



MWAMBA

MWAMBA MINING COMPANY LIMITED

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MWAMBA MINING FEASIBILITY REPORT



120 Ton per Day CIP SMALL-SCALE TOLL MILLING PROJECT

Compiled by;

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P.O Box 646,
Mwanza, Tanzania.
June 21th,2023**

120 Ton per Day CIP Gold Processing Project

FORWARD LOOKING STATEMENTS:

The following report contains forward-looking statements. These forward-looking statements are based on opinions and estimates of Mwamba Mining management at the date the statements are made. They are subject to a number of known and unknown risks, uncertainties and other factors that may cause actual results to differ materially from those anticipated in our forward-looking statements. Factors that could cause such differences include changes in world gold markets, equity markets, costs and supply of materials relevant to the projects, and changes to regulations affecting them. Although Mwamba believe the expectations reflected in our forward-looking statements to be reasonable, Mwamba does not guarantee future results, levels of activity, performance or achievements

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PREFACE

The Mwamba business model is built on a novel approach that supports the local, artisanal and small-scale gold mining community.

ASM TOLL-MILLING BUSINESS

1. Artisanal and Small-Scale Mining (ASM) in Tanzania currently use rudimentary gravity and mercury processing techniques with only 30-40% gold capture compared to the 90%+ capture of modern Clean In-Place (CIP) Processing and Leaching systems used by medium and large mining corporations.
2. Local Artisanal & Small-Scale Miners (ASMs) are great explorers and by nature of their need to mine high-grade ore due to low process tonnes, they have found much of the gold industries new gold discoveries.
3. There are many of these “explorers” in Tanzania and the Government is looking on answers to fix the mercury problem and to get the children out of this hard dangerous labor practice. Mwamba Mining is addressing both of these issues by providing ASM with modern processing activities and establishing “No Child Labour, No Mercury Agreements” with its mine partners.
4. The Toll Mill project involves purchasing high-grade ore from artisanal miners based on the assayed amount of gold contained in the ore and delivered to Mwamba Processing CIP facilities for the recovery of gold. Hence, contributing to the eradication of mercury use and the associated hazards in the ASM mining industry.
5. In 2023, Mwamba Mining conducted extensive ore purchase proof of concept in Geita and Kahama districts to determine the volume and quality of ore supplied by the ASMs, and based on successful results of the operation, Mwamba decided to construct a 120 ton per day CIP plant in Nyarugusu Geita that will services small-scale miners in Geita and Kahama.
6. Mwamba will be involved in funding, participating and developing the ASM’s communities’ education, health and social services through its Toll Milling Clean Gold program.

1. INTRODUCTION

Mwamba Mining Limited (“Mwamba” or “the company”), is a subsidiary company of MWAMBA Cayman Co., an international company incorporated in the Cayman Island and also owns Mwamba North America, Inc. a subsidiary company formed in Delaware in the United States. Mwamba Mining Ltd is dedicated to the acquisition, development and operation of late-stage resource properties in Tanzania, and provision of toll milling services to Tanzanian’s Artisanal and Small-Scale Mining (ASM) industry. In Tanzania, ASM miners lack the skills and modern facilities to safely and efficiently process their ore and maximize profits. Mwamba’s Team has the extensive experience and expertise in developing and managing large scale and small-scale gold mines around the world and the know-how to safely and economically source and process ore from a network of artisanal miners. Mwamba local partners involve local Tanzanian nationals with extensive government relationships and experience in the large-scale mining sector. Bart Mkinga, Kadidi Kadid Mine owner and lead geologist, was formerly Resolute Mining’s lead exploration geologist. Chars Mnguto, technical advisor, was formerly the Exploration Manager for AngloGold Ashanti’s Geita Gold Mine. Both have served as Senior Exploration Geologists for Barrick Gold Africa.

Mwamba company consists of a multinational team with a collective 60+ years of experience in the gold mining industry and is composed of top American, Australian, and Tanzanian geologists and operators. In September 2022, the Executive Secretary of the Mining Commission, granted Mwamba Mining 17 prospecting licenses, namely PL 12022/2022, PL 12023/2022, PL 12024/2022, PL 12025/2022, PL 12026/2022, PL 12027/2022, PL 12028/2022, PL 12029/2022, PL 12030/2022, PL 12031/2022, PL 12032/2022, PL 12033/2022, PL 12034/2022, PL 12035/2022, PL 12036/2022, PL 12037/2022, and PL 12038/2022 surrounding the UDSM-MRI Prospecting License and covering an area of about 369+ sqkm in Nzega Greenstone Belt.

In 2023, Mwamba Mining initiated the Toll Mill business in Geita by carrying out districtwide survey and research of the small-scale miners in Geita and Kahama to determine the volume, grade, and metallurgical properties of the ore they produce. Upon a successful trial run, the company decided to begin the construction of a 120 ton per day CIP plant that will serve the small-scale community in Geita and nearby districts.

In Community Affairs, Mwamba has partnered with the United Nations in a shared mission to eradicate the use of mercury in small-scale gold mining communities. Mwamba has plans to pilot the model with the three small-scale mining cooperatives adjacent to its mining projects. Mwamba will provide the cooperatives with development assistance and community support in return for the exclusive right to purchase their ore. Each cooperative will sign progressive “No-Mercury, No Child Labour” agreements.

1.1. MWAMBA MINING COMPANY PROFILE

i. Thomas Cornew, Chief Executive Officer, Director, Co-Founder

Mr. Thomas Cornew serves as the Chief Executive Officer and a member of the board of directors. Thomas graduated from Dartmouth college in 2018 with an undergraduate degree in mechanical engineering and a graduate degree in electrified vehicle engineering. He was a prominent leader in the Dartmouth Community, leading the engineering school's formula racing team to their first-ever 1st place finish. Alongside his studies, Thomas founded and operated a technology repair business, exiting the company in January of 2018. Thomas offers strong organizational and project management skills, attracting qualified persons to the team and enabling the successful completion of Mwamba's business objectives.

ii. Samwel Bahebe, Managing Director and Co-Founder

Mr. Samwel Bahebe serves as Mwamba's Tanzania Country Manager. Sam was born and raised in Mwanza Tanzania, with strong family ties in the Tanzanian government and extensive experience in medium and small-scale mining operations. Sam excelled in academics from an early age, graduating from Dartmouth Ivy League College in 2018 with an undergraduate degree in Chemical Engineering modified with Earth Sciences. It was during his undergraduate career that Sam began building Mwamba Mining alongside Co-Founders Thomas and Eduard Cornew, recruiting them to help him capitalize on the opportunities in Tanzania's Gold Mining sector. Sam is a member of the Tanzanian Geological Society and leads all of Mwamba's development efforts in Tanzania.

iii. Eduard Cornew, President, Director, Co-Founder

Mr. Eduard Cornew serves as the President and a member of the board of directors. Eduard graduated from Dartmouth College in 2018 with an undergraduate degree in Economics, pursuing minors in Human-Centered Design and Architecture. Eduard attended Harvard Graduate School of Design (GSD) Design Discovery in 2017. Eduard's creative thinking and salesmanship helped Mwamba earn an invitation to the Global Mercury Partnership and establish positive working relations with the Global Environmental Facility (GEF) and the United Nations Environment Programme (UNEP). Eduard represents Mwamba on the Advisory Group of the GEF funded and UNEP led PlanetGOLD program, the world's flagship initiative for sustainably developing the Artisanal and Small-scale Gold Mining (ASGM) sector.

