Assessment Guide for Assessors & Facilitators

Water Quality

Level 2

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Title:		**Monitor Water Quality**					
Applied Title:		**Monitor Water Quality in Citrus Production**					
Field:		Agriculture and Nature Conservation					
Sub-Field:		Primary Agriculture					
SETA (SGB):		AgriSETA					
Skills Area:		Water Quality					
Context:		Citrus Production					
US No:	116077	**Level:**	2	**Credits:**	3	**Notional Hours:**	30
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Based on the Production Guidelines of:

Supported by:

Unit standard alignment and assessment tool development:
Cabeton Training and Development

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Directions

Please Note: There is a separate assessment guide for the learner. The learner must use this guide to prepare himself / herself for the assessment.

This assessment guide contains all necessary activities and instructions that will enable the assessor and learner to gather evidence of the learner's competence as required by the unit standard. This guide was designed to be used by a trained and accredited assessor who is registered to assess this specific unit standard as per the requirements of the AgriSETA ETQA.

Prior to the delivery of the program the facilitator and assessor must familiarise themselves with content of this guide, as well as the content of the assessment guide for learners.

The assessor, facilitator and learner must plan the assessment process together, in order to offer the learner the maximum support, and the opportunity to reflect competence.

The policies and procedures that are applicable during the execution of this assessment are available on the website of the Citrus Academy, contained in a document named Policies and Procedures for Assessment, and must be strictly adhered to. The assessor must familiarise himself with this document before proceeding.

This guide provides step-by-step instructions for the assessment process of:

US No:	116077	**Level:**	2	**Credits:**	3

The step-by-step instructions agree and are conducted in concert with the steps described in the learner assessment guide. The steps are as follows:

Step	***Description***	***Timeframe***
1	Pre-Assessment Briefing and Checklist	Before delivery of program
2	Learner Declaration of Authenticity	Before delivery of program
3	Diagnostic Assessment of Learning Assumed to be in Place	Before delivery of program
4	Assessment Plan for Gathering of Evidence	Before delivery of program
5	Learner Formative Assessment Activities	During delivery of program, assessment after delivery of program
6	Summative Poster Presentation	After delivery of program
7	Integrated Summative Assessment Tool	After delivery of program
8	Re-assessment Procedures	After completion of assessment
9	Documentation	After completion of assessment
10	Administration and Completion of Portfolio of Evidence	After completion of assessment

Step 1

Pre-Assessment Briefing and Checklist

A pre-assessment briefing for learners is held before the delivery of the program. Use the checklist below to ensure that all these points are addressed and discussed with the learners.

Pre-Assessment Briefing Checklist		
	√	X
Organise resources – people, equipment, venue, etc.		
Explain the purpose of the assessment		
Discuss the standards or criteria to be used		
Discuss assessment roles and accountabilities		
Decide on assessment venues		
Negotiate evidence required, and where or how this evidence may be gathered		
Explain the methods of assessment that will be used during the gathering and summing up of evidence		
Negotiate the date of submission for the activity workbook and the date for the summative assessment		
Discuss resources required for the assessment e.g. equipment, materials, etc.		
Explain the procedure if the learner is found to be not yet competent		
Explain the appeal and review procedures		
Identify any potential learning barriers and negotiate strategies to overcome these		
Complete and sign the assessment plan with the learner		

The learner and assessor must sign the **Learner Contract** in the learner assessment guide.

Step 2

Learner Declaration of Authenticity

The learner is requested to complete and sign the Declaration of Authenticity in the learner assessment guide. This should be checked and co-signed by the assessor.

The format is as reflected in the learner assessment guide.

Step 3

Diagnostic Assessment of Learning Assumed to be in Place

In the learner assessment guide, the learner is asked to indicate whether they have completed the learning assumed to be in place as prescribed by the unit standard.

