### STAATSKOERANT, 2 NOVEMBER 2004

### No. 1262

### 2 November 2004



### 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

### **Railway and Pipeline Operations**

Registered by NSB 11, Services, publishes the following qualifications and unit standards for public comment.

This notice contains the titles, fields, sub-fields, **NQF** levels, credits, and purpose of the qualifications and unit standards upon which qualifications are based. The qualifications and unit standards can be accessed via the **SAQA** web-site at <u>www.saqa.org.za</u>. Copies may also be obtained from the Directorate of Standards Setting and Development at the **SAQA** offices, Hatfield Forum, 1067 Arcadia Street, Hatfield.

Comment on the unit standards should reach SAQA at the address below **and no** later **than 28** November **2004.** All correspondence should be marked Standards Setting – SGB for Railway and Pipeline Operations and addressed to

> The Director: Standards Setting and Development SAQA Attention: Mr. D Mphuthing Postnet Suite 248 Private Bag X06 Waterkloof 0145 or faxed to 012 - 431 5144 e-mail: mmphuthing@saga.co.za

JOE SAMUELS DIRECTOR: STANDARDS SETTING AND DEVELOPMENT

1. TITLE OF THE C	UALIFICATION: NATIONAL CERTIFICATE IN PIPELINE OPERATIONS
LEVEL:	3
CREDITS:	147
FIELD:	Services
SUBFIELD:	Rail <b>and Pipeline</b>
ISSUE DATE:	
REVIEW DATE:	

### 2. RATIONALE OF THE QUALIFICATION

This qualification reflects the need in the pipeline operations industry for personnel with knowledge, skills and understanding to operate, monitor and control pipeline operations for the bulk transport *o* f liquids (typically petroleum products) in, through and out a pipeline depot.

This qualification reflects the workplace-based needs of pipeline operators working in the pipeline operations industry that is expressed by employers and employees, both now and in the future.

The qualification will provide a means to set standards in the Pipeline Operations industry and would serve to foster professionalism in the Southern African Transport industry to provide a mechanism for regulating the services provided from a quality and professional point of view.

The qualification is the first of three levels in the pipeline operations industry. It can be developed further and will allow learners to progress to other qualifications within the pipeline operations - and transport industry. The qualification form the basis for further learning towards the Further Education and Training Certificate: Pipeline Operations at NQF Level 4.

The qualification focuses on the skills, knowledge, values and attitudes required to ensure further progression. The objective *is* to

- promote the development of knowledge, skills and values that are required in the Pipeline Industry
- release the potential of people
- provide opportunities for people to move up the value chain
- allow access to a National Qualifications Register
- ensure that the quality of education and training is enhanced and be of a world class standard

It will provide the broad knowledge, skills and values needed in the Pipeline industry and will facilitate access to, and mobility and progression within education and training and to progress along a learning path for learners who:

- have worked in the Pipeline Operations Industry for many years, but have no formal qualification
- wish to extend their range of skills and knowledge of the industry so that they can become competent workers in the Pipeline Operations Industry

The Transport sector and people operating within the pipeline operations industry will benefit from this qualification and its competence standards, which are instrumental to the development and recognition of the foundational, practical and reflective competence (applied competence) needed to render effective and efficient pipeline transport services.

These services are essential in and to the following domains:

- Enabling the rendering of a pipeline transport service
- Enabling the rendering of a transport service
- Contributing to economic growth

Central to the qualification is the development of a culture of a safe and efficient pipeline transport service to meet the needs of clients and consumers.

### 3. PURPOSE OF THE QUALIFICATION

The purpose of the Certificate: Pipeline Operations NQF Level 3 qualification **is** to instill and maintain service excellence with the focus on safe and efficient working in the field of pipeline transport services.

A learner certified as competent in this qualification will be able to operate, monitor and control pipeline operations for the bulk transport of liquids (typically petroleum products) in, through and out a pipeline depot safely in accordance with company-specific policies, procedures and instructions.

This includes activities such as:

- sampling, blending, storing, transferring of these products
- controlling, monitoring flows, pressures and volumes
- performing product specification tests
- utilsing pipeline equipment and communication systems
- communicate with peers, customers and members of supervisory / management levels by expressing opinions in spoken and written form
- performing calculations pertaining to estimated times, tank gauging and meter proving

The understanding of the relevant technology is required to empower the learner to make decisions and take responsibility for work in the execution of for example the storing, handling, controlling, monitoring of liquids (typically petroleum products).

The understanding of the context in which the particular tasks will be performed will also enable the learner to conform to safety, health, environmental and quality criteria in the execution of the particularjob. It forms the basis for more advanced learning and could contribute to the full development of the learner, providing recognition within the pipeline operations environment and broader transport sector.

The qualification serves as a entry level qualification in the specialised area of pipeline transport against the backdrop of the transport industry as a whole. The qualification will form part of the learning pathway for persons in the pipeline transport industry.

The skills, knowledge and values demonstrated within this qualification are essential to facilitate access to, mobility and progression within the industry in order to achieve the increased employability and productivity, as well as potential and economic transformation and economic growth in the pipeline industry.

## 4. LEVEL, CREDITS AND LEARNING COMPONENTS ASSIGNED TO THE QUALIFICATION

The fundamental, core and elective leaning components that make up this qualification are listed below

FUNDAMENTAL	CORE	ELECTIVE
7 credits at Level 2	4 credits at Level 2	27 credits at Level 2
37 credits at Level 3	83 credits at Level 3	17 credits at Level 3
44 credits	87 credits	44 credits (Select a minimum of 12)

The total credits for this **qualification** are **175**, of which a minimum **of 143** must be obtained to achieve this qualification.

### 5. ACCESS TO THE QUALIFICATION

Access to the qualification is governed only by the learning assumed to be in place (Literacy, Mathematics and Sciences). A learner can access the total qualification or any individual unit standard and obtain the credits issued against it. Any learner who can provide evidence of the learning assumed to be in pace has open access to this qualification or to its unit standards.

### 6. LEARNING ASSUMED TO BE IN PLACE

The following is the learning assumed to **be** in place for the Certificate: Pipeline Operations NQF Level 3:

Learners accessing this **Certificate** in Pipeline Operations will have demonstrated competence against the fundamental component of learning for:

- Communication/Language NQF Level 2
- Mathematics/Numeracy NQF Level 2
- Science NQF Level 2

### 7. EXIT LEVEL OUTCOMES

On achieving this qualification the learner will be able to:

Exit level outcome 1: Prepare for the movement of product in, through and out of pipeline depots via pipeline routes

Associated Assessment Criteria

- All relevant information as to the status of the depot regarding the preparation of product movement is communicated with all
- ... role players by utilising company operating systems in accordance with company operations policies, procedures and instructions.
- Information is extracted and captured on applicable systems and pipeline equipment is prepared for product movement in accordance with company operations policies, procedures and instructions, and the operations notice.
- Functional personal protective clothing and equipment for the specific operation is identified and used in accordance with company operations policies, procedures and instructions.

- A depot check is performed in accordance with company operations policies, procedures and instructions.
- Exit level outcome 2: Perform a product movement start up at a pipeline depot

Associated Assessment Criteria

- Start up of product movement is performed and related information is communicated to all relevant role players in accordance with company operations policies, procedures and instructions.
- The start up of product movement and pipeline equipment is monitored and related substandard conditions are corrected in accordance with company operations policies, procedures and instructions.
- Information relevant to depot start-up is correctly captured on applicable information systems.
- Exit level outcome 3: Perform product volume control by accurate metering

Associated Assessment Criteria

- All relevant information as to the status of the depot regarding the metering of product is communicated with **all** role players by utilising company operating systems.
- Information relevant to product metering is extracted and captured on applicable systems.
- Functional personal protective equipment for the specific operation is identified and used in accordance with company operations policies, procedures and instructions.
- Metering equipment is checked for functionality and metering proved for accuracy in accordance with company operations policies, procedures and instructions.

Exit level outcome 4: Launch and receive pigs and spheres using launchers and receivers

Associated Assessment Criteria:

- All relevant information as to the status of launching and receiving pigs/spheres is communicated with all role players,by utilising company operating systems.
- Information relevant to the launching and receiving of pigslspheres is extracted and captured on applicable systems.
- Functional personal protective clothing and equipment for the launching and receiving of pigs/spheres is identified and used in accordance with company operations policies, procedures and instructions.
- Pigs/spheres are launched and/or received correctly and unforeseen occurrences are dealt with in accordance with company operations policies, procedures and instructions.

