



Australian Government

MSL973012 Perform site investigation activities

Release: 1

MSL973012 Perform site investigation activities

Modification History

Release 1. Supersedes and is equivalent to MSL973012A Assist with geotechnical site investigations

Application

This unit of competency covers the ability to prepare for and conduct activities, such as excavations, sampling and testing, as part of a site investigation team. Personnel are expected to identify common site problems and seek advice to deal with situations beyond their own technical competence.

This unit of competency is applicable to laboratory assistants working under the close supervision of a senior technician in the construction, mining and drilling industry sectors.

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

Nil

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	Prepare for on-site operations	1.1	Confirm details of the job, location, work instructions, appropriate sampling/test procedures and safety requirements with supervisor
		1.2	Identify likely site hazards, personal protective equipment (PPE) and safety procedures that are specified for the job and materials used
		1.3	Collect, check and stow all tools, equipment and materials required at the site

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| | | 1.4 | Confirm site access requirements, such as entry permits and participate in safety induction as required |
| 2 | Conduct excavation of boreholes, test pits and/or trenches | 2.1 | Confirm specified sampling/testing locations with supervisor |
| | | 2.2 | Excavate to the specified sampling/testing depth, minimising disturbance and potential contamination of the site |
| | | 2.3 | Ensure materials from different strata are kept separate |
| | | 2.4 | Identify materials and record changes of the strata and the test results |
| 3 | Conduct site sampling | 3.1 | Prepare and check sampling equipment and materials |
| | | 3.2 | Take disturbed and undisturbed samples as directed and in accordance with workplace methods and procedures |
| | | 3.3 | Label samples and record samples/site conditions in accordance with workplace methods and procedures |
| 4 | Conduct site testing | 4.1 | Conduct pre-use checks of test equipment |
| | | 4.2 | Perform basic tests as directed and in accordance with test methods or workplace procedures |
| | | 4.3 | Record data in accordance with test methods or workplace procedures |
| | | 4.4 | Recognise obvious errors or atypical data and seek advice |
| 5 | Complete site operations | 5.1 | Reinstate the site in accordance with instructions |
| | | 5.2 | Clean all equipment (and vehicle as necessary) avoiding environmental damage, stormwater contamination or spread of pests |
| | | 5.3 | Check all equipment and materials prior to re-stowing them for safe transport |

		5.4	Handle and transport samples in accordance with workplace procedures
		5.5	Notify appropriate site personnel on completion of tasks and prior to leaving site (if unsupervised)
		5.6	On return to base, check serviceability of test equipment before storage
6	Maintain records	6.1	Record details of site sampling, testing and material types in accordance with workplace procedures
		6.2	Maintain confidentiality of workplace information
7	Maintain a safe work environment	7.1	Use safe work procedures and PPE to ensure personal safety and that of others
		7.2	Minimise environmental impacts of testing/sampling and generation of waste
		7.3	Collect and/or dispose of all waste in accordance with workplace procedures

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 and international standards covering the requirements for the competence of testing and calibration laboratories, laboratory safety, quality management and environmental

management

- national work health and safety (WHS) standards and codes of practice, national measurement regulations and guidelines, and environmental legislation and regulations
- workplace documents, such as standard operating procedures (SOPs); quality and equipment manuals; calibration and maintenance schedules; material safety data sheets (MSDS) and safety procedures; material, production and product specifications; production and laboratory schedules; workplace recording and reporting procedures; waste minimisation and safe disposal procedures; and maps and site plans
- sampling and testing procedures for specific sites, clients and samples

Common site problems

Common site problems include, but are not limited to, one or more of:

- caving in of excavation walls
- drilling difficulties
- sample loss during retrieval
- knowing when to stop a hole, or what and when to test and sample
- misidentification of samples and sampling locations
- equipment breakdown and breakage
- environmental impacts of construction activities on wildlife, vegetation, waterways and inclement weather

Site hazards

Site hazards include, but are not limited to, one or more of:

- solar radiation, dust and noise
- manual handling of heavy materials and equipment
- working in/on trenches, confined spaces, wet and uneven surfaces, heights and slopes
- vehicular and pedestrian traffic
- underground services, such as gas and electricity
- working close to earth moving equipment, trucks and overhead loads

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

- locating site services before investigations commence
- use of signage, barriers, flashing lights and traffic control
- use of PPE, such as hard hats, hearing protection, gloves,

goggles, coveralls and safety boots

- use of MSDS
- use of machinery guards
- recognising and observing hazard warnings and safety signs/barriers
- handling and storing hazardous material and equipment in accordance with labels, MSDS, manufacturer instructions, and workplace procedures and regulations
- labelling of samples, reagents and hazardous materials
- regularly cleaning equipment and vehicles
- following established manual handling procedures

Minimising environmental impacts

Minimising environmental impacts include, but are not limited to, one or more of:

- damage from movement of vehicles
- disposal of surplus or spent or materials
- containing run-off of water
- recycling of wastes
- compliance with quarantine requirements, including cleaning of vehicles to prevent transfer of pests (e.g. fire ants and seeds) and contaminants
- compliance with environmental, cultural and heritage protection requirements

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

Unit Mapping Information

Release 1. Supersedes and is equivalent to MSL973012A Assist with geotechnical site investigations

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 MSL973012 Perform site investigation activities

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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:

- preparing for site investigations and safely performing relevant site sampling, testing and excavation/reinstatement tasks on at least three (3) occasions
- following instructions and work as part of a small team
- interpreting maps, site plans and drawings
- recognising site services at sampling and testing sites
- recognising site features and soil, rock and fill materials
- taking representative samples, handling and transporting samples
- performing basic in situ tests and site measurements (e.g. location and depth)
- minimising environmental impacts and generation of waste while performing tasks

communicating site problems to appropriate personnel and seeking timely advice maintaining accurate and complete records setting up, checking, using, cleaning and maintaining tools and equipment collecting, storing and disposing of waste in accordance with workplace procedures.

Knowledge Evidence

Must provide evidence that demonstrates knowledge of:

- the basic concepts, purposes and principles of site investigation activities conducted as part of job role
- site safety and management rules, including safety induction, risk assessments, controlled entry/exit to site and required personal protective equipment (PPE)
- simple methods for identifying and classifying materials
- basic engineering properties of soil and rock materials and their use in engineering and construction
- basic principles of representative sampling and testing
- basic in situ testing methods relevant to job role
- relevant site 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:
 - MSL952002 Handle and transport samples or equipment
 - MSL952001 Collect routine site samples
 - MSL973001 Perform basic tests
- Holistic assessment methods include:
 - review of the candidate's work outputs, such as completeness of preparation for investigations, quality of samples and test data obtained
 - feedback from peers and supervisors about the candidate's ability to work safely, follow procedures and instructions accurately, care for equipment and produce quality outputs within the expected timeframe
 - observation of the candidate performing site sampling, testing and excavation/reinstatement tasks
 - examples of workplace documentation completed by the candidate
 - oral or written questioning about safety procedures, sampling and testing procedures, and the recommended responses for common site problems.
- Access is required to instruments, equipment, materials, workplace documentation, procedures and specifications associated with this unit, including, but not limited to:
 - access to geotechnical and/or construction sites and relevant site documentation
 - workplace procedures, sampling plans, test methods and equipment manuals
 - consumables; hand tools; field sampling and test equipment, such as dynamic cone penetration (DCP) testing, standard penetration testing (SPT), shear vane, pocket penetrometer and water level indicator
 - excavation equipment, such as hand and power augers, powered excavators, generators and jack hammers
 - safety clothing and equipment, including helmets, boots, gloves, earmuffs and glasses.
- 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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