

2016 No. 000

**WATER, ENGLAND**

**Private Water Supplies (England) Regulations 2016**

*Made* - - - - \*\*\*

*Laid before Parliament* \*\*\*

*Coming into force* - - \*\*\*

The Secretary of State makes these Regulations in exercise of the powers conferred by—

- (a) sections 67, 77(3) and (4) and 213(2) of the Water Industry Act 1991(a), and
- (b) in relation to Part 4, section 2(2) of the European Communities Act 1972(b).

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

The Secretary of State has carried out the public consultation required by Article 9 of Regulation (EC) No 178/2002 of the European Parliament and of the Council laying down the general principles of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety(d).

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- (a) 1991 c.56; the functions of the Secretary of State under section 67 were transferred to the National Assembly for Wales (“the Assembly”) (a) for the making of regulations concerning water supplied using the supply system of a water undertaker, in relation to the supply system of any water undertaker whose area is wholly or mainly in Wales, and (b) for the making of regulations concerning water supplied other than using the supply system of a water undertaker, in relation to Wales, by article 2 of the National Assembly for Wales (Transfer of Functions) Order 1999 (S.I. 1999/672) (“the Order”); the functions of the Secretary of State under section 69 of that Act were, in relation to any water undertaker whose area is wholly or mainly in Wales and any licensed water supplier so far as relating to licensed activities using the supply system of any such water undertaker, transferred to the Assembly by the same provision of the Order; the functions of the Secretary of State under section 77 of that Act were transferred to the Assembly in relation to Wales by the same provision of the Order; the functions under section 213 of that Act were made exercisable by the Assembly to the same extent as the powers to which that section applies were made exercisable by the Assembly by virtue of the same provision of the Order; see the entry in Schedule 1 to the Order for the Water Industry Act 1991 as substituted by paragraph (e) of Schedule 3 to the National Assembly (Transfer of Functions) Order 2000 (S.I. 2000/253) and amended by section 100(2) of the Water Act 2003 (c.37). Section 69 of that Act was amended by sections 58 and 101(1) of paragraph 39 of Schedule 7 to, and paragraphs 2, 19 and 49 of Schedule 8 to the Water Act 2003 and by section 52 and 56(6) and paragraph 28 of Schedule 1 to the Competition of Services (Utilities Act) 1992. References in Schedule 1 to the Order to specific sections and to the Water Industry Act 1991 generally are treated by section 100(6) of the Water Act 2003 as referring to that Act, as amended by the Water Act 2003. See section 219(4A) of the Water Industry Act 1991 as inserted by section 101(1) of, and paragraphs 2 and 50 of Schedule 8 to, the Water Act 2003 for the definition of “supply system”. See section 219(1) of the Water Industry Act 1991 as amended by section 101(1) of, and paragraphs 2 and 50 of Schedule 8 to, the Water Act 2003 for the definition of “licensed water supplier”. By virtue of sections 162 of, and paragraph 30 of Schedule 11 to, the Government of Wales Act 2006 (c.32), the functions transferred to and made exercisable by the Assembly are now exercisable by the Welsh Ministers.
- (b) 1972 c.68; section 2(2) was amended by section 27(1)(a) of the Legislative and Regulatory Reform Act 2006 (c.51) and by Part 1 of the Schedule to the European Union (Amendment) Act 2008 (c.7). Paragraph 1A of Schedule 2 was inserted by section 28 of the Legislative and Regulatory Reform Act 2006 and was amended by Part 1 of the Schedule to the European Union (Amendment) Act 2008 and by S.I. 2007/1388. Under paragraph 5 of Schedule 3 to the Government of Wales Act 2006 (c.32), despite the transfer to the Welsh Ministers of functions in relation to implementing obligations under EU law in relation to devolved matters, the Secretary of State retains power to exercise such functions as regards Wales.
- (c) S.I. 2008/301.
- (d) OJ No L 31, 1.2.2002, p 1.

# PART 1

## General

### Citation, commencement and application

#### 1. These Regulations—

- (a) may be cited as the Private Water Supplies (England) Regulations 2016;
- (b) come into force on XXXX; and
- (c) apply in relation to England only.

### Interpretation

#### 2. In these Regulations—

“the Act” means the Water Industry Act 1991;

“consumer” means a person to whom a private water supply is provided for human consumption purposes;

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

‘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, excluding tritium, potassium-40, radon and short-lived radon decay products;

“indicator parameter” means a parameter listed in Table C of Schedule 1;

“local authority” means any of the following—

- (a) the Common Council of the City of London;
- (b) a London borough council;
- (c) a district council;
- (d) the council of a county in which there are no district councils;

“parameter” means a property, element, organism or substance listed in the first column of the Tables in Schedule 1 as read, where appropriate, with the notes to that Schedule and those Tables;

“prescribed concentration or value”, in relation to any parameter, means the maximum or minimum concentration or value specified in relation to that parameter in the Tables 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;

“private supply of water” or “private water supply” means a supply of water other than a supply provided directly by a water undertaker or licensed water supplier, and which is comprised of all physical assets from the point of abstraction to the point of use, including associated pipes, fittings and tanks; and

“relevant person” means—

- (a) the owner and the occupier (who may be the same or different persons) of premises which are supplied with water for domestic or food production purposes by means of a private supply;
- (b) the owner and the occupier (who may be the same or different persons) of land on which any part of the supply is situated;
- (c) any other person who exercises powers of management or control in relation to that supply.

