



Australian Government

NWPTRT051 Assess and improve treatment for pathogen removal

Release: 1

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Modification History

Release	Comments
1	This unit was released in NWP Water Training Package release 1.0 and meets the Standards for Training Packages. • New unit, created drawing upon information from deleted unit NWP411A

Application

This unit describes the skills required to identify microorganisms and assess the appropriate drinking water or water re-use treatment processes for inactivation or removal.

This unit applies to those working as water treatment operators responsible for water quality in a range of technical and process applications in water and wastewater treatment.

The skills and knowledge described in this unit must be applied within the legislative, regulatory and policy environment in which they are carried out. Organisational policies and procedures must be consulted and adhered to.

Those undertaking this unit would work autonomously performing sophisticated tasks in a familiar context.

No licensing, legislative or certification requirements apply to unit at the time of publication.

Competency Field

Treatment

Elements and Performance Criteria

ELEMENTS	PERFORMANCE CRITERIA
Elements describe the essential outcomes	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions section.
1. Assess performance of processes to remove	1.1 Review existing process performance data. 1.2 Review existing operational processes with reference to manufacturer and plant designer specifications. 1.3 Identify the impact of raw water quality on water treatment

microorganisms	effectiveness for <i>microorganism</i> removal. 1.4 Review existing fault reports and other relevant plant asset information. 1.5 Investigate the operational status of plant components. 1.6 Investigate the cause of treated water quality issues relating to microorganisms. 1.7 Assess the effectiveness of process control strategies for microorganism removal.
2. Improve process performance for removal of microorganisms	2.1 Identify treatment process conditions for optimising microorganism removal. 2.2 Determine plant configuration and revised operational processes for process optimisation. 2.3 Plan a trial to test the performance of the determined optimisation options.
3. Report on system performance and improvement	3.1 Report on the current operational status of the water treatment process. 3.2 Report on effective treatment processes and associated sampling and testing procedures to maintain water quality. 3.3 Compile a report making recommendations on optimisation options.

Foundation Skills

The foundation skills demands of this unit have been mapped for alignment with the Australian Core Skills Framework (ACSF). The following tables outline the performance levels indicated for successful attainment of the unit.

ACSF levels indicative of performance:

1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Learning					Reading					Writing					Oral communication					Numeracy				

Performance variables:

1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Support					Context					Text complexity					Task complexity				

Further information on ACSF and the foundation skills underpinning this unit can be found in the Foundation Skills Guide on the GSA website.

Range of Conditions

Treatment processes include:	• source water management • pre-treatment processes to address problems associated with waterborne microorganisms • physical treatment processes to remove waterborne microorganisms • disinfection processes to kill or deactivate waterborne microorganisms
Associated problems with microorganisms include:	• algal toxins • taste and odour compounds • disinfection by-products • regrowth, nitrification & disinfection failure

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=26336bc0-04e5-49d9-8c31-46c49b6a0037>

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