

**SOUTH AFRICAN QUALIFICATIONS AUTHORITY (SAQA)**

In accordance with Regulation 24(c) of the National Standards Bodies Regulations of 28 March 1998, the Standards Generating Body (Task Team) for

Fabrication and Extraction

registered by Organising Field 06 –Manufacturing,Engineering and Technology, publishes the following Qualification and Unit Standards for public comment.

This notice contains the titles, fields, sub-fields, NQF levels, credits, and purpose of the Qualification and Unit Standards. The full Qualification and Unit Standards can be accessed via the SAQA web-site at www.saqqa.org.za. Copies may also be obtained from the Directorate of Standards Setting and Development at the SAQA offices, SAQA House, 1067 Arcadia Street, Hatfield, Pretoria.

Comment on the Qualification and Unit Standards should reach SAQA at the address below and **no later than 30 November 2009**. All correspondence should be marked **Standards Setting – Task team for Fabrication and Extraction** and addressed to

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ACTING DIRECTOR: STANDARDS SETTING AND DEVELOPMENT



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

QUALIFICATION:
Further Education and Training Certificate: Mining Operations

SAQA QUAL ID	QUALIFICATION TITLE		
74490	Further Education and Training Certificate: Mining Operations		
ORIGINATOR	PROVIDER		
Task Team - Fabrication and Extraction			
QUALIFICATION TYPE	FIELD	SUBFIELD	
Further Ed and Training Cert	6 - Manufacturing, Engineering and Technology	Fabrication and Extraction	
ABET BAND	MINIMUM CREDITS	NQF LEVEL	QUAL CLASS
Undefined	159	Level 4	Regular-Unit Stds Based

New NQF Level: NQF Level 04

This qualification does not replace any other qualification and is not replaced by another qualification.

PURPOSE AND RATIONALE OF THE QUALIFICATION

Purpose:

The purpose of this Qualification is to equip learners with the theoretical knowledge, technical skills and practical ability to function as a Production Supervisor in a particular context (domain) within the mining industry.

The Production Supervisor plays a critical role in the mining industry. Mining activities are often conducted under dangerous and difficult conditions, which have to be managed appropriately in order to preserve the lives of those working in the industry, and ensure operational efficiency. While the title "supervisor" implies to specific competencies, these competencies are applied in conjunction with technical and operational competencies. The Production Supervisor must adapt continually to changing physical conditions in his or her area of responsibility e.g. geology and blast damage. He/she is accountable for the occupational health and safety of the team, as well as for achieving production targets.

Learners acquiring this Qualification will have an improved understanding of their role, acquire the applied competencies to consistently and effectively execute their duties by contributing to the mining process and adhere to quality and occupational health and safety requirements.

This Qualification will have a positive impact on society through the minerals produced, in the light of the massive impact of the mining industry on the economy. Furthermore, the mining industry has an additional impact on the economy in terms of secondary and tertiary mining and minerals related activities. In many parts of South Africa, entire communities would collapse if mining activities were to cease.

Learners credited with this Qualification will be able to:

- Communicate and solve problems by applying mathematical practical applications in a variety of ways.
- Adhere to Occupational Health, Safety and Environmental requirements.

- Supervise the extraction of minerals to meet production targets, taking into account the Occupational Health, Safety, Quality and Environmental requirements.
- Interact with Technical Services Departments to optimise the mining process.

Rationale:

The South African mining industry is one of the largest and most diverse in the world, with activities in domains such as:

- Underground Hard rock mining (Conventional and Mechanised).
- Underground Coal.
- Surface Mining/Quarrying/Dimension Stone/Industrial Minerals.
- Marine Mining.
- Alluvial.
- Small Scale Mines (Surface and Underground).

Apart from being the industry which makes the largest contribution to foreign exchange earnings, it is also one of the largest employers, providing employment opportunities to many workers from South Africa and neighbouring countries.

While there are many role players in the mining industry, the Production Supervisor (Pit Supervisor) can arguably be considered one of the most important role players in the mining process.

It is vital that the Production Supervisor comes from within the industry, and has intimate knowledge and experience of all the aspects of mining, such as:

- Occupational Health and Safety.
- Production (technical).
- Environmental (particularly surface mining contexts).
- Management/Leadership Skills.
- Mine Production Planning.

This requires a clear and thorough path of learning, from the basic aspects through to the more advanced aspects of Production, Occupational Health and Safety applicable at that particular level. The Production Supervisor has the accountability for the lives of his team and other support personnel.

This Qualification is the result of collaboration by the various mining domains:

- Underground Hard rock mining (Conventional and Mechanised).
- Underground Coal.
- Surface Excavations (Surface Mining/Quarrying/Dimension Stone/Industrial Minerals).
- Small Scale Mines (Surface and Underground).

Learners registering for this Qualification will typically be qualified Rockbreakers working within the mining industry; and learners will qualify as Production Supervisors in any of the specific domains in which they have accumulated sufficient technical and production expertise. Depending on their learning path, before engaging in learning towards this Qualification, a period of practical work in a specific domain may be required before appointment as a Production Supervisor can be made. This Qualification has 4 specialisation streams for learners to follow.

A typical learning pathway would begin with a National Certificate: Rockbreaking, NQF Level 3 and proceed to the Further Education and Training Certificate: Mining Operations. Learners who have achieved this Qualification can progress to Qualifications at a higher level on the NQF within the established mining learning pathways.

As this is a generic Qualification, it will be possible for learners to articulate between the respective domains. However an appropriate exposure to the practical aspects of a particular domain may be required before the learner will be able to operate safely and effectively in the new context.

RECOGNIZE PREVIOUS LEARNING?

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LEARNING ASSUMED IN PLACE

It is assumed that learners embarking on learning towards this Qualification are already competent in the following:

- Communication and Mathematical Literacy at NQF Level 3.

Recognition of Prior Learning:

This Qualification can be achieved wholly or in part through Recognition of Prior Learning in terms of the criteria laid out above.

Evidence can be presented in a variety of forms, including international or previous local Qualifications, reports, testimonials mentioning functions performed, work records, portfolios, videos of practice and performance records.

Access to the Qualification:

Access to this Qualification is restricted in terms of the Mines Health and Safety Act and Regulations to persons who have successfully completed a suitable Rockbreaking Qualification in the relevant domain or are current holders of a Blasting Certificate of Competence issued by the Department of Minerals and Energy.

QUALIFICATION RULES

Fundamental:

The Fundamental Component consists of the following learning, which is compulsory for learners:

- Unit Standards at NQF Level 4, totalling 16 Credits in Mathematical Literacy.
- Unit Standards at NQF Level 4, totalling 20 Credits in Communication in a First South African Language.
- Unit Standards at NQF Level 3, totalling 20 Credits in Communication in a Second South African Language.

It is therefore compulsory for learners to do Communication in two different South African languages, one at NQF Level 4 and the other at NQF Level 3.

All Unit Standards totalling 56 Credits must be achieved.

Core:

All Unit Standards totalling 53 Credits must be achieved.

Electives:

The Elective component consisting of four specialisation areas:

- Specialisation Area A: Underground Hard rock mining (Conventional and Mechanised).
- Specialisation Area B: Underground Coal Mining.
- Specialisation Area C: Surface Excavations.
- Specialisation Area D: Small Scale Mines (Surface and Underground).

Learners are to choose a specialisation area and then complete Unit Standards list for that specialisation totalling a minimum of 50 Credits.

Specialisation area A: Underground hard rock mining:

Title; NQF Level; Credits:

- ID 336912: Demonstrate knowledge and understanding of short term mine planning; NQF Level 4; 8 Credits.
- ID 336907: Demonstrate an understanding of development, pre-ledging equipping, ledging, equipping and stopping processes; NQF Level 4; 8 Credits.
- ID 336902: Demonstrate knowledge and understanding of the starting up and closing off procedure for an underground workplace; NQF Level 4; 5 Credits.
- ID 336900: Demonstrate an understanding of strata control practice in an underground hard rock mine; NQF Level 4; 8 Credits.
- ID 336905: Demonstrate knowledge and understanding of underground horizontal transport operation; NQF Level 4; 4 Credits.
- ID 336911: Demonstrate an understanding of mine geology; NQF Level 4; 4 Credits.
- ID 336915: Demonstrate knowledge and understanding of Mineral valuation; NQF Level 4; 4 Credits.
- ID 336964: Demonstrate an understanding of roles and responsibilities of a production supervisor in a mining environment; NQF Level 4; 8 Credits.
- ID 336980: Apply a computerized management system in a production mining environment; NQF Level 3; 4 Credits.

Total: 53 Credits.

