
GOVERNMENT NOTICES

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

No. 10

11 January 2008



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

Water Sector

registered by Organising Field 12, Physical Planning and Construction, 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.saqg.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 8 February 2008**. All correspondence should be marked **Standards Setting – Water Sector** and addressed to

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SOUTH AFRICAN QUALIFICATIONS AUTHORITY

QUALIFICATION:**Further Education and Training Certificate: Wastewater and Water Reticulation Services**

SAQA QUAL ID	QUALIFICATION TITLE		
60189	Further Education and Training Certificate: Wastewater and Water Reticulation Services		
ORIGINATOR	PROVIDER		
SGB Water Sector			
QUALIFICATION TYPE	FIELD	SUBFIELD	
Further Ed and Training Cert	12 - Physical Planning and Construction	Civil Engineering Construction	
ABET BAND	MINIMUM CREDITS	NQF LEVEL	QUAL CLASS
Undefined	135	Level 4	Regular-Unit Stds Based

This qualification replaces:

Qual ID	Qualification Title	NQF Level	Min Credits	Replacement Status
23476	National Certificate: Supervision of Water Reticulation Operations	Level 4	136	Will occur as soon as 60189 is registered
48906	Further Education and Training Certificate: Supervision of Wastewater Reticulation Operations	Level 4	149	Will occur as soon as 60189 is registered

PURPOSE AND RATIONALE OF THE QUALIFICATION**Purpose:**

The Qualification will provide the learner with the knowledge and skills to work in a water and wastewater reticulation services department or as a utility leader attending to the, operation maintenance and construction of water and wastewater reticulation systems. The core and elective sections of this qualification accommodates for learners to specialise in water or wastewater reticulation services or both.

Qualifying learners are able to:

- Demonstrate communication skills at supervisory level.
- Be able to ensure the implementation and assurance of health, safety and environmental systems.
- Be able to supervise the operation and maintenance of water and waste water reticulation systems
- Be able to supervise the construction of water and waste water reticulation systems.

Rationale:

The need for this qualification has been established by the SGB across the water services industry sector. This qualification is aimed at learners who wish to enter or further their career in the field of water and waste water reticulation and have gained experience in related sub fields and wish to receive formal recognition for their experience and knowledge. This qualification

also serves as a basis for post certification development and more particularly to progress to the NQF Level 5 Certificate in Water and Wastewater Reticulation Services.

RECOGNIZE PREVIOUS LEARNING?

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LEARNING ASSUMED IN PLACE

It is assumed that learners are already competent in the following:

- Communication at NQF Level 2.
- Mathematical Literacy at NQF Level 2.
- National Certificate: Water and Waste Water Reticulation service at NQF Level 2.

Recognition of Prior Learning:

This Qualification may be achieved in part through skills programmes or completely through the recognition of prior learning, which includes formal, informal and non-formal learning and work experience. Any learner wishing to be directly assessed may arrange to do so, without attending further training or education. The assessor and learner will decide together on the most appropriate assessment route to be taken.

Access to the Qualification:

Access to this qualification is open bearing in mind learning assumed to be in place.

QUALIFICATION RULES

This qualification consists of Fundamental credits totalling 56, Core credits totalling 60, all of which are compulsory. The qualification also has Electives totalling 72.

Learners have to choose a minimum of 19 credits from the Electives to be awarded the qualification. Total credits for this qualification will therefore be 135.

EXIT LEVEL OUTCOMES

1. Demonstrate communication skills at supervisory level.
2. Implement and assure health, safety and environmental systems.
3. Supervise the operation and maintenance of water and wastewater reticulation systems.
4. Supervise the construction of water and wastewater reticulation systems.

Critical Cross-Field Outcomes:

- Communicate effectively using visual, mathematical and/or language skills in the form of oral and/or written presentation. This relates to all the associated assessment criteria.
- Work effectively with others as a member of a team, group, organisation, and community. This relates to associated assessment criteria 1.4, 1.2 and 1.1.
- Communicate effectively using visual, mathematical and/or language skills in the form of oral and/or written presentation. This relates to both the associated assessment criteria.
- Work effectively with others as a member of a team, group, organisation, and community. This relates to both assessment criteria.
- Collect, analyse, organise and critically evaluate information. This relates to both the associated assessment criteria.
- Communicate effectively using visual, mathematical and/or language skills in the form of oral and/or written presentation. This relates to all the associated assessment criteria.

