Metalliferous Mining Training Package
MNM99

VOLUME I of III

Volume I  Introduction, Assessment Guidelines, Qualifications plus Core and Open Cut competency standards.

Volume II  Competency standards for: Underground; Processing & Exploration

Volume III  Competency standards for: Mine Management; General Management & Technical Management

Endorsed by the National Training Framework Committee and agreed by Ministers 12/11/1999.
This training package is to be reviewed by 30/04/2003.

This material contained within this volume is part of the endorsed component of the training package, this volume should not be used in isolation, but should be used in the context of the whole training package.
## List of Qualifications

**Metalliferous Mining Training Package - MNM99 V3.00**

<table>
<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td>MNM20103</td>
<td>Certificate II in Metalliferous Mining Operations (Open Cut)</td>
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<td>Certificate II in Metalliferous Mining Operations (Underground)</td>
</tr>
<tr>
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<td>Certificate II in Metalliferous Mining Operations (Processing)</td>
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<td>Diploma of Metalliferous Mining (Open Cut and Underground)</td>
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<tr>
<td>MNM50399</td>
<td>Diploma of Metalliferous Mining (Processing)</td>
</tr>
<tr>
<td>MNM60101</td>
<td>Advanced Diploma of Metalliferous Mining</td>
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</table>
IMPORTANT

Training packages are not static documents. Changes are made periodically to reflect the latest industry practices.

Before commencing any form of training or assessment, you must ensure delivery is from the current version of the Training Package.

To ensure you are complying with this requirement:
• Check the Print Version Number just below the copyright statement on the imprint pages of your current Training Package.
• Access the ATP website (http://www.atpl.net.au) and check the latest Print Number.
• In cases where the Print Version Number is later than yours, the Print Version Modification History in the Training Package sample on the ATP website will indicate the changes that have been made.

The Modification History is also available on the website of the developer of the Training Package: National Mining Industry Industry Training Advisory Body Ltd http://www.miningitab.com.au

The National Training Information Service (http://www.ntis.gov.au) also displays any changes in Units of Competency and the packaging of qualifications.
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**PRINT VERSION MODIFICATION HISTORY**

Please refer to the National Training Information Service for the latest version of Units of Competency and Qualification information (http://www.ntis.gov.au)

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<td>Update of Training Package to align to licensing requirements in the Metalliferous sector, includes: <em>Amendments to existing qualifications</em> <em>Amendments to existing units of competency</em> Insertion of new units of competency</td>
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<td>22/01/2002</td>
<td>NTQC</td>
<td>Category 1 changes: deletion of duplicated unit of competency and new title for one unit. MNMUGC111A deleted, MNMUGC110A retitled plus correction of a small number of typographical errors in the Mine Management Services units of competency. Category 3 changes: Insertion of an Advanced Diploma qualification, comprising of an additional 32 units of competency aligned at this level</td>
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**Forms control:** All endorsed training packages will have a version number displayed on the imprint page of every volume constituting that training package. Every training package will display an up-to-date copy of this modification history form, to be placed immediately after the contents page of the first volume of the training package. Comments on changes will only show sufficient detail to enable a user to identify the nature and location of the change. Changes to training packages will generally be batched at quarterly intervals. This modification history form will be included within any displayed sample of that training package and will constitute all detail available to identify changes.
Introduction

The Metalliferous Mining Training Package provides a framework for training, assessment and the issuing of qualifications within the metalliferous mining sector. The Training Package:

- places greater emphasis on the application of knowledge and skill in a work situation through competency standards
- links qualifications to competency standards rather than the curriculum
- recognises there are many ways of achieving competency
- supports industry demand for competency based training
- provides greater flexibility to mines in the way training is delivered and assessed
- provides for national recognition of training and assessment outcomes to enhance portability.

A central feature of the Metalliferous Mining Training Package is the direct relationship between endorsed Metalliferous Mining Competency Standards and qualifications under the Australian Qualifications Framework (AQF). This means that individuals are able to gain Statements of Attainment or full AQF qualifications on the basis of assessments against the competency standards. Skills gained from workplace knowledge and experience may be recognised in this way without the requirement of attending a formal training program. In an industry where there was no formal recognition of training at the operator level, but statutory licensing arrangements for management positions, the Training Package provides a range of options and learning pathways for the recognition of skills within all levels of the industry.

The introduction of assessment against competency standards allows the development of a range of ‘assessment and training’ and ‘assessment only’ pathways to recognition and qualifications for:

- trainees
- apprentices
- cadets
- new employees wishing to enter the industry
- current employees seeking a qualification
- current employees seeking a promotion
- current employees seeking recognition of their skills and knowledge.

Wide industry consultation was undertaken to ensure the approach to the Metalliferous Mining Training Package would meet the needs of all clients: employers, employees, those wishing to enter the industry and the providers of training and assessment. The input from the industry allowed the Training Package to build on existing practices and structures within the industry to provide a flexible approach to training and assessment.

The approach encourages partnerships between enterprises and registered training organisations (RTOs) to facilitate the recognition of employee skills.

The Metalliferous Mining Training Package has been developed to provide qualifications covering AQF 2 – to AQF 6.
CHARACTERISTICS OF THE METALLIFEROUS MINING INDUSTRY

Metalliferous Mining in Australia
Mining has been and remains important to the Australian economy contributing to jobs, GDP, productivity growth and exports. The Australian metalliferous mining sector is the largest contributor to national mining employment, accounting for 42% of the workforce. Besides producing metalliferous ores, mines within the sector are involved in mineral exploration and the provision of exploration services.

At the production end of the process, the Australian metalliferous mining sector is involved in processing and refining. Around 80% of Australia’s mineral commodity production (including refined metals) is exported.

The major metalliferous mining activities in Australia are:
- Open cut mining - open pit/strip mining, dredge mining, solar evaporation.
- Underground mining
- Processing - milling, smelting, froth flotation, leaching, magnetic separation, electrostatic and gravity separation
- Engineering and administrative services
- Exploration/mine establishment/mine closure.

FACTORS INFLUENCING METALLIFEROUS SECTOR

Commodity prices
Overall there is an oversupply of mineral products and the lower economic growth in Europe, Asia and Japan has led to a decrease in world export prices for mineral products.

Export demand
It is foreseen that demand will increase for mineral products despite Asian economic downturn but price will remain low.

Profitability
Increased production output, lower world commodity prices, and increased expenditure, has led to a significant drop in profits.

CHANGES IN THE METALLIFEROUS SECTOR

Changes impacting on the metalliferous mining sector include:
- increasing rates of technological change
- geographical spread of operations
- remote locations with fly in and fly out operations
- complex nature of processes
- expanded scales of activity
- occupational health and safety and environmental legislation and Duty of Care
• wide spread introduction of quality systems
• composition of the workforce
• outsourcing of specific functions
• increasing use of contractors.

The metalliferous mining sector is capital intensive and the productivity of a mine, is dependent on extent to which this capital is used efficiently. Mining companies have gone through restructuring in the last few years to form larger companies with a global focus. At the mine site, cross-skilling, upskilling and multi-skilling of employees are key strategies developed to enhance the productive use of capital equipment.

Improved work practices have led to greater productivity with a trend towards increasing use of contract labour. The outsourcing of tasks has significant implications for the future training needs of the metalliferous mining sector. There is an increasing need for training and upskilling of existing work force and training of new employees so that productivity gains can be achieved and maintained.

Personnel working in the metalliferous mining sector cover a range of functional groupings. These include:
• Group Managers
• Mine Managers
• Middle Managers
• Technical Specialists.
• Front line Supervisors
• Operators
• Maintenance Personnel
• Tradespeople
• Support personnel
• Administration personnel.

In the past, recognition of employee skills was only available for statutory positions and tradespeople and the large number of employees at operator level were not catered for. Reports into recent mine disasters have identified the inadequacy of training at all levels. Training for hazard identification, risk assessment and risk reduction were raised as priority areas. There is increasing support for competency based industry training programs which address all underground mining occupations.

The Metalliferous Mining Training Package addresses these areas and provides a framework for the development of competency based training and the issuing of qualifications for personnel to middle management levels.

NEW APPRENTICESHIPS

In the past there have been no apprenticeships or traineeships for operators within metalliferous mining. The qualifications identified as New Apprenticeships will provide a career pathway for employees to middle management. This will encourage new
entrants to enter the industry and will assist in addressing skill shortages for both contractors and mine sites.

There will be a progressive uptake of the new qualifications as opportunities are marketed to and recognised by school leavers. Industry will actively recruit young people to the industry and recognise the skills of existing employees as they become aware of the advantages associated with New Apprenticeships.

For the qualifications identified as New Apprenticeships, flexibility has been included to meet the needs of mine sites, employers and employees. There is flexibility in:

- the range of electives available in each qualification to meet site specific and individual requirements
- the approaches to delivery of training and assessment.

Flexible delivery strategies, workplace training and assessment and partnerships with registered training organisations are proposed to support employees in rural and isolated situations to ensure they are not disadvantaged.

STRUCTURE OF THE METALLIFEROUS MINING TRAINING PACKAGE

The Metalliferous Mining Training Package consists of 3 Endorsed Components, and Support Materials ie. Training (27) and Assessment (27) Resources.

ENDORSED COMPONENTS

Competency Standards
Developed of competency standards to address functional areas at operator level were commenced in 1996. During 1998-99 these were revised against best practice, and enhanced and extended to meet Training Package development and qualifications from AQF 2 to AQF 6.

Qualifications
The competency standards are packaged in a flexible way to meet mine site and individual requirements and provide qualifications) from Certificate II to Diploma under the Australian Qualifications Framework (AQF).

Assessment Guidelines
These provide policies, procedures and guidance in using the competency standards as benchmarks for assessment.

Support Materials (non endorsed)

Training and Assessment Resources
These are developed for the metalliferous mining underground competency standards and provide guidance on the development of training materials to met competency outcomes and assess against the competency standards. Guidance is also provided to assist trainers and assessors to align existing mine training and assessment materials to the competency standards.
Training and Assessment Guide
This is a User’s Guide providing general information on training and assessment as well as handy hints on how to use the Training and Assessment Resources.

Using the Metalliferous Mining Training Package (Professional Development Kit)
This provides assistance to those wishing to use any components of the Metalliferous Mining Training Package – trainers, assessors and registered training organisations. It provides assistance to those who are undertaking new roles in facilitating, supporting and validating skills through flexible approaches to training delivery and assessment. This relates particularly to:
- workplace training and assessment
- partnerships between mines and registered training organisations to meet industry requirements for assessment in the workplace or in a simulated situation
- a qualification system based on competency recognition.

METHODOLOGY

In 1996 development commenced on the Metalliferous Mining Competency Standards. Extensive industry consultation was undertaken in all States and standards were developed covering AQF 2 – 3 in the following areas:
- Extraction Open Cut (OCC)
- Extraction Underground (UGC)
- Processing (PRD)
- Exploration (AAB)
- Establishment (BEB).

In early 1998 the National Mining Industry Training Body received Australian National Training Authority (ANTA) funding to develop a Metalliferous Mining Training Package. It was agreed to incorporate the revision/further development of the Metalliferous Mining Competency Standards as part of the Training Package.

STEERING COMMITTEE

A Metalliferous Mining Steering Committee was established to monitor the project. Members are representative of:
- Employers
- Mine Managers
- Unions
- Contractors
- State/Territory Recognition Authorities
- Registered Training Providers
- Universities
- Emergency Services
- State/Territory ITABs
- State Departments of Minerals and Energy
- Australian National Training Authority (ANTA).
The Steering Committee initially completed a Scoping Project to identify and report on the content and issues to be addressed in the Training Package.

FRAMEWORK FOR THE DEVELOPMENT FOR THE TRAINING PACKAGE

A series of documents developed by ANTA underpin the development of the Metalliferous Mining Training Package. These include:

- Best Practice Manual for Competency Standards Development
- Guidelines for Training Package Developers
- Australian Qualifications Framework
- Assessment Principles
- Australian Recognition Framework.

CONSULTATION PROCESS

Wide industry consultation was conducted to ensure all the issues surrounding the development of the Metalliferous Mining Training Package and the content of the Training Package components were addressed. This included briefing sessions – face to face, audio teleconferences and videoconferences, workshops, postal and email consultation with feedback sheets, and validation of revised documents by key stakeholders.

The majority of metalliferous mines are located in Western Australia and Queensland with a growing number in New South Wales and a few in South Australia, Tasmania and Northern Territory. Because of this there was an emphasis on consultation in Western Australia, Queensland, New South Wales and Tasmania. Briefing sessions and workshops were held with:

- State/Territory ITABs
- State/Territory ITAB Regional Network meetings
- Special workshops convened for specific consultation purposes comprising representative from peak employer/employee bodies, mine management, training officers, employees nominees, subject matter experts from operational mines, and training providers to the metalliferous mining industry
- National Mining Conferences
- Individual employees at mine sites and registered training providers
- Statutory Authorities
- Inspectors of Mines.

OUTCOMES

A key feature of the Training Package is its flexibility to accommodate the nature of the workforce and work requirements. Flexibility is provided through:

- entry to qualifications at a number of levels
- the range of electives in each qualification to provide choices for career path development as well as specialisation to meet individual and mine site needs
• emphasis on the recognition of prior learning (RPL) and/or recognition of current competencies (RCC) to recognise the skills of the existing workforce
• the establishment of qualifications at operator level to provide career options
• options to customise competency outcomes for industry sector and mine site requirements
• the provision of learning strategies and assessment materials which support flexible delivery and achieve competency outcomes.

EQUITY STATEMENT

The skills and knowledge required of employees in the Metalliferous Mining Industry are comprehensive and there are many employment opportunities available. The Training Package ie Competency Standards, Qualification Framework and Assessment Guidelines reflect the range of skills required and is written in a non-exclusive manner so as to increase the participation rates of equity groups and to minimise unintentional bias.
QUALIFICATIONS METALLIFEROUS MINING INDUSTRY

INTRODUCTION

The Metalliferous Mining Training Package Qualifications Framework has been developed in consultation with the Metalliferous Mining Industry and with reference to the ANTA Guidelines for Training Package Developers. The Qualifications form one of the endorsed components of the Metalliferous Mining Training Package.

The qualifications are identified under the Australian Qualifications Framework (AQF) and range from a Certificate II to an Advanced Diploma. Each qualification is structured to show that an individual has achieved a particular set of outcomes that relate to workplace requirements expressed as competencies. In particular the qualifications:

- provide flexible packages of units of competency for qualifications at each AQF level
- provide qualifications which are consistent nationally and allow portability
- identify units of competency as core (mandatory) and elective so that mines can choose from the package those competencies relevant to their site
- provide guidance on how units of competency may be customised and contextualised for a particular mine site
- identify which qualifications may be delivered as New Apprenticeships/Traineeships.

The qualifications are developed by grouping national competency standards into combinations meaningful to a mine site and aligning these to an AQF qualification and recommended title.

Qualifications developed in this way include the following features:

- Qualifications are competency based and focus on outcomes. That is they are made up of Metalliferous Mining units of competency agreed by the industry as being relevant to workplace requirements.
- The content of the qualifications is flexibly structured so that mines may choose the outcomes to meet their differing needs and to ensure immediate and continuing relevance of training.
- Training and assessment which leads to formally recognised qualifications may be provided at the workplace or in a training venue using a range of learning strategies and methods.
- User Choice provides the opportunity for mines to select only those public and/or private registered training organisations that will satisfy the mine’s real training and assessment needs.
- Training which leads to formally recognised AQF qualifications may qualify for financial assistance from governments.

Some qualifications are identified as traineeships. Traineeships represent one pathway to achieve a qualification, that of paid employment and structured training.
PACKAGING OF UNITS OF COMPETENCY FOR QUALIFICATIONS

The packages of the units of competency combined to form qualifications are based on industry consultation. The industry consultation determined that qualifications in metalliferous mining should satisfy the following criteria.

Metalliferous Mining Qualifications should:
- reflect realities in terms of work organisation and job design
- reflect options to meet changing situations to avoid entrenching traditional approaches to work organisation and job design
- be neutral in terms of remuneration and other Industrial Relations policies/practices
- avoid leading to unnecessary training
- be structured in a way which earns industry respect
- recognise different entry points and development pathways
- allow for articulation between qualifications.

These criteria ensured that development of the Metalliferous Mining Qualifications employed the following strategies:
- packages of units of competency reflect specific functional groupings and levels of work
- identification of core units of competency that everyone should demonstrate
- identification of a range of elective units of competency to allow qualifications to be customised to workplace needs.

The following rules were used to structure each qualification:
- the criteria for structuring qualifications were satisfied
- the system was simple to use and explain
- the mines’ need for reasonable flexibility was safeguarded.

ALIGNMENT TO THE AQF

The process for packaging units of competency ensured that:
- groups of units of competency with reference to levels of work within mines were identified at the competency standard development stage and confirmed during Training Package development consultations
- the packages identified qualifications at AQF 2, 3, 4, 5 and 6 (Advanced Diploma)
- alignment of qualifications to the characteristics of each AQF level is demonstrated.

COMPETENCY DEPTH AND BREADTH

Each unit title and content has been subjected to considerable industry consultation and endorsement. When considering any unit of competency for inclusion into your staff development program and/or course of instruction (RTO), please read the unit title in conjunction with the unit descriptor to establish the breadth and depth of the unit relative to the overall programme.
QUALIFICATION TITLES

The following are the titles for qualifications from AQF 2 - 6 in the Metalliferous Mining industry:

- MNM20103 Certificate II in Metalliferous Mining Operations (Open Cut)
- MNM20203 Certificate II in Metalliferous Mining Operations (Underground)
- MNM20303 Certificate II in Metalliferous Mining Operations (Processing)
- MNM30103 Certificate III in Metalliferous Mining Operations (Open Cut)
- MNM30203 Certificate III in Metalliferous Mining Operations (Underground)
- MNM30303 Certificate III in Metalliferous Mining Operations (Processing)
- MNM40103 Certificate IV in Metalliferous Mining Operations (Open Cut)
- MNM40203 Certificate IV in Metalliferous Mining Operations (Underground)
- MNM40303 Certificate IV in Metalliferous Mining Operations (Processing)
- MNM50299 Diploma of Metalliferous Mining (Open Cut and Underground)
- MNM50399 Diploma of Metalliferous Mining (Processing)
- MNM60101 Advanced Diploma of Metalliferous Mining

Those qualifications which are aligned to a specific functional area carry the functional group title in brackets e.g. Certificate II in Metalliferous Mining Operations (Processing).

The requirement to receive the qualification is the completion of the core and elective units of competency identified for each qualification. Elective units of competency may include:

- a maximum of three metalliferous mining units of competency packaged at a lower AQF level than the qualification
- any number of metalliferous mining units of competency packaged at a higher AQF level than the qualification
- units of competency from other nationally endorsed industry competency standards appropriate for use in Metalliferous Mining at a relevant AQF level.

PATHWAYS TO A QUALIFICATION

Employees in positions at operator level in the industry can access qualifications at Certificate II and Certificate III. The Certificate IV encompasses the competencies expected of supervisors, team leaders and site coordinators. A Diploma in Metalliferous Mining is an entry point for management training. The Advanced Diploma relates to personnel responsible for the safe and commercial operation of a mine.

Although employees can access qualifications by entry at each AQF qualification at the Certificate level the achievement of units of competency are cumulative. Therefore an employee entering at Certificate III must also be able to demonstrate units of competency packaged at Certificate II. To meet these requirements units of competency can only be counted once in the Metalliferous Mining qualifications.
The packaging of the units of competency compliments but does not infringe on the responsibilities and requirements of State-based regulatory authorities. An individual seeking a qualification for a position covered by State/Territory regulatory requirements should check with the relevant Act and regulatory authority when selecting units of competency for the qualification.

**MAPPING WITH OTHER INDUSTRY STANDARDS**

To further assist meeting the multi skilling requirements of mines the Metalliferous Mining industry has identified other endorsed national competency standards that are relevant to the mine workplace. These may be included as electives in relevant qualifications. Mines should contact the Training Body (listed below) for further information on these units of competency and ensure that the most recent version of the unit of competency is used. For more information on the other competency standards which have been mapped as relevant to Metalliferous Mining please contact:

- Business Services Training Australia
- Automotive Training Australia
- EE-Oz Training Standards
- Forest and Forestry Products
- IT&Titab
- Manufacturing, Engineering Related Services ITAB
- Manufacturing Learning Australia
- National Mining ITAB
- Property Services Training Australia
- Public Services ITAB
CUSTOMISATION OF COMPETENCY STANDARDS PACKAGED INTO QUALIFICATIONS

Many Metalliferous Mining operations have specific competency requirements because of their particular circumstances of operation, location or specific function. To assist in meeting these requirements the Metalliferous Mining units of competency may be customised subject to the following criteria:

- the units of competency may be customised provided the competency outcomes and levels of performance specified in the standards are not diminished or lessened
- specific criteria or conditions established by regulatory authorities are satisfied in full.

Table 1. provides guidelines for the use of competency standards and how they may be customised to meet local requirements. Units of competency may be built on but the performance specified in a unit of competency cannot be diminished or lessened.

Table 1. Guidelines to support the use of Metalliferous Mining competency standards

<table>
<thead>
<tr>
<th>Using the Standards</th>
<th>Suggestions</th>
<th>Precautions</th>
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<tr>
<td>Using outcomes from the Metalliferous Mining competency standards.</td>
<td>Retain, and if appropriate, extend or build on the competency outcomes.</td>
<td>Don’t diminish or lessen the level of performance specified in the competency standards.</td>
</tr>
<tr>
<td>Adding units of competency</td>
<td>Additional units of competency may be developed to meet the specific needs of the enterprise or site</td>
<td>Other units may be added but the qualification must reflect the units of competency specified by the Training Package.</td>
</tr>
<tr>
<td>Customising Metalliferous Mining competency standards.</td>
<td>The units of competency may be customised to meet the needs of the enterprise or site providing the competency outcomes are retained.</td>
<td>Don’t diminish or lessen the level of performance specified in the competency standards.</td>
</tr>
<tr>
<td>Using workplace assessment processes.</td>
<td>Ensure assessors meet the industry criteria for assessors and that the integrity of the processes achieve validity, reliability, fairness and flexibility.</td>
<td>Don’t devalue the quality of the assessment outcomes by using inadequate processes and procedures.</td>
</tr>
</tbody>
</table>
### Using the Standards

<table>
<thead>
<tr>
<th>Using the Standards</th>
<th>Suggestions</th>
<th>Precautions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selecting individual units of competency.</td>
<td>This is acceptable and the successful competency outcomes of the assessment will enable the participant to be granted a Statement of Attainment. The AQF qualification is issued on completion of the endorsed package of units of competency.</td>
<td>Specific requirements exist for individuals who are seeking a qualification to meet the requirements such as a Statutory Licence to practice as a Shotfirer. Individuals or enterprises should check the relevant Act and legislative requirements in their State/Territory when selecting units of competency for a qualification.</td>
</tr>
</tbody>
</table>

### NEW APPRENTICESHIPS

New Apprenticeships are possible under the Metalliferous Mining Training Package. The following qualifications may be offered:

- MNM20103 Certificate II in Metalliferous Mining Operations (Open Cut)
- MNM20203 Certificate II in Metalliferous Mining Operations (Underground)
- MNM20303 Certificate II in Metalliferous Mining Operations (Processing)
- MNM30103 Certificate III in Metalliferous Mining Operations (Open Cut)
- MNM30203 Certificate III in Metalliferous Mining Operations (Underground)
- MNM30303 Certificate III in Metalliferous Mining Operations (Processing)
- MNM40103 Certificate IV in Metalliferous Mining Operations (Open Cut)
- MNM40203 Certificate IV in Metalliferous Mining Operations (Underground)
- MNM40303 Certificate IV in Metalliferous Mining Operations (Processing)
- MNM50299 Diploma of Metalliferous Mining (Open Cut and Underground)
- MNM50399 Diploma of Metalliferous Mining (Processing)
- MNM60101 Advanced Diploma of Metalliferous Mining
MNM20103 CERTIFICATE II IN METALLIFEROUS MINING OPERATIONS - OPEN CUT

Requirements for completion:
Successful completion of a total of twelve (12) units of competency made up of:
- seven (7) mandatory units of competency, and
- five (5) electives units of which:
  - a minimum of three (3) units are drawn from the specified Metalliferous Mining Extraction Underground units listed, and
  - a maximum of two (2) units, relevant to the job function from other endorsed Training Package

Shot Firing - Open Cut
The units of competency, relating to shot firing, currently exist in the Metalliferous Mining Training Package (MNM99). The industry through the development of the Training Package has deemed that these are appropriate units of competency for the function in open cut mining. However to be designated/appointed under any statutory requirements as a Shot Firer, units of competency should be demonstrated to meet the State/Territory licensing requirements. State/Territory licensing requirements need to be confirmed by the Registered Training Organisation delivering and/or assessing the competency.

Certificate II in Metalliferous Mining Operations (Open Cut)

<table>
<thead>
<tr>
<th>Mandatory Units - total 7 units</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generic Core</strong></td>
</tr>
<tr>
<td>MNMCCCCO001A  Communicate in the workplace</td>
</tr>
<tr>
<td>MNMCCCCO1002A  Work safely</td>
</tr>
<tr>
<td>MNMCCCCO003A  Plan and organise individual work</td>
</tr>
<tr>
<td>MNMCCCCO004A  Contribute to quality work outcomes</td>
</tr>
<tr>
<td>MNMCCCCO005A  Apply local risk control processes</td>
</tr>
<tr>
<td><strong>Ancillary Mine Support</strong></td>
</tr>
<tr>
<td>MNMOCC105A  Install ground support</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Elective Units - total of 5 units with a minimum of 3 units from those listed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generic Core</strong></td>
</tr>
<tr>
<td>MNMCCCC006A  Perform initial response first aid</td>
</tr>
<tr>
<td><strong>Drilling, Blasting and Ground Support</strong></td>
</tr>
<tr>
<td>MNMOCC105A  Install ground support</td>
</tr>
<tr>
<td><strong>Loading and Hauling</strong></td>
</tr>
<tr>
<td>MNMOCC1208A  Conduct truck operations</td>
</tr>
<tr>
<td>MNMOCC1212A  Conduct conveyor operations</td>
</tr>
<tr>
<td>MNMOCC213A  Conduct slurry pump operations</td>
</tr>
<tr>
<td>MNMOCC220A  Apply operational maintenance skills</td>
</tr>
<tr>
<td>MNMOCC221A  Service mine plant and equipment</td>
</tr>
<tr>
<td><strong>Ancillary mine support</strong></td>
</tr>
<tr>
<td>MNMOCC1418A  Transport plant, equipment and personnel</td>
</tr>
<tr>
<td>MNMOCC419A  Suppress dust in open cut environment</td>
</tr>
<tr>
<td>MNMOCC420A  Position and set up mobile lighting</td>
</tr>
<tr>
<td>Unit Code</td>
</tr>
<tr>
<td>------------------</td>
</tr>
<tr>
<td>MNMOCC1421A</td>
</tr>
<tr>
<td>MNMOCC1422A</td>
</tr>
<tr>
<td>MNMOCC1423A</td>
</tr>
<tr>
<td>MNMOCC428A</td>
</tr>
<tr>
<td>MNMOCC429A</td>
</tr>
</tbody>
</table>

**Stockpiling and Preparation**
- MNMOCC530A: Move and position materials to form stockpiles
- MNMOCC533A: Break oversize rock
- MNMOCC534A: Recontour site

**Rehabilitation**
- MNMOCC635A: Profile soil
- MNMOCC637A: Undertake contour ripping
- MNMOCC638A: Undertake direct seeding
- MNMOCC639A: Plant seedlings
- MNMOCC641A: Monitor and maintain vegetation
- MNMOCC642A: Stockpile and maintain topsoil

A maximum of two (2) units, relevant to the job function from other endorsed Training Packages

**Note:**
1. Care must be taken to ensure that all pre-requisites (specified within a unit of competency) are complied with for any unit of competency chosen as an elective.
MNM30103  CERTIFICATE III IN METALLIFEROUS MINING OPERATIONS - OPEN CUT

Requirements:
Successful completion of a total of seventeen (17) units of competency made up of:
- twelve (12) units of competency satisfying the criteria for the Certificate II in Metalliferous Mining Operations (Open Cut), PLUS
- five (5) electives units of which:
  - a minimum of three (3) units are drawn from the specified Metalliferous Mining Extraction Underground units listed, and
  - a maximum of two (2) units, relevant to the job function from other endorsed Training Packages

Shot Firing - Open Cut
The units of competency, relating to shot firing, currently exist in the Metalliferous Mining Training Package (MNM99). The industry through the development of the Training Package has deemed that these are appropriate units of competency for the function in open cut mining. However to be designated/appointed under any statutory requirements as a Shot Firer, units of competency should be demonstrated to meet the State/Territory licensing requirements. State/Territory licensing requirements need to be confirmed by the Registered Training Organisation delivering and/or assessing the competency.

<table>
<thead>
<tr>
<th>Certificate III in Metalliferous Mining Operations (Open Cut)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Twelve (12) units of competency satisfying the criteria for the Certificate II in Metalliferous Mining Operations (Open Cut), PLUS</td>
</tr>
<tr>
<td>Elective Units - total 5 units with a minimum of three (3) from those listed</td>
</tr>
<tr>
<td><strong>Drilling, Blasting and Ground Support</strong></td>
</tr>
<tr>
<td>MNMCCC101A Set up and prepare for drilling operations</td>
</tr>
<tr>
<td>MNMCCC1102A Drill in open cut environment</td>
</tr>
<tr>
<td>MNMMNC301A Apply shotfiring</td>
</tr>
<tr>
<td>MNMMNC402A Fire shots</td>
</tr>
<tr>
<td><strong>Loading and Hauling</strong></td>
</tr>
<tr>
<td>MNMCCC201A Conduct excavator operations</td>
</tr>
<tr>
<td>MNMCCC202A Conduct electric rope shovel operations</td>
</tr>
<tr>
<td>MNMCCC203A Conduct hydraulic shovel operations</td>
</tr>
<tr>
<td>MNMCCC2106A Conduct shovel/excavator operations</td>
</tr>
<tr>
<td>MNMCCC2107A Conduct front end loader operations</td>
</tr>
<tr>
<td>MNMCCC2109A Conduct dozer operations</td>
</tr>
<tr>
<td>MNMCCC2110A Conduct scraper operations</td>
</tr>
<tr>
<td>MNMCCC2111A Conduct loading and hauling support operations</td>
</tr>
<tr>
<td>MNMCCC220A Apply operational maintenance skills</td>
</tr>
<tr>
<td>MNMCCC221A Service mine plant and equipment</td>
</tr>
<tr>
<td><strong>Dredging</strong></td>
</tr>
<tr>
<td>MNMCCC314A Prepare for dredging operations</td>
</tr>
<tr>
<td>MNMCCC315A Conduct dredging operations</td>
</tr>
<tr>
<td>MNMCCC316A Shut down dredge for maintenance</td>
</tr>
<tr>
<td><strong>Ancillary Mine Support</strong></td>
</tr>
<tr>
<td>Code</td>
</tr>
<tr>
<td>-----------------</td>
</tr>
<tr>
<td>MNMOCC417A</td>
</tr>
<tr>
<td>MNMMNI303A</td>
</tr>
<tr>
<td>MNMOCC1424A</td>
</tr>
<tr>
<td>MNMOCC1425A</td>
</tr>
<tr>
<td>MNMOCC427A</td>
</tr>
</tbody>
</table>

**Stockpiling and Preparation**

<table>
<thead>
<tr>
<th>Code</th>
<th>Skill Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMOCC531A</td>
<td>Maintain stockpiles</td>
</tr>
<tr>
<td>MNMOCC532A</td>
<td>Blend stockpile materials</td>
</tr>
<tr>
<td>MNMMNI302A</td>
<td>Conduct secondary firing</td>
</tr>
</tbody>
</table>

**Rehabilitation**

<table>
<thead>
<tr>
<th>Code</th>
<th>Skill Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMOCC636A</td>
<td>Construct drains and berms</td>
</tr>
<tr>
<td>MNMOCC640A</td>
<td>Install reticulation systems</td>
</tr>
</tbody>
</table>

- a maximum of two (2) units, relevant to the job function from other endorsed Training Packages

**Note:**

1. Care must be taken to ensure that all pre-requisites (specified within a unit of competency) are complied with for any unit of competency chosen as an elective.
2. Units of competency which are part of a pre-requisite qualification cannot be credited as an elective for this qualification.
MNM40103  CERTIFICATE IV IN METALLIFEROUS MINING OPERATIONS - OPEN CUT

Requirements for completion:
Successful completion of a total of twenty one (21) units of competency made up of:
- fourteen (14) mandatory units of competency
- seven (7) electives units of which
  - a minimum of five (5) units are drawn from the specified Metalliferous Mining Extraction Open Cut units listed, and
  - a maximum of two (2) units, relevant to the job function from other endorsed Training Packages

<table>
<thead>
<tr>
<th>Certificate IV in Metalliferous Mining Operations (Open Cut)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mandatory Units - a total of 14 units</td>
</tr>
<tr>
<td><strong>Generic Core</strong></td>
</tr>
<tr>
<td>MNMCCCOO001A Communicate in the workplace</td>
</tr>
<tr>
<td>MNMCCCOI002A Work safely</td>
</tr>
<tr>
<td>MNMCCCOO003A Plan and organise individual work</td>
</tr>
<tr>
<td>MNMCCCOO004A Contribute to quality work outcomes</td>
</tr>
<tr>
<td>MNMCCCOO005A Apply local risk control processes</td>
</tr>
<tr>
<td><strong>Mine Management</strong></td>
</tr>
<tr>
<td>MNMF5FX18A Apply, monitor, rectify and report statutory/legal compliance systems</td>
</tr>
<tr>
<td>MNMF5FX19A Apply, monitor and report pit development systems</td>
</tr>
<tr>
<td>MNMF5FX22A Apply and monitor systems for stable mining</td>
</tr>
<tr>
<td>MNMF5FX23A Apply and monitor mine transport systems and production equipment</td>
</tr>
<tr>
<td>MNMF5FX24A Apply and monitor mine services systems</td>
</tr>
<tr>
<td>MNMF5FX25A Apply and monitor mine fixed plant and infrastructure systems</td>
</tr>
<tr>
<td>MNMF5FX26A Apply and monitor emergency preparedness and response</td>
</tr>
<tr>
<td>MNMF5FX27A Facilitate the risk management process</td>
</tr>
<tr>
<td><strong>Quality</strong></td>
</tr>
<tr>
<td>MNQ.TL/08A Implement and monitor quality system</td>
</tr>
<tr>
<td><strong>Elective Units - total 7 units with a minimum of five (5) form those listed</strong></td>
</tr>
<tr>
<td><strong>Generic Core</strong></td>
</tr>
<tr>
<td>MNMCCCOO006A Perform initial response first aid</td>
</tr>
<tr>
<td><strong>Drilling, Blasting and Ground Support</strong></td>
</tr>
<tr>
<td>MNMMN1401A Administer shotfiring activities</td>
</tr>
<tr>
<td><strong>Mine Management</strong></td>
</tr>
<tr>
<td>MNMF5FX20A Lead and monitor surface mining operations and report outcomes</td>
</tr>
<tr>
<td>MNMF5FX21A Apply and monitor the ventilation management system</td>
</tr>
<tr>
<td><strong>Safety Co-ordination</strong></td>
</tr>
<tr>
<td>MNCO42A Examine and maintain mine safety</td>
</tr>
<tr>
<td><strong>Training</strong></td>
</tr>
<tr>
<td>BSZ404A Train small groups</td>
</tr>
<tr>
<td>BSZ405A Plan and promote a training program</td>
</tr>
<tr>
<td>BSZ406A Plan a series of training sessions</td>
</tr>
<tr>
<td>BSZ407A Deliver training sessions</td>
</tr>
<tr>
<td>Course Code</td>
</tr>
<tr>
<td>--------------</td>
</tr>
<tr>
<td>BSZ408A</td>
</tr>
<tr>
<td>BSZ501A</td>
</tr>
<tr>
<td>BSZ508A</td>
</tr>
<tr>
<td><strong>Assessment</strong></td>
</tr>
<tr>
<td>BSZ401A</td>
</tr>
<tr>
<td>BSZ402A</td>
</tr>
<tr>
<td>BSZ507A</td>
</tr>
<tr>
<td><strong>Supervision</strong></td>
</tr>
<tr>
<td>BSBCMN402A</td>
</tr>
<tr>
<td>BSBCMN404A</td>
</tr>
<tr>
<td>BSBCMN412A</td>
</tr>
<tr>
<td>BSBFLM402A</td>
</tr>
<tr>
<td>BSBFLM403A</td>
</tr>
<tr>
<td>BSBFLM404A</td>
</tr>
<tr>
<td>BSBFLM405A</td>
</tr>
<tr>
<td>BSBFLM406A</td>
</tr>
<tr>
<td>BSBFLM409A</td>
</tr>
<tr>
<td>BSBFLM410A</td>
</tr>
<tr>
<td>BSBFLM411A</td>
</tr>
</tbody>
</table>

**Note:** 1. Care must be taken to ensure that all pre-requisites (specified within a unit of competency) are complied with for any unit of competency chosen as an elective.

**a maximum of two (2) units, relevant to the job function from other endorsed Training Packages**
### Extraction Open Cut Units of Competency at AQF II, III & IV

<table>
<thead>
<tr>
<th>UNIT IDENTIFIER</th>
<th>UNITS OF COMPETENCY PACKAGED AT AQF 2, 3 &amp; 4</th>
<th>Mandatory (M) Elective (E)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>II</td>
</tr>
<tr>
<td><strong>Generic Core</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMCCCOO001A</td>
<td>Communicate in the workplace</td>
<td>M</td>
</tr>
<tr>
<td>MNMCCCO1002A</td>
<td>Work safely</td>
<td>M</td>
</tr>
<tr>
<td>MNMCCCO003A</td>
<td>Plan and organise individual work</td>
<td>M</td>
</tr>
<tr>
<td>MNMCCCO004A</td>
<td>Contribute to quality work outcomes</td>
<td>M</td>
</tr>
<tr>
<td>MNMCCCOO005A</td>
<td>Apply local risk control processes</td>
<td>M</td>
</tr>
<tr>
<td>MNMCCCOO006A</td>
<td>Perform initial response first aid</td>
<td>E</td>
</tr>
<tr>
<td><strong>Drilling, Blasting and Ground Support</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMOCC101A</td>
<td>Set-up and prepare for drilling operations</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC1102A</td>
<td>Drill in open cut environment</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC105A</td>
<td>Install ground support</td>
<td>E</td>
</tr>
<tr>
<td>MNMMNI303A</td>
<td>Handle and transport explosives</td>
<td>E</td>
</tr>
<tr>
<td>MNMMNI402A</td>
<td>Fire shots</td>
<td>E</td>
</tr>
<tr>
<td>MNMMNI401A</td>
<td>Administer shotfiring activities</td>
<td>E</td>
</tr>
<tr>
<td><strong>Loading and Hauling</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMOCC201A</td>
<td>Conduct excavator operations</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC202A</td>
<td>Conduct electric rope shovel operations</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC203A</td>
<td>Conduct hydraulic shovel operations</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC1206A</td>
<td>Conduct shovel/excavator operations</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC1207A</td>
<td>Conduct front end loader operations</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC1208A</td>
<td>Conduct truck operations</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC1209A</td>
<td>Conduct dozer operations</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC1210A</td>
<td>Conduct scraper operations</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC1211A</td>
<td>Conduct loading and hauling support equipment operations</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC1212A</td>
<td>Conduct conveyor operations</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC213A</td>
<td>Conduct slurry pump operations</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC220A</td>
<td>Apply operational maintenance skills</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC221A</td>
<td>Service mine plant and equipment</td>
<td>E</td>
</tr>
<tr>
<td><strong>Ancillary Mine Support</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMOCC417A</td>
<td>Construct and maintain roads</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC1418A</td>
<td>Transport plant, equipment and personnel</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC419A</td>
<td>Suppress dust in open cut environment</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC420A</td>
<td>Position and setup mobile lighting</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC1421A</td>
<td>Operate from elevated work platform</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC1422A</td>
<td>Operate roller/compactor</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC1423A</td>
<td>Operate forklift</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC1424A</td>
<td>Conduct crane operations</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC1425A</td>
<td>Conduct grader operations</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC426A</td>
<td>Operate light vehicle</td>
<td>M</td>
</tr>
<tr>
<td>MNMOCC427A</td>
<td>Recover equipment</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC428A</td>
<td>Operate mine services vehicle</td>
<td>E</td>
</tr>
<tr>
<td>UNIT IDENTIFIER</td>
<td>UNITS OF COMPETENCY PACKAGED AT AQF 2, 3 &amp; 4</td>
<td>Mandatory (M) Elective (E)</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-----------------------------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>II</td>
</tr>
<tr>
<td>MNMOCC429A</td>
<td>Conduct dewatering activities</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stockpiling and Preparation</td>
<td></td>
</tr>
<tr>
<td>MNMOCC530A</td>
<td>Move and position materials to form stockpiles</td>
<td></td>
</tr>
<tr>
<td>MNMOCC531A</td>
<td>Maintain stockpiles</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC532A</td>
<td>Blend stockpile materials</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC533A</td>
<td>Break oversize rock</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC534A</td>
<td>Recontour site</td>
<td>E</td>
</tr>
<tr>
<td>MNMMN1302A</td>
<td>Conduct secondary firing</td>
<td>E</td>
</tr>
<tr>
<td></td>
<td>Stockpiling and Preparation</td>
<td></td>
</tr>
<tr>
<td>MNMOCC635A</td>
<td>Profile soil</td>
<td></td>
</tr>
<tr>
<td>MNMOCC636A</td>
<td>Construct drains and berms</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC637A</td>
<td>Undertake contour ripping</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC638A</td>
<td>Undertake direct seeding</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC639A</td>
<td>Plant seedlings</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC640A</td>
<td>Install reticulation systems</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC641A</td>
<td>Monitor and maintain vegetation</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC642A</td>
<td>Stockpile and maintain topsoil</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC643A</td>
<td>Identify and assess environmental and heritage concerns</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>Dredging</td>
<td></td>
</tr>
<tr>
<td>MNMOCC314A</td>
<td>Prepare for dredging operations</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC315A</td>
<td>Conduct dredging operations</td>
<td>E</td>
</tr>
<tr>
<td>MNMOCC316A</td>
<td>Shut down dredge for maintenance</td>
<td>E</td>
</tr>
<tr>
<td></td>
<td>Mine Management</td>
<td></td>
</tr>
<tr>
<td>MNMF5FX18A</td>
<td>Apply, monitor, rectify and report statutory/legal compliance systems</td>
<td>M</td>
</tr>
<tr>
<td>MNMF5FX19A</td>
<td>Apply, monitor and report pit development systems</td>
<td>M</td>
</tr>
<tr>
<td>MNMF5FX20A</td>
<td>Lead and monitor surface mining operations and report outcomes</td>
<td>E</td>
</tr>
<tr>
<td>MNMF5FX21A</td>
<td>Apply and monitor the ventilation management system</td>
<td>E</td>
</tr>
<tr>
<td>MNMF5FX22A</td>
<td>Apply and monitor systems for stable mining</td>
<td>M</td>
</tr>
<tr>
<td>MNMF5FX23A</td>
<td>Apply and monitor mine transport systems and production equipment</td>
<td>M</td>
</tr>
<tr>
<td>MNMF5FX24A</td>
<td>Apply and monitor mine services systems</td>
<td>M</td>
</tr>
<tr>
<td>MNMF5FX25A</td>
<td>Apply and monitor mine fixed plant and infrastructure systems</td>
<td>M</td>
</tr>
<tr>
<td>MNMF5FX26A</td>
<td>Apply and monitor emergency preparedness and response</td>
<td>M</td>
</tr>
<tr>
<td>MNMF5FX27A</td>
<td>Facilitate the risk management process</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>Quality</td>
<td></td>
</tr>
<tr>
<td>UNIT IDENTIFIER</td>
<td>UNITS OF COMPETENCY PACKAGED AT AQF 2, 3 &amp; 4</td>
<td>Mandatory (M) Elective (E)</td>
</tr>
<tr>
<td>-----------------</td>
<td>---------------------------------------------</td>
<td>--------------------------</td>
</tr>
<tr>
<td>MNQ.TL/08A</td>
<td>Implement and monitor quality system</td>
<td>M</td>
</tr>
<tr>
<td><strong>Safety Co-ordination</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNC 042A</td>
<td>Examine and maintain mine safety</td>
<td>E</td>
</tr>
<tr>
<td><strong>Training</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BSZ404A</td>
<td>Train small groups</td>
<td>E</td>
</tr>
<tr>
<td>BSZ405A</td>
<td>Plan and promote a training program</td>
<td>E</td>
</tr>
<tr>
<td>BSZ406A</td>
<td>Plan a series of training sessions</td>
<td>E</td>
</tr>
<tr>
<td>BSZ407A</td>
<td>Deliver training sessions</td>
<td>E</td>
</tr>
<tr>
<td>BSZ408A</td>
<td>Review training</td>
<td>E</td>
</tr>
<tr>
<td>BSZ501A</td>
<td>Analyse competency requirements</td>
<td>E</td>
</tr>
<tr>
<td>BSZ508A</td>
<td>Design training courses</td>
<td>E</td>
</tr>
<tr>
<td><strong>Assessment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BSZ401A</td>
<td>Plan assessment</td>
<td>E</td>
</tr>
<tr>
<td>BSZ402A</td>
<td>Conduct assessment</td>
<td>E</td>
</tr>
<tr>
<td>BSZ507A</td>
<td>Develop assessment tools</td>
<td>E</td>
</tr>
<tr>
<td><strong>Supervision</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BSBCM402A</td>
<td>Develop work priorities</td>
<td>E</td>
</tr>
<tr>
<td>BSBCM404A</td>
<td>Develop teams and individuals</td>
<td>E</td>
</tr>
<tr>
<td>BSBFML402A</td>
<td>Show leadership in the workplace</td>
<td>E</td>
</tr>
<tr>
<td>BSBFML403A</td>
<td>Manage effective workplace relationships</td>
<td>E</td>
</tr>
<tr>
<td>BSBFML404A</td>
<td>Lead work teams</td>
<td>E</td>
</tr>
<tr>
<td>BSBFML405A</td>
<td>Implement operational plan</td>
<td>E</td>
</tr>
<tr>
<td>BSBFML406A</td>
<td>Implement workplace information system</td>
<td>E</td>
</tr>
<tr>
<td>BSBFML409A</td>
<td>Implement continuous improvement</td>
<td>E</td>
</tr>
<tr>
<td>BSBFML410A</td>
<td>Coordinate implementation of customer service strategies</td>
<td>E</td>
</tr>
<tr>
<td>BSBFML411A</td>
<td>Monitor a safe workplace</td>
<td>E</td>
</tr>
<tr>
<td>BSBCM412A</td>
<td>Promote innovation and change</td>
<td>E</td>
</tr>
</tbody>
</table>
MNM20203 CERTIFICATE II IN METALLIFEROUS MINING OPERATIONS (UNDERGROUND)

Requirements for completion:
Successful completion of a total of fourteen (14) units of competency made up of:
- eight (8) mandatory units of competency
- six (6) electives units of which:
  - a minimum of four (4) units are drawn from the specified Metalliferous Mining Extraction Underground units listed, and
  - a maximum of two (2) units, relevant to the job function from other endorsed Training Packages

Shot Firing - Open Cut
The units of competency, relating to shot firing, currently exist in the Metalliferous Mining Training Package (MNM99). The industry through the development of the Training Package has deemed that these are appropriate units of competency for the function in open cut mining. However to be designated/appointed under any statutory requirements as a Shot Firer, units of competency should be demonstrated to meet the State/Territory licensing requirements. State/Territory licensing requirements need to be confirmed by the Registered Training Organisation delivering and/or assessing the competency.

Certificate II in Metalliferous Mining Operations (Underground)

### Mandatory Units - total 8 units

<table>
<thead>
<tr>
<th>Generic Core</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMCCCOO001A Communicate in the workplace</td>
</tr>
<tr>
<td>MNMCCCO1002A Work safely</td>
</tr>
<tr>
<td>MNMCCCOO003A Plan and organise individual work</td>
</tr>
<tr>
<td>MNMCCCOO004A Contribute to quality work outcomes</td>
</tr>
<tr>
<td>MNMCCCOO005A Apply local risk control processes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ancillary Mine Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMUGC432A Operate equipment services vehicle underground</td>
</tr>
<tr>
<td>MNMUGC434A Transport plant, equipment and personnel</td>
</tr>
<tr>
<td>MNMUGC440A Set-up and perform manual scaling operations</td>
</tr>
</tbody>
</table>

### Elective Units - total of 6 units with a minimum of 4 units from those listed

<table>
<thead>
<tr>
<th>Generic Core</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMCCCOO006A Perform initial response first aid</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Drilling, Blasting and Ground Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMUGC1101A Set up and prepare for ground support</td>
</tr>
<tr>
<td>MNMUGC1102A Conduct ground support- bolting and meshing</td>
</tr>
<tr>
<td>MNMUGC108A Maintain magazine</td>
</tr>
<tr>
<td>MNMUGC112A Conduct wet filling activities</td>
</tr>
<tr>
<td>MNMUGC120A Apply shotcrete</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Loading and Hauling</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMUGC213A Conduct load, haul, dump operations</td>
</tr>
<tr>
<td>MNMUGC214A Conduct truck operations</td>
</tr>
<tr>
<td>MNMUGC215A Conduct conveyor operations</td>
</tr>
<tr>
<td>MNMUGC223A Conduct slurry pump operations</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ancillary Mine Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code</td>
</tr>
<tr>
<td>------------</td>
</tr>
<tr>
<td>MNMUGC425A</td>
</tr>
<tr>
<td>MNMUGC428A</td>
</tr>
<tr>
<td>MNMUGC430A</td>
</tr>
<tr>
<td>MNMUGC431A</td>
</tr>
<tr>
<td>MNMUGC433A</td>
</tr>
<tr>
<td>MNMUGC435A</td>
</tr>
<tr>
<td>MNMUGC437A</td>
</tr>
<tr>
<td>MNMMNI303A</td>
</tr>
<tr>
<td>MNMUGC442A</td>
</tr>
<tr>
<td>MNMUGC443A</td>
</tr>
</tbody>
</table>

*Note: a maximum of two (2) units, relevant to the job function from other endorsed Training Packages*

<table>
<thead>
<tr>
<th>Note:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Care must be taken to ensure that all</td>
</tr>
<tr>
<td>pre-requisites (specified within a unit</td>
</tr>
<tr>
<td>of competency) are complied with</td>
</tr>
<tr>
<td>for any unit of competency chosen as an</td>
</tr>
<tr>
<td>elective.</td>
</tr>
</tbody>
</table>
MNM30203 CERTIFICATE III IN METALLIFEROUS MINING OPERATIONS (UNDERGROUND)

Requirements for completion:
Successful completion of a total of twenty four (24) units of competency made up of:
- fourteen (14) units of competency satisfying the criteria for the Certificate II in Metalliferous Mining Operations (Underground), PLUS
- ten (10) electives units of which
  - a minimum of eight (8) units are drawn from the specified Metalliferous Mining Extraction Underground units listed, and
  - a maximum of two (2) units, relevant to the job function from other endorsed Training Packages

Shot Firing - Open Cut
The units of competency, relating to shot firing, currently exist in the Metalliferous Mining Training Package (MNM99). The industry through the development of the Training Package has deemed that these are appropriate units of competency for the function in open cut mining. However to be designated/appointed under any statutory requirements as a Shot Firer, units of competency should be demonstrated to meet the State/Territory licensing requirements. State/Territory licensing requirements need to be confirmed by the Registered Training Organisation delivering and/or assessing the competency.

<table>
<thead>
<tr>
<th>Certificate III in Metalliferous Mining Operations (Underground)</th>
</tr>
</thead>
<tbody>
<tr>
<td>fourteen (14) units of competency satisfying the criteria for the Certificate II in Metalliferous Mining Operations (Underground), PLUS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Elective Units - total 10 units with a minimum of eight (8) from those listed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Drilling, Blasting and Ground Support</strong></td>
</tr>
<tr>
<td>MNMUGC1102A</td>
</tr>
<tr>
<td>MNMUGC103A</td>
</tr>
<tr>
<td>MNMUGC104A</td>
</tr>
<tr>
<td>MNMUGC105A</td>
</tr>
<tr>
<td>MNMUGC106A</td>
</tr>
<tr>
<td>MNMUGC107A</td>
</tr>
<tr>
<td>MNMUGC108A</td>
</tr>
<tr>
<td>MNMNNI401A</td>
</tr>
<tr>
<td>MNMNNI301A</td>
</tr>
<tr>
<td>MNMNNI402A</td>
</tr>
<tr>
<td>MNMUGC121A</td>
</tr>
<tr>
<td>MNMUGC124A</td>
</tr>
<tr>
<td><strong>Loading and Hauling</strong></td>
</tr>
<tr>
<td>MNMUGC1216A</td>
</tr>
<tr>
<td>MNMUGC1217A</td>
</tr>
<tr>
<td>MNMUGC1218A</td>
</tr>
<tr>
<td>MNMUGC219A</td>
</tr>
<tr>
<td>MNMUGC220A</td>
</tr>
<tr>
<td>MNMUGC221A</td>
</tr>
<tr>
<td>MNMUGC222A</td>
</tr>
<tr>
<td>Code</td>
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<tr>
<td>------------</td>
</tr>
<tr>
<td>MNMUGC224A</td>
</tr>
<tr>
<td>MNMUGC225A</td>
</tr>
<tr>
<td>MNMUGC226A</td>
</tr>
<tr>
<td>MNMUGC227A</td>
</tr>
<tr>
<td>MNMUGC228A</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>MNMUGC424A</td>
</tr>
<tr>
<td>MNMUGC426A</td>
</tr>
<tr>
<td>MNMUGC427A</td>
</tr>
<tr>
<td>MNMUGC436A</td>
</tr>
<tr>
<td>MNMUGC438A</td>
</tr>
<tr>
<td>MNMUGC439A</td>
</tr>
<tr>
<td>MNMMNI303A</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>MNMMNI302A</td>
</tr>
</tbody>
</table>

**Note:**

1. Care must be taken to ensure that all pre-requisites (specified within a unit of competency) are complied with for any unit of competency chosen as an elective.
2. Units of competency which are part of a pre-requisite qualification cannot be credited as an elective for this qualification.

*Maximum of two (2) units, relevant to the job function from other endorsed Training Packages.*
MNM40203 CERTIFICATE IV IN METALLIFEROUS MINING OPERATIONS (UNDERGROUND)

Requirements for completion:
Successful completion of a total of twenty one (21) units of competency made up of:
- fifteen (15) mandatory units of competency
- six (6) electives units of which
  - a minimum of four (4) units are drawn from the specified Metalliferous Mining Extraction Underground units listed, and
  - a maximum of two (2) units, relevant to the job function from other endorsed Training Packages

Certificate IV in Metalliferous Mining Operations (Underground)

Mandatory Units - a total of 15 units

<table>
<thead>
<tr>
<th>Generic Core</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMCCCOO0001A Communicate in the workplace</td>
<td></td>
</tr>
<tr>
<td>MNMCCCO1002A Work safely</td>
<td></td>
</tr>
<tr>
<td>MNMCCCOO003A Plan and organise individual work</td>
<td></td>
</tr>
<tr>
<td>MNMCCCOO004A Contribute to quality work outcomes</td>
<td></td>
</tr>
<tr>
<td>MNMCCCOO005A Apply local risk control processes</td>
<td></td>
</tr>
<tr>
<td>Drilling, Blasting and Ground Support</td>
<td></td>
</tr>
<tr>
<td>MNMMNI401A Administer shotfiring activities</td>
<td></td>
</tr>
</tbody>
</table>

Mine Management

| MNMF5FX18A Apply, monitor, rectify and report statutory/legal compliance systems |                                                      |
| MNMF5FX21A Apply and monitor the ventilation management system |                                                      |
| MNMF5FX22A Apply and monitor systems for stable mining |                                                      |
| MNMF5FX23A Apply and monitor mine transport systems and production equipment |                                                      |
| MNMF5FX24A Apply and monitor mine services systems |                                                      |
| MNMF5FX25A Apply and monitor mine fixed plant and infrastructure systems |                                                      |
| MNMF5FX26A Apply and monitor emergency preparedness and response |                                                      |
| MNMF5FX27A Facilitate the risk management process |                                                      |

Ancillary Mine Support

| MNMUGC429A Conduct equipment recovery operations |                                                      |

Quality

| MNQTL08A Implement and monitor quality system |                                                      |

Elective Units - total 6 units with a minimum of four (4) from those listed

<table>
<thead>
<tr>
<th>Generic Core</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMCCCOO006A Perform initial response first aid</td>
<td></td>
</tr>
</tbody>
</table>

Mine Management

| MNMF5FX19A Apply, monitor and report pit development systems |                                                      |
| MNMF5FX20A Lead and monitor surface mining operations and report outcomes |                                                      |

Safety Co-ordination

| MNCO42A Examine and maintain mine safety |                                                      |

Training

<p>| BSZ404A Train small groups |                                                      |
| BSZ405A Plan and promote a training program |                                                      |</p>
<table>
<thead>
<tr>
<th>Unit Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSZ406A</td>
<td>Plan a series of training sessions</td>
</tr>
<tr>
<td>BSZ407A</td>
<td>Deliver training sessions</td>
</tr>
<tr>
<td>BSZ408A</td>
<td>Review training</td>
</tr>
<tr>
<td>BSZ501A</td>
<td>Analyse competency requirements</td>
</tr>
<tr>
<td>BSZ508A</td>
<td>Design training courses</td>
</tr>
</tbody>
</table>

### Assessment

<table>
<thead>
<tr>
<th>Unit Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSZ401A</td>
<td>Plan assessment</td>
</tr>
<tr>
<td>BSZ402A</td>
<td>Conduct assessment</td>
</tr>
<tr>
<td>BSZ507A</td>
<td>Develop assessment tools</td>
</tr>
</tbody>
</table>

### Supervision

<table>
<thead>
<tr>
<th>Unit Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSBCMN402A</td>
<td>Develop work priorities</td>
</tr>
<tr>
<td>BSBCMN404A</td>
<td>Develop teams and individuals</td>
</tr>
<tr>
<td>BSBCMN412A</td>
<td>Promote innovation and change</td>
</tr>
<tr>
<td>BSBFLM402A</td>
<td>Show leadership in the workplace</td>
</tr>
<tr>
<td>BSBFLM403A</td>
<td>Manage effective workplace relationships</td>
</tr>
<tr>
<td>BSBFLM404A</td>
<td>Lead work teams</td>
</tr>
<tr>
<td>BSBFLM405A</td>
<td>Implement operational plan</td>
</tr>
<tr>
<td>BSBFLM406A</td>
<td>Implement workplace information system</td>
</tr>
<tr>
<td>BSBFLM409A</td>
<td>Implement continuous improvement</td>
</tr>
<tr>
<td>BSBFLM410A</td>
<td>Coordinate implementation of customer service strategies</td>
</tr>
<tr>
<td>BSBFLM411A</td>
<td>Monitor a safe workplace</td>
</tr>
</tbody>
</table>

**Note:**

1. Care must be taken to ensure that all pre-requisites (specified within a unit of competency) are complied with for any unit of competency chosen as an elective.

**a maximum of two (2) units, relevant to the job function from other endorsed Training Packages**
## Extraction Underground Units of Competency at AQF II, III & IV

<table>
<thead>
<tr>
<th>UNIT IDENTIFIER</th>
<th>UNITS OF COMPETENCY PACKAGED AT AQF 2, 3 &amp; 4</th>
<th>Mandatory (M) Elective (E)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Generic Core</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMCCCOO001A</td>
<td>Communicate in the workplace</td>
<td>M M M</td>
</tr>
<tr>
<td>MNMCCCO1002A</td>
<td>Work safely</td>
<td>M M M</td>
</tr>
<tr>
<td>MNMCCCOO003A</td>
<td>Plan and organise individual work</td>
<td>M M M</td>
</tr>
<tr>
<td>MNMCCCOO004A</td>
<td>Contribute to quality work outcomes</td>
<td>M M M</td>
</tr>
<tr>
<td>MNMCCCOO005A</td>
<td>Apply local risk control processes</td>
<td>M M M</td>
</tr>
<tr>
<td>MNMCCCOO006A</td>
<td>Perform initial response first aid</td>
<td>E E E</td>
</tr>
<tr>
<td><strong>Drilling, Blasting and Ground Support</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMUGC1101A</td>
<td>Set up and prepare for ground support</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC1102A</td>
<td>Install ground support - bolting and meshing</td>
<td>E E</td>
</tr>
<tr>
<td>MNMUGC103A</td>
<td>Set up and prepare for drilling operations</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC104A</td>
<td>Conduct underground production drilling</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC105A</td>
<td>Conduct underground development drilling</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC106A</td>
<td>Conduct raise bore drilling</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC107A</td>
<td>Conduct diamond drilling</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC108A</td>
<td>Maintain magazine</td>
<td>E E</td>
</tr>
<tr>
<td>MNMUGC112A</td>
<td>Conduct wet filling activities</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC118A</td>
<td>Charge Underground blasts</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC120A</td>
<td>Apply shot-crete</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC121A</td>
<td>Install sets</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC124A</td>
<td>Conduct airleg mining</td>
<td>E</td>
</tr>
<tr>
<td>MMNNMI301A</td>
<td>Apply shotfiring</td>
<td>E</td>
</tr>
<tr>
<td>MMNNMI402A</td>
<td>Fire shots</td>
<td>E</td>
</tr>
<tr>
<td>MMNNMI401A</td>
<td>Administer shotfiring activities</td>
<td>E</td>
</tr>
<tr>
<td><strong>Loading and Hauling</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMUGC213A</td>
<td>Conduct load, haul, dump operations</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC214A</td>
<td>Conduct truck operations</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC215A</td>
<td>Conduct conveyor operations</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC1216A</td>
<td>Conduct skip operations</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC1217A</td>
<td>Operate automated winder</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC1218A</td>
<td>Operate manual winder</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC219A</td>
<td>Conduct rail haulage operations</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC220A</td>
<td>Conduct line of site operations</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC221A</td>
<td>Conduct tele remote operations</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC222A</td>
<td>Conduct control room operations</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC223A</td>
<td>Conduct slurry pump operations</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC224A</td>
<td>Conduct cage operations</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC225A</td>
<td>Operate winder for shaft sinking</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC226A</td>
<td>Maintain winder equipment</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC227A</td>
<td>Inspect and maintain shafts and structures</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC228A</td>
<td>Monitor, inspect and service ropes and attachments</td>
<td>E</td>
</tr>
<tr>
<td><strong>Ancillary Mine Support</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNIT IDENTIFIER</td>
<td>UNITS OF COMPETENCY PACKAGED AT AQF 2, 3 &amp; 4</td>
<td>Mandatory (M) Elective (E)</td>
</tr>
<tr>
<td>-----------------</td>
<td>---------------------------------------------</td>
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<tr>
<td>MNMUGC424A</td>
<td>Construct and maintain underground roads</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC425A</td>
<td>Operate from elevated work platform</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC426A</td>
<td>Conduct crane operations underground</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC427A</td>
<td>Conduct grader operations</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC428A</td>
<td>Operate roller/compactor</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC429A</td>
<td>Conduct equipment recovery operations</td>
<td>M</td>
</tr>
<tr>
<td>MNMUGC430A</td>
<td>Undertake towing underground</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC431A</td>
<td>Conduct integrated tool carrier operations</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC432A</td>
<td>Operate equipment services vehicle underground</td>
<td>M M</td>
</tr>
<tr>
<td>MNMUGC433A</td>
<td>Undertake de-watering activities</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC434A</td>
<td>Transport plant, equipment and personnel</td>
<td>M M</td>
</tr>
<tr>
<td>MNMUGC435A</td>
<td>Install and maintain reticulation systems</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC436A</td>
<td>Install and maintain vent</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC437A</td>
<td>Install and remove secondary fan</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC438A</td>
<td>Conduct remote controlled equipment recovery operations</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC439A</td>
<td>Conduct mechanical scaling</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC440A</td>
<td>Set-up and perform manual scaling operations</td>
<td>M M</td>
</tr>
<tr>
<td>MNMMNI303A</td>
<td>Handle and transport explosives</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC442A</td>
<td>Operate light vehicle underground</td>
<td>E</td>
</tr>
<tr>
<td>MNMUGC443A</td>
<td>Refuel vehicles/machines underground</td>
<td>E</td>
</tr>
<tr>
<td><strong>Stockpiling and Preparation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMUGC542A</td>
<td>Maintain underground stockpiles</td>
<td>E</td>
</tr>
<tr>
<td>MNMMNI302A</td>
<td>Conduct secondary firing</td>
<td>E</td>
</tr>
<tr>
<td><strong>Mine Management</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMF5FX18A</td>
<td>Apply, monitor, rectify and report statutory/legal compliance systems</td>
<td>M</td>
</tr>
<tr>
<td>MNMF5FX19A</td>
<td>Apply, monitor and report pit development systems</td>
<td>E</td>
</tr>
<tr>
<td>MNMF5FX20A</td>
<td>Lead and monitor surface mining operations and report outcomes</td>
<td>E</td>
</tr>
<tr>
<td>MNMF5FX21A</td>
<td>Apply and monitor the ventilation management system</td>
<td>M</td>
</tr>
<tr>
<td>MNMF5FX22A</td>
<td>Apply and monitor systems for stable mining</td>
<td>M</td>
</tr>
<tr>
<td>MNMF5FX23A</td>
<td>Apply and monitor mine transport systems and production equipment</td>
<td>M</td>
</tr>
<tr>
<td>MNMF5FX24A</td>
<td>Apply and monitor mine services systems</td>
<td>M</td>
</tr>
<tr>
<td>MNMF5FX25A</td>
<td>Apply and monitor mine fixed plant and infrastructure systems</td>
<td>M</td>
</tr>
<tr>
<td>MNMF5FX26A</td>
<td>Apply and monitor emergency preparedness and response</td>
<td>M</td>
</tr>
<tr>
<td>UNIT IDENTIFIER</td>
<td>UNITS OF COMPETENCY PACKAGED AT AQF 2, 3 &amp; 4</td>
<td>Mandatory (M)</td>
</tr>
<tr>
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<td>---------------------------------------------</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>II</td>
</tr>
<tr>
<td>MNMF5FX27A</td>
<td>Facilitate the risk management process</td>
<td></td>
</tr>
<tr>
<td>Quality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNQ.TL/08A</td>
<td>Implement and monitor quality system</td>
<td></td>
</tr>
<tr>
<td>Safety Co-ordination</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNC.O42.A</td>
<td>Examine and maintain mine safety</td>
<td></td>
</tr>
<tr>
<td>Training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BSZ404A</td>
<td>Train small groups</td>
<td></td>
</tr>
<tr>
<td>BSZ405A</td>
<td>Plan and promote a training program</td>
<td></td>
</tr>
<tr>
<td>BSZ406A</td>
<td>Plan a series of training sessions</td>
<td></td>
</tr>
<tr>
<td>BSZ407A</td>
<td>Deliver training sessions</td>
<td></td>
</tr>
<tr>
<td>BSZ408A</td>
<td>Review training</td>
<td></td>
</tr>
<tr>
<td>BSZ501A</td>
<td>Analyse competency requirements</td>
<td></td>
</tr>
<tr>
<td>BSZ508A</td>
<td>Design training courses</td>
<td></td>
</tr>
<tr>
<td>Assessment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BSZ401A</td>
<td>Plan assessment</td>
<td></td>
</tr>
<tr>
<td>BSZ402A</td>
<td>Conduct assessment</td>
<td></td>
</tr>
<tr>
<td>BSZ507A</td>
<td>Develop assessment tools</td>
<td></td>
</tr>
<tr>
<td>Supervision</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BSBCMN402A</td>
<td>Develop work priorities</td>
<td></td>
</tr>
<tr>
<td>BSBCMN404A</td>
<td>Develop teams and individuals</td>
<td></td>
</tr>
<tr>
<td>BSBFLM402A</td>
<td>Show leadership in the workplace</td>
<td></td>
</tr>
<tr>
<td>BSBFLM403A</td>
<td>Manage effective workplace relationships</td>
<td></td>
</tr>
<tr>
<td>BSBFLM404A</td>
<td>Lead work teams</td>
<td></td>
</tr>
<tr>
<td>BSBFLM405A</td>
<td>Implement operational plan</td>
<td></td>
</tr>
<tr>
<td>BSBFLM406A</td>
<td>Implement workplace information system</td>
<td></td>
</tr>
<tr>
<td>BSBFLM409A</td>
<td>Implement continuous improvement</td>
<td></td>
</tr>
<tr>
<td>BSBFLM410A</td>
<td>Coordinate implementation of customer service strategies</td>
<td></td>
</tr>
<tr>
<td>BSBFLM411A</td>
<td>Monitor a safe workplace</td>
<td></td>
</tr>
<tr>
<td>BSBCMN412A</td>
<td>Promote innovation and change</td>
<td></td>
</tr>
</tbody>
</table>
MNM20303  CERTIFICATE II IN METALLIFEROUS MINING OPERATIONS (PROCESSING)

Requirements for completion:
Successful completion of a total of fifteen (15) units of competency made up of:
- five (5) mandatory units of competency
- ten (10) electives units of which
  - a minimum of seven (7) units are drawn from the specified Metalliferous Mining Processing units listed, and
  - a maximum of three (3) units, relevant to the job function from other endorsed Training Packages

<table>
<thead>
<tr>
<th>Certificate II in Metalliferous Mining Operations (Processing)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mandatory Units - total 5 units</strong></td>
</tr>
<tr>
<td><strong>Generic Core</strong></td>
</tr>
<tr>
<td>MNMCCCOO001A Communicate in the workplace</td>
</tr>
<tr>
<td>MNMCCCO1002A Work safely</td>
</tr>
<tr>
<td>MNMCCCO003A Plan and organise individual work</td>
</tr>
<tr>
<td>MNMCCCO004A Contribute to quality work outcomes</td>
</tr>
<tr>
<td>MNMCCCO005A Apply local risk control processes</td>
</tr>
<tr>
<td><strong>Elective Units - total of 10 units with a minimum of 7 units from those listed</strong></td>
</tr>
<tr>
<td><strong>Generic Core</strong></td>
</tr>
<tr>
<td>MNMCCCO006A Perform initial response first aid</td>
</tr>
<tr>
<td><strong>General Processing</strong></td>
</tr>
<tr>
<td>MNMPRD102A Conduct conveyor operations</td>
</tr>
<tr>
<td>MNMPRD104A Conduct pump operations</td>
</tr>
<tr>
<td>MNMPRD105A Conduct valve operations</td>
</tr>
<tr>
<td>MNMPRD107A Distribute tailings</td>
</tr>
<tr>
<td>MNMPRD108A Handle reagents</td>
</tr>
<tr>
<td>MNMPRD110A Monitor tailings dam environment</td>
</tr>
<tr>
<td>MNMPRD111A Operate compressors</td>
</tr>
<tr>
<td>MNMPRD112A Operate fluid mixing equipment</td>
</tr>
<tr>
<td>MNMPRD113A Operate heat exchangers</td>
</tr>
<tr>
<td>MNMPRD116A Take samples</td>
</tr>
<tr>
<td>MNMPRD117A Maintain auxiliary plant and equipment operation</td>
</tr>
<tr>
<td>MNMPRD169A Operate gantry crane</td>
</tr>
<tr>
<td>MNMPRD170A Conduct non-slewing crane operations</td>
</tr>
<tr>
<td>MNMPRD171A Conduct slewing crane operations</td>
</tr>
<tr>
<td>MNMPRD172A Operate vehicle loading crane</td>
</tr>
<tr>
<td><strong>Handling and Pre-Treatment</strong></td>
</tr>
<tr>
<td>MNMPRD217A Blend stockpile materials</td>
</tr>
<tr>
<td>MNMPRD218A Break oversize rock</td>
</tr>
<tr>
<td>MNMPRD221A Maintain stockpiles</td>
</tr>
<tr>
<td>MNMPRD222A Move and position materials to form stockpiles</td>
</tr>
<tr>
<td>MNMPRD223A Operate raw material feed systems</td>
</tr>
<tr>
<td><strong>Beneficiation</strong></td>
</tr>
<tr>
<td>MNMPRD324A Conduct aeration process</td>
</tr>
<tr>
<td>MNMPRD326A Conduct digestion process</td>
</tr>
<tr>
<td>Code</td>
</tr>
<tr>
<td>---------</td>
</tr>
<tr>
<td>MNMPRD327A</td>
</tr>
<tr>
<td>MNMPRD328A</td>
</tr>
<tr>
<td>MNMPRD329A</td>
</tr>
<tr>
<td><strong>Refining</strong></td>
</tr>
<tr>
<td>MNMPRD443A</td>
</tr>
<tr>
<td>MNMPRD444A</td>
</tr>
<tr>
<td>MNMPRD445A</td>
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<tr>
<td>MNMPRD446A</td>
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<tr>
<td>MNMPRD447A</td>
</tr>
<tr>
<td>MNMPRD448A</td>
</tr>
<tr>
<td>MNMPRD449A</td>
</tr>
<tr>
<td><strong>By Product Management</strong></td>
</tr>
<tr>
<td>MNMPRD654A</td>
</tr>
<tr>
<td>MNMPRD655A</td>
</tr>
<tr>
<td>MNMPRD657A</td>
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<tr>
<td>MNMPRD658A</td>
</tr>
<tr>
<td><strong>Product Distribution</strong></td>
</tr>
<tr>
<td>MNMPRD761A</td>
</tr>
<tr>
<td>MNMPRD764A</td>
</tr>
<tr>
<td>MNMPRD765A</td>
</tr>
<tr>
<td>MNMPRD767A</td>
</tr>
<tr>
<td>MNMPRD768A</td>
</tr>
</tbody>
</table>

**Note:**

1. Care must be taken to ensure that all pre-requisites (specified within a unit of competency) are complied with for any unit of competency chosen as an elective.

