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Australian/New Zealand Standard[®]

Water quality—Sampling

**Part 11: Guidance on sampling of
groundwaters**

AS/NZS 5667.11:1998

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EV/8, Methods for Examination of Waters. It was approved on behalf of the Council of Standards Australia on 31 December 1997 and on behalf of the Council of Standards New Zealand on 2 March 1998. It was published on 5 April 1998.

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Australian Chamber of Commerce and Industry
Australian Institute of Marine Science
Australian Water and Waste Water Association
Australian and New Zealand Environment and Conservation Council
Griffith University, Australia
Minerals Council of Australia
National Association of Testing Authorities, Australia
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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EV/8, Methods for Examination of Waters. This Standard is technically equivalent to and has been reproduced from ISO 5667-11:1993, *Water quality—Sampling—Part 11: Guidance on sampling of groundwaters*.

This is Part 11 in a series of Standards on the sampling of waters, waste waters, sediments and sludges. The objective of this series of Standards is to provide parties interested in monitoring and sampling with guidance, including guidance on the design of sampling programs, sampling techniques, preservation, handling and transport of samples for the purposes of process control, quality characterization, identification of sources of pollution, compliance with water quality guidelines or standards, and other activities. This Part of the series provides detailed principles to be applied to the sampling of groundwaters.

All sampling equipment should be chosen to minimize interferences to the sample. This would include the consideration of the possibility of adsorption or leaching of the analytes of interest from the sampling equipment materials.

Where it is suspected that an immiscible organic layer is present more specialized sampling techniques may be required and expert advice should be sought.

Appendix ZZ lists the variations between this Standard and ISO 5667-11. For the purposes of this Standard, the ISO text is amended, supplemented or replaced as set out in Appendix ZZ. These changes are indicated by a marginal bar against the relevant clause, note, table, figure or part thereof affected.

The term 'normative' has been used in this Standard to define the application of the annex or appendix to which it applies. A 'normative' annex or appendix is an integral part of a Standard.

As this Standard is reproduced from an international Standard, the following applies:

- (a) Its number appears on the cover and title page while the International Standard number appears only on the cover.
- (b) In the source text, 'this International Standard' should read 'this Australian/New Zealand Standard'.
- (c) A full point substitutes for a comma when referring to a decimal marker.
- (d) In the source text, 'national statutory requirements' should be read as 'statutory requirements or relevant guidelines'.

References to international Standards should be replaced by equivalent Australian, New Zealand or Australian/New Zealand Standards, as follows:

<i>Reference to International Standard</i>	<i>Australian, New Zealand or Australian/ New Zealand Standard</i>
ISO	AS/NZS
5667	5667
5667-1	5667.1
5667-2	
5667-3	
6107-2	—

CONTENTS

	<i>Page</i>
1 SCOPE	1
2 NORMATIVE REFERENCES	1
3 DEFINITIONS	2
4 SAMPLING EQUIPMENT	2
5 SAMPLING PROCEDURES	3
6 SAFETY PRECAUTIONS	7
7 SAMPLE IDENTIFICATION AND RECORDS	7
 ANNEX A REPORT—SAMPLING FROM GROUNDWATERS	 9
 APPENDIX ZZ LIST OF VARIATIONS BETWEEN THIS STANDARD AND ISO 5667-11	 11

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AUSTRALIAN/NEW ZEALAND STANDARD

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*.



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