Reg. No. 2024/0643
VAT 14725285-015
P. O. Box 4322, Windhoek
Namibia
Email: liesenhe@gmail.com
Cell: +264 81 558 6313

The Town Planner
Karibib Town Council
Erf No. 22 Kalk Street
Karibib, Namibia

30 March 2026

Dear Sir/ Madam,

RE: SUPPORT FOR GOLD BAY MINERAL PROCCESSING PLANT

This communique has reference to the above-mentioned subject matter.

HJ Gold bay Investment (Pty) Ltd and Legend Nafuka Mining and Trading CC has have signed a Memorandum of Understanding agreement in which they will work together to develop an economical and efficient technological process for producing sponge copper from copper oxide ore, the project shall be called Gold Bay Minerals, and it will be operated at Karibib Townlands No. 57, (along the Namib Naukluft Road).

Moreover, this processing center will also provide processing services for legally sourced ore in the surrounding areas, increasing the income of small miners with low-grade solutions, provided that proof of legal source of ore (such as Exclusive Prospecting Licence, Mining Licence, Mining Claims) is presented. The processing of legally sourced ore will enhance the value of low-grade oxidized ore. It will also offer beneficiation tests for large-scale exploration projects of exploration companies, reducing the cost of beneficiation tests.

The objective is to create a market hub within the town and constituency by buying ore from the local community members and then process. HJ Gold Bay Investment (Pty) Ltd commits to uphold its social responsibilities towards the Karibib Town Council, thus we seek your support as the authority to give us your blessing and acknowledgement in order for us to make this project a success.

Project Introduction

With the continuous growth of global copper resource demand, the efficient utilization of low-grade copper oxide ore has become an important issue in the metallurgical field. Sponge copper, as an important copper intermediate product, is widely used in electronics, chemical industry and other industries. This project will deploy an economical and efficient technological process for producing sponge copper from copper oxide ore, so as to improve resource utilization and reduce production costs. At present, copper oxide ore resources are widely distributed but generally of low grade. Traditional pyrometallurgical smelting has high energy consumption and heavy pollution, while hydro-metallurgical technology has attracted much attention due to its environmental friendliness and adaptability to low-grade ore. Through systematic optimization of each link of the process, this project has established a complete hydro-metallurgical technical route for producing sponge copper, providing a reliable reference for industrial application.

HJ GOLD BAY

Reg. No. 2024/0643
VAT 14725285-015
P. O. Box 4322, Windhoek
Namibia
Email: liesenhe@gmail.com
Cell: +264 81 558 6313

1. Overview of the Technological Process

(I) Raw Material Preparation and Pre-treatment System

Raw material preparation and pre-treatment are the primary links in production, which directly affect the subsequent processes and product quality. Raw material preparation requires proper collection, transportation and storage of ore to prevent oxidation and pollution; pre-treatment includes crushing, grinding and screening. A two-stage or three-stage crushing process is adopted, and the ore is refined by ball mill/rod mill. Crushing and milling will take place at the mining site, and not at the processing site at Karibib. Screening ensures uniform particle size, and finally 80% of the ore passes through a 200-mesh sieve to increase the contact area between minerals and leaching agent.

(II) Leaching Process and Condition Control

Leaching is the core process, whose purpose is to dissolve copper from the ore, with sulfuric acid (3% concentration of sulfuric acid) as the preferred leaching agent. The optimal leaching conditions are as follows: sulfuric acid concentration of 10-15%, temperature of 60-80℃, liquid-solid ratio of 3:1-5:1, and leaching time of 4-6 hours. Under these conditions, the copper leaching rate can reach more than 75%. During the leaching process, it is necessary to regularly detect the copper ion concentration and adjust the parameters. After leaching, the copper-containing leach-ate is obtained by solid-liquid separation, and the leaching residue can be further treated after washing.

(III) Purification and Solution Treatment System

The leach-ate contains impurities such as Fe and Al, which need to be purified by neutralization precipitation, solvent extraction or ion exchange. Among them, solvent extraction has a good purification effect. After purification, the copper concentration of the solution should reach 30-50g/L and the impurity content should be less than 1g/L. At the same time, the temperature is adjusted and stabilizers are added to create conditions for the reduction process.

