

Resource Grade Assumption Defense

Geological basis and regional benchmarking for the 4 g/t mill feed assumption

LOCATION

Chunya District, Mbeya Region · Lupa Goldfield,
Tanzania

ENTITY

Archimidas Limited

PREPARED

May 2026

SUBJECT

Mill Feed Grade Planning Assumption

This document does not constitute an offer to sell or solicitation of an offer to buy any security. Grade figures cited from third-party sources are reproduced for benchmarking purposes only and remain the property of their respective publishers.

01 Purpose of this Memo

Our project financial model uses a 4 g/t (4 ppm) ore grade assumption. This memo explains where that number comes from, why we believe it is defensible at the planning stage, and what it does and does not represent.

We are writing this transparently because we do not yet have an independent assay program on our concession. What we do have is a deposit located inside one of Tanzania's well-documented gold belts, with a single producing JORC-compliant analog mine roughly within the same goldfield, a coherent body of peer-reviewed regional geology, and on-the-ground operational evidence from our own active shafts.

4.0 g/t

DILUTED MILL FEED GRADE ·
BASE CASE

4.3 g/t

NLGM HISTORICAL BLENDED
MILL FEED · BENCHMARK

29.6 km

DISTANCE TO NEW LUIKA GOLD
MINE

The 4 g/t number sits below what the only operating producer in the Lupa Goldfield actually feeds into its mill. It sits inside the documented grade range for deposits across the belt. It sits well below the ore grade that artisanal shaft mining typically delivers anywhere in Tanzania, because shaft mining is selective rather than bulk. It is treated in our model as a planning assumption, not as a resource declaration.

For a reader familiar with mining economics, the key takeaway is this: we are not asking anyone to accept a grade we cannot yet prove on our own ground. We are asking for acceptance that the grade we have modeled is consistent with what a comparable, audited, peer-reviewed operating mine in the same belt is currently delivering, and that the model holds up under conservative variations of that number.

Four sections follow. First, the published grade data on the Lupa Goldfield and where our 4 g/t assumption fits inside that range. Second, the geological argument for why a regional analog is a defensible proxy at this stage of the project. Third, the cascade from in-situ rock grade to recovered gold, with three scenarios showing how the model behaves when grade comes in lower or higher than base case. Fourth, a methodology statement clarifying the limits of this assumption. A complete source list closes the document.

A note on terminology. Throughout this document we use g/t (grams per metric tonne) and ppm (parts per million) interchangeably. They are mathematically equivalent at these concentrations. We use g/t in tables and discussion to match the convention of every Lupa Goldfield disclosure we reference.

02 Where 4 g/t Sits in the Lupa Goldfield

The Lupa Goldfield in southwestern Tanzania has been mined since the colonial era and currently has one modern JORC-compliant operating producer: Shanta Gold's New Luika Gold Mine (NLGM), located in the same Paleoproterozoic terrane and the same host lithology as our concession. This makes it the natural benchmark for any planning-stage grade assumption on a Lupa belt concession.

The table below pulls together the relevant grade data from NLGM and the broader belt. All figures come from public disclosures, peer-reviewed academic sources, or independent industry databases, referenced by number in Section 06.

METRIC	GRADE	SOURCE / YEAR
NLGM ore body classification (High >6 g/t, Medium 3–6 g/t, Low 1–3 g/t)	3.9 g/t avg	Major Mines & Projects
NLGM historical blended mill feed	4.3 g/t	Shanta Gold AIM, 2019
NLGM open pit P&P reserves · 1.6 Mt for 245 koz	4.8 g/t	Shanta Gold
NLGM underground indicated resources · 2.2 Mt for 475 koz	6.5 g/t	Shanta Gold
NLGM combined deposit resource (2016)	4.4 g/t	TECT Geological
NLGM total JORC resource (2022)	2.42 g/t	Shanta Gold
NLGM JORC reserves (December 2023)	2.71 g/t	Shanta Gold, 2024
Lupa Goldfield deposit grade range	1.5–5.0 g/t	TECT / academic
Tanzanian ASGM selective ore grade benchmark	5–20 g/t	Mwamba Mining