### Scope

3.—(1) These Regulations apply in relation to private supplies of water intended for human consumption and for these purposes “water intended for human consumption” means all water—

- (a) either in its original state, or after treatment, intended for drinking, cooking, food preparation or other domestic purposes, regardless of its origin and whether it is supplied from any distribution network, from a tanker, or in bottles or containers;
  - (b) used in any food production undertaking for the manufacture, processing, preservation or marketing of products or substances intended for human consumption unless, in accordance with Regulation (EC) No. 852/2004 of the European Parliament and of the Council on the hygiene of foodstuffs(a), the competent authority is satisfied that the quality of the water cannot affect the wholesomeness of the foodstuff in its finished form.
- (2) These Regulations do not apply in relation to—
- (a) water controlled by the Natural Mineral Water, Spring Water and Bottled Drinking Water (England) Regulations 2007(b); and
  - (b) water that is a medicinal product within the meaning of the Medicines Act 1968(c) or a product in which any provision of that Act has effect as if it were such a medicinal product.

## PART 2

### Water standards

#### Wholesomeness

- 4.** A private supply of water is to be regarded as wholesome if the following conditions are met—
- (a) it does not contain any micro-organism, parasite or substance, alone or in conjunction with any other substance, at a concentration or value that would constitute a potential danger to human health;
  - (b) it complies with the concentrations or values prescribed in Part 1 of Schedule 1 for each parameter; and
  - (c) the water satisfies the formula:  $[\text{nitrite}]/50 + [\text{nitrite}]/3 \leq 1$ , where the square brackets signify the concentrations in mg/l for nitrate ( $\text{NO}_3$ ) and nitrite ( $\text{NO}_2$ ).

#### Use of products or substances in private supplies

**5.—**(1) Any product or substance used in the preparation or distribution of a private supply of water, or impurities associated with such products or substances, must not be present in water at the point of use at levels that would make it unwholesome or constitute a potential danger to human health.

- (2) Where disinfection forms part of the preparation or distribution of water the relevant person must—
- (a) design, operate and maintain the disinfection process so as to keep disinfection by-products as low as possible without compromising the effectiveness of the disinfection;
  - (b) ensure that the effectiveness of the disinfection process is maintained; and
  - (c) verify the effectiveness of the disinfection process.

#### Requirement to carry out a risk assessment

**6.—**(1) Subject to paragraphs (2) and (3), a local authority must carry out a risk assessment for every private water supply in its area and review and update that risk assessment every 5 years (or earlier if it considers that the existing risk assessment is inadequate).

(2) In the case of a supply provided to a single dwelling, the duty in paragraph (1) applies only where that supply is provided as part of a commercial or public activity.

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(a) OJ No L 139, 30.4.2004, p 1.

(b) S.I. 2007/3165, to which there are amendments not relevant to these Regulations.

(c) c. 67.

(3) In the case of any other supply provided to a single dwelling, a local authority must carry out a risk assessment if requested to do so by the owner or occupier of that dwelling.

(4) The risk assessment must establish whether there is a risk of supplying water that would constitute a potential danger to human health.

## PART 3

### Monitoring

#### Monitoring

7. A local authority must monitor all private water supplies in accordance with this Part when carrying out its duties under section 77(1) of the Act.

#### Further distribution of supplies from water undertakers or licensed water suppliers

8. Where water is supplied by a water undertaker or licensed water supplier and is then further distributed by a person other than a water undertaker or licensed water supplier, the local authority must carry out monitoring on the basis of the risk assessment.

#### Large supplies and supplies as part of a commercial or public activity

9.—(1) Paragraph (2) applies in the case of a private water supply (other than that specified in regulation 8) that—

- (a) supplies an average daily volume of water of 10m<sup>3</sup> or more, or
- (b) supplies water as part of a commercial or public activity.

(2) Where this paragraph applies, the local authority must monitor for any parameter in Parts 1 and 2 of Schedule 1 in accordance with Schedule 2 and carry out any additional monitoring that the risk assessment shows to be necessary.

#### Other private supplies

10.—(1) In the case of any other private water supply other than a supply to a single dwelling not provided as part of a commercial or public activity, the local authority must monitor for—

- (a) conductivity;
- (b) enterococci;
- (c) *Escherichia coli* (*E. coli*);
- (d) hydrogen ion concentration;
- (e) turbidity;
- (f) any parameter in Parts 1 and 2 of Schedule 1 identified in the risk assessment as being at risk of not complying with the concentrations or values in that Schedule; and
- (g) anything else identified in the risk assessment as a potential danger to human health.

(2) The local authority must carry out the monitoring required by this regulation at least every 5 years and more frequently if the risk assessment shows this to be necessary.

(3) In the case of a private water supply to a single dwelling not provided as part of a commercial or public activity, a local authority may monitor the supply in accordance with this regulation, and must do so if requested to do so by the owner or occupier of that dwelling.

#### Monitoring for radioactive substances

11.—(1) A local authority must monitor each private supply that supplies water to any premises in its area (other than a supply to a single dwelling not provided as part of a commercial or public activity unless

requested to do so by the owner or occupier) for the parameters contained in Table D in Part 3 of Schedule 1 (“the radioactive parameters table”) in accordance with paragraphs (2) to (7).

(2) As regards the radon parameter the local authority must—

- (a) ensure a representative survey is carried out in accordance with paragraph (3) to determine the likelihood of a supply failing the relevant parametric concentration or value listed in the radioactive parameters table; and
- (b) carry out monitoring where there is reason to believe, on the basis of the results of the representative surveys or other reliable information, that the parametric value for radon might be exceeded.

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

- (a) as to be capable of determining the scale and nature of likely exposure 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 (in particular the geology and hydrology of the area, radioactivity of rock or soil) and well type, can be identified and used to direct further action to areas of likely high exposure.