**a maximum of three (3) units, relevant to the job function from other endorsed Training Packages**
MNM30303  CERTIFICATE III IN METALLIFEROUS MINING OPERATIONS (PROCESSING)

Requirements for completion:
Successful completion of a total of twenty two (22) units of competency made up of:
- five (5) core units from the Certificate II in Metalliferous Mining Operations (Processing), PLUS
- ten (10) elective units from the Certificate II in Metalliferous Mining Operations (Processing), PLUS
- seven (7) electives units of which:
  - a minimum of five (5) units are drawn from the specified Metalliferous Mining Processing units listed, and
  - a maximum of two (2) units, relevant to the job function from other endorsed Training Packages

<table>
<thead>
<tr>
<th>Certificate III in Metalliferous Mining Operations (Processing)</th>
</tr>
</thead>
<tbody>
<tr>
<td>fifteen (15) units from the Certificate II in Metalliferous Mining Operations (Processing), PLUS</td>
</tr>
<tr>
<td>Elective Units - total 7 units with a minimum of five (5) from those listed</td>
</tr>
</tbody>
</table>

**General Processing**
- MNMPRD103A Conduct drying activities
- MNMPRD109A Monitor and control boiler operation
- MNMPRD1114A Perform process control room operations
- MNMPRD115A Respond to an unplanned shut down

**Handling and Pre-Treatment**
- MNMPRD219A Conduct crushing and screening
- MNMPRD220A Conduct milling/grinding

**Beneficiation**
- MNMPRD224A Operate and monitor filter processes
- MNMPRD325A Conduct calcination activities
- MNMPRD330A Conduct bacterial oxidation
- MNMPRD331A Conduct filtering process
- MNMPRD332A Conduct flotation process
- MNMPRD333A Conduct heavy media separation
- MNMPRD334A Conduct high tension separation
- MNMPRD335A Conduct leaching process
- MNMPRD336A Conduct magnetic separation
- MNMPRD337A Conduct pressure oxidation
- MNMPRD338A Conduct thickening and clarifying process
- MNMPRD339A Conduct wet gravity separation

**Refining**
- MNMPRD440A Conduct electrowinning/electrofining operations
- MNMPRD441A Conduct elution processes
- MNMPRD442A Conduct gold room operations
- MNMPRD450A Monitor casting quality

**Smelting**
- MNMPRD550A Cast as blast furnace
- MNMPRD551A Cast ingots
- MNMPRD552A Operate a blast furnace
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMPRD1553A</td>
<td>Operate furnaces</td>
</tr>
<tr>
<td>MNMPRD554A</td>
<td>Operate converters</td>
</tr>
<tr>
<td>MNMPRD555A</td>
<td>Supply molten metal and additives to furnaces</td>
</tr>
<tr>
<td>MNMPRD556A</td>
<td>Tap furnaces</td>
</tr>
<tr>
<td>MNMPRD557A</td>
<td>Control molten metal in holding furnace/vessel</td>
</tr>
<tr>
<td>MNMPRD558A</td>
<td>Monitor and control furnace combustion and gases</td>
</tr>
<tr>
<td>UTPPNEG154A</td>
<td>Operate electrostatic precipitator dust collection plant</td>
</tr>
</tbody>
</table>

*Product Distribution*

- MNMPRD759A: Check and evaluate records and documentation
- MNMPRD760A: Complete import/export documentation
- MNMPRD762A: Maintain contain bulk cargo records

A maximum of two (2) units, relevant to the job function from other endorsed Training Packages

**Note:**

1. Care must be taken to ensure that all pre-requisites (specified within a unit of competency) are complied with for any unit of competency chosen as an elective.
2. Units of competency which are part of a pre-requisite qualification cannot be credited as an elective for this qualification.
MNM40303  CERTIFICATE IV IN METALLIFEROUS MINING OPERATIONS (PROCESSING)

Requirements for completion:
Successful completion of a total of twenty one (21) units of competency made up of:
- eleven (11) mandatory units of competency
- ten (10) electives units of which:
  - a minimum of seven (7) units are drawn from the specified Metalliferous Mining Processing units listed, and
  - a maximum of three (3) units, relevant to the job function from other endorsed Training Packages

Certificate IV in Metalliferous Mining Operations (Underground)

Mandatory Units - a total of 11 units

<table>
<thead>
<tr>
<th>Generic Core</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMCCCOO001A Communicate in the workplace</td>
</tr>
<tr>
<td>MNMCCCO01002A Work safely</td>
</tr>
<tr>
<td>MNMCCCO003A Plan and organise individual work</td>
</tr>
<tr>
<td>MNMCCCOO004A Contribute to quality work outcomes</td>
</tr>
<tr>
<td>MNMCCCO005A Apply local risk control processes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mine Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMF5FX18A Apply, monitor, rectify and report statutory/legal compliance systems</td>
</tr>
<tr>
<td>MNMF5FX24A Apply and monitor mine services systems</td>
</tr>
<tr>
<td>MNMF5FX25A Apply and monitor mine fixed plant and infrastructure systems</td>
</tr>
<tr>
<td>MNMF5FX26A Apply and monitor emergency preparedness and response</td>
</tr>
<tr>
<td>MNMF5FX27A Facilitate the risk management process</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNQ.TL/08A Implement and monitor quality system</td>
</tr>
</tbody>
</table>

Elective Units - total 10 units with a minimum of seven (7) from those listed

<table>
<thead>
<tr>
<th>Generic Core</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMCCCOO006A Perform initial response first aid</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>General Processing</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMPRD101A Commission/Recommission plant</td>
</tr>
<tr>
<td>MNMPRD106A Decommission plant</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>By Product Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMPRD656A Monitor and co-ordinate waste water treatment processes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Product Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMPRD763A Organise and monitor wharf/terminal operations</td>
</tr>
<tr>
<td>MNMPRD766A Process movement of containers and cargo</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Safety Co-ordination</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNC.O42.A Examine and maintain mine safety</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Training</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSZ404A Train small groups</td>
</tr>
<tr>
<td>BSZ405A Plan and promote a training program</td>
</tr>
<tr>
<td>BSZ406A Plan a series of training sessions</td>
</tr>
<tr>
<td>BSZ407A Deliver training sessions</td>
</tr>
<tr>
<td>BSZ408A Review training</td>
</tr>
<tr>
<td>Code</td>
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<tr>
<td>---------</td>
</tr>
<tr>
<td>BSZ501A</td>
</tr>
<tr>
<td>BSZ508A</td>
</tr>
</tbody>
</table>

**Assessment**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSZ401A</td>
<td>Plan assessment</td>
</tr>
<tr>
<td>BSZ402A</td>
<td>Conduct assessment</td>
</tr>
<tr>
<td>BSZ507A</td>
<td>Develop assessment tools</td>
</tr>
</tbody>
</table>

**Supervision**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSBCMN402A</td>
<td>Develop work priorities</td>
</tr>
<tr>
<td>BSBCMN404A</td>
<td>Develop teams and individuals</td>
</tr>
<tr>
<td>BSBCMN412A</td>
<td>Promote innovation and change</td>
</tr>
<tr>
<td>BSBFLM402A</td>
<td>Show leadership in the workplace</td>
</tr>
<tr>
<td>BSBFLM403A</td>
<td>Manage effective workplace relationships</td>
</tr>
<tr>
<td>BSBFLM404A</td>
<td>Lead work teams</td>
</tr>
<tr>
<td>BSBFLM405A</td>
<td>Implement operational plan</td>
</tr>
<tr>
<td>BSBFLM406A</td>
<td>Implement workplace information system</td>
</tr>
<tr>
<td>BSBFLM409A</td>
<td>Implement continuous improvement</td>
</tr>
<tr>
<td>BSBFLM410A</td>
<td>Coordinate implementation of customer service strategies</td>
</tr>
<tr>
<td>BSBFLM411A</td>
<td>Monitor a safe workplace</td>
</tr>
</tbody>
</table>

A maximum of three (3) units, relevant to the job function from other endorsed Training Packages

**Note:** Care must be taken to ensure that all pre-requisites (specified within a unit of competency) are complied with for any unit of competency chosen as an elective.
## Processing Units of Competency at AQF II, III & IV

<table>
<thead>
<tr>
<th>UNIT IDENTIFIER</th>
<th>UNITS OF COMPETENCY PACKAGED AT AQF 2, 3 &amp; 4</th>
<th>Mandatory (M) Elective (E)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMCCCOO001A</td>
<td>Communicate in the workplace</td>
<td>M M M</td>
</tr>
<tr>
<td>MNMCCCO1002A</td>
<td>Work safely</td>
<td>M M M</td>
</tr>
<tr>
<td>MNMCCCOO003A</td>
<td>Plan and organise individual work</td>
<td>M M M</td>
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<tr>
<td>MNMCCCOO004A</td>
<td>Contribute to quality work outcomes</td>
<td>M M M</td>
</tr>
<tr>
<td>MNMCCCOO005A</td>
<td>Apply local risk control processes</td>
<td>M M M</td>
</tr>
<tr>
<td>MNMCCCOO006A</td>
<td>Perform initial response first aid</td>
<td>E E E</td>
</tr>
</tbody>
</table>

### General Processing
- MNMPRD101A Commission/Recommission plant E
- MNMPRD102A Conduct conveyor operations E
- MNMPRD103A Conduct drying activities E
- MNMPRD104A Conduct pump operations E
- MNMPRD105A Conduct valve operations E
- MNMPRD106A Decommission plant E
- MNMPRD107A Distribute tailings E
- MNMPRD108A Handle reagents E
- MNMPRD109A Monitor and control boiler operation E
- MNMPRD1110A Monitor tailings dam environment E
- MNMPRD111A Operate compressors E
- MNMPRD112A Operate fluid mixing equipment E
- MNMPRD113A Operate heat exchangers E
- MNMPRD1114A Perform process control room operations E
- MNMPRD115A Respond to an unplanned shut down E
- MNMPRD116A Take samples E
- MNMPRD117A Maintain auxiliary plant and equipment operation E
- MNMPRD169A Operate gantry crane E
- MNMPRD170A Conduct non-slewing crane operations E
- MNMPRD171A Conduct slewing crane operations E
- MNMPRD172A Operate vehicle loading crane E

### Handling and Pre-Treatment
- MNMPRD217A Blend stockpile materials E
- MNMPRD218A Break oversize rock E
- MNMPRD219A Conduct crushing and screening E
- MNMPRD220A Conduct milling/grinding E
- MNMPRD221A Maintain stockpiles E
- MNMPRD222A Move and position materials to form stockpiles E
- MNMPRD223A Operate raw material feed systems E

### Beneficiation
- MNMPRD224A Operate and monitor filter processes E
- MNMPRD324A Conduct aeration process E
- MNMPRD325A Conduct calcination activities E
- MNMPRD326A Conduct digestion process E
<table>
<thead>
<tr>
<th>UNIT IDENTIFIER</th>
<th>UNITS OF COMPETENCY PACKAGED AT AQF 2, 3 &amp; 4</th>
<th>Mandatory (M)</th>
<th>Elective (E)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMPRD327A</td>
<td>Conduct precipitation operations</td>
<td></td>
<td>E</td>
</tr>
<tr>
<td>MNMPRD328A</td>
<td>Conduct reduction process</td>
<td></td>
<td>E</td>
</tr>
<tr>
<td>MNMPRD329A</td>
<td>Conduct roasting operations</td>
<td></td>
<td>E</td>
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<tr>
<td>MNMPRD330A</td>
<td>Conduct bacterial oxidation</td>
<td></td>
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<tr>
<td>MNMPRD331A</td>
<td>Conduct filtering process</td>
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<tr>
<td>MNMPRD332A</td>
<td>Conduct flotation process</td>
<td></td>
<td>E</td>
</tr>
<tr>
<td>MNMPRD333A</td>
<td>Conduct heavy media separation</td>
<td></td>
<td>E</td>
</tr>
<tr>
<td>MNMPRD334A</td>
<td>Conduct high tension separation</td>
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<td>E</td>
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<tr>
<td>MNMPRD335A</td>
<td>Conduct leaching process</td>
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<tr>
<td>MNMPRD336A</td>
<td>Conduct magnetic separation</td>
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</tr>
<tr>
<td>MNMPRD337A</td>
<td>Conduct pressure oxidation</td>
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<tr>
<td>MNMPRD338A</td>
<td>Conduct thickening and clarifying process</td>
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<tr>
<td>MNMPRD339A</td>
<td>Conduct wet gravity separation</td>
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<tr>
<td><strong>Refining</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>MNMPRD440A</td>
<td>Conduct electrowinning/electrofining</td>
<td></td>
<td>E</td>
</tr>
<tr>
<td>MNMPRD441A</td>
<td>CONDUCT ELUTION PROCESSES</td>
<td></td>
<td>E</td>
</tr>
<tr>
<td>MNMPRD442A</td>
<td>CONDUCT GOLD ROOM OPERATIONS</td>
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<td>E</td>
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<tr>
<td>MNMPRD443A</td>
<td>CONDUCT SOLVENT EXTRACTION</td>
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<tr>
<td>MNMPRD444A</td>
<td>Prepare and carry out electrolytic cleaning process</td>
<td>E</td>
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<tr>
<td>MNMPRD445A</td>
<td>Prepare for pellatising activities</td>
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<tr>
<td>MNMPRD446A</td>
<td>Prepare for sintering activities</td>
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<tr>
<td>MNMPRD447A</td>
<td>Produce pellets</td>
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<tr>
<td>MNMPRD448A</td>
<td>Sinter materials</td>
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<tr>
<td>MNMPRD449A</td>
<td>Undertake tank-farming</td>
<td></td>
<td>E</td>
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<tr>
<td>MNMPRD450A</td>
<td>Monitor casting quality</td>
<td></td>
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<tr>
<td><strong>By Product Management</strong></td>
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<tr>
<td>MNMPRD654A</td>
<td>Conduct acid plant operations</td>
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<tr>
<td>MNMPRD655A</td>
<td>Conduct air cleaning activities</td>
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<td>E</td>
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<tr>
<td>MNMPRD656A</td>
<td>Monitor and co-ordinate waste water treatment processes</td>
<td>E</td>
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<tr>
<td>MNMPRD657A</td>
<td>Monitor and operate waste water treatment processes</td>
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<tr>
<td>MNMPRD658A</td>
<td>Reclaim and treat water systems</td>
<td></td>
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<tr>
<td><strong>Product Distribution</strong></td>
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<tr>
<td>MNMPRD759A</td>
<td>Check and evaluate records and documentation</td>
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<tr>
<td>MNMPRD760A</td>
<td>Complete import/export documentation</td>
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<tr>
<td>MNMPRD761A</td>
<td>Connect and disconnect reefer units</td>
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<td>E</td>
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<tr>
<td>MNMPRD762A</td>
<td>Maintain contain bulk cargo records</td>
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<td>E</td>
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<tr>
<td>MNMPRD763A</td>
<td>Organise and monitor wharf/terminal operations</td>
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<tr>
<td>MNMPRD764A</td>
<td>Bulk package and store products</td>
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<tr>
<td>MNMPRD765A</td>
<td>Prepare and load for transport</td>
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<tr>
<td>UNIT IDENTIFIER</td>
<td>UNITS OF COMPETENCY PACKAGED AT AQF 2, 3 &amp; 4</td>
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<tr>
<td>MNMPRD766A</td>
<td>Process movement of containers and cargo</td>
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<tr>
<td>MNMPRD767A</td>
<td>Secure cargo</td>
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<td>E</td>
</tr>
<tr>
<td>MNMPRD768A</td>
<td>Transfer cargo</td>
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<tr>
<td><strong>Smelting</strong></td>
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<tr>
<td>MNMPRD550A</td>
<td>Cast as blast furnace</td>
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<tr>
<td>MNMPRD551A</td>
<td>Cast ingots</td>
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<tr>
<td>MNMPRD552A</td>
<td>Operate a blast furnace</td>
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<tr>
<td>MNMPRD1553A</td>
<td>Operate furnaces</td>
<td>E</td>
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<tr>
<td>MNMPRD554A</td>
<td>Operate converters</td>
<td>E</td>
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<tr>
<td>MNMPRD555A</td>
<td>Supply molten metal and additives to furnaces</td>
<td>E</td>
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<tr>
<td>MNMPRD556A</td>
<td>Tap furnaces</td>
<td>E</td>
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<tr>
<td>MNMPRD557A</td>
<td>Control molten metal in holding furnace/vessel</td>
<td>E</td>
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<tr>
<td>MNMPRD558A</td>
<td>Monitor and control furnace combustion and gas</td>
<td>E</td>
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<tr>
<td>UTPPNEG154A</td>
<td>Operate electrostatic precipitator dust collection plant</td>
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<tr>
<td><strong>Mine Management</strong></td>
<td></td>
<td></td>
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<tr>
<td>MNMF5FX18A</td>
<td>Apply, monitor, rectify and report statutory/legal compliance systems</td>
<td>M</td>
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<tr>
<td>MNMF5FX24A</td>
<td>Apply and monitor mine services systems</td>
<td>M</td>
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<tr>
<td>MNMF5FX25A</td>
<td>Apply and monitor mine fixed plant and infrastructure systems</td>
<td>M</td>
<td></td>
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<tr>
<td>MNMF5FX26A</td>
<td>Apply and monitor emergency preparedness and response</td>
<td>M</td>
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<tr>
<td>MNMF5FX27A</td>
<td>Facilitate the risk management process</td>
<td>M</td>
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<tr>
<td><strong>Quality</strong></td>
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<tr>
<td>MNQ.TL/08.A</td>
<td>Implement and monitor quality system</td>
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<tr>
<td><strong>Safety Co-ordination</strong></td>
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<tr>
<td>MNC.O42.A</td>
<td>Examine and maintain mine safety</td>
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<tr>
<td><strong>Training</strong></td>
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</tr>
<tr>
<td>BSZ404A</td>
<td>Train small groups</td>
<td>E</td>
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</tr>
<tr>
<td>BSZ405A</td>
<td>Plan and promote a training program</td>
<td>E</td>
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</tr>
<tr>
<td>BSZ406A</td>
<td>Plan a series of training sessions</td>
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<tr>
<td>BSZ407A</td>
<td>Deliver training sessions</td>
<td>E</td>
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<tr>
<td>BSZ408A</td>
<td>Review training</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td>BSZ501A</td>
<td>Analyse competency requirements</td>
<td>E</td>
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<tr>
<td>BSZ508A</td>
<td>Design training courses</td>
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<tr>
<td><strong>Assessment</strong></td>
<td></td>
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<tr>
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<td>Plan assessment</td>
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<td>Develop assessment tools</td>
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<td><strong>Supervision</strong></td>
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</tr>
<tr>
<td>BSBCMN402A</td>
<td>Develop work priorities</td>
<td>E</td>
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<tr>
<td>UNIT IDENTIFIER</td>
<td>UNITS OF COMPETENCY PACKAGED AT AQF 2, 3 &amp; 4</td>
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<tr>
<td>BSBCMN404A</td>
<td>Develop teams and individuals</td>
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<td>E</td>
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<tr>
<td>BSBFLM402A</td>
<td>Show leadership in the workplace</td>
<td></td>
<td>E</td>
</tr>
<tr>
<td>BSBFLM403A</td>
<td>Manage effective workplace relationships</td>
<td></td>
<td>E</td>
</tr>
<tr>
<td>BSBFLM404A</td>
<td>Lead work teams</td>
<td></td>
<td>E</td>
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<tr>
<td>BSBFLM405A</td>
<td>Implement operational plan</td>
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<td>Implement workplace information system</td>
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<td>Implement continuous improvement</td>
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<td>E</td>
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<td>Coordinate implementation of customer service strategies</td>
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<tr>
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<td>Monitor a safe workplace</td>
<td></td>
<td>E</td>
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<tr>
<td>BSBCMN412A</td>
<td>Promote innovation and change</td>
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<td>E</td>
</tr>
</tbody>
</table>
MNM50299 DIPLOMA OF METALLIFEROUS MINING (OPEN CUT AND UNDERGROUND)

Requirements for completion:
Successful completion of a total of twenty one (21) units of competency with:
- Fourteen (14) core units being mandatory
- Seven (7) electives units of which:
  - all seven (7) units are drawn from the specified Metalliferous Mining Processing units listed,
  **OR**
  - a minimum of four (4) units are drawn from the specified Metalliferous Mining Processing units listed, and
  - a maximum of three (3) units, relevant to the job function from other endorsed Training Packages

<table>
<thead>
<tr>
<th>Mandatory Units - a total of 14 units</th>
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<tbody>
<tr>
<td><strong>Generic Core</strong></td>
</tr>
<tr>
<td>MNMCCCICO0001A Communicate in the workplace</td>
</tr>
<tr>
<td>MNMCCCICO0002A Work safely</td>
</tr>
<tr>
<td>MNMCCCICO0003A Plan and organise individual work</td>
</tr>
<tr>
<td>MNMCCCICO0004A Contribute to quality work outcomes</td>
</tr>
<tr>
<td>MNMCCCICO0005A Apply local risk control processes</td>
</tr>
<tr>
<td><strong>Mine Management</strong></td>
</tr>
<tr>
<td>MNMFMFXO01A Implement and maintain statutory/legal compliance systems</td>
</tr>
<tr>
<td>MNMFMFXO12A Design system for stable mining</td>
</tr>
<tr>
<td>MNMFMFXO13A Implement mine transport systems and production equipment</td>
</tr>
<tr>
<td>MNMFMFXO14A Implement mine services system</td>
</tr>
<tr>
<td>MNMFMFXO15A Implement mine fixed plant and infrastructure systems</td>
</tr>
<tr>
<td>MNMFMFXO16A Implement emergency preparedness and response systems</td>
</tr>
<tr>
<td>MNMFMFXO27A Facilitate the risk management process</td>
</tr>
<tr>
<td><strong>Quality</strong></td>
</tr>
<tr>
<td>BSXFMI307A Manage quality customer service</td>
</tr>
<tr>
<td>BSXFMI309A Implement and monitor continuous improvement systems and processes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Elective Units - total 10 units with a minimum of seven (7) from the units listed</th>
</tr>
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<tbody>
<tr>
<td><strong>Mine Management</strong></td>
</tr>
<tr>
<td>MNMFMFXO2A Implement and maintain pit development system</td>
</tr>
<tr>
<td>MNMFMFXO3A Implement and maintain surface mining operations</td>
</tr>
<tr>
<td>MNMFMFXO4A Select and commission surface mining operations</td>
</tr>
<tr>
<td>MNMFMFXO5A Plan, conduct and oversee drilling operations</td>
</tr>
<tr>
<td>MNMFMFXO6A Manage blasting operations</td>
</tr>
<tr>
<td>MNMFMFXO7A Plan and monitor water management</td>
</tr>
<tr>
<td>MNMFMFXO8A Plan and monitor recycled materials operation</td>
</tr>
<tr>
<td>MNMFMFXO9A Design stockpile formations and recycling systems</td>
</tr>
<tr>
<td>MNMFMFXO10A Develop, implement and maintain process control systems</td>
</tr>
<tr>
<td>MNMFMFXO11A Implement ventilation management system</td>
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<tr>
<td><strong>Training</strong></td>
</tr>
<tr>
<td>BSZ502A Design and establish the training system</td>
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<tr>
<td>BSZ504A</td>
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<tr>
<td>---------</td>
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<tr>
<td>BSZ505A</td>
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**Assessment**

<table>
<thead>
<tr>
<th>BSZ403A</th>
<th>Review assessment</th>
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<tbody>
<tr>
<td>BSZ503A</td>
<td>Design and establish the assessment system</td>
</tr>
<tr>
<td>BSZ506A</td>
<td>Develop assessment procedures</td>
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**Supervision**

<table>
<thead>
<tr>
<th>BSXFMI301A</th>
<th>Manage personal work priorities and professional development</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSXFMI302A</td>
<td>Provide leadership in the workplace</td>
</tr>
<tr>
<td>BSXFMI303A</td>
<td>Establish and manage effective workplace relationships</td>
</tr>
<tr>
<td>BSXFMI304A</td>
<td>Participate in, lead and facilitate work team</td>
</tr>
<tr>
<td>BSXFMI305A</td>
<td>Manage operations to achieve planned outcomes</td>
</tr>
<tr>
<td>BSXFMI306A</td>
<td>Manage workplace information</td>
</tr>
<tr>
<td>BSXFMI308A</td>
<td>Develop and maintain a safe workplace and environment</td>
</tr>
<tr>
<td>BSXFMI310A</td>
<td>Facilitate and capitalise in change and innovation</td>
</tr>
<tr>
<td>BSXFMI311A</td>
<td>Contribute to the development of workplace learning</td>
</tr>
<tr>
<td>BSAORG302A</td>
<td>Organise schedule on behalf of others to achieve team/section goals</td>
</tr>
</tbody>
</table>

**And**

- Three (3) units of competency drawn from Metalliferous Mining units of competency or endorsed units of competency from other industries appropriate for use in metalliferous mining mine management at AQF 5.
MNM50399  DIPLOMA OF METALLIFEROUS MINING (PROCESSING)

Requirements for completion:
A total of twenty one (21) units of competency with:
- Ten (10) core units being mandatory
- Six (6) elective units of competency drawn from those listed
- Five (5) elective units of competency drawn from Metalliferous Mining Training Package or from other endorsed Training Packages appropriate for use in metalliferous mining mine management at AQF 5.

### Mandatory Units - a total of 10 units

<table>
<thead>
<tr>
<th>Generic Core</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMCCCOO001A  Communicate in the workplace</td>
<td>MNMCCCOO1002A  Work safely</td>
</tr>
<tr>
<td>MNMCCCOO003A  Plan and organise individual work</td>
<td>MNMCCCOO004A  Contribute to quality work outcomes</td>
</tr>
<tr>
<td>MNMCCCOO005A  Apply local risk control processes</td>
<td>MNM5FX01A  Implement and maintain statutory/legal compliance systems</td>
</tr>
<tr>
<td>MNM5FX16A  Implement emergency preparedness and response systems</td>
<td>MNM5FX27A  Facilitate the risk management process</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mine Management</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MNM5FX02A  Implement and maintain pit development system</td>
<td>MNM5FX03A  Implement and maintain surface mining operations</td>
</tr>
<tr>
<td>MNM5FX04A  Select and commission surface mining operations</td>
<td>MNM5FX05A  Plan, conduct and oversee drilling operations</td>
</tr>
<tr>
<td>MNM5FX06A  Manage blasting operations</td>
<td>MNM5FX07A  Plan and monitor water management</td>
</tr>
<tr>
<td>MNM5FX08A  Plan and monitor recycled materials operation</td>
<td>MNM5FX09A  Design stockpile formations and recycling systems</td>
</tr>
<tr>
<td>MNM5FX10A  Develop, implement and maintain process control systems</td>
<td>MNM5FX11A  Implement ventilation management system</td>
</tr>
<tr>
<td>MNM5FX12A  Design system for stable mining</td>
<td>MNM5FX13A  Implement mine transport systems and production equipment</td>
</tr>
<tr>
<td>MNM5FX14A  Implement mine services system</td>
<td>MNM5FX15A  Manage mine ventilation management systems</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Quality</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BSXFM307A  Manage quality customer service</td>
<td>BSXFM309A  Implement and monitor continuous improvement systems and processes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Elective Units - total 6 units from the units listed</th>
</tr>
</thead>
</table>

### Mine Management

| MNM5FX02A  Implement and maintain pit development system | MNM5FX03A  Implement and maintain surface mining operations |
| MNM5FX04A  Select and commission surface mining operations | MNM5FX05A  Plan, conduct and oversee drilling operations |
| MNM5FX06A  Manage blasting operations  | MNM5FX07A  Plan and monitor water management |
| MNM5FX08A  Plan and monitor recycled materials operation | MNM5FX09A  Design stockpile formations and recycling systems |
| MNM5FX10A  Develop, implement and maintain process control systems | MNM5FX11A  Implement ventilation management system |
| MNM5FX12A  Design system for stable mining  | MNM5FX13A  Implement mine transport systems and production equipment |
| MNM5FX14A  Implement mine services system | MNM5FX15A  Manage mine ventilation management systems |

<table>
<thead>
<tr>
<th>Training</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BSZ502A  Design and establish the training system</td>
<td>BSZ504A  Manage training and assessment system</td>
</tr>
<tr>
<td>BSZ505A  Evaluate the training and assessment system</td>
<td>BSZ403A  Review assessment</td>
</tr>
</tbody>
</table>

### Assessment

| BSZ403A  Review assessment | BSZ503A  Design and establish the assessment system |
| BSZ506A  Develop assessment procedures |

### Supervision
| BSXFMI301A | Manage personal work priorities and professional development |
| BSXFMI302A | Provide leadership in the workplace |
| BSXFMI303A | Establish and manage effective workplace relationships |
| BSXFMI304A | Participate in, lead and facilitate work team |
| BSXFMI305A | Manage operations to achieve planned outcomes |
| BSXFMI306A | Manage workplace information |
| BSXFMI308A | Develop and maintain a safe workplace and environment |
| BSXFMI310A | Facilitate and capitalise in change and innovation |
| BSXFMI311A | Contribute to the development of workplace learning |
| BSAORG302A | Organise schedule on behalf of others to achieve team/section goals |

And

a maximum of five (5) units, relevant to the job function from the Metalliferous Mining Training Package or other endorsed Training Packages
### Mine Management Units of Competency at AQF V

<table>
<thead>
<tr>
<th>UNIT IDENTIFIER</th>
<th>UNITS OF COMPETENCY PACKAGED AT AQF 5</th>
<th>Core (C) Elective (E)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mine Management</strong></td>
<td></td>
<td>V</td>
</tr>
<tr>
<td>MNMF5FX01A</td>
<td>Implement and maintain statutory/legal compliance systems</td>
<td>C</td>
</tr>
<tr>
<td>MNMF5FX02A</td>
<td>Implement and maintain pit development system</td>
<td>C</td>
</tr>
<tr>
<td>MNMF5FX03A</td>
<td>Implement and maintain surface mining operations</td>
<td>E</td>
</tr>
<tr>
<td>MNMF5FX04A</td>
<td>Select and commission surface mining operations</td>
<td>E</td>
</tr>
<tr>
<td>MNMF5FX05A</td>
<td>Plan, conduct and oversee drilling operations</td>
<td>E</td>
</tr>
<tr>
<td>MNMF5FX06A</td>
<td>Manage blasting operations</td>
<td>E</td>
</tr>
<tr>
<td>MNMF5FX07A</td>
<td>Plan and monitor water management</td>
<td>E</td>
</tr>
<tr>
<td>MNMF5FX08A</td>
<td>Plan and monitor recycled materials operation</td>
<td>E</td>
</tr>
<tr>
<td>MNMF5FX09A</td>
<td>Design stockpile formations and recycling systems</td>
<td>E</td>
</tr>
<tr>
<td>MNMF5FX10A</td>
<td>Develop, implement and maintain process control systems</td>
<td>E</td>
</tr>
<tr>
<td>MNMF5FX11A</td>
<td>Implement ventilation management system</td>
<td>E</td>
</tr>
<tr>
<td>MNMF5FX12A</td>
<td>Design system for stable mining</td>
<td>C</td>
</tr>
<tr>
<td>MNMF5FX13A</td>
<td>Implement mine transport systems and production equipment</td>
<td>C</td>
</tr>
<tr>
<td>MNMF5FX14A</td>
<td>Implement mine services system</td>
<td>C</td>
</tr>
<tr>
<td>MNMF5FX15A</td>
<td>Implement mine fixed plant and infrastructure systems</td>
<td>C</td>
</tr>
<tr>
<td>MNMF5FX16A</td>
<td>Implement emergency preparedness and response systems</td>
<td>C</td>
</tr>
<tr>
<td>MNMF5FX27A</td>
<td>Facilitate the risk management process</td>
<td>C</td>
</tr>
<tr>
<td><strong>Quality</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BSXFM1307A</td>
<td>Manage quality customer service</td>
<td>C</td>
</tr>
<tr>
<td>BSXFM1309A</td>
<td>Implement and monitor continuous improvement systems and processes</td>
<td>C</td>
</tr>
<tr>
<td><strong>Training</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BSZ502A</td>
<td>Design and establish the training system</td>
<td>E</td>
</tr>
<tr>
<td>BSZ504A</td>
<td>Manage training and assessment system</td>
<td>E</td>
</tr>
<tr>
<td>BSZ505A</td>
<td>Evaluate the training and assessment system</td>
<td>E</td>
</tr>
<tr>
<td><strong>Assessment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BSZ403A</td>
<td>Review assessment</td>
<td>E</td>
</tr>
<tr>
<td>BSZ503A</td>
<td>Design and establish the assessment system</td>
<td>E</td>
</tr>
<tr>
<td>BSZ506A</td>
<td>Develop assessment procedures</td>
<td>E</td>
</tr>
<tr>
<td><strong>Supervision</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UNIT IDENTIFIER</td>
<td>UNITS OF COMPETENCY PACKAGED AT AQF 5</td>
<td>Core (C)</td>
</tr>
<tr>
<td>-----------------</td>
<td>----------------------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>BSXFMI301A</td>
<td>Manage personal work priorities and professional development</td>
<td>V</td>
</tr>
<tr>
<td>BSXFMI302A</td>
<td>Provide leadership in the workplace</td>
<td></td>
</tr>
<tr>
<td>BSXFMI303A</td>
<td>Establish and manage effective workplace relationships</td>
<td></td>
</tr>
<tr>
<td>BSXFMI304A</td>
<td>Participate in, lead and facilitate work team</td>
<td></td>
</tr>
<tr>
<td>BSXFMI305A</td>
<td>Manage operations to achieve planned outcomes</td>
<td></td>
</tr>
<tr>
<td>BSXFMI306A</td>
<td>Manage workplace information</td>
<td></td>
</tr>
<tr>
<td>BSXFMI308A</td>
<td>Develop and maintain a safe workplace and environment</td>
<td></td>
</tr>
<tr>
<td>BSXFMI310A</td>
<td>Facilitate and capitalise in change and innovation</td>
<td></td>
</tr>
<tr>
<td>BSXFMI311A</td>
<td>Contribute to the development of workplace learning</td>
<td></td>
</tr>
</tbody>
</table>
MNM60101 ADVANCED DIPLOMA OF METALLIFEROUS MINING

Requirements for completion:
A total of fourteen (14) units of competency:
- nine (9) mandatory units of competency:
  - six (6) Technical Management units as listed
  - three (3) General Management units as listed
- for Surface only
  - Two (2) Technical Management Units as listed, and
  - Three (3) relevant to the job function from the Metalliferous Mining Training Package or other endorsed Training Packages
- for Underground only
  - Three (3) Technical Management Units as listed, and
  - Two (2) Underground relevant to the job function from the Metalliferous Mining Training Package or other endorsed Training Packages

<table>
<thead>
<tr>
<th>Mandatory Units - a total of 9 units</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Technical Management</strong></td>
</tr>
<tr>
<td><strong>Common</strong></td>
</tr>
<tr>
<td>MNIC01A Establish the mine statutory/legal compliance system</td>
</tr>
<tr>
<td>MNIC02A Establish the mine risk assessment and control system</td>
</tr>
<tr>
<td>MNIC03A Establish mine infrastructure and plant systems</td>
</tr>
<tr>
<td>MNIC04A Establish mine services systems</td>
</tr>
<tr>
<td>MNIC09A Establish and manage the mine occupational health and safety system</td>
</tr>
<tr>
<td>MNIC10A Establish the mine emergency systems</td>
</tr>
<tr>
<td><strong>General Management</strong></td>
</tr>
<tr>
<td><strong>Environmental</strong></td>
</tr>
<tr>
<td>MNIL02A Establish and manage environmental management policies, plans and procedures</td>
</tr>
<tr>
<td><strong>People Management</strong></td>
</tr>
<tr>
<td>MNIL06A Provide leadership</td>
</tr>
<tr>
<td>MNIL09A Manage major incidents and emergencies</td>
</tr>
</tbody>
</table>

**Surface total 5 units - the 2 listed here and 3 from the Metalliferous Training Package or other endorsed Training Packages**

<table>
<thead>
<tr>
<th>Surface</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNIS01A Establish ground control and slope stability systems</td>
</tr>
<tr>
<td>MNIS02A Establish surface product haulage and transport systems</td>
</tr>
</tbody>
</table>

**Underground total 5 units - the 3 listed here and 2 from the Metalliferous Training Package or other endorsed Training Packages**

<table>
<thead>
<tr>
<th>Underground</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNIU01A Establish ground control and stable mining systems</td>
</tr>
<tr>
<td>MNIU02A Establish the ventilation management system</td>
</tr>
<tr>
<td>MNIU03A Establish underground product haulage and transport systems</td>
</tr>
</tbody>
</table>
# Mine Management Units of Competency at AQF VI

<table>
<thead>
<tr>
<th>UNIT IDENTIFIER</th>
<th>UNITS OF COMPETENCY PACKAGED AT AQF 6</th>
<th>Core (C) Elective (E)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Management</strong></td>
<td></td>
<td>VI</td>
</tr>
<tr>
<td>MNIL01A</td>
<td>Reserved</td>
<td></td>
</tr>
<tr>
<td><strong>Environmental</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNIL02A</td>
<td>Establish and manage environmental management policies, plans and procedures</td>
<td>C</td>
</tr>
<tr>
<td><strong>Information Management</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNIL03A</td>
<td>Establish and manage the management information system</td>
<td>E</td>
</tr>
<tr>
<td><strong>People Management</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNIL04A</td>
<td>Establish operational strategies</td>
<td>E</td>
</tr>
<tr>
<td>MNIL05A</td>
<td>Manage the decision making process</td>
<td>E</td>
</tr>
<tr>
<td>MNIL06A</td>
<td>Provide leadership</td>
<td>C</td>
</tr>
<tr>
<td>MNIL07A</td>
<td>Manage organisational change</td>
<td>E</td>
</tr>
<tr>
<td>MNIL08A</td>
<td>Manage group process</td>
<td>E</td>
</tr>
<tr>
<td>MNIL09A</td>
<td>Manage major incidents and emergencies</td>
<td>C</td>
</tr>
<tr>
<td><strong>Business Management</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNIL10A</td>
<td>Evaluate and respond to business influences</td>
<td>E</td>
</tr>
<tr>
<td>MNIL11A</td>
<td>Resource minesite plans and objectives</td>
<td>E</td>
</tr>
<tr>
<td>MNIL12A</td>
<td>Evaluate and enhance minesite performance</td>
<td>E</td>
</tr>
<tr>
<td>MNIL13A</td>
<td>Initiate, monitor and supervise contracts</td>
<td>E</td>
</tr>
<tr>
<td>MNIL14A</td>
<td>Establish and implement operational management plans</td>
<td>E</td>
</tr>
<tr>
<td>MNIL15A</td>
<td>Manage customer service</td>
<td>E</td>
</tr>
<tr>
<td>MNIL16A</td>
<td>Reserved</td>
<td>-</td>
</tr>
<tr>
<td>MNIL17A</td>
<td>Conduct business negotiations</td>
<td>E</td>
</tr>
<tr>
<td><strong>Technical Management</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Common</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNIC01A</td>
<td>Establish the mine statutory/legal compliance system</td>
<td>C</td>
</tr>
<tr>
<td>MNIC02A</td>
<td>Establish the mine risk assessment and control system</td>
<td>C</td>
</tr>
<tr>
<td>MNIC03A</td>
<td>Establish mine infrastructure and plant systems</td>
<td>C</td>
</tr>
<tr>
<td>MNIC04A</td>
<td>Establish mine services systems</td>
<td>C</td>
</tr>
<tr>
<td>MNIC05A</td>
<td>Establish plant, equipment and infrastructure maintenance systems</td>
<td>E</td>
</tr>
<tr>
<td>MNIC06A</td>
<td>Establish the mine water management system</td>
<td>E</td>
</tr>
<tr>
<td>MNIC07A</td>
<td>Establish the stockpile management systems</td>
<td>E</td>
</tr>
<tr>
<td>MNIC08A</td>
<td>Establish waste and by product management system</td>
<td>E</td>
</tr>
<tr>
<td>MNIC09A</td>
<td>Establish and manage the mine occupational health and safety system</td>
<td>C</td>
</tr>
<tr>
<td>MNIC10A</td>
<td>Establish the mine emergency systems</td>
<td>C</td>
</tr>
</tbody>
</table>
## Qualifications for Metalliferous Mine Services

It is proposed that qualifications for specific areas in Metalliferous Mine Services are drawn from the relevant industry Training Packages. For example:

- Laboratory Operations Training Package (PML99)
- Information Technology Training Package (ICA99).
METALLIFEROUS MINING ASSESSMENT GUIDELINES

INTRODUCTION

The Metalliferous Mining Assessment Guidelines are one of the endorsed components of the Metalliferous Mining Training Package. They are for use by a range of people including:

- Assessors in the Metalliferous Mining Industry
- Enterprises
- Registered Training Organisations and Trainers
- Training Managers
- Human Resource Managers
- Regulatory Authorities
- Industry Bodies
- Contractors.

The Guidelines aim to:
- provide information on the context and issues for effective assessment in the Metalliferous Mining
- show where assessment fits in recognising workplace knowledge and skills and leads to a qualification
- support knowledge and skill recognition for career progression in Metalliferous Mining
- recognise current training and assessment practices and bodies associated with assessment
- build on and formalise existing good assessment practice within enterprises and training organisations
- provide guidance for those involved to improve assessment systems and practice
- provide guidance for newcomers to training and assessment
- provide information on what constitutes good practice in assessing the Metalliferous Mining Competency Standards.

Assessment is the process of collecting evidence of the skills and knowledge a candidate has developed, either in a structured learning situation, at work, or in some other context. The Metalliferous Mining Industry has adopted a competency based learning system. This means that each candidate’s skills and knowledge are assessed against the Metalliferous Mining Competency Standards rather than compared with the skills and knowledge of other candidates.

The Metalliferous Mining Assessment Guidelines ensure that qualifications awarded in the Metalliferous Mining Industry recognise achievements of a consistently high standard, are nationally recognised, and encourage flexible ongoing learning. Individuals will have access to formal qualifications through a range of pathways:
- formal training and assessment
- assessment only recognition of competencies
- a combination of work experience, training and assessment.
The pathways lead to nationally recognised qualifications because they involve:
- Registered Training Organisations (RTOs)
- assessment against the Metalliferous Mining Competency Standards
- assessment in accordance with these endorsed Assessment Guidelines carried out by qualified assessors
- a nationally monitored quality assurance framework.

The following figure 1 below shows the pathway to a qualification.

**Figure 1: Assessment and qualifications**

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Options to Achieve Competency</th>
<th>Recognition and Recording of Competency</th>
<th>Recording of Competency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Competency Standards</td>
<td>Training off-the-job</td>
<td>Assessment</td>
<td>Qualification issues by Registered Training Organisation</td>
</tr>
<tr>
<td></td>
<td>Training on-the-job</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Training on and off-the-job</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Work Experience</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Combination of on and/or off-the-job and work experience</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**MINING INDUSTRY ASSESSMENT SYSTEM OVERVIEW**

The Mining Industry has developed an Assessment System to underpin assessment in all sectors of the industry. This Assessment System builds on and formalises good practice within enterprises and training organisations. It provides a common language for the recognition of competency in the Mining Industry. These Guidelines contextualise the system for metalliferous mining providing a framework for implementation.

In Metalliferous Mining assessment is used for a many purposes:
- to meet legislative and regulatory requirements
- to satisfy quality system requirements
- to establish enterprise requirements for a particular function or use of a particular machine or piece of equipment
- to recognise current competencies
- to identify areas of training need.

Implementation under these Guidelines means that assessments can also be used for the issuing of nationally recognised AQF qualifications.
Benefits

The Mining Industry assessment system offers benefits for employers, employees/candidates, and contractors.

Benefits for employers
The Mining Industry assessment system:
• provides benchmarks for employee skills, knowledge and competence
• is a mechanism for formal recognition of skills and knowledge developed at work
• assists in the process of multi skilling and cross skilling
• helps to identify employees with the required mix of knowledge and skills
• makes recruitment more reliable and consistent
• sets workplace standards and serves as the basis of performance appraisal
• serves as a starting point in enterprise agreements
• assists in specification of the skills level required of contractors
• supports due diligence responsibilities
• assists in meeting legal and regulatory training requirements.

Benefits for employees
The Mining Industry assessment system:
• provides formal recognition of competencies developed at work
• leads to a nationally recognised qualification
• assists in identification of career opportunities in metalliferous mining
• helps focus training on individual needs
• assists in the process of multi skilling and cross skilling
• offers flexibility, so people can learn at their own pace and choose the structured and/or work-based training and assessment environment that suits them best, and takes into consideration location and isolation for people working in the Metalliferous Mining Industry.

Benefits for contractors
The Mining Industry assessment system:
• can provide evidence that contractors’ skill mix meets their contractual requirements
• provides a benchmark for contractor capability assessment
• leads to portable, nationally recognised qualifications
• provides contractors with documentation to assist in indemnity
• supports contractors in building efficient systems for multi site operations
• offers flexibility, takes into consideration location and isolation for contractors working in the Metalliferous Mining Industry.

The system, which is summarised in figure 2 below, is competency based and nationally endorsed. The components and features of the system are detailed in the following pages.
**Competency and AQF qualifications**

Assessment in Metalliferous Mining is based on the Metalliferous Mining Competency Standards with the endorsed competency standards forming the benchmark for assessment. These standards, and other nationally endorsed competency standards recognised by Metalliferous Mining, set the benchmarks that candidates must reach for full or part qualifications under the Australian Qualifications Framework (AQF). Results of assessment have national recognition regardless of how candidates have acquired their skills and knowledge, or which assessment pathway they have followed.

The technology, size and complexity of the equipment to be used, occupational health and safety issues and legislative and regulatory requirements require assessment for an AQF qualification in Metalliferous Mining to be conducted in the workplace or a simulated situation. At-job assessment conducted in the workplace or in a simulated situation ensures that candidates can function effectively in the real work environment and that the competencies assessed are relevant to the industry.
Metalliferous Mining Competency Standards
The Metalliferous Mining Competency Standards have been developed for AQF levels 2-6, and have coverage for:
- Extraction Open Cut
- Extraction Underground
- Processing
- Metalliferous Services
- Exploration, Establishment and Closure.

Metalliferous Mining New Apprenticeships
New apprenticeships available for the Metalliferous Mining employees include:
- MNM20103 Certificate II in Metalliferous Mining Operations (Open Cut)
- MNM20203 Certificate II in Metalliferous Mining Operations (Underground)
- MNM20303 Certificate II in Metalliferous Mining Operations (Processing)
- MNM30103 Certificate III in Metalliferous Mining Operations (Open Cut)
- MNM30203 Certificate III in Metalliferous Mining Operations (Underground)
- MNM30303 Certificate III in Metalliferous Mining Operations (Processing)
- MNM40103 Certificate IV in Metalliferous Mining Operations (Open Cut)
- MNM40203 Certificate IV in Metalliferous Mining Operations (Underground)
- MNM40303 Certificate IV in Metalliferous Mining Operations (Processing)
- MNM50299 Diploma of Metalliferous Mining (Open Cut and Underground)
- MNM50399 Diploma of Metalliferous Mining (Processing)
- MNM60101 Advanced Diploma of Metalliferous Mining

Candidates who demonstrate that they have acquired one or more units of competency, but not enough for the award of a qualification, will receive a Statement of Attainment which they can build on at some later time to achieve a qualification.

Licensing Requirements - Shot Firing
Units of competency applicable to the metalliferous mining function of Shot Firing currently exist in the Metalliferous Mining Training Package (MNM99). The industry through the development of the Training Package has deemed that these are the appropriate units for the function.

However to be designated/appointed under any statutory requirements as a Shot Firer, units of competency should be demonstrated to meet the State/Territory licensing requirements. State Licensing requirements need to be confirmed by the registered Training Organisation delivering and/or assessing the competency.

As there is no single national requirement for a shot firer, a statement has been added to each relevant qualification which emphasises that units of competency need to be chosen to meet the State/Territory licensing requirements. The qualifications where Shot Firing statements have been added are:

- Certificate II in Metalliferous Mining (Open Cut) MNM20103
- Certificate III in Metalliferous Mining (Open Cut) MNM30103
- Certificate II in Metalliferous Mining (Underground) MNM20203
- Certificate III in Metalliferous Mining (Underground) MNM30203
Licensing Requirements – Winder Driver

Units of competency to support the statutory requirements for Winder Drivers have been identified within the following qualifications at Certificate II and Certificate III level for Underground:

- MNM20299 Certificate II in Metalliferous Mining Operations (Underground)
- MNM30299 Certificate III in Metalliferous Mining Operations (Underground)

Metalliferous Mining pathways to a qualification

The Metalliferous Mining Industry recognises qualifications which candidates achieve through:

- the recognition of current competencies (RCC) and recognition of prior learning (RPL) which meet AQF competency requirements
- structured training course(s) which meets AQF competency requirements, delivered and assessed by a registered training organisation
- a combination of a course of study meeting the AQF competency requirements and/or recognition of prior learning or current competencies, including credit transfer, and/or experience.

Qualifications can be reached through a range of pathways:

- assessment only recognition of competencies
- structured training and assessment
- any combination of workplace experience, training and assessment.

All pathways incorporate the recognition of prior learning (RPL) and recognition of current competencies (RCC), which are based on the same assessment benchmarks and industry endorsed assessment procedures, and include assessments conducted by qualified assessors. All lead to nationally recognised qualifications, but the time taken to gain a qualification will vary according to the pathway taken and factors related to the particular enterprise or work area.

The structured training and assessment only recognition pathways are summarised in Table 1 (below) and detailed in the following pages. Any combination of these pathways can lead to a qualification.

Table 1. Pathways to a qualification

<table>
<thead>
<tr>
<th>Responsible for</th>
<th>Assessment only pathway</th>
<th>Training and assessment pathway</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training design</td>
<td>Enterprise</td>
<td>Registered Training Organisation(enterprise or public or private)</td>
</tr>
<tr>
<td>Training delivery</td>
<td>Enterprise, perhaps partnership with Registered Training Organisation</td>
<td>Registered Training Organisation, perhaps with enterprise partnership</td>
</tr>
<tr>
<td>Training context</td>
<td>Enterprise</td>
<td>Some off-job, some simulated situations or enterprise partnership</td>
</tr>
<tr>
<td>Assessors</td>
<td>Assessor recognised by Registered Training Organisation providing assessment only services</td>
<td>Registered Training Organisation Assessors</td>
</tr>
<tr>
<td>Assessment records</td>
<td>Training Record Book, Registered Training Organisation and enterprise</td>
<td>Training Record Book, and Registered Training Organisation</td>
</tr>
<tr>
<td>Issuing qualifications</td>
<td>Registered Training Organisation</td>
<td>Registered Training Organisation</td>
</tr>
<tr>
<td>Quality assurance</td>
<td>Registered Training Organisation and ARF process and procedures</td>
<td>Registered Training Organisation and ARF process and procedures</td>
</tr>
</tbody>
</table>
**Assessment only pathway**

The assessment only pathway provides the opportunity for formal qualifications to be awarded as a result of assessment of employees or contractors in enterprises who are not registered by State/Territory Recognition Authorities as training organisations.

Assessment is conducted by assessors recognised by a Registered Training Organisation providing assessment only services.

**Training**

Structured training is designed and delivered at work, either as part of routine operations or in designated training sessions. Candidates, their supervisors and trainers use the Metalliferous Mining Competency Standards as an indication of the skills and knowledge that the candidates are expected to acquire. They organise a formal assessment when confident that the candidate has acquired one or more units of competency.

**Assessments**

Assessors recognised by the Registered Training Organisation providing assessment only services, conduct assessments in the workplace. Assessors may be employees of the Registered Training Organisation or the enterprise, or the Registered Training Organisation may contract an assessor from another enterprise or training organisation.

The assessor checks the candidate’s acquisition of one or more units of competency, in consultation with the candidate’s supervisor, team leader, site coordinator and/or the training department within the enterprise. Evidence should be gathered on a number of occasions, in a variety of contexts, conditions and situations. The assessment must be at-job and conducted in the workplace or in a simulated situation.

**Recording Units of Competency**

The assessor, reports the candidate’s assessment outcomes to the Registered Training Organisation providing assessment only service. The assessor also validates the candidate’s Metalliferous Mining Training Record Book, documenting the range of experiences through which the competencies were achieved. The candidate keeps the Training Record Book as a personal record. The enterprise may keep records of an employee’s assessment, in compliance with legislative and regulatory requirements, quality system requirements and Duty of Care.

The Registered Training Organisation is responsible for recording the results of all assessments and keeping candidates’ personal files secure and confidential.

**Issuing qualifications**
The Registered Training Organisation issues an AQF qualification if the candidate has demonstrated the required package of competencies, and maintains records of all applicants’ achievements in assessment. Any qualification issued under the AQF must be issued with a document which identifies the units of competency achieved.

If an employee leaves an organisation or withdraws from training before achieving all the competencies required for a qualification, the Registered Training Organisation will issue Statements of Attainment for the units of competency the candidate has achieved. The Registered Training Organisation maintains records of the competencies achieved by applicants for Statements of Attainment, so people can return to training and build on earlier achievements to attain full AQF qualifications.

Quality assurance

It is the responsibility of the Registered Training Organisation providing assessment only services to ensure the integrity of the recognition pathway to qualifications. The Registered Training Organisation is required to ensure that assessments conducted at the enterprise by assessors meet these Assessment Guidelines, and that AQF qualifications are only issued when earned. Assessments must be demonstrably fair, reliable, valid and flexible to provide consistent outcomes.

Registered Training Organisation providing assessment only services quality management

The availability of a Registered Training Organisation providing assessment only services, gives enterprises and contractors access to nationally recognised AQF qualifications even though they are not themselves a Registered Training Organisation.

The procedures and qualifications outlined in these guidelines for the recognition of assessors ensures that all assessments endorsed by the Registered Training Organisation meet industry requirements and national standards for competency-based assessment.

The Metalliferous Mining Industry requires quality management of assessment to have confidence in the assessment outcomes. The following model is provided to help achieve this:
Figure 3. Quality model for assessment only services

Registered Training Organisation providing assessment only services

Quality principles
- consistency in assessment
- good practice
- confidence of users
- effectiveness of the system

Quality elements
- Registration as Training Organisation
  - ensures RTO meets ARF requirements for recognition and State/Territory quality requirements

Quality audit
- conducted under ARF by
  - Recognition Authorities
  - industry
  - ITABs

Verification of assessment at enterprise level

Use of Metalliferous Mining Assessors
- ensures assessors apply same standard of assessment

Use of Sector Assessment Guidelines
- ensures assessment based on range of evidence required to demonstrate competency

Enterprise Assessment Procedures
- ensures conduct of assessment meets industry requirements and is recorded and reported

Appeals Process
- ensures fair and equitable assessment

Training and assessment pathway

The training and assessment pathway provides qualifications as a result of formal training and assessment by a public, private organisation or enterprise registered by a State/Territory Recognition Authority as a Registered Training Organisation for training and assessment purposes against the Metalliferous Mining Training Package.

Training

Registered Training Organisations operating in the Metalliferous Mining Industry design and deliver formal structured training programs which reflect the Metalliferous Mining Competency Standards and qualifications as outlined in the Metalliferous Mining Training Package. For some components of a program, such as the development of knowledge that underpins successful performance of practical tasks, the training may be conducted off the job. Program participants
must learn to apply their knowledge and skills in simulated workplace environments, or during work with local mines.

Assessments

Assessments are conducted by assessors employed or recognised by the Registered Training Organisation. Some parts of the training program may be assessed off the job, but all assessment against competencies must be conducted in practical industry settings: either in simulated situations or at local mines.

Recording competencies

The Registered Training Organisation assessor records the assessment outcomes and validates the candidate’s Metalliferous Mining Training Record Book when one or more units of competency have been demonstrated successfully. The candidate keeps the Training Record Book as a personal record.

The Registered Training Organisation is responsible for recording the results of all assessments, and keeping candidates’ personal files secure and confidential.

Issuing qualifications

The Registered Training Organisation issues an AQF qualification when a participant has achieved a relevant package of competencies as outlined in the Metalliferous Mining Training Package. Any qualification issued under the AQF must be issued with a document which identifies the units of competency achieved.

If a candidate leaves the program before achieving all of the competencies for a qualification, the Registered Training Organisation issues a Statement of Attainment for the units of competency achieved.

Quality assurance

Each Registered Training Organisation is responsible for ensuring the fairness, validity, reliability and consistency of the assessments it conducts. All assessment processes must meet Australian Recognition Framework requirements, national assessment principles and provide consistency of outcomes.

Partnerships and flexible arrangements

The Metalliferous Mining assessment system supports and encourages flexible training and assessment arrangements based on partnerships between mines and Registered Training Organisations. Such partnerships optimise the use of resources and maximise opportunities for individuals to progress in the industry through improving their skills, knowledge and qualifications.

AQF qualifications can be achieved through any partnership arrangement which includes the following:
• Assessment must be conducted by an assessor recognised by a Registered Training Organisation registered against the Metalliferous Mining Training Package. Assessment is against the Metalliferous Mining Competency Standards, in a real or simulated situation.

• Secure, confidential records of all training and assessment must be maintained by the Registered Training Organisation.

• Qualifications can be issued only by a Registered Training Organisation endorsed by a State/Territory Recognition Authority under ARF for the Metalliferous Mining Training Package.

Individuals may complete part of their training in a mine and part with a Registered Training Organisation. People who have completed relevant packages of units of competency through either pathway or any combination of pathways can choose to contact a Registered Training Organisation providing assessment only services for issue of a qualification. Some partnership options are shown in the following Table 2.

Table 2. Flexible arrangements and partnerships

<table>
<thead>
<tr>
<th>Pathway to a Qualification</th>
<th>Assessment</th>
<th>Qualification</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Enterprise which is not a Registered Training Organisation conducts training. Some off-the-job training may be provided by other organisations which also are not Registered Training Organisations.</td>
<td>Assessment undertaken by assessors employed by the enterprise or contracted from outside the enterprise who are recognised by a Registered Training Organisation providing assessment only services.</td>
<td>Registered Training Organisation</td>
</tr>
<tr>
<td>2. Enterprise which is a Registered Training Organisation conducts training and assessment</td>
<td>Assessment undertaken by assessors employed by the enterprise or contracted from outside the enterprise.</td>
<td>Registered Training Organisation</td>
</tr>
<tr>
<td>3. Off-the-job training by a Registered Training Organisation, at-job training by an enterprise. The enterprise employs and provides an assessor recognised by the Registered Training Organisation</td>
<td>The Registered Training Organisation conducts off-the-job assessment; and the enterprise conducts the at-job assessment.</td>
<td>Registered Training Organisation</td>
</tr>
<tr>
<td>4. Off-the-job training by a Registered Training Organisation, with at-job training by an enterprise. The enterprise provides a technical expert to assist in assessment.</td>
<td>The Registered Training Organisation conducts off-the-job assessment and provides assessors to conduct at-job assessment in conjunction with the technical expert provided by the enterprise.</td>
<td>Registered Training Organisation</td>
</tr>
<tr>
<td>5. Off-the-job training by a Registered Training Organisation, with at-job training by an enterprise.</td>
<td>The Registered Training Organisation conducts off-the-job assessment and provides assessors to conduct at-job assessment.</td>
<td>Registered Training Organisation</td>
</tr>
</tbody>
</table>

Assessor qualifications
Assessments against the units of competency in the Metalliferous Mining Training Package will be carried out in accordance with these endorsed guidelines. The guidelines include the necessary qualifications for those conducting assessments and provide for those situations where more than one person may contribute to the assessment and where the required technical and assessment competencies may not all be held by any one person.
To be recognised as an Assessor in Metalliferous Mining, assessors must meet the following criteria:

- have demonstrated competence against the following three units of competency from the Assessment and Workplace Training Competency Standards or achieved by successful completion of an accredited course or RPL for a Certificate in an accredited course:
  - BSZ401A Plan assessment
  - BSZ402A Conduct assessment
  - BSZ403A Review assessment
- have an understanding of the industry context, and of the use of endorsed Metalliferous Mining Competency Standards as the benchmarks for assessment
- be competent in an area within Metalliferous Mining at least to the level being assessed.

It is preferable that assessors should have some awareness of language, literacy and numeracy issues in assessment.

All training organisations including Registered Training Organisations, must consult with mine personnel to determine the appropriateness of the assessors for at-job assessments within the mine.

Specific criteria may exist for assessors who are assessing a candidate for a qualification which is a requirement for the issue of a statutory licence to practice, for example Shot Firer. This requirement may vary from State to State depending on legislative requirements.

Assessment arrangements

If a competent assessor has a sound understanding of the general industry context, but does not have the necessary expertise to conduct assessments according to the specific needs of a particular mine, this can be overcome by assessors working in teams or with technical experts. If an assessment is conducted by a team, it is important that the mine is first consulted, and then recognises and trusts the technical experts or panel of assessors.

Suitable arrangements may include:

- An assessor who is not competent in the area being assessed, but who meets all other criteria, works with another person (a technical expert) who is competent in, and can advise on, the relevant vocational competencies at least to the level being assessed.
- The assessor convenes an assessment panel with members who, between them, meet all of the requirements of the industry and the enterprise.
• An assessor who is not familiar with the assessment evidence being collected works with a workplace team leader or supervisor who has the relevant vocational competencies at least to the level being assessed.

• An assessor monitors and validates assessment procedures carried out by a workplace supervisor, team leader or site coordinator with the relevant vocational competencies at least to the level being assessed.

GUIDELINES FOR DESIGNING ASSESSMENT MATERIALS

Most assessments in Metalliferous Mining take place at work or in a simulated workplace. When designing assessment processes, assessors therefore first need to ‘interpret’ the units of competency to suit the assessment environment. This involves identification of:

• equipment to be used in the assessment and the manufacturer’s instructions for its use and/or maintenance
• occupational health and safety policies and requirements of the mine
• the specific knowledge, understanding and agreed procedures that apply in the workplace(s) concerned
• specific OH&S requirements for the equipment, process or procedure.

Determining appropriate assessment methods and tools

It is the responsibility of the assessor, working with other technical experts if necessary, to determine appropriate ways of gathering evidence of a candidate’s competency. The evidence may be collected over time, rather than on just one occasion, but the evidence gathering should not be prohibitively costly or time-consuming. Assessors must ensure that assessment processes do not place inappropriate emphasis on language, literacy or numeracy, and do not disadvantage candidates on inappropriate grounds such as gender or cultural background. For example, the literacy required for assessment should not be greater than that required for the actual task.

Given these constraints, key questions to consider when selecting assessment methods and tools include:

Will the evidence be valid? Do the assessment methods and tools used measure what they claim to measure?

Will the evidence be reliable? Would the assessment methods and tools provide consistent outcomes regardless of who does the assessment?

Will the evidence be authentic? Can the assessor be confident that the assessment methods and tools will provide evidence of the candidate’s own performance?

Will the evidence be sufficient? Do the assessment methods and tools gather enough suitable evidence to result in an acceptable judgement about whether competence has been demonstrated?

Are the assessment methods and tools fair? Do the assessment methods and tools provide a fair assessment for all candidates, or do they rely (to any extent) on irrelevant factors?
Assessment methods and tools — glossary
Assessments methods and tools commonly applied in the Metalliferous Mining include:

Observation of skill demonstration
This involves the assessor observing performance (either real or simulated) and, if appropriate, checking the product produced by the candidate during the demonstration. Performance may be observed in a structured manner or unobtrusively through direct or indirect methods.

Oral questions
By asking the candidate oral questions, the assessor can test the candidate’s communication skills at the same time as authenticating the knowledge that underpins performance. One advantage of open oral questioning is that the candidate can seek clarification from the assessor when necessary. This is not possible with written or computer based questions.

Written questions
Written questions may take a number of forms such as:

Multiple choice — a question or incomplete statement followed by four or five options from which the candidate selects the correct one.

Short answer — a question with a predetermined answer which varies from one word to, at most, two or three sentences.

Simulation
A simulation is a mock situation in which the candidate can be asked to reproduce normal workplace performance. Simulations are common in circumstances where cost, safety and operational demands on equipment and other resources may limit access to the workplace for conducting assessments. Courses provided by training organisations which are not in partnership with an enterprise usually rely on simulations for both training and assessment.

Case studies
A case study can be based on written information and/or practical experiences in a simulated or actual workplace. It provides the candidate with opportunities to demonstrate their problem solving and decision making skills, and their flexibility in applying underpinning knowledge to new contexts. It is important that an assessment based on a case study focuses on problem solving or application of underpinning knowledge, not the candidate’s ability to read the text. Case studies can be written or presented orally by the assessor.

Project
A project is usually a quite complex and/or time-consuming exercise which a candidate completes without close supervision, then submits for assessment. Projects often include the completion of a project report about how the project was carried out.
**Portfolio**

A portfolio is a presentation of documented evidence of a candidate’s competency. It may include examples or a critique of a candidate’s work. Evidence provided in a portfolio must be authenticated and may include work records and logs. A portfolio provides evidence of experience over time.

**Critical incident**

Assessments based on critical incidents involve a candidate identifying a problem or a challenging workplace situation which they feel they resolved. The assessor and the candidate discuss how the candidate responded to the incident and how a similar response could be translated to other situations. The analysis of critical incidents is useful as a way of assessing the candidate’s acquisition and application of a cluster of competencies.

**Indirect evidence**

Indirect evidence is evidence of competency which is not demonstrated for the assessor. For example, ability to apply standard emergency procedures may be assessed on the basis of a supervisor’s statement about a candidate’s performance in the workplace.

Different assessment methods are suited to the assessment of different types of competency. This is outlined in Figure 4.

**Figure 4. Suitable assessment methods**

<table>
<thead>
<tr>
<th>Approaches to assessment of competence</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PRACTICAL PERFORMANCE</strong></td>
</tr>
<tr>
<td>Involves assessment of process and product</td>
</tr>
<tr>
<td><strong>UNDERPINNING KNOWLEDGE</strong></td>
</tr>
<tr>
<td>recalls facts, comprehension, problem solving</td>
</tr>
<tr>
<td><strong>AT WORK</strong></td>
</tr>
<tr>
<td>• direct observation using checklists</td>
</tr>
<tr>
<td>• skill demonstration using checklists</td>
</tr>
<tr>
<td>• indirect evidence (verified)</td>
</tr>
<tr>
<td><strong>SIMULATED</strong></td>
</tr>
<tr>
<td>• direct observation using checklists</td>
</tr>
<tr>
<td>• skill demonstration using checklists</td>
</tr>
<tr>
<td>• project</td>
</tr>
<tr>
<td>• case study</td>
</tr>
<tr>
<td><strong>WRITTEN</strong></td>
</tr>
<tr>
<td>• multiple choice</td>
</tr>
<tr>
<td>• short answer</td>
</tr>
<tr>
<td>• project</td>
</tr>
<tr>
<td>• case study</td>
</tr>
<tr>
<td><strong>ORAL</strong></td>
</tr>
<tr>
<td>• oral questions</td>
</tr>
<tr>
<td>• interview</td>
</tr>
<tr>
<td>• indirect evidence (verified)</td>
</tr>
<tr>
<td>• case study</td>
</tr>
<tr>
<td>• scenario</td>
</tr>
<tr>
<td>• critical incident</td>
</tr>
</tbody>
</table>

**Note:** Oral questions can also be used in conjunction with skill demonstration and observation.
Self-Assessment

Self assessment is an important tool in the assessment process. Trainees or assessment candidates can use these self assessment tools to check whether they are ready for assessment or whether more training is required to achieve a unit of competency.

Assessors are encouraged to develop self assessment checklists as part of any assessment tool for the metalliferous mining. Self assessment tools should relate directly to the elements and performance criteria in a unit of competency and cover the underpinning knowledge and the critical aspects of evidence outlined in the Evidence Guide of each unit of competency. The evidence the candidate is required to provide should be clearly stated.

Combined approaches and holistic assessment

In many cases assessors will be able to use a range of different assessment methods together. This is important as a means of ensuring full competency (rather than an ability to perform just one type of assessment task particularly well) and maximising candidates’ chances of demonstrating their skills and knowledge. For example, exclusive reliance on oral questioning may unfairly disadvantage shy candidates, and could lead to an incorrect decision.

Using a range of methods and tools also supports integrated or holistic assessment. This means designing assessment activities which combine knowledge and understanding, problem solving and technical skills, and attitudes and ethics which go towards successful completion of workplace tasks. Holistic assessment usually involves:

- actual or simulated workplace tasks, especially tasks which require the integration of a range of competencies and associated underpinning knowledge
- the use of analytical skills to solve problems associated with the task(s)
- a combination of theory and practice.
GUIDELINES FOR CONDUCTING ASSESSMENTS

The Metalliferous Mining Competency Standards are the benchmark for assessment in the Metalliferous Mining Industry. Like competency standards applicable to other industries, they are expressed in a common format based on units of competency. All reporting of formal assessments must relate to one or more units of competency, no matter how that competency has been acquired.

Each unit of competency has the following components which provide guidance on suitable training and assessment activities and outcomes:

<table>
<thead>
<tr>
<th>Unit of competency:</th>
<th>This refers to a general area of competence (i.e. skills and knowledge) described in the title of the unit. Each unit contains elements, performance criteria and a range of variables.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elements of competency:</td>
<td>Elements describe the things that an employee who works in a particular area will be able to do. They are expressed as actions or outcomes which can be assessed.</td>
</tr>
<tr>
<td>Performance criteria:</td>
<td>Performance criteria guide the assessor in judging a candidate’s skills and knowledge. They specify the level of performance expected if the candidate has achieved the unit of competency.</td>
</tr>
<tr>
<td>Range of variables:</td>
<td>The range of variables refers to the industry- and enterprise-specific factors which may apply to the standards. It places the unit of competency in the context in which performance should be demonstrated, e.g. typical facilities and equipment.</td>
</tr>
<tr>
<td>Evidence guide:</td>
<td>This part of the unit indicates the kinds of evidence that is required to demonstrate full competency in the unit, including underpinning knowledge and transferable skills.</td>
</tr>
</tbody>
</table>
CONDUCTING ASSESSMENTS

Assessments are conducted when a candidate (and/or their trainer or supervisor) is reasonably confident that they have acquired one or more units of competency. The candidate may have acquired the competency through recent training or through previous training or work experience (i.e. Recognition of Prior Learning or Recognition of Current Competency).

The following Figure 5 (below) shows a generic process for the recognition of competency to gain a qualification in metalliferous mining.

Figure 5 – Conducting Assessments

Trainee registers with
Registered Training Organisation
Enterprise, public or private

RPL/RCC against competency standards at job or in simulated situation using Registered Training Organisation Assessors

Not yet competent Against competency standards

Training conducted on and/or off the job facilitated by training organisation

Assessment against competency standards on the job or in simulated situation using Registered Training Organisation Assessors

All units of competency in qualification being undertaken completed

Qualification awarded by a Registered Training Organisation under AQF
Before conducting an assessment, particularly in the workplace, all parties must agree on a procedure. The procedure must:

- be suitable for a mine’s size, structure and needs
- clearly state who will be conducting the assessment such as an assessment panel, an internal or external technical expert, or an assessor
- involve an assessor who meets the industry requirement to sign off the assessment
- allow for agreement by all parties on what constitutes evidence of competency
- allow an Appeals Review Process, available to both the employee and the employer, so that an assessment can be challenged if necessary.

**Minimising the cost of assessment in the workplace**

Assessors should, where possible, find ways to minimise the cost and inconvenience caused by assessment activities. For example:

- check candidate’s readiness for assessment before proceeding
- use performance of actual work activities as sources of evidence
- arrange for demonstrations of competence in the most appropriate place
- make the assessment only as precise and/or complex as necessary at the candidate’s level of qualification and occupational area
- separate evidence gathering from making a judgement, and assign evidence gathering to less expensive personnel (including candidates themselves)
- design assessment events so that the candidate can have prior knowledge of the requirements and can be actively involved in evidence gathering
- use holistic assessment scenarios which build on secondary evidence such as a record book, trainer’s report or workplace report
- limit the number of times a single unit of competency or similar units of competency are assessed
- monitor progress as part of normal responsibilities, rather than relying on assessment events
- provide self appraisal tools for candidates
- assess more than one unit of competency at a time.

**Recognition of Current Competencies (RCC) and Recognition of Prior Learning (RPL)**

RPL/RCC are ways of recognising that a person has achieved required competencies, through previous informal and formal learning, or through work and life experience. This has particular potential to benefit many people in Metalliferous Mining. Assessments for RCC and RPL rely on the same range of evidence as assessments of competencies people have recently acquired through training. However, they may also include documentary evidence of previous achievements, qualifications and references from people who are familiar with the candidate’s record.

