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ENVIRONMENTAL HEALTH FACT SHEET NO. 511

DOH REQUIREMENTS FOR THE DESIGN OF WASTE STABILISATION PONDS AND THE ASSOCIATED DISPOSAL OR RECYCLING OF SEWAGE EFFLUENT

The purpose of this fact sheet is to detail the Department of Health (DoH) requirements for the design of waste stabilisation ponds and the associated disposal or recycling of sewage effluent. The Power Water Corporation (PWC) *Waste Stabilisation Pond Design Manual* is to be used as minimum design criteria for waste stabilisation ponds.

The document does not aim to provide information on detailed standards and procedures as this level of information will be provided by the relevant Northern Territory Government agency.

This fact sheet replaces the Territory Health Services *Policy for the Design of Off Site Sewage Ponds and the Disposal or Reuse of Sewage Pond Effluent, 1998.*

INTRODUCTION

Waste stabilisation ponds (also known as sewage ponds) are used extensively in the Northern Territory for the treatment of sewage effluent prior to final disposal. While economic constraints may affect the waste stabilisation pond design in small communities, public health matters, such as minimising the potential for mosquito breeding and disease transmission, need to be considered and addressed during their design.

Treated sewage effluent from waste stabilisation ponds is a potentially valuable resource and the conservation and reuse of this treated effluent is encouraged in the Northern Territory.

Sewage effluent however, can contain various materials such as organic solids, nutrients and pathogenic microorganisms, which can affect human health and contribute to undesirable environmental and ecological effects when discharged untreated to land or waterways.

There is legislation to control the reuse or disposal of treated sewage effluent. The responsibility for enforcement of such legislation is vested with DoH and the Department of Natural Resources, Environment, The Arts and Sport (NRETAS). The discharge of treated sewage effluent to land or water may therefore occur, but only in accordance with pertinent legislation, or in its absence, to any reasonable conditions imposed by the relevant Northern Territory Government agency.

The following performance requirements for waste stabilisation ponds and associated disposal or reuse of sewage effluent require that the effect on the environment and public health is minimised:

- Sewage effluent will not result in pooling
- Sewage effluent will not enter potable water supply off-takes
- Sewage effluent will not cause mosquito breeding
- Sewage effluent will not adversely impact on waterways

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NORTHERN TERRITORY LEGISLATION

- *Public Health and Environmental Health Act 2011*
- *Water Act 1992*
- *Waste Management And Pollution Control Act 1998*
- *Planning Act 1999*
- *Water Supply And Sewerage Services Act 2000*

CODES / GUIDELINES

Australian Government - Department of the Environment, Water, Heritage and the Arts:

National Water Quality Management Strategy publications

www.environment.gov.au/water/publications/quality/index.html

- Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 1) 2006
- Paper 11: Guidelines for Sewerage Systems - Effluent Management - 1997
- Paper 12: Guidelines for Sewerage Systems – Acceptance of Trade Waste (Industrial Waster) – 1994
- Paper 13: Guidelines for Sewerage Systems - Sludge (Biosolids) Management - 2004
- Paper 14: Guidelines for Sewerage Systems - Use of Reclaimed Water - 1999
- Paper 15: Guidelines for Sewerage Systems - Sewerage System Overflows - 2004

Department of Health – Environmental Health

- Environmental Health Standards for Remote Communities in the Northern Territory, June 2001, www.nt.gov.au/health/envirohealth
- Guidelines for the Management of Recycled Water Systems

Department of Health – Medical Entomology

- Policy for the Design of Off Site Sewerage Ponds and the Disposal or Reuse of Sewerage Pond Effluent
- Recommendations for the Design Details of Sewage Pond Effluent Reuse or Disposal Facilities to Prevent Mosquito Breeding
- The Prevention of Mosquito Breeding in Sewage Treatment Facilities

Medical Entomology Guidelines > www.health.nt.gov.au/medical_entomology > publications > development guidelines

Department of Natural Resources, Environment, The Arts and Sport

- Sewage Treatment Plants (STPs) in Indigenous Communities under the Strategic Indigenous Housing and Infrastructure Program (SIHIP)

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Power Water Corporation

- Waste Stabilisation Ponds Design Manual 2008
- Guidelines for Buffer Zones – Sewerage Treatment, Sludge Management and Re-Use Schemes 2003

**Note that these documents are updated from time to time.*

DOH REQUIREMENTS FOR WASTE STABILISATION POND DESIGN

DoH approval for the construction of waste stabilisation ponds is not required providing that waste stabilisation ponds are designed in accordance with PWC's Waste Stabilisation Pond Design Manual 2008.