(4) As regards the tritium parameter—

- (a) the local authority must carry out monitoring where an anthropogenic source of tritium or other artificial radionuclides is present within the catchment area and it cannot be shown on the basis of other surveillance programmes or investigations that the level of tritium is below the parametric value listed in the radioactive parameters table;
- (b) if the concentration of tritium exceeds its parametric value, an investigation of the presence of other artificial radionuclides must be carried out.

(5) As regards the indicative dose parameter the local authority—

- (a) must carry out monitoring where an artificial source of radionuclides or elevated natural radioactivity is present and it cannot be shown on the basis of other surveillance programmes or investigations that the level of ID is below the parametric value listed in the radioactive parameters table;
- (b) may use a screening strategy for gross alpha and gross beta activity or for individual radionuclides and in the event that there is any exceedance of the values specified in that table, must carry out an analysis of the specific radionuclides in accordance with Part 3 of Schedule 3.

(6) Subject to paragraph (7), where monitoring is required by paragraphs (4) or (5), it shall be carried out at the frequencies as set out for audit monitoring in Table 3 of Part 2 of Schedule 2.

(7) In the case of a private water supply other than a supply within the scope of regulation 9 or a supply to a single dwelling not provided as part of a commercial or public activity, where monitoring is required by paragraphs (4) or (5) it shall be carried out at least every 5 years and more frequently if the risk assessment shows this to be necessary.

(8) The local authority may, for such time as it may decide, exclude from monitoring a parameter contained in the radioactive parameters table—

- (a) if it considers that the parameter in question is unlikely to be present in the supply or system at a concentration or value that poses a risk of the private water supply failing to meet the concentration, value or state specified in the radioactive parameters table in respect of that parameter;
- (b) taking into account the findings of any risk assessment; and
- (c) taking into account any guidance issued by the Secretary of State.

(9) The local authority must provide the Secretary of State with the grounds for a decision under paragraph (8) and the necessary documentation supporting the decision (including the findings of any surveys, monitoring or investigations carried out).

(10) The Secretary of State must communicate to the European Commission the grounds for a decision under paragraph (8) and the information provided under paragraph (9).

## **Sampling and analysis**

**12.**—(1) When a local authority monitors a private water supply in accordance with regulations 8 to 11 it must take a sample—

- (a) if the water is supplied for domestic purposes from a tap normally used to supply water for human consumption, and which, if there is more than one tap, is representative of the water supplied to the premises;
- (b) if the water is used in a food-production undertaking, at the point at which it is used in the undertaking;
- (c) if the water is supplied from a tanker, at the point at which it emerges from the tanker;
- (d) in any other case, at a suitable point.

(2) The local authority must ensure that the sample is analysed in accordance with Schedule 3.

## **New supplies**

**13.**—(1) Where a local authority becomes aware of a private water supply that is to be, or is being, used for the first time (or for the first time after being out of use for a period of 12 months or more), the requirements of regulation 6 to 12 and 14 to 16 must be complied with as soon as is reasonably practicable.

(2) A private water supply must not be brought into use or used until the local authority is satisfied that the supply does not constitute a potential danger to human health.

## **Records**

**14.**—(1) A local authority must make and keep records in respect of every private water supply in its area in accordance with Schedule 4.

(2) By 31 January of every year, a local authority must send the Secretary of State a copy of the records mentioned in Schedule 4.

# **PART 4**

## **Action in the event of failure**

## **Provision of information**

**15.** If a local authority considers that a private water supply in its area is a potential danger to human health, it must take appropriate steps to ensure that people likely to consume water from it—

- (a) are informed that the supply constitutes a potential danger to human health;
- (b) where possible, are informed of the nature of the potential danger; and
- (c) are given advice to allow them to minimise any potential danger.

## **Investigations**

**16.**—(1) A local authority must carry out an investigation to establish the cause if it suspects that a private water supply is unwholesome or that an indicator parameter does not comply with the concentrations or values prescribed in Part 2 or Part 3 of Schedule 1.

(2) Once a local authority has carried out an investigation and established the cause of the water being unwholesome, it must act in accordance with this regulation.

(3) If the cause of the water being unwholesome is due to the distribution system within a domestic premises, the local authority must promptly inform the people likely to be affected and offer them advice on measures necessary for the protection of human health.

(4) Where the cause of the water being unwholesome is due to the distribution system within a premises where water is made available to the public, the local authority must —

- (a) inform the people likely to be affected and offer them advice on measures necessary for the protection of human health; and
  - (b) ensure remedial action is taken to ensure the water is wholesome.
- (5) If the cause of the water being unwholesome is not due to the distribution system within a domestic premises, the local authority—
- (a) must either serve a notice in accordance with section 80 of the Act or, if the water is a potential danger to human health, serve a notice under regulation 18 if the conditions in that regulation are fulfilled; or
  - (b) may on application grant an authorisation in accordance with regulation 17(2) if the conditions in that regulation are fulfilled.

### **Authorisations of different standards**

**17.—**(1) Any relevant person may apply to the local authority for a grant of an authorisation under this regulation.

(2) The local authority (in exceptional circumstances) may grant an authorisation of different prescribed concentrations or values under this regulation if—

- (a) the only cause of the unwholesome water is that a parameter in Table B of Part 1 of Schedule 1 (chemical parameters) is not complied with;
- (b) the local authority has consulted all water users who will be affected by the authorisation and Public Health England, and has taken their views into account;
- (c) granting the authorisation does not cause a potential danger to human health; and
- (d) the supply of water cannot be maintained by any other reasonable means.

