

# Water Quality Protection Note

## Analytical Laboratories

### Purpose

To provide the Commission's views on activities that may impact on the quality of the State's water resources.

These notes provide a basis for developing formal best management practice guidelines in consultation with key stakeholders.

### Scope

This note applies to waste water from all analytical laboratories. It covers educational institutions, mine-site and industrial analytical facilities, and commercial analytical laboratories.

### Preamble

The following notes reflect the Commission's current position. They are recommendations only and may be varied at the discretion of the Commission.

This note was produced to minimise adverse environmental impacts that may arise from inappropriate disposal of analytical laboratory wastewater. Wastes from sinks or discarded chemicals can harm water resources if allowed to discharge in an uncontrolled manner to soakage, or drain to surface waters.

The Commission considers that wastewater should be disposed of to a reticulated sewerage system where practicable and safe to do so.

### Statutory requirements

#### **Metropolitan Water Supply Sewerage and Drainage Act 1909**

Discharges to sewerage schemes operated by the Water Corporation require an Industrial Waste Permit (issued by the Corporation). Pretreatment may be necessary to conform to the permit requirements. Discharge to sewerage schemes operated by other organisations may require similar compliance.

### Site Selection

The Commission recommends that on site waste disposal facilities for laboratories be located:

- At least 2 metres above the highest groundwater table
- At least 50 metres downstream from any well or bore used by humans, stock or for irrigation
- At least 200 metres from any wetland or water impoundment, and 50 metres from any surface drainage channel.

### Construction recommendations

Laboratory waste water from sinks, cooling systems etc, should discharge to a dilution pit which holds at least one cubic metre of liquid, or the average daily liquid waste discharge volume, whichever is greater. The pit should be constructed of, or lined with materials resistant to the chemicals used in the laboratory (fibreglass, rigid plastic or coated masonry may be suitable). The pit should have removable baffle plates to

ensure mixing. The outlet point should be located at the top water level opposite the entry point to encourage mixing of pit contents. The pit should have a secure, removable lid to permit extraction of sludges and surface scums. It must be vented to permit release of gases. The pit should be sign-posted to indicate that the contents may be hazardous.

Where a reticulated sewerage system is not available, the contents of the dilution pit may be discharged to a soak pit, leach drain or evaporation bed, depending on the soil conditions at the site. Discharge should not occur to septic tank/leach drain systems because of the potential to disrupt biological processes within these systems. Discharge to drains and surface water bodies should not occur.

## Operation and Management

Waste chemicals, precipitates and other potentially contaminating materials should be temporarily stored in a secure impervious container pending destruction, recycling or disposal at a site approved by the Department of Environmental Protection's Division of Waste Management. Care should be exercised that reactive chemicals are held in separate, labelled containers.

The laboratory operator should familiarise staff with the operation of the waste disposal system. Staff should be informed about disposal practices for substances that may threaten the environment. Caution notices above sinks are recommended.

Regular checks, eg monthly, should be made of the dilution pit to assess build-up of solids which would cause loss of dilution, or blockage. Periodic chemical testing of pit waters (minimum monthly) is advisable, to confirm the discharge does not pose a threat to the environment. Test results should be recorded and made available for inspection by the regulatory agencies.

## More information

The Commission welcomes your comment on these notes. They will be updated from time to time as comments are received or industry standards change.

If you wish to comment on the notes or require more information, please contact the Commission's Resource Quality Branch at the Hyatt Centre in East Perth.



Level 2, Hyatt Centre  
3 Plain Street, East Perth  
Western Australia 6004  
Telephone: (08) 9278 0300  
[www.wrc.wa.gov.au](http://www.wrc.wa.gov.au)