RPL and RCC assessments should be conducted before training is recommended. Figure 6. diagrammatically represents the procedures involved in recognising prior learning or current competencies against the Metalliferous Mining Competency Standards.
**Figure 6. The Metalliferous Mining process for RPL and RCC**

<table>
<thead>
<tr>
<th>PROCESS FOR RPL/RCC</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A candidate with experience and/or qualifications seeks recognition</td>
<td>Recognition is sought for unit(s) of competency in the Metalliferous Mining Competency Standards</td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Units relevant to the workplace and/or qualification(s) are identified and performance criteria and context for assessment required for each unit sought is identified</td>
<td>Workplace and/or RTO assistance should be provided to help identify relevant units and assessment requirements</td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>The candidate’s experience and/or qualification(s) are matched with performance criteria and related evidence guide and range statement</td>
<td>Evidence is gathered to meet assessment requirements with workplace and/or RTO support. Advice and documentation from others such as supervisor, team leader, training manager and workplace reports may be useful</td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Units of competency demonstrated are verified</td>
<td>Assessment methods may include:</td>
</tr>
<tr>
<td></td>
<td>• oral questioning</td>
</tr>
<tr>
<td></td>
<td>• demonstration and observation</td>
</tr>
<tr>
<td></td>
<td>• documentary evidence</td>
</tr>
<tr>
<td></td>
<td>• portfolio</td>
</tr>
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</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Evidence is judged on:</td>
<td>Assessment is conducted by an assessor who meets Metalliferous Mining criteria for assessor qualification</td>
</tr>
<tr>
<td>• sufficiency</td>
<td></td>
</tr>
<tr>
<td>• validity</td>
<td></td>
</tr>
<tr>
<td>• reliability</td>
<td></td>
</tr>
<tr>
<td>• currency</td>
<td></td>
</tr>
<tr>
<td>• authenticity</td>
<td></td>
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<p>| | |</p>
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<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Partial or full recognition of evidence</td>
<td>Partial recognition requires further evidence or training</td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Award of Statement of Attainment or AQF qualification by Registered Training Organisation</td>
<td>A Statement of Attainment is awarded for demonstration of units of competency and an AQF qualification when all required units of competency are demonstrated</td>
</tr>
</tbody>
</table>
Assessors’ checklist

In planning the assessment have you:
- confirmed the candidate is ready for assessment
- determined the critical aspects of evidence to be provided
- explained and confirmed the context and time of the assessment with the candidate
- checked that the assessment environment is safe and accessible
- arranged any resources required for the assessment
- informed all relevant people of the assessment plans
- arranged to gather the necessary range of evidence.

In conducting the assessment have you:
- adequately briefed the candidate
- made sure you have gathered sufficient evidence
- made sure assessment was fair and objective
- provided clear and constructive feedback to the candidate during the assessment
- sought more evidence if you are unsure or gained guidance from another assessor
- made an assessment decision in accordance with the requirements for the unit of competency.

In finalising the assessment have you:
- informed the candidate of the assessment decision and discussed it with them
- provided clear and constructive feedback
- provided the candidate with guidance on further goals or training opportunities
- advised the candidate of reassessment opportunities and/or the appeals mechanism if necessary
- recorded the assessment results in accordance with industry and Registered Training Organisation requirements
- maintained the confidentiality of the assessment outcomes
- reviewed the assessment process
- reported on the conduct of the assessment with any suggestions for improvement.
METALLIFEROUS MINING COMPETENCY STANDARDS

INTRODUCTION

The metalliferous sector consists of all enterprises involved in the exploration, establishment, extraction, processing, closure and servicing of mining operations for metalliferous ores within Australia.

It is estimated that the metalliferous industry currently employs over 80,000 people throughout Australia (ABS 1993-94). The majority of semi-skilled workers have no formal qualifications and the formal structures for the recognition and portability of training and safety training is evident in only a minority of the sites.

The competency standards developed cover:
- Metalliferous Core
- Extraction Open Cut Competencies
- Extraction Underground Competencies
- Processing Competencies
- Geo Technical Survey Competencies
- Environmental Management Competencies
- Mine Management Competencies.

Competency standards for the Metalliferous Mining Sector were developed to AQF III during 1996-97. In 1997 a Scoping project for the Metalliferous Mining Training Package was conducted. As a result of the Scoping project the competency standards were reviewed against Standards Best Practice and:
- existing competency standards refined
- the core competencies were extended
- the Processing competency standards extended to include refining and smelting
- supervisory and mine management competency standards developed to AQF 5
- technical and general management competency standards developed to AQF 6.

The competencies have received widespread industry support for:
- their functional structure
- comprehensive content
- easy to read format
- the incorporation of language, literacy and numeracy requirements
- alignment to existing competencies.
CONSULTATION

The Metalliferous Mining Steering Committee established to oversee the development of the Metalliferous Mining Training Package monitored the revision of the competency standards.

The competency standard development processes followed a rigorous consultation, development and validation phase involving mining organisations, contractors, regulators and suppliers of training in key regional centres in all States and Territories.

Industry participation was one of the key factors critical to project success. The industry was consulted throughout the competencies development, review and validation process.

The consultation process ensured a high level of involvement and commitment to the development of the competencies and also served to educate the industry across Australia as to the nature and purpose of training reform.

Industry contribution to the development and validation of the units of competency included:

- participation on national development and review committees
- participation in workgroups for the development of competencies
- reviewing first draft competencies and providing feedback to consultants
- commenting on validation competencies
- providing existing competency related materials for review.

Full details of the consultation and validation process are detailed in Attachment 2 The Metalliferous Mining Competency Standards.

CONTENT

To cover the range and breadth of functions meaningful in the workplace the competency standards address task, task management, contingency management and role environment skills required at mine and processing sites. The metalliferous competencies provide for functional industry outcomes to ensure application across differing environments and occupational classifications.

In order to accommodate the difference between work locations, job descriptions and other variations the focus was on the major activities the industry performs for clients rather than specific jobs or occupations within the industry.

A major work activities framework was developed to assist the in the identification of the competency standards. During the project a number of amendments were made to the framework to include preferred industry terminology and in some instances break some activities down.

The units of competency are designed for use by mine and processing sites, contractors or individuals in particular jobs where they are relevant to their work roles. A selection of units from various streams can contribute to a specific work role at a mine site.
The framework divided the major activities into the following streams.

### MAJOR ACTIVITIES FRAMEWORK

<table>
<thead>
<tr>
<th>Extraction Open Cut Competencies</th>
<th>Stream C Extraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1 DRILLING, BLASTING &amp; GROUND SUPPORT</td>
<td></td>
</tr>
<tr>
<td>C2 Loading &amp; Hauling</td>
<td></td>
</tr>
<tr>
<td>C3 Dredging</td>
<td></td>
</tr>
<tr>
<td>C4 Ancillary Mine Support</td>
<td></td>
</tr>
<tr>
<td>C5 STOCKPILING &amp; PREPARATION</td>
<td></td>
</tr>
<tr>
<td>C6 Rehabilitation</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Extraction Underground Competencies</th>
<th>Stream C Extraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1 Drilling, Blasting &amp; Ground Control</td>
<td></td>
</tr>
<tr>
<td>C2 LOADING &amp; HAULING</td>
<td></td>
</tr>
<tr>
<td>C3 Dredging Not Applicable</td>
<td></td>
</tr>
<tr>
<td>C4 Ancillary Mine Support</td>
<td></td>
</tr>
<tr>
<td>C5 STOCKPILING &amp; PREPARATION</td>
<td></td>
</tr>
<tr>
<td>C6 Rehabilitation Not Applicable</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Processing Competencies</th>
<th>Stream D Processing</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1 General Processing</td>
<td></td>
</tr>
<tr>
<td>D2 Handling and Pre Treatment</td>
<td></td>
</tr>
<tr>
<td>D3 Beneficiation</td>
<td></td>
</tr>
<tr>
<td>D4 Refining</td>
<td></td>
</tr>
<tr>
<td>D5 Smelting</td>
<td></td>
</tr>
<tr>
<td>D6 By Product Management</td>
<td></td>
</tr>
<tr>
<td>D7 End-Product Distribution</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Metalliferous Services</th>
<th>Stream F Metalliferous Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1 Professional Services not included in this project</td>
<td></td>
</tr>
<tr>
<td>F2 Technical Support Services (Non Professional)</td>
<td></td>
</tr>
<tr>
<td>F3 Management Services (Administration)</td>
<td></td>
</tr>
<tr>
<td>F4 Supervision</td>
<td></td>
</tr>
<tr>
<td>F5 MINE MANAGEMENT SERVICES</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exploration, Establishment &amp; Closure</th>
<th>Stream A Exploration, B Establishment, E Closure</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1 Investment Planning not included in this project</td>
<td></td>
</tr>
<tr>
<td>A2 Research not included in this project</td>
<td></td>
</tr>
<tr>
<td>A3 GEOLOGICAL SURVEY</td>
<td></td>
</tr>
<tr>
<td>B1 Planning not included in this project</td>
<td></td>
</tr>
<tr>
<td>B2 Establishment &amp; De-establishment not included in this project</td>
<td></td>
</tr>
<tr>
<td>B3 Systems Development only environmental management covered in this project</td>
<td></td>
</tr>
<tr>
<td>E1 REINSTATEMENT NOT INCLUDED IN THIS PROJECT</td>
<td></td>
</tr>
<tr>
<td>E2 Conclusion not included in this project</td>
<td></td>
</tr>
</tbody>
</table>
The competencies are aligned to the Australian Qualifications Framework at levels II to VI, and have been packaged into a series of metalliferous sector qualifications in line with national guidelines.

The alignment reflects the competency profile within the industry as presented in the competencies. The packaging presents both core and elective competency units within each functional stream, however does not recommend preferred career paths through the units and levels. To achieve preferred career path development models, the units can be repackaged within and across the functional fields to suit the needs of specific mine sites.

**KEY ANTA POLICY ISSUES**

**Key Competencies**
- Key competencies have also been identified within the standards at the three performance levels.

**Occupational Health and Safety (OHS)**
- The competencies integrate OHS requirements into all performance criteria, range of variables and evidence guides where this is relevant. A core unit “Work Safely” was introduced to cover critical issues relating to OHS.

**Gender Equity**
- The competencies apply equally to all persons regardless of gender. In the view of the industry there is no bias or discrimination in evidence.

**Portability of Recognition**
- The development process and consultation has ensured all States/Territories and industry parties will recognise the competencies and provide the infrastructure for portability within the public and private training systems.

**Customisation**
- Many mine and processing sites have specific competency requirements because of their particular circumstances of operation, location or specific function. To meet these local requirements the Metalliferous Mining Competency Standards may be customised. It is important however, that in the customisation of the unit of competency it is built on and the performance specified is not diminished or lessened in any way.

**Incorporation and mapping of associated and cross industry competencies**
Associated and cross industry competencies have been considered and may be incorporated as **electives** within the qualifications from the following areas:
- Business Services Training Australia: National Clerical-Administrative
- ANTA Management: Frontline Management Competencies
- Automotive Training Australia: Manufacturing (Vehicle Assembly) Stamping & Press Operation
- Forest & Forest Products Employment Skills Co. Ltd: Forest and Forest Products
- InfoComp Training Ltd: Information Technology
The units of competency contained in the Training Package are specific to the metalliferous sector. In some instances, as defined in the qualifications, other industry competencies can be incorporated within specific qualifications as electives.

**Mapping of Units of Competency**

The metalliferous competencies have been mapped against the other industry competencies as indicated above and in Attachment 2. However, the competencies for the metalliferous sector stand alone in that those submitted with the Package are specifically metalliferous and carry the MNM code in the ANTA code allocated. The competencies are to be considered in their own right irrespective of their original origin or potential for mapping.

The Extraction Open Cut and Extraction Underground competencies share many commonalities, and whilst not mapped at this stage, offer opportunities for cross recognition when the industry is willing to facilitate this development.

**REVIEW PROCESSES AND TIMELINES**

The Metalliferous Project Steering Committee will be responsible for the implementation of the competencies, and will establish a feedback loop through the State/Territory Mining ITAB Network and the National Mining ITAB to gather information for a formal review of the competency standards.

A formal proposal will be made to ANTA for funding to assist in national competency review. It is expected the review will be completed at the end of the year 2002.

The review process will be consultative and some issues to be considered in the review include:
• degree of industry adoption and feedback on usability
• review of any identified gaps in the competency standards
• impact of competencies in quality assurance, industrial and other areas
• current national policy on Training Packages
• the impact of further environmental, legislative and technological change for the industry.

DETAILS OF THE COMPETENCY STANDARDS

The following Tables 1-7 provide an outline listing all the units of competency relevant to personnel working within the Metalliferous Mining sector. Full details of the units of competency are attached.

Table 1: Metalliferous Core Competencies

<table>
<thead>
<tr>
<th>UNIT IDENTIFIER</th>
<th>FIELD</th>
<th>UNIT TITLE</th>
<th>AQF</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMCCCOO001A</td>
<td>Core Units</td>
<td>Communicate in the workplace</td>
<td>2</td>
</tr>
<tr>
<td>MNMCCCO1002A</td>
<td>Core Units</td>
<td>Work Safely</td>
<td>2</td>
</tr>
<tr>
<td>MNMCCCOO003A</td>
<td>Core Units</td>
<td>Plan and organise individual work</td>
<td>2</td>
</tr>
<tr>
<td>MNMCCCOO004A</td>
<td>Core Units</td>
<td>Contribute to quality work outcomes</td>
<td>2</td>
</tr>
<tr>
<td>MNMCCCOO005A</td>
<td>Core Units</td>
<td>Apply local risk control processes</td>
<td>2</td>
</tr>
<tr>
<td>MNMCCCOO006A</td>
<td>Core Units</td>
<td>Perform initial response first aid</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 2: Extraction Open Cut Competencies

<table>
<thead>
<tr>
<th>UNIT IDENTIFIER</th>
<th>FIELD</th>
<th>UNIT TITLE</th>
<th>AQF</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMOCC101A</td>
<td>Drilling, Blasting &amp; Ground Support</td>
<td>Set-up and prepare for drilling operations</td>
<td>3</td>
</tr>
<tr>
<td>MNMOCC1102A</td>
<td>Drilling, Blasting &amp; Ground Support</td>
<td>Drill in open cut environment</td>
<td>3</td>
</tr>
<tr>
<td>MNMOCC103A</td>
<td>Drilling, Blasting &amp; Ground Support</td>
<td>Prepare for blasting</td>
<td>3</td>
</tr>
<tr>
<td>MNMOCC104A</td>
<td>Drilling, Blasting &amp; Ground Support</td>
<td>Conduct blasting operations</td>
<td>3</td>
</tr>
<tr>
<td>MNMOCC105A</td>
<td>Drilling, Blasting &amp; Ground Support</td>
<td>Install ground support</td>
<td>2</td>
</tr>
<tr>
<td>MNMOCC201A</td>
<td>Loading &amp; Hauling</td>
<td>Conduct excavator operations</td>
<td>3</td>
</tr>
<tr>
<td>MNMOCC202A</td>
<td>Loading &amp; Hauling</td>
<td>Conduct electric rope shovel operations</td>
<td>3</td>
</tr>
<tr>
<td>MNMOCC203A</td>
<td>Loading &amp; Hauling</td>
<td>Conduct hydraulic shovel operations</td>
<td>3</td>
</tr>
<tr>
<td>MNMOCC1206A</td>
<td>Loading &amp; Hauling</td>
<td>Conduct shovel/excavator operations</td>
<td>3</td>
</tr>
<tr>
<td>MNMOCC1207A</td>
<td>Loading &amp; Hauling</td>
<td>Conduct front end loader operations</td>
<td>3</td>
</tr>
<tr>
<td>MNMOCC1208A</td>
<td>Loading &amp; Hauling</td>
<td>Conduct truck operations</td>
<td>3</td>
</tr>
<tr>
<td>MNMOCC1209A</td>
<td>Loading &amp; Hauling</td>
<td>Conduct dozer operations</td>
<td>3</td>
</tr>
<tr>
<td>MNMOCC1210A</td>
<td>Loading &amp; Hauling</td>
<td>Conduct scraper operations</td>
<td>3</td>
</tr>
<tr>
<td>UNIT IDENTIFIER</td>
<td>FIELD</td>
<td>UNIT TITLE</td>
<td>AQF</td>
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</tr>
<tr>
<td>MNMOCC1211A</td>
<td>Loading &amp; Hauling</td>
<td>Conduct loading and hauling support equipment operations</td>
<td>3</td>
</tr>
<tr>
<td>MNMOCC1212A</td>
<td>Loading &amp; Hauling</td>
<td>Conduct conveyor operations</td>
<td>2</td>
</tr>
<tr>
<td>MNMOCC213A</td>
<td>Loading &amp; Hauling</td>
<td>Conduct slurry pump operations</td>
<td>2</td>
</tr>
<tr>
<td>MNMOCC314A</td>
<td>Dredging</td>
<td>Prepare for dredging operations</td>
<td>3</td>
</tr>
<tr>
<td>MNMOCC315A</td>
<td>Dredging</td>
<td>Conduct dredging operations</td>
<td>3</td>
</tr>
<tr>
<td>MNMOCC316A</td>
<td>Dredging</td>
<td>Shut down dredge for maintenance</td>
<td>3</td>
</tr>
<tr>
<td>MNMOCC417A</td>
<td>Ancillary Mine</td>
<td>Construct and maintain roads</td>
<td>3</td>
</tr>
<tr>
<td>MNMOCC1418A</td>
<td>Ancillary Mine</td>
<td>Transport plant, equipment and personnel</td>
<td>2</td>
</tr>
<tr>
<td>MNMOCC419A</td>
<td>Ancillary Mine</td>
<td>Suppress dust in open cut environment</td>
<td>2</td>
</tr>
<tr>
<td>MNMOCC420A</td>
<td>Ancillary Mine</td>
<td>Position and setup mobile lighting</td>
<td>2</td>
</tr>
<tr>
<td>MNMOCC1421A</td>
<td>Ancillary Mine</td>
<td>Operate from elevated work platform</td>
<td>2</td>
</tr>
<tr>
<td>MNMOCC1422A</td>
<td>Ancillary Mine</td>
<td>Operate roller/compactor</td>
<td>2</td>
</tr>
<tr>
<td>MNMOCC1423A</td>
<td>Ancillary Mine</td>
<td>Operate forklift</td>
<td>2</td>
</tr>
<tr>
<td>MNMOCC1424A</td>
<td>Ancillary Mine</td>
<td>Conduct crane operations</td>
<td>2</td>
</tr>
<tr>
<td>MNMOCC1425A</td>
<td>Ancillary Mine</td>
<td>Conduct grader operations</td>
<td>3</td>
</tr>
<tr>
<td>MNMOCC426A</td>
<td>Ancillary Mine</td>
<td>Operate light vehicle</td>
<td>2</td>
</tr>
<tr>
<td>MNMOCC427A</td>
<td>Ancillary Mine</td>
<td>Recover equipment</td>
<td>3</td>
</tr>
<tr>
<td>MNMOCC428A</td>
<td>Ancillary Mine</td>
<td>Operate mine services vehicle</td>
<td>2</td>
</tr>
<tr>
<td>MNMOCC429A</td>
<td>Ancillary Mine</td>
<td>Undertake dewatering activities</td>
<td>2</td>
</tr>
<tr>
<td>MNMOCC530A</td>
<td>Stockpiling &amp;</td>
<td>Move and position materials to form stockpiles</td>
<td>2</td>
</tr>
<tr>
<td>MNMOCC531A</td>
<td>Stockpiling &amp;</td>
<td>Maintain stockpiles</td>
<td>3</td>
</tr>
<tr>
<td>MNMOCC532A</td>
<td>Stockpiling &amp;</td>
<td>Blend stockpile materials</td>
<td>3</td>
</tr>
<tr>
<td>MNMOCC533A</td>
<td>Stockpiling &amp;</td>
<td>Break oversize rock</td>
<td>2</td>
</tr>
<tr>
<td>MNMOCC534A</td>
<td>Stockpiling &amp;</td>
<td>Recontour site</td>
<td>2</td>
</tr>
<tr>
<td>MNMOCC635A</td>
<td>Rehabilitation</td>
<td>Profile soil</td>
<td>2</td>
</tr>
<tr>
<td>MNMOCC636A</td>
<td>Rehabilitation</td>
<td>Construct drains and berms</td>
<td>3</td>
</tr>
<tr>
<td>MNMOCC637A</td>
<td>Rehabilitation</td>
<td>Undertake contour ripping</td>
<td>2</td>
</tr>
<tr>
<td>UNIT IDENTIFIER</td>
<td>FIELD</td>
<td>UNIT TITLE</td>
<td>AQF</td>
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<td>-----</td>
</tr>
<tr>
<td>MNMOCC638A</td>
<td>Rehabilitation</td>
<td>Undertake direct seeding</td>
<td>2</td>
</tr>
<tr>
<td>MNMOCC639A</td>
<td>Rehabilitation</td>
<td>Plant seedlings</td>
<td>2</td>
</tr>
<tr>
<td>MNMOCC640A</td>
<td>Rehabilitation</td>
<td>Install reticulation systems</td>
<td>3</td>
</tr>
<tr>
<td>MNMOCC641A</td>
<td>Rehabilitation</td>
<td>Monitor and maintain vegetation</td>
<td>2</td>
</tr>
<tr>
<td>MNMOCC642A</td>
<td>Rehabilitation</td>
<td>Stockpile and maintain topsoil</td>
<td>2</td>
</tr>
<tr>
<td>MNMOCC643A</td>
<td>Rehabilitation</td>
<td>Identify and assess environmental and heritage concerns</td>
<td>2</td>
</tr>
<tr>
<td>MNMOCC220A</td>
<td>Operator Maintenance</td>
<td>Apply operational maintenance skills</td>
<td>2/3</td>
</tr>
<tr>
<td>MNMOCC221A</td>
<td>Operator Maintenance</td>
<td>Service mine plant and equipment</td>
<td>2/3</td>
</tr>
</tbody>
</table>

Table 3: Extraction Underground Competencies

<table>
<thead>
<tr>
<th>UNIT</th>
<th>FIELD</th>
<th>UNIT TITLE</th>
<th>AQF</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMUGC1101A</td>
<td>Drilling, Blasting and Ground Support</td>
<td>Set up &amp; prepare for ground support</td>
<td>2</td>
</tr>
<tr>
<td>MNMUGC1102A</td>
<td>Drilling, Blasting and Ground Support</td>
<td>Install ground support – bolting and meshing</td>
<td>2/3</td>
</tr>
<tr>
<td>MNMUGC103A</td>
<td>Drilling, Blasting &amp; Ground Control</td>
<td>Set-up and prepare for drilling operations</td>
<td>3</td>
</tr>
<tr>
<td>MNMUGC104A</td>
<td>Drilling, Blasting &amp; Ground Control</td>
<td>Conduct underground production drilling</td>
<td>3</td>
</tr>
<tr>
<td>MNMUGC105A</td>
<td>Drilling, Blasting &amp; Ground Control</td>
<td>Conduct underground development drilling</td>
<td>3</td>
</tr>
<tr>
<td>MNMUGC106A</td>
<td>Drilling, Blasting &amp; Ground Control</td>
<td>Conduct raise bore drilling</td>
<td>3</td>
</tr>
<tr>
<td>MNMUGC107A</td>
<td>Drilling, Blasting &amp; Ground Control</td>
<td>Conduct diamond drilling</td>
<td>3</td>
</tr>
<tr>
<td>MNMUGC108A</td>
<td>Drilling, Blasting &amp; Ground Control</td>
<td>Maintain magazine</td>
<td>2</td>
</tr>
<tr>
<td>MNMUGC118A</td>
<td>Drilling, Blasting and Ground Support</td>
<td>Charge underground blasts</td>
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<td>Administer shotfiring activities</td>
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<td>Operate winder for shaft sinking</td>
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<td>Inspect and maintain shafts and structures</td>
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<td>Monitor, inspect and service ropes and attachments</td>
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<td>Construct and maintain underground roads</td>
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<td>Operate from elevated work platform</td>
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<td>Operate equipment services vehicle underground</td>
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<td>Undertake dewatering activities</td>
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<td>Transport plant, equipment and personnel</td>
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<td>Install and maintain reticulation systems</td>
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<td>Install and remove a secondary fan</td>
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<td>Conduct mechanical scaling</td>
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<td>Operate light vehicle underground</td>
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<td>Refuel vehicles/machines underground</td>
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<td>Conduct valve operations</td>
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<td>Monitor and control boiler operation</td>
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<td>Monitor tailings dam environment</td>
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<td>Operate compressors</td>
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<td>Operate fluid mixing equipment</td>
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<td>MNMPRD113A</td>
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<td>Operate heat exchangers</td>
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<td>MNMPRD114A</td>
<td>General Processing</td>
<td>Perform process control room operations</td>
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<td>MNMPRD115A</td>
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<td>Respond to an unplanned shut down</td>
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<td>MNMPRD116A</td>
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<td>Take samples</td>
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<td>MNMPRD117A</td>
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<td>Maintain auxiliary plant and equipment operation</td>
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<td>MNMPRD217A</td>
<td>Handling and Pre-treatment</td>
<td>Blend stockpile materials</td>
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<td>MNMPRD218A</td>
<td>Handling and Pre-treatment</td>
<td>Break oversize rock</td>
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<td>MNMPRD219A</td>
<td>Handling and Pre-treatment</td>
<td>Conduct crushing and screening</td>
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Table 4: Processing Competencies
<p>| UNIT          | FIELD                | UNIT TITLE                                                      | AQ |
|--------------|----------------------|                                                               |    |
| MNMPRD220A   | Handling and Pre-treatment | Conduct milling/grinding                                      | 3  |
| MNMPRD221A   | Handling and Pre-treatment | Maintain stockpiles                                           | 2  |
| MNMPRD222A   | Handling and Pre-treatment | Move and position materials to form stockpiles                | 2  |
| MNMPRD223A   | Handling and Pre-treatment | Operate raw material feed systems                             | 2  |
| MNMPRD224A   | Beneficiation         | Operate and monitor filter processes                          | 3  |
| MNMPRD324A   | Beneficiation         | Conduct aeration process                                      | 2  |
| MNMPRD325A   | Beneficiation         | Conduct calcination activities                                | 3  |
| MNMPRD326A   | Beneficiation         | Conduct digestion process                                     | 2  |
| MNMPRD327A   | Beneficiation         | Conduct precipitation operations                              | 2  |
| MNMPRD328A   | Beneficiation         | Conduct reduction process                                     | 2  |
| MNMPRD329A   | Beneficiation         | Conduct roasting operations                                   | 2  |
| MNMPRD330A   | Beneficiation         | Conduct bacterial oxidation                                   | 3  |
| MNMPRD331A   | Beneficiation         | Conduct filtering process                                     | 3  |
| MNMPRD332A   | Beneficiation         | Conduct flotation process                                     | 3  |
| MNMPRD333A   | Beneficiation         | Conduct heavy media separation                                | 3  |
| MNMPRD334A   | Beneficiation         | Conduct high tension separation                               | 3  |
| MNMPRD335A   | Beneficiation         | Conduct leaching process                                      | 3  |
| MNMPRD336A   | Beneficiation         | Conduct magnetic separation                                   | 3  |
| MNMPRD337A   | Beneficiation         | Conduct pressure oxidation                                    | 3  |
| MNMPRD338A   | Beneficiation         | Conduct thickening and clarifying process                    | 3  |
| MNMPRD339A   | Beneficiation         | Conduct wet gravity separation                                | 3  |
| MNMPRD440A   | Refining              | Conduct electrowinning/electrofining operations                | 3  |
| MNMPRD441A   | Refining              | Conduct elution processes                                     | 3  |
| MNMPRD442A   | Refining              | Conduct gold room operations                                  | 3  |
| MNMPRD443A   | Refining              | Conduct solvent extraction                                    | 2  |
| MNMPRD444A   | Refining              | Prepare and carry-out electrolytic cleaning process            | 2  |
| MNMPRD445A   | Refining              | Prepare for pelletising activities                            | 2  |
| MNMPRD446A   | Refining              | Prepare for sintering activities                              | 2  |
| MNMPRD447A   | Refining              | Produce pellets                                               | 2  |
| MNMPRD448A   | Refining              | Sinter materials                                             | 2  |
| MNMPRD449A   | Refining              | Undertake tank-farming                                       | 2  |</p>
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<td>Cast a blast furnace</td>
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<td>Operate a blast furnace</td>
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<td>MNMPRD1553A</td>
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<td>MNMPRD554A</td>
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<td>Operate converters</td>
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<td>MNMPRD555A</td>
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<td>Supply molten metal and additives to furnaces</td>
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<td>MNMPRD556A</td>
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<td>Tap furnaces</td>
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<td>MNMPRD557A</td>
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<td>Control molten meal in holding furnace/vessel</td>
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<td>MNMPRD558A</td>
<td>Smelting</td>
<td>Monitor and control furnace combustion gases</td>
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<td>MNMPRD654A</td>
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<td>Conduct acid plant operations</td>
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<td>Conduct air cleaning activities</td>
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<td>Monitor and co-ordinate waste water treatment processes</td>
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<td>Monitor and operate waste water treatment processes</td>
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<td>Reclaim and treat water systems</td>
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<td>Check and evaluate records and documentation</td>
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<td>Complete import/export documentation</td>
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<td>Connect and disconnect reefer units</td>
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<td>Maintain container/bulk cargo records</td>
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<td>MNMPRD763A</td>
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<td>Organise and monitor wharf/terminal operations</td>
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<td>Bulk package and store product</td>
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<td>MNMPRD765A</td>
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<td>Prepare and load for transport</td>
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<td>MNMPRD766A</td>
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<td>Process Movement of containers and cargo</td>
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<td>Secure Cargo</td>
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<td>MNMPRD768A</td>
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<td>Transfer cargo</td>
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<td>MNMPRD172A</td>
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<td>Operate vehicle loading crane</td>
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Table 5: Geo Technical Survey and Environmental Management Competencies

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<td>Operate and maintain instruments and field equipment</td>
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<td>Geological Survey</td>
<td>Plan and undertake field trip</td>
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<td>MNMAAA303A</td>
<td>Geological Survey</td>
<td>Conduct fieldwork</td>
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<td>MNMAAA304A</td>
<td>Geological Survey</td>
<td>Collect and prepare samples</td>
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<td>Perform geoscientific tests and analyses in the field and laboratory</td>
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<td>Process data and maintain accurate records</td>
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<td>Systems Development - Environmental Mgmt</td>
<td>Develop site environmental policy</td>
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<td>MNMBEB308A</td>
<td>Systems Development - Environmental Mgmt</td>
<td>Undertake process or project environmental impact assessment</td>
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<td>Implement mine operations environmental management system</td>
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<td>MNMBEB310A</td>
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<td>Take environmental samples and measurements</td>
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<td>Monitor and correct activities having impact on the environment</td>
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<td>Systems Development - Environmental Mgmt</td>
<td>Review environmental management system performance</td>
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Table 6: Mine Management Services Competencies

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<td>Mine Management</td>
<td>Implement and maintain pit development system</td>
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<td>Mine Management</td>
<td>Implement and maintain surface mining operations</td>
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<td>MNMF5FX04A</td>
<td>Mine Management</td>
<td>Select and commission surface mining operations plant and equipment</td>
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<td>Plan, conduct and oversee drilling operations</td>
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<td>Manage blasting operations</td>
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<td>Plan and monitor water management</td>
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<td>Plan and monitor recycled materials operation</td>
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<td>MNMF5FX09A</td>
<td>Mine Management</td>
<td>Design stockpile formations and recycling systems</td>
<td>5</td>
</tr>
<tr>
<td>MNMF5FX10A</td>
<td>Mine Management</td>
<td>Develop, implement and maintain process control systems</td>
<td>5</td>
</tr>
<tr>
<td>MNMF5FX11A</td>
<td>Mine Management</td>
<td>Implement the ventilation management system</td>
<td>5</td>
</tr>
<tr>
<td>UNIT IDENTIFIER</td>
<td>FIELD</td>
<td>UNIT TITLE</td>
<td>AQF</td>
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<tr>
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<tr>
<td>MNMF5FX12A</td>
<td>Mine Management</td>
<td>Implement the strata management system</td>
<td>5</td>
</tr>
<tr>
<td>MNMF5FX13A</td>
<td>Mine Management</td>
<td>Implement mine transport systems and production equipment</td>
<td>5</td>
</tr>
<tr>
<td>MNMF5FX14A</td>
<td>Mine Management</td>
<td>Implement mine services systems</td>
<td>5</td>
</tr>
<tr>
<td>MNMF5FX15A</td>
<td>Mine Management</td>
<td>Implement mine fixed plant and infrastructure systems</td>
<td>5</td>
</tr>
<tr>
<td>MNMF5FX16A</td>
<td>Mine Management</td>
<td>Implement emergency preparedness and response systems</td>
<td>5</td>
</tr>
<tr>
<td>MNMF5FX17A</td>
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</tr>
<tr>
<td>MNMF5FX18A</td>
<td>Mine Management</td>
<td>Apply, monitor, rectify and report statutory/legal compliance systems</td>
<td>4</td>
</tr>
<tr>
<td>MNMF5FX19A</td>
<td>Mine Management</td>
<td>Apply, monitor and report pit development systems</td>
<td>4</td>
</tr>
<tr>
<td>MNMF5FX20A</td>
<td>Mine Management</td>
<td>Lead and monitor surface mining operations and report outcomes</td>
<td>4</td>
</tr>
<tr>
<td>MNMF5FX21A</td>
<td>Mine Management</td>
<td>Apply and monitor the ventilation management system</td>
<td>4</td>
</tr>
<tr>
<td>MNMF5FX22A</td>
<td>Mine Management</td>
<td>Apply and monitor the strata management system</td>
<td>4</td>
</tr>
<tr>
<td>MNMF5FX23A</td>
<td>Mine Management</td>
<td>Apply and monitor mine transport systems and production equipment</td>
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<tr>
<td>MNMF5FX24A</td>
<td>Mine Management</td>
<td>Apply and monitor mine services systems</td>
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<tr>
<td>MNMF5FX25A</td>
<td>Mine Management</td>
<td>Apply and monitor mine fixed plant and infrastructure systems</td>
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<tr>
<td>MNMF5FX26A</td>
<td>Mine Management</td>
<td>Apply and monitor emergency preparedness and response systems</td>
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<tr>
<td>MNMF5FX27A</td>
<td>Mine Management</td>
<td>Facilitate the risk management process</td>
<td>4</td>
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</table>

**Table 7: Mine Managers Competencies (General and Technical)**

<table>
<thead>
<tr>
<th>UNIT IDENTIFIER</th>
<th>FIELD</th>
<th>UNIT TITLE</th>
<th>AQF</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNIL02A</td>
<td>Mine Manager</td>
<td>Establish and manage environmental management policies, plans and procedures</td>
<td>6</td>
</tr>
<tr>
<td>MNIL03A</td>
<td>Mine Manager</td>
<td>Establish and Manage the Management Information System</td>
<td>6</td>
</tr>
<tr>
<td>MNIL04A</td>
<td>Mine Manager</td>
<td>Establish operational strategies</td>
<td>6</td>
</tr>
<tr>
<td>MNIL05A</td>
<td>Mine Manager</td>
<td>Manage the decision making process</td>
<td>6</td>
</tr>
<tr>
<td>MNIL06A</td>
<td>Mine Manager</td>
<td>Provide leadership</td>
<td>6</td>
</tr>
<tr>
<td>MNIL07A</td>
<td>Mine Manager</td>
<td>Manage organisational change</td>
<td>6</td>
</tr>
<tr>
<td>MNIL08A</td>
<td>Mine Manager</td>
<td>Manage group process</td>
<td>6</td>
</tr>
<tr>
<td>MNIL09A</td>
<td>Mine Manager</td>
<td>Manage major incidents and emergencies</td>
<td>6</td>
</tr>
<tr>
<td>Course Code</td>
<td>Qualification Level</td>
<td>Code</td>
<td>Description</td>
</tr>
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<td>------</td>
<td>-------------</td>
</tr>
<tr>
<td>MNIL10A</td>
<td>Mine Manager</td>
<td>Evaluate and respond to business influences</td>
<td>6</td>
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<tr>
<td>MNIL11A</td>
<td>Mine Manager</td>
<td>Resource minesite plans and objectives</td>
<td>6</td>
</tr>
<tr>
<td>MNIL12A</td>
<td>Mine Manager</td>
<td>Evaluate and enhance minesite performance</td>
<td>6</td>
</tr>
<tr>
<td>MNIL13A</td>
<td>Mine Manager</td>
<td>Initiate, monitor and supervise contracts</td>
<td>6</td>
</tr>
<tr>
<td>MNIL14A</td>
<td>Mine Manager</td>
<td>Establish and implement operational management plans</td>
<td>6</td>
</tr>
<tr>
<td>MNIL15A</td>
<td>Mine Manager</td>
<td>Manage customer service</td>
<td>6</td>
</tr>
<tr>
<td>MNIL16A</td>
<td>Mine Manager</td>
<td>Conduct business negotiations</td>
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</table>

**Technical Management**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Qualification Level</th>
<th>Code</th>
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<tbody>
<tr>
<td>MNIC01A</td>
<td>Mine Manager</td>
<td>Establish the mine statutory/legal compliance system</td>
<td>6</td>
</tr>
<tr>
<td>MNIC02A</td>
<td>Mine Manager</td>
<td>Establish the mine risk assessment and control system</td>
<td>6</td>
</tr>
<tr>
<td>MNIC03A</td>
<td>Mine Manager</td>
<td>Establish mine infrastructure and plant systems</td>
<td>6</td>
</tr>
<tr>
<td>MNIC04A</td>
<td>Mine Manager</td>
<td>Establish mine services systems</td>
<td>6</td>
</tr>
<tr>
<td>MNIC05A</td>
<td>Mine Manager</td>
<td>Establish plant, equipment and infrastructure maintenance systems</td>
<td>6</td>
</tr>
<tr>
<td>MNIC06A</td>
<td>Mine Manager</td>
<td>Establish the mine water management system</td>
<td>6</td>
</tr>
<tr>
<td>MNIC07A</td>
<td>Mine Manager</td>
<td>Establish the stockpile management systems</td>
<td>6</td>
</tr>
<tr>
<td>MNIC08A</td>
<td>Mine Manager</td>
<td>Establish waste and by product management system</td>
<td>6</td>
</tr>
<tr>
<td>MNIC09A</td>
<td>Mine Manager</td>
<td>Establish and manage the mine occupational health and safety system</td>
<td>6</td>
</tr>
<tr>
<td>MNIC10A</td>
<td>Mine Manager</td>
<td>Establish the mine emergency systems</td>
<td>6</td>
</tr>
<tr>
<td>MNIC11A</td>
<td>Mine Manager</td>
<td>Establish a blasting system</td>
<td>6</td>
</tr>
<tr>
<td>MNIC12A</td>
<td>Mine Manager</td>
<td>Establish mine closure management systems</td>
<td>6</td>
</tr>
<tr>
<td>MNIS01A</td>
<td>Mine Manager</td>
<td>Establish ground control and slope stability systems</td>
<td>6</td>
</tr>
<tr>
<td>MNIS02A</td>
<td>Mine Manager</td>
<td>Establish surface product haulage and transport systems</td>
<td>6</td>
</tr>
<tr>
<td>MNIU01A</td>
<td>Mine Manager</td>
<td>Establish ground control and stable mining systems</td>
<td>6</td>
</tr>
<tr>
<td>MNIU02A</td>
<td>Mine Manager</td>
<td>Establish the ventilation management system</td>
<td>6</td>
</tr>
<tr>
<td>MNIU03A</td>
<td>Mine Manager</td>
<td>Establish underground product haulage and transport systems</td>
<td>6</td>
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</table>
## Mapping of Changes to Units of Competency

### Field: Core Units

<table>
<thead>
<tr>
<th>Unit #</th>
<th>Title</th>
<th>Source / Types of Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMCCCO1002A</td>
<td>Work Safely</td>
<td>MNMCCCO1002A – new code and amendments to “tidy up” unit, including removal of content</td>
</tr>
<tr>
<td>Replaces</td>
<td></td>
<td>relating to environment, first aid and site security, and adding of specific occupational health issues</td>
</tr>
<tr>
<td>MNMCCCOO002A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Perform initial response</td>
<td>New unit based on ANTA Guideline Competency Standards for First Aid</td>
</tr>
<tr>
<td>MNMCCCOO006A</td>
<td>first aid</td>
<td></td>
</tr>
</tbody>
</table>

### Major Activity: Extraction Underground

**Field: Drilling, Blasting and Ground Support**

<table>
<thead>
<tr>
<th>Unit #</th>
<th>Title</th>
<th>Source / Types of Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMUGC1101A</td>
<td>Set up &amp; prepare for ground support</td>
<td>MNMUGC101A – new code and change of title and removal of references to conducting drilling and use of explosives</td>
</tr>
<tr>
<td>Replaces</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMUGC101A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMUGC1102A</td>
<td>Install ground support – bolting and meshing</td>
<td>MNMUGC102A – new change of title and separating out shot-creteing and sets to leave a unit covering bolts, mesh, straps</td>
</tr>
<tr>
<td>Replaces</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMUGC102A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMUGC118A</td>
<td>Charge underground blasts</td>
<td>New unit</td>
</tr>
<tr>
<td>Replaces</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMUGC109A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNNMNI401A</td>
<td>Administer shotfiring activities</td>
<td>New unit and new code</td>
</tr>
<tr>
<td>Replaces</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNNMNI110A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNNMNI301A</td>
<td>Apply shotfiring</td>
<td>New unit and new code</td>
</tr>
<tr>
<td>MNNMNI402A</td>
<td>Fire shots</td>
<td>New unit and new code</td>
</tr>
<tr>
<td>MNNMNI402A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMUGC120A</td>
<td>Apply shot-crete</td>
<td>New unit. Based on MNMUGC102A – separating out shot-creteing</td>
</tr>
<tr>
<td>MNNMNI121A</td>
<td>Install sets</td>
<td>New unit. Based on MNMUGC102A – separating out installing of sets</td>
</tr>
<tr>
<td>MNNMNI124A</td>
<td>Conduct airleg mining</td>
<td>New unit</td>
</tr>
</tbody>
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To be reviewed by 30/04/2003  
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### Major Activity: Extraction Underground
#### Field: Loading & Hauling

<table>
<thead>
<tr>
<th>Unit #</th>
<th>Title</th>
<th>Source / Types of Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMUGC1216A</td>
<td>Conduct skip operations</td>
<td>MNMUGC216A - new code, change to title and amendments to closer align to licensing requirements</td>
</tr>
<tr>
<td>Replaces</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMUGC216A</td>
<td></td>
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</tr>
<tr>
<td>MNMUGC1217A</td>
<td>Operate automated winder</td>
<td>MNMUGC217A - new code and based on this unit, with specific amendments</td>
</tr>
<tr>
<td>Replaces</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMUGC217A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMUGC1218A</td>
<td>Operate manual winder</td>
<td>MNMUGC218A - new code and change to title and amendments to closer align to licensing requirements</td>
</tr>
<tr>
<td>Replaces</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMUGC218A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMUGC224A</td>
<td>Conduct cage operations</td>
<td>New unit proposed to cover the function of “platman”</td>
</tr>
<tr>
<td>MNMUGC225A</td>
<td>Operate winder for shaft sinking</td>
<td>New unit</td>
</tr>
<tr>
<td>MNMUGC226A</td>
<td>Maintain winder equipment</td>
<td>New unit</td>
</tr>
<tr>
<td>MNMUGC227A</td>
<td>Inspect and maintain shafts and structures</td>
<td>New unit</td>
</tr>
<tr>
<td>MNMUGC228A</td>
<td>Monitor, inspect and service ropes and attachments</td>
<td>New unit</td>
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### Major Activity: Extraction Underground
#### Field: Ancillary Mine Support

<table>
<thead>
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<th>Title</th>
<th>Source / Types of Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMMNNI303A</td>
<td>Handle and transport explosives</td>
<td>MNMUGC441A - new code and amendments to reflect licensing requirements</td>
</tr>
<tr>
<td>Replaces</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMUGC441A</td>
<td></td>
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</tr>
<tr>
<td>MNMUGC442A</td>
<td>Operate light vehicle underground</td>
<td>New unit based on MNMOCC426A - new code plus specific components for underground</td>
</tr>
<tr>
<td>MNMUGC443A</td>
<td>Refuel vehicles / machines underground</td>
<td>New unit</td>
</tr>
</tbody>
</table>
### Major Activity: Extraction Underground
**Field: Stockpiling and Preparation**

<table>
<thead>
<tr>
<th>Unit #</th>
<th>Title</th>
<th>Source / Types of Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMMNI302A</td>
<td>Conduct secondary firing</td>
<td>Based on MNMUGC543A – new code and some changes to tidy up unit</td>
</tr>
</tbody>
</table>

### Major Activity: Processing
**Field: General Processing**

<table>
<thead>
<tr>
<th>Unit #</th>
<th>Title</th>
<th>Source / Types of Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMPRD1110A</td>
<td>Monitor tailings dam environment</td>
<td>MNMPRD110A – new code, change to title and change from mandatory core to optional</td>
</tr>
<tr>
<td>Replaces MNMPRD110A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMPRD1114A</td>
<td>Perform process control room operations</td>
<td>MNMPRD114A – new code and additional PCs and element</td>
</tr>
<tr>
<td>Replaces MNMPRD114A</td>
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<td></td>
</tr>
<tr>
<td>MNMPRD117A</td>
<td>Maintain auxiliary plant and equipment operation</td>
<td>New unit</td>
</tr>
</tbody>
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### Major Activity: Processing
**Field: Handling and Pre-treatment**

<table>
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<tr>
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<th>Title</th>
<th>Source / Types of Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMPRD224A</td>
<td>Operate and monitor filter processes</td>
<td>New unit</td>
</tr>
</tbody>
</table>

### Major Activity: Processing
**Field: Refining**

<table>
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<tr>
<th>Unit #</th>
<th>Title</th>
<th>Source / Types of Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMPRD450A</td>
<td>Monitor casting quality</td>
<td>New unit</td>
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</table>

### Major Activity: Processing
**Field: Smelting**

<table>
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<th>Unit #</th>
<th>Title</th>
<th>Source / Types of Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMPRD1553A</td>
<td>Operate furnaces</td>
<td>MNMPRD553A – new code and element re-named, PCs added.</td>
</tr>
<tr>
<td>Replaces MNMPRD553A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unit #</td>
<td>Title</td>
<td>Source / Types of Changes</td>
</tr>
<tr>
<td>-------------</td>
<td>--------------------------------------------</td>
<td>----------------------------------------------------------------</td>
</tr>
<tr>
<td>MNMPRD554A</td>
<td>Operate converters</td>
<td>New unit</td>
</tr>
<tr>
<td>MNMPRD555A</td>
<td>Supply molten metal and additives to furnaces</td>
<td>New unit</td>
</tr>
<tr>
<td>MNMPRD556A</td>
<td>Tap furnaces</td>
<td>New unit</td>
</tr>
<tr>
<td>MNMPRD557A</td>
<td>Control molten metal in holding furnace/vessel</td>
<td>New unit</td>
</tr>
<tr>
<td>MNMPRD558A</td>
<td>Monitor and control furnace combustion gases</td>
<td>New unit</td>
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</tbody>
</table>

**Major Activity: Extraction Open Cut**

**Field: Loading and Hauling**

<table>
<thead>
<tr>
<th>Unit #</th>
<th>Title</th>
<th>Source / Types of Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMOCC201A</td>
<td>Conduct excavator operations</td>
<td>New unit based on MNMOCC206A</td>
</tr>
<tr>
<td>MNMOCC202A</td>
<td>Conduct electric rope shovel operations</td>
<td>New unit based on MNMOCC206A</td>
</tr>
<tr>
<td>MNMOCC203A</td>
<td>Conduct hydraulic shovel operations</td>
<td>New unit based on MNMOCC206A</td>
</tr>
<tr>
<td>MNMOCC1206A</td>
<td>Conduct shovel/excavator operations</td>
<td>New code. Element 'Carry out operator maintenance' removed</td>
</tr>
<tr>
<td>Replaces</td>
<td>MNMOCC206A</td>
<td></td>
</tr>
<tr>
<td>MNMOCC1102A</td>
<td>Drill in an open cut environment</td>
<td>New code. Element 'Carry out operator maintenance' removed</td>
</tr>
<tr>
<td>Replaces</td>
<td>MNMOCC102A</td>
<td></td>
</tr>
<tr>
<td>MNMOCC1207A</td>
<td>Conduct front end loader operations</td>
<td>New code. Element 'Carry out operator maintenance' removed</td>
</tr>
<tr>
<td>Replaces</td>
<td>MNMOCC207A</td>
<td></td>
</tr>
<tr>
<td>MNMOCC1208A</td>
<td>Conduct truck operations</td>
<td>New code. Element 'Carry out operator maintenance' removed</td>
</tr>
<tr>
<td>Replaces</td>
<td>MNMOCC208A</td>
<td></td>
</tr>
<tr>
<td>MNMOCC1209A</td>
<td>Conduct dozer operations</td>
<td>Element 'Carry out operator maintenance' removed</td>
</tr>
<tr>
<td>Replaces</td>
<td>MNMOCC209A</td>
<td></td>
</tr>
<tr>
<td>MNMOCC1210A</td>
<td>Conduct scraper operations</td>
<td>New code. Element 'Carry out operator maintenance' removed</td>
</tr>
<tr>
<td>Replaces</td>
<td>MNMOCC210A</td>
<td></td>
</tr>
<tr>
<td>MNMOCC1211A</td>
<td>Conduct loading and hauling support equipment operations</td>
<td>New code. Element 'Carry out operator maintenance' removed</td>
</tr>
<tr>
<td>Unit #</td>
<td>Title</td>
<td>Source / Types of Changes</td>
</tr>
<tr>
<td>----------------</td>
<td>--------------------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>Replaces MNMOCC211A</td>
<td>Conduct conveyor operations</td>
<td>New code. Element 'Carry out operator maintenance' removed</td>
</tr>
<tr>
<td>MNMOCC1212A</td>
<td>Replaces MNMOCC212A</td>
<td></td>
</tr>
<tr>
<td>MNMOCC1418A</td>
<td>Replaces MNMOCC418A</td>
<td>Transport plant equipment and personnel</td>
</tr>
<tr>
<td>MNMOCC1421A</td>
<td>Replaces MNMOCC421A</td>
<td>Operate from an elevated work platform</td>
</tr>
<tr>
<td>MNMOCC1422A</td>
<td>Replaces MNMOCC422A</td>
<td>Operate roller/compactor</td>
</tr>
<tr>
<td>MNMOCC1423A</td>
<td>Replaces MNMOCC423A</td>
<td>Operate forklift</td>
</tr>
<tr>
<td>MNMOCC1424A</td>
<td>Replaces MNMOCC424A</td>
<td>Conduct crane operations</td>
</tr>
<tr>
<td>MNMOCC1425A</td>
<td>Replaces MNMOCC425A</td>
<td>Conduct grader operations</td>
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</table>

**NOTE:**
If an operator does conduct regular maintenance this is covered by the following units of competency (adapted from the Open Cut qualifications from the Coal Training Package MNC98):

<table>
<thead>
<tr>
<th>Unit #</th>
<th>Title</th>
<th>Source / Types of Changes</th>
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<tbody>
<tr>
<td>MNMOCC220A</td>
<td>Apply operational maintenance skills</td>
<td>Replaces 'Carry out operator maintenance' in the above units</td>
</tr>
<tr>
<td>MNMOCC221A</td>
<td>Service mine plant and equipment.</td>
<td>Replaces 'Carry out operator maintenance' in the above units</td>
</tr>
</tbody>
</table>
# METALLIFEROUS MINING TRAINING PACKAGE (MNM99)

## INDEX OF COMPETENCY STANDARDS

<table>
<thead>
<tr>
<th>Streams</th>
<th>No of Units</th>
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<tbody>
<tr>
<td>Core</td>
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<tr>
<td>Open Cut</td>
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<tr>
<td>Underground</td>
<td>54</td>
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<tr>
<td>Processing</td>
<td>80</td>
</tr>
<tr>
<td>Geo Technical Survey and Environmental Management</td>
<td>12</td>
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<tr>
<td>Mine Management Services</td>
<td>27</td>
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<tr>
<td>General Management</td>
<td>15</td>
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<tr>
<td>Technical Management</td>
<td>17</td>
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### Table 1: Metalliferous Core Competencies

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<tbody>
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<td>MNMCCCOO001A</td>
<td>Core Units</td>
<td>Communicate in the workplace</td>
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<td>MNMCCCO1002A</td>
<td>Core Units</td>
<td>Work Safely</td>
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<tr>
<td>MNMCCCOO003A</td>
<td>Core Units</td>
<td>Plan and organise individual work</td>
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<tr>
<td>MNMCCCOO004A</td>
<td>Core Units</td>
<td>Contribute to quality work outcomes</td>
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<tr>
<td>MNMCCCOO005A</td>
<td>Core Units</td>
<td>Apply local risk control processes</td>
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<tr>
<td>MNMCCCOO006A</td>
<td>Core Units</td>
<td>Perform initial response first aid</td>
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### Table 2: Extraction Open Cut Competencies

<table>
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<th>UNIT TITLE</th>
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<tbody>
<tr>
<td>MNMOCC101A</td>
<td>Drilling, Blasting &amp; Ground Support</td>
<td>Set-up and prepare for drilling operations</td>
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</tr>
<tr>
<td>MNMOCC1102A</td>
<td>Drilling, Blasting &amp; Ground Support</td>
<td>Drill in open cut environment</td>
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<tr>
<td>MNMOCC103A</td>
<td>Drilling, Blasting &amp; Ground Support</td>
<td>Prepare for blasting</td>
<td>3</td>
</tr>
<tr>
<td>MNMOCC104A</td>
<td>Drilling, Blasting &amp; Ground Support</td>
<td>Conduct blasting operations</td>
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<tr>
<td>MNMOCC105A</td>
<td>Drilling, Blasting &amp; Ground Support</td>
<td>Install ground support</td>
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<tr>
<td>MNMOCC201A</td>
<td>Loading &amp; Hauling</td>
<td>Conduct excavator operations</td>
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<td>MNMOCC202A</td>
<td>Loading &amp; Hauling</td>
<td>Conduct electric rope shovel operations</td>
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<td>MNMOCC203A</td>
<td>Loading &amp; Hauling</td>
<td>Conduct hydraulic shovel operations</td>
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<td>MNMOCC1206A</td>
<td>Loading &amp; Hauling</td>
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<td>MNMOCC1207A</td>
<td>Loading &amp; Hauling</td>
<td>Conduct front end loader operations</td>
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<td>MNMOCC1208A</td>
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<td>Conduct truck operations</td>
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<td>MNMOCC1209A</td>
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<td>Conduct dozer operations</td>
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<td>MNMOCC1210A</td>
<td>Loading &amp; Hauling</td>
<td>Conduct scraper operations</td>
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<td>MNMOCC1211A</td>
<td>Loading &amp; Hauling</td>
<td>Conduct loading and hauling support</td>
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<td>MNMOCC1212A</td>
<td>Loading &amp; Hauling</td>
<td>Conduct conveyor operations</td>
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<tr>
<td>MNMOCC213A</td>
<td>Loading &amp; Hauling</td>
<td>Conduct slurry pump operations</td>
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<td>MNMOCC314A</td>
<td>Dredging</td>
<td>Prepare for dredging operations</td>
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<td>MNMOCC315A</td>
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<td>Conduct dredging operations</td>
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<td>MNMOCC316A</td>
<td>Dredging</td>
<td>Shut down dredge for maintenance</td>
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<td>MNMOCC417A</td>
<td>Ancillary Mine Support</td>
<td>Construct and maintain roads</td>
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<td>MNMOCC418A</td>
<td>Ancillary Mine Support</td>
<td>Transport plant, equipment and personnel</td>
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<td>MNMOCC419A</td>
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<td>Suppress dust in open cut environment</td>
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<tr>
<td>MNMOCC420A</td>
<td>Ancillary Mine Support</td>
<td>Position and setup mobile lighting</td>
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<tr>
<td>MNMOCC421A</td>
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<td>Operate from elevated work platform</td>
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<tr>
<td>UNIT IDENTIFIER</td>
<td>FIELD</td>
<td>UNIT TITLE</td>
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<td>MNMOCC1422A</td>
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<td>Operate roller/compactor</td>
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<td>Ancillary Mine Support</td>
<td>Operate forklift</td>
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<td>MNMOCC1424A</td>
<td>Ancillary Mine Support</td>
<td>Conduct crane operations</td>
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<td>MNMOCC1425A</td>
<td>Ancillary Mine Support</td>
<td>Conduct grader operations</td>
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<tr>
<td>MNMOCC426A</td>
<td>Ancillary Mine Support</td>
<td>Operate light vehicle</td>
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<tr>
<td>MNMOCC427A</td>
<td>Ancillary Mine Support</td>
<td>Recover equipment</td>
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<td>Ancillary Mine Support</td>
<td>Operate mine services vehicle</td>
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<td>MNMOCC429A</td>
<td>Ancillary Mine Support</td>
<td>Undertake dewatering activities</td>
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<tr>
<td>MNMOCC530A</td>
<td>Stockpiling &amp; Preparation</td>
<td>Move and position materials to form stockpiles</td>
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<td>MNMOCC531A</td>
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<td>MNMOCC532A</td>
<td>Stockpiling &amp; Preparation</td>
<td>Blend stockpile materials</td>
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<td>MNMOCC533A</td>
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<td>Break oversize rock</td>
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<td>MNMOCC534A</td>
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<td>Recontour site</td>
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<td>MNMOCC635A</td>
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<td>Profile soil</td>
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<td>MNMOCC636A</td>
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<td>Construct drains and berms</td>
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<td>MNMOCC637A</td>
<td>Rehabilitation</td>
<td>Undertake contour ripping</td>
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<td>MNMOCC638A</td>
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<td>Undertake direct seeding</td>
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<td>MNMOCC639A</td>
<td>Rehabilitation</td>
<td>Plant seedlings</td>
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<td>MNMOCC640A</td>
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<td>Install reticulation systems</td>
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<td>MNMOCC641A</td>
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<td>Monitor and maintain vegetation</td>
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<td>MNMOCC642A</td>
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<td>Stockpile and maintain topsoil</td>
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<td>MNMOCC643A</td>
<td>Rehabilitation</td>
<td>Identify and assess environmental and heritage concerns</td>
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<td>MNMOCC220A</td>
<td>Operator Maintenance</td>
<td>Apply operational maintenance skills</td>
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<td>MNMOCC221A</td>
<td>Operator Maintenance</td>
<td>Service mine plant and equipment</td>
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### Table 3: Extraction Underground Competencies

<table>
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<th>UNIT TITLE</th>
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<tr>
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<td>Set up &amp; prepare for ground support</td>
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<td>Install ground support – bolting and meshing</td>
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<td>Drilling, Blasting &amp; Ground Control</td>
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<tr>
<td>MNMUGC104A</td>
<td>Drilling, Blasting &amp; Ground Control</td>
<td>Conduct underground production drilling</td>
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<td>MNMUGC105A</td>
<td>Drilling, Blasting &amp; Ground Control</td>
<td>Conduct underground development drilling</td>
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<td>MNMUGC106A</td>
<td>Drilling, Blasting &amp; Ground Control</td>
<td>Conduct raise bore drilling</td>
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<td>MNMUGC107A</td>
<td>Drilling, Blasting &amp; Ground Control</td>
<td>Conduct diamond drilling</td>
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<td>MNMUGC108A</td>
<td>Drilling, Blasting &amp; Ground Control</td>
<td>Maintain magazine</td>
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<td>MNMUGC118A</td>
<td>Drilling, Blasting and Ground Support</td>
<td>Charge underground blasts</td>
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<td>MNMNNI401A</td>
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<td>Administer shotfiring activities</td>
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<td>MNMNNI301A</td>
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<td>Apply shotfiring</td>
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<td>MNMNNI402A</td>
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<td>MNMUGC120A</td>
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<td>Apply shot-crete</td>
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<td>MNMUGC121A</td>
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<td>Install sets</td>
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<td>MNMUGC124A</td>
<td>Drilling, Blasting and Ground Support</td>
<td>Conduct airleg mining</td>
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<td>MNMUGC112A</td>
<td>Drilling, Blasting &amp; Ground Control</td>
<td>Conduct wet filling activities</td>
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<td>MNMUGC213A</td>
<td>Loading &amp; Hauling</td>
<td>Conduct load, haul, dump operations</td>
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<td>Conduct truck operations</td>
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<td>Conduct line of sight remote operations</td>
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<td>Conduct tele remote operations</td>
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<td>Conduct control room operations</td>
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<td>Loading &amp; Hauling</td>
<td>Operate winder for shaft sinking</td>
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<td>MNMUGC226A</td>
<td>Loading &amp; Hauling</td>
<td>Maintain winder equipment</td>
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<tr>
<td>MNMUGC227A</td>
<td>Loading &amp; Hauling</td>
<td>Inspect and maintain shafts and structures</td>
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<tr>
<td>MNMUGC228A</td>
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<td>Monitor, inspect and service ropes and attachments</td>
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<tr>
<td>MNMUGC424A</td>
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<td>Construct and maintain underground roads</td>
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<tr>
<td>MNMUGC426A</td>
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<td>Conduct crane operations underground</td>
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<td>MNMUGC427A</td>
<td>Ancillary Mine Support</td>
<td>Conduct grader operations</td>
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<td>Conduct equipment recovery operations</td>
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<td>MNMUGC430A</td>
<td>Ancillary Mine Support</td>
<td>Undertake towing underground</td>
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<td>MNMUGC431A</td>
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<td>Conduct integrated tool carrier operations</td>
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<td>MNMUGC432A</td>
<td>Ancillary Mine Support</td>
<td>Operate equipment services vehicle underground</td>
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<tr>
<td>MNMUGC433A</td>
<td>Ancillary Mine Support</td>
<td>Undertake dewatering activities</td>
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<tr>
<td>MNMUGC434A</td>
<td>Ancillary Mine Support</td>
<td>Transport plant, equipment and personnel</td>
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<tr>
<td>MNMUGC435A</td>
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<td>Install and maintain reticulation systems</td>
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<tr>
<td>MNMUGC436A</td>
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<td>Install and maintain vent</td>
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<td>MNMUGC437A</td>
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<td>Install and remove a secondary fan</td>
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<td>MNMUGC438A</td>
<td>Ancillary Mine Support</td>
<td>Conduct remote controlled equipment recovery operations</td>
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<td>MNMUGC439A</td>
<td>Ancillary Mine Support</td>
<td>Conduct mechanical scaling</td>
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<tr>
<td>MNMUGC440A</td>
<td>Ancillary Mine Support</td>
<td>Set-up and perform manual scaling operations</td>
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<tr>
<td>MNMNI303A</td>
<td>Ancillary Mine Support</td>
<td>Handle and transport explosives</td>
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<td>MNMUGC442A</td>
<td>Ancillary Mine Support</td>
<td>Operate light vehicle underground</td>
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<tr>
<td>MNMUGC443A</td>
<td>Ancillary Mine Support</td>
<td>Refuel vehicles/machines underground</td>
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<tr>
<td>MNMUGC542A</td>
<td>Stockpiling &amp; Preparation</td>
<td>Maintain underground stockpiles</td>
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<tr>
<td>MNMNI302A</td>
<td>Stockpiling &amp; Preparation</td>
<td>Conduct secondary firing</td>
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Table 4: Processing Competencies

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<th>UNIT TITLE</th>
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<td>MNMPRD101A</td>
<td>General Processing</td>
<td>Commission / Recommission plant</td>
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<tr>
<td>MNMPRD102A</td>
<td>General Processing</td>
<td>Conduct conveyor operations</td>
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<td>MNMPRD103A</td>
<td>General Processing</td>
<td>Conduct drying activities</td>
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<td>MNMPRD104A</td>
<td>General Processing</td>
<td>Conduct pump operations</td>
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<td>MNMPRD105A</td>
<td>General Processing</td>
<td>Conduct valve operations</td>
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<td>MNMPRD106A</td>
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<td>Monitor tailings dam environment</td>
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<td>Operate furnaces</td>
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<td>Supply molten metal and additives to furnaces</td>
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<td>Tap furnaces</td>
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<td>Control molten meal in holding furnace/vessel</td>
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<td>Reclalm and treat water systems</td>
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<td>Complete import/export documentation</td>
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<td>Connect and disconnect reefer units</td>
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<td>MNMPRD762A</td>
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<td>MNMPRD763A</td>
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<td>Bulk package and store product</td>
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<td>Process Movement of containers and cargo</td>
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**Table 5: Geo Technical Survey and Environmental Management Competencies**

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<td>Geological Survey</td>
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<td>MNMAAA302A</td>
<td>Geological Survey</td>
<td>Plan and undertake field trip</td>
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<td>MNMAAA303A</td>
<td>Geological Survey</td>
<td>Conduct fieldwork</td>
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<td>MNMAAA304A</td>
<td>Geological Survey</td>
<td>Collect and prepare samples</td>
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<td>MNMAAA305A</td>
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<td>Perform geoscientific tests and analyses in the field and laboratory</td>
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<td>MNMAAA306A</td>
<td>Geological Survey</td>
<td>Process data and maintain accurate records</td>
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<td>MNMBEB37A</td>
<td>Systems Development - Environmental Mgmt</td>
<td>Develop site environmental policy</td>
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<td>MNMBEB308A</td>
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<td>Undertake process or project environmental impact assessment</td>
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<td>MNMBEB309A</td>
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<td>Implement mine operations environmental management system</td>
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<tr>
<td>MNMBEB310A</td>
<td>Systems Development - Environmental Mgmt</td>
<td>Take environmental samples and measurements</td>
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<td>Monitor and correct activities having impact on the environment</td>
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<td>Systems Development - Environmental Mgmt</td>
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**Table 6: Mine Management Services Competencies**

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<td>Implement and maintain pit development system</td>
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<td>MNMF5FX03A</td>
<td>Mine Management</td>
<td>Implement and maintain surface mining operations</td>
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<td>MNMF5FX04A</td>
<td>Mine Management</td>
<td>Select and commission surface mining operations plant and equipment</td>
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<td>MNMF5FX05A</td>
<td>Mine Management</td>
<td>Plan, conduct and oversee drilling operations</td>
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<td>MNMF5FX06A</td>
<td>Mine Management</td>
<td>Manage blasting operations</td>
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<td>Plan and monitor water management</td>
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<td>Plan and monitor recycled materials operation</td>
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<td>Design stockpile formations and recycling systems</td>
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<td>Develop, implement and maintain process control systems</td>
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<td>Implement the strata management system</td>
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<td>Implement mine transport systems and production equipment</td>
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<td>Implement mine services systems</td>
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<td>Implement emergency preparedness and response systems</td>
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<td>Mine Management</td>
<td>Lead and monitor surface mining operations and report outcomes</td>
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<td>Facilitate the risk management process</td>
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Table 7: Mine Managers Competencies (General and Technical)

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<td>MNIL02A</td>
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<td>Establish and manage environmental management policies, plans and procedures</td>
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<td>MNIL03A</td>
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<td>Establish and Manage the Management Information System</td>
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<td>Establish operational strategies</td>
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<td>Manage the decision making process</td>
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<td>Provide leadership</td>
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<td>Mine Manager</td>
<td>Manage organisational change</td>
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<td>Manage group process</td>
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<td>Manage major incidents and emergencies</td>
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### General

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<td>Mine Manager</td>
<td>Resource minesite plans and objectives</td>
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<td>MNIL12A</td>
<td>Mine Manager</td>
<td>Evaluate and enhance minesite performance</td>
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<td>MNIL13A</td>
<td>Mine Manager</td>
<td>Initiate, monitor and supervise contracts</td>
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<td>MNIL14A</td>
<td>Mine Manager</td>
<td>Establish and implement operational management plans</td>
<td>6</td>
</tr>
<tr>
<td>MNIL15A</td>
<td>Mine Manager</td>
<td>Manage customer service</td>
<td>6</td>
</tr>
<tr>
<td>MNIL16A</td>
<td>-</td>
<td>RESERVED</td>
<td>-</td>
</tr>
<tr>
<td>MNIL17A</td>
<td>Mine Manager</td>
<td>Conduct business negotiations</td>
<td>6</td>
</tr>
</tbody>
</table>

### Technical Management

<table>
<thead>
<tr>
<th>UNIT IDENTIFIER</th>
<th>FIELD</th>
<th>UNIT TITLE</th>
<th>AQF</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNIC01A</td>
<td>Mine Manager</td>
<td>Establish the mine statutory/legal compliance system</td>
<td>6</td>
</tr>
<tr>
<td>MNIC02A</td>
<td>Mine Manager</td>
<td>Establish the mine risk assessment and control system</td>
<td>6</td>
</tr>
<tr>
<td>MNIC03A</td>
<td>Mine Manager</td>
<td>Establish mine infrastructure and plant systems</td>
<td>6</td>
</tr>
<tr>
<td>MNIC04A</td>
<td>Mine Manager</td>
<td>Establish mine services systems</td>
<td>6</td>
</tr>
<tr>
<td>MNIC05A</td>
<td>Mine Manager</td>
<td>Establish plant, equipment and infrastructure maintenance systems</td>
<td>6</td>
</tr>
<tr>
<td>MNIC06A</td>
<td>Mine Manager</td>
<td>Establish the mine water management system</td>
<td>6</td>
</tr>
<tr>
<td>MNIC07A</td>
<td>Mine Manager</td>
<td>Establish the stockpile management systems</td>
<td>6</td>
</tr>
<tr>
<td>MNIC08A</td>
<td>Mine Manager</td>
<td>Establish waste and by product management system</td>
<td>6</td>
</tr>
<tr>
<td>MNIC09A</td>
<td>Mine Manager</td>
<td>Establish and manage the mine occupational health and safety system</td>
<td>6</td>
</tr>
<tr>
<td>MNIC10A</td>
<td>Mine Manager</td>
<td>Establish the mine emergency systems</td>
<td>6</td>
</tr>
<tr>
<td>MNIC11A</td>
<td>Mine Manager</td>
<td>Establish a blasting system</td>
<td>6</td>
</tr>
<tr>
<td>MNIC12A</td>
<td>Mine Manager</td>
<td>Establish mine closure management systems</td>
<td>6</td>
</tr>
<tr>
<td>MNIS01A</td>
<td>Mine Manager</td>
<td>Establish ground control and slope stability systems</td>
<td>6</td>
</tr>
<tr>
<td>MNIS02A</td>
<td>Mine Manager</td>
<td>Establish surface product haulage and transport systems</td>
<td>6</td>
</tr>
<tr>
<td>MNIU01A</td>
<td>Mine Manager</td>
<td>Establish ground control and stable mining systems</td>
<td>6</td>
</tr>
<tr>
<td>MNIU02A</td>
<td>Mine Manager</td>
<td>Establish the ventilation management system</td>
<td>6</td>
</tr>
<tr>
<td>MNIU03A</td>
<td>Mine Manager</td>
<td>Establish underground product haulage and transport systems</td>
<td>6</td>
</tr>
</tbody>
</table>

### Mapping of Changes to Units of Competency

**Field: Core Units**
<table>
<thead>
<tr>
<th>Unit #</th>
<th>Title</th>
<th>Source / Types of Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMCCCO1002A</td>
<td>Replaces MNMCCCO002A</td>
<td>Work Safely MNMCCCO1002A – new code and amendments to “tidy up” unit, including removal of content relating to environment, first aid and site security, and adding of specific occupational health issues</td>
</tr>
<tr>
<td>MNMCCCO006A</td>
<td>Perform initial response first aid</td>
<td>New unit based on ANTA Guideline Competency Standards for First Aid</td>
</tr>
</tbody>
</table>

**Major Activity: Extraction Underground**  
**Field: Drilling, Blasting and Ground Support**

<table>
<thead>
<tr>
<th>Unit #</th>
<th>Title</th>
<th>Source / Types of Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMUGC1101A</td>
<td>Replaces MNMUGC101A</td>
<td>Set up &amp; prepare for ground support MNMUGC101A – new code and change of title and removal of references to conducting drilling and use of explosives</td>
</tr>
<tr>
<td>MNMUGC1102A</td>
<td>Replaces MNMUGC102A</td>
<td>Install ground support – bolting and meshing MNMUGC102A – new change of title and separating out shot-creting and sets to leave a unit covering bolts, mesh, straps</td>
</tr>
<tr>
<td>MNMUGC118A</td>
<td>Replaces MNMUGC109A</td>
<td>Charge underground blasts New unit</td>
</tr>
<tr>
<td>MNMMNI401A</td>
<td>Replaces MNMUGC110A</td>
<td>Administer shotfiring activities New unit and new code</td>
</tr>
<tr>
<td>MNMMNI301A</td>
<td>Apply shotfiring</td>
<td>New unit and new code</td>
</tr>
<tr>
<td>MNMMNI402A</td>
<td>Fire shots</td>
<td>New unit and new code</td>
</tr>
<tr>
<td>MNMUGC120A</td>
<td>Apply shot-crete</td>
<td>New unit. Based on MNMUGC102A – separating out shot-creting</td>
</tr>
<tr>
<td>MNMUGC121A</td>
<td>Install sets</td>
<td>New unit. Based on MNMUGC102A – separating out installing of sets</td>
</tr>
<tr>
<td>MNMUGC124A</td>
<td>Conduct airleg mining</td>
<td>New unit</td>
</tr>
<tr>
<td>Unit #</td>
<td>Title</td>
<td>Source / Types of Changes</td>
</tr>
<tr>
<td>------------</td>
<td>--------------------------------------------</td>
<td>------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>MNMUGC1216A</td>
<td>Conduct skip operations</td>
<td>MNMUGC216A – new code, change to title and amendments to closer align to licensing requirements</td>
</tr>
<tr>
<td>Replaces</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMUGC216A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMUGC1217A</td>
<td>Operate automated winder</td>
<td>MNMUGC217A – new code and based on this unit, with specific amendments</td>
</tr>
<tr>
<td>Replaces</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMUGC217A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMUGC1218A</td>
<td>Operate manual winder</td>
<td>MNMUGC218A – new code and change to title and amendments to closer align to licensing requirements</td>
</tr>
<tr>
<td>Replaces</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMUGC218A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMUGC224A</td>
<td>Conduct cage operations</td>
<td>New unit proposed to cover the function of “platman”</td>
</tr>
<tr>
<td>MNMUGC225A</td>
<td>Operate winder for shaft sinking</td>
<td>New unit</td>
</tr>
<tr>
<td>MNMUGC226A</td>
<td>Maintain winder equipment</td>
<td>New unit</td>
</tr>
<tr>
<td>MNMUGC227A</td>
<td>Inspect and maintain shafts and structures</td>
<td>New unit</td>
</tr>
<tr>
<td>MNMUGC228A</td>
<td>Monitor, inspect and service ropes and attachments</td>
<td>New unit</td>
</tr>
</tbody>
</table>

**Major Activity: Extraction Underground**

**Field: Ancillary Mine Support**

<table>
<thead>
<tr>
<th>Unit #</th>
<th>Title</th>
<th>Source / Types of Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMMNI303A</td>
<td>Handle and transport explosives</td>
<td>MNMUGC441A – new code and amendments to reflect licensing requirements</td>
</tr>
<tr>
<td>Replaces</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMUGC441A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMUGC442A</td>
<td>Operate light vehicle underground</td>
<td>New unit based on MNMOCC426A – new code plus specific components for underground</td>
</tr>
<tr>
<td>MNMUGC443A</td>
<td>Refuel vehicles / machines underground</td>
<td>New unit</td>
</tr>
</tbody>
</table>
### Major Activity: Extraction Underground
Field: Stockpiling and Preparation

<table>
<thead>
<tr>
<th>Unit #</th>
<th>Title</th>
<th>Source / Types of Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMMNI302A</td>
<td>Conduct secondary firing</td>
<td>Based on MNMUGC543A – new code and some changes to tidy up unit</td>
</tr>
<tr>
<td>Replaces</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMUGC543A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Major Activity: Processing
Field: General Processing

<table>
<thead>
<tr>
<th>Unit #</th>
<th>Title</th>
<th>Source / Types of Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMPRD1110A</td>
<td>Monitor tailings dam environment</td>
<td>MNMPRD110A – new code, change to title and change from mandatory core to optional</td>
</tr>
<tr>
<td>Replaces</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMPRD1110A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMPRD1114A</td>
<td>Perform process control room operations</td>
<td>MNMPRD114A – new code and additional PCs and element</td>
</tr>
<tr>
<td>Replaces</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMPRD1114A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMPRD117A</td>
<td>Maintain auxiliary plant and equipment operation</td>
<td>New unit</td>
</tr>
</tbody>
</table>

### Major Activity: Processing
Field: Handling and Pre-treatment

<table>
<thead>
<tr>
<th>Unit #</th>
<th>Title</th>
<th>Source / Types of Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMPRD224A</td>
<td>Operate and monitor filter processes</td>
<td>New unit</td>
</tr>
</tbody>
</table>

### Major Activity: Processing
Field: Refining

<table>
<thead>
<tr>
<th>Unit #</th>
<th>Title</th>
<th>Source / Types of Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMPRD450A</td>
<td>Monitor casting quality</td>
<td>New unit</td>
</tr>
</tbody>
</table>

### Major Activity: Processing
Field: Smelting

<table>
<thead>
<tr>
<th>Unit #</th>
<th>Title</th>
<th>Source / Types of Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMPRD1553A</td>
<td>Operate furnaces</td>
<td>MNMPRD553A – new code and element re-named, PCs added.</td>
</tr>
<tr>
<td>Replaces</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MNMPRD553A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Operate converters

**New unit**

### Supply molten metal and additives to furnaces

**New unit**

### Tap furnaces

**New unit**

### Control molten metal in holding furnace/vessel

**New unit**

### Monitor and control furnace combustion gases

**New unit**

---

### Major Activity: Extraction Open Cut

**Field: Loading and Hauling**

<table>
<thead>
<tr>
<th>Unit #</th>
<th>Title</th>
<th>Source / Types of Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMOCC201A</td>
<td>Conduct excavator operations</td>
<td>New unit based on MNMOCC206A</td>
</tr>
<tr>
<td>MNMOCC202A</td>
<td>Conduct electric rope shovel operations</td>
<td>New unit based on MNMOCC206A</td>
</tr>
<tr>
<td>MNMOCC203A</td>
<td>Conduct hydraulic shovel operations</td>
<td>New unit based on MNMOCC206A</td>
</tr>
<tr>
<td>MNMOCC1206A</td>
<td>Conduct shovel/excavator operations</td>
<td>New code. Element 'Carry out operator maintenance' removed</td>
</tr>
<tr>
<td>Replaces</td>
<td>MNMOCC206A</td>
<td></td>
</tr>
<tr>
<td>MNMOCC1102A</td>
<td>Drill in an open cut environment</td>
<td>New code. Element 'Carry out operator maintenance' removed</td>
</tr>
<tr>
<td>Replaces</td>
<td>MNMOCC102A</td>
<td></td>
</tr>
<tr>
<td>MNMOCC1207A</td>
<td>Conduct front end loader operations</td>
<td>New code. Element 'Carry out operator maintenance' removed</td>
</tr>
<tr>
<td>Replaces</td>
<td>MNMOCC207A</td>
<td></td>
</tr>
<tr>
<td>MNMOCC1208A</td>
<td>Conduct truck operations</td>
<td>New code. Element 'Carry out operator maintenance' removed</td>
</tr>
<tr>
<td>Replaces</td>
<td>MNMOCC208A</td>
<td></td>
</tr>
<tr>
<td>MNMOCC1209A</td>
<td>Conduct dozer operations</td>
<td>Element 'Carry out operator maintenance' removed</td>
</tr>
<tr>
<td>Replaces</td>
<td>MNMOCC209A</td>
<td></td>
</tr>
<tr>
<td>MNMOCC1210A</td>
<td>Conduct scraper operations</td>
<td>New code. Element 'Carry out operator maintenance' removed</td>
</tr>
<tr>
<td>Replaces</td>
<td>MNMOCC210A</td>
<td></td>
</tr>
<tr>
<td>MNMOCC1211A</td>
<td>Conduct loading and hauling support equipment operations</td>
<td>New code. Element 'Carry out operator maintenance' removed</td>
</tr>
<tr>
<td>Unit #</td>
<td>Title</td>
<td>Source / Types of Changes</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------------------------------------</td>
<td>----------------------------------------------------------------</td>
</tr>
<tr>
<td>Replaces MNMOCC211A</td>
<td>Conduct conveyor operations</td>
<td>New code, Element 'Carry out operator maintenance' removed</td>
</tr>
<tr>
<td>MNMOCC1212A</td>
<td>Replaces MNMOCC212A</td>
<td>Transport plant equipment and personnel</td>
</tr>
<tr>
<td>MNMOCC1418A</td>
<td>Replaces MNMOCC418A</td>
<td>Operate from an elevated work platform</td>
</tr>
<tr>
<td>MNMOCC1421A</td>
<td>Replaces MNMOCC421A</td>
<td>Operate roller/compactor</td>
</tr>
<tr>
<td>MNMOCC1422A</td>
<td>Replaces MNMOCC422A</td>
<td>Operate forklift</td>
</tr>
<tr>
<td>MNMOCC1423A</td>
<td>Replaces MNMOCC423A</td>
<td>Conduct crane operations</td>
</tr>
<tr>
<td>MNMOCC1424A</td>
<td>Replaces MNMOCC424A</td>
<td>Conduct grader operations</td>
</tr>
</tbody>
</table>

**NOTE:**
If an operator does conduct regular maintenance this is covered by the following units of competency (adapted from the Open Cut qualifications from the Coal Training Package MNC98):

<table>
<thead>
<tr>
<th>Unit #</th>
<th>Title</th>
<th>Source / Types of Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MNMOCC220A</td>
<td>Apply operational maintenance skills</td>
<td>Replaces 'Carry out operator maintenance' in the above units</td>
</tr>
<tr>
<td>MNMOCC221A</td>
<td>Service mine plant and equipment.</td>
<td>Replaces 'Carry out operator maintenance' in the above units</td>
</tr>
</tbody>
</table>
Core – Units of Competency

MNMCCC0001A Communicate in the workplace................................. 151
MNMCCC01002A Work safely.............................................................. 159
MNMCCC0003A Plan and organise individual work.......................... 164
MNMCCC0004A Contribute to quality work outcomes ...................... 169
MNMCCC0005A Apply local risk control processes ......................... 175
MNMCCC0006A Perform initial response first aid......................... 139
**STREAM**  CC  Metalliferous Mining  
**FIELD**  CO  Core Units  
**UNIT**  MNMCCCOO001A Communicate in the workplace

**MNMCCCOO001A**  
This unit applies in all contexts to communication in the workplace.

This unit has been classified as a CORE UNIT and therefore must be read in conjunction with all other units.

