



Australian Government

RIIMCU606D Establish and maintain the mining method and strata management systems

Release: 2

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Modification History

Release	Comment
1	This unit replaces RIIMCU606A Establish and maintain the mining method and strata management systems.
2	Required frequency and volume of evidence amended in Performance evidence. Substantial amendments made in Assessment Conditions field, including: references to Industry Sectors, assessor and subject matter expert experience requirements, how assessment should be conducted and what it should confirm.

Application

This unit describes a participant's skills and knowledge required to establish and maintain the mining method and strata management systems in Coal mining (Underground).

This unit is appropriate for those working in management roles.

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.

Unit Sector

Coal mining (Underground)

Elements and Performance Criteria

1. Plan and prepare to establish and maintain the mining method and strata management system	1.1 Access, interpret and apply mining method and strata management system documentation, and ensure the work activity is compliant 1.2 Identify and record the necessary resources required to create and maintain a stable mining structure 1.3 Identify and evaluate historical information relating to the mine site 1.4 Identify, assess and record possible mining structure failure modes relevant to the mine site 1.5 Determine the criteria for establishing the stability of mining
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	structures 1.6 Identify the hazards and analyse the risks associated with failures of mining structures 1.7 Identify and assess the limitations and controls applying to design of stable mining structures
2. Identify and evaluate geological and geotechnical information to establish a stable mining structure	2.1 Identify and determine exploration techniques to gain information about geological, hydrological and geotechnical conditions 2.2 Identify and evaluate geological, geotechnical and hydrological information 2.3 Identify and evaluate strata gas information 2.4 Identify and evaluate roof, seam and floor lithological and physical properties information 2.5 Identify and evaluate stress regimes information
3. Identify and evaluate mining engineering principles and practices	3.1 Identify and evaluate mining system types and methods 3.2 Identify potential layouts for stable mining structures from engineering analysis 3.3 Identify and evaluate mining constraints impacting on the development of a stable mining structure 3.4 Identify and evaluate equipment requirements, appropriate for the development and maintenance of a stable mining structure 3.5 Identify the effects of mining induced subsidence on surface areas
4. Identify, evaluate and determine the strata control systems	4.1 Identify, evaluate and determine ground support systems. 4.2 Identify, evaluate and determine ground support installation and monitoring systems 4.3 Identify and evaluate causes and impacts of strata failure mechanisms 4.4 Identify and evaluate natural and induced stress control methods
5. Establish the strata management plan	5.1 Design and establish methods of entry to the coal seam 5.2 Design and establish systems of mining 5.3 Design and establish sequences for mining operations 5.4 Design and establish strata management procedures 5.5 Identify the training needs and establish a training plan 5.6 Establish action response plans for the management of strata

	movement
6. Plan and prepare for the implementation of the mining method and the strata management systems	6.1 Access, interpret and clarify the mining method and the strata management system 6.2 Identify and communicate to all personnel roles and responsibilities 6.3 Identify, forecast, obtain and allocate/schedule resources required 6.4 Develop the implementation process for the training plan 6.5 Develop the monitoring and review processes for the strata management system
7. Establish the process to audit the effectiveness of the strata management system	7.1 Audit mining structures for stability 7.2 Audit monitoring systems 7.3 Audit compliance to action response plans 7.4 Audit recording and reporting systems 7.5 Audit maintenance program and procedures 7.6 Audit the training plan for currency, relevance and compliance 7.7 Establish procedures for response to instances of non-compliance or other discrepancies/deficiencies revealed by audit

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit. Further information is available in the Resources and Infrastructure Industry Training Package Companion Volume.

Unit Mapping Information

RIIMCU606A Establish and maintain the mining method and strata management systems

Links

Companion Volume implementation guides are found in VETNet -

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

Assessment Requirements for RIIMCU606D Establish and maintain the mining method and strata management systems

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Performance Evidence

Evidence is required to be collected that demonstrates a candidate's competency in this unit. Evidence must be relevant to the roles within this sector's work operations and satisfy all of the requirements of the performance criteria of this unit and include evidence that the candidate:

- locates and applies relevant legislation, documentation, policies and procedures
- implements the procedures and techniques for the safe, effective and efficient establishment and maintenance of the mining method and strata management systems including:
 - operating hand held monitoring equipment
 - collecting, collating and interpreting mining structures data
 - accessing and evaluating data from monitoring systems and equipment
 - performing mathematical calculations
 - interpreting and applying mathematical and scientific theorems/laws related to mining structures
 - accessing, interpreting and applying mine survey information
 - interpreting and applying design criteria for mining structures systems and devices
 - accessing and analysing historical strata information related to the mine and failure mode of mine structures
- works effectively with others to undertake and complete the establishment and maintenance of the mining method and strata management systems including:
 - communicating clearly and concisely with others to receive and clarify work instructions, and convey work progress
 - identifying the relevant information and scope of the work necessary to meet the required outcomes