Specialisation area B: Underground coal mining:

Title; NQF Level; Credits:

- ID 263016: Read and understand a mine plan and transfer recorded information onto mine plans; NQF Level 3; 4 Credits.
- ID 337039: Coordinate transportation operations in an underground coal mine; NQF Level 4; 5 Credits.
- ID 115600: Demonstrate the coordination of conveyor system operations in an underground coal mine; NQF Level 3; 4 Credits.
- ID 115608: Demonstrate an understanding of Ventilation systems in an underground coal mine; NQF level 4; 10 Credits.
- ID 336979: Control stonework operations in an underground coal mine; NQF Level 3; 4 Credits.
- ID 336944: Coordinate of loading operations in an underground coal mine; NQF Level 4; 5 Credits.
- ID 110125: Control operations in a blasting section in an underground coal mine; NQF Level 3; 15 Credits.
- ID 263414: Process data using information technology; NQF Level 4; 5 Credits.

- ID 336962: Conduct over an underground coal mine inspection in a production section; NQF Level 4; 6 Credits.
- ID 336981: Demonstrate an understanding to control strata conditions in an underground coal mine; NQF Level 4; 4 Credits.

Total: 62 Credits.

Specialisation area C: Surface excavations:

For Blasted Surface Excavations: SAQA ID 257075; Design blasts for surface excavations (NQF Level 4; 24 Credits) must be achieved. Unit Standards totalling further 26 Credits must be achieved from the list below.

For Non-Blasted Surface Excavations: Choose Unit Standards from those listed below totalling at least 50 Credits.

Title; NQF Level; Credits:

- ID 257075: Design blasts for surface excavations; NQF Level 4; 24 Credits.
- ID 337000: Develop a short term surface excavation scheduling; NQF Level 4; 7 Credits.
- ID 336903: Coordinate surface excavation operations; NQF Level 4; 10 Credits.
- ID 336909: Apply strata control techniques and processes in surface excavations; NQF Level 4; 7 Credits.
- ID 336914: Implement and maintain services and infrastructure in surface excavations; NQF Level 4; 7 Credits.
- ID 336961: Construct and maintain roads in surface excavations; NQF Level 4; 7 Credits.
- ID 336965: Demonstrate an understanding of surface excavation; NQF Level 4; 7 Credits.
- ID 257095: Carry out basic surveying and calculations in surface excavations; NQF Level 3; 8 Credits.
- ID 336920: Implement and monitor grade and quality control for surface excavations; NQF Level 4; 4 Credits.
- ID 336966: Demonstrate an understanding of extraction and the beneficiation of minerals on surface excavations; NQF Level 4; 9 Credits.
- ID 336999: Coordinate the development of surface excavation operations; NQF Level 4; 7 Credits.
- ID 230017: Carry out blasting environmental testing; NQF Level 4; 6 Credits.
- ID 244407: Lift and move a load using mechanical lifting equipment; NQF Level 3; 7 Credits.

Total: 110 Credits.

For specialisation area D: Small scale mining:

Title; NQF Level; Credits:

- ID 260982: Acquire authorization needed for small-scale prospecting and mining; NQF Level 3; 3 Credits.
- ID 336963: Conduct prospecting relevant to small-scale mining; NQF Level 4; 10 Credits.
- ID 337019: Conduct mineral and ore sampling on a small-scale mine; NQF Level 3; 3 Credits.
- ID 336913: Complete a strategic plans for small-scale mining; NQF Level 5; 18 Credits.
- ID 336901: Plan run of mine excavation process for a small-scale mining operation; NQF Level 4; 6 Credits.
- ID 336960: Plan logistics and services for a small-scale mine; NQF Level 3; 3 Credits.
- ID 336942: Plan a mineral processing plant for a small scale mine; NQF Level 4; 9 Credits.
- ID 336941: Compile an integrated Environmental Impact Management Plan for a small-scale mine; NQF Level 4; 9 Credits.

- ID 336939: Demonstrate an understanding of the Mine Health and Safety Act, for small-scale mining operations; NQF Level 4; 6 Credits.
- ID 336916: Demonstrate knowledge and application of ground stability for small scale mines; NQF Level 4; 12 Credits.

Total: 79 Credits.

EXIT LEVEL OUTCOMES

1. Communicate and solve problems by applying mathematical practical applications in a variety of ways.
2. Adhere to Occupational Health, Safety and Environmental requirements in the workplace.
3. Supervise the extraction of minerals to meet production targets; taking into account the Occupational Health, Safety, Quality and Environmental requirements.
4. Interact with Technical Services Departments to optimise the mining process.

Critical Cross-Field Outcomes:

Critical Cross-Field Outcomes have been addressed by the Exit Level Outcomes as follows:

While performing integrated mining operations in a supervisory capacity, qualifying learners are able to:

Identify and solve problems in which response displays that responsible decisions, using critical and creative thinking, have been made by:

- Monitoring mining infrastructure, equipment and processes in terms of physical condition and operation.
- Monitoring infrastructure, equipment and processes in a mining production environment in terms of compliance with best operating procedures, occupational health and safety and quality assurance requirements.
- Responding to non-conformances in a mining production environment.
- Responding to emergencies in a mining production environment.
- Applying preventative or remedial action in accordance with operating procedures.

Work effectively with others as a member of a team, group, organisation or community by:

- Contributing to team goals and achievements by adhering to agreed working methods and processes.
- Contributing to team efficiency by supporting other team members in the minerals processing environment.
- Adhering to team protocols, codes of conduct and generally promoting a positive team spirit.
- Coordinating one's work with that of others in the direct surrounding area, internal and external operations.

Organise and manage oneself and one's activities responsibly and effectively by:

- Conducting shift take-over and hand-over activities effectively in order to ensure typical continuous operations in a mining production environment.
- Applying operating instructions to control and respond to mining operation conditions.
- Taking preventive and remedial action to solve operating problems in a mining production environment.

Collect, analyse, organise and critically evaluate information by:

Source: National Learners' Records Database

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- Monitoring operational parameters in a minerals processing environment.
- Collating and sorting quality assurance data.
- Monitoring and interpreting quality assurance data against the requirements.
- Managing records, reports and stock.

Communicate effectively by using mathematical and/or language skills in the modes of oral and/or written presentations by:

- Interpreting, recording and reporting of mining production data.
- Completing reports, log sheets, shift handover activities and other control activities effectively, ensuring that all other team members are aware of critical information.
- Preparing and submitting reports, non-conformance reports and other required documentation.
- Working with modern communications technology such as computer messaging, cellular phones and radio systems in a mining production environment.

Use science and technology effectively and critically, showing responsibility towards the environment and health of others by:

- Working according to occupational health and safety regulations:
 - Evident in all 4 Exit Level Outcomes.
- Using relevant terminology and adhering to standard protocols such as SI, ISO and other standards applicable in the mining production environment.
- Controlling technologically advanced mining production equipment according to operating procedures.

Demonstrate an understanding of the world as a set of related systems by recognising that problem solving contexts do not exist in isolation by:

- Understanding the impact of upstream, downstream and parallel mining production systems upon each other and his own role in each context.
- Requesting assistance from other team members and support personnel.
- Assisting other team members and working together with support personnel to investigate and resolve problem areas.
- Adjusting equipment and machinery while taking cognizance of the impact on other processes.

ASSOCIATED ASSESSMENT CRITERIA

Associated Assessment Criteria for Exit Level Outcome 1:

- Oral communication is maintained and adapted as required to promote effective interaction in a work context.
- Written communication is conducted at an appropriate level for designated target audiences.
- Oral and written communication is conducted at an appropriate level in a second language.
- Mathematical principles and techniques are applied while performing tasks in the operational context.
- Problems and solutions are recorded and monitored for reoccurrence.

Associated Assessment Criteria for Exit Level Outcome 2:

- Occupational Health, Safety and Environmental requirements are understood and applied at all times as per workplace requirements.
- Hazardous conditions are identified and explained in accordance with specified requirements.
- Ports are compiled, submitted, circulated and followed up in accordance with legal and site-specific requirements.

- Occupational Health, Safety and Environmental compliance is monitored on a continuous basis in accordance with legal and site-specific requirements.

Associated Assessment Criteria for Exit Level Outcome 3:

- The organisation's objectives and operating standards are interpreted in order to determine the direction of work units.
- Mining activities are supervised in order to achieve the required production rates in terms of quantity, quality and costs.
- Mining activities are conducted in accordance with the requirements of the Mine Health and Safety Act and other Occupational Health and Safety requirements.
- Codes of Practice, Policies and Procedures are communicated to all role players and compliance thereof ensured in accordance with the relevant provisions.
- Production results and deviations are reported and logged on a continual basis according to specified requirements.
- Corrective action is taken to maintain product quality and process integrity.

