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GOVERNMENT NOTICES

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

No. 103
9 February 2009

SAQA

SOUTH AFRICAN QUALIFICATIONS AUTHORITY (SAQA)

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

Horticulture

registered by Organising Field 01 – Agriculture and Nature Concervation, 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.saqa.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 9 March 2009.* All correspondence should be marked **Standards Setting** – Task **Team for Horticulture** and addressed to

> The Director: Standards Setting and Development
> SAQA
> *Attention: Mr. E. Brown*
> Postnet Suite 248
> Private Bag X06
> Waterkloof
> 0145
> or faxed to 012 – 431-5144
> e-mail: ebrown@saqa.org.za

D. MPHUTHING
ACTING DIRECTOR: STANDARDS SETTING AND DEVELOPMENT

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

QUALIFICATION:
National Certificate: Arboriculture

SAQA QUAL ID	QUALIFICATION TITLE		
65490	National Certificate: Arboriculture		
ORIGINATOR		PROVIDER	
Task Team - Horticulture			
QUALIFICATION TYPE	FIELD	SUBFIELD	
National Certificate	1 - Agriculture and Nature Conservation	Horticulture	
ABET BAND	MINIMUM CREDITS	NQF LEVEL	QUAL CLASS
Undefined	120	Level 3	Regular-Unit Stds Based

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

PURPOSE AND RATIONALE OF THE QUALIFICATION
Purpose:

This Qualification is aimed at meeting the needs of persons already working in the field of Arboriculture. It also caters for new entrants in the field of Arboriculture who seek to do tree work as Ground Workers, who conduct elementary tree maintenance and who tree care work.

In South Africa, untrained workers without the necessary competencies pose a danger to trees, plants and other operating tree workers. This results in a compromise of environmental, health and safety standards. Accordingly, this Qualification is aimed at serving as an entry-level qualification that articulates with other qualifications in the field of forestry and nature conservation. It also serves as a springboard for future learning and competence needs of persons seeking to pursue higher levels of study and work in Arboriculture and related sub-fields.

This Qualification is aimed at filling the competence gap at this level to allow entry-level tree workers to earn a qualification and formal recognition.

The Qualification will enable the qualifying person to:

> Communicate with role players (team, customer, supervisor/manager) in the work context.
> Maintain and preserve trees and plants in an urban environment.
> Perform tree related aerial work in an urban environment.
> Adhere to occupational health and safety standards in carrying out tree work.

The Qualification will enable the qualifying learner to do the following:

> Identify types and basic characteristics of tree families.
> Fell trees with a chainsaw using specialised techniques.
> Climb a tree according to safe working practices.
> Perform aerial rescue according to safe working practices.
> Carry out pruning activities according to industry standards.
> Operate a chain saw from a rope and harness according to safe practices and industry standards.

> Dismantle trees according to acceptable industry standards and safe practices.
> Operate a mobile elevating work platform.
> Provide primary emergency care/first aid as an advanced first responder.

Rationale:

This Qualification is needed because of the varying levels of performance by the many people who act as Arborists and General Tree Workers.

Low and insufficient competence levels of tree workers leads to a loss of essential existing current and future trees and plants. Low skills in tree work are also associated with structural damage to plants and trees and to injury to workers, due to the lack of competencies required to handle trees safely and responsibly. In addition, there is the tendency to indiscriminately use chemicals in the handling of plants and trees.

This lack of skills, knowledge and proper orientation has resulted in the need for unit standards and qualifications for Arborists and tree work ground staff to build a competence profile and to develop capacity in the profession. In addition, learning opportunities for many previously disadvantaged persons will be created (access), through the many channels of learning and recognition, including Recognition of Prior Learning (RPL).

This Qualification creates opportunities for employment in the SMME, corporate, Non-Governmental (NGO) and the various state entities. It creates, for the learner, a platform for future learning and work opportunities in the various sub-fields within the forestry and nature conservation field. The qualification will, in general, benefit entry-level learners, and, in particular, those that are currently employed and have acquired work experience but have not acquired any formal recognition and/or qualification.

RECOGNIZE PREVIOUS LEARNING?
Y

LEARNING ASSUMED IN PLACE
This Qualification assumes that learners are already competent in:

> Communication and Mathematical Literacy at NQF Level 2.

In addition, the learner should be a qualified chainsaw operator.

Recognition of Prior Learning:

This Qualification can be achieved wholly or in part through Recognition of Prior Learning. Whether a learner attends formal courses or acquires the required skills through informal means, the same standards apply as per the matrix of unit standards and Exit Level Outcomes.

The Qualification and the Unit Standards have been written in such a way that the learning has to be assessed in an integrated way. Assessors will assess evidence to establish what the learners know, understand and can do. Such evidence may be gathered through course related activities and/or through work related activities. In cases where candidates do not attend formal learning programs, assessors should seek work related evidence as far as possible.

Assessors should ensure that learners submitting themselves to RPL are thoroughly briefed prior to assessment. Learners will be required to submit a Portfolio of Evidence in the prescribed format to be assessed for formal recognition.

Where courses are provided for learners, institutions can use the Unit Standards and this Qualification to assess learning achievements. For learners who are not able to achieve the

outcomes, providers can then use the Unit Standards and Qualification to determine a specific learning program to suit the learning needs of the candidate.

Access to the Qualification:

Access is open to all learners who are qualified chainsaw operators. However, the following learner attributes are recommended:

> Physical fitness.
> Good eyesight.

QUALIFICATION RULES
The Qualification consists of Fundamental, Core and Elective Unit Standards. A minimum of 120 credits is required to achieve this Qualification. The credits are allocated as follows:

Fundamental Component:

> All Fundamental unit standards totaling 36 credits are compulsory.

Core Component:

> All the Core unit standards totaling 65 credits are compulsory.

Elective Component:

> The qualifying learner must choose unit standards totalling a minimum of 19 credits in order to meet the Qualification requirements.

EXIT LEVEL OUTCOMES
1. Communicate with role players (team, customer, supervisor/manager) in the work context.

2. Maintain and preserve trees and plants in an urban environment in accordance with industry standards.

3. Perform tree related aerial work in an urban environment according to safe working practices.

4. Adhere to Occupational Health and Safety (OHS) standards in carrying out tree work.

Critical Cross-field Outcomes:

This Qualification addresses the following Critical Cross -Field Outcomes. The way in which the Critical Cross-Field Outcomes are addressed is given in detail in the unit standards.

Identify and solve problems:

> Identify and classify types of tree families for dismantling, pruning, felling and tree climbing operations.
> Perform aerial rescue according to safe working practices.
> Dismantle, climb, fell and prune trees.
> Conduct risk assessment.

Work effectively with others as a member of a team or organisation:

> Contribute to team and operational goals.
> Adhere to operational procedures.

> Support team members in adhering to procedures relating to work roles to be carried out.
> Adhere to team and organisational protocols.

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

> Respond appropriately to working conditions.
> Apply work procedures appropriately to meet work requirements.

Collect, analyse, organise and critically evaluate information:

> Conduct risk assessment.
> Respond appropriately to risks identified.
> Apply legal and environmental standards.
> Choose and use of equipment (chainsaw and protective clothing).

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

> Report injures.
> Brief ground crew.
> Communicate with role players.

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

> Apply occupational health, safety and environmental requirements in the workplace.
> Adhere to sector standards.
> Use and care for equipment properly.

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

> Provide appropriate solutions to needs identified.
> Conduct risk assessment.
> Apply occupational health, safety and environmental requirements in the workplace.
> Assist team members.

ASSOCIATED ASSESSMENT CRITERIA
Associated Assessment Criteria for Exit Level Outcome 1:

1.1 Client requirements are gathered and communicated according to company's policies and procedures.
1.2 Oral communication is maintained and adapted as required to promote effective interaction in a work context.
1.3 Written communication is conducted at an appropriate level for designated target audiences.
1.4 Solutions are recorded and presented at an appropriate level.

Associated Assessment Criteria for Exit Level Outcome 2:

2.1 Tree work techniques are carried out according to needs identified and in line with relevant standards.
> Range: Techniques refer to pruning, felling and tree dismantling.
2.2 Knowledge of tree biology is applied correctly and appropriately within the relevant environment.

2.3 Safety measures are applied together with the correct use of equipment and resources when performing tree work operations.

Associated Assessment Criteria for Exit Level Outcome 3:

3.1 Cabling equipment is used appropriately to meet needs identified and in a safe manner.
3.2 Bracing equipment is used appropriately to meet needs identified and in a safe manner.
3.3 Aerial operations are carried out procedurally and in a manner that meets all safety and all requirements.
3.4 Knowledge of road traffic law and regulations is applied for tree work operations in a safe and compliant manner.
3.5 Tree climbing is in line with relevant standards and meets needs identified within context.

Associated Assessment Criteria for Exit Level Outcome 4:

4.1 Knowledge of OHS legislation is demonstrated and applied when performing three work operation.
4.2 First Aid is administered appropriately in the workplace and reported according to organisational policies and procedures.
4.3 Safety, healthy and environmentally related activities are conducted in the work environment according to requirements of Occupational Health, Safety and Environmental laws and related codes.

Integrated assessment:

Integrated assessment evaluates the learner's ability to combine actions and ideas across a range of activities and knowledge areas. The integrated assessment must specifically assess the learner's ability to:

> Demonstrate competence by means of the practical application of the embedded knowledge in a manner that meets the required performance standards required.
> Illustrate a clear understanding of the concepts, theory and principles that underpin the practical action taken.

The assessment will require assessment methods which measure and evaluate evidence generated during learning and on-the-job activities. Because assessment practices must be open and transparent, fair, valid and reliable; ensuring that no leaner is disadvantaged in any way whatsoever, an integrated assessment approach is incorporated into the Qualification.

A variety of methods must be used in assessment tools and activities must be appropriate to the context in which the learner is working or will work. Where it is not possible to assess the learner at the workplace, simulations, case studies role plays and other similar techniques should be used to provide a context appropriate to the assessment.

The term integrated assessment implies that theoretical and practical components should be assessed together. Whenever possible, the assessment of knowledge, skills, attitudes and values shown in the Unit Standards should be integrated and, during integrated assessment, the assessor should make use of a range of formative and summative assessment tools and methods. Combinations of practical, applied, foundational and reflective competencies should be assessed. Assessment should further ensure that all specific outcomes, embedded knowledge and critical cross field outcomes are evaluated in an integrated way.

Assessors must assess and give credit for the evidence of learning that has already been acquired through formal, informal and non-formal learning and work experience as the assessment process is capable of being applied to RPL, subject to the rules and criteria of the relevant ETQA.

INTERNATIONAL COMPARABILITY
Introduction:

Arboriculture deals with the specialisation of tree care. In the past Arborists used to be commonly referred to as a tree surgeon. However the term, arborist, is now becoming increasingly common. For this comparative survey, we have reviewed Qualifications, courses and training opportunities in Australia, New Zealand, the United Kingdom due to their advanced technology and best practices in the field of nature conservation and forestry.

SADC countries were also looked at to compare practices.

Australia:

Australia's entry level course in the field is the Certificate II in Horticulture (Arboriculture), which has general and specialist streams. Generally, Australian Arboriculture courses articulate well at a number of general vocational education/schooling and beyond. For our purpose, we have reviewed the course TAFE NSW Course No: 1601. This course is part of a range of a series of articulating Horticulture certificates. These are: the entry level No 1600, for which there are no entry level requirements; Course No: 1601, Course No 1604, (for supervisors) and Course No: 1605 Diploma in Horticulture, for those seeking to run a business in the field of horticulture.

The level 4 Course No: 1601 is for people who work, or want to work, at a trade level, in the arboriculture sector of the horticulture industry, especially people who already have qualifications in amenity horticulture. The entry requirements are the entry level Horticulture Course No 1600, or New South Wales School Certificate (or equivalent).

Although this course is at a higher level than South Africa's entry Level 3 Arboriculture Qualification, it contains equivalent course content elements that are comparable to SA's Level 3 Arboriculture Qualification.

The object of this Australian course is, "to develop sound underpinning knowledge and a broad range of practical skills required to cultivate, establish, maintain and care for trees and shrubs in public and private gardens". It is consistent with the South African Arboriculture Level 3 qualification.

The course elements: provide information about trees and their culture; implement tree pruning programs, operate chainsaws; undertake complex tree climbing and aerial rescue; respond to emergencies; remove dead, damaged, dangerous or unsound trees or tree limbs and fell small trees and remove trees in confined spaces, form part of Australia's level 3 and 4 Arboriculture course offering. These course elements are also found in SA course Level 4 core offering.

Generic components of the qualification that resonate with the CCFO and other underpinning components of the SA Qualification are occupational health and safety procedures; first Aid, communicate effectively in the workplace; work effectively in the industry.

Differences are that: the Australian Qualification is at a higher level (level 4). It is pitched at the level of a tradesman. Also, the following elements of the Australian course are not part of the SA qualification: sample soils and analyse results; improve plant nutrition; implement tree care and maintenance programs.

Also, while the Australian Qualification, TAFE NSW, Course No: 1601, articulates horizontally with another, Certificate IV, RTF40203 in Horticulture (Arboriculture) (1604), the South African qualification, does not have such articulation at horizontal level. SA needs to develop an articulation pathway for Arboriculture.

United Kingdom:

In the United Kingdom, The National Proficiency Test Council NPTC and Lantra Awards offer certificates of competence for chainsaw use and for other areas related to Arboriculture.

The difference between the South Africa and the UK is that the UK Arboriculture Qualification equivalent is at NQF Level 2, as opposed to SA's Level 3. The UK Arboriculture certificate of competency is foundational and is at Level 2: National Certificate (0345) Horticulture (Forestry Route/Arboriculture Route).

However, the corresponding titles of certificate programs are Climb Trees & Perform Aerial Rescue; Brush Cutting Operations; Brushwood Chipper Operations; Stump Grinding Operations; Inspection of Arboricultural Equipment and Utility Arboriculture, Forest Machine Operations.

Qualifying learners in the UK can work as tree climbers and as tree surgeons, or alternatively as contract workers.

This Qualification articulates vertically with the Level 3 Qualification in Arboriculture - an Arboricultural Association Technicians' Certificate in Arboriculture - which opens doors for opportunities as a foreman.

The BTEC National Certificate/Diploma in Forestry and Arboriculture is the next vertical point in the broader scheme of the Qualification framework, which can be achieved on a part time basis.

A comparison with SA will show that the UK's entry level at NQF Level 2 has a greater substance than SA's entry Level 3, which is for beginners.

However, both South Africa and the United Kingdom require Arboriculture practitioners to be qualified in chainsaw and First Aid work.

In addition, there are Health and Safety Regulations (PUWER), in the UK, that make it obligatory for tree work operatives, in order for their Qualifications to remain up to date, to attend chainsaw refresher courses.

International Society of Arboriculture (ISA):

This body of tree care workers has developed a learning and occupational framework and a membership structure to which members and non-members can refer.

ISA differentiates between three levels of competency. The ISA Arborist is at the bottom with competencies of tree worker, climber specialist and aerial specialist, in the middle is the utility municipal specialist with the capacity to manage arboricultural operations and projects and the Board Certified Master Arborist, with advance competencies in field sciences and management practices is at the top level.

New Zealand:

South Africa's Level 3 National Certificate in Arboriculture is an amalgam of New Zealand's level 2 and 3 Qualifications, in terms of content and course orientation.

While South Africa's Level 3 Qualification is targeted at both the general tree worker, chainsaw operator with aerial tree work and basic tree maintenance capabilities, New Zealand enables a gradual-incremental approach with these competencies.

For example, the New Zealand Horticulture Training (NZHTO) offers six National Certificates in Horticulture in the Arboriculture area, graded for the Ground worker (Level 2), Transplant

Worker (Level 3), Basic Climber (Level 3), Utility Worker (Level 4), Advanced Climber (Level 4) and Consultant Climber (Level 4).

Overall, New Zealand's Horticultural training, at the NQF Level 2-4, referred to above, is comprised of the following learning areas, which is consistent, in many important ways, to South Africa's Level 3 National Certificate in Arboriculture: pruning young, and mature amenity plants; plant maintenance; chainsaws, health and safety; transplanting trees manually and with specialist equipment; using climbing equipment in arboriculture; basic and advanced limb, sectional and tree felling techniques; using brush chippers and stump grinders; climbing and moving in trees; site access; site assessment; identifying amenity trees and shrubs; tree inspection; diagnosing amenity plant health problems; working around electricity in an arboriculture situation.

Despite this, the following, and their equivalents, are not featured in South Africa's Level 3 National Certificate in Arboriculture: Planting trees and shrubs, planning and managing complex tree work, knowledge of application of tree law; the New Zealand arboriculture industry.

The South African Level 3 National Certificate in Arboriculture neatly tracks some of New Zealand's key competencies at the various levels, both in content, Unit Standard structure and outlook of the competency.

The SA Level 3 National Certificate in Arboriculture Qualification contains, at intermediate level, the key aspects of aerial rescue operations. These are: tree maintenance (felling, dismantling and pruning), first aid, and tree climbing orientation into plant families as core elements of the qualification. The other components of the qualification - including chainsaw operation, map reading, environmental pollution control, chipper and stump grinder operation identification of soil types, the control of pests, road traffic regulations, cabling and bracing - are electives.