(3) An authorisation must require the applicant to take action over a period of time to ensure that the necessary parameters are complied with, and must specify—

- (a) the person to whom an authorisation is granted;
- (b) the supply concerned;
- (c) the grounds for granting an authorisation;
- (d) the parameters concerned, previous relevant monitoring results, and the maximum permissible values under the authorisation;
- (e) the geographical area, the estimated quantity of water supplied each day, the number of persons likely to be affected and whether or not any food production undertaking is affected;
- (f) an appropriate monitoring scheme, with an increased monitoring frequency where necessary;
- (g) a summary of the steps for the necessary remedial action, including a timetable for the work and an estimate of the cost and provisions for reviewing progress; and
- (h) the duration of the authorisation.

(4) If the local authority grants an authorisation, and the person to whom it is granted takes action in accordance with the timetable specified in the authorisation, the local authority must not serve a notice under section 80 of the Act concerning the matters specified in the authorisation without first amending or revoking the authorisation.

(5) The duration of the authorisation must be as short as possible and in any event must not exceed 3 years.

(6) The local authority must ensure that people likely to be affected are promptly informed of the authorisation and its conditions, and, where necessary, ensure that advice is given to particular groups for which the authorisation could present a special risk.

(7) If the supply exceeds 1,000 m<sup>3</sup> a day as an average or serves more than 5,000 persons the local authority must send a copy of the authorisation to the Secretary of State within 1 month.

(8) The local authority must keep the progress of the remedial action under review.

(9) If necessary, it may grant a second authorisation for up to a further 3 years with the prior consent of the Secretary of State.

(10) It may revoke or amend the authorisation at any time, and in particular may revoke or amend if the timetable for remedial action has not been adhered to.

## PART 5

### Notice procedure

#### Notices

**18.**—(1) If any private supply of water intended for human consumption constitutes a potential danger to human health, a local authority acting under these Regulations must serve a notice under this regulation on any relevant person.

(2) The notice must—

- (a) identify the private water supply to which it relates;
- (b) state the grounds for serving the notice;
- (c) prohibit or restrict the use of that supply; and
- (d) specify what other action is necessary to protect human health and to restore the quality of the water supply.

(3) The local authority must promptly inform consumers of the private water supply to which the notice relates and provide any necessary advice.

(4) The notice may be subject to conditions and may be amended by further notice at any time.

(5) The local authority must revoke the notice as soon as it becomes aware that there is no longer a potential danger to human health.

(6) It is an offence for a person on whom a notice under this regulation is served to fail to comply with a notice served under this regulation.

#### Appeals

**19.**—(1) Any person who is aggrieved by a notice served under regulation 18 may appeal to the magistrates' court within 28 days of service of the notice.

(2) The procedure on appeal to a magistrates' court under paragraph (1) is by way of complaint, and the Magistrates' Courts Act 1980(a) applies to the proceedings.

(3) A notice remains in force unless suspended by the court.

(4) On an appeal, the court may either cancel the notice or confirm it, with or without modification.

#### Penalties

**20.**—(1) A person who fails to comply with a notice served under regulation 18 is liable—

- (a) on summary conviction to a fine or to a term of imprisonment not exceeding 3 months, or both;
- (b) on conviction on indictment to a fine or to imprisonment for a term not exceeding 2 years, or both.

(2) Where a body corporate is guilty of an offence under these Regulations, and that offence is proved to have been committed with the consent or connivance of, or to have been attributable to any neglect on the part of—

- (a) any director, manager, secretary or other similar person of the body corporate, or
- (b) any person who was purporting to act in any such capacity,

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(a) c. 43.



that person is guilty of the offence as well as the body corporate.

(3) In paragraph (2), “director”, in relation to a body corporate whose affairs are managed by its members, means a member of the body corporate.

## PART 6

### Miscellaneous

#### Fees

**21.** Provision for charging fees is set out in Schedule 5.

#### Review

**22.**—(1) The Secretary of State must from time to time—

- (a) carry out a review of these Regulations;
- (b) set out the conclusions of the review in a report; and
- (c) publish the report.

(2) The report must in particular—

- (a) set out the objectives intended to be achieved by these Regulations;
- (b) assess the extent to which those objectives are achieved; and
- (c) assess whether those objectives remain appropriate and, if so, the extent to which they could be achieved with a system that imposes less regulation.

(3) The first report under this regulation must be published before the end of the period of 5 years beginning on the day on which these Regulations come into force.

(4) Reports under this regulation must afterwards be published at intervals not exceeding 5 years.

#### Revocation

**23.** The Private Water Supplies Regulations 2009<sup>(a)</sup> are revoked.

Signatory text

Address  
Date

*Name*  
Parliamentary Under Secretary of State  
Department for Environment, Food and Rural Affairs

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(a) S.I. 2009/3101.

# SCHEDULE 1 Regulations 2, 4, 10, 11, 15 and 17

## Prescribed concentrations or values

### PART 1

#### Wholesomeness

**TABLE A: MICROBIOLOGICAL PARAMETERS**

Prescribed concentrations or values

<i>Parameters</i>	<i>Maximum concentration or value</i>	<i>Units of measurement</i>
<i>Escherichia coli (E. coli)</i>	0	Number/100ml
Enterococci	0	Number/100ml
<b>In the case of water in bottles or containers:</b>		
<i>Escherichia coli (E. coli)</i>	0	Number/250ml
Enterococci	0	Number/250ml
<i>Pseudomonas aeruginosa</i>	0	Number/250ml
Colony count 22°C	100	Number/ml
Colony count 37°C	20	Number/ml