Exit level outcome 5: Determine the volume of product in a tank

Associated Assessment Criteria:

- All relevant information regarding the determining of the tank volume is communicated with all role players by utilising company operating systems.
- Tank gauging procedure is correctly performed, substandard conditions dealt with and volumes are correctly calculated in

- accordance with company operations policies, procedures and instructions.
- Information relevant to tank volume calculations is extracted and captured on applicable systems.
- Functional personal protective clothing and equipment for the gauging of tanks is identified and used in accordance with company operations policies, procedures and instructions.

### Exit level outcome 6: Perform product quality tests

Associated Assessment Criteria:

- Test environment and quality testing equipment is prepared to perform relevant product quality test in accordance with company operations policies, procedures and instructions.
- Relevant product quality tests are performed, results recorded and communicated to all role players.
- Product samples are retained or disposed of correctly in accordance with company operations policies, procedures and instructions.
- Product quality test centre is cleared and made safe in accordance with company operations policies, procedures and instructions.

Exit level outcome 7: Plan and handle transmixture and/or intermixtures at a pipeline depot

Associated Assessment Criteria:

- All relevant information regarding the planning and handling of transmixture and intermixtures is communicated with all role players by utilising company operating systems.
- Information related to the planning and handling of transmixture and/or intermixtures is extracted and captured on applicable information system.
- Functional personal protective clothing and equipment relative to the planning and handling of transmixture and intermixtures is identified and used in accordance with company operations policies, procedures and instructions.
- The transmixture and intermixture is handled in accordance with company operations policies, procedures and instructions.
- The blending of intermixture is planned and handled in accordance with product specifications.

Exit level outcome 8: Implement risk control at a pipeline depot

Associated Assessment Criteria:

- Information as to the risk status of depot is, extracted, captured and communicated to relevant role players.
- Company and legislative regulations pertaining to risk status of depot is applied.
- Relevant emergency plan is activated in accordance with company policies, procedures and instructions. Fire-fighting equipment is identified and used correctly.

Exit level outcome 9: Perform minor maintenance on pipeline operations equipment

Associated Assessment Criteria:

Information as to the scheduled and unscheduled minor maintenance tasks is extracted, captured and communicated to relevant role players.

5

- Scheduled and unscheduled minor maintenance is planned and performed in accordance with company technical instructions.
- Functional personal protective clothing and equipment relative to the scheduled and unscheduled minor maintenance is identified and used correctly in accordance with company operations policies, procedures and instructions.
- Company operating systems to control pipeline equipment for preparing for minor maintenance is utilised correctly.

Exit level outcome 10: Demonstrate an understanding of the pipeline industry and equipment

Associated Assessment Criteria:

- The pipeline transport industry, pipeline terminology, purpose and function of pipeline equipment and company specific operational procedures, policies and instructions are explained and discussed.
- Pipeline operations documentation and reports are generated and/or obtained in accordance with company operations policies, procedures and instructions.

Exit level outcome 11: Perform the shutdown of product movement at a pipeline depot

Associated Assessment Criteria:

- Information regarding the shut down status of product movement in the pipeline depot is extracted, captured and communicated to relevant role players in accordance with the operations notice.
- The shut down status of the pipeline equipment is monitored, substandard conditions are dealt with and the corrective actions <u>applied</u>.
- The pipeline depot and relative pipeline equipment is isolated and made safe in accordance with company operations policies, procedures and instructions.

### 8. CRITICAL CROSS-FIELD OUTCOMES

The critical cross-field outcomes are integrated with the unit standards and assessment criteria **d** each unit standard were drafted to include assessment of the degree to which critical cross-field competence has been attained. Learner competence can be assessed against a single unit standard or, in cases where learners are enrolled on a skills programme, competence may be assessed against the relevant cluster of standards on which the skills programme is based.

Unit Standard Title	Critica standa	ll Cross- Irds	Field Ou	tcomes suj	oported	by the ui	nit
Pipeline Operations unit standards	Problemsolving	Communication	Information evaluation	Organise and manage oneself and one's activities	Teamwork	Use of science and technology	Understand the world as a set of related systems
Demonstrate an	X	X	X	X	X	X	X

The following examples illustrate some of the ways in which this unit standard supports critical cross-field outcomes:

1118 No. 26928

				-1		1	1
understanding of the pipeline industry and							
Implement risk control	×	X	X	X	×	×	X
Plan and handle transmixture and/or intermixtures	×	×	×	×	×	×	×
Perform minor maintenance on pipeline operations equipment	×	×	×	×	×	×	×
Launch and receive pigs and spheres	×	×	×	×	×	×	×
Perform product quality tests	X	×	×	×	×	×	×
Perform product metering	X	X	X	×	×	X	X
Perform the shutdown of product movement at a pipeline depot	×	×	×	×	×	×	×
Determine the volume of product in a tank	×	X	X	×	×	×	×
Perform a product movement start up at a pipeline depot	×	×	×	×	×	×	×
Prepare for the movement of product in, through and out of pipeline depots via pipeline routes	×	×	×	×	×	×	×

### 9. INTERNATIONAL AND NATIONAL COMPARABILITY

The qualification and the content of the standards themselves were the focus of international and national benchmarking, which occurred continually throughout the project, through an open communication process, consultation as well as requested comments.

The following websites had been explored:

- 1. <u>http://apprenticeship.det.nsw.edu..au</u>
- 2. http://www.ntis.uov.au
- 3. http://www.anta.gov.au
- 4. http://www.alis.gov.ab.ca
- 5. http://www.open.ac.uk
- 6. <u>http://www.transportation.org.uk</u>
- 7. http://www.sua.oru.uk
- 8. <u>http://www.nzua.uovt.nz</u>
- 9. http://www.openeguals.ora:uk
- 10. http://www.city-and-guilds.co.uk
- 11. http://www.api-ep.api.org
- 12. http://www.enbridaetechnologv.com
- 73. http://www.saqa.org.za
- 74. http://www.apia.net.a
- 15. http://www.api-ep.api.org

Qualifications, unit standards and institutional bodies had been used for benchmarking thus far:

### NEW ZEALAND QUALIFICATIONSAND UNIT STANDARDS

Employees in New Zealand fulfil a multi functional role – they are responsible for the operating as well as the maintenance aspects (mechanical, electrical) of the pipeline environments. In South Africa however, these functions are divided in two main streams: employees are performing either the operations function or the maintenance function.

The maintenance function in South Africa is sub divided in various sub fields: Mechanical, Electrical, Metering and Instrumentation and Information Technology. Employees in the pipeline industry specialises in the various sub fields. The main function of the Mechanical Technicians is the repair of valves, pumps, mechanical parts of motors, fans, etc. The Electrical Technicians perform maintenance on valve actuators, transformers, overhead circuit breakers, corrosion control, etc. The Metering and Instrumentation Technicians are mainly responsible for the calibration of metering equipment, analogue displays and relevant equipment. InformationTechnologists are mainly responsible for the maintenance of all the computer systems.

The operations function is focussed on the operation of the pipeline; the main responsibility is the transportation of bulk petroleum products from one point to another. There are three different gradings in the operations environment in the South African context – each responsible for different aspects of the pipeline operations. The pipeline controllers are employed at pipeline depots (intake-, delivery- and pump stations) and are mainly responsible for the operations of pipeline equipment, monitoring pressures and flows, equipment limitations, volume and quality control and limited minor maintenance at a specific pipeline depot. The co-ordinator officers are mainly responsible for the pipeline network (consisting of a number of depots) via remote control or by means of a verbal communication network linked to the depots. The pipeline planners are mainly responsible for the scheduling of the transport of pipeline products and constant updating of the schedule.

Other utility groups such as the supply of electricity and telecommunications also support the South African Pipeline Transport industry.

In New Zealand pigs are mainly used for cleaning of the pipeline and for product batch protection. In South Africa pigs are used for cleaning or batching, however spheres are mainly used for batching of product in the pipeline. According to the available information it seems that pigs in New Zealand are physically tracked, whereas in South Africa this is not the case. It appears that the average operating pressure in South Africa are higher than those in New Zealand.

The New Zealand unit standards were generated around refinery processes. In the Southern African context provision is made for the generation of unit standards and qualifications for the chemical industries however unit standards and qualifications for the pipeline industry need to based on the transportation of petrochemical products.

Due to the difference of the product types passed through the pipeline the product quality testing differs vastly as South Africa is still in the process of phasing out leaded petrol and New Zealand does not have synthetic fuels. Product type and company codes used are unique to the South African context.

In both countries statutory regulations impact on the safe operation of the pipelines although different regulations apply e.g. Environmental, Occupational Health and Safety and National Key Point Acts.

