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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB 17378.2-2007

**The specification for marine monitoring - Part 2: Data
processing and quality control of analysis**

海洋监测规范 第2部分: 数据处理与分析质量控制

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Foreword

All technical content in this section is mandatory. GB 17378 "marine monitoring" is divided into seven parts.

--- Part 1. General;

--- Part 2. Data processing and analysis of quality control;

--- Part 3. Sample collection, storage and transport;

--- Part 4. Seawater analysis;

--- Part 5. Sediment analysis;

--- Part 6. Analysis of the organism;

--- Part 7. Ecological survey of offshore pollution and biological monitoring. This section GB 17378 Part 2, instead of GB 17378.2-1998 "specification for marine monitoring Part 2. Data processing and Analytical quality control. " This section compared with GB 17378.2-1998 main changes are as follows:

--- Amend the relevant provisions of the general regulations (1998 edition, Chapter 4; Chapter 4 of this edition);

--- Revised and improved the standard blank definition (1998 Version 3.6;

- Again given the sensitivity of the method definition (1998 Version 3.11; edition 3.9);
- Revised the detection limit, the lower limit of the measurement concept more clearly the meaning of these two concepts of probability (the 1998 edition 3.12,1.13; this Version 3.10, 3.11);
- Precision in the definition, and supplement its usual metric (1998 Version 3.17;
- Gives a more precise definition of the system error and random error (the 1998 edition 3.29,3.30; this edition 3.25,3.26);

1 Scope

Part 2 of China's mandatory specification for marine monitoring, covering data processing and analytical quality control. This is the part that decides whether the numbers can be believed. Marine analysis works at concentrations near the detection limit - trace metals and organics in seawater are measured in parts per billion and below - where contamination from the vessel, the sampler, the reagents and the laboratory itself is the dominant source of error, and where a result can be produced that is entirely an artefact. The part specifies the blanks, duplicates, spikes and reference materials that must accompany a batch, the control charts by which a method is judged to be in control, the criteria for accepting or rejecting data, and the treatment of values below the detection limit, which is where more monitoring datasets have been ruined by careless handling than by any laboratory error.

GB 17378 of the provisions of this part of the ocean monitoring data processing commonly used terms and symbols, statistical tests outliers, the mean difference between two The significance test, validation of analytical methods, sample preparation and application of internal control, analytical quality control drawing and the like. This section applies to the marine environment monitoring analysis of seawater, sediment analysis, biological analysis, ecological survey offshore pollution and biological monitoring Data Processing and Analysis laboratory internal quality control. Oceanic and Atmospheric pollutants into the sea fluxes survey, dredging and marine dumping investigation was also Reference may be used.

2 Normative references

The following documents contain provisions which, through reference in this Part of GB 17378, constitute provisions of this part. For dated reference documents Member, all subsequent amendments (not including errata content) or revisions do not apply to this section, however, encouraged to reach under this section Parties to research agreement to use the latest versions of these documents. For undated reference documents, the latest versions apply to this section.

GB 8170 numerical rounding rules

GB 17378.5-2007 marine monitoring Part 5. Sediment analysis

GB 17378.6-2007 marine monitoring Part 6. Analysis of the organism

3 Terms and Definitions

The following terms and definitions apply to this part of GB 17378.

3.1 Initial sample collection site.

3.2 Pretreated need to carry out sample measurement.

3.3 Independent samples taken from the same two or more samples.

3.4 Zero concentration corresponding to the standard series of analytical signal response.

3.5 In full agreement with the conditions of sample analysis, measurement results of blank samples.

3.6 The magnitude of the test signal value of the sample items (X) and analytical instruments given a correlation curve (Y) between. Calibration curves are divided into standard song Line and curve.

3.7 Determination of the sample analysis process steps are identical to the standard series measured under the conditions of the calibration curve obtained.

3.8 Calibration curves measured under standard measuring step series of somewhat more than sample analysis process is simplified conditions.

3.9 Sensitivity of a measuring method, equal in magnitude response indicates that the amount of the signal and the signal generated test substance concentration or mass Ratio. It reflects the degree of change in the concentration of the test substance units or units of quality changes resulting response signal indicative amount.

3.10 By one measurement can be 95% confidence probability qualitative judgment there is a minimum concentration or amount of material required for the test.

3.11 Confidence probability is 95%, the lowest concentration or the minimum amount can be measured quantitatively measured object.

3.12 The measurement results below the detection limit of XN.

3.13 Under specified conditions, the degree of mutual agreement between independent test results. Common standard deviation to measure.

4 General Provisions

4.1 original site work record on the specified form with a hard pencil, writing correct, should not apply. Need to correct wrong note when, in the wrong Uniform numbers on the horizontal line, write the correct figure up above it. 4.2

5.1 according to the method given in the recording and rounding the effective number of digits.

4.3 indicates that the test result and the dimensionless number of significant digits, indicate according to the analysis method specified. Without this provision, the a is a general principle of data only allowed at the end of a number is estimated (suspicious) value each other numbers are valid (credible), and so the decision And an integer number of decimal places. Mandatory due to changes in dimension without decimals to take place, the details of the calculation method, see Chapter 5.

4.4 XN below the detection limit of the test results should be reported "not detected", but in the regional monitoring detection rate accounted for more than half the sample frequency (including 1/2) or less than 1/2, 1/2 and 1/4 portions were taken XN amount of undetected participate statistical operation.

4.5 Data not performed the competent department under the quality control program generated data considered suspect. Suspicious data can not be used for offshore Environmental quality and marine environmental impact assessment.

4.6 parallel sample test is one way of analytical quality control. Principles laid down, not with the kind of simultaneous determination of internal projects, all bis test Parallel analysis of samples. Dissolved oxygen, water, oil, etc. to be measured parallel to double the original sample (these do not need to test-analysis of two parallel). If the analysis is not to sea Dual water sample relative deviation predetermined allowable value, as shown in Table 1 to perform.

4.7 sediments and organisms like double relative deviation table see GB 17378.5 and GB 17378.6.

4.8 natural samples spiked recoveries can not be beyond the range of values given method. Without this provision, executed in Table 2.

4.9 ocean monitoring, the use of analytical methods other than the specification must be done according to the provisions validation method comparison, reported to the competent authorities Approval of the record. Table 1 seawater parallel twin-like relative deviation table The results where the magnitude 10-410-510-6 10-710-810-9 10-

10 Relative deviation allowable limit / 1.0 2.5 510,203,050 calculation | AB | A + B x 100
Table

2 Recovery allowable value table Concentration or amount range / (Mug/L) Recovery rate/
< 10 060 - 110 > 10 080 to 110 > 100 090 ~ 110 Capacity and weight method 95 - 105

5.1.1 Significant figures

5.1.1.1 any specific measurement of the amount (given) Results are given by measuring the (fixed) value obtained was measured, also known as value. Measure Usually a number