



# GEMFIELDS

*A world-leading miner of coloured gemstones*

GEMSTONE RESOURCES AND GEMSTONE RESERVES REPORT

EFFECTIVE DATE OF 31 DECEMBER 2024

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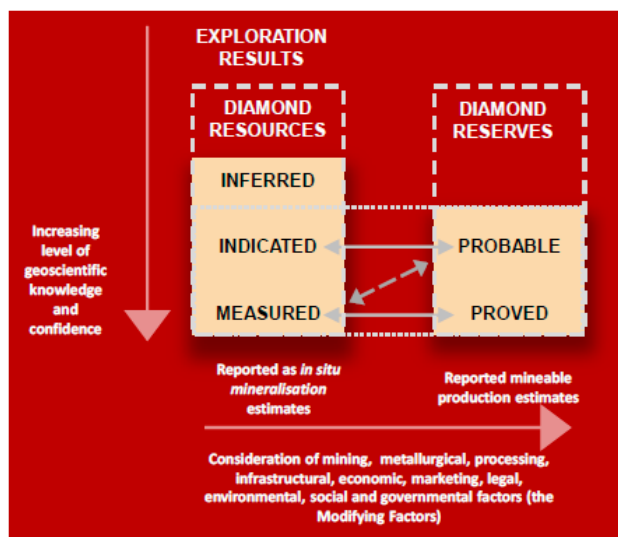
# SECTION 1 - OVERVIEW

## INTRODUCTION

Gemfields Group Limited (“GGL”) through its wholly-owned subsidiary Gemfields Ltd (“Gemfields”) holds 75% attributable interests in Kagem Mining Ltd which operates the Kagem Emerald Mine (“Kagem”) in Zambia, and in Montepuez Ruby Mining Limitada which operates the Montepuez Ruby Mine (“MRM”) in Mozambique. [12.13(i)(2)]

This annual Gemstone Resources and Gemstone Reserves Report deals with Kagem and MRM only and excludes any other coloured gemstone interests held by Gemfields. This annual report details the location, geology, mining, processing, and operational statistics at Kagem and MRM.

The Gemstone Resources and Gemstone Reserves have been prepared and reported in compliance with and according to the requirements of The South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves (the SAMREC Code or SAMREC), 2016 Edition, with special reference to sections 60 to 72 of SAMREC related to the reporting of results for diamond and other gemstone properties. [12.13(i)(4)]



## Relationship between Gemstone Resources and Gemstone Reserves (SAMREC Code, 2016)

The Gemstone Resources and Gemstone Reserves presented in this report are based on a Competent Persons Report (“CPR”) for Kagem and MRM with an effective date of 1 July 2019, which have then been depleted by mining production for the period 1 July 2019 to 31 December 2024. The Gemstone Resources are reported inclusive of the Gemstone Reserves, both correct on 31 December 2024,

the Effective Date of this Gemstone Resources and Gemstone Reserves report. [12.10(a)]

At the Effective Date of 31 December 2024, GGL had total attributable mineral resources of 1,088 million carats (“Mct”) of combined emerald and beryl at an average value of USD2.06/ct, (which is lower than previous years due to the turbulent emerald market in the second half of 2024 leading to the September and November 2024 auctions yielding results below Kagem’s historical averages), and 491 Mct of ruby and corundum at an average value of USD22.98/ct (average 2014–2024).

## CORPORATE GOVERNANCE – COMPLIANCE [12.13(i)(4)]

GGL’s attributable Gemstone Resources and Gemstone Reserves are reported in compliance with Section 12 of the JSE Rules, the SAMREC Code (2016 edition) and SAMREC Code Table 1 and Appendices. Shorthand references to the JSE Rules and SAMREC Table 1 are shown where applicable, for example:

- [12.10(a)] – in Chapter 12 of JSE Rules which deals with the effective date;
- [12.13(i)(2)] – in section 12.13, contents of annual report, which deals with attributable beneficial interest;
- [SR2.1(i)] – in Table 1, describe the regional geology; and
- [SR11.3(iv)] – in Table 1, describe the top and bottom sieve cut-off sizes.

## COMPETENT PERSONS AND CONSENT [12.13(i)]

The Competent Persons (“CPs”) in terms of SAMREC who take responsibility for the reporting of Gemstone Resources and Gemstone Reserves for Kagem and MRM in this report are respectively:

- Hemant Azad, Head of Geology, PE and MSc (Geology), FAusIMM, and MAIG is the Competent Person responsible for reporting of Gemstone Resources and Gemstone Reserves at Kagem in this report. Hemant was Head of Geology with Montepuez Ruby Mining Limitada until October 2021 before transferring to Kagem. He has overall 22 years of experience and more than ten years’ relevant experience in Gemstone industry of this style of mineralisation.

The Competent Person’s address is Kagem Mining Ltd, PO Box 21657, Plot 6374, Corner Dr. Aggrey and Kariba Roads, Light Industrial Area, Kitwe, Zambia. [12.13(i)(5)]

- Murlidhar Gautam, Head of Geology, MRM, MTech (Applied Geology), MAusIMM, is the competent person responsible for reporting Gemstone Resources and Gemstone Reserves at MRM in this report. Murlidhar Gautam was Head of Production and Exploration with Kagem Mining Ltd until October 2021 before transferring to MRM. He has over 22 years’ experience in Exploration and Mining of different commodities diamond, emerald, copper, bauxite and ruby. He has relevant experience in this style of mineralisation.

The Competent Person’s address is Montepuez Ruby Mining Lda, Avenida Eduardo Mondlane, No. 178, Edifício Cruz Vermelha, Cidade De Pemba, Cabo Delgado, Mozambique.

The address of the Australasian Institute of Mining and Metallurgy is Ground/204 Lygon St, Carlton VIC 3053, Australia. [12.13(i)(5)]

The CPs have confirmed to GGL in writing that the contents of this report are consistent with the CPR for Kagem and MRM and operational records for the period 1 July 2019 to 31 December 2024 and comply with the requirements of Section 12 of the JSE Listings Requirements and the SAMREC Code. [12.13(i)(6)]

The CPs further consent to the disclosure of the 2024 Gemstone Resource and Gemstone Reserve Statement in the form and context in which it is presented. [12.13(i)(6)]

This report contains statements of a forward-looking nature which involve various uncertainties that may cause the actual results to differ materially from those presented.

Rounding of figures in this report may result in minor computational discrepancies. Where these occur, the CPs do not consider them to be material.

## SECTION 2 - OPERATIONS

### KAGEM

#### Location [SR1.2(i)]

Kagem is in the Ndola Rural Emerald Restricted Area (“NRERA”) within the Kafubu area of the Copperbelt Province (Figure K1). Kagem is one of the largest producing emerald mines globally.

Located at latitude 13°04'S and longitude 28°08'E at an elevation of 1,200 m above mean sea level (msl), the site is some 31 km south-southwest of the Copperbelt town of Kitwe. The licence is bisected by the administrative boundary between the Ndola Rural District and Luanshya District.



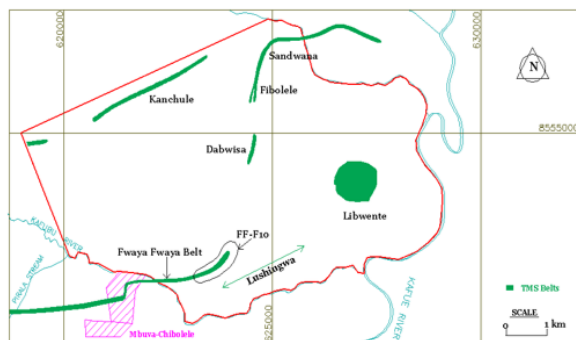
**Figure K1: Kagem Mine Location**

#### Legal Entitlement [SR1.5(i)] [12.13(iii)(5)]

Kagem operates in terms of a large-scale gemstone licence 14105HQ LSG (Figure K2) over an area of 42.4 km<sup>2</sup> issued on 27 April 2010. The licence was renewed on 10 December 2019 for a further 25 years, which is then valid until 26 April 2045.

A large-scale mining licence 8749HQ LML for the Chibolele mine was renewed on 30 August 2019 for 25 years and transferred to Kagem on 1 October 2019.

Gemfields holds a 75% interest in the Kagem Mine, with the remaining 25% held by the Government of the Republic of Zambia (“GRZ”).



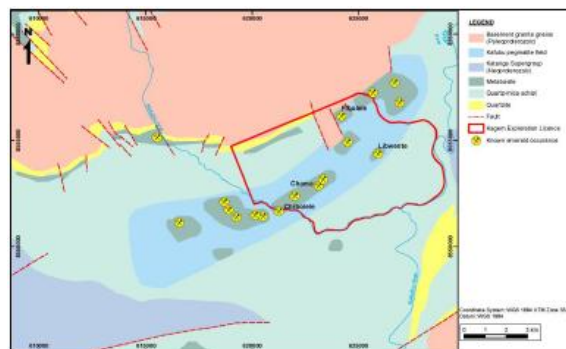
**Figure K2: Licence Extents**

#### Geological Setting [SR2.1(i)(ii)] [SR11.1(i)]

Emerald mineralisation in the Kafubu area, including the Kagem deposits, belongs to a group referred to as “schist-hosted emeralds”, relating to the interaction of Be-bearing fluids relating to pegmatite dykes or granitic rocks, with Cr -rich mafic and ultramafic schists or weakly metamorphosed ultramafic rocks (Figure K3).

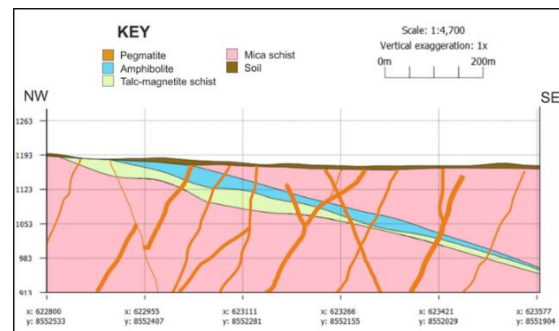
Kagem’s Chama, Fibolele, Chibolele and Libwente deposits form part of a semi-regional scale tight-isoclinal

fold system, which trends northeast or east-northeast, ranging in dip from near flat-lying to up to 60° to the southeast or south-southeast, and is locally offset by a series of predominantly north-northwest striking structures.



**Figure K3: Simplified Geology of Kafubu Emerald Area**

The emerald deposits are hosted by talc-magnetite schists (“TMS”) of the Muva Supergroup. The stratigraphy of the Chama and Chibolele deposits is broadly described (from bottom to top) in terms of a footwall mica schist, overlain by TMS, amphibolite (“AMP”) and quartz-mica schist of the Muva Supergroup. The whole sequence is intruded by steeply dipping discordant and locally concordant quartz-feldspar pegmatite (“PEG”) dykes and quartz-tourmaline veins (Figure K4). The stratigraphic sequences at Fibolele and Libwente are largely similar to that described for Chama, except for local differences in the average thickness of individual units. Some key distinctions exist, where the AMP horizon in the hanging wall of the TMS unit is absent at Fibolele, while at Libwente the distribution of the ultramafic schists is more irregular, with at least two distinct TMS bands and additional minor satellite bodies with AMP in the hangingwall, footwall or both.



**Figure K4: Chama -Schematic NW to SE cross-section**

The suite of PEG dykes and quartz-tourmaline veins that intrude the stratigraphic succession throughout the Kagem deposits occupy a range of trends, both concordant and discordant to the local stratigraphy. At Chama and Chibolele, most discordant dykes strike north or north-northwest, dipping at around 50° to sub-vertical towards the east or east-northeast. The discordant dykes and veins at Libwente and Fibolele occupy the same trend set, striking north-northwest, but with a steeper, typically sub-vertical dip.

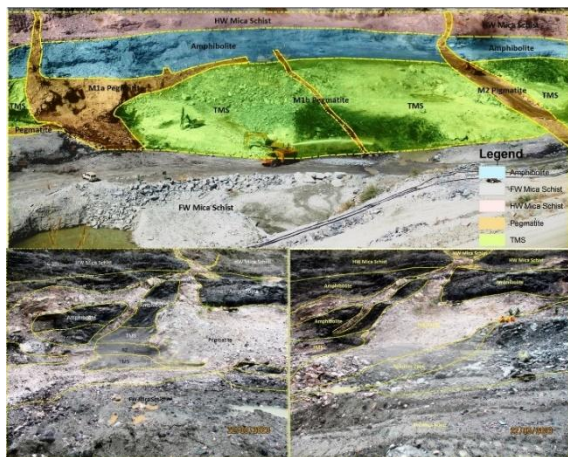
The emerald mineralization is hosted by the ultramafic TMS unit, with three main styles of mineralization recognised;

- discordant reaction zone (“RZ”) material adjacent to the PEG and quartz-tourmaline vein contacts;



- concordant RZ material concentrated along the footwall and rarely the hanging wall contacts of the TMS unit; and
- discordant RZ hosted by brittle structures within the TMS unit distal to the PEG and quartz-tourmaline veins.

The RZ is laterally discontinuous and varies in thickness from a few centimetres to more than 2 m (Figure K5).



**Figure K5: Reaction Zone exposed at the Kagem Mine**

#### Exploration Activities [12.13(iii)(1)] [SR3.1(i)] [SR11.2(i)]

The main exploration methods employed at Kagem included airborne geophysical survey maps, diamond drilling, geological mapping and bulk sampling from trial pits, which has been undertaken since 1998. Diamond drilling is primarily aimed at determining the nature and geometry of the TMS units and PEG / quartz-tourmaline veins. The main exploration tool used to determine emerald and beryl grade and quality is through current open-pit mining operations at Chama, Chibolele and Fibolele, and trial mining at Libwente. The grade of each deposit is determined through recovered emerald quantity and quality data from the sort house.

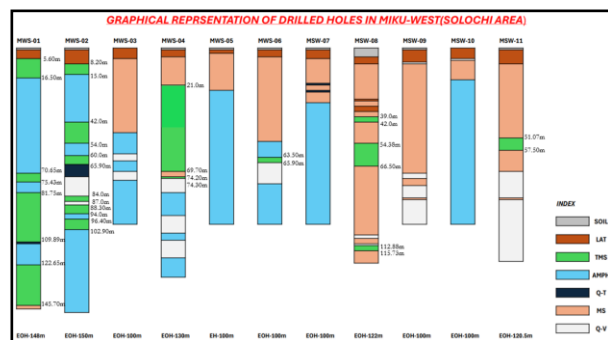
In 2024, the main exploration activities focused on other Kagem licences Arinus, 8748-HQ-LML, located south of the Chibolele 8749-HQ-LML licence, and Miku West, 8750-HQ-LML, southwest of the Kamakanga 8752-HQ-LML licence. Reconnaissance exploration drilling was conducted to confirm the emerald bearing host lithology which has given positive indicators. However, for resource modelling close spaced exploration drilling will be required along with bulk sampling to confirm the ore-grade.

In the Arinus licence, a total of twelve (12) oriented drillholes with 1,954 meters were drilled covering the area from northeast to southwest. The drilling was planned on wide spacing 100 meters apart on the interpreted TMS band (G2 Band with Cr ranging from 650 to 2800 ppm) based on regional geological maps combining air borne geophysics magnetic and radiometric data.

