



Australian Government

NWPTRT014 Operate and control iron and manganese removal processes

Release: 1

NWPTRT014 Operate and control iron and manganese removal 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.

Application

This unit describes the skills required to operate and control iron and manganese removal processes. The ability to identify faults, apply basic process adjustments, according to instructions, and report on the process is essential to performance.

This unit applies to those working as operational staff in 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 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 required 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 when required. 2.4 Identify and report process faults and operational condition of assets. 2.5 Carry out basic process adjustments to enhance process performance. 2.6 Monitor process to maintain parameters of operation.
3. Report on process	3.1 Collect, interpret, 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 NA					Reading					Writing					Oral communication NA					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

Processes include:	- oxidation - manganese coated filters - sequestering - ion exchange
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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 NWPTRT014 Operate and control iron and manganese removal 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 in at least one of the processes listed in the Range of Conditions. If not otherwise specified the candidate must demonstrate evidence of performance of the following on least one occasion.

- identifying and reporting faults
- completing logs
- preparing and applying chemical dosing
- monitoring test results and processes
- conducting routine process inspections
- taking samples and performing basic tests including at least either jar testing or iron and manganese analyses
- applying basic process formulae including at least either chemical dosage or detention time
- making basic process adjustments according to instructions including at least one of:
 - dosage
 - flow rate
 - detention time
 - pH

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.

- chemical forms and occurrence of iron and manganese
- impact of stratification in reservoirs
- problems associated with iron and manganese in drinking water systems
- chemistry of common oxidation removal processes including aeration, chlorination, potassium permanganate

- manganese coated filtration removal processes including greensand
- ion exchange removal processes
- sequestering with polyphosphates
- chemical dosing processes
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Assessment Conditions

Competency will need to be demonstrated over a period of time reflecting the scope of the role and the practical requirements of the workplace, the evidence collected must relate to a number of performances assessed at different points in time and separated by further learning and practice.

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

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