

HJ

INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

HJ 354-2019

**Technical specification for check and acceptance of wastewater
on-line monitoring system (CODCr, NH₃-N et al.)**

(English Translation)

Issued on: December 24, 2019

Implemented on: March 24, 2020

Issued by: Ministry of Ecology and Environment

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1 Scope

This standard specifies the acceptance conditions and acceptance procedures of the wastewater online monitoring system; the acceptance requirements for water pollution source discharge outlets, flow monitoring units, monitoring stations, automatic water sampling units and data control units; the acceptance methods and acceptance technical indicators of flow meters, water quality automatic samplers and water quality automatic analyzer; as well as the acceptance content of the operation and maintenance plan of the wastewater online monitoring system.

This standard applies to the acceptances of the components of the wastewater online monitoring system constructed and installed in accordance with HJ 353 as well as the online monitoring instruments of water pollution sources such as flow meters, automatic water quality samplers, water quality automatic analyzers of chemical oxygen demand (CODCr), water quality automatic analyzers of total organic carbon (TOC), water quality automatic analyzers of ammonia nitrogen (NH₃-N), water quality automatic analyzer of total phosphorus (TP), water quality automatic analyzer of total nitrogen (TN), thermometers, pH water quality automatic analyzers, etc.

The wastewater online monitoring system specified in this standard is applicable to the online monitoring of chemical oxygen demand (CODCr), ammonia nitrogen (NH₃-N), total phosphorus (TP), total nitrogen (TN), pH value, temperature, flow monitoring factors.

2 Normative references

This standard refers to the following documents or clauses therein. For undated references, the valid version is applicable to this standard.

GB/T 6920 Water quality - Determination of pH value - Glass electrode method

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

GB/T 15562.1 Environmental protection graphic sign - Discharge port (source)

GB/T 50093 Code for construction and acceptance of automation instrumentation engineering

GB/T 50168 Code for construction and acceptance of cable lines for electrical installation engineering

HJ 212 Data transmission standard for online monitoring systems of pollutant

HJ 353-2019 Technical specification for installation of wastewater on-line monitoring system (CODCr, NH3-N et al.)

HJ 355 Technical specification for operation of wastewater on-line monitoring system (CODCr, NH3-N et al.)

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

3 Terms and definitions

The following terms and definitions apply to this standard.

3.1

Wastewater on-line monitoring system

Refers to a system consisting of software and hardware facilities that implement functions such as monitoring the flow of water pollution source flow, collecting water samples from water pollution sources, analyzing water samples from water pollution sources, analyzing data statistics and uploading.

3.2

Wastewater on-line monitoring equipment

Refers to the instruments and meters used in the wastewater online monitoring system to continuously monitor the concentration and discharge of pollutants online.

3.3

Instantaneous sample

Refers to the water sample collected at one time at a sampling point.

3.4

Composite sample

Refers to a mixture of water samples collected at the same sampling point continuously or at different times.

4.1.1 Provide relevant technical information on the type selection, engineering

design, construction, installation and commissioning, performance of the wastewater online monitoring system.

4.1.5 The automatic water sampling unit has been running stably for one month.

It can collect instantaneous samples and representative composite samples for the analysis of the wastewater online monitoring instruments. It may retain samples and alarm.

4.1.6 The power supply is uninterrupted during the acceptance process.

4.1.7 The data control unit has been operating stably for one month, sending data to the monitoring center platform in time, during which the equipment operation rate shall be greater than 90%; the data transmission rate shall be greater than 90%.

4.2 Acceptance contents

After the wastewater online monitoring system is installed, commissioned, and test run, and connected to the environmental protection authority, it shall undergo construction acceptance, instrument and equipment acceptance, network acceptance, operation and maintenance program acceptance.

5.1.1 The layout of pollution source discharge outlets meets the requirements

of HJ 91.1.

5.2 Flow monitoring unit

5.2.1

The dredging work platform is provided at the rear end of the triangular weir and the rectangular weir, which can facilitate the removal of deposits at the rear end of the weir trough.

5.2.2

There is a working platform for the inspection and comparison of ultrasonic probes at the installation place of the flowmeter, which can facilitate the maintenance and comparison of

the flowmeter.

5.2.5

The installation of protective railings shall all meet the requirements.

5.3 Monitoring station building

5.3.1

The monitoring station building has its all rooms dedicated for special purposes.

5.4.1 Realize the functions of collecting instantaneous samples and composite

samples, mixing and temporarily storing water samples, automatic washing and emptying of the mixing bucket.

5.4.2 Realize the function of retaining composite samples and instantaneous samples.

5.4.3 Realize in-situ measurement of pH automatic water analyzer, thermometer or the measurement of instantaneous sample.

5.4.4 CODCr, TOC, NH₃-N, TP, TN automatic water analyzer measures the composite sample.

5.4.5 The necessary anti-freezing or anti-corrosion facilities shall be provided.

5.4.6 Set artificial comparison sampling port for composite samples.

5.4.7 The pipes of the automatic water sampling unit are open pipes, marked with water flow direction.

5.5 Data control unit

5.5.1

The data control unit can coordinate and operate the wastewater online monitoring system; collect, store, and display monitoring data and running daily records; upload the wastewater monitoring data to the monitoring center platform.

6.1.1 The various cables and pipes of the wastewater online monitoring

instrument shall be protected by pipes laid in the ground or erected in the air.

The cables erected in the air shall be attached to a solid bridge frame; the cables, pipes, as well as both ends of the cables, pipes are clearly marked. The construction of cable lines shall meet the relevant requirements of GB/T 50168.