



Australian Government

MSL975011 Design and supervise complex environmental field surveys

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MSL975011A Design and supervise complex environmental field surveys

Application

This unit of competency covers the ability to design and supervise complex field surveys for a wide range of environmental systems. This unit covers confirming survey requirements, designing and organising field surveys to achieve their purpose, and supervising the field survey according to a defined plan.

This unit of competency is applicable to technical officers working in the environmental industry sector. All operations must comply with relevant standards, appropriate procedures and/or workplace requirements.

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

Pre-requisite Unit

MSL974007 Undertake environmental field-based monitoring

Competency Field

Testing

Unit Sector

Elements and Performance Criteria

Elements describe the essential outcomes.

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

1	Confirm survey requirements with senior staff	1.1	Confirm the purpose and objectives of the field survey activities with senior management and details of information required
		1.2	Clarify the purpose and objectives of the field survey activities with all stakeholders within the context of the

		workplace's overall environmental program
	1.3	Identify and accurately interpret all external statutory requirements and workplace protocols that relate to the defined field survey activities
	1.4	Analyse drivers and constraints that may influence field survey activities
	1.5	Document the type, quantity and quality of data needed to meet the defined objectives
	1.6	Refine and document the detailed objectives of the field activities with senior management and stakeholders
2	Design field survey activities	
	2.1	Develop and document details of the field survey methodology and, if appropriate, trial and refine them under field conditions
	2.2	Discuss and confirm survey methodology with senior staff and external experts or stakeholders, as appropriate
	2.3	Develop work program, including timetable and staff roles and responsibilities for the total field survey, and all related activities
	2.4	Ensure that work program conforms to workplace requirements covering risk management, data quality procedures, safety, environmental and emergency requirements
	2.5	Document work program, address all administration requirements and obtain appropriate approvals
3	Identify resources and supervise pre-survey checks	
	3.1	Identify and list all resources required to implement the agreed work program
	3.2	Arrange collection and checking of all equipment, field instruments and supplies required for implementation of the work program
	3.3	Supervise calibration of all appropriate field instruments
	3.4	Arrange correct packaging and transportation of equipment and instruments

		3.5	Ensure that all access, transport, communication and emergency systems have been arranged and are suitable for all field locations and activities
4	Supervise field survey activities	4.1	Supervise all field survey and associated activities
		4.2	Monitor equitable duty rosters covering field survey activities in consultation with all staff
		4.3	Ensure that all data quality procedures are followed
		4.4	Ensure that all survey work is performed safely and with minimal impact on the environment
5	Supervise close-down of field activities	5.1	Arrange for the checking, packaging and transportation of all samples, equipment and instruments back to base
		5.2	Ensure that site is left in accordance with workplace and environmental requirements
		5.3	Monitor dispatch of collected samples for subsequent laboratory analyses
		5.4	Ensure that all equipment and instruments are tested and decontaminated before final storage, as necessary
		5.5	Ensure all field data is stored appropriately for subsequent analysis
		5.6	Report results, any anomalies and recommendations to data analysers, users and/or supervisor

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.

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.

Standards, codes, procedures and/or workplace requirements

Standards, codes, procedures and/or workplace requirements include the latest version of one or more of:

- Australian, national and international standards, guidelines and codes covering labelling of workplace substances; storage, handling and transport of dangerous goods; and environmental management
- national work health and safety (WHS) standards and codes of practice, and occupational protective equipment
- government policy and regulations covering environmental management, sustainable development and impact assessment, and environmental protection measures
- industry-specific codes, regulations and guidelines, such as animal welfare legislation and codes of practice, and Australian Quarantine and Inspection Service (AQIS) Export Control (Orders) Regulations and Import Guidelines
- standard methods for conducting field monitoring and surveys, specific environmental standards, survey plans, site-specific requirements, stakeholder consultation protocols, permits for access to land (e.g. Aboriginal reserves), and wildlife capture and handling
- workplace documents, such as ethics committee approval, standard operating procedures (SOPs), data quality procedures, equipment manuals and warranties, supplier catalogue and handbooks, calibration and maintenance schedules, material safety data sheets (MSDS) and safety procedures, safety and accident/injury/emergency plans, survey/laboratory schedules, workplace recording and reporting procedures, and waste minimisation and safe disposal procedures

Field survey activities Field survey activities, but are not limited to, include one or more of:

- climate and meteorology
- geology, soils and geomorphology
- hydrology and water quality
- noise
- land resources, vegetation, wildlife and conservation
- land uses, agriculture, forestry, mining and recreation

Clients and stakeholders

Clients and stakeholders include, but are not limited to, one or more of:

- Commonwealth, state/territory and local government agencies

- organisations with monitoring and/or survey responsibilities
- regulatory authorities
- private companies
- developers
- land owners and leaseholders

The purpose or objective of the field survey

The purpose or objective of field surveys include, but are not limited to, one or more of:

- part of workplace environmental management plan
- statutory requirements
- environmental impact assessment for major development
- environment audit
- pollution control activity
- general environmental and ecological surveys
- research studies

