



Government Gazette

REPUBLIC OF SOUTH AFRICA

Vol. 477 Pretoria 18 March 2005 **No. 27386**



AIDS HELPLINE: 0800-0123-22 Prevention is the cure

GOVERNMENT NOTICES

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

No. 217

18 March 2005



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

Environmental Sciences, Environmental Management and Waste Management

Registered by NSB 10, Physical, Mathematical, Computer and Life Sciences 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 qualification and unit standards can be accessed via the SAQA web-site at www.saga.org.za. Copies may also be obtained from the Directorate of Standards Setting and Development at the SAQA offices, Hatfield Forum West, 1067 Arcadia Street, Hatfield.

Comment on the qualification and unit standards should reach SAQA at the address *below and no later than 18 April 2005*. All correspondence should be marked Standards Setting – SGB Environmental Sciences, Environmental Management and Waste Management and addressed to

The Director: Standards Setting and Development
SAQA

Attention: Mr. E Brown

Postnet Suite 248

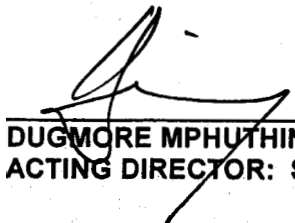
Private Bag X06

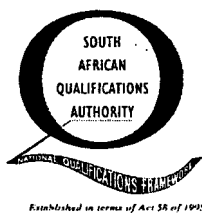
Waterkloof

0145

or faxed to 012 - 431 5144

e-mail: ebrown@saga.co.za


DUGMORE MPHUTHING
ACTING DIRECTOR: STANDARDS SETTING AND DEVELOPMENT



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

QUALIFICATION:

General Education and Training Certificate: Environmental Practice

SAQA QUAL ID	QUALIFICATION TITLE		
49552	General Education and Training Certificate: Environmental Practice		
SGB NAME	NSB 70	PROVIDER NAME	
SGB Environmental Sc & Env Mgt & Waste Mgt	Physical, Mathematical, Computer and Life Sciences		
QUAL TYPE	FIELD	SUBFIELD	
National Certificate	Physical, Mathematical, Computer and Life Sciences	Environmental Sciences	
ABET BAND	MINIMUM CREDITS	NQF LEVEL	QUALIFICATION CLASS
Undefined	120	Level 1	Regular-Unit Stds Based

PURPOSE AND RATIONALE OF THE QUALIFICATION

This qualification is the first in a series for practitioners in the field of environmental science, environmental management and waste management. This series of qualifications will equip practitioners with the skills, knowledge and values to contribute towards the wise and effective use and management of our natural resources and ecological systems.

The specific purpose of this qualification represents the skills, knowledge and understanding required by competent practitioners to:

- > Have an elementary understanding of the concept of the environment and the basic principles which underpin the sustainable use of resources
- > Understand their role and perform the activities associated with their role, using the tools, materials and practices of their particular field
- > Understand how they are affected by laws, agreements and policies related to their particular context
- > Understand the impact of their activities on the (natural) environment, as well as the implications of these activities for the environment.

With this understanding, learners will be able to engage productively and responsibly in work, individual or community-related activities in the field of environmental science, environmental management and waste management. This qualification will also serve as a basis for further learning, and will equip learners with the knowledge, skills and values to participate meaningfully in society and contribute towards developing sustainable communities.

This qualification can be obtained in any context within the field of environmental science, environmental management and waste management, eg: local government, public and private waste management enterprises, cultural or natural heritage sites, community projects, recycling and recovery of resources, control and eradication of invasive and alien species, rural development, or as workers with environmental functions in a range of industries such as mining, chemicals or manufacturing, etc.

This qualification will enable providers, assessors and learners to plan, implement and measure the outcomes of suitable learning programmes, or to recognize prior learning.

