

**THE MINISTRY OF
HEALTH OF VIETNAM**

No. 52/2024/TT-BYT

**THE SOCIALIST REPUBLIC OF VIETNAM
Independence - Freedom - Happiness**

Hanoi, December 31, 2024

CIRCULAR

ON NATIONAL TECHNICAL REGULATION ON AND INSPECTION, SUPERVISION OF DOMESTIC WATER QUALITY

Pursuant to Point b Clause 3 Article 43 of the Law on Water Resources dated November 27, 2023;

Pursuant to the Law on Technical Regulations and Standards dated June 29, 2006;

Pursuant to Decree No. 117/2007/ND-CP dated July 11, 2007 of the Government on production, supply, and consumption of clean water; Decree No. 124/2011/ND-CP dated December 28, 2011 of the Government on amendment to Decree No. 117/2007/ND-CP;

Pursuant to Decree No. 95/2022/ND-CP dated November 15, 2022 of the Government on functions, tasks, powers, and organizational structures of Ministry of Health;

At request of Director of Health Environment Management Agency;

The Minister of Health promulgates Circular on National Technical Regulation on and inspection, supervision of domestic water quality.

Article 1. Scope

This Circular prescribes:

1. National Technical Regulation on domestic water quality.
2. Internal control, external control, inspection and supervision of domestic water quality (hereinafter referred to as “clean water”).

Article 2. Definitions

In this Circular, the terms below are construed as follows:

1. *Water supplier* (hereinafter referred to as “supplier”) means an organization or an individual producing, delivering, selling wholesale, retailing clean water by utilizing complete centralized water supply system.

2. *Water consumer* (hereinafter referred to as “consumer”) means an agency, entity, enterprise, apartment building, residential area, hospital, school, hotel, restaurant, or resort outfitted with tanks to contain clean water supplied by a supplier.

3. *Internal control* means the process of sampling and testing water quality carried out by supplier and consumer.

4. *External control* means the process of sampling and testing water quality carried out by health agency designated by competent authority. External control can be separate from or carried out in tandem with inspection and supervision of water quality.

5. *Inspection and supervision* mean the process of inspecting and supervising compliance with regulations on internal control, external control, and quality control of clean water at request of health authority, health agency designated by competent authority.

Article 3. Promulgation of National Technical Regulation on Water Quality

The National Technical Regulation on Domestic Water Quality (hereinafter referred to as “the National Technical Regulation”) is attached hereto.

Article 4. Regulations on internal control

1. The supplier shall perform internal control as follows:

a) Test frequency and parameters in provinces and cities of which local governments have promulgated technical regulations on domestic water quality (hereinafter referred to as “local technical regulations”):

- All water parameters under Article 4 of the National Technical Regulation attached hereto shall be tested every 3 years and: Prior to initial operation; immediately after upgrade or major repair that affects production system; in the event of environmental emergencies that potentially affect water quality; where factors in production process potentially affect water quality; at request of competent authority. Where test results satisfactory in accordance with Article 4 of the National Technical Regulation hereunder are produced in 2 consecutive periodic tests, test frequency may be reduced to once every 5 years until unsatisfactory test results are produced;

- Test frequency for all group A parameters: at least once every month;

- Test frequency for all group B parameters: Compliant with local technical regulations and at least once every 6 months. Where test results satisfactory to local technical regulations are produced in 2 consecutive periodic tests, test frequency may be reduced to once every year. Supplier may adopt test frequency of once every year until unsatisfactory results are produced;

- Depending on local conditions, provincial People's Committees may require tests to be conducted more frequently than the aforementioned test frequency.

b) Test frequency and parameters in provinces and cities of which local governments have not promulgated local technical regulations:

- All water parameters under Article 4 of the National Technical Regulations attached hereto shall be tested: Prior to initial operation; immediately after upgrade or major repair that affects production system; in the event of environmental emergencies that potentially affect water quality; where factors in production process potentially affect water quality; at request of competent authority.

- Test frequency for all group A parameters: at least once every month;

- Test frequency for all group B parameters: Compliant with National Technical Regulation and at least once every 6 months. Where test results satisfactory to the National Technical Regulation attached hereto are produced in 2 consecutive tests, test frequency can be reduced to once every year. Supplier may adopt test frequency of once every year until unsatisfactory results are produced;

- Depending on local conditions, provincial People's Committees may require tests to be conducted more frequently than the aforementioned test frequency.

c) Sample quantity and sampling location:

- In respect of a supplier with design capacity below 1.000 m³/24 hours or supplying water for less than 6.500 people: Collect at least 1 sample from a tank of the supplier containing treated water before entering water supply network and 1 sample at random from a faucet at the end of the water supply network;

- In respect of a supplier with design capacity of 1.000 m³/24 hours or higher or supplying water for 6.500 people to less than 100.000 people: Collect at least 1 sample from a tank of the supplier containing treated water before entering water supply network and 2 samples at random from faucets at the end of the water supply network;

- In respect of a supplier with design capacity of 1.000 m³/24 hours or higher or supplying water for 6.500 people to less than 100.000 people: Collect at least 1 sample from a tank of the supplier containing treated water before entering water supply network and 2 samples at random from faucets at the end of the water supply network;

- In respect of a supplier with design capacity of 30.000 m³/24 hours or higher or supplying water for 200.000 people or higher: Collect at least 1 sample from a tank of the supplier containing treated water before entering water supply network and 1 sample at random from a faucet at the end of the water supply network for each addition 15.000 m³ or each additional 100.00 people;

- Where risk of water pollution or epidemic is present, it is possible to increase the number of samples required in accordance with assessment of pollution risks.

d) Internal control results of water quality shall be made public by suppliers on their website within 3 working days from the date on which internal control results are produced. Suppliers that do not have a website must publicly post results at the entrance of their headquarters within 20 days from the date on which internal control results are produced;

dd) Within 24 hours from the moment in which microbiological parameters unsatisfactory to local technical regulations or Nation Technical Regulation attached hereto in case provincial People's Committees have not promulgated local technical regulations, suppliers must examine, identify causes, adopt rectifying measures, collect samples and redo tests of unsatisfactory microbiological tests. Sample quantity and sampling location: 1 sample is collected from a tank of the supplier containing treated water before entering water supply network and 1 sample is collected at random at a faucet.

Where test results are still unsatisfactory after adopting rectifying measures, suppliers must immediately report to presiding authorities, water supply authorities in order to take actions and promptly supply clean water and report to competent health agencies for monitoring;

e) Where test results of sensory, chemical, radioactive exposure parameters are unsatisfactory to local technical regulations or Nation Technical Regulation attached hereto in case provincial People's Committees have not promulgated local technical regulations, suppliers must examine, determine causes, adopt rectifying measures, collect samples, and redo tests of unsatisfactory parameters. Sample quantity and sampling location: 1 sample is collected from a tank of the supplier containing treated water before entering water supply network and 1 sample is collected at random at a faucet.