Africa:

Arboriculture/Horticulture is still in its infancy on the continent. Only four countries on the continent (South Africa, Kenya, Algeria and Morocco) participate in Arboriculture/Horticulture trade shows. Saharan African universities focus mainly on forestry, Food Production, Silviculture and Wood Processing Studies at higher education level at universities such as Kwame Nkrumah, Nigeria Federal University, Botswana.

Conclusion:

Similarities:

South Africa's Level 3 National Certificate in Arboriculture, as an entry level Qualification, compares well with its international counterparts in a number of areas. The Qualification's composite exit level outcomes are in line with those at similar Qualifications reviewed.

The basic areas of tree work are covered, both in content and practice. There is an international perspective in its outlook.

In the practice of Arborcists, there are similar stringent requirements for the use of potentially dangerous equipment like grinders, chippers and chainsaws. The standards pertaining to First Aid are also consistent with those of the broader international community.

Also similar is the inclusion of generic work related competencies like team work.

Differences:

The South African qualification is at a different level on the NQF than those of other countries, but this is a result of the nature of the NQF.

South Africa's learning and occupational pathway for Arboriculture has not evolved to include a learning pathway as compared to its international counterparts.

ARTICULATION OPTIONS
This Qualification articulates horizontally to the following qualifications:

> ID 50266: National Certificate: Forestry: Silviculture, NQF Level 3.
> ID 48988: National Certificate: Timber Harvesting, NQF Level 3.

This Qualification articulates vertically to:

> ID 23953: Further Education and Training Certificate: New Venture Creation, NQF Level 4.

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, in terms of agreements reached around assessment and between various ETQA's (including professional bodies).

> 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.

The options as listed above provide the opportunity to ensure that assessment and moderation can be transparent, affordable, valid reliable and non-discriminatory.

CRITERIA FOR THE REGISTRATION OF ASSESSORS
For an applicant to register as an assessor or moderator of this qualification, the applicant needs:

> To be registered as an assessor with the relevant ETQA.
> To be in possession of a relevant forestry qualification at least at NQF Level 4 qualification.
> To have sufficient relevant experience.

NOTES
N/A

UNIT STANDARDS

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
Fundamental	119472	Accommodate audience and context needs in oral/signed communication	Level 3	5
Fundamental	9010	Demonstrate an understanding of the use of different number bases and measurement units and an awareness of error in the context of relevant calculations	Level 3	2
Fundamental	9013	Describe, apply, analyse and calculate shape and motion in 2-and 3-dimensional space in different contexts	Level 3	4
Fundamental	119457	Interpret and use information from texts	Level 3	5
Fundamental	9012	Investigate life and work related problems using data and probabilities	Level 3	5
Fundamental	119467	Use language and communication in occupational learning programmes	Level 3	5
Fundamental	7456	Use mathematics to investigate and monitor the financial aspects of personal, business and national issues	Level 3	5
Fundamental	119465	Write/present/sign texts for a range of communicative contexts	Level 3	5
Core	243272	Operate a Mobile Elevating Work Platform (MEWP)	Level 2	10
Core	262280	Climb a tree according to safe working practices	Level 3	10·
Core	262157	Conduct pruning activities according to industry standards	Level 3	5
Core	262301	Dismantle trees according to acceptable industry standards and safe practices	Level 3	10
Core	117066	Fell trees with a chainsaw using specialised techniques	Level 3	2
Core	262185	Identify types and basic characteristics of tree families	Level 3	10
Core	262187	Operate a chain saw from a rope and harness	Level 3	5
Core	262258	Perform aerial rescue from a tree	Level 3	5
Core	254220	Provide primary emergency care/first aid as an advanced first responder	Level 3	8
Elective	116124	Control pests, diseases and weeds on all crops effectively and responsibly	Level 2	2
Elective	261803	Operate chipper according to industry norms	Level 2	3
Elective	261804	Operate stump grinder according to industry norms	Level 2	3
Elective	9322	Work in a team	Level 2	3
Elective	117085	Conduct basic forestry map reading	Level 3	2
Elective	254506	Demonstrate knowledge and attainment of the principal soil types and their characteristics	Level 3	3
Elective	262183	Install cabling and bracing for tree support	Level 3	7
Elective	123242	Organize forestry work team activities	Level 3	5
Elective	256527	Apply knowledge of road traffic legislation pertaining to traffic officers, road users and vehicles	Level 4	14
Elective	114587	Determine and manage the human resource needs of a new venture	Level 4	4
Elective	114589	Manage time productively	Level 4	4
Elective	243273	Monitor and control the safety and operations of Mobile Elevating Work Platforms	Level 4	8
Elective	242819	Motivate and Build a Team	Level 4	10
Elective	242850	Perform fire-ground operations necessary to ensure life safety, fire control, and property conservation under supervision	Level 4	12

LEARNING PROGRAMMES RECORDED AGAINST THIS QUALIFICATION
None

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Operate chipper according to industry norms

SAQA US ID	UNIT STANDARD TITLE			
261803	Operate chipper according to industry norms			
ORIGINATOR		PROVIDER		
Task Team - Horticulture				
FIELD		SUBFIELD		
1 - Agriculture and Nature Conservation		Horticulture		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL		CREDITS
Undefined	Regular	Level 2		3

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

SPECIFIC OUTCOME 1
Inspect the equipment and operational site according to organisational standards.

SPECIFIC OUTCOME 2
Prepare to use chipper on work site in accordance with operational standards.

SPECIFIC OUTCOME 3
Operate equipment as per specifications.

SPECIFIC OUTCOME 4
Conduct activities for post equipment use.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	65490	National Certificate: Arboriculture	Level 3

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Operate stump grinder according to industry norms

SAQA US ID	UNIT STANDARD TITLE		
261804	Operate stump grinder according to industry norms		
ORIGINATOR		*PROVIDER*	
Task Team - Horticulture			
FIELD		*SUBFIELD*	
1 - Agriculture and Nature Conservation		Horticulture	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 2	3

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

SPECIFIC OUTCOME 1
Inspect the equipment and operational site according to organisational standards.

SPECIFIC OUTCOME 2
Prepare to use stump grinder on site in accordance to standard operating procedures.

SPECIFIC OUTCOME 3
Operate stump grinder as per specifications.

SPECIFIC OUTCOME 4
Conduct activities for post equipment use.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	65490	National Certificate: Arboriculture	Level 3

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Conduct pruning activities according to industry standards

SAQA US ID	UNIT STANDARD TITLE		
262157	Conduct pruning activities according to industry standards		
ORIGINATOR		PROVIDER	
Task Team - Horticulture			
FIELD		SUBFIELD	
1 - Agriculture and Nature Conservation		Horticulture	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	5

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

SPECIFIC OUTCOME 1
Identify tree structure and targeted features to be emphasised for pruning operations.

SPECIFIC OUTCOME 2
Conduct risk assessment in relation to tree pruning operations.

SPECIFIC OUTCOME 3
Apply knowledge of legal and environmental factors in relation to pruning operations when dealing with targeted species.

SPECIFIC OUTCOME 4
Brief ground staff on tree pruning operations.

SPECIFIC OUTCOME 5
Identify and check pruning equipment and Personal Protective Clothing (PPC) for pruning operations.

SPECIFIC OUTCOME 6
Use a chainsaw from harness and rope for pruning operations.

SPECIFIC OUTCOME 7
Perform tree pruning activities safely according to industry standards.

SPECIFIC OUTCOME 8
Advise client on outcome of tree pruning operation.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	65490	National Certificate: Arboriculture	Level 3

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Install cabling and bracing for tree support

SAQA US ID	*UNIT STANDARD TITLE*		
262183	Install cabling and bracing for tree support		
ORIGINATOR		*PROVIDER*	
Task Team - Horticulture			
FIELD		*SUBFIELD*	
1 - Agriculture and Nature Conservation		Horticulture	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 3	7

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

SPECIFIC OUTCOME 1
Describe cabling and bracing as tree supporting systems as per industry standards.

SPECIFIC OUTCOME 2
Set up a cabling and or bracing tree supporting system using natural or constructed props in accordance to working standards.

SPECIFIC OUTCOME 3
Perform post cabling and bracing installation activities as per industry working standards.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	65490	National Certificate: Arboriculture	Level 3

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Identify types and basic characteristics of tree families

SAQA US ID	UNIT STANDARD TITLE		
262185	Identify types and basic characteristics of tree families		
ORIGINATOR		PROVIDER	
Task Team - Horticulture			
FIELD		SUBFIELD	
1 - Agriculture and Nature Conservation		Horticulture	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	10

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

SPECIFIC OUTCOME 1
Identify basic tree families for dismantling, felling and pruning operations.

SPECIFIC OUTCOME 2
Describe the characteristics of basic tree families.

SPECIFIC OUTCOME 3
Identify targeted trees and foliage for intervention.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	65490	National Certificate: Arboriculture	Level 3

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Operate a chain saw from a rope and harness

SAQA US ID	UNIT STANDARD TITLE		
262187	Operate a chain saw from a rope and harness		
ORIGINATOR		PROVIDER	
Task Team - Horticulture			
FIELD		SUBFIELD	
1 - Agriculture and Nature Conservation		Horticulture	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	5

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

SPECIFIC OUTCOME 1
Achieve a working position to receive a chainsaw in an aerial position as per industry standards.

SPECIFIC OUTCOME 2
Start a chainsaw from rope and harness according to standard operating procedures.

SPECIFIC OUTCOME 3
Change chainsaw position from rope and harness for cutting.

SPECIFIC OUTCOME 4
Remove limbs from rope and harness using a chainsaw as required.

SPECIFIC OUTCOME 5
Use a chainsaw in exceptional circumstances.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	65490	National Certificate: Arboriculture	Level 3

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Perform aerial rescue from a tree

SAQA US ID	UNIT STANDARD TITLE			
262258	Perform aerial rescue from a tree			
ORIGINATOR		PROVIDER		
Task Team - Horticulture				
FIELD		SUBFIELD		
1 - Agriculture and Nature Conservation		Horticulture		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL		CREDITS
Undefined	Regular	Level 3		5

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

SPECIFIC OUTCOME 1
Secure the site to perform aerial rescue

SPECIFIC OUTCOME 2
Relay information about the accident to relevant parties as per industry standards.

SPECIFIC OUTCOME 3
Perform aerial rescue operation according to industry standards.

SPECIFIC OUTCOME 4
Perform activities for post aerial rescue operations.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	65490	National Certificate: Arboriculture	Level 3

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Climb a tree according to safe working practices

SAQA US ID	UNIT STANDARD TITLE		
262280	Climb a tree according to safe working practices		
ORIGINATOR		PROVIDER	
Task Team - Horticulture			
FIELD		SUBFIELD	
1 - Agriculture and Nature Conservation		Horticulture	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	10

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

SPECIFIC OUTCOME 1
Investigate operating conditions to ensure safety of people and environment during tree climbing operations.

SPECIFIC OUTCOME 2
Inspect tree and site for potential hazards during tree climbing operation.

SPECIFIC OUTCOME 3
Climb a tree safely according to industry standards.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	65490	National Certificate: Arboriculture	Level 3

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Dismantle trees according to acceptable industry standards and safe practices

SAQA US ID	UNIT STANDARD TITLE		
262301	Dismantle trees according to acceptable industry standards and safe practices		
ORIGINATOR		PROVIDER	
Task Team - Horticulture			
FIELD		SUBFIELD	
1 - Agriculture and Nature Conservation		Horticulture	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	10

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

SPECIFIC OUTCOME 1
Identify potential hazards for trees that need dismantling.

SPECIFIC OUTCOME 2
Communicate hazards to interested and involved parties.

SPECIFIC OUTCOME 3
Dismantle the tree safely according to industry standards.

SPECIFIC OUTCOME 4
Remove limbs using a chainsaw according to industry standards.

SPECIFIC OUTCOME 5
Remove vertical trunks by using a chainsaw.

SPECIFIC OUTCOME 6
Complete tree dismantling operation in line with operational standards.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	65490	National Certificate: Arboriculture	Level 3

No. 104   **9 February 2009**

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 (SGB) for

Mining and Minerals

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.saqa.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 9 March 2009.* All correspondence should be marked **Standards Setting – SGB for Mining and Minerals** and addressed to

> The Director: Standards Setting and Development
> SAQA
> *Attention: Mr. E. Brown*
> Postnet Suite 248
> Private Bag X06
> Waterkloof
> 0145
> or faxed to 012 – 431-5144
> e-mail: ebrown@saqa.org.za

D. MPHUTHING
ACTING DIRECTOR: STANDARDS SETTING AND DEVELOPMENT

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

QUALIFICATION:
National Certificate: Mining Technical Support

SAQA QUAL ID	QUALIFICATION TITLE		
65549	National Certificate: Mining Technical Support		
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
QUALIFICATION TYPE	FIELD	SUBFIELD	
National Certificate	6 - Manufacturing, Engineering and Technology	Fabrication and Extraction	
ABET BAND	MINIMUM CREDITS	NQF LEVEL	QUAL CLASS
Undefined	138	Level 3	Regular-Unit Stds Based

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

PURPOSE AND RATIONALE OF THE QUALIFICATION

This qualification will provide qualifying learners with the necessary skills, knowledge, understanding and competence, to competently and confidently undertake tasks pertinent to a Surveyor, Geologist and Sampler in their specific fields related to surface and underground mining; as well as provide an opportunity for learners to apply appropriate skills in relation to the workplace.

The Surveying, Geology and Sampling technician is vital to the smooth running of these disciplines of the mining industry which covers a wide variety of fields such as Geological Exploration sampling, GPS surveying as well as structural mapping and hazard identification.

Learners achieving this qualification will be able to understand their role of applying required competencies consistently and effectively in the execution of their duties. They will also contribute to the mining technical services discipline by effectively adhering to quality and occupational safety requirements.

This qualification will have a positive impact on society through assisting in the identification and delineation of potential mineral deposits; as well as improve the health and safety of people in and outside the mining environment through input to hazard identification programmes and helping protect the environment during mine closure procedures.

People credited with this qualification are able to:

> Communicate and solve problems in a variety of ways.
> Demonstrate an understanding of Occupational Health, Safety and Environmental standards in the workplace.
> Demonstrate an understanding of stratigraphic and geological features pertinent to the mining environment.
> Perform map reading and measuring functions within a mining environment.
> Perform basic survey sampling and geological functions pertinent to the mining environment.

Rationale:

Surveying, Geology and Sampling are recognised as generic key competencies in the development of basic skills in the South African mining industry. In particular they impact on the identification and delineation of potential mineral deposits, development of mines and the safe, profitable and optimal exploitation of mining reserves. Further, the need for improved quality standards with maximization of efficiencies within the mining industry coupled with the increasing complexity of many SA mining operations have resulted in greater need for skills in the fields of Survey, Geology and Sampling. Maintenance of such standards has been recognised and emphasis has been placed on providing such technical support training at all levels within these mining disciplines. This is a key component in Technical Support Operations training and serves to extend the life of mines providing employment both within the mining industry and the numerous support industries.

Learners entering this qualification will typically come from mining, survey, geology or sampling operations, working as Technical Support assistants or stope face operators. In some cases learners will come from other industries such as soil science or civil engineering. Learners from other industries would, however, have to become familiar with the mining environment, equipment and processes before they can proceed with this qualification. Qualifying learners will be competent support technicians on NQF Level 3 in the Surveying, Geological and Sampling disciplines in all mining operations; and in particular underground or surface surveying and mapping, geological mapping; and mineral sampling procedures. Learners will obtain the basic theoretical knowledge pertinent to these mining related environments. This qualification has 3 specialisation streams for learners to follow.

A typical learning pathway in this field would start with the NC: Mining Technical Support NQF Level 2 and proceed to the Further Education and Training Certificate (FETC): Minerals Surveying, Minerals Sampling or Mining/Exploration Geology (NQF Level 4). Learners could then progress onto a NQF Level 5 qualification in one of the specialisation areas namely Surveying, Geology or Sampling. The qualification is designed to be flexible and accessible so that learners are able to demonstrate the competencies in Surveying, Geology and Sampling Technical Support across the mining and minerals sectors.

This qualification will be a suitable and justified recognition for the skills and competencies of technical assistants who, to date, have been trained and developed on an informal basis only, with little chance of advancement. The associated status of a nationally recognised qualification will serve as a motivation for learners to further their skills by entering the fields of Surveying, Geology and Sampling. Current Surveying, Geology and Sampling Technical Assistants in particular will benefit from the opportunities of assessment and subsequent recognition presented by RPL (Recognition of Prior Learning).

RECOGNIZE PREVIOUS LEARNING?
Y

LEARNING ASSUMED IN PLACE
Communication and Mathematical Literacy at NQF Level 2.

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.

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 is open; however it is preferable that learners have completed the National Certificate: Mining Technical Support: NQF Level 2.

QUALIFICATION RULES
There are 3 specialisation areas possible:

> Specialisation Area A: Sampling.
> Specialisation Area B: Surveying.
> Specialisation Area C: Geology.

