

(6) The Department may, by notice served on a water undertaker, revoke or amend a notice served under paragraph (4).

(7) Article 30 of the 2006 Order applies to the enforcement by the Department of the duties under this regulation in the same way as it applies to the enforcement by the enforcement authority of the duties to which that Article applies.

Contamination from pipes

32.—(1) Where there is a risk (“the prescribed risk”) that water supplied by the water undertaker would, for the reason mentioned in paragraph (2), after leaving that undertaker’s pipes—

- (a) contain a concentration of copper in excess of 2mg/litre; or
- (b) contain a concentration of lead in excess of 10µg/litre,

the water undertaker must, subject to paragraph (3), treat the water in such a way as will, in its opinion, eliminate the prescribed risk or reduce it to a minimum.

(2) The reason referred to in paragraph (1) is the presence in the water of a concentration of copper or lead which is attributable to the fact that copper or lead is the major component of such a pipe as is mentioned in Article 108(3)(a) of the 2006 Order, or its associated fittings.

(3) Paragraph (1) shall not require the water undertaker to treat water—

- (a) if the treatment is unlikely to achieve a significant reduction in the concentration of copper or lead; or
- (b) if treatment is not reasonably practicable.

(4) Where the water undertaker—

- (a) has reason to believe that water supplied by it for regulation 5(1) purposes from a pipe to which paragraph (5) applies contains, at the consumer's tap, a concentration of lead which exceeds 10µg/l; and
- (b) has received from the owner of premises to which water is so supplied notice in writing —
 - (i) of the owner's intention to replace so much of the pipe as belongs to them; and
 - (ii) of the owner's desire that the water undertaker replaces the remainder of the pipe,

the water undertaker must modify or replace its part of the pipe.

(5) This regulation applies to a pipe—

- (a) of which the major component is lead;
- (b) which is subject to water pressure from a water main or would be so subject but for the closing of some valve; and
- (c) which belongs, as to part, to the water undertaker and, as to the remainder, to the owner of any premises to which the water undertaker supplies water for regulation 5(1) purposes.

Application and introduction of substances and products

33.—(1) Subject to paragraph (2), a water undertaker must not apply any substance or product to, or introduce any substance or product into, water which is to be supplied for regulation 5(1) purposes, unless one of the requirements of paragraph (4) is satisfied.

(2) A substance or product which, at the time of its application or introduction—

- (a) bears an appropriate CE marking in accordance with the Construction Products Regulation; or
- (b) conforms to an appropriate British Standard or some other appropriate standard of an EEA state or Turkey which provides an equivalent level of protection and performance,

may be applied or introduced, notwithstanding that none of the requirements of paragraph (4) is satisfied.

(3) Paragraph (2) applies only if such an application or introduction complies with—

- (a) such conditions of use restricting the dosing concentration as are for the time being in force in relation to such substances and products pursuant to a determination of the Department by an notice in writing; and
- (b) such other requirements, within the meaning of the Technical Standards Directive, in relation to such substances and products, as have been communicated to the European Commission in the form of a draft technical regulation in accordance with Article 8 of that Directive, and whose adoption by a Member State has also been communicated to the European Commission.

(4) The requirements of this paragraph are that—

- (a) the Department has for the time being approved the application or introduction of that substance or product and it is applied or introduced in accordance with any conditions attaching to that approval;
 - (b) the Department is satisfied that the application or introduction of the substance or product either alone or in combination with any other substance or product in the water is unlikely to adversely affect the quality of the water supplied; or
 - (c) the substance or product is to be applied or introduced solely for the purposes of testing or research, and the water undertaker has given to the Department not less than 3 months' notice in writing of its intention so to apply or introduce the substance or product.
- (5) An application for an approval mentioned in paragraph (4)(a) may be made by any person.
- (6) If the Department decides to issue an approval under paragraph (4)(a), the Department may include in the approval such conditions as the Department considers appropriate and, in accordance with paragraph (10), may at any time revoke or vary any approval that the Department has previously given.
- (7) Where substances or products are applied or introduced in any case in which the requirement mentioned in paragraph (4)(c) is satisfied, their application or introduction must be discontinued within 12 months of the date on which they were first applied or introduced or, if the Department by notice given in writing to the water undertaker so directs, within such other period (whether longer or shorter) as may be specified in the notice.
- (8) The Department may, by notice given in writing to any water undertaker, prohibit it from applying to, or introducing into, water intended to be supplied for regulation 5(1) purposes any substance or product which the water undertaker would otherwise be authorised to apply or introduce by virtue of—
- (a) paragraphs (1) and (4)(b) or (c), or
 - (b) paragraph (2).
- (9) A prohibition under paragraph (8) may be without limitation as to time or for such period as is specified in the notice.
- (10) Subject to paragraph (11), the Department may—
- (a) revoke by notice in writing any approval given under paragraph (4)(a);
 - (b) vary any such approval by notice in writing by including conditions or varying existing conditions;
 - (c) give any such notice as is mentioned in paragraph (8).
- (11) Unless the Department is satisfied that it is necessary to do so in the interests of public health without notice, the Department must not act under paragraph (10) without giving all such persons as are, in the Department's opinion, likely to be affected by the revocation or variation of the approval or by the giving of the notice, at least 6 months' notice in writing.
- (12) Notwithstanding paragraph (11), the Department must give immediate notice to all persons likely to be affected by the revocation or variation of an instrument mentioned in paragraph (10) (a) or (b).
- (13) At least once in each year the Department must issue a list of all the substances and products, with particulars of the action taken, in relation to which—
- (a) an approval under paragraph 4(a) has been granted or refused;
 - (b) such an approval has been revoked or varied; and
 - (c) a notice has been given under paragraph (8).
- (14) The Department may—

- (a) by notice served on the person who makes an application for approval under paragraph (4) (a), require the person to pay the Department a charge which reflects the administrative expenses incurred or likely to be incurred by the Department in connection with the application; and
- (b) in determining the amount of any such charge, adopt such methods and principles for its calculation as appear to the Department to be appropriate.

In this regulation—

“the Construction Products Regulation” means Regulation (EU) No 305/2011 of the European Parliament and of the Council laying down harmonised conditions for the marketing of construction products⁽¹⁴⁾;

“the Technical Standards Directive” means Directive (EU) 2015/1535 of the European Parliament and of the Council laying down a procedure for the provision of information in the field of technical regulations and of rules on Information Society services⁽¹⁵⁾.

Use of processes

34.—(1) The Department may at any time by notice in writing given to the water undertaker require it to make an application to the Department for approval of the use of any process; and may prohibit it for such period as may be specified in the notice from using any such process in connection with the supply by it of water for regulation 5(1) purposes.