- Where test results are satisfactory after adopting rectifying measures, samples shall be collected and re-evaluated for previously unsatisfactory parameters at least once every month for 3 consecutive months as follows: 1 sample is collected from a tank of the supplier containing treated water before entering water supply network and 1 sample is collected at random at a faucet;

- Where test results are still unsatisfactory after adopting rectifying measures, suppliers must immediately report to presiding authorities, water supply authorities in order to take actions and promptly supply clean water and report to competent health agencies for monitoring.

2. Consumers shall organize internal control as follows:

a) Test frequency and parameters:

- Periodic tests shall be carried out at least once every 6 months. Where there are suspicions regarding water quality, tests must be conducted immediately. Depending on local conditions, provincial People's Committees may require tests to be conducted more frequently than the aforementioned test frequency;

- Test parameters: All group A parameters, and *Pseudomonas aeruginosa* and *Staphylococcus aureus*.

b) Sample quantity and sampling location: At least 1 sample is collected from a centralized tank and 1 sample is collected at random at a faucet. Where there are at least 2 clean water tanks, collect at least 1 sample from the tank and 1 sample at random at a faucet for each clean water tank;

c) Internal control results presented using Form No. 7 under Appendix attached hereto shall be uploaded by suppliers on their websites within 3 working days from the date on which internal control results are produced. Suppliers that do not have a website must publicly post the results on their notice boards within 20 days from the date on which internal control results are produced;

d) Where test results of parameters produced by consumers are unsatisfactory to local technical regulations or National Technical Regulation attached hereto in case provincial People's Committees have not promulgated local technical regulations, consumers must:

- Immediately inform suppliers to cooperate in examining, identifying causes, adopting rectifying measures, collecting samples, and redoing tests of unsatisfactory parameters within 24 hours from the moment in which unsatisfactory results are produced. Sample quantity and sampling location: 1 sample after a water meter of the consumer, 1 sample at clean water tank, and 1 sample at faucet connected to clean water tank from which unsatisfactory test results are produced;

- Where test results are still unsatisfactory after adopting rectifying measures, whether supplier or consumer is responsible must be determined. Presiding authorities and water supply authorities must be informed in order to take rectifying measures, supply clean water; competent health authorities must be informed in order to monitor.

Article 5. Regulations on external control, internal control, and quality supervision

1. In respect of suppliers:

a) Examine compliance of internal control and sampling for tests of all parameters with local technical regulations or Nation Technical Regulation attached hereto in case provincial People's Committees have not promulgated local technical regulations; examine water quality logbook under Point c Clause 7 Article 6 hereof;

c) Quantity and sampling location for external control of water parameters are compliant with Point c Clause 1 Article 4 hereof;

c) External control frequency:

- Each supplier must undergo periodic external control at least once every year;
- Irregular external control shall be carried out: In case of suspicions pertaining to water quality according to periodic or irregular water quality reports of suppliers; in case of environmental emergencies that may affect water quality; in case of unqualified water quality inspection or epidemiology survey results; in case agencies, organizations, or individuals complain about water quality; at request of competent authorities.

d) Within 5 working days from the date on which external control results are produced, entities conducting external control shall inform suppliers subject to external control in writing; publicly post on their website; inform superior agencies and presiding agencies of suppliers subject to external control (if any) about external control results;

dd) Where water quality external control results are unsatisfactory to local technical regulations or National Technical Regulation attached hereto in case provincial People's Committees have not promulgated local technical regulations, entities conducting external control must immediately report to superiors and inform suppliers subject to external control in order to comply with Point dd and Point e Clause 1 Article 4 hereof.

2. In respect of consumers:

a) Conduct external control, inspection, and supervision:

- In case of environmental emergencies that affect water quality;
- In case agencies, organizations, individuals complain about water quality;
- At request of competent authorities.

b) Sample quantity, sampling locations, and test parameters are specified under Points a and b Clause 2 Article 4 hereof;

c) Where water quality external control results are unsatisfactory to local technical regulations or National Technical Regulation attached hereto in case provincial People's Committees have not promulgated local technical regulations, entities conducting external control must immediately report to superiors and inform suppliers subject to external control in order to comply with Point d Clause 2 Article 4 hereof.

3. In respect of entities and households producing water for self-consumption.

a) Conduct external control, inspection, and supervision:

- In case production takes place in areas prone to pollution defined by provincial People's Committees;

- At request of competent authorities; In case of environmental emergencies that may affect water quality; in case organizations, individuals complain about water quality.
 - b) Water quality test parameters are compliant with Point a Clause 2 Article 4 hereof or depending on pollution risks or at request of competent authorities;
 - c) Sample quantity and sampling location: 1 sample is collected at faucet or water tank or directly at production areas;
 - d) Where water quality external control results are unsatisfactory to local technical regulations or National Technical Regulation attached hereto in case provincial People's Committees have not promulgated local technical regulations, entities conducting external control must immediately report to superiors, local governments, inform entities and households subject to external control, and cooperate in identifying causes.
4. Record of external control, inspection, and supervision of water quality shall use Form No. 1 of Appendix attached hereto.

Article 6. Organizing implementation

1. Health Environment Management Agency - Ministry of Health is responsible for popularizing, guiding, examining, and reporting implementation of this Circular on a nationwide scale.
2. Provincial People's Committees have the responsibility to:
 - a) coordinate, provide guidelines, and inspect implementation of this Circular in their provinces and cities;
 - b) promulgate local technical regulations on the basis of National Technical Regulation hereunder on the basis of:
 - Group A parameters: Mandatory parameters;
 - Group B parameters: Parameters appropriate to practical local conditions;
 - Limit values of parameters must not exceed the permissible limits with the exception of pH and Chlorine which must be within permissible range under Article 4 of the National Technical Regulation hereunder.
 - c) identify water production areas at risks in their provinces and cities;
 - d) allocate budget and coordinate periodic, irregular external control, inspection, supervision of water quality; invest and upgrade laboratory equipment in order to adequately carry out tests of water quality parameters in accordance with this Circular;

dd) coordinate continuous clean water supply in case of issues to clean water quality.

3. Professional institutes affiliated to the Ministry of Health have the responsibility to:

a) consolidate, analyze, and produce reports on water quality of provinces and cities; develop plans for training, professional training, technical training for local governments in implementation of regulations;

b) develop expenditure plans and estimates and request competent authority to approve and carry out periodic inspection, supervision of water quality in their jurisdiction;

c) collect sample and carry out tests for water quality, inspection and evaluate causes at request of Ministry of Health;

d) provide technical support for provinces and cities in developing local technical regulations on water quality;

dd) carry out inspection and supervision of water quality within their jurisdiction;

e) submit reports using Form No. 2 of Appendix attached hereto every 6 months and every year to Health Environment Management Agency within 30 days from the last day of June and December.

