

Botswana's Karowe Mine – home to exceptional Diamonds and the second largest diamond in history

The Karowe Mine, located in northern Botswana, 22km south east of the Orapa Mine, which was discovered three years earlier in 1967 as the nation's first diamond mine, is wholly owned by Lucara Diamond Corporation and has a remarkable success story in its first five years of production. Between 1967 and 1976, De Beers had discovered a grand total of 79 kimberlites, the host rock for diamonds, in Botswana, 75 of which were in the Orapa Kimberlite Field and eight were diamondiferous; this was truly the heyday for them in Botswana – it also included the discovery of the Karowe, Letlhakane, Damtshaa and B/K11 mines.

Karowe Mine (Karowe means a precious stone in the local sesarwa language), one of the most valuable in the world, has seen its initial investment increase by over 10-fold and has delivered some incredible, large exceptional stones, including the brilliant *"Lesedi La Rona"* in November 2015, the second largest rough stone recovered to date, and Botswana's largest, thereby carving Karowe mine and Botswana firmly into the diamond history books. In February, 2016, Thembanani Moitlhobogi won the national competition to name the massive 1109 carats (ct) stone (a carat equals 0.2 grams in weight) *"Lesedi La Rona"*, meaning *"Our Light"*.

The largest rough gem diamond, the *"Cullinan"*, weighing 3106ct, was mined from Premier Mine in South Africa in 1905 and named after the mine's chairman, Thomas Cullinan. It produced no fewer than 105 cut and polished diamonds, including the second largest to date, the *"Cullinan I"* at 530ct. The *"Star of Africa"*, at 546ct, is the largest cut and polished gem; it was cut from a 756ct stone, also discovered from the Premier Mine, in 1985. The Karowe *"Lesedi La Rona"* gem therefore offers a perfect opportunity to be cut into one of the World's largest ever finished diamonds. The *"Lesedi La Rona"* was bought by Graff Diamonds in 2017 for \$53M and they are currently weighing up their options. According to Laurence Graff, their founder and Chairman, *"this stone will give us a collection of diamonds like no other – they will be among the most valuable diamonds ever created."*

Ownership of the Karowe Mine has passed hands three times; De Beers discovered the kimberlite A/K6 in 1970, but their early evaluation showed the pipe to be sub-economic with poor mineral chemistry, a small resource with a surface area of just 3.4 ha (Orapa Mine is 118 ha) and a very low diamond grade. In 2009, De Beers subsequently sold their 70% shareholding in the mine to Lucara Diamond Corporation, based in Canada, for \$49M.

A 2010 Feasibility Study, using new data and more advanced techniques of evaluation, concluded a NPV of \$189M with a required capital investment of just \$165M. This study also proved the pipe actually had an area of 4.2 ha at the surface which expands to 7.0 ha at a depth of 120 meters and also has a much higher diamond grade of 19ct per hundred tons with a price tag of \$183/ct (rough diamonds are valued based on their size, shape, quality and colour, otherwise commonly known as the 4 C's – carat, cut, clarity and colour, a grading system which was invented by the Gemological Institute of America back in 1953). In the same year, Lucara bought African Diamonds 30% shareholding in the mine for \$70M in stock, thus making Lucara the sole owner through Boteti

Mining. Lucara is now valued at almost \$1.0 Billion – a remarkable investment since it paid only \$120M seven years ago.

The Karowe mine was commissioned in 2012 and consists of three lobes, South, Centre and North, of which the South Lobe makes up approximately 75% of the kimberlites' original resource potential. Construction of the A/K6 diamond mine required a capital investment of approximately \$120M, which includes the process plant and all mine site and off-site infrastructure. Instead of using conventional scrubbers and crushers to disaggregate the kimberlite ore in order to liberate the diamonds, this mine uses an autogenous (AG) mill. The AG mill acts as a tumbling mill where the ore is reduced in size by the interaction between the pieces of ore through tumbling. This non-crushing process, along with more sophisticated sensor-based bulk sorting using X-Ray Transmission (XRT) technology supplied by the Tomra Group, has resulted in less diamond breakage and the ability to recover the exceptional over - size stones for which Karowe is now famous. Between July 2012 and December 2017 over 2.0 million ct have been mined and sold generating in excess of \$1.2 billion in revenue. The first sale of rough diamonds from the Karowe Mine was held in June 2012.