**TABLE B: CHEMICAL PARAMETERS**

Prescribed concentration or values

<i>Parameters</i>	<i>Maximum concentration or value</i>	<i>Units of measurement</i>
Acrylamide (i)	0.10	µg/l
Antimony	5.0	µg/l
Arsenic	10	µg/l
Benzene	1.0	µg/l
Benzo(a)pyrene	0.010	µg/l
Boron	1.0	mg/l
Bromate	10	µg/l
Cadmium	5.0	µg/l
Chromium	50	µg/l
Copper	2.0	mg/l
Cyanide	50	µg/l
1, 2 dichloroethane	3.0	µg/l
Epichlorohydrin (i)	0.10	µg/l
Fluoride	1.5	mg/l
Lead	10	µg/l
Mercury	1.0	µg/l
Nickel	20	µg/l
Nitrate (ii)	50	mg/l
Nitrite(ii)	0.5 (or 0.1 in the case of treatment works)	mg/l
Pesticides (iii)—		
Aldrin	0.030	µg/l
Dieldrin	0.030	µg/l
Heptachlor	0.030	µg/l
Heptachlor epoxide	0.030	µg/l
other pesticides	0.10	µg/l

Pesticides total (iv)	0.50	µg/l
Polycyclic aromatic hydrocarbons (v)	0.10	µg/l
Selenium	10	µg/l
Tetrachloroethene and Trichloroethene (vi)	10	µg/l
Trihalomethanes: Total (vii)	100	µg/l
Vinyl chloride (i)	0.50	µg/l

#### **National requirements – Prescribed concentrations or values**

<i>Parameters</i>	<i>Maximum concentration or value</i>	<i>Units of measurement</i>
Aluminium	200	µg/l
Colour	20	mg/l Pt/Co
Iron	200	µg/l
Manganese	50	µg/l
Odour	Acceptable to consumers and no abnormal change	
Sodium	200	mg/l
Taste	Acceptable to consumers and no abnormal change	
Tetrachloromethane	3	µg/l
Turbidity	4	NTU

(i) 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.

(ii) See also the nitrate-nitrite formula in regulation 4(c).

(iii) For these purposes “pesticides” means

organic insecticides

organic herbicides

organic fungicide

organic nematocides

organic acaricides

organic algicides

organic rodenticides

organic slimicides

related products (inter alia, growth regulators and their relevant metabolites, degradation and reaction products; only those pesticides likely to be present in a given supply need be monitored.

(iv) “Pesticides total” means the sum of the concentrations of the individual pesticides detected and quantified in the monitoring process.

(v) The specified compounds are:-

benzo(b)fluoranthene

benzo(k)fluoranthene

benzo(ghi)perylene

indeno(1,2,3-cd)pyrene

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

(vii) The specified compounds are:-

chloroform

bromoform

dibromochloromethane

bromodichloromethane

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

## PART 2

### Indicator parameters (excluding radioactive substances)

**TABLE C**

**Prescribed concentrations, values or states**

<i>Parameters</i>	<i>Maximum concentration or value or state (unless otherwise stated)</i>	<i>Units of measurement</i>
Ammonium	0.50	mg/l
Chloride (i)	250	mg/l
<i>Clostridium perfringens</i> (including spores)	0	Number/100ml
Coliform bacteria	0	Number/100ml (Number/250 ml in the case of water put into bottles or containers)
Colony counts	No abnormal change	Number/ml at 22°C
	No abnormal change	Number/ml at 37°C
Conductivity (i)	2500	µS/cm at 20°C
Hydrogen ion	9.5 (maximum)	pH value
	6.5 (minimum) (in the case of still water put into bottles or containers the minimum is 4.5)	pH value
Sulphate (i)	250	mg/l
Total organic carbon (TOC)	No abnormal change	mgC/l
Turbidity(ii)	1	NTU

(i) The water should not be aggressive.

(ii) Only in the case of surface water or groundwater that has been influenced by surface water.

## PART 3

### Indicator parameters –radioactive substances

**TABLE D**

**Parametric values for radon, tritium and ID of water intended for human consumption**

<i>Parameters</i>	<i>Maximum concentration or value or state (unless otherwise stated)</i>	<i>Units of measurement</i>
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Indicative dose (for radioactivity) (i)	0.10	mSv
(a) Gross alpha	0.1	Bq/l
(b) Gross beta	1.0	Bq/l
Radon (ii)	100	Bq/l
Tritium (for radioactivity) (iii)	100	Bq/l

(i) Where treatment to reduce the level of radionuclides in water intended for human consumption has been taken, monitoring must be carried out under Schedule 2 Part 1 to ensure the continued efficacy of the treatment

(ii) Enforcement action by the local authority is deemed justified on radiological protection grounds without further consideration where radon concentrates exceed 1,000 Bq/l.

(iii) If tritium concentration exceeds its parametric value, an investigation (which may include analysis) of the presence of artificial radionuclides must be carried out.

## SCHEDULE 2

Regulation 9

### Monitoring

#### PART 1

#### Check monitoring

#### Sampling

1.—(1) A local authority must undertake check monitoring in accordance with this Part.

(2) Check monitoring means sampling for each parameter listed in Table 1 in the circumstances listed in that table in order—

- (a) to determine whether or not water complies with the concentrations or values in Schedule 1;
- (b) to provide information on the organoleptic and microbiological quality of the water; and
- (c) to establish the effectiveness of the treatment of the water, including disinfection.

**Table 1**

#### Check monitoring

<i>Parameter</i>	<i>Circumstances</i>
Aluminium	When used as flocculant or where the water originates from, or is influenced by, surface waters
Ammonium	In all supplies
<i>Clostridium perfringens</i> (including spores)	Where the water originates from, or is influenced by, surface waters
Coliform bacteria	In all supplies
Colony counts	In all supplies
Colour	In all supplies
Conductivity	In all supplies
<i>Escherichia coli</i> ( <i>E. coli</i> )	In all supplies
Hydrogen ion concentration	In all supplies

Iron	When used as flocculant or where the water originates from, or is influenced by, surface waters
Manganese	Where the water originates from, or is influenced by, surface waters
Nitrate	When chloramination is practised
Nitrite	When chloramination is practised
Odour	In all supplies
<i>Pseudomonas aeruginosa</i>	Only in the case of water in bottles or containers
Taste	In all supplies
Turbidity	In all supplies

### Frequency of sampling

2.—(1) Sampling must be carried out at frequencies specified in Table 2.

