

Unit of Competency CPCPDR3024

Maintain and service domestic treatment plants and onsite sewerage facilities

Application

This unit specifies the skills and knowledge required to maintain and service domestic treatment plants and onsite sewerage facilities.

The unit covers maintaining system components, conducting and analysing effluent quality tests and maintaining systems on new or existing domestic or commercial structures.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Prerequisite Unit

CPCPDR4013 Design and size domestic treatment plant disposal systems

Elements and Performance Criteria

1. Prepare for work.	<p>1.1 Identify and arrange work health and safety (WHS) and environmental requirements necessary to undertake the work.</p> <p>1.2 Complete a site risk assessment, including hazards associated with exposure to wastewater and wastewater treatment facilities.</p> <p>1.3 Develop procedures to minimise risk associated with identified hazards.</p>
2. Maintain components.	<p>2.1 Check operation of pumps and aerators to identify maintenance requirements.</p> <p>2.2 Perform maintenance of pump systems and components and aerators and replace as required.</p> <p>2.3 Clean membranes, filters, UV light tubes and ozone-producing equipment where appropriate.</p> <p>2.4 Measure sludge and scum levels in septic tanks and treatment plants.</p> <p>2.5 Analyse and maintain land application areas and piping systems.</p> <p>2.6 Determine appropriate procedures for loss of power and equipment failure.</p> <p>2.7 Perform maintenance of relevant components and replace system devices where required.</p>
3. Conduct and analyse effluent quality tests.	<p>3.1 Calibrate and use commercial testing equipment to conduct water quality tests and record results in accordance with legislative requirements.</p> <p>3.2 Collect, prepare and send water samples to an accredited laboratory for effluent quality tests where appropriate.</p> <p>3.3 Identify rectification work required from effluent quality test results.</p> <p>3.4 Perform rectification work as required.</p>
4. Maintain	<p>4.1 Analyse and determine the correct treatment processes for a range of small</p>

systems.	decentralised treatment facilities. 4.2 Maintain a range of wastewater treatment facilities in compliance with legislation. 4.3 Maintain black and/or grey water systems to comply with end user, water and regulatory quality parameters.
5. Complete documentation and report outcomes.	5.1 Complete service reports and correspondence outlining maintenance issues. 5.2 Provide advice to end user. 5.3 Produce an operation and maintenance schedule for end user. 5.4 Document and report outcomes to local authorities and property owners.

Foundation skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume Implementation Guide:

<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPDR3024

Maintain and service domestic treatment plants and onsite sewerage facilities

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- applying an operation and maintenance procedure for three of the following systems, ensuring a primary, secondary and tertiary system is selected:
 - o primary treatment conventional septic tank
 - o primary biological filter
 - o secondary treatment aerated wastewater treatment plant
 - o secondary treatment sand filter
 - o tertiary ultraviolet (UV) disinfection and ozone oxidation
 - o tertiary chlorine.

For each procedure the person must identify and report faults to appropriate person.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- disinfection technologies and land application systems
- system processes to reduce nutrients
- interpreting and applying test results for:
 - o dissolved oxygen readings
 - o clarity readings of wastewater
 - o various air pressures on aerator
 - o rectification of incorrect residual chlorine readings
 - o calculation of pump duty
 - o rectification of incorrect pH readings
- microbiology of wastewater constituents
- SI system of measures
- work health and safety procedures
- dissolved oxygen
- pH parameters
- air pressure from the aerator
- residual chlorine parameter
- pump operation
- pump duty

- infectious diseases
- types of wastewater treatment processes
- risks with working with wastewater
- types of land application areas
- maintenance procedures
- legislation and regulations relating to wastewater
- wastewater quality parameters
- areas of consideration for health and safety:
 - protective clothing and equipment
 - use of tools and equipment
 - workplace environment and safety
 - handling of materials
 - hazardous materials
 - handling of materials
 - hazard control
 - electrical
 - lifting safety
 - first aid requirements for injuries
 - personal hygiene
- areas of potential risk:
 - hygiene
 - biological
 - health
 - chemical
 - electrical
- types of hazards:
 - chlorine
 - influent
 - effluent
 - electrical
 - UV
 - ozone
 - pH correction chemicals
- correct operation of filters and pumps
- types of land application:
 - absorption trenches and beds
 - evapotranspiration beds
 - mounds
 - shallow sub-surface irrigation systems
 - covered surface drip irrigation
 - low pressure effluent drip irrigation systems
 - above-ground irrigation
- constructed wetlands:
 - reed beds

- o lagoons
- devices used in effluent systems:
 - o sludge recycling device
 - o disinfecting device
 - o dosing device
 - o pumps
 - o aerators
 - o valves
- tests for effluent quality:
 - o biochemical oxygen demand (BOD)
 - o sludge
 - o suspended solids
 - o clarity
 - o pH
 - o dissolved oxygen
 - o bacterial content (pathogenic organisms)
 - o free chlorine
 - o total nitrogen
 - o total phosphorous
- rectification solutions:
 - o recommended use of household products
 - o adjustments to system
 - o improvements to system
- result information inclusions:
 - o summary of own investigations
 - o local authority reports
 - o reports by other testing agencies or authorities
- end users such as:
 - o landowners
 - o tenants
- how to access relevant information, including codes and standards
- tools, materials and equipment used to maintain and service domestic treatment plants and onsite sewerage facilities
- work health and safety (WHS) requirements for maintaining and servicing domestic treatment plants and onsite sewerage facilities.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion Volume Implementation Guide:

<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>