

Eureka Mine Geology Presentation
Geological Society Of Zimbabwe
Site Visit

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Eureka Gold Mine – LOCATION and HISTORY

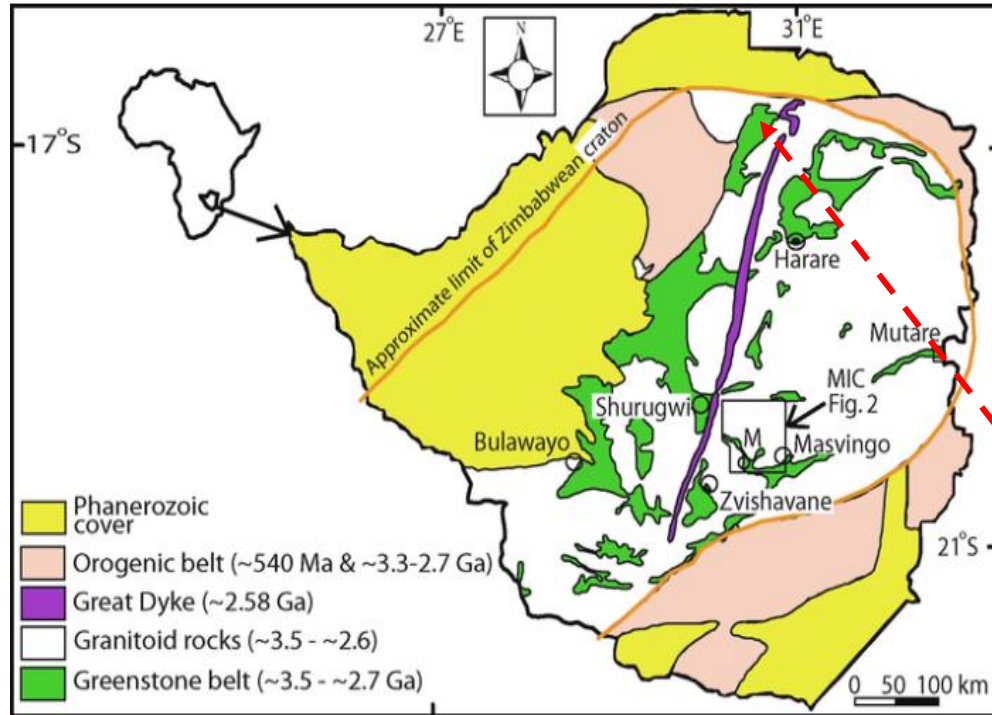


Figure 1: Eureka Gold Mine Location

Location

Eureka Gold Mine is situated in Guruve District of Mashonaland Central Province, approximately 150km North of Harare.

History

- Small workings started from 1895 to 1996.
- The mine developed into a large-scale commercial operation by Delta Gold Zimbabwe in August 1995.
- Mining operations started from January 1999 to June 2000 which then closed due to high operational costs.
- The mine was sold to Placer Dome, Mmakau and Shaft Sinkers who did pit dewatering in July 2005
- In 2018, Dallaglio Investments took over Eureka and production restarted in 2019.