The assessor must guide the learners through this step, explaining in detail the content of the mentioned learning areas, because names of learning programs do not always agree with the names of the unit standards, and learners might indicate the incorrect information.

If learners indicate that they have not yet completed the mentioned unit standards, the assessor should prescribe an action plan to allow the learner to obtain the skills required by recommending additional training, competence portfolios, or the relevant RPL assessment for the given unit standards.

The format is as reflected in the assessment guide for learners. Please read it and familiarise yourself with its content.

Step 4

Assessment Plan for Gathering of Evidence

A pro-forma assessment plan for this unit standard has been drafted in the learner assessment guide. Explain the plan to the learner and complete the dates and signatures as indicated.

The format for the assessment plan is as reflected in the assessment guide for learners. Please read it and familiarise yourself with its content. Make a note of the dates agreed upon in the table provided below.

Learner and Assessor Assessment Plan		
Unit Standard	Monitor Water Quality	
Registration Number	116077	
Step	***Description***	***Completion / Submission Date***
Step 5	Learner Formative Assessment Activities	
Step 6	Summative Poster Presentation	
Step 7	Integrated Summative Assessment	
Step 8	Re-Assessment Procedures	
Step 9	Documentation	
Step 10	Administration and Completion of Portfolio of Evidence	

Step 5

Learner Formative Assessment Activities

The Learner Assessment Guide contains comprehensive activities and worksheets that the learner must complete during the delivery of the learning program. It is imperative that these activities be completed as part of the learning process in order to give the learner the opportunity to develop the skills, knowledge and attitudes that are required for competence.

Learners must complete all the activities in the workbook.

Learners must be encouraged to take control of their learning by indicating areas in the workbook where they experience difficulty.

Learners hand in the Learner Assessment Guide to the assessor or the facilitator, only if the facilitator is a subject matter expert, for the assessment of the formative assessment activities. The assessment of these activities must be done according to the prescribed benchmarks and according to the marking matrix that follows.

The learner must not move on to the next step before this step has been completed and learners show sufficient capacity and readiness for summative assessment. If problems areas are identified, the learner should be guided with a developmental action plan, which is documented separately and signed by the learner, the facilitator and the assessor.

Model answers are provided below.

Activity 1 – Class Discussion and Brainstorming
Complete the worksheet below.
What does water quality mean to you?
All natural waters contain "foreign" material. The type and concentration of these "foreign" materials determine the quality of the water. These foreign materials are grouped into physical, chemical and biological components dissolved or suspended in water.
Why is water quality important?
Poor quality water has a negative influence not on the plant alone but also on the soil and irrigation system. Using poor quality water increases the input costs, and has a negative influence on the environment without greater profits.
What do you think are the major methods to maintain water quality?
The basic principle is to avoid the addition of unnecessary foreign material during any stage of the production process that will decrease the quality of the water that leaves the farm, to underground water or water stored on the farm.
How do you think you can contribute on a daily basis to maintaining water quality on your farm and in your area?
By using the minimum chemicals and fertilisers according to prescription, protect open water sources from contamination and following the cleaning procedures for all equipment handling chemicals and fertilisers.

Activity 2 – Worksheet

Complete the worksheet below.

List the six critical water quality control points of water quality management.

1. **The quality of the water received on the farm.**
2. **Knowing what causes the said quality.**
3. **The quality standards of water for citrus production.**
4. **What can be done to improve the quality?**
5. **Which water quality factors cannot be changed and need to be managed.**
6. **Managing the quality of the water leaving the farm/property.**

List the materials that play a role in physical water quality factors and indicate which can be controlled with proper measures.

PWQF	***Control***
Inorganic materials like clay, silt and sand.	**Controlled by reducing erosion of soil surfaces, sedimentation and/or filtration.**
Organic debris like remnants of plants, seeds, animals, aquatic fauna and flora.	**Filtration**
Living aquatic plants and animals like algae and snails.	**Filtration**
Plastic cuttings from the irrigation pipes and equipment.	**Clean the working area after a repair job is done and filtration.**
Lubricant residues.	**Lubricate according to prescription, clean after the job is done, filtration.**

List the chemical water quality factors and indicate which aspect (the plant, irrigation system or the soil) of citrus production might be influenced.

