



Australian Government

MSS025015 Plan and conduct environmental project work

Release: 1

MSS025015 Plan and conduct environmental project work

Modification History

Release 1. Supersedes and is equivalent to MSS025015A Plan and conduct environmental project work

Application

This unit of competency covers the ability to plan and conduct a small scale, low risk, measurement-based environmental project. Personnel may work individually, or as part of a team. They are required to develop and confirm a project brief/plan with their supervisor, execute and document the project, and evaluate the outcomes. The unit does not cover procurement of project resources and contract management.

This unit of competency is applicable to environmental technicians working in all industry sectors.

While no specific licensing or certification requirements apply to this unit at the time of publication, environmental monitoring and management activities are governed by relevant legislation, regulations and/or external accreditation requirements. Local requirements should be checked.

Pre-requisite Unit

Nil

Competency Field

Project management

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	Scope project with supervisor	1.1	Clarify project aim, objectives and timeframe.
		1.2	Identify intended outcomes, key stakeholders, drivers and likely constraints.
		1.3	Identify key activities, milestones and resources required to achieve deliverables on time.

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| | | 1.4 | Agree on performance indicators to monitor project progress and acceptance criteria for deliverables. |
| 2 | Prepare project plan in consultation with supervisor | 2.1 | Identify relevant legislation, standards, codes, procedures and/or workplace requirements. |
| | | 2.2 | Locate and review background information to inform the development of project methodology. |
| | | 2.3 | Analyse risks for all aspects of project work. |
| | | 2.4 | Consider a range of strategies for conducting the project, including alternative measurement methods. |
| | | 2.5 | Outline feasible and measurable project objectives, selected methodology, outputs and the roles and responsibilities of participants. |
| | | 2.6 | Consider integration and sequencing of tasks as part of optimising work breakdown structure. |
| | | 2.7 | Present draft project plan and work schedule to supervisor for review and approval. |
| 3 | Review project methodology | 3.1 | Conduct trials to refine methodology and/or provide proof of concept, as necessary. |
| | | 3.2 | Troubleshoot equipment and methodology problems and develop/test solutions in consultation with supervisor, as necessary. |
| | | 3.3 | Modify draft project plan, as necessary. |
| | | 3.4 | Document all accepted/rejected ideas and/or prototypes from trials. |
| 4 | Execute project plan and analyse outcomes | 4.1 | Communicate plan to other participants, as necessary. |
| | | 4.2 | Safely operate measurement equipment/instruments in accordance with manufacturer requirements, test methods and workplace procedures. |
| | | 4.3 | Obtain data using specified methods and in accordance with safety and legislative/regulatory/workplace |

- requirements.
- 4.4 Record and store data in agreed formats.
 - 4.5 Recognise anomalous results and investigate causes.
 - 4.6 Evaluate data using specified quality criteria and reference materials.
 - 4.7 Use appropriate mathematical/statistical/graphical methods and software to analyse and present results.
 - 4.8 Report results using the appropriate accuracy, precision and units.
- 5 **Report project progress and outcomes**
- 5.1 Provide progress reports/project outputs on time and at the required quality standard.
 - 5.2 Evaluate the project process and outputs in comparison with the project objectives and performance criteria.
 - 5.3 Identify any issues and opportunities for improvement.
 - 5.4 Prepare project reports containing the required information and using the agreed style, voice and format.
 - 5.5 Complete and store all project documentation.
 - 5.6 Present final report of project process and outcomes to supervisor.

Foundation Skills

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

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

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional

contexts) are included.

Legislation, regulations, standards, codes, workplace procedures and requirements include the latest version of one or more of:

- federal legislation, such as the Environment Protection and Biodiversity Conservation Act, Australian Heritage Council Act, Native Title Act and National Environmental Protection Measures
- state/territory government legislation and local government by-laws, policies, regulations and plans dealing with land use, acquisition, planning and protection; environmental protection; cultural/heritage protection; vegetation management; nature conservation and wildlife/plant protection; water and water management; soil conservation; pollution and contaminated sites; fisheries, forestry and mining operations
- legislation, standards and codes of practice for work health and safety (WHS)
- Australian and international standards covering environmental management (e.g. AS/NZS ISO 14000 Basic Set:2007 Environmental Management Basic Set)
- industry guidelines and codes, such as state and territory regulator (e.g. EPA) sampling and testing manuals, and Australian Dangerous Goods Code
- registration/licensing and/or accreditation requirements
- site plans, maps and specifications; methods and procedures for sampling and in-field testing to meet workplace, client and/or regulatory/certifying body requirements; client sampling schemes and sampling plans; workplace environmental management plans and procedures for specific sites and/or activities (e.g. sampling, monitoring, construction and mining)
- workplace documents, such as standard operating procedures (SOPs); work schedules; recording and reporting procedures; equipment manuals and warranties; supplier catalogue and handbooks; safety data sheets (SDS) and safety procedures; waste minimisation, containment, processing and safe disposal procedures.

Background information includes one or more of:

- site or project history, and client history
- records of consultations with stakeholders
- emergency plans and safety procedures
- site access protocols and permits
- maps (road and topographical)
- existing databases (e.g. vegetation, topography, soils and regional ecosystem maps)
- legislative/regulatory requirements

- workplace environmental management plans for site
- workplace, regulatory or standard methods/procedures for environmental sampling, monitoring or in-field testing
- manufacturer information or manuals for environmental equipment
- relevant case studies and good practice models.

