



Australian Government

NWPTRT092 Operate and control digestion processes

Release: 1

NWPTRT092 Operate and control digestion 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. • New unit, created drawing upon information from deleted units NWP353B and NWP270B

Application

This unit describes the skills required to operate and control digestion processes and report on system performance within domestic and industrial wastewater treatment plants.

This unit applies to those working as operational staff with specific responsibility for operating anaerobic processes in treatment plants and checking that the processes comply with organisational requirements

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 under supervision, performing routine tasks within 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. Plan and prepare for work	1.1 Determine work requirements from job specifications and plans. 1.2 Select and check equipment to meet safety requirements of task and site.

	1.3 Select, fit and use personal protective equipment.
2. Operate and control process	2.1 Carry out routine inspection on assets. 2.2 Collect process samples. 2.3 Carry out routine tests. 2.4 Prepare samples for laboratory testing. 2.5 Identify and report process faults and operational condition of assets. 2.6 Carry out basic process adjustments to enhance process performance. 2.7 Monitor processes to maintain parameters of operation.
3. Complete documentation	3.1 Collect, record and complete process data. 3.2 Identify data that falls outside normal parameters and report 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.

Range of Conditions

Current digestion processes include:	- anaerobic - mesophilic - aerobic - thermophilic
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	• mesophilic
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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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Assessment Requirements for NWPTRT092 Operate and control digestion 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.

Performance Evidence

Evidence required to demonstrate competence must satisfy all of the requirements of the elements and performance criteria. The candidate must be assessed operating at least one of the processes listed in Range of Conditions. If not otherwise specified the candidate must demonstrate evidence of performance of the following on at least one occasion.

- planning and conducting routine inspections
- completing logs
- taking samples and performing basic tests, including at least one of:
 - pH
 - DO
 - Redox
 - total solids
 - volatile solids (aerobic)
 - gas composition
 - total solids
 - volatile solids
 - volatile acids
 - alkalinity (anaerobic)
- collecting samples for laboratory testing
- applying basic process formulae, including at least one of:
 - solids loading
 - volatile acids to alkalinity ratio
 - solids retention time
- making basic process adjustments according to instructions, including at least one of:
 - feed rate
 - air and oxygen feed rate
 - mixing

- pH (aerobic)
- feed rate
- sludge withdrawal
- mixing
- sludge feed rate
- pH (anaerobic)

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.

- digestion process principles
- types of hazards related to explosives, hydrogen sulphide, carbon dioxide
- differences between aerobic and anaerobic biological processes
- chemical dosing processes
- chemicals used for pH control, odour control, nutrient addition
- flow measurement
- risk factors and potential hazards relating to anaerobic bioreactor systems
- chemical and biological principles that form the basis of digestion
- hydraulic detention times
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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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