iv. Tony Bainbridge, Mining Director, Director

Mr. Anthony Bainbridge serves as the Director of Mining. Tony has 38 years of experience in the metals and mining sector, specializing in gold and copper with knowledge of the full mining cycle from exploration to development. Tony started his career as a Geologist in Papua New Guinea (PNG) where he and his team discovered the Keremenge and Hamata gold deposits with over 5Moz Au between them. From 1986 to 1992, Tony served as the prime consultant for 7 major international companies operating throughout South East Asia (BHP Bilton, AngloGold Ashanti, Lihir Gold, New Guinea Mining, Ok Tedi JV, Porgera JV Barrick Gold). He then went on to serve as the Chief Geologist for Highlands Pacific Limited in PNG, graduating to Exploration Manager in 1998. There he managed a quarterly budget of US\$22M, leading a

team of 12 professional geologists and a staff of 85 persons in a countrywide exploration for Au, Cu, and Ni. Overseeing budgeting and implementation to achieve company goals, Tony led his exploration team to discover the high-grade Kainantu Au-Te Gold Mine with 7Moz @ 8 g/t Au., bringing the project into production as interim Mine Manager. During his 8-year term as Exploration Manager for Highlands Pacific Limited Tony served on the Negotiation Team for Stakeholders Policy of PNG, interfacing with Provincial and National government to negotiate landowner agreements for the Ramu Nickel Mine and Kainantu Gold Mine. In 2007, Tony became COO for Peabody and President of their Mongolia Operations, building a coal company with 58 coal and 26 Uranium Projects. He helped to raise US\$440M in development capital, managing an exploration expenditure of US\$73M over 12 months on acquisitions and development. At its peak the operation employed a coal team of 220 personnel and produced 2,500,000 tonnes per year, making it the largest coal mine in Mongolia at the time. In 2009 Tony left Peabody to found Mongolia Resources Corporation (MRC), a gold mining company. As CEO he raised \$14M in development capital and built a portfolio of 23 gold projects including one CIP plant with two underground mine facilities. Soon after listing the company on the ASX, operations were closed due to a change in Mongolian Government Policy. Tony then started the mining consultancy Asia Intercept Mining Group (AIM), serving as Chairman and CEO. In the years since he has grown AIM into an integrated mining company with projects in South Korea and Africa. The firm assists clients, including TMT metals, with gold operations in Ghana, the Dominican Republic, and Nigeria. AIM engages a wide scope of business assisting in strategic planning for bringing advanced exploration projects into production. The firm offers a complete understanding of mining law in Asia and Africa, experience developing mines to International Standards, completing due diligence for acquisitions, reverse-takeovers, and new IPO listings. AIM has raised over US\$550M for mining projects to date.

v. Mac Jackson, Exploration Director, Director

Mr. Mac Jackson serves as the Director of Exploration. Mac has 40 years of experience in geology and exploration with a specialization in gold. Mac has served as a senior geologist for Newmont and Gold Standard Ventures where he was instrumental in the discovery of the West Leeville (+3 million ounces gold), Turf deposits (+5 million ounces gold), and on the Carlin Trend and the Fiber Line deposit (+2 million ounces gold) at Twin Creeks. After being promoted to VP of exploration for Gold Standard Ventures he led the exploration team, resulting in the discovery of the Dark Star deposit (4+ million ounces), land expansion to acquire the Jasperoid Wash deposit and the initiation of mine development studies. In this role, he was responsible for evaluating acquisition opportunities, contributing to the acquisition of the Lewis property in the Battle Mountain district. During this time period, the market capitalization of Gold Standard Ventures increased 800%. In 2022, Mac became Mwamba's largest investor and now leads the company's exploration programs.

vi. Bart Mkinga, Exploration Lead

Mr. Bart Mkinga serves as Mwamba's exploration lead and as the Kadidi Mine General Manager. Bart earned a Masters in Geology and Economic Geology and has 20 years of experience in Tanzania's Gold Mining Sector. Bart has held various top-level roles throughout his career, acquiring diverse skills in mine planning, exploration, program planning &

supervision, budgeting, and statutory reporting. Bart served as Barrick Exploration Africa's Senior Geologist from 1999 to 2006. He then went on to serve as Exploration Manager for Resolute Tanzania until 2011. During that time, Bart was selected to contribute to the drafting of Tanzania's Mining Act of 2010, representing large-scale mining interests on the committee. Bart now works as Country Manager for Rift Valley Resources, leading project acquisitions, statutory reporting, and government relations for the firm. It was during his time as Resolute Tanzania's Exploration Manager that Bart first discovered the Kadidi resource adjacent to Resolute's Golden Pride Mine.

vii. Charles Mnguto, Advisor

Mr. Chars Mnguto serves as a senior consultant to Mwamba. Chars, BSc. Geology, is a multi-terrain geologist with 23 years' experience in both the local and international exploration fields. During his diverse career in minerals exploration and mining industry, Chars has worked in various base and precious metals projects in the United Republic of Tanzania, Zimbabwe, and Democratic Republic of Congo (DRC) as a competent geologist. Chars worked on several world-class deposits and highly ranking exploration projects such as AngloGold Ashanti's Geita Gold Mine; Barrick Exploration Africa's Tusker Deposit in Tanzania; BHP's Hartley Platinum Mine in Zimbabwe, and Banro's Exploration Projects in DR Congo. Chars has recently been involved in the consultation work on various exploration, mining and minerals processing projects in the Lake Victoria Gold Fields (LVGF) in Tanzania; and Bunia Kibali in Eastern DR Congo.

viii. Ezekiel Bahebe, Tanzania Advisor

Mr. Ezekiel Bahebe serves as the Tanzania Advisor. The father of Tanzanian co- Founder Samwel Bahebe, Ezekiel spent his early career working in the Tanzania Revenue Authority where he grew a diverse network in the tax and mining offices of Tanzanian Government. After leaving the public sector Sam's father embarked on his career as an entrepreneur, starting his own tax and auditing business in 1992. In the years since, the Bahebe Family has grown into a tycoon of Tanzanian business. Sam's older brother Ombeni Bahebe runs a customs brokerage, M/S Damodar Group LTD, from Tanzania's capital, the port city of Dar es Salaam. Ezekiel also operates his tax and auditing business from the family's home town of Mwanza, Tanzania, servicing many of the medium scale mining companies in the area. Mwanza is an affluent fishing and mining city at the heart of the Lake Victoria Gold Fields, nearby to many of Tanzania's most noteworthy gold mining discoveries and operations.

ix. Jim Bickel, Financial & Executive Advisor

Mr. Jim Bickel serves as the Financial & Executive Advisor. Jim served in a wide variety of senior management and Board oversight positions for both private and public companies. He was appointed CEO and President of Redwood Group International in January 2006 and has been Chairman of the company's Board of Directors since January 2007. Mr. Bickel possesses over 40 years of experience in sales and senior management positions with manufacturing-based companies: as the President of Allison Spring and Manufacturing (1968-1973), Bicolor Machinery and Manufacturing (1974-1979), and Keel Corporation (1980-1986), all California

based manufacturing companies of high-tech metal parts and assemblies. From 1986 through 2002, Mr. Bickel served as Vice President of Uniglobe USA and President of Uniglobe Mid-Pacific assisting in building a national travel franchise system with over 900 locations and later built Golf Retail Franchise System. From 2002 to 2004, Mr. Bickel served as Vice Chairman of MedChannel LLC, a medical device company serving radiology and surgical markets. Since 2002, Mr. Bickel has also acted as Vice President and Secretary of World Health and Education Foundation, a charitable, not-for-profit entity. In 2008, Mr. Bickel helped to startup gold mining company Mongolia Resources Corporation (MRC), serving as Director. Mr. Bickel led the \$14M financing establish MRC's Mongolia operations, listing the company on the ASX soon thereafter. MRC's success in Mongolia was cut short in 2013 due to a change in environmental policy. Mr. Bickel has an extensive working knowledge of the mining industry and the greater China business landscape gained from his years of experience.

2. ASM TOLL-MILL PROJECT

ASGM (Artisanal and Small-Scale Gold Mining) is a major source of mineral resources production in Tanzania and globally. It accounts for approximately 31 percent of the Tanzania's annual gold production(<https://www.tanzaniainvest.com/gold>). It is largely informal, inefficient, and is associated with low levels of safety measures, health care or environmental protection. To address this problem, Mwamba Mining initiated a business venture that involves designing and constructing a free-standing CIP toll-mill plant facility, known as Toll – Milling, in Geita region solely to accommodate the processing needs of a growing quantity of small-scale miners in the area. Much of the recent gold mining boom in Tanzania has taken place in the Geita region, situated near Lake Victoria in the North of the country (Figure 21).



Figure 1: Location of Geita and Lake Victoria, Tanzania.

In recent years, this area has been the site of a variety of government and donor supported programs designed to mitigate health and environmental impacts associated with ASGM. The survey carried out by the UN Environmental program (UNEP), estimated the population of artisanal and small-scale miners in Geita district to approximately 150,000, and the majority were classified as unlicensed illegal miners (UNEP, 2012). The current beneficiation methods employed by ASGM involves rudimentary gravity and mercury processing techniques which only captures 30-40% of gold compared to the 90%+ efficiency of modern Carbon-In-Pulp (CIP) Processing and leaching systems used by medium and large mining corporations.