Environmental project work includes collecting and presenting data relating to one or more of:

- outdoor air quality
- noise
- water quality, surface water, environmental flows, groundwater and catchment studies, and hydrological surveys
- occupational hygiene (e.g. air quality, noise and radiation)
- ecology studies
- soil surveys, geotechnical surveys
- contaminated site management (with appropriate risk analysis and supervision)
- land management
- coastal management
- wetland management
- stormwater management
- energy technologies and services
- waste management.

Environmental measurements include one or more of:

- conducting in-field sampling and testing
- conducting flora and/or fauna surveys
- conducting soil surveys and soil profiling at a site
- commissioning or modifying field equipment or instruments
- establishing or modifying environmental monitoring stations
- growth of species of environmental interest under controlled conditions
- remediation trials
- laboratory testing of environmental samples.

Project plans include one or more of:

- scope, objectives, work breakdown structure
- sampling/testing/monitoring/survey methods
- available resources (e.g. equipment and personnel), specific roles and responsibilities of participants
- budget and cost estimates

- data quality requirements and assurance procedures
- risk analysis and control measures, safety requirements and related work procedures
- stakeholders and consultation procedures
- milestones, output/project deliverables and their acceptance criteria
- project management procedures covering planning, risk analysis, communications and reporting
- project management software and tools, such as Gantt and program and evaluation review technique (PERT) charts, critical path method, and records of costs and inputs.

Safety procedures and control measures include one or more of:

- use of personal protective equipment (PPE), such as sunscreen, hats, safety glasses, gloves, coveralls and safety boots
- use of specified safe work procedures for tasks
- ‘stay with vehicle’ and other survival techniques
- regular communication schedule
- use of global positioning system (GPS), maps and aerial photos
- handling, storage and disposal of all hazardous materials/waste in accordance with SDS, labels, workplace procedures, codes and regulations.

Mathematical/statistical/graphical methods and software include one or more of:

- determination of linear, logarithmic, exponential and power relationships
- determination of regression lines and correlation coefficients
- uncertainty calculations
- frequency and probability plots
- parametric statistical tools, such as t-test, z-test, binomial and analysis of variance (ANOVA)
- non-parametric statistical tools, such as Chi-square test
- use of spreadsheets and databases.

Project documentation includes one or more of:

- sampling, monitoring, survey or in-field test data and results
- records of equipment use, time spent and approved expenditure
- emails and correspondence, records of consultations
- progress reports
- final reports/briefings

WHS and environmental management requirements include:

- compliance with relevant federal/state/territory WHS legislation at all times
- assuming that samples are potentially hazardous and applying standard precautions
- accessing and applying current industry understanding of infection control issued by the National Health and Medical Research Council (NHMRC) and state/territory Departments of Health, where relevant.

Unit Mapping Information

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Links

Companion Volume implementation guides are found in VETNet -

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

Assessment Requirements for MSS025015 Plan and conduct environmental project work

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Performance Evidence

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

- scoping, planning and conducting at least one (1) small scale, low risk, measurement-based environmental project (either individually, or as part of a team)
- researching background information for the project to inform selection of sampling/test/measurement methods and project methodology
- interpreting and applying relevant legislative/regulatory requirements, workplace procedures, test and sampling methods
- analysing project requirements and preparing a draft plan
- conducting trials to develop/refine a feasible and efficient plan
- using available project management procedures and tools to develop plans and monitor/report progress
- obtaining reliable environmental data using agreed sampling/test/measurement methods
- processing and analysing results using relevant mathematical, statistical, and/or graphical methods
- presenting measurement results in the specified format (units, precision and uncertainty)
- evaluating results and drawing logical conclusions about quality and/or compliance with legislative/regulatory requirements
- seeking advice/assistance when difficulties are beyond scope of responsibility or technical competence
- critically evaluating the project progress, processes, measurement methodology and outputs against agreed performance criteria and identifying opportunities for improvement
- providing progress/final reports and project outputs that meet the required quality standard and are delivered within the agreed timeframe
- following procedures for working safely and minimising environmental impacts and waste.

Knowledge Evidence

Must provide evidence that demonstrates knowledge of:

- relevant environmental and measurement terms, concepts and principles
- legislative/regulatory/workplace requirements that apply to assigned project activities
- workplace and/or regulator sampling, monitoring and testing procedures that apply to assigned project activities

- basic project management principles and tools for project planning and monitoring of timelines, expenditure and performance
- basic techniques for achieving effective communication, teamwork and cooperation
- basic techniques for troubleshooting, problem solving and conflict resolution
- workplace project planning, management and reporting requirements
- workplace procedures for identifying/assessing and controlling hazards/risks associated with project activities
- relevant hazards, health and safety requirements and safe work procedures.

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:
 - review of project records prepared by the candidate, such as project plans/trials, challenges/variations, draft/progress/final reports, details of contributions made by the candidate (for team projects) and evaluation of their individual performance
 - presentation of the project methodology and outcomes and lessons learned by the candidate to a supervisor or suitable audience (including an explanation of their contribution to specific activities for team-based projects)
 - feedback from supervisors about the candidate's ability to plan and conduct environmental project work, work safely, and deliver quality outputs within the agreed timeframe
 - oral and/or written questions to assess the candidate's understanding of project management principles and their ability to plan and conduct project work and deal with unforeseen challenges.
- Access is required to all instruments, equipment, materials, workplace documentation, procedures, and specifications associated with this unit including, but not limited to:
 - site/project history, background information
 - relevant project management procedures, tools and software

- physical resources required for work activities, such as safety equipment; laptop computer; digital/video camera; sampling, monitoring and/or survey equipment and materials; test instruments and vehicle
- workplace procedures, work program, maps, site plans, site sampling plans and specified sampling/test methods, equipment manuals and safe work procedures.
- 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

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