

#### **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) 32,3

Final Maximum Height (m) 46

Maximum Storage Capacity (tons/month) 200 000

Total Volume Already Deposited (Mm<sup>3</sup>) 26.7

Life of TSF (year) 2025 @1,5m/year OR 2032 @2m/year















## **TECHNICAL ASPECTS:**

**Design Criteria** 

Stability Assessment and Mitigation Measures

**Dam Breach Assessment** 

**Area of Inundation** 

**Summary of Human Exposure** 

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).

A detailed stability assessment based on piezocone probing and laboratory testing results in Q1 2025. (KP Reference: PR301-00726/64, 19 March 2025)

The assessment confirmed that all Factors of Safety (FoS) for drained conditions exceed the recommended minimum thresholds. While the undrained peak FoS values across most sections are below 1.5, they remain above 1.0. Discussions are ongoing with the Engineers of Record (EoR) to further evaluate and address this matter

The boreholes drilled during the dolomite stability investigation carried out in 2024 indicate that IHC 4//1 conditions dominate the site with localised IHC 2//1 conditions present at the site, presenting a medium risk for small to very large sized sinkholes and a medium risk of subsidence formation.

Assessment completed in 2022 (KP Reference: RI301-00726/21 Rev 0, 27 February 2023)

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

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:**

Surveillance:

Site Specific OMS Manual Version 2022 available

Mandatory Code of Practice (MCOP) document No: SAND301-00726/09 is in place (dated July 2023)

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.

Surveillance Frequency

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

EoR

Surveillance Technology/System Quartex and Groundwork Geolytics

**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 (FMEA) completed with no untoward risk identified

Risk Management Site specific OMS Manual in place

Site specific Trigger Action Response Plans (TARPs) in place

Critical and operational 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 24 October 2024 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 2024 to June 2025 (renewal process has commenced)

# **Independent Reviews:**

Independent Tailings Review Board (ITRB)

18 July 2022 with no material concerns identified

**Future ITRB Review** 

Currently underway

**Performance Reviews** 

Annual and quarterly reports with inspections completed by EoR

(KP Reference: PR301-00726/64, 19 March 2025)

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 is currently underway

















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



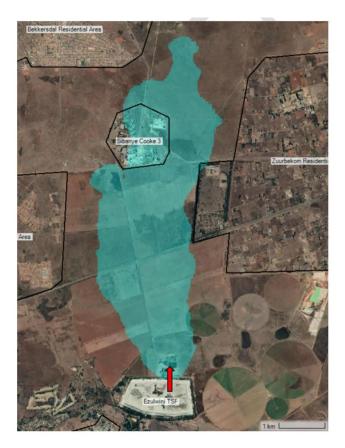












**Figure 2**: Inundation Map for the Rainy-day Failure at the Northern Wall



**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











