



Australian Government

NWPTRT083 Operate and control aerobic bioreactor processes

Release: 1

NWPTRT083 Operate and control aerobic bioreactor processes

Modification History

Release	Comments
1	This unit was released in NWP Water Training Package release 1.0 and meets the Standards for Training Packages. This unit supersedes and is equivalent to NWP350B Monitor, operate and control trickling filter processes. • Unit code updated • Content and formatting updated to comply with the new standards • All PC transitioned from passive to active voice • Unit title changed to better reflect unit outcomes

Application

This unit of competency describes the skills required to monitor, operate and control fixed film aerobic bioreactor processes, including trickling filters and rotating biological contactors. This unit of competency also describes the outcomes required to measure and report on system performance and process quality control.

This unit supports the attainment of skills and knowledge required for operational staff with a specific responsibility for fixed film aerobic bioreactor processes in treatment plants.

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, particularly those relating to safety.

Those undertaking this unit would work under supervision, while performing routine tasks, within a range of familiar contexts.

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. Monitor fixed film aerobic bioreactor process performance	1.1 Monitor test results and processes. 1.2 Identify and report faults and the operational condition of the process.
2. Operate and control fixed film aerobic bioreactor processes	2.1 Select and check equipment and tools required to meet safety requirements of task and site. 2.2 Select, fit and use personal protective equipment. 2.3 Carry out routine plant inspections. 2.4 Collect process samples and conduct standard tests. 2.5 Carry out system adjustments and process calculations to enhance system performance.
3. Complete documentation	3.1 Collect, interpret and record process data. 3.2 Report observations outside defined parameters for further action.

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.

Unit Mapping Information

This unit supersedes and is equivalent to NWP350B Monitor, operate and control trickling filter processes.

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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Assessment Requirements for NWPTRT083 Operate and control aerobic bioreactor processes

Modification History

Release	Comments
1	These Assessment Requirements were released in NWP Water Training Package release 1.0 and meet the Standards for Training Packages. Assessment Requirements created drawing upon specified assessment information from superseded unit

Performance Evidence

Evidence required to demonstrate competence must satisfy all of the requirements of the elements and performance criteria. If not otherwise specified the candidate must demonstrate evidence of performance of the following on at least one occasion.

- identifying and correcting operational and control system problems
- taking samples and performing tests:
 - settling tests
 - microscopic observation
 - pH
 - dissolved oxygen
 - nutrient analyses, including at least one of:
 - nitrogen
 - phosphorus
 - temperature
- completing logs and reports
- performing relevant process calculations:
 - hydraulic and organic loading rates
 - recirculation ratios
- monitoring test results
- identifying and reporting faults
- conducting routine plant inspections
- making basic process adjustments:
 - pH correction
 - dissolved oxygen levels
 - recirculation rates

- collecting data and completing required documentation

Knowledge Evidence

Evidence required to demonstrate competence must satisfy all of the requirements of the elements and performance criteria. If not otherwise specified the depth of knowledge demonstrated must be appropriate to the job context of the candidate.

- process layout
- features and components of fixed film aerobic bioreactor systems
- theory of process operation and monitoring
- chemicals used for pH control, odour control, nutrients
- flow measurement
- risk factors and potential hazards relating to fixed film aerobic bioreactor systems
- risk control requirements including safety equipment and material safety data sheets
- lockout procedures for mechanical and electrical installations and hydraulic isolation
- equipment operation, capacity and limitations
- relevant utilities and service bodies
- process calculation
- hazardous materials handling
- chemical and biological principles that form the basis of fixed film aerobic wastewater treatment
- types of fixed film processes
- recirculation principles
- operational problems

Assessment Conditions

Competency should be assessed in an actual workplace or in a simulated environment, with access to equipment and infrastructure appropriate to the outcome. Competency should be demonstrated over time to ensure the candidate is assessed across a variety of situations.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

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