

4 August 2023

# GLOBAL INDUSTRY STANDARD FOR TAILINGS MANAGEMENT – DECLARATION OF CONFORMANCE

#### 1 INTRODUCTION

The Global Industry Standard for Tailings Management (GISTM), published in August 2020, significantly raises the bar with respect to tailings management. The GISTM comprises six topics, 15 principles and 77 requirements, which integrate social, environmental, local economic and technical considerations, towards the goal of zero harm to people and the environment. Members of the International Council on Mining and Metals (ICMM) have committed to conform with the requirements of the GISTM by 5 August 2023 for all "Very High" and "Extreme" consequence tailings storage facilities (TSFs) and by 5 August 2025 for all remaining TSFs.

This document serves to outline the approach followed towards conformance and provides a summary of the conformance status of all TSFs owned and managed by Sibanye Stillwater Limited (Sibanye-Stillwater or the Group) as of 31st July 2023.

Reference to our TSF disclosure and Fact Sheets: https://www.sibanyestillwater.com/sustainability/environment/tailings-management/

#### 1.1 Southern Africa (SA) region

Sibanye-Stillwater's TSFs were included in several acquisitions as the Group grew over time. The TSFs are all mature and, although compliant with historical geographic practices and legislation, were designed, operated and managed to varying standards. All TSFs are constructed in the upstream direction utilising the tailings to form the outer wall. Compared to the downstream method, this approach is perceived as more risky, but can be done safely with the right geographic location, operation methodology and surveillance systems commensurate to the level of risk.

There is currently a total of 34 TSFs of which 19 are active, 12 are dormant and 3 undergoing re-mining. Twenty-one of the TSFs are classified as either Very High or Extreme of which 19 are active and 2 dormant.

One new TSF within a brownfields portion of the Marikana footprint is currently under detailed design and permitting as part of a tailings retreatment project. The TSF includes backfilling worked out pits and constructing an above ground TSF. The TSF is to be lined and constructed as an impoundment with a waste rock embankment. The consequence classification of the TSF is Extreme. The above ground portion will be commissioned in approximately 8 to 10 years' time. The feasibility study is ongoing hence no declarations have been made in terms of conformance to the GISTM as yet.

#### 1.2 United States (US) region

The US region's TSFs were included in the Stillwater acquisition. There are 3 TSFs developed as lined downstream impoundments with zoned embankments constructed primarily of compacted waste rock. Two TSFs are active and one dormant. All three TSFs are classified as either Very High or Extreme.



At the East Boulder Mine a new TSF, Lewis Gulch, is under the final stages of permitting. The TSF will classify as Very High consequence. A Plain Language Summary is included in the disclosures on the website. At the Stillwater Mine two new TSFs, Hertzler Stage 4 and 5 are beginning the permitting process. Consequence classification is ongoing.

#### 1.3 European (EU) region

Sibanye-Stillwater has recently increased its ownership in the Keliber project in Finland to 79%. Two TSFs are planned, the Pre-flotation TSF and Main Flotation TSF. Both TSFs will be constructed as impoundments with waste rock embankments. Construction is scheduled to start during 2024. Integration into the Group Tailings Management System, including GISTM conformance, is ongoing with conformance targeted by year end. The consequence classification must be confirmed but is potentially High or Significant.

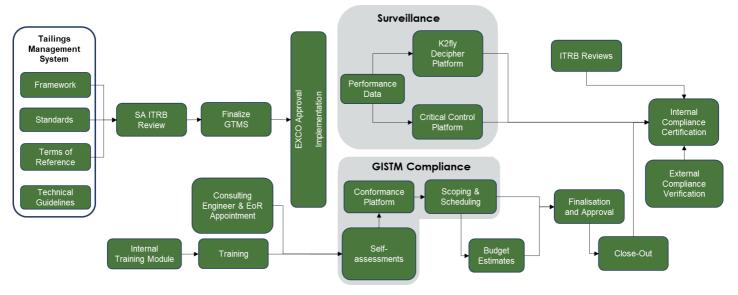
#### 1.4 Australian (AUS) region

Sibanye-Stillwater increased its shareholding in New Century Resources from 19.99% to 100% in March 2023. New Century Resources owns and operates the New Century zinc tailings retreatment operation in Queensland. There is a single TSF which is being hydraulically remined for reprocessing. The TSF will be depleted Q1 2027. The TSF was constructed in the upstream direction and designed and operated in accordance with ANCOLD Guidelines. The TSF has a High consequence classification. Self-assessments against the GISTM Requirements are to be initiated in Q3 2023 targeting conformance prior to August 2025. The reprocessed tailings are deposited in a worked-out pit. The final tailings elevation will be below the pit crest.

