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## Integrated wastewater discharge standard

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**Market and Quality Supervision Management Committee of Tianjin.**

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# Integrated wastewater discharge standard

## 1 Application scope

This standard specifies the terms and definitions of water pollutant discharge, standard grading, pollutant discharge control requirements, pollutant monitoring requirements, implementation and supervision.

This standard is applicable to the discharge management of water pollutants in the existing pollutant discharge units [Translator note: “unit” refers to an organization / entity] of Tianjin, as well as the environmental impact assessment of construction projects, the design of environmental protection facilities of construction projects, the completion acceptance, the discharge management after commissioning.

This standard applies to the discharge of water pollutants permitted by law. The location of newly-established pollution sources and the management of existing sources in special protection areas shall be in accordance with the Laws of the People's Republic of China on the Prevention and Control of Water Pollution, the Law of the People's Republic of China on Marine Environmental Protection, the Law of the People's Republic of China on Environmental Impact Assessment, as well as other laws, regulations and provisions.

In accordance with the principle that the integrated discharge standards and industrial discharge standards are not cross-executed, where there are national or local industry water pollutant discharge standards, it shall implement the corresponding industrial water pollutant discharge standards in accordance with their scope of application. For other pollutant-discharge units, the water pollutant-discharge units shall implement this standard.

The water pollutant-discharge control requirements as specified in this standard are applicable to the discharge of water pollutants directly or indirectly by the pollutant-discharge unit outside its legal boundary.

## 2 Normative references

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) are applicable to this standard.

GB 6920 Water quality - determination of pH value - Glass electrode method

GB 7466 Water quality - Determination of total chromium

GB 7467 Water quality - Determination of chromium (6) - 1.5 Diphenylcarbahydrazide spectrophotometric method

GB 7475 Water quality - Determination of copper, zinc, lead and cadmium - Atomic absorption spectrometry

GB 7484 Water quality - Determination of fluoride - Ion selective electrode method

GB 7485 Water quality - Determination of total arsenic - Silver diethyldithiocarbamate spectrophotometric method

GB 7494 Water quality - Determination of anionic surfactants - Methylene blue spectrophotometric method

GB 8978 Integrated wastewater discharge standard

GB 11889 Water quality - Determination of aniline compounds- Spectrophotometric method with N-(1-naphthyl) ethylenediamine azo

GB 11890 Water quality - Determination of benzene and its analogies gas chromatographic method

GB 11893 Water quality - Determination of total phosphorus - Ammonium molybdate spectrophotometric method

GB 11901 Water quality - Determination of suspended substance - Gravimetric method

GB 11902 Water quality - Determination of selenium - Diaminonaphthalene fluorometric method

GB 11903 Water quality - Determination of colority

GB 11907 Water quality - Determination of silver - Flame atomic absorption spectrophotometric method

GB 11911 Water quality - Determination of iron and manganese - Flame atomic absorption spectrometric method

GB 11912 Water quality - Determination of nickel - Flame atomic absorption spectrometric method

GB 13192 Water quality - Determination of organic phosphorous pesticide in water - Gas chromatography

GB/T 14204 Water quality - Determination of alkylmercury - Gas

zymotechnics and filter membrane

HJ/T 399 Water quality - Determination of the chemical oxygen demand - Fast digestion spectrophotometric method

HJ 478 Water quality - Determination of polycyclic aromatic hydrocarbons by liquid-liquid extraction and solid-phase extraction high performance liquid chromatography

HJ 484 Water quality - Determination of cyanide volumetric and spectrophotometry method

HJ 488 Water quality - Determination of Fluoride - Fluorine reagents spectrophotometry

HJ 501 Water quality - Determination of total organic carbon - Combustion oxidation nondispersive infrared absorption method

HJ 503 Water quality - Determination of volatile phenolic compounds - 4-AAP spectrophotometric method