CWQF	***Factor Affected***
Total soluble salts and pH	**Plant, soil and irrigation system**
Iron, manganese and sulphides	**Irrigation system**
Sodium	**Plant and soil**
Chloride	**Plant**
Bicarbonate	**Plant**
Boron	**Plant**

Activity 3 – Experiment: Using a Pilot Plant

Follow the instructions below and complete the questions that follow.

1. Fill a 20-litre drum with the water to be used for pest control sprays.
2. Measure the pH of the water with a pH meter or pH paper strips. If the pH is higher than the optimal pH for the pesticide, continue with step 3. Otherwise no acidification is required.
3. Add acid in small volumes of 1ml at a time.
4. Stir the water with a paddle in a vertical motion – not a horizontal motion – which will mix the water, and acid in an up-down movement. Do this after every addition of acid.
5. Measure the pH again with a pH meter or pH paper strips.
6. Repeat the addition of acids and mixing until the pH reaches the desired level.
7. Record the volume of acid used to reach the desired pH.
8. Calculate the volume of acid required to bring the pH of the desired volume of water down to the required level.

List the equipment that you used to perform the experiment.
20-litre drum, pH meter or pH paper strips, pH standard buffer solutions, measuring cylinder, pipette or burette to measure the acid, paddle, calculator.
List the steps that you followed to prepare for and conduct the experiment.
1. Calibrate the pH-meter according to the instructions by the manufacturer before it is use to measure the pH. **2. Store the pH-electrode as prescribed by the manufacturer.** **3. Measure the pH. If it is higher than the required pH, proceed with step 6. If not, proceed with step 4.** **4. Add the chemical at the correct concentration and mix with the paddle.** **5. Measure the pH. If it is higher than the required pH, proceed with step 6. If not the mix is ready for use.** **6. Add 10ml of the acid and stir the water with the paddle for 5 to 10 strokes.** **7. Note the volume acid added.** **8. Measure the pH. If it is higher than the required pH, repeat step 6. If not proceed with steps 4 and 5.** **9. Calculate the volume acid required per spray tank.**
What important things did you have to remember to protect your health and safety?
1. Always add the acid to the water. Wear protective eyeglasses, gloves and apron when handling acids. **2. Never fill the pipette by sucking with your mouth. Use the rubber bulb design for this purpose.** **3. To reduce the risk of injury, use diluted acid for the pilot. Remember to consider the dilution when calculating the volume acid required for the spray tank.**
How did you ensure that your results were accurate, and how did you record them?
The volume of acid required to reach the prescribed pH is determined on a small volume of water. Usually a spray tank has a capacity of 2,000 litres. Therefore the volume of acid needs to be calculated as follows: Millilitre acid required = volume of spray tank ÷ volume of the pilot container x ml acid added to reach the desired pH. If the accuracy is substandard the error will be aggravated by a huge factor. In the example it will be 2000 ÷ 20 = 100.

Activity 4 – Worksheet
Complete the worksheet below.
List four direct and four indirect effects of water quality on citrus production.
Direct Effects
1. The concentration of salts dissolved in the water **2. Concentration of magnesium (Mg), chloride (Cl) and nitrogen (NO3 and NH4).** **3. Bicarbonate** **4. High concentration of chlorides**
Indirect Effects
1. Sodium adsorption ratio (SAR) **2. For foliar sprays to supplement nutrients the pH has an effect.** **3. Foliar sprays to control pest and diseases** **4. Blocking of emitters**
How can PWQF be improved?
Sedimentation and filtration
How can CWQF be improved?
Correcting the pH and oxidation

How can the quality of water leaving the farm be improved?
The only practical method to improve the quality of the water leaving the farm is to minimise the chemicals and fertilisers used and to prevent any contamination of the water sources.