<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>PERFORMANCE CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Access shift change over details</td>
</tr>
<tr>
<td></td>
<td>1.1.1 Accesses information from appropriate sources</td>
</tr>
<tr>
<td></td>
<td>1.1.2 Follows procedures for accessing information</td>
</tr>
<tr>
<td>1.2</td>
<td>Communicate with personnel</td>
</tr>
<tr>
<td></td>
<td>1.2.1 Communicates clearly and concisely to ensure information is understood</td>
</tr>
<tr>
<td></td>
<td>1.2.2 Asks questions and confirms meaning of information where required</td>
</tr>
<tr>
<td></td>
<td>1.2.3 Maintains communication with other personnel to assist flow of work activities</td>
</tr>
<tr>
<td></td>
<td>1.2.4 Uses approved signalling methods to convey information</td>
</tr>
<tr>
<td></td>
<td>1.2.5 Listens for information being supplied</td>
</tr>
<tr>
<td></td>
<td>1.2.6 Participates in discussion to obtain relevant information and clarify meaning (where required)</td>
</tr>
<tr>
<td></td>
<td>1.2.7 Communicates efficiently using simple English</td>
</tr>
<tr>
<td></td>
<td>1.2.8 Communicates co-operatively with other personnel</td>
</tr>
<tr>
<td></td>
<td>1.2.9 Communicates according to site procedures, regulations and OHS</td>
</tr>
<tr>
<td>1.3</td>
<td>Complete written documentation</td>
</tr>
<tr>
<td></td>
<td>1.3.1 Completes written documentation / or computer generated documentation and conveys meaning even if grammar and spelling is not accurate</td>
</tr>
<tr>
<td></td>
<td>1.3.2 Completes all required documentation clearly, concisely and on time</td>
</tr>
<tr>
<td></td>
<td>1.3.3 Uses approved documents as required according to site procedures</td>
</tr>
<tr>
<td></td>
<td>1.3.4 Passes on written information to appropriate personnel</td>
</tr>
<tr>
<td>1.4</td>
<td>Identify and access mine communication equipment/system</td>
</tr>
<tr>
<td></td>
<td>1.4.1 Identifies and access mine communication system</td>
</tr>
<tr>
<td></td>
<td>1.4.2 Establishes and maintains communication within</td>
</tr>
<tr>
<td>ELEMENT</td>
<td>PERFORMANCE CRITERIA</td>
</tr>
<tr>
<td>--------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1.4</td>
<td>the mine according to site procedures, regulations, OHS and any other relevant legislation</td>
</tr>
<tr>
<td>1.4.3</td>
<td>Access and applies all safety procedures involved with utilising communication equipment/system</td>
</tr>
<tr>
<td>1.5</td>
<td>Communicate using mine equipment system</td>
</tr>
<tr>
<td>1.5.1</td>
<td>Selects and uses most efficient and appropriate communication method</td>
</tr>
<tr>
<td>1.5.2</td>
<td>Uses communications equipment according to site procedures, regulations, OHS and other relevant legislation</td>
</tr>
<tr>
<td>1.5.3</td>
<td>Communicates clearly and efficiently through the control of volume, tone and audible speed of voice</td>
</tr>
<tr>
<td>1.5.4</td>
<td>Acknowledges and responds to communication</td>
</tr>
<tr>
<td>1.5.5</td>
<td>Takes and confirms messages and promptly passes onto appropriate person</td>
</tr>
<tr>
<td>1.5.6</td>
<td>Directs different types of communication through correct channels, hierarchies and frequency</td>
</tr>
<tr>
<td>1.5.7</td>
<td>Maintains radio contact with surrounding equipment operators and personnel (where applicable)</td>
</tr>
<tr>
<td>1.5.8</td>
<td>Uses safety light and other approved signals when operating equipment (where applicable)</td>
</tr>
<tr>
<td>1.5.9</td>
<td>Identifies and reports faults in communication equipment</td>
</tr>
<tr>
<td>1.5.10</td>
<td>Follows communication emergency procedures</td>
</tr>
<tr>
<td>1.6</td>
<td>Participate in and facilitate teamwork</td>
</tr>
<tr>
<td>1.6.1</td>
<td>Establishes and clarifies clearly defined purpose, roles, responsibilities and accountabilities with team members</td>
</tr>
<tr>
<td>1.6.2</td>
<td>Negotiates processes to monitor and adjust team performance with other team members</td>
</tr>
<tr>
<td>1.6.3</td>
<td>Recognises the differences and individual contribution of each team member</td>
</tr>
<tr>
<td>1.6.4</td>
<td>Uses open communication processes to obtain and share information</td>
</tr>
<tr>
<td>1.6.5</td>
<td>Provides mentoring and coaching support to other team members to enhance their skills and knowledge</td>
</tr>
</tbody>
</table>
RANGE OF VARIABLES

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

The term 'mine site operations' also covers refining and smelting operations.

COMMUNICATION

Communications may include:
- Verbal (teamwork interaction and personal)
- Written information
- Signals (hand)
- Audible sounds (bells, whistles, sirens)
- Visual signs (flashing lights, lamps)

Approved signals may include:
- Approved hand signals
- Horn
- Safety lights

Mine communications systems may include:
- System overview
- Operating directories
- Site specific procedures and constraints

Communication occurs throughout all work activities to facilitate work activities and communication methods may include:
- Authorised signaling methods
- Computer based systems
- Emergency alarms
- PA system
- Sirens and clear calls
- Telemetry
- Telephone
- Two way radio
- Whistles

Underground specific:
- Cap lamp
- Emergency communication and signaling procedures
- Charge plan

Specific communication safety requirements may include:
- Avoidance of energy sources
- Care of equipment and wiring
- Compliance with hazardous zone procedures

Shift change over details may be written, verbal and computerised and may include:
• Adequacy of lighting (all plant and work areas)
• Approved materials and equipment to be used
• Authorisations
• Clearances
• Environmental considerations
• Hazards and problems (current and potential)
• Instructions
• Isolation requirements
• Metallurgical information
• Nature and scope of work
• Plant conditions and requirements
• Resource requirements and allocations
• Safety requirements
• Schedule
• Services
• Site characteristics and requirements
• Supplies log
• Verbal briefing of issues arising during shift
• Work log

Underground specific:

• Access road plan and haul routes
• Survey plan
• Geological details
• Face plan

Records may include:

• End of shift documentation
• Work log
• Supplies log
• Computer readings

Site procedures and regulations may be written, verbal and computerised & may be found in:

• Induction documentation
• Managers rules
• Material safety data sheets
• Operations manual
• Policy and procedures documents
• Safe operating procedures
• Standard operating procedures
• Training materials
• Verbal instructions

Teams may be:

• Ongoing
• Project-based
Teams operate within:
- non discriminatory principles and practices
- mine site goals, objectives and strategies
- best practice principles and practices
- agreed responsibility and accountability requirements
- available budget and resource parameters

LEGISLATION

Current relevant legislation codes, regulations and standards may include:
- Australian Standards
- Isolation Procedures
- Manufacturer's specifications and recommendations
- Material safety data sheets
- Mine Safety & Health Legislation and regulations (Duty of Care)
- Occupational Health Safety Environment Legislation
- Site Regulations and Procedures
- AS/NZS 4360: 1995

EVIDENCE GUIDE

CRITICAL ASPECTS FOR CONSIDERATION

Assessment must confirm competency in a particular activity relevant to mine site operations.
These include:
- Conducting an activity safely and efficiently
- Achieving quality and productivity targets
- Adhering to and understanding relevant legislative (state and federal) requirements
- Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:

- Core Unit MNMCCCOO001A Communicate in the workplace
- Core Unit MNMCCCOO002A Work safely
- Core Unit MNMCCCOO003A Plan and organise individual work
- Core Unit MNMCCCOO004A Contribute to quality work outcomes
- Core Unit MNMCCCOO005A Apply local risk control processes

LANGUAGE, LITERACY AND NUMERACY STATEMENT

- Calculates time
- Completes written documentation and/or computer generated documentation and conveys meaning even if grammar and spelling are not accurate
- Follows instructions
• Gives and draws out information for the purpose of collecting and providing information
• Listens for relevant information from oral communication
• Locates relevant information in texts which contain data in simple graphic, diagram and visual form (eg maps, plans)
• Performs mathematical calculations
• Reads and understands written information
• Takes metric measures
• Takes part in communication, clarifying meaning when not understanding

KNOWLEDGE WILL INCLUDE

• Mine site communication procedures
• Communication equipment operating procedures (eg: two way radio, telephone, distribution control system, computers)
• Signalling procedures
• Site procedures
• Approved signals
• Emergency communication procedures
• Radio communication methods
• Telephone communication methods
• Team based work methods and procedures

SKILLS WILL INCLUDE

• Asking questions
• Assessing and interpreting information
• Completing documentation
• Interpret communications (e.g. plans, reports, maps, conversations)
• Listens for all information
• Monitoring information provided
• Reading and understanding
• Talking clearly
• Use communications equipment (e.g. telephone, distribution control system, two way radio)
• Writing
• Effective team work participation
• Setting goals and reviewing performance in a teamwork environment
• Negotiating work allocation and followup within the work team
• Mentoring and coaching other team members
• Use of computer systems

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors.
All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.
COMPETENCY STATEMENT

Evidence of competency is best obtained by observing activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry operating conditions. If this is not practical, observations in a realistic simulated environment may be substituted by written and oral assessments.

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</table>
STREAM  CC  Metalliferous Mining
FIELD  CO  Core Units
UNIT  MNMCCCO1002A Work safely

MNMCCCO1002A
This unit applies in all contexts to working safely on the mine site.

This unit replaces unit of competency MNMCCCOO002A

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<tr>
<th>ELEMENT</th>
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<tbody>
<tr>
<td>1</td>
<td>Follow site safety procedures</td>
</tr>
<tr>
<td>1.1</td>
<td>Conducts all work according to current relevant legislation, regulations, codes and standards</td>
</tr>
<tr>
<td>1.2</td>
<td>Accesses, interprets and implements all mine site safety policies and procedures</td>
</tr>
<tr>
<td>1.3</td>
<td>Follows mine site safe operating procedures for managing potential hazards, risks and emergencies</td>
</tr>
<tr>
<td>1.4</td>
<td>Applies mine site safety reporting procedures</td>
</tr>
<tr>
<td>2</td>
<td>Apply personal safety measures</td>
</tr>
<tr>
<td>2.1</td>
<td>Maintains a clean and tidy workplace that is free of obstructions</td>
</tr>
<tr>
<td>2.2</td>
<td>Uses appropriate personal protective equipment</td>
</tr>
<tr>
<td>2.3</td>
<td>Follows safe manual handling procedures</td>
</tr>
<tr>
<td>2.4</td>
<td>Follows correct hazardous substances safety procedures</td>
</tr>
<tr>
<td>2.5</td>
<td>Identifies and conforms to appropriate procedures for working in confined spaces</td>
</tr>
<tr>
<td>2.6</td>
<td>Identifies and conforms to appropriate procedures for working at heights</td>
</tr>
<tr>
<td>2.7</td>
<td>Identifies and conforms to appropriate isolation procedures</td>
</tr>
<tr>
<td>2.8</td>
<td>Obtains permits and clearances before specialised work is carried out, according to site procedures</td>
</tr>
<tr>
<td>3</td>
<td>Identify and report incidents</td>
</tr>
<tr>
<td>3.1</td>
<td>Identifies, manages and reports potential hazards, risks and emergencies</td>
</tr>
<tr>
<td>3.2</td>
<td>Reports incidents and/or injury to approved personnel</td>
</tr>
<tr>
<td>3.3</td>
<td>Records clearly and concisely the details of any incident and/or injury</td>
</tr>
<tr>
<td>4</td>
<td>Apply emergency procedures</td>
</tr>
<tr>
<td>4.1</td>
<td>Recognises and responds to alarms according to mine site procedures</td>
</tr>
<tr>
<td>4.2</td>
<td>Identifies and correctly uses rescue equipment in accordance with manufacturers instructions and site procedures</td>
</tr>
<tr>
<td>4.3</td>
<td>Applies basic fire fighting techniques according to mine site procedures</td>
</tr>
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</table>
4.4 Maintains familiarity with emergency escape route(s) according to mine site procedures

4.5 Follows mine site emergency response plans and procedures

5 Maintain personal well-being

5.1 Adheres to mine site policies in relation to smoking, alcohol and drug use

5.2 Maintains standards of health, fitness and well-being according to site and/or industry medical criteria

RANGE OF VARIABLES

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

The term 'mine site operations' also covers refining and smelting operations.

Current relevant legislation, regulations, codes and standards may include:
- Mine Safety & Health Legislation and regulations
- Occupational Health and Safety (OH&S) Legislation and regulations
- Australian Standards
- Industry guidelines and codes of practice
- Manufacturers' specifications and recommendations
- Hazardous substances management, including Material Safety Data Sheets (MSDS)
- AS/NZS 4360: 1995

Mine site safe operating procedures may include:
- Awareness and access to emergency exits
- Carrying out safety checks (e.g. safety showers and eye washes)
- Emergency procedures
- First aid procedures
- Hazard identification and recognition procedures
- Hold worker access permit
- Hot work procedures
- Housekeeping standards
- Observing smoking, usage of radios and mobile phones restrictions at certain locations or times or during specific activities
- Observing electrical and mechanical procedures
- Observing right of way of heavy equipment
- Observing site speed limits
- Occupational health safety and environment procedures around equipment, vehicles and personnel
- Tagging procedures (e.g. out-of-service tags, danger tags, restrictive operations tags)
- Use of barricades and guards
- Use of fire extinguishers
- Hazardous substances safety procedures, including use of material safety data sheets (MSDS)
- Use of two way radios and site telephones
• Wearing equipment restraints
• Wearing personal protective equipment
• Working in confined spaces
• Wearing of seat belts

Mine site safe operating procedures - underground specific:
• Ensuring ventilation is operating
• Awareness and access to escape ways
• Breakdown and recovery procedures
• Sign and barricade erection (including cleaning of signs)
• Observing right of way in incline and declines

Potential hazards, risks and emergencies may include:
• Personal safety (e.g. crush injuries, burns, slips, trips, falls, chemical exposure, fatigue)
• Plant (e.g. structural damage, emergency shut down)
• Environment (e.g. seepage, emissions, chemical spills, pollution, anything detrimental to fauna and flora)

Personal protective equipment may include:
• Eye protection (e.g. glasses)
• Hearing protection (e.g. ear plugs)
• Protection from the elements (e.g. sunblock)
• Protective clothing (e.g. gloves, safety boots, helmet, shin guards, long sleeved shirt and trousers)
• Chemical/gas detectors
• Respiratory devices
• Safety harness when working at heights

Rescue equipment may include:
• Self rescuers (underground only)
• Respiratory devices / breathing apparatus
• Rope rescue equipment

Standards of health, fitness and well-being may include:
• Health surveillance and testing at intervals in accordance with mine site, industry and/or state regulatory requirements
• Drug and alcohol
• Stress
• Communicable diseases
• Adverse personal hygiene
• Remote lifestyle (moves, time away from home base)
• Shift work and fatigue management
• Heat stress and hypothermia
CRITICAL ASPECTS OF EVIDENCE

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:

- Conducting an activity safely and efficiently
- Achieving quality and productivity targets
- Adhering to and understanding relevant legislative (state and federal) requirements
- Adhering to and understanding environmental and heritage issues
- Adhering to and understanding mine site safety procedures and operating procedures for managing potential hazards, risks and emergencies

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

CONCURRENT ASSESSMENT AND/OR PRE-REQUISITE RELATIONSHIP OF UNITS

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:

- Core Unit MNMCCCOO001A Communicate in the workplace
- Core Unit MNMCCCOO003A Plan and organise individual work
- Core Unit MNMCCCOO004A Contribute to quality work outcomes
- Core Unit MNMCCCOO005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE

- Emergency procedures
- Equipment safety requirements
- Hazardous substances procedures and handling techniques, including understanding of Materials Safety Data Sheets (MSDS) and their usage
- Isolation procedures
- Lifting techniques (manual, automated)
- Mine site safety requirements
- Occupational health and safety procedures
- Primary and secondary ventilation
- Site safety procedures (open cut and underground)
- Participative procedures for workplace management of OH&S – eg: consultation, safety representatives, committees, dispute resolution
- Health/safety effects of irregular hours/rosters on health and bodily functions – eg: circadian rhythms, sleep, alertness, fatigue, stress
- Effects of heat stress and hypothermia

SKILLS WILL INCLUDE

- Hazard identification and control
- Reporting incidents
- Wearing personal protective equipment
- Positive attitude towards personal safety and co-workers
RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

CONSISTENCY IN PERFORMANCE

Competency in this unit needs to be assessed over a period of time to ensure consistency of performance in a range of environments. The breadth of evidence required to demonstrate the competency should be determined following consideration of the local site factors.

Assessment must satisfy the critical aspects expressed in this unit.

CONTEXT OF ASSESSMENT

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors.

All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.

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MNMCCCOO003A Plan and organise individual work

MNMCCCOO003A
This unit covers the planning, organising and completion of individual work.

This unit has been classified as a CORE UNIT and therefore must be read in conjunction with all other units.

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<td>3.1 Plan and prepare for work</td>
<td>3.1.1 Work requirements are identified by the individual from allocated tasks or selected from the group current work targets</td>
</tr>
<tr>
<td></td>
<td>3.1.2 Work is planned from an analysis of the required standard work procedures, outcomes, tasks, available time, resource requirements and known priorities</td>
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<td></td>
<td>3.1.3 Duplication of effort is minimised by coordinated planning of related and/or sequential jobs</td>
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<tr>
<td></td>
<td>3.1.4 Preparations for work are completed</td>
</tr>
<tr>
<td>3.2 Complete work as planned</td>
<td>3.2.1 Requirements are discussed and sequenced with appropriate parties</td>
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<tr>
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<td>3.2.2 Work is completed in accordance with the agreed plan, outcomes and quality requirements and within the operating capacities of the equipment and operator</td>
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<td></td>
<td>3.2.3 Work process is modified to meet changing circumstances and priorities</td>
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<tr>
<td></td>
<td>3.2.4 Work documentation and/or reports are completed to enterprise/site requirements</td>
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RANGE OF VARIABLES
The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

The term 'mine site operations' also covers refining and smelting operations.

Work may be:
- allocated through manager, deputy, supervisor, team facilitator
- allocated on written work schedules or plans
- provided verbally
- individual tasks and jobs or group/function work schedules
Work preparations are likely to include:
- identification and analysis of work and related safety requirements
- identification and obtaining/arranging of resources
- briefing of involved parties
- preparation of the work site

Safety information and procedures may be contained in:
- legislation and regulations
- relevant Australian standards
- management plans and policies
- OH&S policy
- codes of practice
- manufacturer's instructions
- safe working practices
- job procedures (or equivalent standard operating procedures)

Documentation and/or reports may be:
- shift reports
- handover briefs
- time cards
- other relevant records

LEGISLATION

Current relevant legislation codes, regulations and standards may include:
- Australian Standards
- Isolation Procedures
- Manufacturer's specifications and recommendations
- Material safety data sheets
- Mine Safety & Health Legislation and regulations (Duty of Care)
- Occupational Health Safety Environment Legislation
- Site Regulations and Procedures
- AS/NZS 4360: 1995

EVIDENCE GUIDE

CRITICAL ASPECTS FOR CONSIDERATION

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:
- Conducting an activity safely and efficiently
- Achieving quality and productivity targets
- Adhering to and understanding relevant legislative (state and federal) requirements
- Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.
CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:

- Core Unit MNMCCCOO001A Communicate in the workplace
- Core Unit MNMCCCOO002A Work safely
- Core Unit MNMCCCOO003A Plan and organise individual work
- Core Unit MNMCCCOO004A Contribute to quality work outcomes
- Core Unit MNMCCCOO005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE

- Basic work planning processes
- Operational safety requirements
- Equipment characteristics, technical capabilities and limitations, operational procedures
- Job outcome, standards and priorities
- Mine resource systems
- Recording procedures

SKILLS WILL INCLUDE

- Determining relevant work requirements
- Applying operational safety measures
- Planning work actions
- Preparation for the work
- Interpreting and communicating operational information
- Identifying and obtaining resources
- Completing the work to plan
- Maintaining work records and/or reports
- Access, interpret and apply technical and operational information
- Recognise and respond to changing circumstances
- Communicate in the workplace
- Obtain resources
- Complete records

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors.

All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.
COMPETENCY STATEMENT

Evidence of competency is best obtained by observing activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry operating conditions. If this is not practical, observations in a realistic simulated environment may be substituted by written and oral assessments.

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MNMCCCOO004A Contribute to quality work outcomes

This unit covers individual involvement in the achievement of quality work outcomes and environmental compliance throughout work activities.

This unit has been classified as a CORE UNIT and therefore must be read in conjunction with all other units.

This unit is based on OH&S1 Follow defined OH&S policies and procedures, Occupational health and safety, Competency Standards for the Chemical and Oils Industry, March 1995.

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<td>4.1 Plan and prepare for quality work outcomes</td>
<td>4.1.1 Relevant quality procedures are identified from site/enterprise and team quality requirements</td>
</tr>
<tr>
<td></td>
<td>4.1.2 Performance indicators for individual work are identified and agreed with the appropriate persons</td>
</tr>
<tr>
<td></td>
<td>4.1.3 Work plans and processes facilitate the achievement of quality work outcomes</td>
</tr>
<tr>
<td>4.2 Comply with environmental requirements</td>
<td>4.2.1 Environmental requirements for the work are interpreted and included as a factor in work planning/preparation</td>
</tr>
<tr>
<td></td>
<td>4.2.2 Environmental monitoring and control measures are implemented during the work processes</td>
</tr>
<tr>
<td></td>
<td>4.2.3 Environmental incidents and potential problems are responded to or referred to others in accordance with site requirements</td>
</tr>
<tr>
<td>4.3 Achieve and maintain quality work outcomes</td>
<td>4.3.1 Responsibility for monitoring quality of outputs is accepted and changes implemented by the individual, as necessary, in accordance with site procedures</td>
</tr>
<tr>
<td></td>
<td>4.3.2 Performance indicators, adjusted and agreed to meet changing circumstances, are satisfied</td>
</tr>
<tr>
<td></td>
<td>4.3.3 Loss and damage incidents are minimised by monitoring work processes, reporting incidents and applying local risk control processes</td>
</tr>
<tr>
<td></td>
<td>4.3.4 Procedural improvements and/or recommendations are communicated to the relevant people</td>
</tr>
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RANGE OF VARIABLES
The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

The term 'mine site operations' also covers refining and smelting operations.

QUALITY

Quality procedures and processes may be contained in:
- work instructions
- safe work procedures
- manager's rules
- product ore specifications
- equipment maintenance schedules
- technical procedures
- adopted or specifically prepared standards

Safety information and procedures may be contained in:
- legislation and regulations
- relevant Australian standards
- management plans
- manager's rules
- OH&S policy
- codes of practice
- manufacturer's instructions
- safe working or job procedures (or equivalent Standard Operating Procedures)

Performance indicators are to account for:
- issues of time
- quantity
- quality

Cost factors may include:
- establishing time targets for own work
- identifying reasonable criteria for evaluating own work outcomes
- identifying measures to avoid wastage
- identifying reasonable criteria to judge internal and/or external customer satisfaction
- identifying processes to ensure a 'right first time' approach

Loss and damage incidents may include:
- personal injury
- loss and damage of plant
- loss and damage of equipment and materials
ENVIRONMENT

Environmental requirements are those established under law and coverage includes:
- dust
- water quality
- waste water management
- chemicals handling
- noise/vibration
- fuel/oil handling and disposal
- waste management and rehabilitation

Environmental control measures may include:
- dust suppression
- water treatment
- waste water processes
- application of materials safety data sheets (MSDS) and HAZCHEM
- compliance with noise/vibration standards
- application of waste disposal procedures

Environmental reports and records may include:
- complaints register
- incidental reporting procedures

LEGISLATION

Current relevant legislation codes, regulations and standards may include:
- Australian Standards
- Isolation Procedures
- Manufacturer's specifications and recommendations
- Material safety data sheets
- Mine Safety & Health Legislation and regulations (Duty of Care)
- Occupational Health Safety Environment Legislation
- Site Regulations and Procedures
- AS/NZS 4360: 1995

CRITICAL ASPECTS FOR CONSIDERATION

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:
- Conducting an activity safely and efficiently
- Achieving quality and productivity targets
- Adhering to and understanding relevant legislative (state and federal) requirements
- Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.
CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:
- Core Unit MNMCCCOO001A Communicate in the workplace
- Core Unit MNMCCCOO002A Work safely
- Core Unit MNMCCCOO003A Plan and organise individual work
- Core Unit MNMCCCOO004A Contribute to quality work outcomes
- Core Unit MNMCCCOO005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE

- Operational safety requirements
- Enterprise quality processes
- Enterprise loss and damage control systems
- Work planning processes
- Environmental legislative framework
- Environmental licence provisions
- Site environmental procedures and key constraints
- Site environment control measures

SKILLS WILL INCLUDE

- Applying operational safety measures
- Identifying quality procedures and needs
- Planning and preparing for work
- Identifying performance indicators
- Monitoring and adjusting performance indicators to meet changing circumstances
- Satisfying performance indicators
- Applying environmental control systems
- Applying operational safety measures
- Identifying quality procedures and needs
- Planning and preparing for work
- Processing recommendations for change for change
- Access, interpret and apply information on enterprise quality processes
- Communicate in the workplace
- Monitor and recommend changes to the systems
- Apply environmental controls
- Maintain records and/or reporting processes
- Access, interpret and apply information on enterprise quality processes
- Formulate performance indicators for own work

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.
ASSESSMENT STATEMENT

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors. All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.

COMPETENCY STATEMENT

Evidence of competency is best obtained by observing activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry operating conditions. If this is not practical, observations in a realistic simulated environment may be substituted by written and oral assessments.

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<tr>
<td>2 Communicating Ideas and Information</td>
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<tr>
<td>3 Planning and Organising Activities</td>
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<tr>
<td>7 Using Technology</td>
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</tr>
</tbody>
</table>
MNMCCCOO005A APPLY LOCAL RISK CONTROL PROCESSES

STREAM CC Metalliferous Mining
FIELD CO Core Units
UNIT MNMCCCOO005A Apply local risk control processes

MNMCCCOO005A
This unit covers the risk control processes to be performed by employees at all levels. It complements and is allied to Unit MNMCCCOO002A, Work Safely.

This unit has been classified as a CORE UNIT and therefore must be read in conjunction with all other units.

<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>PERFORMANCE CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1 Identify hazards</td>
<td>5.1.1 Work area conditions are analysed to identify/recognise potential hazards</td>
</tr>
<tr>
<td></td>
<td>5.1.2 Relevant safety systems information is accessed and analysed to eliminate situations covered by existing and adequate procedures</td>
</tr>
<tr>
<td></td>
<td>5.1.3 The type and scope of unresolved hazards and their likely impact are recognised</td>
</tr>
<tr>
<td>5.2 Assess risk</td>
<td>5.2.1 Likelihood of the event happening is considered and determined</td>
</tr>
<tr>
<td></td>
<td>5.2.2 Consequence if the event should occur is evaluated and determined</td>
</tr>
<tr>
<td></td>
<td>5.2.3 Risk level (likelihood and consequence combined) is considered and determined</td>
</tr>
<tr>
<td>5.3 Identify unacceptable risk</td>
<td>5.3.1 Criteria for determining the acceptability/unacceptability of the risk is identified or sought from the appropriate party</td>
</tr>
<tr>
<td></td>
<td>5.3.2 Risk is evaluated against criteria to identify if it warrants 'unacceptable risk' status and is either actioned or referred to the appropriate person</td>
</tr>
<tr>
<td>5.4 Identify and decide on course of action</td>
<td>5.4.1 Range of actions/controls which may eliminate or minimise the risk are identified</td>
</tr>
<tr>
<td></td>
<td>5.4.2 All possible options for resolution of the problem/dealing with the risk are identified and considered</td>
</tr>
<tr>
<td></td>
<td>5.4.3 Feasible options are identified by preliminary analysis and testing of possible options</td>
</tr>
<tr>
<td></td>
<td>5.4.4 Feasible options are subject to detailed analysis including the identification of resource requirements</td>
</tr>
<tr>
<td></td>
<td>5.4.5 Most appropriate action for dealing with the situation is selected</td>
</tr>
</tbody>
</table>
5.5 Take action

5.5.1 The course of action is planned and prepared in detail

5.5.2 Resources required for the course of action are acquired or obtained

5.5.3 Safety information and procedures are accessed and applied throughout the operations

5.5.4 The course of action is implemented

5.6 Complete records and reports

5.6.1 Information on the course of action and implementation is communicated to the relevant people

5.6.2 All hazards and actions from personal risk assessment are recorded as specified by legislative and site requirements

**RANGE OF VARIABLES**

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

The term 'mine site operations' also covers refining and smelting operations.

**RISK CONTEXT**

The criteria for acceptable risk must be determined by the organisation's internal policy, goals and/or objectives.

Site policy, objectives, rules, procedures and assessment techniques will vary between sites.

**Safety information and procedures may be contained in:**

- legislation and regulations
- relevant Australian standards
- management plans
- manager's rules
- OH&S policy
- codes of practice
- manufacturer's instructions
- safe working or
- job procedures (or equivalent Standard Operating Procedures)

**Hazards in the workplace may involve:**

- equipment
- methods/plans competencies
- the work environment

**Controls for hazards should be considered using:**

- option types in sequence for eliminating the hazard
- substitution,
• engineering controls
• administrative controls (procedures, etc)
• personal protective equipment

**Records and reports for risk assessment may include:**
• hazard reporting forms
• Incident reports
• near miss reports
• shift reports

**DEFINITIONS**

**For the purpose of this standard the definitions below apply (AS/NZS 4360: 1995):**
• Consequence - the outcome of an event or situation expressed qualitatively or quantitatively, being a loss, injury, disadvantage or gain.
• Frequency - a measure of likelihood expressed as the number of occurrences of an event in a given time.
• Hazard - a source of potential harm or a situation with a potential to cause loss.
• Likelihood - Used as a qualitative description of probability and frequency.
• Probability - the likelihood of a specific outcome, measured by the ratio of specific outcomes to the total number of possible outcomes. Probability is expressed as a number between 0 and 1, with 0 indicating an impossible outcome and 1 indicating an outcome is certain.
• Risk - the chance of something happening that will have an impact upon objectives. It is measured in terms of consequences and likelihood.
• Risk Assessment - the process used to determine risk management priorities by evaluating and comparing the level of risk against predetermined standards, target risk levels or other criteria.
• Risk Identification - the process of determining what can happen, why and how.

**LEGISLATION**

**Current relevant legislation codes, regulations and standards may include:**
• Australian Standards
• Isolation Procedures
• Manufacturer's specifications and recommendations
• Material safety data sheets
• Mine Safety & Health Legislation and regulations (Duty of Care)
• Occupational Health Safety Environment Legislation
• Site Regulations and Procedures
• AS/NZS 4360: 1995
CRITICAL ASPECTS FOR CONSIDERATION

Assessment must confirm competency in a particular activity relevant to mine site operations.

These include:
- Conducting an activity safely and efficiently
- Achieving quality and productivity targets
- Adhering to and understanding relevant legislative (state and federal) requirements
- Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:
- Core Unit MNMCCCOO001A Communicate in the workplace
- Core Unit MNMCCCOO002A Work safely
- Core Unit MNMCCCOO003A Plan and organise individual work
- Core Unit MNMCCCOO004A Contribute to quality work outcomes
- Core Unit MNMCCCOO005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE

- Operational safety requirements
- Site and equipment safety requirements
- Site rules, policies, procedures and regulations
- Personal safety measures
- Personal risk assessment and control processes (hazard identification through to action)
- Site communication methods, written and oral
- Reporting and recording procedures

SKILLS WILL INCLUDE

- Applying operational safety requirements
- Accessing, interpreting and communicating operational hazard-related information
- Identifying hazards in the work environment
- Assessing the risk
- Identifying and deciding a course of action
- Taking action in response to risks
- Completing risk management process records and/or reports
- Read, interpret, apply and communicate technical information, rules, procedures
- Determine the risk level of a hazard

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT
Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors.

All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.

COMPETENCY STATEMENT

Evidence of competency is best obtained by observing activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry operating conditions. If this is not practical, observations in a realistic simulated environment may be substituted by written and oral assessments.

<table>
<thead>
<tr>
<th>KEY COMPETENCY</th>
<th>LEVEL</th>
</tr>
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<tbody>
<tr>
<td>1 Collecting, Analysing and Organising Information</td>
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</table>
MNMCCCOO006A Perform initial response first aid

This unit applies in all contexts to the provision of essential first aid in recognizing and responding to an emergency using basic life support measures. The person applying this competency will:
• provide an initial response where first aid is required;
• not be expected to deal with complex casualties or incidents, and;
• be working under supervision and/or according to established workplace first aid procedures and policies.

This unit is based on the ANTA Guideline First Aid Competency Standard A (July 2001).

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<thead>
<tr>
<th>ELEMENT</th>
<th>PERFORMANCE CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1</td>
<td>Assess the situation</td>
</tr>
<tr>
<td>6.2</td>
<td>Apply basic first aid techniques</td>
</tr>
<tr>
<td>6.2.1</td>
<td>Identifies physical hazards to personal and others’ health and safety</td>
</tr>
<tr>
<td>6.2.2</td>
<td>Minimises immediate risks to self and casualty’s health and safety by controlling the hazard in accordance with occupational health and safety requirements</td>
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<tr>
<td>6.2.3</td>
<td>Assesses the casualty’s vital signs and physical condition in accordance with workplace procedures</td>
</tr>
<tr>
<td>6.2.4</td>
<td>Provides first aid management in accordance with established first aid procedures</td>
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<tr>
<td>6.2.5</td>
<td>Reassures casualty in a caring and calm manner and makes comfortable using available resources</td>
</tr>
<tr>
<td>6.2.6</td>
<td>Uses first aid resources and equipment appropriate to the identified risks and hazard controls</td>
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<tr>
<td>6.2.7</td>
<td>Seeks first aid assistance from others in a timely manner and as appropriate</td>
</tr>
<tr>
<td>6.2.8</td>
<td>Monitors and responds to casualty’s condition in accordance with effective first aid principles and workplace procedures</td>
</tr>
<tr>
<td>6.2.9</td>
<td>Accurately records details of casualty’s physical condition, medications, changes in condition, management and response to management in line with organisational procedures</td>
</tr>
<tr>
<td>6.2.10</td>
<td>Finalises casualty management according</td>
</tr>
</tbody>
</table>
6.3 Communicate details of the incident

6.3.1 Requests appropriate medical assistance using relevant communication media and equipment

6.3.2 Accurately conveys details of casualty’s condition and management activities to emergency services/relieving personnel

6.3.3 Prepares reports to supervisors in a timely manner, presenting all relevant facts according to established company procedures

**RANGE OF VARIABLES**

**Physical hazards** may include:
- Workplace hazards
- Environmental hazards
- Proximity of other people
- Hazards associated with the casualty management processes

**Immediate risks** may include:
- Worksite equipment, machinery and substances
- Environmental risks
- Body fluids
- Risk of further injury to the casualty
- Risks associated with the proximity of other workers and bystanders

**Vital signs** include:
- Breathing
- Circulation
- Consciousness

**First aid management** will need to account for:
- Workplace policies and procedures
- Industry/site specific regulations, codes etc.
- Occupational health and safety requirements
- State and territory workplace health and safety requirements
- Location and nature of the workplace
- The environmental conditions for example electricity, biological risks, weather, motor vehicle accidents
- Location of emergency services personnel
- The use and availability of first aid equipment and resources
- Infection control
- Allergies the casualty may have

**Established first aid principles** include:
- Checking the site for danger to self, casualty and others and minimising the danger
- Checking and maintaining the casualty’s airway, breathing and circulation

**First aid resources and equipment** may include:
- Defibrillation units
- Pressure bandages
• Thermometers
• First aid kit
• Eyewash
• Thermal blankets
• Pocket face masks
• Rubber gloves
• Dressing
• Spacer device
• Cervical collars

**Casualty's condition is monitored and responded to** *may include:*
• Abdominal injuries
• Allergic reactions
• Bleeding
• Burns–thermal, chemical, friction, electrical
• Cardiac conditions
• Chemical contamination
• Cold injuries
• Crush injuries
• Dislocations
• Drowning
• Envenomation–snake, spider, insect and marine bites
• Environmental conditions such as hypothermia, dehydration, heat stroke
• Epilepsy, diabetes, asthma and other medical conditions
• Eye injuries
• Fractures
• Head injuries
• Minor skin injuries
• Neck and spinal injuries
• Needle stick injuries
• Poisoning and toxic substances
• Respiratory management of asthma and/or choking
• Shock
• Smoke inhalation
• Soft tissue injuries including sprains, strains, dislocations
• Substance abuse, including drugs
• Unconsciousness including not breathing and no pulse

**Medications** *may include:*
• Asthma–aerosol bronchodilators–casualty’s own or from first aid kit in accordance with State and Territory legislation
• Severe allergic reactions–adrenaline–subject to casualty’s own regime

**Communication media and equipment** *may include:*
• Mobile phone
• Satellite phones
• Hf/vhf radio
• Flags
• Flares
• Two way radio
• E-mail
• Electronic equipment
CRITICAL ASPECTS OF EVIDENCE

Assessment must confirm competency in:
- Demonstration of first aid casualty management principles–assessing and minimising danger, maintaining the casualty’s airway, breathing and circulation
- Resuscitation
- Bleeding control
- Care of unconscious
- Airway management
- Consideration of the welfare of the casualty
- Report preparation
- Ability to interpret and use listed documents

CONCURRENT ASSESSMENT AND/OR PRE-REQUISITE RELATIONSHIP OF UNITS

Competency in this unit underpins competency in other aspects of providing workplace first aid. It may be appropriate to assess parts of this unit in conjunction with other first aid competencies.

Competence may be assessed in conjunction with other units of competency such as:
- Core Unit MNMCCC01002A Work safely
- Core Unit MNMCCC005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE

- Basic anatomy and physiology
- Duty of care
- State and territory regulatory requirements relating to currency of skill and knowledge
- Infection control
- Legal requirements
- Company standard operating procedures (sops)
- Dealing with confidentiality
- Knowledge of the first aiders’ skills and limitations
- Occupational health and safety legislation and regulations
- How to gain access to and interpret material safety data sheets (MSDS’s)

SKILLS WILL INCLUDE

- Decision making
- Assertiveness skills
- Communication skills
- Safe manual handling of casualty
RESOURCES IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

CONSISTENCY IN PERFORMANCE

Competency in this unit needs to be assessed over a period of time to ensure consistency of performance in a range of environments. The breadth of evidence required to demonstrate the competency should be determined following consideration of the local site factors.

Assessment must satisfy the critical aspects expressed in this unit.

CONTEXT OF ASSESSMENT

Competence may be demonstrated working individually, under supervision or as part of a first aid team.

Where applicable, assessment should replicate workplace conditions as far as possible. Where, for reasons of safety, access to equipment and resources and space, assessment takes place away from the workplace, simulations should be used to represent workplace conditions as closely as possible. Consistency of performance should be maintained over the required range of workplace situations until renewal of competence / licence is required by the industry/organisation.

All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.

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**STREAM**  OC Extraction - Open Cut  
**FIELD**  C1 Drilling, Blasting & Ground Support  
**UNIT**  MNMOCC101A Set-up and prepare for drilling operations  

MNMOCC101A  
This unit applies in all contexts to the preparation of the drilling site and set-up of equipment and materials for drilling in the extractive process for the open cut environment.  

This unit must be read in conjunction with the Core Units.

<table>
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<th>PERFORMANCE CRITERIA</th>
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</thead>
<tbody>
<tr>
<td>1.1 Prepare drilling site</td>
<td>1.1.1 Conducts work according to site procedures, OHS, regulations, other relevant legislation and manufacturer's specifications</td>
</tr>
<tr>
<td></td>
<td>1.1.2 Receives, interprets and clarifies shift change over details</td>
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<tr>
<td></td>
<td>1.1.3 Identifies, manages and reports potential risks and hazards according to work plan</td>
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<td></td>
<td>1.1.4 Uses appropriate personal protective equipment</td>
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<td></td>
<td>1.1.5 Conducts equipment pre-start (visual) checks to ensure equipment is ready for operation</td>
</tr>
<tr>
<td></td>
<td>1.1.6 Assesses site conditions and historical information of past performance to determine and clarify drilling requirements</td>
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<tr>
<td></td>
<td>1.1.7 Locates and connects ancillary services (where required)</td>
</tr>
<tr>
<td></td>
<td>1.1.8 Stabilises drill to minimise delays and breakdowns and ensures safety of operating personnel and continuous drilling</td>
</tr>
<tr>
<td></td>
<td>1.1.9 Communicates with other personnel using approved communication methods</td>
</tr>
<tr>
<td></td>
<td>1.1.10 Adheres to emergency procedures to ensure safety of personnel, plant and equipment</td>
</tr>
<tr>
<td>1.2 Mark out drill pattern</td>
<td>1.2.1 Erects physical barricades and signage to protect pattern from unauthorised personnel and equipment</td>
</tr>
<tr>
<td></td>
<td>1.2.2 Adjusts drill pattern within authorised tolerances and drill pattern</td>
</tr>
<tr>
<td></td>
<td>1.2.3 Obtains authorisation for changes to drill pattern plan from relevant authority</td>
</tr>
<tr>
<td></td>
<td>1.2.4 Places indicators on drill pattern in preparation for hole drilling</td>
</tr>
<tr>
<td></td>
<td>1.2.5 Marks out drill pattern ensuring it is visible and</td>
</tr>
</tbody>
</table>
1.2.6 Protects pre-existing drill holes according to characteristics of hole
1.2.7 Completes all required documentation clearly, concisely and on time

1.3 Move equipment and materials to pattern
1.3.1 Completes pre-operational checks to confirm drill rig is derigged and in readiness for moving
1.3.2 Determines route and destination prior to movement of equipment and materials
1.3.3 Identifies and manages potential hazards to ensure safe transportation to drill site
1.3.4 Moves equipment and attachments safely and avoids damage to equipment and site or injury to personnel
1.3.5 Aligns drill rig in appropriate position to access drill pattern efficiently
1.3.6 Connects ancillary where applicable

**RANGE OF VARIABLES**

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

**EQUIPMENT**

Pre-operational checks are those checks specified by the manufacturer prior to operating the item of equipment and may include but not restricted to:

- Air filter restriction indicator
- Cab (horn, lights, air conditioner)
- Display instrumentation and gauges (indicators, gauges, laser levels), computer systems
- Engine and stop engine lights (orange and red)
- Fluid levels (windscreen washer tank, hydraulic oil, coolant, grease, water, engine oil, fuel)
- Visual and audio warning devices and lights

Capacity of equipment and/or attachments may include:

- Duration of operation
- Efficient and safe operating speed
- Operating limitations
- Type of activities performed
- Weight and/or load limitations

Start-up, park and shutdown procedures may include:

- Correct location of equipment,
- Safety mechanisms operational (horn, operating lights),
- Vehicle is left secured

**Indicators may include:**

- Brake oil temperature
• Engine oil pressure
• Brake air pressure
• Water temperature
• Service meter
• Voltmeter
• Torque converter
• Oil temperature
• Tachometer
• Speedometer/odometer
• Parking brake
• Steering filters
• Transmission filter
• Fuel filter
• Retarder
• Computer indicators

Site conditions may include:
• Wet and dry
• Day and night
• Broken ground
• Stable ground (compaction) amount of scale
• Slope of working surface
• Degree of compaction
• Location of water table
• Working over old underground workings and voids

Visual inspection and fault finding may include:
• Cab condition (no rags in air conditioner vent, dirt around brake and accelerator pedals, seat condition, all gear secured)
• Cab mounts
• Damage to equipment
• Danger tags
• Engine oil to be checked before starting engine
• Fire suppression unit (pins in position in triggers)
• Grease lines
• Light positioning and cleanliness
• No combustible material around exhaust
• Oil leaks (engine, hydraulic hoses, ground) fuel leaks (engine, on ground), water leaks (radiator, hoses)
• Personnel proximity
• Portable fire extinguisher (bracket, gauge, hose, ease of access)
• Radiator top up tank
• Tyres and rim condition
• Vehicle number
• Wheel nuts and studs
• Windows (clean, emergency exit tag in place)

Routine operational servicing:
• Checking fluid levels
• Filter changing
• Greasing
• Keeping cab clean
• Tightening loose fittings

**Equipment cleaning methods may include:**
• Degreasing
• Forced air
• Steam cleaning
• Vacuum
• Water

**MATERIAL**

**Materials may include:**
• Gravel
• Ore

**OVERBURDEN**
• Oxidised waste
• Rejects
• Road base
• Rubbish
• Sand
• Sulphide rock fill
• Tailings
• Topsoil
• Water

**Contaminant may include:**
• Animal carcasses (sheep, cows, kangaroos)
• Cigarette butts
• Consumables
• Ear plugs
• Metal bucket teeth
• Metal or steel rods
• Old fencing
• Old piping
• Plastic
• Timber

**SITE INFORMATION**

**Potential risks and hazards may include:**
• Abandoned equipment
• Adjoining pit walls
• Adverse weather conditions (electrical storms, floods, fires)
• Chemicals
• Contaminants
• Equipment
• Fences
• Holes
• Materials
• Over-hanging rocks
• Personnel
• Pot holes
• Unsafe ground
• Unstable faces
• Vehicles

Site environmental and heritage concerns may include:
• Culturally sensitive sights and artefacts
• Drainage
• Dust
• Emissions
• Flora and fauna
• Hazardous chemicals
• Heritage legislation
• Noise
• Runoff
• Spills
• Water quality

Weather conditions may include:
• Cyclones
• Dry
• Flood
• Heat
• Rain
• Storms (hail, electrical)
• Strong winds

LEGISLATION

Current relevant legislation codes, regulations and standards may include:
• Australian Standards
• Environmental Agencies regulations
• Environmental Protection Act
• Isolation procedures
• Manufacturers' specifications and recommendations
• Mine Safety & Health Legislation and regulations
• Occupational Health and Safety legislation
• Site regulations and procedures
EVIDENCE GUIDE

Unit: Set-up and prepare for drilling operations.

CRITICAL ASPECTS FOR CONSIDERATION

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:

- Conducting an activity safely and efficiently
- Achieving quality and productivity targets
- Adhering to and understanding relevant legislative (state and federal) requirements
- Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:

- Core Unit MNMCCCOO001A Communicate in the workplace
- Core Unit MNMCCCOO002A Work safely
- Core Unit MNMCCCOO003A Plan and organise individual work
- Core Unit MNMCCCOO004A Contribute to quality work outcomes
- Core Unit MNMCCCOO005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE

- Blasting procedures
- Breakdown procedures
- Drilling pattern marking procedures
- Drilling procedures
- Emergency procedures
- Environmental and heritage procedures
- Equipment processes, technical capability and limitations
- Equipment safety requirements
- Geological and technical data
- Hauling procedures
- Hazardous goods procedures and consequences of spills
- Isolation procedures
- Mine operational system
- Night and day working procedures
- Occupational health and safety procedures
- Open cut procedures
- Operational procedures and checks
- Road rules
- Shutdown procedures
- Site procedures
- Site safety requirements
- Start up procedures
- Towing procedures
SKILLS WILL INCLUDE

- Ancillary equipment operation, maintenance, cleaning
- Apply diagnostic techniques
- Blasting techniques
- Decision making
- Directing
- Drilling techniques
- Driving techniques
- Equipment operation, maintenance (minor), cleaning
- Hazard identification
- Hazardous goods handling techniques
- Interpretation of plans, reports, maps, specifications
- Lifting techniques (manual, cranes and loads)
- Maintain records
- Monitoring
- Organise work tasks
- Plan and document reading
- Report defects
- Safe work practices
- Select and fit personal protective equipment
- Team work
- Trouble shooting
- Use communications equipment
- Use computer systems
- Use relevant hand tools

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors. All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.
COMPETENCY STATEMENT

Evidence of competency is best obtained by observing relevant activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry operating conditions. If this is not practical, observations in a realistic simulated environment may be supplemented by written and oral assessments.

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MNMOC1102A
This unit applies in all contexts to the positioning, operation and shut down of a drilling rig in the extractive process for the open cut environment.

This unit must be read in conjunction with the Core Units.

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<thead>
<tr>
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<tr>
<td>2.1 Drill and monitor progression</td>
<td>2.1.1 Drills holes according to drill pattern plan, indicators and approved sequence</td>
</tr>
<tr>
<td></td>
<td>2.1.2 Monitors site conditions and drilling techniques and components are adjusted to maintain drilling operations</td>
</tr>
<tr>
<td></td>
<td>2.1.3 Stabilises hole by collaring and by adjusting drilling techniques</td>
</tr>
<tr>
<td></td>
<td>2.1.4 Maintains safety of driller and surrounding personnel</td>
</tr>
<tr>
<td></td>
<td>2.1.5 Monitors progress of hole formation and drill performance according to rate, speed and condition of drill equipment</td>
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<tr>
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<td>2.1.6 Maintains a clear drill hole through application of appropriate drilling techniques</td>
</tr>
<tr>
<td></td>
<td>2.1.7 Operates equipment and attachments within recommended speed, engine capability and other limitations</td>
</tr>
<tr>
<td></td>
<td>2.1.8 Diagnoses and solves downhole problems</td>
</tr>
<tr>
<td></td>
<td>2.1.9 Compacts misdirected drill holes (where applicable)</td>
</tr>
<tr>
<td></td>
<td>2.1.10 Communicates with other personnel using approved communication methods</td>
</tr>
<tr>
<td></td>
<td>2.1.11 Adheres to emergency procedures to ensure safety of personnel, plant and equipment</td>
</tr>
<tr>
<td></td>
<td>2.1.12 Samples ore grades during the drilling process at predetermined depths</td>
</tr>
<tr>
<td>2.2 Pack-up drill site</td>
<td>2.2.1 Clears site of debris</td>
</tr>
<tr>
<td></td>
<td>2.2.2 Removes drill rig and ancillary services, where applicable, to allocated area</td>
</tr>
<tr>
<td>2.3 Conduct housekeeping activities</td>
<td>2.3.1 Cleans equipment</td>
</tr>
<tr>
<td></td>
<td>2.3.2 Cleans and stores attachments and ancillary service equipment</td>
</tr>
<tr>
<td></td>
<td>2.3.3 Completes all required records and documentation accurately and promptly</td>
</tr>
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</table>
The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

EQUIPMENT

Drill rigs may be:
- Diesel
- Electric
- Pneumatic
- Track
- Wheeled
- Hydraulic
- Rotary
- Handheld

Equipment may include:
- Drill rig and associated drilling components (rods, bits, augers, down hole hammer, down hole tools of all types)
- Support vehicles
- Float
- Vehicles approved for dangerous goods
- Earth moving equipment
- Laser profile
- Water/Water trucks
- Witches hats
- Tapes, signs, flags, pegs
- Rope measuring tape
- Cutting implements
- Lifting and handling equipment (winch, crane, block and tackles)
- Ancillary equipment (generators, pumps, lights, compressors, cleaning equipment, power tools, hand tools)

Pre-operational checks are those checks specified by the manufacturer prior to operating the item of equipment and may include but not restricted to:
- Air filter restriction indicator
- Cab (horn, lights, air conditioner)
- Computer systems
- Display instrumentation and gauges (indicators, gauges, laser levels)
- Engine and stop engine lights (orange and red)
- Fluid levels (windscreen washer tank, hydraulic oil, coolant, grease, water, engine oil, fuel)
- Visual and audio warning devices and lights

Drill pattern may include:
- Specifically designed for site conditions
- Staggered
- Uniform
Drilling techniques may include:
- Adjustment of feed
- Adjustment to pull force
- Compacting
- Hammer
- Removing debris
- Rotation
- Speed adjustments

Drilling components may include:
- Augers
- Bits
- Down hole hammer
- Rods

SITE INFORMATION

Site conditions may include:
- Amount of scale
- Broken ground
- Day and night
- Degree of compaction
- Dry and wet
- Location of water table
- Slope of working surface
- Stability of ground
- Stable ground (compaction)
- Working over old underground workings and voids

Adjustment to drilling techniques are performed as necessary and may be based on feedback signals including:
- Gauge readings
- Ground conditions
- Hole characteristics
- Sounds
- Vibrations
- Wear of components

Ancillary services may include:
- Compressed air
- Electricity
- Water

Drilling plan may be written or verbal, formal or informal, depending on the complexity of the process and may include:
- Access road plan
- Equipment and resource allocations/requirements
- Face plan
- Geological details
- Mine site
- Services
Personnel may include:
- Blasters
- Contractors
- Drillers
- Drivers
- Holders of appropriate tickets
- Inspectors
- Licensed operators
- Maintenance staff
- Personnel authorised by mine management
- Service personnel
- Supervisors
- Trades persons
- Visitors

Down-hole problems may include:
- Differing ground conditions and old mine workings
- Hole deviation
- Loss of circulation return
- Loss of rod or bit
- Rod or bit breakage's

Debris may include:
- Broken drill bits
- Rags
- Rock chips

Equipment cleaning methods may include:
- Degreasing
- Forced air
- Steam cleaning
- Vacuum
- Water

Records may include:
- Computer readings
- End of shift documentation
- Supplies log
- Work log

LEGISLATION

Current relevant legislation codes, regulations and standards may include:
- Australian Standards
- Environmental Agencies regulations
- Environmental Protection Act
- Isolation procedures
- Manufacturers' specifications and recommendations
- Mine Safety & Health Legislation and Regulations
- Occupational Health and Safety legislation
- Site regulations and procedures
EVIDENCE GUIDE

CRITICAL ASPECTS FOR CONSIDERATION

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:

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- Achieving quality and productivity targets
- Adhering to and understanding relevant legislative (state and federal) requirements
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Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

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This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:

- Core Unit MNMCCCOO001A Communicate in the workplace
- Core Unit MNMCCCO1002A Work safely
- Core Unit MNMCCCOO003A Plan and organise individual work
- Core Unit MNMCCCOO004A Contribute to quality work outcomes
- Core Unit MNMCCCOO005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE

- Ancillary services procedures
- Breakdown procedures
- Cleaning procedures
- Down hole problems
- Drilling procedures
- Emergency procedures
- Environmental and heritage procedures
- Equipment processes, technical capability and limitations
- Equipment safety requirements
- Geological and technical data
- Hazardous goods procedures and consequences of spills
- Inspection procedures
- Isolation procedures
- Mine operational system
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- Towing procedures
SKILLS WILL INCLUDE

- Ancillary equipment operation, maintenance, cleaning
- Apply diagnostic techniques
- Decision making
- Directing
- Drilling techniques
- Driving techniques
- Equipment operation, maintenance (minor), cleaning
- Hazard identification
- Hazardous goods handling techniques
- Interpretation of plans, reports, maps, specifications
- Maintain records
- Monitoring
- Organise work tasks
- Plan and document reading
- Report defects
- Safe work practices
- Select and fit personal protective equipment
- Team work
- Trouble shooting
- Use communications equipment
- Use computer systems
- Use relevant hand tools

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT

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</table>
MNM0CC103A
This unit applies in all contexts to the organisation, safe transportation of blasting agents and explosives in preparation for blasting and maintaining the magazine in the extractive process for the open cut environment.

This unit must be read in conjunction with the Core Units.

<table>
<thead>
<tr>
<th>ELEMENT</th>
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<tbody>
<tr>
<td>3.1 Organise for blast</td>
<td>3.1.1 Receives, interprets and clarifies shift change over details</td>
</tr>
<tr>
<td></td>
<td>3.1.2 Selects appropriate type of blasting agents, explosives and equipment according to blasting plan and ground conditions to maximise efficiency and effectiveness of work activities</td>
</tr>
<tr>
<td></td>
<td>3.1.3 Conducts equipment pre-start (visual) checks to ensure equipment is ready for operation</td>
</tr>
<tr>
<td></td>
<td>3.1.4 Uses appropriate personal protective equipment</td>
</tr>
<tr>
<td></td>
<td>3.1.5 Identifies, manages and reports potential risks and hazards according to work plan</td>
</tr>
<tr>
<td></td>
<td>3.1.6 Assesses site and weather conditions and historical information of past performance to determine and clarify blasting requirements</td>
</tr>
<tr>
<td></td>
<td>3.1.7 Gains relevant approvals through submitting appropriate documentation and notifications</td>
</tr>
<tr>
<td></td>
<td>3.1.8 Completes organisation of blast on time avoiding delays</td>
</tr>
<tr>
<td></td>
<td>3.1.9 Checks hole depth according to drill plan</td>
</tr>
<tr>
<td></td>
<td>3.1.10 Communicates with other personnel using approved communication methods</td>
</tr>
<tr>
<td></td>
<td>3.1.11 Adheres to emergency procedures to ensure safety of personnel, plant and equipment</td>
</tr>
<tr>
<td>3.2 Maintain magazine</td>
<td>3.2.1 Limits access to magazine store to approved personnel only</td>
</tr>
<tr>
<td></td>
<td>3.2.2 Labels and segregates blasting agents and explosives to type</td>
</tr>
<tr>
<td></td>
<td>3.2.3 Maintains inventory control systems to record and indicate type, quantity and shelf life of explosives</td>
</tr>
<tr>
<td></td>
<td>3.2.4 Secures blasting agents and explosives in their packaging to avoid spoiling, spillage and wrongful use</td>
</tr>
</tbody>
</table>
### 3.2 Promptly returns unused blasting agents and explosives to store

3.2.5 Promptly returns unused blasting agents and explosives to store

3.2.6 Secures magazine

### 3.3 Obtain and transport blasting agents and explosives

<table>
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<tr>
<th>3.3.1</th>
<th>Selects sufficient quantity of blasting agents and explosives to conduct blast according to blast plan</th>
</tr>
</thead>
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<tr>
<td>3.3.2</td>
<td>Prepares blasting agents and explosives in readiness for immediate use</td>
</tr>
<tr>
<td>3.3.3</td>
<td>Limits access to blasting agents and explosives</td>
</tr>
<tr>
<td>3.3.4</td>
<td>Safely handles and separates blasting agents, explosives and equipment for transport</td>
</tr>
<tr>
<td>3.3.5</td>
<td>Displays relevant safety signage on blasting agents and explosive transport vehicles</td>
</tr>
<tr>
<td>3.3.6</td>
<td>Transports blasting agents and explosives to correct location using designated route</td>
</tr>
</tbody>
</table>

### 3.4 Set-up blast site

<table>
<thead>
<tr>
<th>3.4.1</th>
<th>Erects physical barricades and signage to protect pattern and avoid unauthorised access</th>
</tr>
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<tbody>
<tr>
<td>3.4.2</td>
<td>Primes, loads, stems and ties-in holes according to blast plan</td>
</tr>
<tr>
<td>3.4.3</td>
<td>Promptly returns unused explosives and materials to store</td>
</tr>
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### RANGE OF VARIABLES

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

### EQUIPMENT

**Equipment may include:**

- Ancillary equipment (generators, pumps, lights, compressors, cleaning equipment, power tools, hand tools)
- Cutting implements
- Flags
- Float
- Pegs
- Signs
- Support vehicles
- Tapes
- Vehicles approved for dangerous goods
- Witches hats
PERSONNEL

Personnel may include:
- Blasters
- Contractors
- Drillers
- Drivers
- Inspectors
- Licensed operators, holders of appropriate tickets, personnel authorised by mine management
- Maintenance staff
- Service personnel
- Supervisors
- Trades persons
- Visitors

SITE INFORMATION

Site conditions may include:
- Amount of scale
- Broken ground
- Day and night
- Dry and/or wet
- Location of water table
- Slope of working surface
- Stability of ground
- Stable ground (compaction)
- Working over old underground workings and voids

Preparation and authorisation of blast plan may include:
- Explosive type and quantity/hole
- Firing sequence (tie in)
- Initiation products
- Length per hole
- Stemming material

Weather conditions may include:
- Cyclones
- Dry
- Raining
- Still
- Storms (electrical)
- Windy

Blasting agents and explosives may be liquid or solid and may include:
- Anfo
- Blasting caps
- Detonating cords
- Detonators (electric and non electric)
- Exactex
- Gelignite
- Gun powder
• Power gels
• Water gels and emulsions

**Physical barricades may include:**
• Barrier tapes
• Flagged fencing
• Flags
• Rope
• Windrow
• Wire fence

**Signage may include:**
• Access requirements
• Safety
• Type of site

**Detonation mechanisms may include:**
• Bell wire
• Delay mechanisms
• Initiators
• Meter reading
• Safety fuses and tapes
• Tape

**LEGISLATION**

Current relevant legislation codes, regulations and standards may include:
• Australian Standards
• Duty of Care
• Environmental Agencies regulations
• Environmental Protection Act
• Isolation procedures
• Manufacturers' specifications and recommendations
• Mine Safety & Health Legislation and Regulations
• Occupational Health and Safety legislation
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**EVIDENCE GUIDE**

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- Core Unit MNMCCCOO004A Contribute to quality work outcomes
- Core Unit MNMCCCOO005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE

- Blasting procedures and regulations
- Emergency procedures
- Environmental and heritage procedures
- Equipment processes, technical capability and limitations
- Equipment safety requirements
- Geological and technical data
- Hazardous goods procedures and consequences of spills
- Isolation procedures
- Labelling procedures
- Mine operational system
- Night and day working procedures
- Occupational health and safety procedures
- Open cut procedures
- Operational procedures and checks
- Shutdown procedures
- Site procedures
- Site safety requirements
- Start up procedures
- Storage procedures
- Types and characteristics of blasting agents, explosives and detonation mechanisms

SKILLS WILL INCLUDE

- Apply diagnostic techniques
- Blasting preparation techniques
- Decision making
- Hazard identification
- Hazardous goods handling techniques
- Maintain records
- Monitoring
- Organise work tasks
- Plan and document reading
- Report defects
- Safe work practices
- Select and fit personal protective equipment
- Team work
- Trouble shooting
- Use communications equipment
- Use computer systems
RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

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**CONDUCT BLASTING OPERATIONS**

**STREAM**  
OC Extraction - Open Cut

**FIELD**  
C1 Drilling, Blasting & Ground Support

**UNIT**  
MNMOCC104A Conduct blasting operations

MNMOCC104A  
This unit applies in all contexts to the issue of warnings before detonation occurs, detonation and post blast operation in the extractive process for the open cut environment.

This unit must be read in conjunction with the Core Units.