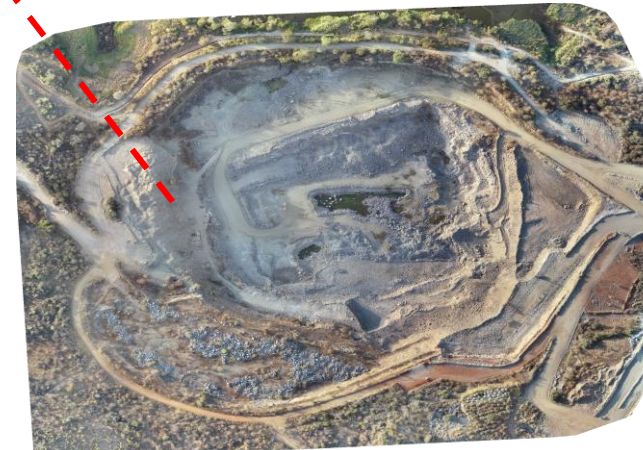


Figure 2: Eureka Mine Open Pit

Eureka Gold Mine – REGIONAL GEOLOGY

Regional Geology

- The Eureka Gold Mine is in the north eastern part of the Chinhoyi-Guruve Greenstone Belt consisting of two lithological successions of the volcanic dominated Bulawayan (2.8Ga) supergroup and sediments of the Shamvaian (2.7Ga) supergroup.
- The greenstone belt is in contact with younger granitoids and sediments. The Older Granitoids (TTG) form part of the Archean basement of the Zimbabwe Craton and Younger Granitoids form part of Chilimanzi Suite.
- Evolution of the greenstone belt maybe described by five deformational events (D1-D5).
- D₁ event i.e., Chilimanzi granitic intrusion (diapirism) caused low grade metamorphism forming gold bearing quartz veins at Eureka Gold Mine .