A minimum of 138 credits is required to complete the qualification. In this Qualification, credits are allocated as follows:

Fundamental:

> All 36 credits are compulsory.

Core:

> All 51 credits are compulsory.

Electives:

> 51 Elective credits as specified below must be achieved.

Note: The elective credits should be chosen in accordance with the requirements of the selected context and the interests of the learner.

For Specialisation Area A: Sampling.

The following unit standards (28 credits) must be achieved:

Title; NQF Level; Credits:

> Compile a sample sheet and manually calculate the results for mineral evaluation purposes; NQF Level 3; 4 Credits.
> Mark off and map face sampling sections for mineral evaluation purposes; NQF Level 4; 11 Credits.
> Measure and record basic geological information for grade control purposes; NQF Level 3; 5 Credits.
> Compile a grade distribution plan; NQF Level 3; 3 Credits.
> Collate data for grade control and geological interpretation purposes; NQF Level 3; 5 Credits.

Total = 28 Credits.

A further 23 credits are to be chosen from the rest of the electives to make up a minimum of 138 credits for the qualification.

For Specialisation Area B: Surveying.

The following unit standards (28 credits) must be achieved:

Title; NQF Level; Credits:

> Perform distance measurements using a tape and Electronic Distance Measurement (EDM) equipment; NQF Level 4; 2 Credits.
> Produce a survey note; NQF Level 3; 4 Credits.
> Measure, plot and interpret area measurements within an underground workplace; NQF Level 2; 3 Credits.
> Construct a Cartesian co-ordinate grid and plot points; NQF Level 3; 4 Credits.
> Set up a survey instrument to take observations; NQF Level 3; 4 Credits.
> Determine quantities from plotted data; NQF Level 4; 6 Credits.
> Apply calculations of areas, volumes, masses and weights to simple shapes in strata control; NQF Level 3; 3 Credits.
> Reduce basic distance measurements (Tape or EDM) for use in surveying; NQF Level 4; 2 Credits.

Total = 28 Credits.

A further 23 credits are to be chosen from the rest of the electives to make up a minimum of 138 credits for the qualification.

For Specialisation Area C: Geology.

The following unit standards (28 credits) must be achieved:

Title; NQF Level; Credits:

> Demonstrate a basic understanding of South African stratigraphy and associated major economic deposits; NQF Level 3; 6 Credits.
> Demonstrate an understanding of sedimentary rocks; NQF Level 3; 6 Credits.
> Demonstrate an understanding of igneous rocks; NQF Level 3; 6 Credits.
> Demonstrate an understanding of metamorphic rocks; NQF Level 3; 6 Credits.
> Demonstrate an understanding of mineralization processes; NQF Level 3; 4 Credits.

Total = 28 Credits.

A further 23 credits are to be chosen from the rest of the electives to make up a minimum of 138 credits for the qualification.

EXIT LEVEL OUTCOMES
1. Communicate and solve problems in a variety of ways.

2. Demonstrate an understanding of Occupational Health, Safety and Environmental standards in the workplace.

3. Demonstrate an understanding of stratigraphic and geological features pertinent to the mining environment.

4. Perform map reading and measuring functions within a mining environment.

5. Perform basic survey sampling and geological functions pertinent to the mining environment.

The following Exit level outcomes are specific in terms of Geology, Sampling or Survey:

6. Apply a selection of Surveying procedures.

Or

7. Apply a selection of Sampling procedures.

Or

8. Demonstrate an understanding of Geological principles.

Critical Cross Field Outcomes:

Critical Cross-field Outcomes have been addressed by the exit level outcomes as follows:

While providing technical support in mining operations, qualifying learners are able to:

Identify and solve problems in which responses display that responsible decisions using critical thinking have been made, by:

> Responding to non-conformances in a mining technical support environment.
> Responding to emergencies in a mining technical support environment.
> Explaining and applying principles necessary to identify, record and report potentially hazardous geological features.

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 technical support environment.
> Adhering to team protocols, codes of conduct and generally promoting a positive team spirit.
> Coordinating work with that of others in the direct surrounding area.

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

> Performing map reading and measuring functions within a mining environment.
> Performing basic sampling and geological functions pertinent to the mining environment.
> Conducting self-locating activities surface and underground.
> Constructing a geological cross-section of an un-deformed area.

Collect, analyse, organise and critically evaluate information by:

> Accessing and interpreting information related to work tasks from a range of written and oral sources to ensure that work requirements are understood.
> Measuring directions and distances on a map in accordance with work related standards.
> Calculating quantities using tape measurements in accordance with work related and legal requirements.
> Determining the mineral content of a mining unit by applying elementary evaluation techniques.
> Plotting cartesian coordinates in accordance with requirements.
> Collating data for grade control and geological interpretative purposes.

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

> Demonstrating oral and written communication effectively while performing the tasks related to conducting mineral technical support in mining operations.
> Communicating and conveying information accurately and in accordance with acceptable timeframes.

> Applying principles and techniques of mathematics while performing the tasks related to mineral technical support.
> Solving mathematical problems in relation to the operational context.
> Calculating quantities from plotted data in accordance with specified work related requirements.

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

> Adhering to Occupational Health, Safety and Environmental policies, procedures and requirements at all times as per workplace requirements.
> Conducting activities in a mineral technical support environment in accordance with Occupational Health, Safety and Environmental requirements.
> Understanding and explaining concepts and principles necessary to identify and verify the selected mining horizon in accordance with mine specific requirements.
> Explaining principles necessary to identify, record and report potentially hazardous geological features.
> Demonstrating knowledge of the stratigraphy within a specific mineral deposit in accordance with mine specific requirements.
> Demonstrating an understanding of mineral resource types, their utilisation and exploitation.
> Using hand held electronic distance measuring technology.
> Setting up a GPS receiver.
> Setting up a survey instrument to take observations.
> Sampling a mining face with a scanning device.

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

> Interpreting plans in accordance with work and legal standards and requirements.
> Understanding the impact of upstream, downstream and parallel minerals processing systems upon each other and his/her own role in each context.
> Requesting assistance from other team members and support personnel when required.
> Assisting other team members and work together with support personnel to provide technical support in the mining environment.

ASSOCIATED ASSESSMENT CRITERIA
Associated Assessment Criteria for Exit Level Outcome 1:

> Oral and written communication is demonstrated effectively while performing the tasks related to conducting mineral technical support in mining operations.
> Information related to work tasks is accessed and interpreted from a range of written and oral sources to ensure that work requirements are understood.
> Information communicated is accurate and conveyed in accordance with acceptable timeframes.
> Principles and techniques of Mathematics are applied while performing the tasks related to mineral technical support activities.
> Mathematical problems are solved in relation with 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 policies, procedures and requirements are adhered to at all times as per workplace requirements.
> Technical Support operations are conducted in a mineral technical support environment according to the Occupational Health, Safety and Environmental requirements.

Associated Assessment Criteria for Exit Level Outcome 3:

> Concepts and principles necessary to identify and verify the selected mining horizon are understood and explained in accordance with mine specific requirements.
> Principles necessary to identify, record and report potentially hazardous geological features are explained in accordance with specified work standards and legal requirements.
> Knowledge of the stratigraphy within a specific mineral deposit is demonstrated in accordance with the requirements of mine specific requirements.
> An understanding of mineral resource types, their utilisation and exploitation is demonstrated in accordance with specified requirements.

Associated Assessment Criteria for Exit Level Outcome 4:

> Tape measurements are plotted in accordance with work related requirements.
> Quantities are calculated from plotted data in accordance with specified work requirements.
> Plans are interpreted in accordance with work and legal standards and requirements.
> Directions and distances on a map are measured in accordance with work related standards.
> Quantities are calculated using tape measurements in accordance with work related and legal requirements.

Associated Assessment Criteria for Exit Level Outcome 5:

> Survey drafting is performed in accordance with work requirements.
> The ability to locate oneself on surface and underground is demonstrated in accordance with specified work related requirements.
> The stratigraphic widths of a mineral exposure is measured in accordance with specific mine related requirements.
> The mineral content of a mining unit is determined by applying elementary evaluation techniques in accordance with work related requirements and standards.
> A geological cross-section of an un-deformed area is constructed in accordance with work requirements.

Associated Assessment Criteria for Exit Level Outcome 6:

> Hand held Electronic Distance Measurement (EDM) measurements are performed in accordance with specified requirements and equipment parameters.
> A survey note is produced in accordance with legal and work related requirements and standards.
> A GPS receiver is set up in accordance with specified requirements and manufacturer guidelines.
> Basic coordinate systems are interpreted in accordance with specified requirements.
> Plotted measured data are quantified in accordance with work related standards and requirements.
> Grade chains are calculated and manufactured in accordance with work related requirements and standards.
> A survey instrument is set up to take observations in accordance with work related standards and manufacturer's guidelines.
> Cartesian coordinates are plotted in accordance with requirements.
> The global positioning system is operated in accordance with equipment parameters and work related requirements.

Or

Associated Assessment Criteria for Exit Level Outcome 7:

> A mining face is sampled with a scanning devise for mineral evaluation purposes in accordance with work requirements and manufacturer guidelines.
> A sample sheet is compiled and the results manually calculated for mineral evaluation purposes in accordance with mine related standards and requirements.
> A face is marked off for sampling and mapped for mineral evaluation purposes in accordance with work related standards and requirements.
> The particle size distribution of a sample is determined by means of a sieving technique in accordance with work requirements and manufacturer guidelines.
> A grade distribution plan is compiled in accordance with mine related standards and requirements.
> Data for grade control and geological interpretative purposes are collated in accordance with work requirements and standards.
> Basic geological data are measured and recorded for grade control purposes in accordance with mine related standards and requirements.

Or

Associated Assessment Criteria for Exit Level Outcome 8:

> Knowledge of South African stratigraphy, sedimentary, igneous and metamorphic rocks, and mineralization processes is demonstrated in accordance with specified requirements.

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 inference 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 further learning. The assessment should also ensure that all the critical cross-field outcomes have been achieved.

The learner may choose in which language s/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 the plating process.

INTERNATIONAL COMPARABILITY

International qualifications were compared to ensure that the qualification structure and unit standards are comparable in terms of level, scope of qualification and competencies covered.

The following were considered:

> Countries with a formal Qualifications Framework, such as the United Kingdom (NVQ and SVQ), Australia and New Zealand.
> Countries who are reputed to be leaders in this particular field.
> SADEC countries, which are in geographical proximity to South Africa.

Qualifications Frameworks:

Frameworks consulted were those of Australia, New Zealand, United Kingdom (Britain) and Scotland.

While conducting the research in this regard, no evidence could be found of a "technical support" qualification, i.e. a qualification combining geological, surveying and sampling services.

Evidence was however found of qualifications at a higher level, comparable to Diploma or Degree Level (Levels 5 and 6 respectively) for the individual disciplines. These are at a higher level than envisaged by the NC Technical Support Level 3.

Leading Countries:

The fields of geology, surveying and sampling are common across the world, particularly in the mining context. There was no evidence suggesting that any particular country could be considered a leader in this regard.

Courses at undergraduate level were found in various countries, but in the respective disciplines and not as a combination as envisaged with the NC Technical Support Level 3.

Countries included in the search were Canada (British Columbia), United Kingdom, Australia and New Zealand.

SADEC Countries:

No evidence of a relevant qualification was found for any of the SADEC countries.

Consultation with experienced mining engineers who have worked in Africa (SADEC countries) have confirmed that competencies relating to Technical Support (at the level of the proposed qualification) would be acquired informally in the workplace. This would typically occur when workers assist technical or professional people performing these tasks.

People rendering geological or surveying support (i.e. at a professional level) typically have a relevant degree or diploma from a recognised institution (university, technical college).

Qualifications and unit standards (competencies) found:

The following relevant qualifications and/or standards were found:

Canada (British Columbia).

> Online courses are being offered at the University of British Columbia.

Similar elements of competence were found and the outcomes of the courses match closely with the outcomes of the unit standards incorporated in this National Certificate Geology for the training of geological assistants, aides and operators.

The structures of the courses are similar, however, no judgement could be made on the level and depth of the courses as they are delivered on-line according to the pace of the learner.

United Kingdom:

> WJEC (Originally Welsh Joint Education Committee) run certificate courses and shorter professional development courses.

GCE and GCSE Courses are offered in Geology. The various courses are organised into units, which correspond to clusters of individual unit standards of the proposed NC Technical Support:

> UNIT GL1: Foundation Geology.
> UNIT GL2: Investigative Geology.
> UNIT GL3: Geology and the Human Environment.
> Unit GL4: Interpreting the Geological Record.
> Unit GL5: Geological Themes.
> Unit GL6: Geological Investigations.

Australia:

Relevant competencies are packaged into various qualifications e.g.:

> Certificate II in Surface Coal Operations.
> MNCG1000 Conduct Mine Surveying Operations.

New Zealand:

A number of Geology unit standards were found, although not a specific qualification per se:

Level 2:

> 6360: Identify geological features from recorded visual information.
> 6361: Investigate and report on the geology in an area.
> 6362: Demonstrate an understanding of fossils.

Level 3:

> 21614: Describe the geological history of an area in the Southwest Pacific.
> 6364: Use plate tectonics to explain distribution of major NZ and Southwest Pacific geological features.
> 6365: Demonstrate knowledge of geological hazards.
> 8153: Explain factors affecting a water resource and its management, and plot and interpret hydrographs.

Level 4:

> 8140: Investigate, interpret and report on geological features, landforms and active processes of a site.
> 8145: Read geological maps and interpret geological history.
> 8147: Demonstrate a knowledge of the interior of the Earth.
> 8152: Collect water samples for analysis.

Level 5:

> 8137: Collect geophysical data and samples.
> 8138: Collect geotechnical data and samples.
> 8139: Collect geological data and rock samples.
> 8141: Describe and classify soils using soil maps.
> 8142: Identify and classify rock and soil materials.
> 8144: Model subsurface geological features.
> 8146: Read and interpret geophysical maps.
> 8148: Describe biogeochemical cycling of elements.
> 8150: Analyse wastewaters and demonstrate an understanding of wastewater treatment and discharge.

Level 6:

> 12364: Demonstrate knowledge of soil formation and structure.
> 12365: Demonstrate knowledge of soil fertility.
> 14398: Describe, assess and report on a degraded landform.
> 8143: Describe, assess and report on a contaminated site.
> 8149: Perform sedimentological and paleontological analyses.
> 8151: Perform soil chemical analysis.

Surveying: A National Certificate in Surveying (Level 3) with the following relevant standards exists:

> 8762: Confirm reliability of existing survey marks.
> 8774: Set up survey instruments and targets.
> 8775: Undertake and record linear field measurements for survey purposes.
> 8776: Undertake and record angular field measurements for survey purposes.
> 8777: Determine vertical height for survey purposes.
> 8778: Construct control survey marks, bench marks and trigonometrical beacons.
> 8798: Work safely during survey operations.

Conclusions:

International comparison in this instance has not revealed comparable qualifications for one or more of the following reasons:

> Formal qualifications in geology, surveying and sampling (laboratory assistants) are at a higher level than the proposed NC: Technical Support Level 3 (Level 4, 5 or higher).
> The reasons for South African unit standards and qualification representing a learning path starting at lower levels is mainly due to the relatively low educational base of the majority of workers in the mining industry. These standards (and indeed the NC Technical Support Level 3 qualification) seek to address the education gap.
> The courses found e.g. in the UK and Canada, are not necessarily set in a mining context and are therefore not as practically oriented as the NC: Technical Support, which focuses entirely on the mining context.
> The combination of geology, survey and sampling competencies into a single qualification is a unique approach that has not been seen elsewhere.

The competencies covered by the NC: Mining Technical Support (Level 3) are required by workers in the mining industry and it is highly motivated that learners should learn towards and be assessed against the relevant standards.

Despite the lack of directly comparable qualifications internationally, the NC Technical Support (Level 3) is nevertheless deemed a valuable and relevant qualification.

ARTICULATION OPTIONS
This qualification is the ideal platform for horizontal articulation in the Survey, Geology and Sampling disciplines, and other mining industry related sub-fields.

Vertical articulation exists with:

> ID 50082: Further Education and Training Certificate: Minerals Surveying.

MODERATION OPTIONS
> Anyone assessing a learner or moderating the assessment of a learner against this unit standard 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 unit standard 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.

> The relevant Education, Training, Quality, Assurance (ETQA) Body will oversee assessment and moderation of assessment, 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 Unit Standard.

> Anyone wishing to be assessed against this unit standard 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 this qualification and preferably relevant workplace practical experience.
> Registration as an assessor with the relevant ETQA.

