11 February 2026

2025/26 Water and Wastewater Treatment Network Review – Suurbraak

Final Internal Audit Report

Swellendam Municipality
Internal Audit Services

Audit Ref. 2025/26-011

A. Petersen
SENIOR INTERNAL AUDITOR
(SWELLENDAM MUNICIPALITY)

This Engagement Conforms with the International Standards for the Professional Practice of Internal Auditing.

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Audit Ref No **2025/26-011**

Mr. W. Treurnicht
Acting Director: Infrastructure Services
Swellendam Municipality

Dear Mr. Treurnicht

We have the pleasure of submitting our final audit report, presenting internal audit findings and recommendations, and contributing to the maturity of the control framework to increase business efficiency and effectiveness.

The results of the audit, which are presented to management, are aimed at providing assurance that risk treatments covered in the audit are adequate and effective in contributing to the management of the risks impacting management's objectives.

Please take note that this report has been prepared solely for the management of Swellendam Municipality. We do not accept any responsibility to any third party to whom the contents may be disclosed or who, at their own accord, may decide to rely on it, as the report has not been prepared for, and is not intended for, any other purpose.

We would like to express our appreciation for the inputs and assistance from Management, and would be pleased to provide you with any further assistance and requests that you have. Please do not hesitate to contact Mr. A. Petersen.

INDEPENDENCE

The Internal Audit Function of the Swellendam Municipality certifies that we are, in all respects, independent, and seen as being independent, with regard to the auditing of the Water and Wastewater Treatment Plants situated in Suurbraak.

Yours sincerely,

Petersen

MR. A. PETERSEN
SENIOR INTERNAL AUDITOR
DATE: 11 FEBRUARY 2026

1. EXECUTIVE SUMMARY

1.1 INTRODUCTION

In accordance with the approved 2025/26 Risk-Based Internal Audit Three-year Strategic Plan, the Internal Audit function was required to conduct an audit engagement focusing on the Water and Wastewater Treatment Networks within Suurbraak. The engagement required to provide independent assurance to management and Council on the adequacy and effectiveness of internal controls governing the Water and Wastewater treatment network's operations located in Suurbraak. A physical site inspection was performed on 04 February 2026 at both the Water and Wastewater Treatment Networks in Suurbraak to obtain a comprehensive understanding of the processes, controls, and operational environment.

1.2 BACKGROUND INFORMATION

The Water and Waste Water Treatment Network falls under the Infrastructure Services Directorate, specifically the Water Services Department. The department is responsible for ensuring that both plants operate efficiently and deliver reliable, compliant water and sanitation services to the community. Given the critical role these facilities play in public health, environmental protection, and sustainable municipal service delivery, effective control measures and operational oversight are essential.

The Suurbraak water treatment network is situated at 34°00'31.2 longitude and 20°39'20.77" latitude. Coloured water with low turbidity is treated at the water treatment network. Service water at Suurbraak water treatment works is treated in a conventional water treatment plant. This treatment includes chemical coagulation, flocculation, followed by sedimentation and pressure filtration. The filtered water is disinfected after stabilisation. The works consist of one flocculation tank, four settling tanks, and three pressure sand filters. Disinfection is normally done with chlorine gas. The raw water gravitates from the mountain to a pump, where two raw water pumps pump the raw water to the treatment network.

1.3 PURPOSE, SCOPE, AND APPROACH

The purpose of this review was to evaluate the adequacy and effectiveness of existing controls and provide reasonable assurance that the internal controls governing the Water and Wastewater Treatment Networks processes are adequate, appropriate, and operating effectively and efficiently in the Suurbraak region.

Our scope will include:

The review will cover the period 01 September 2025 – 31 December 2025 and be based on the objectives outlined below. In addition, the review assessed the design and operational effectiveness of internal controls.

Our approach will include

- Reviewing and evaluating the general internal controls implemented at the Water and Wastewater Treatment Network plants in Suurbraak;
- Reviewing and assessing whether plant equipment was calibrated/serviced, and maintained in accordance with approved maintenance schedules;

- Reviewing the health and safety compliance with environmental and safety regulations applicable to the Water and Wastewater Treatment operations in Suurbraak;
- Determine whether municipal officials assigned to these facilities possess the requisite human resource and technical skills to operate the plants effectively and;
- Discussion and observations based on potential audit findings.