This qualification recognises skills, knowledge and values relevant to environmental science, environmental and waste management activities. It is designed for learners who engage actively in such activities. These activities are necessary in order to develop a portfolio of evidence. The qualification is suitable for learners who:

- > Have attended courses and then apply the knowledge gained to activities in a workplace or in a community, or
- > Are already workers and have acquired the skills and knowledge without attending formal courses (RPL can be done through the summative assessment and portfolio of evidence), or

- > Are already active in the community and have acquired the skills and knowledge without attending formal courses (RPL can be done through the summative assessment and portfolio of evidence), or
- > Participate in skills programmes and the appropriate work experience or community work, or
- > Are part of a learnership programme which integrates structured learning and work experience, or
- > Acquire their learning through any combination of the above.

Rationale:

South Africa has a need to manage and protect its natural resources and ecological systems, while simultaneously using its resources in a sustainable manner to promote social, physical and economic development.

There is also a need for people as individuals, and as members of social or workplace communities, to become aware of their responsibilities towards the environment and to be empowered to make informed choices regarding their own activities and the impact that these activities have on the environment. There is also a need for people to develop practices which will ensure that their activities, individually and collectively, result in the sustainable use of resources and minimise impact on the environment.

Recent developments in environmental legislation have resulted in an increased demand for practitioners with the necessary skills, knowledge and values to fulfil these legislative requirements.

Such practitioners - as learners, as workers and as members of social communities - need to be equipped to engage with the complexities and challenges which arise from this need to ensure that use and development is socially, ecologically and economically sustainable.

RECOGNIZE PREVIOUS LEARNING?

Y

LEARNING ASSUMED TO BE IN PLACE

It is assumed that the learner has attained ABET Level 3 in Communication and Mathematics.

Recognition of prior learning:

This qualification may be obtained through the process of RPL. The learner should be thoroughly briefed prior to the assessment and support should be provided to assist the learner in the process of developing a portfolio. While this is primarily a context-based qualification, evidence from other areas of endeavour may be introduced if pertinent to any of the exit level outcomes.

QUALIFICATION RULES

EXIT LEVEL OUTCOMES

1. Demonstrate the use of appropriate numeracy and communication skills.
2. Handle material and perform tasks without an adverse impact on the environment.
Range: Material includes waste, hazardous substances, cleaning materials, natural resources, etc.
3. Recognise and respond to issues that have an impact on the environment.
Range: The response is appropriate to the level of authority and level of skill.
4. Gather and contribute information required to respond to environmental conditions.
5. Manage own performance and contribute to the performance of the team and the organisation.

ASSOCIATED ASSESSMENT CRITERIA

1.
 - > Appropriate numeracy and verbal and written communication skills are selected and used in the performance of tasks.
 - > Appropriate numeracy and verbal and written communication skills are selected and used to explain concepts and processes during assessment.
2.
 - > A specific practice is described and explained, relating the tools and the materials to the practice, and explaining the environmental principles which underpin the practice.
 - > Resources are used in a sustainable manner, without injury to self or fellow workers or damage to tools, equipment, infrastructure or the environment.

3.
 - > Actual or potential environmental impacts are identified.
 - > Actual or potential environmental impacts are reported timeously and accurately.
4.
 - > Appropriate information is collected and recorded accurately.
 - > Information is contributed in an appropriate form or format within the required timeframe.
5.
 - > Contribution to cleanliness and condition of tools, equipment and infrastructure is made in an environmentally responsible and safe manner.
 - > Laws, policies and procedures which govern the learner's particular context are described and explained.
 - > The learner's role and contribution is described and explained.

Integrated Assessment:

In order to achieve the aims of integrated assessment it is recommended that the assessor assesses all components of the learning simultaneously and that credits are awarded for the unit standards during this assessment.

It is recommended that learning components (ie fundamental and core) are combined into assignments and projects which are then included in the portfolio of evidence. This will form the basis for the bulk of the assessment. The assessor can then focus on specific areas for further probing and verification.

The assessment process should:

- > Cover the explicit activities required for the qualification as well as the understanding of the concepts and principles which underpin the activities
- > Establish how the critical outcomes have been advanced by the learning process.

The integrated assessment 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:

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

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 context-based qualification, evidence from other areas of endeavour may be introduced if pertinent to any of the exit-level outcomes.

Assessors should also evaluate evidence that the learner has been performing consistently to standard over a period of time.