HJ 505 Water quality - Determination of biochemical oxygen demand after 5 days (BOD5) - Dilution and seeding method

HJ 535 Water quality - Determination of ammonia nitrogen - Nesslers reagent spectrophotometry

HJ 536 Water quality - Determination of ammonia nitrogen - Salicylic acid spectrophotometry

HJ 537 Water quality - Determination of ammonia nitrogen - Distillation-neutralization titration

HJ 585 Water quality - Determination of free chlorine and total chlorine - Titrimetric method using N,N-diethyl-1,4-phenylenediamine

HJ 586 Water quality - Determination of free chlorine and total chlorine - Spectrophotometric method N,N-diethyl-1,4-phenylenediamine

HJ 591 Water quality - Determination of Pentachlorophenol by Gas Chromatography

HJ 592 Water quality - Determination of nitrobenzene-compounds by Gas chromatography

HJ 593 Water quality - Determination of phosphorus - Phosphomolybdenum blue spectrophotometric method

HJ 594 Water quality - Determination of the total amount of the developing

HJ 671 Water quality - Determination of total phosphorus - Flow injection analysis (FIA) and ammonium molybdate spectrophotometry

HJ 676 Water quality - Determination of phenolic compounds - Liquid-liquid extraction gas chromatography

HJ 686 Water quality - Determination of volatile organic compounds - Purge and trap/gas chromatography

HJ 694 Water quality - Determination of mercury，arsenic，selenium，bismuth and antimony - Atomic fluorescence spectrometry

HJ 699 Water quality - Determination of organochlorine pesticides and chlorobenzenes - Gas chromatography mass spectrometry

HJ 700 Water quality - Determination of 65 elements - Inductively coupled plasma mass spectrometry

HJ 716 Water quality - Determination of nitroaromatics - Gas chromatography mass spectrometry

HJ 744 Water quality - Determination of phenols compounds - Gas chromatography mass spectrometry

HJ 755 Water quality - Determination of total coliforms and fecal coliforms - Paper strip method

HJ 757 Water quality - Determination of chromium - Flame atomic absorption spectrometry

HJ 776 Water quality - Determination of 32 elements - Inductively coupled plasma optical emission spectrometry

HJ 806 Water quality - Determination of acrylonitrile and acrolein - Purge and trap / gas chromatography

HJ 810 Water quality - Determination of volatile organic compounds - Headspace / Gas chromatography mass spectrometry

HJ 811 Water quality - Determination of total selenium - 3,3'-Diaminobenzidine spectrophotometric method

HJ 822 Water quality - Determination of aniline compounds - Gas chromatography mass spectrometry

HJ 823 Water quality - Determination of cyanide - Flow injection analysis (FIA) and spectrophotometric method

HJ 824 Water quality - Determination of sulfide - Flow injection analysis (FIA)

**Direct discharge**

The behavior that pollutant-discharge units directly discharge water pollutants into environmental water bodies.

**3.6**

**Indirect discharge**

The behavior that pollutant discharge units discharge water pollutants into the public sewage treatment system.

**3.7**

**Public sewage treatment plant**

The enterprise or institute which collects wastewater through sewage pipelines (canals) and so on, provides waste water treatment services to more than two pollutant discharge units, and whose discharge can meet the requirements of relevant discharge standards, including urban sewage treatment plants of various scales and types, regional (including various industrial parks, development zones, industrial agglomeration zones) wastewater treatment plants and so on. Its wastewater treatment grade shall reach grade II or above.

**3.7** [should be 3.8]

**Industrial park**

Various industrial parks, development zones, bonded zones, export processing zones, eco-industrial demonstration zones, industrial agglomeration zones, etc. which are approved by the State or Tianjin Municipality with clear geographical boundaries.

# 4 Standard grading

**4.1** This standard is divided into three grades in accordance with different discharge destinations and different functions of wastewater, of which the grade I and grade II are direct discharge standards, the grade III is indirect discharge standard.