The 12 drillholes were drilled with a maximum vertical depth of 175 meters below the pre-mining surface, with an azimuth of 336° and a 70° inclination. The results showed positive indications and all expected lithologies were intersected according to the stratigraphic succession. Out of 12 drillholes, six were intersected with emerald bearing host lithology i.e. Talc-Magnetite-Schist ("TMS") at varying

depths of 125 to 140 meters, along with promising reaction zones and beryl seen in drill cores.

In the Miku West licence, two areas viz Solochi (Southeast) and Musati (Northern end) were identified for drilling based on field mapping and the interpreted TMS band (G2 Band with Cr ranging from 650 to 2800 ppm) identified using regional geological maps combining air borne geophysics magnetic and radiometric data.



**Figure K6: Graphical representation of intersected lithologies.**

In Solochi, a total of 1,270.5 meters of oriented drilling was completed, with an azimuth of 340° and a 65° inclination. Out of eleven (11) drillholes, six were intersected with emerald bearing host lithology (TMS) at varying depths of 100 to 112 meters, along with promising reaction zones. (Figure K6 & K7).

In Musati, a total of 795.5 meters of drilling was completed, with one drillhole intersected with emerald bearing host lithology (TMS).

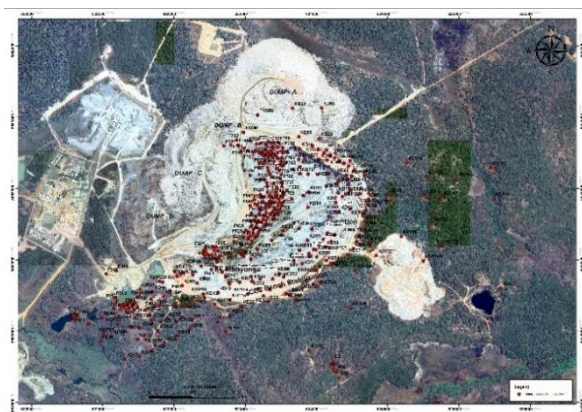


**Figure K7: Oriented diamond drilling campaign at Kagem.**

Drilling to date, across the Kagem deposit areas comprises of 1,019 drill holes for a total meterage of 106,835.58 meters. Out of the total drill holes, 416 holes for 48,406.55 metres have been drilled at Chama, 60 holes for 6,116.64 meters at Chibolele, 130 holes for 12,324.10 meters at Fibolele, 45 holes for 3,861.36 meters at Kamakanga, 12 holes for 1,954 meters at Arinus and 18 holes for 2,066 meters at Mikuwest. All drill holes are diamond core holes. Downhole survey data exists for roughly 35% of the total number of holes drilled.

Drill spacing at Chama varies from approximately 25 x 25 m in the northeast around the surface expression of the TMS unit to highly variable down-dip loosely described as a 100 x 200 m grid decreasing to approximately 50 x 50 m in places (Figure K8). Most holes were drilled inclined to the TMS unit, at an average dip of 70° to northwest and west.





**Figure K8: Chama collar locations**

The majority of drilling at Chibolele was completed prior to 2006. Drilling was carried out over 1,000 m of strike length, at 50 m strike intervals in the southwest and 100 m strike intervals in the northeast (Figure K9). Most holes were drilled perpendicular to the TMS unit, at an average dip of 70° to northwest and west.

In 2022, additional oriented exploration drilling was conducted to upgrade the Indicated resource to the Measured category. This drilling, combined with the continuous mapping of the veins and faces of the developing mine on a weekly basis, detailed analysis of the existing drill hole database and bulk sample data, gave high confidence on grade and continuity for 50 metres. Up to 31 December 2024, 341 kt of ore has been mined from Chibolele from Measured resources category (as assessed by SRK in 2019), thus giving further confidence over the conversion of resources from Indicated to Measured.



**Figure K9: Chibolele Pit-Shell and collar locations**

Chibolele is drilled in 50 m sections, with an on-section collar spacing of 50 m. Infill drilling at 25 x 25 m has been completed in a small area to the south (Figure K10).



**Figure K10: Fibolele collar locations**

Drilling at Libwente has been completed on a variable grid of 100 x 100 m, 100 x 50 m, or 50 x 50 m, decreasing to 25 x 25 m in places. Almost all the Libwente holes are drilled vertically to target the shallow dipping TMS unit.

Most holes start at HQ diameter, switching to NQ diameter core once into competent rock. Most holes extend ca. 20 m beyond the TMS unit into the footwall mica schist before being terminated.



**Figure K11: Kamakanga collar locations**

Bulk sampling commenced at the Kamakanga licence in January 2022, for which Mine Safety Department, Zambia (MSD) was duly notified on 30 December 2021, as a part of statutory compliance to be fulfilled in the host country.

The licence area did not have any proven resources and reserves at the time of acquisition and bulk sampling was planned based on available data. The exploration campaign, that commenced in 2022 and which was completed in 2023, had the objective to confirm the host lithology and to establish mineable resources for a future sustainable mining model. (Figure 11)

Geo-chemical analysis was done for 53 lithological samples from various depths of different drillholes to understand the type of tectonic formations and metamorphic sequence significant to mineralisation. The analysis showed some interesting facts, in that the EU values in Reaction Zone (RZ) and Pegmatites in KGA-1, had a different curve showing a major indication of Mg enrichment and MgO with 10.14% compared to the rest, Cr values also had a spike within this RZ indicating mineralisation which will further be confirmed through bulk sampling operation.

Small-scale bulk sampling continued at the pit in 2024, with a small quantity of production recovered at 31 December 2024, of 12,646 cts of emerald and 626,336 cts of Beryl-1 and 2.

### Outlook

A total of USD 0.6 million was spent on exploration drilling activities during 2024.

Face mapping and blast hole probing will continue in 2025, together with a more detailed drilling and sampling programme. Any further drilling is operational in nature and provided for in the sustaining capital provision and/or operating costs.



The Geotechnical study that Kagem engaged renowned global consultants and experts on technical subjects, SRK consulting UK, to complete was finalised in September 2024. (Figure 12).

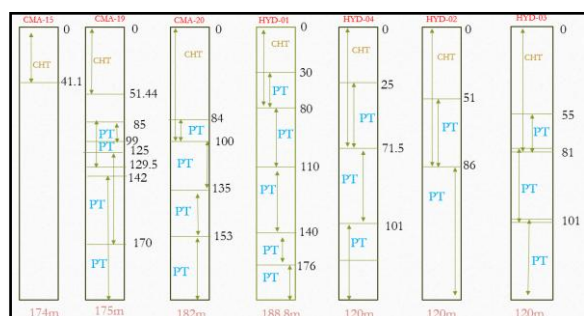
The report includes details of the site visit, hydro-geological study fieldwork, analysis of the field and hydro-geological data.

The purpose of the study was defined as the provision of recommendations for stable open pit mining operations and waste dump stability as the pits and dumps extend vertically and laterally. The study, as interpreted by SRK, comprised;

- geotechnical characterisation of the rock mass and structures;
- slope and dump stability analysis including the incorporation of the impacts of ground water;
- development of optimum slope and waste dump design configurations;
- input into blast monitoring; and
- input into slope monitoring.

The recommendations arising from the SRK report have been implemented in new push-backs, waste dump stabilisation and improvement in blasting technique in all Kagem pits. Additionally, the hydro-geological boreholes tested by SRK in and around Kagem pits are being properly fixed and continuous hydro-geological monitoring is being done by the exploration team.

The total cost of this Geotechnical study was GBP 210,000 (~ USD 262,500).



**Figure K12: Geotechnical Studies completed with Packer and Constant Head Test at Kagem.**

### **Emerald Mineralisation and classification system [SR11.2(xi)]**

Emeralds are a member of the beryl group of minerals which have the chemical formula  $\text{Be}_3\text{Al}_2(\text{SiO}_3)_6$ . Emerald is the deep green translucent variety of beryl and results from the substitution of Cr,  $\text{Fe}^{2+}$  or V for Al in the crystal lattice. Images of emerald and beryl at the Kagem Mine are displayed in (Figure K13).

The Chama, Chibolele and Fibolele open pit production is processed through the wash plant, and the recovered gemstones are subsequently sorted by hand to provide emerald grade and quality values for each pit.

Three reference sets, which define each quality designation, are held at the sort house at Kagem, in London and in India and used to ensure consistent grading of gemstone production.



**Figure K13: Emerald mineralisation at Kagem**

After cleaning, the gemstones are sorted by hand into four broad quality designations, before being further subdivided (resulting in 216 quality splits) as outlined in Table K1.

**Table K1: Kagem emerald/beryl classification system**

Category	Description
Premium Emerald	Strong green/blue-green color, vivid saturation, very good clarity, high brilliance, very high carat yields once cut. Green or blue-green fractions, five quality designations (A-E), six size categories. (60 premium emerald grades)
Emerald	Variable green/blue-green color, variable clarity, variable yield after cutting. Green or blue-green fractions, various quality designations (F-M for green stones, Fc-Nc for blue-green stones), various size categories. (118 emerald grades)
Beryl-1	Bluish color, clarity translucent to opaque, highly included, low cut recovery. Two sizes: -16 mm and +16 mm
Beryl-2	Greyish/brownish color, no luster or transparency

### **Quality Assurance/Quality Control [SR11.6(vii)]**

The logging and sampling procedures in place are consistent with normal industry practice for this commodity type.

Geochemical assaying of the drill core for a suite of elements is used to assist in interpreting the geometry of the TMS unit and RZ which host the emerald and beryl mineralisation. The bulk of the geochemical assay data is supplied by handheld Niton XRF analysis, validated by laboratory assays in selected drillholes.

Previously, laboratory assays were carried out at either Alfred H Knight laboratory in Kitwe, Shiva Analyticals in Bangalore, India, or the SGS laboratory in Kalalushi. Whereas for recent drilling the Geo-chemical analysis was done through Bureau Veritas Zambia, having sample preparation facilities within the country but analysed at the Bureau Veritas Canada Laboratory. All laboratories offering services and innovative solutions in order to ensure that their assets, products, infrastructure and processes meet international standards and regulations in terms of quality, health and safety, environmental protection and social responsibility.

## Methods for estimation and classification of Gemstone Resources and Gemstone Reserves [12.13(iii)(2)] [SR11.4, SR11.5]

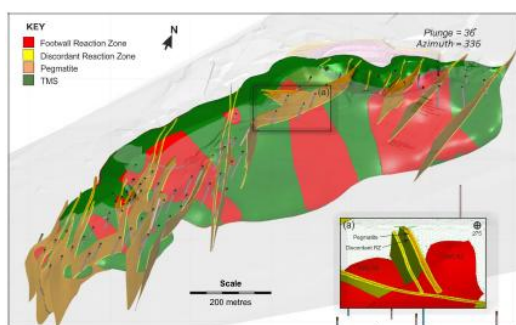
The exploration drilling at Chama done during the financial year 2023 had the objective to upgrade the measured and indicated resource to proven reserve. The evaluation of resource and reserve was done in-house in Surpac based on the same modality applied by SRK as described below.

Gemstone Resource models were earlier constructed, estimated and classified independently for the Chama, Chibolele, Fibolele and Libwente areas. All geological modelling was undertaken in ARANZ Leapfrog Geo software, with grade and tonnage estimates being completed in either GEMS or Datamine as relevant.

Geological modelling for each deposit followed the following process:

1. Construction of a TMS model, through sectional polyline interpretations of the TMS footwall and hanging wall. TMS and RZ logging codes were used as an explicit control on the TMS model geometry, with downhole Niton XRF chromium grades used to refine the contact surfaces where appropriate.
2. Development of a discordant PEG model. At Fibolele and Libwente this was completed through a manual process of creating interval selections of PEG / quartz-tourmaline vein intersections considered to form part of individual dykes or veins, and subsequent modelling using the Leapfrog vein tool. At Chama and Chibolele, the discordant PEG model was generated using a Leapfrog indicator interpolation of all discordant PEG intersections, applying a trend guided by a series of surfaces based on downhole PEG trends and geological mapping within the open pit. The discordant PEG models were cut from the TMS solids.
3. Construction of two RZ domains: one to define the TMS footwall RZ (concordant), and another based on areas where the PEG model is in contact with the TMS model (discordant).

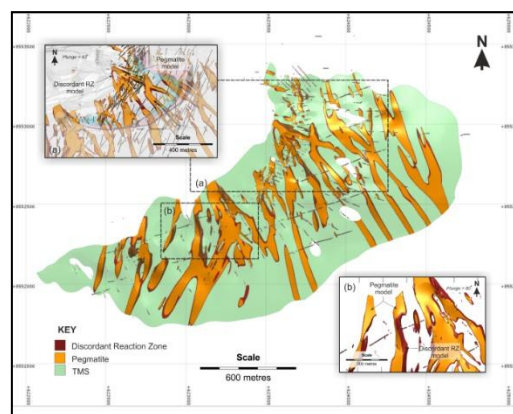
To define the basis for the footwall RZ model, all logged RZ intervals at the base of the TMS solid volumes were manually selected and assigned a footwall RZ code. RZ hanging wall surfaces were then generated from the hanging wall points of the footwall RZ interval selection, using the TMS modelled surface as a framework to guide the trend of the model. The Fibolele concordant RZ model (Figure K14) comprises solid volumes at both the footwall and hanging wall of the TMS unit, whilst the Chama (Figure K15), Chibolele and Libwente concordant RZ models only comprise a footwall volume.



**Figure K14: Fibolele TMS, quartz-tourmaline vein and concordant and discordant RZ models**

The discordant RZ models were created as a buffer around the discordant PEG models and within the TMS unit. The discordant RZ thickness was adjusted on a deposit basis for the ratio of combined concordant and discordant RZ volume relative to modelled TMS volume above the most recent pit survey wireframes to reflect the RZ to TMS ratio in the Gemfields production analysis for each pit to date.

A block model was used to quantify the volume, tonnage, and grade of the modelled RZs. The volumes of the discordant and concordant RZs were defined from the geological model. The tonnage was estimated using an average density value of 2.85 g/cm<sup>3</sup>. The anticipated grade of emerald and beryl and their relative importance is based on the extrapolation of the recovery of these minerals from the tonnage of RZ processed during the period covered by the historical mining production statistics. The minimum size (bottom cut-off) of stone which can be recovered from the wash plant is 3 mm. Given the complexity associated with the estimation of RZ tonnage as well as the concentration of emerald and beryl within the RZ, the Gemstone Resource estimate was based on appropriately factored production and bulk sampling data combined with the geological interpretation of the TMS, PEG, and RZ lithological units.



**Figure K15: Chama TMS, PEG and discordant RZ models**

The exploration and production activities completed by Kagem have significantly improved the geological knowledge and understanding of the deposits. The derivation of Gemstone Resources is dependent on the availability of historical production statistics or the results of bulk samples. This provides the confidence in the grade of the individual deposit, and therefore the contained gemstones in the estimate.

The classification scheme for the Gemstone Resources at Kagem takes the following factors into account:

- Quantity and quality of the underlying data, the level of geological understanding for each deposit, and across the property.
- Confidence in the geological continuity of the TMS, PEG, and RZ.
- Confidence in the grades, as derived from the production/bulk sampling, and the understanding of the grade variation at a given production scale.
- The stage of development for each deposit (such as exploration, production, care and maintenance, etc.).
- The perceived level of risk associated with deviations from the assumptions made.



- Reasonable prospects for eventual economic extraction.

The Gemstone Resources are reported within an optimised pit shell using the same input parameters as those in the mining study, but with a 30% mark-up on the anticipated prices to reflect an optimistic view. All grades quoted reflect beryl and emerald, expressed as carats per ton.

