



**THE SOCIALIST REPUBLIC OF VIETNAM**

**QCVN 08: 2008/BTNMT**

**National Technical Regulation on surface water quality**

**(This English version is for reference only)**

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## **Foreword**

QCVN 08:2008/BTNMT was prepared by the Committee of the National Technical Regulation on Water Quality, submitted by the General Department of Environment and the Legal Department and promulgated in accordance with Decision No. 16/2008/QĐ-BTNMT dated December 31st, 2008 by the Minister of Natural Resources and Environment.



# National Technical Regulation on surface water quality

## 1. GENERAL PROVISIONS

### 1.1. Scope of regulation

1.1.1. This regulation defines limit values of parameters of surface water quality.

1.1.2. This regulation is applied to evaluate and control the quality of surface water, as a basis for the protection and use of water properly.

### 1.2. Explanation of terms

Surface water concerned in this Regulation is the water flowing through or deposited on the ground, streams, canals, ditches, lakes, ponds, marshes, ...

## 2. TECHNICAL REGULATIONS

Limit values of parameters of surface water quality are given in Table 1.

**Table 1: Limit values of parameters of surface water quality**

No.	Parameters	Unit	Limit values			
			A		B	
			A1	A2	B1	B2
1	pH		6-8.5	6-8.5	5.5-9	5.5-9
2	Dissolved oxygen (DO)	mg/l	≥ 6	≥ 5	≥ 4	≥ 2
3	Total suspended solids (TSS)	mg/l	20	30	50	100
4	COD	mg/l	10	15	30	50
5	BOD <sub>5</sub> (20 <sup>0</sup> C)	mg/l	4	6	15	25
6	Ammonium (NH <sub>4</sub> <sup>+</sup> ) (calculated by N)	mg/l	0.1	0.2	0.5	1
7	Chloride (Cl <sup>-</sup> )	mg/l	250	400	600	-
8	Fluoride (F <sup>-</sup> )	mg/l	1	1.5	1.5	2
9	Nitrite (NO <sub>2</sub> <sup>-</sup> ) (calculated by N)	mg/l	0.01	0.02	0.04	0.05
10	Nitrate (NO <sub>3</sub> <sup>-</sup> ) (calculated by N)	mg/l	2	5	10	15
11	Phosphate (PO <sub>4</sub> <sup>3-</sup> ) (calculated by N)	mg/l	0.1	0.2	0.3	0.5
12	Cyanide (CN <sup>-</sup> )	mg/l	0.005	0.01	0.02	0.02
13	Arsenic (As)	mg/l	0.01	0.02	0.05	0.1
14	Cadmium (Cd)	mg/l	0.005	0.005	0.01	0.01
15	Lead (Pb)	mg/l	0.02	0.02	0.05	0.05

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16	Chromium III (Cr <sup>3+</sup> )	mg/l	0,05	0,1	0,5	1
17	Chromium VI (Cr <sup>6+</sup> )	mg/l	0,01	0.02	0.04	0.05
18	Copper (Cu)	mg/l	0.1	0.2	0.5	1
19	Zinc (Zn)	mg/l	0.5	1.0	1.5	2
20	Nickel (Ni)	mg/l	0.1	0.1	0.1	0.1
21	Iron (Fe)	mg/l	0.5	1	1.5	2
22	Mercury (Hg)	mg/l	0.001	0.001	0.001	0.002
23	Surface-active substances	mg/l	0.1	0.2	0.4	0.5
24	Total oils & grease	mg/l	0.01	0.02	0.1	0.3
25	Phenol (total)	mg/l	0.005	0.005	0.01	0.02
26	Organic chlorine plant protection chemicals					
	Aldrin + Dieldrin	µg/l	0.002	0.004	0,008	0,01
	Endrin	µg/l	0.01	0.012	0,014	0,02
	BHC	µg/l	0.05	0.1	0,13	0,015
	DDT	µg/l	0.001	0,002	0,004	0,005
	Endosulfan(Thiodan)	µg/l	0.005	0,01	0,01	0,02
	Lindan	µg/l	0.3	0,35	0,38	0,4
	Chlordane	µg/l	0.01	0,02	0,02	0,03
	Heptachlor	µg/l	0.01	0,02	0,02	0,05
27	Organic phosphorus - plant protection chemicals					
	Paration	µg/l	0.1	0.2	0.4	0.5
	Malation	µg/l	0.1	0.32	0.32	0.4
28	Herbicides					
	2,4D	µg/l	100	200	450	500
	2,4,5T	µg/l	80	100	160	200
	Paraquat	µg/l	900	1200	1800	2000
29	Total radioactivity α	Bq/l	0.1	0.1	0.1	0.1
30	Total radioactivity β	Bq/l	1.0	1.0	1.0	1.0
31	E.coli	MPN/ 100ml	20	50	100	200
32	Coliform	MPN/ 100ml	2500	5000	7500	10000

**Note:** The classification of surface water sources for assessing and controlling water quality, for different purpose of water :

A1 - Good use for domestic water supply and other purposes, such as type A2, B1 and B2.

A2 - Used for domestic water supply, but must apply the appropriate treatment technology, conservation of aquatic animals and plants, or other purposes, such as type B1 and B2.

