



**Australian Government**

# **Assessment Requirements for MSS024006 Perform sampling and testing of water**

**Release: 1**

# Assessment Requirements for MSS024006 Perform sampling and testing of water

## Modification History

Release 1. Supersedes and is equivalent to MSS024006A Perform sampling and testing of water

## Performance Evidence

Evidence of competence in this unit must satisfy all of the requirements of the elements and performance criteria, and include demonstration of:

- sampling natural, polluted and/or process water for both chemical and microbiological parameters and conducting field-testing of samples on at least two (2) occasions
- accurately interpreting a sampling plan, relevant standards and codes and associated sampling, testing and data quality procedures
- selecting and checking all required field equipment, instruments and materials and safely transporting them to and from site
- safely setting-up and using field instruments and/or equipment, including field calibration
- obtaining reliable, representative water samples in accordance with sampling plan and close attention to any pre-treatment, containers, preservation, storage, labelling and traceability requirements
- obtaining and recording valid and reliable field test data in accordance with test methods
- accurately recording site features, environmental conditions and any observations that may impact on reliability of field data
- identifying atypical results as out-of-normal range or an artefact
- identifying and rectifying basic instrument faults
- calculating results using appropriate units and precision
- checking the acceptability of environmental data using specified quality tests or procedures
- completing field records, presenting and reporting results in accordance with workplace procedures
- seeking advice when issues/problems are beyond scope of competence/responsibility
- transporting, cleaning, maintaining and storing field equipment in accordance with workplace procedures
- following procedures for working safely and minimising environmental impacts/waste.

## Knowledge Evidence

Must provide evidence that demonstrates knowledge of:

- scientific terminology used in job role covering water chemistry, biology and microbiology
- hydrologic cycle

- fundamentals of aquatic chemistry, including:
  - physical and chemical properties of water
  - chemical equilibria in natural, polluted and process waters
  - biogeochemical processes in freshwater and marine systems
  - water analytical environmental chemistry
  - environmental contaminants in water (fate, transport and bioaccumulation)
- fundamentals of hydrobiology, including:
  - aquatic and benthic flora and fauna
  - aquatic microorganisms
  - marine, estuarine and freshwater ecosystems
  - stratification and eutrophication in water bodies
  - aquatic microbiology
- principles of representative sampling
- principles and procedures for random, systematic and stratified sampling, including consistency of sampling procedures
- preservation of the integrity of samples
- maintaining identification of samples relative to their source
- workplace and/or legal traceability requirements
- cost-effectiveness of sampling
- common characteristics of water to be sampled and likely contaminants
- links between quality control, quality assurance, quality management systems and sampling procedures
- workplace procedures dealing with legislative requirements for the handling, labelling and transport of hazardous goods
- relevant hazards; health and safety and site environmental management requirements; importance of personal and environmental safe work procedures particularly at high risk sites.

## Assessment Conditions

- Judgement of competence must be based on holistic assessment of the evidence. Assessment methods must confirm consistency of performance over time, rather than a single assessment event.
- This unit of competency is to be assessed in the workplace, or a simulated workplace environment. A simulated workplace environment must reflect realistic operational workplace conditions that cover all aspects of workplace performance, including the environment, task skills, task management skills, contingency management skills and job role environment skills.
- Foundation skills are integral to competent performance of the unit and should not be assessed separately.
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

- Knowledge evidence may be collected concurrently with performance evidence or through an independent process such as workbooks, written assessments or interviews (provided a record is kept in each case).
- Holistic assessment methods include:
  - inspection of water samples collected by the candidate against given sampling requirements
  - review of water sampling and testing records completed by the candidate for accuracy and completeness
  - feedback from supervisors that the candidate can safely sample and test natural, polluted and/or process water for both chemical and microbiological parameters and provide reliable test results within the agreed timeframe
  - oral and/or written questions to check the candidate's knowledge of water sampling and testing procedures, set-up and use of equipment; normal ranges; troubleshooting of common sampling and testing problems.
- Access is required to all instruments, equipment, materials, workplace documentation, procedures, and specifications associated with this unit including, but not limited to:
  - vehicles, survey/test equipment, water sampling and monitoring equipment, camera, consumables
  - documentation, including work program, maps and field protocols, codes of practice, user manuals, workplace safety procedures and sampling/test/survey methods.
- Assessors must satisfy the assessor competency requirements that are in place at the time of the assessment as set by the VET regulator.
- The assessor must demonstrate both technical competency and currency.
- Technical competence can be demonstrated through:
  - relevant VET or other qualification/Statement of Attainment AND/OR
  - relevant workplace experience
- Currency can be demonstrated through:
  - performing the competency being assessed as part of current employment OR
  - having consulted with an organisation providing environmental monitoring, management or technology related services about performing the competency being assessed within the last twelve months.

## Links

Companion Volume implementation guides are found in VETNet -  
<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=5b04f318-804f-4dc0-9463-c3fb9a3fe998>