## 2 METHODOLOGY AND APPROACH TO CONFORMANCE

An internal road map was initially established to identify the high-level gaps and actions required for conformance. A Group Tailings Management System (GTMS), aligned to the GISTM, was developed, reviewed by the SA Region's Independent Tailings Review Board (ITRB) and approved by the Executive and Board. All further actions were undertaken in accordance with the GTMS. A summary of the roadmap is included in Figure 2-1.

FIGURE 2-1: CONFORMANCE ROADMAP





# 2.1 Interpretation of conformance

In 2021, the ICMM published Conformance Protocols to guide owners' self-assessments and third-party validators with implementation of the GISTM. The GISTM does not provide a definition of conformance. The Conformance Protocols however provide definitions of levels of conformance, included in Table 2-1.

TABLE 2-1: CONFORMANCE PROTOCOLS: DEFINITION OF CONFORMANCE LEVELS

Conformance Level	Description of Outcome
Meets	Systems and/or practices related to the Requirement have been implemented and there is sufficient evidence to demonstrate that the requirement is being met
Partially meets	Systems and/or practices related to meeting the criterion have been only partially implemented
	Gaps or weaknesses persist that may contribute to an inability to meet the intended outcome of the criterion
	Insufficient verifiable evidence has been provided to demonstrate that the criterion has been met
	A plan is in place to address deficiencies in other criteria
Does not meet	Systems and/or practices required to support implementation of the Requirement are not in place, or are not being implemented, or cannot be evidenced
Not applicable	The specific Requirement is not applicable to the context of the asset

GISTM Requirement 4.7, which is, by definition, linked to Requirement 5.7, provides some latitude to conformance where "the upgrade of an existing tailings facility is not viable or cannot be retroactively applied". The upgrade must however be risk informed and carried out "as soon as reasonably practicable". The Conformance Protocols expand on the definition of upgrade to include "engineering work or other measures which might include remedial engineering measures for existing facilities". This latitude has been simplified by the ICMM Tailings Working Group including "meets with a plan" in the definition of conformance where the owner has a plan in place to meet conformance that has not yet been fully implemented.

Due to external capacity constraints and the timeline for conformance, Sibanye-Stillwater has, where appropriate, utilised the concept of "meets with a plan" for Requirements 4.7 and 5.7 on the proviso that the integrity and safety implications are properly managed. TSFs in this category are indicated with a summary of the ongoing work in Table 6-2, Table 6-3 and Table 6-4. The ongoing work is also disclosed in the relevant fact sheets.

#### 2.2 Self-assessments

A dedicated tailings module was developed for self-assessments to identify TSF-specific gaps with the GISTM, develop actions to close out the gaps and upload evidence of conformance. The module was used to track progress and report on the level of conformance to senior management, executive and board. The appointed Responsible Tailings Facility Engineer (RTFE) is accountable for conducting



monthly self-assessments with the input from representatives of internal departments (environmental, social, safety and communication) and external parties including the Engineer of Record. An internal guide, based on the ICMM Conformance Protocols (2021), was developed to assist with undertaking the self-assessments. The module was also designed to enable third-party validation.

This declaration is based on self-assessments with the intent to have third party validation completed during Q4 2023.

#### 2.3 Governance

The Group Tailings Management framework defines the tailings management governance structure, required roles, accountability, and authority of personnel responsible for the safe management of the TSFs. A generalised structure is indicated in Figure 2-2. The various roles are summarised below.

Accountable Executives -The Chief Regional Officers are appointed by the CEO as the Accountable Executives for the management of the TSFs within their region. The Chief Regional Officers are not tailings specialists and hence are supported by tailings specialists appointed in the regions and the corporate Group Technical and Innovation function.

Tailings Engineering – Tailings specialists have been employed in the SA and US regions and the Group Technical and Innovation division as the custodians of the Group Tailings Management System to provide support to the Accountable Executives and operational teams. The specialists are responsible for providing assurance to the Accountable Executives that the TSFs are being managed appropriately in accordance with the Group Tailings Management System, legislation and best practice guides.

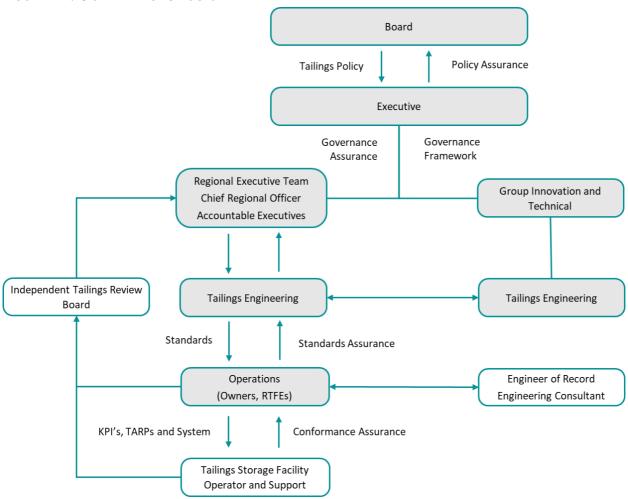
Responsible Tailings Facility Engineers (RTFE) – The SA region's Metallurgical Managers are appointed in terms of the Mine's Health and Safety Act regulation 3(1)a (Act 29 of 1996) for inter alia the management and integrity of the TSFs under their control. Considering these appointments and the lack of suitable resources within the tailings industry, the Metallurgical Managers are appointed as the RTFEs. It was recognized that the Metallurgical Managers do not necessarily have the required qualifications and experience and hence several internal tailings courses were developed and presented. This training, combined with support from the internal tailings specialists and the Engineers of Record's teams enables the RTFEs to fulfil their responsibilities. The responsibility for the US region's TSFs falls under the environmental team. The Environmental Sustainability Manager has accordingly been appointed as the RTFE who is supported in the role by a tailings specialist and Engineer of Record.