- Work effectively with others as a member of a team, group, organisation, and community. This relates to assessment criteria 3.1.
- Collect, analyse, organise and critically evaluate information. This relates to both the associated assessment criteria.
- Communicate effectively using visual, mathematical and/or language skills in the form of oral and/or written presentation. This relates to all the associated assessment criteria.
- Work effectively with others as a member of a team, group, organisation, and community. This relates to assessment criteria 4.1.
- Collect, analyse, organise and critically evaluate information. This relates to all the associated assessment criteria.

ASSOCIATED ASSESSMENT CRITERIA

Associated Assessment Criteria for Exit Level Outcome 1:

- 1.1 Information should be accessed and used in the context of supervisory tasks and activities.
- 1.2 Interpret and communicate workplace policies and procedures for the reticulation industry.
- 1.3 Language and communication should be used for accessing and navigating learning programmes.
- 1.4 Liaise with contractors and members of the public regarding water and wastewater issues.

Associated Assessment Criteria for Exit Level Outcome 2:

- 2.1 Ensure the legislative update of a personal safety, health and environmental management system on a wastewater and water reticulation system.
- 2.2 Act proactively to prevent incidents by ensuring compliance with safety, health and environmental policies and procedures.

Associated Assessment Criteria for Exit Level Outcome 3:

- 3.1 The supervision of tasks and activities involved are done in accordance with sound supervisory practices.
- 3.2 Tasks and processes involved in the supervision of maintenance of wastewater and water reticulation systems are executed in accordance with organisational policies and procedures.
- 3.3 Equipment and materials comply with national specifications and codes of practices.

Associated Assessment Criteria for Exit Level Outcome 4:

- 4.1 Tasks and activities involved in the construction are supervised in accordance with sound supervisory practices.
- 4.2 Tasks and processes involved in the supervision of the construction of wastewater and water reticulation systems are executed in accordance with organisational policies and procedures.
- 4.3 Equipment and materials used for construction comply with national specifications and Codes of practices.

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.

Some assessment aspects will demand practical demonstration while others may not.

Since this is one of a series of qualifications in a framework, 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 and essential embedded knowledge has been achieved, by assessing through integrated assessment.

INTERNATIONAL COMPARABILITY

International qualifications were examined to ensure that the qualification model and associated unit standards proposed are comparable in terms of qualification levels, scope and competencies covered. However, the core and elective components have been developed and/or revised taking into account South Africa's unique context, but also looking at international best practice.

Qualifications from the following countries were examined:

Australian Qualifications Framework (AQF):

- NWP05: Water Industry and the Certificate Course in Water and Wastewater Reticulation.

New Zealand Qualifications Authority (NZQA):

- National Certificate in Water and Wastewater Reticulation and its associated unit standards (Level 2; 3 and 4).
- National Certificate in Water and Wastewater reticulation: Site Operator (Level 2; 3 and 4).

Scottish Vocational Qualifications (SQA):

- H7HE: Water Distribution: Water Level 2.
- D2 XK: Construction Practice: Substructures.
- D5 XY: Construction Technology: Substructure and Remedial works.

United Kingdom (QCA):

- City and Guilds Level 2 Certificate in Water Engineering, 500/1698/2.
- Certificate in Process Plant Operations Level 2.
- Cambridge University: Module 4D15: Sustainable Water Engineering.
- Modelling Water Distribution Networks MODULE CODE: CIV.

United States of America:

- SD Association of Rural Water Systems Sioux Falls, South Dakota 57106, Water and Wastewater Operator Certification Board.

Findings Concerning Comparability:

A substantial degree of similarity was found in most of the qualifications examined. Although the South African qualification combines both water and wastewater reticulation services due to the similarities found in the core components of both qualifications, the revised qualification provides a mix of mandatory unit standards to cover both water and wastewater core competencies and electives as optional units that enable learners to choose from to address their particular roles in their respective work areas and specialization.

