



**Australian Government**

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

# **PUADEFPH007A Conduct chlorine dosing of water at the point of supply**

**Revision Number: 1**

## PUADEFPH007A Conduct chlorine dosing of water at the point of supply

### Modification History

Not applicable.

### Unit Descriptor

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This unit covers the competency required to conduct chlorine dosing of water at the point of supply within the Australian Defence Force (ADF).

### Application of the Unit

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The application of this unit in the workplace includes chlorine dosing water at the *point of supply* to ensure chlorine disinfection residue levels meet the minimum standard for national drinking water guidelines.

This unit of competency is applicable to preventive medicine personnel. This function is limited to the performance of tasks in accordance with organisational policies and procedures.

### Licensing/Regulatory Information

Not applicable.

### Pre-Requisites

Not applicable.

## Employability Skills Information

<b>Employability Skills</b>	This unit contains employability skills.
<b>Pre-requisite Unit/s</b>	Nil

## 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 bold italicised text is used, further information is detailed in the Required Skills and Knowledge and/or the Range Statement. Assessment of performance is to be consistent with the Evidence Guide.

## Elements and Performance Criteria

### ELEMENT

### PERFORMANCE CRITERIA

#### 1. Prepare for chlorine dosing

- 1.1 Chlorines are used, handled and stored in accordance with ***organisational policies and procedures***
- 1.2 Chlorine residue level is established via ***field water testing***
- 1.3 ***Chlorine residue level*** is compared with national drinking water guidelines and information related to chlorine concentration to determine ***chlorine demand***

#### 2. Perform chlorine dosing

- 2.1 ***Chlorine dosing*** is conducted in accordance with organisational policies and procedures
- 2.2 ***Personal protective equipment*** is selected, fitted and used correctly
- 2.3 Dosing is monitored to maintain parameters of dosing to achieve desired chlorine residue level
- 2.4 ***Dosing faults*** are identified and acted on, in accordance with organisational policies and procedures

**ELEMENT****PERFORMANCE CRITERIA****3. Monitor chlorine dosing performance**

- 3.1 Dosing samples are collected and field tested to confirm chlorine residue level and water quality
- 3.2 Dosing data is collected, recorded and reported according to organisational policies and procedures
- 3.3 Observations outside defined parameters are reported for further action

## Required Skills and Knowledge

### REQUIRED SKILLS AND KNOWLEDGE

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

#### Required Skills

- calculate chlorine dosing level
- communicate appropriately about, consult on and impart knowledge of:
  - causes of disease transmission
  - causes of manpower wastage
  - control measures of disease transmission
  - safe water handling practices
  - water quality assurance measures
- interpret data gathered in the field against quality standards in national water quality guidelines and organisational policy
- liaise and communicate with persons in positions of authority
- make technical judgements based on own level of knowledge and experience
- measure chemicals accurately
- prioritise tasking
- work safely

#### Required Knowledge

- aetiology of water-borne diseases
- Australian Drinking Water Guidelines 2004 (National Health and Medical Research Council)
- best use of available resources
- causes of disease transmission
- causes of manpower wastage
- chlorine dosing levels per volume of water
- control measures of disease transmission
- documentation processes relevant to own workplace
- handling and storage requirements for chlorine
- health surveillance system
- organisational policies and procedures
- process of disease
- relationship between chlorine, water pH and temperature as it relates to water disinfection
- risk management principles
- safe water handling practices
- time management strategies to set priorities
- water quality assurance measures

## Evidence Guide

### EVIDENCE GUIDE

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

Assessment must confirm the ability to:

- handle, store and used chlorine safely
- accurately calculate chlorine dosing levels
- identify and respond to dosing faults.

#### **Consistency in performance**

Competency should be demonstrated over a minimum of two assessment occasions.

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

##### **Context of assessment**

Competency should be assessed in an actual workplace situation. This may be in an urban or a field setting.

##### **Specific resources for assessment**

Access is required to:

- appropriate equipment and stores
- relevant organisational policies and procedures.

## Range Statement

### 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 in the Performance Criteria is detailed below.

<b>Point of supply may include</b>	<ul style="list-style-type: none"> <li>Trailer mounted water containers</li> <li>Water distribution point</li> <li>20 L water jerry cans</li> <li>100 L water bladder</li> </ul>
<b>Organisational policies and procedures may include</b>	<ul style="list-style-type: none"> <li>Clinical standards (state/territory and national)</li> <li>Codes of ethics</li> <li>Codes of practice</li> <li>Environmental health policy</li> <li>Health and hygiene guidelines</li> <li>Health surveillance policy documents</li> <li>Industry professional body standards</li> <li>Industry standards (state/territory and national)</li> <li>Organisational health policy directives</li> <li>Pesticides manual</li> <li>Relevant Australian Standards</li> <li>Relevant Commonwealth Acts</li> <li>Workplace safety guidelines</li> </ul>
<b>Field water testing may include</b>	<ul style="list-style-type: none"> <li>Faecal coliform bacteria</li> <li>Free chlorine level (after addition)</li> <li>pH</li> <li>Physical characteristics (taste, colour, odour and temperature)</li> <li>Radioactivity (as ordered)</li> <li>Selected poisons (if presence is suspected, normally arsenic and cyanide, and may include mustard and nerve agents)</li> <li>Total coliform bacteria</li> <li>Total dissolved solids (TDS)</li> </ul>

**RANGE STATEMENT**

	Turbidity
<b>Chlorine residual level</b>	is the concentration of chlorine remaining after the chlorine oxidised and performed its disinfection
<b>Chlorine demand</b>	is the amount of chlorine participating in oxidation reactions during a specified contact period; chlorine in water rapidly oxidises organic matter including micro-organisms
<b>Chlorine dosage</b>	is the amount of chlorine added to water; dosage is expressed as a concentration, normally in terms of milligrams per litre (mg/L)
<b>Personal protective equipment may include</b>	Chemical resistant apron Chemical resistant gloves Eye protection
<b>Dosing faults may include</b>	Chlorine residual level too high Chlorine residual level too low Insufficient contact time allowed Water pH level too high Water temperature too high

**Unit Sector(s)**

Not applicable.

**Corequisite Unit/s**

<b>Co-requisite Unit/s</b>	NWP210A Perform basic water tests NWP218A Perform sampling
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