Modification history

Release	Comments
Release 1	This version released with SFI Seafood Industry Training Package Version 1.0

SFIAQU403	**Manage water quality and environmental monitoring in enclosed systems**
Application	This unit of competency describes the skills and knowledge required to develop and implement a water quality and environmental monitoring program and procedures for enclosed systems. The unit applies to individuals who use specialised skills and knowledge to analyse and monitor water quality and environmental data and manage maintenance activities within an aquaculture facility. No licensing, legislative or certification requirements apply to this unit at the time of publication.
Prerequisite Unit	Nil
Unit Sector	Aquaculture (AQU)

Elements	Performance Criteria
Elements describe the essential outcomes.	*Performance criteria describe the performance needed to demonstrate achievement of the element.*
1. Develop a water quality management program	1.1 Develop monitoring schedule and methods to identify routine water quality and environmental parameters 1.2 Develop workplace procedures for routine water quality, environmental monitoring and management of culture or holding water and the use of relevant technology 1.3 Organise data collection and record management activities
2. Oversee non-routine water quality monitoring, sampling and manipulation	2.1 Identify potential problematic non-routine water quality parameters and develop measurement methods 2.2 Carry out monitoring and sampling and arrange external analysis according to workplace procedures 2.3 Detect and manage effects of health treatments on the quality of the culture or holding water
3. Analyse and present data in tables and graphs	3.1 Check water quality and environmental data to identify transcription errors or atypical entries 3.2 Present data accurately in tables and graphs according to workplace practices 3.3 Analyse data and report on features and trends
4. Assess and adjust water for cultured or held stock	4.1 Assess the suitability of supply water for cultured or held stock 4.2 Detect aquaculture practices that impact adversely on water quality, and modify practices to minimise impacts 4.3 Manipulate water chemistry to improve water quality according to workplace procedures 4.4 Modify management strategies based on data collected

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	• Analyses data against quality parameters and interprets tables and graphs to determine trends
Writing	• Records and presents data accurately and in required format • Documents workplace procedures using clear structure, language and technical terminology
Numeracy	• Measures perimeters, areas, volumes and angles • Applies mathematical concepts of ratio, percentage, density, and standard deviation to monitoring activities
Oral communication	• Participates in verbal exchanges to convey information relating to water quality and monitoring data
Navigate the world of work	• Works independently within broad parameters, taking responsibility for plans, decisions and outcomes relating to own role and area of responsibility
Get the work done	• Uses workplace digital systems and tools to access, organise, analyse and display information relevant to role and area of responsibility

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
SFIAQU403 Manage water quality and environmental monitoring in enclosed systems	SFIAQUA411A Manage water quality and environmental monitoring in enclosed systems	Updated to meet Standards for Training Packages	Equivalent unit

Links	Companion Volumes, including Implementation Guides, are available at VETNet: https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=e31d8c6b-1608-4d77-9f71-9ee749456273

TITLE	Assessment requirements for SFIAQU403 Manage water quality and environmental monitoring in enclosed 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 developed and managed a water quality and environmental monitoring program for an enclosed system on at least one occasion, including:

- developing the monitoring schedule and procedures for routine monitoring
- analysing and interpreting graphs and trends in data to determine required action for routine and non-routine data
- implementing water quality and environmental management strategies based on analysis of data.

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:

- purpose of a water quality management program
- routine and non-routine water quality parameters
- water chemistry and interaction between parameters
- interaction between stock, water chemistry and aquaculture practices
- types, features and purpose of a range of monitoring equipment used for managing water quality and environmental monitoring
- procedures for collecting, storing, retrieving and communicating data
- procedures for verifying data and rectifying mistakes
- options for presenting and displaying data
- technology used in environmental monitoring of enclosed systems.

Assessment Conditions

Assessment of skills must take place under the following conditions:

- physical conditions:
  - skills must be demonstrated in an aquaculture facility or an environment that accurately represents workplace conditions
- resources, equipment and materials:
  - measuring and testing equipment
  - data sets and records to analyse
  - technology for recording and presenting data
  - workplace forms or records
- specifications:
  - workplace procedures for management of water quality and environmental monitoring of culture or holding water.

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

Links	Companion Volumes, including Implementation Guides, are available at VETNet: https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=e31d8c6b-1608-4d77-9f71-9ee749456273