SHALI GROUP
STRATEGIC METAL DISCOVERY AND DEVELOPMENT

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REPORT:

BACKGROUND INFORMATION DOCUMENT FOR THE PROPOSED ONGOMBO COPPER PROJECT, KHOMAS REGION, NAMIBIA.

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1 BACKGROUND INFORMATION DOCUMENT

1.1 PURPOSE OF THIS DOCUMENT

Environmental Compliance Consultancy (ECC) has been contracted by Shali Group Holdings (Pty) Ltd to revise and update the environmental and social impact assessment (ESIA) for underground mining activities within EPL 5772, Khomas Region, Namibia.

The purpose of this Background Information Document (BID) is to provide Interested and Affected Parties (I&APs) a background to the proposed Project and to invite I&APs to register as part of the Environmental Social Impact Assessment (ESIA) process.

All those who register as an I&AP will be kept informed throughout the ESIA process. Registration provides a platform for participants to submit comments, concerns or recommendations regarding the proposed Project. This BID includes the following information:

- The proposed Project and location
- The necessity of the Project, benefits or adverse impacts anticipated
- The alternatives within the Project that will be considered and assessed
- How the ESIA process works
- The public participation process and how to become involved
- Next steps and the way forward

1.2 DESCRIPTION OF THE PROPOSED PROJECT

The Ongombo Project lies within the Matchless member of the Kuiseb Formation, a conspicuous assemblage of lenses of foliated amphibolite, chlorite-amphibolite schist, talc schist and metagabbro. This belt, up to 5km wide in the Otjihase area, stretches 350km east-north-eastwards in the Southern Zone of the Damara Orogen from the Gorob - Hope area towards Steinhausen, north of Omitara. There are general characteristics found in all deposits. The sulphide mineralization is found in “shoots” a few tens of meters up to 400m wide and several kilometres in length. At least 13 deposits are known, the largest of these occur in three distinct clusters at Gorob/Hope in the south and Matchless and Otjihase/Ongombo/Ongeama in the north.

The Project will be a low grade and low tonnage operation, therefore the mine will be a low-cost operation and designs will be directed at keeping operating and capital costs to a minimum. The target production rates to be evaluated are set for a 40ktpm operation. The deposit is relatively small yet extends on strike and will have a short life compared to other Southern African projects and as such the infrastructure and cost base will be designed accordingly.

The proposed Project is in Central Namibia near the Windhoek District, 1.5km northeast of the Otjihase Mine and 45km from Windhoek in the Khomas Region. The property can be accessed from Windhoek, towards Gobabis on the (B6) and then by gravel road (M53). The area under licence measures 15.7km from north to south and 12.5km from east to west and covered an area of 12,092Ha as set out in Figure 1.

