



Australian Government

MSS024016 Process and present environmental data

Release: 1

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Modification History

Release 1. Updated unit code. Changes to performance criteria. Range of conditions removed. Assessment requirements amended. Equivalent outcome.

Application

This unit describes the skills and knowledge to retrieve environmental data; evaluate formulae; perform scientific calculations; present and interpret information in tables, graphs and simple maps; and keep accurate records.

This unit applies to environmental technicians working in all industry sectors. The unit requires personnel to solve problems of limited complexity where the information may not be obvious, but not contradictory, and can be determined by direct reasoning.

No licensing or certification requirements exist at the time of publication. Relevant legislation, industry standards and codes of practice within Australia must be applied.

Pre-requisite Unit

Nil

Competency Field

Data

Unit Sector

Environmental

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1	Retrieve and check environmental data	1.1	Read and interpret workplace procedures for processing data
		1.2	Store and retrieve data using appropriate files and application software
		1.3	Verify the quality of data using workplace procedures
		1.4	Rectify errors in data using workplace procedures

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

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|---|---|-----|--|
| 2 | Calculate scientific quantities | 2.1 | Calculate statistical values for given data |
| | | 2.2 | Calculate scientific quantities using given formulae and data and estimate uncertainties |
| | | 2.3 | Ensure calculated quantities are consistent with estimations and expectations |
| | | 2.4 | Report all calculated quantities using the appropriate units and correct number of significant figures |
| | | | |
| 3 | Present data | 3.1 | Present data in clearly labelled tables, charts and simple maps |
| | | 3.2 | Graph data using appropriate scales to span the range of data or display trends |
| | | 3.3 | Report all data using the appropriate units and number of significant figures |
| | | | |
| 4 | Read and interpret data variations and trends | 4.1 | Compare data with reference values or expected ranges |
| | | 4.2 | Recognise and report significant variations and trends in data |
| | | 4.3 | Interpret significant features of graphs, including gradients, intercepts, maximum and minimum values, and limit lines |
| | | | |
| 5 | Keep accurate written records and maintain confidentiality | 5.1 | Transcribe information accurately |
| | | 5.2 | Verify the accuracy of records |
| | | 5.3 | File and store workplace records in accordance with workplace procedures |
| | | 5.4 | File all reference documents logically and keep them up-to-date and secured |

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

5.5 Observe workplace confidentiality standards

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MSS024004 Process and present environmental data.

Links

The MSS Sustainability Companion Volume implementation Guides are available from VETNet: -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5b04f318-804f-4dc0-9463-c3fb9a3fe998>

Assessment Requirements for MSS024016 Process and present environmental data

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Performance Evidence

There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit, and:

- retrieved, coded, recorded and checked environmental data and calculated scientific and statistical quantities with or without a calculator or computer software, including at least 8 of the following items:
 - converting units involving multiples and submultiples
 - scientific notation, significant figures, round off, estimate and approximate
 - transposing and evaluating formulae
 - fractions, decimals, proportions and percentages
 - percentage and absolute uncertainties in measurements and test results
 - statistical values of data, including mean, median, mode and standard deviation
 - perimeters, angles, areas (m^2) and volumes (mL , L , m^3) of regular shapes
 - dose (mg), average mass, mass percentage, density, specific gravity, moisture, relative and absolute humidity, viscosity and permeability
 - ratios
 - concentration
 - average count, colonies per swab surface and cell counts
 - variables
 - biological oxygen demand (BOD), chemical oxygen demand (COD) and total organic carbons (TOC)
 - % content of moisture, sulphur dioxide and trace metals
- prepared and presented accurate results in the required format and included data in at least 1 of the following forms:
 - tables, graphs, histograms, pie charts, bar charts, maps
- interpreted data to identify:
 - significant data points
 - variations
 - trends
 - anomalies.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- scientific and technical terminology relevant to job role
- procedures for coding, entering, storing, retrieving and communicating data
- international system of units (SI)
- concepts of metrology, including:
 - all measurements are estimates
 - repeated measurements belong to a sample of the measured parameter
 - repeatability, precision, accuracy, significant figures
 - sources of error, uncertainty associated with measurement steps
 - traceability
- procedures for verifying data and rectifying mistakes
- procedures for maintaining and filing records, and maintaining security of data
- variations and trends in data (including seasonal, diurnal, location and non-conformance).

Assessment Conditions

Skills must have been demonstrated in the workplace or in a simulated environment that reflects workplace conditions and contingencies. The following conditions must be met for this unit:

- use of facilities, equipment and resources, including:
 - calculator, computer and relevant software or laboratory information system
 - environmental data sets and records
 - documentation, including user manuals; workplace procedures for recording, processing, storing and reporting environmental data; test or survey methods.

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

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