



## TAILINGS Management Information

### Overview

Lucara Diamond Corp. strives for mining industry best practices in the design, safe operation and monitoring of facilities for managing water, tailings and other mineral wastes, as those practices are applicable to our operations. Lucara has put in place an integrated approach to tailings management that includes working toward continuous evaluation with the objective of identifying and minimizing potential environmental and social impacts, with appropriate mitigations put into place.



Lucara, through our wholly owned subsidiary Lucara Botswana Proprietary Limited, operates two tailings facilities at our 100% owned Karowe Diamond Mine. These two facilities are referred to as the coarse tailings facility (CRD) and the fine tailings facility (FRD). The main methods used in the processing of the ore prior to deposition involve conventional Autogenous Milling and crushing. After initial crushing we implement diamond recovery using sensor based bulk sorting (X-Ray Transmission) on sized run-of-mine material

followed by additional crushing and then Dense Media Separation with X-Ray Florescence concentration. The tailings facilities are in a generally flat-lying, semi-arid to arid region, where evaporation exceeds precipitation, and the region is of low seismic hazard rating. There are no permanent surface water bodies or communities within the zone of influence of our fine residue deposit (FRD) tailings facilities.

The coarse tailings are comprised of a coarse residue, in the form of a sandy gravel, that is conveyed at a very low moisture content (<10%) and placed via the stacker at the coarse residue deposit (CRD), there are no requirements for walls or impoundments given the dry nature of the material being deposited.

The fine tailings, often referred to as slimes, are pumped as a slurry (at 46% water by mass) and discharged to an FRD. The current deposition method of the fine residue on site is to place the material behind a waste rock impoundment wall referred to as downstream construction. The current facility is divided into four paddocks. The paddock walls are raised in phases to allow for sufficient capacity for fine residue deposition and to maintain the required freeboard of the facility. A spigot operation is used to deposit the slurry into the active paddock. The FRD has been designed to maximize water capture with each of the paddocks sloping toward the centre of the facility. This allows for recycling of water to be used in the process plant.





### Design Criteria

The design criteria of the tailings facilities are based on applicable South African National Standards (SANS 10286), which has been adopted for use in Botswana.

### Inspections

Systematic internal inspections of the CRD and FRD are conducted daily. Independent external inspections are conducted biannually as required under Regulation 237 of the Mines, Quarries and Machinery Act CAP 44:02. The latest independent external review was conducted in June 2020 with all facilities compliant.

### Risk Rating

Lucara uses the applicable South African National Standards (SANS 10286:1998 “code of Practice, Mine Residue”). The FRD facility is rated as a high hazard facility in accordance with the SANS safety classification. Although no residents live within the zone of influence, there is potential for the flow slide to cause harm to the mine plant and the pit to the north of the facility in the event of a breach. The Emergency Response Plan will be updated in 2021 to reflect the risk rating and will identify any areas of improvement in our mitigation measures.

### Continuous Improvement

In 2020, we formalized our practices with respect to site maintenance by adopting a written site-level



Tailings Management Policy, conducted a dam breach analysis to determine the zone of influence, and initiated a self-assessment using the Mining Association of Canada’s Towards Sustainable Mining (TSM) Tailings Management Protocol. During 2021, we will register our tailings facilities with the Investor Mining and Tailings Safety Initiative hosted by the Church of England Pensions Board, and the data will be made available digitally through the Global Tailings portal and is listed

below. Furthermore, in 2021 we will be working to align disclosure and governance of our tailing facilities to both TSM and the Global Mine Tailings Standard released in August 2020. During 2021, an initial gap analysis will be carried out to identify if our current governance and management systems conform to the TSM Tailings Management Protocol and GISTM and identify potential areas of improvement.