Mercury amalgamation, is a simple and inexpensive way to extract gold, is the most commonly used method, thus ASGM also poses significant environmental and health risks arising from mercury use. It perpetuates poverty by poisoning local communities and impairing their productivity. Tanzania has conducted extensive awareness and technology demonstration campaigns intended to showcase the improved safety and efficiency of modern technologies. A state-owned Mining Corporation, STAMICO, initiated a countrywide program that aim to facilitate transformation of artisanal and small-scale mining sub-sector in the country. Offering drilling services, geological, mining and laboratories services and establishing CIP demonstration centers in Itumbi (chunya), Lwamgasa (Geita) and Katente (Bukombe) areas with most populated small-scale miners in the country (<https://www.stamico.co.tz/pages/functions>). The purpose of the demonstration centers is to train and showcase the benefits of utilizing advanced ore-processing technology.

While ASGMs are aware of the benefits of modern processing, the majority are unable to afford it due to high capital costs. Mwamba Mining, in support of the government's initiative, introduces its first Toll -Mill project in Geita Tanzania this October of 2023, that would allow small – scale miners in the project area to stop processing ore using mercury and access the higher yield of modern processing technologies. The artisanal miners would also enjoy the opportunity to direct all their resources towards excavation or digging while receiving sponsorships and better mining equipment from Mwamba Mining.

Mwamba is currently constructing a 120-ton per day CIP processing plant in Buziba village, Nyarugusu, Geita, an area with highest population of active artisanal shafts. The proposed plant would cost approximately US\$1,000,000 to design, construct and startup operations. The plant will generate revenue by providing custom milling facility for small-scale miners who sell their ore production to Mwamba Mining. Mwamba will partner with legal miners and supply them mining equipment to boost their production and help support the formalization process of the unlicensed miners with the aim to build secure, transparent and verifiable gold supply chains. Upon successful plant commissioning in Geita, Mwamba will replicate this business model in UDSM-MRI facility which is currently surrounded by more than hundreds of artisanal mine operators.

2.1. Toll- Mill Operations

The Toll Mill project involves purchasing of ore based on the assayed amount of gold contained in the ore delivered by the ASGM and processed at Mwamba's processing facility. Mwamba has designed a specialized ore pick-up truck to facilitate its ore-sourcing program. A Mwamba employee will use a jaw crusher and splitter mounted on the truck to crush the ore on site and take a representative sample. Half of the sample will be left with the miner in a sealed bag and the other half will be brought back to Mwamba's lab to be assayed. Mwamba Mining site managers will get samples 50 – 100kg of samples from active mine shafts identified and selected during the survey program. Once the ore grade is assessed, Mwamba will purchase the ore at an agreed price based on the gold content of the ore. The ore will then be transported to Mwamba's processing facilities for the recovery of gold. Gold ore procurement process is the most important and costly aspect of this business. The key to success is developing and maintaining relationships based on trust and respect with the artisanal community who are the source of ore. Mwamba will provide the small-scale mining cooperatives with development assistance and community support in return for the exclusive right to purchase their ore. Each cooperative shall sign progressive "No-mercury, No Child Labour" agreements. The agreements will be between the mine owner and Mwamba to operate the mine in accordance with Tanzanian rules and environmental policies.

2.1.1. Site Selection and Background

The success of Mwamba's Toll Milling business depends on the availability and grade of the ore mined by artisanal and small-scale miners (ASM) in the area. Most local toll-mill operators have established their business in districts with high volumes of ore to purchase from to feed in their VAT leach, CIP Plant, and sluicing processing centers. To initially establish ourselves in the industry, we focused on the Geita and Kahama districts. These districts are the most prolific gold producing regions in the Lake Victoria Gold Fields and are home to the largest ASM populations in Tanzania.

Due to the large number of artisanal mines in Geita and Kahama, we narrowed our surveys based on historic production history. The main factors considered during site selection were historic production volume per week, grade of the ore, ASM population, and price per bag. This information was obtained from miners and ASM community members within and outside the Mwamba's network. It enabled us to identify mine sites that merit further investigation. The following sites were selected for more detailed surveying:

Geita:

- Msalala (Igarula & Isonda Mines)
- Nyarugusu (Pamoja Mine, Ibondo, Mulela & Stamico)
- Nyambalimbe
- Nyamatagata
- Nyamahuna
- Msasa Mine

Kahama:

- Nyakafuru
- Nyambogo
- Kanegere
- Tambalare

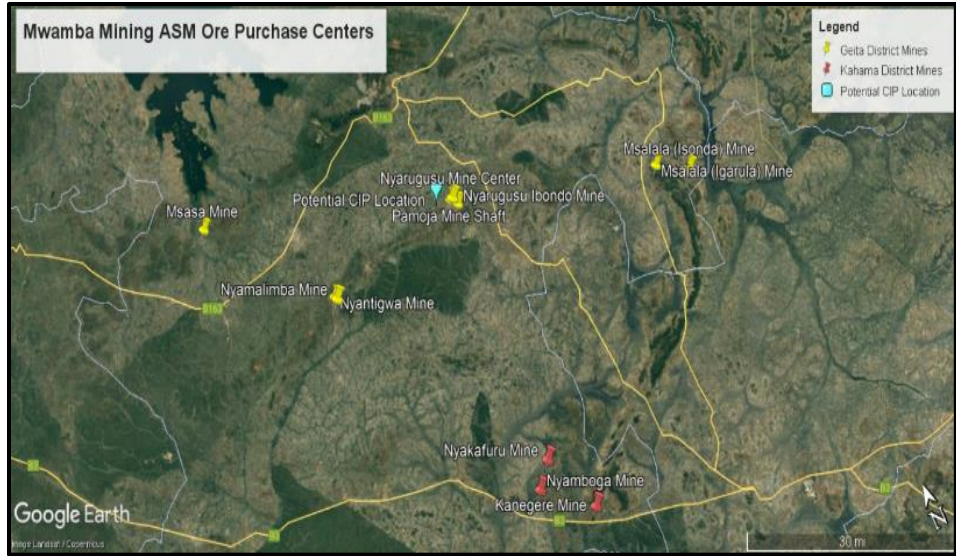


Figure 2: Showing Mwamba Ore purchase Centers

2.1.2. Proof of Concept (POC)

In Feb 2023, Mwamba began the ore purchasing program and an extensive sampling campaign to confirm the economic viability of an ore-buying gold production model. Mwamba began by purchasing almost US\$25,778 ore from four artisanal miners in Geita and Kahama as a test run. This initial step generated vital information with regards to the ore availability, grade, and market competition. The results of the POC are summarized below:

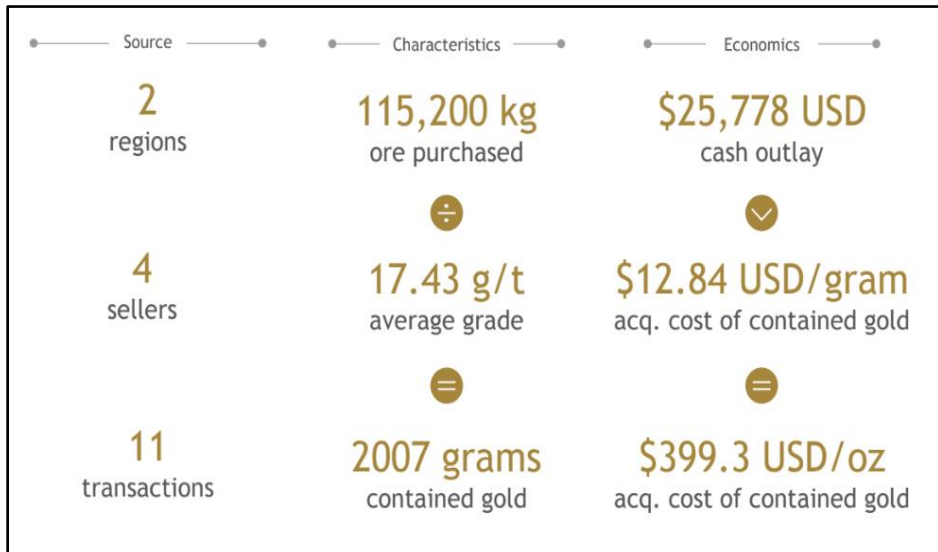


Figure 3: Summary of POC purchase trial

Mwamba mining incurred a cost of \$25,778 to purchase 115,200Kg of ore of an average grade of 17.43 g/t containing a theoretical estimated 2,0007 (2kg) grams of gold before processing.