NOTES
N/A

UNIT STANDARDS

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
Fundamental	119472	Accommodate audience and context needs in oral/signed communication	Level 3	5
Fundamental	9010	Demonstrate an understanding of the use of different number bases and measurement units and an awareness of error in the context of relevant calculations	Level 3	2
Fundamental	9013	Describe, apply, analyse and calculate shape and motion in 2-and 3-dimensional space in different contexts	Level 3	4
Fundamental	119457	Interpret and use information from texts	Level 3	5
Fundamental	9012	Investigate life and work related problems using data and probabilities	Level 3	5
Fundamental	119467	Use language and communication in occupational learning programmes	Level 3	5

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
Fundamental	7456	Use mathematics to investigate and monitor the financial aspects of personal, business and national issues	Level 3	5
Fundamental	119465	Write/present/sign texts for a range of communicative contexts	Level 3	5
Core	11131	Measure the stratigraphic widths of a mineral exposure	Level 2	6
Core	116669	Conduct an issue-based risk assessment within an underground workplace	Level 3	2
Core	262181	Construct a geological cross-section of an un-deformed area	Level 3	3
Core	11118	Determine the mineral content of a mining unit applying elementary evaluation techniques	Level 3	2
Core	11686	Identify and verify the selected mining horizon	Level 3	3
Core	262217	Identify, record and report on geological features that could result in potentially hazardous conditions in the workplace	Level 3	5
Core	262264	Locate a surface geographical position by employing map-reading techniques	Level 3	3
Core	261817	Locate an underground geographical position by employing plan reading techniques	Level 3	3
Core	9530	Manage work time effectively	Level 3	3
Core	14442	Plot tape and offset measurements on a plan	Level 3	3
Core	253016	Read and understand a mine plan and transfer recorded information onto mine plans	Level 3	4
Core	261818	Demonstrate a basic understanding of mineral resource types, utilisation and exploitation	Level 4	5
Core	262259	Demonstrate a basic understanding of the stratigraphy of the relevant economic deposit	Level 4	3
Core	14461	Determine quantities from plotted data	Level 4	6
Elective	244432	Measure, plot and interpret area measurements within an underground workplace	Level 2	3
Elective	261777	Operate a geophysical measuring instrument to record data for a geophysical survey	Level 2	4
Elective	116937	Use a Graphical User Interface (GUI)-based spreadsheet application to create and edit spreadsheets	Level 2	4
Elective	252554	Apply calculations of areas, volumes, masses and weights to simple shapes in strata control	Level 3	3
Elective	13912	Apply knowledge of self and team in order to develop a plan to enhance team performance	Level 3	5
Elective	11111	Calculate and manufacture grade chains	Level 3	3
Elective	11116	Calculate and plot the position of an underground survey point from traverse measurements by employing first principles	Level 3	7
Elective	257095	Carry out basic surveying and calculations in surface excavations	Level 3	8
Elective	113909	Coach a team member in order to enhance individual performance in work environment	Level 3	5
Elective	262237	Collate data for grade control and geological interpretation purposes	Level 3	5
Elective	262184	Compile a grade distribution plan	Level 3	3
Elective	11114	Compile a sample sheet and manually calculate the results for mineral evaluation purposes	Level 3	4
Elective	230013	Conduct face profiling and blast hole surveys	Level 3	6
Elective	11596	Construct a Cartesian co-ordinate grid and plot points	Level 3	4
Elective	262303	Demonstrate a basic understanding of South African stratigraphy and associated major economic deposits	Level 3	6
Elective	261778	Demonstrate a basic understanding of global tectonic systems	Level 3	3
Elective	261797	Demonstrate an understanding of igneous rocks	Level 3	6
Elective	262179	Demonstrate an understanding of metamorphic rocks	Level 3	6
Elective	262198	Demonstrate an understanding of mineralization processes	Level 3	4
Elective	262160	Demonstrate an understanding of sedimentary rocks	Level 3	6
Elective	262277	Identify geographical and geological features from aerial photographs	Level 3	5
Elective	261801	Manually construct an outcrop plan of a geologically simple area from given data	Level 3	3

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
Elective	261758	Manually construct an underground geological plan of a geologically simple area from given data	Level 3	3
Elective	262306	Measure and record basic geological information for grade control purposes	Level 3	5
Elective	262239	Measure and record water levels in boreholes	Level 3	2
Elective	11112	Produce a survey note	Level 3	4
Elective	11043	Sample a mining face with a scanning device for mineral evaluation purposes	Level 3	5
Elective	11637	Set up a survey instrument to take observations	Level 3	4
Elective	114978	Use a word processing package to produce business documents	Level 3	3
Elective	9533	Use communication skills to handle and resolve conflict in the workplace	Level 3	3
Elective	262257	Electronic data capturing for geological interpretation and modelling purposes	Level 4	6
Elective	261757	Identify structural and stratigraphic features on a surface geological map	Level 4	4
Elective	261286	Identify structural and stratigraphic features on an underground geological plan	Level 4	4
Elective	9754	Mark off and map face sampling sections for mineral evaluation purposes	Level 4	11
Elective	14271	Perform distance measurements using a tape and Electronic Distance Measurement (EDM) equipment	Level 4	2
Elective	11713	Reduce basic distance measurements (Tape or EDM) for use in surveying	Level 4	2
Elective	261800	Supervise the rehabilitation of a geological site	Level 4	7

LEARNING PROGRAMMES RECORDED AGAINST THIS QUALIFICATION
None

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAQA

UNIT STANDARD:

Identify structural and stratigraphic features on an underground geological plan

SAQA US ID	UNIT STANDARD TITLE		
261286	Identify structural and stratigraphic features on an underground geological plan		
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	4

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

SPECIFIC OUTCOME 1
Demonstrate the knowledge required on an underground geological plan to identify structural and stratigraphic features.

SPECIFIC OUTCOME 2
Plan and prepare to identify structural and stratigraphic features on an underground geological plan.

SPECIFIC OUTCOME 3
Identify structural and stratigraphic features on an underground geological plan.

SPECIFIC OUTCOME 4
Compile and submit reports.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	65549	National Certificate: Mining Technical Support	Level 3

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Identify structural and stratigraphic features on a surface geological map

SAQA US ID	UNIT STANDARD TITLE		
261757	Identify structural and stratigraphic features on a surface geological map		
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	4

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

SPECIFIC OUTCOME 1
Demonstrate the knowledge required to identify on a surface geological map, structural and stratigraphic features.

SPECIFIC OUTCOME 2
Plan and prepare to identify structural and stratigraphic features on a surface geological map.

SPECIFIC OUTCOME 3
Identify structural and stratigraphic features on a surface geological map.

SPECIFIC OUTCOME 4
Compile and submit reports.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	65549	National Certificate: Mining Technical Support	Level 3

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Manually construct an underground geological plan of a geologically simple area from given data

SAQA US ID	UNIT STANDARD TITLE		
261758	Manually construct an underground geological plan of a geologically simple area from given data		
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	3

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

SPECIFIC OUTCOME 1
Demonstrate the knowledge and understanding required to manually construct an underground geological plan of a geologically simple area (minor deformation) from supplied data.

SPECIFIC OUTCOME 2
Prepare to construct an underground geological plan of a geologically simple area.

SPECIFIC OUTCOME 3
Construct an underground geological plan of a geologically simple area.

SPECIFIC OUTCOME 4
Present an underground geological plan.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	65549	National Certificate: Mining Technical Support	Level 3

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Operate a geophysical measuring instrument to record data for a geophysical survey

SAQA US ID	UNIT STANDARD TITLE			
261777	Operate a geophysical measuring instrument to record data for a geophysical survey			
ORIGINATOR		PROVIDER		
SGB Mining and Minerals				
FIELD		SUBFIELD		
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL		CREDITS
Undefined	Regular	Level 2		4

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

SPECIFIC OUTCOME 1
Demonstrate the knowledge required to operate a geophysical measuring instrument.

SPECIFIC OUTCOME 2
Prepare to operate a geophysical measuring instrument.

SPECIFIC OUTCOME 3
Operate the geophysical measuring instrument.

SPECIFIC OUTCOME 4
Conduct post survey activities and compile and present reports.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	65549	National Certificate: Mining Technical Support	Level 3

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAQA

UNIT STANDARD:

Demonstrate a basic understanding of global tectonic systems

SAQA US ID	UNIT STANDARD TITLE			
261778	Demonstrate a basic understanding of global tectonic systems			
ORIGINATOR		PROVIDER		
SGB Mining and Minerals				
FIELD		SUBFIELD		
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL		CREDITS
Undefined	Regular	Level 3		3

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

SPECIFIC OUTCOME 1
Demonstrate basic knowledge and understanding of the structure of the crust and upper mantle, their composition and operative heat transfer processes.

SPECIFIC OUTCOME 2
Demonstrate basic knowledge and understanding of earthquakes and volcanism.

SPECIFIC OUTCOME 3
Demonstrate basic knowledge and understanding of plate tectonics.

SPECIFIC OUTCOME 4
Demonstrate basic knowledge and understanding of the relationship between plate tectonics and mineralisation.

SPECIFIC OUTCOME 5
Demonstrate basic knowledge and understanding of plate tectonic activity during the geological evolution of South Africa.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	65549	National Certificate: Mining Technical Support	Level 3

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate an understanding of igneous rocks

SAQA US ID	UNIT STANDARD TITLE		
261797	Demonstrate an understanding of igneous rocks		
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	6

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
115705	Demonstrate an understanding of igneous rocks	Level 4	6	Will occur as soon as 261797 is registered

SPECIFIC OUTCOME 1
Demonstrate understanding of the processes that result in the derivation of igneous rocks, their classification and distribution.

SPECIFIC OUTCOME 2
Demonstrate understanding of the principal characteristics of fine grained and glassy igneous rocks.

SPECIFIC OUTCOME 3
Demonstrate understanding of the principal characteristics of medium grained igneous rocks.

SPECIFIC OUTCOME 4
Demonstrate understanding of the principal characteristics of coarse grained igneous rocks.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	65549	National Certificate: Mining Technical Support	Level 3

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Supervise the rehabilitation of a geological site

SAQA US ID	UNIT STANDARD TITLE		
261800	Supervise the rehabilitation of a geological site		
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	7

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
11687	Supervise the rehabilitation of a geological exploration site	Level 4	14	Will occur as soon as 261800 is registered

SPECIFIC OUTCOME 1
Demonstrate the knowledge required to rehabilitate a geological exploration site.

SPECIFIC OUTCOME 2
Plan and prepare to supervise the rehabilitation of a geological exploration site.

SPECIFIC OUTCOME 3
Supervise the rehabilitation activity.

SPECIFIC OUTCOME 4
Conduct post-rehabilitation activities and compile and present reports.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	65549	National Certificate: Mining Technical Support	Level 3

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Manually construct an outcrop plan of a geologically simple area from given data

SAQA US ID	UNIT STANDARD TITLE			
261801	Manually construct an outcrop plan of a geologically simple area from given data			
ORIGINATOR		PROVIDER		
SGB Mining and Minerals				
FIELD		SUBFIELD		
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL		CREDITS
Undefined	Regular	Level 3		3

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
115691	Manually construct an outcrop plan of a geologically simple area from given data	Level 3	3	Will occur as soon as 261801 is registered

SPECIFIC OUTCOME 1
Demonstrate the knowledge and understanding required to manually construct an outcrop plan of a geologically simple area from supplied data.

SPECIFIC OUTCOME 2
Plan and construct an outcrop plan of a geologically simple area.

SPECIFIC OUTCOME 3
Present a geological outcrop plan.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	65549	National Certificate: Mining Technical Support	Level 3

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAQA

UNIT STANDARD:

Locate an underground geographical position by employing plan reading techniques

SAQA US ID	UNIT STANDARD TITLE		
261817	Locate an underground geographical position by employing plan reading techniques		
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	3

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

SPECIFIC OUTCOME 1
Demonstrate the knowledge required for locating an underground position.

SPECIFIC OUTCOME 2
Plan and prepare to locate the underground position.

SPECIFIC OUTCOME 3
Locate the underground position.

SPECIFIC OUTCOME 4
Clean up and compile a report.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	65549	National Certificate: Mining Technical Support	Level 3

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate a basic understanding of mineral resource types, utilisation and exploitation

SAQA US ID	UNIT STANDARD TITLE			
261818	Demonstrate a basic understanding of mineral resource types, utilisation and exploitation			
ORIGINATOR		PROVIDER		
SGB Mining and Minerals				
FIELD		SUBFIELD		
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL		CREDITS
Undefined	Regular	Level 4		5

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

SPECIFIC OUTCOME 1
Demonstrate a basic understanding of mineral resource types.

SPECIFIC OUTCOME 2
Demonstrate a basic understanding of mineral utilisation.

SPECIFIC OUTCOME 3
Demonstrate a basic understanding of mineral exploitation and economic importance of South African mineral deposits to the South African economy.

SPECIFIC OUTCOME 4
Demonstrate basic understanding of the economic importance of South African mineral deposits to the world economy.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	65549	National Certificate: Mining Technical Support	Level 3

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate an understanding of sedimentary rocks

SAQA US ID	*UNIT STANDARD TITLE*			
262160	Demonstrate an understanding of sedimentary rocks			
ORIGINATOR			*PROVIDER*	
SGB Mining and Minerals				
FIELD			*SUBFIELD*	
6 - Manufacturing, Engineering and Technology			Fabrication and Extraction	
ABET BAND	*UNIT STANDARD TYPE*		*NQF LEVEL*	*CREDITS*
Undefined	Regular		Level 3	6

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
115701	Demonstrate an understanding of sedimentary rocks	Level 4	6	Will occur as soon as 262160 is registered

SPECIFIC OUTCOME 1
Demonstrate understanding of the processes that result in the derivation of sedimentary rocks.

SPECIFIC OUTCOME 2
Demonstrate understanding of the principal characteristics of clastic sedimentary rocks.

SPECIFIC OUTCOME 3
Demonstrate understanding of the principal characteristics of chemical sedimentary rocks.

SPECIFIC OUTCOME 4
Demonstrate understanding of the principal characteristics of biological sedimentary rocks.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	65549	National Certificate: Mining Technical Support	Level 3

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate an understanding of metamorphic rocks

SAQA US ID	UNIT STANDARD TITLE		
262179	Demonstrate an understanding of metamorphic rocks		
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	6

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
115708	Demonstrate an understanding of metamorphic rocks	Level 4	6	Will occur as soon as 262179 is registered

SPECIFIC OUTCOME 1
Demonstrate understanding of the processes that result in the derivation of metamorphic rocks, their classification and distribution.

SPECIFIC OUTCOME 2
Demonstrate understanding of the principle characteristics of low grade metamorphic rocks.

SPECIFIC OUTCOME 3
Demonstrate understanding of the principle characteristics of medium grade metamorphic rocks.

SPECIFIC OUTCOME 4
Demonstrate understanding of the principle characteristics of high grade metamorphic rocks.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	65549	National Certificate: Mining Technical Support	Level 3

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Construct a geological cross-section of an un-deformed area

SAQA US ID	*UNIT STANDARD TITLE*		
262181	Construct a geological cross-section of an un-deformed area		
ORIGINATOR		*PROVIDER*	
SGB Mining and Minerals			
FIELD		*SUBFIELD*	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	*UNIT STANDARD TYPE*	*NQF LEVEL*	*CREDITS*
Undefined	Regular	Level 3	3

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
115677	Construct a geological cross-section of an undeformed area	Level 3	3	Will occur as soon as 262181 is registered

SPECIFIC OUTCOME 1
Demonstrate the knowledge and understanding required to construct a geological cross-section.

SPECIFIC OUTCOME 2
Plan and construct a geological cross section.

SPECIFIC OUTCOME 3
Present a geological cross-section.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	65549	National Certificate: Mining Technical Support	Level 3

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Compile a grade distribution plan

SAQA US ID	UNIT STANDARD TITLE		
262184	Compile a grade distribution plan		
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	3

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

SPECIFIC OUTCOME 1
Demonstrate the knowledge required to compile a grade distribution plan.

SPECIFIC OUTCOME 2
Prepare to construct a grade distribution plan.

SPECIFIC OUTCOME 3
Compile a grade distribution plan.

SPECIFIC OUTCOME 4
Present a grade distribution plan.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	65549	National Certificate: Mining Technical Support	Level 3

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate an understanding of mineralization processes

SAQA US ID	UNIT STANDARD TITLE		
262198	Demonstrate an understanding of mineralization processes		
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	4

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 typical mineral deposits.

SPECIFIC OUTCOME 2
Demonstrate an understanding of the mineralization processes within sedimentary rocks.

SPECIFIC OUTCOME 3
Demonstrate an understanding of the mineralization processes within igneous rocks.

SPECIFIC OUTCOME 4
Demonstrate an understanding of the mineralization processes within metamorphic rocks.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	65549	National Certificate: Mining Technical Support	Level 3

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAQA

UNIT STANDARD:

Identify, record and report on geological features that could result in potentially hazardous conditions in the workplace

SAQA US ID	UNIT STANDARD TITLE		
262217	Identify, record and report on geological features that could result in potentially hazardous conditions in the workplace		
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	5

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

SPECIFIC OUTCOME 1
Demonstrate the knowledge required to identify, measure and record geological features in underground and surface mining environments.

SPECIFIC OUTCOME 2
Demonstrate the knowledge required to identify the potential hazards associated with geological features.

SPECIFIC OUTCOME 3
Plan and prepare to measure and record the geological features.

SPECIFIC OUTCOME 4
Measure and record the geological features.

SPECIFIC OUTCOME 5
Compile and submit reports.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	65549	National Certificate: Mining Technical Support	Level 3

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Collate data for grade control and geological interpretation purposes

SAQA US ID	UNIT STANDARD TITLE		
262237	Collate data for grade control and geological interpretation purposes		
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	5

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

SPECIFIC OUTCOME 1
Demonstrate the knowledge required to collate geologically related data for grade control and geological modelling purposes.