Engineers of Record (EoR) – Historic tailings practice in both the SA and US Regions required suitably qualified and experienced professional engineers to be appointed in an oversight capacity to provide assurance that the TSFs are being operated in accordance with the design intent. EoRs are formally endorsed and appointed in accordance with the Terms of Reference: External Appointments and commercial contracts. All EoRs are supported by established consulting firms with the appropriate level of capacity and have assigned deputies who represent the EoR when required and secure the EoR succession plans.

Independent Tailings Review Boards (ITRB)- The SA region ITRB was established in January 2021. The US region, in accordance with Montana State legislation, established its Independent Review Panel (IRP) in 2016 and the ITRB in 2021. The IRP is responsible for certifying the safety of new and expansions to the TSFs to the regulators. After publication of the GISTM, the IRP members were also requested to act as the ITRB. They now have the dual responsibility as an IRP to report to the regulators about the safety of future TSFs and as the ITRB to the regional executive about the management of the TSFs. Both roles are clearly defined by the regulations (Montana Code Annotated 2015) and the Sibanye-Stillwater Group Tailings Management System (GTMS).



FIGURE 2-2: GOVERNANCE STRUCTURE



#### 2.4 Community and stakeholder engagements

#### SA region

Historical practice in the SA region had limited engagement with the communities which included permitting of the TSFs, Social Labour Plans and resolution of environmental complaints such as dust generated by a TSF. Awareness and preparation of downstream communities and other stakeholders for a potential TSF failure is recognised to be the ultimate risk mitigator to the impact of a potential failure. This recognition and the GISTM Requirements have substantially raised the bar with the implementation of interactive engagements that cover the entire operation, not just the TSFs, especially when related to emergency response.

The overall approach followed is summarised in Figure 2-3. Key aspects to be noted include:

- Impacted communities were identified as those within potential areas of inundation determined through Dam Breach Analyses. These assessments were based on the conservative assumption that liquefaction of the tailings body was credible. These areas of inundation are equivalent to an Extreme consequence classification and are not necessarily aligned to the actual area of inundation and resultant consequence classification for dormant TSFs.
- Tailings awareness training has been provided to the impacted communities by both the RTFEs and an external consultant.



- Emergency preparedness training has been undertaken with the impacted communities which
  included details of evacuation routes and demarcated assembly points.
- Vulnerability assessments were completed for the collective community. A "door to door"
  assessment was undertaken by an external consultant to identify the vulnerability of individuals
  within communities impacted by the Marikana operations. It is intended to continue the process
  going forward with learnings from this exercise applied to the remaining operations.
- Several engagements have been held with regional and local municipalities. Memorandums of Understanding detailing emergency response roles and commitments have been entered into with the Bojanala Platinum District Municipality (which includes all Rustenburg operations), the Capricorn District Municipality (which covers the Limpopo operations) and Lejweleputswa District Municipality (which covers the Beatrix operation). Similar engagements with local municipalities impacted by the gold operations are ongoing however, the lack of resources within the municipalities and regulators has delayed entering formal agreements.
- Several engagements have been held with the Gift of the Givers Foundation, the largest disaster response non-governmental organisation on the African continent. A Memorandum of Understanding has been entered into for emergency response and support after a disaster.
- As part of the preparation of Emergency Preparedness and Response Plans (EPRP), Internal mock drills were conducted at the operations with the findings incorporated in the EPRPs.
- An external mock drill, including the impacted communities, first responders, governmental
  disaster recovery teams, Gift of the Givers and other stakeholders was conducted for the
  Rustenburg and Marikana operations. Learnings from the drill are to be incorporated in similar
  drills to be conducted at the remaining operations.

