

JIU DING MINING INVESTMENT LIMITED

PROJECT BRIEF

FOR

**OPERATING GOLD LEACHING PROJECT KILOMBERO ONE VILLAGE
,GEITA DISTRICT,GEITA REGION**

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1.0. EXECUTIVE SUMMARY.

JIU DING MINING INVESTMENT LIMITED is a company registered in Tanzania under Certificate of Incorporation No. 141390848 issued on 30th March 2020.

The project promoters are well established business in China, carrying out various businesses but majoring in mining sector. Having been in the business for over 10 years the directors are now well prepared to establish a gold leaching project in Tanzania.

The business plan has been prepared for **JIU DING MINING INVESTMENT LIMITED** to be submitted to any Tanzania government institutions for any approval, permit, license etc. The implementation of this project will include following activities:

- Registration of project with NEMC
- Registration of project with TIC
- Construction of project site
- Recruitment
- The purchase of project machines and equipment
- Purchasing project vehicles
- Equipping the company with relevant facilities

JIU DING MINING INVESTMENT LIMITED plan to inject a total of investment of \$1,355,000.

1.1 THE PROJECT PROMOTERS

The project is being implemented by three shareholders one being international company based in Hong Kong and two shareholders are individual investors based in China .The company is owned by three shareholders namely: -

Name	Nationality	% Share subscribed	Date of Birth
JINJIU HONG KONG INTERNATIONAL INVESTMENT LIMITED SICHUANPROVINCE,STREET FISH MARKET, HOUSE No. 20, HONG KONG Email:1704023017@qq.com Tel:+255766521698	CHINA	51	
XIE KUN QINGHAI PROVINCE CENTRALTOWER,FLOOR No. 4,ROOM No.455, CHINA Email:1704023017@qq.com Tel:+255766521698	CHINA	34	28 th June 1973
LI JUN QINGHAI PROVINCE CENTRALTOWER,FLOOR No. 4,ROOM No.455, CHINA Email:1704023017@qq.com Tel:+255766521698	CHINA	15	15 th August 1974

1.2 LOCATION.

The project is located at Kilombero One Village, Geita District - Geita Region...

1.3 **OBJECTIVE OF STUDY**

The purpose of this study is to work out the technical and commercial details and financial viability of a project for Operating Gold Leaching at Kilombero One Village, Geita District - Geita Region.

1.4 **INTRODUCTION TO THIOUREA GOLD LEACHING**

JIU DING MINING INVESTMENT LIMITED is planning to use thiourea gold leaching process since it is an environmentally friendly and non-toxic gold leach and a substitute for cyanide leach, The use of thiourea, $(CS(NH_2)_2$ as a extracting agent for gold has shown best results in the mining industry. Laboratory testing of this reagent has indicated that a thiourea process for gold extraction has several advantages over conventional processing techniques. The use of cyanide for the extraction of gold from ores and concentrates is the predominant treatment method for primary recovery of this metal throughout the world. Indeed, cyanidation has proven to be very effective and economical for processing many types of gold-bearing materials. However, certain characteristics and disadvantages of the cyanidation process warranted development of alternative gold extractant systems.

The major concerns involving the cyanidation process are the health and environmental problems associated with it. These include the

possible formation of deadly hydrogen cyanide gas, the ingestion or absorption through the skin of cyanide salts, and the formation of the free forms of cyanide (HCN and CN-) in effluent waters in concentrations toxic to aquatic life.

In light of increasing environmental awareness and responsibility, **JIU DING MINING INVESTMENT LIMITED** board of director has opted for thiourea gold leaching instead of cyanide processing altogether.

Thiourea is not restricted by the same toxicity factors as cyanide. Thiourea toxicity data indicate high threshold limit values for mammals and a lethal dose of 10 g/kg for humans. On this basis, thiourea is considered much safer than cyanide. Indeed, the low pH required in a thiourea process is good news for environmentalists. However, it must be mentioned that thiourea has been shown to be a carcinogen to rats and possibly to trout. Even so, thiourea has been used for years in the treatment of thyroid diseases in humans and at this time is considered to be non-carcinogenic to humans.

Studies has shown that the rate of dissolution of pure gold in acidic thiourea solutions. Under proper conditions of acid and added oxidant, a thiourea medium has been shown to dissolve the gold as much as twelve times faster than a cyanide medium. The acids studied included sulfuric, hydrochloric, and nitric. The various

oxidants examined were ferric ion, hydrogen peroxide, sodium peroxide, formamidine disulfide, dissolved oxygen, ozone, and potassium permanganate. The fastest leaching system has been generally concluded to be the ferric ion-sulfate media system, although chloride media results are very similar. Rates are dependent on thiourea and oxidant concentrations, and appear to be controlled partially by chemical phenomena and partially by transport of oxidant species to the gold surface. A transition from diffusion control to kinetic .