Table 1: Data from Initial Proof of Concept Purchase

Transaction #	District	Mine	# of Bags	Tested Grade (g/ton)	Grams of Gold	USD / 80kg bag	Total Costs/USD	USD/Au (g)
1	Kahama	Nyambogo	93	12.52	93.15	\$19.30	\$1,794.60	\$19.27
2	Kahama	Nyambogo	57	27.5	125.40	\$21.44	\$1,222.13	\$9.75
3	Kahama	Nyambogo	200	27.18	434.88	\$21.44	\$4,288.16	\$9.86
4	Geita	Nyantwiga	22	18	31.68	\$25.73	\$566.04	\$17.87
5	Geita	Nyantwiga	4	17.46	5.59	\$30.02	\$120.07	\$21.49
6	Geita	Igalula	200	16.81	268.96	\$10.72	\$2,144.08	\$7.97
7	Geita	Igalula	200	8.47	135.52	\$12.86	\$2,572.90	\$18.99
8	Geita	Igalula	200	10.38	166.08	\$12.86	\$2,572.90	\$15.49
9	Geita	Igalula	200	7.33	117.28	\$12.86	\$2,572.90	\$21.94
10	Geita	Pamoja	21	26.32	44.22	\$30.02	\$630.36	\$14.26
11	Geita	Pamoja	243	30.09	584.95	\$30.02	\$7,294.17	\$12.47

2.1.3. Laboratory Testing

During the POC phase, we obtain duplicate representative samples from each batch of ore piles from different shafts and sent to a local lab for Aqua regia and bottle roll testing. The tests were to determine the ore head grade and the cyanide leachability of materials from each shaft. The results of this work are shown on Table 27 below.

Table 2a: AAS and Bottle Roll Testing Results

SAMPLE DESCRIPTION				AquaRegia Test Results		24HRS- Bottle Roll Report		
No	District	Mine	Sample ID	Grade (ppm)		12 HRS		18 HRS
				Au	Cu	Au	Cu	Au
1	Kahama	Nyambogo	NMG033BS1A	27.5	108.52	25.35	50.37	26.5
2			NMG033BS1B	27.18	99.02	25.23	48.43	26.38
3			NMG025BS2A	12.42	59.74	11.62	15.17	11.98
4			NMG025BS2B	9.3	47.17	8.56	10.87	9.13
5	Geita	Pamoja	PMJ1S001A	30.09	714.89	25.96	223.96	29.22
6			PMJ1S001B	26.32	685.02	22.59	191.32	26.16
7		Nyantigwa	NYTG24CS001A	18	627.11	17.08	223.96	17.5
8			NYTG24CS001B	17.46	713.58	16.86	299.8	17.01
9		Igalula	IGL97BS001A	6.55	21.37	5.78	0.28	6.24
10			IGL97BS001B	7.33	18.87	6.76	0.44	6.75
11			IGL52CS001A	7.05	19.48	6.83	0.22	6.97
12			IGL52CS001B	8.47	24.17	8.34	0.39	8.42
13			IGL140ES001A	8.66	20	6.16	6	7.9
14			IGL140ES001B	10.38	21.55	8.19	10.43	9.78
15			IGL24CS001A	16.81	15.58	15.83	0.16	16.22

Table 2b: Summary Statistics of the POC Ore Purchase Data

Description	Value	Unit
Total # of Bags	1440	-
Total Cost	\$25,778.30	USD
Total Weight	115200	Kg
Total Gold Contained	2007.70	grams
Average Grade	17.43	grams/ton
Average USD/Bag	\$17.90	USD

The results from this test work showed the materials bought selectively bought from the artisanal to be of high grade with an average head grade of 17.43 g/t, and that the ore was leached up to 92+ percent within the first 24-hours and above 95+ after 48-hours of retention time. This test work confirms the basis for the operating costs estimates and effectiveness of a simple CIP system to recover gold from high grade materials in the geita – kahama greenstone belt.

2.1.4. Plant Flowsheet

The standard process for this plant is shown on the preliminary flowsheet on Figure 4 below. The list of equipment is shown on Table 3. Ore will be brought to the plant in small trucks with an average size of 10 ton lots and the material will be dumped on a compacted patio in a segregated bay. The material will be sampled and analyzed for gold grade, impurities and moisture allowing a fair assessment to be made of its value. The owner of the material will be paid on the basis of the analytical results.

From the patio, the ore will be fed by small loader over a feeding hopper and into a chute feeder which discharges onto a hammer crusher. The hammer crusher will discharge onto the screen that will recycle the oversize materials into the hammer crusher and the undersize passes by conveyor to a Ball mill. The ball mill discharge is pumped to hydro-cyclone with the underflow going back to the ball mill and the overflow feeding into the trash screen. It screens out the dirt from the ore before its mixed with water and leaching chemicals in thickener tank. The underflow slurry from the thickener tank is pumped into the first four, agitated leach tanks.

The leach tanks work in series and by the time the solids pass through the fourth tank the gold has been leached from the fine solids. The slurry then passes into the first of three carbon-in-pulp tanks where fine carbon particles move in counter current with the slurry to absorb the gold laden cyanide solution. The slurry is pumped from the bottom of the fourth tank and sent to a standard tailing facility and the liquid phase is sent to the carbon & slurry separation screen

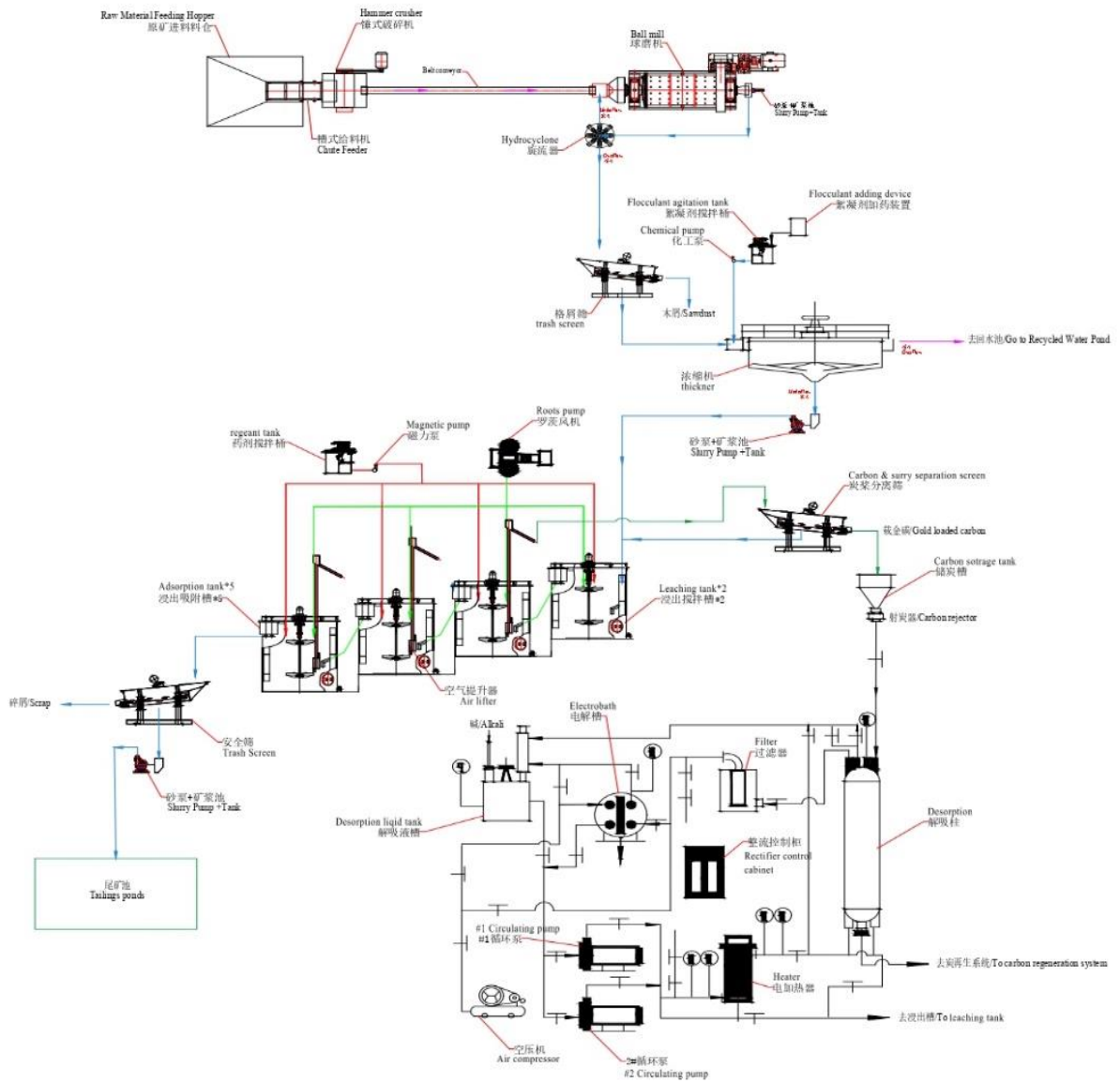
The slurry is pumped from the bottom of the third tank and sent to a standard tailings facility and the liquid phase is sent to the carbon & slurry separation screen. That separates the loaded carbon from the slurry.