Activity 5 – Demonstration

Take turns to demonstrate the preparation for and taking of water samples. Let the assessor or facilitator sign that you can demonstrate the correct techniques.

Key Notes:

1. **Obtain a suitable sample container. Glass or plastic.**
2. **Clean the sample container and the lid or cap.**
3. **Rinse the sample container with the water to be sampled three times.**
4. **Take the sample by filling the container away from the side and below the surface.**
5. **Fill the bottle to the rim.**
6. **Close tightly.**
7. **Tie the label with the appropriate information to the container.**

Learner's Signature		**Date:**	
Assessor's Signature		**Date:**	

Activity 6 – Job Description

Write a job card for someone to take a water sample and to perform basic water quality tests. Instruct the person to perform the following tests:

- pH Testing
- Electrical Conductivity

Adapt the answer to the person the learners targeted in the job description and note the correct instructions to take water samples.

Job Description – pH Testing:

Using pH test paper strips:

1. **Utensils required are a small beaker or cup holding 25 to 100ml water.**
2. **Ensure that the glassware is clean.**
3. **Pour a small volume of the water to be tested into the beaker and rinse the beaker.**
4. **Discard the rinse water and repeat step 3.**
5. **Fill the beaker 50% with the water to be tested.**
6. **Insert 25% of the test paper strip into the water and keep it submerged for the period specified by the manufacturer.**
7. **Compare the colour developed on the paper strip with that of the colour chart.**
8. **Note the pH. If in doubt when the colour is developed is not clear, repeat steps 6 and 7.**

Using a pH-meter:

1. **Utensils require are glass beakers for the buffer solutions and the water to be tested as well as a thermometer if the pH meter requires temperature adjustments.**
2. **Calibrate the instrument according to the specifications of the manufacturer.**
3. **Ensure that the glassware is clean.**
4. **Pour a small volume of the water to be tested into the beaker and rinse the beaker.**
5. **Discard the rinse water and repeat step 3.**
6. **Fill the beaker 50% with the water to be tested.**
7. **Insert the pH electrode into the water.**
8. **Follow the instructions of the manufacturer as to the time required to reach a reading.**
9. **Note the pH reading.**
10. **Take a measurement of the temperature of the water.**
11. **Care for the pH electrode and pH meter as per the instructions of the manufacturer, after the measurements are completed.**

Job Description – Electrical Conductivity:
1. Utensils require are glass beakers for the calibration solutions and the water to be tested as well as a thermometer if temperature corrections are required for the specific instrument. **2. Calibrate the EC instrument according to the specifications of the manufacturer.** **3. Ensure that the glassware is clean.** **4. Pour a small volume of the water to be tested into the beaker and rinse the beaker.** **5. Discard the rinse water and repeat step 3.** **6. Fill the beaker 50% with the water to be tested.** **7. Insert the EC probe into the water.** **8. Follow the instructions of the manufacturer as to the time required to reach a reading.** **9. Note the EC reading.** **10. Note the temperature of the water.** **11. Care for the EC probe and EC meter as per the instructions of the manufacturer, after the measurements are completed.**

Activity 7 – Experiment: Water Tests
Follow the instructions below and complete the experiment. Working in groups or as individuals, locate at least three different water sources close by and take samples in the prescribed manner. At the same time, assess the physical quality factors of the water sources. Under the supervision of the facilitator, perform pH and EC tests on the water according to the procedures described above.
Record the procedures followed in taking the water samples and performing the tests described above.
See model answers to activities 5 and 6.
Based on the results of the pH tests performed in the practical, discuss methods that can be used to improve the pH of the water.
No model answer provided, depends on results of tests. See previous model answers.
Based on observations made at the water sources when samples were taken, discuss means by which the physical quality factors of the water can be improved.
No model answer provided, depends on results of tests. See previous model answers.