(2) The Department may refuse the application or impose on any approval given for the purposes of this regulation such conditions as it thinks fit and, subject to paragraph (3), may at any time by notice in writing to the water undertaker revoke an approval so given or modify or revoke any condition imposed by virtue of this paragraph.

(3) Subject to paragraph (4), the Department must not—

- (a) revoke any approval given for the purposes of this regulation;
- (b) modify any condition imposed by virtue of paragraph (2); or
- (c) prohibit the water undertaker from using any process, unless it has given to the undertaker at least six months’ notice in writing of its intention to revoke, modify or prohibit, as the case may be.

(4) Paragraph (3) shall not apply in any case in which the Department is of the opinion that the immediate revocation, modification or prohibition is necessary in the interests of public health.

Offences

35.—(1) A water undertaker which applies or introduces, any substance or product in contravention of regulation 33(1) or a notice given under regulation 33(8), or uses any process in contravention of a prohibition imposed under regulation 34(1) or without complying with a condition imposed by virtue of regulation 34(2) shall be guilty of an offence and liable—

- (a) on summary conviction, to a fine not exceeding the statutory maximum;
- (b) on conviction on indictment, to a fine.

(2) In any proceedings against a water undertaker for an offence under paragraph (1), it shall be a defence for that water undertaker to show that it took all reasonable steps and exercised all due diligence to avoid the commission of the offence.

⁽¹⁴⁾ OJ No L 88, 4.4.2011, p 5, as last amended by Commission Delegated Regulation (EU) No 574/2014 (OJ No L 159, 28.5.2014, p 41).

⁽¹⁵⁾ OJ No L 241, 17.9.2015, p 1.

PART 10

RECORDS AND INFORMATION

Maintenance of records

36.—(1) The water undertaker must prepare and maintain, in respect of each of its water supply zones, a record containing—

- (a) the name of the zone;
- (b) the name of every water treatment works, service reservoir and other supply point from which water is supplied to premises within the zone;
- (c) an estimate of the population of the zone;
- (d) the details contained within each risk assessment carried out under regulation 30, including a summary of its results;
- (e) particulars of any departure authorised under Part 8 which applies to water supplied in the zone;
- (f) particulars of the action taken or required to be taken by the water undertaker to comply with -
 - (i) any departure authorised under Part 8; and
 - (ii) any notice under regulation 23(3);
- (g) particulars of the result of any analysis of samples taken in accordance with Part 4 or any of regulations 14 to 17 and 20 and 31; and
- (h) such other particulars as the water undertaker may determine.

(2) The water undertaker must make—

- (a) entries in respect of the matters mentioned in paragraph (1)(f)(i), where relevant, and (1)(f)(ii) within 28 days of the date of the authorisation and notice respectively; and
- (b) entries relating to the results of the analysis of samples within 28 days of the day on which the result is first known to the water undertaker.

(3) Without prejudice to paragraph (2) the water undertaker must at least once in each year review and bring up to date the record required to be kept by paragraph (1).

(4) Nothing in this regulation shall require the water undertaker to retain a record—

- (a) of information mentioned in any of sub-paragraphs (a), (b) and (f) of paragraph (1) at any time more than 30 years after the date on which the information was first entered in the record;
- (b) of information mentioned in any other sub-paragraph of that paragraph at any time more than five years after the date on which the information was first entered in the record.

Provision of information

37.—(1) Subject to paragraphs (2), (3), and (4), any person may request a water undertaker to send them a copy of any record maintained by a water undertaker under regulation 36, and a water undertaker must, within ten working days of the receipt of the request, send a copy of the record requested to the person.

(2) A water undertaker must comply with a request under paragraph (1)—

- (a) in the case of a request relating to a water supply zone, free of charge if the person receives a supply of water in the zone; or

- (b) in any other case, on payment of such reasonable charge as a water undertaker may determine.
- (3) Paragraph (1) does not oblige a water undertaker to comply with a request which is vexatious.
- (4) Where a water undertaker has previously complied with a request which was made by any person, paragraph (1) does not oblige it to comply with a subsequent identical or substantially similar request from that person unless a reasonable interval has elapsed between compliance with the previous request and the making of the subsequent request.
- (5) A water undertaker must include in, or append to, at least one of the accounts sent to each customer in any year a statement informing the customer of their rights under paragraph (1).
- (6) As soon as possible after an event which, by reason of its effect or likely effect on the water supplied by a water undertaker, gives rise or is likely to give rise to a significant risk to human health, a water undertaker must notify—
- (a) in every case—
 - (i) every appropriate district council;
 - (ii) the Public Health Agency (formally known as the Regional Agency for Public Health and Social Well-being and established by section 12 of the Health and Social Care (Reform) Act (Northern Ireland) 2009); and
 - (iii) the Department.
- (7) Where a person has received a notification under paragraph (6), they may require a water undertaker to provide them with such further information relating to the event and its consequences as they may reasonably require.

Publication of Information

- 38.**—(1) The water undertaker must, not later than 30th June in each year, publish a report relating to the preceding year containing—
- (a) a statement of the number of treatment works, service reservoirs and other supply points from which it supplied water during any part of that year;
 - (b) a statement of the number of its water supply zones for the year;
 - (c) a summary of appropriate information of samples taken and any associated departures authorised under Part 8;
 - (d) a statement of the action taken by the water undertaker during the year to comply with—
 - (i) any departure authorised under Part 8; and
 - (ii) any notice served by the Department under these regulations
 - (e) a statement of the overall drinking water quality, to include information on microbiological and chemical testing and samples taken; and
 - (f) a statement of events and incidents affecting drinking water quality;
- (2) A report under paragraph (1) may include such other information as the water undertaker thinks fit.
- (3) At the same times as it publishes a report in accordance with paragraph (1), the water undertaker must send a copy of it to every district council within whose area it supplied water in the preceding year.
- (4) In addition to the report provided under paragraph (3), the water undertaker must provide appropriate information on drinking water quality specific to every district council.

PART 11 REVOCATIONS

Revocations

39. The regulations listed in Schedule 6 are revoked.

PART 12 TRANSITIONAL PROVISIONS

Transitional Provisions

40.—(1) Any authorisation granted by the Department under regulations 8, 16, 20 and 21 of the 2007 Regulations and which has not been revoked or expired by 27 October 2017 shall have effect as if granted under regulation 10, 18, 24 or 25 respectively

(2) Any notice granted by the Department under regulations 6, 7, 16, 16A, 19, 27, 28, 30 or 31 of 2007 Regulations and which has not been revoked or expired by 27 October 2017 shall have effect as if granted under regulation 8, 9, 18, 20, 23, 30, 31, 33, or 34.