### AUSTRALIA QUALIFICATIONS AND UNIT STANDARDS

Similarities could be traced between the operations of the pipeline in South Africa versus Australia. More unit standards for the Australian context exists. Competencies needed to operate the pipeline in Australia are expressed in various unit standards. The existing Australian unit standards expresses the competencies required in the pipeline operations environment in little chunks. No credits were indicated in these unit standards and the levels differ vastly from that in the South African context. Similar competencies are required for the South African context but were captured in less unit standards due to the SAQA requirements in terms of the number of outcomes required per unit standard as well as the credit allocation.

As with the findings in New Zealand the following also apply in the South African context:

- Multi-skilled personnel
- Statutory regulations
- Product types
- Refinery based processes vs. pipeline transportation
- Gas vs. synthetic/liquid fuels

According to the available information it seems that the Australian unit standards and qualifications are more focussed on the operation of gas pipelines.

The Australian Qualification Framework makes provision for different qualifications with regard to the gas industry, for example:

- Certificate II Gas Industry Operations
- Certificate 111 Gas Industry Operations
- Certificate IV Gas Industry Operations
- Diploma Gas Industry Operations
- Advanced Diploma Gas Systems

These qualifications are gas specific, excluding liquid fuels. In the South African context various qualifications on different levels of the National Qualifications Framework were identified to make provision for the competency requirements of the pipeline industry.

### CANADIAN QUALIFICATIONS AND UNIT STANDARDS

### ALBERTA

From the information available in the document it is assumed that Alberta are mainly involved in the oil and gas extraction and storage which is distributed'to refineries by means of the pipeline.

Employees can advance to different occupations in the industry e.g. Utility Workers, Gaugers, Tank Farm Operators and these employees are skilled according to the specific occupational requirements of the various companies in the industry. These employees enter into employment with a specific high school education **as** well as a driver's licence. They are subjected to in house training for progression to higher gradings.

Some of the competencies of the Tank Farm Operators and Gaugers relate to that of the South African Controller, for example both are responsible for the following:

- Routine checks of the pumping station or remote stations
- Take readings and make necessary adjustments
- Keep detailed records of product flow, temperature, density and pressure in the pipeline
- Take samples of product to evaluate quality

- Take readings from meters
- Send and receive pigs
- Calculations for receipts and deliveries of products
- Routing of products
- Perform quality test of product
- Monitoring the metering system

The operators in Alberta are multi-skilled and are responsible for the maintenance aspects of the pipeline equipment, which **is** not the case in the South Africa.

No specific qualifications or unit standards could be accessed.

### ENBRIDGE TECHNOLOGY

Enbridge Technology is a training and technology provider, providing customed design training and consulting services for clients in the oil and gas industry worldwide. A list of the the possible pipeline operations training modules could be accessed, covering both the operations and maintenance aspects, but the contents of these modules could not be accessed (available on a for sale basis only). The modules contain information on how to complete the covered tasks. The courses are designed in accordance with API-approved principles, and the API naming conventions. From the list it seems that the modules cover similar pipeline operations competencies with regard to this specific qualification. The list includes, for example:

- Use Pipeline Pigs
- Gauging a Tank
- Prove Meters
- Taking Tank Temperatures and Samples
- Testing Refined Product Haze and Diesel Flash Points

From the available document, it is clear that a qualification for pipeline operators exists (Pipeline Operator Qualification), however there is no indication whether or not unit standards, levels or credits apply. It seems that the training became into being due to the regulatory requirements for pipeline operations.

### UNITED KINGDOM QUALIFICATIONSAND UNIT STANDARDS

### OPEN UNIVERSITY

With regard to the initial research done on this web site it seems that current occupational infrastructures are diverse and fragmented and include an extensive number of **jobs** roles where competence based standards for pipelines (oil and gas) and gas networks exist, except for the level **4**.

National Certificates as well as Higher National Certificates exist. These qualifications cover various occupational areas such **as** the installation and Construction, Maintenance, Design and Project Management of pipelines (oil and gas) and gas networks. These areas of specialising also exist in South Africa but are not related to this specific qualification.

These pipelines and networks transport highly volatile natural gas and oil in a range of pipe sizes and pressures thus similar to the South African context. These pipelines appear to be dedicated product-specific and no reference **is** made to multi-product pipelines, as is the case in South Africa. **A** high standard of safety and competence is required in terms of the operation of their pipelines, also similar to the South African context.

### CITY AND GUILDS

The site was accessed. Reference was made to oil and gas extraction, petroleum and chemical industries but no documents were available.

### AMERICAN QUALIFICATIONS

### AMERICAN PETROLEUM INSTITUTE

The web site was accessed and various training programmes exist, for example:

- o Introduction to Pipelining
- o Introduction to Oil and Gas Production and Equipment
- o Introduction to Gas Processing
- o Petroleum Industry in Canada
- o Pipeline Environment Inspection
- o Petroleum Safety Training
- o Oil Spill Containment and Recovery
- o Oil Production Operators Course
- o Oil and Gas Production Operator Basics
- o Environmental Perspectives

These courses are in existence but could not be accessed on the web in order to determine more detail. The web site is set up as an advert to training rather than access to available competencies.

However the South African petroleum industry have adopted the American Petroleum Institute (API) standards as well as American Standards of Temperature Measurement (ASTM) and these standards are inter nationally accepted.

### **BELGIUM QUALIFICATIONS**

The Transport SETA (TETA) undertook a visit to Belgium to benchmarking purposes and was requested to investigate the possibility for the existence of unit standards and or qualifications pertaining to pipeline operations. The report back was that no unit standards for pipeline operations were found.

### NATIONAL BENCHMARKING

### SOUTH AFRICAN QUALIFICATIONSAND UNIT STANDARDS

### PETROCHEMICAL QUALIFICATIONS AND UNIT STANDARDS

Qualifications and unit standards related to the petrochemical industry were explored. Various qualifications and related unit standards on different levels of the NQF exist. These qualifications refer to chemical processes and thus process workers rather than the pipeline transportation. A number of the outcomes stated in these unit standards could have been utilised but the range statements limits the equipment used in the industry and could therefore not be uitilised.

### WATER SECTOR QUALIFICATIONS AND UNIT STANDARDS

Qualifications and unit standards related to the water industry were explored and it was found that these unit standards were written for the water industry specifically. Similarities in terms of the maintenance aspects could be related to which has no impact on this specific qualification. The water industry pipelines are

not being operated and therefore the need for operators in this industry does not exist. The commodity (water) transported is a non-hazardous liquid as opposed to the petroleum liquids. The water pipeline is operated at very low pressures whereas the petroleum pipeline working pressure is in the access of 8000 kPa. For the reasons above these qualifications and unit standards are not suitable.

### **GAS NETWORK OPERATIONS**

The Energy SETA funded a project with regards to the generation of unit standards for the operations of gas networks. Some of these workshops were attended but the unit standards generated were gas specific and not appropriate to this qualification. These unit standards make provision for a wide range of competencies, varying from filling and distributing gas cylinders to distribution via gas pipelines. The gas is distributed using compressed air with low pressure whereas the liquid pipeline makes use of centrifugal pumps with high-pressures. There is a similarity between the Metering Systems used; however gas is measured in kilojoules and liquid is measured in litres.

In conclusion, should more information pertaining to benchmarking be required, an in depth benchmarking programme will have to be embarked on which would includes visits to actual sites as the information from the web has been exhausted.

### 10. I NTEGRATED ASSESSMENT

Because assessment practices must be open, transparent, fair, valid, and reliable and ensure that no learner is disadvantaged in any way whatsoever, an integrated assessment approach is incorporated into the qualification.

Learning, teaching and assessment are inextricably linked. Whenever possible, the assessment of knowledge, skills, attitudes and values shown in the unit standards should be integrated.

Assessment of the communication, language, literacy and numeracy should be conducted in conjunction with other aspects and should use authentic Pipeline Operations contexts wherever possible.

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. Where it is not possible to assess the learner in the workplace or on-the-job, 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. During integrated assessments the assessor should make use of formative and summative assessment methods and assess combinations of practical, foundational and reflective competencies (applied competencies).

Assessors and moderators should make use of a range of formative and summative assessment methods. Assessors should assess and give credit for the evidence of learning that has already been acquired through formal, informal and non-formal learning and work experience.

Assessment should ensure that all specific outcomes, embedded knowledge and critical cross-field outcomes are evaluated. The assessment of the critical cross-field outcomes should be integrated with the assessment of specific outcomes and embedded knowledge.

#### Formative Assessment

This kind of assessment will typically take place during training and merely serves to guide the learner towards full competence.

Assessment can be done in any agreed upon method of assessment of the knowledge required to perform the various competencies.