Administrative requirements and approvals

Administrative requirements and approvals include, but are not limited to, one or more of:

- travel requisitions
- authority for use of vehicles and equipment
- insurance
- permits

Field procedures

Field procedures include, but are not limited to, one or more of:

- sampling
- field testing (validated and authorised)
- animal trapping (and release), tagging and keeping
- emergency response, safety and survival aspects
- data collection, analysis and reporting
- protection of the environment

WHS and environmental management requirements

WHS and environmental management requirements include:

- complying with WHS and environmental management requirements at all times, which may be imposed through state/territory or federal legislation. These requirements must not be compromised at any time
- applying standard precautions relating to the potentially hazardous nature of samples

- accessing and applying current industry understanding of infection control issued by the National Health and Medical Research Council (NHMRC) and State and Territory Departments of Health, where relevant

Unit Mapping Information

Release 1. Supersedes and is equivalent to MSL975011A Design and supervise complex environmental field surveys

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5c63a03b-4a6b-4ae5-9560-1e3c5f462baa>

Assessment Requirements for MSL975011 Design and supervise complex environmental field surveys

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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:

- designing, organising and supervising at least one (1) complex environmental field survey
- confirming the survey purpose, objectives and resource requirements
- selecting appropriate field survey methods, equipment, instruments and data quality procedures
- assessing risks and implementing appropriate safety and emergency procedures
- developing an approved work program with details of key survey activities, timetable, staff roles and responsibilities
- identifying all necessary supplies, equipment, instruments and vehicles
- completing all survey plans and administrative requirements accurately and within the specified timeframe
- clearly explaining the individual roles, responsibilities and specific tasks of staff within the work program
- overseeing the checking, cleaning, storage and transport of all supplies, equipment and instruments to and from site
- managing day-to-day survey activities efficiently in consultation with staff
- modifying existing field survey protocols and adapting field activities to suit changing circumstances
- communicating and negotiating effectively with staff and stakeholders to resolve problems or conflicts
- overseeing the secure storage of all field data
- reporting survey results, any anomalies and recommendations in accordance with workplace procedures
- following workplace safety procedures and hazard control measures for the protection of self and others.

Knowledge Evidence

Must provide evidence that demonstrates knowledge of:

- general principles of environmental planning and assessment, and environmental protection
- environmental field survey terminology, principles, practices and techniques relevant to job role

- workplace data quality procedures, data recording and storage methods relevant to job role
- current developments in field instrumentation, survey equipment and communication systems relevant to job role
- typical purpose and objectives of the complex environmental field surveys, including:
 - information and analysis required
 - end users of information
 - significance of outcomes for broader programs
- typical field survey drivers and constraints, such as:
 - political agendas, social and economic issues
 - new field survey protocols or codes of practice
 - recent judicial decisions
 - recent environmental impact assessments or audits
 - media or public concerns
 - field safety or accident/incident issues
 - competencies and availability of staff
 - time available to design and implement field activities
- rights and responsibilities of employers and employees when conducting field activities, such as legal/regulatory requirements, risk management, safety and emergency management, and environmental protection
- typical field survey problems, such as:
 - unexpected restriction on access to sites
 - seasonal conditions
 - equipment failure or loss, failure to bring critical equipment
 - communication failure/difficulties
 - unforeseen environment impacts
 - contact with hazardous wastes
- relevant hazards, work health and safety (WHS) and environment requirements

Assessment Conditions

- Judgment 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).
- This unit of competency may be assessed with:
 - MSL935004 Maintain instruments and equipment
- Holistic assessment methods include:
 - review of the planning and reporting for a complex environmental field survey designed and supervised by the candidate
 - observation of field survey activities performed by the candidate, such as:
 - initial safety, emergency and environmental impact assessment associated with survey activities
 - pre-survey site reconnaissance
 - supervision of field survey activities
 - collection and reporting of reliable data
 - effective communication techniques
 - feedback from supervisors that relevant field survey objectives were achieved
 - feedback from staff that field survey roles, responsibilities and tasks were clearly explained
 - feedback from stakeholders that consultation and outcomes met their needs, where appropriate
 - oral and written questions to assess required knowledge of environmental field survey design, data quality assurance, use of equipment and solving typical survey problems
 - review of the candidate's responses to simulation exercises, such as survey preparation, handling accident situations and emergencies.
- Access is required to instruments, equipment, materials, workplace documentation, procedures and specifications associated with this unit, including, but not limited to:
 - legislation, regulations and codes of practice
 - workplace procedures and field protocols, equipment/instrument manuals, calibration procedures, instrument fault-finding procedures, general maintenance and repair procedures
 - equipment required for field activities, such as vehicles, navigation and communication equipment, survey equipment, sampling/monitoring equipment, containers and animal cages, field test kits and instruments, consumables, safety equipment, first aid and/or survival kits
 - work program, workplace procedures, codes of practice and field protocols and manuals.
- 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 competence 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 a laboratory about performing the competency being assessed within the last twelve months.

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