(IV) Reduction Process and Sponge Copper Generation System

Reduction is the key step to convert copper ions into metallic copper. Common reducing agents include iron powder, sulfur dioxide and hydrogen. The reduction process controls the pH value at 1.5-2.5, the temperature at 60-70℃, and the time at 2-3 hours. The end point of the reaction can be determined by observing the color change of the solution or measuring the residual copper ion concentration. The porous sponge copper generated by reduction needs to be subjected to solid-liquid separation immediately to prevent oxidation.

Reg. No. 2024/0643
VAT 14725285-015
P. O. Box 4322, Windhoek
Namibia
Email: liesenhe@gmail.com
Cell: +264 81 558 6313

(V) Product Treatment and Quality Control System

Sponge copper needs to go through post-treatment processes such as washing with deionized water/dilute acid, low-temperature drying at 80-100℃, and briquetting/granulation. Quality control includes chemical composition, physical performance and micro structure detection. High-quality sponge copper should have a copper content of ≥83%, total impurity content of ≤2%, and bulk density of 1.2-1.8g/cm³ to ensure compliance with industry standards.

(VI) Three-Waste Treatment and Resource Utilization

1. Wastewater Treatment: Neutralization precipitation with lime milk (pH adjusted to 8-9, heavy metal precipitation rate >99%) and reverse osmosis membrane separation technology (sulfuric acid reuse rate >80%) are adopted;

2. Leaching Residue Utilization: 30%-40% of leaching residue can be added to produce non-fired bricks, or residual iron minerals can be recovered by magnetic separation.

II. Plant Construction Plan and Benefits

HJ GOLD BAY INVESTMENT (PTY) LTD plans to construct a sponge copper processing plant with an annual processing capacity of 100,000 tons of raw ore, expecting an annual output of 600 tons of copper metal equivalent. The project will create more than 5 million Namibian dollars in tax revenue for Namibia, provide over 100 employment and effectively solve the sales problem of low-grade copper ore for local small miners, achieving a win-win situation of economic and social benefits.

Hence, we are requesting your good office to write us a support letter that will inform the Ministry of Environment, Forestry and Tourism (MEFT), that the project will be developed in Karibib Industrial zone and that you support this important project that will help create jobs and reduce poverty.

Yours Sincerely,

Mr. Y. He

HJ Gold bay Investment (Pty) Ltd

…….

Reg. No. 2024/0643
VAT 14725285-015
P. O. Box 4322, Windhoek
Namibia
Email: liesenhe@gmail.com
Cell: +264 81 558 6313

The Mining Commissioner
Ministry of Mines Energy and Industry
Private Bag 13297, Windhoek, Namibia
Enquiries: info@mme.gov.na

30 March 2026

Dear Mrs. I. Chirchir,

RE: SUPPORT FOR GOLD BAY MINERAL PROCCESSING PLANT

This communique has reference to the above-mentioned subject matter.

HJ Gold bay Investment (Pty) Ltd and Legend Nafuka Mining and Trading CC has have signed a Memorandum of Understanding agreement in which they will work together to develop an economical and efficient technological process for producing sponge copper from copper oxide ore, the project shall be called Gold Bay Minerals, and it will be operated at Karibib Townlands No. 57, (along the Namib Naukluft Road).

Moreover, this processing center will also provide processing services for legally sourced ore in the surrounding areas, increasing the income of small miners with low-grade solutions, provided that proof of legal source of ore (such as Exclusive Prospecting Licence, Mining Licence, Mining Claims) is presented. The processing of legally sourced ore will enhance the value of low-grade oxidized ore. It will also offer beneficiation tests for large-scale exploration projects of exploration companies, reducing the cost of beneficiation tests.

The objective is to create a market hub within the town and constituency by buying ore from the local community members and then process. HJ Gold Bay Investment (Pty) Ltd commits to uphold its social responsibilities towards the Karibib Town Council, thus we seek your support as the authority to give us your blessing and acknowledgement in order for us to make this project a success.

Project Introduction

With the continuous growth of global copper resource demand, the efficient utilization of low-grade copper oxide ore has become an important issue in the metallurgical field. Sponge copper, as an important copper intermediate product, is widely used in electronics, chemical industry and other industries. This project will deploy an economical and efficient technological process for producing sponge copper from copper oxide ore, so as to improve resource utilization and reduce production costs. At present, copper oxide ore resources are widely distributed but generally of low grade. Traditional pyrometallurgical smelting has high energy consumption and heavy pollution, while hydro-metallurgical technology has attracted much attention due to its environmental friendliness and adaptability to low-grade ore. Through systematic optimization of each link of the process, this project has established a complete hydro-metallurgical technical route for producing sponge copper, providing a reliable reference for industrial application.

