Translated English of Chinese Standard: HJT373-2007
Translated by: www.ChineseStandard.net
Wayne Zheng et al.
Email: Sales@ChineseStandard.net

HJ

INDUSTRY STANDARD

OF THE PEOPLE'S REPUBLIC OF CHINA

HJ/T 373-2007

Technical specifications of quality assurance and qualify control for monitoring of stationary pollution source (on trial)

固体污染源检测
质量保证与质量控制技术规范（试行）

Issued on: November 12, 2007 **Implemented on: January 1, 2008**

Issued by: State Environmental Protection Administration

Announcement of State Environmental Protection Administration

2007 No. 72

In order to implement *Environmental Protection Law of the People's Republic of China*, to protect environment, ensure human health, specify the supervision and management of environmental pollution source and improve the accuracy and reliability of monitoring data, hereby approve and issue two standards, including *The technical requirement and test procedure for Water Quality Automatic Sampler* as national environmental protection industry standard.

The standard name and standard number are as follows:

I. "The Technical Requirement and Test Procedure for Water Quality Automatic Sampler" (HJ/T372-2007)

II. Technical specifications of quality assurance and qualify control for monitoring of stationary pollution source (on trial) (HJ/T 373-2007)

The above standards shall be a directive standards, be implemented since January 1, 2008, and be published by the China Environmental Science Press, and the content of the standards is available at the website of State Environmental Protection Administration (www.sepa.gov.cn/tech/hjbz/bzwb).

It is hereby to announce.

November 12, 2007

Table of Contents

Foreword

In order to implement *Environmental Protection Law of the People's Republic of China*, *Water Pollution Prevention and Control Law of the People's Republic of China* and *Atmospheric Pollution Prevention Law of the People's Republic of China*, standardize the monitoring of pollution source, and ensure the accuracy and reliability of monitoring data and information, hereby formulate this Standard.

This Standard specifies technical requirements for quality assurance and quality control of sampling and testing in the process of manually monitoring and comparison monitoring of waste water discharge and exhaust emission of stationary pollution source.

This Standard is a directive standard.

This Standard is proposed by the Department of Science, Technology and Standards of State Environmental Protection Administration.

Drafting organizations of this Standard are: China National Environmental Monitoring Center, and Shenyang Municipal Environmental Monitoring Center.

This Standard was approved by State Environmental Protection Administration on November 12, 2007.

This Standard was implemented on January 1, 2008.

State Environmental Protection Administration shall be responsible for interpreting this Standard.

Technical specifications of quality assurance and qualify control for monitoring of stationary pollution source (on trial)

1 Scope of application

This Standard specifies technical requirements for quality assurance and quality control of sampling and testing in the process of manually monitoring and comparison monitoring of waste water discharge and exhaust emission of stationary pollution source.

This Standard applies to the environmental monitoring of waste water discharge and exhaust emission of stationary pollution sources.

2 Normative references

The articles contained in the following documents have become part of this Standard when they are quoted herein. For the undated documents so quoted, all the modifications or revisions made thereafter shall be applicable to this Standard.

GB 8978-1996 Integrated wastewater discharge standard

GB 12998-91 Water quality—Guidance on sampling techniques

GB 16297-1996 Comprehensive emission standard of air pollutants

GB/T 16157-1996 The determination of particulates and sampling methods of gaseous pollutants emitted from exhaust gas of stationary source

HJ/T 75-2007 Specifications for continuous emissions monitoring of flue gas emitted from stationary sources (on trial)

HJ/T 76-2007 Specification and test procedure for continuous emission monitoring systems of flue gas emitted from stationary sources (on trial)

HJ/T 91-2002 Technical specifications requirements for monitoring of surface water and waste water

HJ/T 92-2002 Technical requirements for monitoring of total amount of pollutants in waste water

HJ/T 355-2007 Technical specifications for the operation and assessment of Wastewater on-line monitoring system (on trial)

HJ/T 356-2007 Technical specifications for validity of wastewater on-line monitoring data (on trial)

Check-up System of Employment with Certificates for Environmental Monitoring Staff (Huanfa [2006] No.114)

3 Terms and definitions

For the purpose of this Standard, the following terms and definitions shall apply.

