



Australian Government

MSL977007 Troubleshoot equipment and/or production processes

Release: 1

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Modification History

Release	Comments
Release 1	This version was released in <i>MSL Laboratory Operations Training Package Release 2.0</i>. Supersedes and equivalent to MSL977002 Troubleshoot equipment and/or production processes. Range of conditions removed. Assessment requirements amended. Equivalent outcome.

Application

This unit of competency covers the ability to apply technical, instrumental and equipment knowledge and skills to troubleshoot testing equipment and testing issues related to production processes, identify problems and recommend corrective action.

This unit applies to senior technical officers, laboratory supervisors and technical specialists working in all industry sectors. All operations must comply with relevant standards, appropriate procedures and/or workplace requirements. Troubleshooting is the process of using technical knowledge and skills to investigate abnormal performance and assay results. This unit of competency includes troubleshooting testing equipment and testing issues related to production processes. In the case of chromatography, for example, these problems may be related to materials, such as laboratory solvents, procedures or equipment components, such as columns, injectors, pumps and detectors.

No licensing or certification requirements exist at the time of publication. However, regulations and/or external accreditation requirements for laboratory operations exist, so local requirements should be checked. Relevant legislation, industry standards and codes of practice within Australia must also be applied.

Pre-requisite Unit

Nil

Competency Field

Testing

Elements and Performance Criteria

Elements describe the essential outcomes.

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

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1	Identify abnormal equipment and/or process performance	1.1	Determine whether testing equipment is operating to manufacturer specifications
		1.2	Recognise whether equipment outputs are consistent with normal operation
		1.3	Identify signs of equipment degradation and impending failure
		1.4	Inspect equipment outputs to determine nature of the problem
		1.5	Define nature of substandard performance
2	Identify causes of substandard performance	2.1	Select appropriate technical process for investigation
		2.2	Identify causes using fact-finding processes, including interviews with appropriate personnel
		2.3	Review maintenance records to ensure that system does not need simple maintenance
		2.4	Review calibration records to ensure system is within calibration
		2.5	Verify that the appropriate test procedure, materials and equipment were used
		2.6	Conduct performance tests as appropriate to investigation
		2.7	Analyse equipment and/or testing variables to develop list of possible causes
		2.8	Isolate causes using appropriate elimination techniques
3	Recommend corrective action	3.1	Propose and trial corrective action based on investigation
		3.2	Monitor trial data to ensure outputs are consistent with normal operation
		3.3	Review trial results to confirm validity of corrective

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action

3.4 Maintain workplace records as required

3.5 Submit report summarising investigation and recommendations

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

Equivalent to MSL977002 Troubleshoot equipment and/or production processes, Release 1.

Links

Training Package Companion Volumes -

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

Assessment Requirements for MSL977007 Troubleshoot equipment and/or production processes

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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:

- troubleshoot at least 2 different testing equipment/testing issues related to production processes to identify causes of problems and recommended corrective actions.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- principles and concepts that underpin operation of testing equipment and test methods
- overall characteristics, capabilities and limitations of testing equipment and its components
- functions of key equipment components and sub-systems and effects on outputs and results of modifying variables
- possible effects of matrix and impurities on analytical methods
- effects on outputs and results of varying test procedure and/or modifying test materials or reagents
- troubleshooting procedures and elimination techniques for isolating causes of problems
- mathematical and statistical procedures for evaluating test data
- workplace requirements for problem investigation and reporting
- awareness of environmental sustainability issues as they relate to the work task
- legal, ethical and work health and safety (WHS) requirements specific to the work task.

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 suitable facilities, equipment and resources, including:
 - a standard laboratory equipped with appropriate equipment, samples, reagents and test methods, laboratory procedures and standard operating procedures (SOPs)
 - performance data, calibration and maintenance records relevant to investigation.

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

Links

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