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<tr>
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<tr>
<td>4.1 Issue site clearances and safety warnings</td>
<td>4.1.1 Receives, interprets and clarifies shift change over details</td>
</tr>
<tr>
<td></td>
<td>4.1.2 Issues clear safety warnings</td>
</tr>
<tr>
<td></td>
<td>4.1.3 Conducts visual checks and other approved checks to confirm clearances and ensure appropriate time delays</td>
</tr>
<tr>
<td></td>
<td>4.1.4 Posts sentries and/or erects barricades in safe positions to ensure blast site security and prevent unauthorised access to blast site</td>
</tr>
<tr>
<td></td>
<td>4.1.5 Communicates with other personnel using approved communication methods</td>
</tr>
<tr>
<td></td>
<td>4.1.6 Adheres to emergency procedures to ensure safety of personnel, plant and equipment</td>
</tr>
<tr>
<td>4.2 Detonate site</td>
<td>4.2.1 Conducts detonation at scheduled time according to blast plan</td>
</tr>
<tr>
<td></td>
<td>4.2.2 Achieves blast design outcomes including desirable fragmentation, appropriate heave and minimum dilution</td>
</tr>
<tr>
<td></td>
<td>4.2.3 Minimises damage to surrounding site and blast area</td>
</tr>
<tr>
<td>4.3 Conduct post blast operations</td>
<td>4.3.1 Inspects blast site after required delay before clearances are given</td>
</tr>
<tr>
<td></td>
<td>4.3.2 Identifies safe areas and potential dangers to personnel and equipment</td>
</tr>
<tr>
<td></td>
<td>4.3.3 Locates and disposes misfires</td>
</tr>
<tr>
<td></td>
<td>4.3.4 Flags large rocks for further fragmentation</td>
</tr>
<tr>
<td></td>
<td>4.3.5 Records blast outcomes indicating successes, misfires and general blast results</td>
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RANGE OF VARIABLES

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SITE INFORMATION

Clear safety warnings may include:
- Fixed timings
- Flags
- Flashing lights or beacons
- Notice boards
- Radio signals
- Siren prior to blast
- Warning signs on access roads

Visual checks and other checks may include:
- Aerial view
- From sentry locations
- On-site

Potential dangers may include:
- Misfires
- Unstable ground
- Void zones

Misfires may include:
- Non detonation
- Partial detonation

Records may include:
- Computer readings
- Drawings
- End of shift documentation
- Inspectors reports
- Plans
- Supplies log
- Work log

PERSONNEL

Personnel may include:
- Blasters
- Contractors
- Drillers
- Drivers
- Holders of appropriate tickets
- Inspectors
- Licensed operators
- Maintenance staff
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- Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

**CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS**

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:
- Core Unit MNMCCCOO001A Communicate in the workplace
- Core Unit MNMCCCOO002A Work safely
- Core Unit MNMCCCOO003A Plan and organise individual work
- Core Unit MNMCCCOO004A Contribute to quality work outcomes
- Core Unit MNMCCCOO005A Apply local risk control processes

**KNOWLEDGE WILL INCLUDE**

- Blast theory
- Damage control
- Detonation functions, limitations and devices
- Detonation procedures and regulations
- Emergency procedures
- Environmental and heritage procedures
- Equipment safety requirements
- Geological and technical data
- Handling and treatment of explosives and their accessories
• Handling and treatment of un-detonated explosives and misfires
• Hazardous goods procedures and consequences of spills
• Inspection procedures
• Isolation procedures
• Mine operational system
• Night and day working procedures
• Occupational health and safety procedures
• Open cut procedures
• Operational procedures and checks
• Shutdown procedures
• Site procedures
• Site safety requirements
• Start up procedures
• Types and characteristics of blasting agents, explosives and detonation mechanisms
• Types and characteristics of detonations

SKILLS WILL INCLUDE

• Apply diagnostic techniques
• Blasting preparation techniques
• Decision making
• Detonating techniques
• Hazard identification
• Hazardous goods handling techniques
• Loading techniques
• Maintain records
• Monitoring
• Organise work tasks
• Plan and document reading
• Report defects
• Safe work practices
• Select and fit personal protective equipment
• Team work
• Trouble shooting
• Tying techniques
• Use communications equipment
• Use computer systems

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors. All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.
COMPETENCY STATEMENT

Evidence of competency is best obtained by observing relevant activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry operating conditions. If this is not practical, observations in a realistic simulated environment may be supplemented by written and oral assessments.

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</table>
INSTALL GROUND SUPPORT

STREAM  OC  Extraction - Open Cut
FIELD  C1  Drilling, Blasting & Ground Support
UNIT  MNMOCC105A Install ground support

MNMOCC105A
This unit covers the installation of ground support mechanisms to provide structural support to rock surface in the extractive process for the open cut environment.

This unit must be read in conjunction with the Core Units.

<table>
<thead>
<tr>
<th>ELEMENT</th>
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</thead>
<tbody>
<tr>
<td>5.1 Organise for ground support installation</td>
<td>5.1.1 Receives, interprets and clarifies shift change over details</td>
</tr>
<tr>
<td></td>
<td>5.1.2 Conducts equipment pre-start (visual) checks to ensure equipment is ready for operation</td>
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<td></td>
<td>5.1.3 Identifies, manages and reports potential risks and hazards according to work plan</td>
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<td>5.1.4 Uses appropriate personal protective equipment</td>
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<td></td>
<td>5.1.5 Selects appropriate type of equipment and ground support materials according to job type, work plan specifications</td>
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<tr>
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<td>5.1.6 Manages site environmental and heritage issues</td>
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<td></td>
<td>5.1.7 Communicates with other personnel using approved communication methods</td>
</tr>
<tr>
<td></td>
<td>5.1.8 Adheres to emergency procedures to ensure safety of personnel, plant and equipment</td>
</tr>
<tr>
<td>5.2 Setup and prepare for installation</td>
<td>5.2.1 Removes all surface soils and vegetations and exposes bedrock (where appropriate)</td>
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<td></td>
<td>5.2.2 Scales down loose material and makes site safe</td>
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<td>5.2.3 Positions drill at designated angle and according to capacity of equipment</td>
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<tr>
<td></td>
<td>5.2.4 Positions drill holes according to ground support design and ground support plan to maximise lamination of rock layers</td>
</tr>
<tr>
<td>5.3 Assemble and install ground support</td>
<td>5.3.1 Assembles anchors to full depth according to ground support plan</td>
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<td>5.3.2 Drills holes to specified diameter and depth in accordance with type of ground support and work plan specifications</td>
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<td>5.3.3 Installs and tensions anchors and bolts to appropriate pattern and tensioning degree</td>
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<td>5.3.4 Installs water suppression devices minimising water infiltration to ground supports</td>
</tr>
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<td></td>
<td>5.3.5 Checks ground support periodically and adjusts stressing where required to monitor creepage</td>
</tr>
</tbody>
</table>
5.4 Conduct housekeeping activities

5.4.1 Clears area to conform to job requirements

5.4.2 Cleans equipment

5.4.3 Cleans and stores attachments and other ancillary equipment

5.4.4 Completes all required records and documentation accurately and promptly

**RANGE OF VARIABLES**

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

*Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.*

**EQUIPMENT**

Water suppressing device:
- De-watering systems
- Drainage holes
- Polyfill
- Shotcrete

Equipment may include:
- Ancillary equipment (generators, pumps, lights, compressors, cleaning equipment, power tools, hand tools)
- Cutting implements
- Drill rigs
- Flags
- Lifting and handling equipment (winch, crane, block and tackles)
- Mesh
- Pegs
- Rope measuring tape
- Signs
- Support vehicles
- Tapes
- Witches hats

Capacity of equipment and/or attachments may include:
- Duration of operation
- Efficient and safe operating speed
- Operating limitations
- Type of activities performed
- Weight and/or load limitations

Tensioning may include:
- Loosening
- Tightening
- Variation to pattern
Pre-operational checks are those checks specified by the manufacturer prior to operating the item of equipment and may include but not restricted to:

- Air filter restriction indicator
- Cab (horn, lights, air conditioner)
- Computer systems
- Display instrumentation and gauges (indicators, gauges, laser levels)
- Engine and stop engine lights (orange and red)
- Fluid levels (windscreen washer tank, hydraulic oil, coolant, grease, water, engine oil, fuel)
- Visual and audio warning devices and lights

Safe operating procedures may include:

- Adhering to all site procedures
- Observing site speed limits
- Working safely around other machines and personnel
- Observing right of way in incline and decline
- Wearing of seat belts
- Using respiratory devices where appropriate
- Hazard identification and recognition procedures
- Awareness and access to escape ways
- Emergency procedures
- Observation of electrical and mechanical procedures
- First aid
- Use of barricades
- Use of out of service tags and danger tags
- Use of different types of fire extinguishers

Ground support plan may be verbal or written, and may include:

- Access road plan
- Equipment and resource allocations/ requirements
- Geological details
- Mine site
- Site drawings

SITE INFORMATION

Site conditions may include:

- Amount of scale
- Broken ground
- Day and night
- Location of water table
- Slope of working surface
- Stability of ground
- Stable ground (compaction)
- Wet and dry
- Working over old underground workings and voids

Potential risks and hazards may include:

- Abandoned equipment
- Adjoining pit walls
- Adverse weather conditions (electrical storms, floods) fires
- Chemicals
- Contaminants
- Equipment
- Fences
- Holes
- Materials
- Over flying aircraft
- Over-hanging rocks
- Personnel
- Pot holes
- Unsafe ground
- Unstable faces
- Vehicles

LEGISLATION

Current relevant legislation codes, regulations and standards may include:
- Australian Standards
- Duty of Care
- Environmental Agencies regulations
- Environmental Protection Act
- Isolation procedures
- Manufacturers' specifications and recommendations
- Mine Safety & Health Legislation and Regulations
- Occupational Health and Safety legislation
- Site regulations and procedures

EVIDENCE GUIDE

CRITICAL ASPECTS FOR CONSIDERATION

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:
- Conducting an activity safely and efficiently
- Achieving quality and productivity targets
- Adhering to and understanding relevant legislative (state and federal) requirements
- Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:
- Core Unit MNMCCCOO001A Communicate in the workplace
- Core Unit MNMCCCOO002A Work safely
- Core Unit MNMCCCOO003A Plan and organise individual work
- Core Unit MNMCCCOO004A Contribute to quality work outcomes
- Core Unit MNMCCCOO005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE
- De-watering procedures and characteristics
- Drilling procedures
- Emergency procedures
• Environmental and heritage procedures
• Equipment safety requirements
• Geological and technical data
• Ground support characteristics and applications
• Hazardous goods procedures and consequences of spills
• Inspection procedures
• Isolation procedures
• Mine operational system
• Night and day working procedures
• Occupational health and safety procedures
• Open cut procedures
• Operational procedures and checks
• Shutdown procedures
• Site procedures
• Site safety requirements
• Start up procedures

SKILLS WILL INCLUDE
• Apply diagnostic techniques
• Decision making
• Drilling techniques
• Hand tools
• Hazard identification
• Maintain records
• Monitoring
• Organise work tasks
• Plan and document reading
• Power tools
• Report defects
• Safe work practices
• Select and fit personal protective equipment
• Team work
• Tensioning of ground support mechanisms
• Trouble shooting
• Use communications equipment
• Use computer systems

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors.
All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.
COMPETENCY STATEMENT

Evidence of competency is best obtained by observing relevant activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry operating conditions. If this is not practical, observations in a realistic simulated environment may be supplemented by written and oral assessments.

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## MNMOCC201A Conduct excavator operations

This unit applies in all contexts to the movement of material through excavator digging and loading operations in the extractive process in the open cut environment.

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<td>1.1 Plan and prepare for operations</td>
<td>1.1.1. Conducts work according to site procedures, OHS, regulations, other relevant legislation and manufacturers' specifications</td>
</tr>
<tr>
<td></td>
<td>1.1.2. Receives, interprets and clarifies shift change over details</td>
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<td></td>
<td>1.1.3. Evaluates equipment and/or attachments supplied for suitability for the work to be undertaken, according to job specifications and to maximise efficiency and effectiveness of work activities</td>
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<td></td>
<td>1.1.4. Identifies, manages and reports potential risks and hazards</td>
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<td></td>
<td>1.1.5. Uses appropriate personal protective equipment</td>
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<td></td>
<td>1.1.6. Carries out equipment visual pre-start checks to ensure equipment is ready for operation</td>
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<td>1.1.7. Complies with environmental requirements</td>
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<tr>
<td></td>
<td>1.1.8. Establishes and maintains communication with other personnel using approved communication methods</td>
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<tr>
<td></td>
<td>1.1.9. Follows emergency procedures to ensure safety of personnel and plant</td>
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<tr>
<td>1.2 Operate excavator efficiently</td>
<td>1.2.1. Starts excavator to manufacturer's operational requirements</td>
</tr>
<tr>
<td></td>
<td>1.2.2. Warms up and exercises excavator and associated equipment, and checks controls and instruments for correct functioning</td>
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<tr>
<td></td>
<td>1.2.3. Interprets instruments and alarms and takes appropriate action in response</td>
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<td></td>
<td>1.2.4. Operates excavator smoothly, with correct reach angle to allow optimum efficiency and bucket load, and minimise overload or strain on excavator</td>
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<td></td>
<td>1.2.5. Positions excavators for safe, efficient extraction</td>
</tr>
<tr>
<td>1.3 Dig and load trucks with excavator</td>
<td>1.3.1. Positions and sets up excavator for safe, efficient digging</td>
</tr>
<tr>
<td></td>
<td>1.3.2. Determines and maintains depth of bench to allow optimum use of bucket capacity</td>
</tr>
</tbody>
</table>
1.3.3. Sets and monitors bucket penetration for optimum bucket load and to minimise overload or strain on excavator

1.3.4. Walks excavator and re-positions for safe and efficient operation

1.3.5. Communicates with and directs truck positioning for safe loading operation

1.3.6. Loads material on truck so that bucket clears side of truck and is not swung over truck cabin, material is placed in the centre of tray and does not exceed truck load limit

1.3.7. Checks surrounding area and re-positions excavator in regard to other operations personnel, to meet digging requirements

1.3.8. Keeps floor clean and level and removes spillages

1.3.9. Parks excavator in safe area, on flat, level ground at end of shift

1.4 Carry out wall scaling operations

1.4.1. Examines pit wall for loose material and fault zones

1.4.2. Works excavator along the wall and drags material down at full bucket reach

1.4.3. Builds, and sites excavator on mounds, to increase bucket reach

1.4.4. Assesses condition of wall for risks to personnel and damage to machine, and sets up for safe operation to suit area conditions

1.4.5. Manoeuvres excavator so that injuries to operator and/or damage to machine from falling rocks are prevented

1.4.6. Parks excavator in safe area, on flat, level ground at end of shift

1.5 Conduct housekeeping activities

1.5.1. Cleans equipment to site requirements

1.5.2. Cleans and stores attachments and other ancillary equipment ready for further use

1.5.3. Completes all required records and documentation accurately and promptly

**RANGE OF VARIABLES**

The following Range of Variables is subject to site specific operations, but is not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation apply to all elements and performance criteria.
EQUIPMENT
Capacity of equipment and/or attachments may include:
- Duration of operation
- Efficient and safe operating speed
- Operating limitations
- Type of activities performed
- Weight and/or load limitations

Start-up, park and shutdown procedures may include:
- Correct location of equipment
- Safety mechanisms operational (horn, operating lights)
- Vehicle is left secured

Indicators may include:
- Brake air pressure
- Brake oil temperature
- Computer indicators
- Engine oil pressure
- Fuel filter
- Parking brake
- Service meter
- Steering filters
- Tachometer
- Torque converter oil temperature
- Transmission filter
- Voltmeter
- Water temperature

Site procedures and regulations may be found in:
- Induction documentation
- Managers rules
- Operations manual
- Policy and procedures documents
- Training materials
- Verbal or written instructions

Pre-operational checks are those checks specified by the manufacturer prior to operating the item of equipment and may include but not restricted to:
- Air filter restriction indicator
- Cab (horn, lights, air conditioner)
- Computer systems
- Display instrumentation and gauges (indicators, gauges, laser levels)
- Engine and stop engine lights (orange and red)
- Fluid levels (windscreen washer tank, hydraulic oil, coolant, grease, water, engine oil, fuel)
- Visual and audio warning devices and lights

Visual inspection and fault finding may include:
- Cab condition (no rags in air conditioner vent, dirt around brake and accelerator pedals, seat condition, all gear secured)
- Cab mounts
- Damage to equipment
- Danger tags
• Engine oil to be checked before starting engine
• Fire suppression unit (pins in position in triggers)
• Grease lines
• Light positioning and cleanliness
• No combustible material around exhaust
• Oil leaks (engine, hydraulic hoses, ground); fuel leaks (engine, on ground); water leaks (radiator, hoses)
• Personnel proximity
• Portable fire extinguisher (bracket, gauge, hose, ease of access)
• Radiator top up tank
• Vehicle number
• Windows (clean, emergency exit tag in place)

**Equipment cleaning methods may include:**
• Degreasing
• Forced air
• Steam cleaning
• Vacuum
• Water

**SITE INFORMATION**

**Site conditions may include:**
• Broken ground
• Day and night
• Degree of compaction
• Location of water table
• Slope of working surface
• Stable ground (compaction) amount of scale
• Wet and dry
• Working over old underground workings and voids

**Site environmental and heritage concerns may include:**
• Culturally sensitive sights and artefacts
• Drainage
• Dust
• Emissions
• Flora and fauna
• Hazardous chemicals
• Heritage legislation
• Noise
• Runoff
• Spills
• Water quality

**Emergency plan may include:**
• Clean up
• Equipment shut down procedures
• Evacuation procedures
• First aid
• Isolation procedures
• Notification of authorities
• Use of personal protective equipment
Loading face characteristics may include:
- Stable
- Unstable

Potential risks and hazards may include:
- Abandoned equipment
- Adjoining pit walls
- Adverse weather conditions (electrical storms, floods, fires)
- Chemicals
- Contaminants
- Equipment
- Fences
- Holes
- Materials
- Over-hanging rocks
- Personnel
- Pot holes
- Unsafe ground
- Unstable faces
- Vehicles

Safe operating procedures may include:
- Adhering to all site procedures
- Awareness and access to escape ways
- Emergency procedures
- First aid
- Hazard identification and recognition procedures
- Observation of electrical and mechanical procedures
- Observing right of way in incline and decline
- Observing site speed limits
- Use of barricades
- Use of different types of fire extinguishers
- Use of out of service tags and danger tags
- Using respiratory devices where appropriate
- Wearing of seat belts
- Working safely around other machines and personnel

MATERIALS
Materials may include:
- Gravel
- Ore
- Overburden
- Oxidised waste
- Rejects
- Road base
- Rubbish
- Sand
- Sulphide rock fill
- Tailings
- Topsoil
- Water
Contaminant may include:
- Animal carcasses (sheep, cows, kangaroos)
- Cigarette butts
- Consumables
- Ear plugs
- Metal bucket teeth
- Metal or steel rods
- Old fencing
- Old piping
- Plastic
- Rubbish
- Timber

LEGISLATION

Current relevant legislation codes, regulations and standards may include:
- Australian Standards
- Environmental Agencies regulations
- Environmental Protection Act
- Isolation procedures
- Manufacturers' specifications and recommendations
- Mine Safety & Health Legislation and regulations
- Occupational Health and Safety legislation
- Site regulations and procedures
- Vehicle driving licensing regulations

EVIDENCE GUIDE

CRITICAL ASPECTS FOR CONSIDERATION

Assessment must confirm competency in a particular activity relevant to mine site operations.
These include:
- Conducting an activity safely and efficiently
- Achieving quality and productivity targets
- Adhering to and understanding relevant legislative (state and federal) requirements
- Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:
- Core Unit MNMCCCOO001A Communicate in the workplace
- Core Unit MNMCCCO1002A Work safely
- Core Unit MNMCCCOO003A Plan and organise individual work
- Core Unit MNMCCCOO004A Contribute to quality work outcomes
- Core Unit MNMCCCOO005A Apply local risk control processes
KNOWLEDGE WILL INCLUDE

- Excavator operating principles and practices
- Breakdown procedures
- Emergency procedures
- Environmental and heritage procedures
- Equipment processes, technical capability and limitations
- Equipment safety requirements
- Geological and technical data
- Hauling procedures
- Hazardous goods procedures and consequences of spills
- Isolation procedures
- Mine operational system
- Night and day working procedures
- Occupational health and safety procedures
- Open cut procedures
- Operational procedures and checks
- Road rules
- Shutdown procedures
- Site procedures
- Site safety requirements
- Start up procedures

SKILLS WILL INCLUDE

- Safe, smooth, efficient excavator operation
- Bucket penetration and reach setting
- Ancillary equipment operation and cleaning
- Apply diagnostic techniques
- Truck positioning
- Decision making
- Directing
- Driving techniques
- Equipment operation and cleaning
- Hazard identification
- Hazardous goods handling techniques
- Interpretation of plans, reports, maps, specifications
- Lifting techniques (manual, cranes and loads)
- Maintaining records
- Monitoring
- Organise work tasks
- Plan and document reading
- Report defects
- Safe work practices
- Select and fit personal protective equipment
- Team work
- Trouble shooting
- Use communications equipment
- Use computer systems
- Use relevant hand tools
RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors.

All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.

COMPETENCY STATEMENT

Evidence of competency is best obtained by observing relevant activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry operating conditions. If this is not practical, observations in a realistic simulated environment may be supplemented by written and oral assessments.

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STREAM  OC  Extraction - Open Cut
FIELD  C2  Loading & Hauling
UNIT  MNMOCC202A Conduct electric rope shovel operations

This unit applies in all contexts to the movement of material through electric rope shovel digging and loading operations in the extractive process in the open cut environment.

<table>
<thead>
<tr>
<th>ELEMENT</th>
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| 2.1 Plan and prepare for operations | 2.1.1. Conducts work according to site procedures, OHS, regulations, other relevant legislation and manufacturers' specifications  
2.1.2. Receives, interprets and clarifies shift change over details  
2.1.3. Evaluates equipment and/or attachments supplied for suitability for the work to be undertaken, according to job specifications and to maximise efficiency and effectiveness of work activities  
2.1.4. Identifies, manages and reports potential risks and hazards  
2.1.5. Uses appropriate personal protective equipment  
2.1.6. Carries out equipment visual pre-start checks to ensure equipment is ready for operation  
2.1.7. Complies with environmental requirements  
2.1.8. Positions or moves cable towers, power lines and/or crossovers to location according to work plan, ensuring safety of operator and other personnel  
2.1.9. Establishes and maintains communication with other personnel using approved communication methods  
2.1.10. Follows emergency procedures to ensure safety of personnel and plant |
| 2.2 Operate shovel efficiently | 2.2.1. Starts shovel to manufacturer’s operational requirements  
2.2.2. Warms up and exercises shovel and associated equipment, and checks controls and instruments for correct functioning  
2.2.3. Interprets instruments and alarms and takes appropriate action in response  
2.2.4. Operates shovel smoothly, with correct reach angle to allow optimum efficiency and bucket load, and minimise overload or strain on shovel  
2.2.5. Positions shovel for safe, efficient extraction |
2.3 Dig and load trucks with electric rope shovel

2.3.1. Positions and sets up shovel for safe, efficient digging

2.3.2. Determines and maintains depth of bench to allow optimum use of bucket capacity

2.3.3. Sets and monitors bucket penetration for optimum bucket load and to minimise overload or strain on shovel

2.3.4. Walks shovel and re-positions shovel, power lines and cable towers for safe and efficient operation

2.3.5. Communicates with and directs truck positioning for safe loading operation

2.3.6. Loads material on truck so that bucket clears side of truck and is not swung over truck cabin, material is placed in the centre of tray and does not exceed truck load limit

2.3.7. Checks surrounding area and re-positions shovel in regard to other operations personnel, to meet digging requirements

2.3.8. Keeps floor clean and level and removes spillages

2.3.9. Parks shovel in safe area, on flat, level ground at end of shift

2.4 Conduct housekeeping activities

2.4.1. Cleans equipment to site requirements

2.4.2. Cleans and stores attachments and other ancillary equipment ready for further use

2.4.3. Completes all required records and documentation accurately and promptly

RANGE OF VARIABLES

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

EQUIPMENT

Capacity of equipment and/or attachments may include:

- Duration of operation
- Efficient and safe operating speed
- Operating limitations
- Type of activities performed
- Weight and/or load limitations
Start-up, park and shutdown procedures may include:
- Correct location of equipment
- Safety mechanisms operational (horn, operating lights)
- Vehicle is left secured

Indicators may include:
- Brake air pressure
- Brake oil temperature
- Computer indicators
- Service meter
- Voltmeter
- Ammeter
- Hoist brake set
- Swing brake set
- Boom jack indicator
- Electric motor temperature

Site procedures and regulations may be found in:
- Induction documentation
- Managers rules
- Operations manual
- Policy and procedures documents
- Training materials
- Verbal or written instructions

Pre-operational checks are those checks specified by the manufacturer prior to operating the item of equipment and may include but not restricted to:
- Air filter restriction indicator
- Cab (horn, lights, air conditioner)
- Computer systems
- Display instrumentation and gauges (indicators, gauges, laser levels)
- Electric motor run lights
- Fluid levels (windscreen washer tank, hydraulic oil, grease, gearbox oil)
- Visual and audio warning devices and lights

Visual inspection and fault finding may include:
- Cab condition (no rags in air conditioner vent, dirt around brake and accelerator pedals, seat condition, all gear secured)
- Cab mounts
- Damage to equipment
- Danger tags
- Gear box oil to be checked before starting
- Fire suppression unit (pins in position in triggers)
- Grease lines
- Light positioning and cleanliness
- No combustible material around exhaust
- Oil leaks (engine, hydraulic hoses, ground)
- Personnel proximity
- Portable fire extinguisher (bracket, gauge, hose, ease of access)
- Vehicle number
- Windows (clean, emergency exit tag in place)
Equipment cleaning methods may include:
- Degreasing
- Forced air
- Steam cleaning
- Vacuum
- Water

SITE INFORMATION

Site conditions may include:
- Broken ground
- Day and night
- Degree of compaction
- Location of water table
- Slope of working surface
- Stable ground (compaction) amount of scale
- Wet and dry
- Working over old underground workings and voids

Site environmental and heritage concerns may include:
- Culturally sensitive sights and artefacts
- Drainage
- Dust
- Emissions
- Flora and fauna
- Hazardous chemicals
- Heritage legislation
- Noise
- Runoff
- Spills
- Water quality

Emergency plan may include:
- Clean up
- Equipment shut down procedures
- Evacuation procedures
- First aid
- Isolation procedures
- Notification of authorities
- Use of personal protective equipment

Loading face characteristics may include:
- Stable
- Unstable

Potential risks and hazards may include:
- Abandoned equipment
- Adjoining pit walls
- Adverse weather conditions (electrical storms, floods, fires)
- Chemicals
- Contaminants
• Equipment
• Fences
• Holes
• Materials
• Over-hanging rocks
• Personnel
• Pot holes
• Unsafe ground
• Unstable faces
• Vehicles

Safe operating procedures may include:
• Adhering to all site procedures
• Awareness and access to escape ways
• Emergency procedures
• First aid
• Hazard identification and recognition procedures
• Observation of electrical and mechanical procedures
• Observing right of way in incline and decline
• Observing site speed limits
• Use of barricades
• Use of different types of fire extinguishers
• Use of out of service tags and danger tags
• Using respiratory devices where appropriate
• Wearing of seat belts
• Working safely around other machines and personnel

MATERIALS

Materials may include:
• Gravel
• Ore
• Overburden
• Oxidised waste
• Rejects
• Road base
• Rubbish
• Sand
• Sulphide rock fill
• Tailings
• Topsoil
• Water

Contaminant may include:
• Animal carcasses (sheep, cows, kangaroos)
• Cigarette butts
• Consumables
• Ear plugs
• Metal bucket teeth
• Metal or steel rods
• Old fencing
• Old piping
• Plastic
• Rubbish
• Timber

**LEGISLATION**

*Current relevant legislation codes, regulations and standards may include:*

• Australian Standards
• Environmental Agencies regulations
• Environmental Protection Act
• Isolation procedures
• Manufacturers' specifications and recommendations
• Mine Safety & Health Legislation and regulations
• Occupational Health and Safety legislation
• Site regulations and procedures
• Vehicle driving licensing regulations

**EVIDENCE GUIDE**

**CRITICAL ASPECTS FOR CONSIDERATION**

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:

• Conducting an activity safely and efficiently
• Achieving quality and productivity targets
• Adhering to and understanding relevant legislative (state and federal) requirements
• Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

**CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS**

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:

• Core Unit MNMCCCOO001A Communicate in the workplace
• Core Unit MNMCCCO1002A Work safely
• Core Unit MNMCCCOO003A Plan and organise individual work
• Core Unit MNMCCCOO004A Contribute to quality work outcomes
• Core Unit MNMCCCOO005A Apply local risk control processes

**KNOWLEDGE WILL INCLUDE**

• Electric rope shovel operating principles and practices
• Breakdown procedures
• Emergency procedures
• Environmental and heritage procedures
• Equipment processes, technical capability and limitations
• Equipment safety requirements
• Geological and technical data
• Hauling procedures
• Hazardous goods procedures and consequences of spills
- Isolation procedures
- Mine operational system
- Night and day working procedures
- Occupational health and safety procedures
- Open cut procedures
- Operational procedures and checks
- Road rules
- Shutdown procedures
- Site procedures
- Site safety requirements
- Start up procedures
- Towing procedures

SKILLS WILL INCLUDE

- Safe, smooth, efficient electric rope shovel operation
- Bucket penetration and reach setting
- Management of trailing electric cables
- Ancillary equipment operation and cleaning
- Apply diagnostic techniques
- Decision making
- Directing
- Driving techniques
- Equipment operation and cleaning
- Hazard identification
- Hazardous goods handling techniques
- Interpretation of plans, reports, maps, specifications
- Lifting techniques (manual, cranes and loads)
- Maintaining records
- Monitoring
- Organise work tasks
- Plan and document reading
- Report defects
- Safe work practices
- Select and fit personal protective equipment
- Team work
- Trouble shooting
- Use communications equipment
- Use computer systems
- Use relevant hand tools

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors.
All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.

**COMPETENCY STATEMENT**

Evidence of competency is best obtained by observing relevant activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry operating conditions. If this is not practical, observations in a realistic simulated environment may be supplemented by written and oral assessments.

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<tbody>
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<tr>
<td>2 Communicating Ideas and Information</td>
<td>2</td>
</tr>
<tr>
<td>3 Planning and Organising Activities</td>
<td>1</td>
</tr>
<tr>
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</tr>
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<td>5 Using Mathematical Ideas and Techniques</td>
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</tr>
<tr>
<td>6 Solving Problems</td>
<td>2</td>
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<tr>
<td>7 Using Technology</td>
<td>2</td>
</tr>
</tbody>
</table>
MNMOCC203A Conduct hydraulic shovel operations

This unit applies in all contexts to the movement of material through hydraulic shovel digging and loading operations in the extractive process in the open cut environment.

<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>PERFORMANCE CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1 Plan and prepare for operations</td>
<td>3.1.1. Conducts work according to site procedures, OHS, regulations, other relevant legislation and manufacturers' specifications</td>
</tr>
<tr>
<td></td>
<td>3.1.2. Receives, interprets and clarifies shift change over details</td>
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<td>3.1.3. Evaluates equipment and/or attachments supplied for suitability for the work to be undertaken, according to job specifications and to maximise efficiency and effectiveness of work activities</td>
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<td></td>
<td>3.1.4. Identifies, manages and reports potential risks and hazards</td>
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<td>3.1.5. Uses appropriate personal protective equipment</td>
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<tr>
<td></td>
<td>3.1.6. Carries out equipment visual pre-start checks to ensure equipment is ready for operation</td>
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<td></td>
<td>3.1.7. Complies with environmental requirements</td>
</tr>
<tr>
<td></td>
<td>3.1.8. Establishes and maintains communication with other personnel using approved communication methods</td>
</tr>
<tr>
<td></td>
<td>3.1.9. Follows emergency procedures to ensure safety of personnel and plant</td>
</tr>
<tr>
<td>3.2 Operate shovel efficiently</td>
<td>2.2.6. Starts shovel to manufacturer’s operational requirements</td>
</tr>
<tr>
<td></td>
<td>2.2.7. Warms up and exercises shovel and associated equipment, and checks controls and instruments for correct functioning</td>
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<tr>
<td></td>
<td>2.2.8. Interprets instruments and alarms and takes appropriate action in response</td>
</tr>
<tr>
<td></td>
<td>2.2.9. Operates shovel smoothly, with correct reach angle to allow optimum efficiency and bucket load, and minimise overload or strain on shovel</td>
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<tr>
<td></td>
<td>2.2.10. Positions shovel for safe, efficient extraction</td>
</tr>
<tr>
<td>3.3 Dig and load trucks with hydraulic shovel</td>
<td>3.3.1. Positions and sets up shovel for safe, efficient digging</td>
</tr>
<tr>
<td></td>
<td>3.3.2. Determines and maintains depth of bench to allow optimum use of bucket capacity</td>
</tr>
</tbody>
</table>
3.3.3. Sets and monitors bucket penetration for optimum bucket load and to minimise overload or strain on shovel

3.3.4. Walks shovel and re-positions for safe and efficient operation

3.3.5. Communicates with and directs truck positioning for safe loading operation

3.3.6. Loads material on truck so that bucket clears side of truck and is not swung over truck cabin, material is placed in the centre of tray and does not exceed truck load limit

3.3.7. Checks surrounding area and re-positions shovel in regard to other operations personnel, to meet digging requirements

3.3.8. Keeps floor clean and level and removes spillages

3.3.9. Parks shovel in safe area, on flat, level ground at end of shift

3.4 Conduct housekeeping activities

3.4.1. Cleans equipment to site requirements

3.4.2. Cleans and stores attachments and other ancillary equipment ready for further use

3.4.3. Completes all required records and documentation accurately and promptly

**RANGE OF VARIABLES**

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

**EQUIPMENT**

Capacity of equipment and/or attachments may include:
- Duration of operation
- Efficient and safe operating speed
- Operating limitations
- Type of activities performed
- Weight and/or load limitations

Start-up, park and shutdown procedures may include:
- Correct location of equipment
- Safety mechanisms operational (horn, operating lights)
- Vehicle is left secured

Indicators may include:
- Brake air pressure
- Brake oil temperature
- Computer indicators
- Engine oil pressure
- Fuel filter
- Parking brake
- Retarder
- Service meter
- Steering filters
- Tachometer
- Torque converter oil temperature
- Transmission filter
- Voltmeter
- Water temperature

**Site procedures and regulations may be found in:**
- Induction documentation
- Managers rules
- Operations manual
- Policy and procedures documents
- Training materials
- Verbal or written instructions

**Pre-operational checks are those checks specified by the manufacturer prior to operating the item of equipment and may include but not restricted to:**
- Air filter restriction indicator
- Cab (horn, lights, air conditioner)
- Computer systems
- Display instrumentation and gauges (indicators, gauges, laser levels)
- Engine and stop engine lights (orange and red)
- Fluid levels (windscreen washer tank, hydraulic oil, coolant, grease, water, engine oil, fuel)
- Visual and audio warning devices and lights

**Visual inspection and fault finding may include:**
- Cab condition (no rags in air conditioner vent, dirt around brake and accelerator pedals, seat condition, all gear secured)
- Cab mounts
- Damage to equipment
- Danger tags
- Engine oil to be checked before starting engine
- Fire suppression unit (pins in position in triggers)
- Grease lines
- Light positioning and cleanliness
- No combustible material around exhaust
- Oil leaks (engine, hydraulic hoses, ground); fuel leaks (engine, on ground); water leaks (radiator, hoses)
- Personnel proximity
- Portable fire extinguisher (bracket, gauge, hose, ease of access)
- Radiator top up tank
- Vehicle number
- Windows (clean, emergency exit tag in place)

**Equipment cleaning methods may include:**
- Degreasing
- Forced air
• Steam cleaning
• Vacuum
• Water

SITE INFORMATION

Site conditions may include:
• Broken ground
• Day and night
• Degree of compaction
• Location of water table
• Slope of working surface
• Stable ground (compaction) amount of scale
• Wet and dry
• Working over old underground workings and voids

Site environmental and heritage concerns may include:
• Culturally sensitive sights and artefacts
• Drainage
• Dust
• Emissions
• Flora and fauna
• Hazardous chemicals
• Heritage legislation
• Noise
• Runoff
• Spills
• Water quality

Emergency plan may include:
• Clean up
• Equipment shut down procedures
• Evacuation procedures
• First aid
• Isolation procedures
• Notification of authorities
• Use of personal protective equipment

Loading face characteristics may include:
• Stable
• Unstable

Potential risks and hazards may include:
• Abandoned equipment
• Adjoining pit walls
• Adverse weather conditions (electrical storms, floods, fires)
• Chemicals
• Contaminants
• Equipment
• Fences
• Holes
• Materials
- Over-hanging rocks
- Personnel
- Pot holes
- Unsafe ground
- Unstable faces
- Vehicles

**Safe operating procedures may include:**
- Adhering to all site procedures
- Awareness and access to escape ways
- Emergency procedures
- First aid
- Hazard identification and recognition procedures
- Observation of electrical and mechanical procedures
- Observing right of way in incline and decline
- Observing site speed limits
- Use of barricades
- Use of different types of fire extinguishers
- Use of out of service tags and danger tags
- Using respiratory devices where appropriate
- Wearing of seat belts
- Working safely around other machines and personnel

**MATERIALS**

**Materials may include:**
- Gravel
- Ore
- Overburden
- Oxidised waste
- Rejects
- Road base
- Rubbish
- Sand
- Sulphide rock fill
- Tailings
- Topsoil
- Water

**Contaminant may include:**
- Animal carcasses (sheep, cows, kangaroos)
- Cigarette butts
- Consumables
- Ear plugs
- Metal bucket teeth
- Metal or steel rods
- Old fencing
- Old piping
- Plastic
- Rubbish
- Timber
LEGISLATION

Current relevant legislation codes, regulations and standards may include:
- Australian Standards
- Environmental Agencies regulations
- Environmental Protection Act
- Isolation procedures
- Manufacturers’ specifications and recommendations
- Mine Safety & Health Legislation and regulations
- Occupational Health and Safety legislation
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- Vehicle driving licensing regulations

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CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:
- Core Unit MNMCCCO001A Communicate in the workplace
- Core Unit MNMCCCO1002A Work safely
- Core Unit MNMCCCO003A Plan and organise individual work
- Core Unit MNMCCCO004A Contribute to quality work outcomes
- Core Unit MNMCCCO005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE

- Hydraulic shovel operating principles and practices
- Breakdown procedures
- Emergency procedures
- Environmental and heritage procedures
- Equipment processes, technical capability and limitations
- Equipment safety requirements
- Geological and technical data
- Hauling procedures
- Hazardous goods procedures and consequences of spills
- Isolation procedures
- Mine operational system
- Night and day working procedures
- Occupational health and safety procedures
Open cut procedures
Operational procedures and checks
Road rules
Shutdown procedures
Site procedures
Site safety requirements
Start up procedures
Towing procedures

SKILLS WILL INCLUDE

Safe, smooth, efficient hydraulic shovel operation
Bucket penetration and reach setting
Ancillary equipment operation and cleaning
Apply diagnostic techniques
Decision making
Directing
Driving techniques
Equipment operation and cleaning
Hazard identification
Hazardous goods handling techniques
Interpretation of plans, reports, maps, specifications
Lifting techniques (manual, cranes and loads)
Maintaining records
Monitoring
Organise work tasks
Plan and document reading
Report defects
Safe work practices
Select and fit personal protective equipment
Team work
Trouble shooting
Use communications equipment
Use computer systems
Use relevant hand tools

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors.
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MNMOC1206A
This unit applies in all contexts to the movement of material through shovel/excavator digging and loading operations in the extractive process in the open cut environment.

This unit replaces unit of competency MNMOCC206A

### ELEMENT
### PERFORMANCE CRITERIA

| 6.1 | Plan and prepare for operations | 6.1.1 | Conducts work according to site procedures, OHS, regulations, other relevant legislation and manufacturer's specifications |
| 6.1.2 | Receives, interprets and clarifies shift change over details |
| 6.1.3 | Selects appropriate type of equipment and/or attachments according to job specifications and to maximise efficiency and effectiveness of work activities |
| 6.1.4 | Identifies, manages and reports potential risks and hazards according to work plan |
| 6.1.5 | Uses appropriate personal protective equipment |
| 6.1.6 | Conducts equipment pre-start (visual) checks to ensure equipment is ready for operation |
| 6.1.7 | Manages site environmental and heritage issues |
| 6.1.8 | Positions or moves cable towers, power lines and/or crossovers to location according to work plan, ensuring safety of operator and other personnel |
| 6.1.9 | Communicates with other personnel using approved communication methods |
| 6.1.10 | Adheres to emergency procedures to ensure safety of personnel, plant and equipment |

| 6.2 | Dig and load material | 6.2.1 | Carries out start-up, park and shut-down procedures |
| 6.2.2 | Operates equipment within recommended speed, engine capability and limitations |
| 6.2.3 | Monitors equipment performance utilising appropriate indicators to aid efficient operations |
| 6.2.4 | Manoeuvres equipment to maximise efficiency and ensure safety of other equipment and personnel |
| 6.2.5 | Assesses material and site conditions to determine appropriate operating technique |
| 6.2.6 | Completes work according to agreed work plan and outcomes |
6.2.7 Removes or manages contaminants upon identification

6.2.8 Identifies and assesses loading face characteristics and makes adjustments to loading technique to ensure maximum amount of material is accessed

6.2.9 Minimises spillage and contamination through digging and loading techniques

6.3 Conduct housekeeping activities

6.3.1 Cleans equipment

6.3.2 Cleans and stores attachments and other ancillary equipment

6.3.3 Completes all required records and documentation accurately and promptly

**RANGE OF VARIABLES**

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

**EQUIPMENT**

Capacity of equipment and/or attachments may include:
- Duration of operation
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- Operating limitations
- Type of activities performed
- Weight and/or load limitations

Start-up, park and shutdown procedures may include:
- Correct location of equipment
- Safety mechanisms operational (horn, operating lights)
- Vehicle is left secured

Indicators may include:
- Brake air pressure
- Brake oil temperature
- Computer indicators
- Engine oil pressure
- Fuel filter
- Parking brake
- Retarder
- Service meter
- Speedometer/Odometer
- Steering filters
- Tachometer
- Torque converter oil temperature
- Transmission filter
- Voltmeter
- Water temperature

Site procedures and regulations may be found in:
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- Operations manual
- Policy and procedures documents
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- Engine and stop engine lights (orange and red)
- Fluid levels (windscreen washer tank, hydraulic oil, coolant, grease, water, engine oil, fuel)
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Equipment cleaning methods may include:
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- Forced air
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- Vacuum
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Site conditions may include:
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- Dust
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- Flora and fauna
- Hazardous chemicals
- Heritage legislation
- Noise
- Runoff
- Spills
- Water quality
Emergency plan may include:
- Clean up
- Equipment shut down procedures
- Evacuation procedures
- First aid
- Isolation procedures
- Notification of authorities
- Use of personal protective equipment

Loading face characteristics may include:
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- Unstable

Potential risks and hazards may include:
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- Adjoining pit walls
- Adverse weather conditions (electrical storms, floods, fires)
- Chemicals
- Contaminants
- Equipment
- Fences
- Holes
- Materials
- Over-hanging rocks
- Personnel
- Pot holes
- Unsafe ground
- Unstable faces
- Vehicles

Safe operating procedures may include:
- Adhering to all site procedures
- Awareness and access to escape ways
- Emergency procedures
- First aid
- Hazard identification and recognition procedures
- Observation of electrical and mechanical procedures
- Observing right of way in incline and decline
- Observing site speed limits
- Use of barricades
- Use of different types of fire extinguishers
- Use of out of service tags and danger tags
- Using respiratory devices where appropriate
- Wearing of seat belts
- Working safely around other machines and personnel

MATERIALS

Materials may include:
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- Ore
- Overburden
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• Cigarette butts
• Consumables
• Ear plugs
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• Timber

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• Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.
CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:

- Core Unit MNMCCCOO001A Communicate in the workplace
- Core Unit MNMCCCO1002A Work safely
- Core Unit MNMCCCOO003A Plan and organise individual work
- Core Unit MNMCCCOO004A Contribute to quality work outcomes
- Core Unit MNMCCCOO005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE

- Blasting procedures
- Breakdown procedures
- Drilling pattern marking procedures
- Drilling procedures
- Emergency procedures
- Environmental and heritage procedures
- Equipment processes, technical capability and limitations
- Equipment safety requirements
- Geological and technical data
- Hauling procedures
- Hazardous goods procedures and consequences of spills
- Isolation procedures
- Mine operational system
- Night and day working procedures
- Occupational health and safety procedures
- Open cut procedures
- Operational procedures and checks
- Road rules
- Shutdown procedures
- Site procedures
- Site safety requirements
- Start up procedures
- Towing procedures

SKILLS WILL INCLUDE

- Ancillary equipment operation, maintenance, cleaning
- Apply diagnostic techniques
- Blasting techniques
- Decision making
- Directing
- Drilling techniques
- Driving techniques
- Equipment operation, maintenance (minor), cleaning
- Hazard identification
- Hazardous goods handling techniques
- Interpretation of plans, reports, maps, specifications
- Lifting techniques (manual, cranes and loads)
- Maintain records
- Monitoring
- Organise work tasks
- Plan and document reading
- Report defects
- Safe work practices
- Select and fit personal protective equipment
- Team work
- Trouble shooting
- Use communications equipment
- Use computer systems
- Use relevant hand tools

**RESOURCE IMPLICATIONS**

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

**ASSESSMENT STATEMENT**

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors.

All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.

**COMPETENCY STATEMENT**

Evidence of competency is best obtained by observing relevant activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry operating conditions. If this is not practical, observations in a realistic simulated environment may be supplemented by written and oral assessments.

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<td>7 Using Technology</td>
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UNIT MNMOCC1207A Conduct front end loader operations

This unit applies in all contexts to the movement of material through front end loader operations and tipping operations in the extractive process in open cut environments.

This unit replaces unit of competency MNMOCC207A

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<tr>
<td>7.1 Plan and prepare for operations</td>
<td>7.1.1 Receives, interprets and clarifies shift change over details</td>
</tr>
<tr>
<td></td>
<td>7.1.2 Selects appropriate type of equipment and/or attachments according to job specifications and to maximise efficiency and effectiveness of work activities</td>
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<tr>
<td></td>
<td>7.1.3 Identifies, manages and reports potential risks and hazards according to work plan</td>
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<td></td>
<td>7.1.4 Uses appropriate personal protective equipment</td>
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<tr>
<td></td>
<td>7.1.5 Conducts equipment pre-start (visual) checks to ensure equipment is ready for operation</td>
</tr>
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<td></td>
<td>7.1.6 Manages site environmental and heritage issues</td>
</tr>
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<td>7.1.7 Communicates with other personnel using approved communication methods</td>
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<td>7.1.8 Adheres to emergency procedures to ensure safety of personnel, plant and equipment</td>
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<td></td>
<td>7.1.9 Conducts work according to site procedures, regulations, OHS, other relevant legislation, manufacturer's specifications safely and efficiently</td>
</tr>
<tr>
<td>7.2 Load material</td>
<td>7.2.1 Carries out start-up, park and shut-down procedures</td>
</tr>
<tr>
<td></td>
<td>7.2.2 Operates equipment and attachments within recommended speed, engine capability and limitations</td>
</tr>
<tr>
<td></td>
<td>7.2.3 Monitors equipment performance utilising appropriate indicators to aid efficient operations</td>
</tr>
<tr>
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<td>7.2.4 Maneuvers equipment to maximise efficiency and ensure safety of other equipment and personnel</td>
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<td>7.2.5 Assesses material and site conditions to determine appropriate operating techniques</td>
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<td>7.2.6 Completes work according to agreed work plan and outcomes</td>
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### Range of Variables

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

- Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

### Equipment

**Capacity of equipment and/or attachments may include:**
- Duration of operation
- Efficient and safe operating speed
- Operating limitations
- Type of activities performed
- Weight and/or load limitations

**Start-up, park and shutdown procedures may include:**
- Correct location of equipment
- Safety mechanisms operational (horn, operating lights)
- Vehicle is left secured

**Pre-operational checks are those checks specified by the manufacturer prior to operating the item of equipment and may include but not restricted to:**
- Air filter restriction indicator
- Cab (horn, lights, air conditioner)
- Computer systems
- Display instrumentation and gauges (indicators, gauges, laser levels)
- Engine and stop engine lights (orange and red)
• Fluid levels (windscreen washer tank, hydraulic oil, coolant, grease, water, engine oil, fuel)
• Visual and audio warning devices and lights

**Indicators may include:**
- Brake air pressure
- Brake oil temperature
- Computer indicators
- Engine oil pressure
- Fuel filter
- Parking brake
- Retarder
- Service meter
- Speedometer/Odometer
- Steering filters
- Tachometer
- Torque converter oil temperature
- Transmission filter
- Voltmeter
- Water temperature

**Equipment cleaning methods may include:**
- Degreasing
- Forced air
- Steam cleaning
- Vacuum
- Water

**Potential risks and hazards may include:**
- Abandoned equipment
- Adjoining pit walls
- Adverse weather conditions (electrical storms, floods) fires
- Chemicals
- Contaminants
- Equipment
- Fences
- Holes
- Materials
- Over-hanging rocks
- Personnel
- Pot holes
- Unsafe ground
- Unstable faces
- Vehicles

**SITE INFORMATION**

**Site environmental and heritage concerns may include:**
- Culturally sensitive sights and artefacts
- Drainage
- Dust
- Emissions
- Flora and fauna
• Hazardous chemicals
• Heritage legislation
• Noise
• Runoff
• Spills
• Water quality

**Site conditions may include:**
• Wet and dry
• Day and night
• Broken ground
• Stable ground (compaction) amount of scale
• Slope of working surface
• Degree of compaction
• Location of water table
• Working over old underground workings and voids

**MATERIALS**

**Materials may include:**
• Gravel
• Ore
• Overburden
• Oxidised waste
• Rejects
• Road base
• Rubbish
• Sand
• Sulphide rock fill
• Tailings
• Topsoil
• Water

**Contaminant may include:**
• Animal carcasses (sheep, cows, kangaroos), ear plugs
• Cigarette butts
• Consumables
• Metal bucket teeth
• Metal or steel rods
• Old fencing
• Old piping
• Plastic
• Timber

**LEGISLATION**

**Current relevant legislation codes, regulations and standards may include:**
• Australian Standards
• Environmental Agencies regulations
• Environmental Protection Act
• Isolation procedures
• Manufacturers' specifications and recommendations
• Mine Safety & Health Legislation and regulations
• Occupational Health and Safety legislation
• Site regulations and procedures
• Vehicle driving licensing regulations

CRITICAL ASPECTS FOR CONSIDERATION

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:
• Conducting an activity safely and efficiently
• Achieving quality and productivity targets
• Adhering to and understanding relevant legislative (state and federal) requirements
• Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:
• Core Unit MNMCCCO001A Communicate in the workplace
• Core Unit MNMCCCO1002A Work safely
• Core Unit MNMCCCO003A Plan and organise individual work
• Core Unit MNMCCCO004A Contribute to quality work outcomes
• Core Unit MNMCCCO005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE

• Connecting and using attachments
• Dumping procedures
• Emergency procedures
• Environmental and heritage procedures
• Equipment processes, technical capability and limitations
• Equipment safety requirements
• Geological and technical data
• Hauling procedures
• Hazardous goods procedures and consequences of spills
• Isolation procedures
• Levelling procedures
• Material placement procedures
• Mine operational system
• Night and day working procedures
• Occupational health and safety procedures
• Open cut procedures
• Operational procedures and checks
• Road rules
• Shutdown procedures
• Site procedures
• Site safety requirements
• Start up procedures
• Towing procedures
SKILLS WILL INCLUDE

- Ancillary equipment operation, maintenance, cleaning
- Apply diagnostic techniques
- Decision making
- Directing
- Driving techniques
- Dumping techniques
- Equipment operation, maintenance (minor), cleaning
- Hazard identification
- Hazardous goods handling techniques
- Interpret ground conditions
- Interpretation of plans, reports, maps, specifications
- Maintain records
- Monitoring
- Organise work tasks
- Plan and document reading
- Pushing techniques
- Report defects
- Safe work practices
- Select and fit personal protective equipment
- Team work
- Trouble shooting
- Use communications equipment
- Use computer systems
- Use relevant hand tools

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors. All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.

COMPETENCY STATEMENT

Evidence of competency is best obtained by observing relevant activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry operating conditions. If this is not practical, observations in a realistic simulated environment may be supplemented by written and oral assessments.
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</table>
STREAM  OC Extraction - Open Cut
FIELD  C2 Loading & Hauling
UNIT  MNMOCC1208A Conduct truck operations

MNMOCC1208A
This unit applies in all contexts to the movement of material via truck hauling and tipping operations in the extractive process in the open cut environment.

This unit replaces unit of competency MNMOCC208A.

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<td>8.1.2 Receives, interprets and clarifies shift change over details</td>
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<td>8.1.3 Selects appropriate type of equipment and/or attachments according to job specifications and to maximise efficiency and effectiveness of work activities</td>
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<td>8.1.9 Adheres to emergency procedures to ensure safety of personnel, plant and equipment</td>
</tr>
<tr>
<td>8.2 Present truck for loading</td>
<td>8.2.1 Monitors loading area to maintain a streamlined loading process</td>
</tr>
<tr>
<td></td>
<td>8.2.2 Assesses conditions and presents either on or off side truck to shovels</td>
</tr>
<tr>
<td></td>
<td>8.2.3 Presents truck promptly to loading equipment</td>
</tr>
<tr>
<td></td>
<td>8.2.4 Reacts promptly to signals given</td>
</tr>
<tr>
<td></td>
<td>8.2.5 Adhered to safety requirements when loading</td>
</tr>
<tr>
<td>8.3 Haul material</td>
<td>8.3.1 Operates truck safely within working environment limitations and road conditions</td>
</tr>
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<td>8.3.2 Carries out start-up, park and shut-down procedures</td>
</tr>
<tr>
<td></td>
<td>8.3.3 Operates equipment within recommended speed, engine capability and limitations</td>
</tr>
</tbody>
</table>
### 8.3.4 Monitors equipment performance utilising appropriate indicators to aid efficient operations

### 8.3.5 Removes or manages contaminants upon identification (where applicable)

### 8.3.6 Identifies and manages spillages on haul surfaces

### 8.3.7 Fully lowers tray when equipment is in motion

### 8.3.8 Meets hauling operation scheduled requirements ensuring loading unit can operate continuously avoiding undue delays

### 8.3.9 Maintains efficient hauling cycle by following road rules

### 8.4 Tip material

<table>
<thead>
<tr>
<th>8.4.1</th>
<th>Checks safety clearances and bund location before and on approaching tipping site</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.4.2</td>
<td>Reverses truck to bund, or designated tipping area avoiding previous load (where applicable)</td>
</tr>
<tr>
<td>8.4.3</td>
<td>Tips load</td>
</tr>
<tr>
<td>8.4.4</td>
<td>Fully lowers tray before driving off the tipping area</td>
</tr>
</tbody>
</table>

### 8.5 Conduct housekeeping activities

<table>
<thead>
<tr>
<th>8.5.1</th>
<th>Cleans equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.5.2</td>
<td>Cleans and stores attachments and other ancillary equipment</td>
</tr>
<tr>
<td>8.5.3</td>
<td>Completes all required records and documentation accurately and promptly</td>
</tr>
</tbody>
</table>

### RANGE OF VARIABLES

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

*Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.*

### EQUIPMENT

**Pre-operational checks are those checks specified by the manufacturer prior to operating the item of equipment and may include but not restricted to:**

- Air filter restriction indicator
- Cab (horn, lights, air conditioner)
- Display instrumentation and gauges (indicators, gauges, laser levels), computer systems
- Engine and stop engine lights (orange and red)
- Fluid levels (windscreen washer tank, hydraulic oil, coolant, grease, water, engine oil, fuel)
- Visual and audio warning devices and lights

**Capacity of equipment and/or attachments may include:**

- Duration of operation
- Efficient and safe operating speed
- Operating limitations
- Type of activities performed
- Weight and/or load limitations
Start-up, park and shutdown procedures may include:
- Correct location of equipment,
- Safety mechanisms operational (horn, operating lights),
- Vehicle is left secured

Indicators may include:
- Brake oil temperature
- Engine oil pressure
- Brake air pressure
- Water temperature
- Service meter
- Voltmeter
- Torque converter
- Oil temperature
- Tachometer
- Speedometer/odometer
- Parking brake
- Steering filters
- Transmission filter
- Fuel filter
- Retarder
- Computer indicators

Site conditions may include:
- Wet and dry
- Day and night
- Broken ground
- Stable ground (compaction) amount of scale
- Slope of working surface
- Degree of compaction
- Location of water table
- Working over old underground workings and voids

Presentation for loading may include:
- on side
- off side
- blind side loading
- various site conditions
- various shovel types (hydraulic, rope etc)

Equipment cleaning methods may include:
- Degreasing
- Forced air
- Steam cleaning
- Vacuum
- Water

MATERIAL

Materials may include:
- Gravel
• Ore
• Overburden
• Oxidised waste
• Rejects
• Road base
• Rubbish
• Sand
• Sulphide rock fill
• Tailings
• Topsoil
• Water

Contaminant may include:
• Animal carcasses (sheep, cows, kangaroos)
• Cigarette butts
• Consumables
• Ear plugs
• Metal bucket teeth
• Metal or steel rods
• Old fencing
• Old piping
• Plastic
• Timber

SITE INFORMATION

Potential risks and hazards may include:
• Abandoned equipment
• Adjoining pit walls
• Adverse weather conditions (electrical storms, floods, fires)
• Chemicals
• Contaminants
• Equipment
• Fences
• Holes
• Materials
• Over-hanging rocks
• Personnel
• Pot holes
• Unsafe ground
• Unstable faces
• Vehicles

Site environmental and heritage concerns may include:
• Culturally sensitive sights and artefacts
• Drainage
• Dust
• Emissions
• Flora and fauna
• Hazardous chemicals
• Heritage legislation
• Noise
• Runoff
• Spills
• Water quality

Weather conditions may include:
• Cyclones
• Dry
• Flood
• Heat
• Rain
• Storms (hail, electrical)
• Strong winds

LEGISLATION

Current relevant legislation codes, regulations and standards may include:
• Australian Standards
• Environmental Agencies regulations
• Environmental Protection Act
• Isolation procedures
• Manufacturers' specifications and recommendations
• Mine Safety & Health Legislation and regulations
• Occupational Health and Safety legislation
• Site regulations and procedures
• Vehicle driving licensing regulations

CRITICAL ASPECTS FOR CONSIDERATION

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• Conducting an activity safely and efficiently
• Achieving quality and productivity targets
• Adhering to and understanding relevant legislative (state and federal) requirements
• Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:
• Core Unit MNMCCCO001A Communicate in the workplace
• Core Unit MNMCCCO1002A Work safely
• Core Unit MNMCCCOO003A Plan and organise individual work
• Core Unit MNMCCCO004A Contribute to quality work outcomes
• Core Unit MNMCCCOO005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE

• Emergency procedures
• Environmental and heritage procedures
• Equipment processes, technical capability and limitations
• Equipment safety requirements
• Geological and technical data
• Hauling procedures
• Hazardous goods procedures and consequences of spills
• Isolation procedures
• Loading procedures
• Mine operational system
• Night and day working procedures
• Occupational health and safety procedures
• Open cut procedures
• Operational procedures and checks
• Road rules
• Shutdown procedures
• Site procedures
• Site safety requirements
• Start up procedures

SKILLS WILL INCLUDE

• Ancillary equipment operation, maintenance, cleaning
• Apply diagnostic techniques
• Decision making
• Directing
• Driving techniques
• Presenting truck for loading
• Equipment operation, maintenance (minor), cleaning
• Hazard identification
• Interpret ground conditions
• Interpretation of plans, reports, maps, specifications
• Maintain records
• Monitoring
• Organise work tasks
• Plan and document reading
• Report defects
• Safe work practices
• Select and fit personal protective equipment
• Team work
• Tipping techniques
• Trouble shooting
• Use communications equipment
• Use computer systems
• Use relevant hand tools

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment
availability, equipment/plant types and different contexts.

**ASSESSMENT STATEMENT**

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors.

All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.

**COMPETENCY STATEMENT**

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STREAM  OC  Extraction - Open Cut
FIELD  C2  Loading & Hauling
UNIT  MNMOCC1209A Conduct dozer operations

This unit applies in all contexts to the movement of material through dozer operations in the extractive process in open cut environments.

This unit replaces unit of competency MNMOCC209A

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<td>Conducts work according to site procedures, regulations, OHS, other relevant legislation, manufacturer's specifications safely and efficiently</td>
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<td>9.1.2</td>
<td>Receives, interprets and clarifies shift change over details</td>
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<td>9.1.3</td>
<td>Selects appropriate type of equipment and/or attachments according to job specifications and to maximise efficiency and effectiveness of work activities</td>
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<td>Identifies, manages and reports potential risks and hazards according to work plan</td>
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<td>9.1.5</td>
<td>Uses appropriate personal protective equipment</td>
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<td>9.1.6</td>
<td>Conducts equipment pre-start (visual) checks to ensure equipment is ready for operation</td>
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<td>9.1.7</td>
<td>Manages site environmental and heritage issues</td>
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<td>9.1.8</td>
<td>Communicates with other personnel using approved communication methods</td>
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<td>9.1.9</td>
<td>Adheres to emergency procedures to ensure safety of personnel, plant and equipment</td>
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<td>9.2</td>
<td>Doze material</td>
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<td>Carries out start-up, park and shut-down procedures</td>
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<td>9.2.2</td>
<td>Operates equipment within recommended speed, engine capability and limitations</td>
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<td>9.2.3</td>
<td>Monitors equipment performance utilising appropriate indicators to aid efficient operations</td>
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<td>9.2.4</td>
<td>Maneuvers equipment to maximise efficiency and ensure safety of other equipment and personnel</td>
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<td>9.2.5</td>
<td>Assesses material and site conditions to determine appropriate operating technique</td>
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<td>9.2.6</td>
<td>Completes work according to agreed work plan and outcomes</td>
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<td>9.2.7</td>
<td>Removes or manages contaminants upon identification (where applicable)</td>
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9.2.8 Adheres to emergency procedures to ensure safety of personnel, plant and equipment
9.2.9 Uses appropriate dozing technique according to site conditions, material conditions and work plan
9.2.10 Maximises productivity by using appropriate blade techniques

9.3 Push equipment 9.3.1 Pushes equipment safely utilising authorised equipment and/or connection capabilities
9.3.2 Maintains clear communication between equipment operators to ensure both operators are in readiness for pushing
9.3.3 Adjusts equipment pushing speed and direction according to other vehicles performance, material characteristics and ground conditions

9.4 Carry out ripping activities 9.4.1 Assesses site and material conditions and plan to determine best ripping technique
9.4.2 Adjusts ripping technique according to material and site conditions

9.5 Conduct housekeeping activities
9.5.1 Cleans equipment
9.5.2 Cleans and stores attachments and other ancillary equipment
9.5.3 Completes all required records and documentation accurately and promptly

RANGE OF VARIABLES

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

EQUIPMENT

Equipment cleaning methods may include:

- Degreasing
- Forced air
- Steam cleaning
- Vacuum
- Water

Pre-operational checks are those checks specified by the manufacturer prior to operating the item of equipment and may include but not restricted to:

- Air filter restriction indicator
- Cab (horn, lights, air conditioner)
- Computer systems
- Display instrumentation and gauges (indicators, gauges, laser levels)
- Engine and stop engine lights (orange and red)
- Fluid levels (windscreen washer tank, hydraulic oil, coolant, grease, water, engine oil, fuel)
• Visual and audio warning devices and lights

**Capacity of equipment and/or attachments may include:**
• Duration of operation
• Efficient and safe operating speed
• Operating limitations
• Type of activities performed
• Weight and/or load limitations

**Start-up, park and shutdown procedures may include:**
• Correct location of equipment
• Safety mechanisms operational (horn, operating lights)
• Vehicle is left secured

**Indicators may include:**
• Brake air pressure
• Brake oil temperature
• Computer indicators
• Engine oil pressure
• Fuel filter
• Oil temperature
• Parking brake
• Retarder
• Service meter
• Speedometer/odometer
• Steering filters
• Tachometer
• Torque converter
• Transmission filter
• Voltmeter/ Ammeter
• Water temperature

**Blade techniques may include:**
• Cutting
• Rolling
• Sliding

**MATERIALS**

**Materials may include:**
• Gravel
• Ore
• Overburden
• Oxidised waste
• Rejects
• Road base
• Rubbish
• Sand
• Sulphide rock fill
• Tailings
• Topsoil
• Water
Contaminant may include:
- Animal carcasses (sheep, cows, kangaroos)
- Cigarette butts
- Consumables
- Ear plugs
- Metal bucket teeth
- Metal or steel rods
- Old fencing
- Old piping
- Plastic
- Timber

SITE INFORMATION

Site conditions may include:
- Broken ground
- Day and night
- Degree of compaction
- Location of water table
- Slope of working surface
- Stable ground (compaction) amount of scale
- Wet and dry
- Working over old underground workings and voids

Potential risks and hazards may include:
- Abandoned equipment
- Adjoining pit walls
- Adverse weather conditions (electrical storms, floods, fires)
- Chemicals
- Contaminants
- Equipment
- Fences
- Holes
- Materials
- Over-hanging rocks,
- Personnel
- Pot holes
- Unsafe ground
- Unstable faces
- Vehicles

Site environmental and heritage concerns may include:
- Culturally sensitive sights and artefacts
- Drainage
- Dust
- Emissions
- Flora and fauna
- Hazardous chemicals
- Heritage legislation
- Noise
- Runoff
• Spills
• Water quality

LEGISLATION

Current relevant legislation codes, regulations and standards may include:
• Australian Standards
• Environmental Agencies regulations
• Environmental Protection Act
• Isolation procedures
• Manufacturers’ specifications and recommendations
• Mine Safety & Health Legislation and regulations (duty of care)
• Occupational Health and Safety legislation
• Site regulations and procedures
• Vehicle driving licensing regulations

CRITICAL ASPECTS FOR CONSIDERATION

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:
• Conducting an activity safely and efficiently
• Achieving quality and productivity targets
• Adhering to and understanding relevant legislative (state and federal) requirements
• Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:
• Core Unit MNMCCCOO001A Communicate in the workplace
• Core Unit MNMCCCO01002A Work safely
• Core Unit MNMCCCO003A Plan and organise individual work
• Core Unit MNMCCCO004A Contribute to quality work outcomes
• Core Unit MNMCCCO005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE

• Emergency procedures
• Environmental and heritage procedures
• Equipment processes, technical capability and limitations
• Equipment safety requirements
• Geological and technical data
• Hazardous goods procedures and consequences of spills
• Isolation procedures
• Mine operational system
• Night and day working procedures
• Occupational health and safety procedures
• Open cut procedures
• Operational procedures and checks
• Production improving techniques
• Road rules
• Shutdown procedures
• Site procedures
• Site safety requirements
• Start up procedures

Skills will include:
• Ancillary equipment operation, maintenance, cleaning
• Apply diagnostic techniques
• Boxing out
• Constructing drains/channels
• Decision making
• Directing
• Dozing techniques
• Equipment operation, maintenance (minor), cleaning
• Hazard identification
• Hazardous goods handling techniques
• Interpret ground conditions
• Interpretation of plans, reports, maps, specifications
• Levelling techniques

• Maintain records
• Monitoring
• Organise work tasks
• Plan and document reading
• Push-loading
• Report defects
• Ripping techniques
• Safe work practices
• Select and fit personal protective equipment
• Stockpiling
• Team work
• Timber clearing
• Trouble shooting
• Use communications equipment
• Use computer systems
• Use relevant hand tools

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors. All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.
COMPETENCY STATEMENT

Evidence of competency is best obtained by observing relevant activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry operating conditions. If this is not practical, observations in a realistic simulated environment may be supplemented by written and oral assessments.

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</table>
MNMOC1210A Conduct scraper operations

This unit applies in all contexts to the movement of material via scraper, load and dump operations in the extractive process in the open cut environment.

This unit replaces unit of competency MNMOCC210A

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<td>10.1.5 Uses appropriate personal protective equipment</td>
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<td>10.1.6 Conducts equipment pre-start (visual) checks to ensure equipment is ready for operation</td>
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<td>10.1.7 Manages site environmental and heritage issues</td>
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<tr>
<td></td>
<td>10.1.8 Communicates with other personnel using approved communication methods</td>
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<td></td>
<td>10.1.9 Adheres to emergency procedures to ensure safety of personnel, plant and equipment</td>
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<tr>
<td>10.2 Scrape and load material</td>
<td>10.2.1 Carries out start-up, park and shut-down procedures</td>
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<td>10.2.2 Operates equipment within recommended speed, engine capability and limitations</td>
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<td>10.2.7 Removes or manages contaminants upon identification (where applicable)</td>
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</table>
10.2.8 Bowl is loaded at a steady speed, operating at an efficient cut rate according to scraping technique, material characteristics, site conditions and manufacturer's specifications.

10.2.9 Full load is gained without excessive spillage, whilst maintaining vehicle stability and preventing wheel slippage.

10.2.10 Clean cut is maintained on surface during and after loading according to site procedures, regulations and OHS.

10.3 Dump material

10.3.1 Spreads load evenly at a steady speed or as specified in work plan and site conditions.

10.3.2 Adjusts bowl, apron and ejector to ensure constant flow of material from bowl.

10.4 Load scraper under assistance

10.4.1 Carries out push loading safely using authorised equipment and/or connection capabilities.

10.4.2 Maintains clear communication between equipment operators throughout push - load sequence.

10.4.3 Adjusts pushing speed and direction according to other equipment capabilities, material characteristics and ground conditions.

10.5 Conduct housekeeping activities

10.5.1 Clean equipment.

10.5.2 Cleans and stores attachments and other ancillary equipment.

10.5.3 Completes all required records and documentation accurately and promptly.

**RANGE OF VARIABLES**

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

**EQUIPMENT**

Scrapers may include:

- Augers
- Cushion hitch
- Double enders
- Elevators

Pre-operational checks are those checks specified by the manufacturer prior to operating the item of equipment and may include but not restricted to:

- Visual and audio warning devices and lights
- Engine and stop engine lights (orange and red)
- Fluid levels (windscreen washer tank, hydraulic oil, coolant, grease, water, engine oil, fuel)
• Cab (horn, lights, air conditioner)
• Air filter restriction indicator
• Display instrumentation and gauges (indicators, gauges, laser levels)
• Computer systems

**Capacity of equipment and/or attachments may include:**
• Duration of operation
• Efficient and safe operating speed
• Operating limitations
• Type of activities performed
• Weight and/or load limitations

**Start-up, park and shutdown procedures may include:**
• Correct location of equipment
• Safety mechanisms operational (horn, operating lights)
• Vehicle is left secured

**Indicators may include:**
• Brake air pressure
• Brake oil temperature
• Computer indicators
• Engine oil pressure
• Fuel filter
• Parking brake
• Retarder
• Service meter
• Speedometer/Odometer
• Steering filters
• Tachometer
• Torque converter oil temperature
• Transmission filter
• Voltmeter
• Water temperature

**Equipment cleaning methods may include:**
• Degreasing
• Forced air
• Steam cleaning
• Vacuum
• Water

**SITE INFORMATION**

**Potential risks and hazards may include:**
• Unsafe ground
• Unstable faces
• Fences
• Adjoining pit walls
• Holes
• Pot holes
• Materials
• Over-hanging rocks
- Vehicles
- Abandoned equipment
- Equipment
- Personnel
- Chemicals
- Contaminants
- Adverse weather conditions (electrical storms, floods, fires)

**Site environmental and heritage concerns may include:**
- Dust
- Noise
- Emissions
- Spills
- Hazardous chemicals
- Water quality
- Drainage
- Runoff
- Flora and fauna
- Heritage legislation
- Culturally sensitive sights and artefacts

**Site conditions may include:**
- Broken ground
- Day and night
- Degree of compaction
- Location of water table
- Slope of working surface
- Stable ground (compaction) amount of scale
- Wet and dry
- Working over old underground workings and voids

**MATERIALS**

**Materials may include:**
- Gravel
- Ore
- Overburden
- Oxidised waste
- Rejects
- Road base
- Rubbish
- Sand
- Sulphide rock fill
- Tailings
- Topsoil
- Water

**Contaminant may include:**
- Animal carcasses (sheep, cows, kangaroos)
- Ear plugs, consumables, cigarette butts
- Metal bucket teeth
- Metal or steel rods
• Old fencing
• Old piping
• Plastic
• Timber

LEGISLATION

Current relevant legislation codes, regulations and standards may include:
• Australian Standards
• Environmental Agencies regulations
• Environmental Protection Act
• Isolation procedures
• Manufacturers’ specifications and recommendations
• Mine Safety & Health Legislation and regulations (duty of care)
• Occupational Health and Safety legislation
• Site regulations and procedures
• Vehicle driving licensing regulations

CRITICAL ASPECTS FOR CONSIDERATION

Assessment must confirm competency in a particular activity relevant to mine site operations.
These include:
• Conducting an activity safely and efficiently
• Achieving quality and productivity targets
• Adhering to and understanding relevant legislative (state and federal) requirements
• Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:
• Core Unit MNMCCCO001A Communicate in the workplace
• Core Unit MNMCCCO1002A Work safely
• Core Unit MNMCCCO003A Plan and organise individual work
• Core Unit MNMCCCO004A Contribute to quality work outcomes
• Core Unit MNMCCCO005A Apply local risk control processes

KNOWLEDGE MAY INCLUDE

• Emergency procedures
• Environmental and heritage procedures
• Equipment processes, technical capability and limitations
• Equipment safety requirements
• Geological and technical data
• Hazardous goods procedures and consequences of spills
• Isolation procedures
• Loading techniques
• Mine operational system
• Night and day working procedures
• Occupational health and safety procedures
• Open cut procedures
• Operational procedures and checks
• Road rules
• Shutdown procedures
• Site procedures
• Site safety requirements
• Start up procedures

SKILLS MAY INCLUDE

• Ancillary equipment operation, maintenance, cleaning
• Apply diagnostic techniques
• Decision making
• Directing
• Dumping techniques
• Equipment operation, maintenance (minor), cleaning
• Hazard identification
• Hazardous goods handling techniques
• Interpret ground conditions
• Interpretation of plans, reports, maps, specifications
• Loading techniques
• Maintain records
• Monitoring
• Organise work tasks
• Plan and document reading
• Pulling techniques
• Pushing techniques
• Report defects
• Safe work practices
• Select and fit personal protective equipment
• Spreading techniques
• Team work
• Trouble shooting
• Use communications equipment
• Use computer systems
• Use relevant hand tools

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors. All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.
COMPETENCY STATEMENT

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</table>
**UNIT**  MNMOCC1211A Conduct loading and hauling support equipment operations

This unit applies in all contexts to the preparation, loading and hauling of material support equipment in the extractive process in the open cut environment.