The major disadvantage of the thiourea process is reported to be the higher cost due to high thiourea and acid consumptions. Excessive thiourea consumption is partially due to the oxidation-degradation of thiourea by ferric iron. Other factors which contribute to thiourea degradation are temperature and complex formation with other metals. It has been shown that thiourea consumption can be reduced by an acid pre-leach to remove impurities.

Daily Chemical List and Quantity

- Thiourea gold leach is 120 kg/day (it is an environmentally friendly and non-toxic gold leach and a substitute for cyanide leach) imported from China
- Lime: 300kg/day sourced from domestic market since it is available.

- Water Underground water discharged from mining shaft 200 meters away for production and living.

2.0 THE SCALE OF THE STORAGE FACILITY

The tailing storage facility of this project is an anti-seepage tailing reservoir with a storage capacity of 65,000 cubic meters

3.0 THE NUMBER OF GOLD PROCESSING PLANTS IN THE AREA

Rwamgasa village 10, Paning 1 tank Leaching 1 3, rwamgasa village around 10 km radius paning about 10 factories, three tank leaching factory

3.1 LIST OF MACHINE

JIU DING MINING INVESTMENT LIMITED is planning to purchase machine from china, some of selected machines are:

NAME OF MACHINE	TYPE
Belt mine conveyer	500x2000
Belt conveyer	B=500 L=12
Ball mill	JP1545
Slurry pump	
Hydraulic rotator	150*4
Thickener	Φ9

Slurry pump	Q=12,P=18
Trash sifter	0618
Security sifter	0618
Partited carbon sifter	SY500
Extract carbon sifter	DZS0415
Air lifter	KT125
Efficient leaching of stirring slot	SJP4.0x4.5
Roots blower	
Thiourea stirring slot	1.5×1.5
Magnetic drive pump	
Cone bottom lime milk stirring slot	1.5×1.5
Glue pump	25PNJ

3.2 THE STRUCTURAL TYPE OF BUILDING TO BE USED

JIU DING MINING INVESTMENT LIMITED is planning to construct office and accommodation building made up with brick and concrete structure while the workshop will be made up with a light steel structure materials.

The Size of Building is about 400 square meters for office and housing, about 800 square meters for workshop. The facility is located to nearest house is over 100 m.

3.3 SOURCE OF POWER AND WATER

Project power Supply is estimated to be 380 voltages for production and 220 voltages for living use to be supplied by TANESCO. **JIU DING MINING INVESTMENT LIMITED** will be using water from underground water discharged from mining shaft 200 meters away for production and living.

3.4 RAW MATERIALS

JIU DING MINING INVESTMENT LIMITED CIL USES gold containing tailings as raw materials from neighboring gold mine

3.5 CAPACITY

The project expects to produce **27kg** of raw gold per year.

3.6 TYPES OF WASTE PRODUCED EACH DAY

The waste is tailings slurry with a concentration of 30%, which is directly discharged into the anti-seepage tailings pond.

The amount of waste generated per day is the amount of tailings discharged into the tailings pond is **66.67 cubic meters per day**, and the water is **233 cubic meters**. The tailings pond water can be

recycled for use, and the return water utilization rate is more than **80%**.

3.7 PROJECT PRODUCTION CAPACITY

JIU DING MINING INVESTMENT LIMITED is planning to build a gold mineral (including gold tailings) treatment capacity of 100t/d.

4.0 PROJECT MANAGEMENT

JIU DING MINING INVESTMENT LIMITED is under the skilled and professional Management who have experience in managing gold mining project.

Under this management **JIU DING MINING INVESTMENT LIMITED** once the project is approved local engineers and other experts will be employed.

The company will have a team of qualified and experienced functional managers in the areas of operations/Marketing, workshop Finance and Administration. Other senior and middle level staff will be available for the startup and subsequent operations of the company, the total number of employees are expected to be **125** when operating at full capacity

Employment	Foreign Skilled	Local Skilled	Local Unskilled	Total
Women	5	10	20	35
Men	10	20	60	90
TOTAL	15	30	80	125

5.0 **MARKETING ASPECTS**

The processed gold will be exported to China and Hong Kong where the company is currently negotiating with international buyers. As mentioned above, the promoters are well versed in the business with well-established market contacts.

6.0 **ASPECTS OF PROJECT SUSTAINABILITY**

The project sponsors having studied market conditions and the infrastructure in Tanzania are convinced that the project will be able to operate undisturbed. The growing demand for gold globally gives them assurance of a steady market. The peace and tranquility that exist in Tanzania is another aspect of assured business sustainability.