SPECIFIC OUTCOME 2
Source and collate raw data.

SPECIFIC OUTCOME 3
Validate raw data.

SPECIFIC OUTCOME 4
Archive the collated data and compile completion reports.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	65549	National Certificate: Mining Technical Support	Level 3

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Measure and record water levels in boreholes

SAQA US ID	UNIT STANDARD TITLE			
262239	Measure and record water levels in boreholes			
ORIGINATOR		PROVIDER		
SGB Mining and Minerals				
FIELD		SUBFIELD		
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL		CREDITS
Undefined	Regular	Level 3		2

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

SPECIFIC OUTCOME 1
Demonstrate the knowledge required for measuring and recording the level of water in boreholes.

SPECIFIC OUTCOME 2
Prepare to measure water levels in boreholes.

SPECIFIC OUTCOME 3
Measure water levels in boreholes.

SPECIFIC OUTCOME 4
Clean up and compile and submit reports.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	65549	National Certificate: Mining Technical Support	Level 3

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAQA

UNIT STANDARD:

Electronic data capturing for geological interpretation and modelling purposes

SAQA US ID	UNIT STANDARD TITLE		
262257	Electronic data capturing for geological interpretation and modelling purposes		
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	6

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
12187	Electronic data capturing for geological interpretation and modelling purposes	Level 4	6	Will occur as soon as 262257 is registered

SPECIFIC OUTCOME 1
Demonstrate the knowledge required for capturing geological related data for geological interpretation and modelling purposes using Electronic means.

SPECIFIC OUTCOME 2
Prepare raw data for electronic capture.

SPECIFIC OUTCOME 3
Enter and validate collated data.

SPECIFIC OUTCOME 4
Archive the original raw data and compile completion reports.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	65549	National Certificate: Mining Technical Support	Level 3

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAQA

UNIT STANDARD:

Demonstrate a basic understanding of the stratigraphy of the relevant economic deposit

SAQA US ID	UNIT STANDARD TITLE		
262259	Demonstrate a basic understanding of the stratigraphy of the relevant economic deposit		
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	3

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

SPECIFIC OUTCOME 1
Demonstrate basic understanding of the geological characteristics of the relevant economic deposit.

SPECIFIC OUTCOME 2
Demonstrate basic understanding of the stratigraphy of the relevant economic deposit.

SPECIFIC OUTCOME 3
Demonstrate basic understanding of the regional distribution of the principle economic horizons within the relevant economic deposit.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	65549	National Certificate: Mining Technical Support	Level 3

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Locate a surface geographical position by employing map-reading techniques

SAQA US ID	UNIT STANDARD TITLE		
262264	Locate a surface geographical position by employing map-reading techniques		
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	3

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

SPECIFIC OUTCOME 1
Demonstrate the knowledge required for locating a surface geographical position.

SPECIFIC OUTCOME 2
Plan and prepare to locate the surface geographical position.

SPECIFIC OUTCOME 3
Locate the surface geographical position.

SPECIFIC OUTCOME 4
Clean up and compile a report.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	65549	National Certificate: Mining Technical Support	Level 3

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Identify geographical and geological features from aerial photographs

SAQA US ID	UNIT STANDARD TITLE		
262277	Identify geographical and geological features from aerial photographs		
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	5

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

SPECIFIC OUTCOME 1
Demonstrate the knowledge required to examine aerial photographs so as to identify surface geographical and geological features.

SPECIFIC OUTCOME 2
Plan and prepare to identify surface geographical and geological features on an aerial photograph.

SPECIFIC OUTCOME 3
Identify surface geographical and geological features on an aerial photograph.

SPECIFIC OUTCOME 4
Compile and present reports.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	65549	National Certificate: Mining Technical Support	Level 3

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate a basic understanding of South African stratigraphy and associated major economic deposits

SAQA US ID	UNIT STANDARD TITLE		
262303	Demonstrate a basic understanding of South African stratigraphy and associated major economic deposits		
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	6

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

SPECIFIC OUTCOME 1
Demonstrate a basic understanding of the fundamental principles of stratigraphy.

SPECIFIC OUTCOME 2
Demonstrate a basic understanding of the fundamental crustal components of South Africa.

SPECIFIC OUTCOME 3
Demonstrate a basic understanding of the principle lithostratigraphic series within South Africa.

SPECIFIC OUTCOME 4
Demonstrate a basic understanding of the major economic deposits associated with the principle lithostratigraphic series within South Africa.

SPECIFIC OUTCOME 5
Demonstrate a basic understanding of the relationship between global geological evolution, South Africa and surrounding African countries.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	65549	National Certificate: Mining Technical Support	Level 3

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Measure and record basic geological information for grade control purposes

SAQA US ID	UNIT STANDARD TITLE		
262306	Measure and record basic geological information for grade control purposes		
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	5

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

SPECIFIC OUTCOME 1
Demonstrate the knowledge required to acquire basic geological data for grade control purposes.

SPECIFIC OUTCOME 2
Plan and prepare to measure and record basic geological data for grade control purposes.

SPECIFIC OUTCOME 3
Measure and record basic geological data for grade control purposes.

SPECIFIC OUTCOME 4
Compile and present reports.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	65549	National Certificate: Mining Technical Support	Level 3

No. 105 **9 February 2009**

SOUTH AFRICAN QUALIFICATIONS AUTHORITY (SAQA)

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

Adventure Based Learning

registered by Organising Field 11 - Services, 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.saqa.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 9 March 2009*. All correspondence should be marked **Standards Setting – Task Team Adventure Based Learning** and addressed to

> The Director: Standards Setting and Development
> SAQA
> *Attention: Mr. E. Brown*
> Postnet Suite 248
> Private Bag X06
> Waterkloof
> 0145
> or faxed to 012 – 431-5144
> e-mail: ebrown@saqa.org.za
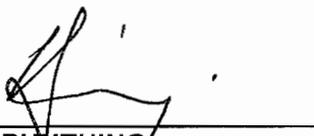
D. MPHUTHING
ACTING DIRECTOR: STANDARDS SETTING AND DEVELOPMENT

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAQA

QUALIFICATION:
Further Education and Training Certificate: Adventure-Based Learning

SAQA QUAL ID	QUALIFICATION TITLE		
65569	Further Education and Training Certificate: Adventure-Based Learning		
ORIGINATOR		PROVIDER	
Task Team - Adventure Based Learning			
QUALIFICATION TYPE	FIELD	SUBFIELD	
Further Ed and Training Cert	11 - Services	Hospitality, Tourism, Travel, Gaming and Leisure	
ABET BAND	MINIMUM CREDITS	NQF LEVEL	QUAL CLASS
Undefined	137	Level 4	Regular-Unit Stds Based

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

PURPOSE AND RATIONALE OF THE QUALIFICATION
Purpose:

In the context of the Adventure-Based Learning industry, this qualification will enable a successful learner to develop and lead creative, innovative and exciting programmes and adventure recreation activities; which are largely, but not exclusively, based outdoors.

Individuals meeting the requirements of this qualification will be able to contribute positively towards safe, interesting and exciting indoor and outdoor experiences for the participants, and in so doing contribute to the development of the adventure recreation industry of South Africa. The qualifying learner will also contribute positively to an increasing awareness of the role that adventure recreation plays in the overall well-being of participants, and the benefits it has for the broader community, and this is likely to increase participation levels.

Learners will be capable of combining a range of self-organisation and life-long learning skills with a working knowledge of Adventure-Based learning practices and integrating these within a context to produce a multi-skilled practice.

The qualifying learner will be able to:

> Apply the principles of facilitation within the Adventure-Based Learning environment.
> Prepare Adventure-Based Learning activities and/or programmes according to organisational requirements.
> Conduct Adventure-Based Learning activities according to operational requirements.

Rationale:

The growth and expansion within the adventure, leadership and team-building sectors within the Adventure-Based Learning industry, require competent and qualified activity leaders or facilitators to offer outdoor recreation experiences that are available for the public.

This qualification forms part of a qualification set for this industry and will enable career-path development for individuals operating within the following three main fields of operation:

> Outdoor Recreation.
> Outdoor Guiding.
> Extreme Adventure, Recreation and Sport.

Adventure-Based Learning provides a unique combination of the use of the outdoors as a classroom and a variety of adventure recreation activities as the medium to create experiences that can provide learning opportunities for alternative education.

In particular, this qualification will develop the competencies required by individuals operating as:

> Leaders of volunteer groups.
> Group instructors.
> Senior instructors.
> Programme Co-ordinators.
> Professional ABL practitioners.
> Outdoor Recreation Therapists.

Adventure-Based learning activities may be planned, conducted and facilitated for a variety of purposes, and settings including youth programmes, alternative/environmental education, social development, team building, leadership training or outdoor recreation therapy. They may be offered by a range of Adventure-Based organisations, including:

> Adventure-Based Outdoor Centres.
> Training and development companies and organisations.
> Adventure Institutions offering outdoor and adventure programmes.
> Schools and Colleges.
> Tertiary education offering recreation programmes.
> Organisations specialising in utilising recreation rehabilitation.

This qualification is designed to meet the needs of learners who are either actively involved in the Adventure-Based Learning environment or individuals who desire to further develop their skills in order to enter this industry.

RECOGNIZE PREVIOUS LEARNING?
Y

LEARNING ASSUMED IN PLACE
It is assumed that learners accessing this qualification are competent in:

> Communication at NQF Level 3.
> Mathematical Literacy at NQF Level 3.

Recognition of Prior Learning:

This Qualification can be achieved wholly or in part through the Recognition of Prior Learning and the Qualification may be granted to learners who have acquired the skills and knowledge without attending formal courses providing they can demonstrate competence in the outcomes of the individual Unit Standards as required by the Fundamental, Core and Elective areas stipulated in the Qualification and by the Exit Level Outcomes.

An RPL process may also be used to credit learners with Unit Standards in which they have developed the necessary competency as a result of workplace and experiential learning.

RPL may also be used by learners, who are not in possession of a GETC or equivalent qualification, to gain access to the Qualification. ·

Learners submitting themselves for RPL should be thoroughly briefed prior to the assessment, and may be required to submit a Portfolio of Evidence in the prescribed format to be assessed for formal recognition. 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.

Access to the Qualification:

> There is open access for learners who are able to arrange for assessment in either an Adventure- Based Learning or Adventure Guiding environment.

QUALIFICATION RULES
The qualification is made up of Fundamental, Core and Elective unit standards and a minimum of 137 Credits is required to complete the qualification.

Fundamental Component:

The Fundamental Component consists of Unit Standards in:

> Mathematical Literacy at NQF Level 4 to the value of 16 credits.
> Communication at NQF Level 4 in a First South African Language to the value of 20 credits.
> Communication in a Second South African Language at NQF Level 3 to the value of 20 credits.
> It is compulsory therefore 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 in the Fundamental Component are compulsory.

Core Component:

> The Core Component consists of Unit Standards to the value of 66 credits all of which are compulsory.

Elective Component:

> Elective unit standards to the value of 15 credits must be selected.

EXIT LEVEL OUTCOMES
1. Apply the principles of facilitation within the Adventure-Based Learning environment.

2. Prepare Adventure-Based Learning activities and/or programmes according to organisational requirements.

3. Conduct Adventure- Based Learning activities according to operational requirements.

Critical Cross-Field Outcomes:

The qualification addresses the following Critical Cross-Field Outcomes:

Communicate effectively:
> Effective communication is enabled through the maintaining of relevant communication as per organisational requirements.

Identify and solve problems:

> Problems are identified and solved in the planning and conducting of Adventure-Based Learning activities and/or programmes as it relates to the planning execution and reviewing of all related responsibilities.

Collect, analyse, organise, and critically evaluate information:
> Information is collected analysed, organized and evaluated in the preparation, conducting and conclusion of Adventure-Based Learning activities.

Organise and manage own activities:
> Own activities are managed and organised in the performance of Adventure-Based Learning.

Work in a team:
> Teamwork is supported in the operational environment and the execution of Adventure-Based Learning responsibilities.

Seeing the world as a set of interrelated systems:
> Inter-relatedness of systems is supported in the observing and management of group dynamics as well as the conducting of activities in the natural outdoor environment.

ASSOCIATED ASSESSMENT CRITERIA
Associated Assessment Criteria for Exit Level Outcome 1:

1.1. Facilitation as a tool within the Adventure-Based Learning environment is explained in terms of its use in the different models of Adventure-Based Learning.
1.2. Group dynamics are explained inn terms of its effect and application in the management and organising of groups in order to conduct Adventure-Based Learning facilitation.
1.3. The role, purpose and function of participant support is explained in terms of achieving the aims and objectives of an Adventure-Based Learning facilitation process.

Associated Assessment Criteria for Exit Level Outcome 2:

2.1 Outdoor recreation and adventure activities used in the operational environment are identified and described in terms of their application in an Adventure learning programme.
2.2 Adventure and recreation activities are selected and sequenced to prepare for the implementation of planned Adventure-Based learning programmes.
2.3 Operational requirements specific to selected outdoor adventure and recreation activities and/or programmes are evaluated to ensue that minimum impact practices are implemented.
2.4 The potential impact of activities and/or programmes on individuals and groups are evaluated so as to assist in the choice of activities that have minimal negative and maximum positive impact.
2.5 Pre-implementation preparation for activities are concluded according to organisational and industry requirements.
2.6 Group and activity administration is concluded according to organisational and industry requirements.

Associated Assessment Criteria for Exit Level Outcome 3:

3.1 Communication is maintained in order to brief and lead participants through a recreation and/or adventure activity/programme.
3.2 Adventure-Based Learning activities and/or programmes are supervised and conducted in accordance with organisational procedures, time-frames and standards.
3.3 Technical skills are applied to lead participants through selected activities/Adventure-Based Learning programme in a variety of terrains.
3.4 Navigation in natural environments is conducted in a manner ensuring that minimal impact practices are maintained.

3.5 Adventure-Based Learning activities/programmes are concluded in order to meet specific activity outcomes and objectives.
3.6 Review sessions are concluded in support of effectiveness of the learning experiences for the participants.
3.7 Post activity responsibilities are conducted according to organizational and industry requirements.

Integrated Assessment:

Integrated assessment at this level will evaluate the learner's ability to combine actions and ideas across a range of activities and knowledge areas. The integrated assessment must specifically assess the learner's ability to:

> Demonstrate competence by means of the practical application of the embedded knowledge in a manner that meets the required performance standards required.
> Illustrate a clear understanding of the concepts, theory and principles that underpin the practical action taken.

The assessment may require assessment methods, which take evidence generated during on-the job activities into account. Because assessment practices must be open, transparent, fair, valid and reliable; ensuring that no learner is disadvantaged in any way whatsoever, an integrated assessment approach is incorporated into the qualification.

A variety of methods must be used in assessment and tools and activities must be appropriate to the context in which the learner is working or will work. Where it is not possible to assess the learner in the workplace simulations, case studies, role-plays and other similar techniques should be used to provide a context appropriate to the assessment.

The term integrated assessment implies that theoretical and practical components should be assessed together. Whenever possible the assessment of knowledge, skills, attitudes and values shown in the Unit Standards should be integrated and, during integrated assessment, the assessor should make use of a range of formative and summative assessment tools and methods. Combinations of practical, applied, and foundational competencies should be assessed.

Assessment should further ensure that all specific outcomes, embedded knowledge and critical cross-field outcomes are evaluated in an integrated way. Assessors must assess and give credit for the evidence of learning that has already been acquired through formal, informal and non-formal learning and work experience as the assessment process is capable of being applied to RPL, subject to the rules and criteria of the relevant ETQA.

INTERNATIONAL COMPARABILITY
Adventure-Based Learning is utilised in countries such as Britain, New Zealand and Australia. Outdoor adventure activities are also used in the USA but training and development of instructors/facilitators and practitioners is well-established and recorded in terms of qualifications utilised in Britain and Australia, which are presently regarded as world-leaders in the utilisation of adventure activities in a learning environment.

Due to the well-regulated structure of Adventure-Based Learning organisations and the well-established requirements of skills and competencies against recognised qualifications in the ABL environment in these countries, the decision was taken to conduct international comparability against qualifications utilised by Australia and Britain.

Comparisons were conducted against the following qualifications:

> The Australian Certificate in Outdoor Recreation Level 3.

> The British NCFE Level 3 Certificate in Outdoor Activity Leadership.

The British NCFE Level 3 Certificate in Outdoor Activity Leadership contains the following core competencies:

> Contribute to improving personal and organisational performance.
> Organise people and resources for outdoor programmes.
> Promote Health and Safety.
> Promote the conservation of the environment.
> Establish and maintain effective working relationships.
> Design outdoor recreation programmes.
> Deliver education in the outdoors.
> Promote the transfer of learning from outdoor experiences.
> Design outdoor development training programmes.
> Deliver training in the outdoors.
> Facilitate adventurous experiences.