Sealed with the Official Seal of the Department of Agriculture, Environment and Rural Affairs on
6th October 2017



Dave Foster
A senior officer of the Department of the
Environment

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SCHEDULE 1

Regulation 5

PRESCRIBED CONCENTRATIONS AND VALUES

Wholesomeness

TABLE A

MICROBIOLOGICAL PARAMETERS

(1) Item	(2) Parameters	(3) Concentration or Value (maximum)	(4) Unit of measurement	(5) Point of Compliance ⁽¹⁾
Part I: Directive requirements				
1.	Enterococci	0	number/100ml	Consumers' taps
2.	<i>Escherichia coli (E. coli)</i>	0	number/100ml	Consumers' taps
Part II: National requirements				
1.	Coliform bacteria	0	number/100ml	Service reservoirs ⁽²⁾ and water treatment works
2.	<i>Escherichia coli (E. coli)</i>	0	number/100ml	Service reservoirs and water treatment works

(1) Where water is supplied from a tanker see regulation 5(3)(a)

(2) Compliance required as to 95% of samples taken for coliform bacteria from each service reservoir (regulation 5(6)).

TABLE B

CHEMICAL PARAMETERS

(1) Item	(2) Parameters	(3) Concentration or Value (maximum)	(5) Units of Measurement	(6) Point of compliance
Part I: Directive requirements				
1.	Acrylamide ⁽¹⁾	0.10	µg/l	
2.	Antimony	5.0	µg/l	Consumers' taps
3.	Arsenic	10	µg/l	Consumers' taps
4.	Benzene	1.0	µg/l	Consumers' taps
5.	Benzo(a)pyrene	0.010	µg/l	Consumers' taps
6.	Boron	1.0	mg/l	Consumers' taps

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(1) Item	(2) Parameters	(3) Concentration or Value (maximum)	(5) Units of Measurement	(6) Point of compliance
7	Bromate ⁽²⁾	10	µg/l	Consumers' taps
8	Cadmium	5.0	µg/l	Consumers' taps
9	Chromium	50	µg/l	Consumers' taps
10	Copper ⁽³⁾	2.0	mg/l	Consumers' taps
11	Cyanide	50	µg/l	Consumers' taps
12	1, 2 dichloroethane	3.0	µg/l	Consumers' taps
13	Epichlorohydrin ⁽¹⁾	0.10	µg/l	
14	Fluoride	1.5	mg/l	Consumers' taps
15	Lead ⁽³⁾	10	µg/l	Consumers' taps
16	Mercury	1.0	µg/l	Consumers' taps
17	Nickel ⁽³⁾	20	µg/l	Consumers' taps
18	Nitrate ⁽⁴⁾	50	mg/l	Consumers' taps
19	Nitrite ⁽⁴⁾	0.50	mg/l	Consumers' taps
		0.10		Treatment works
20	Pesticides ⁽⁵⁾⁽⁶⁾	0.030	µg/l	Consumers' taps
	Aldrin			
	Dieldrin			
	Heptachlor			
	Heptachlor epoxide			
	other pesticides ⁽⁵⁾⁽⁶⁾	0.10	µg/l	Consumers' taps
21	Pesticides: Total ⁽⁷⁾	0.50	µg/l	Consumers' taps
22	Polycyclic aromatic hydrocarbons ⁽⁸⁾	0.10	µg/l	Consumers' taps

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(1) Item	(2) Parameters	(3) Concentration or Value (maximum)	(5) Units of Measurement	(6) Point of compliance
23	Selenium	10	µg/l	Consumers' taps
24	Tetrachloroethene and Trichloroethene ⁽⁹⁾	10	µg/l	Consumers' taps
25	Trihalomethanes: Total ⁽¹⁰⁾	100	µg/l	Consumers' taps
26	Vinyl chloride ⁽¹⁾	0.50	µg/l	
Part II: National requirements				
1.	Aluminium	200	µg/l	Consumers' taps
2.	Colour	20	mg/l Pt/Co	Consumers' taps
3.	Iron	200	µg/l	Consumers' taps
4.	Manganese	50	µg/l	Consumers' taps
5.	Odour	Acceptable to consumers and no abnormal change		Consumers' taps
6.	Sodium	200	mg/l	Consumers' taps
7.	Taste	Acceptable to consumers and no abnormal change		Consumers' taps
8.	Tetrachloromethane	3	µg/l	Consumers' taps
9.	Turbidity	4	NTU	Consumers' taps

- (1) The parametric value refers to the residual monomer concentration in the water as calculated according to specifications of the maximum release from the corresponding polymer in contact with the water. This is controlled by product specification.
- (2) Where possible, without compromising disinfection, a water undertaker (in relation to a supply of water for human consumption purposes) must strive for a lower value.
- (3) See also regulation 8(5).
- (4) See also regulation 5(3)(d).
- (5) See the definition of "pesticides and related products" in regulation 2.
- (6) The parametric value applies to each individual. "other pesticide" means a pesticide other than aldrin, dieldrin, heptachlor and heptachlor epoxide.
- (7) "Pesticides: Total" means the sum of the concentrations of the individual pesticides detected and quantified in the monitoring process.
- (8) The specified compounds are benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(ghi)perylene, indeno(1,2,3-cd)pyrene and the parametric value applies to the sum of the concentrations of the individual compounds detected and quantified in the monitoring process.
- (9) The parametric value applies to the sum of the concentrations of the individual compounds detected and quantified in the monitoring process.
- (10) The specified compounds are chloroform, bromoform, dibromochloromethane, bromodichloromethane and the parametric value applies to the sum of the concentrations of the individual compounds detected and quantified in the monitoring process.

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SCHEDULE 2

Regulation 2 and 5

INDICATOR PARAMETERS

(1) Item	(2) Parameters	(3) Specification Concentration or Value (maximum unless otherwise stated) or State	(4) Units of Measurement	(5) Point of monitoring
1	Ammonium	0.50	mg/l	Consumers' taps
2	Chloride ⁽¹⁾⁽²⁾	250	mg/l	Supply point
3	<i>Clostridium perfringens</i> (including spores) ⁽¹⁾	0	Number/100ml	Supply point
4	Coliform bacteria	0	Number/100ml	Consumers' taps
5	Colony counts	No abnormal change	Number/1ml at 22°C Number/1ml at 37°C	Consumers' taps, service reservoirs and treatment works
6	Conductivity ⁽¹⁾⁽²⁾	2500	µS/cm at 20°C	Supply point
7	Hydrogen ion ⁽²⁾	9.5 6.5 (minimum)	pH units	Consumers' taps
8	Radon radioactivity ⁽¹⁾⁽³⁾⁽⁶⁾ (for	100	Bq/l	Supply point
9	Sulphate ⁽¹⁾⁽²⁾	250	mg/l	Supply point

- (1) May be monitored from samples of water leaving treatment works or other supply point, as no significant change during distribution.
- (2) The water should not be aggressive.
- (3) Where radon concentrations exceed 1000Bq/l, remedial action must be carried out on radiological protection grounds without further consideration.
- (4) Excluding tritium, potassium-40, radon and radon decay products.
- (5) Elevated levels of tritium may indicate the presence of other artificial radionuclides. If the tritium concentration exceeds its parametric value, an analysis of the presence of other radionuclides is required.
- (6) Where treatment to reduce the level of radionuclides in water intended for human consumption has been taken, monitoring must be carried out to ensure the continued efficacy of the treatment.
- (7) If the gross alpha activity exceeds 0.1Bq/l or gross beta activity exceeds 1.0Bq/l, analysis for specific radionuclides is required.