This unit replaces unit of competency MNMOCC211A

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<td>11.2 Conduct support equipment operations</td>
<td>11.2.1 Carries out start-up, park and shut-down procedures</td>
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11.2.7 Removes or manages contaminants upon identification (where applicable)
11.2.8 Adheres to emergency procedures to ensure safety of personnel, plant and equipment

11.3 Conduct housekeeping activities

11.3.1 Cleans equipment
11.3.2 Cleans and stores attachments and other ancillary equipment
11.3.3 Completes all required records and documentation accurately and promptly

RANGE OF VARIABLES

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

EQUIPMENT

Loading and hauling support equipment may include:
- Backhoe
- Integrated tool carriers
- Self loading crane attachment
- Skid steer
- Tractor
- Water trucks
- Articulated vehicles

Safe operating procedures may include:
- Adhering to all site procedures
- Awareness and access to escape ways
- Emergency procedures
- First aid
- Hazard identification and recognition procedures
- Observation of electrical and mechanical procedures
- Observing right of way in incline and decline
- Observing site speed limits
- Use of barricades
- Use of different types of fire extinguishers
- Use of out of service tags and danger tags
- Using respiratory devices where appropriate
- Wearing of seat belts
- Working safely around other machines and personnel

Pre-operational checks are those checks specified by the manufacturer prior to operating the item of equipment and may include but not restricted to:
- Air filter restriction indicator
- Cab (horn, lights, air conditioner)
- Computer systems
- Display instrumentation and gauges (indicators, gauges, laser levels)
• Engine and stop engine lights (orange and red)
• Fluid levels (windscreen washer tank, hydraulic oil, coolant, grease, water, engine oil, fuel)
• Visual and audio warning devices and lights

Capacity of equipment and/or attachments may include:
• Duration of operation
• Efficient and safe operating speed
• Operating limitations
• Type of activities performed
• Weight and/or load limitations

Start-up, park and shutdown procedures may include:
• Correct location of equipment
• Safety mechanisms operational (horn, operating lights)
• Vehicle is left secured

Indicators may include:
• Brake air pressure
• Brake oil temperature
• Computer indicators
• Engine oil pressure
• Fuel filter
• Parking brake
• Retarder
• Service meter
• Speedometer/Odometer
• Steering filters
• Tachometer
• Torque converter oil temperature
• Transmission filter
• Voltmeter
• Water temperature

Equipment cleaning methods may include:
• Degreasing
• Forced air
• Steam cleaning
• Vacuum
• Water

SITE INFORMATION

Site environmental and heritage concerns may include:
• Culturally sensitive sights and artefacts
• Drainage
• Dust
• Emissions
• Flora and fauna
• Hazardous chemicals
• Heritage legislation
• Noise
• Runoff
Potential risks and hazards may include:
- Abandoned equipment
- Adjoining pit walls
- Adverse weather conditions (electrical storms, floods, fires)
- Chemicals
- Contaminants
- Equipment
- Fences
- Holes
- Materials
- Over-hanging rocks
- Personnel
- Pot holes
- Unsafe ground
- Unstable faces
- Vehicles

Site conditions may include:
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- Wet and dry
- Working over old underground workings and voids

MATERIALS

Materials may include:
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- Overburden
- Oxidised waste
- Rejects
- Road base
- Rubbish
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- Tailings
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Contaminant may include:
- Animal carcasses (sheep, cows, kangaroos)
- Cigarette butts
- Consumables
- Ear plugs
- Metal bucket teeth
• Metal or steel rods
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• Site regulations and procedures
• Vehicle driving licensing regulations

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CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:
• Core Unit MNMCCCO001A Communicate in the workplace
• Core Unit MNMCCCO1002A Work safely
• Core Unit MNMCCCO003A Plan and organise individual work
• Core Unit MNMCCCO004A Contribute to quality work outcomes
• Core Unit MNMCCCO005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE

• Emergency procedures
• Environmental and heritage procedures
• Equipment processes, technical capability and limitations
• Equipment safety requirements
• Geological and technical data
• Hazardous goods procedures and consequences of spills
• Isolation procedures
• Loading and hauling operations
• Mine operational system
• Night and day working procedures
• Occupational health and safety procedures
• Open cut procedures
• Operational procedures and checks
• Road rules
• Shutdown procedures
• Site procedures
• Site safety requirements
• Start up procedures
• Support operations

SKILLS WILL INCLUDE

• Ancillary equipment operation, maintenance, cleaning
• Apply diagnostic techniques
• Decision making
• Directing
• Driving techniques
• Equipment operation, maintenance (minor), cleaning
• Hazard identification
• Hazardous goods handling techniques
• Interpret ground conditions
• Interpretation of plans, reports, maps, specifications
• Lifting techniques
• Maintain records
• Monitoring
• Organise work tasks
• Plan and document reading
• Report defects
• Safe work practices
• Select and fit personal protective equipment
• Team work
• Trouble shooting
• Use communications equipment
• Use computer systems
• Use relevant hand tools

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT

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STREAM  OC Extraction - Open Cut
FIELD  C2  Loading & Hauling

UNIT  MNMOCC1212A Conduct conveyor operations

MNMOCC1212A
This unit applies in all contexts to the preparation and movement of material via conveyor in the extractive process in the open cut environment.

This unit replaces unit of competency MNMOCC212A

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<td>12.1.6 Manages site environmental and heritage issues</td>
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<td>12.1.7 Communicates with other personnel using approved communication methods</td>
</tr>
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<td></td>
<td>12.1.8 Adheres to emergency procedures to ensure safety of personnel, plant and equipment</td>
</tr>
<tr>
<td>12.2 Convey material</td>
<td>12.2.1 Activates audio and visual safety indicators before conveying operation commences</td>
</tr>
<tr>
<td></td>
<td>12.2.2 Carries out start-up and shut-down procedures</td>
</tr>
<tr>
<td></td>
<td>12.2.3 Monitors equipment performance utilising appropriate indicators to aid efficient operations</td>
</tr>
<tr>
<td></td>
<td>12.2.4 Assesses weight and dimension of materials to ensure conveyor is not overloaded and is in compliance with specifications</td>
</tr>
<tr>
<td></td>
<td>12.2.5 Completes work according to agreed work plan and outcomes</td>
</tr>
<tr>
<td></td>
<td>12.2.6 Removes or manages contaminants upon identification (where applicable)</td>
</tr>
<tr>
<td></td>
<td>12.2.7 Continuously operates plant avoiding jam and stoppages</td>
</tr>
<tr>
<td></td>
<td>12.2.8 Monitors conveying process to ensure that spillage is minimised</td>
</tr>
</tbody>
</table>
12.3 Conduct housekeeping activities

12.3.1 Maintains conveyor

12.3.2 Completes all required records and documentation accurately and promptly

RANGE OF VARIABLES

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

EQUIPMENT

Equipment cleaning methods may include:
• Degreasing
• Forced air
• Steam cleaning
• Vacuum
• Water

Pre-operational checks are those checks specified by the manufacturer prior to operating the item of equipment and may include but not restricted to:
• Computer systems
• Conveyor belt and componentry
• Display instrumentation and gauges (indicators, gauges, laser levels)
• Grease
• Visual and audio warning devices and lights

Capacity of conveyor may include:
• Duration of operation
• Efficient and safe operating speed
• Operating limitations
• Type of activities performed
• Weight and/or load limitations

Indicators may include:
• Computer indicators
• Conveyor indicators

SITE INFORMATION

Potential risks and hazards may include:
• Abandoned equipment
• Adjoining pit walls
• Adverse weather conditions (electrical storms, floods, fires)
• Chemicals
• Contaminants
• Equipment
• Fences
• Holes
- Materials
- Over-hanging rocks
- Personnel
- Pot holes
- Unsafe ground
- Unstable faces
- Vehicles

Site environmental and heritage concerns may include:
- Culturally sensitive sights and artefacts
- Drainage
- Dust
- Emissions
- Flora and fauna
- Hazardous chemicals
- Heritage legislation
- Noise
- Runoff
- Spills
- Water quality

Site conditions may include:
- Broken ground
- Day and night
- Degree of compaction
- Location of water table
- Slope of working surface
- Stable ground (compaction) amount of scale
- Wet and dry
- Working over old underground workings and voids

MATERIALS

Contaminant may include:
- Animal carcasses (sheep, cows, kangaroos)
- Cigarette butts
- Consumables
- Ear plugs
- Metal bucket teeth
- Metal or steel rods
- Old fencing
- Old piping
- Plastic
- Timber

Materials may include:
- Gravel
- Ore
- Overburden
- Oxidised waste
- Rejects
- Road base
- Rubbish
- Sand
- Sulphide rock fill
- Tailings
- Topsoil
- Water

**LEGISLATION**

Current relevant legislation codes, regulations and standards may include:
- Australian Standards
- Environmental Agencies regulations
- Environmental Protection Act
- Isolation procedures
- Manufacturers’ specifications and recommendations
- Mine Safety & Health Legislation and regulations (duty of care)
- Occupational Health and Safety legislation
- Site regulations and procedures

**EVIDENCE GUIDE**

**CRITICAL ASPECTS FOR CONSIDERATION**

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:
- Conducting an activity safely and efficiently
- Achieving quality and productivity targets
- Adhering to and understanding relevant legislative (state and federal) requirements
- Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

**CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS**

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:
- Core Unit MNMCCCOO001A Communicate in the workplace
- Core Unit MNMCCCO1002A Work safely
- Core Unit MNMCCCO003A Plan and organise individual work
- Core Unit MNMCCCOO004A Contribute to quality work outcomes
- Core Unit MNMCCCOO005A Apply local risk control processes

**KNOWLEDGE MAY INCLUDE**

- Conveying operations
- Emergency procedures
- Environmental and heritage procedures
- Equipment processes, technical capability and limitations
- Equipment safety requirements
- Geological and technical data
- Hazardous goods procedures and consequences of spills
- Isolation procedures
• Mine operational system
• Night and day working procedures
• Occupational health and safety procedures
• Open cut procedures
• Operational procedures and checks
• Shutdown procedures
• Site procedures
• Site safety requirements
• Start up procedures

SKILLS MAY INCLUDE

• Ancillary equipment operation, maintenance, cleaning
• Apply diagnostic techniques
• Decision making
• Directing
• Equipment operation, maintenance (minor), cleaning
• Greasing techniques
• Hazard identification
• Hazardous goods handling techniques
• Interpret ground conditions
• Interpretation of plans, reports, maps, specifications
• Maintain records
• Monitoring techniques
• Organise work tasks
• Plan and document reading
• Report defects
• Safe work practices
• Select and fit personal protective equipment
• Team work
• Trouble shooting
• Use communications equipment
• Use computer systems
• Use relevant hand tools

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors.
All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.

COMPETENCY STATEMENT

Evidence of competency is best obtained by observing relevant activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry conditions.
operating conditions. If this is not practical, observations in a realistic simulated environment may be supplemented by written and oral assessments.

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<tr>
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<td>2 Communicating Ideas and Information</td>
<td>2</td>
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<tr>
<td>3 Planning and Organising Activities</td>
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<td>5 Using Mathematical Ideas and Techniques</td>
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<tr>
<td>6 Solving Problems</td>
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<tr>
<td>7 Using Technology</td>
<td>2</td>
</tr>
</tbody>
</table>
MNMOC213A Conduct slurry pump operations

This unit applies in all contexts to the preparation and movement of material via slurry pump in the extractive process in the open cut environment.

This unit must be read in conjunction with the Core Units.

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<thead>
<tr>
<th>ELEMENT</th>
<th>PERFORMANCE CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.1 Plan and prepare for operations</td>
<td>13.1.1 Conducts work according to site procedures, regulations, OHS, other relevant legislation, manufacturer's specifications safely and efficiently</td>
</tr>
<tr>
<td></td>
<td>13.1.2 Receives, interprets and clarifies shift change over details</td>
</tr>
<tr>
<td></td>
<td>13.1.3 Identifies, manages and reports potential risks and hazards according to work plan</td>
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<td></td>
<td>13.1.4 Uses appropriate personal protective equipment</td>
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<tr>
<td></td>
<td>13.1.5 Conducts equipment pre-start (visual) checks to ensure equipment is ready for operation</td>
</tr>
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<td></td>
<td>13.1.6 Manages site environmental and heritage issues</td>
</tr>
<tr>
<td></td>
<td>13.1.7 Communicates with other personnel using approved communication methods</td>
</tr>
<tr>
<td></td>
<td>13.1.8 Adheres to emergency procedures to ensure safety of personnel, plant and equipment</td>
</tr>
<tr>
<td>13.2 Pump material</td>
<td>13.2.1 Carries out start-up and shut-down procedures</td>
</tr>
<tr>
<td></td>
<td>13.2.2 Operates equipment within recommended speed, engine capability and limitations</td>
</tr>
<tr>
<td></td>
<td>13.2.3 Constantly monitors pressure and flow of material</td>
</tr>
<tr>
<td></td>
<td>13.2.4 Monitors equipment performance utilising appropriate indicators to aid efficient operations</td>
</tr>
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<td></td>
<td>13.2.5 Completes work according to agreed work plan and outcomes</td>
</tr>
<tr>
<td>13.3 Carry out operator maintenance</td>
<td>13.3.1 Conducts visual inspection and fault finding</td>
</tr>
<tr>
<td></td>
<td>13.3.2 Conducts routine operational servicing to ensure peak performance of equipment</td>
</tr>
<tr>
<td></td>
<td>13.3.3 Conducts maintenance of piping according to maintenance plan and at location of weakness or breakage</td>
</tr>
<tr>
<td>13.4 Conduct housekeeping</td>
<td>13.4.1 Cleans equipment</td>
</tr>
</tbody>
</table>
ELEMENT

PERFORMANCE CRITERIA

activities

13.4.2 Completes all required records and documentation accurately and promptly

RANGE OF VARIABLES

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

EQUIPMENT

Pre-operational checks are those checks specified by the manufacturer prior to operating the item of equipment and may include but not restricted to:
• Computer systems
• Display instrumentation and gauges (indicators, gauges, laser levels)
• Pump and components
• Visual and audio warning devices and lights

Capacity of pump (indicators) may include:
• Duration of operation
• Efficient and safe operating speed
• Operating limitations
• Pressure limitations
• Type of activities performed

Indicators may include:
• Computer indicators

Visual inspection and fault finding may include:
• Danger tags
• Fire suppression unit (pins in position in triggers)
• Light positioning and cleanliness
• Oil leaks
• Personnel proximity
• Portable fire extinguisher (bracket, gauge, hose, ease of access)
• Stress in pipelines

Equipment cleaning methods may include:
• Degreasing
• Forced air
• Steam cleaning
• Vacuum
• Water

SITE INFORMATION

Potential risks and hazards may include:
• Abandoned equipment
• Adjoining pit walls
• Adverse weather conditions (electrical storms, floods, fires)
• Chemicals
• Contaminants
• Equipment
• Fences
• Holes
• Materials
• Over-hanging rocks
• Personnel
• Pot holes
• Unsafe ground
• Unstable faces
• Vehicles

Site environmental and heritage concerns may include:
• Culturally sensitive sights and artefacts
• Drainage
• Dust
• Emissions
• Flora and fauna
• Hazardous chemicals
• Heritage legislation
• Noise
• Runoff
• Spills
• Water quality

Site conditions may include:
• Broken ground
• Day and night
• Degree of compaction
• Location of water table
• Slope of working surface
• Stable ground (compaction) amount of scale
• Wet and dry
• Working over old underground workings and voids

MATERIALS

Materials may include in suspension:
• Gravel
• Ore
• Overburden
• Rejects
• Sand
• Water

Current relevant legislation codes, regulations and standards may include:
• Australian Standards
• Environmental Agencies regulations
• Environmental Protection Act
• Isolation procedures
CRITICAL ASPECTS FOR CONSIDERATION

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:

- Conducting an activity safely and efficiently
- Achieving quality and productivity targets
- Adhering to and understanding relevant legislative (state and federal) requirements
- Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:

- Core Unit MNMCCOO001A Communicate in the workplace
- Core Unit MNMCCOO002A Work safely
- Core Unit MNMCCOO003A Plan and organise individual work
- Core Unit MNMCCOO004A Contribute to quality work outcomes
- Core Unit MNMCCOO005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE

- Emergency procedures
- Environmental and heritage procedures
- Equipment processes, technical capability and limitations
- Equipment safety requirements
- Geological and technical data
- Hazardous goods procedures and consequences of spills
- Isolation procedures
- Material under pressure
- Mine operational system
- Night and day working procedures
- Occupational health and safety procedures
- Open cut procedures
- Operational procedures and checks
- Pumping operations
- Shutdown procedures
- Site procedures
- Site safety requirements
- Start up procedures

SKILLS WILL INCLUDE

- Ancillary equipment operation, maintenance, cleaning
• Apply diagnostic techniques
• Decision making
• Directing
• Equipment operation, maintenance (minor), cleaning
• Hazard identification
• Hazardous goods handling techniques
• Interpret ground conditions
• Interpretation of plans, reports, maps, specifications
• Maintain records
• Monitoring techniques
• Organise work tasks
• Plan and document reading
• Report defects
• Safe work practices
• Select and fit personal protective equipment
• Team work
• Trouble shooting
• Use communications equipment
• Use computer systems
• Use relevant hand tools

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors.

All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.

COMPETENCY STATEMENT

Evidence of competency is best obtained by observing relevant activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry operating conditions. If this is not practical, observations in a realistic simulated environment may be supplemented by written and oral assessments.

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<td>2</td>
</tr>
</tbody>
</table>
**STREAM**  OC  Extraction - Open Cut  
**FIELD**  C3  Dredging  
**UNIT**  MNMOCC314A Prepare for dredging operations

MNMOCC314A
This unit applies in all contexts to preparation for dredging activities in the extractive processes in the open cut environment.

This unit must be read in conjunction with the Core Units.

<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>PERFORMANCE CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1</td>
<td>Prepare for dredging</td>
</tr>
<tr>
<td>14.1.1</td>
<td>Conducts work according to site procedures, regulations, OHS, other relevant legislation, manufacturer's specifications safely and efficiently</td>
</tr>
<tr>
<td>14.1.2</td>
<td>Receives, interprets and clarifies shift change over details</td>
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<tr>
<td>14.1.3</td>
<td>Identifies, manages and reports potential risks and hazards according to work plan</td>
</tr>
<tr>
<td>14.1.4</td>
<td>Uses appropriate personal protective equipment</td>
</tr>
<tr>
<td>14.1.5</td>
<td>Performs dredge pre-operational checks</td>
</tr>
<tr>
<td>14.1.6</td>
<td>Conducts ladder checks to detect possible faults and oil leaks</td>
</tr>
<tr>
<td>14.1.7</td>
<td>Checks and assesses position of side line cables to ensure full movement of dredge</td>
</tr>
<tr>
<td>14.1.8</td>
<td>Manages site environmental and heritage issues</td>
</tr>
<tr>
<td>14.1.9</td>
<td>Communicates with other personnel using approved communication methods</td>
</tr>
<tr>
<td>14.1.10</td>
<td>Adheres to emergency procedures to ensure safety of personnel, plant and equipment</td>
</tr>
<tr>
<td>14.2</td>
<td>Conduct sounding</td>
</tr>
<tr>
<td>14.2.1</td>
<td>Conducts sounding by assessing the height and depth of ladder swing and density indicators</td>
</tr>
<tr>
<td>14.2.2</td>
<td>Determine measurement of pond depth and dimension of pond floor</td>
</tr>
<tr>
<td>14.2.3</td>
<td>Assess sounding details to determine the location of dredge pond clean-up requirements</td>
</tr>
<tr>
<td>14.2.4</td>
<td>Assesses sounding details and dredging plant requirements to determine appropriate time to conduct retreat</td>
</tr>
</tbody>
</table>
RANGE OF VARIABLES

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

EQUIPMENT

Pre-operational checks are those checks specified by the manufacturer prior to operating the item of equipment and may include but not restricted to:

- Barrel
- Communication equipment
- Computer systems
- Display instrumentation and gauges (indicators, gauges, laser levels)
- Emergency instrumentation
- Gantry
- Gear
- Hydraulic lines
- Lighting
- Lubrication oil
- Physical structure of ladder
- Position of dredge according to mine plan specifications
- Power
- Pumps
- Relevant clearances
- Spud carriages
- Suction valves (service pump, cooling water pump, gland pump, cutter flush pump, monitor pump)
- Visual and audio warning devices and lights

Ladder checks may include:

- Barrel and line shaft bearings
- Coupling bolts
- Cutlass bearing and ladder flush flow
- Cutter teeth
- Gear box
- Swing of sheave

Sounding operations may include:

- Dimension of sand bank
- Location of sand banks
- Water depth

Indicators may include:

- Computer panel

Clean-up requirements may include:

- Minimise number of sand banks
- Required depth of pond

SITE INFORMATION
Potential risks and hazards may include:
- Abandoned equipment
- Adverse weather conditions (electrical storms, floods) fires
- Chemicals
- Contaminants
- Loose anchors
- Oil leaks
- Overturning dredge
- Personnel
- Pond water level under minimum level required
- Sand banks
- Unstable faces
- Vehicles
- Water craft

Site environmental and heritage concerns may include:
- Culturally sensitive sights and artefacts
- Drainage
- Emissions
- Flora and fauna
- Hazardous chemicals
- Heritage legislation
- Noise
- Runoff
- Spills
- Water quality

LEGISLATION

Current relevant legislation codes, regulations and standards may include:
- Australian Standards
- Environmental Agencies regulations
- Environmental Protection Act
- Isolation procedures
- Manufacturers' specifications and recommendations
- Mine Safety & Health Legislation and Regulations
- Occupational Health and Safety legislation
- Site regulations and procedures

CRITICAL ASPECTS FOR CONSIDERATION

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:
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CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:

- Core Unit MNMCCCOO001A Communicate in the workplace
- Core Unit MNMCCCOO002A Work safely
- Core Unit MNMCCCOO003A Plan and organise individual work
- Core Unit MNMCCCOO004A Contribute to quality work outcomes
- Core Unit MNMCCCOO005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE

- Anchoring procedures
- Dredge preparation procedures
- Dredging clean-up procedures
- Emergency procedures
- Environmental and heritage procedures
- Equipment processes, technical capability and limitations
- Equipment safety requirements
- Hazardous goods procedures and consequences of spills
- Indicator readings
- Isolation procedures
- Ladder swing capability and limitations
- Mine operational system
- Monitoring procedures
- Night and day working procedures
- Occupational health and safety procedures
- Open cut procedures - dredging
- Operational procedures and checks
- Shutdown procedures
- Site procedures
- Site safety requirements
- Sounding procedures
- Start up procedures

SKILLS WILL INCLUDE

- Apply diagnostic techniques
- Checking techniques
- Decision making
- Directing
- Hazard identification
- Hazardous goods handling techniques
- Interpret ground conditions
- Interpretation of plans, reports, maps, specifications
- Maintain records
- Monitoring
- Organise work tasks
- Plan and document reading
- Report defects
- Safe work practices
- Select and fit personal protective equipment
• Sounding techniques
• Team work
• Trouble shooting
• Use communications equipment
• Use computer systems

**RESOURCE IMPLICATIONS**

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

**ASSESSMENT STATEMENT**

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**STREAM**  OC  Extraction - Open Cut  
**FIELD**  C3  Dredging  
**UNIT**  MNMOCC315A Conduct dredging operations

MNMOCC315A  
This unit applies in all contexts to conduct of dredging activities, retreating, centre-line changes, anchor moves, side-line, cable replacement, plant moves in the extractive processes in the open cut environment.

This unit must be read in conjunction with the Core Units

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<tr>
<td><strong>15.1</strong> Dredge materials</td>
<td></td>
</tr>
</tbody>
</table>
| 15.1.1 Operates dredge on centre line, at full swing limit and maximum ladder depth, where possible, at given parameters  
| 15.1.2 Adjusts radius of swing to maintain production tonnage and feed according to operational plant requirements  
| 15.1.3 Positions dredge behind working face  
| 15.1.4 Monitors and adjusts dredge indicators to achieve required feed  
| 15.1.5 Cuts out hard indurated materials using appropriate cutting techniques  
| 15.1.6 Reports conditions affecting throughput and changes dredging operations to maintain throughput  
| 15.1.7 Adjusts position of dredge using adequate float line to maintain full swing requirements  
| 15.1.8 Completes all required records and documentation accurately and promptly |
| **15.2** Perform retreat |  
| 15.2.1 Gains appropriate clearances from operational plant operators before retreat commences  
| 15.2.2 Minimises reduction of tonnage during the retreat by monitoring site conditions  
| 15.2.3 Adjusts spuds and carriage way according to retreat requirements  
| 15.2.4 Maintains dredge on centre line at full swing limit, where possible whilst conducting a retreat according to given parameters and mine plan  
| 15.2.5 Completes all required records and documentation accurately and promptly |
| **15.3** Conduct centre-line changes |  
| 15.3.1 Gains relevant clearances and visual checks before centre-line change  
<p>| 15.3.2 Confirms cable line and float line is clear before conducting centre-line change |</p>
<table>
<thead>
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<th>PERFORMANCE CRITERIA</th>
</tr>
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</table>
| 15.3.3 15.3.4 15.3.5 15.3.6 15.3.7   | Confirms sufficient amount of cable is available before centre-line change  
| Aligns dredge with centre line indicators located on working face  
| Maintains full swing and adjusts spuds and carriage way while dredge is being aligned with centre line markers  
| Conducts centre line moves efficiently avoiding obstacles  
| Completes all required records and documentation accurately and promptly |
| 15.4 Conduct anchor moves            | Halts ladder swinging and maintains full feed according to site conditions  
| Pays out ample length of cable ensuring cable is slack against bank of pond  
| Maintains communication with dredge operator and personnel moving anchors ensuring co-ordination of anchor moving activities  
| Moves anchors alternately, at a safe speed and to the required positions  
| Secures anchors safely preventing movement away from side batter  
| Moves anchor according to plan and to minimises downtime  
| Completes all required records and documentation accurately and promptly |
| 15.5 Conduct side-line cable replacement | Lowers auxiliary spud, raises ladder and flushes plant out before side-line cable is replaced  
| Removes existing cable from drum  
| Securely tracks new cable on drum  
| Moves cable to batter using appropriate transportation method  
| Tensions cable onto drum ensuring appropriate degree of tension is achieved  
| Connects cable to anchor  
| Completes all required records and documentation accurately and promptly |
| 15.6 Conduct plant moves             | Conduct plant movement according to mine plan  
| Maintains adequate float line on pond avoiding breakages or damage to float line  
| Completes all required records and documentation accurately and promptly |
The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

**EQUIPMENT**

**Spud may include:**
- Auxiliary spud (rear of pontoon)
- Caterpillar hoses
- Main spud
- Spud
- Spud carriage winch
- Working spud carriage

**Adjustment to spud and carriage way may include:**
- Spud lifts and drops (varying degrees)
- Carriage moves forward and backwards

**Centre-line indicators may include:**
- Stakes
- Vehicle
- Witches hats

**Ladder depth may include:**
- Fully lowered (floor of pond)
- Fully raised and secured
- Varying levels

**Mine plan may include:**
- Authorised locations
- Basic geological and survey information
- Clean-up requirements
- Loading face
- Location of hazards
- Location of site and relevant facilities
- Required tonnage
- Work specifications for day and night shifts

**Production tonnage may include:**
- Amount of tonnage required according to mine plan
- Tonnes per hour

**Operational plant (processor) requirements may include:**
- Amount of tonnes
- Feed requirements
- Flush out requirements

**Indicators may include:**
- Computer panel
SITE INFORMATION

Hard indurated materials may include:
- Limestone
- Rock

Conditions effecting throughput may include:
- Hard indurated material
- Heavy slimes
- Limited swing operations

Clearances may be written or verbal and may include:
- Approvals for vertical advancement
- Instructions to commence and halt work activities
- Nature and scope of task
- Potential hazards

Obstacles may include:
- Bank
- Cable line
- Concentrator
- Float line
- Personnel
- Tailing
- Transport boat

Anchors may include:
- Loaders
- Tractors
- Un-used equipment

Side-line cable may be:
- Broken
- Worn

Transportation method may include:
- Motorised dingy

LEGISLATION

Current relevant legislation codes, regulations and standards may include:
- Australian Standards
- Environmental Agencies regulations
- Environmental Protection Act
- Isolation procedures
- Manufacturers' specifications and recommendations
- Mine Safety & Health Legislation and Regulations
- Occupational Health and Safety legislation
- Site regulations and procedures
CRITICAL ASPECTS FOR CONSIDERATION

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:

- Conducting an activity safely and efficiently
- Achieving quality and productivity targets
- Adhering to and understanding relevant legislative (state and federal) requirements
- Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:

- Core Unit MNMCCCOO001A Communicate in the workplace
- Core Unit MNMCCCOO002A Work safely
- Core Unit MNMCCCOO003A Plan and organise individual work
- Core Unit MNMCCCOO004A Contribute to quality work outcomes
- Core Unit MNMCCCOO005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE

- Anchor move procedures
- Anchoring procedures
- Centre-line procedures
- Dredge manoeuvring procedures
- Dredge preparation procedures
- Emergency procedures
- Environmental and heritage procedures
- Equipment processes, technical capability and limitations
- Equipment safety requirements
- Hazardous goods procedures and consequences of spills
- Indicator readings
- Isolation procedures
- Ladder swing capability and limitations
- Mine operational system
- Monitoring procedures
- Night and day working procedures
- Occupational health and safety procedures
- Open cut procedures - dredging
- Operational procedures and checks
- Plant move procedures
- Retreat procedures
- Shutdown procedures
- Side-line cable replacement procedures
- Site procedures
- Site safety requirements
- Start up procedures
- Working face dangers
SKILLS WILL INCLUDE

- Anchoring techniques
- Apply diagnostic techniques
- Decision making
- Directing
- Dredging techniques
- Hazard identification
- Hazardous goods handling techniques
- Interpret ground conditions
- Interpretation of plans, reports, maps, specifications
- Maintain records
- Monitoring
- Monitoring techniques
- Organise work tasks
- Plan and document reading
- Report defects
- Safe work practices
- Select and fit personal protective equipment
- Team work
- Tension cables
- Trouble shooting
- Use communications equipment
- Use computer systems
- Use protective equipment

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors.
All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.

COMPETENCY STATEMENT

Evidence of competency is best obtained by observing relevant activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry operating conditions. If this is not practical, observations in a realistic simulated environment may be supplemented by written and oral assessments.
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<td>6 Solving Problems</td>
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<tr>
<td>7 Using Technology</td>
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</tbody>
</table>
**STREAM**  OC Extraction - Open Cut  
**FIELD**  C3 Dredging  
**UNIT**  MNMOCC316A Shut down dredge for maintenance

This unit applies in all contexts to the shut down of the dredge for maintenance in the extractive processes in the open cut environment.

This unit must be read in conjunction with the Core Units.

<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>PERFORMANCE CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.1</td>
<td>Take dredge off feed</td>
</tr>
<tr>
<td>16.1.1</td>
<td>Conducts work according to site procedures, regulations, OHS, other relevant legislation, manufacturer's specifications safely and efficiently</td>
</tr>
<tr>
<td>16.1.2</td>
<td>Raises and safely secures ladder above water</td>
</tr>
<tr>
<td>16.1.3</td>
<td>Conducts retreat away from working face to safe location to avoid brunt of possible face fall</td>
</tr>
<tr>
<td>16.1.4</td>
<td>Flushes out plant</td>
</tr>
<tr>
<td>16.1.5</td>
<td>Adjusts spuds and cable lengths to ensure dredge remains level on pond</td>
</tr>
<tr>
<td>16.1.6</td>
<td>Completes all required records and documentation accurately and promptly</td>
</tr>
<tr>
<td>16.2</td>
<td>Move float line</td>
</tr>
<tr>
<td>16.2.1</td>
<td>Disconnects main power supply to dredge and plant</td>
</tr>
<tr>
<td>16.2.2</td>
<td>Moves float line to new position ensuring enough slack is available for move</td>
</tr>
<tr>
<td>16.2.3</td>
<td>Completes all required records and documentation accurately and promptly</td>
</tr>
<tr>
<td>16.3</td>
<td>Conduct a ladder check</td>
</tr>
<tr>
<td>16.3.1</td>
<td>Confirms ladder is above water and safely secured</td>
</tr>
<tr>
<td>16.3.2</td>
<td>Checks ladder at scheduled time to minimise downtime and according to operational plant requirements</td>
</tr>
<tr>
<td>16.3.3</td>
<td>Visually inspects swing sheave action to assess ladder swing performance</td>
</tr>
<tr>
<td>16.3.4</td>
<td>Visually inspects cutter components and flush flow</td>
</tr>
<tr>
<td>16.3.5</td>
<td>Maintains communication with dredge operator and maintenance personnel using approved communication methods</td>
</tr>
<tr>
<td>16.3.6</td>
<td>Completes all required records and documentation accurately and promptly</td>
</tr>
<tr>
<td>16.4</td>
<td>Conduct operational maintenance</td>
</tr>
<tr>
<td>16.4.1</td>
<td>Visual inspects dredge and finds faults</td>
</tr>
<tr>
<td>ELEMENT</td>
<td>PERFORMANCE CRITERIA</td>
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<tr>
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</tr>
<tr>
<td>16.4.2</td>
<td>Conducts routine operational servicing to ensure peak performance of dredge</td>
</tr>
</tbody>
</table>

**RANGE OF VARIABLES**

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

**EQUIPMENT**

**Spud may include:**
- Auxiliary spud (rear of pontoon)
- Caterpillar hoses
- Main spud
- Spud
- Spud carriage winch
- Working spud carriage

**Ladder check may include:**
- Automatic lubricator
- Barrel
- Cutlass bearing
- Cutter
- Deck hose used in emergency
- Dredge main pump
- Gland water
- Hydraulic oil lines
- Ladder angle indicating pendulum transmitter
- Ladder angle striker and sensor limit switches
- Ladder winch sheaves
- Mining hose
- Port and starboard carrier sheaves
- Port and starboard swing sheaves
- Purge jets
- Shaft and gearbox
- Stand-by valve
- Vacuum relief valve

**Cutter components may include:**
- Cutter teeth
- Cutlass bearing

**SITE INFORMATION:**

**Face fall may include:**
- Collapse on top of dredge
- On side or at rear

**Adjustments to spuds may include:**
• Spud lifts and drops (varying degrees)

**Operational plant (processor) requirements may include:**
• Amount of tonnes
• Feed requirements
• Flush out requirements

**Visual inspection may include:**
• Anchors
• Cables
• Centre line indicators
• Decks
• Float line
• Ladder
• Spuds and carriages

**LEGISLATION**

**Current relevant legislation codes, regulations and standards may include:**
• Australian Standards
• Environmental Agencies regulations
• Environmental Protection Act
• Isolation procedures
• Manufacturers’ specifications and recommendations
• Mine Safety & Health Legislation and Regulations (duty of care)
• Occupational Health and Safety legislation
• Site regulations and procedures

**EVIDENCE GUIDE**

**CRITICAL ASPECTS FOR CONSIDERATION**

**Assessment must confirm competency in a particular activity relevant to mine site operations.** These include:
• Conducting an activity safely and efficiently
• Achieving quality and productivity targets
• Adhering to and understanding relevant legislative (state and federal) requirements
• Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

**CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS**

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:
• Core Unit MNMCCCOO001A Communicate in the workplace
• Core Unit MNMCCCOO002A Work safely
• Core Unit MNMCCCOO003A Plan and organise individual work
• Core Unit MNMCCCOO004A Contribute to quality work outcomes
• Core Unit MNMCCCOO005A Apply local risk control processes
KNOWLEDGE WILL INCLUDE

- Anchoring procedures
- Centre-line procedures
- Dredge manoeuvring procedures
- Dredge preparation procedures
- Emergency procedures
- Environmental and heritage procedures
- Equipment processes, technical capability and limitations
- Equipment safety requirements
- Float line movement procedures
- Hazardous goods procedures and consequences of spills
- Indicator readings
- Isolation procedures
- Ladder maintenance procedures
- Ladder swing capability and limitations
- Mine operational system
- Monitoring procedures
- Night and day working procedures
- Occupational health and safety procedures
- Open cut procedures - dredging
- Operational procedures and checks
- Retreat procedures
- Shutdown procedures
- Site procedures
- Site safety requirements
- Start up procedures
- Working face dangers

SKILLS WILL INCLUDE

- Adjust float line
- Apply diagnostic techniques
- Decision making
- Directing
- Dredging techniques
- Hazard identification
- Hazardous goods handling techniques
- Interpret ground conditions
- Interpretation of plans, reports, maps, specifications
- Ladder checks
- Maintain records
- Monitoring
- Monitoring techniques
- Organise work tasks
- Plan and document reading
- Report defects
- Safe work practices
- Select and fit personal protective equipment
- Team work
- Trouble shooting
- Use communications equipment
• Use computer systems
• Use protective equipment

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors. All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.

COMPETENCY STATEMENT

Evidence of competency is best obtained by observing relevant activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry operating conditions. If this is not practical, observations in a realistic simulated environment may be supplemented by written and oral assessments.

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</tbody>
</table>
MNMOC417A
This unit applies in all contexts to the planning, preparation, construction and maintenance of open cut roads in the extractive process in the open cut environment.

This unit must be read in conjunction with the Core Units.

<table>
<thead>
<tr>
<th>ELEMENT</th>
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</tr>
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<tbody>
<tr>
<td>17.1 Prepare for road construction and maintenance</td>
<td>17.1.1 Conducts work according to site procedures, regulations, OHS, other relevant legislation, manufacturer's specifications safely and efficiently</td>
</tr>
<tr>
<td></td>
<td>17.1.2 Receives, interprets and clarifies shift change over details</td>
</tr>
<tr>
<td></td>
<td>17.1.3 Locates ancillary services and marks services out before work commences</td>
</tr>
<tr>
<td></td>
<td>17.1.4 Selects appropriate type of equipment and/or attachments according to job specifications and to maximise efficiency and effectiveness of work activities</td>
</tr>
<tr>
<td></td>
<td>17.1.5 Identifies, manages and reports potential risks and hazards according to work plan</td>
</tr>
<tr>
<td></td>
<td>17.1.6 Uses appropriate personal protective equipment</td>
</tr>
<tr>
<td></td>
<td>17.1.7 Conducts equipment pre-start (visual) checks to ensure equipment is ready for operation</td>
</tr>
<tr>
<td></td>
<td>17.1.8 Manages site environmental and heritage issues</td>
</tr>
<tr>
<td></td>
<td>17.1.9 Communicates with other personnel using approved communication methods</td>
</tr>
<tr>
<td></td>
<td>17.1.10 Adheres to emergency procedures to ensure safety of personnel, plant and equipment</td>
</tr>
<tr>
<td></td>
<td>17.1.11 Communicates with other personnel using approved communication methods</td>
</tr>
<tr>
<td></td>
<td>17.1.12 Adheres to emergency procedures to ensure safety of personnel, plant and equipment</td>
</tr>
<tr>
<td>17.2 Construct roads</td>
<td>17.2.1 Conforms to specified road construction characteristics, and location</td>
</tr>
<tr>
<td></td>
<td>17.2.2 Pegs road detailing direction, shape and work specification</td>
</tr>
<tr>
<td></td>
<td>17.2.3 Prepares road sub-base so that road material can be applied to meet planned road characteristics</td>
</tr>
<tr>
<td></td>
<td>17.2.4 Constructs road surface to achieve required</td>
</tr>
</tbody>
</table>
ELEMENT | PERFORMANCE CRITERIA
--- | ---
 | Traction, manoeuvrability and stable haul surface for all vehicles and personnel
17.2.5 | Erects and constructs road signage and safety barriers to avoid damage to equipment, avoid injury to personnel, protect surrounding vegetated areas and delineated roadways
17.2.6 | Constructs drains and water crossing points to aid the removal of run-off and avoid accumulation of excessive water and minimise road and environmental damage
17.3 | Maintain roads
17.3.1 | Assesses road conditions regularly for compliance with road design characteristics
17.3.2 | Maintains condition of roads in relation to volume of traffic and future requirements
17.3.3 | Identifies, repairs and/or reports damage to road to appropriate authorities
17.3.4 | Maintains effective drainage for the removal of excess water and ensure safe operating surface
17.3.5 | Areas subject to excessive wear and tear are monitored, redesigned and remade to meet design characteristics
17.3.6 | Maintains the road surface utilising approved dust suppressants (where applicable)

**RANGE OF VARIABLES**

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

**SITE INFORMATION**

Site environmental and heritage concerns may include:
- Culturally sensitive sights and artefacts
- Drainage
- Dust
- Emissions
- Flora and fauna
- Hazardous chemicals
- Heritage legislation
- Noise
- Runoff
- Spills
- Water quality

Potential risks and hazards may include:
- Abandoned equipment
- Adjoining pit walls
• Adverse weather conditions (electrical storms, floods, fires)
• Chemicals
• Contaminants
• Equipment
• Fences
• Holes
• Materials
• Over-hanging rocks
• Personnel
• Pot holes
• Unsafe ground
• Unstable faces
• Vehicles

**Erosion may include:**
• Fracturing
• Soil slippage
• Water
• Wind

**Drain mechanisms may include:**
• Berm
• Flora coverage (grasses, small bushes)
• Netting
• Ponding
• Straw baling
• T pieces

**ROAD**

**Road characteristics may include:**
• Berms
• Bunds
• Camber
• Curves
• Drainage
• Drainage
• Gradient
• Surface material
• Width

**Road signage may include:**
• Danger warnings
• Safety warnings
• Speed

**Traffic characteristics may include:**
• Frequency
• Loadings
• Types of vehicles

**LEGISLATION**
Current relevant legislation codes, regulations and standards may include:
- Australian Standards
- Environmental Agencies regulations
- Environmental Protection Act
- Isolation procedures
- Manufacturers' specifications and recommendations
- Mine Safety & Health Legislation and Regulations
- Occupational Health and Safety legislation
- Site regulations and procedures

EVIDENCE GUIDE

CRITICAL ASPECTS FOR CONSIDERATION

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:
- Conducting an activity safely and efficiently
- Achieving quality and productivity targets
- Adhering to and understanding relevant legislative (state and federal) requirements
- Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:
- Core Unit MNMCCC0001A Communicate in the workplace
- Core Unit MNMCCC0002A Work safely
- Core Unit MNMCCC0003A Plan and organise individual work
- Core Unit MNMCCC0004A Contribute to quality work outcomes
- Core Unit MNMCCC0005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE

- Construction pegging
- Drainage construction methods
- Dumping procedures
- Emergency procedures
- Environmental and heritage procedures
- Equipment processes, technical capability and limitations
- Equipment safety requirements
- Geological and technical data
- Hauling procedures
- Hazardous goods procedures and consequences of spills
- Isolation procedures
- Material placement procedures
- Mine operational system
- Night and day working procedures
- Occupational health and safety procedures
- Open cut procedures
• Operational procedures and checks
• Road construction methods
• Road rules
• Shutdown procedures
• Site procedures
• Site safety requirements
• Start up procedures
• Towing procedures

SKILLS WILL INCLUDE

• Ancillary equipment operation, maintenance, cleaning
• Apply diagnostic techniques
• Decision making
• Directing
• Driving techniques
• Dumping techniques
• Equipment operation, maintenance (minor), cleaning
• Hazard identification
• Hazardous goods handling techniques
• Interpret ground conditions
• Interpretation of plans, reports, maps, specifications
• Maintain records
• Monitoring
• Organise work tasks
• Plan and document reading
• Pushing techniques
• Report defects
• Safe work practices
• Select and fit personal protective equipment
• Team work
• Trouble shooting
• Use communications equipment
• Use computer systems
• Use protective equipment
• Use relevant hand tools

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors. All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.
COMPETENCY STATEMENT

Evidence of competency is best obtained by observing relevant activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry operating conditions. If this is not practical, observations in a realistic simulated environment may be supplemented by written and oral assessments.

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</table>
**STREAM**  OC Extraction - Open Cut  
**FIELD**  C4 Ancillary Mine Support  
**UNIT**  MNMOCC1418A Transport plant, equipment and personnel

This unit applies in all contexts to the organisation and transport of mine plant, equipment and personnel in the extractive process in the open cut environment.

This unit replaces unit of competency MNMOCC418A

<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>PERFORMANCE CRITERIA</th>
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</table>
| 18.1 Organise for the transportation of plant, equipment and personnel | 18.1.1 Conducts work according to site procedures, regulations, OHS, other relevant legislation, manufacturer's specifications safely and efficiently  
18.1.2 Receives, interprets and clarifies shift change over details  
18.1.3 Organises equipment and authorised personnel requirements on time according to transportation schedule  
18.1.4 Minimises operational delays by following transportation schedule  
18.1.5 Identifies, manages and reports potential risks and hazards according to work plan  
18.1.6 Conducts equipment pre-start (visual) checks to ensure equipment is ready for operation  
18.1.7 Manages site environmental and heritage issues  
18.1.8 Communicates with other personnel using approved communication methods  
18.1.9 Adheres to emergency procedures to ensure safety of personnel, plant and equipment |
| 18.2 Load, transport and unload plant and equipment | 18.2.1 Carries out start-up, park and shut-down procedures  
18.2.2 Determines load according to manufacturer's specifications to prevent damage to carrying equipment and/or loss of load  
18.2.3 Loads and secures plant and equipment  
18.2.4 Transports plant and equipment to specified destination on time, in original condition  
18.2.5 Unloads plant and equipment avoiding damage to equipment or injury to personnel  
18.2.6 Transports plant and equipment within the operating capacity of the transport vehicle |
| 18.3 Transport personnel | 18.3.1 Follows transport capacity limitations and ensures |
personnel use protective restraints

18.3.2 Follows approved transport routes and speed limits

18.3.3 Transports personnel ensuring the safety of personnel, the vehicle, other vehicles, equipment, and the surrounding environment

18.3.4 Transports personnel according to plan within the operating capacity of the vehicle

18.3.5 Transports personnel at authorised times according to mine schedule

18.4 Conduct housekeeping activities

18.4.1 Cleans equipment

18.4.2 Cleans and stores attachments and other ancillary equipment

18.4.3 Completes all required records and documentation accurately and promptly

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

EQUIPMENT

Pre-operational checks are those checks specified by the manufacturer prior to operating the item of equipment and may include but not restricted to:

- Air filter restriction indicator
- Cab (horn, lights, air conditioner)
- Computer systems
- Display instrumentation and gauges (indicators, gauges, laser levels)
- Engine and stop engine lights (orange and red)
- Fluid levels (windscreen washer tank, hydraulic oil, coolant, grease, water, engine oil, fuel)
- Visual and audio warning devices and lights

Capacity of equipment and/or attachments may include:

- Duration of operation
- Efficient and safe operating speed
- Operating limitations
- Type of activities performed
- Weight and/or load limitations

Start-up, park and shutdown procedures may include:

- Correct location of equipment
- Safety mechanisms operational (horn, operating lights)
- Vehicle is left secured

Plant and equipment may include:

- Ancillary equipment (generators, pumps, lights, compressors, cleaning equipment, power tools, hand tools)
- Cutting implements
- Drill rig and associated drilling components (rods, bits, augers, down hole hammer, down hole tools of all types) support vehicles
- Earth moving equipment
- Equipment components
- Flags
- Float
- Laser profile
- Lifting and handling equipment (winch, crane, block and tackles)
- Pegs
- Pipes
- Pump system and components
- Rope measuring tape
- Signs
- Tapes
- Vehicles approved for dangerous goods
- Water/Water trucks
- Witches hats

SITE INFORMATION

Site environmental and heritage concerns may include:
- Culturally sensitive sights and artefacts
- Drainage
- Dust
- Emissions
- Flora and fauna
- Hazardous chemicals
- Heritage legislation
- Noise
- Route taken
- Runoff
- Spills
- Water quality

Load calculations may include:
- Height
- Weight
- Width

Capacity of equipment and/or attachments may include:
- Duration of operation
- Efficient and safe operating speed
- Operating limitations
- Type of activities performed
- Weight and/or load limitations

Personnel may include:
- Supervisors
- Drivers
- Drillers
- Blasters
• Trades persons
• Maintenance staff
• Service personnel
• Contractors
• Inspectors
• Visitors
• Licensed operators
• Holders of appropriate tickets
• Personnel authorised by mine management

**Personnel restraint requirements may include:**
• Seat belts

**Transport routes may include:**
• Haul roads
• Major and minor site access roads
• Major and minor site roads
• Pit access roads
• Public and private roads
• Service roads

**Current relevant legislation codes, regulations and standards may include:**
• Australian Standards
• Environmental Agencies regulations
• Environmental Protection Act
• Isolation procedures
• Manufacturers’ specifications and recommendations
• Mine Safety & Health Legislation and Regulations
• Occupational Health and Safety legislation
• Site regulations and procedures

**EVIDENCE GUIDE**

**CRITICAL ASPECTS FOR CONSIDERATION**

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:
• Conducting an activity safely and efficiently
• Achieving quality and productivity targets
• Adhering to and understanding relevant legislative (state and federal) requirements
• Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

**CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS**

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:
• Core Unit MNMCCCOO001A Communicate in the workplace
• Core Unit MNMCCCO1002A Work safely
• Core Unit MNMCCCO003A Plan and organise individual work
• Core Unit MNMCCCO004A Contribute to quality work outcomes
• Core Unit MNMCCOO005A Apply local risk control processes

**KNOWLEDGE WILL INCLUDE**

- Emergency procedures
- Environmental and heritage procedures
- Equipment processes, technical capability and limitations
- Equipment safety requirements
- Geological and technical data
- Hauling procedures
- Hazardous goods procedures and consequences of spills
- Isolation procedures
- Mine operational system
- Night and day working procedures
- Occupational health and safety procedures
- Open cut procedures
- Operational procedures and checks
- Personnel transport procedures
- Road rules
- Shutdown procedures
- Site procedures
- Site safety requirements
- Start up procedures
- Towing procedures

**SKILLS WILL INCLUDE**

- Ancillary equipment operation, maintenance, cleaning
- Apply diagnostic techniques
- Decision making
- Directing
- Driving techniques
- Equipment operation, maintenance (minor), cleaning
- Hazard identification
- Hazardous goods handling techniques
- Interpret ground conditions
- Interpretation of plans, reports, maps, specifications
- Maintain records
- Monitoring
- Organise work tasks
- Plan and document reading
- Pushing techniques
- Report defects
- Safe work practices
- Select and fit personal protective equipment
- Team work
- Trouble shooting
- Use communications equipment
- Use computer systems
- Use protective equipment
- Use relevant hand tools
RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors.
All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.

COMPETENCY STATEMENT

Evidence of competency is best obtained by observing relevant activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry operating conditions. If this is not practical, observations in a realistic simulated environment may be supplemented by written and oral assessments.

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</table>
UNIT MNOCC419A Suppress dust in open cut environment

MNOCC419A
This unit applies in all contexts to the suppression of dust in the extractive process in open cut environments.

This unit must be read in conjunction with the Core Units.

ELEMENT | PERFORMANCE CRITERIA
---|---
19.1 Apply dust suppressant | 19.1.1 Conducts work according to site procedures, regulations, OHS, other relevant legislation, manufacturer's specifications safely and efficiently
19.1.2 Receives, interprets and clarifies shift change over details
19.1.3 Selects appropriate dust suppressant method according to site conditions
19.1.4 Distributes dust suppressant in appropriate pattern (where applicable) according to road type
19.1.5 Adjust dust suppressant activities according to schedule and weather conditions
19.1.6 Manages site environmental and heritage issues
19.1.7 Communicates with other personnel using approved communication methods
19.1.8 Adheres to emergency procedures to ensure safety of personnel, plant and equipment
19.2 Minimise dust creation | 19.2.1 Selects and applies appropriate dust suppression method
19.2.2 Reduces dust creation by instigating rehabilitation measures to stabilise dumps and tailings sites (where applicable)

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

Dust suppression methods may include:
- Chemical
- Equipment operating techniques
- Vegetation
Approved dust suppressant distribution methods may include:
- Sprinklers
- Water truck sprays (staggered, continuous)

SITE INFORMATION
Weather conditions may include:
- Cyclones
- Dry
- Floods
- Heat
- Rain
- Storms (hail, electrical)
- Strong winds

Site environmental and heritage concerns may include:
- Culturally sensitive sights and artefacts
- Drainage
- Dust
- Emissions
- Flora and fauna
- Hazardous chemicals
- Heritage legislation
- Noise
- Runoff
- Spills
- Water quality

Rehabilitation plan may include:
- Company environmental guidelines and processes
- Dimension of site
- Fertiliser
- Flora and/or seeding requirements
- Personnel requirements
- Re-contouring plans
- Survey information
- Types of reticulation systems
- Types of vehicles

LEGISLATION
Current relevant legislation codes, regulations and standards may include:
- Australian Standards
- Environmental Agencies regulations
- Environmental Protection Act
- Isolation procedures
- Manufacturers’ specifications and recommendations
- Mine Safety & Health Legislation and Regulations
- Occupational Health and Safety legislation
- Site regulations and procedures
CRITICAL ASPECTS FOR CONSIDERATION

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:
- Conducting an activity safely and efficiently
- Achieving quality and productivity targets
- Adhering to and understanding relevant legislative (state and federal) requirements
- Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:
- Core Unit MNMCCCO001A Communicate in the workplace
- Core Unit MNMCCCO002A Work safely
- Core Unit MNMCCCO003A Plan and organise individual work
- Core Unit MNMCCCO004A Contribute to quality work outcomes
- Core Unit MNMCCCO005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE

- Emergency procedures
- Environmental aspects
- Equipment processes, technical capability and limitations
- Equipment safety requirements
- Geological and technical data (rock formation)
- Maintenance procedures
- Mine operation system
- Occupational health and safety procedures
- Plan terminology
- Site procedures (operational and maintenance)
- Site safety requirements
- Sprinkler operation
- Water truck operation

SKILLS WILL INCLUDE

- Decision making
- Directing and signalling
- Equipment cleaning
- Equipment minor maintenance
- Equipment operation
- Follow instructions
- Hazard identification
- Interpretation of plans, reports, maps, specifications
- Maintain records
- Mechanical applications
- Plan and document reading
• Safe work practices
• Tools and equipment operation and minor maintenance
• Trouble shooting
• Use of communications equipment (including 2-way radio)
• Wear protective equipment

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors.
All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.

COMPETENCY STATEMENT

Evidence of competency is best obtained by observing relevant activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry operating conditions. If this is not practical, observations in a realistic simulated environment may be supplemented by written and oral assessments.

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STREAM  OC  Extraction - Open Cut
FIELD  C4  Ancillary Mine Support

UNIT  MNMOCC420A Position and setup mobile lighting

MNMOCC420A
This unit applies in all contexts to the organisation and positioning of lighting in the extractive process in the open cut environment.

This unit must be read in conjunction with the Core Units.

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<tr>
<th>ELEMENT</th>
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<td>20.1 Prepare for mobile lighting</td>
<td>20.1.1 Conducts work according to site procedures, regulations, OHS, other relevant legislation, manufacturer's specifications safely and efficiently</td>
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<td></td>
<td>20.1.2 Receives, interprets and clarifies shift change over details</td>
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<td>20.1.3 Selects appropriate type of equipment and/or attachments according to job specifications and to maximise efficiency and effectiveness of work activities</td>
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<td>20.1.4 Identifies, manages and reports potential risks and hazards according to work plan</td>
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<td>20.1.5 Uses appropriate personal protective equipment</td>
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<td></td>
<td>20.1.6 Conducts equipment pre-start (visual) checks to ensure equipment is ready for operation</td>
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<td></td>
<td>20.1.7 Manages site environmental and heritage issues</td>
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<td>20.1.8 Communicates with other personnel using approved communication methods</td>
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<td></td>
<td>20.1.9 Adheres to emergency procedures to ensure safety of personnel, plant and equipment</td>
</tr>
<tr>
<td>20.2 Position and activate lighting</td>
<td>20.2.1 Isolates area using physical barricades and signage</td>
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<tr>
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<td>20.2.2 Positions lighting to suit work activities and site conditions</td>
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<td></td>
<td>20.2.3 Enhances visibility of site according to the position of the lighting</td>
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<td>20.2.4 Activates lights according to schedule and to enhance visibility</td>
</tr>
</tbody>
</table>
RANGE OF VARIABLES

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

EQUIPMENT

Pre-operational checks are those checks specified by the manufacturer prior to operating the item of equipment and may include but not restricted to:

- Air filter restriction indicator
- Cab (horn, lights, air conditioner)
- Computer systems
- Display instrumentation and gauges (indicators, gauges, laser levels)
- Engine and stop engine lights (orange and red)
- Fluid levels (windscreen washer tank, hydraulic oil, coolant, grease, water, engine oil, fuel)
- Visual and audio warning devices and lights

Physical barricades may include:

- Flagged fencing
- Windrow (bund)
- Wire fence

Signage may include:

- Safety
- Type of site
- Access requirements
- Speed

SITE INFORMATION

Potential risks and hazards may include:

- Abandoned equipment
- Adjoining pit walls
- Adverse weather conditions (electrical storms, floods, fires) water, traffic
- Chemicals
- Contaminants
- Equipment
- Fences
- Holes
- Materials
- Over-hanging rocks
- Personnel
- Pot holes
- Unsafe ground
- Unstable faces
- Vehicles
Site environmental and heritage concerns may include:
- Culturally sensitive sights and artefacts
- Drainage
- Dust
- Emissions
- Flora and fauna
- Hazardous chemicals
- Heritage legislation
- Noise
- Runoff
- Spills
- Water quality

Site conditions may include:
- Broken ground
- Day and night
- Degree of compaction
- Location of water table
- Slope of working surface
- Stable ground (compaction) amount of scale
- Wet and dry
- Working over old underground workings and voids

LEGISLATION

Current relevant legislation codes, regulations and standards may include:
- Australian Standards
- Environmental Agencies regulations
- Environmental Protection Act
- Isolation procedures
- Manufacturers' specifications and recommendations
- Mine Safety & Health Legislation and Regulations
- Occupational Health and Safety legislation
- Site regulations and procedures

CRITICAL ASPECTS FOR CONSIDERATION

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:
- Conducting an activity safely and efficiently
- Achieving quality and productivity targets
- Adhering to and understanding relevant legislative (state and federal) requirements
- Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:
• Core Unit MNMCCCOO001A Communicate in the workplace
• Core Unit MNMCCCOO002A Work safely
• Core Unit MNMCCCOO003A Plan and organise individual work
• Core Unit MNMCCCOO004A Contribute to quality work outcomes
• Core Unit MNMCCCOO005A Apply local risk control processes

**KNOWLEDGE WILL INCLUDE**

• Construction procedures
• Emergency procedures
• Environmental and heritage procedures
• Equipment processes, technical capability and limitations
• Equipment safety requirements
• Hauling procedures
• Hazardous goods procedures and consequences of spills
• Isolation procedures
• Lighting safety issues
• Mine operational system
• Night and day working procedures
• Occupational health and safety procedures
• Open cut procedures
• Operational procedures and checks
• Road rules
• Shutdown procedures
• Site procedures
• Site safety requirements
• Start up procedures
• Towing procedures
• Water and electricity hazards

**SKILLS WILL INCLUDE**

• Ancillary equipment operation, maintenance, cleaning
• Apply diagnostic techniques
• Decision making
• Directing
• Driving techniques
• Equipment operation, maintenance (minor), cleaning
• Hazard identification
• Hazardous goods handling techniques
• Interpret ground conditions
• Interpretation of plans, reports, maps, specifications
• Lifting techniques
• Maintain records
• Monitoring
• Organise work tasks
• Plan and document reading
• Report defects
• Safe work practices
• Select and fit personal protective equipment
• Team work
• Trouble shooting
• Use communications equipment
• Use protective equipment
• Use relevant hand tools

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors.
All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.

COMPETENCY STATEMENT

Evidence of competency is best obtained by observing relevant activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry operating conditions. If this is not practical, observations in a realistic simulated environment may be supplemented by written and oral assessments.

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STREAM  OC Extraction - Open Cut
FIELD  C4 Ancillary Mine Support
UNIT  MNMOCC1421A Operate from elevated work platform

MNMOCC1421A
This unit applies in all contexts to the preparation, positioning and operation of elevated work platforms in the extractive process in the open cut environment.

This unit replaces unit of competency MNMOCC421A

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<td>21.1 Plan and prepare for operations</td>
<td>21.1.1 Conducts work according to site procedures, regulations, OHS, other relevant legislation, manufacturer's specifications safely and efficiently</td>
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<td></td>
<td>21.1.2 Receives, interprets and clarifies shift change over details</td>
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<td>21.1.3 Selects appropriate type of equipment and/or attachments according to job specifications and to maximise efficiency and effectiveness of work activities</td>
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<td>21.1.4 Identifies, manages and reports potential risks and hazards according to work plan</td>
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<td>21.1.5 Uses appropriate personal protective equipment</td>
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<td>21.1.6 Conducts equipment pre-start (visual) checks to ensure equipment is ready for operation</td>
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<td>21.1.7 Manages site environmental and heritage issues</td>
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<td>21.1.9 Adheres to emergency procedures to ensure safety of personnel, plant and equipment</td>
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<tr>
<td>21.2 Position and set up platform</td>
<td>21.2.1 Stabilises work platform and selects attachments</td>
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<td>21.2.2 Carries out start-up, park and shut-down procedures</td>
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<td></td>
<td>21.2.3 Operates equipment within recommended speed, engine capability and limitations</td>
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<tr>
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<td>21.2.4 Manoeuvres equipment to maximise efficiency and ensure safety of other equipment and personnel</td>
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<tr>
<td>21.3 Conduct work activities from elevated platform</td>
<td>21.3.1 Uses approved safety devices ensuring safety of personnel and surrounding site</td>
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<td></td>
<td>21.3.2 Monitors equipment performance using appropriate indicators</td>
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<td>21.3.3 Completes work according to agreed work plan</td>
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<tr>
<td>21.4 Conduct housekeeping activities</td>
<td>21.4.1 Cleans equipment</td>
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<td></td>
<td>21.4.2 Cleans and stores attachments and other ancillary</td>
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</tbody>
</table>
21.4.3 Completes all required records and documentation accurately and promptly

RANGE OF VARIABLES

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

EQUIPMENT

Work platforms may include:

- Cherry pickers
- Scissor lift
- Manned cage
- Crane box

Pre-operational checks are those checks specified by the manufacturer prior to operating the item of equipment and may include but not restricted to:

- Air filter restriction indicator
- Cab (horn, lights, air conditioner)
- Computer systems
- Display instrumentation and gauges (indicators, gauges, laser levels)
- Engine and stop engine lights (orange and red)
- Fluid levels (windscreen washer tank, hydraulic oil, coolant, grease, water, engine oil, fuel)
- Visual and audio warning devices and lights

Capacity of equipment and/or attachments may include:

- Duration of operation
- Efficient and safe operating speed
- Operating limitations
- Type of activities performed
- Weight and/or load limitations

Start-up, park and shutdown procedures may include:

- Correct location of equipment
- Safety mechanisms operational (horn, operating lights)
- Vehicle is left secured

Indicators may include:

- Brake air pressure
- Brake oil temperature
- Computer indicators
- Engine oil pressure
- Fuel filter
- Parking brake
- Retarder
- Service meter
- Speedometer/Odometer
- Steering filters
• Tachometer
• Torque converter oil temperature
• Transmission filter
• Voltmeter
• Water temperature

**Equipment cleaning methods may include:**
• Degreasing
• Forced air
• Steam cleaning
• Vacuum
• Water

**SITE INFORMATION**

**Potential risks and hazards may include:**
• Abandoned equipment
• Adjoining pit walls
• Adverse weather conditions (electrical storms, floods, fires)
• Chemicals
• Contaminants
• Equipment
• Fences
• Holes
• Materials
• Over-hanging rocks
• Personnel
• Pot holes
• Unsafe ground
• Unstable faces
• Vehicles

**Site environmental and heritage concerns may include:**
• Culturally sensitive sights and artefacts
• Drainage
• Dust
• Emissions
• Flora and fauna
• Hazardous chemicals
• Heritage legislation
• Noise
• Runoff
• Spills
• Water quality

**Site conditions may include:**
• Broken ground
• Day and night
• Degree of compaction
• Location of water table
• Slope of working surface
• Stable ground (compaction) amount of scale
- Wet and dry
- Working over old underground workings and voids

**Emergency plan may include:**
- Clean up
- Equipment shut down procedures
- Evacuation procedures
- First aid
- Isolation procedures
- Notification of authorities
- Use of personal protective equipment

**Records may include:**
- End of shift documentation
- Work log
- Supplies log
- Computer readings

**LEGISLATION**

Current relevant legislation codes, regulations and standards may include:
- Australian Standards
- Environmental Agencies regulations
- Environmental Protection Act
- Isolation procedures
- Manufacturers' specifications and recommendations
- Mine Safety & Health Legislation and Regulations
- Occupational Health and Safety legislation
- Site regulations and procedures

**EVIDENCE GUIDE**

**CRITICAL ASPECTS FOR CONSIDERATION**

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:
- Conducting an activity safely and efficiently
- Achieving quality and productivity targets
- Adhering to and understanding relevant legislative (state and federal) requirements
- Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

**CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS**

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:
- Core Unit MNMCCCOO0001A Communicate in the workplace
- Core Unit MNMCCCOI1002A Work safely
- Core Unit MNMCCCOO0003A Plan and organise individual work
- Core Unit MNMCCCOO0004A Contribute to quality work outcomes
- Core Unit MNMCCCOO0005A Apply local risk control processes
KNOWLEDGE WILL INCLUDE

- Emergency procedures
- Environmental and heritage procedures
- Equipment processes, technical capability and limitations
- Equipment safety requirements
- Geological and technical data
- Hazardous goods procedures and consequences of spills
- Isolation procedures
- Mine operational system
- Night and day working procedures
- Occupational health and safety procedures
- Open cut procedures
- Operational procedures and checks
- Shutdown procedures
- Site procedures
- Site safety requirements
- Start up procedures
- Working at heights methods and limitations

SKILLS WILL INCLUDE

- Ancillary equipment operation, maintenance, cleaning
- Apply diagnostic techniques
- Decision making
- Directing
- Equipment operation, maintenance (minor), cleaning
- Hazard identification
- Hazardous goods handling techniques
- Interpret ground conditions
- Interpretation of plans, reports, maps, specifications
- Maintain records
- Monitoring
- Organise work tasks
- Plan and document reading
- Report defects
- Safe work practices
- Select and fit personal protective equipment
- Team work
- Trouble shooting
- Use communications equipment
- Use computer systems
- Use protective equipment
- Use relevant hand tools

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.
ASSESSMENT STATEMENT

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors. All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.

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<td>6 Solving Problems</td>
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<tr>
<td>7 Using Technology</td>
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</table>
STREAM  OC Extraction - Open Cut  
FIELD   C4 Ancillary Mine Support  
UNIT  MNMOCC1422A Operate roller/compactor

MNMOCC1422A
This unit applies in all contexts to roller/compactor operations in the extractive process in open cut environments.

This unit replaces unit of competency MNMOCC422A

<table>
<thead>
<tr>
<th>ELEMENT</th>
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<tbody>
<tr>
<td>22.1 Plan and prepare for operations</td>
<td>22.1.1 Conducts work according to site procedures, regulations, OHS, other relevant legislation, manufacturer's specifications safely and efficiently</td>
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<td></td>
<td>22.1.2 Receives, interprets and clarifies shift change over details</td>
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<td>22.1.3 Selects appropriate type of equipment and/or attachments according to job specifications and to maximise efficiency and effectiveness of work activities</td>
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<td>22.1.4 Identifies, manages and reports potential risks and hazards according to work plan</td>
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<td>22.1.5 Uses appropriate personal protective equipment</td>
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<td>22.1.6 Conducts equipment pre-start (visual) checks to ensure equipment is ready for operation</td>
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<td>22.1.7 Manages site environmental and heritage issues</td>
</tr>
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<td></td>
<td>22.1.8 Communicates with other personnel using approved communication methods</td>
</tr>
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<td></td>
<td>22.1.9 Adheres to emergency procedures to ensure safety of personnel, plant and equipment</td>
</tr>
<tr>
<td>22.2 Carry out compacting</td>
<td>22.2.1 Carries out start-up, park and shut-down procedures</td>
</tr>
<tr>
<td></td>
<td>22.2.2 Operates equipment within recommended speed, engine capability and limitations</td>
</tr>
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<td>22.2.3 Manoeuvres equipment to maximise efficiency and ensure safety of other equipment and personnel</td>
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<td></td>
<td>22.2.4 Assesses materials and site conditions to determine appropriate operation technique</td>
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<td>22.2.5 Removes or manages contaminants upon identification (where applicable)</td>
</tr>
<tr>
<td></td>
<td>22.2.6 Compacts to required degree of compaction</td>
</tr>
<tr>
<td></td>
<td>22.2.7 Monitors equipment performance utilising appropriate indicators to aid efficient operations</td>
</tr>
<tr>
<td>22.3 Conduct housekeeping activities</td>
<td>22.3.1 Cleans equipment</td>
</tr>
</tbody>
</table>
22.3.2 Cleans and stores attachments and other ancillary equipment
22.3.3 Completes all required records and documentation accurately and promptly

RANGE OF VARIABLES

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

EQUIPMENT

Rollers and compactors may include:
- Dozer
- Front end loader where rollers are attached
- Rollers
- Tractors

Pre-operational checks are those checks specified by the manufacturer prior to operating the item of equipment and may include but not restricted to:
- Air filter restriction indicator
- Cab (horn, lights, air conditioner)
- Computer systems
- Display instrumentation and gauges (indicators, gauges, laser levels)
- Engine and stop engine lights (orange and red)
- Fluid levels (windscreen washer tank, hydraulic oil, coolant, grease, water, engine oil, fuel)
- Visual and audio warning devices and lights

Capacity of equipment and/or attachments may include:
- Duration of operation
- Efficient and safe operating speed
- Operating limitations
- Type of activities performed
- Weight and/or load limitations

Start-up, park and shutdown procedures may include:
- Correct location of equipment
- Safety mechanisms operational (horn, operating lights)
- Vehicle is left secured

Indicators may include:
- Brake air pressure
- Brake oil temperature
- Computer indicators
- Engine oil pressure
- Fuel filter
- Parking brake
- Retarder
- Service meter
• Speedometer/Odometer
• Steering filters
• Tachometer
• Torque converter oil temperature
• Transmission filter
• Voltmeter
• Water temperature

**Equipment cleaning methods may include:**
• Water
• Steam cleaning
• Degreasing
• Vacuum
• Forced air

**SITE INFORMATION**

**Potential risks and hazards may include:**
• Abandoned equipment
• Adjoining pit walls
• Adverse weather conditions (electrical storms, floods) fires
• Chemicals
• Contaminants
• Equipment
• Fences
• Holes
• Materials
• Over-hanging rocks
• Personnel
• Pot holes
• Unsafe ground
• Unstable faces
• Vehicles

**Site environmental and heritage concerns may include:**
• Culturally sensitive sights and artefacts
• Drainage
• Dust
• Emissions
• Flora and fauna
• Hazardous chemicals
• Heritage legislation
• Noise
• Runoff
• Spills
• Water quality

**Site conditions may include:**
• Broken ground
• Day and night
• Degree of compaction
• Location of water table
- Slope of working surface
- Stable ground (compaction) amount of scale
- Wet and dry
- Working over old underground workings and voids

Contaminant may include:
- Animal carcasses (sheep, cows, kangaroos)
- Cigarette butts
- Consumables
- Ear plugs
- Metal bucket teeth
- Metal or steel rods
- Old fencing
- Old piping
- Plastic
- Timber

MATERIALS

Materials may include:
- Gravel
- Ore
- Overburden
- Oxidised waste
- Rejects
- Road base
- Rubbish
- Sand
- Sulphide rock fill
- Tailings
- Topsoil
- Water

LEGISLATION

Current relevant legislation codes, regulations and standards may include:
- Australian Standards
- Environmental Agencies regulations
- Environmental Protection Act
- Isolation procedures
- Manufacturers' specifications and recommendations
- Mine Safety & Health Legislation and Regulations
- Occupational Health and Safety legislation
- Site regulations and procedures

EVIDENCE GUIDE

CRITICAL ASPECTS FOR CONSIDERATION

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:
- Conducting an activity safely and efficiently
• Achieving quality and productivity targets
• Adhering to and understanding relevant legislative (state and federal) requirements
• Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

**CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS**

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:

- Core Unit MNMCCCOO001A Communicate in the workplace
- Core Unit MNMCCCO1002A Work safely
- Core Unit MNMCCCCO003A Plan and organise individual work
- Core Unit MNMCCCCO004A Contribute to quality work outcomes
- Core Unit MNMCCCCO005A Apply local risk control processes

**KNOWLEDGE WILL INCLUDE**

- Compacting procedures
- Emergency procedures
- Environmental and heritage procedures
- Equipment processes, technical capability and limitations
- Equipment safety requirements
- Geological and technical data
- Hazardous goods procedures and consequences of spills
- Isolation procedures
- Mine operational system
- Night and day working procedures
- Occupational health and safety procedures
- Open cut procedures
- Operational procedures and checks
- Road rules
- Shutdown procedures
- Site procedures
- Site safety requirements
- Start up procedures
- Surface maintenance techniques

**SKILLS WILL INCLUDE**

- Ancillary equipment operation, maintenance, cleaning
- Apply diagnostic techniques
- Compacting techniques
- Decision making
- Directing
- Driving techniques
- Equipment operation, maintenance (minor), cleaning
- Hazard identification
- Hazardous goods handling techniques
- Interpret ground conditions
- Interpretation of plans, reports, maps, specifications
- Maintain records
- Monitoring
- Organise work tasks
- Plan and document reading
- Report defects
- Safe work practices
- Select and fit personal protective equipment
- Team work
- Trouble shooting
- Use communications equipment
- Use computer systems
- Use protective equipment
- Use relevant hand tools

**RESOURCE IMPLICATIONS**

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

**ASSESSMENT STATEMENT**

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors. All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.