### Type of Mining, Mining Activities [12.13(iii)(3)]

Kagem conducted limited mining from 1984 until GRZ assumed management control in 1990. Hagura UK Ltd (the one JV partner) regained management control in 1996 and via various agreements increased its stake to 75% in Kagem. Gemfields acquired Hagura in October 2007 and implemented an expansion and redevelopment plan, with production commencing in November 2007.

Conventional open pit mining using drill-blast-load-haul methods is done with Kagem-owned in-house fleet and contractor-provided labour. The mining fleet comprises 23 excavators feeding 48 articulated dump trucks (“ADTs”) with additional supporting ancillary equipment. Ore stockpiling has been introduced to cater for variable ore production.

Open-pit optimisations determined the economic pit shells, which were used for mine design and production scheduling.

**Table K2: Pit Optimization Parameters**

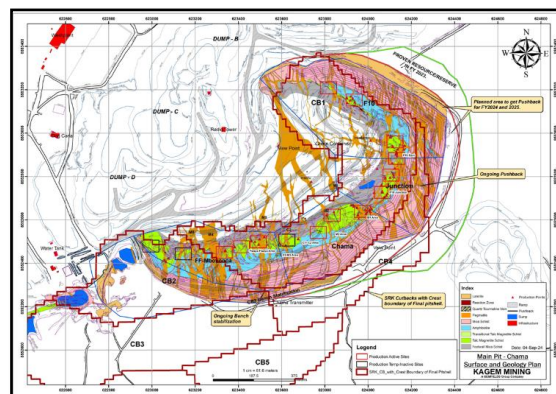
Parameters	Units	Base Case
<b>Geotechnical</b>		
Chama Overall Slope Angle	(°)	46°
Chibolele Overall Slope Angle	(°)	53°
Fibolele Overall Slope Angle	(°)	50°
<b>Mining Factors</b>		
Dilution	(%)	15%
Bench height	(m)	10.0
Mining Recovery	(%)	100%
<b>Processing</b>		
Plant Recovery	(%)	100%
<b>Operating Costs</b>		
Mining Cost	(USD/t <sub>rock</sub> )	2.67
G&A (mining)	(USD/t <sub>rock</sub> )	0.39
Processing Cost	(USD/t <sub>ore</sub> )	4.50
<b>Selling Costs</b>		
Mineral Royalties	(%)	9.0%
Management & Auction Fees	(%)	12.5%
Marketing & Advertising	(USD/ct)	N/A
<b>Product Price</b>		
P+E (HQA)	(USD/ct)	65.42
E (LQA)	(USD/ct)	4.05

The steeply dipping reaction zones (RZs) are mined using manual intensive methods with the assistance of hydraulic excavators under close supervision during daylight hours. All large and high-quality coloured gemstones are hand-sorted at the mining face and are placed in a drop safe-type container that is tagged and closed with security-controlled locks. The remaining RZ material is loaded into trucks and transported directly to the processing facility.

The Chama pit at 31 December 2024 relative to the surface and geology is shown in (Figure K16). The scale of the operations at the Chama Pit can be seen in (Figure K17).

The Fibolele bulk sampling pit at 31 December 2024 relative to the surface and geology is shown in (Figure K18).

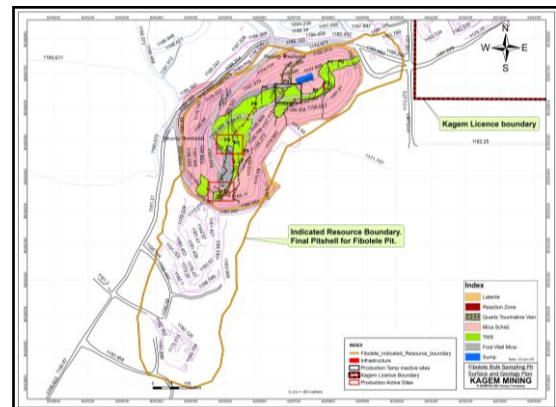
The Chibolele operation comprises two historically mined open pits, the Mbuva and Chibolele pits, with most of the production coming from Chibolele. Production is targeted from three production points, M1, M2 and M3 (Figure K19).



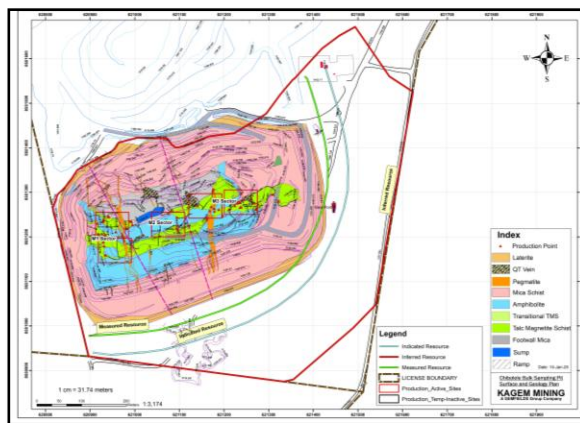
**Figure K16: Chama Main Pit, surface and geology plan at 31 December 2024**



**Figure K17: Panoramic view of Chama Main Pit.**



**Figure K18: Fibolele Bulk Sampling Pit, surface and geology plan on 31 December 2024**



**Figure K19: Chibolele bulk sampling pit, surface and geology plan at 31 December 2024**

## Historical Production [12.13(iii)(3)] [SR1.4(iv)]

Historical production for 2020 to 2024 is summarised in Table K5, and the historical mined tonnages of waste and ore and the average strip ratio are shown in Figure K20.

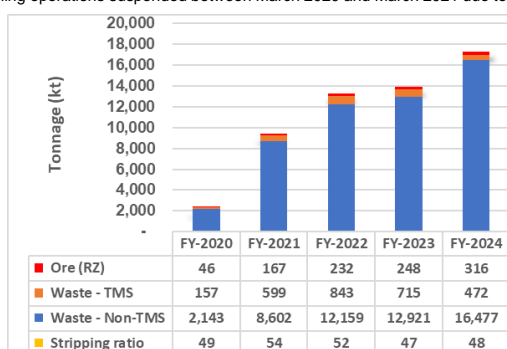
In 2020, mining was suspended due to Covid-19, resuming in April 2021 in a phased manner following the completion of housekeeping activities, such as pit cleaning, desilting, road construction, dump stabilisation and opening of production points. As such, waste stripping was below target during this period.

Mining activities at Libwente have remained closed since 2020, whereas Fibolele mining activities resumed in January 2024.

**Table K5: Kagem summary production data**

Item	Units	2020	2021	2022	2023	2024
Waste mined						
Chama	(Mt)	1.6	7.9	9.4	9.2	12.3
Fibolele	(Mt)	0.1	-	-	-	0.6
Chibolele	(Mt)	0.5	1.1	1.4	1.3	2.1
Total	(Mt)	2.3	9.0	11.9	10.9	15.2
RoM ore						
Chama	(kt)	34	130	170	186	233
Fibolele	(kt)	4	-	-	-	20
Chibolele	(kt)	8	38	61	62	63
Total	(kt)	46	168	231	248	316
B&E Grade						
Chama	(ct/t)	229	218	167	126	139
Fibolele	(ct/t)	31	-	-	-	73
Chibolele	(ct/t)	173	100	144	108	94
Total	(ct/t)	202	191	161	122	127
Recovered gemstones	(Mct)	9.4	32	37.2	30.2	40.3

\* Mining operations suspended between March 2020 and March 2021 due to Covid-19.

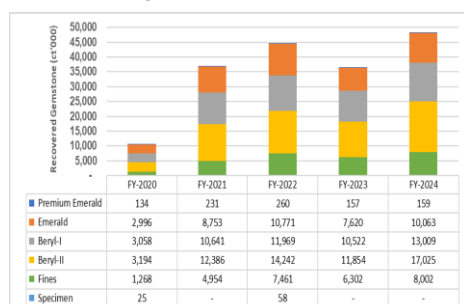


\* Mining operations suspended between March 2020 and March 2021 due to Covid-19.

**Figure K20: Kagem historical mined tonnage and strip ratio**

The cash rock handling unit cost for 2024 (calculated as total mining and production costs (excluding mineral royalties) plus selling general and administrative expenses, divided by total rock handling for the year) was USD3.42/t (2023:USD4.10/t).

Historical recovered gemstone data for 2020 to 2024 are set out in (Figure K21).



\* Mining operations suspended between March 2020 and March 2021 due to Covid-19.

**Figure K21: Kagem historical recovered gemstones**

## Auction Results – 2023 and 2024 [SR11.4(xx)]

The higher-quality auction results of RoM parcels for 2023 and 2024 realised USD 43.7 million and USD 50.9 million from the sale of 0.264 Mct and 0.350 Mct higher quality emeralds respectively (Table K6).

**Table K6: Higher quality auction results**

Item	Units	May-June'23	May'24	Nov'24
Carats sold	(Mct)	0.264	0.209	0.141
Sales realised	(USDm)	43.7	35	16.1
Av. Sales value	(USD/ct)	165.55	167.51	113.96

The commercial-quality auction results of RoM parcels for 2023 and 2024 realised USD 46.7 million and USD 27.9 million from the sale of 6.36 Mct and 6.27 lower quality emeralds respectively (Table K7).

**Table K7: Commercial quality auction results**

Item	Units	Mar'23	Aug-Sept'23	Mar'24	Aug-Sept'24
Carats sold	(Mct)	2.97	3.39	4.17	2.42
Sales realised	(USDm)	21.2	25.5	17.1	10.8
Av. Sales value	(USD/ct)	7.13	7.51	4.45	4.47

A number of special interest pieces were recovered during 2024 that will be offered for sale in future auctions. (Figure K20).

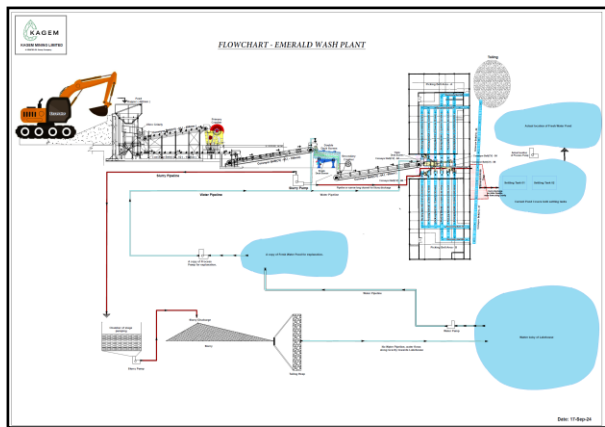


**Figure K20: Special pieces of emeralds, recovered in 2024**

## Processing Plant [SR5.3(iii)]

The processing/wash plant (capacity 330 ktpa ore) processes RZ material mined directly from the open pit through a simple series of comminution, screening, washing, and sorting facilities (Figure K22). Two sets of grizzly bars split the plant feed into three fractions - +300 mm (stockpiled), -100 mm (sent to double deck screen) and -300 +100 mm (sent to primary crusher). The double-deck screen separates the material into three streams: +60 mm (secondary crusher in open circuit), -3 mm fines (fines, to valley storage area) and -60 +3 mm (triple deck screen splits into three product streams for hand picking).

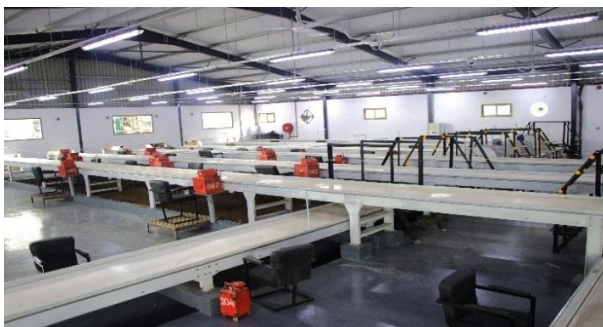
The wash plant products, together with the higher-quality product recovered directly from the mine, are essentially hand-sorted in a secure sort house facility where gemstones are upgraded using manual methods to produce emerald (subdivided into premium emerald and emerald) and beryl (subdivided into beryl-1, beryl-2, specimen and fines categories).



**Figure K22: Kagem washing plant schematic flowsheet.**

In July 2023, a rehabilitation project commenced at the wash plant to upscale the production efficiency from a targeted 50 to 75 tph. During the period of the works, the processing tonnage was reduced by 40%. The works took a year to complete and were commissioned on 1 July 2024, restarting at 100% capacity. (Figure K23).

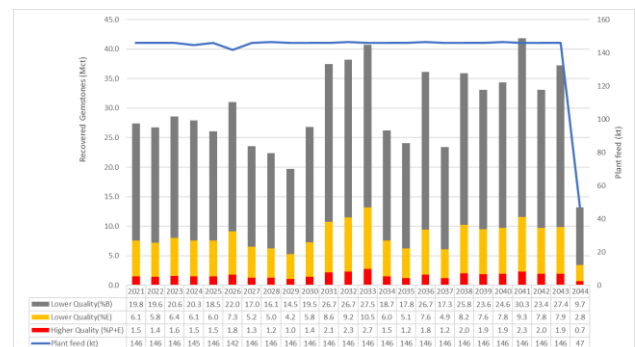
The wash plant processed 169 kt of ore during 2024, with actual plant availability and utilisation of 85% and 90% respectively.



**Figure K23: Kagem Wash Plant Rehabilitation of Picking Belt Area**

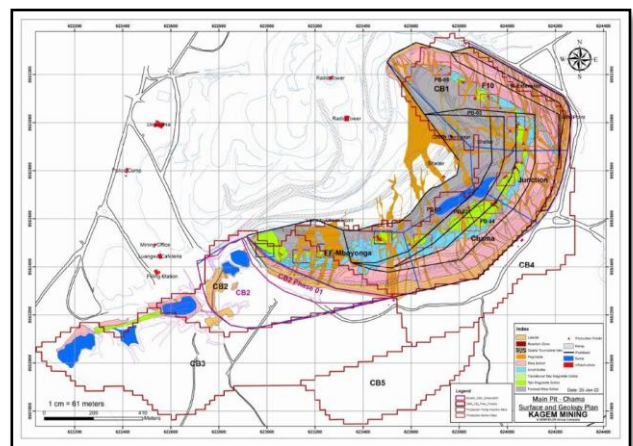
### Production Forecast [12.13(iii)(4)]

The LoM plan provides for plant feed of 146 ktpa with an average feed grade of 194 ct/t through to 2044 (Figure K24). Kagem forecasts to recover 977 Mct (or 733Mct on Gemfields Group 75% attributable basis) over the LoM.



**Figure K24: Kagem projected plant feed and recovered gemstones for LoM**

The planned pushbacks in the LoM plan for Chama pit are shown in Figure K25.



**Figure K25: Kagem planned pushbacks at Chama.**



## Gemstone Resources and Gemstone Reserves [12.13(iii)(6)(8)(9)] [SR11.5]

### Gemstone Resource and Gemstone Reserve Estimate on 31 December 2024.

The Kagem Gemstone Resources and Gemstone Reserves estimate (75% basis) for 31 December 2024 is set out in Table K8. Gemstone Resources are reported at a bottom screen cut-off of 3 mm and are inclusive of the Gemstone Reserves. No Inferred Gemstone Resources are included in the LoM plans, which support the Gemstone Reserve declaration.