4. Departments of Health of provinces and central-affiliated cities have the responsibility to:

a) take charge and cooperate with relevant entities in popularizing, implementing, guiding, inspecting, and monitoring implementation of this Circular within their jurisdiction;

b) receive declaration of conformity of suppliers in the jurisdiction in accordance with Article 15 of Circular No. 28/2012/TT-BKHCH dated December 12, 2012 of the Minister of Science and Technology;

c) develop plans, prepare personnel and equipment, request provincial People's Committees to allocate funding (from annual budget) for inspection, supervision, and external control of water quality in their jurisdiction;

d) request affiliated entities to conduct inspection, supervision, and external control of water quality in accordance with this Circular in their jurisdiction and submit reports to provincial People's Committees;

dd) coordinate inspection, supervision, and external control of water quality for water produced and self-consumed by entities and households located in areas prone to pollution risks in their jurisdiction;

e) carry out inspection and examination for water quality assurance implemented by local suppliers.

5. Provincial Centers for Disease Control (CDCs) shall have the responsibility to:

a) develop and propose annual expenditure plans and estimate to Departments of Health in order to implement external control, inspection, and supervision of water quality;

b) implement periodic, irregular inspection, supervision, and external control of water quality in all suppliers with minimum capacity of 1.000 m³/24 hours in their jurisdiction in accordance with Article 5 hereof;

c) coordinate and cooperate with district-level medical centers in conducting periodic, irregular inspection, supervision, and external control of water quality in all suppliers with capacity below 1.000 m³/24 hours;

d) coordinate and cooperate with district-level medical centers in conducting inspection, supervision, and external control of water quality of consumers; entities and households that engage in water production and self-consumption;

dd) submit reports using Form No. 3 under Appendix attached hereto every 6 months, every year to Departments of Health of provinces and central-affiliated cities, professional Institutes affiliated to the Ministry of Health and Health Environment Management Agency - Ministry of Health within 15 days from the final day of June and December.

6. District-level medical centers shall have the responsibility to:

a) develop and propose annual expenditure plans and estimate for external control, inspection, and supervision of water quality to competent authorities;

b) implement periodic, irregular inspection, supervision, and external control of water quality in all suppliers with capacity below 1.000 m³/24 hours in their jurisdiction in accordance with Article 5 hereof;

c) carry out inspection, supervision and cooperate with provincial CDCs in conducting external control of water quality of consumers in accordance with Point a Clause 2 Article 5 hereof; entities and households that engage in water production and self-consumption in accordance with Point a Clause 3 Article 5 hereof;

d) submit reports using Form No. 4 of Appendix attached hereto every quarter, every 6 months, and every year to superior authority within 10 days from the final day of March, June, September, and December.

7. Suppliers shall have the responsibility to:

a) comply with this Circular;

b) declare water quality conformity in accordance with Circular No. 28/2012/TT-BKHCN dated December 12, 2012 of the Minister of Science and Technology and Circular No. 02/2017/TT-BKHCN dated March 31, 2017 of the Minister of Science and Technology and assume legal responsibility for water quality of suppliers;

c) store and manage water quality logbook:

- Results of periodic and irregular water quality parameter tests including internal control results using Form No. 5 of Appendix attached hereto and external control results;

- Dossiers on chemicals used in clean water production;

- Rectification results for incidents related to water quality;

- Proof of publicly posted water quality.

d) operate under inspection, supervision of competent authorities;

dd) propose water quality parameters and corresponding limit values in order to develop local technical regulations on water quality;

e) ensure continuous supply of water with quality compliant with technical regulations in case of water emergencies (if any);

g) submit reports on quarterly and annual water quality test results using Form No. 6 of Appendix attached hereto to district-level medical centers in respect of suppliers with capacity below 1.000 m³/24 hours, provincial CDCs in respect of suppliers with minimum capacity more than 1.000 m³/24 hours within 5 working days from the final days of March, June, September, and December. Report all unsatisfactory parameter test results (if any).

8. Consumers shall have responsibility to:

a) regularly examine and maintain hygiene of clean water tanks, intermediate water tanks, and clean water system; comply with regulations on internal control of water quality under Clause 2 Article 4 and cooperate with relevant entities in conducting external control of water quality in accordance with Clause 2 Article 5 hereof;

b) store and manage internal control dossiers and results;

c) submit reports on water quality emergencies and rectifying solutions and results to superior agencies and competent health authorities.

9. Entities and households producing water for domestic use shall have responsibility to:

a) conform to regulations on safe water use in accordance with recommendations of local governments;

b) inspect and maintain hygiene of structures, equipment, and instruments for processing and storing clean water. Adopt protective measures to protect water sources and storage system from being polluted by domestic, agricultural, industrial, and craft village wastes;

c) promptly inform local government about irregularities pertaining to water quality.

10. Where a supplier possesses multiple water supply structures, internal control, external control, supervision, and supervision of water quality shall be conducted for individual water supply structures of the supplier in accordance with this Circular.

Article 7. Entry into force

1. This Circular comes into force from July 01, 2025.

2. Circular No. 41/2018/TT-BYT dated December 14, 2018 of the Minister of Health; Circular No. 26/2021/TT-BYT dated December 15, 2021 of the Minister of Health expire from the effective date hereof.

Article 8. Terms of reference

Where documents referred to in this Circular are superseded or amended, the newer versions will prevail.

Article 9. Transition clauses

1. Local governments of provinces and central-affiliated cities must promulgate or amend, supersede local technical regulations compliant with the National Technical Regulation under this Circular by December 31, 2027 at the latest.

2. Where local technical regulations have not been amended or superseded in accordance with Clause 1 of this Article, local governments of provinces and central-affiliated cities that have promulgated local technical regulations before the effective date hereof may:

a) continue to adopt local technical regulations promulgated before the effective date hereof; or

b) adopt the National Technical Regulation attached hereto from the effective date hereof.

Article 10. Responsibility for implementation

Chief of Ministry Office, Director of Health Environment Management Agency, Director of Administration of Science Technology and Training, Director of Department of Legal

Affairs, Chief Ministry Inspectorate, relevant departments and agencies, heads of entities affiliated to Ministry of Health, directors of Departments of Health of provinces and central-affiliated cities, and relevant organizations and individuals shall be responsible for the implementation of this Circular.

Difficulties that arise during implementation of this Circular must be reported to the Ministry of Health (via Health Environment Management Agency) in writing./.

