



Australian Government

RIIMEX405E Apply and monitor systems and methods of surface coal mining

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 5.0.

Application

This unit develops the skills and knowledge required to monitor the systems and methods of surface mining in coal mining. This includes monitoring mine development operations, waste management procedures and stockpile formation and reclaiming systems.

It applies to those working in supervisory or technical specialist roles. They generally perform a broad range of operational activities in their area of responsibility and are responsible for monitoring a safe work environment.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Coal mining (open cut)

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 apply and monitor surface coal mining systems	1.1 Obtain, interpret, clarify and confirm work requirements 1.2 Access, interpret and apply systems and methods of surface coal mining documentation and confirm work activity is compliant 1.3 Identify and address potential risks, hazards and environmental issues and implement control measures according to site requirements 1.4 Identify and assess risks associated with unstable mining structures within scope of own role 1.5 Obtain and interpret emergency procedures and identify steps required to respond to emergencies

ELEMENT	PERFORMANCE CRITERIA
2. Monitor mine development operations	2.1 Communicate, apply and monitor approved mining system according to mining system and site requirements 2.2 Communicate and apply primary and secondary support systems according to mining system and site requirements 2.3 Identify and assess operational constraints impacting on the maintenance of stable mining structure according to mining system and site requirements 2.4 Assess and report strata spoil and dump failures and implement appropriate control measures according to mining system and site requirements 2.5 Identify and monitor application of the mining sequences according to mining system and site requirements 2.6 Identify, assess and record failure mechanisms and implement control measures according to mining system and site requirements 2.7 Identify and apply emergency response and evacuation plans and procedures and report on outcomes according to site requirements 2.8 Monitor and report on standard operating procedures according to site requirements 2.9 Contribute to systems audit and review requirements within scope of own role
3. Monitor waste management procedures	3.1 Identify, interpret and assess surface and groundwater information according to site requirements 3.2 Monitor implementation of drainage system within scope of own role
4. Monitor stockpile formation and reclaiming systems	4.1 Identify, interpret and confirm stockpile requirements according to site requirements 4.2 Monitor and report stockpile configuration according to site requirements 4.3 Identify and assess stockpile operation and implement control measures according to site requirements
5. Report on the systems and methods of mining	5.1 Complete and submit reports according to site requirements 5.2 Provide recommendations in terms of safety, efficiency and effectiveness of systems within scope of own role

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 resourcing requirements
Oral communication	Conveys information and requirements clearly and listens actively
Reading	Identifies and interprets relevant information from workplace procedures, documentation and legislation

Unit Mapping Information

Supersedes and is equivalent to RIIMEX405D Apply and monitor systems and methods of surface coal mining.

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 RIIMEX405E Apply and monitor systems and methods of surface coal mining

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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:

- apply and monitor systems and methods of surface coal mining on at least two occasions, including:
 - implementing measures for strata spoil and dump failures
 - implementing control methods for virgin and induced stress
 - implementing stockpile control measures
 - assessing outcomes, forming reasoned recommendations and completing reports
 - interpreting and assessing surface and groundwater information.

During the above, the candidate must:

- locate and apply relevant documentation, policies and procedures and confirm work activity is compliant
- implement requirements, procedures and techniques for monitoring of systems and methods of surface coal mining, including:
 - analysing hazards and risks, and implementing control measures
 - accessing and analysing archival and historical mine management information relating to the mine and failure mode of mine structures
 - interpreting and monitoring the application of design criteria for strata management
 - identifying and evaluating geological and geotechnical information
- work effectively with others to monitor systems and methods of surface coal mining in a manner that meets required outcomes, including:
 - complying with reporting requirements and procedures
 - providing leadership and direction to others
 - communicating clearly and concisely with others to receive and clarify work instructions
 - providing clear and timely instruction and supervision to those involved in monitoring of the mining systems and methods

- communicating clearly and concisely with others to resolve coordination requirements prior to commencing and during work activities.

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:

- key procedures and documentation required to apply and monitor systems and methods of surface coal mining, including:
 - key mine site historical information
 - surface and groundwater information
- principles and techniques for applying monitoring systems and methods of surface coal mining, including:
 - monitoring systems and methodologies
 - stable structure controls and excavation maintenance procedures
 - plant, equipment and tools maintenance requirements and procedures
 - audit, audit inspection, communication and reporting methodologies
- principles and techniques for interpreting visual signs of stress, including:
 - mining induced stress
 - vertical and horizontal stress tectonics
 - adverse jointing
 - fault orientation
 - spoil characteristics
- principles and techniques for assessing and implementing failure mechanisms, including:
 - strata spoil and dump failure measures
 - virgin and induced stress control methods
 - stockpile control measures
 - mining structure failure modes
- geology, hydrogeological, strata and strata gas characteristics relating to surface coal mining
- basic mining engineering principles relating to surface coal mining
- principles, processes and techniques for emergency responses, evacuations and disaster planning
- techniques for coordinating and communicating job activities with others.

Assessment Conditions

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

- include access to:
 - systems and methods of surface coal mining documentation
- 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 (RTOs) 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) and Civil Infrastructure	1	1 year
	2	2 years

Industry sector	AQF indicator level***	Required assessor or industry subject matter expert experience
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 Companion Volume 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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