**4.2** For the wastewater which is discharged into the water-body of category IV (inclusive) and above in GB 3838 and the water-body within its impoundment area, as well as the wastewater which is discharged into the category II and category III sea areas in GB 3097, it shall implement the grade I standard.

**4.3** For the wastewater which is discharged into the water-body of the category

must not negotiate for discharging.

**5.4 Other provisions**

**5.4.1** The base water-displacement of the unit-product from each industry shall implement the corresponding national and local standards.

**5.4.2** In addition to the discharge limits as specified in this standard, the discharge of water pollutants shall also meet the control limits of total pollutant discharge which are approved or specified by the national or local environmental protection administrative department.

# 6 Pollutant monitoring requirements

**6.1** For the sampling of wastewater as discharged from the pollutant discharge unit, it shall, in accordance with the types of the monitored pollutants, be performed at the specified monitoring location of pollutant discharge. The pollutant discharge unit shall follow the relevant requirements of the national technical specifications on pollution source monitoring to arrange the sampling port, it shall provide a permanent marking of pollutant discharge outlet at the monitoring position of pollutant discharge.

**6.2** For the requirements of the installation of automatic pollutant discharge monitoring equipment, for new (rebuilding, extending) construction units and existing units, it shall be implemented in accordance with the relevant laws and the provisions of “Administrative measures for automatic monitoring of pollution sources”.

**6.3** The pollutant discharge unit shall monitor the discharge status and keep the original monitoring records in accordance with the requirements of relevant laws and regulations.

**6.4** The frequency, sampling time, quality control and other requirements for monitoring the pollutant discharge shall be implemented in accordance with the provisions of the national and local relevant technical specifications on pollution source monitoring as well as the requirements of the environmental protection administrative department.

**6.5** The concentration of water pollutants is determined by using the method standards listed in Table 3.

**6.6** After this standard is issued-implemented, if there are new standards for methods monitoring the pollutants as listed in Table 3, then, such standards are also applicable to the determination of corresponding pollutants of this discharge standard.

| | | | |
|---|---|---|---|
| 29 | Aniline | Spectrophotometric method with N-(1-naphthyl) ethylenediamine azo | GB 11889<br>HJ 822 |
| 30 | Nitrobenzene | Gas chromatography<br>Liquid-liquid extraction / solid phase extraction-gas chromatography<br>Gas chromatography-mass spectrometry | HJ 592<br>HJ 648<br><br>HJ 716 |
| 31 | Anionic surfactant | Methylene blue spectrophotometry<br>Flow injection-methylene blue spectrophotometry | GB 7494<br>HJ 826 |
| 32 | Total copper | Atomic absorption spectrophotometry<br>Inductively coupled plasma atomic emission spectrometry (ICP-AES)<br>Inductively coupled plasma mass spectrometry (ICP-MS) | GB 7475<br>HJ 776<br><br>HJ 700 |

**Table 3 (continued)**

| No. | Control item | Determination method | Implemented standard |
|---|---|---|---|
| 33 | Total zinc | Atomic absorption spectrophotometry<br>Inductively coupled plasma atomic emission spectrometry (ICP-AES)<br>Inductively coupled plasma mass spectrometry (ICP-MS) | GB 7475<br>HJ 776<br><br>HJ 700 |
| 34 | Total manganese | Flame atomic absorption spectrometry<br>Inductively coupled plasma atomic emission spectrometry (ICP-AES)<br>Inductively coupled plasma mass spectrometry (ICP-MS) | GB 11911<br>HJ 776<br><br>HJ 700 |
| 35 | Color developer | 169 coupler method<br>169 coupler spectrophotometry (provisional) | GB 8978-1996 Appendix D<br>HJ 595 |
| 36 | Total amount of developer and oxide | Iodine-starch colorimetry<br>Iodine-starch spectrophotometry (provisional) | GB 8978-1996 Appendix D<br>HJ 594 |
| 37 | Elemental phosphorus | Phosphomolybdenum blue spectrophotometry<br>Phosphorus molybdenum blue colorimetry | HJ 593<br>GB 8978-1996 Appendix D |
| 38 | Organophosphorus pesticides (in P) | Gas chromatography | GB 13192 |
| 39 | Dimethoate | Gas chromatography | GB 13192 |
| 40 | Parathion | Gas chromatography | GB 13192 |
| 41 | Methyl parathion | Gas chromatography | GB 13192 |
| 42 | Malathion | Gas chromatography | GB 13192 |
| 43 | Pentachlorophenol and sodium pentachlorophenol (in pentachlorophenol) | Gas chromatography | HJ 591 |