INTERNATIONAL COMPARABILITY

No other qualifications have been identified which are directly comparable with this one in terms of level and scope. The fact that this is a generic qualification that must serve the diverse needs of the broad field of environmental science, environmental management and waste management, puts it in a class of its own. Internationally, qualifications related to environmental science and environmental management fall into the sphere of higher education, apart from a few isolated examples at supervisory and first-tier management level. There are a limited number of qualifications which focus on waste management, such as the Scottish Vocational Qualifications and the National Vocational Qualifications of England, Wales and Northern Ireland. The approach taken in these qualifications aligns broadly with the approach taken here: qualifications are standards-based, learning is workplace-based, assessment is observation- and portfolio-based, and skills and knowledge are acquired, practiced and assessed within contexts relevant to the learner. However, this (ie the South African) qualification places a greater requirement on the learner to demonstrate successful integration of the knowledge and skills acquired. Another recent development has been the initiative by the International Solid Waste Association to develop qualifications and promote training internationally. Developments are also taking place in other parts of the world, notably South America. However, concrete information of the type needed to carry out a detailed comparison could not be found within the limits of the research capability.

Narrow consultation:

Those participating in the work of developing, generating and reviewing this qualification and the unit standards were representative of their constituencies and came from a range of contexts within the environmental science, environmental management and waste management field.

ARTICULATION OPTIONS

This qualification has been designed and structured so that qualifying learners can move from one context to another. Employers or institutions should be able to evaluate the outcomes of this qualification against the needs of their context and structure top-up learning appropriately. Equally, holders of other qualifications may be evaluated against this qualification for the purpose of RPL.

This qualification has been designed as a generic qualification which will serve the diverse needs of the field of environmental science, environmental management and waste management. While a certain amount of the learning is applicable across the field, the balance will be related to the learner's context. Each context will have a different focus and this will determine what qualifications, both horizontally and vertically, will articulate with this one.

MODERATION OPTIONS

Moderators for the qualification should be qualified and accredited with an appropriate ETQA. To assure the quality of the assessment process, the moderation should cover the following:

- > Assessor credentials.
 - > The assessment instrument.
 - > The assessment process.
- Moderators should be qualified assessors in their own right.

CRITERIA FOR THE REGISTRATION OF ASSESSORS

The following criteria should be applied by the relevant ETQA:

1. Appropriate qualification in a relevant field of environmental science, environmental management and waste management at NQF level 2 or higher with a minimum of 2 years' experience in a relevant context. The subject matter expertise of the assessor can be established by recognition of prior learning.
2. Appropriate experience and understanding of assessment theory, processes and practices.
3. Good interpersonal skills and ability to balance the conflicting requirements of:
 - > Maintaining national standards
 - > The interests of the learner
 - > The need for transformation and redressing the legacies of the past
 - > The cultural background and language of the learner.
4. Registration as an assessor with a relevant ETQA.
5. Any other criteria required by a relevant ETQA.

NOTES

UNIT STANDARDS

(Note: A blank space after this line means that the qualification is not based on Unit Standards.)

	UNIT STANDARD ID AND TITLE	LEVEL	CREDITS	STATUS
core	13167 Identify potential hazards and critical safety issues in the workplace	Level 1	2	Registered
core	14445 Frame and implement an individual action plan to improve productivity within an organisational unit	Level 1	3	Registered
core	14569 Demonstrate an understanding of how to participate effectively in the workplace	Level 1	3	Registered
core	110082 Understand the impact of customer service on a business	Level 1	6	Registered
core	119302 Select, use and care for hand tools and basic equipment in environmentally related contexts	Level 1	6	Draft - Prep for P Comment
core	119303 Handle and dispose of waste	Level 1	12	Draft - Prep for P Comment
core	119305 Demonstrate an awareness of the impact of human activities on the environment	Level 1	12	Draft - Prep for P Comment
Core	119306 Recognise, group, use and care for materials which can impact on health and the environment	Level 1	10	Draft - Prep for P Comment
Elective	9357 Develop and use keyboard skills to enter text	Level 1	4	Registered
Elective	10008 Write and present a simple business plan	Level 1	7	Reregistered
Elective	10567 Transport personnel, material and equipment using tight Delivery Vehicle	Level 1	4	Registered