Activity 8 – Class Discussion
Have a class discussion and write notes for yourself.
Suggest methods to manage the physical conditions of water to maintain water quality.
Soil particles; Prevent water entering the natural water sources and storage dames to flow at high speed unprotected soil surfaces. This could mean erosion control of newly planted areas, construction and maintenance of waterways, planting on contours, reducing the precipitation rate of irrigation systems especially systems like central pivots, high volume sprinklers and flood irrigation. **Reducing pollution by nitrogen and phosphorus will reduce the growth of algae in the water storage systems.** **During repairs, take care to prevent soil and plastic cuttings to enter the irrigation system.**
Suggest methods to manage the chemical conditions of water to maintain water quality.
Acidify water for pesticide and foliar nutrition sprays. **Get expert help to manage saline or alkaline water to minimize the effect on the soil, trees and environment.** **Mix waters of different chemical quality to improve the overall quality and volume available after mixing.**

Activity 9 – Write a Report
Write a report about the reporting system related to water quality management and maintenance on your farm. Include what has to be reported, when it has to be reported, who has to report what and to whom it has to be reported.
Model criteria for report writing: **1. State the current situation in terms of WQ parameters measured.** **2. State the historic situation of these parameters.** **3. Explain all deviations** **4. Compile an action plan to address the deviations.**
Model key points to appear in the report: **1. Current situation in respect of measurements like suspended solids, pH and EC.** **2. Events like rainfall, spillage during the preceding 2 to 3 months that could have influence the current quality.** **3. Comparisons with the quality parameters the previous year during the same time.** **4. Evaluate the deviation from the average in respect of the parameters but also those climatic factors that have an impact on water quality.** **5. Evaluate these deviations in terms of their impact on production, soil and environ ment.** **6. Review of action plans in place.**

Marking Matrix and Assessor Report for Formative Assessment Activities Formative Evidence Collection Summary for Unit Standard 116077 – Level 2					
	Action Required from Learner to Develop Competence	***Competence Assessments***	***Standard for Activity***	***Allocation of Marks***	***Feedback to Learner and Comments on Evidence***
Specific Outcome 1: **Demonstrate an understanding of water quality management** *Range:* Quality factors for water include but are not limited to temperature, dissolved gasses such as oxygen and carbon dioxide, COD, water insoluble solids and dissolved minerals and organic load	Attend classroom lesson, participate and ask questions	Activities in learner activity book were completed correctly	Activity answers must be at least 85% correct A signature + commentary from the supervisor / coach / mentor or facilitator in learner workbook	As per model answer sheet	
Specific Outcome 2: **Demonstrate an understanding of the importance of water to agriculture**	Attend classroom lesson, participate and ask questions	Activities in learner activity book were completed correctly	Activity answers must be at least 85% correct A signature + commentary from the supervisor / coach / mentor or facilitator in learner Workbook	As per model answer sheet	
Specific Outcome 3: **Demonstrate an ability to monitor and perform basic water quality tests and analyses** *Range:* Quality maintenance tasks including water aeration, inlet and outlet screening, inlet and outlet level and flow control, degassing and filtration	Attend classroom lesson, participate and ask questions	Activities in learner activity book were completed correctly	Activity answers must be at least 85% correct A signature + commentary from the supervisor / coach / mentor or facilitator in learner Workbook	As per model answer sheet	

