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Water quality — Sampling —

Part 11:

Guidance on sampling of groundwaters

Qualité de l'eau — Échantillonnage —

Partie 11: Guide général pour l'échantillonnage des eaux souterraines



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 5667-11 was prepared by Technical Committee ISO/TC 147, *Water quality*, Sub-Committee SC 6, *Sampling (general methods)*.

ISO 5667 consists of the following parts, under the general title *Water quality — Sampling*:

- *Part 1: Guidance on the design of sampling programmes*
- *Part 2: Guidance on sampling techniques*
- *Part 3: Guidance on the preservation and handling of samples*
- *Part 4: Guidance on sampling from lakes, natural and man-made*
- *Part 5: Guidance on sampling of drinking water and water used for food and beverage processing*
- *Part 6: Guidance on sampling of rivers and streams*
- *Part 7: Guidance on sampling of water and steam in boiler plants*
- *Part 8: Guidance on the sampling of wet deposition*
- *Part 9: Guidance on sampling from marine waters*

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- *Part 10: Guidance on sampling of waste waters*
- *Part 11: Guidance on sampling of groundwaters*
- *Part 12: Guidance on sampling of sediments*

Annex A forms an integral part of this part of ISO 5667.

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Introduction

This part of ISO 5667 is one of a group of standards dealing with the sampling of specific types of water. It should be read in conjunction particularly with ISO 5667-1, ISO 5667-2 and ISO 5667-3, which deal respectively, and in a general manner, with the design of sampling programmes, sampling techniques and the preservation and handling of samples. The general terminology used is in accordance with that published in ISO/TC 147, *Water quality*, and more particularly with the terminology on sampling given in ISO 6107-2.

Water quality — Sampling —

Part 11: Guidance on sampling of groundwaters

1 Scope

This part of ISO 5667 provides guidance on the design of sampling programmes, sampling techniques and the handling of water samples taken from groundwater for physical, chemical and microbiological assessment. It does not cover sampling related to the day-to-day operational control of groundwater abstractions for potable or other purposes, but is concerned with the general surveillance of groundwater quality. Because of the complexity of groundwater systems, many specific sampling applications will require specialist hydrogeological advice which cannot be detailed in this part of ISO 5667.

A definition of the purpose of groundwater sampling is an essential prerequisite before identifying the principles to be applied to a particular sampling problem. The general purpose of sampling programmes commonly devised for groundwaters is to survey the quality of groundwater supplies, to detect and assess groundwater pollution and to assist in groundwater resource management. The principles set out in this part of ISO 5667 also apply to the following more detailed objectives:

- a) to determine the suitability of groundwater as a source of drinking water or industrial/agricultural water, and to monitor its quality during supply;
- b) to identify, at an early stage, the pollution of aquifers caused by potentially hazardous surface or sub-surface activities (e.g. the operation of waste disposal sites, industrial developments, mineral exploitation, agricultural practices, changes in land use);
- c) to monitor and understand the movement of pollutants, in order to assess their impact on

groundwater quality and to calibrate and validate suitable groundwater quality models;

- d) to develop an understanding of groundwater quality variations, including those caused by deliberate actions (e.g. variations in groundwater pumping regimes, groundwater recharge by effluent, surface clean-up activities arising from contaminated waste disposal sites), in order to achieve optimal resource management;
- e) to collect data for pollution-control law-enforcement.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 5667. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 5667 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 5667-1:1980, *Water quality — Sampling — Part 1: Guidance on the design of sampling programmes.*

ISO 5667-2:1991, *Water quality — Sampling — Part 2: Guidance on sampling techniques.*

ISO 5667-3:1985, *Water quality — Sampling — Part 3: Guidance on the preservation and handling of samples.*

ISO 6107-2:1989, *Water quality — Vocabulary — Part 2.*