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(1) Item	(2) Parameters	(3) Specification Concentration or Value (maximum unless otherwise stated) or State	(4) Units of Measurement	(5) Point of monitoring
10	Indicative dose (for radioactivity) ⁽¹⁾⁽⁴⁾⁽⁶⁾⁽⁷⁾	0.10	mSv	Supply point
11	Total organic carbon (TOC) ⁽¹⁾	No abnormal change	mg/l	Supply point
12	Tritium (for radioactivity) ⁽¹⁾⁽⁵⁾⁽⁶⁾	100	Bq/l	Supply point
13	Turbidity	1	NTU	Treatment works

- (1) May be monitored from samples of water leaving treatment works or other supply point, as no significant change during distribution.
- (2) The water should not be aggressive.
- (3) Where radon concentrations exceed 1000Bq/l, remedial action must be carried out on radiological protection grounds without further consideration.
- (4) Excluding tritium, potassium-40, radon and radon decay products.
- (5) Elevated levels of tritium may indicate the presence of other artificial radionuclides. If the tritium concentration exceeds its parametric value, an analysis of the presence of other radionuclides is required.
- (6) Where treatment to reduce the level of radionuclides in water intended for human consumption has been taken, monitoring must be carried out to ensure the continued efficacy of the treatment.
- (7) If the gross alpha activity exceeds 0.1Bq/l or gross beta activity exceeds 1.0Bq/l, analysis for specific radionuclides is required.

SCHEDULE 3

Regulation 6

MONITORING PROGRAMMES

- 1.—(1) A monitoring programme established under Part 4 of these Regulations 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 is wholesome;
- (b) provide information on the quality of water supplied to—
- (i) demonstrate whether or not the water complies with prescribed concentrations and values for parameters in Schedule 1;

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- (ii) determine the organoleptic and microbiological quality of the water; and
- (iii) establish the effectiveness of the treatment of the water, particularly of disinfection where it is used.
- (c) identify the most appropriate means of mitigating any risk to human health; and
- (d) have regard to Part 5.
- (2) A monitoring programme must consist of either—
 - (a) the collection and analysis of discrete water samples; or
 - (b) measurement recorded by a continuous monitoring process; or
 - (c) a combination of both of the methods described in sub-paragraphs (a) and (b).
- (3) In addition, monitoring programmes may consist of—
 - (a) inspections of records of the functionality and maintenance status of equipment; and/or
 - (b) inspections of the catchment area, water abstraction, treatment, storage and distribution infrastructure.
- (4) The monitoring programme may be based on a risk assessment as set out in regulation 30.
- (5) When choosing appropriate parameters and other micro-organisms, parasites or substances for monitoring programmes, local conditions for each water supply system must be taken into consideration.

TABLE 1**PARAMETERS AND CIRCUMSTANCES FOR GROUP A MONITORING**

<i>(1) Item</i>	<i>(2) Parameter</i>	<i>(3) Circumstances</i>
1	Aluminium	If used as water treatment chemicals or where the water originates from, or is influenced by, surface waters
2	Ammonium	Where chloramination is practised
3	Coliform bacteria	In all supplies
4	Colony Counts	In all supplies
5	Colour	In all supplies
6	Conductivity	In all supplies
7	Disinfectant residual	When disinfection treatment is practised
8	<i>Escherichia coli (E. coli)</i>	In all supplies
9	Indicative Dose	Where there is treatment in place to reduce the level of radionuclides in water intended for human consumption.
10	Iron ⁽¹⁾	If used as water treatment chemicals or where the water originates from, or is influenced by, surface waters

(1) A supply which consists of both groundwater and surface water is deemed to be a supply which consists only of surface water.

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<i>(1) Item</i>	<i>(2) Parameter</i>	<i>(3) Circumstances</i>
11	Manganese ⁽¹⁾	Where the water originates from, or is influenced by, surface waters
12	Nitrate	Where chloramination is practised
13	Nitrite	Where chloramination is practised
14	Odour	In all supplies
15	pH (Hydrogen ion)	In all supplies
16	Radon	Where there is treatment in place to reduce the level of radionuclides in water intended for human consumption.
17	Taste	In all supplies
18	Tritium	Where there is treatment in place to reduce the level of radionuclides in water intended for human consumption.
19	Turbidity	In all supplies

(1) A supply which consists of both groundwater and surface water is deemed to be a supply which consists only of surface water.

TABLE 2

Annual Sampling Frequencies: Water Supply Zones

This table sets out the annual sampling frequencies for all the substances and parameters in column 1. These are determined for each water supply zone according to its estimated population (column 2).

<i>(1) Substances and parameters subject to monitoring</i>	<i>(2) Estimated population of water supply zone⁽¹⁾</i>	<i>(3) Number of samples per year</i>
Group A monitoring		
<i>Escherichia coli (E. coli)</i>	< 100	4
Coliform bacteria	≥ 100	12 per 5,000 population ⁽¹⁾
Residual disinfectant		
Aluminium	<100	2

(1) Where the population is not an exact multiple of 5,000, the population figure should be rounded up to the nearest multiple of 5,000.

(2) Sampling for these parameters may be within water supply zones or at supply points as specified in Table 3, subject to notes (5) and (6) below.

(3) Group A monitoring in water supply zones is required only where chloramination is practised. In other circumstances Group B monitoring is required.

(4) Group B monitoring in water supply zones is required only where sodium hypochlorite is added after water has left the treatment works. In other circumstances, Group B monitoring is required at supply points.

(5) To monitor for indicative dose (for radioactivity).