**Table K8: Kagem Attributable Gemstone Resource and Gemstone Reserve Estimate at 31 December 2024**

Gemstone Resource	Tonnage	B+E Grade	Contained B+E	Gemstone Reserves	Tonnage	B+E Grade	Contained B+E
Attributable to GGL	(kt)	(ct/t)	(Mct)	Attributable to GGL	(kt)	(ct/t)	(Mct)
<b>Chama</b>				<b>Chama</b>			
Measured	70	282	20	Proved	56	187	11
Indicated	3,228	270	872	Probable	2,583	218	563
<b>Total Measured + Indicated</b>	<b>3,299</b>	<b>270</b>	<b>891</b>	<b>Total Gemstone Reserve</b>	<b>2,639</b>	<b>217</b>	<b>574</b>
Inferred	—	—	—				
<b>Fibolele</b>				<b>Fibolele</b>			
Measured	—	—	—	Proved	—	—	—
Indicated	76	160	12	Probable	61	139	9
<b>Total Measured + Indicated</b>	<b>76</b>	<b>160</b>	<b>12</b>	<b>Total Gemstone Reserve</b>	<b>61</b>	<b>139</b>	<b>9</b>
Inferred	900	160	144				
<b>Libwente</b>							
Measured	—	—	—				
Indicated	—	—	—				
<b>Total Measured + Indicated</b>	<b>—</b>	<b>—</b>	<b>—</b>				
Inferred	150	46	7				
<b>Stockpiles</b>				<b>Stockpiles</b>			
Measured	586	139	81	Proved	586	139	81
Indicated	—	—	—	Probable	—	—	—
<b>Total Measured + Indicated</b>	<b>586</b>	<b>139</b>	<b>81</b>	<b>Total Gemstone Reserve</b>	<b>586</b>	<b>139</b>	<b>81</b>
Inferred	—	—	—				
<b>Chibolele</b>				<b>Chibolele</b>			
Measured	350	160	56	Proved	280	128	36
Indicated	259	180	47	Probable	207	160	33
<b>Total Measured + Indicated</b>	<b>608</b>	<b>169</b>	<b>103</b>	<b>Total Gemstone Reserve</b>	<b>487</b>	<b>142</b>	<b>69</b>
Inferred	413	200	83				
<b>Total M+I Gemstone Resources</b>	<b>4,570</b>	<b>238</b>	<b>1,088</b>	<b>Total Gemstone Reserves</b>	<b>3,773</b>	<b>194</b>	<b>733</b>
Total Inf Gemstone Resources	1,463	160	233				

Gemstone Resource Grade and Value	Recovered Grade in 2024 (ct/t)				2024
	Chama	Fibolele	Chibolele	Libwente	Parcel Value (USD/ct)
Premium Emerald	0.66	0.21	0.03	—	249.74
Emerald	38.20	21.96	11.60	—	4.67
Beryl-1	47.17	18.46	25.58	—	0.14
Beryl-2	53.44	32.28	56.50	—	0.01

Note: The 'Emerald' category is sold via three sales channels: Higher-quality auctions, commercial-quality auctions, and Direct Sales. This price is the weighted average of (a) auction revenue per carat for 'Emerald' lots at higher-quality auctions, (b) auction revenue per carat for 'Emerald' lots at commercial-quality auctions, and (c) Export prices per carat for Direct Sale 'Emerald' grades. For Beryl-1 the weighted average is based on the Direct Sale export prices per carat for Beryl-1 (<16mm) and Beryl-1 (>16mm). Kagem assumes an allowance of three months between a stone coming out of the ground and becoming available for auction (cleaning, grading, quality control, shipping, viewing, etc.), hence the auction revenue figures for the 12-month period from October 2023 to September 2024 were used.

The comparative Kagem Gemstone Resource and Gemstone Reserve estimate attributable to GGL (75% basis) at 31 December 2023 is set out in Table K9. The key differences between the 2023 and 2024 attributable Gemstone Resource and Gemstone Reserve estimates are explained as follows:

### Gemstone Resources:

- For Chama, the base data used was mining and production data. From July 2019 to December 2024, 890Kt of RZ has been mined, with 151 million carats produced, which caters confidence of the ore mineralisation pattern over the life of mine and gave reference for the upgrade of the resources in previous years.
- For Chibolele, the base data used was actual bulk sampling mining and production, where 341Kt of RZ has been mined, with 40 million carats produced carats from Dec 2017 to Dec 2024. This caters confidence of the ore mineralisation pattern over the life of mine and gave reference for the upgrade of the resources in previous years.
- For 2024, no Resource upgrades were made, with the year-on-year movement representing ore depletion in Chama, Chibolele and Fibolele and addition of Measured Gemstone Resources in surface stockpiles for Chama and Chibolele.

### Gemstone Reserves:

- No increase in the Proved Gemstone Reserves in Chama for 2024.
- Maiden declaration of Proved and Probable Gemstone Reserves at Chama and Chibolele. Previous drilling confirmed the geological understanding, and the Measured Resources converted into Proved Reserves; and
- Ore depletion in Chama, Chibolele and Fibolele and addition in Chama and Chibolele of Proved Gemstone Resources in surface stockpiles.

**Table K9: Kagem Attributable Gemstone Resource and Gemstone Reserve Estimate at 31 December 2023**

Gemstone Resource	Tonnage	B+E Grade	Contained B+E	Gemstone Reserves	Tonnage	B+E Grade	Contained B+E
Attributable to GGL	(kt)	(ct/t)	(Mct)	Attributable to GGL	(kt)	(ct/t)	(Mct)
<b>Chama</b>				<b>Chama</b>			
Measured	216	282	61	Proved	173	187	32
Indicated	3,257	270	879	Probable	2,606	218	568
<b>Total Measured + Indicated</b>	<b>3,473</b>	<b>271</b>	<b>940</b>	<b>Total Gemstone Reserve</b>	<b>2,778</b>	<b>216</b>	<b>600</b>
Inferred	—	—	—				
<b>Fibolele</b>				<b>Fibolele</b>			
Measured	—	—	—	Proved	—	—	—
Indicated	92	160	14	Probable	69	139	10
<b>Total Measured + Indicated</b>	<b>92</b>	<b>160</b>	<b>14</b>	<b>Total Gemstone Reserve</b>	<b>69</b>	<b>139</b>	<b>10</b>
Inferred	900	160	144				
<b>Libwente</b>							
Measured	—	—	—				
Indicated	—	—	—				
<b>Total Measured + Indicated</b>	<b>—</b>	<b>—</b>	<b>—</b>				
Inferred	150	46	7				
<b>Stockpiles</b>				<b>Stockpiles</b>			
Measured	469	139	65	Proved	469	139	65
Indicated	—	—	—	Probable	—	—	—
<b>Total Measured + Indicated</b>	<b>469</b>	<b>139</b>	<b>65</b>	<b>Total Gemstone Reserve</b>	<b>469</b>	<b>139</b>	<b>65</b>
Inferred	—	—	—				
<b>Chibolele</b>				<b>Chibolele</b>			
Measured	397	160	63	Proved	317	128	41
Indicated	259	180	47	Probable	207	160	33
<b>Total Measured + Indicated</b>	<b>656</b>	<b>157</b>	<b>110</b>	<b>Total Gemstone Reserve</b>	<b>524</b>	<b>141</b>	<b>74</b>
Inferred	413	200	83				
<b>Total M+I Gemstone Resources</b>	<b>4,690</b>	<b>241</b>	<b>1,130</b>	<b>Total Gemstone Reserves</b>	<b>3,841</b>	<b>195</b>	<b>749</b>
Total Inf Gemstone Resources	1,463	160	234				
Gemstone Resource Grade and Value	Recovered Grade in 2023 (ct/t)				2023 Parcel Value (USD/ct)		
	Chama	Fibolele	Chibolele	Libwente			
Premium Emerald	0.88	—	0.89	—	231.81		
Emerald	39.14	—	124.80	—	8.28		
Beryl-1	50.50	—	245.60	—	0.14		
Beryl-2	47.35	—	478.25	—	0.01		

Note: The 'Emerald' category is sold via three sales channels: Higher-quality auctions, commercial-quality auctions, and Direct Sales. This price is the weighted average of (a) auction revenue per carat for 'Emerald' lots at higher-quality auctions, (b) auction revenue per carat for 'Emerald' lots at commercial-quality auctions, and (c) Export prices per carat for Direct Sale 'Emerald' grades. For Beryl-1 the weighted average is based on the Direct Sale export prices per carat for Beryl-1 (<16mm) and Beryl-1 (>16mm). Kagem assumes an allowance of three months between a stone coming out of the ground and becoming available for auction (cleaning, grading, quality control, shipping, viewing, etc.), hence the auction revenue figures for the 12-month period from October 2023 to September 2024 were used.

### Material Risk Factors [12.13(iii)(10)]

The principal risk factors for Kagem are as follows:

- Gemstone Resource and Gemstone Reserve estimation risk [High risk rating]: The presence and proportion of premium or higher quality gemstones may be more erratic than indicated from the mining and bulk sampling undertaken to date. The total B&E ct/t grade may also be more variable than indicated to date. Further sampling of mining blocks prior to mining to predict future production more accurately is recommended.
- Competitor risk [High risk rating]: Recent oversupply of emeralds into the market offered at lower than historical (market) prices has adversely affected the price per carat, and therefore revenues achieved. Although Management believe this to be a transient market dynamic, the impact on the short-term results of Kagem are highly uncertain going into 2025.  
Theft/Pilferage risk (of equipment, assets, supplies, consumables, etc) [High risk rating]: Intrusions into Kagem's licence areas are common, as well as theft from internal syndicates. Kagem actively manages this risk and has a dedicated Protection Services team in place, however combatting this risk comes at a huge cost to Kagem.
- Legislative/Country risk [Medium-high risk rating]: Changes in relevant government regulations, particularly environmental, tax, health and safety regulations and new legislation affecting water, mining, mineral rights, and business ownership. In January 2025, the previously suspended 15% export duty was re-introduced without prior consultation of industry stakeholders. The tax was subsequently revoked at the end of February 2025 following stakeholder lobbying. Although the tax was revoked, a medium risk remains prevalent as such changes in legislation are somewhat unpredictable and outside of the Company's control.
- Artisanal miners [Medium risk rating]: The understanding of the dynamics of the artisanal mining presence in the area and proactive dialogue with this group has improved though the ASM studies completed. A clear plan is being developed to proactively manage this risk going-forward.
- Water management [Low risk rating]: Effluent is sampled and analysed monthly by an independent laboratory, the results are in compliance with statutory limits. There is zero discharge of silty water to the environment, and silt traps are in place. Dewatering has a positive impact on the local community.

### Legal Proceedings / Material Conditions that may impact on Company's activities [12.13(iii)(11)]

The Directors of GGL and Kagem are not aware of any legal proceedings that may have an influence on the rights to explore or mine for gemstones.

The Directors of GGL have confirmed that no significant legal issue exists which would affect the likely viability of Kagem and/or on the estimation and classification of the Gemstone Resources and Gemstone Reserves.

### Environmental Management and Funding [12.13(iii)(13)]

Kagem continues to mine and manage its operations in an environmentally responsible manner, by ensuring environmental protection and conservation programmes are incorporated in its operational processes.

Kagem was awarded a prestigious safety award on 26 July 2024 by the Director of Mines Safety, Kitwe, in recognition of its exceptional achievement of 7,580,144 Lost Time Injury (LTI)-free hours. Kagem is the first mining company in Zambia to have received this rolling trophy through Honorable PS Dr Hapenga Kabeta. (Figure 26)



**Figure K26: Kagem received safety award certificate of achievements & rolling trophy.**

As at 31 December 2024, Kagem had attained 9,305,296 hours without lost time injury (2 years 11 months).

The responsible environmental and conservation programmes undertaken by Kagem in 2024 included:

- Continuation of the progressive rehabilitation programme, with a total of 20,300 indigenous trees planted at dumps covering an approximate area of 20,000sqm.
- Monthly water sampling, with Kagem being compliant with the set effluent and water standards.
- Management of hazardous waste compliance with the stipulated legal framework.
- An external IMS (ISO 14001:2015, ISO 9001:2015 and ISO 45001:2018) surveillance audit was conducted and the system was found to be effective and adequate, therefore, Kagem's certifications continue.
- Quarterly, internal IMS audits were successfully conducted.
- Air Quality is monitored continuously, and the air quality results in 2024 were satisfactory and pose no health risks.
- Kagem's environmental management licences in terms of the Environmental Management Regulations (SI 112 of 2013) were fully complied, with water abstraction and usage permits successfully renewed.
- Kagem participated in the review of the mining and environmental regulations.
- A consolidated environmental management plan for Chama, Chibolele, Fibolele and Kamakanga was completed.
- An Environmental Protection Fund audit was conducted, and the report has been submitted for review to the Mines Safety Department (MSD).



## Corporate Responsibility

Kagem's corporate responsibility activities aim to position the company in good standing with local communities, and to ensure that its policies provide a positive impact in the communities and complement Government efforts in reducing poverty levels. Kagem's approach of community engagement and participation is consistent with the Sustainable Development Goals and Government policy.

In November 2023, Kagem became the first company in Africa to be certified to the Environmental, Social and Governance (ESG) Clarity platform, the assessment was done and verified by Bureau Veritas.

As a continuation of Gemfields' commitment to advance access to education amongst local communities, during 2024 Kagem replaced shattered windows at Chapula Secondary School, donated reading books to Kapila Primary School and educated schoolgirls about the importance of maintaining menstrual hygiene through health camps and distributed sanitary pads to Bulaya Secondary School girls. (Figure 27)



**Figure K27: Kagem educated to maintain hygiene and donated sanitary pads to Bulaya Secondary School girls.**

In a tripartite Public Private Partnership, Kagem signed a Memorandum of Understanding (MOU) with the Government of Zambia's Ministry of Technology and Science and the Ministry of Agriculture to fund the construction and development of the Chapula Polytechnic Centre in Lufwanyama which is estimated to cost ZMW 52.75 million (approximately USD 2.5 million).

The foundation stone for Chapula Polytechnic Centre was laid by Honourable Felix C. Mutati, Minister of Technology and Science on 8 June 2024. The aim of the Polytechnic Centre is to galvanise the local community, providing young people with the necessary skills to support themselves professionally and training-up an able workforce to fill vital roles in the region. (Figure 28).

A contractor (Huazam construction company) was awarded the contract for the construction of the Polytechnic Centre, with works progressing steadily.



**Figure K28: Foundation stone ceremony was successfully done for Chapula Polytechnic Centre and was laid by Honourable Felix C. Mutati, Minister of Technology and Science.**

In support of education, Kagem also has signed MOUs in place with the University of Zambia and Copperbelt University to sponsor and support best-performing students in the schools of Mining Engineering and Geology.

Kagem extended support to the health sector by procuring bicycles for the end malaria campaign and by promoting waste reduction and disposal practices through educational campaigns, support of local recycling initiatives and repairing the incinerator at the Nkana clinic, as well as providing assistance to the Lufwanyama district health office. (Figure 29).



**Figure K29: Kagem supported health sector by procuring 20 bicycles.**

Kagem continues to support agriculture through various cooperatives as a way of sustaining livelihoods for the community members. Through agriculture, community members can realise legitimate income leading to increased household incomes to sustain themselves and their families. Agriculture also contributes to the reduction in incidences of illegal mining by providing alternative income-generating activities. All the Kagem supported cooperatives have received comprehensive training in organic and integrated farming aimed at increasing efficiency and value addition to the products. The trainings were held in collaboration with the Ministry of Agriculture-Lufwanyama District.

