Australian Government

Department of Education, Employment and Workplace Relations

RTE2604A Maintain drainage systems

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This competency standard covers the process of carrying out routine maintenance activities for drainage systems, including the repair and replacement of components under routine supervision. It requires the ability to read and follow operational procedures for drainage system maintenance, record and report maintenance observations and activities, control weeds, safely use chemicals, and follow OHS procedures relating to drainage system maintenance. Maintaining drainage systems requires knowledge of drainage systems and cleaning procedures, OHS procedures, weeds encountered in drainage systems and their control, equipment used to clean and maintain drainage systems, legislation regarding the use of chemicals near waterways, environmentally safe disposal procedures for chemical containers and residues, oils/grease and used parts.

Application of the Unit

Not applicable.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Not applicable.

Elements and Performance Criteria Pre-Content

Not applicable.

Elements and Performance Criteria

Elements and Performance Criteria

Element	Performance Criteria
1 Carry out pre- and post-season maintenance	1.1 Equipment is prepared pre-season for effective operation in accordance with design specifications and enterprise standards.
	1.2 System is flushed, cleaned, closed down and maintained post-season in accordance with design specifications and enterprise standards.
	1.3 Equipment requiring storage is dismantled, loaded, transported and stored without damage according to enterprise standards.
2 Carry out routine maintenance activities on drainage systems	2.1 All maintenance activities are carried out according to the maintenance program and the manufacturers specifications.
	2.2 Mechanical equipment is serviced in accordance with the operators manual or as directed.
	2.3 Drainage system is flushed and cleaned, with simple components replaced as directed.
	2.4 Drainage system is visually inspected for leaks and operating faults, and observations are recorded in the maintenance book.
	2.5 Operation area is maintained in a clean and safe condition, and OHS procedures are followed.
3 Maintain system components	3.1 System maintenance is carried out at scheduled times using equipment and materials in accordance with enterprise standards.
	3.2 **Components** are inspected for wear or blockage and reported or replaced according to enterprise guidelines.
	3.3 Operation area is maintained in a clean and safe condition, and **OHS procedures** are followed.

4 Monitor and control weed growth	4.1 Silt is cleared from channels, drains, sumps and crossings with no disruption to gradients and levels as necessary.
	4.2 System checks ensure a weed free and unobstructed water flow from outlets as necessary.
	4.3 Damage to plants, structures and fittings is minimised through the use of recognised mechanical and chemical methods of weed control according to **enterprise guidelines.**
	4.4 Operation area is maintained in a clean and safe condition, and OHS procedures are followed.
5 Record and report maintenance activities	5.1 All damage and blockage caused by pests and vermin is recorded by damage type, location and the section of the system affected.
	5.2 Damage or faulty pumps, valves, electrical components and computer systems are recorded and reported, and action taken to effect repairs.
	5.3 All routine maintenance activities are recorded and reported in accordance with enterprise standards.

Required Skills and Knowledge

Not applicable.

Evidence Guide

What evidence is required to demonstrate competence for this standard as a whole?

Competence in undertaking routine maintenance on drainage systems requires evidence that a person can inspect, repair and replace simple drainage system components, monitor and control weeds and silt build up, and carry out maintenance activities under routine supervision.

The skills and knowledge required to undertake routine maintenance on drainage systems must be **transferable** to a different work environment. For example, if maintenance is carried out on one type of drainage irrigation system, it should be evident that it could be carried out on other drainage systems.

What specific knowledge is needed to achieve the performance criteria?

Knowledge and understanding are essential to apply this standard in the workplace, to transfer the skills to other contexts, and to deal with unplanned events. The knowledge requirements for this competency standard are listed below:

basic types of drainage systems

drainage system cleaning procedures

OHS procedures relating to drainage system maintenance

weeds encountered in drainage systems and their control

equipment used to clean and maintain drainage systems

legislation regarding the use of chemicals near waterways

environmentally safe disposal procedures for chemical containers and residues, oils/grease and used parts.