**PP. MINISTER
DEPUTY MINISTER**

Nguyen Thi Lien Huong

QCVN 01-1:2024/BYT

NATIONAL TECHNICAL REGULATION ON DOMESTIC WATER QUALITY

Foreword

The National Technical Regulation on domestic water quality QCVN 01-1:2024/BYT is compiled by Health Environment Management Agency - Ministry of Health, appraised by Ministry of Science and Technology, and promulgated by Ministry of Health under Circular No. 52/2024/TT-BYT dated December 31, 2024.

The QCVN 01-1:2024/BYT replaces the QCVN 01-1:2018/BYT under Circular No. 41/2018/TT-BYT dated December 14, 2018 and Circular No. 26/2021/TT-BYT dated December 15, 2021.

NATIONAL TECHNICAL REGULATION ON DOMESTIC WATER QUALITY

Chapter I

GENERAL PROVISIONS

Article 1. Scope

This National Technical Regulation prescribes limit values of domestic water quality parameters.

Article 2. Regulated entities

1. This National Technical Regulation applies to: Suppliers; consumers; entities and households producing water for self-consumption; state authorities for inspection, examination, supervision of water quality or health agencies assigned by state authorities to conduct external control, inspection, supervision; laboratories and organizations recognizing water quality parameters.

2. This National Technical Regulation does not apply to water of drinking fountain, bottled mineral water, and bottled drinking water for drinking, water from purifiers, filter system, and water types not for domestic use.

Article 3. Definitions

In this document, the terms below are construed as follows:

1. Clean domestic water means water that has been treated to meet quality and suffice to use for drinking, eating, cooking, and cleaning needs of people (hereinafter referred to as “clean water”).

2. Sensory parameters refer to odor and taste perceptible to human senses.

3. CFU stands for “colony forming unit”.

4. MPN stands for “most probable number”.

5. NTU stands for “nephelometric turbidity unit”.

6. SMEWW stands for Standard Methods for the Examination of Water and Wastewater of the United States.

7. TCU stands for “true color unit”.

8. US EPA stands for United States Environmental Protection Agency.

Chapter II

TECHNICAL PROVISIONS

Article 4. List of water quality parameters and limits

No.	Entry	Unit	Permissible limit
-----	-------	------	-------------------

Group A parameters			
	<i>a. Microbiological parameters</i>		
1	Total Coliform	CFU/100 ML or MPN/100mL	< 1
2	Thermotolerant <i>E.coli</i> or Coliform	CFU/100 ML or MPN/100mL	< 1
	<i>b. Sensory and chemical parameters</i>		
3	Color	TCU	15
4	Odor ^(*)	-	No strange odor
5	pH ^(*)	-	Between 6,0 - 8,5
6	Turbidity	NTU	2
7	Arsenic (As)	mg/L	0,01
8	Free chlorine ^(*)	mg/L	Between 0,2 - 1,0
9	Permanganate	mg/L	2
10	Ammonia (NH ₃ and NH ₄ ⁺ by N)	mg/L	1
Group B parameters			
	<i>a. Microbiological parameters</i>		
11	Pseudomonas aeruginosa	CFU/100mL	< 1
12	Staphylococcus aureus	CFU/100mL	< 1
	<i>b. Chemical parameters</i>		
13	Antimony (Sb)	mg/L	0,02
14	Barium (Ba)	mg/L	1,3
15	Bor in general for Borate and boric acid (B)	mg/L	2,4
16	Cadmium (Cd)	mg/L	0,003
17	Lead (Plumbum) (Pb)	mg/L	0,01
18	Chloride (Cl ⁻)	mg/L	250 or 300 ^(**)
19	Chromium (Cr)	mg/L	0,05
20	Copper (Cuprum) (Cu)	mg/L	1
21	Hardness, by CaCO ₃	mg/L	300
22	Fluoride (F ⁻)	mg/L	1,5
23	Zinc (Zincum) (Zn)	mg/L	2

24	Manganese (Mn)	mg/L	0,1
25	Sodium (Na)	mg/L	200
26	Aluminium (Al)	mg/L	0,2
27	Nickel (Ni)	mg/L	0,07
28	Nitrate (NO ₃ ⁻ by N)	mg/L	11
29	Nitrite (NO ₂ ⁻ by N)	mg/L	0,9
30	Iron (Fe)	mg/L	0,3
31	Selenium (Se)	mg/L	0,04
32	Sulfate (SO ₄ ²⁻)	mg/L	250
33	Sulfide (S ²⁻)	mg/L	0,05
34	Mercury (Hg)	mg/L	0,001
35	Total dissolved solids (TDS)	mg/L	1.000
36	Cyanide (CN ⁻)	mg/L	0,05
<i>Chloroalkanes</i>			
37	1,1,1 - Trichloroethane (C ₂ H ₃ Cl ₃)	µg/L	2.000
38	1,2 - Dichloroethane (C ₂ H ₄ Cl ₂)	µg/L	30
39	1,2 - Dichloroethene (C ₂ H ₂ Cl ₂)	µg/L	50
40	Carbon tetrachloride (CCl ₄)	µg/L	2
41	Dichloromethane (CH ₂ Cl ₂)	µg/L	20
42	Tetrachloroethene (C ₂ Cl ₂)	µg/L	40
43	Trichloroethene (C ₂ HCl ₃)	µg/L	8
44	Vinyl chloride (C ₂ H ₃ Cl)	µg/L	0,3
<i>Aromatic hydrocarbons</i>			
45	Benzene (C ₆ H ₆)	µg/L	10
46	Ethylbenzene (C ₈ H ₁₀)	µg/L	300
47	Pentachlorophenol (C ₆ HCl ₅ O)	µg/L	9
48	Styrene (C ₈ H ₈)	µg/L	20
49	Toluene (C ₇ H ₈)	µg/L	700
50	Xylene (C ₈ H ₁₀)	µg/L	500
<i>Chlorobenzene</i>			
51	1,2 - Dichlorobenzene (C ₆ H ₄ Cl ₂)	µg/L	1.000