During 2024, Kagem facilitated the establishment of a fish farm project for a local cooperative which is operational and will also serve as a potential business entity once the harvesting period is in session. (Figure K30).



**Figure K30: Kagem facilitated establishment of a fish farm project for Chitete community.**

Kagem continued to build trust and relationships with the communities and external stakeholders through routine sensitisations on the importance of environmental protection, illegal mining activities as well as participation in national events. (Figure K31).



**Figure K3128: Kagem continued community engagement and participation in national events.**

In 2023, Kagem returned to supporting the Zambia Carnivore Program (ZCP) with their work protecting Zambia's famous wildlife, which supports the country's tourism sector. Kagem's donation also supports ZCP's work to enable women to access employment in conservation. This commitment of support is for five consecutive years from 2023.

### Operational Grievance Mechanism

Kagem established an Operational Grievance Mechanism ("OGM") in 2022 as part of its ongoing commitment to engage with local communities. The OGM was publicised widely in local communities around Kagem from March 2023.

The OGM has not received any human rights grievances since its implementation and most of the contacts have been employment requests, requests for new community initiatives and requests concerning on-going projects. A total of 2,112 contacts had been received through the OGM by 31 December 2024, the majority of which came through a toll free number.

The OGM process is also working in collaboration with other independent monitors to ensure proper transparency and integrity of the process.

### Corporate Governance

Kagem has continued its practice of strong corporate governance, through compliance with governance principles enshrined in various statutes and policies. It has continued meeting its statutory obligations, consistently holding Board Meetings on at least a quarterly basis and adheres to labour and other laws. During the period under review, Kagem renewed the its various licences incidental to its operations, as required. Kagem maintains a compliance register and compliance checklist.



## MONTEPUEZ

### Location

The Montepuez Ruby Mine (MRM) is located in Cabo Delgado province in north-eastern Mozambique, approximately 170 km west of Pemba (Figure M1). MRM is the world's single-largest producing ruby mine.

Located at latitude 13°10'South and longitude 39°20'East at an average elevation of 450 m above mean sea level, the site is 30 km east of the regional town of Montepuez. The nearest village is Namanhumbir, less than one km from the project camp and approximately 6.6 km from the mining areas. The main office is located in the mine operational area, and the accommodation is at the Namanhumbir mine camp. The camp is accessed via a 1.2 km long dirt road from the regional Route 242, which connects Pemba and Montepuez.

MRM recovers gemstones from a series of shallow pits at Mugloto, Glass and Maninge Nice. The main surface infrastructure, gemstone recovery plant and ruby sorting house are located at the Maninge Nice block.

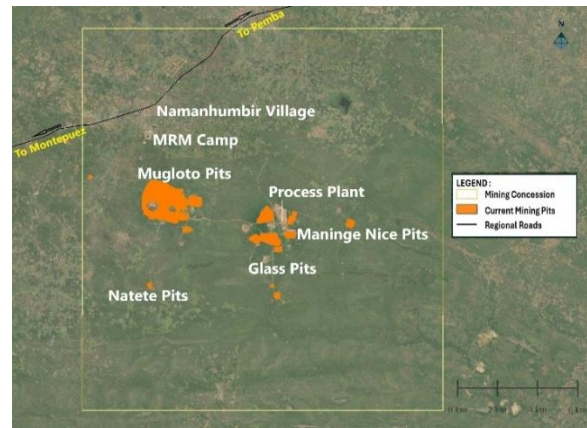


**Figure M1: Montepuez Mine Location.**

### Legal Entitlement

The single mining licence 4703C Ref. 1588/CM/INAMI/2015 (combining the two initial licences 4702 and 4703) covering an area of 34,996 ha was issued by the Government of Mozambique to MRM in December 2015, valid until 11 November 2036 (Figure M2). The original licences were granted in November 2011, valid for 25 years.

Gemfields holds a 75% interest in MRM, with the remaining 25% held by Mwiriti Limitada, the original titleholder.

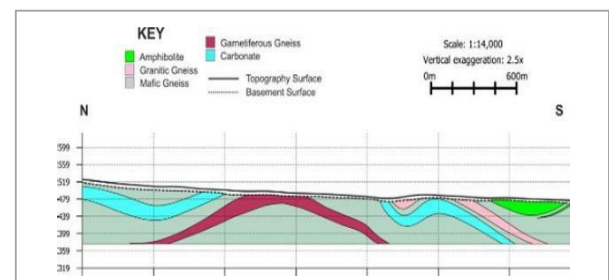


**Figure M2: Licence Extent and Site Layout Plan.**

### Geological Setting

The Montepuez ruby deposit is hosted by the Montepuez Complex, a strongly ductile-deformed, wedge-shaped, metamorphic terrane. The Montepuez Complex is composed of orthogneisses ranging from granitic to amphibolitic in composition, and para gneisses comprising quartzite, meta-arkose, marble lenses, quartz-feldspar gneiss, and biotite gneiss (Figure M3). These metamorphosed sedimentary rocks have been intruded by granite, granodiorite, and tonalite.

Intense deformation has resulted in a highly complex structural framework, with the local units folded into tight and isoclinal folds dissected by a suite of mainly northeast to southwest trending shear zones.



**Figure M3: Central Mugloto area – north-south section**

The Montepuez Complex is bounded by thrust faults to the north by the Nairito Complex, the oldest rocks in the region composed of ductile-deformed metamorphosed intrusives, and to the west by volcano-sedimentary meta-suites of the Xixano Complex.

Ruby and corundum mineralisation is found in two styles: primary amphibolite, and a secondary gravel bed. The main source of rubies and corundum is secondary mineralisation, although mining has also occurred from the primary mineralisation. The secondary gravel bed horizon comprises variably rounded quartz and clastic fragments, forming a semi-continuous horizon, at or near the basement contact. The gravel bed horizon is generally less than two metres thick, with an average thickness of 0.45 m. The primary mineralisation is associated with a variably weathered amphibolite unit, which is being mined in the Maninge Nice area.

Within the gravel bed unit, the quality and quantity of ruby gemstones varies significantly across the deposit. The grade and type of ruby encountered also varies across the secondary mineralisation (Figure M4). MRM attributes this to the variability of the primary host lithology, the geomorphology of the area, and the nature of the physical



and chemical weathering during the deposition of the secondary mineralisation.

Differences in the grade and quality of stones recovered from Mugloto and Glass are attributed to different primary sources. Geochemical analyses and studies done using a portable X-ray fluorescent analyser indicate that the ruby/corundum recovered from Glass are typically higher in Cr and V, and lower in Fe than stones from Mugloto.



**Figure M4: Montepuez primary and secondary mineralisation.**

The Maninge Nice secondary deposits lie very close to the underlying primary amphibolite deposits, resulting in a higher number of carats per ton being recovered. These are associated with a high incidence of ruby/corundum, when compared to the secondary deposits at Mugloto and Glass. The ruby/corundum at Maninge Nice tends to be more platy in shape, indicating reduced transportation distances. The stones at Maninge Nice are typically tabular hexagonal crystals, highly fractured and included with a strong basal cleavage.

The stones recovered from Glass are similar to those at Maninge Nice, except the secondary mineralisation does not overly the primary source. The stones indicate a higher transportation distance, are more rounded, meaning the number of stones recovered is reduced. The stones recovered from the Glass area typically have a better pink colour than those in Mugloto.

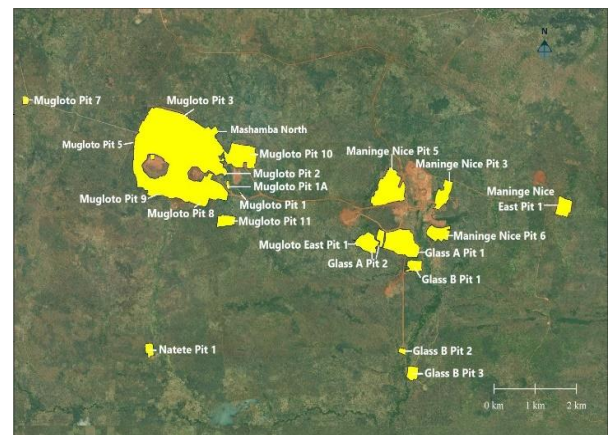
Stones recovered from Mugloto are relatively high in Fe content. The primary source for these stones is thought to lie outside the area currently delineated by exploration drilling and pitting. The stones are typically dark red colour, more transparent with fewer inclusions, and often rounded or tumbled in shape.

### Exploration Activities

Exploration and mining have been underway at Montepuez since 2012. The main exploration methods employed at Montepuez deposit include auger and diamond drilling, small-scale exploration pits, bulk sampling, and mining. This key data is supplemented by limited geological mapping, satellite imagery and geophysical and soil geochemistry surveys. Exploration expenditure to December 2024 amounted to approximately USD 5.3 million, with drilling expenses accounting for 63% of the total.

Any further drilling is operational as a part of the Exploration plan and a capital provision of USD 0.7 million per year is being provided for it.

Exploration of the Montepuez deposit can be broadly defined in terms of three phases so far. Phase one was completed before Q2 2015, Phase two was completed post Q2 2015 and Phase three Auger exploration for secondary deposit was completed in Q4 2022. A Phase 4 is planned to continue exploration in unexplored areas of the MRM licence area. Auger drilling and exploration pitting is used primarily to determine the thickness and nature of the secondary mineralisation in the gravel bed and the overlying material. Diamond drilling has been used to determine the nature of the basement geology, with the aim of defining the primary mineralisation at Maninge Nice. The main exploration tool used to determine ruby grade and quality is through bulk sampling (Figure M5), and later, production.



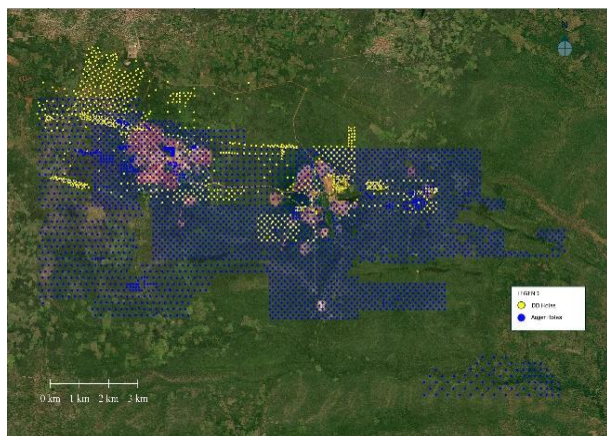
**Figure M5: Montepuez bulk sampling / production pit outlines.**

Various geophysical surveys have been conducted: high-resolution radiometric survey (November 2012), ground-penetrating radar and electromagnetic surveys (April 2013) and airborne geophysical survey (October/November 2015).

During 2024, 36 (2180 m) diamond drill holes were completed with no new auger holes whilst in 2023, a total of 46(2590 m) diamond drill holes were completed.

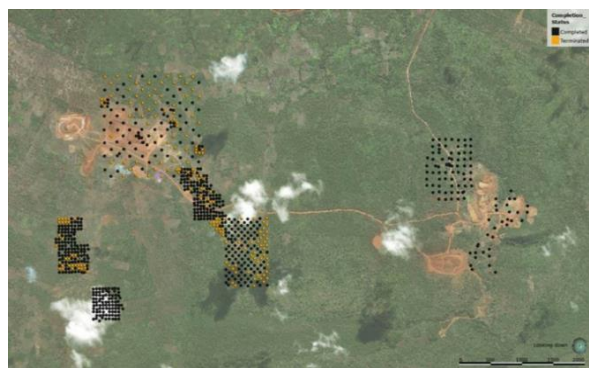
Exploration drilling mainly comprises auger holes and diamond drilling holes. Since inception 3,499 auger holes (23,969 m) and 1,284 diamond holes (67,872 m) with a variable drill hole spacing across the Mugloto and Maninge Nice areas (Figure M6). Auger drilling is carried out at different grids, ranging from 140 m to 280 m. In the Mugloto area, several small pockets of closely spaced drilling are conducted on a 30-40 m grid. The distribution of diamond drill holes is relatively sporadic, covering the Glass, Maninge Nice, and Mugloto areas over a 14 km strike length. Drill spacings vary from 5 meters to 75 meters, to 200 meters.

The auger and diamond holes were drilled to an average depth of 7.1 m and 52.86 m respectively. All the auger holes were drilled vertically while a few diamond drill holes were drilled inclined as well. No downhole surveying has been undertaken and none of the holes has been structurally oriented.



**Figure M6: Diamond (yellow) and auger (blue) drill hole collar locations.**

Some exploration pitting typically one m2 in cross section and average 3.9 m deep was focused on the central Mugloto and Maninge Nice areas (Figure M7). A total of 823 exploration pits (3,224 m) were completed in 2012-2013, at grid spacings of 50 x 50 m, 100 x 50 m and 200 x 100 m. Due to various technical difficulties, 175 pits were terminated prior to reaching the planned depth, and have been excluded from the database for modelling.



**Figure M7: The completed (black) and terminated (orange) exploration pit collar locations.**

The X and Y coordinates for the drill hole and pit collars were surveyed with standard hand-held GPS equipment, whilst the elevation is taken from the SRTM geophysical topography surface.

Ruby grade and quality distribution at Montepuez is determined from mine production records. The mined material is processed through the onsite processing plant, with a bottom cut of 1.6 mm.

#### **Ruby Mineralisation and classification system**

The material recovered from the wash plant is initially split by hand into three categories, waste, garnet, and rubies/corundum.

Montepuez uses a classification scheme for the recovered gemstones, classified on the size and quality of the individual ruby/corundum (Table M1).

Once split into these broad quality categories, the gemstones are further subdivided into various groups based on clarity, colour, size, weight, and shape, resulting in several hundred final subdivisions (Table M1)

**Table M1: Montepuez ruby/corundum classification system.**

Category	Description
Waste	Discarded
Garnets	Stockpiled for future use
Ruby/corundum:	
Fines	Sieved, -2.8 mm
<4.6 mm	Sieved, +2.8 mm -4.6 mm
Premium Ruby	Rough >0.5 g, desirable shape, clarity, and red colour
Ruby	<0.5 g, desirable shape, clarity, red colour; rough >0.5 g, rough included or pink colour affecting recovery or appearance
Low Ruby	Gemstones with pinkish red to red colour, translucent with significant inclusion
Corundum	Opaque non-gem quality rough
Sapphire	Very light pink to pink gemstones of variable shape and clarity

#### **Quality Assurance/Quality Control**

The logging and sampling procedures in place are generally consistent with normal industry practice for this commodity type.

Key geological information logged includes lithology, mineralogy, weathering, alteration, colour, grain size, structure/texture, and intrusive features. The presence of key minor or trace minerals including rubies, corundum, garnet, and pyrite are recorded.

