



Australian Government

RIICTC304E Muck out tunnel earthworks

Release: 1

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Modification History

Release	Comments
Release 1	This version first released with RII Resources and Infrastructure Industry Training Package Version 6.0.

Application

This unit describes the skills and knowledge required to muck out tunnel earthworks in civil construction, including scaling down loose equipment, removing spoil by hand and loading spoil by machine.

It applies to those working in operational roles. They generally work under minimal supervision to undertake a broad range of tasks in varied work contexts, using some discretion and judgement in selecting equipment, services or contingency measures.

Licensing, legislative and certification requirements that apply to this unit can vary between states, territories, and industry sectors. Users must check requirements with relevant body before applying the unit.

Unit Sector

Civil construction

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Plan and prepare to muck out tunnel earthworks	1.1 Obtain, interpret, clarify and confirm work instructions 1.2 Access, interpret and apply documentation required to muck out tunnel earthworks and confirm work activity is compliant 1.3 Confirm and identify requirements for complying with environmental protection, safety and traffic management signage requirements 1.4 Select and wear personal protective equipment according to site requirements 1.5 Obtain and interpret emergency procedures and identify steps required to respond to emergencies

ELEMENT	PERFORMANCE CRITERIA
	1.6 Select plant, tools and equipment required to carry out tasks and check for faults 1.7 Identify and address potential risks, hazards and environmental issues, and implement control measures within scope of own role
2. Bar/scale down loose material	2.1 Identify and position plant and equipment according to job requirements 2.2 Scale down loose material according to job requirements
3. Remove spoil by hand	3.1 Remove excavated muck according to job requirements 3.2 Transport muck to spoil heap
4. Load spoil by machine	4.1 Install spoil haulage lines, rail and conveyor system according to engineering and manufacturer specifications 4.2 Operate mucking machines according to site requirements 4.3 Inspect and maintain conveyors to schedule
5. Remove spoil	5.1 Operate hauling engine according to job requirements 5.2 Operate continuous conveyor system 5.3 Maintain dust controls throughout mucking process
6. Conduct housekeeping activities	6.1 Clear work area and dispose of or recycle materials according to site requirements 6.2 Clean, check, perform maintenance on and store plant, tools and equipment according to manufacturer specifications and site requirements 6.3 Carry out housekeeping activities according to site requirements

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

Skill	Description
Numeracy	Calculates basic measurements including mass and dimensions
Self-management	Monitors and minimises own exposure to worksite risks and hazards during work activities
Writing	Completes documentation using sector specific vocabulary, grammatical structures and conventions

Unit Mapping Information

Supersedes and is equivalent to RIICTC304D Muck out tunnel earthworks.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=88a61002-9a21-4386-aaf8-69c76e675272>

Assessment Requirements for RIICTC304E Muck out tunnel earthworks

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Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- muck out tunnel earthworks on at least two occasions, including at least ten cubic metres by machine to required job specifications.

During the above, the candidate must:

- locate and apply required legislation, documentation, policies and procedures
- implement the requirements, procedures and techniques to muck out tunnel earthworks, including:
 - applying equipment and manual handling techniques
 - selecting and using required tools and equipment
- work with others to undertake and complete the mucking out of tunnel earthworks that meets all required outcomes, including:
 - organising work activities to meet task requirements
 - communicating with others to receive and clarify work instructions
 - using communication techniques and systems to advise others of work activity and exclusion zones.

Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- legislation required to muck out tunnel earthworks
- policies, procedures and documentation required to muck out tunnel earthworks, including those relating to:
 - work health and safety
 - emergency response

- using safety data sheets (SDS) and materials handling methods
- project quality requirements
- hazard and risk management
- environmental protection
- waste management
- communication techniques and equipment
- site isolation and traffic control responsibilities
- operational, maintenance and basic diagnostic procedures
- job plans and specifications
- site requirements
- engineer specifications
- manufacturer specifications for required plant and equipment
- housekeeping activities, including:
 - cleaning up work area
 - cleaning, maintaining and storing equipment and tools
 - waste management
 - processing records
- principles and techniques required to muck out tunnel earthworks, including those relating to:
 - soil and rock type characteristics
 - construction principles
 - mucking machines
 - dust controls
 - muck removal, including by both machine and hand
 - spoil haulage systems, including:
 - rail
 - road conveyor
- types, characteristics, technical capabilities and limitations of plant and equipment required to muck out tunnel earthworks, including:
 - muckers/boggers
 - skid steer loaders
 - front end loaders
- civil construction terminology relevant to mucking out tunnel earthworks.

Assessment Conditions

Mandatory conditions for assessment of this unit are stipulated below. The assessment must:

- include access to:
 - personal protective equipment
 - equipment required to muck out tunnel earthworks

- be conducted in a safe environment; and,
- be assessed in the context of this sector's work environment; and,
- be assessed in compliance with relevant legislation/regulation and using policies, procedures and processes directly related to the industry sector for which it is being assessed; and,
- confirm consistent performance can be applied in a range of relevant workplace circumstances.

Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated work environment* provided it is realistic and sufficiently rigorous to cover all aspects of this sector's workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.

Assessor requirements

Assessors must be able to clearly demonstrate current and relevant industry knowledge and experience to satisfy the mandatory regulatory standards as set out in the Standards for Registered Training Organisations 2015/Australian Quality Training Framework mandatory requirements for assessors current at the time of assessment and any relevant licensing and certification requirements. This includes:

- vocational competencies at least to the level being delivered and assessed
- current industry skills directly relevant to the training and assessment being provided
- current knowledge and skills in vocational training and learning that informs their training and assessment
- formal relevant qualifications in training and assessment
- having knowledge of and/or experience using the latest techniques and processes
- possessing the required level of RII training product knowledge
- having an understanding and knowledge of legislation and regulations relevant to the industry and to employment and workplaces
- demonstrating the performance evidence, and knowledge evidence outlined in this unit of competency, and
- the minimum years of current** work experience after competency has been obtained as specified below in an industry sector relevant to the outcomes of the unit.

It is also acceptable for the appropriately qualified assessor to work with an industry expert to conduct assessment together and for the industry expert to be involved in the assessment judgement. The industry expert must have current industry skills directly relevant to the training and assessment being provided. This means the industry subject matter expert must demonstrate skills and knowledge from the minimum years of current work experience after competency has been obtained as specified below, including time spent in roles related to the unit being assessed:

Industry sector	AQF indicator level***	Required assessor or industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying)	1	1 year
	2	2 years

and Civil Infrastructure		
Drilling, Coal Mining, Extractive (Quarrying), Metalliferous Mining and Civil Infrastructure	3-6	3 years
Other sectors	Where this unit is being assessed outside of the resources and infrastructure sectors assessor and/or industry subject matter expert experience should be in-line with industry standards for the sector in which it is being assessed and where no industry standard is specified should comply with any relevant regulation.	

*Guidance on simulated environments has been stipulated in the RII implementation guide located on VETNet.

**Assessors can demonstrate current work experience through employment within industry in a role relevant to the outcomes of the unit; or, for external assessors this can be demonstrated through exposure to industry by conducting a minimum number of site assessments as determined by the relevant industry sector, across various locations.

*** While a unit of competency does not have an AQF level, where a unit is being delivered outside of a qualification the first numeric character in the unit code should be considered as the AQF indicator level for assessment purposes.

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