52	Monochlorobenzene (C ₆ H ₅ Cl)	µg/L	300
53	Total Trichlorobenzene (C ₆ H ₃ Cl ₃)	µg/L	20
	<i>Complex organic compounds</i>		
54	Acrylamide (C ₃ H ₅ NO)	µg/L	0,5
55	Epichlorohydrin (C ₃ H ₅ ClO)	µg/L	0,4
56	Hexachlorobutadiene (C ₄ Cl ₆)	µg/L	0,6
	<i>Plant protection chemicals</i>		
57	1,2- Dibromo - 3 chloropropane (C ₃ H ₅ Br ₂ Cl)	µg/L	1
58	1,2 - Dichloropropane (C ₃ H ₆ Cl ₂)	µg/L	40
59	1,3- Dichloropropene (C ₃ H ₆ Cl ₂)	µg/L	20
60	2,4-D (C ₈ H ₆ Cl ₂ O ₃)	µg/L	30
61	2,4 - DB (C ₁₀ H ₁₀ Cl ₂ O ₃)	µg/L	90
62	Alachlor (C ₁₄ H ₂₀ ClNO ₂)	µg/L	20
63	Aldicarb (C ₇ H ₁₄ N ₂ O ₂ S)	µg/L	10
64	Atrazine (C ₈ H ₁₄ ClN ₅) and chloro-s-triazine derivatives	µg/L	100
65	Carbofuran (C ₁₂ H ₁₅ NO ₃)	µg/L	5
66	Chlorpyrifos (C ₉ H ₁₁ Cl ₃ NO ₃ PS)	µg/L	30
67	Chlordane (C ₁₀ H ₆ Cl ₈)	µg/L	0,2
68	Chlorotoluron (C ₁₀ H ₁₃ ClN ₂ O)	µg/L	30
69	Cyanazine (C ₉ H ₁₃ ClN ₆)	µg/L	0,6
70	DDT (C ₁₄ H ₉ Cl ₅) and derivatives	µg/L	1
71	Dichlorprop (C ₉ H ₈ Cl ₂ O ₃)	µg/L	100
72	Fenoprop (C ₉ H ₇ Cl ₃ O ₃)	µg/L	9
73	Hydroxyatrazine (C ₈ H ₁₅ N ₅ O)	µg/L	200
74	Isoproturon (C ₁₂ H ₁₈ N ₂ O)	µg/L	9
75	MCPA (C ₉ H ₉ ClO ₃)	µg/L	2
76	Mecoprop (C ₁₀ H ₁₁ ClO ₃)	µg/L	10
77	Methoxychlor (C ₁₆ H ₁₅ Cl ₃ O ₂)	µg/L	20
78	Molinate (C ₉ H ₁₇ NOS)	µg/L	6

79	Pendimethalin (C ₁₃ H ₁₉ N ₃ O ₄)	µg/L	20
80	Permethrin (C ₂₁ H ₂₀ Cl ₂ O ₃)	µg/L	20
81	Propanil (C ₉ H ₉ Cl ₂ NO)	µg/L	20
82	Simazine (C ₇ H ₁₂ ClN ₅)	µg/L	2
83	Trifluralin (C ₁₃ H ₁₆ F ₃ N ₃ O ₄)	µg/L	20
<i>Disinfectants and by-products</i>			
84	2,4,6 - Trichlorophenol (C ₆ H ₂ Cl ₃ OH)	µg/L	200
85	Bromat (BrO ₃ ⁻)	µg/L	10
86	Formaldehyde (CH ₂ O)	µg/L	500
87	Monochloramine (NH ₃ Cl)	µg/L	3.000
<i>Trihalomethanes (THM)</i>			
88	Bromodichloromethane (CHBrCl ₂)	µg/L	60
89	Bromoform (CHBr ₃)	µg/L	100
90	Chloroform (CHCl ₃)	µg/L	300
91	Dibromochloromethane (CHBr ₂ Cl)	µg/L	100
<i>Halogenated acetonitrile</i>			
92	Dibromoacetonitrile (C ₂ HBr ₂ N)	µg/L	70
93	Dichloroacetonitrile (C ₂ HCl ₂ N)	µg/L	20
94	Trichloroacetonitrile (C ₂ Cl ₃ N)	µg/L	1
<i>Haloacetic acids (HAAs)</i>			
95	Acid monochloroacetic (C ₂ H ₃ ClO ₂)	µg/L	20
96	Acid dichloroacetic (C ₂ H ₂ Cl ₂ O ₂)	µg/L	50
97	Acid trichloroacetic (C ₂ HCl ₃ O ₂)	µg/L	200
<i>c. Radiation exposure parameters</i>			
98	Total activity α	Bq/L	0,1
99	Total activity β	Bq/L	1,0
Note: (-) indicates the lack of measurement unit			
(*) Measure on site			
(**) Only apply to coastal areas, islands, or areas prone to saltwater intrusion.			
Both Nitrite and Nitrate are capable of creating methemoglobin. As a result, where they			

are both present in water, total ratio between concentration of each substance and their maximum limit must not be greater than 1 and determined using formula below:

$$C_{\text{nitrat}}/\text{GHTD}_{\text{nitrat}} + C_{\text{nitrit}}/\text{GHTD}_{\text{nitrit}} \leq 1$$

Chapter III

REGULATIONS ON MANAGEMENT

Article 5. Sampling methods, test methods

1. Sampling and test methods for water quality parameters are specified under Appendix attached hereto.
2. In addition to methods detailed under Clause 1 of this Article, results produced by automatic and continuous monitoring devices for water quality satisfactory to technical performance characteristics shall also be accepted.

Article 6. Requirements for water quality test laboratories

1. Tests for water quality parameters shall be conducted at laboratories recognized for conformity to TCVN ISO/IEC 17025.
2. Measuring instruments used in tests for water quality parameters (including those for on-site measurement) must be inspected and calibrated in accordance with measurement laws. Technical performance characteristics of measuring instruments must be maintained throughout use during inspection interval.

Article 7. Declaration of conformity

Conform to Circular No. 28/2012/TT-BKHCN dated December 12, 2012 of the Minister of Science and Technology; Circular No. 02/2017/TT-BKHCN dated March 31, 2017 of the Minister of Science and Technology.

Chapter IV

ORGANIZING IMPLEMENTATION

Article 8. Responsibilities for organizing implementation

1. Health Environment Management Agency shall take charge and cooperate with relevant state authorities in guiding implementation, organizing implementation, and requesting Ministry of Health to amend the National Technical Regulation. The Ministry of Health and Departments of Health shall coordinate inspection and supervise compliance of water quality test laboratories with this National Technical Regulation.

2. Suppliers; consumers; entities, and households engaging in water production and self-consumption in Vietnamese territory shall conform to this National Technical Regulation.

3. Water quality test laboratories according to this National Technical Regulation shall operate under inspection, supervision of the Ministry of Health and Departments of Health regarding compliance with Article 6 hereof.

4. Where test methods and legislative documents referred to hereunder are amended or superseded, the new versions shall prevail.