Marking Matrix and Assessor Report for Formative Assessment Activities Formative Evidence Collection Summary for Unit Standard 116077 – Level 2					
	Action Required from Learner to Develop Competence	***Competence Assessments***	***Standard for Activity***	***Allocation of Marks***	***Feedback to Learner and Comments on Evidence***
***Specific Outcome 4:* Demonstrate an ability to perform and understand maintenance tasks on certain operational technical systems related to water quality**	Attend classroom lesson, participate and ask questions	Activities in learner activity book were completed correctly	Activity answers must be at least 85% correct A signature + commentary from the supervisor / coach / mentor or facilitator in learner Workbook	As per model answer sheet	
US CCFO: Identifying	Attends all lessons, activities, practical and completes activities and workbook as per instructions	Attendance register and facilitator report	Learner must at least be present and no negative commentary about the learner should be made in the facilitator report.	N/a	
US CCFO: Working					
US CCFO: Organising					
US CCFO: Communicating					
US CCFO: Science					
US CCFO: Demonstrating					
US CCFO: Contributing					
US CCFO: Collecting					

Assessment Feedback Form – Activity Workbook			
	Comments / Remarks		
Feedback to learner on assessment			
Feedback from learner to assessor			
Learner's Signature		**Date:**	
Assessor's Signature		**Date:**	

Step 6

Summative Poster Presentation

In this step, the learner is expected to design a poster about water quality management in citrus production.

Before the summative task is undertaken, the learner must be reminded of what is expected from him / her in terms of summative and reflexive competence. Read and explain to the learner this section in the learner assessment guide. The learner and assessor must sign off this section to acknowledge that this step was completed.

- Use the planning and questioning format below to help you collect evidence for foundational and embedded knowledge as prescribed by the outcomes of the unit standards.
- Provide the questions as listed to the learners as a guide.
- Ensure that you apply the exact same methodology for each learner in order to ensure that VACS principles are adhered to.
- The benchmark for learner competence is an 85% overall test score.
- Only a suitably qualified and registered assessor who is ALSO a subject matter expert in this specific field can mark this assessment tool for learner assessment.
- If no such a person can be found to assess the learner, then it is advised that a qualified assessor consults with the appropriate subject matter expert prior to the assessment in order to establish key points for competence and / or uses model answers as supplied by a subject matter expert to allocate marks. The subject matter expert should be consulted for any answers that the assessor might have queries on.
- Use a header in the following format for each test paper:

Unit Standard:	116077	**NQF Level:**	2
Learner Name			

- The assessor should use the questions below as a marking matrix and to gather evidence and to check for completeness.

What is water quality?	10%
Why is water quality important for citrus production?	5%
How is water quality managed and maintained on your farm?	10%
What affects water quality chemically?	5%
How should these chemical factors be controlled to assist in optimum water quality?	5%
What affects water quality physically?	5%
How should these physical factors be controlled to assist in optimum water quality?	5%
What does water sampling have to do with water quality?	5%
How should water sampling be done?	5%

What happens to the water samples?	5%
What are simple tests that you can perform on water samples?	10%
What information is obtained from the tests performed on the water samples?	10%
Describe how the water quality system on your farm works.	10%
Explain the basic maintenance to this water quality system or things that affect this system.	10%

Step 7

Integrated Summative Assessment Tool

One assessment tool is provided in this step, being:

1. Attitudes and Attributes Assessment Tool

This assessment tool has been drafted in its entirety and follows below. It must be copied and completed for every learner in the same manner and according to the same procedure.

Learners must not be given these tools in preparation for summative assessment. This corresponding step in the Learner Assessment Guide is a direct reflection of these tools and is drafted in a format that is appropriate to the learner's level of language competence.

1. Attitudes and Attributes Assessment Tool

- Use this rating scale to judge the learner's CCFO competence according to the unit standard.
- The learner's entire performance and all the stages of learning, as well as all gathered evidence must be considered for this section.
- It is advised that the assessor consult with facilitators, mentors, coaches and supervisors in order to ensure that an objective rating is allocated.
- A rating between 1 and 5 should be given, as follows:

Rating	***Description***
1	No evidence can be found
2	The evidence found is weak and this is still a major development area for the learner
3	The evidence found meets the average expectation for a learner on this level
4	The evidence found is of a high quality and exceeds the average standard expected
5	The evidence found is outstanding and the learner attitudes and traits are very well developed

- Learner must be given constructive feedback on each rating.
- Ensure that you apply the exact same methodology for each learner in order to ensure that VACS principles are adhered to.
- The benchmark for learner competence in this tool is 3:5 in EVERY CCFO.