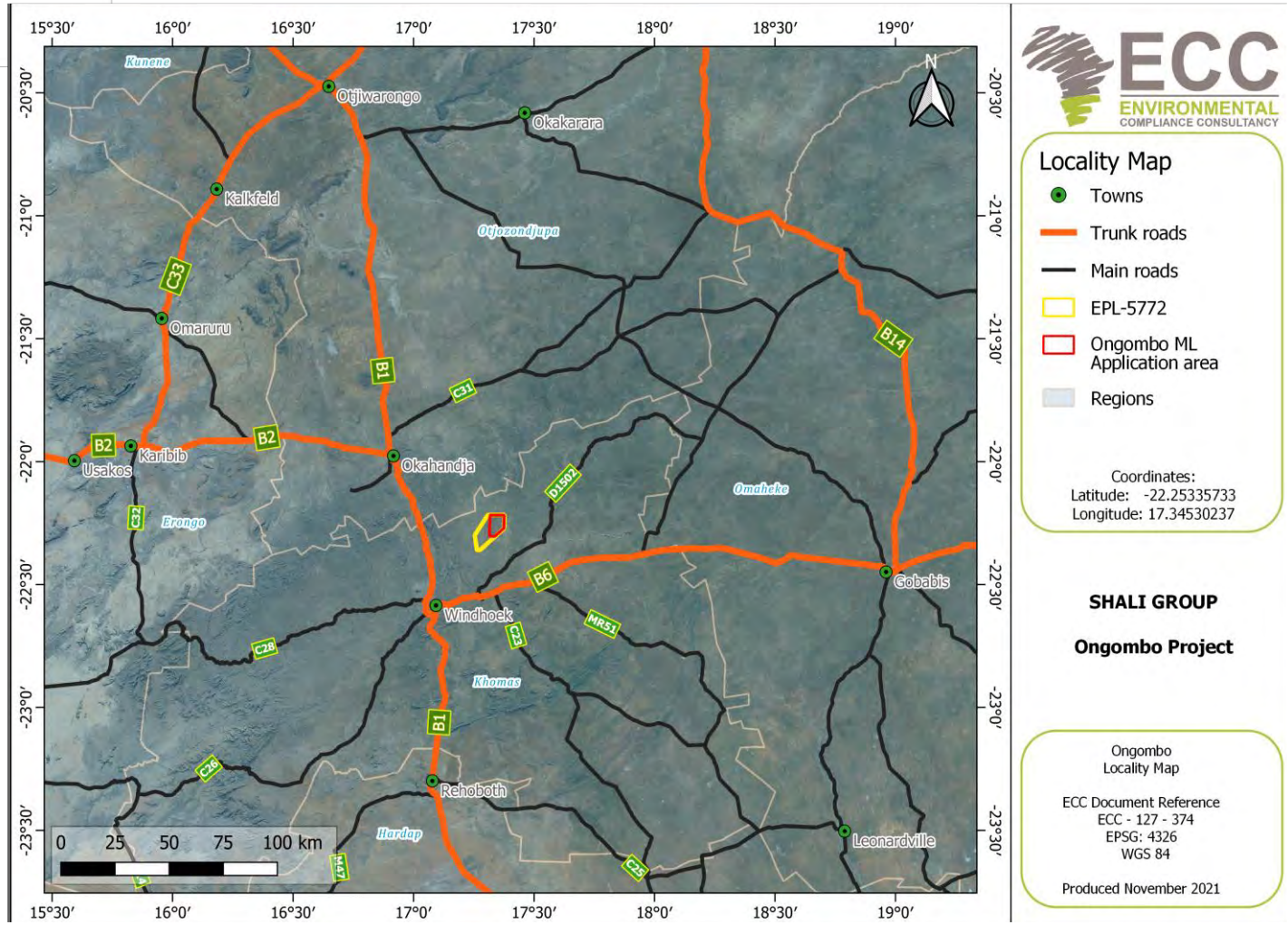

Figure 1 – Site Locality Map

In terms of Section 32 (1) of the Environmental Management Act, No. 7 of 2007, ECC has determined that the Ministry of Mines and Energy (MME) is the competent authority for the proposed mining Project. The mining activity triggers the listed activities as per the Environmental Management Act Regulations. The relevant activities list is provided in the BID.