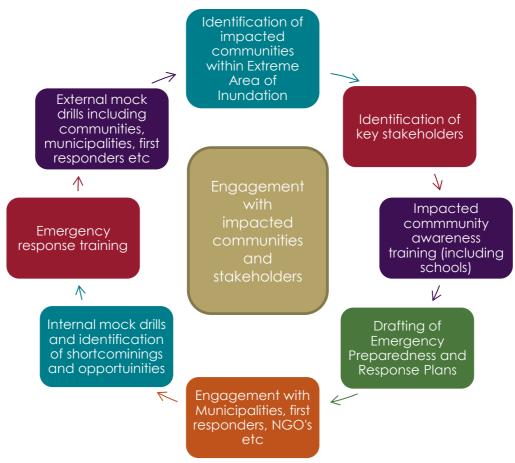
# **US** region

Community engagement related to the TSFs in the US region occurs in a variety of forums.

- As part of the Good Neighbor Agreement (GNA), GNA community and technical representatives are involved in regular dam performance review of existing TSFs as well as design review for new or expanded TSFs. The GNA also facilitates a responsible mining technology committee that is tasked with the review of new tailings technologies.
- Tailings awareness training and emergency exercises simulating a dam breach are held with
  the local government and emergency responders on a regular basis. Potential breach of the
  TSFs is a scenario that is included in the local government's Multi-Hazard Mitigation Plans
  Emergency response roles are clearly defined in the TSF Emergency Preparedness Plans. These
  sessions are particularly valuable to volunteer emergency responders in these rural jurisdictions,
  as they provide much needed general training and simulation opportunities.
- Tailings awareness and emergency preparedness training has been provided to local residents in potential areas of inundation determined through Dam Breach Analyses.



FIGURE 2-3: COMMUNITY ENGAGEMENT IN PREPARATION OF AN EMERGENCY



#### 3 TECHNICAL CRITERIA: SA REGION

#### 3.1 Tailings characterisation

Prior to publication of the GISTM, a limited number of detailed geotechnical investigations had been undertaken to characterize the various tailings bodies. Annual stability assessments undertaken by the Engineer of Record instead utilised representative geotechnical parameters from available databases coupled with piezometric levels or seepage analyses. Detailed geotechnical investigations, including test pitting, piezocone probing, shear vanes, sampling at depth and laboratory testing have since been undertaken on active and selected dormant TSFs.

It was not considered necessary to undertake detailed geotechnical investigations for TSFs that had been dormant for some time on the proviso that the TSF was known to have a low phreatic surface. Information on the foundation materials for the gold TSFs was limited and hence geotechnical investigations comprised of test-pitting and laboratory testing were undertaken. Stability assessments for these TSFs were based on historic data, data from the recent investigations on active TSFs and the laboratory results for the foundation materials. It is however planned to undertake piezocone probing on these TSFs to confirm the actual position of the phreatic surface H2 2023 and H1 2024.

#### 3.2 Consequence classification

Prior to the GISTM, tailings management in Southern Africa was in accordance with the Code of Practice for Mine Residue Deposits, 1998 (SANS 10286). The code specifies a consequence



classification using a three-tier matric (Low-Medium-High) based on the potential impact in an area of inundation (also known as the zone of influence) resulting from a hypothetical catastrophic failure. Owners had the option to determine the area of inundation either through a dam breach analysis or by using empirical guidelines provided by the code. All TSFs were previously classified using the empirical guidelines and hence Dam Breach Analyses were undertaken for all TSFs to confirm or update the area of inundation and determine the consequence classification of the TSF using the GISTM matrix.

Dam Breach Analyses for active TSFs assumed that a catastrophic breach of the outer wall, resulting in liquefaction of the tailings impounded by the outer wall, is credible under both rainy- and sunny-day scenarios. The same assumption was made for dormant TSFs that are known to have a phreatic surface. All such TSFs have typically been classified as Very High or Extreme given the extent of the estimated area of inundation and impacted communities within the area.

A catastrophic breach of the outer wall with liquefaction of the impounded tailings is not considered credible for TSFs that have been dormant for some time and are known to have a phreatic surface close to natural ground level. This resulted in limited areas of inundation and a Significant or High consequence classification. The level of the phreatic surface is however to be confirmed where required by means of piezocone.

All TSFs are being managed using extreme criteria which has resulted in required upgrades on some of the TSFs as detailed in Section 5 and within the respective fact sheets.

#### 3.3 Design criteria

The GISTM provides two design criteria, the flood and seismic design criteria, both of which are a function of the consequence classification. All TSFs are being managed to the Extreme consequence criteria, regardless of the actual classification.

All other design criteria are required to be aligned to best international practice, TSF-specific and determined by the Engineer of Record. The SA Region has adopted recommended factors of safety, from the Guideline on Tailings Dams - Planning, Design, Construction, Operation and Closure (ANCOLD, 2019) as the extreme criteria which have been modified by the Engineer of Record to be TSF-specific utilising a risk-based approach as required.

#### 3.4 Brittle behaviour

The potential for brittle behaviour was assessed for the tailings body and foundation through piezocone probing, shear vanes and triaxial testing of samples extracted at varying depths. Both gold and PGM tailings were found to exhibit a medium to high potential for brittle behaviour. Consolidated reports summarising the assessments and detailing the risk mitigation measures using the As Low As Reasonably Practicable (ALARP) process were drafted by the Engineers of Record.