At the end of this step, an assessment feedback form is provided which must be completed and signed by the assessor, learner and moderator, where applicable.

Attitudes and Attributes Assessment Tool

Use the following rating table in this assessment:

Rating	***Description***
1	No evidence can be found
2	The evidence found is weak and this is still a major development area for the learner
3	The evidence found meets the average expectation for a learner on this level
4	The evidence found is of a high quality and exceeds the average standard expected
5	The evidence found is outstanding and the learner attitudes and traits are very well developed

CCFO Criteria	***Rating***
Identifying – The learner can identify problems and deficiencies correctly.	
Working in a Team – The learner is able to work well as member of a team.	
Organising – The learner works in an organised and systematic way whilst performing all tasks and tests.	
Communicating – The learner is able to communicate his or her knowledge orally and in writing, in a way that shows what knowledge he or she has gained.	
Demonstrating – The learner is able to show and perform the tasks required correctly.	
Contributing – The learner is able to link the knowledge, skills and attitudes that he or she has acquired in this module of learning to specific duties in their job or in the community where he or she lives.	
Science – Learner is able to utilise and use science and technology effectively	
Collecting – Learner can effectively gather information	

Assessment Feedback Form			
	Comments / Remarks		
Feedback to learner on assessment and / or overall recommendations and action plan for competence			
Feedback from learner to assessor			
Assessment Judgement	You have been found: ❍ Competent ❍ Not yet competent in this unit standard	Actions to follow: ❍ Assessor report to ETQA ❍ Learner results and attendance certification issued	
Learner's Signature		**Date:**	
Assessor's Signature		**Date:**	
Moderator's Signature		**Date:**	

Step 8

Re-Assessment Procedures

- Note that only outcomes on which the learner was found not yet competent must be re-assessed.
- The same procedures in steps 6 and 7 are repeated.
- The tool must be adapted at discretion of the assessor. Best practice is not to present the exact same format and questions if possible.
- Use your expertise and judgement to ensure that the method of re-assessment remains integrated and relevant to the expected outcomes.

Step 9

Documentation

The following documentation is addressed in this step:

1. Learner and assessor information reports;
2. Assessor report and summative evidence collection summary;
3. Learner assessment re-actionnaire;
4. Assessor's assessment review and improvement document;
5. Assessment appeal form

1. Learner and Assessor Information Forms

The learner information form is in the assessment guide for learners. The assessor information form follows. These forms must be completed for each individual learner and placed in the learner's portfolio of evidence.

2. Assessor Report and Summative Evidence Collection Summary

This report follows after the information report. Use it to summarise the findings during assessment. Please complete the copy of this report that is in the learner assessment guide.

3. Learner Assessment Re-Actionnaire

A pro-forma for the learner assessment re-actionnaire is included in the learner assessment guide. Ask the learner to complete this form and sign it.

4. Assessor's Assessment Review and Improvement Document

The assessor is expected to complete the assessor review of the assessment process, using the pro-forma document of which an example follows. Please complete the copy of the document in the learner assessment guide. This document must be discussed with the learner and any learner commentary should be recorded.

5. Assessment Appeal Form

The assessment appeal form is also provided in the learner assessment guide. Assist the learner to complete the document if necessary.

The learner must be requested to sign-off all reports and documents before they are placed in the portfolio of evidence.