3.1 Quality assurance

The total quality management during the process of environment monitoring includes all activities and measures to ensure the accuracy and reliability of environmental monitoring data.

3.2 Quality control

It refers to the operational techniques and activities adopted to meet the quality requirements of environmental monitoring.

3.3 Comparison monitoring

It refers that in order to verify the accuracy of results of water and gas online automatic monitor, manual monitoring method and online automatic monitor method are simultaneously adopted; manual monitoring results are the basis for verifying online automatic monitoring data. Of which the manual monitoring methods shall use national standard methods or other currently effective methods.

3.4 Field-laboratory quality control

It refers to the process of synchronous sampling and analysis of quality control samples and practical samples according to fixed routines. And its quality control results can be used to determine whether the error of the monitoring results derives from field sampling or laboratory analysis.

4 The technical requirements of quality assurance and quality control for waste water monitoring

4.1 Monitoring personnel

When water is deeper than 1 m, sampling shall be conducted at 1/4 depth of water under surface layer; when depth of water is not more than 1 m, sampling shall be conducted at 1/2 depth of water; the sampling location shall be close to the center of sampling section and comply with the requirements of 6.3.2 in HJ/T92-2002.

4.4.5 Sampling apparatus

4.4.5.1 Requirements of sampling apparatuses

Sampling apparatuses shall be able to mark the sampling depth, and texture and structure shall comply with the provisions of GB 12998-91.

4.4.5.2 Cleaning of sampling apparatuses

The sampling apparatuses are cleaned according to the requirements of 4.2.3.1 in HJ/T 91-2002.

4.4.5.3 Sampling of sample bottle

Sampling personnel shall regularly sample the sample bottles and make record, quality control personnel shall randomly verify. 3% of each batch of sample bottles cleaned shall be sampled, to detect the occurrences of items to be detected (excluding dissolved oxygen, biochemical needed oxygen, bacteria, and other special items). If detected, it can be determined if it is qualified according to the requirements of analysis accuracy of such item. If finding unqualified sample bottle, source and cleaning condition of sample bottle shall be immediately investigated to find out reason and correct.

4.4.6 Collection, storage, transport and records of samples

Collection, storage, transport and records of samples shall comply with the provisions of 5.2.2 and 5.2.3 in HJ/T 91-2002. Quality assurance measures of sampling site shall comply with the requirements of 9.2 in HJ/T 92-2002. Collection records of samples can refer to Annex A.

4.5 The basic conditions of analytical laboratory

The basic conditions of analytical lab shall comply with the provisions of 11.5 in HJ/T 91-2002. The mutual-influenced monitoring items shall not be conducted in the same laboratory.

4.6 Quality control of laboratory analysis

4.6.2.5.2 Performance calibration of analytical instruments

Calibrate the analytical instruments according to the specified method. Instruments shall be calibrated on the analysis day or according to the instrument requirements. The contents of the mass spectrometer calibration include the mass number, the ion abundances, etc.

4.6.2.5.3 The standard curve verification

On the sample analysis day or after the instrument is operated for every 12 hours, the standard solution shall be used to verify the standard curve. Normally, if the relative error between the analysis results of standard solution and standard value is not more than 20%, the original standard curve can still be used; if there are specified requirements for standard curve in the analysis methods, it shall be performed according to the method requirements. If the standard curve is found out of control, it shall be re-drawn immediately.

4.6.3 Inter-laboratory quality control

Inter-laboratory quality control can be conducted using password sample assessment, proficiency testing and other ways, which shall be conducted at least once a year. Quality control records can refer to Annex A.