### Summative Assessment

To be allowed access to the final qualifying assessment a learner must show that she/he has reached a level of overall *integrated* competence. The elements of importance here are overall abilities, problem solving capability and safe working. In addition assessors should be satisfied that the learner has achieved that level of competence to be able to take charge of any aspect of pipeline operations.

The learner's ability to demonstrate competence against a particular unit standard, under real-life working conditions and in the presence of an assessor, will be assessed. The summative assessment can also be used as a diagnostic assessment tool aimed at identifying the learner's skills gaps.

### Workplace Assessment

Workplaces are used for assessment purposes provided that the appropriate facilities, tools, equipment, and support systems are available and accessible to both the assessor and the learner. The pipeline operations industry requires workplace assessment for the following reasons:

- Assessment needs to occur in a familiar environment so that the learner **is** not asked to cope with different equipment and a strange environment at the time of assessment.
- Assessment needs to take place at a time and venue mutually agreed to by the assessor and the learner.

### **II** METHODS OF ASSESSMENT

The following methods of assessment have been identified as the preferred measurement and assessment of learner competence in the assessment criteria:

- 1. Written tests
- 2. Practical tests
- 3. Oral assessment methods
- 4. In-situ (on-the-job) observations
- 5. Simulation
- 6. Structured classroom discussions and oral tests

These methods will be carefully selected based on the purpose of the assessment. For example, the written method will be used to assess knowledge or on-job demonstration for practical competence. The assessment must integrate a number of different methods (no less than two of those detailed above) in order to give the assessor reliable and valid proof of competence and evidence of required attitudes.

### 12. RECOGNITION OF PRIOR LEARNING (RPL)

The structure of this Unit Standard-based Qualification makes the recognition of prior learning (RPL) possible, if the learner is able to demonstrate competence in the knowledge, skills, values and attitudes implicit in this Pipeline-Operations Qualification,

Recognition of Prior Learning will be done by means of an Integrated Assessment (see Exit Level Outcomes and associated Assessment Criteria).

The following tools may be used to supplement the above minimum assessment methods:

Valid, reliable and authentic evidence (presented as a portfolio of evidence) from past achievements and experience may serve to supplement the assessment of applied competence. The portfolio should include inter alia:

- 1. Written statements from persons (e.g. current and/or previous employer, colleague, peer, manager, external customers, supervisor) confirming competence of the learner
- 2. Relevant certificates or awards
- 3. Previous assessment records
- 4. Journals/logbook

Learners who already work in the Pipeline Operations industry and who-believe that they possess the competencies to enable them to meet all of the outcomes listed in the unit standards will be able to present themselves for assessment against the unit standards of their choice. Once found competent, these learners will be certified as competent and credited accordingly.

RPL will allow for accelerated access to further learning and gaining of credits towards the qualification. All RPL is subject to quality assurance by the TETA ETQA and is conducted by a registered assessor.

### 13. ARTICULATION POSSIBILITIES

The qualification lends itself to both horizontal and vertical articulation possibilities, which allow mobility and progression for the learner.

Horizontal articulation possibilities lie with other qualifications at the same level in the learning area of transport, logistics and pipeline operations.

Vertical articulation possibilities can be achieved by continuing up the learning pathway in pipeline operations and or transport management.

### 14. CRITERIA FOR REGISTRATION OF ASSESSORS

- Anyone assessing a learner against this qualification must be registered as an assessor with both the ETDP SETA and the Transport SETA ETQA.
- Any institution offering learning that will enable the achievement of this qualification must be accredited as a provider with the relevant ETQA.
- Assessment will be overseen by the TETA ETQA according to the ETQA's policies and guidelines for assessment; in terms of agreements reached around assessment between ETQA's (including professional bodies).
- 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 TETA ETQA for this purpose.

### 15. MODERATION "OPTIONSINCLUDING (RECOMMENDATION OF A MODERATION BODY OR BODIES)

 Anyone moderating the assessment of a learner against this qualification must be must be registered as a moderator with both the ETDP SETA and the Transport SETA ETQA. .

 Moderation of assessment will be overseen by the TETA ETQA according to the ETQAs policies and guidelines for moderation; in terms of agreements reached around moderation between ETQA's (including professional bodies).

# 16. MATRIX OF QUALIFICATION DESIGN INCLUDING: FUNDAMENTAL, CORE AND ELECTIVE UNIT STANDARDS CATEGORISATION; NLRD No. (if available), LEVEL AND CREDIT VALUE

FUNDAMENTAL CATEGORY				
Unit Standard ID	Unit Standard Title	NQF Level	Credit Value	
Mathematical Scier	ices		-	
9013	Describe, apply, analyse and calculate shape	L3	4	
 	and motion in 2-and 3-dimensional space in different contexts		1	
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	L3	2	
14106	Demonstrate understanding of real and imaginary numbers and real number systems	L3	2	
14108	Measure, estimate, calculate physical quantities, explore, describe and represent, interpret, justify geometrical relationships in 2 & 3-dimensional space relevant to the life or workplace of the comm	L3	4	
9011	Use mathematics to investigate and monitor the financial aspects of personal and business issues	L3	5	
TOTAL			17	
Communication/Li	teracy		_	
8968	Accommodate audience and context needs in oral communication	L3	5	
8970	Write texts for a range of communicative contexts	L3	5	
8969	Interpret and use information from texts	L3	5	
8972	Interpret a variety <b>d</b> literary texts	L3	5	
TOTAL			20	
OTHER:				
End User Computin	<u>, jg</u>			
7548 (Fundamental)	Use personal computer operating systems	L2	3	
AIDS:				
. 8494	Demonstrate an understanding of HIV/AIDS and its implication	L2	4	
TOTAL			44	
CORE CATEGORY				
110080	Demonstrate an understanding of occupational health, safety and personal hygiene within the transport industry	L2	4	
	Demonstrate an understanding of the pipeline industry and equipment	L3	17	

Title Matrix: National Certificate in Pipeline Operations NQF Level 3

	Prepare for the movement of product in,	L3	15
	through and out of pipeline depots via pipeline		
	routes		
	Plan and handle transmixture and/or	L3	5
	Intermixtures	10	
	Perform minor maintenance on pipeline	123	3
<del>_</del>	operations equipment		
	Launch and receive pigs and spheres	10	0
	Perform product quality tests	L3	5
	Perform product metering	L3	6
	Perform the shutdown of product movement at a pipeline depot	L3	4
	Determine the volume of product in a tank	L3	3
	Perform a product movement start up at a	L3	14
	pipeline depot		
	Implement risk control	L3	6
TOTAL			87
ELECTIVE CAT	EGORY		
7570	Produce word processing documents for	L3	5
	business		
8000	Apply basic business principles	L3	8
11406	Apply a knowledge of Basic Geographic	L2	7
	Principles		
12483	Perform basic first aid	L2	4
7572	Demonstrate knowledge of and produce	L2	3
	computer spreadsheets using basic functions		
7568	Demonstrate knowledge of and produce word	L2	3
	processing documents using basic functions		
7571	Demonstrate the ability to electronic mail	L2	3
	software to send and receive messages		
7573	Demonstrate ability to use the World Wide	L2	3
	Web		
8035	Processing and controlling documentation	L3	4
12484	Perform basic fire fighting	L2	4
TOTAL	·		44
TOTAL AMOUN	IT OF CREDITS		175

### 17. RULES OF COMBINATION

In order for a learner to be credited with this qualification, he/she must achieve:

- all **17** credits from the Mathematical Sciences unit standards in the fundamental component of learning;
- all 20 credits from the Communication/ Literacy unit standards in the fundamental component of learning;
- all **3** credits from the End User Computing unit standards in the fundamental component of learning;
- all 4 credits pertaining to AIDS in the fundamental component of learning.
- all the **87** credits from the core component of learning; and
- **at** least 12 credits from the elective component of learning, culminating in a total qualification with a minimum credit value of **143** credits.