#### **Methods for estimation and classification of Gemstone Resources and Gemstone Reserves**

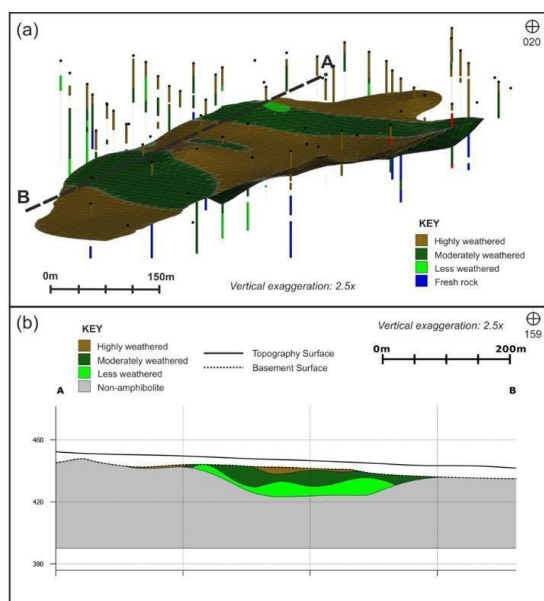
The auger and diamond drilling and exploration pit data were used to model the secondary, overburden unit and primary bedrock lithologies (Figure M8). Topographic and basement contact surfaces are also modelled. The three-dimensional volumetric model of the secondary gravel bed is based on the top and bottom contacts from the logged auger holes and exploration pits and follows the geometry of the modelled basement contact between drill holes.

A gravel bed "skin" model was created to reflect the mining dilution included by the mining operation. This entails expanding the gravel bed model by 0.3 m on the footwall and hanging wall or set to a standard 1.5 m thickness where the gravel bed model is <0.9 m thick.

The Maninge Nice amphibolite body was modelled through sectional polyline interpretations, based on logged amphibolite in diamond holes and exploration pits, cropped to the modelled basement surface.

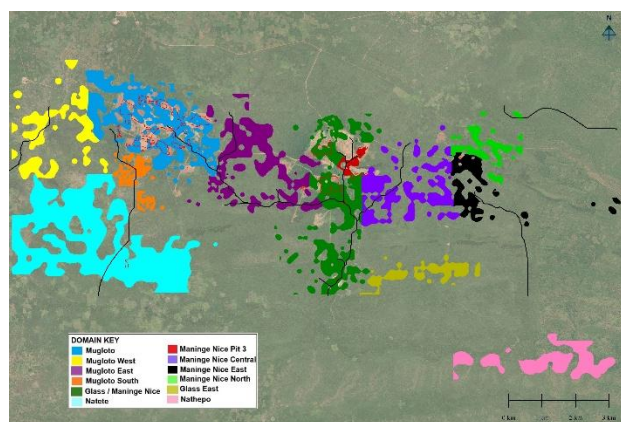
A watershed analysis of the modelled basement surface using Global Mapper software showed that the gravel bed appears to be present more consistently near the paleo-drainage channels; the modelled ruby grade is typically higher near the paleo-drainage channels, while areas of consistent lower grade are distal to the major channels.





**Figure M8: Oblique (a) and sectional (b) views of the Maninge Nice amphibolite model coloured by the degree of weathering.**

To reflect the variation in ruby grade and quality throughout the gravel bed, the gravel bed model is divided into ten spatial domains based on auger/pit grade populations and geological control (Figure M9), in which two domains Natete and Nathepo were added in 2022. The domain outlines are of similar grade and controlled by the major paleo-drainage channels.



**Figure M9: Gravel bed model, coloured by domain relative to drainage channels (in black) and extent of production pits (red outlines).**

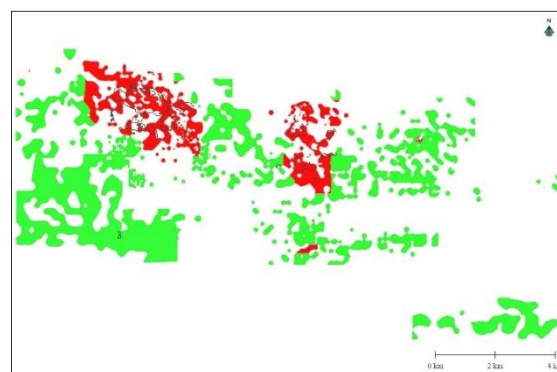
The grades from ongoing production provide the most reliable data source, which details the stone quality subdivisions and various quality types. The production grades for the secondary mineralisation are factored to remove the dilution effect by a thickness ratio of modelled gravel bed to gravel bed plus skin.

The tonnage estimates are derived from averaged drill core density measurements assigned separately to the various domains.

The classification scheme for the Gemstone Resources at Montepuez (Figure M10) considers the following factors:

1. Quantity and quality of the underlying data, the level of geological understanding for each type of mineralisation across the property as a whole;
2. Confidence in the geological continuity of the host mineralisation;
3. Confidence in the grades, as derived from the production and the understanding of the grade variation at a given production scale; and
4. The perceived level of risk associated with deviations from the assumptions made.

The Gemstone Resources statement is split into the mineralisation types (primary and secondary), as well as the different geographical areas. The statement presented is based on the geological modelling of the two mineralisation styles (gravel bed and amphibolite), and the application of factors derived from production.



**Figure M10: Block model classification of Gemstone Resources (red=Indicated, green=Inferred). Black outline shows the extent of gravel extraction in production pits.**

In presenting this Gemstone Resource, the following apply:

- Gemstone Resources for the gravel bed are reported inclusive of dilution, at a 1.5 m minimum mining width;
- Gemstone Resources for Maninge Nice Pit 3 primary amphibolite are reported as undiluted;
- The block model has been depleted to the relevant pit surveys to reflect the 31 December 2024 effective date.
- The average value reported in the Gemstone Resource statement is USD 22.98/ct (this is the average parcel value for 2014 to 2024, see Table M4);
- Premium ruby and normal ruby are presented individually whilst other classes (low ruby, corundum, sapphire, and -4.6 mm mixed ruby/corundum) are combined. A total grade for all classes is also presented for clarity;
- Gemstone Resource grades are quoted with a bottom cut-off stone size of 1.6 mm;
- All figures are rounded to reflect the relative accuracy of the estimate.

MRM maintains stockpiles of both the primary and secondary mineralisation types to manage the expected variability in the gemstone grading distribution and impact of the wet season on productivity. The strategy provides more than six months of production stockpiled near the wash plant. The stockpiles are monitored to account for



the addition of Run of Mine (RoM) material added during production, material moved to the processing plant, and surveyed monthly. The stockpile balances are based on the production data.

### Type of Mining, Mining Activities

The Montepuez deposits were discovered in 2009, where there was a large influx of artisanal miners to the area. Gemfields signed a joint venture agreement with Mwiriti Lda in 2011. Bulk sampling started in August 2012 and an initial wash plant and sort house was commissioned in November 2012.

Mining is carried out at the Mugloto, Maninge Nice and Glass areas as a conventional open-pit gravel operation with excavators, loaders, and trucks (Figure M11). All material is 'free dig' with some of the harder laterite needing to be ripped by a bulldozer. All equipment is owned and operated by the mine. Mining operation runs in two twelve-hour shifts.

The Maninge Nice blocks target primary amphibolite and secondary gravel bed mineralisation, whereas the Mugloto and Glass areas contain only secondary gravel bed mineralisation.

Mining in Mugloto and Maninge Nice varies in depth between five to ten metres. Waste mining is undertaken in 2.5 m flitches. The flitch heights are reduced as the excavation approaches the gravel bed horizon, as directed by site geologists. Small equipment sizes allow for highly selective mining. Complete extraction of the gravel is ensured by mining a minimum thickness of 1.5 m.

Grade control is constrained to visual inspection and mining of the mineralised zones is only undertaken during daylight hours. Geologists on-site direct the mechanical loader from within the pit area to ensure that the gravel bed is mined correctly (Figure M11).



**Figure M11: Systematic and selective mining under Geology supervision.**

MRM recovers gemstones from a series of shallow pits at Mugloto, Glass and Maninge Nice (examples shown in Figure M12, M13 and M14 respectively).

MRM has included an ore stockpiling strategy to manage the expected variability in the gemstone grading distribution as well as the impacts of the wet season on productivity. The stockpiling strategy provides more than six months of production stockpiled near the wash plant. Ore is fed to the

plant either from these stockpiles or directly from the pits.



**Figure M12: Mugloto Pits.**



**Figure M13: Glass A Pit 1/Slime Pond and Glass B Pit 1.**



**Figure M14: Maninge Nice Pit 3, 5 and 6, and Glass A Pit 1.**

Considerations for stripping ratio, thicknesses and mineralisation type were the main drivers for the LoM plan. Economic potential was tested in a financial model by considering:

- Long-term macro-economics and prices;
- Revenue-based deductions (e.g., royalties, auction fees);
- Operating costs; and
- Modifying factors.

Modifying factors applicable to the derivation of Gemstone Reserves comprise estimates for the selective mining unit. Mining dilution for secondary mineralisation is the greater of

0.3 m skin on top and bottom contacts, or a minimum total thickness of 1.5 m. Grade capping has been applied to the Mugloto secondary mineralisation to limit the grade of the higher-value gemstone based on historical results.

No mining losses are applied to the secondary material due to the nature in which dilution was modelled. A small mining loss of 1.4% was implied in the modelling of the primary material.

The backfilling of the Maninge Nice pits is only possible in areas, which do not overlie the primary mineralisation. External

waste rock dumps are required. Concurrent backfilling of the pits at Mugloto (Figure M15) and Glass is possible as mining is focused on secondary material.



**Figure M15: In-pit backfilling at Mugloto Pits.**

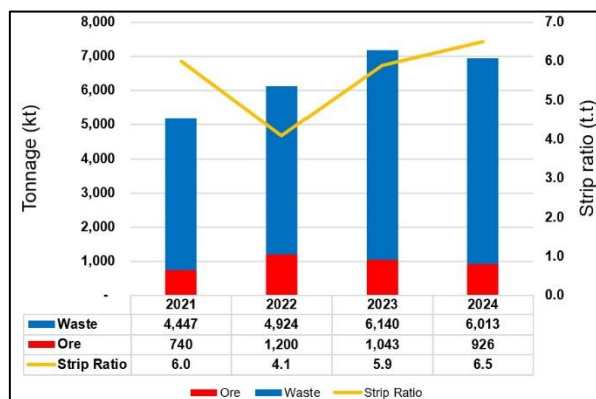
The current LoM plan production requires a ramp-up from 7.9 Mtpa total ore and waste to 15 Mtpa by 2026, with ore mining increasing to 3.6 Mtpa by 2026 and is projected to extend to 2029 (LoM of 5 years). The future LoM plan expects to achieve an overall stripping ratio of 3.3 over the LoM. The mining sequence targets areas to balance lower stripping ratios, proximity to wash plant and areas with historically high premium rubies.

An owner-operated fleet undertakes all material movement. The primary excavators are CAT336D and Komatsu PC 600 hydraulic excavators with CAT730C and Komatsu HM 400 ADTs for waste mining and TATA2523 tipper trucks for ore mining. Equipment replacement cycles are set at 18,000 engine hours for all primary equipment, except the TAT2523 trucks set at 10,000 engine hours.

## Historical Production

The historical mined tonnages of waste and ore and the average strip ratio for from 2021 to 2024 is shown in Figure M16.

**Figure M16: MRM historical mined tonnage and strip ratio.**



The ore and waste tonnage mined during 2024 was 7.99 million tonnes with an overall stripping ratio of 6.5.

Historical production data for 2021 to 2024 is tabulated in Table M2.

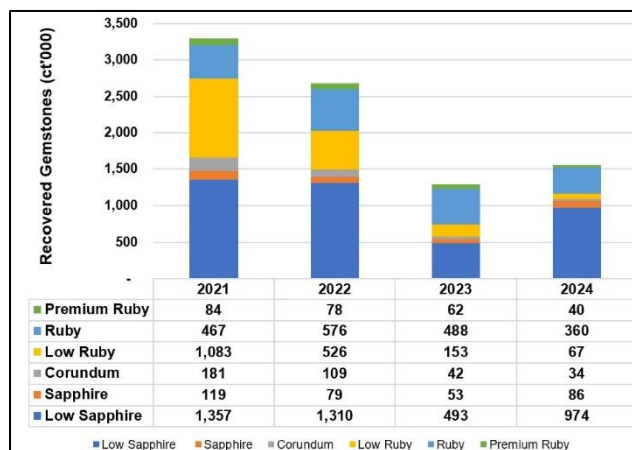
**Table M2: MRM summary production data**

Item	Units	2021	2022	2023	2024
<b>Tonnage Mined</b>					
Mugloto Secondary	(kt)	585.9	1,157.2	867.9	778.1
Maninge Nice Primary	(kt)	-	-	7.7	8.8
Maninge Nice Secondary	(kt)	119.4	35.5	104.9	138.9
Glass Secondary	(kt)	34.6	14.1	27.7	0.1
Natete Secondary	(kt)	-	-	35.3	-
Total ore mined	(kt)	739.9	1206.8	1043.6	925.8
<b>Tonnage Processed</b>					
Mugloto Secondary	(kt)	859	1,002	1,079.3	1,014.1
Maninge Nice Primary	(kt)	-	9	0.9	-
Maninge Nice Secondary	(kt)	132.8	135.9	9.5	30.5
Glass Secondary	(kt)	9.8	0.2	2.7	27.5
Natete Secondary	(kt)	-	-	16.9	-
Head feed	(kt)	1,001.6	1,147.2	1,109.4	1,072.0
<b>Recovered Grade</b>					
Mugloto Secondary	(ct/t)	3.60	1.41	0.99	1.41
Maninge Nice Primary	(ct/t)	-	113.47	208.24	-
Maninge Nice Secondary	(ct/t)	1.21	1.53	1.01	0.84
Glass Secondary	(ct/t)	2.09	11.34	2.67	1.34
Natete Secondary	(ct/t)	-	-	0.34	-
Aggregated grade	(ct/t)	3.27	2.3	1.15	1.39
Recovered Gemstones	(Mct)	3.27	2.64	1.28	1.56

The rock handling cash unit cost was USD 7.24/t and USD 5.90/t for 2024 and 2023 respectively.

Historical data for recovered gemstones for 2021 to 2024 are shown graphically in Figure M17.

**Figure M17: MRM historical recovered gemstones**



Based on auger exploration findings, two new bulk sampling pits were opened in 2024, Mugloto East Pit 1, and, Mashamba North Pit, pit development plan is ongoing. Ore processed from Mugloto East Pit 1 has shown ruby mineralisation.

## Auction Results – 2023 and 2024

The auction results from the sales of parcels of mixed and commercial quality rubies in 2023 and 2024 are set out in Table M3. A total of three auctions were held during 2024, one commercial quality and two mixed quality.

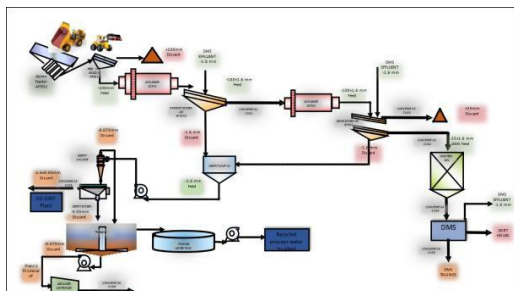


**Table M3: Auction Results 2023 and 2024**

Item	Units	Jun'23	Sep'23	Dec'23	Jun'24	Sep'24	Dec'24
Carats sold	(Mct)	0.30	0.87	0.24	0.24	5.65	0.14
Sales realised	(USDm)	80.4	1.5	69.5	68.7	2.3	46.2
Av. Sales value	(USD/ct)	266.0	1.7	290	317.0	0.4	321.9

## Processing

A processing plant including a scrubber, rated at 200 tph of RoM feed, and a dense medium separation plant (“DMS”), rated at 83 tph of washed -25 mm+1.6 mm material, was commissioned in December 2016 (Figure M18). A new thickener was installed across 2019 to 2020 to meet the operating capacity.