Diamonds greater than 10.8ct in weight, the lower threshold for exceptional size stones, represent approximately 5% by weight of all diamond production over the life of mine to date. Life of Mine average stone size for the +10.8ct production is 27.8ct/stone. Lucara sells its production in Botswana through regular and exceptional stone tenders. The largest stones are sold through Exceptional Stone Tenders, where buyers submit sealed bids over a number of days. There are about four to five regular and one to two exceptional stone tenders each year.

By the end of 2017, Lucara had sold 156 exceptional diamonds for more than \$1M each, generating \$598M.

The Karowe Mine employs over 800 people of which more than 98% are Botswana citizens.

In 2015, with the commissioning of the XRT circuits, Lucara's Karowe Mine "rocked" the diamond world with the recovery of seven +300ct diamonds. Three of these incredible exceptional stones were recovered in the same week in November; "*Lesedi La Rona*" at 1109ct, "*The Constellation*" at 813ct and the smallest gem, *an unnamed* 374ct. Earlier in the year Karowe had recovered the 342ct "*Queen of the Kalahari*". The combined weight of 2638ct sold, via tender and solo sale, for a stunning \$154M, more than the cost of developing the mine. Stones cut from the "*Queen of the Kalahari*" have adorned Charlize Theron on the red carpet at the Oscars.

In April 2018, Lucara again made the headlines by recovering a 472ct light brown diamond, the 3rd largest ever for Karowe.

Significant Stone recoveries and sales from Karowe Mine to date are:-

- 156 individual diamonds sold for > US\$1.0M each
- 6 diamonds > 300ct as single diamonds
- 77 gem quality diamonds > 100ct sold as individual diamonds
- 54 diamonds between 100ct – 199ct

The mines estimated resource down to a depth of 700m is over 14Mct with a 2018 production of between 270,000 to 290,000ct worth between \$170 and \$200M. Open pit mining is scheduled until the year 2026, after which underground mining will be a possible option.

Up until the Karowe Mine incredible 2015 discoveries, the largest diamond discovered in Botswana was that at Jwaneng Mine in March 1993, weighing 446ct.

The superb gem quality stones from the Debswana Jwaneng Mine are used in some of the finest jewellery in the world, proudly worn by film stars and dignitaries. In 2013, a pear-shaped colourless diamond, mined from Jwaneng Mine, and weighing 101.73ct, was sold for \$26.7M at Christie's International jewellery auction in Geneva, Switzerland. It had taken almost two years to cut and polish. It was bought by the Harry Winston Corporation and has subsequently been named the Winston Legacy. In January, 2016, a beautiful 425ct gem was also discovered at Jwaneng Mine.

With future improvement in diamond X – ray transmission recovery technology, and with more Botswana mines now wanting to adopt such technology, specifically to safeguard against accidental diamond breakage, the chances of another "*Lesedi La Rona*" being recovered are very high.

At time of Independence from Great Britain in 1966, Botswana was a very poor country with a GDP per capita of only \$70. The discovery of Orapa Diamond Mine in 1967, was about to change all of that.

Today Botswana is a modern African state , a middle income country with a GDP per capita of about \$7,450, over 100 times that of 50 years ago. In 2017, Revenue from Diamond Mining accounted for almost 30% of Government revenue, 76% of foreign exchange and 16% of GDP.

To learn all about Botswana's diamond industry, be sure to get Mike's books, Botswana's Diamonds – Prospecting to Jewellery and also Botswana Diamond Jewellery, both available on Amazon.com.

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