- designing and establishing sequences for mining operations
- preparing technical procedures relating to mining structures
- demonstrates completion of establishing and maintaining the mining method and strata management system that safely, effectively and efficiently meets all of the required outcomes on more than one (1) occasion including:
 - identifying viable options and the selection of mining method and strata management techniques that best meet the required outcomes
 - conducting enquiries/investigations and preparing reports
 - analysing and reporting on training needs

Knowledge Evidence

The candidate must demonstrate knowledge of the following when establishing and maintaining the mining method and strata management systems through:

- accessing, interpreting and applying legislative, organisation and site requirements and procedures for:
 - applying risk management processes and techniques
 - mine planning and design
 - evaluating audit methodologies
 - identifying and managing environmental issues, hazards and risks
- accessing and applying legislative and site requirements for mining structures including:
 - mine plans
 - ventilation
 - gas monitoring
 - strata support
 - safety management plans
- identifying and evaluating the systems of mining including:
 - tunnels
 - drifts
 - stone drivage
 - shift sinking
 - pillar extraction
 - partial extraction
 - punch mining
 - longwall mining (including installation and recovery)
 - the use of breaker line supports
 - faults drivage
- identifying and assessing factors affecting stability of mining structures including:
 - stress analysis including: mining induced stress, vertical and horizontal stress tectonics

- sedimentology including: subsidence, water bearing strata, permeability of seam and strata, hydrology, physical property testing, caving characteristics, windblast, outblast, gas content and over and underlying strata
- mining structure failure modes
- ground support systems
- pillar design criteria
- pillar stress/strain/strength/ratios
- width/height ratios
- roof support design criteria
- Mohr's Circle
- Young's Modules
- Poisson's Ratio
- stress distribution diagrams
- factors of safety
- identifying and evaluating systems of work including:
 - bord and pillar
 - place changing
 - longwall
 - highwall
 - auger mining
 - pillar extraction
 - partial extraction
 - the use of breaker line supports
 - punch mining
- identifying and evaluating mining and general engineering principles relevant to the behaviour of excavations in rock including:
 - exploration techniques
 - geology, lithology and strata gas characteristics
 - mine surveying
 - mining of coal deposits
 - identifying and applying emergency response and evacuation/disaster planning processes and techniques
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Assessment Conditions

- An assessor of this unit must satisfy the requirements of the NVR/AQTF or their successors; and Industry regulations for certification and licensing; and,
- this unit must be assessed in the context of this sector's work environment; and,
- this unit must be assessed in compliance with relevant legislation/regulation and using policies, procedures, processes and operational manuals directly related to the industry sector for which it is being assessed; and,

- assessment may be conducted in conjunction with the assessment of other Units of Competency; and,
- assessment must confirm consistent performance can be applied in a range of relevant workplace circumstances; and,
- assessors must demonstrate the performance evidence, and knowledge evidence as outlined in this Unit of Competency, and through the minimum years of current* work experience specified below in an Industry sector relevant to the outcomes of the unit; or,
- where the assessor does not meet experience requirements a co-assessment or partnership arrangement must exist between the qualified assessor and an Industry subject matter expert. The Industry subject matter expert should hold the unit being assessed (or an equivalent unit) and/or demonstrate equivalence of skills and knowledge at the unit level. An Industry technical expert must also demonstrate skills and knowledge from the minimum years of current work experience specified below in the Industry sector, including time spent in roles related to the unit being assessed; and,
- assessor and Industry subject matter expert requirements differ depending on the Australian Qualifications Framework Level (AQF) of the qualification being assessed and/or Industry Sector as follows:

Industry sector	AQF** Level	Required assessor or Industry subject matter expert experience
Drilling, Metalliferous Mining, Coal Mining, Extractive (Quarrying) and Civil Construction	1	1 Year
	2	2 Years
Drilling, Coal Mining and Extractive (Quarrying)	3-6	3 Years
Metalliferous Mining and Civil Construction	3-6	5 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.	

*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 frequent site assessments across various locations.

**Where a unit is being delivered outside of a Qualification the first numeric character in the Unit code should be considered to indicate the AQF level

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