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

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<i>(1) Substances and parameters subject to monitoring</i>	<i>(2) Estimated population of water supply zone⁽¹⁾</i>	<i>(3) Number of samples per year</i>
Ammonium	100–4,999	4
Colony counts	5,000–9,999	12
Colour	10,000–29,999	24
Conductivity ⁽²⁾	30,000–49,999	36
Hydrogen ion	50,000–79,999	52
Iron	80,000–100,000	76
Manganese		
Nitrate ⁽³⁾		
Nitrite ⁽³⁾		
Odour		
Taste		
Turbidity		
Group B monitoring		
Aluminium	<100	1
Antimony	100–4,999	4
Arsenic	5,000–100,000	8
Benzene ⁽²⁾		
Benzo(a)pyrene		
Boron ⁽²⁾		
Bromate ⁽⁴⁾		
Cadmium		

- (1) Where the population is not an exact multiple of 5,000, the population figure should be rounded up to the nearest multiple of 5,000.
- (2) Sampling for these parameters may be within water supply zones or at supply points as specified in Table 3, subject to notes (5) and (6) below.
- (3) Group A monitoring in water supply zones is required only where chloramination is practised. In other circumstances Group B monitoring is required.
- (4) Group B monitoring in water supply zones is required only where sodium hypochlorite is added after water has left the treatment works. In other circumstances, Group B monitoring is required at supply points.
- (5) To monitor for indicative dose (for radioactivity).
- (6) In the event that a single sample is taken in a year, a further sample should be taken if there is any change in relation to that supply that could affect the concentration of radionuclides in the water supply.

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(1) Substances and parameters subject to monitoring	(2) Estimated population of water supply zone ⁽¹⁾	(3) Number of samples per year
Chromium		
<i>Clostridium perfringens</i> (including spores)		
Copper		
Cyanide ⁽²⁾		
1,2 dichloroethane ⁽²⁾		
Enterococci		
Fluoride ⁽²⁾		
Gross alpha ⁽²⁾⁽⁵⁾		
Gross beta ⁽²⁾⁽⁵⁾		
Iron		
Lead		
Manganese		
Mercury ⁽²⁾		
Nickel		
Nitrate ⁽³⁾		
Nitrite ⁽³⁾		
Pesticides and related		

- (1) Where the population is not an exact multiple of 5,000, the population figure should be rounded up to the nearest multiple of 5,000.
- (2) Sampling for these parameters may be within water supply zones or at supply points as specified in Table 3, subject to notes (5) and (6) below.
- (3) Group A monitoring in water supply zones is required only where chloramination is practised. In other circumstances Group B monitoring is required.
- (4) Group B monitoring in water supply zones is required only where sodium hypochlorite is added after water has left the treatment works. In other circumstances, Group B monitoring is required at supply points.
- (5) To monitor for indicative dose (for radioactivity).
- (6) In the event that a single sample is taken in a year, a further sample should be taken if there is any change in relation to that supply that could affect the concentration of radionuclides in the water supply.

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(1) Substances and parameters subject to monitoring	(2) Estimated population of water supply zone ⁽¹⁾	(3) Number of samples per year
products ⁽²⁾		
Polycyclic aromatic hydrocarbons		
Radon ⁽²⁾⁽⁶⁾		
Selenium		
Sodium		
Trichloroethene/		
Tetrachloroethene ⁽²⁾		
Tetrachloromethane ⁽²⁾		
Trihalomethanes		
Chloride ⁽²⁾		
Sulphate ⁽²⁾		
Total organic carbon ⁽²⁾		
Tritium ⁽²⁾		

- (1) Where the population is not an exact multiple of 5,000, the population figure should be rounded up to the nearest multiple of 5,000.
- (2) Sampling for these parameters may be within water supply zones or at supply points as specified in Table 3, subject to notes (5) and (6) below.
- (3) Group A monitoring in water supply zones is required only where chloramination is practised. In other circumstances Group B monitoring is required.
- (4) Group B monitoring in water supply zones is required only where sodium hypochlorite is added after water has left the treatment works. In other circumstances, Group B monitoring is required at supply points.
- (5) To monitor for indicative dose (for radioactivity).
- (6) In the event that a single sample is taken in a year, a further sample should 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

Annual Sampling Frequencies: Treatment Works or Supply Points

Sampling is at treatment works for the substances and parameters shown in column (1) of the Table as items (1) to (6) and at supply points for the other substances and parameters, except nitrite subject to notes 2 and 3 to the Table below.

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This table sets out the annual sampling frequencies for all the substances and parameters in column 2 at treatment works or supply points. The frequencies are determined according to the volume of water supplied at each treatment works or supply point (column 3).

(1) Item	(2) Substances and parameters	(3) Volume of water supplied m ³ /d ⁽¹⁾	(4) Number of samples per year ⁽²⁾
1	<i>Escherichia coli</i> (<i>E. coli</i>)	<20	4
2	Coliform bacteria	20-1,999	52
3	Colony counts	2,000-5,999	104
4	Nitrite ⁽³⁾	6,000-11,999	208
5	Residual disinfectant	≥ 12,000	365
6	Turbidity		
Group A monitoring			
7	Conductivity	<20	2
		20-999	4
		1,000-1,999	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	

- (1) The water undertaker may use the number of inhabitants in a supply zone instead of the volume of water to determine the minimum frequency, assuming a water consumption of 200 l/day/capita.
- (2) The volumes are calculated as averages taken over a calendar year.
- (3) Sampling at treatment works when chloramination is practised.
- (4) Sampling at treatment works when chloramination is not practised.
- (5) Group B monitoring at supply points is required only where sodium hypochlorite is not added after water has left the treatment works. In other circumstances, Group B monitoring is required in water supply zones
- (6) To monitor for indicative dose (for radioactivity).

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(1) Item	(2) Substances and parameters	(3) Volume of water supplied m ³ /d ⁽¹⁾	(4) Number of samples per year ⁽²⁾
		120,000-241,999	730
		242,000-484,999	1,460
		485,000-728,999	2,190
Group A monitoring			
8	Gross alpha ⁽⁶⁾	<20	1
9	Gross beta ⁽⁶⁾	20-999	4
10	Radon	1,000-49,999	8
11	Tritium	50,000-89,999	12
		90,000-299,999	24
		300,000-649,999	36
		≥ 650,000	48
Group B monitoring			
12	Benzene	<20	1
13	Boron	20-999	4
14	Bromate ⁽⁵⁾	1,000-49,999	8
15	Clostridium perfringens (including spores)	50,000-89,999	12
		90,000-299,999	24
16	Cyanide	300,000-649,999	36
17	1,2,dichloroethane	≥650,000	48
18	Fluoride		
19	Mercury		
20	Nitrite ⁽⁴⁾		

(1) The water undertaker may use the number of inhabitants in a supply zone instead of the volume of water to determine the minimum frequency, assuming a water consumption of 200 l/day/capita.

(2) The volumes are calculated as averages taken over a calendar year.

(3) Sampling at treatment works when chloramination is practised.