Elective	13197	Recognise and explain the purpose of various input transmission and storage devices, and understand how to care for them	Level 1	3	Draft - Prep for P Comment
Elective	14666	Prepare oneself for employment	Level 1	4	Registered
Elective	110044	Collect information to support a community needs assessment	Level 1	12	Registered
Elective	110045	Support the facilitation of learning in a development practice project	Level 1	12	Registered
Elective	110075	Apply basic fire fighting techniques	Level 1	3	Registered
Elective	116511	Carry out basic first aid treatment in the workplace	Level 1	1	Registered
Fundamental	7447	Working with numbers in various contexts	Level 1	6	Reregistered
Fundamental	7449	Critically analyse how mathematics is used in social, political and economic relations	Level 1	2	Reregistered
Fundamental	7451	Collect, analyse, use and communicate numerical data	Level 1	2	Reregistered
Fundamental	7461	Use maps to access and communicate information concerning routes, location and direction	Level 1	1	Reregistered
Fundamental	7463	Describe and represent objects and the environment in terms of shape, space, time and motion	Level 1	2	Reregistered
Fundamental	12462	Engage in a range of speaking and listening interactions for a variety of purposes	Level 1	6	Registered
Fundamental	12469	Read and respond to a range of text types	Level 1	6	Registered
Fundamental	12470	Write for a variety of different purposes	Level 1	6	Registered
Fundamental	12471	Explore and use a variety of strategies to learn (revised)	Level 1	5	Registered
Fundamental	13169	Describe and discuss issues relating to HIV-AIDS, TB and sexually transmitted illnesses and their impact on the workplace	Level 1	4	Registered
Fundamental	14084	Demonstrate an understanding of and use the numbering system	Level 1	1	Registered
Fundamental	14661	Demonstrate knowledge of self in order to understand one's identity and role within the immediate community and South African society	Level 1	3	Registered
Fundamental	14664	Demonstrate knowledge of diversity within different relationships in the South African society	Level 1	3	Registered
Fundamental	14780	Apply financial life skills	Level 1	4	Registered
Fundamental	119304	Compile a portfolio of evidence for assessment	Level 1	3	Draft - Prep for P Comment
Fundamental	7467	Collect and use data to establish basic statistical and probability models and solve related problems	Level 2	5	Reregistered



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

1

Compile a portfolio of evidence for assessment

SAQA US ID	UNIT STANDARD TITLE		
119304	Compile a portfolio of evidence for assessment		
SGB NAME	NSB 70	PROVIDER NAME.	
SGB Environmental Sc & Env Mgt & Waste Mgt	Physical, Mathematical, Computer and Life Sciences		
UNIT STANDARD TYPE	FIELD DESCRIPTION	SUBFIELD DESCRIPTION	
Regular	Physical, Mathematical, Computer and Life Sciences	Environmental Sciences	
ABET BAND	CREDITS	NQF LEVEL	UNIT STANDARD TYPE
Undefined	3	Level 1	Regular

SPECIFIC OUTCOME 1

Respond to questions about the reasons for developing a portfolio of evidence and describe briefly how the portfolio is used in the process of assessment.

SPECIFIC OUTCOME 2

Use my own portfolio to demonstrate what a portfolio should consist of, and explain briefly why I have included these items.

SPECIFIC OUTCOME 3

Use my own material to demonstrate kinds of evidence that can be included in a portfolio, and respond to questions about why I have selected these items for my portfolio.



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

2

Demonstrate an awareness of the impact of human activities on the environment

SAQA US ID	UNIT STANDARD TITLE		
119305	Demonstrate an awareness of the impact of human activities on the environment		
SGB NAME	NSB 10	PROVIDER NAME	
SGB Environmental Sc & Env Mgt & Waste Mgt	Physical, Mathematical, Computer and Life Sciences		
UNIT STANDARD TYPE	FIELD DESCRIPTION	SUBFIELD DESCRIPTION	
Regular	Physical, Mathematical, Computer and Life Sciences	Environmental Sciences	
ABET BAND	CREDITS	NQF LEVEL	UNIT STANDARD TYPE
Undefined	12	Level 1	Regular

SPECIFIC OUTCOME 1

Identify the components of the environment and describe their interrelationships.