### 18. UNIT STANDARD TITLES

### UNIT STANDARD TITLES AND ASSOCIATED SPECIFIC OUTCOMES

### DEMONSTRATE AN UNDERSTANDING OF THE PIPELINE INDUSTRY AND EQUIPMENT

Specific Outcome 1:	Explain and discuss the pipeline transport industry
Specific Outcome 2:	Explain and discuss the purpose and function of pipeline equipment
Specific Outcome 3:	Understand pipeline terminology
Specific Outcome 4:	Explain and discuss the purpose of company specific operational procedures, policies and instructions
Specific Outcome 5:	Generate and/or obtain pipeline operations documentation and reports

### **IMPLEMENT RISK CONTROL**

Specific Outcome 1:	Communicate information as to the risk status of depot to relevant
Specific Outcome 2:	role players Extract and capture information on applicable information system relevant to risk status of depot
Specific Outcome 3:	Apply and enforce company and legislative regulations pertaining to risk status of depot
Specific Outcome 4: Specific Outcome 5:	Activate relevant emergency plan Identify and use fire-fighting equipment

### PLAN AND HANDLE TRANSMIXTURE AND/OR INTERMIXTURES

Specific Outcome 1:	Communicate all relevant information as to the handling and controlling of transmixture and/or intermixtures
Specific Outcome 2:	Utilise company operating systems and software to control pipeline equipment for the handling and controlling of transmixture and/or intermixtures
Specific Outcome 3:	Extract and capture information on applicable information system relevant to the handling and controlling of transmixture and/or intermixtures
Specific Outcome 4:	Identify, select and use functional personal protective clothing and equipment for the specific operation and assess, immediate surroundings within the prevailing environment
Specific Outcome 5:	Plan and handle the transmixture and/or intermixture
Specific Outcome 6:	Plan and handle the blanding and/or tanker loading of intermivture
Specific Outcome 6:	Fiantanu nanule the plenuing anu/of tanker loading of intermixture

### PERFORM MINOR MAINTENANCE ON PIPELINE OPERATIONS EQUIPMENT

Specific Outcome 1:	Communicate all relevant information as to the minor maintenance
	tasks with all relevant role players
Specific Outcome 2:	Plan and perform unscheduled minor maintenance
Specific Outcome 3:	Plan and perform scheduled minor maintenance tasks
Specific Outcome 4:	Extract and capture information on applicable information system relevant to scheduled and unscheduled minor maintenance
Specific Outcome 5:	Identify, select and use functional personal protective clothing and equipment for the specific operation and assess immediate surroundings within the prevailing environment
Specific Outcome 6:	Utilise company operating systems and software to control pipeline equipment for minor maintenance(e.g. isolation, testing and draining purposes)

### LAUNCH AND RECEIVE PIGS AND SPHERES

Specific	Outcome 1:	Communicate all relevant information as to the status of launching
Specific	Outcome 2:	and receiving pigslspheres with all role players Utilise company operating systems and software for launching and receiving of pigs/spheres

Specific Outcome 3:	Extract and capture information on applicable information system
	relevant to the launching and receiving of pigslspheres
Specific Outcome 4:	Identify, select and use functional personal protective clothing and
	equipment for the specific operation and assess immediate
	surroundings within the prevailing environment
Specific Outcome 5:	Launch pigs/spheres in accordance with company policies and
	procedures and deal with unforeseen occurrences
Specific Outcome 6:	Receive pigs/spheres in accordance with company policies and
	procedures and deal with unforeseen occurrences

### PERFORM PRODUCT QUALITY TESTS

- Specific outcome 1: Communicate all relevant information with regard to the quality of product testing with all role players
- Specific outcome 2: Utilise company product quality testing equipment and software
- Specific outcome 3: Prepare and assess test environment
- Perform product quality tests Specific outcome 4:
- Specific outcome 5: Retain or dispose product samples
- Specific outcome 6: Man and unman product quality test centre

### PERFORM PRODUCT METERING

Specific outcome 1:	Communicate all relevant information as to the status of the depot regarding product metering with all role players
Specific outcome 2:	Utilise company operating systems and software to control metering equipment
Specific outcome 3:	Extract and capture information on applicable information system relevant to product metering
Specific outcome 4:	Identify, select and use functional personal protective equipment for the specific operation and assess immediate surroundings within the prevailing environment
Specific outcome 5: Specific outcome 6:	Perform a product metering equipment check Prepare and perform product metering

. .

### PERFORM THE SHUTDOWN OF PRODUCT MOVEMENTAT A PIPELINE DEPOT

- Communicate relevant information regarding the shut down status of Specific outcome 1: product movement in the pipeline depot with all relevant role players Specific outcome 2: Shut down product movement by utilising company operating systems, software and pipeline equipment
- Specific outcome 3: Deal with substandard conditions and implement the corrective actions related to the shut down of the pipeline equipment and product movement
- Specific outcome 4: Monitor the shut down status of the pipeline equipment
- Specific outcome 5: Extract and capture information on applicable information system relevant to the shut down of pipeline equipment and unmanning of depot

### DETERMINE THE VOLUME OF PRODUCT IN A TANK

Specific outcome 1: Communicate relevant information regarding the determining of the tank volume with all relevant role players

- Specific outcome 2: Capture determined tank volumes on applicable information system
- Specific outcome 3:
- Perform a tank dipping procedure Deal with substandard conditions and implement the corrective actions Specific outcome 4: related to the determined tank volume

### PERFORM A PRODUCT MOVEMENT START UP AT A PIPELINE DEPOT

Specific outcome 1: Start up product movement by utilising company operating systems, software and pipeline equipment

Specific Outcome 2:	Communicate relevant information regarding the start-up status of product movement in the pipeline depot with all relevant role players
Specific Outcome 3:	Deal with substandard conditions and implement the corrective actions related to the start up of the pipeline equipment and initial product movement
Specific Outcome 4:	Monitor the initial performance of the pipeline equipment and product movement
Specific outcome 5:	Capture information on applicable information system relevant to the start up of pipeline equipment and initial product movement

### PREPARE FOR THE MOVEMENT OF PRODUCT IN, THROUGH AND OUT OF PIPELINE DEPOTS VIA PIPELINE ROUTES

Specific outcome 1:	regarding the preparation of product movement with all role players
Specific outcome 2:	Utilise company operating systems and software to control pipeline equipment and routes
Specific outcome 3:	Extract and capture information on applicable information system relevant to the preparation of product movement
Specific outcome <b>4:</b>	Identify, select and use functional personal protective clothing and equipment for the specific operation and assess immediate surroundings within the prevailing environment
Specific outcome <b>5</b> :	Perform a depot check effectively for the preparation of product movement
Specific outcome 6:	Prepare pipeline equipment and line-up the product movement route

19

٦

٠,

### SUUTH AFRICAN QUALIFICATIONS AUTHORITY



Title: National Certificate: Rail Transport: Passenger Services at NQF level 3

Field: Services

Subfield: Rail and Pipeline Operations

- NQF level: 3
- Credits: 130

### Rationale for the Qualification

The primary purpose of this qualification is *to* provide qualifying learners with a range of skills in acquiring, interpreting and applying rail passenger transport principles in the delivery of customer services.

The learner must be able to interpret available information and provide a range of responses to familiar problems, based on limited discretion and judgment, and under general supervision and quality checking.

The following will ensure portability and a nationally recognised qualification that will -

- ensure safety of passengers;
- ensure better company asset utilisation and control;
- ensure economic growth by ensuring income;
- relieve peak traffic from the roads; and
- ensure an economical rail passenger service as a preferred mode of transport.

The qualification contributes to the establishment of a learning pathway through which the individual can embark and build on a career pathway. Learners will be able to progress to a nationally recognised qualification in the rail passenger environment through the various skills programmes that will be designed around clusters of unit standards that are the building blocks of this qualification.

Level, credits, minimum credits required at specific level and learning components assigned to the qualification

The total number of credits for the Fundamental and Core standards is **124**. The MINIMUM number of credits inclusive of at least TWO Elective standard is **130**. The MAXIMUM number of credits inclusive of ALL Elective standards is **143**.

	FUNDAMENTAL	CORE	ELECTIVES	TOTAL
LEVEL 1	8			8
LEVEL 2	16			16
LEVEL3	36	52	15	103
LEVEL4		12	4	16
	60	64	19	143

### Access to the Qualification:

Access to the qualification is only limited to those requirements described under Learning Assumed to be in Place. The operational environment that qualified learners could operate in and may pose certain requirements in terms of physical fitness.

### Purpose of the Qualification

A learner qualifying in this qualification will be able to serve, interact, supervise and plan in the rail passenger environment to ensure a safe and economical passenger service.

A learner who has achieved this qualification will have extensive theoretical and practical knowledge and skills to satisfy customer needs when supplying correct information, selling tickets and rendering supplementary services as required. This qualification will also form the platform to proceed into the HET band, e.g. Advanced certificate: Rail Transport: Passengers, Transport Management and Transport Logistics Management.