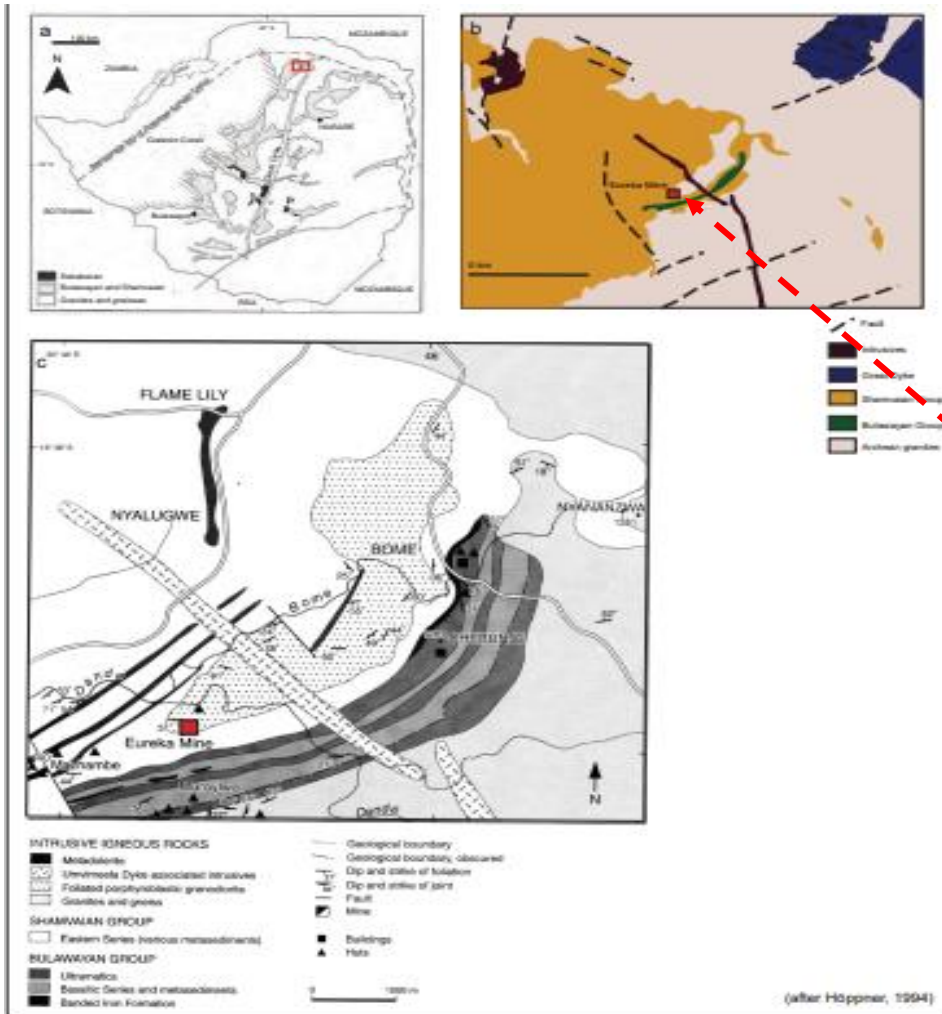


Figure 3: Geology of the Guruve-Chinhoyi Greenstone Belt and Eureka Mine



Figure 4: Eureka Mine Open Pit

Eureka Gold Mine – MINE GEOLOGY

Local Geology

- The main lithologies are Granodiorite and Archean Greenstone.
- Granodiorite is the main host for mineralization
- Gold mineralization is confined to quartz veins having E-W strike and dip ranging of 40 to 65 degrees S.
- The main reef varies in thickness from narrow stringers a few cm wide, up to zones that are 1.2 m wide characterized by multiple quartz stringer veins (sets).
- The main ore shoot plunges SSW, parallel to the nose of the folded granitoid.
- There three main types of Ore: Streaky, Zebra and Molly.
- Minor Schist ore is also present.

