



DECEMBER 2023

EZULWINI NORTH TAILINGS STORAGE FACILITY (TSF)

DETAILS OF TAILINGS STORAGE FACILITY

Tailings Storage Facility (TSF) Name	Ezulwini North TSF
Operation	Cooke 4
Operational Status	Active
Operating Segment	RSA - Gold
Location	Westonaria, South-west of Johannesburg - please refer to Figure 1
Latitude, Longitude (decimals)	-26.35345, 27.7256778
Ore Source	Underground
Type of Storage Facility	Impoundment (upstream development)
Deposition Methodology	Day-Wall Paddock
Year of Commissioning	1982
Consequence Classification (GISTM, 2020)	Extreme
Operating Contractor	Stefanutti Stocks Inland (SSI)
Engineer of Record (EoR)	Knight Piesold (Pty) Ltd (KP)
Current Maximum Height (m)	30
Final Maximum Height (m)	60
Maximum Storage Capacity (tons/month)	200 000
Total Volume Already Deposited (Mm³)	26.7
Life of TSF (year)	2035 @2m/year



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TECHNICAL ASPECTS:

Design Criteria

GISTM and best practice guidelines including Australian National Committee on Large Dams (ANCOLD) (Guidelines on Tailings Dams, July 2019). Site specific design criteria were specified by the EoR. Details are included in the Design Basis Report (DBR).

Stability Assessment and Mitigation Measures

A detailed stability assessment was conducted in 2022. All sections of the TSF (current and final) that were analysed, exceeded the minimum required FoS for drained and pseudo-static conditions.

This assessment will be updated based on piezocone probing and laboratory testing results once they become available in Q4 2023.

(KP Reference: RI301-00726/21 Rev 0, 27 February 2023)

Dam Breach Assessment

Assessment completed in 2022

(KP Reference: RI301-00726/21 Rev 0, 27 February 2023)

Area of Inundation

Has been identified by EoRs – please refer to Figures 2 to 5

Summary of Human Exposure

Consequence classification has been based on Population at Risk (PAR). Communities have been identified and are being engaged through various means including Community Engagement Forums (CEF)

DOCUMENTATION:

Site Specific OMS Manual

Version 2022 available

Mandatory Code of Practice (MCOP) document No: SAND301-00726/09 is in place (dated July 2022)

Design Basis Report (DBR)

Version 2022 available

(KP Reference: RI301-00726/09 Rev B, 23 August 2022)

Environmental Management System

The Environmental Management System is ISO accredited (ISO 14001:2015)

The initial Environmental Management Programme (EMPr) is dated 2015.



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Surveillance:

Surveillance Frequency

Daily by the Operator and monthly reports of critical controls submitted to and reviewed by the EoR

Surveillance Technology/System

K2Fly Decipher

Deformation Monitoring

Interferometric Synthetic Aperture Radar (InSAR)

Phreatic Surface Levels & Pore Pressure Measurements

Standpipe piezometers
AquaSense Retrofit piezometers (IoT device)

RISK MANAGEMENT / EMERGENCY PREPAREDNESS:

Risk Assessment

Annual Risk Assessment (Bowtie) completed with no untoward risk identified

Risk Management

Site specific OMS Manual in place
Site specific Trigger Action Response Plans (TARPs) in place
Critical controls established and implemented

Site Specific Emergency Preparedness & Response Plans (EPRP)

Version 2023 available

Annual emergency mock drill for a catastrophic TSF failure – undertaken on 28 June 2023 with SSW employees and contractors.

Environmental emergency preparedness is managed on site according to ISO14001: 2015.

CLOSURE & POST CLOSURE

Closure Planning

In place - report prepared by Golder Associates
(Golder Reference: 20353622-341342-2, April 2021)

Closure Costing

Adequate financial capacity in place
Financials prepared by Golder Associates
(Golder Reference: 20447293-349380-3, December 2021)

Asset Insurance Cover

In place – July 2023 to June 2024



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Independent Reviews:

Independent Tailings Review Board (ITRB)

18 July 2022 with no material concerns identified

Future ITRB Review

2025

Performance Reviews

Annual and quarterly reports with inspections completed by EoR
(KP Reference: RI301-00726/09 Rev 0, 31 March 2023)

Dam Safety Review (DSR)

Carried out by an independent third party in 2019/2020,

During the site visit on 13 November 2019 the immediate concern was the total lack of vertical freeboard around the full perimeter of the TSF. To re-instate the vertical freeboard around the entire top perimeter of the TSF a weekly deposition plan showing the planned deposition vs the actual was prepared to address this concern. In addition, 2 excavators were used to build mechanical walls and re-instate the daywall paddocks around the TSF. Once re-instated a revised freeboard assessment as well as a photogrammetric survey was conducted, and the freeboard was found to be within the statutory freeboard requirements.