Similarities in the Further Education and training Certificate: Adventure-Based Learning is found in the following unit standards making up the core component of the qualification:

> Facilitate learning through an Adventure-Based activity.
> Plan and implement minimum impact practices.
> Manage and organise groups.
> Prepare to conduct and conclude adventurous experiences.
> Lead participants through an outdoor recreation and/or adventure activity showing competence in the technical skill required.

The Further Education and training Certificate: Adventure-Based Learning qualification differs through the inclusion of the following areas of competency:

> Navigate in natural environments.
> Support and refer participants.
> Use and maintain a temporary overnight site.
> Present Adventure-Based learning team-building programme and recreational activities.
> Conduct a reviewing session.

The important role of Adventure-Based learning in the South African context as it relates to team building and the honing of group cohesion within a new political dispensation is the reason for the inclusion of learning related to participant support, team building and reviewing of learning. In addition, the natural environments in which our adventure and recreational activities often take place require skills in the navigation of natural environments as well as the use and maintaining of overnight sites.

The Australian Level 3 Certificate in Outdoor Recreation comprises the following competency focus areas:

> Facilitate a group.
> Guide outdoor recreation sessions.
> Maintain environmental procedures.
> Maintain environmental procedures.
> Plan for minimal environmental impact.
> Plan outdoor recreation activities.
> Respond to emergency situations.
> Undertake risk analysis of activities.

The following ranges of technical skills are provided in elective modules in this qualification:

> Climbing skills - Artificial surface.
> Climbing skills - Natural surface.
> Inland canoeing skills.
> Inland kayaking skills.
> Sea kayaking skills.
> Single pitch abseil skills - Natural surfaces.
> Single pitch abseil skills - Artificial surfaces.
> Surfing manoeuvres.
> Snowboarding.
> Bushwalk skills - easy untracked.
> Bushwalk skills - difficult.
> Diving.
> Low rope sessions.
> High rope sessions.
> Archery.
> Cycling.
> Caving.
> Snorkelling.
> Surfing.
> Rafting.

Similarities in the Further Education and training Certificate: Adventure-Based Learning is found in the following unit standards making up the core component of the qualification:

> Facilitate learning through an Adventure-Based activity.
> Plan and implement minimum impact practices.
> Manage and organise groups.
> Prepare to conduct and conclude adventurous experiences.
> Lead participants through an outdoor recreation and/or adventure activity showing competence in the technical skill required.

The qualification differs through the inclusion of the following areas of competency:

> Navigate in natural environments.
> Support and refer participants.
> Use and maintain a temporary overnight site.
> Present an Adventure-Based learning team-building programme and recreational activities.
> Conduct a reviewing session.

The elective component of the Further Education and training Certificate: Adventure-Based Learning compares well in terms of the following adventure and/or recreational activities and technical skills:

> Rafting.
> Paintball.
> Low ropes.
> Abseiling.
> Orienteering (applied to trails etc.).
> Foefie slide.
> Kloofing.
> High ropes.

Whilst some of the elective components are already addressed in the Level 3 qualification they are available for inclusion into the elective component of the Further Education and training Certificate: Adventure-Based Learning should it be deemed a requirement.

Safety and risk assessment is incorporated into each unit standard dealing with technical skills in the elective component of the qualification, thus avoiding the possibility of poor integration with technical skills.

No similar qualifications are offered in SADC countries.

Conclusion:

The comparison exercise has indicated a strong alignment of the learning in the Further Education and training Certificate: Adventure-Based Learning to best practice offered internationally. While the Australian qualification offers in excess of 40 specialisation activities, the ones chosen for the local context are regarded as adequate for the South African context.

The industry in Britain and Australia is regulated quite rigorously and training and operational safety and conduct are maintained via established watchdog bodies such as the Institute of Outdoor Learning (UK), Adventure Activity Licensing Authority (AALA) and the Australian Outdoor Recreation Council (AORC). This is not the case in South Africa, hence a strong focus on safety and safe practices can be found in the unit standards in the Further Education and training Certificate: Adventure-Based Learning.

The qualification is comparable to best international practice and is appropriate for South Africa in terms of the current Adventure-Based Learning set-up in the country.

ARTICULATION OPTIONS
This Qualification will provide for horizontal and vertical articulation within the envisaged Learning pathway for the Adventure-Based Learning environment. As no similar qualifications are presently registered on the NQF, articulation outside of the ABL environment could possibly include:

Horizontal articulation:

> ID 58163: Further Education and training Certificate: Community Recreation, NQF Level 4.

Vertical articulation:

> National Certificate: Recreation Management, NQF Level 5.
> National Higher Certificate: Recreation Management, NQF Level 5.

MODERATION OPTIONS
> Anyone moderating assessment of a learner, against this Qualification must be registered as a moderator with the relevant ETQA, or with an ETQA that has a Memorandum of Understanding with the relevant ETQA.

> Any institution offering learning that may enable the achievement of this Qualification must be accredited as a provider with the relevant ETQA, or with an ETQA that has a Memorandum of Understanding with the relevant ETQA.

> Assessment and moderation of assessment may be overseen by the relevant ETQA according to the policies and guidelines for assessment and moderation of that ETQA, in terms of agreements reached around assessment and moderation between various ETQAs (including professional bodies), and in terms of the moderation guideline detailed immediately below.

> Moderation must include both internal and external moderation of assessments at all exit points of the Qualification, unless ETQA policies specify otherwise. Moderation should also encompass achievement of the competence described both in individual Unit Standards as well as the integrated competence described in the Exit Level Outcomes of the Qualification.

> 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, or with an ETQA that has a Memorandum of Understanding with the relevant ETQA.

CRITERIA FOR THE REGISTRATION OF ASSESSORS
Anyone assessing a learner, against this Qualification must be registered as an assessor with the relevant ETQA, or with an ETQA that has a Memorandum of Understanding with the relevant ETQA.

For an applicant to register as an assessor or moderator of this Qualification the applicant needs:

> To be registered as an assessor with the relevant ETQA.
> To be in possession of a relevant qualification at NQF Level 6 or higher.

NOTES
Operational requirements within different Adventure-Based Learning settings/organisations may differ due to a specific preference for adventure activities to transfer learning. Regardless of the type of activities utilised, all operational environments will need to pay particular attention to:

> Equipment and infrastructure requirements.
> Equipment preparation and maintenance.
> Safety standards.
> Environmental utilisation and care.
> Preparation of the operational environment.

Post activity responsibilities within the operational environment will likewise be organisationally specific but will include:

> Adventure equipment inspection and maintenance.
> Environment care.
> Infrastructure maintenance.
> Programme administration and feedback.
> Incident reports.
> Activity evaluation.

It is recommended that a learner should complete 1 000 hours of practical experience to give the learner practice in applying Adventure-Based Learning skills. This is within the bounds of completion of a certificate within 1 year of full-time study. It also represents the minimum amount of experience appropriate to the practical application of the required skills both in terms of facilitation but also in terms of activity and equipment related safety and mastery of skills.

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

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
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	262278	Conduct a reviewing session	Level 4	5
Core	262279	Conduct an adventurous experience	Level 4	8
Core	262304	Facilitate learning through an adventure based learning (abl) experience	Level 4	8
Core	262317	Lead participants through an outdoor recreation and adventure activity	Level 4	10
Core	262320	Manage and organise groups	Level 4	10
Core	262318	Navigate in natural environments	Level 4	5
Core	262305	Plan and implement minimum impact practices	Level 4	5
Core	262238	Present team building programmes and recreational activities	Level 4	10
Core	262319	Support and refer participants	Level 4	5
Elective	119730	Co-ordinate volunteer activities	Level 3	4
Elective	262302	Conduct an abseil experience in an artificial or selected natural site	Level 3	8
Elective	262244	Control and maintain adventure equipment	Level 3	5
Elective	262241	Supervise a low ropes course in an adventure environment	Level 3	5
Elective	262240	Use orienteering techniques in a mapped area	Level 3	3
Elective	262243	Conduct a sea kayaking experience for recreational use	Level 4	5
Elective	262245	Lead a survival experience in the outdoors	Level 4	6
Elective	262246	Set up and operate a camping site	Level 4	5
Elective	262242	Supervise a high ropes course	Level 4	8

LEARNING PROGRAMMES RECORDED AGAINST THIS QUALIFICATION
None

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAQA

UNIT STANDARD:

Present team building programmes and recreational activities

SAQA US ID	UNIT STANDARD TITLE		
262238	Present team building programmes and recreational activities		
ORIGINATOR		PROVIDER	
Task Team - Adventure Based Learning			
FIELD		SUBFIELD	
11 - Services		Hospitality, Tourism, Travel, Gaming and Leisure	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	10

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

SPECIFIC OUTCOME 1
Explain the theory of team building as it applies to Adventure-based learning.

SPECIFIC OUTCOME 2
Design a team-building programme according to identified needs.

SPECIFIC OUTCOME 3
Implement the programme to facilitate team building.

SPECIFIC OUTCOME 4
Evaluate the programme and follow up according to organisational requirements.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	65569	Further Education and Training Certificate: Adventure-Based Learning	Level 4

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Use orienteering techniques in a mapped area

SAQA US ID	UNIT STANDARD TITLE		
262240	Use orienteering techniques in a mapped area		
ORIGINATOR		PROVIDER	
Task Team - Adventure Based Learning			
FIELD		SUBFIELD	
11 - Services		Hospitality, Tourism, Travel, Gaming and Leisure	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	3

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

SPECIFIC OUTCOME 1
Interpret and use a map by identifying scale

SPECIFIC OUTCOME 2
Use a map to orientate position and course.

SPECIFIC OUTCOME 3
Orienteer through demarcated terrain.

SPECIFIC OUTCOME 4
Deal with common emergencies and local hazards.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	65569	Further Education and Training Certificate: Adventure-Based Learning	Level 4

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Supervise a low ropes course in an adventure environment

SAQA US ID	UNIT STANDARD TITLE			
262241	Supervise a low ropes course in an adventure environment			
ORIGINATOR		PROVIDER		
Task Team - Adventure Based Learning				
FIELD		SUBFIELD		
11 - Services		Hospitality, Tourism, Travel, Gaming and Leisure		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL		CREDITS
Undefined	Regular	Level 3		5

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

SPECIFIC OUTCOME 1
Apply knowledge of low ropes courses in order to plan a low ropes programme.

SPECIFIC OUTCOME 2
Prepare a low ropes course to ensure safety of participants.

SPECIFIC OUTCOME 3
Prepare participants for a low ropes programme.

SPECIFIC OUTCOME 4
Supervise and conclude low ropes course activities.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	65569	Further Education and Training Certificate: Adventure-Based Learning	Level 4

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAQA

UNIT STANDARD:

Supervise a high ropes course

SAQA US ID	UNIT STANDARD TITLE		
262242	Supervise a high ropes course		
ORIGINATOR		PROVIDER	
Task Team - Adventure Based Learning			
FIELD		SUBFIELD	
11 - Services		Hospitality, Tourism, Travel, Gaming and Leisure	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	8

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

SPECIFIC OUTCOME 1
Plan a High Rope course suitable to the needs of the participant/group goals.

SPECIFIC OUTCOME 2
Prepare equipment for a high rope course to ensure participant safety.

SPECIFIC OUTCOME 3
Prepare individuals for participation in a high-ropes course.

SPECIFIC OUTCOME 4
Supervise and conclude high ropes course activities.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	65569	Further Education and Training Certificate: Adventure-Based Learning	Level 4

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAQA

UNIT STANDARD:

Conduct a sea kayaking experience for recreational use

SAQA US ID	UNIT STANDARD TITLE		
262243	Conduct a sea kayaking experience for recreational use		
ORIGINATOR		PROVIDER	
Task Team - Adventure Based Learning			
FIELD		SUBFIELD	
11 - Services		Hospitality, Tourism, Travel, Gaming and Leisure	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	5

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

SPECIFIC OUTCOME 1
Prepare to conduct a sea kayaking experience.

SPECIFIC OUTCOME 2
Demonstrate sea-kayaking skills.

SPECIFIC OUTCOME 3
Conduct a sea-kayaking experience.

SPECIFIC OUTCOME 4
Conclude and review the sea-kayaking experience.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	65569	Further Education and Training Certificate: Adventure-Based Learning	Level 4

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Control and maintain adventure equipment

SAQA US ID	UNIT STANDARD TITLE		
262244	Control and maintain adventure equipment		
ORIGINATOR		PROVIDER	
Task Team - Adventure Based Learning			
FIELD		SUBFIELD	
11 - Services		Hospitality, Tourism, Travel, Gaming and Leisure	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	5

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

SPECIFIC OUTCOME 1
Demonstrate knowledge of adventure equipment.

SPECIFIC OUTCOME 2
Maintain an inventory of adventure equipment.

SPECIFIC OUTCOME 3
Carry out maintenance and repairs according to the policies in the area of operation.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	65569	Further Education and Training Certificate: Adventure-Based Learning	Level 4

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAQA

UNIT STANDARD:

Lead a survival experience in the outdoors

SAQA US ID	UNIT STANDARD TITLE		
262245	Lead a survival experience in the outdoors		
ORIGINATOR		PROVIDER	
Task Team - Adventure Based Learning			
FIELD		SUBFIELD	
11 - Services		Hospitality, Tourism, Travel, Gaming and Leisure	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	6

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

SPECIFIC OUTCOME 1
Conduct preparations for a survival experience.

SPECIFIC OUTCOME 2
Brief and prepare the group participating in a survival experience.

SPECIFIC OUTCOME 3
Conduct a survival experience.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	65569	Further Education and Training Certificate: Adventure-Based Learning	Level 4

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAQA

UNIT STANDARD:

Set up and operate a camping site

SAQA US ID	UNIT STANDARD TITLE		
262246	Set up and operate a camping site		
ORIGINATOR		PROVIDER	
Task Team - Adventure Based Learning			
FIELD		SUBFIELD	
11 - Services		Hospitality, Tourism, Travel, Gaming and Leisure	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	5

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

SPECIFIC OUTCOME 1
Select a suitable camping site within the area of operation.

SPECIFIC OUTCOME 2
Conclude logistical arrangements according to identified intervention requirements.

SPECIFIC OUTCOME 3
Conduct a camping intervention.

SPECIFIC OUTCOME 4
Conclude a camping intervention.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	65569	Further Education and Training Certificate: Adventure-Based Learning	Level 4

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAQA

UNIT STANDARD:

Conduct a reviewing session

SAQA US ID	UNIT STANDARD TITLE		
262278	Conduct a reviewing session		
ORIGINATOR		PROVIDER	
Task Team - Adventure Based Learning			
FIELD		SUBFIELD	
11 - Services		Hospitality, Tourism, Travel, Gaming and Leisure	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	5

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

SPECIFIC OUTCOME 1
Apply principles of review to enhance Adventure based Learning.

SPECIFIC OUTCOME 2
Conduct review sessions to enhance an Adventure Based Learning experience.

SPECIFIC OUTCOME 3
Reflect on and provide feedback on the information captured during reviewing sessions.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	65569	Further Education and Training Certificate: Adventure-Based Learning	Level 4

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Conduct an adventurous experience

SAQA US ID	UNIT STANDARD TITLE		
262279	Conduct an adventurous experience		
ORIGINATOR		PROVIDER	
Task Team - Adventure Based Learning			
FIELD		SUBFIELD	
11 - Services		Hospitality, Tourism, Travel, Gaming and Leisure	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	8

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

SPECIFIC OUTCOME 1
Plan and prepare for an Adventure-based activity according to operational requirements.

SPECIFIC OUTCOME 2
Prepare participants for an adventure based activity.

SPECIFIC OUTCOME 3
Supervise an adventurous experience according to operational requirements.

SPECIFIC OUTCOME 4
Monitor the safety, enjoyment and achievement of participants.

SPECIFIC OUTCOME 5
Conclude an adventurous experience.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	65569	Further Education and Training Certificate: Adventure-Based Learning	Level 4

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAQA

UNIT STANDARD:

Conduct an abseil experience in an artificial or selected natural site

SAQA US ID	UNIT STANDARD TITLE		
262302	Conduct an abseil experience in an artificial or selected natural site		
ORIGINATOR		PROVIDER	
Task Team - Adventure Based Learning			
FIELD		SUBFIELD	
11 - Services		Hospitality, Tourism, Travel, Gaming and Leisure	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	8

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

SPECIFIC OUTCOME 1
Select, fit and use abseiling equipment.

SPECIFIC OUTCOME 2
Set up an abseiling site.

SPECIFIC OUTCOME 3
Apply correct abseiling techniques.

SPECIFIC OUTCOME 4
Apply safety procedures.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	65569	Further Education and Training Certificate: Adventure-Based Learning	Level 4

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAQA

UNIT STANDARD:

Facilitate learning through an adventure based learning (abl) experience

SAQA US ID	UNIT STANDARD TITLE		
262304	Facilitate learning through an adventure based learning (abl) experience		
ORIGINATOR		PROVIDER	
Task Team - Adventure Based Learning			
FIELD		SUBFIELD	
11 - Services		Hospitality, Tourism, Travel, Gaming and Leisure	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	8

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

SPECIFIC OUTCOME 1
Select Adventure-based activities in order to meet clients' and organisational needs and requirements.

SPECIFIC OUTCOME 2
Prepare for the facilitation of learning in the Adventure Based Learning environment.