The following NQF principles will be realised through the availability of a nationally recognised qualification for rail passenger services:

- 9 Progression: Learners may go to the next level on the framework once they have built up the required number of credits (in acceptable combinations) needed to get the qualification
- Portability: Learners will be able to retain credits for certified areas of competence regardless of the rail passenger handling context they move to, while the elective standards provide for a contextual focus.
- Access: This qualification and the other planned rail passenger handling qualifications will make it possible for learners to enter and exit at levels of education and training that make sense from a learning pathway point of view. Access is only limited to the specifications under learning assumed to be in place.
- Integration: The qualification ensures a degree of integration of education and training, theory and practice and academic and technical/vocational.
- RPL: Through assessment the proposed qualification will allow persons to get recognition for the knowledge and skills in rail passenger handling that they already have.
- Flexibility: The availability of the qualification will make it possible for learners to reach the same outcome through different learning situations – formal, informal, learnerships or skills programmes.
- 9 Guidance of learners: Qualified trainers will guide learners who need to make choices around careers and learning in this field and related fields.
- Refevance: The qualification is designed in such a way as to provide for a match between what is taught and trained, and what learners need in order to be employed.

- 9 **Credibility:** Through benchmarking the standards writing team has attempted to ensure that the standards and qualification for rail passenger handling have national and international credibility and recognition,
- 9 **Standards and quality:** The national standards and qualification in rail passenger handling provide a benchmark to ensure good quality education and training. Assessors may use these standards as a base for assessing learners fairly and equally.
- Legitimacy: Every effort has been made to ensure that any group of persons with an interest in rail passenger handling participated in the design and writing of the standards and qualifications
- Articulation: Through the articulation possibilities associated with this qualification learners are allowed to move between work and learning contexts provided they have obtained the relevant credits.

### Learning assumed to be in place

It **b** assumed that learners who wish to undertake learning towards achievement of this qualification will have the necessary mathematical and communication skills at NQF level 2. Learners must be able to study independently and manage their own study programme and time.

### Exit level outcomes

Unit Standard Title				al Cros ted by	satield ( the Unit	Dulteomi Standa	es aliols	
Unit Standard Title	Solve problems / Make	Teamwork	Self Organisation	Information evaluation	Communicati	Science & Technology	Inter relatedness of Systems	Personal Development:
Communicating and conducting interpersonal relations in industry	X	X	x	X	x			X
Demonstrate knowledge and understanding of HIV/AIDS in a workplace, and its effects on a business sub-sector, own organisation and a specific workplace	X	X	x	X	X	<b>X</b> .	<b>X</b>	X
Follow grievance procedures	X		X	X	<b>X</b>			X
Adhere to disciplinary code	X		X	X	X			<b>X</b>
Verify train tickets	X	<b>X</b> .	X	X	X	X	X	Χ.
Handle customer requests/complaints and address customer needs	X	X	<b>X</b> -	X	X	X	X	X
Sell rail passenger tickets	X	X	X	Х	<b>X</b> -	X	X	X
Obtain and utilise information	X	X	X	X	X	X	X	X
Demonstrate an understanding of cultural awareness in the workplace.	X	X	x	X	X			X
Handle rail passenger emergency plan	X	X	X	X	X	X	X	X
Handle rail passenger claims/refunds	X	X	X	X	X	X	<b>X</b>	X
Supervise activities in a rail passenger environment	X	x	x	X	X	X	x	X
Control depot budget	X	X	X	X	X	X	X	X
Handle rail passenger luggage	X	X	X	X	X	X	X	X
Handle rail passenger computerised reservations	X	X	x	X	. <b>X</b> .	X	X	X
Control safe custody of passenger belongings	X	X	X	X	X	X	X	X
Load/off load vehicles into or from a railway motorcar truck	X	X	X	X	X	X	X	X
Instil in myself a personal marketing culture	X	X	X	X	X	X	X	X

### On achieving this qualification learners can -

- 9 Communicate effectively, orally and/or in writing, with different role players, applying principles of communication;
- 9 Demonstrate an understanding of cultural awareness in the workplace;
- Demonstrate knowledge and understanding of HIV/AIDS in a workplace, and its effects on a business sub-sector, own organisation and a specific workplace;
- 9 Communicating and conducting interpersonal relations in the transport industry;
- 9 Handle customer requests/complaints and address customer needs.; obtain and utilise information for the required service;
- 9 Sell rail passenger tickets, handle claims/refunds, verify tickets, handle luggage and cloakroom requirements and handle emergency plan for rail passengers;
- 9 Identify learning strategies to acquire and improve the various skills and capabilities required of a rail passenger supervisor;
- Explain the importance, role and regulations of the rail passenger environment;
- 9 Be able to execute the tasks in a team context with various role players in the work environment.

### Assessors should ensure that the learner demonstrates an ability to consider a range of options, make decisions about and demonstrate practical competence in terms of the following:

- 9 Communication and cultural awareness in the workplace and when selling tickets
- 9 HIV/AIDS in the workplace and its effects on the organisation and the narrower work environment
- 9 Routine problem solving, demonstrating a broad knowledge base and basic analytical skills with respect to rail transport policy and procedures
- 9 Correct application of theoretical concepts and approaches to the selling of tickets, luggage classification, cloakroom requests and the various abnormalities, which may occur during sales.
- 9 Correct application of theoretical concepts and approaches to communicating and conducting interpersonal relations in the transport industry, handling of customer requests / complaints and addressing customer needs, obtaining and utilising information for the required service.
- 9 Task execution in a team context with various role players in the work environment.

### International Comparability

International and national benchmarking was conducted throughout the standards writing process. The internet site http://www.ntis.gov.au was used for research and to obtain the relevant information on international qualifications.

The Australian National Training Authority (ANTA) was used to benchmark the unit standards and qualifications proposed here. The ANTA qualification on rail passengers is on a qualifications framework level **3**, and when compared with the proposed qualification an 80 % similarity is evident in terms of the unit standards. This is true in terms of the outcomes as well as the assessment criteria.

### Integrated assessment

The proposed qualification requires learners to demonstrate competence on the particular unit standards as well as their ability to integrate the competence specified in each unit standards, thus showing the extent to which they have achieved the overall outcomes expressed in the rail passenger handling qualification.

The purpose of the integrated assessment is therefore to gather evidence on the extent to which knowledge, skills and values have been acquired and the critical cross-field outcomes incorporated into the assessable performance.

Assessors are required to conduct formative and summative assessments to assess qualifying learners in terms of applied competence.

Recognition of prior learning must be provided for as a means to compare the previous learning and experience of a learner (howsoever obtained) against the learning outcomes required for a this rail passenger handling qualification. Regardless of where and how the learner has achieved the learning, if such learning meets the requirements of this qualification (or part thereof), it could be recagnised for credits.

### Recognition & Prior Learning

Valid, reliable and authentic evidence (presented as a portfolio of evidence) from past achievements and experience may serve to supplement the assessment of applied competence. The qualification may be acquired only in PART through RPL. A summative, integrated assessment at the level of the qualification will need to be completed by the RPL applicant. The qualification's exit level outcomes and associated assessment criteria provide the standard when determining whether a candidate does meet all (or part) of the qualification for the attainment of credits.

All recognition of prior learning is subject to quality assurance by the relevant accredited ETQA and is conducted by a registered assessor.

### **Articulation Possibilities**

This Rail Transport, Passengers qualification has been developed for transformed practice across the' rail passenger industry and will provide articulation possibilities with a range of qualifications: There **is** potential articulation with passenger handling qualifications in other transport modes and with qualifications in customer services in other sub-fields. There is also potential for articulation with qualifications at a higher **NQF** level, e.g. Transport Management qualifications and **Supply** Chain Management qualifications.

### **Criteria for Registration of Assessors**

- 1. Integrated assessment of learner competence against this qualification may only be undertaken by an assessment agency or assessor registered with the relevant ETQA/s.
- 2. An assessor will be registered to design, plan and conduct assessments against the qualification and /or unit standards based on his/her proven competence in terms of the qualification and/or the unit standards as well as any other requirements for registration set by the relevant ETQA.
- 3. Any institution offering learning that will enable achievement of this qualification must be accredited as a provider by the relevant ETQA, and the learning programmes as well as assessment materials approved in terms of their alignment with the registered qualification and unit standards.
- 4. Moderation of assessment will be done by the relevant ETQA as prescribed.

### Moderation

**SAQA** and its accredited agencies will ensure that the mechanisms and bodies for internal and **external** moderation of learner achievement and of institutions providing the learning opportunities meet the .requirements for transparency and the development of the field, sub-field and the **NQF**.

Moderation of the assessment process and technical correctness of the assessor's judgement must be done by a person who has been specialising in Rail Passenger Services and who has been certified as **competent** against the National Certificate and which must include the relevant standards that the learners will be assessed against as well as being a registered moderator.