1.4 AUDIT TEAM

Audit Team	Name	Position
Internal Audit Function of Swellendam Municipality	Mr. Ashwin Petersen	Senior Internal Auditor
	Mr. Herschelle Swart	Internal Auditor
	Mr. Xola Mahlaba	Internal Audit: Intern

1.5 MANAGEMENT'S RESPONSIBILITY IN TERMS OF INTERNAL CONTROL

Management is charged with the responsibility for establishing a network of processes with the objective of controlling the operations and processes of Swellendam Municipality in a manner that provides the Council with reasonable assurance that those risks are being managed and objectives are being met. Implementing internal controls is a function of management and is an integral part of the overall process of managing operations.

Internal Control	Fraud & Error
Internal Control can be defined as a process effected by management to provide reasonable assurance relating to: - Operational Controls - Internal Financial Controls - Compliance Controls The general purpose of an audit is to provide information about the adequacy and effectiveness of the system of internal control, risk management, and governance.	Audit procedures alone, even when carried out with due professional care, do not guarantee that fraud will be detected because of the inherent limitations of an audit. Management's attention is also drawn to the fact that inherent limitations exist in the reliance on internal controls and procedures, as errors and lapses in control result from staff carelessness, misunderstanding of instructions, collusion between individuals, and management override.

1.6 INTERNAL AUDIT OPINION

Internal Audit is required to express an opinion on the adequacy and effectiveness of the governance, risk management, and control processes of the Water and Wastewater Treatment Networks.

Governance – Internal Audit is of the opinion that the governance processes are not fully effective, as evidenced by insufficient oversight of critical plant operations, safety compliance, and infrastructure maintenance. Due to the lack of clear accountability mechanisms for after-hours supervision, safety signage, and visitors' sign-in/out registers indicate a need for controls to be implemented.

Risk Management – Internal Audit is of the opinion that the current risk management practices at the Water and Wastewater Treatment Networks are Insufficient as risks were identified, including reliance on

manual chlorination, irregular pH testing. Additionally, the lack of proper access controls, safety signage, and CCTV monitoring increases both security and safety risks.

Control Processes – Internal Audit's assessment concludes that the internal control environment at both plants is inadequate and not operating effectively. The physical inspection identified several control deficiencies, including unrestricted access, a lack of visitor and shift registers, safety hazards, and the lack of after-hours supervision.

1.7 REPORTING FRAMEWORK

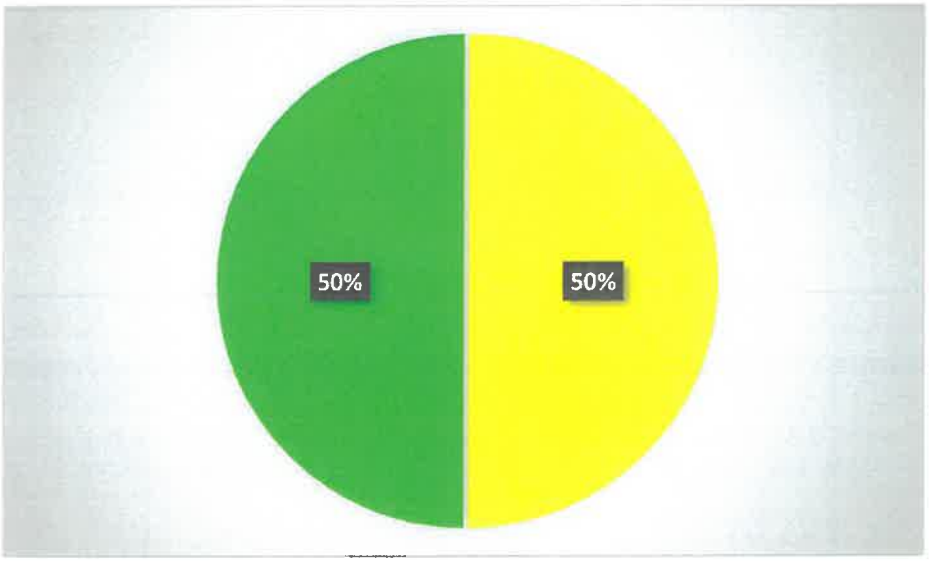
The findings identified have been broadly categorised into:

Rating	Suggested Management Action
Critical	Significant control weaknesses requiring immediate management action
Significant	Control weaknesses that are regarded as serious and require management action within a short period of time
Housekeeping	These control weaknesses do not represent a significant risk to the control environment and can normally be corrected at a minimal cost. The correction of these control weaknesses will have the effect of an improved control environment.
Positive	No action is needed. Management made progress in control the environment.