(4) Sampling at treatment works when chloramination is not practised.

(5) Group B monitoring at supply points is required only where sodium hypochlorite is not added after water has left the treatment works. In other circumstances, Group B monitoring is required in water supply zones

(6) To monitor for indicative dose (for radioactivity).

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(1) Item	(2) Substances and parameters	(3) Volume of water supplied m ³ /d ⁽¹⁾	(4) Number of samples per year ⁽²⁾
21	Pesticides and related products		
22	Trichloroethene/ Tetrachloroethene		
23	Tetrachloromethane		
24	Chloride		
25	Sulphate		
26	Total Organic Carbon		
27	Radon		
28	Tritium		
29	Gross alpha ⁽⁶⁾		
30	Gross beta ⁽⁶⁾		

- (1) The water undertaker may use the number of inhabitants in a supply zone instead of the volume of water to determine the minimum frequency, assuming a water consumption of 200 l/day/capita.
- (2) The volumes are calculated as averages taken over a calendar year.
- (3) Sampling at treatment works when chloramination is practised.
- (4) Sampling at treatment works when chloramination is not practised.
- (5) Group B monitoring at supply points is required only where sodium hypochlorite is not added after water has left the treatment works. In other circumstances, Group B monitoring is required in water supply zones
- (6) To monitor for indicative dose (for radioactivity).

SCHEDULE 4

Regulation 18

ANALYTICAL METHODOLOGY

TABLE A

Parameters for which, subject to regulation 18(12), methods of analysis are prescribed

(1) Parameter	(2) Method
<i>Clostridium perfringens</i> (including spores)	EN ISO 14189
Coliform bacteria	EN ISO 9308-1 or EN ISO 9308-2
Colony count 22°C-enumeration of culturable microorganisms	EN ISO 6222

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<i>(1) Parameter</i>	<i>(2) Method</i>
Colony count 36°C-enumeration of culturable microorganisms	EN ISO 6222
Enterococci	EN ISO 7899-2
<i>Escherichia coli</i> (<i>E. coli</i>)	EN ISO 9308-1 or EN ISO 9308-2
<i>Pseudomonas aeruginosa</i>	EN ISO 16266

TABLE B**Minimum performance characteristic: “uncertainty of measurement”**

<i>(1) Parameter⁽¹⁾</i>	<i>(2) Uncertainty of measurement (% of parametric value, except pH)⁽²⁾</i>
Aluminium	25
Ammonium	40
Antimony	40
Arsenic	30
Benzo(a)pyrene ⁽³⁾	50
Benzene	40
Boron	25
Bromate	40
Cadmium	25
Chloride	15
Chromium	30
Conductivity	20
Copper	25
Cyanide ⁽⁴⁾	30
1,2-dichloroethane	40
Fluoride	20
Hydrogen ion concentration pH (expressed in pH units) ⁽⁵⁾	0.2
Iron	30
Lead	25
Manganese	30

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(1) Parameter ⁽¹⁾	(2) Uncertainty of measurement (% of parametric value, except pH) ⁽²⁾
Mercury	30
Nickel	25
Nitrate	15
Nitrite	20
Oxidisability ⁽⁶⁾	50
Pesticides ⁽⁷⁾	30
Polycyclic aromatic hydrocarbons ⁽⁸⁾	50
Selenium	40
Sodium	15
Sulphate	15
Tetrachloroethene ⁽⁹⁾	30
Tetrachloromethane	30
Trichloroethene ⁽⁹⁾	40
Trihalomethanes: total ⁽⁸⁾	40
Total organic carbon ⁽¹⁰⁾	30
Turbidity ⁽¹¹⁾	30

- (1) Acrylamide, epichlorohydrin and vinyl chloride to be controlled by product specification.
- (2) 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 better. Measurement uncertainty must be estimated at the level of the parametric value, unless otherwise specified.
- (3) If the value of uncertainty of measurement cannot be met, the best available technique should be selected (up to 60%).
- (4) The method determines total cyanide in all forms.
- (5) Values for trueness, precision and uncertainty of measurement are expressed in pH units.
- (6) Reference method EN ISO 8467.
- (7) 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
- (8) The performance characteristics apply to individual substances, specified at 25% of the parametric value in Table B in Schedule 1.
- (9) The performance characteristics apply to individual substances, specified at 50% of the parametric value in Table B in Schedule 1.

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- (10) The uncertainty of measurement should be estimated at the level of 3 mg/l of the total organic carbon. CEN 1484 Guidelines for the determination of total organic carbon and dissolved organic carbon must be used.
- (11) The uncertainty of measurement must be estimated at the level of 1.0 NTU (nephelometric turbidity units) in accordance with EN ISO 7027.

TABLE C

Minimum performance characteristics: trueness, precision and limit of detection- may be used until 31 December 2019

<i>(1) Parameter⁽¹⁾</i>	<i>(2) Trueness⁽²⁾</i>	<i>(3) Precision⁽³⁾</i>	<i>(4) Limit of detection⁽⁴⁾</i>
Aluminium	10	10	10
Ammonium	10	10	10
Antimony	25	25	25
Arsenic	10	10	10
Benzene	25	25	25
Benzo(a)pyrene	25	25	25
Boron	10	10	10
Bromate	25	25	25
Cadmium	10	10	10
Chloride	10	10	10
Chromium	10	10	10
Colour	10	10	10
Conductivity	10	10	10
Copper	10	10	10
Cyanide ⁽⁵⁾	10	10	10
1,2-dichloroethane	25	25	10
Fluoride	10	10	10
Hydrogen ion concentration pH (expressed in pH units) ⁽⁶⁾	0.2	0.2	
Iron	10	10	10
Lead	10	10	10
Manganese	10	10	10
Mercury	20	10	20

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(1) Parameter ⁽¹⁾	(2) Trueness ⁽²⁾	(3) Precision ⁽³⁾	(4) Limit of detection ⁽⁴⁾
Nickel	10	10	10
Nitrate	10	10	10
Nitrite	10	10	10
Oxidisability ⁽⁷⁾	25	25	25
Pesticides ⁽⁸⁾	25	25	25
Polycyclic aromatic hydrocarbons ⁽⁹⁾	25	25	25
Selenium	10	10	10
Sodium	10	10	10
Sulphate	10	10	10
Tetrachloroethene ⁽¹⁰⁾	25	25	10
Tetrachloromethane	20	20	20
Trichloroethene ⁽¹⁰⁾	25	25	10
Trihalomethanes: total ⁽⁹⁾	25	25	10
Turbidity ⁽¹¹⁾	10	10	10
Turbidity ⁽¹²⁾	25	25	25

- (1) Acrylamide, epichlorohydrin and vinyl chloride to be controlled by product specification.
- (2) Trueness is a measure of systematic error, i.e. the difference between the mean value of the large number of repeated measurements and the true value. Further specifications are those set out in ISO 5725.
- (3) Precision is a measure of random error and is usually expressed as the standard deviation (within and between batches) of the spread of results from the mean. Acceptable precision is twice the relative standard deviation. This term is further specified in ISO 5725.
- (4) Limit of detection is either three times the standard deviation within a batch of a natural sample containing a low concentration of the parameter; or five times the standard deviation of a blank sample (within a batch).
- (5) The method determines total cyanide in all forms.
- (6) Values for trueness, precision and uncertainty of measurement are expressed in pH units.
- (7) Reference method EN ISO 8467 1995.
- (8) 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
- (9) The performance characteristics apply to individual substances, specified at 25% of the parametric value in Table B in Schedule 1.