What specific skills are needed to achieve the performance criteria?

To achieve the performance criteria, appropriate literacy and numeracy levels as well as some complementary skills are required. These include the ability to:

read and follow operational procedures for drainage system maintenance

record and report maintenance observations and activities

use hand or powered equipment to control weeds

safely use chemicals for weed control

follow OHS procedures relating to drainage system maintenance.

What processes should be applied to this competency standard?

There are a number of processes that are learnt throughout work and life, which are required in all jobs. They are fundamental processes and generally transferable to other work functions. Some of these are covered by the **key competencies**, although others may be added. The questions below highlight how these processes are applied in this competency standard. Following each question a number in brackets indicates the level to which the key competency needs to be demonstrated where 0 = not required, 1 = perform the process, 2 = perform and administer the process and 3 = perform, administer and design the process.

1. How can **communication of ideas and information** (**1**) be applied?	Through reporting damage, faulty systems and routine maintenance activities.
2. How can **information be collected**, **analysed and organised** (**1**)?	Preparing records of drainage maintenance activities.
3. How are **activities planned and organised** (**1**)?	Organising maintenance activities.
4. How can **team work** (**1**) be applied?	Reporting drainage system problems to others for action.
5. How can the use of **mathematical ideas and techniques** (**1**) be applied?	In preserving gradients and levels to design requirements.
6. How can **problem-solving skills** (**1**) be applied?	In identifying and repairing damaged and faulty parts.
7. How can the **use of technology** (**1**) be applied?	Using computerised drainage systems.

Are there other competency standards that could be assessed with this one?

This competency standard **could** be assessed on its own or in combination with other competencies relevant to the job function.

There is essential information about **assessing this competency standard for consistent performance** and **where and how it may be assessed**, in the Assessment Guidelines for this Training Package. All users of these competency standards must have **access** to the **Assessment Guidelines**. Further advice may also be sought from the relevant **sector booklet**.

Range Statement

Range of Variables

The Range of Variables explains the contexts within which the performance and knowledge requirements of this standard may be assessed. The scope of variables chosen in training and assessment requirements may depend on the work situations available

What **pre-season maintenance** might be carried out?	Pre-season maintenance may include removing scale in pipes, weed control in the system, removing sludge and living organisms, and repairing control devices.
What **post-season maintenance** might be carried out?	Post-season maintenance may include draining supply system, draining and flushing diesel tanks of sediments, treating and flushing the system, capping open pipes on fixed systems, and covering fixed systems to protect from environmental degradation.
What **drainage systems** might be relevant to this standard?	These may include surface drains, culverts, mole drains, sand slit, sub-surface traps, reed beds, pumps for recycling, and baffles. Systems may range from manual operation and monitoring to fully automated with computer control and monitoring.
What **components** might be inspected and/or replaced?	These may include gutters, pipes, swales, subsurface pipes, gross pollutant traps, culverts, outfalls, and drainage materials such as rocks and gravels.
What might the **OHS requirements** be for maintenance activities?	Requirements may include systems and procedures for safe manual handling, outdoor work (including protection from solar radiation, dust and noise), selection, use and maintenance of relevant personal protective clothing and equipment, selection, care and safe use of hand tools, and safe systems for the prevention of electrical injury.
What might **enterprise guidelines** for weed control include?	Enterprise guidelines will identify OHS and environmental considerations. OHS requirements may include safe systems and procedures for the operation and maintenance of machinery and equipment, the handling, transporting, use and storage of farm chemicals, and protection against chemical residues, including that in/on

	foliage, water, soil and other items. Environmental considerations may include choice of chemical versus mechanical weed control/removal, use of hand versus powered equipment, and procedures for avoiding chemical contamination of water supplies.

For more information on contexts, environment and variables for training and assessment, refer to the Sector Booklet.

Unit Sector(s)

Not applicable.