Assessor Information Form				
Unit Standard	116077			
Program Date(s)				
Surname				
First Name				
Company Name				
Job / Role Title				
Home Language				
Gender	Male		Female	
Race	African	Coloured	Indian/Asian	White
Employment	Permanent		Non-permanent	
Disabled	Yes		No	
Date of Birth				
ID Number				
Contact Telephone Numbers				
Email Address				
Postal Address				

Assessor Report and Formative and Summative Evidence Collection Summary for Unit Standard 116077 – Level 2					
Description	***Evidence Gathered***		***Benchmark***	***Competent / Not yet Competent***	***Feedback and Comments***
	Foundational and Embedded Knowledge	**Practical Skills, Underpinning Knowledge and Reflexive Competence**			
Specific Outcome 1: **Demonstrate an understanding of water quality management** *Range:* Quality factors for water include but are not limited to temperature, dissolved gasses such as oxygen and carbon dioxide, COD, water insoluble solids and dissolved minerals and organic load	Summative Poster	CCFO Rating Scale	85% competence in all areas		
Specific Outcome 2: **Demonstrate an understanding of the importance of water to agriculture**	Summative Poster	CCFO Rating Scale	85% competence in all areas		
Specific Outcome 3: **Demonstrate an ability to monitor and perform basic water quality tests and analyses** *Range:* Quality maintenance tasks including water aeration, inlet and outlet screening, inlet and outlet level and flow control, degassing and filtration	Summative Poster	CCFO Rating Scale	85% competence in all areas		
Specific Outcome 4: **Demonstrate an ability to perform and understand maintenance tasks on certain operational technical systems related to water quality**	Summative Poster	CCFO Rating Scale	85% competence in all areas		

Assessor Report and Formative and Summative Evidence Collection Summary for Unit Standard 116077 – Level 2					
Description	***Evidence Gathered***		***Benchmark***	***Competent / Not yet Competent***	***Feedback and Comments***
	Foundational and Embedded Knowledge	**Practical Skills, Underpinning Knowledge and Reflexive Competence**			
Embedded Knowledge: The learner is able to demonstrate a basic knowledge of: 1. The names and functions of water quality maintenance systems and components 2. The names and attributes of water quality factors 3. Sensory cues related to water quality 4. The purpose of understanding the need for water quality knowledge 5. Procedures related to the maintenance and testing of water quality 6. Rules and regulations related to water 7. Basic report writing skills	Summative Poster	N/A	Overall minimum test score of 85%		
Unit Standard CCFOs: • Team Work • Self Management • Communication • Problem solving • Interpreting information • Science and technology • Related systems	N/a	Rating Scale	Minimum rating of 3:5 in each criteria or overall average of 3:5		

Assessor's Assessment Review and Improvement Document	
Issues	**Comments**
Did the assessment go according to plan?	
Did anything unexpected happen?	
Were you pleased with the assessment decision; i.e. was it what you expected?	
How could the process have been carried out more efficiently?	
How could the process of assessing the knowledge be improved?	
How could the Performance Observation checklist be improved?	
Was the evidence you gathered sufficient to make a judgment of competence?	
Was the way you obtained feedback from the learner effective?	
Were you pleased with the way you communicated your decision to the learner? If not, how could this have been improved?	
How would you improve the assessment process?	

Any learner has the right of appeal against any not-yet-competent decision by the assessor. If the learner wishes to appeal, please assist him / her to complete the form below.

Appeal Form			
I hereby appeal against the outcome of my assessment.			
Date:			
Learner's Name:			
Assessors Name:			
Organisation:			
Assessment Details: Criteria, role, standards Used, etc.			
Issue to be Reviewed:			
Learner's Signature		**Date:**	
Assessor's Signature		**Date:**	

Step 10

Administration and Completion of Portfolio of Evidence

All the documents or copies thereof, as prescribed previously, must be kept on file as part of the learner portfolio of evidence.

Learner's portfolio of evidence must be readily available for internal and external moderation and verification by the appropriate practitioners, until after the verification process has taken place. The portfolio of evidence may then be kept or returned to the learner according to the service provider's policy.

The prescribed learner results form should be submitted to the ETQA or the National Learner Database as per the SETA procedure.