

DECEMBER 2022

KAREE TAILINGS
 STORAGE FACILITY (TSF) 4

DETAILS OF TAILINGS STORAGE FACILITY

Tailings Storage Facility (TSF) Name	Karee Mine Tailings Dams 4 (TD4)
Operation	Marikana
Operational Status	Active
Operating Segment	RSA - PGM
Location	45km east of the town of Rustenburg in the North West province - please refer to Figure 1
Latitude, Longitude (decimals)	-25.6498, 27.4491
Ore Source	Underground
Type of Storage Facility	Impoundment (upstream development)
Deposition Methodology	Spigot, converting to Hybrid Paddock System during 2023
Year of Commissioning	2008
Consequence Classification (GISTM, 2020)	Very High
Operating Contractor	Fraser Alexander (Pty) Ltd (FAT)
Engineer of Record (EoR)	SLR Consulting (Pty) Ltd
Current Maximum Height (m)	17
Final Maximum Height (m)	36
Maximum Storage Capacity (tons/month)	220 000
Life of TSF (year)	2045 @1.3m/yr, 2043 @1.5m/yr



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TECHNICAL ASPECTS:

Adopted Factor of Safety	Australian National Committee on Large Dams (ANCOLD) (July 2019)
Stability Assessment and Mitigation Measures (if applicable)	A detailed stability assessment based on piezocone probing and laboratory test work was conducted in 2022. (SLR Project No: 720.19129.00042 Rev A, December 2022) All the FoS are above the required limits
Dam Breach Assessment	Assessment completed in 2022 (SLR Project No: 720.19129.00011 Rev 1, December 2022)
Area of Inundation	Has been identified by EoRs – please refer to Figure 2
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
Dam Safety Review (DSR)	Carried out by an independent third party in 2020. All recommendations at the time have been addressed in the last 2 years. (KP Reference: RI301-00877/02 Rev B, 26 August 2022)
Design Basis Report (DBR)	Version 2022 available (SLR Project No: 720.19129.00033 Rev 1, December 2022)
Environmental Management Programme (EMPr)	In place
<u>Surveillance:</u> 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
 Operating contractor Technical and Operational Risk Assessment System (TORAS)

Site Specific Emergency Preparedness & Response Plans (EPRP)

Version 2022 available

Annual emergency mock drill for a catastrophic TSF failure – undertaken on 18 November 2022 with SSW employees and contractors.

CLOSURE & POST CLOSURE

Closure Planning

In place - report prepared by Golder Associates (Golder Reference: 20141966-340280-9, June 2021)

Closure Costing

Adequate financial capacity in place
 Financials prepared by Golder Associates (Golder Reference: 21467970-349390-1, December 2021)

Asset Insurance Cover

In place – July 2022 to June 2023

Independent Reviews:

Independent Tailings Review Board (ITRB)

12 July 2022 with no material concerns identified

Future ITRB Review

2025

Performance Reviews

Annual and quarterly reports and inspections completed by EoR (SLR Project No: 720.19129.00033 Rev 0, March 2022)



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Figure 1: Layout of Karee Tailings Dam Complex



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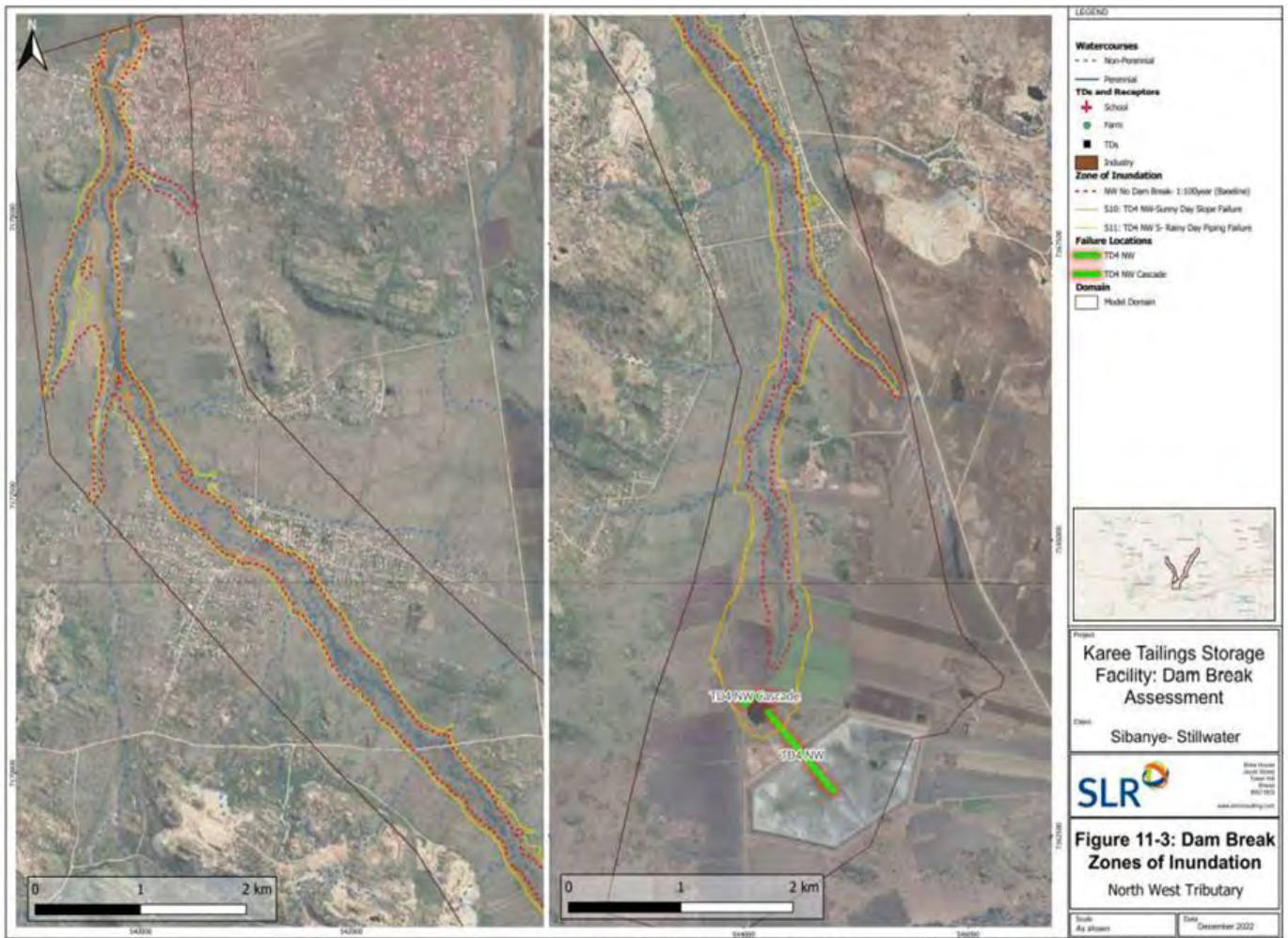


Figure 2: Area of Inundation (North-West tributary)