The South African qualification and its associated unit standards is generally comparable to the Scottish, Australian, New Zealand in terms of degree of complexity, scope and range of competencies covered but are offered and structured differently with the United Kingdom qualification. The UK refers to reticulation as distribution and the implementation of training takes place differently to the system employed by South Africa.

New Zealand being an OECD country, offered many similarities to the environment and structure of the South African Industry and the way their courses and curricular is structured. Unit standard content would often combine concepts differently to what is done locally and the analysis of these often provided new insight into best practice.

ARTICULATION OPTIONS

This is the first qualification in a series from NQF Level 2 through to NQF Level 5. This series of qualifications can articulate directly to learning programmes and qualifications in the water and wastewater sector. It also opens the possibility for further learning in the sub-field of Civil Engineering Construction.

MODERATION OPTIONS

- A person assessing a learner or moderating the assessment of a learner against this Qualification must be registered as an assessor 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 ETQA.
- Assessment and moderation of assessment will be overseen by the relevant ETQA according to the ETQAs policies and guidelines for assessment and moderation, in terms of agreements reached around assessment and moderation between ETQAs (including professional bodies), and in terms of the moderation guideline.
- Moderation must include both internal and external moderation of assessments at exit points of the qualification, unless ETQA policies specify otherwise. Moderation should also encompass achievement of the competence described both in individual unit standards, exit level outcomes as well as the integrated competence described in the qualification.

CRITERIA FOR THE REGISTRATION OF ASSESSORS

All assessors need to be Subject Matter Experts, qualified one level higher and registered with the relevant ETQA.

NOTES

This qualification replaces qualification 23476, "National Certificate: Supervision of Water Reticulation Operations", Level 4, 136 credits.

This qualification replaces qualification 48906, "Further Education and Training Certificate: Supervision of Wastewater Reticulation Operations", Level 4, 149 credits.

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

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
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	254096	Demonstrate knowledge of corrosion control	Level 4	6
Core	254121	Demonstrate knowledge of the characteristics of water flow	Level 4	10
Core	14417	Lead and supervise construction teams	Level 4	8
Core	14425	Perform site administration functions	Level 4	10
Core	254119	Plan and organize maintenance and construction tasks for water and wastewater reticulation services	Level 4	12
Core	254099	Supervise personal safety practices in the workplace	Level 4	4
Core	254098	Supervise the procurement, use and storage of equipment and materials for construction and maintenance	Level 4	10
Elective	254124	Plan team work functions and complete reports	Level 3	4
Elective	254102	Demonstrate basic knowledge of different types of trenchless technologies in water and wastewater environments	Level 4	6
Elective	254122	Demonstrate knowledge of leak detection and leak detection programmes	Level 4	4
Elective	254104	Demonstrate knowledge of the operation and maintenance of flow control and air valves in pipelines	Level 4	4
Elective	254100	Demonstrate knowledge of wastewater composition, odours, and odour control	Level 4	6
Elective	254115	Demonstrate sound environmental practices in wastewater operations	Level 4	7
Elective	254095	Maintain water quality in water supply reticulation systems	Level 4	5
Elective	254094	Manage water resources	Level 4	12
Elective	254120	Prepare and set up Closed Circuit Television (CCTV) for the inspection of a pipeline	Level 4	6
Elective	254118	Apply water loss control principles	Level 5	8
Elective	115753	Conduct outcomes-based assessment	Level 5	15

LEARNING PROGRAMMES RECORDED AGAINST THIS QUALIFICATION

None



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Manage water resources***

SAQA US ID	UNIT STANDARD TITLE		
254094	Manage water resources		
ORIGINATOR	PROVIDER		
SGB Water Sector			
FIELD	SUBFIELD		
12 - Physical Planning and Construction	Civil Engineering Construction		
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

Demonstrate basic knowledge of hydrology.

SPECIFIC OUTCOME 2

Demonstrate knowledge of the National Water Act of 1998 (NWA).

SPECIFIC OUTCOME 3

Read maps and satellite images.

SPECIFIC OUTCOME 4

Determine volumetric quantities.

SPECIFIC OUTCOME 5

Comply with dam safety regulations.