4.7 Standard samples and chemical reagents

The environmental standard samples and chemical reagents used in the monitoring process shall be qualified products produced by normal manufacturers.

4.8 Measurement of the amount

When monitoring the amounts of waste water, the waste water flow and average concentration shall be measured while sampling and the monitoring method shall be performed according to the requirements of HJ/T92-2002.

4.9 Monitoring report

Level 3 audit system shall be performed for the monitoring report. The audit scope shall include sample collection, transfer, original records of laboratory analysis, data reports, etc. The original records shall include the records of quality control measures. The monitoring report may be approved only when the test results of quality control sample are qualified

and when the zero point drift is greater than the instrument regulating indicators, test shall be conducted again.

5.4.5.4 Sampling of absorption bottles

When using absorption liquid to collect gaseous pollutants, absorption bottles shall be regularly sampled for inspection. 5% of each batch of absorption bottles cleaned shall be sampled for detecting its substance under test. If detected, it may determine if the absorption bottle is qualified according to the analysis precision requirements of the item. If finding the unqualified absorption bottle, source and cleaning condition of absorption bottle shall be immediately investigated, so as to find out the reasons and make correction. Quality control records can refer to Annex A.

5.4.6 Sampling records

Sampling records shall be comprehensive and detailed, it can refer to Annex A.

5.5 Quality control of laboratory analysis

The quality of various reagents and pure water for laboratory analysis shall comply with the requirements of analysis method. Monitoring samples shall be timely analyzed, otherwise it must be saved according to requirements of monitoring items, and it must be analyzed within the prescribed period. There shall include at least one whole procedure blank sample in each batch of samples, quality control samples shall be determined in the laboratory.

5.6 Standard samples and chemical reagents

Perform according to the provisions of 4.7 of this Standard.

5.7 Monitoring report

Perform according to the provisions of 4.9 of this Standard.

5.8 Flue gas online monitoring system contrastive monitoring quality assurance and quality control technology requirements

5.8.1 Contrastive monitoring conditions

Operation of online automatic monitoring equipment shall meet the relevant requirements of HJ / T 75-2007 and HJ / T 76-2007.

5.8.2 Basic requirements for contrastive monitoring quality control

Annex B

(Informative)

Verification methods of boiler operating load

B.1 Steam boiler

B.1.1 Steam boiler load

Steam boiler load refers to the boiler duty, that is the quantity of steam in a unit time, and the unit is t / h.

B.1.2 Steam flow meter method

On boilers with the larger tonnage, it is generally equipped with a steam flow meter. The quantity of steam of boiler per hour can be directly calculated through flow meter. Flow meter shall be calibrated before testing.

B.1.3 Measuring-tank method

For the boilers with the small tonnage, its operating load is generally calculated by measuring-tank method. The method calculates the feeding water quantity of boiler through measuring the water level changes of tank, and then converts into the boiler duty. Calculate the feeding water quantity according the Formula (B.1):

$$\text{Feeding water quantity (t)} = \text{water level difference (m)} \times \text{tank area (m}^2\text{)} \times \text{water density (t/m}^3\text{)} \quad \text{(B.1)}$$

Generally using two tanks, one is used for the measurement tank, and the other is used for the consumption tank. The measurement tank shall be located above the consumption tank, its volume shall be not less than 0.5 m^3, and the volume of consumption tank shall be slightly larger than that of the measurement tank. The measurement tank shall be calibrated after being installed, and the gravimetric method is applicable to calibration method. Diameters of inlet and outlet pipe of the measurement tank shall be not too small, so as to ensure that the time to fill and empty is less than the required time of consumption tank. When recording the water volume by this method, water supply pipe and pump shall not be leaked, if leaking is found, it must timely carry out maintenance and repair before use again.

B.1.4 Water meter method

$$Q_0 = 36 \times 10^5 \times 0.7 = 25.2 \times 10^5 \text{ kJ/h}$$

This is an excerpt of the PDF (Some pages are marked off intentionally)

------ The End ------