



Australian Government

Department of Education, Employment and Workplace Relations

AHCWAT502A Manage water systems

Release: 1

AHCWAT502A Manage water systems

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers managing water systems and defines the standard required to: identify adverse environmental impacts of irrigation activities and appropriate remedial action; determine the feasibility of using or up-grading an irrigation system; install or modify an irrigation and drainage system as necessary; evaluate irrigation system outputs and performance and strategically manage irrigated production systems
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Application of the Unit

Application of the unit	This unit of competency applies to water managers and covers the process of strategically managing an integrated system involving relationships between irrigation, drainage and environmental systems.
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Not Applicable

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
1. Determine the feasibility of using or up-grading irrigation system	1.1. Water resources and drainage implications are assessed to determine suitability for irrigation. 1.2. Water quality and treatment requirements are determined. 1.3. Water requirements and most suitable application systems are determined for each crop/plant type and area, and for each soil type. 1.4. Other water requirements, such as climate control, are determined. 1.5. Soil types are assessed to determine suitability for irrigation and the range of crop/plant types that could be grown. 1.6. Drainage requirements are determined in relation to each soil and crop/plant type and type of irrigation system. 1.7. Performance data, audit reports, environmental and Occupational Health and Safety (OHS) data for existing systems are assessed if available. 1.8. Information is obtained from irrigation specialists on all relevant aspects of irrigation design. 1.9. Available irrigation system types and components are assessed and costed, and a decision is made on the particular system to be used or upgrades to existing system.
2. Install or modify an irrigation and drainage system as necessary	2.1. Materials and equipment making up the system are determined and acquired. 2.2. Irrigation system is installed using advice, as necessary, from irrigation specialists. 2.3. Checking that irrigation and drainage systems are supervised to ensure there are no leaks or blockages; that the water is being evenly distributed; that drainage is effective and the system is in good working order.
3. Evaluate irrigation system performance	3.1. Plant growth /yield increases from irrigation are determined and valued. 3.2. Costs of irrigation are calculated. 3.3. Cost benefit of irrigation is determined and compared with alternative systems/approaches.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- identify adverse environmental impacts of irrigation activities and appropriate remedial action
- analyse performance and audit data
- evaluate irrigation system performance
- strategically manage irrigated production systems
- develop and implement relevant enterprise OHS and environmental procedures
- use literacy skills to fulfil job roles as required by the organisation. The level of skill may range from reading and understanding documentation to completion of written reports
- use oral communication skills/language competence to fulfil the job role as specified by the organisation including questioning, active listening, asking for clarification, negotiating solutions and responding to a range of views
- use numeracy skills to estimate, calculate and record complex workplace measures
- use interpersonal skills to work with others and relate to people from a range of cultural, social and religious backgrounds and with a range of physical and mental abilities.

Required knowledge

- plant requirements
- water quality
- environmental impacts of irrigation, using water from any ground or underground source
- cost/benefit analysis
- enterprise policies and procedures.

Evidence Guide

EVIDENCE GUIDE	
The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The evidence required to demonstrate competency in this unit must be relevant to workplace operations and satisfy holistically all of the requirements of the performance criteria and required skills and knowledge and include achievement of the following: • identify adverse environmental impacts of irrigation activities and appropriate remedial action • determine the feasibility of using or up-grading an irrigation system • install or modify an irrigation and drainage system as necessary • evaluate irrigation system outputs and performance • strategically manage irrigated production systems.
Context of and specific resources for assessment	Competency requires the application of work practices under work conditions. Selection and use of resources for some worksites may differ due to the regional or enterprise circumstances.

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole.	
Irrigation system types may include:	• flood • furrow • micro-sprinklers • pop-ups • impact sprinklers • low-level lines • overhead sprinklers • drippers and micro-jets.

RANGE STATEMENT

Irrigated systems may include:

- water harvesting
- delivery
- drainage collection
- drainage storage and treatment as well as natural drainage and treatment systems involving the removal of pollutants through evaporation, and/or clearance by filtration through surface layers.

Unit Sector(s)

Unit sector	Water
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Co-requisite units

Co-requisite units		

Competency field

Competency field	
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