Associated Assessment Criteria for Exit Level Outcome 4:

- The principles of basic mining economics are applied to make financial decisions to optimise the profitability of area of a mine.
- Essential basic engineering principles are applied in the workplace to enhance productivity and profitability.
- The application of strata control principles are applied in the workplace specifically to ensure the health and safety of persons.
- Geological features and discontinuities are investigated, reported and dealt with in accordance with mine specified requirements.
- Relevant survey techniques are applied in order to achieve legal, safety and economic objectives.

Integrated Assessment:

Integrated Assessment at the level of the Qualification provides an opportunity for learners to show they are able to integrate concepts, actions and ideas achieved across a range of Unit Standards and contexts.

Integrated Assessment must evaluate the quality of observable performance as well as the thinking behind the performance and must be based on a summative assessment guide. The guide will spell out how the assessor will assess different aspects of the performance and will include:

- Observing the learner at work (both in the primary activity as well as other interactions).
- Asking questions and initiating short discussions to test understanding.
- Looking at records and reports in the portfolio and reviewing previous assessments.

In some cases interference will be necessary to determine competence depending on the nature and context within which performance takes place.

It is necessary to ensure that the fundamental part of the Qualification is also targeted to ensure that while the competence may have been achieved in a particular context, learners are able to apply it in a range of other contexts and for future learning. The assessment should also ensure that all the Critical Cross-Field Outcomes have been achieved.

The learner may choose in which language she/he wants to be assessed. This should be established as part of a process of preparing the learner for assessment and familiarising the learner with the approach being taken.

While this is primarily a workplace-based Qualification, evidence from other areas of endeavour may be introduced if pertinent to any of the Exit-Level Outcomes. The assessment process should cover both the explicit tasks required for the qualification as well as the understanding of the concepts and principles that underpin the activities associated with manufacturing cement or lime.

INTERNATIONAL COMPARABILITY

Mining activities occur in many countries all over the world, although the South African mining industry is more diverse than that of most other countries.

The above has determined that the countries chosen to benchmark this Qualification against were selected based on proven best practice within similar mining conditions.

The international comparability exercise was conducted by comparing the outcomes of the proposed South African Qualification to those in Qualifications, skills programmes and training courses of a number of countries with established mining industries. The reason for comparing against those countries is given in each instance:

- Australia: International best practice.
- New Zealand: International best practice.
- United Kingdom: International best practice.
- India: Strong emerging industry.
- Zambia: African country (SADEC).
- Botswana: African country (SADEC).
- Namibia: African country (SADEC).

The United Kingdom, India, New Zealand and Australia are considered best practice because many aspects of their mining operations relate and compare to similar aspects of mining operations within the South African industry. However, mining practices and standards are influenced world-wide by the presence of former colonial structures (e.g. in Africa) and large multinational companies such as Anglo American, Rio Tinto, BHP Billiton and others.

In most cases very little was found in terms of Production Supervisor Qualifications, but rather on the technical/production aspects of mining. There was also no evidence of the generic approach envisaged by this (proposed) Qualification.

A limiting aspect regarding international comparability is that the NQF Framework of South Africa and other countries are not identical. It is thus more meaningful to compare learning pathways, rather than individual Qualifications.

Australia:

Australia has a well-developed economy and mining sector.

Mining conditions and practices are similar to those in South African mines.

Mining practices are well established and considered to be international best practice.

Australia has a well structured outcomes-based training and education system.

Relevant Qualifications were found:

- Certificate III in Extractive Industries Operations
- Comparable competencies (standards) are:
 - Conduct blast survey.
 - Conduct blast hole drilling operations.

- Handle and transport explosives.
- Conduct shot firing.

- Certificate IV in Metaliferous Mining Operations (Open Cut) Drilling, Blasting and Ground Support.
 - Comparable competencies (standards) are:
 - Set-up and prepare for drilling.
 - Operations.
 - Drill in open cut environment.
 - Install ground support.
 - Handle and transport explosives.
 - Fire shots.
 - Administer shot firing activities.

- Certificate IV in Metaliferous Mining Operations (Open Cut)(Underground)(Processing).
 - Comparable competencies (standards) are:
 - Core:
 - Work safely.
 - Communicate in the workplace.
 - Contribute to quality work outcomes.
 - Participate in environmental work practices.
 - Mine management:
 - Apply, monitor, rectify and report statutory/legal compliance systems.
 - Apply and monitor systems for stable mining.
 - Apply and monitor mine emergency preparedness and response systems.
 - General:
 - Apply risk management processes.
 - Conduct safety and health investigations.
 - Communicate information.

- Diploma of Extractive Industries Management:
 - The Diploma of Extractive Industries Management reflects the role of personnel working in a quarry or other extractive industries operations, who perform tasks involving a high level of autonomy and requiring the application of significant judgement in planning and determining the selection of equipment/roles/techniques for themselves and others. They are required to develop site specific work instructions and practices to ensure the implementation of the site management systems, plans and policies. They demonstrate the application of a broad range of technical, managerial, coordination and planning skills.

- Comparable competencies (standards) are:
 - General Management:
 - Implement and maintain management plans to control risk.
 - Implement pit plan.
 - Conduct sales in construction materials operations.
 - Manage personal work priorities and professional development.
 - Provide leadership in the workplace.
 - Establish effective workplace relationships.
 - Facilitate work teams.
 - Manage operational plan.
 - Promote continuous improvement.
 - Facilitate and capitalise on change and innovation.
 - Develop a workplace learning environment.
 - Prepare budgets and financial plans.
 - Technical Management units:
 - Conduct shot firing.

- Implement site water management plan.
- Implement site plant and resource management plan.
- Select and install quarry plant and equipment.
- Design surface blasts.
- Manage blast hole drilling operations.
- Manage blasting operations.
- Manage dredging operations.
- Implement site processing plant operations.
- Implement site waste and by-product management plan.
- Implement stockpile management plan.
- Implement and maintain the site plant, equipment.
- Infrastructure maintenance plan.

• The outcomes in the Further Education and Training Certificate Mining Operations, NQF Level 4 compare well with those of the Australian Qualifications. While not every aspect of the proposed Mining Supervision Qualification is covered within the above mentioned certificates and training packages, they provide useful training information in terms of the comparable portions to persons wanting to qualify for the South African Certificate.

New Zealand:

New Zealand has a well-developed economy and mining sector.

Mining conditions and practices are similar to those in South Africa.

Mining practices are well established and considered to be best practice.

New Zealand has a well structured outcomes-based training and education system.

Details found (www.nzqa.govt.nz):

- National Certificate in Extractive Industries (Shot firing; Surface).
- Comparable competencies (standards) are:
 - Store explosives for use in extractive industries.
 - Design blasting layouts.
 - Carry out shot-firing operations.
- The intent and content of the proposed Mining Supervision Qualification compare favourably with elements of the New Zealand Qualification.

United Kingdom:

- The United Kingdom is widely considered to be a leader both in terms of mining technology (many UK trained professionals work in the South African Mining Industry) and learning systems, having a well-developed system of National Vocational Qualifications.
 - Details were found relating to a N/SVQ Shot Firing Operations.
 - Comparable competencies (standards) are:
 - Contribute to an Efficient and Effective Work Environment.
 - Contribute to Health and Safety in the Workplace.
 - Receive Store and Issue Explosive Materials.
 - Obtain and Transport Explosive Materials.
 - Charge Blast Holes to Specification.
 - Blast to Specification.
 - Deal with Misfires.
- The intent and content of the N/SVQ Shot firing Operations compare favourably with the proposed Mining Supervision Qualification.

India:

- India has one of the fastest growing economies in the world.
- Mining practices are well established and considered to be best practice.
- Underground mining conditions are similar to those envisaged in this Qualification.
- India has a well structured outcomes-based training and education system.
- Details regarding an Overman's/Foreman's Certificate were found:

This is not a Unit Standards based Qualification, but a developmental process. However the content compares favourably with some of the competencies in the proposed Mining Supervision Qualification.

Persons holding Diploma in Mining Engineering or an equivalent qualification from a Institution approved under Regulation 18 will be eligible for grant of a Overman's/Foreman's Certificate if he possesses at least one year's experience as a Post Diploma Trainee under the Directorate of Practical Training in Mining or equivalent approved training.