#### 3.5 Design and Continuation Reports

Given the age of the TSFs and changes in ownership, limited information regarding the original designs is available. The respective Engineers of Record were accordingly appointed to prepare Continuation Reports for all TSFs using historic design and performance data, results from geotechnical investigations and current performance data. Information gaps were identified in the Continuation Reports which have either been or are being closed out.



#### 3.6 Independent review

#### Dam Safety Reviews

After the Brumadhino disaster and prior to the publication of the GISTM, independent third-party reviews were undertaken for all active TSFs to provide assurance to the Executive and Board that the TSFs were being managed appropriately and that no unacceptable risks were present.

No material findings were reported.

#### Independent Tailings Review Board

ITRB reviews are undertaken on a three-year cycle for all TSFs. TSFs indicating a level of increased risk are reviewed annually. All active TSFs were reviewed in 2021 and 2022 and all dormant TSFs, except Blue Ridge TSF, in 2023.

Blue Ridge TSF was laid dormant approximately 12 months after commissioning with a maximum wall height of 9m. Having a low consequence classification, the TSF is to be reviewed by a Senior Independent Technical Reviewer during H2 2023 instead of the ITRB.

No material risks were identified during the reviews.

The ITRB ranked their recommendations by priority as indicated in Table 3-1. Priority 1 recommendations are summarised below:

- The potential for mobilisation of residual shear strength (brittle behaviour) and the impact thereof on the factor of safety should be addressed by the EoR
- The piezometer data should be reviewed and the need for additional piezometers defined. Consideration should include the following to confirm the interpretation of the results:
  - Nested vibrating wire piezometers adjacent to standpipes
  - Mostap sampling for moisture content profiling
  - o Interpretation of the results from the seismic output from the cones
- The discrepancy between standpipe and piezocone phreatic surface levels should be eliminated as a matter of urgency.

All recommendations have been closed out or are being actioned by the Engineers of Record as part of ongoing geotechnical investigations.

The reviews are summarised in the respective fact sheets.



**TABLE 3-1: ITRB PRIORITY DEFINITIONS** 

Priority	Integrity	Actions
1	A dam safety issue considered immediately dangerous to life, health or the environment, or a significant risk of regulatory enforcement.	Priority 1 recommendations requires immediate action. Action and time frames agreed with Accountable Executive (AE)
2	If not corrected, a concern that could result in a dam safety issue leading to injury, health impact or discontinuity of operations	Priority 2 recommendations require immediate planning and completion by a date specified by operations
3	Single occurrence of deficiency or non- conformance that alone would not be expected to result in dam safety issues, discontinuity of operations or regulatory intervention.	Priority 3 recommendations require action by a date that would prevent escalation
4	A recommendation based on good practice improvement or risk reduction.	Priority 4 recommendations may be scheduled at the discretion of site operations considering its resources

### 4 TECHNICAL CRITERIA: US REGION

The US region's TSFs have benefited from being under the same local governance and company, and the same Engineer of Record's firm for the life of the operations. This has allowed for a high level of practice to be maintained with good consistency and follow through.

#### 4.1 Tailings characterization

Several geotechnical studies have been conducted to characterise the tailings and the TSF sites. Investigations included site geotechnical, geological (including morphology), and geochemical testing at the surface and underground. These investigations have been updated over time as the TSFs have gone through expansion permitting. Additional geotechnical testing of the tailings has been conducted in multiple phases at one of the TSFs over the last 20 years.

As part of the annual inspections and quarterly reporting, stability assessments completed by the Engineer of Record are reviewed. This work includes utilizing up to date geotechnical monitoring data; deformation and phreatic surfaces, to inform and update the assessment.

#### 4.2 Consequence Classification

The US region's TSFs are classified using modelling and empirical guidelines to confirm or update the area of inundation mapping and determine the consequence classification for the TSF using of the GISTM matrix. In the last two years, the dam breach analysis has been combined with local government and stakeholder knowledge relating to populations and infrastructure that could potentially be at risk during a breach scenario.

In Montana, since 2015, Dam Breach Analysis fall under the following regulations and guidelines:

- Montana Code Annotated,
- Montana Department of Environmental Quality Dam Safety Regulations,



- Montana Dept. of Natural Resources and Conservation Dam Safety Program: Downstream Hazard Classification Procedures for Montana Dams.
- Canadian Dam Association (CDA) Dam Brach Bulletin App. B

#### 4.3 Design criteria

The US region's operations in Montana are regulated by the Montana Annotated Code (Title 82, Chapter 4, Part 3) regarding design criteria, specifically Factors of Safety, Design Earthquakes, and Probable Maximum Floods. This aligns with the GISTM regarding two of the design criteria, the flood and seismic design criteria. TSFs in Montana are classified with a hazard consequence similar to the CDA's consequence classification (Low to Extreme) however the TSFs are required to be managed to the Extreme design criteria regardless of the actual classification:

- Ground motion associated with the 1-in-10,000-year event, or the maximum credible earthquake, whichever is larger,
- The Inflow Design Flood will utilise the PMF.

