Modification history

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| Release | Comments |
| Release 1 | This version released with FBP Food, Beverage and Pharmaceutical Training Package version 2.0. |

| FBPFST4012 | Apply water management principles to the food industry |
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| Application | This unit of competency describes the skills and knowledge required of quality assurance and technical staff to monitor and manage water quality and usage in a food processing operation.  This unit applies to individuals who are responsible for maintaining product safety, quality and efficiency of food processing operations that use water by managing their own work and the quality of the work of others within known parameters. This includes using discretion and judgement in the selection and use of available resources.  No occupational licensing or certification requirements apply to this unit at the time of publication. However, legislative and regulatory requirements for food processing exist so local requirements must be checked. All work must comply with Australian food safety standards and relevant codes of practice. |
| Prerequisite Unit | Nil |
| Unit Sector | Food science and technology (FST) |

| 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. Identify the sources and quality of water available to food processing plants | 1.1 Identify current and possible future sources, and quality, of raw water  1.2 Identify the quality requirements of water for food processing operations  1.3 Assess the chemical properties and suitability of water supplied from a range of sources including water recycled from the food processing plant  1.4 Assess the consumption of non-recycled water and formulate a reduction strategy |
| 2. Identify raw water pre-treatment processes | 2.1 Document the steps involved in water purification and obtain data on quality of supplied water  2.2 Identify and evaluate water disinfection methods and equipment for a range of food processing operations |
| 3. Apply efficient and sustainable water management principles to the food processing industry | 3.1 Identify opportunities for reducing water usage  3.2 Identify sources and characteristics of waste water generated across the operation  3.3 Identify methods for treating and recycling water for re-use  3.4 Identify opportunities to reduce the volume of waste water and improve treatment methods  3.5 Review procedures for future water management and set critical limits  3.6 Document outcomes of review |

| 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 | * Interprets food safety, water management and environmental protection guidelines and regulations * Interprets water management procedures |
| Numeracy | * Analyses data resulting from testing of water * Determines calibration procedures and schedules for test equipment |
| Navigate the world of work | * Monitors adherence to legal and regulatory standards and responsibilities for self and others |
| Get the work done | * Gathers data and feedback to strengthen product quality and processes in the future |

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| Unit Mapping Information | | | |
| Code and title current version | Code and title previous version | Comments | Equivalence status |
| FBPFST4012 Apply water management principles to the food industry | FDFFST4012A Apply water management principles to the food industry | Updated to meet Standards for Training Packages | 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=78b15323-cd38-483e-aad7-1159b570a5c4 |

| TITLE | Assessment requirements for FBPFST4012 Apply water management principles to the food industry |
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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 safely and effectively applied water management principles to the food industry on at least one occasion, including:   * assessing the chemical properties of water to determine its suitability for use in food processing * using appropriate disinfection methods * monitoring water usage for a food processing operation * integrating water quality monitoring into process planning * implementing and reviewing water management procedures in food processing to reduce volume of waste water and improve water quality. | |

| 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:   * water quality requirements, including: * chemical specifications including pH, Total Suspended Solids (TSS), Total Dissolved Solids (TDS), heavy metals * microbiological specifications including BOD, presence of Fecal coloform, bacteria, Cryptosporidium, Giardiia * water purification processes in general * water disinfection methodologies and systems suitable for the food processing industry including chlorination, ozonation and UV irradiation * waste water treatment (relevant to a food processing plant) including primary, secondary and tertiary waste water treatment stages * waste stream characteristics and classification in relation to the food processing industry * methods of reducing, reusing and recycling water in a food processing operation, including implementation and routine monitoring of waste reduction practices, use of consumable, returnable, refillable or reusable packaging * Commonwealth, state/territory legislation and local bylaws governing prescribed wastes * legal requirements for water discharge * regulations relating to the processing and disposal of food waste * the major requirements contained in the environmental protection legislation, including state/territory environmental regulatory certification procedures, permits and waste discharge agreements. |

| Assessment Conditions |
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| Assessment of skills must take place under the following conditions:   * physical conditions: * skills must be demonstrated in a workplace setting or an environment that accurately represents a real food processing workplace * resources, equipment and materials: * testing and analysis equipment * water samples * specifications: * methods and procedures for analysing and purifying water samples * water management procedures.   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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