SPECIFIC OUTCOME 3
Facilitate learning in an Adventure Based Learning environment.

SPECIFIC OUTCOME 4
Maintain the physical, mental and emotional well being of participants throughout the facilitation process.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	65569	Further Education and Training Certificate: Adventure-Based Learning	Level 4

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAQA

UNIT STANDARD:

Plan and implement minimum impact practices

SAQA US ID	UNIT STANDARD TITLE		
262305	Plan and implement minimum impact practices		
ORIGINATOR		PROVIDER	
Task Team - Adventure Based Learning			
FIELD		SUBFIELD	
11 - Services		Hospitality, Tourism, Travel, Gaming and Leisure	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	5

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

SPECIFIC OUTCOME 1
Determine the impact of activities on the operational environment.

SPECIFIC OUTCOME 2
Plan for minimal impact on the environment.

SPECIFIC OUTCOME 3
Implement practices which minimise impact on the environment in which activities are conducted.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	65569	Further Education and Training Certificate: Adventure-Based Learning	Level 4

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Lead participants through an outdoor recreation and adventure activity

SAQA US ID	UNIT STANDARD TITLE		
262317	Lead participants through an outdoor recreation and adventure activity		
ORIGINATOR		PROVIDER	
Task Team - Adventure Based Learning			
FIELD		SUBFIELD	
11 - Services		Hospitality, Tourism, Travel, Gaming and Leisure	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	10

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

SPECIFIC OUTCOME 1
Demonstrate relevant technical skills appropriate to a selected activity.

SPECIFIC OUTCOME 2
Lead participants through a selected activity.

SPECIFIC OUTCOME 3
Apply safety practices to ensure participant's physical well-being.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	65569	Further Education and Training Certificate: Adventure-Based Learning	Level 4

SAQA

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Navigate in natural environments

SAQA US ID	UNIT STANDARD TITLE		
262318	Navigate in natural environments		
ORIGINATOR		PROVIDER	
Task Team - Adventure Based Learning			
FIELD		SUBFIELD	
11 - Services		Hospitality, Tourism, Travel, Gaming and Leisure	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	5

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

SPECIFIC OUTCOME 1
Use navigational equipment correctly in a natural environment.

SPECIFIC OUTCOME 2
Plan a route in a tracked or easy untracked area using a map and/or a compass.

SPECIFIC OUTCOME 3
Navigate tracked or easy untracked areas safely.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	65569	Further Education and Training Certificate: Adventure-Based Learning	Level 4

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Support and refer participants

SAQA US ID	UNIT STANDARD TITLE		
262319	Support and refer participants		
ORIGINATOR		PROVIDER	
Task Team - Adventure Based Learning			
FIELD		SUBFIELD	
11 - Services		Hospitality, Tourism, Travel, Gaming and Leisure	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	5

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

SPECIFIC OUTCOME 1
Evaluate individual behaviour in order to identify support requirements within the operational environment.

SPECIFIC OUTCOME 2
Provide support in response to identified requirements.

SPECIFIC OUTCOME 3
Facilitate professional assistance through referral in situations where so required.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	65569	Further Education and Training Certificate: Adventure-Based Learning	Level 4

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Manage and organise groups

SAQA US ID	UNIT STANDARD TITLE		
262320	Manage and organise groups		
ORIGINATOR		PROVIDER	
Task Team - Adventure Based Learning			
FIELD		SUBFIELD	
11 - Services		Hospitality, Tourism, Travel, Gaming and Leisure	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	10

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

SPECIFIC OUTCOME 1
Organise members of a group and the group as a unit.

SPECIFIC OUTCOME 2
Manage the functions, expectations and performance of a group.

SPECIFIC OUTCOME 3
Motivate the members of a group and the group as a unit.

SPECIFIC OUTCOME 4
Develop channels of communication with and within a group.

SPECIFIC OUTCOME 5
Resolve problems arising with and within a group.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	65569	Further Education and Training Certificate: Adventure-Based Learning	Level 4

No. 106   **9 February 2009**

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 (SGB) for

Transport and Logistics Operations

registered by Organising Field 11 - Services, 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.saqa.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 9 March 2009.* All correspondence should be marked **Standards Setting – Transport and Logistics Operations** and addressed to

The Director: Standards Setting and Development
SAQA
Attention: Mr. E. Brown
Postnet Suite 248
Private Bag X06
Waterkloof
0145
or faxed to 012 – 431-5144
e-mail: ebrown@saqa.org.za
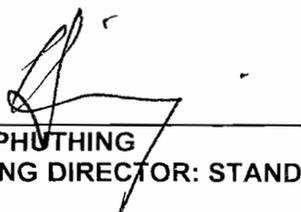
D. MPHUTHING
ACTING DIRECTOR: STANDARDS SETTING AND DEVELOPMENT

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAQA

QUALIFICATION:
Further Education and Training Certificate: Transport Operations

SAQA QUAL ID	QUALIFICATION TITLE		
65529	Further Education and Training Certificate: Transport Operations		
ORIGINATOR		PROVIDER	
SGB Transport and Logistics Operations			
QUALIFICATION TYPE	FIELD	SUBFIELD	
Further Ed and Training Cert	11 - Services	Transport, Operations and Logistics	
ABET BAND	MINIMUM CREDITS	NQF LEVEL	QUAL CLASS
Undefined	140	Level 4	Regular-Unit Stds Based

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 multi-modal transport qualification is to recognise the skills and knowledge required to facilitate transport operations within a framework of company specific policies, processes and procedures. The qualification is intended to address the recognition needs of road, rail, pipeline, maritime, and aerospace operations.

Facilitating transport operations includes the carriage of freight and passengers into, through and out of organisations and their distribution channels. The qualification also addresses the movement of passengers.

This qualification serves as a foundation for the qualification at NQF Level 5 which deals with the coordination and implementation of transport operations in compliance with legislative requirements and international codes and practices. It will provide career development opportunities for those working in transport operations, and promote mobility across the different modes of transport.

Transport is a complex sector in and of itself, and at the same time it affects every other sector in some way. It is essential that those in charge of transport operations develop the insight, knowledge and skill to function effectively in a competitive, multi-faceted environment with unique demands.

The multi-modal nature of this qualification will also provide for a variety of learning pathways with increased specialisation possible, as required. The qualification will also enable many to have their practical skills, developed on the job, recognised through an RPL (Recognition of Prior Learning) process.

A learner obtaining this qualification will be able to:

> Demonstrate understanding of transport.
> Demonstrate understanding of the legal and ethical framework underpinning transport operations.
> Plan and review transport operations within a supply chain environment.

> Provide customer support services.

The skills, knowledge, values and understanding in this qualification are essential for national and international competitiveness and will have a positive impact on social and economic transformation and upliftment of the democratic South African society.

Rationale:

Transport operations deals with the movement and supply of freight (goods and livestock) and passengers from origin to destination in terms of stakeholder requirements. It involves the movement of any and all goods and materials from raw material stages, through the manufacturing process, to the delivery of finished products and their disposal. It also deals with the routing and/or scheduling of freight and passengers, using all transport modes and related activities. (Related activities include warehousing).

This qualification establishes the essential knowledge and skills required for the competence to facilitate Transport Operations, and specifies the assessment requirements for recognition at this level. Learners completing this qualification will be able to facilitate operations within the transport environment, within a framework of company specific policies, processes and procedures.

This qualification will provide learners with access to employment opportunities within the Transport Operations environment. Learners will be able to take responsibility for the facilitating the transportation of goods nationally as well as internationally. The benefit for organisations and the community lies in the continuous improvement of transport service levels. Government is also committed to improving the public service by supporting the transformation of transport operations.

RECOGNIZE PREVIOUS LEARNING?
Y

LEARNING ASSUMED IN PLACE
It is assumed that the learner attempting this qualification is competent in:

> Communication at NQF Level 3.
> Mathematical Literacy at NQF Level 3.

Recognition of Prior Learning:

This Qualification and the entire fundamental, core and elective Unit Standards associated with it can be achieved by any learner through the recognition of prior learning, which includes learning outcomes achieved through formal, informal and non-formal learning and work experience. Learner and assessor will jointly decide on methods to determine prior learning and competence in the knowledge, skills, values and attitudes implicit in the qualification and the associated unit standards.

This Recognition of Prior Learning may allow for:

> Gaining of credits for unit standards in this qualification.
> Obtaining this qualification in whole.

All Recognition of Prior Learning is subject to quality assurance by the relevant ETQA or an ETQA that has a Memorandum of Understanding with the relevant ETQA.

QUALIFICATION RULES
The Qualification consists of a Fundamental, a Core and an Elective Component.

To be awarded the Qualification learners are required to obtain a minimum of 140 credits as detailed below.

FUNDAMENTAL COMPONENT

The Fundamental Component consists of Unit Standards in:

> Mathematical Literacy at NQF Level 4 to the value of 16 credits.
> Communication at NQF Level 4 in a First South African Language to the value of 20 credits.
> Communication in a Second South African Language at NQF Level 3 to the value of 20 credits.

It is compulsory therefore 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 in the Fundamental Component are compulsory.

CORE COMPONENT

> The Core Component consists of Unit Standards to the value of 60 credits all of which are compulsory.

ELECTIVE COMPONENT

> The Elective Component consists of individual unit standards from which the learner must choose unit standards totalling a minimum of 24 credits.

All candidates working in Freight Operations must do the unit standards "Demonstrate an understanding of supply chain concepts" and "Apply knowledge of specific transport legislation to own transport operations".

EXIT LEVEL OUTCOMES
1. Demonstrate understanding of transport.

2. Demonstrate understanding of the legal and ethical framework underpinning transport operations.

3. Plan and review transport operations within a supply chain environment.

4. Provide customer support services.

Critical Cross-Field Outcomes:

This qualification addresses the following critical cross-field outcomes, as detailed in the associated unit standards:

> Identifying and solving problems in which responses indicate that responsible decisions using critical and creative thinking have been made.
> Working effectively with others as a member of a team, group, organisation or community.
> Organising and managing oneself and one's activities responsibly and effectively.
> Collecting, analysing, organising and critically evaluating information.
> Communicating effectively using visual, mathematical and/or language skills in the modes of oral/written persuasion.

> Using science and technology effectively and critically, showing responsibility towards the environment and health of others.
> Demonstrating and understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.

Learning programmes directed towards this qualification will also contribute to the full personal development of each learner and the social and economic development of the society at large, by making individuals aware of the importance of:

> Reflecting on and exploring a variety of strategies to learn more effectively.
> Participating as responsible citizens in the life of local, national and global communities.
> Being culturally and aesthetically sensitive across a range of social contexts.
> Exploring education and career opportunities; and developing entrepreneurial opportunities.

ASSOCIATED ASSESSMENT CRITERIA
Associated Assessment Criteria for Exit Level Outcome 1:

> Transport as a business and business sector is described in terms of its distinguishing features.
> Different transport modes are described in terms their roles, purpose and interrelationship.
> The concept of multi-modalism in transport operations is explained with reference to the provision of seamless supply chain solutions, and the multi-modal opportunities for own transport operation.

Associated Assessment Criteria for Exit Level Outcome 2:

> A broad overview of transport related legislation and its implications for transport operations is identified and explained in terms of its origin and purpose.
> Environmental legal principles, rights, duties and responsibilities are explained for a specific work context, and applied in own working context.
> Business ethics in transport operations are explained with reference to own transport operations and the particular challenges evident in that environment.

Associated Assessment Criteria for Exit Level Outcome 3:

> The delivery of transport services is planned and controlled in ways that deliver to client expectations within the constraints of own operations.
> Own operations are reviewed with a view to continuous improvement of transport systems and processes, for quality service delivery.

Associated Assessment Criteria for Exit Level Outcome 4:

> The level of service provided to customers, internal and external, is monitored in terms of expectations and service level agreements.

Integrated Assessment:

Assessment should take place within the context of:

> Given Quality Assurance policies, procedures and processes.
> A guided and supported learning environment.

Assessment will take place according to the detailed specifications indicated in the unit standards.

Over and above the achievement of the specified unit standards, evidence of integration will be required as per the above broad criteria, all within the context of an active learning environment.

Assessors should note that the evidence of integration (as above) could well be presented by candidates when being assessed against the unit standards: Thus there should not necessarily be separate assessments for each unit standard and then further assessment for integration. Well designed assessments should make it possible to gain evidence against each unit standard while at the same time gain evidence of integration.

Assessment Principles:

Assessment should be in accordance with the following general and specific principles:

> The initial assessment activities should focus on gathering evidence in terms of the main outcomes expressed in the titles of the unit standards to ensure assessment is integrated rather than fragmented. Where assessment at title level is unmanageable, then the assessment can focus on each specific outcome, or groups of specific outcomes. Take special note of the need for integrated assessment.

> Evidence must be gathered across the entire range specified in each unit standard, as applicable. Assessment activities should be as close to the real performance as possible, and where simulations or role-plays are used, there should be supporting evidence to prove that the candidate is able to perform in the real situation.

> All assessments should be conducted in accordance with the following universally accepted principles of assessment:

 > Use appropriate, fair and manageable methods that are integrated into real work-related or learning situations.
 > Judge evidence on the basis of its validity, currency, authenticity and sufficiency.
 > Ensure assessment processes are systematic, open and consistent.

INTERNATIONAL COMPARABILITY
Qualifications from the following countries were sourced for a comparison with the Further Education and Training Certificate: Transport Operations:

> UK.
> USA.
> Singapore.
> Australia.
> New Zealand.

The Chartered Institute of Logistics and Transport (CILT)-International Diploma in Logistics and Transport was selected as the benchmark for transport qualifications due to its international recognition and credibility. Other UK qualifications of relevance include the undergraduate degree in Transport and Business Management - significant because of the close relationship between the first year of study and the proposed Level 5 qualification.

The USA was selected as a first world, world leader in transport logistics, and their GS-2130, a US Individual Occupational Requirement for Transport Operations - was reviewed.

Singapore has established itself as a multi-modal transport node for the East and it was logical to compare the proposed Level 5 qualification with their Diploma in Logistics & Operations Management.

Australia and New Zealand have set up a joint occupational classification system which has informed current Department of Labour deliberations around occupationally based qualifications. They are also world leaders in outcomes based approached. The National Diploma in Road Transport Management shows marked similarities to the proposed Level 5 qualification.

Investigations into Africa showed that there was little formal development of transport operations qualifications in Africa, apart from South Africa. There are clear indications, though, that Africa is keen to cooperate on transport issues, as signalled by the African Maritime Transport Charter and the Sub-Saharan Africa Transport Policy Programme. A common approach to transport management training would facilitate such initiatives.

In more detail, the reviewed qualifications include:

UK and international: The Chartered Institute of Logistics and Transport-International Diploma in Logistics and Transport:

This qualification builds on knowledge gained from the CILT International Certificate course in Logistics and Transport. The Diploma is basically aimed at those already working in the industry/sector at a middle management level and who wish to develop a strategic view of logistics and transport operations and be capable of reviewing operational activities.

Students who are successful in their Diploma studies meet the knowledge standards for Membership (MILT) of the Chartered Institute of Logistics and Transport subject to a minimum of 3 years experience in the logistics and transport sector.

CILT International have produced this course material for the use of education and training Institutes throughout the world but especially where CILT Sections and Branches have been or are being established. CILT International believe that one way to improve the efficiency and effectiveness of the logistics and transport sector especially in the developing world is to promote education and training and membership of the local CILT Section.

Course Content (All 6 modules are compulsory):

> Managing Transport and Logistics operations.
> Managing Resources.
> Transport Economics and Finance.
> Logistics and Supply Chain.
> Inventory and Warehouse Management.
> Passenger Transport.

UK: Transport and Business Management:

This qualification is included (although it is a degree qualification) because of the similarities in content, particularly in the initial years.

The programme equips learners with a thorough and practical knowledge of the economic, social and technological aspects of the main modes of transport, so that they will be able to play a part in their future development. It covers the principles of managing the human and technical resources required in transport systems and the importance of transport in relation to the economy and society. This is examined in terms of the numerous benefits and costs of transport in general and of the relative merits of the different modes of air and surface transport. The programme is multidisciplinary, embracing the fundamental principles and applications of planning, management, economics and technology.

Year 1:

Introduces the principles and problems of transport together with the analytical techniques required in subsequent parts of the programme. Students with a wide range of backgrounds and educational qualifications are brought to a comparable level.

Modules include: Management; Finance; Economics; Statistics; Surface Transport Systems; Logistics; Air Transport; Transport Demand and Human Need; French/German/Spanish or Transport Technology.

Year 2:

Elaborates on the fundamental subjects with more emphasis on practical application and investigates the characteristics of the various transport modes in some detail.

Modules include: Transport Planning; Business Strategy; Economics of Transport; Supply Chain Management; French/German/Spanish or Project Appraisal.

Year 3 or 4:

Allows learners to specialise in areas of personal interest including the choice of topic area for a final year project in the form of a detailed study and analysis of a transport problem and is intended to develop initiative and creativity. The findings are presented in the form of a dissertation.

Modules include: Project; Applied Research Methods; Options from: Aviation Safety; Transport and Environment; Transport Policy; Rail Transport Operations; Transport Services Marketing; Transport Demand Management; Travel Behaviour.