1

credi	
130	
- 8	
NQF	
Services	
Passenger	
Rail	
2.	
Certificate	
National	

ş

Component	Level 1			ave  2		
	Proposed unit standard title	I aval	Credit	Dronced unit standard titla		
Fundamental	Parform hasin life support and/or first aid				Level	Creat
	Drocedures in emergencies 9823		۵	Operate a PC system 7547	2	9
	Apply basic fire fighting techniques 11075	-	ო	Use a PC operating system 7548	2	
				Use a PC peripherals 7566	2	c.
				Demonstrate an understanding of	0	
					V	4
				occupational health, safety and personal		
				hvgiene within the transport industry 110080		
			c			
			ά			16

component	Level 3			Level 4		
	Proposed unit standard title	Level	Credit	Pronosed unit standard title		C-ndit
Fundamental	Accommodate audience and context needs in oral	3	5		Level	Cledic
	communication 8968		1			
	Interpret and use information from texts 8969	9	5			
•	Write texts for a range of communicative contexts	3	2			
	8970		•			
	Use language and communication in occupational	3	5			
	learning programmes 8973		1			
•	Demonstrate an understanding of the use of	6	2			
	different number bases and measurement units		1	•		
	and an awareness of error in the context of					•
	relevant calculations 9010					
	Use mathematics to investigate and monitor the	0	5			
	financial aspects of personal and business issues					
	9011					
	Investigate life and work related problems using	0	5			
	data and probabilities 9012		)			
	Describe, apply, analyse and calculate shape and	8	4			
	motion in 2 and 3 dimensional space in different					
	contexts 9013					
		c.	36			

### STAATSKOERANT, 2 NOVEMBER 2004

No. 26928 1137

Component	Level 3					
ero'	Dronorod unit standard title	-	:	Level 4		
900	Froposed unit standard title	Level	Credit	Proposed unit standard title	Level	Credit
	Communicating and conducting interpersonal relations in industry 7995	e	10	Supervise activities in a rail passenger environment	4	12
	Demonstrate knowledge and understanding of	6	4			
	HIV/AIDS in a workplace, and its effects on a					<u>.</u>
	business sub-sector, own organisation and a			-		
	specific workplace 13915					
	Follow grievance procedures 14636	e	-			
	Adhere to disciplinary code 14633	3	-			
	Verify train tickets	3	0			
	Handle customer requests/complaints and	0	9			
-	address customer needs					
	Sell rail passenger tickets	3	15			
	Obtain and utilise information	3	6			
	Demonstrate an understanding of cultural	3	4			
	awareness in the workplace	•				
	Handle rail passenger emergency plan	3	3		$\left  \right $	
	Handle rail passenger claims/refunds	3	2			
			52			10
						-
Lomponent	Level 3			Level 4		
	Proposed unit standard title	Level	Credit	Pronosed unit standard title	love	Crodit
Elective	Control depot budget 14645	8	2	Instill in myself a personal marketing	4	4
	Handle rail passenger luggage	3	3			T
	Handle rail passenger computerised reservations	3	4			
	Control safe custody of passenger belongings	3	2			
	Load/off load vehicles into or from a railway motorcar truck	с С	4			
			Ļ			
		_	15			4
						•

.

.

1138 No. 26928

### GOVERNMENT GAZETTE, 2 NOVEMBER 2004

٦

^

Unit	standards for Rail Passenger Services NQF Level 3
	Unit Standards at NQF Level 1
9823 110075	Perform basic life support and/or first aid procedures in emergencies. Apply basic fire fighting techniques.
	Unit Standards at NQF Level 2
7547 7548 7566 110080	Operate a PC system. Use a <b>PC</b> operating system. Use a PC peripherals. Demonstrate an understanding of occupational health, safety and personal hygiene within the transport industry.
	Unit Standards at <b>NQF</b> Level <b>3</b>
8968 8969	Accommodate audience and context needs in oral communication. Interpret and use informationform texts.
8970 8973 9010	Use language and communication in occupational learning programmes. Demonstrate understanding of the use of different number bases and measurement units and an awareness of error in the context of relevant calculations.
9011	Use mathematics to investigate and monitor the financial aspects of personal and business
9012 9013	Investigate life and work related problems using data and probabilities. Measure, estimate and calculate physical quantities and explore, describe and represent, interpret and justify geometrical relationships in two and three-dimensional space relevant to the life or workplace of the community
7995 13915	Communicating and conducting interpersonal relations in industry. Demonstrate knowledge and understanding of HIV/AIDS in a workplace, and its effects on a business sub-sector, own organisation and a specific workplace.
14633 14636 ID	Adhere to DisciplinaryCode. Follow Grievance Procedures. Verify train tickets.
ID ID ID	Handle customer requests/complaints and address customer needs. Sell rail passenger tickets. Obtain and utilise information.
ID ID ID 14645	Demonstrate an understanding of cultural awareness in the workplace. Handle rail passenger emergency plan. Handle rail passenger claims and refunds. Control depot expenditure budget Handle rail passenger luggage
ID ID ID	Handle rail passenger computerised reservations. Control safe custody of passenger belongings. Load/off load vehicles into or from a railway motorcar truck
	Unit Standards at NQF Level 4.

IDSupervise activities in a rail passenger environment10021Instill in myself a personal marketing culture

(

### Unit Standards and specific outcomes at NQF Level

9823 Perform basic life support and/or first aid procedures in emergencies

Specific outcome 1	Demonstrate an understanding of emergency scene management
Specific outcome 2	Demonstrate an understanding of elementary anatomy and physiology
Specific outcome 3	Assess an emergency situation
Specific outcome 4	Apply appropriate first aid procedures to the life-threatening situation where possible
Specific outcome 5	Recognise and explain emergency situations that require CPR and AR
Specific outcome 6	Perform CPR and AR
Specific outcome 7	Recognise and name common injuries
Specific outcome 8	Treat common iniuries

110075 Apply basic fire fighting techniques

Specific outcome 1	Identify different types of fires.
Specific outcome 2	Understand, explain and practice fire prevention.
Specific outcome 3	Operate basic fire fighting equipment.
Specific outcome 4	Perform basic fire fighting procedures.

### Unit Standards and specific outcomes at NQF Level 2

### 7547 Operate a PC system

Specific outcome 1	Describe the hardware components of a personal computer.
Specific outcome 2	Operate the hardware components of a personal computer.
Specific outcome 3	Maintain the hardware components of a personal computer.
Specific outcome 4	Perform personal computer operating system operations.
Specific outcome 5	Describe personal computer software.
Specific outcome 6	Describe computer data storage.
Specific outcome 7	Manage computer files.
Specific outcome 8	Operate a printer.

### 7548 Use a PC operating system

Specific outcome 1 Show an understanding of the purpose and nature of a computer operating system. Specific outcome 2 Perform system configurations, stiffy operations and file conversion.

7566 Use a PC peripherals

Specific outcome 1 Describe a range of computer peripherals.

Specific outcome 2 Operate a range of personal computer peripherals.

Specific outcome 3 Maintain the hardware components of personal computer peripherals.

110080 Demonstrate an understanding of occupational health, safety and personal hygiene within the transport industry.

Specific outcome 1 Demonstrate an understanding of personal health, safety and environmental legislation. Specific outcome 2 Demonstrate an understanding of safe working practices in the transport environment. Specific outcome 3 Understand safety and or security emergency procedures.

Unit Standards and specific outcomes at NQF Level 3

8968 Accommodate audience and context needs in oral communication

Specific outcome 1	Interact successfully with audience in oral communication
Specific outcome 2	Use strategies that capture and retain the interest of an audience.
Specific outcome 3	Identify and respond to manipulative use of language.

8969 Interpret and use information from texts

Specific outcome 1	Use a range of reading and viewing strategies to understand the literal meaning of specific
	texts.
Specific outcome 2	Use strategies for extracting implicit messages in texts.
Specific outcome 3	Respond to selected texts in a manner appropriate to the context.
On a sitia sustanana A	Even and even a second

Explore and explain how language structures may influence a reader. Specific outcome 4

8970 Write texts for a range of communicative contexts

S	pecific outcome ´	1	Write for a spec	ified audience and p	purpose.
---	-------------------	---	------------------	----------------------	----------

- Specific outcome 2 Use language structures and features to produce coherent and cohesive texts for a wide range of contexts.
- Specific outcome 3 Draft own writing and edit to improve clarity and correctness.