**Figure M18: Montepuez plant flow sheet.**

An apron feeder has provided operational flexibility for feed rate control and thus stabilized the downstream operation. It has helped to minimize process downtime due to uncontrolled plant feed rate and maintain the feed rate at 150 tph.

The wash plant flowsheet incorporates wet scrubber screening to remove -1.6 mm solids, followed by a log washer to break up clay balls and a double deck, wet screen to remove +25 mm stone fraction and -1.6 mm fines.

Several waste streams are produced in the plant. Coarse +25 mm material is separated and stockpiled. DMS rejects are removed to waste after sample testing. The -1.6 mm fines are pumped to the tailings circuit where they are classified into two fractions:

- A coarser -1.6 mm to +75 µm fraction is dewatered by screen and sent to the dump; and
- The -75 µm fraction is thickened and pumped to settling paddocks where it consolidates and dries prior to transfer to permanent storage in old workings.

Slime treatment plant comprising Decanter Centrifuge Technology was installed and commissioned in July 2022. This ecofriendly disposal of slime cake technology has helped in reducing the load on tailing dam and improve process water recirculation in plant circuit.

After washing and separation in the plant, the resulting gravity concentrate is sorted by hand in the high-security area under strict supervision incorporating automatic colour sorting machines (Figure M19).

The processing plant processed 1.07 Mt of ore during 2024. The actual plant availability and utilization of 85.9% and 94.9% respectively were achieved.

After removal of fines, the remaining gemstones are then subdivided into five broad quality categories (described above), and then further subdivided into various groups based on clarity, colour, size, weight, and shape (see example in Figure M20).



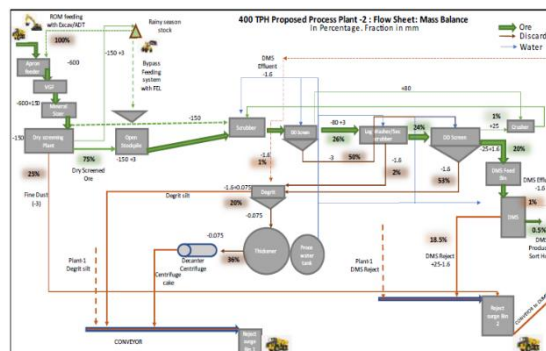
**Figure M19: State-of-the-art recovery house uses UV- light to recover rubies.**



**Figure M20: H Grade + 2 gm ruby recovered at MRM**

MRM's processing plant is running at capacity, management targeted a processing capacity expansion by setting up an additional Processing Plant of 400 TPH capacity. This new processing plant after its commissioning will regulate supply of product mix to the market by creating a buffer between ruby production and sales, allow for further exploration of the licence areas and process MRM's considerable stockpiles. Following the pre-feasibility study, plant design and engineering work was completed, and subsequently tender documents were floated to suppliers. After detailed discussion with participating bidders, a techno-commercial- contractual evaluation of bids was done and finally the project is awarded to Consulmate. Project activity commenced on 16 August 2023 and is expected to be completed by June 2025.

**Figure M21: MRM's second processing plant flow sheet**



MRM has engaged Source Capital and Proslia Energy to construct a 12.5 MWph PV + 7.75 MW/31 MWh Battery Energy Storage System (BESS) solar power plant to support the power for the second processing plant.



## Gemstone Resource and Gemstone Reserve Estimates

The MRM Gemstone Resources and Gemstone Reserves estimate attributable to GGL (75% basis) at 31 December 2024 is set out in Table M4. Gemstone Resource grades are quoted with a bottom cut-off stone size of 1.6 mm and are inclusive of Gemstone Reserves. The stockpile grades are derived from the reported grades for the respective source materials.

No Inferred Gemstone Resources are included in the LoM plans, which support the Gemstone Reserve declaration.

**Table M4: MRM Attributable Gemstone Resource and Gemstone Reserve Estimate at 31 December 2024**

Gemstone Resource (Attributable to GGL)	Tonnage (kt)	Recovered Grade (ct/t)	Contained (Mct)	Gemstone Reserves (Attributable to GGL)	Tonnage (kt)	Recovered Grade (ct/t)	Contained (Mct)
<b>Maninge Nice</b>				<b>Maninge Nice</b>			
Indicated - Primary	842	99.4	83.7	Probable - Primary	830	99.4	82.5
Indicated - Secondary	111	107.3	12.0	Probable - Secondary	111	106.7	11.9
<b>Total Indicated</b>	<b>953</b>	<b>100.4</b>	<b>95.7</b>	<b>Total Probable Reserve</b>	<b>942</b>	<b>100.3</b>	<b>94.4</b>
Inferred - Primary	180	97.9	17.6				
Inferred - Secondary	9,994	12.7	127.0				
<b>Inferred - Total</b>	<b>10,174</b>	<b>14.2</b>	<b>144.7</b>				
<b>Mugloto</b>				<b>Mugloto</b>			
Indicated - Primary	0	0.0	0.0	Probable - Primary	-	-	-
Indicated - Secondary	6,053	3.2	19.1	Probable - Secondary	5,960	3.0	18.1
<b>Total Indicated</b>	<b>6,053</b>	<b>3.2</b>	<b>19.1</b>	<b>Total Probable Reserve</b>	<b>5,960</b>	<b>3.0</b>	<b>18.1</b>
Inferred - Secondary	13,788	14.8	203.6				
<b>Glass</b>				<b>Glass</b>			
Indicated - Secondary	5,073	2.4	12.1	Probable - Secondary	5,066	2.2	11.2
<b>Total Indicated</b>	<b>5,073</b>	<b>2.4</b>	<b>12.1</b>	<b>Total Probable Reserve</b>	<b>5,066</b>	<b>2.2</b>	<b>11.2</b>
Inferred - Secondary	5,670	0.9	5.1				
<b>Stockpiles</b>				<b>Stockpiles</b>			
Indicated – Primary	12	100.1	1.2	Probable – Primary	12	100.1	1.2
Indicated – Secondary <sup>(1)</sup>	1,094	1.8	1.9	Probable – Secondary <sup>(1)</sup>	1094	1.8	1.9
<b>Total Indicated</b>	<b>1,107</b>	<b>2.9</b>	<b>3.2</b>	<b>Total Probable Reserve</b>	<b>1,107</b>	<b>2.9</b>	<b>3.2</b>
<b>Total Indicated Gemstone Resources</b>	<b>13,185</b>	<b>9.9</b>	<b>130.0</b>	<b>Total Probable Gemstone Reserves</b>	<b>13,075</b>	<b>9.7</b>	<b>126.8</b>
<b>Natete*</b>							
Inferred - Secondary	18,140	0.3	5.3				
<b>Nathepo</b>							
Inferred - Secondary	3,915	0.5	2.0				
<b>Total Inf Gemstone Resources</b>	<b>51,687</b>	<b>7.0</b>	<b>360.6</b>				

<sup>1</sup> Combination of material from Maninge Nice, Mugloto and Glass.

Gemstone Grade and Value	Recovered Grade (ct/t)			Av. Parcel Value (2014–2024) <sup>1</sup> (USD/ct)	Av. Parcel Value 2024 (USD/ct)
	Maninge Nice	Mugloto	Glass (1)		
Premium Ruby	0.042	0.037	0.031	1,227.83	1,403.16
Ruby	0.287	0.268	0.253	58.40	110.30
Low Ruby	0.073	0.059	0.159	3.35	
Corundum	0.080	0.030	0.055	1.10	3.95
Sapphire	0.045	0.080	0.108	0.40	1.66
Low Sapphire	0.310	0.931	0.738	0.08	0.05
-4.6mm	-	-	-	10.55	
Reject with some Low Sapphire	n/r	n/r	n/r	0.05	
<b>Weighted Average Value (USD/ct)</b>				<b>22.98</b>	<b>19.41</b>

<sup>1</sup> Average parcel value for 2014 to 2024 applied.

The comparative MRM Gemstone Resource and Gemstone Reserve statement attributable to GGL (75% basis) at 31 December 2023 is set out below. The key differences between the 2023 and 2024 Gemstone Resource and Gemstone Reserve estimates are explained as follows:

### Gemstone Resources:

- The primary and secondary resources and reserves at Maninge Nice have decreased due to mining depletion. However, the grade of the secondary resources has increased because of the extraction of comparatively lower-grade ore from Maninge Nice Pit 5;
- A reduction in tonnage and contained gemstones in the Indicated Gemstone Resources at Mugloto due to mining depletion. The grade has slightly increased due to the mining of lower-grade areas;
- There are no changes in tonnage, grade, or contained gemstones for the Inferred Gemstone Resources in the Maninge Nice, Glass, Nakete, and Nathepo areas. However, there is a slight change in the inferred resource for the Mugloto area (specifically the Mugloto East domain) due to mining depletion;
- The tonnage, grade, and contained carats of the Glass Indicated Resources remain unchanged; and

- There has been an overall increase in the tonnage of secondary stockpiles of indicated resources following a detailed stock balancing exercise conducted in 2024, while the stockpile of indicated primary resources has decreased.

#### Gemstone Reserves:

- Reduction in tonnage and contained gemstones in Probable Gemstone Reserves of Mugloto and Maninge Nice, due to mining depletion;
- The grade at Mugloto and Maninge Nice has increased due to the mining of comparatively lower-grade secondary material from Mugloto Pit 9 and Maninge Nice Pit 5;
- The tonnage, grade, and contained carats of the Glass Probable Reserves remain unchanged; and
- There has been an increase in the secondary stockpiles of probable secondary reserve tonnages following a detailed stockpile balancing exercise conducted in 2024, while the stockpile of primary probable reserve tonnages has decreased.

**Table M5: MRM Attributable Gemstone Resource and Gemstone Reserve Estimate at 31 December 2023**

Gemstone Resource (Attributable to GGL)	Tonnage (kt)	Recovered Grade (ct/t)	Contained (Mct)	Gemstone Reserves (Attributable to GGL)	Tonnage (kt)	Recovered Grade (ct/t)	Contained (Mct)
<b>Maninge Nice</b>				<b>Maninge Nice</b>			
Indicated - Primary	849	99.4	84.4	Probable - Primary	837	99.4	83.2
Indicated - Secondary	215	56.0	12.0	Probable - Secondary	215	55.6	12.0
<b>Total Indicated</b>	<b>1,064</b>	<b>90.6</b>	<b>96.4</b>	<b>Total Probable Reserve</b>	<b>1,052</b>	<b>90.4</b>	<b>95.2</b>
Inferred - Primary	180	97.9	17.6				
Inferred - Secondary	9,994	12.7	127.0				
<b>Inferred - Total</b>	<b>10,174</b>	<b>14.2</b>	<b>144.7</b>				
<b>Mugloto</b>				<b>Mugloto</b>			
Indicated - Primary	-	-	-	Probable - Primary	-	-	-
Indicated - Secondary	6,624	3.0	19.9	Probable - Secondary	6,531	2.89	18.9
<b>Total Indicated</b>	<b>6,624</b>	<b>3.0</b>	<b>19.9</b>	<b>Total Probable Reserve</b>	<b>6,531</b>	<b>2.89</b>	<b>18.9</b>
Inferred - Secondary	13,800	14.8	203.6				
<b>Glass</b>				<b>Glass</b>			
Indicated - Secondary	5,073	2.4	12.1	Probable - Secondary	5,066	2.2	11.2
<b>Total Indicated</b>	<b>5,073</b>	<b>2.4</b>	<b>12.1</b>	<b>Total Probable Reserve</b>	<b>5,066</b>	<b>2.2</b>	<b>11.2</b>
Inferred - Secondary	5,670	0.9	5.1				
<b>Stockpiles</b>				<b>Stockpiles</b>			
Indicated – Primary	28	112.8	3.2	Probable – Primary	28	112.8	3.2
Indicated – Secondary <sup>(1)</sup>	460	10.7	4.9	Probable – Secondary <sup>(1)</sup>	460	10.7	4.9
<b>Total Indicated</b>	<b>488</b>	<b>16.6</b>	<b>8.1</b>	<b>Total Probable Reserve</b>	<b>488</b>	<b>16.6</b>	<b>8.1</b>
<b>Total Indicated Gemstone Resources</b>	<b>13,249</b>	<b>10.3</b>	<b>136.5</b>	<b>Total Probable Gemstone Reserves</b>	<b>13,138</b>	<b>10.1</b>	<b>133.3</b>
<b>Nakete</b>							
Inferred - Secondary	18,140	0.3	5.3				
<b>Nathapo</b>							
Inferred - Secondary	3,915	0.5	2.0				
<b>Total Inf Gemstone Resources</b>	<b>51,699</b>	<b>7.0</b>	<b>360.6</b>				

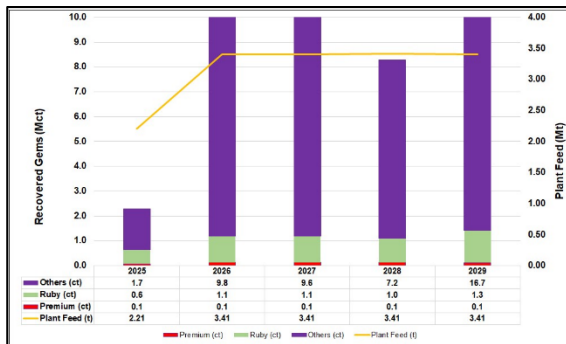
<sup>1</sup> Combination of material from Maninge Nice, Mugloto and Glass.

Gemstone Grade and Value	Recovered Grade (ct/t)			Av. Parcel Value (2014-2023) <sup>(1)</sup>	Av. Parcel Value 2023 (USD/ct)
	Maninge Nice	Mugloto	Glass (1)		
Premium Ruby	0.011	0.058	0.016	1,210.94	1,503.78
Ruby	0.504	0.445	0.161	55.38	89.63
Low Ruby	6.656	0.075	0.332	3.35	1.77
Corundum	0.341	0.033	0.394	0.96	
Sapphire	1.295	0.034	0.077	0.24	
Low Sapphire	10.331	0.344	1.696	0.08	
-4.6mm	-	-	-	10.55	
Reject with some Low Sapphire	n/r	n/r	n/r	0.05	
<b>Weighted Average Value (USD/ct)</b>				<b>23.46</b>	<b>107.22</b>

<sup>1</sup> Average parcel value for 2014 to 2023 applied.

## Production Forecast

The plant feed tonnage and gemstones recovered for the LoM through to 2029 are forecast as shown in Figure M21.



**Figure M22: Forecast production and gemstones recovered**

The LoM assumes the second processing plant begins to be operational in 2025. Construction began on 16 August 2023 and is expected to be in operation by June 2025.