(KP reference: 301-00840/02-005 Rev 1, February 2020)

Next review scheduled for 2025



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Figure 1: Layout of Ezulwini (Cooke 4) TSE Complex



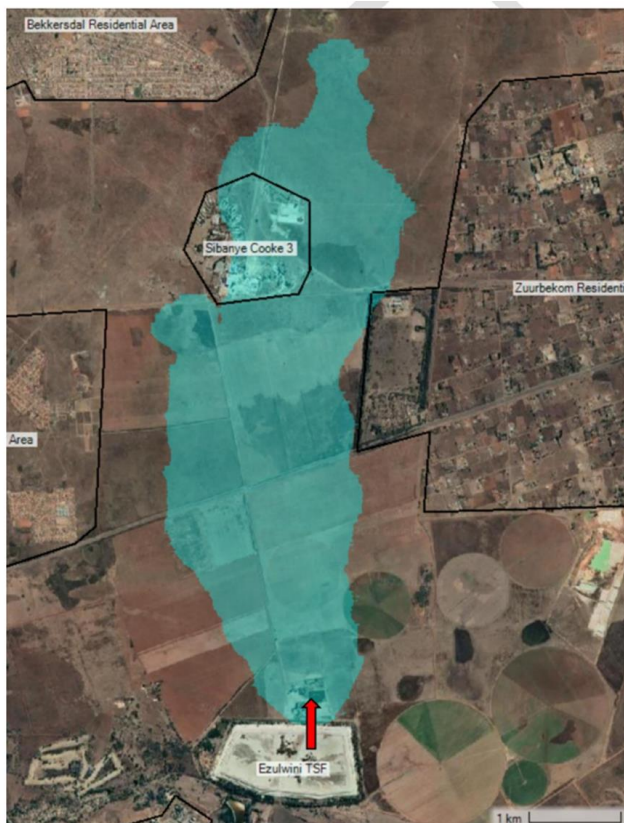


Figure 2: Inundation Map for the Rainy-day Failure at the Northern Wall

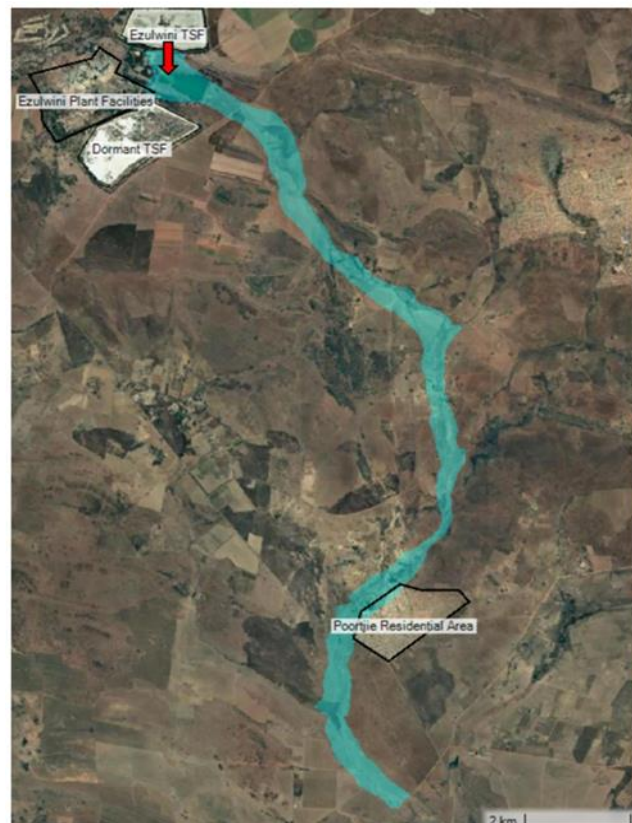


Figure 3: Inundation Map for the Rainy-day Failure at the Southern all

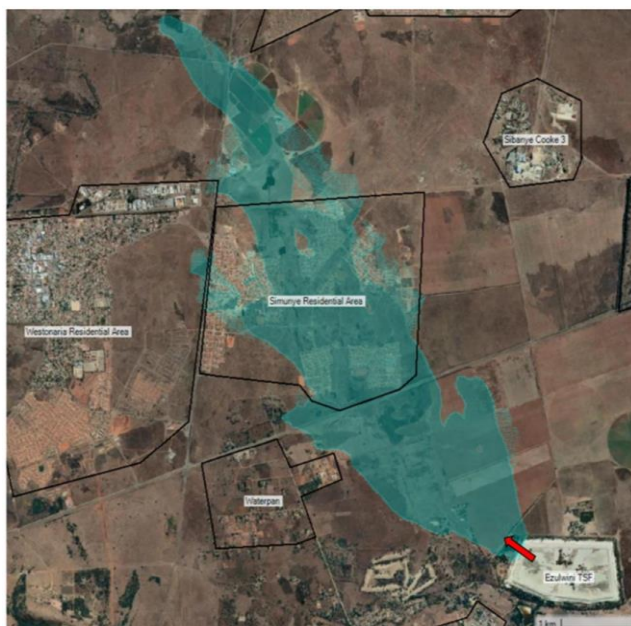


Figure 4: Inundation Map for the Rainy-day Failure at the North-Western Wall



Figure 5: Inundation Map for the Rainy-day Failure at the South-Eastern Wall