SPECIFIC OUTCOME 6

Monitor pollution control.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	60189	Further Education and Training Certificate: Wastewater and Water Reticulation Services	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Maintain water quality in water supply reticulation systems***

SAQA US ID	UNIT STANDARD TITLE		
254095	Maintain water quality in water supply reticulation systems		
ORIGINATOR	PROVIDER		
SGB Water Sector			
FIELD	SUBFIELD		
12 - Physical Planning and Construction	Civil Engineering Construction		
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

Identify and isolate water quality problems, implement responses and report findings.

SPECIFIC OUTCOME 2

Implement hygienic measures to prevent contamination during maintenance.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	60189	Further Education and Training Certificate: Wastewater and Water Reticulation Services	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Demonstrate knowledge of corrosion control***

SAQA US ID	UNIT STANDARD TITLE		
254096	Demonstrate knowledge of corrosion control		
ORIGINATOR	PROVIDER		
SGB Water Sector			
FIELD	SUBFIELD		
12 - Physical Planning and Construction	Building Construction		
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
14053	Demonstrate knowledge of corrosion control	Level 5	7	Will occur as soon as 254096 is registered

SPECIFIC OUTCOME 1

Explain the main causes of corrosion in water and wastewater reticulation systems.

SPECIFIC OUTCOME 2

Demonstrate knowledge of corrosion in sewers and related structures.

SPECIFIC OUTCOME 3

Explain the most common methods of preventing corrosion in water and wastewater reticulation systems.

SPECIFIC OUTCOME 4

Explain the principles of cathodic protection.

SPECIFIC OUTCOME 5

Identify corrosion on pipes and fittings and apply appropriate corrosion control method.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	60189	Further Education and Training Certificate: Wastewater and Water Reticulation Services	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Supervise the procurement, use and storage of equipment and materials for construction and maintenance

SAQA US ID	UNIT STANDARD TITLE		
254098	Supervise the procurement, use and storage of equipment and materials for construction and maintenance		
ORIGINATOR	PROVIDER		
SGB Water Sector			
FIELD	SUBFIELD		
12 - Physical Planning and Construction	Building Construction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	10

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
14430	Supervise the procurement, use and storage of construction materials	Level 4	10	Will occur as soon as 254098 is registered

SPECIFIC OUTCOME 1

Procure construction materials.

SPECIFIC OUTCOME 2

Receive and check construction materials.

SPECIFIC OUTCOME 3

Store construction materials.

SPECIFIC OUTCOME 4

Issue and reconcile construction materials.

SPECIFIC OUTCOME 5

Supervise the use of materials.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	60189	Further Education and Training Certificate: Wastewater and Water Reticulation Services	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Supervise personal safety practices in the workplace

SAQA US ID	UNIT STANDARD TITLE		
254099	Supervise personal safety practices in the workplace		
ORIGINATOR	PROVIDER		
SGB Water Sector			
FIELD	SUBFIELD		
12 - Physical Planning and Construction	Civil Engineering Construction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	4

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
12061	Supervise personal safety practices on a wastewater treatment works	Level 4	4	Will occur as soon as 254099 is registered

SPECIFIC OUTCOME 1

Explain relevant sections of the OHS Act and Compensation for Occupational Injuries and Diseases Act. (COID).

SPECIFIC OUTCOME 2

Explain the purpose of a health and safety committee and health and safety representative.

SPECIFIC OUTCOME 3

Explain safe working practices in the workplace in accordance with work policies and procedures.

SPECIFIC OUTCOME 4

Explain and supervise emergency procedures.

SPECIFIC OUTCOME 5

Monitor good housekeeping practices in workplace.

SPECIFIC OUTCOME 6

Explain the dangers of working with moving machinery.

SPECIFIC OUTCOME 7

Explain and monitor procedures for entering a confined space.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

ID	QUALIFICATION TITLE	LEVEL
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	ID	QUALIFICATION TITLE	LEVEL
Core	60189	Further Education and Training Certificate: Wastewater and Water Reticulation Services	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:*Demonstrate knowledge of wastewater composition, odours, and odour control*

SAQA US ID	UNIT STANDARD TITLE		
254100	Demonstrate knowledge of wastewater composition, odours, and odour control		
ORIGINATOR	PROVIDER		
SGB Water Sector			
FIELD	SUBFIELD		
12 - Physical Planning and Construction	Civil Engineering Construction		
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 knowledge of wastewater, and wastewater composition.