Notwithstanding, DoH requires that the proponents of new or upgraded waste stabilisation ponds carry out the following:

- Notify DoH of a proposal to construct waste stabilisation ponds. This includes modifying or extending existing waste stabilisation ponds. Notification can be via email and shall summarise the following:
  - Location of waste stabilisation ponds
  - Owners details
  - Project Manager's details including where plans can be viewed
  - Method of onsite disposal or recycling
  - Anticipated commencement date of construction
- The design of waste stabilisation ponds for Indigenous Communities must undergo a risk assessment in accordance with NRETAS' *Sewage Treatment Plants (STPs) in Indigenous Communities under the Strategic Indigenous Housing and Infrastructure Program (SIHIP).*
- Submit an electronic copy to DoH of the Operational Environment Management Plan (OEMP) for the waste stabilisation ponds.
- Contact NRETAS – Environment and Heritage Division: to determine if the waste stabilisation ponds require a Waste Discharge Licence (WDL) under Part 7 of the *Water Act.*
- Contact the Department of Lands and Planning (DLP) to determine if planning consent is required for waste stabilisation ponds.
- Any waste stabilisation ponds and associated disposal or reuse scheme should also be designed to incorporate means of preventing or minimising the breeding of mosquitoes under the *Public and Environmental Health Act 2011*. The waste stabilisation ponds should be sited so that suitable wastewater disposal and dispersal is practical, and ideally be constructed with suitable banks that assist in enhancing wave motion as well as reducing the need for weed removal and other maintenance requirements. The design and maintenance of ponds to prevent mosquito breeding should be in accordance with the principles outlined in the following DoH Medical Entomology documents:
  - *Policy for the Design of Off Site Sewerage Ponds and the Disposal or Reuse of Sewerage Pond Effluent.*

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- *Recommendations for the Design Details of Sewage Pond Effluent Reuse or Disposal Facilities to Prevent Mosquito Breeding.*
- *Mosquito Breeding and Sewage Pond Treatment in the Northern Territory.*

RECYCLING OF SEWAGE EFFLUENT FROM WASTE STABILISATION PONDS

To Land

Power and Water Corporation

Power and Water Corporation (or equivalent service provider) may apply to DoH for approval to irrigate recycled water sourced from waste stabilisation ponds to a dedicated land application area. The recycled water is not for the purpose of beneficial reuse. The dedicated land application area must be a secure facility, owned and managed by Power and Water Corporation. Application to DoH can be made by using the 'Application for Irrigation of Recycled Water sourced from Waste Stabilisation Ponds to a Dedicated Land Application Area'.

Any beneficial reuse of recycled water requires Power and Water Corporation to make application to DoH using the 'Application for Recycled Water Systems and Recycled Water Schemes for Towns, Subdivisions and Communities'.

Other Organisations, Communities or Persons

Any other organisation, community, or person proposing to dispose or reuse sewage effluent from waste stabilisation ponds to land shall make application to DoH using the 'Application for Recycled Water Systems and Recycled Water Schemes for Towns, Subdivisions and Communities'

To Waterways

Section 16 of the *Water Act* prohibits the pollution of water but allows for authorisation by NRETA of waste discharge under Part 7 of the Act. This authorisation takes the form of a waste discharge licence (WDL).

A WDL issued by NRETAS may be necessary if waste stabilisation ponds generate significant amounts of sewage effluent that is discharged into receiving waters. Waste discharge licences are regulatory instruments used to regulate the quality and quantity of wastewater (includes sewage effluent) created by industrial and commercial operations that are then discharged to receiving waters in the Northern Territory.

NRETAS liaises with DoH when processing waste discharge licences.

CONTACTS

- DoH Medical Entomology: ph. (08) 8922 8901, fax (08) 8922 8820
- NRETAS Environment, Heritage Division:
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FOR FURTHER INFORMATION
CONTACT ENVIRONMENTAL HEALTH ON 1800 095 646 OR YOUR LOCAL OFFICE
Email: envirohealth@nt.gov.au

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BARKLY Health Development Building Cnr Schmidt & Windley Sts, Tennant Creek PO Box 346 TENNANT CREEK NT 0861 Phone: (08) 8962 4302 Fax: (08) 8962 4420	**CENTRAL AUSTRALIA** Mwerre House 60 Hartley St, Alice Springs PO Box 721 ALICE SPRINGS NT 0871 Phone: (08) 8955 6122 Fax: (08) 8952 5927	**KATHERINE WEST HEALTH BOARD** Unit 10, Riverbank Office Village 38 First Street, Katherine PO Box 147 KATHERINE NT 0851 Phone: (08) 8971 9315 Fax: (08) 8972 1233

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