**COMPETENCY STATEMENT**

Evidence of competency is best obtained by observing relevant activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry operating conditions. If this is not practical, observations in a realistic simulated environment may be supplemented by written and oral assessments.

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<td>3 Planning and Organising Activities</td>
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<td>4 Working With Others and in Teams</td>
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<td>7 Using Technology</td>
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</table>
STREAM  OC  Extraction - Open Cut
FIELD  C4  Ancillary Mine Support
UNIT  MNMOCC1423A Operate forklift

MNMOCC1423A
This unit applies in all contexts to the preparation and operation of forklifts in the extractive process in the open cut environment.

This unit replaces unit of competency MNMOCC423A

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<td>23.1.3 Selects appropriate type of equipment and/or attachments according to job specifications and to maximise efficiency and effectiveness of work activities</td>
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<td>23.1.6 Conducts equipment pre-start (visual) checks to ensure equipment is ready for operation</td>
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<td>23.1.9 Adheres to emergency procedures to ensure safety of personnel, plant and equipment</td>
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<td>23.2 Lift and move load</td>
<td>23.2.1 Carries out start-up, park and shut-down procedures</td>
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<td>23.2.2 Operates equipment within recommended speed, engine capability and limitations</td>
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<td>23.2.4 Monitors equipment performance utilising appropriate indicators to aid efficient operations</td>
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<td>23.2.5 Maneuvres equipment to maximise efficiency and ensure safety of other equipment and personnel</td>
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<td>23.2.6 Lifts and moves load</td>
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<td>23.2.7 Keeps load intact and maintains the safety of surrounding area, personnel and other equipment operators</td>
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<td>23.2.8 Adheres to load lifting limits ensuring stability of the</td>
</tr>
</tbody>
</table>
23.3 Conduct housekeeping activities

23.3.1 Cleans equipment

23.3.2 Cleans and stores attachments and other ancillary equipment

23.3.3 Completes all required records and documentation accurately and promptly

RANGE OF VARIABLES

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

EQUIPMENT

Forklifts may include:
- Conventional
- Integrated tool carrier
- Range of attachments
- Rough terrain

Pre-operational checks are those checks specified by the manufacturer prior to operating the item of equipment and may include but not restricted to:
- Air filter restriction indicator
- Cab (horn, lights, air conditioner)
- Computer systems
- Display instrumentation and gauges (indicators, gauges, laser levels)
- Engine and stop engine lights (orange and red)
- Fluid levels (windscreen washer tank, hydraulic oil, coolant, grease, water, engine oil, fuel)
- Visual and audio warning devices and lights

Capacity of equipment and/or attachments may include:
- Duration of operation
- Efficient and safe operating speed
- Operating limitations
- Type of activities performed
- Weight and/or load limitations

Start-up, park and shutdown procedures may include:
- Correct location of equipment
- Safety mechanisms operational (horn, operating lights)
- Vehicle is left secured

Indicators may include:
- Brake air pressure
- Brake oil temperature
- Computer indicators
- Engine oil pressure
- Fuel filter
- Oil temperature
• Parking brake
• Retarder
• Service meter
• Speedometer/odometer
• Steering filters
• Tachometer
• Torque convertor
• Transmission filter
• Voltmeter
• Water temperature

Equipment cleaning methods may include:
• Degreasing
• Forced air
• Steam cleaning
• Vacuum
• Water

SITE INFORMATION

Potential risks and hazards may include:
• Abandoned equipment
• Adjoining pit walls
• Adverse weather conditions (electrical storms, floods, fires)
• Chemicals
• Contaminants
• Equipment
• Fences
• Holes
• Materials
• Over-hanging rocks
• Personnel
• Pot holes
• Unsafe ground
• Unstable faces
• Vehicles

Site environmental and heritage concerns may include:
• Culturally sensitive sights and artefacts
• Drainage
• Dust
• Emissions
• Flora and fauna
• Hazardous chemicals
• Heritage legislation
• Noise
• Runoff
• Spills
• Water quality

MATERIALS
Materials may include:
- Equipment
- Light materials
- Pallets
- Rubbish
- Stores
- Supplies

Site conditions may include:
- Broken ground
- Day and night
- Degree of compaction
- Location of water table
- Slope of working surface
- Stable ground (compaction) amount of scale
- Wet and dry
- Working over old underground workings and voids

LEGISLATION

Current relevant legislation codes, regulations and standards may include:
- Australian Standards
- Environmental Agencies regulations
- Environmental Protection Act
- Isolation procedures
- Manufacturers' specifications and recommendations
- Mine Safety & Health Legislation and Regulations
- Occupational Health and Safety legislation
- Site regulations and procedures
- Vehicle driving licensing regulations

EVIDENCE GUIDE

CRITICAL ASPECTS FOR CONSIDERATION

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:
- Conducting an activity safely and efficiently
- Achieving quality and productivity targets
- Adhering to and understanding relevant legislative (state and federal) requirements
- Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:
- Core Unit MNMCCO0001A Communicate in the workplace
- Core Unit MNMCCO1002A Work safely
- Core Unit MNMCCO003A Plan and organise individual work
- Core Unit MNMCCO004A Contribute to quality work outcomes
• Core Unit MNMCCOO005A Apply local risk control processes

**KNOWLEDGE WILL INCLUDE**

• Emergency procedures  
• Environmental and heritage procedures  
• Equipment processes, technical capability and limitations  
• Equipment safety requirements  
• Geological and technical data  
• Hazardous goods procedures and consequences of spills  
• Isolation procedures  
• Lifting procedures  
• Loading procedures  
• Mine operational system  
• Night and day working procedures  
• Occupational health and safety procedures  
• Open cut procedures  
• Operational procedures and checks  
• Road rules  
• Shutdown procedures  
• Site procedures  
• Site safety requirements  
• Start up procedures

**SKILLS WILL INCLUDE**

• Use communications equipment  
• Use computer systems  
• Team work  
• Interpretation of plans, reports, maps, specifications  
• Plan and document reading  
• Maintain records  
• Interpret ground conditions  
• Directing  
• Monitoring  
• Decision making  
• Trouble shooting  
• Apply diagnostic techniques  
• Organise work tasks  
• Report defects  
• Select and fit personal protective equipment  
• Use protective equipment  
• Safe work practices  
• Hazard identification  
• Hazardous goods handling techniques  
• Equipment operation, maintenance (minor), cleaning  
• Ancillary equipment operation, maintenance, cleaning  
• Use relevant hand tools  
• Driving techniques  
• Lifting techniques

**RESOURCE IMPLICATIONS**
Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

**ASSESSMENT STATEMENT**

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors.

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**COMPETENCY STATEMENT**

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MNMOC1424A
This unit applies in all contexts to the preparation and operation of cranes in the extractive process in the open cut environment.

This unit replaces unit of competency MNMOCC424A

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<td>24.1.4 Identifies, manages and reports potential risks and hazards according to work plan</td>
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<td>24.1.5 Uses appropriate personal protective equipment</td>
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<td>24.1.7 Manages site environmental and heritage issues</td>
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<td>24.1.9 Adheres to emergency procedures to ensure safety of personnel, equipment and site</td>
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<td>24.2 Lift and shift material</td>
<td>24.2.1 Carries out start-up, park and shut-down procedures</td>
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<td>24.2.2 Operates equipment within recommended speed, engine capability and limitations</td>
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<td>24.2.3 Monitors equipment performance using appropriate indicators</td>
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<td></td>
<td>24.2.4 Positions equipment to maximise efficiency and ensure safety of other equipment and personnel</td>
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<td>24.2.5 Assesses material and site conditions to determine appropriate lifting techniques</td>
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<td>24.2.6 Completes work according to agreed work plan and outcomes</td>
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<td>24.2.7 Determines rigging and slinging requirements after assessing site and material conditions</td>
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</table>
24.2.8 Determines lifting technique by the nature of the mass weight of material being moved and the required location

24.3 Conduct housekeeping activities

24.3.1 Cleans equipment

24.3.2 Cleans and stores attachments and other ancillary equipment

24.3.3 Completes all required records and documentation accurately and promptly

RANGE OF VARIABLES

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

EQUIPMENT

Cranes may include:
- Gantry
- Lattice and boom type
- Mobile cranes
- Overhead handling
- Pendant
- Telescopic

Equipment cleaning methods may include:
- Degreasing
- Forced air
- Steam cleaning
- Vacuum
- Water

SITE INFORMATION

Potential risks and hazards may include:
- Abandoned equipment
- Adjoining pit walls
- Adverse weather conditions (electrical storms, floods, fires)
- Chemicals
- Contaminants
- Equipment
- Fences
- Holes
- Materials
- Over-hanging rocks
- Personnel
- Pot holes
- Unsafe ground
- Unstable faces
SITE INFORMATION

Site environmental and heritage concerns may include:
- Culturally sensitive sights and artefacts
- Drainage
- Dust
- Emissions
- Flora and fauna
- Hazardous chemicals
- Heritage legislation
- Noise
- Runoff
- Spills
- Water quality

Pre-operational checks are those checks specified by the manufacturer prior to operating the item of equipment and may include but not restricted to:
- Air filter restriction indicator
- Cab (horn, lights, air conditioner)
- Computer systems
- Display instrumentation and gauges (indicators, gauges, laser levels)
- Engine and stop engine lights (orange and red)
- Fluid levels (windscreen washer tank, hydraulic oil, coolant, grease, water, engine oil, fuel)
- Visual and audio warning devices and lights

Capacity of equipment and/or attachments may include:
- Boom type
- Crane capacity
- Duration of operation
- Efficient and safe operating speed
- Job configuration
- Operating limitations
- Type of activities performed
- Weight and/or load limitations

Start-up, park and shutdown procedures may include:
- Correct location of equipment
- Safety mechanisms operational (horn, operating lights)
- Vehicle is left secured

Indicators may include:
- Brake air pressure
- Brake oil temperature
- Computer indicators
- Engine oil pressure
- Fuel filter
- Oil temperature
- Parking brake
- Retarder
- Service meter
- Speedometer/Odometer
- Steering filters
- Tachometer
- Torque converter
- Transmission filter
- Voltmeter
- Water temperature

**MATERIALS**

Materials may include:
- Construction items
- Equipment
- Light crane
- Materials
- Stock

**SITE INFORMATION**

Site conditions may include:
- Wet and dry
- Day and night
- Broken ground
- Stable ground (compaction) amount of scale
- Slope of working surface
- Degree of compaction
- Location of water table
- Working over old underground workings and voids

**LEGISLATION**

Current relevant legislation codes, regulations and standards may include:
- Australian Standards
- Environmental Agencies regulations
- Environmental Protection Act
- Isolation procedures
- Manufacturers' specifications and recommendations
- Mine Safety & Health Legislation and Regulations
- Occupational Health and Safety legislation
- Site regulations and procedures
- Vehicle driving licensing regulations

**EVIDENCE GUIDE**

**CRITICAL ASPECTS FOR CONSIDERATION**

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:
- Conducting an activity safely and efficiently
- Achieving quality and productivity targets
- Adhering to and understanding relevant legislative (state and federal) requirements
- Adhering to and understanding environmental and heritage issues
CONDUCT CRANE OPERATIONS  MNM0C1424A

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:

- Core Unit MNMCCC0001A Communicate in the workplace
- Core Unit MNMCCC0100A Work safely
- Core Unit MNMCCC0003A Plan and organise individual work
- Core Unit MNMCCC0004A Contribute to quality work outcomes
- Core Unit MNMCCC0005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE

- Crane hazards
- Emergency procedures
- Environmental and heritage procedures
- Equipment processes, technical capability and limitations
- Equipment safety requirements
- Geological and technical data
- Hazardous goods procedures and consequences of spills
- Isolation procedures
- Mine operational system
- Night and day working procedures
- Occupational health and safety procedures
- Open cut procedures
- Operational procedures and checks
- Relevant manufacturers' specifications
- Road rules
- Shutdown procedures
- Site procedures
- Site safety requirements
- Start up procedures
- Safe working loads terminology (crane and gear)

SKILLS WILL INCLUDE

- Ancillary equipment operation, maintenance, cleaning
- Apply diagnostic techniques
- Decision making
- Directing
- Dogging techniques
- Driving techniques
- Equipment operation, maintenance (minor), cleaning
- Hazard identification
- Hazardous goods handling techniques
- Interpret ground conditions
- Interpretation of plans, reports, maps, specifications
• Lifting techniques
• Maintain records
• Monitoring
• Organise work tasks
• Plan and document reading
• Report defects
• Safe work practices
• Select and fit personal protective equipment
• Team work
• Trouble shooting
• Use communications equipment
• Use computer systems
• Use protective equipment
• Use relevant hand tools

**RESOURCE IMPLICATIONS**

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

**ASSESSMENT STATEMENT**

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors. All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.

**COMPETENCY STATEMENT**

Evidence of competency is best obtained by observing relevant activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry operating conditions. If this is not practical, observations in a realistic simulated environment may be supplemented by written and oral assessments.

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<td>2</td>
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<td>5 Using Mathematical Ideas and Techniques</td>
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<tr>
<td>6 Solving Problems</td>
<td>3</td>
</tr>
<tr>
<td>7 Using Technology</td>
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MNMOC1425A
This unit applies in all contexts to the preparation and operation of graders in the extractive process in the open cut environment.

This unit replaces unit of competency MNMOCC425A

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<td>25.1 Plan and prepare for operations</td>
<td>25.1.1 Conducts work according to site procedures, regulations, OHS, other relevant legislation and manufacturer's specifications safely and efficiently</td>
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<td></td>
<td>25.1.2 Receives, interprets and clarifies shift change over details</td>
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<td></td>
<td>25.1.3 Selects appropriate type of equipment and/or attachments according to job specifications and to maximise efficiency and effectiveness of work activities</td>
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<td>25.1.4 Identifies, manages and reports potential risks and hazards according to work plan</td>
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<td></td>
<td>25.1.5 Uses appropriate personal protective equipment</td>
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<td></td>
<td>25.1.6 Conducts equipment pre-start (visual) checks to ensure equipment is ready for operation</td>
</tr>
<tr>
<td></td>
<td>25.1.7 Manages site environmental and heritage issues</td>
</tr>
<tr>
<td></td>
<td>25.1.8 Communicates with other personnel using approved communication methods</td>
</tr>
<tr>
<td></td>
<td>25.1.9 Adheres to emergency procedures to ensure safety of personnel, plant and equipment</td>
</tr>
<tr>
<td>25.2 Grade site</td>
<td>25.2.1 Carries out start-up, park and shut-down procedures</td>
</tr>
<tr>
<td></td>
<td>25.2.2 Operates equipment within recommended speed, engine capability and limitations</td>
</tr>
<tr>
<td></td>
<td>25.2.3 Assesses materials and site conditions to determine appropriate operation technique</td>
</tr>
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<td></td>
<td>25.2.4 Removes or manages contaminants upon identification (where applicable)</td>
</tr>
<tr>
<td></td>
<td>25.2.5 Grades site to a safe travelling surface</td>
</tr>
<tr>
<td></td>
<td>25.2.6 Monitors equipment performance utilising appropriate indicators to aid efficient operations</td>
</tr>
<tr>
<td></td>
<td>25.2.7 Maneuvers equipment to maximise efficiency and ensure safety of other equipment and personnel</td>
</tr>
<tr>
<td>25.3 Conduct housekeeping activities</td>
<td>25.3.1 Cleans equipment</td>
</tr>
</tbody>
</table>
25.3.2 Cleans and stores attachments and other ancillary equipment
25.3.3 Completes all required records and documentation accurately and promptly

**RANGE OF VARIABLES**

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

**EQUIPMENT**

Pre-operational checks are those checks specified by the manufacturer prior to operating the item of equipment and may include but not restricted to:

- Air filter restriction indicator
- Cab (horn, lights, air conditioner)
- Computer systems
- Display instrumentation and gauges (indicators, gauges, laser levels)
- Engine and stop engine lights (orange and red)
- Fluid levels (windscreen washer tank, hydraulic oil, coolant, grease, water, engine oil, fuel)
- Visual and audio warning devices and lights

Capacity of equipment and/or attachments may include:

- Duration of operation
- Efficient and safe operating speed
- Operating limitations
- Type of activities performed
- Weight and/or load limitations

Start-up, park and shutdown procedures may include:

- Correct location of equipment
- Safety mechanisms operational (horn, operating lights)
- Vehicle is left secured

Indicators may include:

- Brake air pressure
- Brake oil temperature
- Computer indicators
- Engine oil pressure
- Fuel filter
- Oil temperature
- Parking brake
- Retarder
- Service meter
- Speedometer/Odometer
- Steering filters
- Tachometer
- Torque converter
- Transmission filter
- Voltmeter
Water temperature

**Equipment cleaning methods may include:**
- Degreasing
- Forced air
- Steam cleaning
- Vacuum
- Water

**SITE INFORMATION**

**Potential risks and hazards may include:**
- Abandoned equipment
- Adjoining pit walls
- Adverse weather conditions (electrical storms, floods, fires)
- Chemicals
- Contaminants
- Equipment
- Fences
- Holes
- Materials
- Over-hanging rocks
- Personnel
- Pot holes
- Unsafe ground
- Unstable faces
- Vehicles

**Site environmental and heritage concerns may include:**
- Culturally sensitive sights and artifacts
- Drainage
- Dust
- Emissions
- Flora and fauna
- Hazardous chemicals
- Heritage legislation
- Noise
- Runoff
- Spills
- Water quality

**SITE INFORMATION**

**Site conditions may include:**
- Broken ground
- Day and night
- Degree of compaction
- Location of water table
- Slope of working surface
- Stable ground (compaction) amount of scale
- Wet and dry
- Working over old underground workings and voids
MATERIALS

Materials may include:
- Gravel
- Ore
- Overburden
- Oxidised waste
- Rejects
- Road base
- Rubbish
- Sand
- Sulphide rock fill
- Tailings
- Topsoil
- Water

Contaminant may include:
- Animal carcasses (sheep, cows, kangaroos)
- Cigarette butts
- Consumables
- Ear plugs
- Metal bucket teeth
- Metal or steel rods
- Old fencing
- Old piping
- Plastic
- Timber

Records may include:
- Computer readings
- End of shift documentation
- Supplies log
- Work log

LEGISLATION

Current relevant legislation codes, regulations and standards may include:
- Australian Standards
- Environmental Agencies regulations
- Environmental Protection Act
- Isolation procedures
- Manufacturers' specifications and recommendations
- Mine Safety & Health Legislation and Regulations
- Occupational Health and Safety legislation
- Site regulations and procedures
- Vehicle driving licensing regulations
CRITICAL ASPECTS FOR CONSIDERATION

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:

- Conducting an activity safely and efficiently
- Achieving quality and productivity targets
- Adhering to and understanding relevant legislative (state and federal) requirements
- Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:

- Core Unit MNMCCCOO001A Communicate in the workplace
- Core Unit MNMCCCO1002A Work safely
- Core Unit MNMCCCOO003A Plan and organise individual work
- Core Unit MNMCCCOO004A Contribute to quality work outcomes
- Core Unit MNMCCCOO005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE

- Emergency procedures
- Environmental and heritage procedures
- Equipment processes, technical capability and limitations
- Equipment safety requirements
- Geological and technical data
- Grading procedures
- Hazardous goods procedures and consequences of spills
- Isolation procedures
- Mine operational system
- Night and day working procedures
- Occupational health and safety procedures
- Open cut procedures
- Operational procedures and checks
- Road rules
- Shutdown procedures
- Site procedures
- Site safety requirements
- Start up procedures
- Surface maintenance techniques

SKILLS WILL INCLUDE

- Use communications equipment
- Use computer systems
- Team work
- Interpretation of plans, reports, maps, specifications
- Plan and document reading
RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors. All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.

COMPETENCY STATEMENT

Evidence of competency is best obtained by observing relevant activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry operating conditions. If this is not practical, observations in a realistic simulated environment may be supplemented by written and oral assessments.

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<tr>
<td>7 Using Technology</td>
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</table>
MNMOC426A
This unit applies in all contexts to the preparation and operation of light vehicles in the extractive process in the open cut environment.

This unit must be read in conjunction with the Core Units.

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<tr>
<td></td>
<td>26.1.2 Receives, interprets and clarifies shift change over details</td>
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<td>26.1.3 Selects appropriate type of equipment and/or attachments according to job specifications and to maximise efficiency and effectiveness of work activities</td>
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<td>26.1.4 Identifies, manages and reports potential risks and hazards according to work plan</td>
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<td>26.1.5 Uses appropriate personal protective equipment</td>
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<td>26.1.8 Communicates with other personnel using approved communication methods</td>
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<td></td>
<td>26.1.9 Adheres to emergency procedures to ensure safety of personnel, plant and equipment</td>
</tr>
<tr>
<td>26.2 Drive light vehicle</td>
<td>26.2.1 Carries out start-up, park and shut-down procedures</td>
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<tr>
<td></td>
<td>26.2.2 Operates equipment within recommended speed, engine capability and limitations</td>
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<td></td>
<td>26.2.3 Monitors equipment performance utilising appropriate indicators to aid efficient operations</td>
</tr>
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<td></td>
<td>26.2.4 Manoeuvres equipment to maximise efficiency and ensure safety of other equipment and personnel</td>
</tr>
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<td></td>
<td>26.2.5 Assesses road conditions and site conditions determine appropriate driving technique</td>
</tr>
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<td></td>
<td>26.2.6 Completes work according to agreed work plan and outcomes</td>
</tr>
<tr>
<td>26.3 Carry out operator</td>
<td>26.3.1 Conducts visual inspection and fault finding</td>
</tr>
<tr>
<td>ELEMENT</td>
<td>PERFORMANCE CRITERIA</td>
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<tr>
<td>maintenance</td>
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<tr>
<td>26.3.2</td>
<td>Conducts routine operational servicing to ensure peak performance of equipment</td>
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<td>26.4</td>
<td>Conduct housekeeping activities</td>
</tr>
<tr>
<td>26.4.1</td>
<td>Clean equipment</td>
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<tr>
<td>26.4.2</td>
<td>Cleans and stores attachments and other ancillary equipment</td>
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<td>26.4.3</td>
<td>Completes all required records and documentation accurately and promptly</td>
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**RANGE OF VARIABLES**

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

**EQUIPMENT**

Pre-operational checks are those checks specified by the manufacturer prior to operating the item of equipment and may include but not restricted to:

- Air filter restriction indicator
- Cab (horn, lights, air conditioner)
- Computer systems
- Display instrumentation and gauges (indicators, gauges, laser levels)
- Engine and stop engine lights (orange and red)
- Fluid levels (windscreen washer tank, hydraulic oil, coolant, grease, water, engine oil, fuel)
- Visual and audio warning devices and lights

Capacity of equipment and/or attachments may include:

- Duration of operation
- Efficient and safe operating speed
- Operating limitations
- Type of activities performed
- Weight and/or load limitations

Start-up, park and shutdown procedures may include:

- Correct location of equipment
- Safety mechanisms operational (horn, operating lights)
- Vehicle is left secured

Indicators may include:

- Brake air pressure
- Brake oil temperature
- Computer indicators
- Engine oil pressure
- Fuel filter
- Oil temperature
- Parking brake
- Retarder
- Service meter
- Speedometer/Odometer
- Steering filters
- Tachometer
- Torque converter
- Transmission filter
- Voltmeter
- Water temperature

**Light vehicle may include:**
- 4WD
- Car
- Other authorised vehicle
- Sedan
- Small truck
- Utility

**Visual inspection and fault finding may include:**
- Cab condition (no rags in air conditioner vent, dirt around brake and accelerator pedals, seat condition, all gear secured)
- Cab mounts
- Damage to equipment
- Danger tags
- Engine oil to be checked before starting engine
- Fire suppression unit (pins in position in triggers)
- Grease lines
- Light positioning and cleanliness
- No combustible material around exhaust
- Oil leaks (engine, hydraulic hoses, ground) fuel leaks (engine, on ground), water leaks (radiator, hoses)
- Personnel proximity
- Portable fire extinguisher (bracket, gauge, hose, ease of access)
- Radiator top up tank
- Tyres and rim condition
- Vehicle number
- Wheel nuts and studs
- Windows (clean, emergency exit tag in place)

**Routine operational servicing:**
- Checking fluid levels
- Filter changing
- Greasing
- Keeping cab clean
- Tightening loose fittings

**Equipment cleaning methods may include:**
- Degreasing
- Forced air
- Steam cleaning
- Vacuum
- Water
SITE INFORMATION

Potential risks and hazards may include:
- Abandoned equipment
- Adjoining pit walls
- Adverse weather conditions (electrical storms, floods, fires)
- Chemicals
- Contaminants
- Equipment
- Fences
- Holes
- Materials
- Over-hanging rocks
- Personnel
- Pot holes
- Unsafe ground
- Unstable faces
- Vehicles

Site environmental and heritage concerns may include:
- Culturally sensitive sights and artefacts
- Drainage
- Dust
- Emissions
- Flora and fauna
- Hazardous chemicals
- Heritage legislation
- Noise
- Runoff
- Spills
- Water quality

Contaminant may include:
- Animal carcasses (sheep, cows, kangaroos)
- Cigarette butts
- Consumables
- Ear plugs
- Metal bucket teeth
- Metal or steel rods
- Old fencing
- Old piping
- Plastic
- Timber

LEGISLATION

Current relevant legislation codes, regulations and standards may include:
- Australian Standards
- Environmental Agencies regulations
- Environmental Protection Act
- Isolation procedures
- Manufacturers' specifications and recommendations
OPERATE LIGHT VEHICLE  MNMOCC426A

- Mine Safety & Health Legislation and Regulations
- Occupational Health and Safety legislation
- Site regulations and procedures
- Vehicle driving licensing regulations

EVIDENCE GUIDE

CRITICAL ASPECTS FOR CONSIDERATION

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:
- Conducting an activity safely and efficiently
- Achieving quality and productivity targets
- Adhering to and understanding relevant legislative (state and federal) requirements
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Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS:

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:
- Core Unit MNMCCCO001A Communicate in the workplace
- Core Unit MNMCCCO002A Work safely
- Core Unit MNMCCCO003A Plan and organise individual work
- Core Unit MNMCCCO004A Contribute to quality work outcomes
- Core Unit MNMCCCO005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE

- Emergency procedures
- Environmental and heritage procedures
- Equipment processes, technical capability and limitations
- Equipment safety requirements
- Geological and technical data
- Hazardous goods procedures and consequences of spills
- Isolation procedures
- Mine operational system
- Night and day working procedures
- Occupational health and safety procedures
- Open cut procedures
- Operational procedures and checks
- Road rules
- Shutdown procedures
- Site procedures
- Site safety requirements
- Start up procedures

SKILLS WILL INCLUDE

- Ancillary equipment operation, maintenance, cleaning
- Apply diagnostic techniques
- Decision making
• Directing
• Driving techniques
• Equipment operation, maintenance (minor), cleaning
• Hazard identification
• Hazardous goods handling techniques
• Interpret ground conditions
• Interpretation of plans, reports, maps, specifications
• Maintain records
• Monitoring
• Organise work tasks
• Plan and document reading
• Report defects
• Safe work practices
• Select and fit personal protective equipment
• Team work
• Trouble shooting
• Use communications equipment
• Use computer systems
• Use protective equipment
• Use relevant hand tools

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors.

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<td>7 Using Technology</td>
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MNM0CC427A
This unit applies in all contexts to the organisation for and recovery of equipment in the extractive process in the open cut environment.

This unit must be read in conjunction with the Core Units.

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<td>27.1 Organise for equipment recovery</td>
<td>27.1.1 Receives, interprets and clarifies shift change over details</td>
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<td>27.1.2 Selects appropriate type of equipment and/or attachments according to job specifications and to maximise efficiency and effectiveness of work activities</td>
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<td>27.1.3 Identifies, manages and reports potential risks and hazards according to work plan</td>
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<td>27.1.9 Conducts work according to site procedures, regulations, OHS, other relevant legislation, manufacturer's specifications safely and efficiently</td>
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<td>27.2 Recover equipment</td>
<td>27.2.1 Carries out start-up, park and shut-down procedures</td>
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<td>27.2.2 Operates equipment within recommended speed, engine capability and limitations</td>
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<td>27.2.3 Monitors equipment performance utilising appropriate indicators to aid efficient operations</td>
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<td>27.2.4 Manoeuvres equipment to maximise efficiency and ensure safety of other equipment and personnel</td>
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<td></td>
<td>27.2.5 Damage to equipment being recovered and surrounding area is minimised according to site procedures and regulations, OHS and other legislation</td>
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<td></td>
<td>27.2.6 Removal of spills are carried out upon</td>
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<tr>
<td>ELEMENT</td>
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<tr>
<td></td>
<td>identification and managed according to site procedures and regulations</td>
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<td></td>
<td>27.2.7 Recovered equipment is decommissioned in accordance with manufacturer's specification, site procedures, regulations and OHS</td>
</tr>
<tr>
<td>27.3 Conduct housekeeping activities</td>
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</tr>
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**RANGE OF VARIABLES**

*The following Range of Variables is subject to site specific operations, but are not limited to the following details.*

*Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.*

**EQUIPMENT**

Recovery equipment may include:
- Cranes
- Dozer
- Elevated platforms
- Hand tools
- Light vehicles
- Trucks

Pre-operational checks are those checks specified by the manufacturer prior to operating the item of equipment and may include but not restricted to:
- Air filter restriction indicator
- Cab (horn, lights, air conditioner)
- Display instrumentation and gauges (indicators, gauges, laser levels), computer systems
- Engine and stop engine lights (orange and red)
- Fluid levels (windscreen washer tank, hydraulic oil, coolant, grease, water, engine oil, fuel)
- Visual and audio warning devices and lights

Capacity of equipment and/or attachments may include:
- Duration of operation
- Efficient and safe operating speed
- Operating limitations
- Type of activities performed
- Weight and/or load limitations

Start-up, park and shutdown procedures may include:
- Correct location of equipment
- Safety mechanisms operational (horn, operating lights)
- Vehicle is left secured
Indicators may include:
- Brake air pressure
- Brake oil temperature
- Computer indicators
- Engine oil pressure
- Fuel filter
- Oil temperature
- Parking brake
- Retarder
- Service meter
- Speedometer/Odometer
- Steering filters
- Tachometer
- Torque converter
- Transmission filter
- Voltmeter
- Water temperature

Equipment cleaning methods may include:
- Degreasing
- Forced air
- Steam cleaning
- Vacuum
- Water

SITE INFORMATION

Potential risks and hazards may include:
- Unsafe ground
- Unstable faces
- Fences
- Adjoining pit walls
- Holes
- Pot holes
- Materials
- Over-hanging rocks
- Vehicles
- Abandoned equipment, equipment, personnel, chemicals, contaminants, adverse weather conditions (electrical storms, floods) fires

Site environmental and heritage concerns may include:
- Culturally sensitive sights and artefacts
- Drainage
- Dust
- Emissions
- Flora and fauna
- Hazardous chemicals
- Heritage legislation
- Noise
- Runoff
- Spills
- Water quality
Site conditions may include:
- Amount of scale
- Broken ground
- Day and night
- Degree of compaction
- Location of water table
- Slope of working surface
- Stable ground (compaction)
- Wet and dry
- Working over old underground workings and voids

Contaminant may include:
- Animal carcasses (sheep, cows, kangaroos)
- Cigarette butts
- Consumables
- Ear plugs
- Metal bucket teeth
- Metal or steel rods
- Old fencing
- Old piping
- Plastic
- Timber

LEGISLATION

Current relevant legislation codes, regulations and standards may include:
- Australian Standards
- Environmental Agencies regulations
- Environmental Protection Act
- Isolation procedures
- Manufacturers' specifications and recommendations
- Mine Safety & Health Legislation and Regulations
- Occupational Health and Safety legislation
- Site regulations and procedures

CRITICAL ASPECTS FOR CONSIDERATION

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:
- Conducting an activity safely and efficiently
- Achieving quality and productivity targets
- Adhering to and understanding relevant legislative (state and federal) requirements
- Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:
Core Unit MNMCCCOO001A Communicate in the workplace
Core Unit MNMCCCOO002A Work safely
Core Unit MNMCCCOO003A Plan and organise individual work
Core Unit MNMCCCOO004A Contribute to quality work outcomes
Core Unit MNMCCCOO005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE

- Emergency procedures
- Environmental and heritage procedures
- Equipment processes, technical capability and limitations
- Equipment safety requirements
- Geological and technical data
- Hazardous goods procedures and consequences of spills
- Isolation procedures
- Mine operational system
- Night and day working procedures
- Occupational health and safety procedures
- Open cut procedures
- Operational procedures and checks
- Recovery techniques
- Road rules
- Shutdown procedures
- Site procedures
- Site safety requirements
- Start up procedures

SKILLS WILL INCLUDE

- Ancillary equipment operation, maintenance, cleaning
- Apply diagnostic techniques
- Decision making
- Directing
- Driving techniques
- Equipment operation, maintenance (minor), cleaning
- Hazard identification
- Hazardous goods handling techniques
- Interpret ground conditions
- Interpretation of plans, reports, maps, specifications
- Maintain records
- Monitoring
- Organise work tasks
- Plan and document reading
- Report defects
- Safe work practices
- Select and fit personal protective equipment
- Team work
- Trouble shooting
- Use communications equipment
- Use computer systems
- Use protective equipment
- Use relevant hand tools
RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors. All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.

COMPETENCY STATEMENT

Evidence of competency is best obtained by observing relevant activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry operating conditions. If this is not practical, observations in a realistic simulated environment may be supplemented by written and oral assessments.

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</table>
**STREAM**  
OC Extraction - Open Cut  

**FIELD**  
C4 Ancillary Mine Support  

**UNIT**  
MNMOC428A Operate mine services vehicle

MNMOC428A  
This unit applies in all contexts to the preparation and operation of mine service vehicles in the extractive process in the open cut environment.  

This unit must be read in conjunction with the Core Units.

<table>
<thead>
<tr>
<th>ELEMENT</th>
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<tbody>
<tr>
<td>28.1 Plan and prepare for operations</td>
<td>28.1.1 Receives, interprets and clarifies shift change over details</td>
</tr>
<tr>
<td></td>
<td>28.1.2 Selects appropriate type of equipment and/or attachments according to job specifications and to maximise efficiency and effectiveness of work activities</td>
</tr>
<tr>
<td></td>
<td>28.1.3 Identifies, manages and reports potential risks and hazards according to work plan</td>
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<td></td>
<td>28.1.4 Uses appropriate personal protective equipment</td>
</tr>
<tr>
<td></td>
<td>28.1.5 Conducts equipment pre-start (visual) checks to ensure equipment is ready for operation</td>
</tr>
<tr>
<td></td>
<td>28.1.6 Manages site environmental and heritage issues</td>
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<tr>
<td></td>
<td>28.1.7 Communicates with other personnel using approved communication methods</td>
</tr>
<tr>
<td></td>
<td>28.1.8 Adheres to emergency procedures to ensure safety of personnel, plant and equipment</td>
</tr>
<tr>
<td>28.2 Conduct mine service vehicle activities</td>
<td>28.2.1 Carries out start-up, park and shut-down procedures</td>
</tr>
<tr>
<td></td>
<td>28.2.2 Operates equipment within recommended speed, engine capability and limitations</td>
</tr>
<tr>
<td></td>
<td>28.2.3 Monitors equipment performance utilising appropriate indicators to aid efficient operations</td>
</tr>
<tr>
<td></td>
<td>28.2.4 Manoeuvres equipment to maximise efficiency and ensure safety of other equipment and personnel</td>
</tr>
<tr>
<td></td>
<td>28.2.5 Completes work according to agreed work plan and outcomes</td>
</tr>
<tr>
<td>28.3 Carry out operator maintenance</td>
<td>28.3.1 Conducts visual inspection and fault finding</td>
</tr>
<tr>
<td></td>
<td>28.3.2 Conducts routine operational servicing to ensure peak performance of equipment</td>
</tr>
<tr>
<td>28.4 Conduct housekeeping activities</td>
<td>28.4.1 Cleans equipment</td>
</tr>
<tr>
<td></td>
<td>28.4.2 Cleans and stores attachments and other ancillary equipment</td>
</tr>
</tbody>
</table>
### PERFORMANCE CRITERIA

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<thead>
<tr>
<th>ELEMENT</th>
<th>PERFORMANCE CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>28.4.3</td>
<td>Completes all required records and documentation accurately and promptly</td>
</tr>
</tbody>
</table>

### RANGE OF VARIABLES

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

### EQUIPMENT

**Mine services vehicle may include:**
- Backhoe
- Forklift
- Gantry cranes
- Integrated tool carrier
- Self loading crane attachment
- Skid steer
- Tractor
- Water truck
- Yard crane

Pre-operational checks are those checks specified by the manufacturer prior to operating the item of equipment and may include but not restricted to:
- Air filter restriction indicator
- Cab (horn, lights, air conditioner)
- Computer systems
- Display instrumentation and gauges (indicators, gauges, laser levels)
- Engine and stop engine lights (orange and red)
- Fluid levels (windscreen washer tank, hydraulic oil, coolant, grease, water, engine oil, fuel)
- Visual and audio warning devices and lights

**Capacity of equipment and/or attachments may include:**
- Duration of operation
- Efficient and safe operating speed
- Operating limitations
- Type of activities performed
- Weight and/or load limitations

**Start-up, park and shutdown procedures may include:**
- Correct location of equipment
- Safety mechanisms operational (horn, operating lights)
- Vehicle is left secured

**Indicators may include:**
- Brake oil temperature
- Engine oil pressure
- Brake air pressure
- Water temperature
- Service meter
• Voltmeter
• Torque converter oil temperature
• Tachometer
• Speedometer/Odometer
• Parking brake
• Steering filters
• Transmission filter
• Fuel filter
• Retarder
• Computer indicators

**Visual inspection and fault finding may include:**
• Cab condition (no rags in air conditioner vent, dirt around brake and accelerator pedals, seat condition, all gear secured)
• Cab mounts
• Damage to equipment
• Danger tags
• Engine oil to be checked before starting engine
• Fire suppression unit (pins in position in triggers)
• Grease lines
• Light positioning and cleanliness
• No combustible material around exhaust
• Oil leaks (engine, hydraulic hoses, ground) fuel leaks (engine, on ground), water leaks (radiator, hoses)
• Personnel proximity
• Portable fire extinguisher (bracket, gauge, hose, ease of access)
• Radiator top up tank
• Tyres and rim condition
• Vehicle number
• Wheel nuts and studs
• Windows (clean, emergency exit tag in place)

**Routine operational servicing:**
• Checking fluid levels
• Filter changing
• Greasing
• Keeping cab clean
• Tightening loose fittings

**Equipment cleaning methods may include:**
• Degreasing
• Forced air
• Steam cleaning
• Vacuum
• Water

**SITE INFORMATION**

**Potential risks and hazards may include:**
• Abandoned equipment
• Adjoining pit walls
• Adverse weather conditions (electrical storms, floods, fires)
Chemicals
Contaminants
Equipment
Fences
Holes
Materials
Over-hanging rocks
Personnel
Pot holes
Unsafe ground
Unstable faces
Vehicles

Site environmental and heritage concerns may include:
- Culturally sensitive sights and artefacts
- Drainage
- Dust
- Emissions
- Flora and fauna
- Hazardous chemicals
- Heritage legislation
- Noise
- Runoff
- Spills
- Water quality

Contaminant may include:
- Animal carcasses (sheep, cows, kangaroos)
- Cigarette butts
- Consumables
- Ear plugs
- Metal bucket teeth
- Metal or steel rods
- Old fencing
- Old piping
- Plastic
- Timber

LEGISLATION

Current relevant legislation codes, regulations and standards may include:
- Australian Standards
- Environmental Agencies regulations
- Environmental Protection Act
- Isolation procedures
- Manufacturers' specifications and recommendations
- Mine Safety & Health Legislation and Regulations
- Occupational Health and Safety legislation
- Site regulations and procedures
- Vehicle driving licencing regulations
CRITICAL ASPECTS FOR CONSIDERATION

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:

- Conducting an activity safely and efficiently
- Achieving quality and productivity targets
- Adhering to and understanding relevant legislative (state and federal) requirements
- Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:

- Core Unit MNMCCCOO001A Communicate in the workplace
- Core Unit MNMCCCOO002A Work safely
- Core Unit MNMCCCOO003A Plan and organise individual work
- Core Unit MNMCCCOO004A Contribute to quality work outcomes
- Core Unit MNMCCCOO005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE

- Emergency procedures
- Environmental and heritage procedures
- Equipment processes, technical capability and limitations
- Equipment safety requirements
- Geological and technical data
- Hazardous goods procedures and consequences of spills
- Isolation procedures
- Mine operational system
- Night and day working procedures
- Occupational health and safety procedures
- Open cut procedures
- Operational procedures and checks
- Road rules
- Shutdown procedures
- Site procedures
- Site safety requirements
- Start up procedures

SKILLS WILL INCLUDE

- Ancillary equipment operation, maintenance, cleaning
- Apply diagnostic techniques
- Decision making
- Directing
- Driving techniques
- Equipment operation, maintenance (minor), cleaning
- Hazard identification
- Hazardous goods handling techniques
- Interpret ground conditions
- Interpretation of plans, reports, maps, specifications
- Maintain records
- Monitoring
- Organise work tasks
- Plan and document reading
- Report defects
- Safe work practices
- Select and fit personal protective equipment
- Team work
- Trouble shooting
- Use communications equipment
- Use computer systems
- Use protective equipment
- Use relevant hand tools

**RESOURCE IMPLICATIONS**

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

**ASSESSMENT STATEMENT**

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors.

All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.

**COMPETENCY STATEMENT**

Evidence of competency is best obtained by observing relevant activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry operating conditions. If this is not practical, observations in a realistic simulated environment may be supplemented by written and oral assessments.

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</table>
STREAM  OC  Extraction - Open Cut  
FIELD  C4  Ancillary Mine Support  
UNIT  MNMOCC429A Undertake dewatering activities

MNMOCC429A  
This unit applies in all contexts to the organisation of dewatering activities, control of runoff and lowering of the water table in the extractive process for the open cut environment.  
This unit must be read in conjunction with the Core Units.

<table>
<thead>
<tr>
<th>ELEMENT</th>
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</table>
| 29.1  Organise dewatering activities | 29.1.1 Conducts work according to site procedures, regulations, OHS, other relevant legislation, manufacturer's specifications safely and efficiently  
  29.1.2 Receives, interprets and clarifies shift change over details  
  29.1.3 Selects appropriate type of equipment and/or attachments according to job specifications and to maximise efficiency and effectiveness of work activities  
  29.1.4 Identifies, manages and reports potential risks and hazards according to work plan  
  29.1.5 Uses appropriate personal protective equipment  
  29.1.6 Conducts equipment pre-start (visual) checks to ensure equipment is ready for operation  
  29.1.7 Manages site environmental and heritage issues  
  29.1.8 Communicates with other personnel using approved communication methods  
  29.1.9 Adheres to emergency procedures to ensure safety of personnel, plant and equipment |
| 29.2  Control surface water runoff | 29.2.1 Controls surface runoff using appropriate dewatering mechanisms according to environmental guidelines  
  29.2.2 Directs runoff to storage areas to allow settling of sedimentation to occur |
| 29.3  Lower water table | 29.3.1 Locates and stabilises pads within protected area  
  29.3.2 Erects pumps, lines and fittings and ancillary equipment  
  29.3.3 Isolates dewatering area by erecting physical barricades and signage  
  29.3.4 Manoeuvres equipment to maximise efficiency and ensure safety of other equipment and personnel |
### PERFORMANCE CRITERIA

<table>
<thead>
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<tr>
<td>29.3.5</td>
<td>Monitors and adjusts dewatering system performance to satisfy pumping requirements and to ensure that dewatered areas are operational</td>
</tr>
<tr>
<td>29.3.6</td>
<td>Manages water table at desired level</td>
</tr>
</tbody>
</table>

29.4 Conduct housekeeping activities

| 29.4.1  | Cleans equipment |
| 29.4.2  | Attachments and other ancillary equipment are cleaned in accordance with manufacturer's specifications, site procedures and regulations |
| 29.4.3  | Completes all required records and documentation accurately and promptly |

### RANGE OF VARIABLES

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

### EQUIPMENT

Pre-operational checks are those checks specified by the manufacturer prior to operating the item of equipment and may include but not restricted to:

- Air filter restriction indicator
- Cab (horn, lights, air conditioner)
- Computer systems
- Display instrumentation and gauges (indicators, gauges, laser levels)
- Engine and stop engine lights (orange and red)
- Fluid levels (windscreen washer tank, hydraulic oil, coolant, grease, water, engine oil, fuel)
- Visual and audio warning devices and lights

Capacity of equipment and/or attachments may include:

- Duration of operation
- Efficient and safe operating speed
- Operating limitations
- Type of activities performed
- Weight and/or load limitations

Start-up, park and shutdown procedures may include:

- Correct location of equipment
- Safety mechanisms operational (horn, operating lights)
- Vehicle is left secured

De-watering equipment may include:

- Ancillary equipment
- Fittings
- Lines
• Pads
• Piping
• Pumps
• Submersible pumps
• Sumps

**Ancillary equipment may include:**
• Air
• Electricity
• Water

**Physical barricades may include:**
• Flagged fencing
• Windrow (bund)
• Wire fence

**Signage may include:**
• Access requirements
• Safety
• Speed
• Type of site

**Runoff mechanisms may include:**
• Dams
• Drains
• Ponds

**Visual inspection and fault finding may include:**
• Cab condition (no rags in air conditioner vent, dirt around brake and accelerator pedals, seat condition, all gear secured)
• Cab mounts
• Damage to equipment
• Danger tags
• Engine oil to be checked before starting engine
• Fire suppression unit (pins in position in triggers)
• Grease lines
• Light positioning and cleanliness
• No combustible material around exhaust
• Oil leaks (engine, hydraulic hoses, ground) fuel leaks (engine, on ground), water leaks (radiator, hoses)
• Personnel proximity
• Portable fire extinguisher (bracket, gauge, hose, ease of access)
• Tyres and rim condition
• Vehicle number
• Wheel nuts and studs
• Windows (clean, emergency exit tag in place)

**Routine operational servicing:**
• Checking fluid levels
• Filter changing
• Greasing
• Keeping cab clean
• Tightening loose fittings

**Equipment cleaning methods may include:**
• Degreasing
• Forced air
• Steam cleaning
• Vacuum
• Water

**SITE INFORMATION**

**Potential risks and hazards may include:**
• Abandoned equipment
• Adjoining pit walls
• Adverse weather conditions (electrical storms, floods, fires)
• Chemicals
• Contaminants
• Equipment
• Fences
• Holes
• Materials
• Over-hanging rocks
• Personnel
• Pot holes
• Unsafe ground
• Unstable faces
• Vehicles

**Site environmental and heritage concerns may include:**
• Culturally sensitive sights and artefacts
• Drainage
• Dust
• Emissions
• Flora and fauna
• Hazardous chemicals
• Heritage legislation
• Noise
• Runoff
• Spills
• Water quality

**Site conditions may include:**
• Broken ground
• Day and night
• Degree of compaction
• Location of water table
• Slope of working surface
• Stable ground amount of scale
• Wet and dry
• Working over old underground workings and voids

**LEGISLATION**
Current relevant legislation codes, regulations and standards may include:

- Australian Standards
- Environmental Agencies regulations
- Environmental Protection Act
- Isolation procedures
- Manufacturers' specifications and recommendations
- Mine Safety & Health Legislation and Regulations
- Occupational Health and Safety legislation
- Site regulations and procedures

**EVIDENCE GUIDE**

**CRITICAL ASPECTS FOR CONSIDERATION**

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:

- Conducting an activity safely and efficiently
- Achieving quality and productivity targets
- Adhering to and understanding relevant legislative (state and federal) requirements
- Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

**CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS**

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:

- Core Unit MNMCCCOO001A Communicate in the workplace
- Core Unit MNMCCCOO002A Work safely
- Core Unit MNMCCCOO003A Plan and organise individual work
- Core Unit MNMCCCOO004A Contribute to quality work outcomes
- Core Unit MNMCCCOO005A Apply local risk control processes

**KNOWLEDGE WILL INCLUDE**

- Dewatering methods and limitations
- Emergency procedures
- Environmental and heritage procedures
- Equipment processes, technical capability and limitations
- Equipment safety requirements
- Geological and technical data
- Hazardous goods procedures and consequences of spills
- Isolation procedures
- Mine operational system
- Night and day working procedures
- Occupational health and safety procedures
- Open cut procedures
- Operational procedures and checks
- Shutdown procedures
- Site procedures
- Site safety requirements
• Start up procedures
• Water characteristics
• Water safety
• Water table control measures

SKILLS WILL INCLUDE

• Ancillary equipment operation, maintenance, cleaning
• Apply diagnostic techniques
• Decision making
• Directing
• Equipment operation, maintenance (minor), cleaning
• Hazard identification
• Hazardous goods handling techniques
• Interpret ground conditions
• Interpretation of plans, reports, maps, specifications
• Maintain records
• Monitoring
• Organise work tasks
• Plan and document reading
• Report defects
• Safe work practices
• Select and fit personal protective equipment
• Team work
• Trouble shooting
• Use communications equipment
• Use computer systems
• Use protective equipment
• Use relevant hand tools
• Water pumping techniques

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors.
All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.

COMPETENCY STATEMENT

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**STREAM**  OC  Extraction - Open Cut  
**FIELD**  C5  Stockpiling & Preparation  
**UNIT**  MNMOCC530A  Move and position materials to form stockpiles  

MNMOCC530A  
This unit applies in all contexts to organisation of stockpiling and stockpiling in the extractive process in the open cut environment.  

This unit must be read in conjunction with the Core Units.

<table>
<thead>
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<th>ELEMENT</th>
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</table>
| 30.1 Organise for stockpiling | 30.1.1 Conducts work according to site procedures, regulations, OHS, other relevant legislation, manufacturer's specifications safely and efficiently  
30.1.2 Receives, interprets and clarifies shift change over details  
30.1.3 Identifies, manages and reports potential risks and hazards according to work plan  
30.1.4 Uses appropriate personal protective equipment  
30.1.5 Manages site environmental and heritage issues  
30.1.6 Boundaries and signage are erected around stockpile site (where applicable) to limit access to authorised personnel and to ensure stockpile type is identifiable  
30.1.7 Appropriate type of equipment is selected according to the method of stockpiling and specifications to maximise efficiency and effectiveness of work activities  
30.1.8 Communicates with other personnel using approved communication methods  
30.1.9 Adheres to emergency procedures to ensure safety of personnel, plant and equipment |
| 30.2 Stockpile materials | 30.2.1 Places stockpile materials in allocated locations to prevent mixing of materials, for efficient access and identification as specified by stockpile plan  
30.2.2 Visually inspects stockpile structure and surrounding area to assess the safety and progress of stockpile formation  
30.2.3 Removes or manages contaminants upon identification (where applicable)  
30.2.4 Operates equipment according to manufacturer's instructions avoiding damage to stockpile and... |
<table>
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<tbody>
<tr>
<td></td>
<td>surrounding site</td>
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<tr>
<td>30.2.5</td>
<td>Compacts stockpile to specified requirements (where applicable)</td>
</tr>
<tr>
<td>30.2.6</td>
<td>Minimises contamination of stockpile and surround areas by ensuring adequate drainage is available</td>
</tr>
</tbody>
</table>

**RANGE OF VARIABLES**

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

*Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.*

**EQUIPMENT**

Equipment may include:
- Bins
- Conveyors
- Dozers
- Dust suppression equipment
- Feeders
- Gates
- Loaders
- Magnets
- Ploughs
- Reclaimers
- Samplers
- Shovels
- Stackers
- Trucks
- Weighers

Visual checks and other checks may include:
- Aerial view
- On-site

**SITE INFORMATION**

Potential risks and hazards may include:
- Abandoned equipment
- Adjoining pit walls
- Adverse weather conditions (electrical storms, floods, fires)
- Chemicals
- Contaminants
- Equipment
- Fences
- Holes
- Materials
- Over-hanging rocks
• Personnel
• Pot holes
• Unsafe ground
• Unstable faces
• Vehicles

Site environmental and heritage concerns may include:
• Culturally sensitive sights and artefacts
• Drainage
• Dust
• Emissions
• Flora and fauna
• Hazardous chemicals
• Heritage legislation
• Noise
• Runoff
• Spills
• Water quality

Boundaries may include:
• Flagged string
• Wire fence

Signage may include:
• Danger
• Height
• Safety

Personnel may include:
• Blasters
• Contractors
• Drillers
• Drivers
• Holders of appropriate tickets
• Inspectors
• Licensed operators
• Maintenance staff
• Personnel authorised by mine management
• Service personnel
• Supervisors
• Trades persons
• Visitors

Contamination may include:
• Leaching into water table and/or onto flora
• Mixing of incompatible grades of ore

Contaminant may include:
• Animal carcasses (sheep, cows, kangaroos)
• Cigarette butts
• Consumables
• Ear plugs
• Metal bucket teeth
• Metal or steel rods
• Old fencing
• Old piping
• Plastic
• Timber

STOCKPILE

A stockpile may be temporary or permanent and may be:
• A hole
• Back fill
• Formation of earthworks
• Making a mountain
• Tailings dams
• Windrow (bund)

Stockpile pad or rom may be:
• Concrete
• Ground

Upstream processes may include:
• Blending and dispatch of materials
• Crushing
• Dumping
• Rehabilitation processes

Stockpile materials may include:
• Backfill
• Dilution material
• Gangue
• Mineralised waste
• Mullock
• Rehabilitation soils and other materials (clay bands, gravel)
• Road base
• Rubbish
• Sand
• Secondary material
• Various grades of ore

Stockpile plan may include:
• Co-ordination of activities
• Map
• Segregation of ore types
• Signage requirements
• Stockpile construction details (angle of repose, height)
• Total area

LEGISLATION

Current relevant legislation codes, regulations and standards may include:
• Australian Standards
• Environmental Agencies regulations
- Environmental Protection Act
- Isolation procedures
- Manufacturers’ specifications and recommendations
- Mine Safety and Health Legislation and Regulations
- Occupational Health and Safety legislation
- Site regulations and procedures

**EVIDENCE GUIDE**

**CRITICAL ASPECTS FOR CONSIDERATION**

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:
- Conducting an activity safely and efficiently
- Achieving quality and productivity targets
- Adhering to and understanding relevant legislative (state and federal) requirements
- Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

**CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS**

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:
- Core Unit MNMCCCOO001A Communicate in the workplace
- Core Unit MNMCCCOO002A Work safely
- Core Unit MNMCCCOO003A Plan and organise individual work
- Core Unit MNMCCCOO004A Contribute to quality work outcomes
- Core Unit MNMCCCOO005A Apply local risk control processes

**KNOWLEDGE WILL INCLUDE**

- Drainage processes
- Dumping procedures
- Emergency procedures
- Environmental and heritage procedures
- Equipment processes, technical capability and limitations
- Equipment safety requirements
- Hauling procedures
- Hazardous goods procedures and consequences of spills
- Isolation procedures
- Material placement procedures
- Mine operational system
- Night and day working procedures
- Occupational health and safety procedures
- Open cut procedures
- Operational procedures and checks
- Principles of contamination
- Road rules
- Shutdown procedures
- Signage erection procedures
• Site procedures
• Site safety requirements
• Start up procedures
• Stockpiling characteristics and limitations
• Stockpiling procedures

SKILLS WILL INCLUDE

• Ancillary equipment operation, maintenance, cleaning
• Apply diagnostic techniques
• Decision making
• Directing
• Driving techniques
• Dumping techniques
• Equipment operation, maintenance (minor), cleaning
• Hazard identification
• Hazardous goods handling techniques
• Interpret ground conditions
• Interpretation of plans, reports, maps, specifications
• Lifting techniques
• Maintain records
• Monitoring
• Organise work tasks
• Plan and document reading
• Pushing techniques
• Report defects
• Safe work practices
• Select and fit personal protective equipment
• Team work
• Trouble shooting
• Use communications equipment
• Use computer systems
• Use protective equipment
• Use relevant hand tools

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT

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COMPETENCY STATEMENT

Evidence of competency is best obtained by observing relevant activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry conditions.
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</table>
**STREAM**  OC Extraction - Open Cut  
**FIELD**  C5 Stockpiling & Preparation  
**UNIT**  MNMOCC531A Maintain stockpiles

MNMOCC531A  
This unit applies in all contexts to the maintenance of stockpiles, suppression of dust and maintenance of stockpiles in the extractive process in the open cut environment.

This unit must be read in conjunction with the Core Units.

<table>
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<tr>
<th>ELEMENT</th>
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<tbody>
<tr>
<td>31.1 Maintain stockpile construction</td>
<td>31.1.1 Conducts work according to site procedures, regulations, OHS, other relevant legislation, manufacturer's specifications safely and efficiently</td>
</tr>
<tr>
<td></td>
<td>31.1.2 Receives, interprets and clarifies shift change over details</td>
</tr>
<tr>
<td></td>
<td>31.1.3 Maintains battering angle of stockpile</td>
</tr>
<tr>
<td></td>
<td>31.1.4 Uses appropriate personal protective equipment</td>
</tr>
<tr>
<td></td>
<td>31.1.5 Visually inspects stockpile structure and surrounding area to assess the safety and progress of stockpile formation</td>
</tr>
<tr>
<td></td>
<td>31.1.6 Dumps and moves stockpile material using appropriate techniques to form stockpile battering angle and prevent slumping</td>
</tr>
<tr>
<td></td>
<td>31.1.7 Informs appropriate personnel of spillage and takes appropriate measures to manage and/or remove spill</td>
</tr>
<tr>
<td></td>
<td>31.1.8 Removes and disposes contaminants from stockpile upon identification</td>
</tr>
<tr>
<td></td>
<td>31.1.9 Communicates with other personnel using approved communication methods</td>
</tr>
<tr>
<td></td>
<td>31.1.10 Adheres to emergency procedures to ensure safety of personnel, plant and equipment</td>
</tr>
<tr>
<td>31.2 Suppress dust</td>
<td>31.2.1 Maintains stockpile structure to prevent dust creation and unwanted material movement</td>
</tr>
<tr>
<td></td>
<td>31.2.2 Adjusts stockpiling activities due to weather conditions and dust suppression policy</td>
</tr>
<tr>
<td>31.3 Maintain stockpile access roads and bunds</td>
<td>31.3.1 Waters stockpile access roads in appropriate watering pattern and road type</td>
</tr>
<tr>
<td></td>
<td>31.3.2 Maintains safety bunds</td>
</tr>
<tr>
<td></td>
<td>31.3.3 Maintains stockpile access roads free from spillages and obstructions to avoid restricting equipment movement to and from stockpiles</td>
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### PERFORMANCE CRITERIA

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<tr>
<td>31.4 Degradate stockpile</td>
<td>31.4.1 Turns stockpile material utilising appropriate equipment and techniques</td>
</tr>
<tr>
<td></td>
<td>31.4.2 Avoids oxidation of stockpile by applying appropriate decompaction techniques (where applicable)</td>
</tr>
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### RANGE OF VARIABLES

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

### STOCKPILE

**Stockpile plan may include:**
- Co-ordination of activities
- Map
- Segregation of ore types
- Signage requirements
- Stockpile construction details (angle of repose, height)
- Total area

**Stockpile materials may include:**
- Backfill
- Dilution material
- Gangue
- Mineralised waste
- Mullock
- Rehabilitation soils and other materials (clay bands, gravel)
- Road base
- Rubbish
- Sand
- Secondary material
- Various grades of ore

**Bund may include:**
- Berm
- Comprised of various materials (old tyres, materials, rocks)
- Windrow

### SITE INFORMATION

**Contaminant may include:**
- Animal carcasses (sheep, cows, kangaroos)
- Cigarette butts
- Consumables
- Ear plugs
- Metal bucket teeth
- Metal or steel rods
- Old fencing
Contaminated material is removed in some processes to maintain quality of ore and avoid damaging processing equipment.

**Weather conditions may include:**
- Cyclones
- Dry
- Floods
- Heat
- Rain
- Storms (hail, electrical)
- Strong winds

**Personnel may include:**
- Contractors
- Drivers
- Holders of appropriate tickets
- Inspectors
- Licensed operators
- Maintenance staff
- Personnel authorised by mine management
- Service personnel
- Supervisors
- Trades persons
- Visitors

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**CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS**

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:

- Core Unit MNMCCCC0001A Communicate in the workplace
- Core Unit MNMCCCC0002A Work safely
- Core Unit MNMCCCC0003A Plan and organise individual work
- Core Unit MNMCCCC0004A Contribute to quality work outcomes
- Core Unit MNMCCCC0005A Apply local risk control processes

**KNOWLEDGE WILL INCLUDE**

- Bund construction
- Drainage processes
- Dumping procedures
- Dust suppressant characteristics and limitations
- Emergency procedures
- Environmental and heritage procedures
- Equipment processes, technical capability and limitations
- Equipment safety requirements
- Hauling procedures
- Hazardous goods procedures and consequences of spills
- Isolation procedures
- Material placement procedures
- Mine operational system
- Night and day working procedures
- Occupational health and safety procedures
- Open cut procedures
- Operational procedures and checks
- Principles of contamination
- Road rules
- Shutdown procedures
- Site procedures
- Site safety requirements
- Start up procedures
- Stockpiling characteristics and limitations
- Stockpiling procedures

**SKILLS WILL INCLUDE**

- Ancillary equipment operation, maintenance, cleaning
- Apply diagnostic techniques
- Decision making
- Directing
- Driving techniques
- Dumping techniques
- Equipment operation, maintenance (minor), cleaning
- Hazard identification
- Hazardous goods handling techniques
• Interpret ground conditions
• Interpretation of plans, reports, maps, specifications
• Lifting techniques
• Maintain records
• Monitoring
• Organise work tasks
• Plan and document reading
• Pushing techniques
• Report defects
• Safe work practices
• Select and fit personal protective equipment
• Team work
• Trouble shooting
• Use communications equipment
• Use computer systems
• Use protective equipment
• Use relevant hand tools

RESOURCE IMPLICATIONS

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This unit applies in all contexts to the blending of ore in the extractive process for the open cut environment.

This unit must be read in conjunction with the Core Units.

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<td>32.1 Identify and assess material for blending</td>
<td>32.1.1 Conducts work according to site procedures, regulations, OHS, other relevant legislation, manufacturer's specifications safely and efficiently</td>
</tr>
<tr>
<td></td>
<td>32.1.2 Receives, interprets and clarifies shift change over details</td>
</tr>
<tr>
<td></td>
<td>32.1.3 Identifies, manages and reports potential risks and hazards according to work plan</td>
</tr>
<tr>
<td></td>
<td>32.1.4 Uses appropriate personal protective equipment</td>
</tr>
<tr>
<td></td>
<td>32.1.5 Identifies and locates correct material grade according to stockpile plan</td>
</tr>
<tr>
<td></td>
<td>32.1.6 Communicates with other personnel using approved communication methods</td>
</tr>
<tr>
<td></td>
<td>32.1.7 Adheres to emergency procedures to ensure safety of personnel, plant and equipment</td>
</tr>
<tr>
<td>32.2 Blend materials</td>
<td>32.2.1 Selects the correct quantity and grade of material and uses appropriate blending techniques to achieve required blend of ore</td>
</tr>
<tr>
<td></td>
<td>32.2.2 Avoids contaminating surrounding site and access roads</td>
</tr>
<tr>
<td></td>
<td>32.2.3 Supervises blending process (if applicable) to ensure correct grades of ore are selected</td>
</tr>
<tr>
<td></td>
<td>32.2.4 Removes and/or manages contaminants upon identification (where applicable)</td>
</tr>
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The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

EQUIPMENT

Equipment may include:
- Bins
• Conveyors
• Dozers
• Dust suppression equipment
• Feeders
• Gates
• Loaders
• Magnets
• Ploughs
• Reclaimers
• Samplers
• Shovels
• Stackers
• Trucks
• Weighers

MATERIALS

Materials may include:
• Gravel
• Ore
• Overburden
• Oxidised waste
• Rejects
• Road base
• Rubbish
• Sand
• Sulphide rock fill
• Tailings
• Topsoil
• Water

Grade may include:
• Class
• Colour
• High
• Low
• Mineral content
• Moisture content
• Type

SITE INFORMATION

Potential risks and hazards may include:
• Abandoned equipment
• Adjoining pit walls
• Adverse weather conditions (electrical storms, floods, fires)
• Chemicals
• Contaminants
• Equipment
• Fences
• Holes
• Materials
• Over-hanging rocks
• Personnel
• Pot holes
• Unsafe ground
• Unstable faces
• Vehicles

Contaminant may include:
• Animal carcasses (sheep, cows, kangaroos)
• Cigarette butts
• Consumables
• Ear plugs
• Metal bucket teeth
• Metal or steel rods
• Old fencing
• Old piping
• Plastic
• Timber

STOCKPILE

Stockpile plan may include:
• Co-ordination of activities
• Map
• Segregation of ore types
• Signage requirements
• Stockpile construction details (angle of repose, height)
• Total area

Stockpile materials may include:
• Backfill
• Dilution material
• Gangue
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• Rehabilitation soils and other materials (clay bands, gravel)
• Road base
• Rubbish
• Sand
• Secondary material
• Various grades of ore

LEGISLATION

Current relevant legislation codes, regulations and standards may include:
• Australian Standards
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This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:
- Core Unit MNMCCCOO001A Communicate in the workplace
- Core Unit MNMCCCOO002A Work safely
- Core Unit MNMCCCOO003A Plan and organise individual work
- Core Unit MNMCCCOO004A Contribute to quality work outcomes
- Core Unit MNMCCCOO005A Apply local risk control processes

**KNOWLEDGE WILL INCLUDE**

- Blending procedures
- Dust suppressant characteristics and limitations
- Emergency procedures
- Environmental and heritage procedures
- Equipment processes, technical capability and limitations
- Equipment safety requirements
- Hazardous goods procedures and consequences of spills
- Isolation procedures
- Material grade recognition
- Material placement procedures
- Mine operational system
- Night and day working procedures
- Occupational health and safety procedures
- Open cut procedures
- Operational procedures and checks
- Principles of contamination
- Shutdown procedures
- Site procedures
- Site safety requirements
- Start up procedures

**SKILLS WILL INCLUDE**

- Ancillary equipment operation, maintenance, cleaning
- Apply diagnostic techniques
• Blending techniques
• Decision making
• Directing
• Equipment operation, maintenance (minor), cleaning
• Hazard identification
• Hazardous goods handling techniques
• Interpret ground conditions
• Interpretation of plans, reports, maps, specifications
• Maintain records
• Monitoring
• Organise work tasks
• Plan and document reading
• Report defects
• Safe work practices
• Select and fit personal protective equipment
• Team work
• Trouble shooting
• Use communications equipment
• Use computer systems
• Use protective equipment
• Use relevant hand tools

RESOURCE IMPLICATIONS

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</table>
## ELEMENT | PERFORMANCE CRITERIA
--- | ---
33.1 Locate and assess rock | 33.1.1 Receives, interprets and clarifies shift change over details  
33.1.2 Identifies, manages and reports potential risks and hazards according to work plan  
33.1.3 Uses appropriate personal protective equipment  
33.1.4 Selects appropriate type of equipment and/or attachments according to job specifications and to maximise efficiency and effectiveness of work activities  
33.1.5 Identifies and locates oversized rocks through relevant tags and/or in designated location  
33.1.6 Assess rock and uses correct method to break rock according to dimensions, location and grade of rock  
33.1.7 Communicates with other personnel using approved communication methods  
33.1.8 Adheres to emergency procedures to ensure safety of personnel, plant and equipment  
33.1.9 Conducts work according to site procedures, regulations, OHS, other relevant legislation, manufacturer's specifications safely and efficiently
33.2 Break rock | 33.2.1 Notifies relevant personnel of rock breaking process and, where appropriate, barricades site is barricaded and erects signage  
33.2.2 Locates rock weakness and applies correct equipment handling techniques to achieve appropriate rock size
33.3 Clean up site | 33.3.1 Prepares and removes broken rocks  
33.3.2 Removes or manages contaminants upon identification (where applicable)

### RANGE OF VARIABLES

The following Range of Variables is subject to site specific operations, but are not limited to the following details.
Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

MATERIALS

Oversize rock may include:
- Rock that cannot be moved/transported (either by hauling vehicle or conveyor)

Tags may include:
- Cones
- Danger
- Sprayed symbols

Rock breaking techniques may include:
- Dropping
- Pounding
- Utilising a rock breaking machine

SITE INFORMATION

Potential risks and hazards may include:
- Abandoned equipment
- Adjoining pit walls
- Adverse weather conditions (electrical storms, floods, fires)
- Contaminants
- Equipment
- Fences
- Holes
- Materials
- Over-hanging rocks
- Personnel
- Pot holes
- Unsafe ground
- Unstable faces
- Vehicles

Contaminant may include:
- Animal carcasses (sheep, cows, kangaroos)
- Cigarette butts
- Consumables
- Ear plugs
- Metal bucket teeth
- Metal or steel rods
- Old fencing
- Old piping
- Plastic
- Timber

Personnel may include:
- Supervisors
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• Core Unit MNMCCCOO005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE

• Dust suppressant characteristics and limitations
• Emergency procedures
• Environmental and heritage procedures
• Equipment processes, technical capability and limitations
• Equipment safety requirements
- Hazardous goods procedures and consequences of spills
- Isolation procedures
- Material placement procedures
- Mine operational system
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- Open cut procedures
- Operational procedures and checks
- Principles of contamination
- Rock breaking procedures, methods and limitations
- Shutdown procedures
- Site procedures
- Site safety requirements
- Start up procedures

**SKILLS WILL INCLUDE**

- Ancillary equipment operation, maintenance, cleaning
- Apply diagnostic techniques
- Decision making
- Directing
- Equipment operation, maintenance (minor), cleaning
- Hazard identification
- Interpret ground conditions
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- Maintain records
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- Plan and document reading
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- Team work
- Trouble shooting
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- Use computer systems
- Use protective equipment
- Use relevant hand tools

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<tr>
<td>2 Communicating Ideas and Information</td>
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<tr>
<td>3 Planning and Organising Activities</td>
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<td>4 Working With Others and in Teams</td>
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<td>5 Using Mathematical Ideas and Techniques</td>
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<td>6 Solving Problems</td>
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<tr>
<td>7 Using Technology</td>
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</tr>
</tbody>
</table>
**STREAM**  OC  Extraction - Open Cut  
**FIELD**  C5  Stockpiling & Preparation  
**UNIT**  MNMOCC534A Recontour site

MNMOCC534A
This unit applies in all contexts to the organisation and recontouring of a rehabilitation site in the extractive process in open cut environments.

This unit must be read in conjunction with the Core Units.