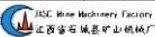
The gold laden carbon is washed with stripping solution to remove the gold from the carbon and this solution is then sent to a small electrolytic cell where the gold particles are plated onto a gold cathode. The cathodes are periodically taken to a furnace and melted to make ingots of dore bullion. The carbon is washed with hydrochloric acid to regenerate its adsorption qualities and then sent to a rotary kiln to be reactivated and reused in the process. The sintered carbon is passed across a double deck screen to remove fine particles generated in the process. The fine carbon which is removed will be stored for subsequent burning to capture any residual gold particles.

Table 3: Plant Equipment List

Equipment Number	Item	Description	Number	HP
1	Coarse ore bin	concrete 60 tonne bin	1	
2	Grizzly,	3' x 6' x 1"	1	
3	Jaw Crusher	10" x 16"	1	35
4	Conveyor belt	18" x 15 m	1	9
5	Screen	3' x 6' x 1/2"	1	6
6	Conveyor belt	18" x 11 m	1	7
7	Cone Crusher	22"	1	35
8	BIN	Steel, 150 tonne	1	
9	Conveyor belt	18 inch x 5 meters	1	5
10	Ball Mill	7' x 7'	1	200
11	Pump SRL	3" x 4"	2	15
12	Cyclone D-15	15 inch	1	
13	Ball Mill	5' x 5'	1	45
14	Pump SRL	2 1/2" x 2"	2	
15	Cyclone D-6	6 inch	1	80
16	DSM Screen	2' x 3'	1	60
17	Leach tanks	15' x 15'	4	
18	Absorption tanks	15' x 15'	4	
19	Screen	3' x 3' x 20#	1	
20	Screen	3' x 3' x 28#	1	
21	Desorption unit		1	
22	Electrolytic cell		1	
23	Smelting		1	
24	Regeneration kiln		1	
	Purchase land	10 hectares	1	
	Stockpile yard	36 m x 28 m	1	
25	Loader	3.5 cubic meter bucket	1	
26	Lab trailer	5 meters x 10 meters	1	
27	Maintenance cont.	3 meters x 7 meters	1	
28	Kitchen/office/bath	5 meters x 10 meters	1	
	Weigh scale	Belt scale type	1	
	Lab equipment	Various	1	
29	Pickup	Hilux 4x4	2	
	Utilities	Power line and water	1	
	Communications	Sat phone/internet	1	

3-5TPH岩金破碎选矿及CIP流程 Flowchart of 3-5TPH Rock Gold Beneficiation & CIP Plant



制图	2023-04-17	比例: -/-	版本: -
审核	2023-04-17	 JXSC Mine Machinery Factory 江西省石城县矿山机械厂	

3-5TPH岩金破碎选矿及CIP流程
Flowchart of 3-5TPH Rock Gold Beneficiation & CIP Plant

Figure 4: Plant Flowsheet Process

2.2. Investment Breakdown

The investment breakdown of the Toll-milling operation is based on a detailed budget quotation from a reputable plant supplier and manufacturer in China and in-house information from Mwamba technical team who have operated similar projects in west Africa. The construction of Mwamba CIP Plant in China is now 60% complete and we expect the plant to be shipped in containers to Dar port in about 20-30 days from 30th June 2023. The rest of equipment and materials needed will be sourced within Tanzania. Tony Bainbridge, the technical director of Mwamba Mining is contributing the front-end equipment of the plant which involves primary crushing system, conveyor belts, feeding ore bins, shaking tables and loaders used at his Tungsten Mine in South Asia that has recently shut down its operations. This addition has significantly decreased the initial capital required to bring the project into operation. The cost estimate is summarized in the table 4 below.

Added to the equipment capital cost will be working capital required to maintain administrative costs during design and construction phase as well as to pre-purchase a one-week supply of ore.

Table 4: Toll Mill Plant Facility Cost Estimate

Item	Description	Qty	Unit Costs (US\$)	Total Costs (US\$)
1	5tph Gravity Gold Processing Plant	1	259,276	259,276
2	Laboratory & Supplies	1	75,366	75,366
5	350kVA Generator	1	50,000	50,000
6	Tailing Storage Facility	1	20,000	20,000
7	Transformer & Power line	1	38,6266	38,626
8	Additional Equipment & Spares Parts	1	83,898	83,398
11	Water Dam & Tanks	1	16,030	16,030
Subtotal				542,696
Contingency 5%				27,135
569,				569,831

Table 5: Toll Mill Startup Cost & Working Capital Estimate

No	Item	Total Costs (US\$)
1	Legal & Permits	25,000
2	Furniture & Office Supplies	15,000
3	Land	10,500
4	Buildings & Construction	73,000
5	Vehicle	29,185
6	Technical Studies & Consultation	20,000
7	Administrative Costs	37,000
8	Working Capital	200,000
Subtotal		409,685
Contingency 5%		20,484
Grand Total		430,169

Table 6 shows the combined startup and equipment costs required to implement and commence the Toll – milling project.

Table 6: Summarized Investment Breakdown

No	Item	Cost
1	Land/Building	83,500
2	Plant	542,696
3	Vehicles	29,185
4	Furniture & Fixtures	15,000
5	Pre-expenses	82,000
6	Others	47,619
7	Working Capital	200,000
	Total	1,000,000

2.3. Toll-Mill Operating Costs

The operating costs associated with running a toll mill business involves ore purchasing costs, loading and hauling the ore to processing facility, grinding and milling costs, maintenance & repair costs, power costs, and all other costs involved in the processing of the ore to produce gold. The plant greatest operating cost estimate is developed from the power cost and reagent costs which are the largest cost items. Power requirement is determined by the horsepower requirements of the plant equipment and it is assumed that all power will be from the national power grid at a cost US\$0.08 -0.09 /kWh. A backup generator will be available in the event of power outages which are frequent in this part of the country. The operating costs were developed based on extensive past project experience, similar sized-project reports, and consultant’s in-house database. The plant operating cost estimate is shown on Table 30 below;

*Notes*Assumptions**

Processing costs for a 120tpd plant is estimated at \$3,000/day at full capacity.

COGS (Refining & Transportation) ~2% of revenue

Average Price Per 80kg Bag of ore is \$ 17.90

Labour @55,000 (excluding director’s salaries)

Table 6: Toll Milling Plant Processing Costs

Item	Unit	Cost
Processing Cost	USD/ton	25
Maintenance	USD	5,000
COGS	% Revenue	2
Ore	USD/ton	223.75
Administration & Labour	USD/Month	55,000

2.3.1. Administration and Labour

This manpower schedule assumes two, 12-hour shifts per day for 340 days per year requiring 3 shifts of personnel. The plant availability is assumed to be 95 percent resulting in 323 effective operating days per year. The labour cost shown in the operating cost estimate is based on this labour schedule assuming that qualified labour is paid a minimum of \$350 per month and professionals are paid a minimum of \$1,000 per month. The manpower complement at the plant is 14 operators, 12 technician and professionals, 2 supervisors, 14 securities, 6 secretaries and camp attendants, and 1 plant Manager.

