

GROUNDWATER SAMPLING GUIDELINES

Publication 699

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EPA has published guidelines to assist in the collection of groundwater samples for analysis. The guidelines have been based on international good practice, current scientific literature as well as comments from groundwater experts and other stakeholders.

WHY HAVE THE GROUNDWATER SAMPLING GUIDELINES BEEN PRODUCED?

Groundwater is an important resource in Victoria. In addition to being a source of potable (drinking) water, irrigation water, stockwater, and water for other uses, groundwater plays a significant role in the maintenance of flow in many streams and wetlands. The need to protect the quality of groundwater (and its beneficial uses) is recognised in the *State Environment Protection Policy (Groundwaters of Victoria)*.

It is important to accurately determine and report the quality of groundwater to assess whether beneficial uses are protected and where polluted, to assist in developing appropriate management strategies.

These guidelines will be useful for environmental consultants, officers of EPA and other agencies and site owner/occupiers. They will assist those involved in groundwater sampling to reduce the potential for error, allowing subsequent groundwater management decisions (eg the degree of clean up required) to be based on 'representative' groundwater quality data. The guidelines may also be a useful reference for protection agencies that require groundwater sampling to be undertaken by others.

This document is a guide to good practice. It is expected that EPA and other regulatory authorities will call up this document in approvals, licences, notices or permits.

WHY DO WE SAMPLE GROUNDWATER?

Groundwater sampling and analysis may be undertaken to:

- determine the background groundwater quality and beneficial uses of the groundwater to be protected
- detect any contamination or other changes in groundwater quality
- determine the extent and degree of existing groundwater contamination
- evaluate the environmental performance of activities with potential to contaminate groundwater
- assess the quality of an existing or potential groundwater resource.

This information may be used to make decisions regarding the management of contaminated or potentially contaminated sites.

WHAT ARE THE KEY ISSUES SURROUNDING GROUNDWATER SAMPLING?

The aim of groundwater sampling is to recover groundwater samples that are representative of groundwater in the ground. This may be affected by a number of factors, including:

- bore drilling technique

- bore installation – construction materials (ie casing, screen, filter pack)
- location of the sampling point (ie depth and length of bore screen)
- bore development technique
- the qualifications and experience of personnel undertaking groundwater sampling, which in turn affects the quality of design of the sampling program and on-site decision making
- quality assurance/quality control measures
- method used to purge the bore
- choice of sampling/purging device
- field measurements
- sample containers, preservation, transport and holding times.

The *Groundwater Sampling Guidelines* address each of the above points by:

- highlighting important considerations when sampling groundwater
- identifying sampling objectives and key measures to achieve those objectives
- identifying further information and source materials.

For more information on groundwater sampling refer to EPA Publication 669, *Groundwater Sampling Guidelines*.

Groundwater sampling is usually undertaken in the context of a hydrogeological assessment. It is recommended that the *Groundwater Sampling Guidelines* be read in conjunction with EPA Publication 668, *Hydrogeological Assessments (Groundwater Quality)* (forthcoming).

The *Groundwater Sampling Guidelines* are available for \$10 from the EPA Information Centre at 40 City Road, Southbank Victoria, telephone (03) 9695 2722.

FURTHER INFORMATION

EPA Information Centre

40 City Road, Southbank 3006

Tel: (03) 9695 2722 Fax: (03) 9695 2780

EPA Regional Offices

Gippsland

7 Church Street, Traralgon 3844

Tel: (03) 5176 1744 Fax: (03) 5174 7851

North-East

24 Ely Street, Wangaratta 3677

Tel: (03) 5721 7277 Fax: (03) 5721 2121

North-West

43 Williamson Street, Bendigo 3550

Tel: (03) 5442 4393 Fax: (03) 5443 6555

South Metro

45 Princes Highway, Dandenong 3175

Tel: (03) 9794 0677 Fax: (03) 9794 5188

South-West

Cnr Lt Malop & Fenwick Streets,

Geelong 3220

Tel: (03) 5226 4825 Fax: (03) 5226 4632

EPA internet site

www.epa.vic.gov.au