In order to assist management with the allocation of resources to address the weaknesses and improve internal control, we have assigned subjective ratings to each of our recommendations. These ratings are for guidance purposes only, and management must evaluate them in the light of their own experience and risk appetite.

Individual ratings do not necessarily take into account the effect of compensating controls or control weaknesses in other areas. Therefore, individual ratings should not be considered in isolation, and their effect on other objectives and areas should also be considered.

1.8 OBJECTIVES AND SUMMARY OF RESULTS



Summary of Results	Rating of Finding
1. Non-operational chlorine room and reliance on the manual chlorination process	Significant
2. Lack of after-hours supervision at the water and wastewater treatment networks	Significant
3. Irregular testing of pH levels at the water treatment network	Significant
4. Lack of a visitor/sign-in register at the water and wastewater networks	Housekeeping
5. Inadequate surveillance and security controls in the panel room at the water and wastewater treatment networks	Housekeeping
6. Safety and hazardous signage at the chlorination and coagulant rooms not clearly visible	Housekeeping

2. DETAILED AUDIT FINDINGS

Areas where Management's attention is drawn for further attention improvement of the control environment follow:

2.1. Non-operational chlorine room and reliance on manual chlorination process	Significant

Criteria

In accordance with SANS 241, it requires that drinking water systems using chlorine (or chlorine-based disinfectants) maintain a minimum disinfectant residual to ensure effective microbial control in the water supply. Specifically, free chlorine (as Cl_2) must be maintained at a defined level after treatment and throughout the distribution system.

Condition

During the physical inspection conducted at the Suurbraak Water Treatment Network, Internal Audit observed that the chlorine room was not operational. As a result, the plant relied on a manual chlorination process for water disinfection.

Root Cause

- Inadequate maintenance and monitoring of critical water treatment infrastructure.

Impact/ Effect

- Inaccurate dosing, inconsistent water quality, and potential non-compliance with water standards.

No	Audit Recommendation	Management Agreed Action	Responsibility and Status
1	Internal Audit recommends that management should repair the chlorine equipment to restore the automated chlorination process in the chlorination room.	Management in agreement with finding. Chlorine equipment in procurement process through operational budget.	**Responsible Person(s):** Mapala Lekalakala **Due Date:** 30 June 2026

Closing Comments: Chief Audit Executive

Management's Response is noted and accepted. Corrective action will be followed up on.

2.2. Lack of after-hours supervision at the wastewater treatment Networks	Significant

Criteria

In accordance with best practice and the Water Act, no 54 of 1956, Schedule 4: minimum class of process controller required per shift, and supervision, operations, and maintenance support services requirements, it states that Class I, Class II, Class III, and Class IV must be available at all times, but may be in-house or outsourced.

Condition

During the physical inspection conducted at the Suurbraak Water Treatment Network, Internal Audit observed that staff rotate according to a scheduled shift register from 08h00 to 16h00 and 16h00 to 00h00. However, from 00h00 to 08h00am, the network is unattended, with no personnel assigned to monitor operations during that period. In addition, the wastewater treatment network is unsupervised after 16h00.

Root Cause

- Staff capacity constraints and the lack of an operational shift schedule register.

Impact/ Effect

- Unattended water treatment and wastewater treatment network increases the risk of undetected infrastructure failures, process deviations, water quality incidents, and/or emergency situations.

No	Audit Recommendation	Management Agreed Action	Responsibility and Status
1	Internal Audit recommends that a shift register be implemented for after-hours monitoring arrangements, including rotation of shifts, remote and/or standby processes. In addition, implementing an on-call system with defined response times, and/or deploying automated monitoring and alarm systems to detect operational deviations.	Management in agreement with finding. Alarm system currently implemented by Chief of traffic offices.	**Responsible Person(s):** Mapala Lekalakala **Due Date:** 31 March 2026

Closing Comments: Chief Audit Executive

Management's Response is noted and accepted. Corrective action will be followed up on.