**Table 2**

#### Sampling frequency for check monitoring

<i>Volume m<sup>3</sup>/day</i>	<i>Sampling frequency per year</i>
≤ 10	1
> 10 ≤ 100	2
> 100 ≤ 1,000	4
> 1,000 ≤ 2,000	10
> 2,000 ≤ 3,000	13
> 3,000 ≤ 4,000	16
> 4,000 ≤ 5,000	19
> 5,000 ≤ 6,000	22
> 6,000 ≤ 7,000	25
> 7,000 ≤ 8,000	28
> 8,000 ≤ 9,000	31
> 9,000 ≤ 10,000	34
> 10,000	4 + 3 for each 1,000 m <sup>3</sup> /day of the total volume (rounding up to the nearest multiple of 1,000 m <sup>3</sup> /day)

(2) The local authority may reduce the frequency of sampling for a parameter to a frequency not less than half if the local authority is of the opinion that the quality of water in the supply is unlikely to deteriorate and—

- (a) in the case of hydrogen ion parameter, the supply has no pH value that is below 6.5 and above 9.5;
- (b) in all other cases, in each of two successive years the results of samples taken for the purposes of monitoring the parameter in question are constant and significantly lower than the concentrations or values referred to in Schedule 1.

(3) The local authority may set a higher frequency for any parameter if it considers it appropriate taking into account the findings of any risk assessment, and may monitor anything else identified in the risk assessment.

## PART 2

### Audit monitoring

#### Sampling

3.—(1) A local authority must undertake audit monitoring in accordance with this Part.

(2) Audit monitoring means sampling for each parameter listed in Parts 1 and 2 of Schedule 1 (other than parameters already being sampled under check monitoring) in order to provide information necessary to determine whether or not the private water supply satisfies each concentration, value or state prescribed in that Schedule and, if disinfection is used, to check that disinfection by-products are kept as low as possible without compromising the effectiveness of disinfection.

(3) The local authority may, for such time as it may decide, exclude a parameter from the audit monitoring of a private water supply—

- (a) if it considers that the parameter in question is unlikely to be present in the supply or system at a concentration or value that poses a risk of the private water supply failing to meet the concentration, value or state specified in Schedule 1 in respect of that parameter;
- (b) taking into account the findings of any risk assessment; and
- (c) taking into account any guidance issued by the Secretary of State.

(4) A local authority may monitor anything else identified in the risk assessment.

### Frequency of sampling

4.—(1) Sampling must be carried out at the frequencies specified in Table 3.

**Table 3**

#### Sampling frequency for audit monitoring

<i>Volume m<sup>3</sup>/day</i>	<i>Sampling frequency per year</i>
≤ 10	1
> 10 ≤ 3,300	2
> 3,300 ≤ 6,600	3
> 6,600 ≤ 10,000	4
> 10,000 ≤ 100,000	3 + 1 for each 10,000 m <sup>3</sup> /day of the total volume (rounding up to the nearest multiple of 10,000 m <sup>3</sup> /day)
> 100,000	10 + 1 for each 25,000 m <sup>3</sup> /day of the total volume (rounding up to the nearest multiple of 25,000 m <sup>3</sup> /day)

(2) A local authority may set a higher frequency for any parameter if it considers it appropriate taking into account the findings of any risk assessment.

## PART 3

Minimum frequency for both check monitoring and audit monitoring for water put into bottles or containers intended for sale

<i>Volume<sup>(i)</sup> of water produced in bottles or containers each day (m<sup>3</sup>)</i>	<i>Check monitoring number of samples per year</i>	<i>Audit monitoring number of samples per year</i>
≤ 10	1	1
> 10 ≤ 60	12	1
> 60	1 for each 5 m <sup>3</sup> /day of the total volume (rounding up to the nearest multiple of 5 m <sup>3</sup> /day)	1 for each 100 m <sup>3</sup> /day of the total volume (rounding up to the nearest multiple of 100 m <sup>3</sup> /day)

<sup>(i)</sup> The volumes are calculated as averages taken over a calendar year.

## SCHEDULE 3

### Sampling and analysis

Regulations 11 and 12

### PART 1

#### General

#### **Samples: general**

- 1.—(1) A local authority must ensure that each sample is—
  - (a) taken by a competent person using suitable equipment;
  - (b) representative of the water at the sampling point at the time of sampling;
  - (c) not contaminated in the course of being taken;
  - (d) kept at such temperature and in such condition as will secure that there is no material change in what is to be measured; and
  - (e) analysed without delay by a competent person using suitable equipment.
- (2) It must ensure that the sample is analysed using a system of analytical quality control.
- (3) The system must be subjected to checking by a person who is—
  - (a) not under the control of either the analyst or the local authority; and
  - (b) approved by the Secretary of State for that purpose.