B1 - For irrigation purposes or other purposes requiring similar quality standards or for the purposes as type B2.

B2 - Water transport and other purposes with low quality water requirements.

### **3. DETERMINATION METHOD**

3.1. Sampling for observing surface water quality under the guidance of national standards:

- TCVN 5992:1995 (ISO 5667-2: 1991) - Water quality. Sampling. Guidance on sampling techniques.
- TCVN 5993:1995 (ISO 5667-3: 1985) - Water quality. Sampling. Guidance on the preservation and handling of samples.
- TCVN 5994:1995 (ISO 5667-4: 1987) - Water quality. Sampling. Guidance on sampling from natural lakes and man-made lakes.
- TCVN 5996:1995 (ISO 5667-6: 1990) - Water quality. Sampling. Guidance on sampling on rivers and streams.

3.2. Analytical methods for determining the parameters of surface water quality comply with the guidance of national standards or corresponding analysis standards of international organizations:

- TCVN 6492-1999 (ISO 10523-1994)- Water quality. Determination of pH.
- TCVN 5499-1995- Water quality. Winkler method for determination of dissolved oxygen
- TCVN 6625-2000 (ISO 11923-1997)- Water quality. Determination suspended solids by filtration through glass-fibre filters.
- TCVN 6001-1995 (ISO 5815-1989)- Water quality. Determination of biochemical oxygen demand after 5 days (BOD5). Dilution and seeding method.
- TCVN 6491-1999 (ISO 6060-1989) - Water quality. Determination of the chemical oxygen demand.
- TCVN 6494-1999- Water quality. Determination of dissolved fluoride, chloride, nitrite, orthophosphate, bromide, nitrate and sulfate ions, using liquid chromatography of ions.
- TCVN 6194-1996 (ISO 9297-1989) - Water quality. Determination of chloride. Silver nitrate titration with chromate indicator (Mohr's method).

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- TCVN 6195-1996 (ISO 10359-1-1992) - Water quality. Determination of fluoride. Part 1: Electrochemical probe method for potable and lightly polluted water.
- TCVN 6178-1996 (ISO 6777-1984) - Water quality. Determination of nitrite. Molecular absorption spectrometric method.
- TCVN 6180-1996 (ISO 7890-3-1988)- Water quality. Determination of nitrate. Spectrometric method using sulfosalicylic acid.
- TCVN 5988-1995 (ISO 5664-1984) - Water quality. Determination of ammonium. Distillation and titration method.
- TCVN 6181-1996 (ISO 6703-1-1984) - Water quality. Determination of total cyanide.
- TCVN 6336-1998 (ASTM D 2330-1988)- Standard test method for methylene blue active substances.
- TCVN 5991-1995 (ISO 5666-3-1984) - Water quality. Determination of total mercury by flameless atomic absorption spectrometry. Method after digestion with bromine.
- TCVN 6002-1995 (ISO 6333-1986) - Water quality. Determination of manganese. Formaldoxime spectrometric method.
- TCVN 6053-1995 (ISO 9696-1992)- Water quality. Measurement of gross alpha activity in non-saline water. Thick source method.
- TCVN 6177-1996 (ISO 6332-1988) - Water quality. Determination of iron. Spectrometric method using 1,10-phenantrolin.
- TCVN 6193-1996 (ISO 8288-1986) - Water quality. Determination of cobalt nickel, copper, zinc, cadmium, and lead. Flame atomic absorption spectrometric methods
- TCVN 6197-1996 (ISO 5961-1994) -Water quality. Determination of cadmium by atomic absorption spectrometry.
- TCVN 6622-2000- Water quality. Determination of surfactants. Part 2. Determination of non-ionic surfactants using Dragendorff reagent.
- TCVN 6626-2000 (ISO 11969-1996) - Water quality. Determination arsenic. Atomic absorption spectrometric method (hydride technique).
- TCVN 6216-1996 (ISO 6439-1990) - Water quality. Determination of phenol index. 4-aminoantipyrine spectrometric methods after distillation.
- TCVN 5070-1995 -Water quality. Weight method for determination of oil and oil product.



- TCVN 6053-1995 (ISO 9696-1992) -Water quality. Measurement of gross alpha activity in non-saline water. Thick source method.
- TCVN 6219-1995 (ISO 9697-1992) -Water quality. Measurement of gross beta activity in non-saline water.
- TCVN 6187-1-1996 (ISO 9308-1-1990)- Water quality. Detection and enumeration of coliform organisms thermotolerant coliform organisms and presumptive Escherichia coli. Part 1: Membrane filtration method.

Parameters specified in this regulation without national standard on the guidance of analytical methods shall apply the corresponding analysis standard of international organizations.

#### **4. ORGANIZATION OF IMPLEMENTATION**

This Regulation applies for replacing TCVN 5942:1995- Water quality. Surface water quality standard which is within the List of Vietnam Standards on Environment mandatorily applied together with Decision No. 35/2002/QĐ-BKHCMNT dated June 25th, 2002 by the Minister of Science, Technology and Quality.

In that case that normative national standards in this regulation have amendments, supplements or replacements, shall apply the new ones.

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