Professional Recognition: The programme is accredited by the Chartered Institute of Logistics and Transport.

USA: GS-2130: Traffic Management Series (Individual Occupational Requirements):

The GS-2130 is a US Individual Occupational Requirement for Transport Operations, and its provisions are outlined below. Examples of certificates which result in recognition for this classification are included below:

> Undergraduate and Graduate Education: traffic management, transportation.
> General Experience (for GS-5 positions): Experience that provided a general knowledge and under-standing of traffic or transportation programs or operations.
> Specialized Experience (for positions above GS-5): Examples of qualifying specialized experience include:

> (1) Operating a transport or traffic system to move passengers or commodities of an organization when there is accountability for operating costs, (2) Operating a transportation system to provide common carrier types of services to shippers, and (3) Procuring common or other carriers and other transportation services to move an organization's personnel, freight, and/or other commodities. Performing loss and damage prevention work when this included responsibilities such as policy and procedures formulation and studies of traffic operations and services.
> Negotiating with carriers and/or regulatory bodies on questions of rates, transit privileges and charges, special services and charges thereof, and classification of commodities.
> Providing advisory service involving commodity analysis from the transportation standpoint.

Certificate:

Possession of a certificate as Certified Member, American Society of Transportation and Logistics meets the requirements for GS-5. Persons with such certificates may also qualify for higher grade levels based on their education and/or experience.

Certified in Transportation and Logistics (CTL):

AST&L is the premier professional organization that develops and administers the Certification in Transportation Logistics. AST&L began the CTL Certification Program in 1948, known as the CPA of the transportation /logistics industry, and is constantly revising and updating the certification exams, keeping current with changes occurring in the field. To qualify an individual must be active member of AST&L and has a four year undergraduate degree or three years of professional experience. The certification is granted to individuals who successfully complete six of the following exam modules:

Four compulsory subjects:

> General Management Principles & Techniques.
> Transportation Economics Management.
> Logistics Management 4) International Transport and Logistics.

Plus any two elective subjects from:

> Creative Component.
> Logistics Analysis.
> Supply Chain Management.
> Logistics and Supply Chain Strategy.

Certificate in Transportation Management.

Course provider: University of Wisconsin-Madison Graduate School of Business.

Description:

> Transportation, Planning, Pricing and Costing Certificate.
> Foundation program for Shippers, Carriers and Logistics Services Providers (LSPs): Today's Buying, Selling and Pricing of Transportation Services.

Capstone program for Shippers and Foundation program for Shippers, Carriers and Logistics Services Providers (LSPs): Today's Buying, Selling and Pricing of Transportation Services.

Singapore: Diploma in Logistics & Operations Management:

Companies across all businesses are extending their geographical reach and influence. They need trained people who understand the nature of logistics & supply chain in an ever-connected world. The Diploma in Logistics and Operations Management trains professionals who will excel in today's dynamic business environment.

The Course provides a strong business foundation in the Freshman year. In the Junior and Senior years, learners will be equipped with business knowledge on how companies manage their physical products and services through subjects like Management Science, Management Accounting & Finance, Operations Management, Material Management, Quality Management and Purchasing Principles & Practice, Specialised knowledge on logistics will be introduced through subjects like Logistics & Supply Chain Management, Transport Management and Distribution Centre Management.

New Zealand: National Diploma in Road Transport Management:

The National Diploma in Road Transport Management recognises the skills expected of an experienced manager in a road transport company to manage some or all of the company's operations in full compliance with the law and organisational procedures.

The qualification is structured to provide maximum flexibility for people in small, medium or large size organisations in any sector of the road transport industry. Significant emphasis is placed on the management and interpersonal skills required of a manager of either a small organisation or at a senior level in a large organisation, as well as on the particular road transport knowledge required to operate a successful road transport business.

The diploma can build on the skills acquired through the National Certificate in Commercial Road Transport (Operations) with strands in Vehicle Despatch, Operations Supervision, and Taxi Operations [Ref: 0861], the National Certificate in First Line Management (Communication and Quality) (Level 3) [Ref: 0743], the National Certificate in First Line Management (Level 4) [Ref: 0649], or the National Certificate in Business Administration (Level 4) [Ref: 0634].

African Maritime Transport Charter:

There appears to be little formal development of transport operations qualifications in Africa, apart from South Africa, which takes the lead in this regard. The African Maritime Transport Charter, though, is one indication of the willingness and intention of Africa to homogenise transport throughout the continent, which suggests an openness to skills development in this area. Extracts from the Charter include:

Article 10: Multimodal Transport:

Member States agree to promote the establishment of multimodal transport joint ventures so as to enable African shipping lines set up within the framework of the U.N. Convention on International Multimodal Transport of Goods, modern systems of point-to-point transportation, improve their services and increase their capacity to finance modern and efficient fleet.

Article 13: Legal Framework:

Member States agree to set up enabling harmonized legislative and regulatory framework that shall promote and guarantee the stability of maritime transport joint ventures, particularly multimodal transport joint ventures.

Article 24: Co-ordination of Policies and Actions:

Transit Member States and Land-locked Member States agree to co-ordinate their policies of acquisition and use of means of land transport (road and rail), river, air, maritime transport and port. They also agree to co-ordinate the actions and instruments of implementation of their national maritime policies, those concerning, inter-alia, grouping, pooling and cargo sharing, operation of cargo handling equipment as well as clearing and forwarding of cargo in transit.

Sub-Saharan Africa Transport Policy Programme:

Another indication of a willingness to cooperate and transform transportation in Africa is suggested in the Sub-Saharan Africa Transport Policy Programme. An extract:

> "Anchoring" of transport policies and strategies into national strategies for poverty reduction is the strategic objective of the Sub-Saharan Africa Transport Policy Program (SSATP) long-term development plan (LTDP). In order to effectively link transport and poverty reduction policies and strategies so that transport makes a tangible and visible contribution to poverty reduction, SSATP set in motion a participatory review process to assist Sub-Saharan Africa (SSA)

countries that wish to review their policies and strategies on poverty reduction and transport. This process was piloted in 2003 and scaled up from 2004. It involves a group of carefully selected country stakeholders undertaking a review of their national poverty reduction strategy and transport policy/strategy.

Conclusion:

It is evident that facilitation of Transport Operations is considered an essential skills area in all economies, and the existence of international bodies coordinating skills development in this area are powerful arguments for transport specific qualifications.

The proposed Further Education and Training Certificate: Transport Operations (Level 4) is comparable to examples in most developed countries. The approach adopted by the SGB, though, recognises the need for transformation in emerging economies, and the need to 'step' development to provide access. Building as it does towards the Level 5 qualification, the Further Education and Training Certificate: Transport Operations (Level 4) provides for learning and career pathways for those involved in transport operations. It will encourage the development of skills to internationally comparable standards, and provide leadership, for the development of transport in Africa.

ARTICULATION OPTIONS
This qualification has horizontal articulation possibilities with the following qualifications at Level 4:

> ID 57849: Further Education and Training Certificate: Dangerous Goods: Multi-modal Transportation, NQF Level 4.
> ID 57806: Further Education and Training Certificate: Exports, NQF Level 4.
> ID 49489: Further Education and Training Certificate: Road Transport Management in the Public Sector, NQF Level 4.
> ID 48439: Further Education and Training Certificate: Road Transport Supervision, NQF Level 4.
> ID 49155: Further Education and Training Certificate: Shipping, NQF Level 4.
> ID 24498: Further Education and Training Certificate: Rail Operations (Train Control), NQF Level 4.
> ID 57712: Further Education and Training Certificate: Generic Management, NQF Level 4.

This qualification has vertical articulation possibilities with the following qualifications:

> ID 57957: National Certificate: Export Administration, NQF Level 5.
> ID 49398: National Certificate: Incident Management, NQF Level 5.
> ID 58600: National Certificate: Land Transport Planning, NQF Level 5.
> ID 58330: National Certificate: Pipeline Operations, NQF Level 5.
> ID 58759: National Certificate: Ports and Harbours, NQF Level 5.
> ID 59201: National Certificate: Generic Management, NQF Level 5.
> ID 58473: National Diploma: Freight Handling Logistics, NQF Level 5.

MODERATION OPTIONS
> Providers offering learning towards this qualification or the component unit standards must be accredited by the relevant ETQA.

> Moderation of assessment will be overseen by the relevant ETQA according to moderation principles and the agreed ETQA procedures.

CRITERIA FOR THE REGISTRATION OF ASSESSORS

> Assessors must be registered with the relevant ETQA or an ETQA with a Memorandum of Understanding with the relevant ETQA.
> The Assessor must have a minimum of 2 years working experience in the specific transport or related field.
> Assessors are assumed to have competence equivalent to this qualification, or above.

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	242816	Conduct a structured meeting	Level 4	5
Core	262262	Demonstrate an understanding of business ethics in transport operations	Level 4	4
Core	262261	Demonstrate an understanding of key transport related legislation and its implications for transport operations	Level 4	6
Core	262260	Demonstrate an understanding of the business of transport	Level 4	10
Core	115591	Explain and apply environmental legal principles, rights, duties and responsibilities to a specific work context	Level 4	6
Core	242810	Manage Expenditure against a budget	Level 4	6
Core	119265	Manage risk in own work environment	Level 4	2
Core	242829	Monitor the level of service to a range of customers	Level 4	5
Core	262299	Plan and control the delivery of transport services	Level 4	12
Core	262298	Review transport systems and processes	Level 4	4
Elective	117877	Perform one-to-one training on the job	Level 3	4
Elective	252418	Perform processes and procedures required for the administration of export transactions	Level 3	6
Elective	252432	Perform processes and procedures required for the administration of import transactions	Level 3	6
Elective	252513	Apply established strategies and procedures to deal with risk behaviour and promote personal wellbeing	Level 4	3
Elective	120020	Apply knowledge of insurance to the transportation of a consignment of goods	Level 4	3
Elective	262300	Apply knowledge of specific transport legislation to own transport operations	Level 4	4
Elective	262263	Demonstrate an understanding of supply chain concepts	Level 4	10
Elective	13952	Demonstrate basic understanding of the Primary labour legislation that impacts on a business unit	Level 4	8
Elective	120124	Demonstrate knowledge of insurable risk	Level 4	3
Elective	13945	Describe and apply the management of stock and fixed assets in a business unit	Level 4	2
Elective	117708	Describe governance and control issues within business systems operations	Level 4	4
Elective	117730	Describe the alignment of the business system to the business strategy and objectives	Level 4	4
Elective	242822	Employ a systematic approach to achieving objectives	Level 4	10

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
Elective	242813	Explain the contribution made by own area of responsibility to the overall organisational strategy	Level 4	5
Elective	242821	Identify responsibilities of a team leader in ensuring that organisational standards are met	Level 4	6
Elective	115500	Inform client of planned process and follow-up on requests	Level 4	4
Elective	13235	Maintain the quality assurance system	Level 4	5
Elective	114589	Manage time productively	Level 4	4
Elective	242819	Motivate and Build a Team	Level 4	10
Elective	252263	Perform the processes and procedures for the administration of import transactions	Level 4	6
Elective	252272	Perform the processes and procedures required for the administration of export transactions	Level 4	6
Elective	117863	Promote health and wellness in a selected context	Level 4	2
Elective	115498	Resolve client requests and queries	Level 4	4
Elective	242817	Solve problems, make decisions and implement solutions	Level 4	8
Elective	242973	Understand, interpret and apply ship stowage plan	Level 4	12
Elective	244459	Apply regulations, codes and statutory reporting in the ports and harbours environment	Level 5	8
Elective	117683	Complete financial, statutory and operational shipping documentation	Level 5	8
Elective	15223	Implement training needs for teams and individuals to upgrade skills levels	Level 5	3
Elective	11286	Institute disciplinary action	Level 5	8
Elective	117650	Know and understand the basics of maritime liner trades	Level 5	12
Elective	244031	Manage dangerous goods logistics	Level 5	12

LEARNING PROGRAMMES RECORDED AGAINST THIS QUALIFICATION
None

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAQA

UNIT STANDARD:

Demonstrate an understanding of the business of transport

SAQA US ID	UNIT STANDARD TITLE		
262260	Demonstrate an understanding of the business of transport		
ORIGINATOR		PROVIDER	
SGB Transport and Logistics Operations			
FIELD		SUBFIELD	
11 - Services		Transport, Operations and Logistics	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	10

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 role and purpose of transport.

SPECIFIC OUTCOME 2
Demonstrate knowledge of different transport modes.

SPECIFIC OUTCOME 3
Demonstrate understanding of the concept of multi-modalism in transport operations.

SPECIFIC OUTCOME 4
Identify multi-modal opportunities for own transport operation.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	65529	Further Education and Training Certificate: Transport Operations	Level 4

SAQA

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate an understanding of key transport related legislation and its implications for transport operations

SAQA US ID	UNIT STANDARD TITLE		
262261	Demonstrate an understanding of key transport related legislation and its implications for transport operations		
ORIGINATOR		PROVIDER	
SGB Transport and Logistics Operations			
FIELD		SUBFIELD	
11 - Services		Transport, Operations and Logistics	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	6

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

SPECIFIC OUTCOME 1
Demonstrate understanding of transport related information.

SPECIFIC OUTCOME 2
Demonstrate understanding of the legal framework underpinning contracts.

SPECIFIC OUTCOME 3
Demonstrate understanding of liability and the law.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	65529	Further Education and Training Certificate: Transport Operations	Level 4

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAQA

UNIT STANDARD:

Demonstrate an understanding of business ethics in transport operations

SAQA US ID	UNIT STANDARD TITLE		
262262	Demonstrate an understanding of business ethics in transport operations		
ORIGINATOR		PROVIDER	
SGB Transport and Logistics Operations			
FIELD		SUBFIELD	
11 - Services		Transport, Operations and Logistics	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	4

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 ethical context in transport operations.

SPECIFIC OUTCOME 2
Explain ethical challenges facing transport operations.

SPECIFIC OUTCOME 3
Demonstrate understanding of the implications of unethical behaviour on transport operations.

SPECIFIC OUTCOME 4
Describe own role in the implementation of ethical practices.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	65529	Further Education and Training Certificate: Transport Operations	Level 4

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAQA

UNIT STANDARD:

Demonstrate an understanding of supply chain concepts

SAQA US ID	UNIT STANDARD TITLE		
262263	Demonstrate an understanding of supply chain concepts		
ORIGINATOR		PROVIDER	
SGB Transport and Logistics Operations			
FIELD		SUBFIELD	
11 - Services		Transport, Operations and Logistics	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	10

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 key components and features of supply chains.

SPECIFIC OUTCOME 2
Demonstrate an understanding of supply chain concepts.

SPECIFIC OUTCOME 3
Demonstrate an understanding of the role of transport in supply chains.

SPECIFIC OUTCOME 4
Demonstrate an understanding of the role of technology in supply chain management.

SPECIFIC OUTCOME 5
Demonstrate an understanding of a mode of transport and its place in the transport sector in South Africa.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	65529	Further Education and Training Certificate: Transport Operations	Level 4

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAQA

UNIT STANDARD:

Review transport systems and processes

SAQA US ID	UNIT STANDARD TITLE		
262298	Review transport systems and processes		
ORIGINATOR		PROVIDER	
SGB Transport and Logistics Operations			
FIELD		SUBFIELD	
11 - Services		Transport, Operations and Logistics	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	4

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

SPECIFIC OUTCOME 1
Identify transport operations information for review purposes.

SPECIFIC OUTCOME 2
Review transport management information.

SPECIFIC OUTCOME 3
Improve transport operations.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	65529	Further Education and Training Certificate: Transport Operations	Level 4

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Plan and control the delivery of transport services

SAQA US ID	UNIT STANDARD TITLE		
262299	Plan and control the delivery of transport services		
ORIGINATOR		PROVIDER	
SGB Transport and Logistics Operations			
FIELD		SUBFIELD	
11 - Services		Transport, Operations and Logistics	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	12

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

SPECIFIC OUTCOME 1
Plan in terms of fleet capacity.

SPECIFIC OUTCOME 2
Apply knowledge of own and customer operations in planning.

SPECIFIC OUTCOME 3
Apply knowledge of infrastructure to planning.

SPECIFIC OUTCOME 4
Apply risk management principles to planning.

SPECIFIC OUTCOME 5
Solve operational problems.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	65529	Further Education and Training Certificate: Transport Operations	Level 4

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

SAQA

UNIT STANDARD:

Apply knowledge of specific transport legislation to own transport operations

SAQA US ID	UNIT STANDARD TITLE		
262300	Apply knowledge of specific transport legislation to own transport operations		
ORIGINATOR		PROVIDER	
SGB Transport and Logistics Operations			
FIELD		SUBFIELD	
11 - Services		Transport, Operations and Logistics	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	4

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

SPECIFIC OUTCOME 1
Identify and explain legislation pertaining to own transport operation.

SPECIFIC OUTCOME 2
Plan the implementation of contracts and service level agreements.

SPECIFIC OUTCOME 3
Maintain compliance in a specific transport operation.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	65529	Further Education and Training Certificate: Transport Operations	Level 4