All other design criteria are required to be aligned to best international practice, be TSF-specific and must be determined by the Engineer of Record. The US region has adopted design criteria from regional guidelines such as the Canadian Dam Associations guidelines, International Council on Mining and Metals Best Practice Guides, and Mining Association of Canada.

#### 4.4 Brittle behaviour

The US PGM TSFs utilise the downstream construction method which does not rely on the tailings material for dam stability. Regardless, the potential for brittle behaviour was assessed for the tailings body and foundation through piezocone probing, shear vane measurements and triaxial testing of samples extracted at varying depths. Stability reports and updated materials and investigation reports have been prepared by the Engineer of Record.

#### 4.5 Design Reports

Design reports for each stage of TSF construction are available along with construction summary reports reflecting on each construction phase. Site management teams working with the Engineer of Record have created Operations, Maintenance, and Surveillance manuals and Design Basis Memos which summarise current operation and design standards.

#### 4.6 Independent review

Independent Review of the US PGM TSFs falls under three categories: Dam Safety Reviews (Montana Annotated Code, GISTM), Independent Review Panels (Montana Annotated Code), and Independent Tailings Review Board (GISTM).

#### **Dam Safety Reviews**

In 2015 as part of the Montana Annotated Code update in response to the Mount Polly disaster and prior to the publication of the GISTM, Dam Safety Reviews (DSR) were conducted by an independent third-party for all TSFs to provide assurance to the executive and board that the TSFs were being managed appropriately with no unacceptable risks. DSRs we also completed in 2020. No material findings were reported.

As part of ongoing conformance, the next DSRs will be undertaken in 2025.



#### Independent Review Panel

As part of the Montana Annotated Code an Independent Review Panel (IRP) is required to review design and operations plans for all new and expanding TSFs. The IRP was initially engaged in 2016. It completed the review of planned work and reported its findings to both the site operations and the state governmental agency. No material findings were reported. The IRP meets as needed for review work and at minimum every three years post execution of reviewed design for follow-up.

#### Independent Tailings Review Board

The ITRB for US PGM TSFs was initiated in 2021, with annual reviews in each subsequent year. The ITRB reviews ongoing operations of both active and inactive TSFs. The US region has benefited from a continuation of the same team working as the IRP and ITRB. No material findings have been found.

ITRB reviews are undertaken at minimum on a three-year cycle for all TSFs. TSFs that indicate some level of increased risk are reviewed annually.

#### 5 TSF UPGRADES

Historic tailings management criteria in the SA region have not necessarily been aligned with current international best practice. Detailed stability assessments utilising more stringent criteria have highlighted the need to upgrade certain TSFs. These upgrades are summarised in the relevant fact sheets and described below.

#### 5.1 Beatrix TSF 2

Geotechnical investigations identified relatively high pore pressures within the foundation below the northwest flank which resulted in unacceptable factors of safety. The pore pressures are primarily due to dykes which divert the drainage of water from the tailings body and subsoil seepage from evaporation paddocks to the northwest flank. An under-drained buttress was constructed in the area of concern during Q1 2022. A further raise has since been recommended by the Engineer of Record. The raise is currently being reviewed by the ITRB with construction potentially during Q3/Q4 2023. The operation has a remaining life of approximately four years at which time all deposition will be stopped.

#### 5.2 Driefontein TSF 1 and TSF 2

Piezocone probing was undertaken at two sections on both TSFs to characterize the tailings body for the development of continuation reports. The probing indicated phreatic surfaces higher than that indicated by installed standpipe piezometers. Results from stability assessments using the different phreatic surfaces yielded significantly different factors of safety for both drained and undrained states. Factors of safety based on the piezometric levels are above recommended values whereas those based on the probing were lower.

The high pore pressures determined by the piezocone probing are not considered credible. A more detailed geotechnical investigation including piezocone probing, shear vanes and resistivity testing is to be undertaken as soon as practicable based on the geotechnical contractor's capacity.

#### **5.3 EPL TD2**

Seepage was evident on the outer wall due to inefficiencies in the drainage system. A localised slough occurred in January 2020 on the northeast flank. An under-drained buttress was constructed along



approximately 80% of the perimeter of the TSF to manage the seepage and improve stability. Construction was undertaken in two phases with completion in October 2021. No further concerns have been identified. The TSF has a remaining life of approximately two years after which it is to be remined.

#### 5.4 Kroondal K2 TSF

A buttress had previously been constructed on the first bench of the south flank due to seepage. A localised slough occurred in September 2022 adjacent to the buttress. The buttress was extended along the area impacted by seepage. An additional under-drained buttress was constructed at the toe along the flank. Construction was completed March 2023.