SPECIFIC OUTCOME 2

Demonstrate knowledge of wastewater source control.

SPECIFIC OUTCOME 3

Demonstrate knowledge of the causes of odours, and techniques for minimising odours in sewers.

SPECIFIC OUTCOME 4

Demonstrate knowledge of odours and remedial techniques in wastewater systems.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	60189	Further Education and Training Certificate: Wastewater and Water Reticulation Services	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate basic knowledge of different types of trenchless technologies in water and wastewater environments

SAQA US ID	UNIT STANDARD TITLE		
254102	Demonstrate basic knowledge of different types of trenchless technologies in water and wastewater environments		
ORIGINATOR	PROVIDER		
SGB Water Sector			
FIELD	SUBFIELD		
12 - Physical Planning and Construction	Civil Engineering Construction		
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
115940	Demonstrate basic knowledge of different types of trenchless technologies in water and wastewater environments	Level 5	8	Will occur as soon as 254102 is registered

SPECIFIC OUTCOME 1

Explain trenchless technologies.

SPECIFIC OUTCOME 2

Explain the preparation for the execution of trenchless technologies.

SPECIFIC OUTCOME 3

Identify potential problems that may occur during execution and recommend solutions.

SPECIFIC OUTCOME 4

Evaluate and recommend the optimal solution for a specific application.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	60189	Further Education and Training Certificate: Wastewater and Water Reticulation Services	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate knowledge of the operation and maintenance of flow control and air valves in pipelines

SAQA US ID	UNIT STANDARD TITLE		
254104	Demonstrate knowledge of the operation and maintenance of flow control and air valves in pipelines		
ORIGINATOR	PROVIDER		
SGB Water Sector			
FIELD	SUBFIELD		
12 - Physical Planning and Construction	Civil Engineering Construction		
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

Explain the purpose of a control valve.

SPECIFIC OUTCOME 2

Maintain Control valves.

SPECIFIC OUTCOME 3

Explain the purpose of an air valve.

SPECIFIC OUTCOME 4

Maintain air valves.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	60189	Further Education and Training Certificate: Wastewater and Water Reticulation Services	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Demonstrate sound environmental practices in wastewater operations***

SAQA US ID		UNIT STANDARD TITLE	
254115		Demonstrate sound environmental practices in wastewater operations	
ORIGINATOR		PROVIDER	
SGB Water Sector			
FIELD		SUBFIELD	
12 - Physical Planning and Construction		Civil Engineering Construction	
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
115893	Demonstrate sound environmental practices in wastewater operations	Level 4	7	Will occur as soon as 254115 is registered

SPECIFIC OUTCOME 1

Explain the harmful effects of wastewater spillage on the environment.

SPECIFIC OUTCOME 2

Demonstrate contamination prevention methods in wastewater operations.

SPECIFIC OUTCOME 3

Demonstrate remedial techniques regarding wastewater spillages.

SPECIFIC OUTCOME 4

Demonstrate knowledge of odours and remedial techniques in wastewater systems.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	60189	Further Education and Training Certificate: Wastewater and Water Reticulation Services	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Apply water loss control principles

SAQA US ID	UNIT STANDARD TITLE		
254118	Apply water loss control principles		
ORIGINATOR	PROVIDER		
SGB Water Sector			
FIELD	SUBFIELD		
12 - Physical Planning and Construction	Civil Engineering Construction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 5	8

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
14022	Apply water loss control principles	Level 4	8	Will occur as soon as 254118 is registered

SPECIFIC OUTCOME 1

Explain the principles of water demand management.

SPECIFIC OUTCOME 2

Collect and record meter readings and flow data in accordance with work policies and procedures.

SPECIFIC OUTCOME 3

Determine existence of unmetered connections.

SPECIFIC OUTCOME 4

Apply water loss control interventions.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	60189	Further Education and Training Certificate: Wastewater and Water Reticulation Services	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Plan and organize maintenance and construction tasks for water and wastewater reticulation services***

SAQA US ID		UNIT STANDARD TITLE	
254119		Plan and organize maintenance and construction tasks for water and wastewater reticulation services	
ORIGINATOR		PROVIDER	
SGB Water Sector			
FIELD		SUBFIELD	
12 - Physical Planning and Construction		Civil Engineering Construction	
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 work tasks in accordance with work policies and procedures.

