Modification history

Release	Comments
Release 2	This version released with AHC Agriculture, Horticulture, Conservation and Land Management Training Package Version 4.0.
Release 1	This version released with AHC Agriculture, Horticulture, Conservation and Land Management Training Package Version 1.0.

AHCIRG433	Manage irrigation systems
Application	This unit of competency describes the skills and knowledge required to prepare irrigation system for operation, develop start-up, shutdown and isolation procedures, trouble shoot for faults and blockages, and measure and review irrigation system performance. The unit applies to individuals who apply specialised skills and knowledge to the management of irrigation systems and have responsibility for the output of others. This includes applying and communicating non-routine technical solutions to predictable and unpredictable problems. No occupational licensing, legislative or certification requirements apply to this unit at the time of publication.
Prerequisite Unit	Nil
Unit Sector	Irrigation (IRG)

Elements	Performance Criteria
Elements describe the essential outcomes.	*Performance criteria describe the performance needed to demonstrate achievement of the element.*
1. Ensure the irrigation is prepared for operation	1.1 Assess staff training needs for carrying out pre-start checks and routine servicing and arrange training for those that require it 1.2 Program or adjust the irrigation controller to meet required schedule 1.3 Develop procedures for adjusting valves and checking filters and emitters
2. Develop start-up, shutdown and isolation procedures	2.1 Develop start-up procedures 2.2 Develop shutdown sequence and isolation procedures 2.3 Install safety or security lock off devices and signage 2.4 Provide instructions for flushing the system as required
3. Carry out trouble shooting for faults and blockages	3.1 Organise access to faulty components and blockages 3.2 Remove and repair or dispose of faulty components 3.3 Select and install replacement components
4. Measure performance of the system	4.1 Identify and record variations in pressures 4.2 Measure and record water flow rates 4.3 Identify and record variations in water flow and distribution 4.4 Measure and record pump performance parameters as necessary 4.5 Measure and record variations in pump performance parameters where relevant 4.6 Inspect distribution and delivery systems 4.7 Identify and repair delivery system malfunctions and record actions 4.7 Identify and record factors external to the system that may cause interference
5. Review system performance status	5.1 Record system pressures and variations 5.2 Record system flow rates and variations 5.3 Calculate and record distribution uniformity and mean application rates 5.4 Determine and record watering depth 5.5 Calculate and compare energy use and water efficiency to industry benchmarks

> **Commented [PM1]:** Is this element required? AHCIRG306 Troubleshoot irrigation systems covers all of this element.

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential for performance in this unit of competency but are not explicit in the performance criteria.

Skill	Description
Reading	• Identify and interpret information regarding managing irrigation systems
Writing	• Develop irrigation system management procedures, and start-up, shutdown and isolation procedures • Record system performance and variations
Numeracy	• Measure, calculate and record system pressure and variations, water flow rates, variations and distribution, and pump performance and variations • Calculate energy use and water efficiency and compare to industry benchmarks
Navigate the world of work	• Identify and describe own workplace requirements, including safety requirements, associated with own role and area of responsibility

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AHCIRG433 Manage irrigation systems Release 2	AHCIRG433 Manage irrigation systems Release 1	Minor changes to performance criteria and foundation skills	Equivalent unit

Links	Companion Volumes, including Implementation Guides, are available at VETNet: https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=c6399549-9c62-4a5e-bf1a-524b2322cf72

TITLE	**Assessment requirements for AHCIRG433 Manage irrigation systems**

Performance Evidence

An individual demonstrating competency must satisfy all of the elements and performance criteria in this unit.

There must be evidence that the individual has managed irrigation systems on at least two occasions and has:
- accessed and prepared data records for both print-based and computer-based data
- applied measuring and testing techniques
- calculated pressure differentials, flow rates, crop yields, estimated water usage and actual water usage
- developed procedures for irrigation system start up, shutdown and operational checks
- identified adverse environmental impacts of irrigation activities and taken appropriate remedial action
- measured output and efficiency of an irrigation system
- measured, interpreted and adjusted flow rates and pressures
- monitored system effectiveness.

Knowledge Evidence

An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of:
- principles and practices of irrigation system management
- component specifications
- environmental impacts of irrigation using water from any ground or underground source
- irrigation schedules
- pump types used in irrigation systems and their output and efficiency ratings
- soil moisture testing techniques
- irrigation technologies
- using records to review an irrigation system
- water in soils and plants
- water requirements of plants/crops consistent with sound environmental management.

Assessment Conditions

Assessment of skills must take place under the following conditions:
- physical conditions:
  - a workplace setting or an environment that accurately represents workplace conditions
- resources, equipment and materials:
  - irrigation system measuring, and recording equipment and procedures
- specifications:
  - industry energy and water efficiency benchmarks
- timeframes:
  - according to the job requirements.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

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