Table 7: ASM Toll Mill Administration and Labour Costs*

Item	Description	No	Unit Costs	Monthly Costs (US\$/Year)	Yearly Costs (US\$/Year)
1	Plant Manager	1	5,000	5,000	60,000
2	Plant Superintendent	1	4,000	4,000	48,000
3	Gold room Supervisor	1	2,500	2,500	30,000
4	Environment & Safety	4	1500	6,000	72,000
5	Geologists	3	3,000	9,000	108,000
6	Field Assistants	5	1,800	9,000	108,000
7	Truck Operators	3	600	1,800	21,600
8	Backhoe Operators	3	600	1,800	21,600
9	Lab Chemist	1	2000	2,000	24,000
10	Lab Assistants	2	1000	2,000	24,000
11	Plant Operators	8	350	2,800	33,600
12	Mechanics	1	600	600	7,200
13	Electrical Technicians	1	500	500	6,000
14	Secretary	2	400	800	9,600
15	Security	14	400	5,600	67,200
16	Camp Attendants & Cookers	4	400	1,600	19,200
	Total	54		55,000	660,000

*The administration and labour component includes all labour costs associated with plant administration, operations and maintenance personnel. Approximately 54 human labors will be required to run the toll mill operation.

2.4. Project Development Schedule

The development schedule is shown on Figure 5 below. There are several technical studies required to be carried out on the project prior to any construction or license application. These studies include Environment Management Plan, Environment Impact Assessment, Tailing Facility Studies, and Topographic surveys. Mwamba Mining began preparation of these studies from April

2023. As soon as the studies are completed, Mwamba will begin site preparation work and construction of supportive infrastructures for the CIP plant. The plant has already been ordered from China and the expected delivery date is 25th August 2023. Plant operations are expected to commence on December.

		Months 2023 -2024									
ID	Task Name	June	July	August	September	October	November	December	January	February	
1	Technical Studies	█									
2	Permit & Licenses		█								
3	Plant & Equipment Shipping to Dar		█								
4	Transformer & Power Installation			█							
5	Start Pads & Fence			█							
6	Site Infrastructure Construction			█							
7	Equipment Mobilization			█							
8	Materials Purchase										
9	Install/Commission CIP Plant					█					
10	Commence Operation							█			

Figure 5: Proposed Development Schedule

2.5. Economic Analysis

The results of the financial analysis show the project to be economically favorable. This is because toll milling has several benefits including less capital intensive, shorter payback period, zero mining costs, scalability and protected margins, and independent on a single source of ore. The net present value of the net cashflow based on a 10% discount rate (NPV) is US\$ 82 m and an IRR of 764.7% on a post-tax project basis, using a base gold price of US\$1,700/oz as summarized in the financial table below.

Table 8: ASM Toll Mill Financial Assumptions & Results Summary

Description	Unit	Value
Plant Details		
Life Of Project	Years	10
Ore Grade (g/t Au)	g/t	17.90
Plant initial Size	tpd	120
Average Annual Mill Feed	Kt	101
Mill Recovery	%	85
Ore Sourcing		
Cost Per Ton	US\$/t	223.75
LOM Milled	t	355,416
Metal Pricing		
Gold Price	US\$/oz	1,700
LOM Net Gold Production	Koz	169
LOM Mwamba Revenue	US\$ m	304
LOM ASM Revenue	US\$ m	75
Cost and Tax Criteria		
Income Tax	%	30
Plant Capital Costs		
Setup Costs	US\$	209,685

Mill Capital	US\$	542,696
Net working Capital	US\$	200,000
Contingency		47,619
Total Capital Cost	US\$	1,000,000
Royalties		
Government Royalties *(Reduced after selling to Mwanza Refinery) *	%	4
Export Fee	%	1
Local Service Levy Fees	%	0.3
Financial Modelling Results		
Pay Back Period	Years	1
NPV	US\$ m	82
IRR	%	764
Lifetime Project Profit	US\$ m	137

2.5.1. Financial Model Results

Table 9: Five Years Project Financial Projections

Financials		2024 F	2025 F	2026 F	2027 F	2028 F	2029 F	
Project Lifetime								
Revenues	USD	0	21,176,810	30,923,245	31,232,478	31,544,803	31,860,251	
Mining Costs	USD	0	(5,736,288)	(8,210,494)	(8,128,389)	(8,047,105)	(7,966,634)	
Milling Costs	USD	0	(640,926)	(917,374)	(908,200)	(899,118)	(890,127)	
G&A Costs	USD	(126,000)	(127,260)	(128,533)	(129,818)	(131,116)	(132,427)	
COGS (Refinery & Transportati	USD	0	(317,652)	(463,849)	(468,487)	(473,172)	(477,904)	
Royalties	USD	0	(1,122,371)	(1,638,932)	(1,655,321)	(1,671,875)	(1,688,593)	
OPEX	USD	(126,000)	(7,944,497)	(11,359,181)	(11,290,215)	(11,222,385)	(11,155,685)	
EBITDA	USD	(126,000)	13,232,313	19,564,065	19,942,263	20,322,417	20,704,566	
Margin	%	NA	62.5%	63.3%	63.9%	64.4%	65.0%	
Net Income	USD	(126,000)	9,208,667	13,640,893	13,895,132	14,150,740	14,407,744	
Taxes	USD	0	(3,946,571)	(5,846,097)	(5,955,056)	(6,064,603)	(6,174,747)	
Change in NWC	USD	(10,356)	(3,369,493)	(1,535,679)	(34,151)	(34,642)	(35,137)	
CAPEX	USD	(770,749)	0	(150,000)	(150,000)	(150,000)	(300,000)	
FCFF	USD	(869,305)	5,916,249	12,032,288	13,803,056	14,073,172	14,194,681	
Cum. FCFF	USD	(869,305)	5,046,943	17,079,232	30,882,288	44,955,460	59,150,142	
Cash	USD	78,494	200,000	200,000	200,000	200,000	200,000	
Financial Debt	USD	0	0	0	0	0	0	
Equity	USD	859,599	4,273,523	5,882,128	5,974,204	6,051,771	6,264,833	
Dividends	USD	0	5,794,742	12,032,288	13,803,056	14,073,172	14,194,681	
Uses of Financing		Sources of Financing					%	USD

Figure 6 shows a breakeven cumulative cash flow for the project over the LOM; the payback period corresponds to when the cumulative cash becomes positive. Figure 7 presents projected annual revenues and EBITDA.

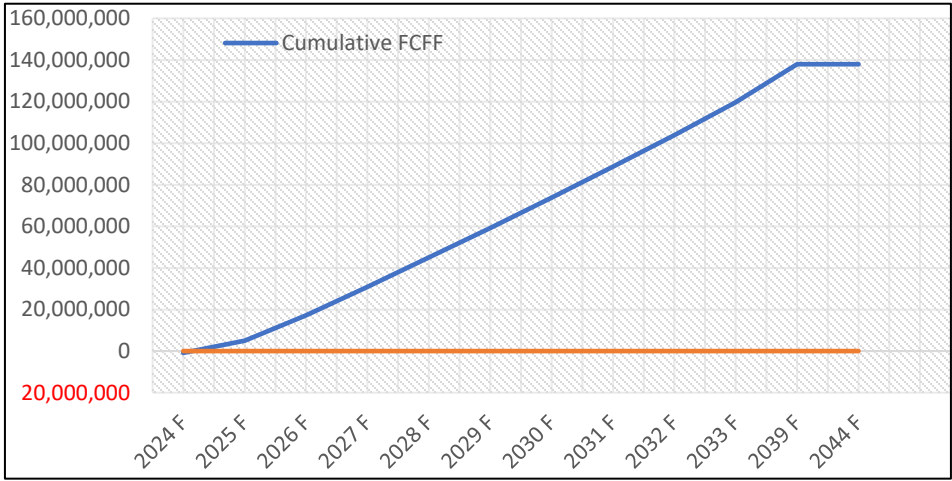


Figure 6: Breakeven – Free Cash Flow to Firm (Cumulative)