The candidates are required to submit the following documents as proof that they have participated meaningfully in the developmental process:

- Original along with Form-II.
- (i) Degree Certificate.
- (ii) Secondary School Certificate.
- (iii) Character Certificate.
- (iv) Valid First Aid Certificate.
- (v) Gas Testing certificate (not required for metal Restricted certificates).
- (vi) Medical Certificate (with attested signature of candidate).
- (vii) Experience Certificate (in original) for a period of one year from the date of passing of Diploma. Out of this one years' experience, the total experience of one year of underground workings is considered or 09 months of underground workings and 03 months' of opencast workings is considered.
- Experience obtained in statutory capacity like Sirdar/Overman/Mate/Foreman may also be considered provided such experience should have been obtained after receiving the requisite Diploma.
- Entire experience in opencast mines may be considered for Foreman Restricted Certificate.
- Date of passing is taken as the date mentioned on Degree certificate or Degree.
- Mark sheet or provisional certificate or a certificate issued by the University/College authorities.
- Candidates are advised to furnish supporting documents for their claim of date of passing.
- The intent and content of the proposed Further Education and Training Certificate Mining Supervision compare favourably with the Indian Qualification.
- There is correlation between the examination syllabi of the Overman/Foreman's Certificate and unit standards within the proposed Further Education and Training Certificate Mining Operations Level 4.

Africa:

- A number of African countries are currently developing qualifications frameworks similar to ours in South Africa with the assistance of UNESCO. Unfortunately none of the countries scanned (Namibia, Kenya, Botswana and Zambia have any mining related qualifications on their systems as yet.
- A senior mining consultant who has worked in several African countries, e.g. Zambia and Madagascar, has however advised that typically training is provided by mining companies operating in the various areas, although there may not yet be any national system in place

- The relevant training given, which will undoubtedly be reflected in future developments, thus closely follows the systems which will be in place in the "home" countries of the respective mining companies, e.g.
 - Kenya and Botswana (British).
 - Madagascar (French).
 - There is also a South African influence in some of these countries, via South African based companies operating in those countries and providing a technical and training service, e.g. Lafarge Cement operating in Zambia and PPC Cement operating in Botswana.

Small Scale Mining:

No references were found to specific training and development programmes in the small scale mining sector. However, a great deal of information was found relating to capacity in the sector. Various organisations are involved in this issue world wide.

This justifies the specific nature of the small-scale mining competencies included in the proposed Mining Supervision Qualification. On the one hand the learner is equipped to operate in the political and economical environment relating to small scale mining, and on the other compliance to legal and other requirements is ensured.

Some of the international issues are:

The Global Mercury Project (GMP) is an initiative of the United Nations in collaboration with numerous government and non-government organizations to promote knowledge and capacity building on the links between small-scale gold mining practices and health, ecosystem, and social factors, and to implement interventions that reduce mercury pollution and exposure caused by mining activities in developing countries. Knowledge regarding the use of mercury and the dynamics of complex environmental, health, socioeconomic, and cultural conditions in and surrounding small-scale mining sites is particularly needed for the purpose of developing appropriate community-based measures to reduce mercury-related problems. GMP strategies aim to build upon local knowledge and practices to train miners on the use of cleaner and affordable technologies of mining and mineral processing in order to minimize negative impacts. The initiative is especially proactive in facilitating trans disciplinary and participatory models of community interaction, involving local, regional, and international stakeholders in each of the strategy design, community assessment, and community intervention phases. The six participating countries are Brazil, Indonesia, Lao People's Democratic Republic, Sudan, Tanzania, and Zimbabwe.

In the context of increased mining activities both in Latin America and Canada, this capacity-building project is the result of needs expressed by the Amerindian Peoples Association of Guyana (APA), the National Organization of Indigenous Peoples of Colombia (ONIC), the Association of Indigenous Village Leaders in Suriname (VIDS) and the Assembly of First Nations of Canada. Through participation in a two-year (2000-2002) research project to explore Indigenous perspectives to consultation and engagement within the mining sector of LAC, the APA and ONIC identified a critical need for capacity-building of Indigenous (and in Colombia, Afro-Colombian) leaders and communities in negotiations with mining companies and governments, including strategies for engaging in multi-party dialogues with a view to influencing policy and practice. In addition, the APA will be conducting its own environmental monitoring and mercury testing to assess contamination and impacts of small-scale mining in Amerindian communities (and medium and large-scale mining where this exists), and sharing the results of studies previously conducted by government and others.

The following information from the World Bank (Site resources) is also interesting:

- Artisanal and small-scale mining is practiced in about 50 countries by people who live in the poorest and most remote rural areas, with few employment alternatives.

- At least 20 million people engage in artisanal and small-scale mining and a further 100 million people depend on it for their livelihood. These numbers are growing in line with higher prices and demand for minerals both in OECD countries and emerging economies such as China and India.
- As many as 650,000 women in 12 of the world's poorest countries are engaged in artisanal mining.
- Between 1 and 1.5 million children, evenly split between boys and girls under the age of 18 years old, are also involved in small-scale mining, according to the International Labour Organization.
- The range of commodities exploited by artisan miners is diverse, including gemstones, gold, copper, cobalt, coal, and other industrial minerals.

Conclusions:

From all of the above, it can be concluded that the proposed Further Education and Training Certificate Mining Operations compares favourably with Qualifications and course presented internationally, on the following basis:

- There is a progression of learning (learning pathway) that takes a learner from performing manual labour, through blasting assistant and related competencies, to rock breaking (blasting) and on to supervisory and management functions.
- Although systems in the various countries scanned have different level indicators, there is a clear correlation between lower, intermediate and higher levels on the one hand, and related competencies on the other.
- The contents of these programmes relate to occupational health and safety, mine and slope stability, explosives handling and transport, blasting and related competencies.

ARTICULATION OPTIONS

This Qualification allows for both vertical and horizontal articulation.

Vertical articulation exists with:

- Advanced Certificate in Mining Practice NQF Level 5 (which is still in the design phase).

Horizontal articulation exists between the respective specialisation areas or to other minerals processing applications in the other mining domains.

MODERATION OPTIONS

- Anyone assessing a learner or moderating the assessment of a learner against the Qualification must be registered as an assessor with the relevant Education, Training, Quality, Assurance (ETQA) Body, or with an ETQA that has a Memorandum of Understanding with the relevant ETQA.
- Any institution offering learning that will enable the achievement of this Qualification must be accredited as a provider with the relevant Education, Training, Quality, Assurance (ETQA) Body, or with an ETQA that has a Memorandum of Understanding with the relevant ETQA.
- Assessment and moderation of assessment will be overseen by the relevant Education, Training, Quality, Assurance (ETQA) Body, or by an ETQA that has a Memorandum of Understanding with the relevant ETQA, according to the ETQA's policies and guidelines for assessment and moderation.
- Moderation must include both internal and external moderation of assessments, unless ETQA policies specify otherwise. Moderation should also encompass achievement of the competence described in the associated Unit Standards.

- Anyone wishing to be assessed against this Qualification may apply to be assessed by any assessment agency, assessor or provider institution that is accredited by the relevant ETQA.

CRITERIA FOR THE REGISTRATION OF ASSESSORS

Assessors should be in possession of:

- An appropriate Qualification above the level of the Qualification and preferably relevant workplace practical experience.
- Registration as an assessor with the relevant ETQA.

UNIT STANDARDS

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
Fundamental	119472	Accommodate audience and context needs in oral/signed communication	Level 3	5
Fundamental	119457	Interpret and use information from texts	Level 3	5
Fundamental	119467	Use language and communication in occupational learning programmes	Level 3	5
Fundamental	119465	Write/present/sign texts for a range of communicative contexts	Level 3	5
Fundamental	9015	Apply knowledge of statistics and probability to critically interrogate and effectively communicate findings on life related problems	Level 4	6
Fundamental	119462	Engage in sustained oral/signed communication and evaluate spoken/signed texts	Level 4	5
Fundamental	119469	Read/view, analyse and respond to a variety of texts	Level 4	5
Fundamental	9016	Represent analyse and calculate shape and motion in 2- and 3-dimensional space in different contexts	Level 4	4
Fundamental	119471	Use language and communication in occupational learning programmes	Level 4	5
Fundamental	7468	Use mathematics to investigate and monitor the financial aspects of personal, business, national and international issues	Level 4	6
Fundamental	119459	Write/present/sign for a wide range of contexts	Level 4	5
Core	120335	Conduct an investigation into workplace incidents	Level 3	5
Core	120331	Demonstrate knowledge pertaining to fires in working places	Level 3	3
Core	336945	Conduct an issue-based risk assessment within a workplace	Level 4	3
Core	336919	Demonstrate an understanding of continual improvement in the mining cycle	Level 4	4
Core	336908	Demonstrate an understanding of essential basic engineering principles that are applicable to the mining environment	Level 4	4
Core	336959	Demonstrate an understanding of labour supervision and production procedures for supervisors in the workplace	Level 4	7
Core	336943	Demonstrate an understanding of mining related strata control issues impacting on mining practice	Level 4	8
Core	336940	Demonstrate an understanding of strata control theory and terminology relevant to mining environment	Level 4	8
Core	336904	Demonstrate knowledge of basic mining economics	Level 4	4
Core	336910	Demonstrate knowledge of environmental awareness in the mining industry	Level 4	3
Core	336899	Demonstrate knowledge of legislation impacting on mining environment	Level 4	4
Elective	257095	Carry out basic surveying and calculations in surface excavations	Level 3	8
Elective	337019	Conduct mineral and ore sampling on a small-scale mine	Level 3	3
Elective	110125	Control operations in a blasting section in an underground coal mine	Level 3	15
Elective	115600	Demonstrate the co-ordination of a conveyor system operations in an underground coal mine	Level 3	4
Elective	244407	Lift and move a load using mechanical lifting equipment	Level 3	7