8973 Use language and communication in occupational learning programmes

Access and use suitable learning resources. Specific outcome 1

- Specific outcome 2 Use learning strategies.
- Manage occupational learning materials. Specific outcome 3
- Specific outcome 4 Conduct basic research and analyse and present findings.
- Specific outcome 5 Function in a team.
- Specific outcome 6 Reflect on how characteristics of the workplace and occupational context affect learning.
- 9010 Demonstrate understanding of the use of different number bases and measurement units and an 'awareness of error in the context of relevant calculations

Specific outcome 1	Convert numbers between the decimal number system and the binary number system.
Specific outcome 2	Work with numbers in different ways to express size and magnitude.
Specific outcome 3	Demonstratethe effect of error in calculations.

ne 3 nonstratet **9011** Use mathematics to investigate and monitor the financial aspects of personal and business issues

Specific outcome 1	Use mathematics to investigate and interpret business budgets with respect to income
	and expenditure.
Specific outcome 2	Use simple and compound interest to make sense of and define a variety of situations.

- Specific outcome 2 Use simple and compound interest to make sense of and define a variety of Specific outcome 3 Use mathematics to debate aspects of remuneration in the workplace.
- 9012 Investigate life and work related problems using data and probabilities
- Specific outcome 1 Pose questions, collect and organise data.
- Specific outcome 2 Represent, analyse and interpret data using various techniques to investigate real-life and work problems.
- Specific outcome 3 Use random events to explore and apply probability concepts in simple life and work related situations.
- **9013** Measure, estimate and calculate physical quantities and explore, describe and represent, interpret and justify geometrical relationships in **two** and three-dimensional space relevant to the life or workplace **of** the community
- Specific outcome 1 Measure, estimate and calculate physical quantities in practical situations relevant to the adult in life or the workplace.
   Specific outcome 2 Explore, describe and represent, interpret and justify geometrical relationships and conjectures to solve problems in two and three dimensional geometrical situations.
- **7995** Communicating and conducting interpersonal relations in industry.

Specific outcome 1	Select and use a communication medium with indusfry.
Specificoutcome 2	Identify the specific requirements and styles.
Specific outcome 3	Choose interpersonal behavioural choices appropriate to occupational situations.
Specific outcome 4	Regularly review the communication networks.

**13915** Demonstrate knowledge and understanding of **HIV/AIDS** in a workplace, and its effects on a business sub-sector, own organisation and a specific workplace.

Specific outcome 1
Specific outcome 2
Specific outcome 3
Specific outcome 3
Specific outcome 4
Specific outcome 5
Know what behaviour is safe and what behaviour carries the risk of HIV transmission.
Know what guidelines and assistance are available to support workers with HIV/AIDS
Know and understand the implications of the HIV/AIDS pandemic

### 14633 Adhere to Disciplinary Code

- Specific outcome 1 Define the need for disciplinary codes in a company.
- Specific outcome 2 Explain the infringements that lead to disciplinary action.
- Specific outcome 3 Describe the procedures that must be followed when a disciplinary process is in progress.
- Specific outcome 4 Describe the actions that can be followed to appeal against a disciplinary charge.

### 44636 Follow Grievance Procedures

Specific outcome 1	Explain the need for company-specific grievance procedures.
Specific outcome 2	Explain the situations that lead to a grievance according to company-specificinstructions.
Specific outcome 3	Describe the company-specific procedures that must be followed when a grievance process is in progress.
Specific outcome 4	Describe the company-specific procedures that can be followed to appeal against a grievance reply.

ID: Verify train tickets.

1

4

(

t

Specific outcome 1Understand the Work environment and provide information when requested.Specific outcome 2Identify and check validity of various tickets.Specific outcome 3Handle expired tickets.Specific outcome 4Address holders of non-valid tickets. (Misuse of tickets)	cific outcome 1 Understand th cific outcome 2 Identify and c cific outcome 3 Handle expire cific outcome 4 Address hold	ne work environment and provide information when requested. heck validity of various tickets. ed tickets. ers of non-valid tickets. (Misuse of tickets)	, .
--	--	--	-----

ID: Handle customer requests/complaints and address customer needs.

Demonstrate an understanding of the company specific basic business principles.
Demonstrate an understanding of the company specific policies/procedures when dealing
with customers.
Handle customer requests and/or complaints according to company specific policies and procedures

ID: Sell rail passenger tickets.

Specific outcome 1	Handle cash at a ticket sales point.
Specific outcome 2	Operate ticket-issuing equipment.
Specific outcome 3	Adhere to safety procedures and policies when handling cash at a sales point.
Specific outcome 4	Complete necessary documents for cash handling.
Specific outcome 5	Obtain necessary applicable stock for equipment use.

D: Obtain and utilise information.

Specific outcome 1	Obtain operational business related information.
Specific outcome 2	Record and acknowledge obtained information in accordance with company specific
Specific outcome 3 Specific outcome 4	instructions and procedures. Evaluate obtained information. Communicate information to relevant stakeholders.

ID: Demonstrate an understanding of cultural awareness in the workplace.

Specific outcome 1	Explain the importance of being knowledgeable about the different cultures in the workplace/work environment.
Specific outcome 2	Describe the main population groups and their culture.
Specific outcome 3	Explain the importance of the correct communication between customers/ colleagues of different cultures.
Specific outcome 4	Demonstrate consideration for cultural norms and differences of main population groups.

.

### 1144 No. 26928 GOVERNMENT GAZETTE, 2 NOVEMBER 2004

D: Handle rail passenger emergency,plan.

Specific outcome 1	Explain an understanding of the company specific emergency plan.
Specific outcome 2	Explain an understanding of the classification of emergency situations that can occur according to the company specific plans.
Specific outcome 3 Specific outcome 4	React to emergency situations according to the company specific emergency plans. Communicate information with regard to the specific emergency situations and company- specific emergency plans.

٦

١

**ID:** Handle rail passenger claims and refunds.

Specific outcome 1	Handle valid claims.
Specific outcome 2	Handle valid refunds for rail passenger tickets.
Specific outcome 3	Handle claims for injuries/fatalities.

14645 Control depot expenditure budget

Specific outcome 1	Distinguish between capital expenditure and an operating budget.
Specific outcome 2	Identify the components of a depot-operating budget.
Specific outcome 3	Discuss the control measures of a depot-operating budget.
Specific outcome 4	Interpret the financial statements received for the depot-operating budget

**ID:** Handle rail passenger luggage.

Specific outcome 1	Demonstrate an understanding of rail passenger luggage.
Specific outcome 2	Receive <b>rail</b> passenger luggage according to company specific instructions and procedures.
Specific outcome 3	Handle rail passenger luggage en route/destination according to company specific instructions and procedures.
Specific outcome 4	Handle unclaimed itemslgoods.

ID: Handle rail passenger computerised reservations.

- Specific outcome 1 Demonstrate an understanding of the relevant services and facilities.
- Specific outcome 2 Use and update the reservation system in accordance with organisational procedures.
- Specific outcome 3 Distribute updated and final train reservation lists.
- Specific outcome 4 Determine train compilation that conforms to reservation needs.

**ID:** Control safe custody of passenger belongings.

- Specific outcome 1 Demonstrate an understanding of passenger belongings according to company-specific instructions.
- Specific outcome 2 Receive passenger belongings for safeguarding in a cloakroom.
- Specific outcome 3 Hand back passenger belongings that were safeguarded in a cloakroom.

Specific outcome 4 Handle unclaimed itemslgoods.

### ID: Load/off load a vehicle into or from a railway motorcar truck.

Specific outcome 1	Demonstrate knowledge relating to the loading of a vehicle into a railway motorcar truck according to company specific instructions and procedures.
Specific outcome 2	Prepare a railway motorcar truck for the loading of a vehicle according to company specific instructions and procedures.
Specific outcome 3	Load a vehicle into a railway motorcar truck according to company specific instructions and procedures.
Specific outcome 4	Deliver a vehicle at the destination according to company specific instructions and procedures.

### Unit Standards at NQF Level 4

### ID: Supervise activities in a rail passenger environment

r

(

Specific outcome 1	Check administration functions according to company specific policies and procedures
Specific outcome 2	Verify accounting process according to company specific instructions and procedules.
Specific outcome 3	Maintain a safe environment for employees and rail passenger according to specific safety instructions.
Specific outcome <b>4</b> Specific outcome <b>5</b>	Initiate special actions according to company specific requirements and instructions. Handle disciplinary actions and grievance procedures according to company specific policies and procedures.
10021 Instill in myself a personal marketing culture	

•

•

Specific outcome 1Identify and define what marketing is.Specific outcome 2Identify marketing principles and concepts.Specific outcome 3Identify the benefits of instilling in self a Marketing Culture.Specific outcome 4Persuade others of the benefits of a marketing culture.

••

Specific outcome 2 Specific outcome 3 Specific outcome 4