



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **NWP427B Coordinate and monitor the operation of drainage systems**

**Revision Number: 2**

## NWP427B Coordinate and monitor the operation of drainage systems

### Modification History

NWP427B Release 2: Layout adjusted. No changes to content.

NWP427B Release 1: Primary release.

### Unit Descriptor

This unit of competency describes the outcomes required to coordinate and monitor drainage systems to ensure compliance with the drainage systems management plan, including system performance, maintenance planning and customer liaison.

### Application of the Unit

This unit supports the attainment of skills and knowledge required for staff with a specific responsibility for ensuring that the operation of drainage systems complies with organisational and statutory requirements.

### Licensing/Regulatory Information

Not applicable.

### Pre-Requisites

Not applicable.

### Employability Skills Information

This unit contains employability skills.

### Elements and Performance Criteria Pre-Content

|                                                                   |                                                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Elements describe the essential outcomes of a unit of competency. | Performance criteria describe the required performance needed to demonstrate achievement of the element. Where <b><i>bold italicised</i></b> text is used, further information is detailed in the range statement. Assessment of performance is to be consistent with the evidence guide. |
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## Elements and Performance Criteria

| ELEMENT                                                                       | PERFORMANCE CRITERIA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1 Confirm performance measures in the drainage system management plan.</b> | <ul style="list-style-type: none"><li>1.1 Confirm data gathering requirements specified in the <i>drainage system</i> management plan.</li><li>1.2 Identify, analyse and address issues that impact on drainage systems.</li><li>1.3 Identify, analyse and address <i>stakeholder</i> requirements that impact on the drainage system.</li><li>1.4 Identify, analyse and address environmental factors that impact on the drainage system.</li><li>1.5 Access <i>historic system information</i> and apply as required.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>2 Monitor and coordinate processes and resource targets.</b>               | <ul style="list-style-type: none"><li>2.1 Correctly select, fit and use equipment, including personal protective equipment.</li><li>2.2 Conduct system performance <i>monitoring and testing</i> according to the drainage management plan.</li><li>2.3 Analyse test results and report results according to <i>organisational procedures and statutory requirements</i>.</li><li>2.4 Identify current and potential problems, conduct investigations and report results and recommendations according to organisational requirements.</li><li>2.5 Identify breaches of the drainage management plan, conduct investigations and report results and recommendations according to organisational requirements.</li><li>2.6 Evaluate maintenance budgets, activity programs and output target measures and Identify, analyse and address any deviations from targets.</li><li>2.7 Identify and record links between operational problems and maintenance activities.</li></ul> |
| <b>3 Report outcomes of coordination and monitoring.</b>                      | <ul style="list-style-type: none"><li>3.1 Analyse, record and report coordination and monitoring data according to organisational procedures.</li><li>3.2 Identify and report current and potential problems according to organisational procedures.</li><li>3.3 Make recommendations to improve system performance and/or customer service standards.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

## Required Skills and Knowledge

This describes the essential skills and knowledge and their level, required for this unit.

### Required skills:

- interpret and apply legislation and enterprise policies
- coordinate measuring and testing activities
- conduct investigations
- interpret and apply environmental legislation
- apply consultation and communication skills
- assess environmental impact
- solve operational problems
- produce reports
- use safety equipment and personal protective equipment
- interpret plans, topographic drawings, charts, service diagrams, service search diagrams and instructions
- communicate with employees and customers
- use communication equipment
- identify control system faults

### Required knowledge:

- relevant legislation
- relevant enterprise policies
- range of appropriate measuring and testing procedures
- investigation procedures
- customer expectations and requirements
- enterprise financial systems and key performance indicators
- occupational health and safety legislation
- inspection of drainage systems
- coordination processes
- system layout
- system processes
- environmental aspects of drainage systems
- lock out procedures for mechanical and electrical installations
- relevant utilities and service bodies
- communication systems
- risk factors and potential hazards involved in drainage systems
- equipment operation, capacity and limitations
- effects of weather and conditions on operation of drainage systems
- pipes and fittings
- pumping and valving systems
- gravity systems
- control systems



## Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for the Training Package.