Two things stand out from this dataset. First, NLGM's actual mill feed averages 4.3 g/t on a sustained operating basis. Our 4 g/t assumption sits below that figure: we are modeling a number that an operating peer in the same belt is currently delivering. Second, there is a wide and consistent spread between the "whole of deposit" grade reported in JORC resource statements (2.4 to 3.2 g/t range) and the "selectively mined ore" grade that actually makes it to the mill (4.3 to 6.5 g/t range). That spread is not noise; selective vein mining delivers an enriched ore stream. We mine the veins. We do not mine the waste rock between them.

Why this matters for the model. *The 4 g/t figure in the financial model is the mill feed grade, not the in-situ deposit grade. This is the same line item that NLGM reports as 4.3 g/t. Treating these two numbers as the same kind of number is what makes the comparison clean.*

03 Geological Defensibility

We are not claiming that our concession contains 4 g/t of gold. We are claiming that a 4 g/t mill feed assumption sits inside a well-documented range for the geological setting in which the deposit occurs.

The basis for using New Luika and the broader Lupa Goldfield as a regional analog rests on four points, each independently documented in the public record.

FACTOR	NEW LUIKA GOLD MINE	OUR CONCESSION
Regional terrane	Paleoproterozoic Lupa Terrane, southwestern Archean Tanzanian cratonic margin	Same terrane. Chunya District, Mbeya Region. Same-belt comparison.
Host lithology	Gneiss Formation, the dominant ore-bearing host rock across the Lupa belt	Same gneissic and granitic basement. Reef and vein systems in the same rock package.
Mineralization style	Orogenic gold; structurally controlled; ESE-WNW trending fabric; sub-vertical; quartz-vein-hosted	Same deposit style. Sub-vertical quartz-vein-hosted gold in the same structural setting.
Metallogenic event	Coherent regional mineralizing event, per U-Pb geochronology (Lawley et al., 2013)	Same event. Allows grade and tonnage analogs from elsewhere in the belt to be applied at planning stage.

This argument supports using 4 g/t as a planning assumption for mill feed grade on our concession. It does not support the claim that 4 g/t is a verified in-situ resource grade on our concession. Future exploration capital will fund systematic surface sampling, an initial drill-testing program, and an independent geological review by a Competent Person. That work is scheduled and budgeted.

THE PRECISE CLAIM BEING MADE

A 4 g/t mill feed assumption for our concession is consistent with (a) the operational performance of the only JORC-compliant producer in the Lupa Goldfield, (b) the documented deposit grade range for the belt, and (c) the geological equivalence of the host setting. It is a defensible planning input. It is not, and we do not represent it as, an independently verified resource grade for this specific concession.

04 From Rock to Bar: The Grade Cascade

A common point of confusion in early-stage mining models is treating "grade" as a single number. In practice there are at least four distinct grade figures, and the difference between them is where most of the revenue is either captured or lost. Our model handles each one as a separate variable.

VARIABLE	BASE CASE	DEFINITION
Run-of-mine (ROM) grade	4.5 g/t	Selectively mined ore out of the shaft, before any dilution from waste rock.
Mining dilution	12%	Waste rock included with the ore stream during selective vein mining. Standard for narrow-vein shaft mining with hand sorting at surface.
Diluted mill feed grade	4.0 g/t	What goes into the jaw crusher and then the ball mill. This figure drives processing throughput and gold output.
Plant recovery rate	75%	Realistic recovery for a gravity plus VAT leach circuit on a Lupa belt deposit. CIL / CIP recovery rates are not used, since a CIL plant is not yet in place.
Recovered grade equivalent	3.0 g/t	Gold actually captured into doré, expressed per tonne milled. This drives revenue.