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
Elective	336906	Plan for authorisation of small-scale prospecting and mining operations	Level 3	3
Elective	336960	Plan logistics and services for a small-scale mine	Level 3	3
Elective	253016	Read and understand a mine plan and transfer recorded information onto mine plans	Level 3	4
Elective	336909	Apply strata control techniques and processes in surface excavation	Level 4	7
Elective	230017	Carry out blasting environmental testing	Level 4	6
Elective	336941	Compile an integrated environmental impact management plan for a small-scale mine	Level 4	9
Elective	336962	Conduct over and underground coal mine inspection in a production section	Level 4	6
Elective	336963	Conduct prospecting relevant to small-scale mining	Level 4	10
Elective	336961	Construct and maintain roads in surface excavations	Level 4	7
Elective	336979	Control stonework operations in an underground coal mine	Level 4	4
Elective	336944	Coordinate loading operations in an underground coal mine	Level 4	5
Elective	336903	Coordinate surface excavation operation	Level 4	10
Elective	336999	Coordinate the development of surface excavation operations	Level 4	7
Elective	337039	Coordinate transportation operations in an underground coal mine	Level 4	5
Elective	336966	Demonstrate an understanding of extraction and the beneficiation of minerals on surface excavations	Level 4	9
Elective	336907	Demonstrate an understanding of development, pre- ledging equipping, ledging, equipping and stoping processes	Level 4	8
Elective	336911	Demonstrate an understanding of mine geology	Level 4	4
Elective	336964	Demonstrate an understanding of roles and responsibilities of a production supervisor in a mining environment	Level 4	8
Elective	336900	Demonstrate an understanding of strata control practice in an underground hard rock mine	Level 4	8
Elective	336965	Demonstrate an understanding of surface excavation	Level 4	7
Elective	336939	Demonstrate an understanding of the mine health and safety Act, for small-scale mining	Level 4	6
Elective	115608	Demonstrate an understanding of ventilation systems in an underground coal mine	Level 4	10
Elective	336981	Demonstrate an understanding to control strata conditions in an underground coal mine	Level 4	4
Elective	336916	Demonstrate knowledge and application of ground stability for small scale mining	Level 4	12
Elective	336915	Demonstrate knowledge and understanding of mineral valuation	Level 4	4
Elective	336912	Demonstrate knowledge and understanding of short term mine planning	Level 4	8
Elective	336902	Demonstrate knowledge and understanding of the starting up and closing off procedures for an underground workplace	Level 4	5
Elective	336905	Demonstrate knowledge and understanding of underground horizontal transport operation	Level 4	4
Elective	257075	Design blasts for surface excavations	Level 4	24
Elective	337000	Develop a short term surface excavation scheduling	Level 4	7
Elective	336914	Implement and maintain services and infrastructure in surface excavation	Level 4	7
Elective	336920	Implement and monitor grade and quality control for surface excavations	Level 4	4
Elective	336942	Plan a mineral processing plant for a small-scale mine	Level 4	9
Elective	336901	Plan run of mine excavation process for a small-scale mining operation	Level 4	6
Elective	336913	Compile a strategic plan for a small-scale mining	Level 5	18
Unknown	336980	Apply a computerized management system in a production mining environment	Level 3	4

LEARNING PROGRAMMES RECORDED AGAINST THIS QUALIFICATION

None



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Demonstrate knowledge of legislation impacting on mining environment***

SAQA US ID		UNIT STANDARD TITLE	
336899		Demonstrate knowledge of legislation impacting on mining environment	
ORIGINATOR		PROVIDER	
Task Team - Fabrication and Extraction			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	4

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Demonstrate an understanding of the relevant aspects of the Labour Relations Act of 1995.

SPECIFIC OUTCOME 2

Demonstrate basic understanding of the relevant aspects of the Basic Conditions of Employment Act.

SPECIFIC OUTCOME 3

Demonstrate a basic understanding of the relevant aspects of the Employment Equity Act.

SPECIFIC OUTCOME 4

Demonstrate a basic understanding of the relevant aspects of the Mine Health and Safety Act.

SPECIFIC OUTCOME 5

Demonstrate basic understanding of the relevant aspects of the Skills Development Act.

SPECIFIC OUTCOME 6

Demonstrate a basic understanding of the relevant aspects of the Skills Development Levies Act.

SPECIFIC OUTCOME 7

Demonstrate a basic understanding of the relevant aspects of the Environmental Conservation Act.

SPECIFIC OUTCOME 8

Demonstrate a basic understanding of the relevant aspects of the National Water Act.

SPECIFIC OUTCOME 9

Demonstrate a basic understanding of the relevant aspects of the Water Services Act.

SPECIFIC OUTCOME 10

Demonstrate a basic understanding of the relevant aspects of the Explosives Act.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate an understanding of strata control practice in an underground hard rock mine

SAQA US ID		UNIT STANDARD TITLE	
336900		Demonstrate an understanding of strata control practice in an underground hard rock mine	
ORIGINATOR		PROVIDER	
Task Team - Fabrication and Extraction			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	8

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Demonstrate an understanding of the strata control considerations applied to underground hard rock, mining methods and the mining environment.

SPECIFIC OUTCOME 2

Demonstrate an understanding of the rock related issues and hazardous elements relative to the mining environment.

SPECIFIC OUTCOME 3

Demonstrate an understanding of the purpose and use of pre-conditioning as used on deep level hard rock mines.

SPECIFIC OUTCOME 4

Demonstrate an understanding of the purpose and use of a panel rating system on hard rock mines.

SPECIFIC OUTCOME 5

Demonstrate an understanding of the purpose and use of seismic warning systems on hard rock mines.

SPECIFIC OUTCOME 6

Demonstrate an understanding of the purpose of and reasons for well-structured monthly planning sessions.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Plan run of mine excavation process for a small-scale mining operation

SAQA US ID		UNIT STANDARD TITLE	
336901		Plan run of mine excavation process for a small-scale mining operation	
ORIGINATOR		PROVIDER	
Task Team - Fabrication and Extraction			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	6

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Demonstrate an understanding of planning for the run-of-mine excavation process for a small-scale mine.

SPECIFIC OUTCOME 2

Collect information necessary for planning the run-of-mine excavation process for a small-scale mine.

SPECIFIC OUTCOME 3

Compile the run-of-mine plan for a small-scale mine.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate knowledge and understanding of the starting up and closing off procedures for an underground workplace

SAQA US ID	UNIT STANDARD TITLE		
336902	Demonstrate knowledge and understanding of the starting up and closing off procedures for an underground workplace		
ORIGINATOR		PROVIDER	
Task Team - Fabrication and Extraction			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	5

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Demonstrate an understanding of the causes for and types of stopped ends.

SPECIFIC OUTCOME 2

Explain the specified requirements pertaining to the closing off of an underground mine workplace.

SPECIFIC OUTCOME 3

Explain specific requirements pertaining to the starting up of a workplace.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Coordinate surface excavation operation

SAQA US ID	UNIT STANDARD TITLE		
336903	Coordinate surface excavation operation		
ORIGINATOR	PROVIDER		
Task Team - Fabrication and Extraction			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	10

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Implement measures pertaining to significant Occupational Health and Safety related Hazards/Risks.

SPECIFIC OUTCOME 2

Allocate tasks to competent personnel in surface excavation operations.

SPECIFIC OUTCOME 3

Apply resources pertaining to surface excavation operations.

SPECIFIC OUTCOME 4

Allocate equipment for surface excavation operations.

SPECIFIC OUTCOME 5

Monitor surface excavation operations.