2.3. Irregular testing of pH levels at the water treatment network	Significant

Criteria

In accordance with the SANS 241-1, pH testing frequency guidance appears in SANS 241-2 (drinking water quality management) and related monitoring protocols: For final (treated) water, pH should be tested once per shift in treatment works as a minimum operational monitoring requirement.

Condition

During the physical inspection conducted at the Suurbraak Water Treatment Network, Internal Audit observed that pH levels were not tested on a regular basis as part of the water quality monitoring process. In addition, no pH results could be obtained in the monitoring logbook to determine the pH levels.

Root Cause

- Unavailability of laboratory equipment to test pH levels.

Impact/ Effect

- Irregular pH testing may result in undetected deviations from acceptable potable water standards, potentially compromising water quality and consumer safety.
- Non-compliance with regulatory requirements such as SANS 241 and Department of Water and Sanitation guidelines.

No	Audit Recommendation	Management Agreed Action	Responsibility and Status
1	Internal Audit recommends that each water treatment network has their own laboratory equipment to conduct regular pH testing. The pH results must be recorded in the monitoring logbook.	Management in agreement with finding. Laboratory equipment procured.	**Responsible Person(s):** Mapala Lekalakala **Due Date:** 31 March 2026

Closing Comments: Chief Audit Executive

Management's Response is noted and accepted. Corrective action will be followed up on.

2.4. Lack of a visitor/sign-in register at the water and wastewater networks | Housekeeping

Criteria

In accordance with the Swellendam Municipality By-Law relating to water and sanitation services and industrial effluent, section 13: unauthorise use of water services, it states that no person may, temporarily or permanently, gain access to water services from the water supply system, sewage disposal system or any other sanitation or effluent services unless an agreement has been entered into with the municipality for the rendering of those services.

Condition

During the physical inspection conducted at the Suurbraak Water and Wastewater Treatment Networks, Internal Audit observed that no visitor and/or sign-in/out register was available at the plants to track access to the premises.

Root Cause

- Lack of administrative and oversight processes at the facility.

Impact/ Effect

- Inability to track visitors and/or contractors for accountability and/or emergency response.
- Potential damage to the infrastructure of the municipality.

No	Audit Recommendation	Management Agreed Action	Responsibility and Status
1	Internal Audit recommends that a mandatory sign-in/out register be developed and maintained for visitors and staff at all the access points, such as entrances and exits.	Management in agreement with finding. Mandatory register implemented on 23 February 2026.	**Responsible Person(s):** Mapala Lekalakala **Due Date:** 23 March 2026

Closing Comments: Chief Audit Executive

Management's Response is noted and accepted. Corrective action will be followed up on.

2.5. Inadequate surveillance and security controls in the panel room at the water and wastewater treatment networks | Housekeeping

Criteria

In accordance with the Local Government: Municipal Finance Management Act, 2003 (Act No. 56 of 2003), specifically Section 63, which requires the accounting officer to ensure safeguarding and maintenance of municipal assets, and Section 62(1)(c), which obliges the municipality to maintain effective internal controls.

Condition

During the physical inspection, Internal Audit observed that the electrical panel room (control room) at both networks was found to be unattended and not equipped with CCTV cameras and/or monitoring controls to detect unwanted activities.

Root Cause

- Inadequate security and surveillance controls.

Impact/ Effect

- Potential tampering, unauthorised access, and/or safety incident.
- Potential damage to key operational systems and infrastructure can go undetected.

No	Audit Recommendation	Management Agreed Action	Responsibility and Status
1	Internal Audit recommends that management install CCTV cameras and ensure restricted access to the electrical panel room (control room).	Management in agreement with finding. Alarm system currently implemented by Chief of traffic offices.	**Responsible Person(s):** Mapala Lekalakala **Due Date:** 30 April 2026

Closing Comments: Chief Audit Executive

Management's Response is noted and accepted. Corrective action will be followed up on.