HJ GOLD BAY

Reg. No. 2024/0643
VAT 14725285-015
P. O. Box 4322, Windhoek
Namibia
Email: liesenhe@gmail.com
Cell: +264 81 558 6313

1. Overview of the Technological Process

(I) Raw Material Preparation and Pre-treatment System

Raw material preparation and pre-treatment are the primary links in production, which directly affect the subsequent processes and product quality. Raw material preparation requires proper collection, transportation and storage of ore to prevent oxidation and pollution; pre-treatment includes crushing, grinding and screening. A two-stage or three-stage crushing process is adopted, and the ore is refined by ball mill/rod mill. Crushing and milling will take place at the mining site, and not at the processing site at Karibib. Screening ensures uniform particle size, and finally 80% of the ore passes through a 200-mesh sieve to increase the contact area between minerals and leaching agent.

(II) Leaching Process and Condition Control

Leaching is the core process, whose purpose is to dissolve copper from the ore, with sulfuric acid (3% concentration of sulfuric acid) as the preferred leaching agent. The optimal leaching conditions are as follows: sulfuric acid concentration of 10-15%, temperature of 60-80℃, liquid-solid ratio of 3:1-5:1, and leaching time of 4-6 hours. Under these conditions, the copper leaching rate can reach more than 75%. During the leaching process, it is necessary to regularly detect the copper ion concentration and adjust the parameters. After leaching, the copper-containing leach-ate is obtained by solid-liquid separation, and the leaching residue can be further treated after washing.

(III) Purification and Solution Treatment System

The leach-ate contains impurities such as Fe and Al, which need to be purified by neutralization precipitation, solvent extraction or ion exchange. Among them, solvent extraction has a good purification effect. After purification, the copper concentration of the solution should reach 30-50g/L and the impurity content should be less than 1g/L. At the same time, the temperature is adjusted and stabilizers are added to create conditions for the reduction process.

(IV) Reduction Process and Sponge Copper Generation System

Reduction is the key step to convert copper ions into metallic copper. Common reducing agents include iron powder, sulfur dioxide and hydrogen. The reduction process controls the pH value at 1.5-2.5, the temperature at 60-70℃, and the time at 2-3 hours. The end point of the reaction can be determined by observing the color change of the solution or measuring the residual copper ion concentration. The porous sponge copper generated by reduction needs to be subjected to solid-liquid separation immediately to prevent oxidation.

Reg. No. 2024/0643
VAT 14725285-015
P. O. Box 4322, Windhoek
Namibia
Email: liesenhe@gmail.com
Cell: +264 81 558 6313

(V) Product Treatment and Quality Control System

Sponge copper needs to go through post-treatment processes such as washing with deionized water/dilute acid, low-temperature drying at 80-100℃, and briquetting/granulation. Quality control includes chemical composition, physical performance and micro structure detection. High-quality sponge copper should have a copper content of ≥83%, total impurity content of ≤2%, and bulk density of 1.2-1.8g/cm³ to ensure compliance with industry standards.

(VI) Three-Waste Treatment and Resource Utilization

1. Wastewater Treatment: Neutralization precipitation with lime milk (pH adjusted to 8-9, heavy metal precipitation rate >99%) and reverse osmosis membrane separation technology (sulfuric acid reuse rate >80%) are adopted;

2. Leaching Residue Utilization: 30%-40% of leaching residue can be added to produce non-fired bricks, or residual iron minerals can be recovered by magnetic separation.

II. Plant Construction Plan and Benefits

HJ GOLD BAY INVESTMENT (PTY) LTD plans to construct a sponge copper processing plant with an annual processing capacity of 100,000 tons of raw ore, expecting an annual output of 600 tons of copper metal equivalent. The project will create more than 5 million Namibian dollars in tax revenue for Namibia, provide over 100 employment and effectively solve the sales problem of low-grade copper ore for local small miners, achieving a win-win situation of economic and social benefits.

Hence, we are requesting your good office to write us a support letter that will inform the Ministry of Environment, Forestry and Tourism (MEFT), that the project will be developed in Karibib Industrial zone and that you support this important project that will help create jobs and reduce poverty.

Yours Sincerely,

Mr. Y. He

HJ Gold bay Investment (Pty) Ltd

…….