<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>PERFORMANCE CRITERIA</th>
</tr>
</thead>
</table>
| 34.1 Organise for the recontouring of rehabilitation site | 34.1.1 Conducts work according to site procedures, regulations, OHS, other relevant legislation, manufacturer's specifications safely and efficiently  
34.1.2 Receives, interprets and clarifies shift change over details  
34.1.3 Selects appropriate type of equipment and/or attachments according to job specifications and to maximise efficiency and effectiveness of work activities  
34.1.4 Identifies, manages and reports potential risks and hazards according to work plan  
34.1.5 Uses appropriate personal protective equipment  
34.1.6 Conducts equipment pre-start (visual) checks to ensure equipment is ready for operation  
34.1.7 Manages site environmental and heritage issues  
34.1.8 Communicates with other personnel using approved communication methods  
34.1.9 Adheres to emergency procedures to ensure safety of personnel, plant and equipment |
| 34.2 Recontour rehabilitation area | 34.2.1 Conducts recontouring activities according to rehabilitation plan and site conditions  
34.2.2 Minimises creation of dust using appropriate dust suppressants  
34.2.3 Ensures final landform replicates surrounding environment or as specified by rehabilitation plan and environmental guidelines  
34.2.4 Determine catchment construction according to site and weather conditions, rehabilitation plan and environmental guidelines |
| 34.3 Conduct housekeeping activities | 34.3.1 Cleans equipment  
34.3.2 Cleans and stores attachments and other ancillary equipment |
<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>PERFORMANCE CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>34.3.3</td>
<td>Completes all required records and documentation accurately and promptly</td>
</tr>
</tbody>
</table>

**RANGE OF VARIABLES**

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

*Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.*

**EQUIPMENT**

Potential risks and hazards may include:
- Abandoned equipment
- Adjoining pit walls
- Adverse weather conditions (electrical storms, floods, fires)
- Chemicals
- Contaminants
- Equipment
- Excessive dust
- Fences
- Holes
- Materials
- Over-hanging rocks
- Personnel
- Pot holes
- Unsafe ground
- Unstable faces
- Vehicles

Equipment may include:
- Bins
- Conveyors
- Dozers
- Dust suppression equipment
- Feeders
- Gates
- Loaders
- Magnets
- Ploughs
- Reclaimers
- Samplers
- Shovels
- Stackers
- Trucks
- Weighers

Pre-operational checks are those checks specified by the manufacturer prior to operating the item of equipment and may include but not restricted to:
- Air filter restriction indicator
- Cab (horn, lights, air conditioner)
• Computer systems
• Display instrumentation and gauges (indicators, gauges, laser levels)
• Engine and stop engine lights (orange and red)
• Fluid levels (windscreen washer tank, hydraulic oil, coolant, grease, water, engine oil, fuel)
• Visual and audio warning devices and lights

SITE INFORMATION

Rehabilitation plan may include:
• Company environmental guidelines and processes
• Dimension of site
• Fertiliser
• Flora and/or seeding requirements
• Personnel requirements
• Recontouring plans
• Survey information
• Types of reticulation systems
• Types of vehicles

Site environmental and heritage concerns may include:
• Culturally sensitive sights and artifacts
• Drainage
• Dust
• Emissions
• Flora and fauna
• Hazardous chemicals
• Heritage legislation
• Noise
• Runoff
• Spills
• Water quality

Site conditions may include:
• Broken ground
• Day and night
• Degree of compaction
• Location of water table
• Slope of working surface
• Stable ground (compaction) amount of scale,
• Wet and dry
• Working over old underground workings and voids

Weather conditions may include:
• Cyclones
• Dry
• Floods
• Heat
• Rain
• Storms (hail, electrical)
• Strong winds
Catchment devices may include:
- Diversion channels
- Holding structures (banks, drains, dams)
- Sediment dams

Rehabilitation area may include:
- Along side access roads
- Area surrounding tailings stockpile
- Borrow pits
- Disturbed sites
- Tailings stockpile
- Waste dumps
- Within leased area

Current relevant legislation codes, regulations and standards may include:
- Australian Standards
- Environmental Agencies regulations
- Environmental Protection Act
- Isolation procedures
- Manufacturers' specifications and recommendations
- Mine Safety and Health Legislation and Regulations
- Occupational Health and Safety legislation
- Site regulations and procedures

CRITICAL ASPECTS FOR CONSIDERATION

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:
- Conducting an activity safely and efficiently
- Achieving quality and productivity targets
- Adhering to and understanding relevant legislative (state and federal) requirements
- Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS:

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:
- Core Unit MNMCCCOO001A Communicate in the workplace
- Core Unit MNMCCCOO002A Work safely
- Core Unit MNMCCCOO003A Plan and organise individual work
- Core Unit MNMCCCOO004A Contribute to quality work outcomes
- Core Unit MNMCCCOO005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE:
- Catchment systems
- Dumping procedures
- Dust suppression procedures
- Emergency procedures
• Environmental and heritage procedures
• Equipment processes, technical capability and limitations
• Equipment safety requirements
• Geological and technical data
• Hazardous goods procedures and consequences of spills
• Isolation procedures
• Material placement procedures
• Mine operational system
• Night and day working procedures
• Occupational health and safety procedures
• Open cut procedures
• Operational procedures and checks
• Principals of erosion and water runoff
• Recontouring characteristics
• Recontouring procedures
• Road rules
• Shutdown procedures
• Site procedures
• Site safety requirements
• Start up procedures

SKILLS WILL INCLUDE

• Ancillary equipment operation, maintenance, cleaning
• Apply diagnostic techniques
• Decision making
• Directing
• Driving techniques
• Dumping techniques
• Equipment operation, maintenance (minor), cleaning
• Hazard identification
• Hazardous goods handling techniques
• Interpret ground conditions
• Interpretation of plans, reports, maps, specifications
• Maintain records
• Monitoring
• Organise work tasks
• Plan and document reading
• Pushing techniques
• Report defects
• Safe work practices
• Select and fit personal protective equipment
• Team work
• Trouble shooting
• Use communications equipment
• Use computer systems
• Use relevant hand tools

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment
availability, equipment/plant types and different contexts.

**ASSESSMENT STATEMENT**

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors.
All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.

**COMPETENCY STATEMENT**

Evidence of competency is best obtained by observing relevant activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry operating conditions. If this is not practical, observations in a realistic simulated environment may be supplemented by written and oral assessments.

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</table>
**STREAM**  OC  Extraction - Open Cut

**FIELD**  C6  Rehabilitation

**UNIT**  MNOCC635A Profile soil

MNOCC635A
This unit applies in all contexts to the organisation and profiling of soil for a rehabilitation site in the extractive process in the open cut environment.

This unit must be read in conjunction with the Core Units.

<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>PERFORMANCE CRITERIA</th>
</tr>
</thead>
</table>
| 35.1 Organise for soil profile construction | 35.1.1 Conducts work according to site procedures, regulations, OHS, other relevant legislation, manufacturer's specifications safely and efficiently  
35.1.2 Receives, interprets and clarifies shift change over details  
35.1.3 Selects appropriate type of equipment and/or attachments according to job specifications and to maximise efficiency and effectiveness of work activities  
35.1.4 Potential risks and hazards are identified and managed to ensure safe and efficient soil profiling according to the work plan in accordance with site procedures, regulations, OHS and other relevant legislation  
35.1.5 Uses appropriate personal protective equipment  
35.1.6 Conducts equipment pre-start (visual) checks to ensure equipment is ready for operation  
35.1.7 Communicates with other personnel using approved communication methods  
35.1.8 Adheres to emergency procedures to ensure safety of personnel, plant and equipment |
| 35.2 Construct soil profile | 35.2.1 Stabilises soil profile through appropriate construction techniques and avoids contaminating soil and surrounding areas according to environmental guidelines  
35.2.2 Selects appropriate materials for subsoil taking into consideration vegetation requirements  
35.2.3 Replicates the construction of soil profile horizons in the surrounding environment or as detailed in rehabilitation plan  
35.2.4 Checks landform construction is complete prior to placement of final soil layer  
35.2.5 Places final soil layer in appropriate conditions to minimise damage to soil |
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<tr>
<td>35.2.6</td>
<td>Constructs soil horizon following land contour to reduce water flow downslope and increase water storage capabilities</td>
</tr>
<tr>
<td>35.2.7</td>
<td>Adds nutrients to soil where required according to rehabilitation plan and environmental guidelines</td>
</tr>
</tbody>
</table>

**RANGE OF VARIABLES**

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

**EQUIPMENT**

Equipment may include:
- Bins
- Conveyors
- Dozers
- Dust suppression equipment
- Feeders
- Gates
- Loaders
- Magnets
- Ploughs
- Reclaimers
- Samplers
- Shovels
- Stackers
- Trucks
- Weighers

Pre-operational checks are those checks specified by the manufacturer prior to operating the item of equipment and may include but not restricted to:
- Air filter restriction indicator
- Cab (horn, lights, air conditioner)
- Computer systems
- Display instrumentation and gauges (indicators, gauges, laser levels)
- Engine and stop engine lights (orange and red)
- Fluid levels (windscreen washer tank, hydraulic oil, coolant, grease, water, engine oil, fuel)
- Visual and audio warning devices and lights

**SITE INFORMATION**

Potential risks and hazards may include:
- Abandoned equipment
- Adjoining pit walls
- Adverse weather conditions (electrical storms, floods, fires)
- Chemicals
- Contaminants
• Equipment
• Fences
• Holes
• Materials
• Over flying aircraft
• Over-hanging rocks
• Personnel
• Pot holes
• Unsafe ground
• Unstable faces
• Vehicles

Site environmental and heritage concerns may include:
• Culturally sensitive sights and artefacts
• Drainage
• Dust
• Emissions
• Flora and fauna
• Hazardous chemicals
• Heritage legislation
• Noise
• Runoff
• Spills
• Water quality

Soil profile may include:
• Contaminated tailings
• Gravel
• Tailings
• Topsoil
• Various grades and types of materials

Rehabilitation plan may include:
• Company environmental guidelines and processes
• Dimension of site
• Fertiliser
• Flora and/or seeding requirements
• Personnel requirements
• Recontouring plans
• Survey information
• Types of reticulation systems
• Types of vehicles

Flora may include:
• Grasses, green manure crops
• Native species
• Nitrogen fixing species (legumes)
• Propagules (seeds, lignotubers, corms, bulbs, rhizomes and roots)
• Seedlings
• Shrubs
• Trees
MATERIALS

Materials may include:
- Gravel
- Ore
- Overburden
- Oxidised waste
- Rejects
- Road base
- Rubbish
- Sand
- Sulphide rock fill
- Tailings
- Topsoil
- Water

Current relevant legislation codes, regulations and standards may include:
- Australian Standards
- Environmental Agencies regulations
- Environmental Protection Act
- Isolation procedures
- Manufacturers' specifications and recommendations
- Mine Safety and Health Legislation and Regulations
- Occupational Health and Safety legislation
- Site regulations and procedures

CRITICAL ASPECTS FOR CONSIDERATION

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:
- Conducting an activity safely and efficiently
- Achieving quality and productivity targets
- Adhering to and understanding relevant legislative (state and federal) requirements
- Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:
- Core Unit MNMCCCOO001A Communicate in the workplace
- Core Unit MNMCCCOO002A Work safely
- Core Unit MNMCCCOO003A Plan and organise individual work
- Core Unit MNMCCCOO004A Contribute to quality work outcomes
- Core Unit MNMCCCOO005A Apply local risk control processes
KNOWLEDGE WILL INCLUDE

- Dumping procedures
- Emergency procedures
- Environmental and heritage procedures
- Equipment processes, technical capability and limitations
- Equipment safety requirements
- Flora nutrient application
- Flora soil requirements
- Geological and technical data
- Hazardous goods procedures and consequences of spills
- Isolation procedures
- Material placement procedures
- Mine operational system
- Night and day working procedures
- Occupational health and safety procedures
- Open cut procedures
- Operational procedures and checks
- Principals of erosion and water runoff
- Recontouring characteristics
- Recontouring procedures
- Shutdown procedures
- Site procedures
- Site safety requirements
- Soil horizon construction methods
- Soil profiling methods
- Start up procedures

SKILLS WILL INCLUDE

- Ancillary equipment operation, maintenance, cleaning
- Apply diagnostic techniques
- Decision making
- Directing
- Driving techniques
- Dumping techniques
- Equipment operation, maintenance (minor), cleaning
- Hazard identification
- Hazardous goods handling techniques
- Interpret ground conditions
- Interpretation of plans, reports, maps, specifications
- Maintain records
- Monitoring
- Organise work tasks
- Plan and document reading
- Pushing techniques
- Report defects
- Safe work practices
- Select and fit personal protective equipment
- Team work
- Trouble shooting
- Use communications equipment
- Use computer systems
- Use relevant hand tools

**RESOURCE IMPLICATIONS**

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

**ASSESSMENT STATEMENT**

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors. All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.

**COMPETENCY STATEMENT**

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<td>7 Using Technology</td>
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</table>
**ELEMENT** | **PERFORMANCE CRITERIA**
--- | ---
36.1 Organise for drain and berm construction | 36.1.1 Conducts work according to site procedures, regulations, OHS, other relevant legislation, manufacturer's specifications safely and efficiently
36.1.2 Receives, interprets and clarifies shift change over details
36.1.3 Appropriate type of equipment and/or attachments are selected according to drain and berm type and dimensions to maximise efficiency and effectiveness of work activities
36.1.4 Identifies, manages and reports potential risks and hazards according to work plan
36.1.5 Uses appropriate personal protective equipment
36.1.6 Conducts equipment pre-start (visual) checks to ensure equipment is ready for operation
36.1.7 Manages site environmental and heritage issues
36.1.8 Placement of drains and berms are allocated according to topography, rehabilitation plan and environmental guidelines
36.1.9 Appropriate materials are selected for the construction of drains and berms to ensure rehabilitated site is stable, minimises erosion and is capable of supporting flora according to rehabilitation plan
36.1.10 Communicates with other personnel using approved communication methods
36.1.11 Adheres to emergency procedures to ensure safety of personnel, plant and equipment

36.2 Construct drains and berms | 36.2.1 Pegs and constructs drains in appropriate locations and angles to ensure the control of water flow according to rehabilitation plan
36.2.2 Ensures location of drain mechanisms are at required dimensions and provide appropriate catchment locations for sediment
## ELEMENT  PERFORMANCE CRITERIA

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<tbody>
<tr>
<td>36.2.3</td>
<td>Ensures berm construction allows water to flow into designated areas</td>
</tr>
<tr>
<td>36.2.4</td>
<td>Places drain mechanisms in appropriate positions to control erosion of drain edges and to reduce the speed of water flow</td>
</tr>
<tr>
<td>36.2.5</td>
<td>Discusses variations or recommendations to rehabilitation plan with appropriate personnel and gains written approval (where applicable)</td>
</tr>
<tr>
<td>36.2.6</td>
<td>Places berms and intervals in appropriate positions to reduce erosion</td>
</tr>
<tr>
<td>36.3 Conduct housekeeping activities</td>
<td>36.3.1 Cleans equipment</td>
</tr>
<tr>
<td></td>
<td>36.3.2 Cleans and stores attachments and other ancillary equipment</td>
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<tr>
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<td>36.3.3 Completes all required records and documentation accurately and promptly</td>
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## RANGE OF VARIABLES

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

## EQUIPMENT

Equipment may include:
- Bins
- Conveyors
- Dozers
- Dust suppression equipment
- Feeders
- Gates
- Loaders
- Magnets
- Ploughs
- Reclaimers
- Samplers
- Shovels
- Stackers
- Trucks
- Weighers

Pre-operational checks are those checks specified by the manufacturer prior to operating the item of equipment and may include but not restricted to:
- Air filter restriction indicator
- Cab (horn, lights, air conditioner)
- Computer systems
- Display instrumentation and gauges (indicators, gauges, laser levels)
• Engine and stop engine lights (orange and red)
• Fluid levels (windscreen washer tank, hydraulic oil, coolant, grease, water, engine oil, fuel)
• Visual and audio warning devices and lights

**Drain and berm may be:**
• Concrete
• Rock

**Drain mechanisms may include:**
• Berm
• Netting
• Flora coverage (grasses, small bushes)
• T pieces
• Straw baling
• Ponding

**SITE INFORMATION**

**Potential risks and hazards may include:**
• Abandoned equipment
• Adjoining pit walls
• Adverse weather conditions (electrical storms, floods, fires)
• Chemicals
• Contaminants
• Equipment
• Fences
• Holes
• Materials
• Over flying aircraft
• Over-hanging rocks
• Personnel
• Pot holes
• Unsafe ground
• Unstable faces
• Vehicles

**Site environmental and heritage concerns may include:**
• Culturally sensitive sights and artefacts
• Drainage
• Dust
• Emissions
• Flora and fauna
• Hazardous chemicals
• Heritage legislation
• Noise
• Runoff
• Spills
• Water quality

**MATERIALS**

**Materials may include:**
- Gravel
- Ore
- Overburden
- Oxidised waste
- Rejects, Rubbish
- Road base
- Sand
- Sulphide rock fill
- Tailings
- Topsoil
- Water

Rehabilitation plan may include:
- Company environmental guidelines and processes
- Dimension of site
- Fertiliser
- Personnel requirements, flora and/or seeding requirements
- Recontouring plans
- Survey information
- Types of reticulation systems
- Types of vehicles

Erosion may include:
- Water runoff
- Wind

LEGISLATION

Current relevant legislation codes, regulations and standards may include:
- Australian Standards
- Environmental Agencies regulations
- Environmental Protection Act
- Isolation procedures
- Manufacturers’ specifications and recommendations
- Mine Safety and Health Legislation and Regulations
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EVIDENCE GUIDE

CRITICAL ASPECTS FOR CONSIDERATION

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CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS:

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:

- Core Unit MNMCCCOO001A Communicate in the workplace
- Core Unit MNMCCCOO002A Work safely
- Core Unit MNMCCCOO003A Plan and organise individual work
- Core Unit MNMCCCOO004A Contribute to quality work outcomes
- Core Unit MNMCCCOO005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE

- Draining methods
- Emergency procedures
- Environmental and heritage procedures
- Equipment processes, technical capability and limitations
- Equipment safety requirements
- Geological and technical data
- Hazardous goods procedures and consequences of spills
- Isolation procedures
- Mine operational system
- Night and day working procedures
- Occupational health and safety procedures
- Open cut procedures
- Operational procedures and checks
- Principals of erosion and water runoff
- Shutdown procedures
- Site procedures
- Site safety requirements
- Start up procedures

SKILLS WILL INCLUDE

- Ancillary equipment operation, maintenance, cleaning
- Apply diagnostic techniques
- Construction skills
- Decision making
- Directing
- Equipment operation, maintenance (minor), cleaning
- Hazard identification
- Hazardous goods handling techniques
- Interpret ground conditions
- Interpretation of plans, reports, maps, specifications
- Maintain records
- Monitoring
- Organise work tasks
- Plan and document reading
- Report defects
- Safe work practices
- Select and fit personal protective equipment
- Team work
- Trouble shooting
• Use communications equipment
• Use computer systems
• Use relevant hand tools

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors.
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**STREAM**  OC  Extraction - Open Cut  
**FIELD**  C6  Rehabilitation  
**UNIT**  MNOCC637A Undertake contour ripping

MNOCC637A
This unit applies in all contexts to the organisation and contour ripping of a rehabilitation site in the extractive process in the open cut environment.

This unit must be read in conjunction with the Core Units.

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<td>37.1  Organise contour ripping operations</td>
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<td>37.1.2 Receives, interprets and clarifies shift change over details</td>
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<td>37.1.3 Selects appropriate type of equipment and/or attachments according to job type and specifications to maximise efficiency and effectiveness of ripping activities</td>
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<tr>
<td></td>
<td>37.1.4 Identifies, manages and reports potential risks and hazards according to work plan</td>
</tr>
<tr>
<td></td>
<td>37.1.5 Uses appropriate personal protective equipment</td>
</tr>
<tr>
<td></td>
<td>37.1.6 Conducts equipment pre-start (visual) checks to ensure equipment is ready for operation</td>
</tr>
<tr>
<td></td>
<td>37.1.7 Manages site environmental and heritage issues</td>
</tr>
<tr>
<td>37.2  Rip site</td>
<td>37.2.1 Rips site to create water catchment areas to improve water infiltration and allows plant root penetration</td>
</tr>
<tr>
<td></td>
<td>37.2.2 Binds topsoils and subsoils to maximum ripping depth (where applicable)</td>
</tr>
<tr>
<td></td>
<td>37.2.3 Conducts ripping operations in appropriate conditions in order to maintain the structure of the soil and avoid burying the top soil layer</td>
</tr>
<tr>
<td></td>
<td>37.2.4 Utilises approved survey controls whilst conducting ripping</td>
</tr>
<tr>
<td>37.3  Conduct housekeeping activities</td>
<td>37.3.1 Cleans equipment</td>
</tr>
<tr>
<td></td>
<td>37.3.2 Cleans and stores attachments and other ancillary equipment</td>
</tr>
<tr>
<td></td>
<td>37.3.3 Completes all required records and documentation accurately and promptly</td>
</tr>
</tbody>
</table>
RANGE OF VARIABLES

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

EQUIPMENT

Equipment may include:
- Shovels
- Dozers
- Ploughs

Pre-operational checks are those checks specified by the manufacturer prior to operating the item of equipment and may include but not restricted to:
- Air filter restriction indicator
- Cab (horn, lights, air conditioner)
- Computer systems
- Display instrumentation and gauges (indicators, gauges, laser levels)
- Engine and stop engine lights (orange and red)
- Fluid levels (windscreen washer tank, hydraulic oil, coolant, grease, water, engine oil, fuel)
- Visual and audio warning devices and lights

Catchment devices may include:
- Diversion channels
- Holding structures (banks, drains, dams)
- Sediment dams

MATERIALS

Materials may include:
- Gravel
- Ore
- Overburden
- Oxidised waste
- Rejects
- Road base
- Rubbish
- Sand
- Sulphide rock fill
- Tailings
- Topsoil
- Water

SITE INFORMATION

Potential risks and hazards may include:
- Abandoned equipment
- Adjoining pit walls
- Adverse weather conditions (electrical storms, floods, fires)
- Chemicals
- Contaminants
- Equipment
- Fences
- Holes
- Materials
- Over flying aircraft
- Over-hanging rocks
- Personnel
- Pot holes
- Unsafe ground
- Unstable faces
- Vehicles

**Site environmental and heritage concerns may include:**
- Culturally sensitive sights and artifacts
- Drainage
- Dust
- Emissions
- Flora and fauna
- Hazardous chemicals
- Heritage legislation
- Noise
- Runoff
- Spills
- Water quality

**Rehabilitation plan may include:**
- Company environmental guidelines and processes
- Dimension of site
- Fertiliser
- Flora and/or seeding requirements
- Personnel requirements
- Recontouring plans
- Survey information
- Types of reticulation systems
- Types of vehicles

**LEGISLATION**

**Current relevant legislation codes, regulations and standards may include:**
- Australian Standards
- Environmental Agencies regulations
- Environmental Protection Act
- Isolation procedures
- Manufacturers’ specifications and recommendations
- Mine Safety and Health Legislation and Regulations
- Occupational Health and Safety legislation
- Site regulations and procedures
CRITICAL ASPECTS FOR CONSIDERATION

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:

- Conducting an activity safely and efficiently
- Achieving quality and productivity targets
- Adhering to and understanding relevant legislative (state and federal) requirements
- Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:

- Core Unit MNMCCCOO001A Communicate in the workplace
- Core Unit MNMCCCOO002A Work safely
- Core Unit MNMCCCOO003A Plan and organise individual work
- Core Unit MNMCCCOO004A Contribute to quality work outcomes
- Core Unit MNMCCCOO005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE

- Decompaction techniques
- Emergency procedures
- Environmental and heritage procedures
- Equipment processes, technical capability and limitations
- Equipment safety requirements
- Geological and technical data
- Hazardous goods procedures and consequences of spills
- Isolation procedures
- Mine operational system
- Night and day working procedures
- Occupational health and safety procedures
- Open cut procedures
- Operational procedures and checks
- Principals of contouring
- Ripping methods and limitations
- Shutdown procedures
- Site procedures
- Site safety requirements
- Soil dynamics
- Start up procedures

SKILLS WILL INCLUDE

- Ancillary equipment operation, maintenance, cleaning
- Apply diagnostic techniques
- Construction skills
- Decision making
• Directing
• Driving techniques
• Equipment adjustment
• Equipment operation, maintenance (minor), cleaning
• Hazard identification
• Hazardous goods handling techniques
• Interpret ground conditions
• Interpretation of plans, reports, maps, specifications
• Maintain records
• Monitoring
• Organise work tasks
• Plan and document reading
• Report defects
• Ripping techniques
• Safe work practices
• Select and fit personal protective equipment
• Team work
• Trouble shooting
• Use communications equipment
• Use computer systems
• Use relevant hand tools

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors.
All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.

COMPETENCY STATEMENT

Evidence of competency is best obtained by observing relevant activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry operating conditions. If this is not practical, observations in a realistic simulated environment may be supplemented by written and oral assessments.

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STREAM  OC  Extraction - Open Cut
FIELD  C6  Rehabilitation

UNIT  MNMOCC638A Undertake direct seeding

MNMOCC638A
This unit applies in all contexts to the organisation and direct seeding of a rehabilitation site in the extractive process in the open cut environment.

This unit must be read in conjunction with the Core Units.

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<tr>
<th>ELEMENT</th>
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<td>38.1</td>
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</tr>
<tr>
<td>38.2</td>
<td>Conduct direct seeding operations</td>
</tr>
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<td>PERFORMANCE CRITERIA</td>
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<tr>
<td>-------------------------------</td>
<td>-------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>38.2.2</td>
<td>Minimises damage to site utilising direct seeding equipment and appropriate techniques</td>
</tr>
<tr>
<td>38.2.3</td>
<td>Conducts seeding activities within appropriate season and growing conditions</td>
</tr>
<tr>
<td>38.2.4</td>
<td>Completes all required records and documentation accurately and promptly indicating result of seeding activities</td>
</tr>
<tr>
<td>38.2.5</td>
<td>Carries out seeding and fertilising activities according to site conditions, flora type, rehabilitation plan and environmental guidelines</td>
</tr>
<tr>
<td>38.2.6</td>
<td>Applies appropriate seed mix and fertiliser according to site and weather conditions, accessibility and future land use</td>
</tr>
<tr>
<td>38.3 Conduct housekeeping activities</td>
<td></td>
</tr>
<tr>
<td>38.3.1</td>
<td>Cleans equipment</td>
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<td>38.3.2</td>
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**RANGE OF VARIABLES**

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

**EQUIPMENT**

Equipment may include:
- Aircraft (helicopter, fixed winged craft)
- Machinery that can be calibrated
- Seeding equipment

Pre-operational checks are those checks specified by the manufacturer prior to operating the item of equipment and may include but not restricted to:
- Air filter restriction indicator
- Cab (horn, lights, air conditioner)
- Computer systems
- Display instrumentation and gauges (indicators, gauges, laser levels)
- Engine and stop engine lights (orange and red)
- Fluid levels (windscreen washer tank, hydraulic oil, coolant, grease, water, engine oil, fuel)
- Visual and audio warning devices and lights

**MATERIALS**

Materials may include:
- Chemicals
- Fertiliser
• Seeds

SITE INFORMATION

Potential risks and hazards may include:
• Abandoned equipment
• Adjoining pit walls
• Adverse weather conditions (electrical storms, floods, fires)
• Chemicals
• Contaminants
• Equipment
• Fences
• Holes
• Materials
• Over flying aircraft
• Over-hanging rocks
• Personnel
• Pot holes
• Unsafe ground
• Unstable faces
• Vehicles

Site environmental and heritage concerns may include:
• Culturally sensitive sights and artefacts
• Drainage
• Dust
• Emissions
• Flora and fauna
• Hazardous chemicals
• Heritage legislation
• Noise
• Runoff
• Spills
• Water quality

Site conditions may include:
• Broken ground
• Day and night
• Degree of compaction
• Location of water table
• Slope of working surface
• Stable ground (compaction) amount of scale
• Wet and dry
• Working over old underground workings and voids

Weather conditions may include:
• Cyclones
• Dry
• Floods
• Heat
• Rain
• Storms (hail, electrical)
• Strong winds

**Future land use may be:**
- Agriculture
- Re-establish vegetation which fulfils the functions of the original native vegetation
- Restore to native vegetation

**Native plants may include:**
- Bushes
- Grasses (spinifex)
- Trees (eucalyptus, acacia)

**Cover crop may include:**
- Cereal rye
- Initial seed mix
- Local annual saltbush
- Other fast germinating species
- Triticale

**Foreign or incompatible species may include:**
- Plant life not native to area
- Weeds

**Seeding method may include:**
- Helicopter or fixed wing aircraft
- Hydro-mulcher
- Hydro-seeder

**Rehabilitation plan may include:**
- Company environmental guidelines and processes
- Dimension of site
- Fertiliser
- Flora and/or seeding requirements
- Personnel requirements
- Recontouring plans
- Survey information
- Types of reticulation systems
- Types of vehicles

**LEGISLATION**

**Current relevant legislation codes, regulations and standards may include:**
- Australian Standards
- Environmental Agencies regulations
- Environmental Protection Act
- Isolation procedures
- Manufacturers' specifications and recommendations
- Mine Safety and Health Legislation and Regulations
- Occupational Health and Safety legislation
- Site regulations and procedures
CRITICAL ASPECTS FOR CONSIDERATION

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:

- Conducting an activity safely and efficiently
- Achieving quality and productivity targets
- Adhering to and understanding relevant legislative (state and federal) requirements
- Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS:

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:

- Core Unit MNMCCCOO001A Communicate in the workplace
- Core Unit MNMCCCOO002A Work safely
- Core Unit MNMCCCOO003A Plan and organise individual work
- Core Unit MNMCCCOO004A Contribute to quality work outcomes
- Core Unit MNMCCCOO005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE

- Cover crop methods
- Emergency procedures
- Environmental and heritage procedures
- Equipment processes, technical capability and limitations
- Equipment safety requirements
- Fertiliser characteristics and application methods
- Foreign species identification
- Future land use principles
- Geological and technical data
- Hazardous goods procedures and consequences of spills
- Isolation procedures
- Mine operational system
- Night and day working procedures
- Occupational health and safety procedures
- Open cut procedures
- Operational procedures and checks
- Seeding methods
- Shutdown procedures
- Site procedures
- Site safety requirements
- Soil dynamics
- Start up procedures

SKILLS WILL INCLUDE

- Ancillary equipment operation, maintenance, cleaning
- Apply diagnostic techniques
• Decision making
• Directing
• Equipment adjustment
• Equipment operation, maintenance (minor), cleaning
• Hazard identification
• Hazardous goods handling techniques
• Interpret ground conditions
• Interpretation of plans, reports, maps, specifications
• Maintain records
• Monitoring
• Organise work tasks
• Plan and document reading
• Report defects
• Safe work practices
• Seed application (machine or hand)
• Select and fit personal protective equipment
• Team work
• Trouble shooting
• Use communications equipment
• Use computer systems
• Use relevant hand tools

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors.
All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.

COMPETENCY STATEMENT

Evidence of competency is best obtained by observing relevant activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry operating conditions. If this is not practical, observations in a realistic simulated environment may be supplemented by written and oral assessments.

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</table>
MNMOC639A
This unit applies in all contexts to the organisation and planting of seedlings on a rehabilitation site in the extractive process in the open cut environment.

This unit must be read in conjunction with the Core Units.

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<thead>
<tr>
<th>ELEMENT</th>
<th>PERFORMANCE CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>39.1 Organise for planting seedlings</td>
<td>39.1.1 Conducts work according to site procedures, regulations, OHS, other relevant legislation, manufacturer's specifications safely and efficiently</td>
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<td></td>
<td>39.1.2 Receives, interprets and clarifies shift change over details</td>
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<td>39.1.3 Selects appropriate type of equipment and/or attachments according to job specifications and to maximise efficiency and effectiveness of work activities</td>
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<tr>
<td></td>
<td>39.1.4 Selects appropriate materials according to site conditions and rehabilitation plan</td>
</tr>
<tr>
<td></td>
<td>39.1.5 Identifies, manages and reports potential risks and hazards according to work plan</td>
</tr>
<tr>
<td></td>
<td>39.1.6 Uses appropriate personal protective equipment</td>
</tr>
<tr>
<td></td>
<td>39.1.7 Conducts equipment pre-start (visual) checks to ensure equipment is ready for operation</td>
</tr>
<tr>
<td></td>
<td>39.1.8 Manages site environmental and heritage issues</td>
</tr>
<tr>
<td></td>
<td>39.1.9 Avoids the introduction of foreign species or incompatible species to prevent possible fire hazards and/or contribute to the deterioration of native species</td>
</tr>
<tr>
<td></td>
<td>39.1.10 Communicates with other personnel using approved communication methods</td>
</tr>
<tr>
<td></td>
<td>39.1.11 Adheres to emergency procedures to ensure safety of personnel, plant and equipment</td>
</tr>
<tr>
<td>39.2 Plant seedlings</td>
<td>39.2.1 Marks out planting site clearly utilising appropriate indicators</td>
</tr>
<tr>
<td></td>
<td>39.2.2 Applies fertiliser according to seedling type, soil quality, manufacturers guidelines, site procedures and OHS</td>
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<td></td>
<td>39.2.3 Prepares soil to ensure adequate water retention capabilities</td>
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<td>39.2.4 Arranges seedlings to conform to contour of site</td>
</tr>
<tr>
<td>ELEMENT</td>
<td>PERFORMANCE CRITERIA</td>
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<tr>
<td></td>
<td>and pattern specifications detailed in rehabilitation plan</td>
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<td>39.2.5</td>
<td>Distributes appropriate amount of water according to plant type and soil conditions</td>
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<tr>
<td>39.2.6</td>
<td>Plants and fertilises seedlings according to site conditions, flora type, rehabilitation plan and environmental guidelines</td>
</tr>
<tr>
<td>39.2.7</td>
<td>Adds support and protection devices to seedlings according to type of seedling and rehabilitation plan</td>
</tr>
<tr>
<td>39.3</td>
<td>Conduct housekeeping activities</td>
</tr>
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**RANGE OF VARIABLES**

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

**EQUIPMENT**

Equipment may include:
- Dozers
- Hand tools
- Other equipment types

Pre-operational checks are those checks specified by the manufacturer prior to operating the item of equipment and may include but not restricted to:
- Air filter restriction indicator
- Cab (horn, lights, air conditioner)
- Computer systems
- Display instrumentation and gauges (indicators, gauges, laser levels)
- Engine and stop engine lights (orange and red)
- Fluid levels (windscreen washer tank, hydraulic oil, coolant, grease, water, engine oil, fuel)
- Visual and audio warning devices and lights

**MATERIALS**

Materials may include:
- Chemicals
• Fertiliser
• Seedlings

Indicators may include:
• Border markers
• Pegs
• Witches hats

SITE INFORMATION

Potential risks and hazards may include:
• Unsafe ground
• Unstable faces
• Fences
• Adjoining pit walls
• Holes
• Pot holes
• Materials
• Over-hanging rocks
• Vehicles
• Abandoned equipment
• Equipment
• Personnel
• Chemicals
• Contaminants
• Adverse weather conditions (electrical storms, floods, fires)
• Over flying aircraft

Site environmental and heritage concerns may include:
• Culturally sensitive sights and artifacts
• Drainage
• Dust
• Emissions
• Flora and fauna
• Hazardous chemicals
• Heritage legislation
• Noise
• Runoff
• Spills
• Water quality

Site conditions may include:
• Amount of scale
• Broken ground
• Day and night
• Degree of compaction
• Location of water table
• Slope of working surface
• Stable ground (compaction)
• Wet and dry
• Working over old underground workings and voids
Native plants may include:
- Bushes
- Grasses (spinifex)
- Trees (eucalyptus, acacia)

Plant type may include:
- Cover crop
- Native species

Soil conditions may include:
- Clay base
- Dry
- Porous
- Sand base
- Wet

Rehabilitation plan may include:
- Company environmental guidelines and processes
- Dimension of site
- Fertiliser
- Flora and/or seeding requirements
- Personnel requirements
- Recontouring plans
- Survey information
- Types of reticulation systems
- Types of vehicles

LEGISLATION

Current relevant legislation codes, regulations and standards may include:
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Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.
CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:

- Core Unit MNMCCCOO001A Communicate in the workplace
- Core Unit MNMCCCOO002A Work safely
- Core Unit MNMCCCOO003A Plan and organise individual work
- Core Unit MNMCCCOO004A Contribute to quality work outcomes
- Core Unit MNMCCCOO005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE

- Emergency procedures
- Environmental and heritage procedures
- Equipment processes, technical capability and limitations
- Equipment safety requirements
- Fertiliser characteristics and application methods
- Fire hazard identification principles
- Foreign species identification
- Future land use principles
- Geological and technical data
- Hazardous goods procedures and consequences of spills
- Isolation procedures
- Mine operational system
- Night and day working procedures
- Occupational health and safety procedures
- Open cut procedures
- Operational procedures and checks
- Reticulation methods
- Seedling planting methods
- Seedling varieties
- Shutdown procedures
- Site procedures
- Site safety requirements
- Soil dynamics
- Start up procedures
- Watering principles

SKILLS WILL INCLUDE

- Ancillary equipment operation, maintenance, cleaning
- Apply diagnostic techniques
- Decision making
- Directing
- Equipment adjustment
- Equipment operation, maintenance (minor), cleaning
- Hazard identification
- Hazardous goods handling techniques
- Interpret ground conditions
- Interpretation of plans, reports, maps, specifications
- Maintain records
- Mix and apply fertiliser
• Monitoring
• Organise work tasks
• Plan and document reading
• Plant seedlings (machine or hand)
• Report defects
• Safe work practices
• Select and fit personal protective equipment
• Team work
• Trouble shooting
• Use communications equipment
• Use computer systems
• Use relevant hand tools
• Watering

**RESOURCE IMPLICATIONS**

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

**ASSESSMENT STATEMENT**

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors.

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**COMPETENCY STATEMENT**

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INSTALL RETICULATION SYSTEMS

STREAM   OC  Extraction - Open Cut
FIELD     C6  Rehabilitation
UNIT      MNMOCC640A Install reticulation systems

MNMOC640A
This unit applies in all contexts to the organisation, installation and maintenance of reticulation systems for rehabilitation sites in the extractive process in the open cut environment.

This unit must be read in conjunction with the Core Units.

<table>
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<tr>
<th>ELEMENT</th>
<th>PERFORMANCE CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>40.1</td>
<td>Conducts equipment pre-start (visual) checks to ensure equipment is ready for operation</td>
</tr>
<tr>
<td>40.1.1</td>
<td>Conducts work according to site procedures, regulations, OHS, other relevant legislation, manufacturer's specifications safely and efficiently</td>
</tr>
<tr>
<td>40.1.2</td>
<td>Receives, interprets and clarifies shift change over details</td>
</tr>
<tr>
<td>40.1.3</td>
<td>Selects appropriate type of equipment and/or attachments according to job specifications and to maximise efficiency and effectiveness of work activities</td>
</tr>
<tr>
<td>40.1.4</td>
<td>Identifies, manages and reports potential risks and hazards according to work plan</td>
</tr>
<tr>
<td>40.1.5</td>
<td>Uses appropriate personal protective equipment</td>
</tr>
<tr>
<td>40.1.6</td>
<td>Conducts equipment pre-start (visual) checks to ensure equipment is ready for operation</td>
</tr>
<tr>
<td>40.1.7</td>
<td>Manages site environmental and heritage issues</td>
</tr>
<tr>
<td>40.1.8</td>
<td>Communicates with other personnel using approved communication methods</td>
</tr>
<tr>
<td>40.1.9</td>
<td>Adheres to emergency procedures to ensure safety of personnel, plant and equipment</td>
</tr>
<tr>
<td>40.2</td>
<td>Install reticulation systems</td>
</tr>
<tr>
<td>40.2.1</td>
<td>Installs appropriate reticulation system according to plant species, location and soil conditions</td>
</tr>
<tr>
<td>40.2.2</td>
<td>Ensures the installation of reticulation devices provide support and protection to rehabilitation site and promotes plant growth</td>
</tr>
<tr>
<td>40.3</td>
<td>Monitor and maintain reticulation systems</td>
</tr>
<tr>
<td>40.3.1</td>
<td>Checks and maintains reticulation devices are functional</td>
</tr>
<tr>
<td>40.3.2</td>
<td>Repairs or replaces defective or ineffective reticulation devices ensuring stability of seedlings and surrounding site</td>
</tr>
<tr>
<td>40.4</td>
<td>Conduct housekeeping activities</td>
</tr>
<tr>
<td>40.4.1</td>
<td>Cleans equipment</td>
</tr>
</tbody>
</table>
The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

EQUIPMENT

Equipment may include:
- Bins
- Conveyors
- Dozers
- Dust suppression equipment
- Feeders
- Gates
- Loaders
- Magnets
- Ploughs
- Reclaimers
- Samplers
- Shovels
- Stackers
- Trucks
- Weighers

Pre-operational checks are those checks specified by the manufacturer prior to operating the item of equipment and may include but not restricted to:
- Air filter restriction indicator
- Cab (horn, lights, air conditioner)
- Computer systems
- Display instrumentation and gauges (indicators, gauges, laser levels)
- Engine and stop engine lights (orange and red)
- Fluid levels (windscreen washer tank, hydraulic oil, coolant, grease, water, engine oil, fuel)
- Visual and audio warning devices and lights

Reticulation system may include:
- Meshing
- Wired devices

SITE INFORMATION

Potential risks and hazards may include:
- Abandoned equipment
- Adjoining pit walls
- Adverse weather conditions (electrical storms, floods, fires)
• Chemicals
• Contaminants
• Equipment
• Fences
• Holes
• Materials
• Over flying aircraft
• Over-hanging rocks
• Personnel
• Pot holes
• Unsafe ground
• Unstable faces
• Vehicles

Site environmental and heritage concerns may include:
• Culturally sensitive sights and artefacts
• Drainage
• Dust
• Emissions
• Flora and fauna
• Hazardous chemicals
• Heritage legislation
• Noise
• Runoff
• Spills
• Water quality

Plant species may include:
• Bushes
• Cover crop
• Grasses
• Seedlings
• Trees

Erosion may include:
• Fracturing
• Water soil slippage
• Wind

Soil conditions may include:
• Clay base
• Dry
• Porous
• Sand base
• Wet

Rehabilitation plan may include:
• Company environmental guidelines and processes
• Dimension of site
• Fertiliser
• Flora and/or seeding requirements
• Personnel requirements
• Recontouring plans
• Survey information
• Types of reticulation systems
• Types of vehicles

LEGISLATION

Current relevant legislation codes, regulations and standards may include:
• Australian Standards
• Environmental Agencies regulations
• Environmental Protection Act
• Isolation procedures
• Manufacturers' specifications and recommendations
• Mine Safety and Health Legislation and Regulations
• Occupational Health and Safety legislation
• Site regulations and procedures

EVIDENCE GUIDE

CRITICAL ASPECTS FOR CONSIDERATION

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:
• Conducting an activity safely and efficiently
• Achieving quality and productivity targets
• Adhering to and understanding relevant legislative (state and federal) requirements
• Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:
• Core Unit MNMCCCOO001A Communicate in the workplace
• Core Unit MNMCCCOO002A Work safely
• Core Unit MNMCCCOO003A Plan and organise individual work
• Core Unit MNMCCCOO004A Contribute to quality work outcomes
• Core Unit MNMCCCOO005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE

• Emergency procedures
• Environmental and heritage procedures
• Equipment processes, technical capability and limitations
• Equipment safety requirements
• Geological and technical data
• Hazardous goods procedures and consequences of spills
• Isolation procedures
• Mine operational system
• Night and day working procedures
• Occupational health and safety procedures
• Open cut procedures
• Operational procedures and checks
• Reticulation characteristics and limitations
• Shutdown procedures
• Site procedures
• Site safety requirements
• Soil dynamics
• Start up procedures

SKILLS WILL INCLUDE

• Ancillary equipment operation, maintenance, cleaning
• Apply diagnostic techniques
• Decision making
• Directing
• Equipment adjustment
• Equipment operation, maintenance (minor), cleaning
• Hazard identification
• Hazardous goods handling techniques
• Interpret ground conditions
• Interpretation of plans, reports, maps, specifications
• Maintain records
• Monitoring
• Organise work tasks
• Plan and document reading
• Report defects
• Reticulation installation and adjustment
• Reticulation repairs
• Safe work practices
• Select and fit personal protective equipment
• Team work
• Trouble shooting
• Use communications equipment
• Use computer systems
• Use relevant hand tools

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors. All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.
COMPETENCY STATEMENT

Evidence of competency is best obtained by observing relevant activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry operating conditions. If this is not practical, observations in a realistic simulated environment may be supplemented by written and oral assessments.

<table>
<thead>
<tr>
<th>KEY COMPETENCY</th>
<th>LEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Collecting, Analysing and Organising Information</td>
<td>2</td>
</tr>
<tr>
<td>2 Communicating Ideas and Information</td>
<td>2</td>
</tr>
<tr>
<td>3 Planning and Organising Activities</td>
<td>1</td>
</tr>
<tr>
<td>4 Working With Others and in Teams</td>
<td>2</td>
</tr>
<tr>
<td>5 Using Mathematical Ideas and Techniques</td>
<td>1</td>
</tr>
<tr>
<td>6 Solving Problems</td>
<td>2</td>
</tr>
<tr>
<td>7 Using Technology</td>
<td>1</td>
</tr>
</tbody>
</table>
**STREAM**  OC  Extraction - Open Cut

**FIELD**  C6  Rehabilitation

<table>
<thead>
<tr>
<th>UNIT</th>
<th>MNMOCC641A Monitor and maintain vegetation</th>
</tr>
</thead>
</table>

MNMOCC641A
This unit applies in all contexts to the monitoring and maintenance of vegetation of a rehabilitated site in the extraction process in the open cut environment.

This unit must be read in conjunction with the Core Units.

<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>PERFORMANCE CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>41.1 Monitor rehabilitation site</td>
<td>41.1.1 Conducts work according to site procedures, regulations, OHS, other relevant legislation, manufacturer's specifications safely and efficiently</td>
</tr>
<tr>
<td></td>
<td>41.1.2 Receives, interprets and clarifies shift change over details</td>
</tr>
<tr>
<td></td>
<td>41.1.3 Uses appropriate personal protective equipment</td>
</tr>
<tr>
<td></td>
<td>41.1.4 Monitors progress of vegetation, stability of rehabilitated area, biological factors, water quality and drainage</td>
</tr>
<tr>
<td></td>
<td>41.1.5 Documents results of monitoring clearly detailing rehabilitation progress and level of success</td>
</tr>
<tr>
<td></td>
<td>41.1.6 Analyses failed rehabilitated areas and plans action to amend conditions towards a self sustaining environment</td>
</tr>
<tr>
<td></td>
<td>41.1.7 Manages site environmental and heritage issues</td>
</tr>
<tr>
<td></td>
<td>41.1.8 Communicates with other personnel using approved communication methods</td>
</tr>
<tr>
<td></td>
<td>41.1.9 Adheres to emergency procedures to ensure safety of personnel, plant and equipment</td>
</tr>
<tr>
<td>41.2 Maintain vegetation</td>
<td>41.2.1 Replants and/or reseeds unsatisfactory areas to ensure vegetation coverage is maintained and in accordance with rehabilitation plan</td>
</tr>
<tr>
<td></td>
<td>41.2.2 Applies fertiliser and water to aid vegetation growth according to ground conditions, rehabilitation plan and environmental guidelines</td>
</tr>
<tr>
<td></td>
<td>41.2.3 Maintains physical barriers if required to prevent unauthorised entry of personnel and feral and native animals</td>
</tr>
<tr>
<td></td>
<td>41.2.4 Enables fire management plan strategies to minimise fire damage to vegetation according to rehabilitation plan</td>
</tr>
</tbody>
</table>
41.3 Maintain soil dynamics

41.3.1 Detects and locates contaminated soils and separates contaminants to prevent further infection to surrounding site

41.3.2 Applies appropriate conditioning agent according to infection levels and vegetation type

41.4 Control weeds

41.4.1 Instigates weed prevention measures at appropriate time to control the spread of weeds

41.4.2 Applies fertilisers and manures with caution to avoid the stimulation of weed growths, seed set and spread

RANGE OF VARIABLES

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

SITE INFORMATION

Potential risks and hazards may include:
- Abandoned equipment
- Adjoining pit walls
- Adverse weather conditions (electrical storms, floods, fires)
- Chemicals
- Contaminants
- Equipment
- Fences
- Holes
- Materials
- Over flying aircraft
- Over-hanging rocks
- Personnel
- Pot holes
- Unsafe ground
- Unstable faces
- Vehicles

Site environmental and heritage concerns may include:
- Culturally sensitive sights and artefacts
- Drainage
- Dust
- Emissions
- Flora and fauna
- Hazardous chemicals
- Heritage legislation
- Noise
- Runoff
- Spills
- Water quality
Biological factors may include:
- Germination rates
- Level of contaminants
- Nutrients
- Suitability of vegetation for site

Water quality may include:
- Contaminated
- Saline
- Uncontaminated

Failed rehabilitation area may include:
- Erosion
- Fire hazards
- Flooding
- Foreign plant infestation
- Patchy coverage
- Slumping of structures

Physical barriers may include:
- Wire fences (various heights)

Fire control strategies may include:
- Fire breaks
- Hazard reduction burns in adjacent areas
- Prescribed cool burns in rehabilitation areas and weed control

Conditioning agent may include:
- Fertiliser
- Herbicides
- Manures
- Pesticides

Contaminated soils may include:
- Contains foreign species seed
- Contains weeds species
- Saline levels

Weed prevention measures may include:
- Burning
- Careful application of manures and fertilisers
- Hand weeding
- Herbicides
- Sustaining native species

Rehabilitation plan may include:
- Company environmental guidelines and processes
- Dimension of site
- Fertiliser
- Flora and/or seeding requirements
- Personnel requirements
- Recontouring plans
• Survey information
• Types of reticulation systems
• Types of vehicles

**LEGISLATION**

Current relevant legislation codes, regulations and standards may include:

• Australian Standards
• Environmental Agencies regulations
• Environmental Protection Act
• Isolation procedures
• Manufacturers' specifications and recommendations
• Mine Safety and Health Legislation and Regulations
• Occupational Health and Safety legislation
• Site regulations and procedures

**EVIDENCE GUIDE**

**CRITICAL ASPECTS FOR CONSIDERATION**

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:

• Conducting an activity safely and efficiently
• Achieving quality and productivity targets
• Adhering to and understanding relevant legislative (state and federal) requirements
• Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

**CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS:**

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:

• Core Unit MNMCCCOO001A Communicate in the workplace
• Core Unit MNMCCCOO002A Work safely
• Core Unit MNMCCCOO003A Plan and organise individual work
• Core Unit MNMCCCOO004A Contribute to quality work outcomes
• Core Unit MNMCCCOO005A Apply local risk control processes

**KNOWLEDGE WILL INCLUDE**

• Cover crop methods
• Emergency procedures
• Environmental and heritage procedures
• Equipment processes, technical capability and limitations
• Equipment safety requirements
• Fertiliser characteristics and application methods
• Fire management strategies
• Foreign species identification and eradication methods
• Future land use principles
• Geological and technical data
• Hazardous goods procedures and consequences of spills
• Isolation procedures
• Mine operational system
• Night and day working procedures
• Occupational health and safety procedures
• Open cut procedures
• Operational procedures and checks
• Planting methods
• Reticulation methods
• Seeding methods
• Shutdown procedures
• Site procedures
• Site safety requirements
• Soil dynamics
• Start up procedures
• Sterilisation methods
• Weed prevention methods

SKILLS WILL INCLUDE

• Apply diagnostic techniques
• Barricade construction and maintenance
• Decision making
• Directing
• Hazard identification
• Hazardous goods handling techniques
• Interpret ground conditions
• Interpretation of plans, reports, maps, specifications
• Maintain records
• Monitoring
• Monitoring techniques
• Organise work tasks
• Plan and document reading
• Report defects
• Safe work practices
• Select and fit personal protective equipment
• Team work
• Trouble shooting
• Use communications equipment
• Use computer systems
• Use relevant hand tools

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.
ASSESSMENT STATEMENT

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors. All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.

COMPETENCY STATEMENT

Evidence of competency is best obtained by observing relevant activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry operating conditions. If this is not practical, observations in a realistic simulated environment may be supplemented by written and oral assessments.

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<td>1</td>
</tr>
</tbody>
</table>
**STREAM**  OC Extraction - Open Cut

**FIELD**  C6 Rehabilitation

**UNIT**  MNMOCC642A Stockpile and maintain topsoil

This unit applies in all contexts to the stockpiling and maintenance of topsoil for a rehabilitated site in the extractive process in the open cut environment.

This unit is related to C5 Stockpiling & Preparation stream and should be taken into consideration.

This unit must be read in conjunction with the Core Units.

<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>PERFORMANCE CRITERIA</th>
</tr>
</thead>
</table>
| 42.1 Organise for topsoil stockpiling | 42.1.1 Conducts work according to site procedures, regulations, OHS, other relevant legislation, manufacturer's specifications safely and efficiently  
42.1.2 Receives, interprets and clarifies shift change over details  
42.1.3 Selects appropriate type of equipment according to the method of stockpiling and specifications to maximise efficiency and effectiveness of work activities  
42.1.4 Identifies, manages and reports potential risks and hazards according to work plan  
42.1.5 Uses appropriate personal protective equipment  
42.1.6 Manages site environmental and heritage issues  
42.1.7 Communicates with other personnel using approved communication methods  
42.1.8 Adheres to emergency procedures to ensure safety of personnel, plant and equipment |
| 42.2 Stockpile topsoil | 42.2.1 Constructs topsoil to appropriate dimensions maintaining soil biota  
42.2.2 Operates equipment according to manufacturers instructions avoiding damage to stockpile and surrounding site  
42.2.3 Minimises excessive handling and compaction to prevent damage to soil structure  
42.2.4 Segregates topsoil from other materials preventing contamination  
42.2.5 Maintains nutrient levels of topsoil according to construction methods  
42.2.6 Minimises the duration of topsoil stockpile standing |
<table>
<thead>
<tr>
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</tr>
</thead>
</table>
| 42.3 Maintain topsoil | 42.3.1 Visually inspects topsoil stockpile structure and surrounding area  
                       | 42.3.2 Isolates and manages contaminants where applicable |
| 42.4 Conduct housekeeping activities | 42.4.1 Cleans equipment  
                                         | 42.4.2 Cleans and stores attachments and other ancillary equipment  
                                         | 42.4.3 Completes all required records and documentation accurately and promptly |

**RANGE OF VARIABLES**

*The following Range of Variables is subject to site specific operations, but are not limited to the following details.*

*Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.*

**MATERIALS**

*Contaminant may include:*

- Animal carcasses (sheep, cows, kangaroos)
- Cigarette butts
- Consumables
- Contains foreign species seed
- Contains weeds species
- Ear plugs
- Metal bucket teeth
- Metal or steel rods
- Old fencing
- Old piping
- Plastic
- Saline levels
- Timber

**SITE INFORMATION**

*Potential risks and hazards may include:*

- Abandoned equipment
- Adjoining pit walls
- Adverse weather conditions (electrical storms, floods, fires)
- Chemicals
- Contaminants
- Equipment
- Fences
- Holes
- Materials
- Over-hanging rocks
- Personnel
- Pot holes
- Unsafe ground
- Unstable faces
- Vehicles

**Site environmental and heritage concerns may include:**
- Culturally sensitive sights and artifacts
- Drainage
- Dust
- Emissions
- Flora and fauna
- Hazardous chemicals
- Heritage legislation
- Noise
- Runoff
- Spills
- Water quality

**Nutrient levels may include:**
- Amount of seed content
- Ph levels high enough to sustain plant growth
- Quality of seed

**LEGISLATION**

**Current relevant legislation codes, regulations and standards may include:**
- Australian Standards
- Environmental Agencies regulations
- Environmental Protection Act
- Isolation procedures
- Manufacturers’ specifications and recommendations
- Mine Safety and Health Legislation and Regulations
- Occupational Health and Safety legislation
- Site regulations and procedures

**EVIDENCE GUIDE**

**CRITICAL ASPECTS FOR CONSIDERATION**

**Assessment must confirm competency in a particular activity relevant to mine site operations. These include:**
- Conducting an activity safely and efficiently
- Achieving quality and productivity targets
- Adhering to and understanding relevant legislative (state and federal) requirements
- Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

**CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS**

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:
• Core Unit MNMCCCOO001A Communicate in the workplace
• Core Unit MNMCCCOO002A Work safely
• Core Unit MNMCCCOO003A Plan and organise individual work
• Core Unit MNMCCCOO004A Contribute to quality work outcomes
• Core Unit MNMCCCOO005A Apply local risk control processes

**KNOWLEDGE WILL INCLUDE**

• Contamination principles
• Emergency procedures
• Environmental and heritage procedures
• Equipment processes, technical capability and limitations
• Equipment safety requirements
• Fire management strategies
• Foreign species identification and eradication methods
• Future land use principles
• Geological and technical data
• Hazardous goods procedures and consequences of spills
• Isolation procedures
• Mine operational system
• Night and day working procedures
• Occupational health and safety procedures
• Open cut procedures
• Operational procedures and checks
• Shutdown procedures
• Site procedures
• Site safety requirements
• Soil dynamics
• Start up procedures
• Stockpiling methods
• Topsoil stockpiling methods
• Weed prevention methods

**SKILLS WILL INCLUDE**

• Apply diagnostic techniques
• Decision making
• Directing
• Hazard identification
• Inspecting
• Interpret ground conditions
• Interpretation of plans, reports, maps, specifications
• Maintain records
• Monitoring
• Organise work tasks
• Plan and document reading
• Report defects
• Safe work practices
• Select and fit personal protective equipment
• Stockpiling
• Team work
• Topsoil handling techniques
• Trouble shooting
• Use communications equipment
• Use computer systems
• Use relevant hand tools

RESOURCES IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors.

All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.

COMPETENCY STATEMENT

Evidence of competency is best obtained by observing relevant activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry operating conditions. If this is not practical, observations in a realistic simulated environment may be supplemented by written and oral assessments.

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<td>6 Solving Problems</td>
<td>1</td>
</tr>
<tr>
<td>7 Using Technology</td>
<td>1</td>
</tr>
</tbody>
</table>
**UNIT** MNMOCC643A Identify and assess environmental and heritage concerns

MNMOCC643A
This unit applies in all contexts to the identification and assessment of environmental and heritage concerns in the extractive process in the open cut environment. This unit relates to all units.

This unit must be read in conjunction with the Core Units.

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<tr>
<th>ELEMENT</th>
<th>PERFORMANCE CRITERIA</th>
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<tbody>
<tr>
<td>43.1</td>
<td>Identifies site specific environmental and heritage concerns</td>
</tr>
<tr>
<td>43.1.1</td>
<td>Identify and reports environmental and heritage concerns immediately to relevant authority according to site procedures, regulations and other relevant legislation.</td>
</tr>
<tr>
<td>43.1.2</td>
<td>Accurately identifies the nature of environment and/or heritage concerns from site information</td>
</tr>
<tr>
<td>43.1.3</td>
<td>Enacts emergency plan (where applicable)</td>
</tr>
<tr>
<td>43.1.4</td>
<td>Enacts relevant isolation procedures according to relevant clearances</td>
</tr>
<tr>
<td>43.1.5</td>
<td>Removes and/or contains contaminants upon identification (where applicable)</td>
</tr>
<tr>
<td>43.2</td>
<td>Assesses and responds to environmental and heritage concerns</td>
</tr>
<tr>
<td>43.2.1</td>
<td>Inspects site on receipt of relevant clearances to confirm environment and/or heritage concerns</td>
</tr>
<tr>
<td>43.2.2</td>
<td>Completes all required records and documentation accurately and promptly</td>
</tr>
<tr>
<td>43.3</td>
<td>Works within environmental and heritage guidelines</td>
</tr>
<tr>
<td>43.3.1</td>
<td>Adheres to environment and heritage concerns</td>
</tr>
<tr>
<td>43.3.2</td>
<td>Conforms to environmental and heritage guidelines in the organisation of work activities</td>
</tr>
<tr>
<td>43.3.3</td>
<td>Contacts and informs appropriate authorities (site manager) of environmental and/or heritage concerns</td>
</tr>
</tbody>
</table>

**RANGE OF VARIABLES**

*The following Range of Variables is subject to site specific operations, but are not limited to the following details.*

*Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.*

**SITE INFORMATION**
Site environmental and heritage concerns may include:
- Ancient fossils
- Culturally sensitive sights and artifacts
- Drainage
- Dust
- Emissions
- Flora and fauna
- Hazardous chemicals
- Heritage legislation
- Historical site (homestead)
- Noise
- Possible indigenous site
- Runoff
- Spills
- Water quality

MATERIALS

Contaminant may include:
- Diseased vegetation
- Leakage into ground water
- Oil spill
- Saline water

PERSONNEL

Appropriate authorities may include:
- Environmental authorities
- Experts (scientific, historic, biological)
- Local aboriginal leaders

LEGISLATION

Current relevant legislation codes, regulations and standards may include:
- Australian Standards
- Environmental Agencies regulations
- Environmental Protection Act
- Isolation procedures
- Manufacturers’ specifications and recommendations
- Mine Safety and Health Legislation and Regulations
- Occupational Health and Safety legislation
- Site regulations and procedures

CRITICAL ASPECTS FOR CONSIDERATION

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:
- Conducting an activity safely and efficiently
- Achieving quality and productivity targets
• Adhering to and understanding relevant legislative (state and federal) requirements
• Adhering to and understanding environmental and heritage issues

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:
• Core Unit MNMCCCOO001A Communicate in the workplace
• Core Unit MNMCCCOO002A Work safely
• Core Unit MNMCCCOO003A Plan and organise individual work
• Core Unit MNMCCCOO004A Contribute to quality work outcomes
• Core Unit MNMCCCOO005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE

• Contamination principles
• Emergency procedures
• Environmental and heritage procedures
• Equipment safety requirements
• Fire management strategies
• Foreign species identification and eradication methods
• Future land use principles
• Geological and technical data
• Hazardous goods procedures and consequences of spills
• Isolation procedures
• Mine operational system
• Night and day working procedures
• Occupational health and safety procedures
• Open cut procedures
• Operational procedures and checks
• Site procedures
• Site safety requirements

SKILLS WILL INCLUDE

• Apply diagnostic techniques
• Decision making
• Directing
• Hazard identification
• Inspecting
• Interpret ground conditions
• Interpretation of plans, reports, maps, specifications
• Maintain records
• Monitoring
• Organise work tasks
• Plan and document reading
• Report defects
• Safe work practices
• Team work
• Trouble shooting
• Use communications equipment
• Use computer systems

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors.

All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.

COMPETENCY STATEMENT

Evidence of competency is best obtained by observing relevant activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry operating conditions. If this is not practical, observations in a realistic simulated environment may be supplemented by written and oral assessments.

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</table>
STREAM  OC  Extraction - Open Cut
FIELD  C2  Loading & Hauling
UNIT  MNMOCC220A Apply operational maintenance skills

MNMOCC220A
This unit covers the maintenance skills which are appropriate for application by operators, servicemen and trades support personnel

This unit is adapted from MNCG35A Apply operational maintenance skills

<table>
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<tr>
<th>ELEMENT</th>
<th>PERFORMANCE CRITERIA</th>
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<tr>
<td>20.1</td>
<td>Select, use and care for tools</td>
</tr>
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<td>20.1.1</td>
<td>Correctly identifies and obtains tools required for the work</td>
</tr>
<tr>
<td>20.1.2</td>
<td>Inspects and prepares tools for use</td>
</tr>
<tr>
<td>20.1.3</td>
<td>Uses tools correctly and safely for their intended purpose</td>
</tr>
<tr>
<td>20.1.4</td>
<td>Identifies and responds to tool maintenance requirements in accordance with manufacturer’s instructions and work procedures</td>
</tr>
<tr>
<td>20.1.5</td>
<td>Cleans tools after use and returns/stores in accordance with site procedures and practices</td>
</tr>
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</table>

| 20.2    | Identify and respond to basic faults in mechanical systems |
| 21.2.1  | Applies site safety principles and procedures, including isolation procedures, when working with mechanical systems |
| 21.2.2  | Identifies general components of mechanical systems, and their functions |
| 21.2.3  | Applies basic diagnostic techniques to identify and respond to faults |
| 21.2.4  | Rectifies or refers faults to others in accordance with site procedures |

| 20.3    | Identify and respond to basic faults in electrical systems |
| 20.3.1  | Applies site safety principles and procedures, including isolation procedures, when working with electrical systems |
| 20.3.2  | Identifies components and functions of basic electrical circuitry |
| 20.3.3  | Applies basic diagnostic techniques to identify and respond to faults |
| 20.3.4  | Rectifies or refers faults to others in accordance with site procedures |

| 20.4    | Identify, select and use fasteners |
| 20.4.1  | Correctly identifies fasteners and matches with the work requirements |
| 20.4.2  | Uses/applies fasteners in accordance with manufacturer’s instructions and site procedures/practices |
20.4.4 Disposes of discarded materials in accordance with site procedures

**RANGE OF VARIABLES**

The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

Operational maintenance procedures are those established and authorised at the mine.

Site safety information and procedures may be contained in:
- legislation and regulations
- relevant Australian standards
- management systems and plans
- managers rules
- OH&S policy
- codes of practice
- safe working procedures
- safe job procedures (or equivalent).

**Tools may include:**

**Hand tools:**
- spanners
- hammers
- files
- screwdrivers
- saws
- knives
- pipe cutters

**Power-tools:**
- grinders
- drills
- saws
- jacks
- hydraulic spreaders
- pneumatic powered tools

**Measuring devices:**
- rulers
- callipers
- verniers
- gauges and feeler gauges.

**Basic mechanical systems include:**
- hydraulic
- lubrication
- pneumatic.
Basic electrical systems may cover low and medium voltage and include:
- equipment batteries
- ignition and operational circuits including lighting circuits.

Fasteners may include:
- screws
- bolts
- staples
- clamps
- rivets
- adhesives

CRITICAL ASPECTS FOR CONSIDERATION

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:

- applying personal and operational safety measures
- interpreting and communicating information on operational maintenance functions
- identifying, selecting, preparing, using and maintaining hand tools
- identifying, selecting, preparing, using and maintaining power tools
- identifying and responding to basic faults in mechanical systems
- identifying and responding to basic faults in hydraulic systems
- identifying and responding to basic faults in pneumatic systems
- identifying and responding to basic faults in lubrication systems
- identifying and responding to basic faults in electrical systems
- identifying, selecting and using a range of fasteners.

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:
- Core Unit MNMCCC0001A Communicate in the workplace
- Core Unit MNMCCC01002A Work safely
- Core Unit MNMCCC0003A Plan and organise individual work
- Core Unit MNMCCC0004A Contribute to quality work outcomes
- Core Unit MNMCCC0005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE

- types and uses of oils, greases, hydraulic fluids, brake fluid and other commonly used servicing materials
- site isolation procedures
- site operational and safety procedures
- site procedures relating to operational maintenance
- site maintenance systems and procedures
- types, characteristics, uses and limitations of hand tools
- types, characteristics, uses and limitations of measuring devices
- hand tool maintenance, care and storage procedures
- types, characteristics, uses and limitations of power tools
• power tool maintenance, care and storage procedures
• the functions of major components of common mechanical systems
• the functions of major components of common hydraulic systems
• the functions of major components of common pneumatic systems
• the functions of major components of common lubrication systems
• basic diagnostic processes/techniques of mechanical systems
• major components within common electrical systems
• electrical system basic circuit diagnostic processes and techniques
• types, uses, grades and limitations of fasteners
• environmental constraints and requirements related to operational maintenance

SKILLS WILL INCLUDE

• apply operational safety requirements
• access and interpret manufacturer’s and site technical information
• match tools with work needs
• apply hand-eye coordination
• apply site isolation procedures
• respond to faults
• apply diagnostic techniques to systems
• complete reporting systems
• comply with environmental requirements

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT

Assessments are to be conducted in the work environment wherever possible. Some aspects may be conducted under simulated conditions where issues of safety and environmental damage are limiting factors.

All assessments must be valid, reliable, fair and flexible accumulating sufficient evidence to demonstrate the required competence.

COMPETENCY STATEMENT

Evidence of competency is best obtained by observing relevant activities in the field and reviewing the outcomes of several activities over a period of time, under normal industry operating conditions. If this is not practical, observations in a realistic simulated environment may be supplemented by written and oral assessments.

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**STREAM**  OC Extraction - Open Cut  
**FIELD**  C2 Loading & Hauling  
**UNIT**  MNMOCC221A Service mine plant and equipment

MNMOCC221A  
This unit covers the scheduled servicing of mine plant and equipment additional to that covered by operator maintenance.

This unit is adapted from MNCG37A Service mine plant and equipment.

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<tr>
<td>Plan and Prepare for Servicing 21.1.1</td>
<td>Receives, interprets and clarifies shift servicing requirements and plans</td>
</tr>
<tr>
<td>21.1.2</td>
<td>Accesses and applies safety information and procedures throughout the work</td>
</tr>
<tr>
<td>21.1.3</td>
<td>Conducts pre-start checks on service vehicle in accordance with manufacturer’s and/or site authorised procedures</td>
</tr>
<tr>
<td>21.1.4</td>
<td>Checks and tops-up service vehicle levels of fuel, lubricants and water up as necessary for the servicing plan</td>
</tr>
<tr>
<td>21.1.5</td>
<td>Maintains service bay</td>
</tr>
<tr>
<td>21.1.6</td>
<td>Identifies replacement parts and servicing tools from servicing schedule, and obtains from appropriate stores area</td>
</tr>
<tr>
<td>21.2</td>
<td></td>
</tr>
<tr>
<td>Service Plant and Equipment 21.2.5</td>
<td>Effects coordination and liaison to arrange details of preparatory activities, timings and locations for servicing</td>
</tr>
<tr>
<td>21.2.6</td>
<td>Carries out start-up, park-up, shut-down procedures on service vehicles in accordance with manufacturer’s and/or site specific requirements</td>
</tr>
<tr>
<td>21.2.7</td>
<td>Operates service vehicle in accordance with manufacturer’s and/or site requirements</td>
</tr>
<tr>
<td>21.2.8</td>
<td>Carries out servicing of plant and equipment in accordance with the service schedule, manufacturer’s specifications and site requirements</td>
</tr>
<tr>
<td>21.2.9</td>
<td>Disposes of used oils and lubricants in accordance with environmental regulations and mine rules</td>
</tr>
<tr>
<td>21.2.10</td>
<td>Completes servicing schedule and maintains records in accordance with site requirements</td>
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The following Range of Variables is subject to site specific operations, but are not limited to the following details.

Site procedures, regulations and occupational health and safety and other relevant legislation applies to all elements and performance criteria.

**Shift details may include:**
- number and types of plant and equipment to be serviced
- description of servicing required
- specific servicing priority and achievement targets
- location of plant and equipment
- site lighting arrangements
- hazards and potential hazards
- coordination details.

**Service bay maintenance requirements may include:**
- clearing and cleaning of access ways
- monitoring and maintaining fuel and lubricant levels
- checking and maintenance of service bay equipment
- applying authorised sampling schedule

**Safety information and procedures may be contained in:**
- legislation and regulations
- relevant Australian standards
- management plans
- manager’s rules
- OH&S policy
- codes of practice
- manufacturer’s instructions
- safe working or job procedures (or equivalent).

**Specific safety requirements include:**
- isolation of plant/equipment
- creation and maintenance of a safe work environment
- the handling of hazardous chemicals and substances
- tagging procedures.

**Service vehicle may be any vehicle that is designed or modified to carry and operate service equipment.**

Service equipment includes:
- Compressors
- Filter
- ‘O’ rings
- gaskets
- jump start equipment
- compressed air start equipment
- tools
- fire fighting equipment
• waste disposal equipment
• records
• cleaning agents

EVIDENCE GUIDE

CRITICAL ASPECTS FOR CONSIDERATION

Assessment must confirm competency in a particular activity relevant to mine site operations. These include:

• applying personal and operational safety procedures
• interpreting and communicating information on servicing operations
• completing servicing equipment pre-start, start-up and shut-down procedures
• completing housekeeping requirements
• following and applying authorised servicing procedures
• disposing of environmentally sensitive oils, fluids and materials
• materials handling and storage procedures

Competency must be demonstrated using plant and equipment that is relevant to each mine site operation.

CONCURRENT ASSESSMENT AND PRE-REQUISITE RELATIONSHIP OF UNITS

This unit may be assessed with other relevant units according to specific mine site requirements and with consideration to the following core units:

• Core Unit MNMCCCOO001A Communicate in the workplace
• Core Unit MNMCCCO1002A Work safely
• Core Unit MNMCCCOO003A Plan and organise individual work
• Core Unit MNMCCCOO004A Contribute to quality work outcomes
• Core Unit MNMCCCOO005A Apply local risk control processes

KNOWLEDGE WILL INCLUDE

• site and equipment safety requirements
• isolation and tag-out procedures
• emergency fire procedures
• equipment characteristics, technical capabilities and limitations
• fuel and lubricants applications and specifications
• filters application and specifications
• additives - applications/specifications
• Hazchem systems
• hazard identification and response procedures
• site environmental requirements and constraints related to servicing

SKILLS WILL INCLUDE

• apply operational safety requirements
• read, interpret and apply technical information
• apply diagnostic techniques
• use relevant hand tools
• carry out oil sampling operations
• carry out basic operation of equipment to be serviced
• apply environmental constraints in servicing operations
• maintain equipment records
• dispose of environmentally sensitive fluids and materials

RESOURCE IMPLICATIONS

Typical resources in the work environment should be used during assessment. Selection and use of resources for particular sites may differ due to mine site conditions, equipment availability, equipment/plant types and different contexts.

ASSESSMENT STATEMENT

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