APPENDIX

LIST OF SAMPLING AND TEST METHODS

(Attached to QCVN 01-1:2024/BYT dated December 31, 2024 of the Minister of Health)

No.	Parameters	Analysis method, standard number
1	Sampling	- TCVN 6663-1:2011 (ISO 5667-1:2006), Water quality - Sampling - Part 1: Guidance on the design of sampling programs and sampling techniques - TCVN 6663-3:2016 (ISO 5667-3:2012), Water quality - Sampling - Part 3: Preservation and handling of water samples - TCVN 6663-5:2009 (ISO 5667-5:2006), Water quality - Sampling - Part 5: Guidance on sampling of drinking water from treatment works and piped distribution systems - TCVN 8880:2011 (ISO 19458:2006), Water quality - Sampling for microbiological analysis
2	Total Coliform, <i>E.coli</i> or thermotolerant Coliform	- TCVN 6187-1:2019 (ISO 9308-1:2014): Water quality - Enumeration of <i>Escherichia coli</i> and coliform bacteria - Part 1: Membrane filtration for waters with low background flora - Or SMEWW 9222B:2023 - Total coliform membrane filter procedure using m- Endo media - Or SMEWW 9222D:2023 - Thermotolerant (Fecal) coliform membrane filter procedure. - Or SMEWW 9222I:2023 - Partitioning <i>E. coli</i> from MF Total conforms using NA-MUG agar

		- TCVN 6187-2:2019 (ISO 9308-2:2012): Water quality - Enumeration of <i>Escherichia coli</i> and coliform bacteria - Part 2: Most probable number method - Or SMEWW 9221:2023 - Multiple-tube fermentation technique for members of the coliform group.
3	<i>Staphylococcus aureus</i>	- SMEWW 9213B:2023 - Microbiological analysis of recreation waters-Swimming pools
4	<i>Pseudomonas aeruginosa</i>	- TCVN 8881:2011 (ISO 16266:2006): Water quality – Detection and enumeration of <i>Pseudomonas aeruginosa</i> – Method by membrane filtration - Or SMEWW 9213E:2023 - Microbiological analysis of recreation waters - Membrane filter technique for <i>Pseudomonas aeruginosa</i>
5	Arsenic	- TCVN 6626:2000 (ISO 11969:1996) - Water quality - Determination arsenic - Atomic absorption spectrometric method (hydride technique) - Or SMEWW 3114B:2023: Arsenic and Selenium by hydride generation atomic absorption spectrometry - Or SMEWW 3120B:2023 - Metals by Inductively Coupled Plasma (ICP)
6	Free chlorine, monochloramine	- TCVN 6225-2:2021 (ISO 7939-2:2017) - Water quality - Determination of free chlorine and total chlorine - Or SMEWW4500 - C1 B, C, G:2023 - Chlorine (residual) by Iodometric method I, method II or DPD Colorimetric method - SMEWW 4500-C1 G:2023 - Chlorine (residual) by DPD colorimetric method
7	Turbidity	- TCVN 12402-1:2020 (ISO 7027-1:2016) - Water quality - Determination of turbidity - Part 1: Quantitative methods. - Or SMEWW 2130:2023 - Turbidity by Nephelometric method
8	Color	- TCVN 6185:2015 (ISO 7887:2011) - Water quality - Examination and determination of colour - Or SMEWW 2120B, C, D:2023 - Color by Visual

		comparison method or Spectrophotometric-single-wavelength method or Spectrophotometric-multi-wavelength method
9	Odor	- SMEWW 2150:2023 - Threshold odor test
10	pH	- TCVN 6492 - 2011 (ISO 10523-2008) - Water quality - Determination of pH - Or SMEWW 4500-H ⁺ -B:2023 - pH by Electrometric method
11	Ammonia (NH ₃ and NH ₄ ⁺ by N)	- TCVN 6179-1:1996 (ISO 7150-1:1984) - Water quality - Determination of ammonium - Part 1: Manual spectrometric method - Or TCVN 6660:2000 (ISO 14911:1988) - Water quality - Determination of dissolved Li ⁺ , Na ⁺ , NH ₄ ⁺ , K ⁺ , Mn ⁺⁺ , Ca ⁺⁺ , Mg ⁺⁺ , Sr ⁺⁺ and Ba ⁺⁺ using ion chromatography. For water and wastewater
		- Or TCVN 5988:1995 (ISO 5664:1984) - Water quality - Determination of aminonium - Distillation and titration method - SMEWW 4500-NH ₃ :2023 - Nitrogen (ammonia) by Titrimetric method or Ammonia-selective electrode method or Phenate method - Or EPA 350.2 - Revision 1974 - Nitrogen, Ammonia (Colorimetric, Titrimetric, Potentiometric distillation procedure)
12	Nickel, Copper, Zinc, Cadmium, Lead	- TCVN 13090:2020 - Water quality - Determination of metals by flame atomic absorption spectrometry - Direct air-acetylene flame method - Or SMEWW 3111:2023 or SMEWW 3113:2023 Metals by Flame atomic absorption or Electrothermal atomic absorption spectrometry - SMEWW 3120B:2023 - Metals by Inductively coupled plasma (ICP/OES)
13	Chromium	- TCVN 6222 - 2008 (ISO 9174 -1998) - Water quality – Determination of chromium – Atomic absorption spectrometric methods
14	Cadmium	- TCVN 6197-2008 (ISO 5961-1994) - Water quality – Determination of cadmium – Atomic absorption

		spectrometric methods - Or TCVN 13091:2020 - Water quality — Determination of metals by electrothermal atomic absorption spectrometric method - Or SMEWW 3113:2023 - Metals by Electrothermal atomic absorption spectrometry
15	Barium, Bor	- TCVN 13092:2020 - Water quality — Determination of metals by inductively coupled plasma-mass spectrometry (ICP-MS) method
16	Selenium	- TCVN 6183-1996 (ISO 9964-1-1993) - Water quality - Determination of selenium - Atomic absorption spectrometric method (hydride technique) - Or SMEWW 3114:2023 - Arsenic and Selenium by Hydride generation atomic absorption spectrometry
17	Manganese	- TCVN 6002 - 1995 (ISO 6333 - 1986) - Water quality - Determination of manganese - Formaldoxime spectrometric method
18	Permanganate	- TCVN 6186:1996 (ISO 8467:1993 (E)) - Water quality - Determination of permanganate index
19	Chloride	- TCVN 6194 - 1996 (ISO 9297 - 1989) - Water quality - Determination of chloride - Silver nitrate titration with chromate indicator (Mohr's method) - Or SMEWW 4110B:2023 - Determination of anions by Ion chromatography with chemical suppression of eluent conductivity - Or SMEWW 4500-C1 D:2023 - Chlorine (residual) by Amperometric titration method
20	Hardness, by CaCO_3	- TCVN 6224:1996 - Water quality - Determination of the sum of calcium and magnesium - EDTA titrimetric method - Or SMEWW 2340:2023 - Hardness by calculation or EDTA titrimetric method
21	Fluoride, Chloride, Nitrite, Nitrate, and Sulfate	- TCVN 6494:2011 (ISO 13040-1:2007) - Water quality - Determination of dissolved anions by liquid chromatography of ions - Part 1: Determination of dissolved anions by liquid chromatography of ions