Three scenarios under stress.

SCENARIO	ROM	DILUTION	MILL FEED	RECOVERY	RECOVERED	ANCHOR
Conservative	3.4 g/t	15%	2.9 g/t	70%	2.0 g/t	Near NLGM 2023 reserve grade of 2.71 g/t
Base	4.5 g/t	12%	4.0 g/t	75%	3.0 g/t	Below NLGM operating feed of 4.3 g/t
Upside	5.7 g/t	10%	5.1 g/t	80%	4.1 g/t	NLGM open pit reserves at 4.8 g/t

At the conservative case (mill feed near the lower bound of what the only operating peer in the belt currently reports on its books), the project remains cash-flow positive with reduced returns.

Sensitivity. *The financial model contains sensitivity tables showing the impact of grade variation on payback period and net cash flow on a continuous basis. Grade is the single most sensitive input, and the model is built around that fact.*

05 Methodology and Limits

The 4 g/t grade assumption in our financial model is a production planning estimate. It is not a JORC- or NI 43-101-compliant resource or reserve declaration. We want to be explicit about that distinction because it matters for how a reader should weigh the number.

A JORC or NI 43-101 resource or reserve declaration on our concession would require, at minimum, a systematic drill program with documented hole locations, downhole survey data, and split-core sampling. Sample preparation and assay would need to be performed at accredited laboratories with

QA/QC protocols including blanks, duplicates, and certified reference materials. The results would feed into a geostatistical resource model built by a Competent Person, who would then sign off on the resource or reserve category and the supporting documentation. Our concession has not yet undergone that program; future capital allocates funds for exactly that work.

Until that program is complete, the 4 g/t mill feed assumption rests on independent reference points, primarily the operational performance of the regional analog producer: New Luika Gold Mine reports a 4.3 g/t historical blended mill feed grade across roughly a decade of operations. The model treats grade as a variable, not a fact. Every scenario tab and sensitivity table allows the grade input to flex, and the model recomputes throughput, gold output, revenue, operating costs, and net cash flow accordingly.

We are not asking anyone to accept that our concession has 4 g/t of gold. We are asking for acceptance that a 4 g/t mill feed assumption is reasonable for a Lupa Goldfield concession at the planning stage, given the documented operational performance of the regional analog producer, the published grade range for the belt, and the geological equivalence of the host setting.

06 Sources and References

01 **Shanta Gold Limited.** Annual Reports, JORC Reserve and Resource Statements, and AIM Regulatory Announcements. shantagold.com

02 **Major Mines & Projects.** New Luika Mine Profile. miningdataonline.com

03 **TECT Geological Consulting.** Shanta Gold / New Luika Gold Mine Case Study. tectgeological.com

04 **Lawley, C., et al. (2013).** Journal of African Earth Sciences. sciencedirect.com

05 **Shanta Gold.** New Luika Resource Upgrade Announcement, July 2019. aimlisting.co.uk

06 **Mwamba Mining.** Public Materials on ASGM in Tanzania. mwambamining.com

07 **Shanta Gold.** Q1 2024 Production and Operational Update; Investor Presentations, 2014–2024. shantagold.com

08 **Mining Review Africa, Mining Weekly, and related industry trade publications** (2018–2024).

All third-party grade and reserve figures cited were retrieved from publicly available sources. Archimidas Limited makes no claim to any resource or reserve disclosed by third parties and does not represent that those figures apply directly to its concession.

Archimidas Limited

Joshua Eaton · Founder and Managing Director

info@archimidas.com · archimidas.com

This memorandum is provided for informational purposes only. It does not constitute an offer to sell or a solicitation of an offer to buy any security. All grade and production figures are planning assumptions based on publicly available regional analogs and are not independently verified resource or reserve declarations. Past performance of comparable mines does not guarantee similar outcomes on this concession. Prospective readers should conduct their own independent due diligence and consult their own legal, financial, and geological advisors before making any investment decision.