
WELSH STATUTORY INSTRUMENTS

2018 No. 647

The Water Supply (Water Quality) Regulations 2018

PART 5

Monitoring – Additional Provisions

Sampling for particular substances and parameters

11.—(1) 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.

(2) For the purposes of establishing the quality of water to be supplied in any supply system into which a supplementary licensee introduces water, a supplementary licensee 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

12.—(1) Subject to paragraph (3), in each year every water undertaker or supplementary licensee 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 standard number of samples 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, *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 standard number or, as the case may be, the number specified in a current notice given by the Welsh Ministers under regulation 9 which departs from the standard number, the same proportion as the number of days in that year in which the treatment works have been in use bears to 365.

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

Sampling at service reservoirs

13.—(1) Every water undertaker or supplementary licensee must take, or cause to be taken, from each of its service reservoirs in each week in which the reservoir is in use or as directed by notification by the Welsh Ministers under regulation 9(4), one sample for analysis—

- (a) for testing for compliance with the prescribed concentrations or values in respect of the parameters *E coli* and coliform bacteria;
- (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

14.—(1) This regulation applies in relation to—

- (a) any source which has not previously been used for the supply of water by a water undertaker or supplementary licensee; and
- (b) any source which has been so used but not so used for a period of 6 months preceding the date on which the water undertaker or supplementary licensee proposes to supply water from it.

(2) Every water undertaker or supplementary licensee must take, or cause to be taken, in accordance with paragraph (3) and (4), such samples of that water as will enable it to establish —

- (a) whether water can be supplied from that source without contravening section 68(1) of the Act (duties of water undertakers and licensed water suppliers with respect to water quality)(1); and
- (b) the treatment necessary to ensure that section 68(1) of the Act is complied with in relation to the supply of that water.

(3) The samples must be taken or caused to be taken—

- (a) before the water undertaker or supplementary licensee supplies water from a source mentioned in paragraph (1)(a);
- (b) as soon as is reasonably practicable after the water undertaker or supplementary licensee 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; and
 - (ii) any other element, organism or substance which, in the opinion of the water undertaker or supplementary licensee proposing to use the source, may cause the supply to contravene section 68(1) of the Act;
- (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 or supplementary licensee proposing to use the source 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 or supplementary licensee must not supply water from a source mentioned in paragraph (1)(a) for regulation 4(1) purposes until 1 month has passed following the day on which the water undertaker or supplementary licensee complied with regulation 28(1) with respect to that source.

(6) The conditions are that the water undertaker or supplementary licensee—

- (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 under regulation 27 specifically with respect to the source.

(1) Section 68(1) was amended by paragraph 18 of Schedule 8 to the Water Act 2003.

(7) For the purposes of paragraph (6)(b), regulation 27 will apply to 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

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

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

- (a) the sample is representative of the quality of the water at the time of sampling;
- (b) the person taking a sample is subject to a system of quality control to an appropriate standard;
- (c) the sample is not contaminated when being taken;
- (d) the sample is kept at such a temperature and in such conditions as secure that there is no material alteration of the concentration or value for the measurement or observation of which the sample is intended;
- (e) the sample is analysed, whether at the time and place it is taken or as soon as reasonably practicable after it 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;
- (f) the collection and transportation of samples, or measurements recorded by continuous monitoring shall be subject to a system of quality control to an appropriate standard checked from time to time by a suitably accredited body.

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

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

- (a) the methods of analysis used by that person for the purposes of monitoring and demonstrating compliance with this Part are validated and documented in accordance with European standard EN ISO/IEC 17025 entitled “*General requirements for the competence of testing and calibration laboratories*”(2) or other equivalent standards accepted at international level; and
- (b) that person applies quality management system practices in accordance with European standard EN ISO/IEC 17025 or other equivalent standards accepted at international level.

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

(6) Subject to paragraph (7), 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 A1 in Schedule 5 must be used for the parameter specified in relation to that method in column 1;

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

- (b) the method of analysis in respect of the parameters listed in column 1 of Table A3 in Schedule 5 must be capable of measuring concentrations equal to the parametric value with a limit of quantification of 30% or less and an uncertainty of measurement as specified in column 2 of that Table and the result must be expressed—
 - (i) using at least the same number of significant figures as the parametric value; and
 - (ii) in the same units laid down in these Regulations; and
 - (c) the method of analysis used for the odour and taste parameters (items 5 and 7 in Part 2 of Table B in Schedule 1) must be capable, at the time of use, of measuring values equal to the parametric value with a precision or uncertainty of measurement of 1 dilution number at 25°C.
- (7) The Welsh Ministers may, on the application of any person, authorise a method of analysis other than that specified in paragraph (6)(a) (“the prescribed method”).
- (8) An application for the purposes of paragraph (7) must be made in writing and must be accompanied by—
- (a) a description of the method of analysis; and
 - (b) the results of the tests carried out to demonstrate the reliability of that method and its equivalence to the prescribed method.
- (9) The Welsh Ministers must not authorise the use of the method proposed in an application under paragraph (7) unless they are 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.
- (10) An authorisation under paragraph (7) may be subject to such conditions as the Welsh Ministers consider appropriate.
- (11) The Welsh Ministers may at any time, by notice in writing served on the water undertaker or supplementary licensee to which an authorisation under paragraph (7) has been given, revoke the authorisation, but any such notice must be served no later than 3 months before the date on which the revocation is stated to take effect.

Collection and analysis of samples: transitional provision

16.—(1) Before 23:59 on 31 December 2019 a water undertaker or supplementary licensee may, in respect of any parameter specified in column 1 of Table A2 in Schedule 5, apply the method of analysis in paragraph (2) in place of the method of analysis in regulation 15(6)(b).

(2) 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 the method of analysis used for a parameter specified in column 1 of Table A2 in Schedule 5 must be capable, at the time of use—

- (a) 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
- (b) of detecting the parameter at the limit of detection specified in relation to that parameter in column 4 of that Table.

(3) For the purposes of paragraph (3)—

“limit of detection” is to be calculated as—

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

“precision” is to be calculated as a measure of random error and may be expressed as the standard deviation (within and between batches) of the spread of results from the

mean. A precision measurement of twice the relative standard deviation is acceptable. The term “precision” is further specified in international standard ISO 5725 entitled “Accuracy (trueness and precision) of measurement methods and results”(3) as amended by the technical corrigendum entitled “Accuracy (trueness and precision) of measurement methods and results - Part 1: General Principles and Definitions TECHNICAL CORRIGENDUM 1”(4);

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

(3) This standard has been approved by the International Organization for Standardization (ISO). Under reference BS ISO 5725-1 to BS ISO 5725-6, these are published as UK standards by the British Standards Institution.

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