*/s/ Eira Thomas*

**Eira Thomas**

President, CEO and  
Director

**Tailings Management Information Sheet**  
**Lucara Diamond Corporation: Karowe Diamond Mine**

**Overview questions:**

- a) Provide an overview of your tailings management system, and how you manage risk
- b) Confirm whether your approach to tailings management has changed or will change in light of the recent tailings disasters at Brumadinho, Mariana, Mt Polley and others. Have you, for example, reviewed all tailings storage facilities with upstream dam construction, and taken steps necessary to protect local communities and the

**Overview answers:**

- a) CRD: The coarse residue, in the form of a sandy gravel, is conveyed at a very low moisture content (<10%) and placed via the stacker at the CRD. FRD: The fine residue, in the form of a thickened slime, is pumped as a slurry (at 46% water by mass providing for a design value of 1,400 kg/m<sup>3</sup> slurry density to the existing FRD).
- Risk Management: Daily inspections, External inspections every two years (Botswana Mines and Quarries Act Reg. 237 of MQWM Act CAP 44:02). Last external inspection in June 2020, facilities compliant
- KD uses SANS 10286:1998 Safety classification of the FRD facility, in accordance with the criteria in South African National Standards (SANS) 10286:1998 "Code of practice, Mine residue", the facility is classed as a high hazard facility. Although no residents live in the zone of influence, there is potential for the flow slide to cause harm to the mine plant and the pit to the north of the facility.
- Emergency Response Plan and Tailings Management Plans are being revised to TSM and Global Reporting Initiative standards
- b) All facilities have been reviewed during 2019/20 and revised management plans

| 1. "Tailings Dam" Name / Identifier             | 2. Location   | 3. Ownership                           | 4. Status | 5. Date of initial operation | 6. Is the Dam currently operated or closed as per currently approved design? | 7. Raising method | 8. Current Maximum Height | 9. Current Tailings Storage Impoundment Volume | 10. Planned Tailings Storage Impoundment Volume in 5 years time.         | 11. Most recent Independent Expert Review   |
|---|---|--|-----------|------------------------------|--|-------------------|---------------------------|--|--|---|
| Coarse tailings (CRD), and fines tailings (FRD) | Karowe Diamond Mine<br>Botswana Central District<br>CRD: LAT-21.50982323<br>Longitude 25.48119270.<br>FRD: LAT-21.51444556<br>Longitude 25.47089352 | Lucara Diamond Corp. / Lucara Botswana | Active    | 2011                         | yes, currently operated.   | Downstream        | FRD: 26m<br>CRD: 34m      | FRD – 4.18 mil m3<br>CRD – 5.57 mil m3,        | Note: Estimate for LOM (2040)<br>FRD: 27,345,731 m3<br>CRD 16,530,959 m3 | June 2020.<br>Note: 2020 required regulatory compliance inspection conducted by firm who oversaw 2020 paddock wall raising and design, firm to be excluded from next review<br>Rationale: Due to CV-19 related international and local travel restrictions the company used in-country qualified engineer to conduct review |

| 12. Do you have full and complete relevant engineering records including design, construction, operation, maintenance and/or closure. | 13. What is your hazard categorisation of this facility, based on consequence of failure? | 14. What guideline do you follow for the classification system? | 15. Has this facility, at any point in its history, failed to be confirmed or certified as stable, or experienced notable stability concerns, as identified by an independent engineer (even if later certified as stable by the same or a different firm). | 16. Do you have internal/in house engineering specialist oversight of this facility? Or do you have external engineering support for this purpose? | 17. Has a formal analysis of the downstream impact on communities, ecosystems and critical infrastructure in the event of catastrophic failure been undertaken and to reflect final conditions? If so, when did this assessment take place? | 18. Is there<br>a) a closure plan in place for this dam, and<br>b) does it include long term monitoring? | 19. Have you, or do you plan to assess your tailings facilities against the impact of more regular extreme weather events as a result of climate change, e.g. over the next two years? | 20. Any other relevant information and supporting documentation.<br><br>Please state if you have omitted any other exposure to tailings facilities through any joint ventures you may have. |
|---|---|---|---|--|---|--|--|---|
| Yes   | High Hazard facility (FRD)  | AA TS 602 001   | No  | Yes for both (Int: Tailings Management committee and ext: Geoflux Engineering)   | Yes, Dam breach analysis; Nov 2020  | a) Yes: Mine closure and rehabilitation plan 2020.<br>b) Yes: Mine closure and rehabilitation plan 2020. | Yes, as part of the upcoming statutory compliance review in 2022.  | None  |