#### **Analysing samples**

- 2.—(1) A local authority must ensure that each sample is analysed in accordance with this paragraph.
- (2) For each parameter specified in the first column of Table 1 in Part 2 of this Schedule the method of analysis is specified in the second column of that Table.
- (3) For each parameter specified in the first column of Table 2 in Part 2 of this Schedule the method is one that is capable of—
  - (a) measuring concentrations and values with the trueness and precision specified in the second and third columns of that table, and
  - (b) detecting the parameter at the limit of detection specified in the fourth column of that Table.
- (4) For hydrogen ion, the method of analysis must be capable of measuring a value with a trueness of 0.2 pH unit and a precision of 0.2 pH unit.
- (5) The method of analysis used for odour and taste parameters must be capable of measuring values equal to the parametric value with a precision of 1 dilution number at 25°C.
- (6) For these purposes—

“limit of detection” is —

  - (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 twice the standard deviation (within a batch and between batches) of the spread of results about the mean;

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



### Authorisation of alternative methods of analysis

3.—(1) The Secretary of State may authorise a method different from that set out in paragraph 2(2) if satisfied that it is at least as reliable.

(2) An authorisation may be time-limited and may be revoked at any time.

### Sampling and analysis by persons other than local authorities

4.—(1) A local authority may enter into an arrangement for any person to take and analyse samples on its behalf.

(2) A local authority must not enter into an arrangement under paragraph (1) unless—

- (a) it is satisfied that the task will be carried out promptly by a person competent to perform it; and
- (b) it has made arrangements that ensure that any breach of these Regulations is communicated to it immediately, and any other result is communicated to it within 28 days.

## PART 2

### Analytical methods

Table 1

#### Prescribed methods of analysis

Parameter	Method
Clostridium perfringens (including spores)	Membrane filtration followed by anaerobic incubation of the membrane on m-CP agar* at $44 \pm 1^\circ\text{C}$ for $21 \pm 3$ hours. Count opaque yellow colonies that turn pink or red after exposure to ammonium hydroxide vapours for 20 to 30 seconds.
Coliform bacteria and <i>Escherichia coli</i> ( <i>E. coli</i> )	BS-EN ISO 9308-1 and BS-EN ISO 9308-2
Colony count $22^\circ\text{C}$ -enumeration of culturable microorganisms	BS-EN ISO 6222
Colony count $37^\circ\text{C}$ -enumeration of culturable microorganisms	BS-EN ISO 6222
Enterococci	BS-EN ISO 7899-2
<i>Pseudomonas aeruginosa</i>	BS-EN ISO 12780

\*Use the following method to make m-CP agar:

Make a basal medium consisting of—

Tryptose	30.0g
Yeast extract	20.0g
Sucrose	5.0g
L-cysteine hydrochloride	1.0g
$\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$	0.1g
Bromocresol purple	40.0mg
Agar	15.0g
Water	1,000.0ml

Dissolve the ingredients of the basal medium; adjust pH to 7.6 and autoclave at  $121^\circ\text{C}$  for 15 minutes. Allow the medium to cool.

Dissolve—

D-cycloserine	400.0mg
Polymyxine-B sulphate	25.0mg
Indoxyl-β-D-glucoside	60.0mg

into 8ml sterile water and add it to the medium.

Add to the medium—

Filter-sterilised 0.5% phenolphthalein diphosphate solution	20.0ml
Filter-sterilised 4.5% FeCl <sub>3</sub> .6H <sub>2</sub> O	2.0ml

**Table 2**

Prescribed performance characteristics for methods of analysis

<i>Parameters</i>	<i>Trueness prescribed concentration or value or specification</i>	<i>% of precision prescribed concentration or value or specification</i>	<i>% of Limit of detection prescribed concentration or value or specification</i>
Aluminium	10	10	10
Ammonium	10	10	10
Antimony	25	25	25
Arsenic	10	10	10
Benzene	25	25	25
Benzo(a)pyrene	25	25	25
Boron	10	10	10
Bromate	25	25	25
Cadmium	10	10	10
Chloride	10	10	10
Chromium	10	10	10
Colour	10	10	10
Conductivity	10	10	10
Copper	10	10	10
Cyanide (i)	10	10	10
1,2-dichloroethane	25	25	10
Fluoride	10	10	10
Iron	10	10	10
Lead	10	10	10
Manganese	10	10	10
Mercury	20	10	20
Nickel	10	10	10
Nitrate	10	10	10
Nitrite	10	10	10
Pesticides and related products (ii)	25	25	25
Polycyclic aromatic hydrocarbons (iii)	25	25	25
Selenium	10	10	10
Sodium	10	10	10
Sulphate	10	10	10
Tetrachloroethene (iv)	25	25	10

Tetrachloromethane	25	25	10
Trichloroethene (iv)	25	25	10
Trihalomethanes:			
Total (iii)			
Turbidity (v)	10	10	10
	25	25	25
Turbidity (vi)	25	25	25

**Notes:**

- (i) The method of analysis should determine total cyanide in all forms
- (ii) The performance characteristics apply to each individual pesticide and will depend on the pesticide concerned.
- (iii) The performance characteristics apply to the individual substances specified at 25% of the parametric value in Part 1 of Table B in Schedule 1.
- (iv) The performance characteristics apply to the individual substances specified at 50% of the parametric value in Part 1 of Table B in Schedule.
- (v) The performance characteristics apply to the prescribed value of 4 NTU.
- (vi) The performance characteristic apply to the specification of 1 NTU for surface waters or ground waters influenced by surface water.

## PART 3

### Monitoring for indicative dose and analytical performance characteristics

#### **Monitoring for compliance with the ID**

- (1) A local authority may use various reliable screening strategies to indicate the presence of radioactivity in water intended for human consumption.
- (2) These strategies may include screening for—
  - (a) certain radionuclides, or screening for an individual radionuclide; or
  - (b) gross alpha activity or gross beta activity screening.