SPECIFIC OUTCOME 2

Identify a range of impacts on the environment and use the correct terminology to describe them:

SPECIFIC OUTCOME 3

Describe natural events and human activities which result in impacts on the environment.

SPECIFIC OUTCOME 4

Gather information related to a particular environmental impact on the immediate surroundings and use it to describe the cause and effect of this impact.

SPECIFIC OUTCOME 5

Take appropriate action to address the impacts of human activities on the environment.



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

3

Handle and dispose of waste

SAQA US ID	UNIT STANDARD TITLE		
119303	Handle and dispose of waste		
SGB NAME	NSB 10	PROVIDER NAME	
SGB Environmental Sc & Env Mgt & Waste Mgt	Physical, Mathematical, Computer and Life Sciences		
UNIT STANDARD TYPE	FIELD DESCRIPTION	SUBFIELD DESCRIPTION	
Regular	Physical, Mathematical, Computer and Life Sciences	Environmental Sciences	
ABET BAND	CREDITS	NQF LEVEL	UNIT STANDARD TYPE
Undefined	12	Level 1	Regular

SPECIFIC OUTCOME 1

Demonstrate an understanding of what waste is and how it interrelates with the environment.

SPECIFIC OUTCOME 2

Identify and describe the concepts and principles of waste management.

SPECIFIC OUTCOME 3

Identify and describe the sequence of steps required in the waste management process.

SPECIFIC OUTCOME 4

Recognise and respond appropriately to special waste.

SPECIFIC OUTCOME 5

Apply waste management principles and procedures in own context.



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

4

Recognise, group; use and care for materials which can impact on health and the environment.

SAQA US ID	UNIT STANDARD TITLE		
119306	Recognise, group, use and care for materials which can impact on health and the environment.		
SGB NAME	NSB 10	PROVIDER NAME	
SGB Environmental Sc & Env Mgt & Waste Mgt	Physical, Mathematical, Computer and Life Sciences		
UNIT STANDARD TYPE	FIELD DESCRIPTION	SUBFIELD DESCRIPTION	
Regular	Physical, Mathematical, Computer and Life Sciences	Environmental Sciences	
ABET BAND	CREDITS	NQF LEVEL	UNIT STANDARD TYPE
Undefined	10	Level 1	Regular

SPECIFIC OUTCOME 1

Recognise and group various items found in my context, according to the impact of their material(s) on health and the environment.

SPECIFIC OUTCOME 2

Read Material Safety Data Sheets and understand their purpose.

SPECIFIC OUTCOME 3

Understand the physical properties of the materials and relate them to the way the materials occur or are used.

SPECIFIC OUTCOME 4

Describe the potential impact of the materials on health and the environment, related to their properties.

SPECIFIC OUTCOME 5

Use materials in my context.

SPECIFIC OUTCOME 6

Transport, store and care for materials in my context.



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

5

Select, use and care for hand tools and basic equipment in environmentally related contexts

SAQA US ID	UNIT STANDARD TITLE		
119302	Select, use and care for hand tools and basic equipment in environmentally related contexts		
SGB NAME	NSB 10	PROVIDER NAME	
SGB Environmental Sc & Env Mgt & Waste Mgt	Physical, Mathematical, Computer and Life Sciences		
UNIT STANDARD TYPE	FIELD DESCRIPTION	SUBFIELD DESCRIPTION	
Regular	Physical, Mathematical, Computer and Life Sciences	Environmental Sciences	
ABET BAND	CREDITS	NQF LEVEL	UNIT STANDARD TYPE
Undefined	6	Level 1	Regular

SPECIFIC OUTCOME 1

Select the appropriate hand tools and equipment for a variety of tasks.

SPECIFIC OUTCOME 2

Inspect and prepare tools and equipment prior to use.

SPECIFIC OUTCOME 3

Use hand tools or equipment to perform a variety of tasks.

SPECIFIC OUTCOME 4

Maintain, care for and store tools and equipment in an environmentally responsible manner

SPECIFIC OUTCOME 5

Work safely with due care for self, others, tools and equipment, materials and the environment.