SPECIFIC OUTCOME 6

Implement environmental and rehabilitation measures.

SPECIFIC OUTCOME 7

Adhere to relevant processes pertaining to surface excavation operations.

SPECIFIC OUTCOME 8

Perform calculations pertaining to surface excavation operations.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate knowledge of basic mining economics

SAQA US ID		UNIT STANDARD TITLE	
336904		Demonstrate knowledge of basic mining economics	
ORIGINATOR		PROVIDER	
Task Team - Fabrication and Extraction			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	4

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Explain expenditure in terms of developing and operating a mine/quarry.

SPECIFIC OUTCOME 2

Demonstrate knowledge and understanding of revenue (income) in terms of sale of products.

SPECIFIC OUTCOME 3

Explain the elements within an income statement.

SPECIFIC OUTCOME 4

Explain the purpose of a budget.

SPECIFIC OUTCOME 5

Explain the breakdown and percentage split of the main working cost elements for an operating mine/quarry.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate knowledge and understanding of underground horizontal transport operation

SAQA US ID	UNIT STANDARD TITLE		
336905	Demonstrate knowledge and understanding of underground horizontal transport operation		
ORIGINATOR	PROVIDER		
Task Team - Fabrication and Extraction			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	4

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Demonstrate knowledge of proper use of track bound machinery.

SPECIFIC OUTCOME 2

Demonstrate knowledge of proper use of trackless mobile machinery.

SPECIFIC OUTCOME 3

Demonstrate knowledge of applying safety devices and precautionary measures when transporting material.

SPECIFIC OUTCOME 4

Demonstrate knowledge and understanding of conveyor belt transportation systems.

SPECIFIC OUTCOME 5

Demonstrate knowledge and understanding of scraper winch, mono winch and mono rail transportation systems.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Plan for authorisation of small-scale prospecting and mining operations***

SAQA US ID		UNIT STANDARD TITLE	
336906		Plan for authorisation of small-scale prospecting and mining operations	
ORIGINATOR		PROVIDER	
Task Team - Fabrication and Extraction			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	3

New NQF Level: NQF Level 03

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Prepare to obtain authorization for small-scale prospecting and mining operation.

SPECIFIC OUTCOME 2

Obtain prospecting and mining permits.

SPECIFIC OUTCOME 3

Evaluate information obtained to access area from landowner.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate an understanding of development, pre-ledging equipping, ledging, equipping and stoping processes

SAQA US ID	UNIT STANDARD TITLE		
336907	Demonstrate an understanding of development, pre-ledging equipping, ledging, equipping and stoping processes		
ORIGINATOR		PROVIDER	
Task Team - Fabrication and Extraction			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	8

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Demonstrate knowledge of the development process involved in excavation and removal of mineral ore.

SPECIFIC OUTCOME 2

Demonstrate knowledge of the pre-ledging equipping process.

SPECIFIC OUTCOME 3

Demonstrate an understanding of the ledging process.

SPECIFIC OUTCOME 4

Demonstrate an understanding of the stope equipping process.

SPECIFIC OUTCOME 5

Demonstrate knowledge and understanding of the stoping process.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate an understanding of essential basic engineering principles that are applicable to the mining environment

SAQA US ID		UNIT STANDARD TITLE	
336908		Demonstrate an understanding of essential basic engineering principles that are applicable to the mining environment	
ORIGINATOR		PROVIDER	
Task Team - Fabrication and Extraction			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	4

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Describe the different types of water pumps, their principle of operation and application.

SPECIFIC OUTCOME 2

Demonstrate knowledge of lifting equipment.

SPECIFIC OUTCOME 3

Demonstrate knowledge of mining machinery.

SPECIFIC OUTCOME 4

Demonstrate knowledge of belt conveyor systems.

SPECIFIC OUTCOME 5

Demonstrate knowledge of basic electricity.

SPECIFIC OUTCOME 6

Demonstrate knowledge of compressed air and relevant equipment.

SPECIFIC OUTCOME 7

Demonstrate knowledge of chairlift installations.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Apply strata control techniques and processes in surface excavation***

SAQA US ID	UNIT STANDARD TITLE		
336909	Apply strata control techniques and processes in surface excavation		
ORIGINATOR		PROVIDER	
Task Team - Fabrication and Extraction			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	7

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Demonstrate knowledge of rock classification systems.

SPECIFIC OUTCOME 2

Demonstrate an understanding of slope stability for surface excavations.

SPECIFIC OUTCOME 3

Identify and explain monitoring equipment types and applications.

SPECIFIC OUTCOME 4

Demonstrate an understanding of hydrogeology as required for surface excavation strata control.

SPECIFIC OUTCOME 5

Monitor and report Strata Control for Surface Excavations.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Demonstrate knowledge of environmental awareness in the mining industry***

SAQA US ID		UNIT STANDARD TITLE	
336910		Demonstrate knowledge of environmental awareness in the mining industry	
ORIGINATOR		PROVIDER	
Task Team - Fabrication and Extraction			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	3

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Explain the components that make up our environment.

SPECIFIC OUTCOME 2

Explain how pollution affects the environment and the use of biophysical resources.

SPECIFIC OUTCOME 3

Relate the legislative Acts, which include responsibilities of environmental management.

SPECIFIC OUTCOME 4

Explain how mining footprint causes land degradation.

SPECIFIC OUTCOME 5

Explain necessary measures of preventing water pollution at the operation.

SPECIFIC OUTCOME 6

Explain air pollution components caused by mining activities.

SPECIFIC OUTCOME 7

Explain principles of good waste management.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate an understanding of mine geology

SAQA US ID	UNIT STANDARD TITLE		
336911	Demonstrate an understanding of mine geology		
ORIGINATOR	PROVIDER		
Task Team - Fabrication and Extraction			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	4

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Relate the functions of a Geology department on the mine environment with reference to the supervisor's production section.

SPECIFIC OUTCOME 2

Recognise and describe typical rock types found on a mine specifically on and adjacent to the mining horizon.

SPECIFIC OUTCOME 3

Demonstrate understanding of tectonic structures intersected in both stoping and tunnelling operations.

SPECIFIC OUTCOME 4

Understand the role of the geologist in production planning/mineral resource management and Rock engineering.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

ID	QUALIFICATION TITLE	LEVEL
Elective 74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate knowledge and understanding of short term mine planning

SAQA US ID		UNIT STANDARD TITLE	
336912		Demonstrate knowledge and understanding of short term mine planning	
ORIGINATOR		PROVIDER	
Task Team - Fabrication and Extraction			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	8

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Demonstrate an understanding of the need and purpose of the monthly planning process.

SPECIFIC OUTCOME 2

Demonstrate an understanding of the critical few of an effective plan.

SPECIFIC OUTCOME 3

Demonstrate an understanding of the factors that need to be considered when planning.

SPECIFIC OUTCOME 4

Demonstrate the methodology used to compile the monthly plan.

SPECIFIC OUTCOME 5

Describe the short term controls used in monthly planning.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Compile a strategic plan for a small-scale mining

SAQA US ID	UNIT STANDARD TITLE		
336913	Compile a strategic plan for a small-scale mining		
ORIGINATOR	PROVIDER		
Task Team - Fabrication and Extraction			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 5	18

New NQF Level: NQF Level 05

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Demonstrate an understanding of strategic planning for a small-scale mine.

SPECIFIC OUTCOME 2

Create information necessary for compiling strategic plans for a small-scale mine.

SPECIFIC OUTCOME 3

Develop a strategic plan for a small-scale mine.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Implement and maintain services and infrastructure in surface excavation

SAQA US ID	UNIT STANDARD TITLE		
336914	Implement and maintain services and infrastructure in surface excavation		
ORIGINATOR	PROVIDER		
Task Team - Fabrication and Extraction			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	7

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Demonstrate knowledge of services and infrastructure design.

SPECIFIC OUTCOME 2

Implement services and infrastructure development.

SPECIFIC OUTCOME 3

Maintain services and infrastructure.

SPECIFIC OUTCOME 4

Plan and provide for resources in surface excavation service and infrastructure operations.

SPECIFIC OUTCOME 5

Conduct scheduling and calculations.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate knowledge and understanding of mineral valuation

SAQA US ID	UNIT STANDARD TITLE		
336915	Demonstrate knowledge and understanding of mineral valuation		
ORIGINATOR	PROVIDER		
Task Team - Fabrication and Extraction			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	4

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Demonstrate an understand of the terminology used in mine evaluation.

SPECIFIC OUTCOME 2

Explain the methodologies used in accurate face sampling.