2.6. Safety and hazardous signage at the chlorination and coagulant rooms not clearly visible	Housekeeping

Criteria

In accordance with the Occupational Health and Safety Act, 85 of 1993, Section 8(1): General duties of employers to their employees, it states that every employer shall provide and maintain, as far as is reasonably practicable, a working environment that is safe and without risk to the health of employees.

Condition

During the physical inspection, Internal Audit observed that safety and hazard warning signs were not visible in the chlorination and coagulant rooms.

Root Cause

- Lack of routine inspections and signage replacement processes.

Impact/ Effect

- Possibility of accidents and/or exposure to hazardous substances.
- Non-compliance with safety legislation.

No	Audit Recommendation	Management Agreed Action	Responsibility and Status
1	Internal Audit recommends that a full assessment be conducted on the wastewater plant, which requires safety signage, and that all missing or faded signs be replaced. In addition, implement periodic reviews to maintain compliance.	Management in agreement with finding. Signages to be implemented in the new financial year of 2026/27.	**Responsible Person(s):** Mapala Lekalakala **Due Date:** 30 April 2026

Closing Comments: Chief Audit Executive

Management's Response is noted and accepted. Corrective action will be followed up on.

3. RE-ASSESSMENT OF KEY RISK

Risk	Pre-audit Inherent Risk Rating	Risk Treatment / Current control processes	Post Audit Inherent Risk Rating	Executive Finding Summary	Post Audit Residual Risk Rating
Ageing infrastructure and inadequate capacity of the water and wastewater network	90 (High)	• Operational Plan; • Grant Funding Allocations for projects; • Implementation of Capital & Maintenance Budget (Limited) and; • Monthly monitoring of water and wastewater samples.	67.50 (High)	During the physical inspection conducted various internal control deficiencies were noted. The following were identified: • Non-operational chlorine room and reliance on manual chlorination process; • Lack of after-hours supervision at the water and wastewater treatment networks; • Irregular testing of pH levels at the water treatment network; • Lack of a visitor/sign-in register at the water and wastewater networks; • Inadequate surveillance and security controls in the panel room at the water and wastewater treatment networks; • Safety and hazardous signage at the chlorination and coagulant rooms not clearly visible.	72 (High)

Risk Appetite Statement:

The post-audit risk rating of the risk is above the risk appetite of **40** as per the risk appetite statement in the 2025/26 risk management policy, and additional measures are needed to address and manage the risk.

4. DISTRIBUTION LIST

This report has been prepared for the sole and exclusive use of Swellendam Municipality. Therefore, it may not be made available to anyone other than authorised persons within the municipality, or relied upon by any third party. No part of this work may be reproduced and/or transmitted in any form by any means, electronic or mechanical, including photocopying and recording, or by information storage or retrieval system, except as permitted, in writing by Swellendam Municipality.

No	Key Strategic Official(s)	Name	To Take Action	Secure Action	For information & oversight
1.	Audit and Performance Committee	Audit and Performance Committee Members			✓
2.	Auditor-General of South Africa (ASGA)	Auditor-General of South Africa (ASGA)			✓
3.	Accounting Officer	Ms. A. Vorster			✓
4.	Director: Financial Services	Ms. E. Wasserman		✓	✓
5.	Acting Director: Community Services	Mr. J. Van Niekerk			✓
6.	Acting Director: Infrastructure Services	Mr. W. Treurnicht			✓

5. DISCLAIMER

Please note that Internal Audit only considered and expressed an opinion based on the physical inspection conducted on the information and documentation made available and accepted the correctness of the instructions received. This report is purely based on the investigation conducted on Suurbraak Water and Wastewater Treatment Networks.

6. ACCEPTANCE OF INTERNAL AUDIT REPORT

We agree to the audit findings and recommendations made and hereby accept the abovementioned report.

MR. J. BOOYSEN
MANAGER: WATER AND SANITATION SERVICES
DATE: 23 FEBRUARY 2026

COMMENTS:

Findings agreed with by management. Most findings were due to the lack of proper housekeeping and will be attended to, periodically.

MS. A VORSTER
MUNICIPAL MANAGER
DATE:

COMMENTS: Remedial action to be implemented in full by 31 March 2026.