



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **RIIUMM306A Conduct mechanical scaling**

**Release: 1**

## RIIUMM306A Conduct mechanical scaling

### Modification History

Not applicable.

### Unit Descriptor

This unit covers the conduct of mechanical scaling in the metalliferous mining industry. It includes planning and preparing for ground control provisions, performing mechanical scaling operations, shutting down equipment, and conducting housekeeping activities. Licensing, legislative, regulatory and certification requirements that apply to this unit can vary between states, territories, and industry sectors. Relevant information must be sourced prior to application of the unit.

### Application of the Unit

This unit is appropriate for those working in an operational role at worksites within:

- Metalliferous mining

### Licensing/Regulatory Information

Refer to Unit Descriptor.

### Pre-Requisites

Not applicable.

### Employability Skills Information

This unit contains employability skills.

### Elements and Performance Criteria Pre-Content

|                                                                   |                                                                                                                                                                                                                                                                                                                  |
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| Elements describe the essential outcomes of a unit of competency. | Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide. |
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## Elements and Performance Criteria

| ELEMENT                                          | PERFORMANCE CRITERIA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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| 1. Plan and prepare for ground control provision | 1.1. Access, interpret and apply <b>compliance documentation</b> relevant to the work activity<br>1.2. Plan and prepare work<br>1.3. Receive, interpret and clarify <b>shift changeover details</b> including relevant geo technical details<br>1.4. Select personal protective equipment appropriate for work activities<br>1.5. Ensure work area ventilation is adequate<br>1.6. Inspect and assess <b>site conditions</b> to determine scaling requirements and starting point<br>1.7. Select appropriate type of safety equipment and <b>scaling equipment</b> according to job type, work plan and site conditions<br>1.8. Conduct equipment pre-start checks to ensure equipment is safe and ready for use<br>1.9. Arrange for delivery of scaling equipment to site if necessary<br>1.10. Identify, address and report potential risks and <b>hazards</b><br>1.11. Inspect and assess appropriateness of conducting mechanical scaling<br>1.12. Erect <b>barricades</b> to prevent unauthorised access if necessary |
| 2. Perform mechanical scaling operations         | 2.1. Ensure equipment is stabilised and in the correct position.<br>2.2. Identify and manage misfires according to site procedures<br>2.3. Ensure services (air, water) are connected according to site procedures<br>2.4. Perform scaling according to site procedures<br>2.5. Continually inspect and assess site conditions to determine scaling requirements<br>2.6. Extend services as required<br>2.7. Use <b>dust suppression methods</b> as scaling operations advance<br>2.8. Adhere to emergency procedure in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

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|                                    | <p>accordance with site requirements</p> <p>2.9. Ensure maintenance of safe egress</p> <p>2.10. Complete all required documentation clearly, concisely and on time</p> <p>2.11. Pass on end of shift information to oncoming shift</p> |
| 3. Shutdown equipment              | 3.1. Conduct shutdown procedures according to manufactures and site procedures                                                                                                                                                         |
| 4. Conduct housekeeping activities | <p>4.1. Clean equipment and work area</p> <p>4.2. Clean and store ancillary service equipment</p>                                                                                                                                      |

## Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

### Required skills

Specific skills are required to achieve the Performance Criteria of this unit, particularly for its application in the various circumstances in which this unit may be used. This includes the ability to carry out the following, as required to conduct mechanical scaling:

- apply legislative, organisation and site requirements and procedures for the conduct of mechanical scaling
- apply operating techniques
- use hand and power tools
- identify hazards
- communicate effectively

### Required knowledge

Specific knowledge is required to achieve the Performance Criteria of this unit, particularly for its application in the various circumstances in which this unit may be used. This includes knowledge of the following, as required to conduct mechanical scaling:

- dewatering procedures and characteristics
- drilling procedures
- environmental procedures
- equipment safety requirements
- geological and technical data (basic)
- ground control characteristics
- hazardous substances (handling and transport)
- inspection procedures
- isolation procedures
- manufacturer's specifications
- mining legislation
- operational procedures and checks
- site emergency procedures
- start-up and shutdown procedures

## Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

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| <b>Overview of assessment</b>                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b> | <p>The evidence required to demonstrate competency in this unit must be relevant to worksite operations and satisfy all of the requirements of the performance criteria, required skills and knowledge and the range statement of this unit and include evidence of the following:</p> <ul style="list-style-type: none"> <li>• knowledge of the requirements, procedures and instructions for the conduct of mechanical scaling</li> <li>• implementation of requirements, procedures and techniques for the safe, effective and efficient completion of the conduct of mechanical scaling</li> <li>• working with others to undertake and complete mechanical scaling that meets all of the required outcomes</li> <li>• consistent timely completion of mechanical scaling that safely, effectively and efficiently meets the required outcomes</li> </ul>                                                |
| <b>Context of and specific resources for assessment</b>                                             | <ul style="list-style-type: none"> <li>• This unit must be assessed in the context of the work environment. Where personal safety or environmental damage are limiting factors, assessment may occur in a simulated environment provided it is realistic and sufficiently rigorous to cover all aspects of workplace performance, including task skills, task management skills, contingency management skills and job role environment skills.</li> <li>• Assessment of this competency requires typical resources normally used in a resources and infrastructure sector environment. Selection and use of resources for particular worksites may differ due to the site circumstances.</li> <li>• The assessment environment should not disadvantage the participant. For example, language, literacy and numeracy demands of assessment should not be greater than those required on the job.</li> </ul> |