SPECIFIC OUTCOME 3

Evaluate sampling reports and decide on an appropriate course of action.

SPECIFIC OUTCOME 4

Calculate square metres, tons, grade, mineral content and kilograms of metal.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Demonstrate knowledge and application of ground stability for small scale mining***

SAQA US ID		UNIT STANDARD TITLE	
336916		Demonstrate knowledge and application of ground stability for small scale mining	
ORIGINATOR		PROVIDER	
Task Team - Fabrication and Extraction			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology			
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	12

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Demonstrate knowledge and understanding of the factors that influence ground stability in small scale mining.

SPECIFIC OUTCOME 2

Failure modes are described and explained in the context of small scale mining.

SPECIFIC OUTCOME 3

Explain monitoring equipment types and applications in relation to small scale mining.

SPECIFIC OUTCOME 4

Demonstrate an understanding of hydrogeology pertaining to small scale mining.

SPECIFIC OUTCOME 5

Demonstrate knowledge and understanding of ground support methods for small scale mining.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate an understanding of continual improvement in the mining cycle

SAQA US ID	UNIT STANDARD TITLE		
336919	Demonstrate an understanding of continual improvement in the mining cycle		
ORIGINATOR	PROVIDER		
Task Team - Fabrication and Extraction			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	4

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Describe the mining process or value chain.

SPECIFIC OUTCOME 2

Describe the methodology to treat constraints impacting on mining.

SPECIFIC OUTCOME 3

Describe the actions in implementing solutions to the mining cycle to effect continuous improvement.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Implement and monitor grade and quality control for surface excavations

SAQA US ID		UNIT STANDARD TITLE	
336920		Implement and monitor grade and quality control for surface excavations	
ORIGINATOR		PROVIDER	
Task Team - Fabrication and Extraction			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	4

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Demonstrate knowledge of the principles of grade and quality control.

SPECIFIC OUTCOME 2

Demonstrate an understanding of the requirements for grade and quality control in surface excavations.

SPECIFIC OUTCOME 3

Coordinate grade control activities.

SPECIFIC OUTCOME 4

Monitor and report on grading control activities.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate an understanding of the mine health and safety Act, for small-scale mining

SAQA US ID		UNIT STANDARD TITLE	
336939		Demonstrate an understanding of the mine health and safety Act, for small-scale mining	
ORIGINATOR		PROVIDER	
Task Team - Fabrication and Extraction			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	6

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Demonstrate an understanding of the objectives of the Mine's Health and Safety Act; and the impact on a small-scale mine.

SPECIFIC OUTCOME 2

Demonstrate an understanding of the responsibilities of the Employee with regards to Health and Safety.

SPECIFIC OUTCOME 3

Demonstrate an understanding of the staffing requirements in a small scale mine.

SPECIFIC OUTCOME 4

Demonstrate an understanding of the responsibility of the manager of a small scale mine to identify and deal with hazards and risks.

SPECIFIC OUTCOME 5

Demonstrate an understanding of the responsibility of the manager of a small scale mine to establish and maintain a medical surveillance system.

SPECIFIC OUTCOME 6

Demonstrate an understanding of the responsibilities of the health and safety committee and safety representatives.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate an understanding of strata control theory and terminology relevant to mining environment

SAQA US ID		UNIT STANDARD TITLE	
336940		Demonstrate an understanding of strata control theory and terminology relevant to mining environment	
ORIGINATOR		PROVIDER	
Task Team - Fabrication and Extraction			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	8

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Demonstrate knowledge of rock mechanics terminology.

SPECIFIC OUTCOME 2

Demonstrate knowledge and understanding of the physical mining environment.

SPECIFIC OUTCOME 3

Demonstrate knowledge of geological discontinuities and associated hazards.

SPECIFIC OUTCOME 4

Demonstrate an understanding of the role of pillars in mining.

SPECIFIC OUTCOME 5

Demonstrate knowledge of the term "Remnant" and remnant precautions.

SPECIFIC OUTCOME 6

Demonstrate knowledge of the term "Special Areas" and controls required in such areas.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Compile an integrated environmental impact management plan for a small-scale mine

SAQA US ID		UNIT STANDARD TITLE	
336941		Compile an integrated environmental impact management plan for a small-scale mine	
ORIGINATOR		PROVIDER	
Task Team - Fabrication and Extraction			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	9

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Evaluate information necessary to compile an environmental impact management plan for a small-scale mine.

SPECIFIC OUTCOME 2

Determine environmental impacts of a proposed a small-scale mine.

SPECIFIC OUTCOME 3

Formulate an environmental impact management plan.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Plan a mineral processing plant for a small-scale mine

SAQA US ID		UNIT STANDARD TITLE	
336942		Plan a mineral processing plant for a small-scale mine	
ORIGINATOR		PROVIDER	
Task Team - Fabrication and Extraction			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	9

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Demonstrate knowledge of various commodities mined in a small scale mine.

SPECIFIC OUTCOME 2

Demonstrate an understanding of mineral processing for a small-scale mine.

SPECIFIC OUTCOME 3

Organise information for planning a mineral processing plant for a small-scale mine.

SPECIFIC OUTCOME 4

Plan a mineral processing plant for a small-scale mine.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate an understanding of mining related strata control issues impacting on mining practice

SAQA US ID	UNIT STANDARD TITLE		
336943	Demonstrate an understanding of mining related strata control issues impacting on mining practice		
ORIGINATOR		PROVIDER	
Task Team - Fabrication and Extraction			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	8

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Demonstrate knowledge of best mining practices when mining towards or in close proximity to geological discontinuities.

SPECIFIC OUTCOME 2

Demonstrate knowledge and understanding of the effect of stress induced fracturing around typical mining excavations.

SPECIFIC OUTCOME 3

Demonstrate basic knowledge of drilling and blasting practice on ground control.

SPECIFIC OUTCOME 4

Demonstrate knowledge of the factors influencing the selection of various support systems.

SPECIFIC OUTCOME 5

Demonstrate an understanding of the importance of quality assurance measures in strata control.

SPECIFIC OUTCOME 6

Demonstrate an understanding of the purpose and the use of the rock related Codes of Practice (COP).

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Coordinate loading operations in an underground coal mine

SAQA US ID		UNIT STANDARD TITLE	
336944		Coordinate loading operations in an underground coal mine	
ORIGINATOR		PROVIDER	
Task Team - Fabrication and Extraction			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	5

New NQF Level: NQF Level 04

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
115585	Demonstrate the coordination of loading operations in an underground coal mine	Level 4	5	Will occur as soon as 336944 is registered

SPECIFIC OUTCOME 1

Demonstrate an understanding to load coal phase.

SPECIFIC OUTCOME 2

Shut down the loading operation.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Conduct an issue-based risk assessment within a workplace

SAQA US ID		UNIT STANDARD TITLE	
336945		Conduct an issue-based risk assessment within a workplace	
ORIGINATOR		PROVIDER	
Task Team - Fabrication and Extraction			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	3

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Explain the specified requirements pertaining to issue-based risk assessment.

SPECIFIC OUTCOME 2

Plan for risk assessment strategy.

SPECIFIC OUTCOME 3

Assess potential risks within possible sites.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate an understanding of labour supervision and production procedures for supervisors in the workplace

SAQA US ID	UNIT STANDARD TITLE		
336959	Demonstrate an understanding of labour supervision and production procedures for supervisors in the workplace		
ORIGINATOR	PROVIDER		
Task Team - Fabrication and Extraction			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	7

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Demonstrate an understanding of scheduling labour complement for production.

SPECIFIC OUTCOME 2

Explain the methodology for processing training and development requests.

SPECIFIC OUTCOME 3

Explain the rationale and legality of overtime work.

SPECIFIC OUTCOME 4

Explain the impact of labour unavailability on a production team and the procedures for taking leave.

SPECIFIC OUTCOME 5

Demonstrate knowledge of behavioural correction or disciplinary procedure.

SPECIFIC OUTCOME 6

Explain the role of an official participating in a disciplinary enquiry.

SPECIFIC OUTCOME 7

Explain both the legal requirements and procedures used in shift clearance.

SPECIFIC OUTCOME 8

Describe the procedure of carrying out an induction in a workplace.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

ID	QUALIFICATION TITLE	LEVEL
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Source: National Learners' Records Database

Unit Standard 336959

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	ID	QUALIFICATION TITLE	LEVEL
Core	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Plan logistics and services for a small-scale mine

SAQA US ID	UNIT STANDARD TITLE		
336960	Plan logistics and services for a small-scale mine		
ORIGINATOR	PROVIDER		
Task Team - Fabrication and Extraction			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	3

New NQF Level: NQF Level 03

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Demonstrate knowledge of logistics and services for a small-scale mine.