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- (10) The performance characteristics apply to individual substances, specified at 50% of the parametric value in Table B in Schedule 1.
- (11) The performance characteristics apply to prescribed value 4 NTU.
- (12) The performance characteristics apply to prescribed value 1 NTU for water leaving surface water treatment works.

SCHEDULE 5

Regulation 8

MONITORING FOR INDIVIDUAL RADIONUCLIDES

1. A water undertaker may use a screening strategy for gross alpha and gross beta to monitor for the parametric indicator value for indicative dose(16). The recommended screening value for gross alpha is 0.1Bq/l and for gross beta is 1.0Bq/l.

If the gross alpha activity exceeds 0.1Bq/l or the gross beta activity exceeds 1.0Bq/l, analysis for specific radionuclides is required.

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

2. Calculation of the ID

The ID must be calculated from the measured radionuclide concentrations and the dose coefficients laid down in Annex III, Table A of Directive 96/29/Euratom or more recent information recognised by the Department, on the basis of the annual intake of water (730l for adults). Where the following formula is satisfied, it can be assumed that the ID is less than the parametric value if 0.1mSv and no further investigation is required.

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

where

$C_i(\text{obs})$ = observed concentration of radionuclide i

$C_i(\text{der})$ = derived concentration of radionuclide i (see Table 1)

n – number of radionuclides detected.

TABLE 1

Derived concentration for radioactivity in water intended for human consumption⁽¹⁾

<i>Origin</i>	<i>Radionuclide</i>	<i>Derived concentration⁽²⁾</i>
Natural	U-238 ⁽³⁾	3.0 Bq/l

(1) This table includes value for the most common natural and artificial radionuclides; these are precise values, calculated for a dose of 0.1mSV, an annual intake of 730 litres and using the dose coefficients laid down in Annex III of Directive 96/29/Euratom; derived concentration for other radionuclides can be calculated on the same basis, and values can be updated on the basis of more recent information recognised by the competent authorities.

(2) Where appropriate gross beta activity may be replaced by residual beta activity after subtraction of the K-40 concentration.

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

(16) Where appropriate gross beta activity may be replaced by residual beta activity after subtraction of the K-40 activity concentration.

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<i>Origin</i>	<i>Radionuclide</i>	<i>Derived concentration⁽²⁾</i>
	U-234 ⁽³⁾	2.8 Bq/l
	Ra-226	0.5 Bq/l
	Ra-228	0.2 Bq/l
	Pb-210	0.2 Bq/l
	Po-210	0.1 Bq/l
Artificial	C-14	240 Bq/l
	Sr-90	4.9 Bq/l
	Pu-239/Pu-240	0.6 Bq/l
	Am-241	0.7 Bq/l
	Co-60	40 Bq/l
	Cs-134	7.2 Bq/l
	Cs-137	11 Bq/l
	I-131	6.2 Bq/l

- (1) This table includes value for the most common natural and artificial radionuclides; these are precise values, calculated for a dose of 0.1mSV, an annual intake of 730 litres and using the dose coefficients laid down in Annex III of Directive 96/29/Euratom; derived concentration for other radionuclides can be calculated on the same basis, and values can be updated on the basis of more recent information recognised by the competent authorities.
- (2) Where appropriate gross beta activity may be replaced by residual beta activity after subtraction of the K-40 concentration.
- (3) This table allows only for the radiological properties of uranium, not for its chemical toxicity.

3. Performance characteristics and method of analysis.

For the following parameters and radionuclides, the method of analysis used must, as a minimum be capable of measuring activity concentrations with a limit of detection specified in Table 2 below:

TABLE 2

<i>Parameters and radionuclides</i>	<i>Limit of detection⁽¹⁾⁽²⁾</i>
Tritium ⁽³⁾	10 Bq/l
Radon ⁽³⁾	10 Bq/l
gross alpha activity ⁽⁴⁾	0.04 Bq/l
gross beta activity ⁽⁴⁾	0.4 Bq/l
U-238	0.02 Bq/l

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<i>Parameters and radionuclides</i>	<i>Limit of detection⁽¹⁾⁽²⁾</i>
U-234	0.02 Bq/l
Ra-226	0.04 Bq/l
Ra-228 ⁽⁵⁾	0.02 Bq/l
Pb-210	0.02 Bq/l
Po-210	0.01 Bq/l
C-14	20 Bq/l
Sr-90	0.4 Bq/l
Pu-239/Pu-240	0.04 Bq/l
Am-241	0.06 Bq/l
Co-60	0.5 Bq/l
Cs-134	0.5 Bq/l
Cs-137	0.5 Bq/l
I-131	0.5 Bq/l

- (1) The limit of detection must be calculated according to the ISO standard 11929: Determination of the characteristic limits (decision threshold, detection limit, and limits of confidence interval) for measurements of ionising radiation– Fundamentals and application, with probabilities of error of 1st and 2nd kind of 0.05 each.
- (2) Measurement uncertainties must be calculated and reported as complete standard uncertainties or as expanded uncertainties with an expansion factor of 1.96 according the ISO Guide for the Expression of Uncertainty in Measurement.
- (3) The limit of detection for tritium and for radon is 10% of its parametric value of 100 Bq/l.
- (4) The limit of detection for gross alpha activity and gross beta activities are 40% of the screening values of 0.1 and 1.0 Bq/l respectively.
- (5) This limit of detection applies only to initial screening for ID for a new water source, if initial checking indicates that is not plausible that Ra-228 exceeds 20% of the derived concentration, the limit of detection may be increased to 0.8 Bq/l for routine Ra-228 nuclide specific measurements until a subsequent re-check is required.