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|                                            | <ul style="list-style-type: none"> <li>• Customisation of assessment and delivery environment to sensitively accommodate cultural diversity.</li> <li>• Aboriginal people and other people from a non English speaking background may have second language issues.</li> <li>• Where applicable, physical resources should include equipment modified for people with disabilities. Access must be provided to appropriate learning and/or assessment support when required.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Method of assessment</b>                | <p>This unit may be assessed in a holistic way with other units of competency. The assessment strategy for this unit must verify required knowledge and skill and practical application using more than one of the following assessment methods:</p> <ul style="list-style-type: none"> <li>• written and/or oral assessment of the candidate's required knowledge</li> <li>• observed, documented and/or first hand testimonial evidence of the candidate's: <ul style="list-style-type: none"> <li>• implementation of appropriate requirement, procedures and techniques for the safe, effective and efficient achievement of required outcomes</li> <li>• consistent achievement of required outcomes</li> </ul> </li> <li>• first hand testimonial evidence of the candidate's: <ul style="list-style-type: none"> <li>• working with others to undertake and complete the conduct of mechanical scaling</li> </ul> </li> </ul> |
| <b>Guidance information for assessment</b> | Consult the SkillsDMC User Guide for further information on assessment including access and equity issues.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

## Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

|                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
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| <b>Relevant compliance documentation</b> may include: | <ul style="list-style-type: none"> <li>• legislative, organisational and site requirements and procedures including:           <ul style="list-style-type: none"> <li>• mining safety and health</li> <li>• mine inspection</li> <li>• OHS</li> <li>• explosives</li> </ul> </li> <li>• manufacturer's guidelines and specifications</li> <li>• Australian standards</li> <li>• Employment and workplace relations legislation</li> <li>• Equal Employment Opportunity and Disability Discrimination legislation</li> </ul> |
| <b>Shift change-over details</b> may include:         | <ul style="list-style-type: none"> <li>• equipment and resource allocations/requirements</li> <li>• geo technical details</li> <li>• site drawings</li> <li>• type of ground control mechanisms</li> <li>• pre shift instructions</li> </ul>                                                                                                                                                                                                                                                                                |
| <b>Site conditions</b> may include:                   | <ul style="list-style-type: none"> <li>• limited accessibility</li> <li>• ground conditions (e.g. dry, wet)</li> <li>• ground stability (e.g. broken, blocky, flaky, stable, compacted, shears, faults, folds)</li> <li>• ground characteristics (high/low stress)</li> <li>• location of water table</li> <li>• noise</li> <li>• slope of working surface</li> <li>• ventilation characteristics</li> <li>• limited visibility</li> <li>• temperature, humidity</li> </ul>                                                 |
| <b>Scaling equipment</b> may include:                 | <ul style="list-style-type: none"> <li>• development drill rigs</li> <li>• mechanical ground support installation rigs</li> <li>• gate-end panel (jumbo box)</li> <li>• power tools and hand tools and attachments</li> <li>• services - air, water, electricity</li> </ul>                                                                                                                                                                                                                                                 |

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|                                              | <ul style="list-style-type: none"> <li>recommended/required PPE</li> </ul>                                                                                                                                                                                                                                                                                                          |
| <b>Hazards</b> may include:                  | <ul style="list-style-type: none"> <li>ground control failure</li> <li>lack of ventilation</li> <li>loose material on working surface</li> <li>misfires</li> <li>gases</li> <li>entry by unauthorised personnel</li> <li>uncovered open holes</li> <li>unstable ground conditions</li> <li>airborne dust and fibres</li> <li>unstable footing</li> <li>poor housekeeping</li> </ul> |
| <b>Barricades</b> may include:               | <ul style="list-style-type: none"> <li>flags</li> <li>signs</li> <li>tapes</li> <li>witches hats</li> <li>signs including: <ul style="list-style-type: none"> <li>danger</li> <li>height</li> <li>no unauthorised entry</li> <li>stockpile numbering</li> <li>traffic control signage</li> </ul> </li> </ul>                                                                        |
| <b>Dust suppression methods</b> may include: | <ul style="list-style-type: none"> <li>mobile/fixed sprays</li> <li>screens (vent doors, vent blinds)</li> <li>ventilation bags</li> <li>watering down site</li> <li>fans</li> </ul>                                                                                                                                                                                                |

## Unit Sector(s)

Metalliferous Mining (Underground)

## Competency field

Refer to Unit Sector(s).

## Co-requisite units

Not applicable.