SPECIFIC OUTCOME 2

Organise required resources in accordance with work plan.

SPECIFIC OUTCOME 3

Assess risks and plan safety requirements in accordance with legislation and work procedures.

SPECIFIC OUTCOME 4

Set out trenches and chambers.

SPECIFIC OUTCOME 5

Notify members of the public of the disruption of water and wastewater services and take remedial action.

SPECIFIC OUTCOME 6

Demonstrate knowledge of sound environmental practice.

SPECIFIC OUTCOME 7

Maintain records in accordance with work policies.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	60189	Further Education and Training Certificate: Wastewater and Water Reticulation Services	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Prepare and set up Closed Circuit Television (CCTV) for the inspection of a pipeline

SAQA US ID	UNIT STANDARD TITLE		
254120	Prepare and set up Closed Circuit Television (CCTV) for the inspection of a pipeline		
ORIGINATOR	PROVIDER		
SGB Water Sector			
FIELD	SUBFIELD		
12 - Physical Planning and Construction	Civil Engineering Construction		
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

Describe the preparation of assets for survey by CCTV.

SPECIFIC OUTCOME 2

Select and set up a CCTV and equipment for survey of assets.

SPECIFIC OUTCOME 3

Describe procedures for survey of assets using a CCTV, and recording and/or coding pipe conditions.

SPECIFIC OUTCOME 4

Complete reports including recommendations.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	60189	Further Education and Training Certificate: Wastewater and Water Reticulation Services	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate knowledge of the characteristics of water flow

SAQA US ID	UNIT STANDARD TITLE		
254121	Demonstrate knowledge of the characteristics of water flow		
ORIGINATOR	PROVIDER		
SGB Water Sector			
FIELD	SUBFIELD		
12 - Physical Planning and Construction	Civil Engineering Construction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	10

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
14023	Demonstrate knowledge of the characteristics of water flow	Level 4	10	Will occur as soon as 254121 is registered

SPECIFIC OUTCOME 1

Explain the characteristics of water flow.

SPECIFIC OUTCOME 2

Describe negative influences affecting water flow in pipelines.

SPECIFIC OUTCOME 3

Explain flow characteristics in the design of a water reticulation system.

SPECIFIC OUTCOME 4

Explain flow and pressure measuring devices and calculate water flows.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

ID	QUALIFICATION TITLE	LEVEL
Core 60189	Further Education and Training Certificate: Wastewater and Water Reticulation Services	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Demonstrate knowledge of leak detection and leak detection programmes***

SAQA US ID		UNIT STANDARD TITLE	
254122		Demonstrate knowledge of leak detection and leak detection programmes	
ORIGINATOR		PROVIDER	
SGB Water Sector			
FIELD		SUBFIELD	
12 - Physical Planning and Construction		Civil Engineering Construction	
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 knowledge of methods of leak detection, and implementation of leak detection methods.

SPECIFIC OUTCOME 2

Demonstrate knowledge of typical leakage rates and causes of leaks.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	60189	Further Education and Training Certificate: Wastewater and Water Reticulation Services	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Plan team work functions and complete reports***

SAQA US ID	UNIT STANDARD TITLE		
254124	Plan team work functions and complete reports		
ORIGINATOR	PROVIDER		
SGB Water Sector			
FIELD	SUBFIELD		
12 - Physical Planning and Construction	Civil Engineering Construction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	4

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
14019	Plan team work functions and complete reports	Level 3	4	Will occur as soon as 254124 is registered

SPECIFIC OUTCOME 1

Plan work tasks in accordance with work policies and procedures.

SPECIFIC OUTCOME 2

Organise required resources in accordance with work plan.

SPECIFIC OUTCOME 3

Assess risks and plan safety requirements in accordance with legislation and work procedures.

SPECIFIC OUTCOME 4

Maintain, complete and submit daily records and reports in accordance with work policies.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	60189	Further Education and Training Certificate: Wastewater and Water Reticulation Services	Level 4