Modification history

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| 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. |

| AHCIRG422 | Manage a moving sprinkler irrigation system |
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| Application | This unit of competency describes the skills and knowledge required to prepare moving sprinkler irrigation system for operation, develop and implement start-up, shutdown and isolation procedures, trouble shoot for faults and blockages, and measure and review moving sprinkler irrigation system performance.  The unit applies to individuals who apply specialised skills and knowledge to the management of moving sprinkler 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 |
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| Elements describe the essential outcomes. | Performance criteria describe the performance needed to demonstrate achievement of the element. |
| 1. Ensure the moving sprinkler irrigation system 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 the required schedule  1.3 Develop pre-start procedures for adjusting valves and checking filters and emitters |
| 2. Develop and implement start up and shut down procedures | 2.1 Develop start up procedures  2.2 Develop shut down 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 Arrange access to faulty components and blockages  3.2 Remove faulty system components and repair or dispose according to operation and maintenance manual and workplace environmental procedures  3.3 Select and install replacement components according to operation and maintenance manual |
| 4. Measure performance of a moving sprinkler irrigation system | 4.1 Identify and record variations in pressures  4.2 Measure and record water flow rates according to workplace procedures  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 system malfunctions and record actions  4.8 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 |

| 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. | |
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| Skill | Description |
| Reading | * Identify and interpret information regarding managing moving sprinkler irrigation systems |
| Writing | * Develop moving sprinkler irrigation system management procedures, pre-start valve adjustment, and filter and emitter checking, and start up, shutdown, isolation and system flushing 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 |

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| Unit Mapping Information | | | |
| Code and title current version | Code and title previous version | Comments | Equivalence status |
| AHCIRG422 Manage a moving sprinkler irrigation system  Release 2 | AHCIRG422 Manage a moving sprinkler irrigation system  Release 1 | Minor changes to performance criteria and foundation skills | Equivalent unit |

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| 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 AHCIRG422 Manage a moving sprinkler irrigation system |
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| 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 moving sprinkler irrigation systems on at least two occasions and has:   * developed and supervised procedures for moving sprinkler irrigation system: * pre-start valve adjustment, and filter and emitter checking * start up * shutdown * isolation * system flushing * measured, interpreted and adjusted flow rates and pressures * measured and recorded output and efficiency of an irrigation system * monitored and recorded system effectiveness: * application rates * depth of irrigation * infiltration and runoff * irrigation times * pressure variations and blockages * salinity levels and water quality * soil moisture levels * sprinkler coverage and output * removed and installed system components according to operation and maintenance manual and workplace environmental procedures * identified adverse environmental impacts of irrigation activities and taken appropriate remedial action * followed workplace health and safety and environmental procedures * used records to review an irrigation system. | |

| Knowledge Evidence |
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| 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:   * best practices for reducing environmental impacts of irrigation * component specifications * critical measures for moisture availability: * field capacity * readily available water * wilting point * energy efficiency indicators and benchmarks for moving sprinkler irrigation: * application efficiency * average application rate * instantaneous application rate * environmental hazards of runoff and compaction * environmental impacts of irrigation using water from any ground or underground source * general irrigation methods for moving sprinkler systems * irrigation schedules * main components of moving sprinkler irrigation systems * soil compaction and drainage monitoring * moving sprinkler irrigation technologies * physical soil characteristics, including: * infiltration rate * water holding capacity * wetted volume in the root zone * pump types used in moving sprinkler irrigation systems and their output and efficiency ratings * pump types used in moving sprinkler irrigation systems and their operation * moving sprinkler and travelling mechanism operation and maintenance manual servicing and maintenance procedures * soil moisture testing techniques * soil, plant and water relationships * water requirements of plants and crops consistent with sound environmental management * workplace health and safety and environmental procedures. |

| Assessment Conditions |
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| 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: * moving sprinkler irrigation system equipment and tools * moving sprinkler irrigation system measuring, and recording equipment and procedures * specifications: * moving sprinkler and travelling mechanism operation and maintenance manual * workplace health and safety and environmental procedures applicable to moving sprinkler irrigation systems * 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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