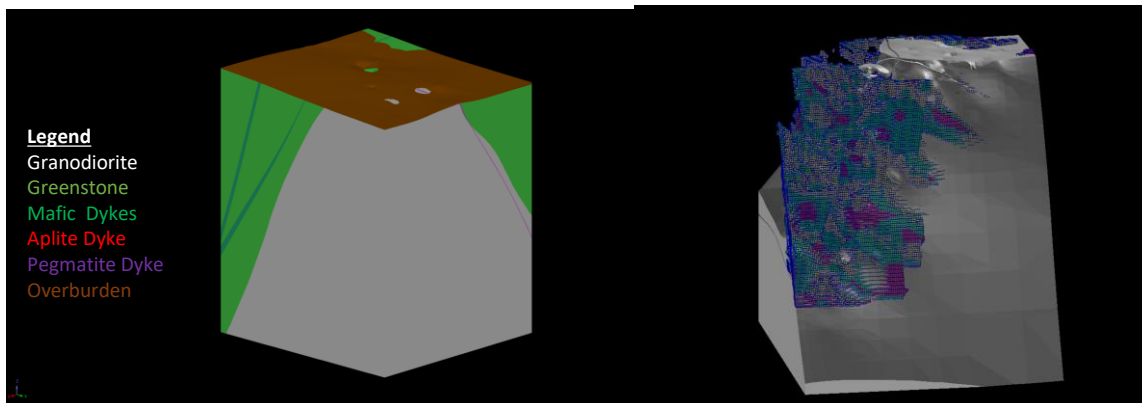


Figure 5 : Eureka Gold Mine Lithological Model

N-S Section: Looking East

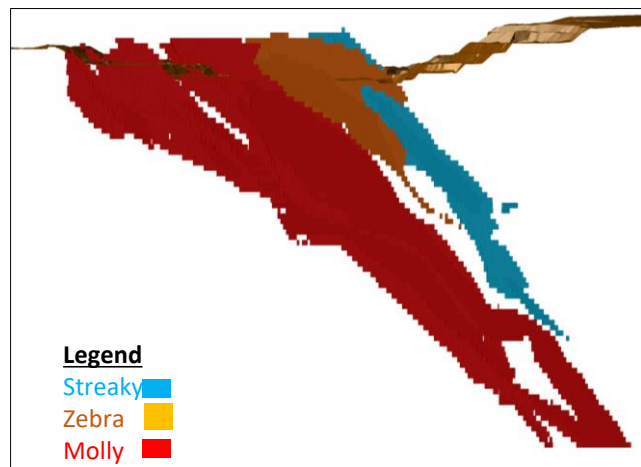


Figure 6: Mineralized Domains

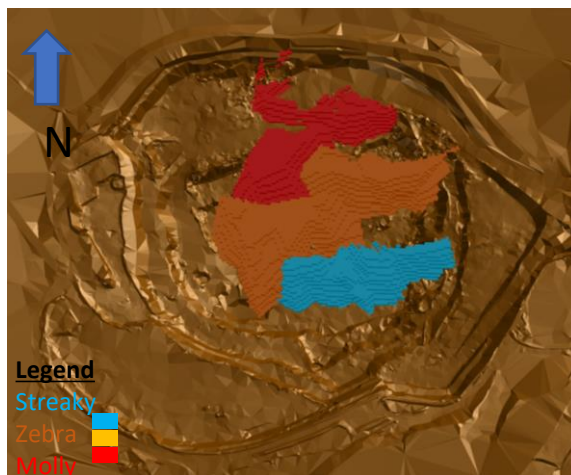
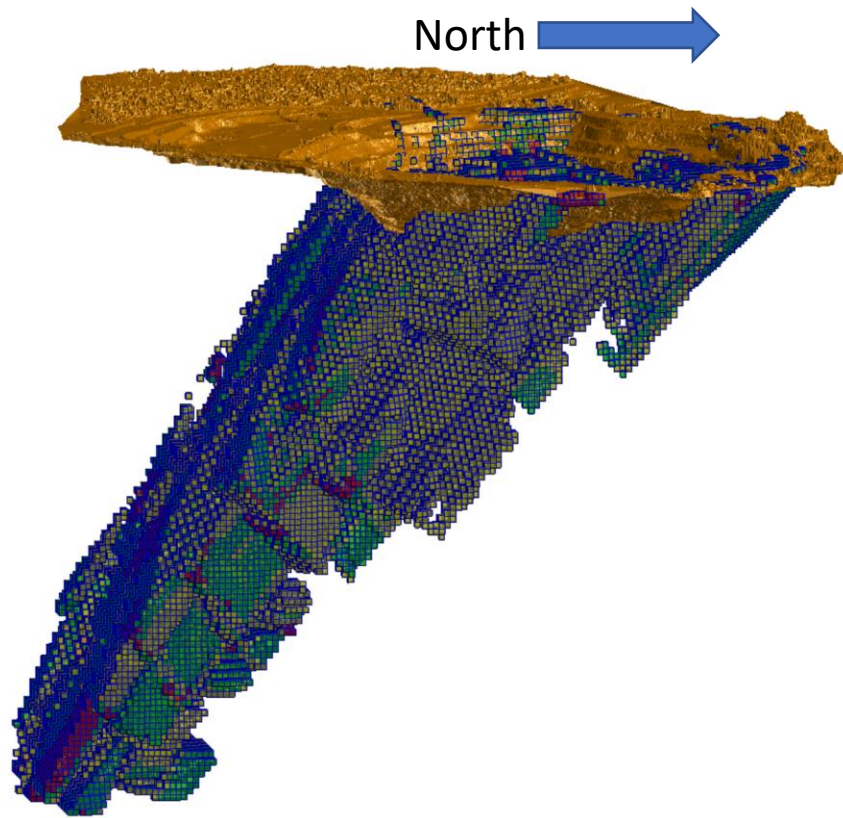


Figure 7: Eureka Mine Rock and Ore Types



Figure 8: in situ Zebra Ore

Eureka Gold Mine – BLOCK MODEL AND LIFE OF MINE



- Ore classified by three grade bins that are color coded:

HG $\geq 1.5\text{g/t}$
LG $0.6 - 1.5\text{g/t}$
MG $0.3 - 0.6\text{g/t}$
WASTE $\leq 0.3\text{g/t}$