7.1 **MONITORING AND EVALUATION**

The monitoring and evaluation tools will be applied in running this project as well, the project sponsors are determined to cooperate fully with the government and other stakeholders for smooth business running.

7.2 **ENVIRONMENTAL ISSUES**

JIU DING MINING INVESTMENT LIMITED is planning to adhere all laws and regulation of the land including The Environmental Management Act, 2004 (Act No. 20 of 2004) and other laws, the

board of director is planning to recruit reputable environment consultant recommended by **NEMC** to conduct environment impact assessment as soon as practicable.

7.3 QUALITY CONTROL SYSTEM

The required quality control system will be employed ensuring that products produced maintain the same standard

8.0 ECONOMIC ASPECTS

Implementation of this project will have the following social and economic values

- Value addition.
- The project will involve transfer of technology.
- The project has created jobs for 125 people on permanent contract basis as well as on temporary basis.
- It will create more business opportunities to local suppliers.
- It will generate substantial revenue to the government in the form of corporate tax, value added tax and pay as you earn.
- The project contributes substantial amounts of foreign earnings.

9.0 PROJECT INVESTMENT COST

The estimated capital investment cost of the project is **US\$ 1,355,000** out of which **US\$1,055,000** while the remaining will cost **US\$300,000**,

JIU DING MINING INVESTMENT LIMITED COST STRUCTURE

Land and Buildings	50,000.00
Machinery & Equipment	500,000.00
Motor Vehicles	150,000.00
Furniture & Fittings	5,000.00
Pre exp	80,000.00
Others	70,000.00
Working Capital	500,000.00
TOTAL	1,355,000.00

For the project to be a reality a total investment amounting to **US\$1,355,000** is needed

9.1 FINANCING PATTERN

The project will be financed by equity **US\$ 1,000,000** and **US\$ 355,000** long term loan

10.0 FINANCIAL ANALYSIS

10.1 Considerations and Assumptions:

The corporate tax charged is 30% of the profits. Capital investment allowance is 50%. The capital assets are exempted from custom duty and Value Added Tax. The straight line method to depreciate the project's capital items has been applied.

Revenues have been conservatively estimated based on experience of the promoters.

10.2 **Financial Statements:**

10.3 **Projected Revenue**

For projection purposes, it is assumed that the economic life of the project is five years, and that revenue from retreading business commence from the first year of operation.

JIU DING MINING INVESTMENT LIMITED REVENUE PROJECTED US\$

	1	2	3	4	5
Revenue	1,660,800.00	1,760,800.00	1,779,805.00	1,785,901.00	1,795,000.00

10.4 **Projected Profit and Loss Statement**

The Income and Expenditure Statement shows the projected income for the 5 years period. The position depicted is that the project earns profit throughout its life. Accumulated after tax profits grow from. US\$**578,025** in first year to US \$**5,159,749** in the 5 year, **Refer appendix III**

10.5 **Projected Cash Flows**

This is shown in the financial statements. The project has a positive end of year cash flow from year 1st, i.e. US\$ **607,275** of operation to the 5th year i.e. US\$ **4,096,878** , **Refer appendix IV**

10.6 Projected Balance Sheet

The projected Balance Sheet of the projected is shown in the financial statements under same heading. Owner's equity of the project increases from US\$ **1, 00,000** in the first year of operation to US \$ **1,899,087 in** the 5th year. **Refer appendix V**

10.7 Projected payback period

Total initial investment is US \$ **1,355,000** cash accumulation third year is US \$**2,060,685** which is more than the initial investment by US\$ **705,685** the project payback Period is within 3 years, The project has a relatively short payback period. It is remarkably impressing for a project whose investment is as big as US\$ 1,355,000 being recovered within 3 years. **Refer appendix VIII**

11.0 IMPLEMENTATION

Project implementation is expected to be relatively very short once project has been approved, it is estimated that implementation of the projected will be as following:-

S/N	ACTIVITY	PERIOD
1	Processing TIC Certificate of Incentive	August 2020
2	Renovation industrial premises	November Jan 2021
4	Ordering machines and equipment	March –May 2021
5	Installation of machines	May- Sept 2021
6	Testing operations	October –December 2021
7	Commercial Operations	January 2022

12.0 CONCLUSION AND RECOMMENDATIONS

The project is technically feasible, financially viable, and economically sound, provided the sponsors will manage it efficiently.

It is recommended that the project be approved by Tanzania Investment Centre and be granted the TIC Certificate of Incentives with its associated privileges and benefits as provided for under the Tanzania Investment Act, 1997.