The design and extent of the buttress is to be confirmed based on the recent geotechnical investigation and will be constructed as required by the design.

#### 5.5 Paardekraal TSF Complex

Seepage is evident in certain sections of the outer walls. There are no signs of distress however it has been decided that seepage is to be controlled through the construction of cut-off drains and buttresses. A detailed geotechnical investigation including piezocone probing and extraction of samples at depth was completed end June 2023. The results will be used to update the 2021 investigation and analyses and for the design of the drains and buttress. The analyses and designs are to be completed during H2 2023 with construction scheduled for completion during 2024.

# 6 CONFORMANCE SUMMARY

Neither the GISTM nor the ICMM has dictated the format of required disclosures. This disclosure considers the anticipated audience to be shareholders, insurers and non-governmental organisations including the ICMM and Global Tailings Management Institute. Disclosures contained within the fact sheets include details as required by Principle 15 of the GISTM. Supporting documentation required by stakeholders, insurers etc for further assessment will be provided on request.

Disclosures consider the materiality of findings where materiality is defined as a risk or event that may have a short or long-term impact on the integrity of the facility requiring mitigation.

Conformance categories, as indicated in Table 6-1, have been introduced to differentiate levels of conformance and simplify the disclosure summary. The conformance rating percentage is the overall score of self-assessments based on the sum scores for individual Requirements where:

- Meets = 100%
- Partially meets = 25%, 50%, 75%
- Does not meet = 0%



TABLE 6-1: CONFORMANCE CATEGORIES

Category	Description	Comments		
A1		All 77 Requirements met		
A2	Conformant	R4.7/R5.7 Meets with a Plan  • Awaiting geotechnical data (laboratories)		
А3		R4.7/R5.7 Meets with a Plan  Ongoing investigations Remedial measures being undertaken		
В	Substantially Conformant	Ongoing, not all 77 Requirements met with 90% to 99% conformance rating.  Conformance is reliant on ongoing work undertaken by third parties, primarily the Engineers of Record and geotechnical contractors.		
С	Partially Conformant	Ongoing, not all 77 Requirements met with < 90% conformance rating.  Conformance is reliant on ongoing work undertaken by both internal departments and third parties.		



TABLE 6-2: CONFORMANCE SUMMARY - ACTIVE TSFS

ACTIVE TSFs		Conformance Category	Comments
Beatrix TSF2	Extreme	А3	Northwest flank buttress to be assessed for recommended raise 2023/2024
Driefontein TSF1	Extreme	А3	Further piezocone probing to be undertaken Q3/Q4 2023 to assess discrepancies between previous probe results and piezometric levels
Driefontein TSF2	Extreme	A3	Further piezocone probing to be undertaken Q3/Q4 2023 to assess discrepancies between previous probe results and piezometric levels
Leeudoorn	Fxtreme	Δ1	Conformant
Ezulwini North TSF	Extreme	A2	Triaxial test results outstanding. Results will be utilised to update the stability assessment if materially different from those obtained from the piezocone probe results.
Baobab 1	Very High	A1	Conformant
Eastern Plats TD2	Extreme	A1	Conformant
Hoedspruit	Very High	A2	<ul> <li>Geotechnical investigation completed, awaiting laboratory test results to confirm stability assessments.</li> </ul>
Karee TD2	Very High	A1	Conformant
Karee TD3		A1	Conformant
Karee TD4	Very High	A1	Conformant
Kroondal K1	Extreme	A2	Geotechnical investigation completed, awaiting laboratory test results to confirm stability assessments.
Kroondal K150	Extreme	A2	Geotechnical investigation completed, awaiting laboratory test results to confirm stability assessment.
Kroondal K2	Extreme	А3	<ul> <li>Geotechnical investigation completed, awaiting laboratory test results to confirm stability assessments.</li> <li>Extension of existing buttress to be assessed to manage adjacent seepage.</li> </ul>
	Beatrix TSF2  Driefontein TSF1  Driefontein TSF2  Leeudoorn  Ezulwini North TSF  Baobab 1 Eastern Plats TD2  Hoedspruit  Karee TD2 Karee TD3 Karee TD4  Kroondal K1  Kroondal K150	Driefontein TSF1 Extreme  Driefontein TSF2 Extreme  Leeudoorn Extreme  Ezulwini North TSF Extreme  Baobab 1 Very High Eastern Plats TD2 Extreme  Hoedspruit Very High Karee TD2 Very High Karee TD3 Very High Karee TD4 Very High Kroondal K1 Extreme  Kroondal K1 Extreme	Beatrix TSF2 Extreme A3  Driefontein TSF1 Extreme A3  Driefontein TSF2 Extreme A3  Leeudoorn Extreme A1  Ezulwini North TSF Extreme A2  Baobab 1 Very High A1 Eastern Plats TD2 Extreme A1  Hoedspruit Very High A2  Karee TD2 Very High A1 Karee TD4 Very High A1  Kroondal K1 Extreme A2  Kroondal K150 Extreme A2