SPECIFIC OUTCOME 2

Organise information necessary for planning logistics and services for a small-scale mine.

SPECIFIC OUTCOME 3

Plan logistics and services for a small-scale mine.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Construct and maintain roads in surface excavations

SAQA US ID	UNIT STANDARD TITLE		
336961	Construct and maintain roads in surface excavations		
ORIGINATOR	PROVIDER		
Task Team - Fabrication and Extraction			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	7

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Demonstrate knowledge and understanding of constructing and maintaining roads in surface excavations.

SPECIFIC OUTCOME 2

Construct roads in surface excavations.

SPECIFIC OUTCOME 3

Maintain roads in surface excavations.

SPECIFIC OUTCOME 4

Demonstrate understanding of occupational health and safety requirements pertaining to roads in surface excavations.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Conduct over and underground coal mine inspection in a production section***

SAQA US ID		UNIT STANDARD TITLE	
336962		Conduct over and underground coal mine inspection in a production section	
ORIGINATOR		PROVIDER	
Task Team - Fabrication and Extraction			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	6

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Prepare to over inspect operations in a production section.

SPECIFIC OUTCOME 2

Over inspect operations in a production section.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Conduct prospecting relevant to small-scale mining

SAQA US ID		UNIT STANDARD TITLE	
336963		Conduct prospecting relevant to small-scale mining	
ORIGINATOR		PROVIDER	
Task Team - Fabrication and Extraction			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	10

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Demonstrate an understanding of prospecting for a small-scale mine.

SPECIFIC OUTCOME 2

Obtain information necessary for prospecting.

SPECIFIC OUTCOME 3

Prepare for prospecting.

SPECIFIC OUTCOME 4

Conduct prospecting.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate an understanding of roles and responsibilities of a production supervisor in a mining environment

SAQA US ID	UNIT STANDARD TITLE		
336964	Demonstrate an understanding of roles and responsibilities of a production supervisor in a mining environment		
ORIGINATOR		PROVIDER	
Task Team - Fabrication and Extraction			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	8

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Demonstrate knowledge and understanding of important documents, records, plans and controls to be retained in the office of a Production Supervisor.

SPECIFIC OUTCOME 2

Demonstrate knowledge and understanding of procedures and controls for the ordering of stores, materials and equipment.

SPECIFIC OUTCOME 3

Demonstrate knowledge and understanding of the key roles and responsibilities of the Production Supervisor performed at the start of the shift.

SPECIFIC OUTCOME 4

Demonstrate knowledge and understanding of the need and requirements for performing odd shift inspections.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate an understanding of surface excavation

SAQA US ID	UNIT STANDARD TITLE		
336965	Demonstrate an understanding of surface excavation		
ORIGINATOR			PROVIDER
Task Team - Fabrication and Extraction			
FIELD			SUBFIELD
6 - Manufacturing, Engineering and Technology			Fabrication and Extraction
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	7

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Demonstrate an understanding of types of Surface Excavation operations.

SPECIFIC OUTCOME 2

Demonstrate an understanding of surface excavation geology.

SPECIFIC OUTCOME 3

Demonstrate an understanding of methods and techniques involved in surface excavation.

SPECIFIC OUTCOME 4

Demonstrate an understanding of services and infrastructure relating to surface excavation.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate an understanding of extraction and the beneficiation of minerals on surface excavations

SAQA US ID	UNIT STANDARD TITLE		
336966	Demonstrate an understanding of extraction and the beneficiation of minerals on surface excavations		
ORIGINATOR		PROVIDER	
Task Team - Fabrication and Extraction			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	9

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Demonstrate knowledge of mineral extraction and beneficiation processes.

SPECIFIC OUTCOME 2

Demonstrate an understanding of the factors affecting minerals extraction.

SPECIFIC OUTCOME 3

Monitor and report on minerals beneficiation processes.

SPECIFIC OUTCOME 4

Demonstrate and apply knowledge of appropriate sampling techniques.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Control stonework operations in an underground coal mine***

SAQA US ID		UNIT STANDARD TITLE	
336979		Control stonework operations in an underground coal mine	
ORIGINATOR		PROVIDER	
Task Team - Fabrication and Extraction			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	4

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Prepare for stone work operations.

SPECIFIC OUTCOME 2

Control stone work operations.

SPECIFIC OUTCOME 3

Record stonework operational information.

SPECIFIC OUTCOME 4

Demonstrate an understanding of working in a team.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Apply a computerized management system in a production mining environment***

SAQA US ID		UNIT STANDARD TITLE	
336980		Apply a computerized management system in a production mining environment	
ORIGINATOR		PROVIDER	
Task Team - Fabrication and Extraction			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	4

New NQF Level: NQF Level 03

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Interpret and modify electronic information.

SPECIFIC OUTCOME 2

Create, print and file electronic information.

SPECIFIC OUTCOME 3

Demonstrate ability to produce basic planning and scheduling utilizing mine computer applications (e.g. excel).

SPECIFIC OUTCOME 4

Demonstrate ability to perform basic production calculations using spreadsheets.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Unknown	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate an understanding to control strata conditions in an underground coal mine

SAQA US ID	UNIT STANDARD TITLE		
336981	Demonstrate an understanding to control strata conditions in an underground coal mine		
ORIGINATOR		PROVIDER	
Task Team - Fabrication and Extraction			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	4

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Demonstrate knowledge of the concept of roof behaviour.

SPECIFIC OUTCOME 2

Monitor strata conditions.

SPECIFIC OUTCOME 3

Demonstrate knowledge of the different types of roof stresses and pillar design.

SPECIFIC OUTCOME 4

Demonstrate an understanding of various support systems in strata control.

SPECIFIC OUTCOME 5

Demonstrate knowledge of Code of Practice in Mines for strata control.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Coordinate the development of surface excavation operations

SAQA US ID		UNIT STANDARD TITLE	
336999		Coordinate the development of surface excavation operations	
ORIGINATOR		PROVIDER	
Task Team - Fabrication and Extraction			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	7

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Demonstrate an understanding of mineral deposits

SPECIFIC OUTCOME 2

Develop surface excavation layout and infrastructure.

SPECIFIC OUTCOME 3

Calculate and interpret desired outputs.

SPECIFIC OUTCOME 4

Calculate and interpret rates of production and equipment requirements.

SPECIFIC OUTCOME 5

Plan and provide for resources in surface excavation operations.

SPECIFIC OUTCOME 6

Conduct scheduling and calculations.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Develop a short term surface excavation scheduling***

SAQA US ID	UNIT STANDARD TITLE		
337000	Develop a short term surface excavation scheduling		
ORIGINATOR	PROVIDER		
Task Team - Fabrication and Extraction			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	7

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Demonstrate knowledge of Surface Excavation scheduling.

SPECIFIC OUTCOME 2

Apply of the relevant factors pertaining to short term surface excavation scheduling.

SPECIFIC OUTCOME 3

Apply budgeting and costing aspects.

SPECIFIC OUTCOME 4

Develop a short term excavation plan.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Conduct mineral and ore sampling on a small-scale mine

SAQA US ID		UNIT STANDARD TITLE	
337019		Conduct mineral and ore sampling on a small-scale mine	
ORIGINATOR		PROVIDER	
Task Team - Fabrication and Extraction			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	3

New NQF Level: NQF Level 03

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
260981	Conduct mineral and ore sampling on a small scale mine	Level 3	3	Will occur as soon as 337019 is registered

SPECIFIC OUTCOME 1

Demonstrate knowledge of mineral and ore sampling on a small-scale mine.

SPECIFIC OUTCOME 2

Prepare for sampling on a small-scale mine.

SPECIFIC OUTCOME 3

Conduct sampling on a small-scale mine.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	74490	Further Education and Training Certificate: Mining Operations	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Coordinate transportation operations in an underground coal mine

SAQA US ID	UNIT STANDARD TITLE		
337039	Coordinate transportation operations in an underground coal mine		
ORIGINATOR	PROVIDER		
Task Team - Fabrication and Extraction			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	5

New NQF Level: NQF Level 04

This unit standard does not replace any other unit standard and is not replaced by another unit standard.

SPECIFIC OUTCOME 1

Demonstrate an understanding of the preparation for transport.

SPECIFIC OUTCOME 2

Demonstrate an understanding of the transport operation.

SPECIFIC OUTCOME 3

Demonstrate an understanding of the shut down procedure of the transport operation.

SPECIFIC OUTCOME 4

Demonstrate teamwork.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	74490	Further Education and Training Certificate: Mining Operations	Level 4