APPENDIX (I)**JIU DING MINING INVESTMENT LIMITED COST STRUCTURE**

Land and Buildings	50,000.00
Machinery & Equipment	500,000.00
Motor Vehicles	150,000.00
Furniture & Fittings	5,000.00
Pre exp	80,000.00
Others	70,000.00
Working Capital	500,000.00
TOTAL	1,355,000.00

APPENDIX (II)**JIU DING MINING INVESTMENT LIMITED PROJECTED REVENUE**

	1	2	3	4	5	6
Revenue	720,000.00	792,000.00	871,200.00	958,320.00	1,054,152.00	1,159,567.20

APPENDIX (III)

**JIU DING MINING INVESTMENT LIMITED PROJECTED INCOME & EXPENDITURE
STATEMENT US\$**

	1	2	3	4	5	6
Revenue	2,850,000	3,277,500	3,769,125	4,334,494	4,984,668	5,732,368
Operating cost	1,995,000	2,294,250	2,638,388	3,034,146	3,489,267	4,012,658
Profit before Depreciation &Interest	855,000	983,250	1,130,738	1,300,348	1,495,400	1,719,710
Interest	17,750	13,313	8,875	4,438	0	0
Depreciation	11,500	11,500	11,500	11,500	11,500	11500
Net Profit before Tax	825,750	958,437	1,110,363	1,284,410	1,483,900	1,708,210
Tax (30%)	247,725	287,531	333,109	385,323	445,170	512,463
Profit After Tax	578,025	670,906	777,254	899,087	1,038,730	1,195,747
Accumulated Profit	578,025	1,248,931	2,026,185	2,925,272	3,964,002	5,159,749

APPENDIX (IV)
JIU DING MINING INVESTMENT LIMITED PROJECTED CASH FLOW US\$

	-	1	2	3	4	5
SOURCES:						
Profit before interest and depreciation	-	855,000	983,250	1,130,738	1,300,348	1,495,400
Owners' Equity	1,000,000					
Loan	350,000	-	-	-	-	-
Total Sources	1,350,000	855,000	983,250	1,130,738	1,300,348	1,495,400
Applications:						
Capital expenditure	705,000	-	-	-	-	-
working Capital &Others	650,000	-	-	-	-	-
Cash	-	607,275	696,719	797,629	945,025	1,050,230
Tax	-	247,725	287,531	333,109	385,323	445,170
Sub total	1,355,000	855,000	984,250	1,130,738	1,330,348	1,495,400
Total applications	1,355,000	855,000	984,250	1,130,738	1,330,348	1,495,400
Accumulated cash		607,275	1,303,994	2,101,623	3,046,648	4,096,878

APPENDIX (V)

JIU DING MINING INVESTMENT LIMITED PROJECTED BALANCE SHEET US \$

Fixed Assets	1	2	3	4	5
Opening balance	-	705,000	693,500	682,000	670,500
Total Long-term Assets	-	705,000	693,500	682,000	670,500
Less depreciation	-	11,500	11,500	11,500	11,500
Closing balance	-	693,500	682,000	670,500	659,000
Working capital	650,000	650,000	650,000	650,000	650,000
Accumulated cash	-	607,275	1,303,994	2,101,623	3,046,648
Total assets	650,000	1,950,775	2,635,994	3,422,123	4,355,648
Financed by					
Equity	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Net profit	-	578,025	670,906	777,254	899,087
Total equity	1,000,000	1,578,025	1,670,906	1,777,254	1,899,087
Long term loan	355,000	-	-	-	-
Total debts	355,000	-	-	-	-
Total equity and debts	1,355,000	1,578,025	1,670,906	1,777,254	1,899,087

APPENDIX (VII)

**JIU DING MINING INVESTMENT LIMITED PROJECTED LONG TERM LOAN
REPAYMENT**

Year	Principle	Loan Interest (5%)	Total Amount Paid	Loan Balance
0				355,000
1	88,750	17,750	106,500	266,250
2	88,750	13,313	102,063	177,500
3	88,750	8,875	97,625	88,750
4	88,750	4,438	93,188	0
TOTAL	355,000	44,375	399,375	

APPENDIX (VIII)
JIU DING MINING INVESTMENT LIMITED PROJECTED PAYBACK PERIOD US\$

Year	Profit After Tax	Depreciation	Total Cash Flow	Accumulated Cash Flow
1	578,025	11,500.00	589,525.00	589,525.00
2	670,906	11,500.00	682,406.00	1,271,931.00
3	777,254	11,500.00	788,754.00	2,060,685.00
4	899,087	11,500.00	910,587.00	2,971,272.00
5	1,038,730	11,500.00	1,050,230.00	4,021,502.00