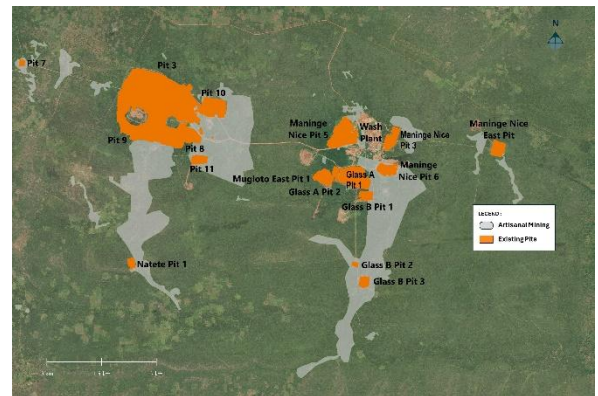
## Material Risk Factors

The principal risk factors for MRM are as follows:

- **Legislative and permitting risk [Low risk rating]:** good relations with government should be maintained, to ensure permits are approved in a timely manner, to lobby for positive changes to mining law and to lobby against any negative changes to the mining fiscal regime;
- **Gemstone Reserve risk [High risk rating]:** The presence of premium quality gemstones may be more erratic than indicated from the bulk sampling and production undertaken to date. Certain parts of the deposits may be richer than others. The market for lower quality stones could be overestimated;
- **Water management [Low risk rating]:** water availability, water use, and potential vulnerability of the operation to climate change impacts are not fully understood;
- **Environmental and social risks [Medium risk rating]:** MRM is compliant with the terms and conditions of the approved EIA. Bio diversity studies were completed in 2019 and 2021 for dry seasons and third phase study for wet season was completed in Q1 2023. Furthermore, a rare species biodiversity study was carried out in Q4 2024 by the University of Lúrio (Unilúrio) as part of the ongoing biodiversity monitoring program. Monitoring of air quality, dust, vibration, and gases in the mine, as well as in surrounding communities and villages, was completed in Q1, Q2, Q3, and Q4 of 2024. Additionally, MRM has acquired advanced air quality monitoring equipment, which will be installed at the mine and in three nearby communities to ensure continuous 24/7 monitoring, thereby enhancing its environmental monitoring capabilities.
- **Insurgency [High risk rating]:** Insurgent activities fluctuated in 2024, with insurgent attacks mainly taking place within Cabo Delgado districts of Mocimboa da Praia, Muidumbe and Macomia. The deployment of additional Rwanda Defense Forces (RDF) personnel in the north of the province forces seems to have caused a disruption within the movement and activities of the insurgents. To mitigate the risk, MRM has maintained the deployment of an additional private armed personal protection unit, the government of Mozambique has deployed additional military inside and outside of operational areas, and MRM started regular flights between Pemba and Montepuez, largely replacing road

transportation through high risk areas. The airstrip inside the mine is being maintained for emergency evacuation.

- **Civil unrest [High risk rating]:** After the October 2024 elections in Mozambique, protests against the election results spread across the country, directly affecting MRM in several ways. These included disruptions to mine supply chains, the burning of community infrastructure built by the mine, looting of farming inputs provided to local communities, damage to water supply infrastructure for the MRM village, and an attempted invasion of the MRM village. As a result, mine operations were temporarily suspended.
- **Artisanal miners [Medium risk rating]:** The understanding of the dynamics of the artisanal mining presence in the area and proactive dialogue with this group needs to be improved (Figure M22).



**Figure M23: Areas affected by artisanal excavation (in grey) relative to MRM operations.**

## Legal Proceedings / Material Conditions that may impact on Company's activities

The Directors of Gemfields Group Limited ("GGL") and MRM are not aware of any legal proceedings that may have an influence on the rights to explore or mine for gemstones.

The Directors of GGL have confirmed that no significant legal issue exists which would affect the likely viability of MRM and/or on the estimation and classification of the Gemstone Resources and Gemstone Reserves.

## Environmental Management and Funding

The discovery of gemstones in the region led to an influx of artisanal miners from within Mozambique and other parts of Africa with most of them operating illegally.

MRM has now been actively exploring and mining for ten years across its licence areas.

MRM holds a valid approval for its Resettlement Action Plan ("RAP"), an authorised land use permit ("DUAT") valid until 2036 and a Category "A" Environmental Licence for the mine site is under renewal process. The process is currently at the stage of approval, awaiting feedback from the Ministry of Land and Environment. The license is expected to be valid for five years.

Water management is a critical ongoing issue that needs continuous attention. The full extent of the operation's vulnerability to climate change impacts, including extreme droughts or floods, is not yet fully understood. To address this, a comprehensive understanding of the water balance, along with the implementation of a water quality and quantity monitoring program, is essential. As part of this effort, MRM has engaged ARA Norte, the government's regional authority for water management in the northern region, to provide guidance on the necessary steps for implementing



an adaptive management plan, which includes the installation of piezometers. Currently, flow meters on water supply boreholes provide data to the site's water balance monitoring system.

Environmental management at MRM comprises the following key activities:

- Comply with the formal management system which was implemented in terms of GGL's health and safety, social and environmental ("HSE") policy;
- Ensure that water from processing operations laden with silt does not reach local water courses; in addition the water from slime pond is recovered and re-used for the processing. MRM's processing plant has installed Decanter Centrifuge for treatment of thickener Silt, which separates water from silt. Recovered water is again used in the plant for processing;
- Air quality monitoring for mine concession and the communities around the Mine. This is to ensure that no air pollution occurs during the Mine operations;
- Efficiently Manage oil and industrial waste including domestic waste associate with MRM camps.
- Biodiversity Management Plan to ensure that compliance with the requirements related to protection of biodiversity and wildlife is not compromised. As part of MRM's commitment to Biodiversity Management, a MOU has been signed in August 2024 with Lúrio University (Unilúrio) to have a sustainable and robust Biodiversity Monitoring Program. A rare species study has been conducted by the Unilúrio in December 2024 as part of the continuous biodiversity monitoring program.
- Mine reclamation and rehabilitation of mined out areas; efforts at MRM are ongoing and progressive. Land reclamation is being carried out progressively, with the planting of native species as part of the reforestation initiative. The mine operates its own nursery to support the continuous planting of native species as part of its biodiversity program. The costs of ongoing rehabilitation for mined out areas are included in the financial model projections for MRM. In addition, MRM has created a provision for mine closure which is detailed in Mine Closure Plan (MCP).
- Cultural Heritage Management; A third-party consultant was engaged to conduct a cultural heritage study in coordination with the local community members. The study was extended to cater for the whole MRM's concession, completing the Cultural heritage Assessment. The combined studies' result indicated the presence of seven sensitive sites and therefore the proper mapping of such sites and suitable protection methods have been established.

External Environmental Monitoring; MRM has achieved as part of the road map for ISO 9001, ISO 14001, and ISO 45001 (Quality, Environmental and Occupational Health and Safety Management Systems) certification.

In December 2024, a third regulatory independent environmental audit was conducted on Environmental Management Plan ("EMP") compliance.

### Corporate Responsibility

In 2024, MRM prioritized making a positive impact on local communities surrounding its concession, with a focus on community-driven initiatives aligned with Mozambique's government policies. The company engaged 1,879 participants across 9 communities, including village leaders,

women's committees, and farmers. Notable initiatives included the Health for Community Project, which provided 35,764 consultations through mobile clinics, and educational support through desk donations to Udjamaa Village Primary School and the enrollment of 276 trainees in vocational courses. MRM also funded Namanhumbir Community Radio and completed a 1.3 km asphalt road to mitigate dust concerns. Through the Livelihood Restoration Program (LRP), MRM supported 105 resettled families with agricultural and livestock projects, including a food conservation center. MRM's economic contributions further supported farming projects that yielded 646,750 kg of crops and assisted 79 individuals with chicken farming, generating significant income. Additionally, MRM provided maize milling machines to local communities and funded a USD70,000 conservation initiative for Quirimbas National Park to enhance biodiversity and local water access.

**Figure M24: MRM supported 6 surrounding communities (Chimoio, Mpuho, Nanhupo-A, Nanhupo-B, Nsewe, Mpene) with Mobile Clinic, providing 216 days of access to health facilities to 35,764 consultations. The project has been implemented in partnership with the Government of Montepuez District, represented by the District Department of Health.**



**Figure M25 - The construction (asphalt) of a 1.3 km road from Namanhumbir village to the MRM camp is nearing completion. Financed by MRM, the project began in July 2023 in response to requests from the community, government, and consultants/auditors to address the dust issues caused by vehicle traffic.**



### Operational Grievance Mechanism (OGM)

In 2024, MRM restored the full functionality of its OGM, covering claims reception, investigation, mediation, remediation, and the implementation of remediation agreements within the 45-day period as outlined in the protocol. MRM also successfully concluded the symbolic payments, effectively closing OGM 1.0, which had addressed historical cases. This transition marked the launch of OGM 2.0, which has been operating smoothly since July 2024.



**Figure M26: Consultation meeting with community leaders and villagers.**

### OTHER NON-MATERIAL PROJECTS

Gemfields holds interests in various other projects that are still at various stages of exploration and are not relevant for purposes of this report, as no Gemstone Resources have been estimated. These include the following partnerships:

- Megaruma Mining Limitada (“MML”), Mozambique (75% interest), which holds two ruby exploration licences each sharing a boundary with the MRM licence, covering approximately 190 km<sup>2</sup> and 150 km<sup>2</sup> respectively;
- Eastern Ruby Mining Limitada (“ERM”), Mozambique (75% interest), which holds exploration licence No. 5061L covering 116 km<sup>2</sup> and sharing its western boundary with MML’s southern licence;
- Campos de Joia Limitada (“CDJ”), Mozambique (100% interest), which holds four licence areas totaling 452 km<sup>2</sup>.
- Oriental Mining SARL, Madagascar (100% interest), which holds eleven exploration licences for emeralds, rubies, sapphires, tourmalines and garnets;
- Web Gemstone Mining plc, Ethiopia (75% interest), an emerald exploration licence covering approximately 200 km<sup>2</sup>.

## SECTION 3 – SUPPLEMENTARY INFORMATION

The South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves (the SAMREC Code, 2016 Edition) was prepared by the SAMREC Committee of the SAMCODES Standards Committee (“SSC”) under the joint auspices of the Southern African Institute of Mining and Metallurgy (“SAIMM”) and the Geological Society of South Africa (“GSSA”).

### SAMREC CODE DEFINITIONS

The SAMREC Code provides definitions for the reporting of Diamond Resources and Diamond Reserves, and other Gemstones, as set out below. The definitions for Resources and Reserves are as extracted from the Diamond Guidelines within the SAMREC Code, replacing Diamond with Gemstone wherever it occurs to avoid any confusion.

An **‘Inferred Gemstone Resource’** is that part of a Gemstone Resource for which quantity, grade and average Gemstone value are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply, but not verify, geological and grade

continuity. An Inferred Gemstone Resource has a lower level of confidence than that applying to an Indicated Gemstone Resource and must not be converted to a Gemstone Reserve. It is reasonably expected that the majority of Inferred Gemstone Resources could be upgraded to Indicated Gemstone Resources with continued exploration.

An **‘Indicated Gemstone Resource’** is that part of a Gemstone Resource for which quantity, grade or value, density, shape and physical characteristics of the deposit are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade continuity between points of observation. An Indicated Gemstone Resource has a lower level of confidence than that applying to a Measured Gemstone Resource and may only be converted to a Probable Gemstone Reserve.

A **‘Measured Gemstone Resource’** is that part of a Gemstone Resource for which quantity, grade or value, density, shape, and physical characteristics of the deposit are estimated with sufficient confidence to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit. Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to confirm geological and grade continuity between points of observation. A Measured Gemstone Resource has a higher level of confidence than that applying to either an Indicated Gemstone Resource or an Inferred Gemstone Resource. It may be converted to a Proved Gemstone Reserve or to a Probable Gemstone Reserve.

A **‘Probable Gemstone Reserve’** is the economically mineable part of an Indicated, and in some circumstances, a Measured Gemstone Resource. The confidence in the Modifying Factors applying to a Probable Gemstone Reserve is lower than that applying to a Proved Gemstone Reserve.

A **‘Proved Gemstone Reserve’** is the economically mineable part of a Measured Gemstone Resource. A Proved Gemstone Reserve implies a high degree of confidence in the Modifying Factors.

Other principles from the SAMREC Code that are relevant to this summary report are listed here.

A Gemstone Resource or Gemstone Reserve shall not be stated without an estimate of the average Gemstone value/revenue. The average Gemstone grade and value shall not be reported without specifying the bottom cut-off screen size.

**Transparency:** The reader of a Public Report must be provided with sufficient information, the presentation of which is clear and unambiguous, to understand the report and not be misled.

**Materiality:** A Public Report contains all the relevant information that investors and their professional advisors would reasonably require, and expect to find, for the purpose of making a reasoned and balanced judgement regarding the Exploration Results, Gemstone Resources or Gemstone Reserves being reported.

**Competency:** The Public Report is based on work that is the responsibility of suitably qualified and experienced persons who are subject to an enforceable Professional Code of Ethics.

A **‘Competent Person’** is a person who is registered with SACNASP, ECSA or SAGC, or is a Member or Fellow of the SAIMM, the GSSA, IMSSA or a Recognised Professional Organisation (“RPO”). These organizations have enforceable disciplinary processes including powers to suspend or expel a member.

A Competent Person must have a minimum of five years relevant experience in the style of mineralisation or type of deposit under consideration and in the activity which that person is undertaking.

The CPs for this report confirm that the AusIMM is recognised as a RPO by the SSC, as listed on the SSC website.

SAMREC	The South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves (the SAMREC Code), 2016 Edition
SSC	SAMCODES Standards Committee
t	metric tonne (= 1 000 kg)
TMS	Talc-magnetite schists
tpd	tonnes per day
tph	tonnes per hour
t/t	tonne per tonne, stripping ratio
V	vanadium
USD	United States Dollar
USD/ct	US Dollar per carat
USDm	million US Dollars
USD/t	US Dollar per tonne
ZEMA	Zambian Environmental Management Agency

## GLOSSARY OF TERMS, ABBREVIATIONS, UNITS

Term	Meaning
3D	three-dimensional
Al	aluminium
AMP	amphibolite
amsl	above mean sea level
ASM	Artisanal and small-scale miner
B&E	Beryl and emerald
Be	beryllium
Cr	chrome
ct	carat (5 ct = 1 gram)
ct/t	carat per tonne
CP	Competent Person
CPR	Competent Persons' Report
DMS	Dense medium separation
DUAT	Authorised land use permit
ECSA	Engineering Council of South Africa
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EPF	Environmental Protection Fund
ERM	Eastern Ruby Mining
FAusIMM	Fellow of the Australasian Institute of Mining and Metallurgy
Fe	iron
g/cm <sup>3</sup>	Grams per cubic centimetre
GGL	Gemfields Group Limited (formerly Pallinghurst Resources Ltd)
GSSA	Geological Society of South Africa
GRZ	Government of Republic of Zambia
HSE	Health and safety, social and environmental
ha	hectare (10 000 m <sup>2</sup> )
IMSSA	Institute of Mine Surveyors of South Africa
JSE	Johannesburg Stock Exchange (JSE) Limited
Kagem	Kagem Emerald Mine
kg	kilogram (= 1 000 g)
km	kilometre
km <sup>2</sup>	square kilometre
kt	thousand tonnes
ktpa	thousand tonnes per annum
LoM	life of mine
m	metre
m <sup>2</sup>	square metre
	micrometre, or micron (1 000 000 µm = 1 m)
mm	millimetre (1 000 mm = 1 m)
MAusIMM	Member of the Australasian Institute of Mining and Metallurgy
Mct	million carats
MRM	Montepuez Ruby Mine
Mt	million tonnes
Mct	Million carats
Mtpa	million tonnes per year
OGM	Operational Grievance Mechanism
PEG	pegmatite
RAP	Resettlement Action Plan
RoM	run of mine
RZ	Reaction zone
SACNASP	South African Council for Natural Scientific Professions
SAGC	South African Geomatics Council
SAIMM	Southern African Institute of Mining and Metallurgy