



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **AHCIRG205A Maintain gravity-fed irrigation systems**

**Release: 1**

## AHCIRG205A Maintain gravity-fed irrigation systems

### Modification History

Not Applicable

### Unit Descriptor

<b>Unit descriptor</b>	This unit covers the process of maintaining gravity fed irrigation systems under routine supervision and defines the standard required to: check for problems and return the system to smooth running; build or repair banks; control weeds and silt build-up; carry out maintenance activities.
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### Application of the Unit

<b>Application of the unit</b>	This unit applies to working with limited supervision, within enterprise guidelines.
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### Licensing/Regulatory Information

Not Applicable

### Pre-Requisites

<b>Prerequisite units</b>		

## Employability Skills Information

<b>Employability skills</b>	This unit contains employability skills.
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## Elements and Performance Criteria Pre-Content

Not Applicable

## Elements and Performance Criteria

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b>

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b>
1. Carry out pre and post season maintenance	<p>1.1. Equipment is prepared pre-season for effective operation in accordance with design specifications and enterprise standards.</p> <p>1.2. System is closed and made resistant to damage post-season in accordance with design specifications and enterprise standards.</p> <p>1.3. Equipment is stored post-season according to enterprise standards.</p>
2. Carry out routine maintenance activities on gravity fed irrigation delivery systems	<p>2.1. All maintenance activities are carried out according to the maintenance program, Occupational Health and Safety (OHS) requirements and the manufacturer's specifications.</p> <p>2.2. Mechanical equipment is serviced in accordance with the operator's manual or as directed.</p> <p>2.3. Supply and distribution system is flushed and cleaned as directed.</p> <p>2.4. System inlets, outlets, structures and fittings are maintained as directed.</p> <p>2.5. System is checked for smooth running and is free of damage, leaks and blockages in channels, drains and outlets, as necessary, in accordance with design specifications and enterprise procedures.</p> <p>2.6. Silt is cleared from channels, drains, sumps and crossings with no disruption to gradients and levels, as necessary.</p> <p>2.7. Adverse environmental impacts of the irrigation system are identified and reported.</p> <p>2.8. Appropriate materials are used for backfilling and building/repairing banks in accordance with enterprise standards.</p>
3. Clear system of weeds using mechanical or chemical methods	<p>3.1. Weeds are removed/controlled in accordance with enterprise standards, OHS and environmental requirements.</p> <p>3.2. Crops and plants are protected from damage in accordance with enterprise standards.</p> <p>3.3. Water flow from outlets is checked, as necessary, to verify freedom from blockage.</p>
4. Record and report maintenance activities	<p>4.1. All damage and blockage caused by pests and vermin are recorded by damage type, location and the section of the system affected.</p> <p>4.2. Damage or faulty pumps, valves, electrical components and computer systems are recorded and</p>

ELEMENT	PERFORMANCE CRITERIA
	<p>reported, and action taken to effect repairs.</p> <p>4.3. All routine maintenance activities are recorded and reported in accordance with enterprise standards.</p>

## Required Skills and Knowledge

### REQUIRED SKILLS AND KNOWLEDGE

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

#### Required skills

- identify hazards and adopt safe work practices
- read and follow operational procedures for gravity fed irrigation system maintenance
- identify adverse environmental impacts of gravity fed irrigation system and take appropriate remedial action
- read instructions and safely use chemicals for weed control
- use mechanical equipment to build/repair banks and for weed removal
- record and report maintenance observations and activities
- follow OHS procedures relating to gravity fed irrigation maintenance
- use literacy skills to follow sequenced written instructions and record information accurately and legibly
- use oral communication skills/language competence to fulfil the job role as specified by the organisation including questioning, active listening, asking for clarification and seeking advice from supervisor
- use numeracy skills to estimate, calculate and record routine workplace measures
- use interpersonal skills to relate to people from a range of social, cultural and ethnic backgrounds and with a range of physical and mental abilities.

#### Required knowledge

- OHS and environmental legislative and enterprise procedures relating to gravity fed irrigation maintenance
- types of channels, furrows, borders, fittings and outlets
- system cleaning procedures
- damage and problems that can occur with gravity-fed irrigation systems
- weed types encountered in gravity fed irrigation systems and their control
- environmentally safe disposal procedures for chemical containers and residues, oils/grease and used parts.



## Evidence Guide

<b>EVIDENCE GUIDE</b>	
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.	
<b>Overview of assessment</b>	
<b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b>	<p>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:</p> <ul style="list-style-type: none"> <li>• check for problems and return the system to smooth running</li> <li>• build or repair banks</li> <li>• control weeds and silt build-up</li> <li>• carry out maintenance activities.</li> </ul>
<b>Context of and specific resources for assessment</b>	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

<b>RANGE STATEMENT</b>	
The range statement relates to the unit of competency as a whole.	
Gravity-fed irrigation systems may include:	<ul style="list-style-type: none"> <li>• border check systems</li> <li>• contour irrigation</li> <li>• furrow irrigation</li> <li>• hillside flooding</li> <li>• basin irrigation.</li> </ul>
Border check systems may include:	<ul style="list-style-type: none"> <li>• permanent or temporary earth</li> <li>• plastic or concrete devices for insertion in a drain for reticulating water</li> <li>• contour banks used to collect and distribute water along the perimeter of an irrigation plot</li> <li>• contour banks within a plot to collect/distribute</li> </ul>

<b>RANGE STATEMENT</b>	
	water <ul style="list-style-type: none"> <li>larger scale systems to stop water exiting one area to another</li> </ul>
Gravity fed systems may include:	<ul style="list-style-type: none"> <li>manual operation and monitoring to fully automated with computer control and monitoring.</li> </ul>

### Unit Sector(s)

<b>Unit sector</b>	Irrigation
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### Co-requisite units

<b>Co-requisite units</b>	

### Competency field

<b>Competency field</b>	
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