#### **Screening for certain radionuclides, or screening for an individual radionuclide**

- (3) If one of the activity concentrations exceeds 20% of the corresponding derived value or the tritium concentration exceeds its parametric value listed in Part 2 of Schedule 1, an analysis of additional radionuclides is required.
- (4) A local authority must, in deciding which radionuclides require to be measured for each supply, take into account all relevant information about likely sources of radioactivity.

#### **Screening strategies for gross alpha activity and gross beta activity**

- (5) Subject to paragraph (6) the recommended screening values are-
  - (a) 0.1Bq/l for gross alpha activity and
  - (b) 1.0Bq/l for gross beta activity.
- (6) If the gross alpha activity exceeds 0.1Bq/l or the gross beta activity exceeds 1.0Bq/l, analysis for specific radionuclides is required.
- (7) The Secretary of State may set alternative screening levels for gross alpha activity and gross beta activity where it is demonstrated by the local authority that the alternative levels are in compliance with an ID of 0,1 mSv.

(8) The determination by the local authority of which radionuclides to measure must be based on all relevant information about likely sources of radioactivity.

### Calculation of the ID

(9) The ID must be calculated from:

- (a) the measured radionuclide concentrations and the dose coefficients laid down in Annex III, Table A of Directive 96/29/Euratom, or
- (b) more recent information recognised by the Secretary of State, on the basis of the annual intake of water (730 l for adults).

(10) Where the following formula is satisfied, it can be assumed that the ID is less than the parametric value of 0,1 mSv and no further investigation is required:

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

where

$C_i(obs)$  = observed concentration of radionuclide  $i$

$C_i(der)$  = derived concentration of radionuclide  $i$

$n$  – number of radionuclides detected.

### Derived concentrations for radioactivity in water intended for human consumption<sup>(1)</sup>

Origin	Nuclide	Derived concentration
Natural	U-238 <sup>(2)</sup>	3,0 Bq/l
	U-234 <sup>(2)</sup>	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

(<sup>1</sup>) Where appropriate gross beta activity may be replaced by residual beta activity after subtraction of the K-40 activity concentration.

(<sup>2</sup>) This Table includes values for the most common natural and artificial radionuclides; these are precise values, calculated for a dose of 0,1 mSV, an annual intake of 730 litre and using the dose coefficients laid down in Annex III, Table A of Directive 96/29/ Euratom; derived concentrations for other radionuclides can be calculated on the same basis, and values can be updated on the basis of more recent information recognised by the Secretary of State. (<sup>3</sup>) This Table allows only for the radiological properties of uranium, not for its chemical toxicity.

### Performance characteristics and methods of analysis

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

Parameters and radionuclides	Limit of detection (Notes 1,2)	Notes
Tritium	10 Bq/l	Note 3
Radon	10 Bq/l	Note 3
gross alpha	0,04 Bq/l	Note 4
gross beta	0,4 Bq/l	Note 4
U-238	0,02 Bq/l	
U-234	0,02 Bq/l	
Ra-226	0,04 Bq/l	
Ra-228	0,02 Bq/l	Note 5

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

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

Note 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.

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

Note 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.

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

## SCHEDULE 4

Regulation 14

### Records

#### Initial records

1.—(1) A local authority must record the number of private supplies in its area, and for each supply must record—

- (a) the name of the supply, together with a unique identifier;
- (b) the type of source;
- (c) the geographical location using a grid reference;
- (d) an estimate of the number of people supplied;
- (e) an estimate of the average daily volume of water supplied in cubic metres;
- (f) the type of premises supplied;
- (g) detail of any treatment process, together with its location; and
- (h) the name of the region of Public Health England in whose area the supply is located.

(2) It must review and update the record at least once a year.

(3) It must keep the record for at least 30 years.

## Additional records

2.—(1) For each supply referred to in paragraph 1(1), the local authority must record each of the following within 28 days of the information being available—

- (a) a plan and description of the supply;
- (b) the monitoring programme for the supply;
- (c) the risk assessment;
- (d) the date, results and location of any sampling and analysis relating to that supply, and the reason for taking the sample;
- (e) the results of any investigation undertaken in accordance with these Regulations;
- (f) any authorisation;
- (g) any notices served under section 80 of the Act or regulation 18;
- (h) any action agreed to be taken by any person under these Regulations;
- (i) any request for the local authority to carry out sampling and analysis, undertake a risk assessment or give advice; and
- (j) a summary of any advice given in relation to the supply.

(2) It must keep the risk assessment and records of sampling and analysis for at least 30 years, and all other records referred to in this paragraph for at least 5 years.

## SCHEDULE 5

Regulation 21

### Fees

1. A local authority may charge a fee, payable on invoice, for the activities in the following table, and the fee is the reasonable cost of providing the service subject to the following maximum amounts.

<i>Service</i>	<i>Maximum fee (£)</i>
Risk assessment (for each assessment):	500
Sampling (for each visit)(i):	100
Investigation (for each investigation):	100
Granting an authorisation (for each authorisation):	100
Analysing a sample—	
taken under regulation 10 (for parameters referred to in paragraph (1)(a) to (e)):	25
taken during check monitoring:	100
taken during audit monitoring and monitoring under Regulation 11:	500

(i) No fee is payable where a sample is taken and analysed solely to confirm or clarify the results of the analysis of a previous sample.

## Persons liable to pay

2.—(1) Any person requesting anything under these Regulations is liable for the cost.

(2) Otherwise fees are payable, as specified in the invoice, by the relevant person.

(3) Where more than one person is liable for a fee, in determining who is required to make payment, the local authority—

- (a) must have regard to any agreement or other document produced to the local authority relating to the terms on which water is supplied; and
- (b) may apportion the charge between them.

**EXPLANATORY NOTE**

*(This note is not part of the Regulations)*

DRAFT