		- Or TCVN 6195:1996 (ISO 10359-1:1992) - Water quality - Determination of fluoride - Part 1: Electrochemical probe method for potable and lightly polluted water - Or TCVN 6494-1:2011 (ISO 10304-1:2007) Water quality - Determination of dissolved anions by liquid chromatography of ions - Part 1: Determination of bromide, chloride, fluoride, nitrate, nitrite, phosphate and sulfate - Or SMEWW 4110B:2023 - Determination of anions by Ion chromatography with chemical suppression of eluent conductivity
22	Nitrate	- TCVN 6180-1996 (ISO 7890-3:1988 (E)) Water quality - Determination of nitrate - Spectrometric method using sulfosalicylic acid - Or SMEWW 4500-NO₃⁻:2023 - Nitrogen (nitrate) by Ultraviolet spectrophotometric screening method or Cadmium reduction method
23	Nitrite	- TCVN 6178 - 1996 (ISO 6777-1984) - Water quality - Determination of nitrite - Molecular absorption spectrometric method - Or TCVN 6494-1:2011 (ISO 10304-1:2007) Water quality - Determination of dissolved anions by liquid chromatography of ions - Part 1: Determination of bromide, chloride, fluoride, nitrate, nitrite, phosphate and sulfate
24	Iron	- TCVN 6177:1996 (ISO 6332:1988) - Water quality - Determination of iron- Spectrometric method - Or SMEWW 3500-Fe B:2023 - Iron by Phenanthroline method
25	Sulfate	- SMEWW 4500-SO₄²⁻ E:2023 - Sulfate by Turbidimetric method - Or EPA 375.4 - Revision 1978 - Sulfate (Turbidimetric)
26	Sulfide	- TCVN 6637:2000 (ISO 10530:1992) - Water quality - Determination of dissolved sulfide - Photometric method using methylene blue - Or SMEWW 4500-S²⁻:2023 - Sulfide by Methylene blue

		method or Iodometric method or Ion selective electrode method
27	Mercury	- TCVN 7877:2008 (ISO 5666:1999) - Water quality - Determination of mercury - Or TCVN 7724:2007 (ISO 17852:2006) - Water quality - Determination of mercury - Method using atomic fluorescence spectrometry - Or SMEWW 3112B:2023 - Metals by Cold-vapor atomic absorption spectrometric method
28	Arsenic, Chromium, Copper, Zinc, Nickel, Manganese, Iron, Mercury, Selenium, Lead, Cadmium, Zinc, Lead	- US EPA 6020 - Revision 0, September 1994 - Water quality - Determination of concentration of Arsenic, Chromium, Copper, Zinc, Nickel, Manganese, Iron, Mercury, Selenium, Lead, Cadmium, etc. using Inductively coupled plasma - mass spectrometry (ICP/MS) - Or US EPA 200.8 - Determination of trace elements in waters and wastes by inductively coupled plasma - mass spectrometry (ICP/MS)
29	Antimony, Aluminium, Arsenic, Bor, Barium, Cadmium, Chromium, Copper, Iron, Manganese, Sodium, Nickel, Lead, Selenium, Zinc, Mercury	- TCVN 6665:2011 (ISO 11885:2007) - Water quality – Determination of selected elements: Aluminium, Arsenic, Bor, Barium, Cadmium, Chromium, Copper, Iron, Manganese, Sodium, Nickel, Lead, Selenium, Zinc, Mercury, etc. by inductively coupled plasma optical emission spectrometry (ICP-OES) - Or TCVN 13092:2020 - Water quality — Determination of metals by inductively coupled plasma-mass spectrometry (ICP-MS) method - Or SMEWW 3125B:2023 - Metals by Inductively coupled plasma-Mass spectrometry method (ICP/MS)
30	Total dissolved solids (TDS)	- SMEWW 2540C:2023 - Solids by Total dissolved solids dried at 180°C
31	Cyanide	- TCVN 6181:1996 (ISO 6703-1:1984) - Water quality - Determination of total cyanide - Or SMEWW 4500-CN⁻ A, B, C, E:2023 - Total cyanide after distillation or Cyanide by Colorimetric method
32	Chloroalkanes (1,1,1-Trichloroethane, 1,2-Dichloroethane, 1,2-	- US EPA 5021A - Revision 2, July 2014 - Volatile organic compounds in various sample matrices using

	Dichloroethene, Carbon tetrachloride, Dichloromethane, Tetrachloroethene, Trichloroethene, Vinyl chloride)	equilibrium headspace analysis - Or US EPA 524.3 - Version 1.0, June 2009 - Measurement of purgeable organic compounds in water by capillary column gas chromatography/mass spectrometry
33	Acrylamide	- US EPA 8032A - Revision 1, December 1996 - Acrylamide by gas chromatography
34	Aromatic hydrocarbons, chlorobenzenes and epichlorhydrin	- US EPA 8260D-1 - Revision 4, February 2017 - Volatile organic compounds by gas chromatography/mass spectrometry (GC/MS) - Or US EPA 8270E - Revision 6, June 2018 - Semivolatile organic compounds by gas chromatography/mass spectrometry
35	Hexachloro butadiene, 1,2 - Dibromo - 3 Chloropropane, 1,2 - Dichloropropane, 1,3 - Dichloropropene, Bromodichloromethane, Bromoform, Dibromochloromethane	- US EPA 524.4 - Revision 1.0, May 2013 - Measurement of purgeable organic compounds in water by gas chromatography/mass spectrometry using nitrogen purge gas (GC/MS)
36	2,4 - D; 2,4 DB, Dichloprop; 2,4,5-T	- US EPA 515.4, Revision 1-0, April 2000 - Determination of chlorinated acids in drinking water by liquid-liquid microextraction, derivatization, and fast gas chromatography with electron capture detection
37	Alachlor, Atrazine and chloro-s-triazine derivatives, Chlorpyrifos, Cyanazine, Methoxychlor, Molinate, Simazine, Trifluralin	- US EPA 525.3 - Version 1.0, February 2012 - Determination of semivolatile organic chemicals (SVOCs) in drinking water by solid phase extraction and capillary column gas chromatography/mass spectrometry (GC/MS) - Or US EPA 551.1 - Revision 1.0, 1995 - Determination of chlorination disinfection byproducts, chlorinated solvents and halogenated pesticides/herbicides in drinking water by liquid-liquid extraction and gas chromatography with electron-capture detection
38	Chlorotoluron, Isoproturon	US EPA 532 - Revision 1.0, 2000 - Determination of phenylurea compounds in drinking water by solid phase extraction and high performance liquid chromatography with UV detection <i>(Chlorotoluron and Isoproturon are members of the class</i>