ACTIVE TS	ACTIVE TSFs		Conformance Category	Comments
	Marikana TSF	Very High	A2	Geotechnical investigation completed, awaiting laboratory test results to confirm stability assessments.
				<ul> <li>Piezocone probing was undertaken to update the 2021 geotechnical investigation. Completed mid-July 2023</li> </ul>
	Paardekraal Complex (Pk4, Central, PK5)	Extreme	A3	<ul> <li>Northwest section of PK4 seepage to be addressed by buttressing with the design based on the geotechnical investigation and assessments.</li> </ul>
				PK5 dormant area to be recommissioned Q4 2023 to increase deposition capacity and resolve seepage concerns on the division wall between the dormant area and PK Central.
	Western Plats TD6	Extreme	A1	Conformant
US PGM	East Boulder TSF	Very High	Al	Conformant
03 PG/M	Herzler TSF	Extreme	A1	Conformant



TABLE 6-3: CONFORMANCE SUMMARY - VERY HIGH AND EXTREME CONSEQUENCE DORMANT TSFS

SA Gold Beatrix TSF 1	Extreme	A1	Conformant  • Piezocone probing to be
			Piezocone probing to be
SA PGM Western Plats TD5	Extreme	A3	<ul> <li>undertaken Q3/Q4 2023 to assess tailings properties and pore pressures.</li> <li>Investigation is currently being undertaken by the Engineer of Record to re-commission TD5 as part of the regional tailings</li> </ul>
		A2	<ul> <li>TSF is partially capped with the uncapped portion used for water management.</li> </ul>
US PGM Nye TSF	Very High		



TABLE 6-4: CONFORMANCE SUMMARY - LOW, SIGNIFICANT AND HIGH CONSEQUENCE TSFS

DORMANT TSFs		Consequence Classification	Conformance Category	Comments
	Beatrix #4 TSF (Oryx TSF)	Significant	A1	Conformant
	Cooke TSF	High	В	<ul> <li>Geotechnical investigation completed.</li> </ul>
				<ul> <li>Stability assessments and drafting of Continuation Report and related technical documents is ongoing. Expected completion date Q4 2023.</li> </ul>
				• EPRP to be finalised.
				<ul> <li>Emergency drills to be undertaken.</li> </ul>
SA Gold	Burnstone TSF	High	С	Currently dormant, to be recommissioned 2026 subject to approved business plan.
				• Self-Assessments were initiated July 2023.
				<ul> <li>Appointed Engineer of Record has started preparation of the Continuation Report and related documents. Expected completion date Q4 2023.</li> </ul>
	Ezulwini South TSF (Cooke 4)	Low	В	<ul> <li>Geotechnical investigation completed.</li> </ul>
				<ul> <li>Stability assessments and drafting of Continuation Report and related technical documents is ongoing.</li> <li>Expected completion date Q4 2023.</li> </ul>
				EPRP to be finalised.
				Emergency drills to be undertaken.
	Kloof TSF2	High	Al	<ul><li>Operations ceased December 2022.</li><li>Conformant</li></ul>



DORMANT TSFs		Consequence Classification	Conformance Category	Comments
				Dam 38 remined. Dam 39 is currently being remined and will be followed by Dam 40 and Dam 41.
	Millsite Complex (Dams 38, 39, 40, 41, Valley Dam)	Significant	В	<ul> <li>Geotechnical investigations ongoing for input into Continuation Report and related documentation</li> </ul>
				EPRP to be finalised.
				Emergency drills to be undertaken.
	Karee4 TD1	High	A1	Conformant
SA PGM	Blue Ridge TSF	Low	С	<ul> <li>Detailed design for closure to be undertaken.</li> </ul>
				• Self-assessments were initiated June 2023.
				<ul> <li>Initial review and gap assessment to be undertaken by senior independent reviewer Q3 2023.</li> </ul>
	Western Plats TD1	High	А3	Piezocone probing to be undertaken H2 2023 to confirm phreatic surface and foundation materials.
	Western Plats TD2	High	А3	Piezocone probing to be undertaken H2 2023 to confirm phreatic surface and foundation materials.
	Western Plats TD7	High	А3	Piezocone probing to be undertaken H2 2023 to confirm phreatic surface and foundation materials.
	EPL TD1	Low	Excluded from conformance	Remining ongoing, Depletion 2025
	Waterval West	Low	Excluded from conformance	Remining ongoing, Depletion 2026



# 7 APPROVALS

SIGNED 4 August 2023	
Ross Cooper VP Tailings Engineering	
SIGNED 4 August 2023	SIGNED 4 August 2023
Richard Stewart Accountable Executive: SA region	Charles Carter Accountable Executive: US region