Figure 9 : Eureka Gold Mine 3D Block Model

Eureka Gold Mine – PRODUCTION GEOLOGY

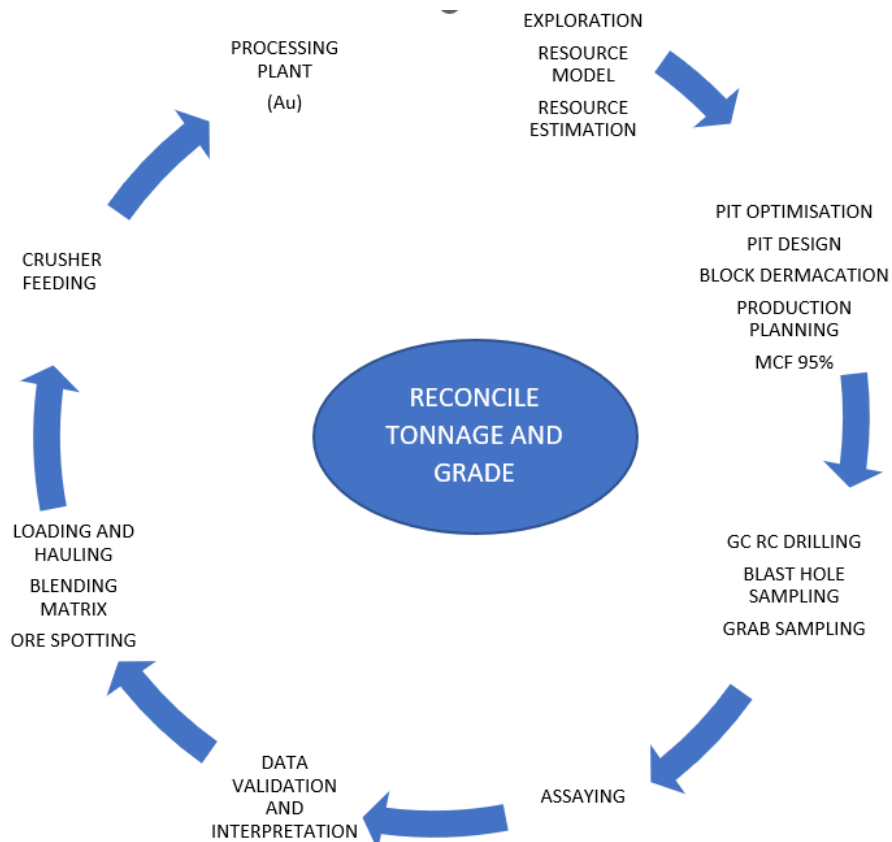


Figure 10: Grade Control Flow Chart



Figure 11: Block Demarcation

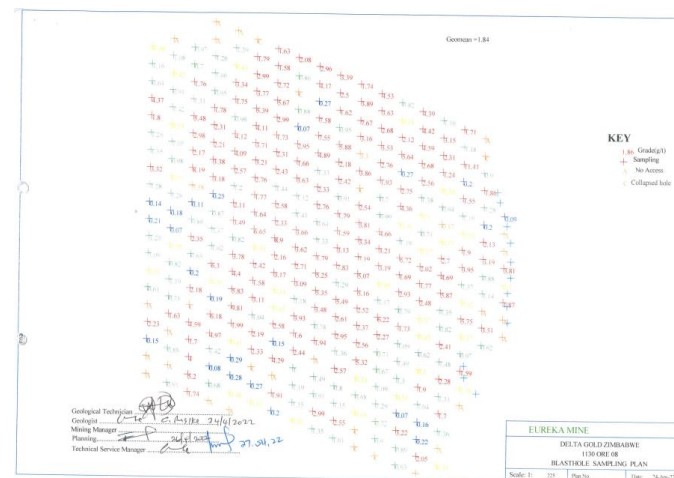


Figure 12: Blast Hole Plan

- Block demarcations and blast hole plans are overlain, dig lines are plotted and stacked in ore mining blocks. Blast hole sampling confirms mineralisation within blocks.
- Grade and Quality Controllers dispatch ore by block demarcations and record truck tallies to RoM pad/Crusher and from Crusher to RoM pad.
- Block demarcations are used for tonnage and grade reconciliations.