| | | | |
|---|---|---|---|
| | | Purge and trap/gas chromatography<br>Headspace/gas chromatography-mass spectrometry | HJ 686<br>HJ 810 |
| 55 | Chlorobenzene | Gas chromatography<br>Gas chromatography<br>Purge and trap/gas chromatography-mass spectrometry<br>Headspace/gas chromatography-mass spectrometry | HJ/T 74<br>HJ 621<br>HJ 639<br>HJ 810 |
| 56 | 1,2-dichlorobenzene | Gas chromatography<br>Purge and trap/gas chromatography-mass spectrometry<br>Headspace/gas chromatography-mass spectrometry | HJ 621<br>HJ 639<br>HJ 810 |
| 57 | 1,4-dichlorobenzene | Gas chromatography<br>Purge and trap/gas chromatography-mass spectrometry<br>Headspace/gas chromatography-mass spectrometry | HJ 621<br>HJ 639<br>HJ 810 |
| 58 | Nitrochlorobenzene | Liquid-liquid extraction/solid phase extraction-gas chromatography<br>Gas chromatography-mass spectrometry | HJ 648<br>HJ 716 |
| 59 | 2,4-dinitrochlorobenzene | Liquid-liquid extraction/solid phase extraction-gas chromatography<br>Gas chromatography-mass spectrometry | HJ 648<br>HJ 716 |
| 60 | Phenol | Liquid-liquid extraction/gas chromatography<br>Gas chromatography-mass spectrometry | HJ 676<br>HJ 744 |
| 61 | M-cresol | Liquid-liquid extraction/gas chromatography<br>Gas chromatography-mass spectrometry | HJ 676<br>HJ 744 |
| 62 | 2,4-dichlorophenol | Liquid-liquid extraction/gas chromatography<br>Gas chromatography-mass spectrometry | HJ 676<br>HJ 744 |

**Table 3 (continued)**

| No. | Control item | Determination method | Implemented standard |
|---|---|---|---|
| 63 | 2,4,6-trichlorophenol | Liquid-liquid extraction/gas chromatography<br>Gas chromatography-mass spectrometry | HJ 676<br>HJ 744 |
| 64 | Dibutyl phthalate | Liquid chromatography | HJ/T 72 |
| 65 | Dioctyl phthalate | Liquid chromatography | HJ/T 72 |
| 66 | Acrylonitrile | Purge and trap/gas chromatography<br>Gas chromatography | HJ 806<br>HJ/T 73 |
| 67 | Total selenium | 2,3-Diaminonaphthalene fluorometric method<br>Atomic fluorescence<br>Inductively coupled plasma mass spectrometry (ICP-MS)<br>3,3'-Diaminobenzidine spectrophotometry | GB 11902<br>HJ 694<br>HJ 700<br>HJ 811 |
| 68 | Number of fecal coliforms | Manifold zymotechnics and filter membrane (trial)<br>Paper strip method | HJ/T 347<br>HJ 755 |
| 69 | Total chlorine | Titrimetric method using N,N-diethyl-1,4-phenylenediamine<br>Spectrophotometric method using N,N-diethyl-1,4-phenylenediamine | HJ 585<br>HJ 586 |

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