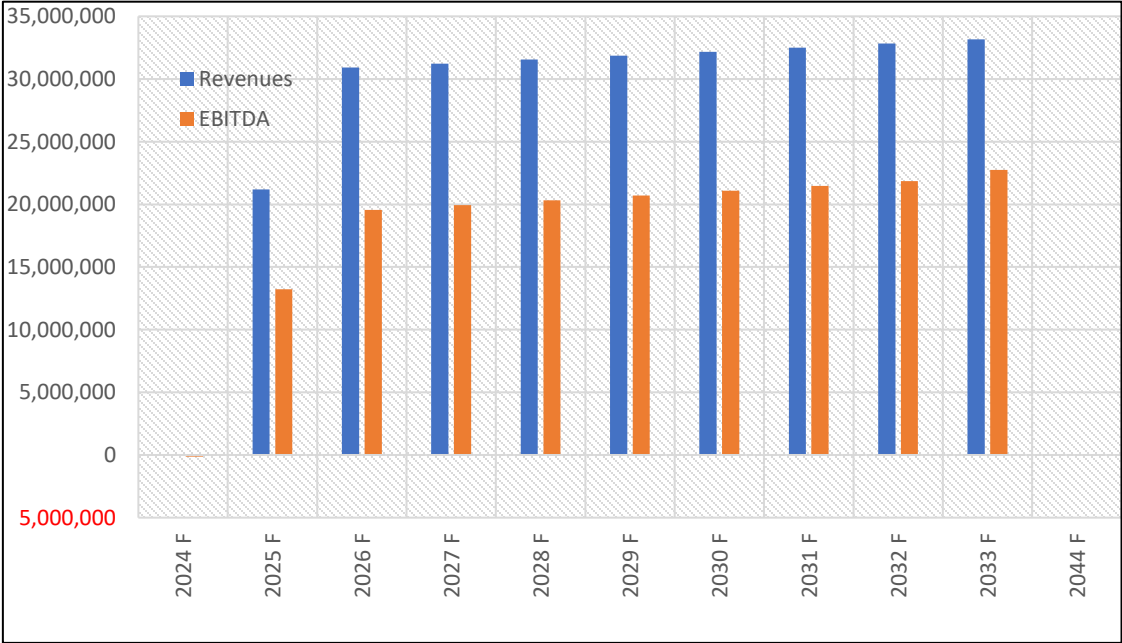


Figure 7. Projected Annual Income

Table 10. Projected Balance Sheet

Balance Sheet	Unit	2024 F	2025 F	2026 F	2027 F	2028 F	2029 F
Cash	USD	111,263	200,000	200,000	200,000	200,000	200,000
Receivables	USD	0	2,610,840	3,812,455	3,850,579	3,889,085	3,927,976
Inventory	USD	20,712	1,305,945	1,867,263	1,855,926	1,844,776	1,833,811
Other current assets	USD	0	290,093	423,606	427,842	432,121	436,442
Exploration Costs	USD	0	0	0	0	0	0
Fixed Assets	USD	752,381	677,143	751,905	811,667	856,429	1,036,191
Assets	USD	884,356	5,084,020	7,055,228	7,146,014	7,222,410	7,434,420
Payables	USD	10,356	652,972	933,631	927,963	922,388	916,906
Other current liabilities	USD	0	174,056	254,164	256,705	259,272	261,865
Financial Debt ST	USD	0	0	0	0	0	0
Financial Debt LT	USD	0	0	0	0	0	0
Equity	USD	874,000	4,256,992	5,867,433	5,961,346	6,040,750	6,255,649
Liabilities & Shareholder's Equity	USD	884,356	5,084,020	7,055,228	7,146,014	7,222,410	7,434,420
<i>Check</i>		<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>

2.6. Growing the ASM Revenue

The Tanzanian ASM sector (and revenues derived from the sector) presents a potentially a high-growth investment case, if properly managed. Taking advantage of this opportunity, Mwamba Mining is currently constructing a 120-t/d gold processing plant that would service the formalized ASMs community in Geita.

In recent years, the companies using the toll milling model have been able to outperform many junior mining companies. The toll mill model comes with several financial benefits including no cost of production, government support, higher scalability, less capital intensive, and shorter payback period. Given that low capital is required to establish a Toll Mill, Mwamba intends to establish several Toll millings projects across the country in areas with large and active formalized ASM population. The business model proposed is highly lucrative and the profits generated could be utilized by Mwamba Mining to acquire prospective land and conduct large scale exploration works at Mwamba and UDSM-MRI prospecting licenses. Mwamba will also invest 2% of his profits in technical training,

community development programs, mining sponsorship programs to increase the safety and productivity of the ASM mining community.

2.7. Mwamba - Wazi Phone App Platform

Wazi is an innovative digital online platform that Mwamba Mining is currently developing, it is designed to create a reliable, optimized, traceable and mercury-free artisanal supply chain by brokering ore exchange between artisanal miners and independent mercury-free processing facilities. The mobile app (WAZI) would allow Mwamba and other CIP owners to easily connect with a vast network of formalized artisanal miners, reducing the risks of illegal miners' involvement, and improving toll milling operations and transaction management. The App could be utilized by other Toll milling providers in Tanzania and other countries. The mobile App will provide a platform upon which local ASGM can connect directly with mercury-free processing facilities. This technology platform will first be developed in tandem with the Nzega Mwamba – Imara gold project so that students can participate and learn first-hand experience about the process of integrating mining activities with digital technology. Students will be engaged in all phases of the phone app development which includes research, data collection, prototype designing, end user testing, and software development. With digitalization in the mining industry fast growing around the world, this platform will present a unique opportunity to both Mwamba Mining and the University of Dar es Salaam to pioneer emerging technology and create its own information software that can help to optimize toll milling production and exploration processes.

3. GOVERNMENT MINERAL POLICY & COMMITMENTS

Recently, the government of Tanzania has undertaken major economic reforms and restructuring in favor of Private sector development and market-oriented economic management. The role of the government has shifted from owning and operating mines to providing policy guidelines, stimulating private investment and providing support for investment. The Mineral Policy of Tanzania was established in 2009 by the Ministry of Minerals, which is charged with the responsibility of formulating a mineral policy, overseeing its administration and coordinating the development of the mineral sector of Tanzania (Ovadia, 2017). The Policy is driven by its vision, which is to have an effective mineral sector contributing significantly to the acceleration of socioeconomic development through the sustainable development and utilization of mineral resources in Tanzania. Its objectives include, but are not limited to, improvement of the economic environment for the purposes of attracting and sustaining local and international private investment in the mineral sector (Ovadia, 2017). According to the Mineral Policy, the government of Tanzania is to remain as regulator and facilitator of the sector while promoting private sector involvement. However, the Policy document makes it clear that the government intends to participate strategically in mining projects and to establish an enabling environment that enables Tanzanians to participate in ownership of medium

and large-scale mines (Ovadia, 2017). This policy aligns with Mwamba's unique strategy of partnering with local landowners and license holders in the ownership and development of the mid-size gold projects. Local property owners and license holders are given an equity stake in the mine and allowed to continue their small-scale mining activities a safe distance from the Mwamba Gold Project pits. We believe that a successful and enduring mining company must directly benefit local stakeholders.

Traditionally, the government's policy focus has been on how to accrue benefits from resources through taxation, royalties, and licenses fees. Royalties are payment to the government that are charged on gross value which for precious metals is 6% and district council where a gold mine is located is entitled to collect a 0.3% on the revenues from gold production as service levy. In addition to this policy, in recent years there have been efforts to generate broader benefits from natural resources through local content provisions that increase local participation in the extractive value chain (Ovadia, 2017). In general, local content policies represent an attempt by the government to ensure that the benefits of a national resource are going to the country and its citizens. It refers to the plans required by the act regarding local procurement, training and employment, and technology transfer. First the policies require mining companies to give preference to local service providers and locally manufactured goods. They require the use of local insurance and financial services and stipulate that legal services to be provided only by local legal practitioners or local law firms. They set the time frame for local content levels to be attained in the mining sector. Finally, they urge companies to give priority to qualified Tanzanians in employment and on-job training. They also require companies to employ only Tanzanians in junior level or middle level positions. Through partnership with local ASM miners, Mwamba Mining supports and complies with the local content plan as described below and much more;

- i) Mwamba Mining will hire qualified Tanzanian locals in every job opportunity in favor of the foreigners. Up to date, Mwamba has only worked with the local senior geologist, consultants and engineers in Tanzania in developing its projects. The current Mwamba ground team is entirely composed of Tanzanian locals led by the Managing director and Co-Founder Samwel Bahebe who is a Tanzanian native.
- ii) Mwamba Mining will offer mining and exploration training and practical experience to the communities surrounding our project sites.
- iii) Mwamba uses local banks, lawyers and consultants for all transactions and professional consultation works. Mwamba has a gold purchase contract with the local refinery in Mwanza (Mwanza Precious Metal Refinery) to purchase all the gold produced by Mwamba Mining gold projects. Mwamba also has contracts with a local chemical and other goods suppliers in Mwanza and Geita.