		<i>of phenylureas which can be determined via EPA 532)</i>
39	Aldicarb, Carbofuran	- US EPA 531.2 - Revision 1.0, September 2001 - Measurement of N-methylcarbamoyloximes and N-methylcarbamates in water by direct aqueous injection HPLC with post column derivatization
40	2,4 -D, 2,4 DB, Dichloprop, MCPA, 2,4,5 -T, Mecoprop	- US EPA 555 - Revision 1.0, August 1992 - Determination of chlorinated acids in water by high performance liquid chromatography with a photodiode array ultraviolet detector
41	Pendimethalin, Alachlor, Atrazine, Metolachlor, Molinate, Simazine	- US EPA 507 - Revision 2.1, 1995 - Determination of Nitrogen and Phosphorus containing pesticides in water by gas chromatography with a nitrogen-phosphorus detector - Or US EPA 525.3 - Version 1.0, February 2012 - Determination of semivolatile organic chemicals in drinking water by solid phase extraction and capillary column gas chromatography/mass spectrometry (GC/MS)
42	Pendimethalin	- US EPA 8091 - Revision 0, December 1996 - Nitroaromatics and cyclic ketones by gas chromatography
43	Chlordane, DDT and derivatives, Methoxychlor, Atrazine, Simazine, Permethrin	- US EPA 1699 - December 2007 - Pesticides in water, soil, sediment, biosolids and tissue by HRGC/HRMS - Or US EPA 525.3 - Version 1.0, February 2012 - Determination of semivolatile organic chemicals (SVOCs) in drinking water by solid phase extraction and capillary column gas chromatography/mass spectrometry (GC/MS)
44	Hydroxyantrazine	- US EPA 525.3 - Version 1.0, February 2012 - Determination of semivolatile organic chemicals (SVOCs) in drinking water by solid phase extraction and capillary column gas chromatography/mass spectrometry (GC/MS) <i>(Hydroxyatrazine is a member of the atrazine class which can be determined by EPA 532.3 as atrazine)</i>
45	Propanil	- US EPA 532 - Revision 1.0, 2000 - Determination of phenylurea compounds in drinking water by solid phase extraction and high performance liquid chromatography with UV detection (HPLC-UV)
46	Carbofuran, Chlordane, Pentachlorophenol, 1,2-Dichlorobenzene, 1,4-Dichlorobenzene, Trichlorobenzene,	- TCVN 6216:1996 (ISO 6439:1990) - Determination of total phenol by colorimetric test - Or US EPA 8270E - Revision 6, June 2018 - Semivolatile organic compounds by gas

	Hexachloro butadiene, Methoxychlor, phenol, 2,4,6 Trichlorophenol	chromatography/mass spectrometry - Or US EPA 524.3 - Version 1, June 2009 - Measurement of purgeable organic compounds in water by capillary column gas chromatography/mass spectrometry. - Or US EPA 528.1 - Version 1,2000 - Determination of phenols in drinking water by solid phase extraction and capillary column gas chromatography/mass spectrometry - Or US EPA 5030C - Revision 3, May 2023 - Purge and trap method for analysis of VOCs in aquaous and water miscible liquid samples
47	Bromine	- SMEWW 4110D:2023 - Ion chromatographic determination of oxyhalides and bromide - Or US EPA 300.1 - Revision 1, 1999 - Determination of inorganice anions in drinking water by ion chromatography
48	Acid monochloroacetic; acid dichloroacetic and acid trichloroacetic	- SMEWW 6251:2023 - Disinfection byproducts by Micro liquid-liquid extraction gas chromatographic method. - Or US EPA 552.3 - Revision 1.0, July 2003 - Determination of haloacetic acids and dalapon in drinking water by liquid-liquid microextraction, derivatization, and gas chromatography with electron capture detection
49	Dibromoaxetonitrile, Dicloroaxetonitrile, Tricloroaxetonitrile, Carbon tetrachloride, 1,2- Dibromo – 3 Cloropropan, Alachlor, Atrazine, Metolachlor, Simazine, Trifluralin, Methoxychlor	- US EPA 551.1 - Revision 1.0, 1995 - Determination of chlorination disinfection byproducts, chlorinated solvents and halogenated pesticides/herbicides in drinking water by liquid-liquid extraction and gas chromatography with electron capture detection
50	Formaldehyde	- US EPA 556.1 - Revision 1.0, September 1999 - Determination of carbonyl compounds in drinking water by fast gas chromatography - Or SMEWW 6252:2023: Disinfection byproducts: aldehydes by PFBHA Liquid-liquid extraction gas chromatographic method - Or EPA 8315A - Revision 1, December 1996 -

		Determination of carbonyl compounds by high performance liquid chromatography (HPLC)
51	Bromoform, Chloroform, Dibromochloromethane, Bromodichloromethane	- US EPA 501.3 - 1996, Measurement of Trihalomethanes in drinking water with gas chromatography/mass spectrometry and selected ion monitoring (GC-MS-SIM) - US EPA 5021A - Revision 2, July 2014 - Volatile organic compounds in various sample matrices using equilibrium headspace analysis - Or US EPA 524.2 - Revision 4.1, 1995- Measurement of purgeable organic compounds in water by capillary column gas chromatography/mass spectrometry - Or US EPA 551.1 - Revision 1.0, 1995 - Determination of chlorination disinfection byproducts, chlorinated solvents and halogenated pesticides/herbicides in drinking water by liquid-liquid extraction and gas chromatography with electron-capture detection
	Total activity α	- TCVN 6053:2021 (ISO 9696:2017) - Gross alpha activity – Test method using thick source - Or TCVN 8879:2011 (ISO 10704:2009) - Measurement of gross alpha and gross beta activity in non-saline water - Thin source deposit method - Or ISO 10704:2019 - Water quality - Determination of alpha activity and beta activity - Thin source method - Or SMEWW 7110B:2023 - Gross alpha and gross beta radioactivity by Evaporation Method
	Total activity β	- TCVN 6219:2021 (ISO 9697:2018) - Determination of total beta activity in non-saline water - Or TCVN 8879:2011 (ISO 10704:2009) - Measurement of gross alpha and gross beta activity in non-saline water - Thin source deposit method - Or ISO 10704:2019 - Water quality - Determination of alpha activity and beta activity - Thin source method - Or SMEWW 7110B:2023 - Gross alpha and gross beta radioactivity by Evaporation Method

Methods with quantitative limit conforming to permissible limits, equivalent or higher accuracy (including precision and trueness) are accepted.

*This translation is made by **THƯ VIỆN PHÁP LUẬT**, Ho Chi Minh City, Vietnam and for reference purposes only. Its copyright is owned by **THƯ VIỆN PHÁP LUẬT** and protected under Clause 2, Article 14 of the Law on Intellectual Property. Your comments are always welcomed*