SCHEDULE 6

Regulation 39

REVOCATIONS

Revocations coming into operation on the 27th October 2017

<i>No.</i>	<i>Regulations revoked</i>	<i>Extent of revocation</i>
1.	The Water Supply (Water Quality) Regulations (Northern Ireland) 2007	The whole Regulations
2.	The Water Supply (Water Quality) (Amendment) Regulations (NI) 2009	The whole Regulations

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<i>No.</i>	<i>Regulations revoked</i>	<i>Extent of revocation</i>
3.	The Water Supply (Water Quality) (Amendment) Regulations (NI) 2010	The whole Regulations
4.	The Water Supply (Water Quality) (Amendment) Regulations (NI) 2015	The whole Regulations

EXPLANATORY NOTE

(This note is not part of the Regulations)

These Regulations supplement the Water and Sewerage Services (Northern Ireland) Order 2006 (the 2006 Order) and also on 27th October 2017, they revoke and replace the Water Supply Quality (Northern Ireland) Regulations 2007 and the Water Supply (Water Quality) (Amendment) Regulations (Northern Ireland) 2009. They also on that date revoke and replace the Water Supply (Water Quality) Regulations (Northern Ireland) 2010 and the Water Supply (Water Quality) Regulations (Northern Ireland) 2015. The Water Supply Quality (Northern Ireland) Regulations 2007 and aforementioned associated amendments are referred to as the “2007 Regulations”.

These Regulations implement Council [Directive 98/83/EC](#) on the quality of water intended for human consumption (O.J. No. L330, 5.12.1998 p.32) (the DWD) as amended by Commission Directive (EU) 2015/1787 and they also implement Council [Directive 2013/51/EURATOM](#) laying down requirements for the protection of the health of the general public with regard to radioactive substances in water intended for human consumption (O.J. No. L296, 7.11.2013 P.12) in relation to public drinking water supplies. The Regulations are primarily concerned with the quality of water supplied in Northern Ireland by the water undertaker for drinking, washing, cooking and food preparation, and for food production, and with arrangements for the publication of information about water quality.

Part 1 of the Regulations (regulations 1 and 2) defines terms that are used in the Regulations.

Part 2 (regulation 4) requires the water undertaker to identify annually the areas (“water supply zones”) that are to be relevant for a particular year for the purposes of the application of provisions of the Regulations. A water supply zone may not comprise an area in which the estimated population exceeds 100,000. The water undertaker may not alter the boundaries of water supply zones during the year.

Part 3 (regulation 5) prescribes standards of wholesomeness in respect of water that is supplied by the water undertaker for cooking, drinking, food preparation and washing and other domestic purposes and to premises for food production purposes. These various purposes are referred to in the Regulations as “regulation 5(1) purposes”.

Part 4 (regulations 6 to 12) provides for the monitoring of water supplies by reference to the analysis of samples. Regulation 6 requires the water undertaker to monitor all water it supplies for human consumption supplies and establish monitoring programmes in accordance with that Part. Regulation 7 defines two monitoring regimes; “Group A” monitoring and “Group B” monitoring. Regulation 8 requires the water undertaker to take a minimum number of samples each year in respect of a variety of properties, elements, organisms and substances. It also makes special provision for monitoring

supplies from tankers. Regulation 9 requires the water undertaker to select at random the consumers' taps from which samples are to be taken. Regulation 10 authorises the taking of samples from points other than consumers' taps ("supply points") and allows the Department to authorise other supply points. Regulation 11 deals with the number of samples to be taken. These are specified in Schedule 3 to the Regulations, and are not less than those specified in Annex II to the DWD. Regulation 11 requires samples to be taken where the water undertaker's have reason to believe that the quality of the water within their water supply zone has been adversely affected by the presence of certain elements, organisms or substances. Regulation 12 sets further provisions for sampling.

Part 5 (regulations 13 to 18) contains additional provisions relating to sampling. Regulations 14 and 15 require samples to be taken in respect of particular organisms and substances, at treatment works and at reservoirs which store treated water. Regulation 17 requires samples to be taken before water is supplied from new sources and from sources which have not recently been used. Regulation 18 prescribes requirements relating to the taking, handling, storage, transport and analysis of samples.

Part 6 (regulation 19) gives provision for deviation from Monitoring requirements of Group A and Group B monitoring under certain conditions.

Part 7 (regulation 20) requires the water undertaker to identify every point from which it abstracts water for supply for regulation 5(1) purposes and to take samples from those points to comply with regulations 29 to 31.

Part 8 (regulations 21 to 28) investigate the cause of any failure, or apprehended failure, of any parameters set out in Schedule 1 or any indicator parameters set out in Schedule 2 and for a notification to be made to the Department. Where a failure relates to a Table B parameter of Schedule 1, and certain other conditions are met, the Department may require the water undertaker to apply to it for an authorisation allowing a departure from the requirements of Part 3, as regards that parameter. The circumstances in which such authorisations may be issued, and the conditions to which they are subject are contained in regulations 24 and 25, respectively. Provision is made in regulation 27 for publicising authorisations. Regulation 28 provides for the modification and withdrawal of authorisations.

Part 9 (regulations 29 to 35) deals with the treatment of water and regulates the substances, processes and products that may be used by the water undertaker in connection with the supply of water. Regulation 28 imposes requirements relating to the disinfection of water and imposes additional requirements for the treatment of surface water. Regulation 30 provides for the carrying out of risk assessments. Regulation 31 provides the procedures following risk assessments. Regulation 32 makes provision for securing the elimination or reduction to a minimum of the risk that water will be contaminated after supply by excessive concentrations of copper or lead. Regulation 33 specifies the circumstances in which the water undertaker may apply or introduce substances or products into water supplied for drinking, washing or cooking. Regulation 34 enables the Department to require that its approval be obtained to the use of processes.

Part 10 (regulation 36 to 38) deals with the provision of information by the water undertaker. Regulation 36 requires the water undertaker to prepare and maintain records containing information about the quality of water supplied in their water supply zones. Regulation 37 requires the water undertaker to make available for public inspection, and to supply the Department and district councils with, information about the quality of water within its water supply zones, the extent to which Part 4 of the Regulations has been complied with, details of any departures authorised under Part 8 of the Regulations. It also requires the water undertaker to provide district councils and health authorities with information relating to matters that could affect the health of persons residing in the district councils' areas. Regulation 38 requires the water undertaker to publish an annual report containing information about the quality of water.

Part 11 (regulation 39) provides for revocations as set out in Schedule 6.

Status: This is the original version (as it was originally made). This item of legislation is currently only available in its original format.

Part 12 (regulation 40) sets out transitional provisions regarding authorisations given to the Department under article 20 or 21 of the Water Supply (Water Quality) Regulations (Northern Ireland) 2002.

A regulatory impact assessment of the costs and benefits and the effect that this instrument will have on the business and voluntary sector has shown there will be no additional impact to these sectors in comparison to the impact imposed by the 2007 Regulations.