### **Critical aspects for assessment and evidence required to demonstrate competency in this unit**

The candidate should demonstrate the ability to coordinate and monitor the operation of drainage systems including:

- interpreting the drainage system management plan and confirming data to be gathered
- identifying, analysing and addressing issues that impact on drainage systems, such as stakeholder requirements and environmental factors
- accessing historic system information
- conducting system performance monitoring and testing
- analysing and reporting test results
- investigating system faults and breaches of the drainage management plan and reporting results and recommendations
- monitoring budgets, programs and targets, evaluating data and investigating and reporting on deviations from the drainage system management plan
- submitting recommendations to improve system performance and/or customer service standards

### **Context of and specific resources for assessment**

Access to the workplace and resources including:

- documentation that should normally be available in a water industry organisation
- relevant codes, standards, and government regulations

Where applicable, physical resources should include equipment modified for people with disabilities.

Access must be provided to appropriate learning and/or assessment support when required.

Assessment processes and techniques must be culturally appropriate, and appropriate to the language and literacy capacity of the candidate and the work being performed.

Validity and sufficiency of evidence requires that:

- competency will need to be demonstrated over a period of time reflecting the scope of the role and the practical requirements of the workplace
- where the assessment is part of a structured learning experience the evidence collected must relate to a number of performances assessed at different points in time and separated by further learning and practice

- a decision of competence should only be made when the assessor has complete confidence in the person's competence over time and in various contexts
- all assessment that is part of a structured learning experience must include a combination of direct, indirect and supplementary evidence
- where assessment is for the purpose of recognition (RCC/RPL), the evidence provided will need to be authenticated and show that it represents competency demonstrated over a period of time
- assessment can be through simulated project-based activity and must include evidence relating to each of the elements in this unit

In all cases where practical assessment is used it will be combined with targeted questioning to assess the underpinning knowledge. Questioning will be undertaken in a manner appropriate to the skill levels of the operator, any cultural issues that may affect responses to the questions, and reflecting the requirements of the competency and the work being performed.

## Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. ***Bold italicised*** wording, if used in the Performance Criteria, is detailed below. Add any essential operating conditions that may be present with training and assessment depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts.

***Drainage system*** may include:

- collection
- transport
- treatment
- disposal
- pipe and pumping systems
- open drains and natural water courses
- gross pollution traps
- wetland treatment systems
- stormwater outfalls
- surface water run-off (e.g. roads, pavements, roofs, parks)
- stormwater flow attenuation structures

***Stakeholder*** may include:

- conservation groups
- land care groups
- general community
- farming groups and individuals
- mining groups and companies
- catchment users
- customers
- government (all levels)
- quasi government organisations

***Historic system information*** may include:

- previous studies
- impact of weather
- relevant hydrometrical information
- system models

***Monitoring and testing*** may include:

- physical analysis of water, for example:
  - pH
  - conductivity
  - colour
  - turbidity
- chemical analysis of water, for example:
  - chlorine
  - alkalinity
  - biochemical
  - oxygen demand

- heavy metals
- iron
- manganese
- microbiological analyses, for example:
  - coliforms
  - plate counts
  - algae identification and counts
- physical measures, for example:
  - power
  - chemicals
  - water flows
  - sludge volumes
- mechanical testing, for example:
  - vibration
  - noise
  - temperature
- fauna and flora surveys
- stakeholder surveys
- relevant federal legislation
- relevant state or territory legislation
- relevant local government by-laws
- relevant land care group agreements
- relevant government and quasi government authorities' rules (e.g. Great Barrier Reef Marine Park Authority, Environment Protection Authority)

***Organisational procedures and statutory requirements*** may include:

## **Unit Sector(s)**

Not applicable.

## **Competency field**

Collection and distribution.