Tanzania Mineral Policy of 2009 aims to support and promote the development of small-scale mining so as to increase its contribution to the economy. It established a permanent section under the Minerals Division to oversee small-scale mining development and promote sustainable solutions for problem areas. The policy set goals to modernize small-scale mining, increase access to finance and global resources, and improve environmental practice in the sector. This 41-policy reform established mercury eradication in small-scale gold mining as a priority for Tanzanian government. Mwamba's community engagement & ore purchasing programs supports government these objectives for the small-scale mining sector.

The mineral policy stipulates that the government will have no less than 16 percent free carried interest in the capital of mining companies. Before commencing of a mining operation, Mwamba and our ASM partners will apply for a mining license, so that the Tanzanian government will be entitled to 16% free carried interest. A mining license is required for operations for which the capital investment is between USD 100,000 and USD 100 million. The government of Tanzania prohibits the exportation of raw materials outside of the country in efforts to encourage complete mineral beneficiation within the country and increase government's revenue. Mwamba Mining business model underscores this new agenda by setting an example of CIP construction and installation across the lake zone gold field that comply with the Tanzanian's government initiatives. This means complete mineral beneficiation within the country.

4. ENVIRONMENTAL POLICIES AND MANAGEMENT

Mwamba Mining abides by the Tanzania environmental laws and regulations. The proposed project location in Nzega is by default close to several natural resources such as rivers, freshwater swamps, and vegetation cover. As such, the necessary standards or work practices have been put in place to ensure minimal disturbance or contamination to the natural resources. As required by the Environmental policies, Mwamba Mining will prepare an Environment Impact Assessment study, and acquire an environmental and social impact assessment (ESIA) certificate for any project that we develop with our ASM partners. In addition, Mwamba will also engage and register for ISO 14001 (Environmental management system) certificate. Mwamba is currently putting together a robust rehabilitation plan that will be executed once the operations commence at our projects. This plan will be running parallel as the operation continues and will lead to a comprehensive mine closure plan.

Mwamba has established a commitment to conduct several environmental monitoring and control programs in the exploration/Mining areas and in the community of Geita. In order to demonstrate socioenvironmental responsibility, actions such as discussions with local government institutions and organizations, adopting measures to maintain and improve the quality of the workforce, as well

as actions to communicate the progress achieved and the development of the undertaking are foreseen. These actions are important for continuous improvement in the performance of planned activities and the maintenance of an Environmental Management and Control System.

5. GOVERNMENT SUPPORT AND PARTICIPATION

To increase the national's economy, the current government regime has promised its support to private sector companies by creating an environment that favors mining investments. Mwamba Mining hopes to utilize the fiscal incentives provided to exploration and mining companies by the government of Tanzania. These include exemption of import duty and Value Added Tax (VAT) on equipment and essential materials up to the anniversary of start of production, thereafter a 5% seal would apply. Furthermore, to benefit from the depreciation allowances increased to 100%, fair streamlined and non-discriminatory licensing procedures, and repatriation of capital and profits directly related to mining. Mwamba Mining also would hope to receive government's support on both local and state levels in facilitating and building relationships with the local communities and artisanal miners near Mwamba mining projects.

6. ECONOMIC IMPACT & CORPORATE SOCIAL RESPONSIBILITY

Mwamba was founded with the vision to engage with and transform Tanzania's small scale mining economy. We see the proposed joint venture with the UDSM-MRI as a mutually beneficial way to generate positive cashflows for the university through the profit split agreement and greatly increase the financial and environmental sustainability of ASM's and the broader community in Geita. First, local miners and communities will have direct and indirect stakes in the project. Secondly, Mwamba's mercury eradication program (Toll-Milling) will act as a foundation for significant poverty alleviation in the region. Mwamba's mining activities will generate significant tax revenue for local and national government. Additionally, the gold project will create various tenders and employment opportunities for local service and goods suppliers hence stimulating adjacent, local economies outside of the mining context.

The project supports local mercury eradication and poverty alleviation programs through microfinancing and access to the project's infrastructure. In contrast to the traditionally tense or openly hostile relationship between large scale mining projects and local stakeholders, the communities surrounding Mwamba's projects will understand the benefits that the project brings by directly and indirectly participating in the project development. All relevant in-country stakeholders will have direct ownership in the mines.

Establishing a link between mining business and education/training has always been crucial part of Mwamba's business model. This partnership will set a framework at which Mwamba Mining will develop a range of programs to reinforce responsible mining and address key challenges facing the local communities surrounding the Mwamba gold project. Through these programs, students, researchers, local community members and Mwamba Mining will work collaboratively on jointly-

identified environmental and social initiatives. The partnership with the local community will focus on agricultural projects, while UDSM-MRI and the company will focus on training the artisanal miners, and promoting co-existence with large-scale mining operations.

6.1. Poverty Alleviation

Mwamba's mercury eradication program aids the sustainable development of ASGM economies. When a mining society or community of ASGM miners work with Mwamba, a requirement is that no children are present in or around the mining operations. By paying miners more for their ore, Mwamba hopes to eliminate the financial need for children to work in the mines. During initial community surveys, Mwamba's management found that children are often at mine sites due to boredom as well as having no productive way to spend their time outside of mining. To this end, Mwamba will construct schools to give children a productive way to spend their time. These schools will also provide programs for local adults, including financial literacy and small business skills. Mwamba believes that the most effective strategy for breaking the cycle of poverty is empowerment through education.

By providing modern processing services, Mwamba increases the profits of local ASGM miners and eradicates the use of toxic chemicals. However, this will move all processing to Mwamba's facilities, disintermediating laborers (primarily women) who used to crush the ore by hand. Mwamba will support these individuals by developing alternative employment opportunities. Mwamba has identified several opportunities, such as sewing centers, that will assist laborers negatively impacted by Mwamba's model. Mwamba will also support these individuals by providing access to microfinance programs that will allow them to start their own small-business and projects.

Mwamba will partner with specialized social impact organizations to develop water and sanitation infrastructure in the communities near its mining projects. Profits from the mercury eradication programs will go towards funding additional poverty alleviation and development programs.

7. MWAMBA VISION & IMPACT STATEMENT

Mwamba supports the Tanzanian Government's initiative to empower Artisanal and Small-scale Gold Mining (ASGM) communities. Legalized in 1995, the Tanzanian ASGM sector is young and highly under-serviced. The Mining Policy Reform of 2010 "mended the mining and legal framework so that Tanzanians have a larger opportunity to benefit from and participate in the sector" (UNEP). Amenable policy has succeeded in growing the Tanzanian ASGM sector so much so that it has undermined its sustainability. We aim to correct this by investing in the unmet needs of ASGM's.

Our innovation is building large scale mines that service the needs of small-scale mining operations. ASGM need improved technology and training in order to break their reliance on mercury. Parallel to the development of our mining assets, we are building a network of ASGMs who will sell us their ore. We will process and distribute the gold for them. This ends the need for ASGM's to use mercury while raising the amount of gold captured from their ore by a factor of 2. We do business ethics

audits and document the licenses of all partnering mines to ensure that we can sell their gold internationally at full-market price.

By ending ASGM's dependence on mercury processing, we will pave the way for a more environmentally responsible era of ASGM gold mining in Tanzania. ASGM is currently the single largest source of mercury pollution on earth. Mercury released by the sector in tailings and vaporized mercury exceeds 1400 tones each year. The health effects are dire, with inhaled mercury leading to neurological damage and other health issues. The communities near these mines are also affected due to mercury contamination of water and soil and subsequent accumulation in food staples, such as fish—a major source of dietary protein in many ASGM regions... Between 10 and 19 million people use mercury to mine for gold in more than 70 countries, making mercury pollution from ASGM activities a global issue" (UNEP).

8. CONCLUSION

Mwamba Mining has a proud relationship with the communities near its operations. Part of the Mwamba's core values is giving back to these communities living close by to its operational mines. The company recognizes that contributing to the local community beyond direct operations can build better and stronger community relations and enhance the quality of life for those people living and working in the region. In partnership with local government agencies in the project areas, Mwamba Mining will contribute funding to local schools' programs, women's organizations, improve local hospitals, and water supply systems in the villages. During construction and operations, the project will deliver employment opportunities, increased support for local and regional business and improved quality of life for those people in the company's communities.

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