1.3 PROJECT LOCATION AND ENVIRONMENT WITHIN THE MINING LICENCE

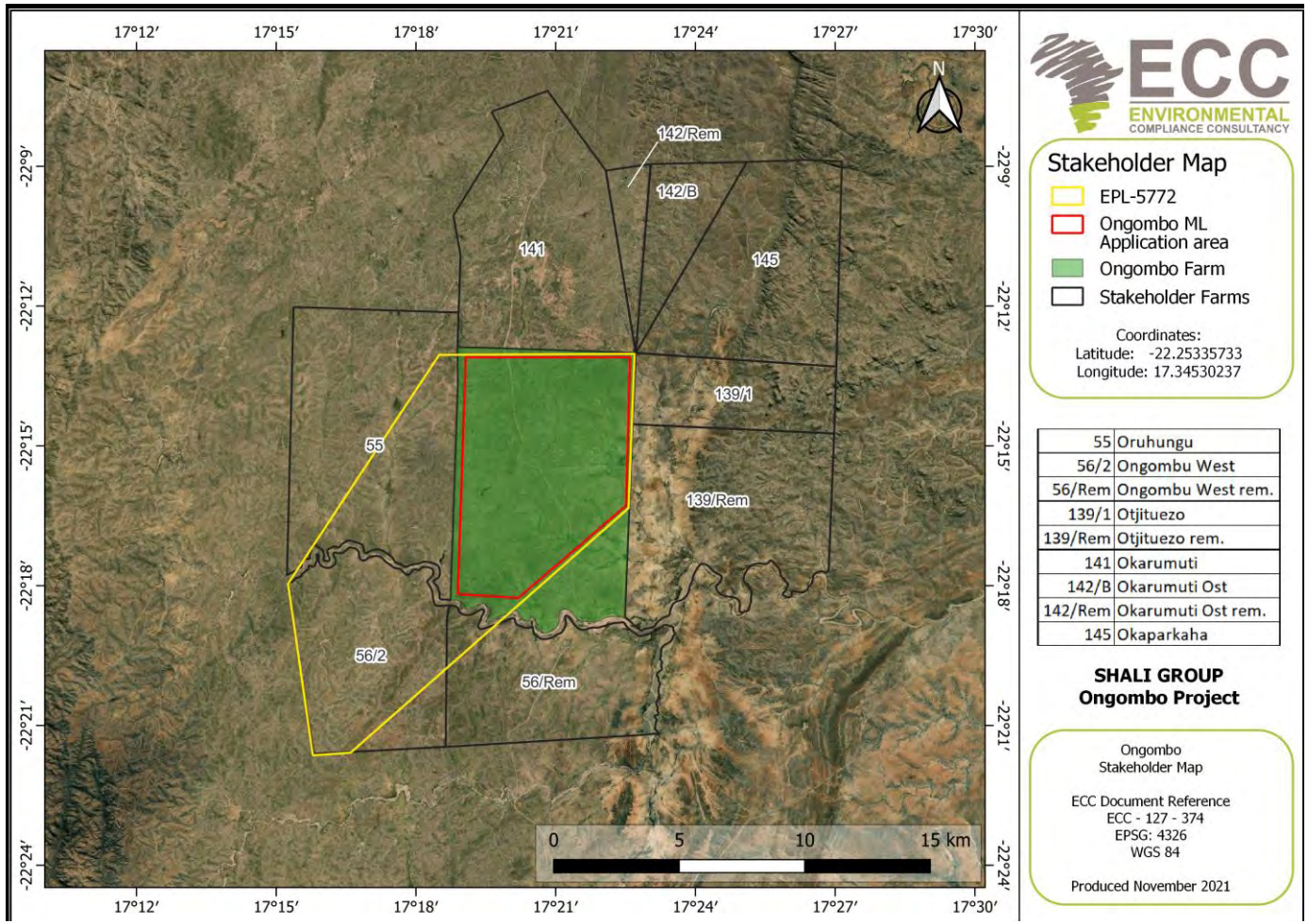

Figure 2 – ESIA study area and surrounding neighbours

1.4 EXPLORATION AND PROJECT PROGRESS

Exploration and resource development of the Ongombo Copper Project to date has defined the Ore Reserves and Mineral Resources as set out in Table 1and Table 2

Table 1 – Resource definition (0.6% Cu cut-off)

Resource Category	In situ tonnes and grades at 0.6% Cu cut-off					
	Tonnes (Millions)	Cu (%)	Ag (g/t)	Au (g/t)	Density (t/m^3)	Sulphur (%)
Measured*						
Central shoot	1.17	1.83	9	0.32	3.1	7.49
Est/Ost	-	-				
Indicated*						
Central shoot	0.57	1.92	10	0.32	3.07	8.3
Est/Ost	4.97	1.4	7	0.32	3.12	8.8
Total measured and indicated	6.71	1.52	8	0.32	3.11	8.5
Inferred						
Central shoot	0.93	1.43	7	0.32	2.94	8.7
Est/Ost	2.82	1.79	9	0.32	3.1	11.9
Total	3.75	1.70	9	0.32	3.06	11.1
*Measures and indicated Mineral Resource for Cu and Ag only. Au is inferred.						

Table 2 - Resource definition (1.0% Cu cut-off)

Resource Category	In situ tonnes and grades at 0.6% Cu cut-off					
	Tonnes (Millions)	Cu (%)	Ag (g/t)	Au (g/t)	Density (t/m^3)	Sulphur (%)
Measured*						
Central shoot	1.11	1.89	10	0.32	3.10	7.6
Est/Ost	-	-				
Indicated*						
Central shoot	0.57	1.93	10	0.32	3.07	8.3
Est/Ost	3.8	1.57	8	0.32	3.14	9.6
Total measured and indicated	5.48	1.67	9	0.32	3.12	9.1
Inferred						
Central shoot	0.66	1.69	9	0.32	2.94	8.8
Est/Ost	2.36	1.98	10	0.32	3.11	12.7
Total	3.02	1.92	10	0.32	3.07	11.9
*Measures and indicated Mineral Resource for Cu and Ag only. Au is inferred.						

1.5 NEED FOR THE PROJECT

New mining activities could contribute to the national and local economies and may have a positive impact on the country's economy. Namibia's economy depends largely on mining. Should the Project prove economically viable, the Namibian economy can expect benefits from revenues during the construction phase, royalties and taxes during the life of mine (LoM) and a positive contribution towards employment.

Between 20 and 80 people will be employed during construction. Approximately two mining crews of 14 personnel for the operational phase will be required with support staff and management it is expected that the total staff complement will be between 50 and 80 people, providing jobs and livelihoods for them, and their families, for the anticipated life of mine between 12-14 years.

A complete mining crew of 14 personnel will comprise of a miner, a team leader, two blasting assistants, a drill rig operator, a drill rig assistant, one roof bolter operator, one roof bolter assistant, one LHD operator, two truck drivers and three face preparation assistants.

1.6 CONSTRUCTION AND OPERATIONAL PHASES

Construction activities will include the following:

- Establishment of linear infrastructure such as access roads, power lines and pipelines;
- Bulk earthworks, civil and steel works in order to prepare and establish the administrative infrastructure, processing plant, fencing and related mining required infrastructures (e.g. workshops HME parking);
- Construction of required pond(s) and tailings storage facility; and
- Construction of conveyor belt for underground mining activities.

Figure 3 depicts the proposed site layout and Figure 4 indicates the planned proposed mining approaches for the Project.

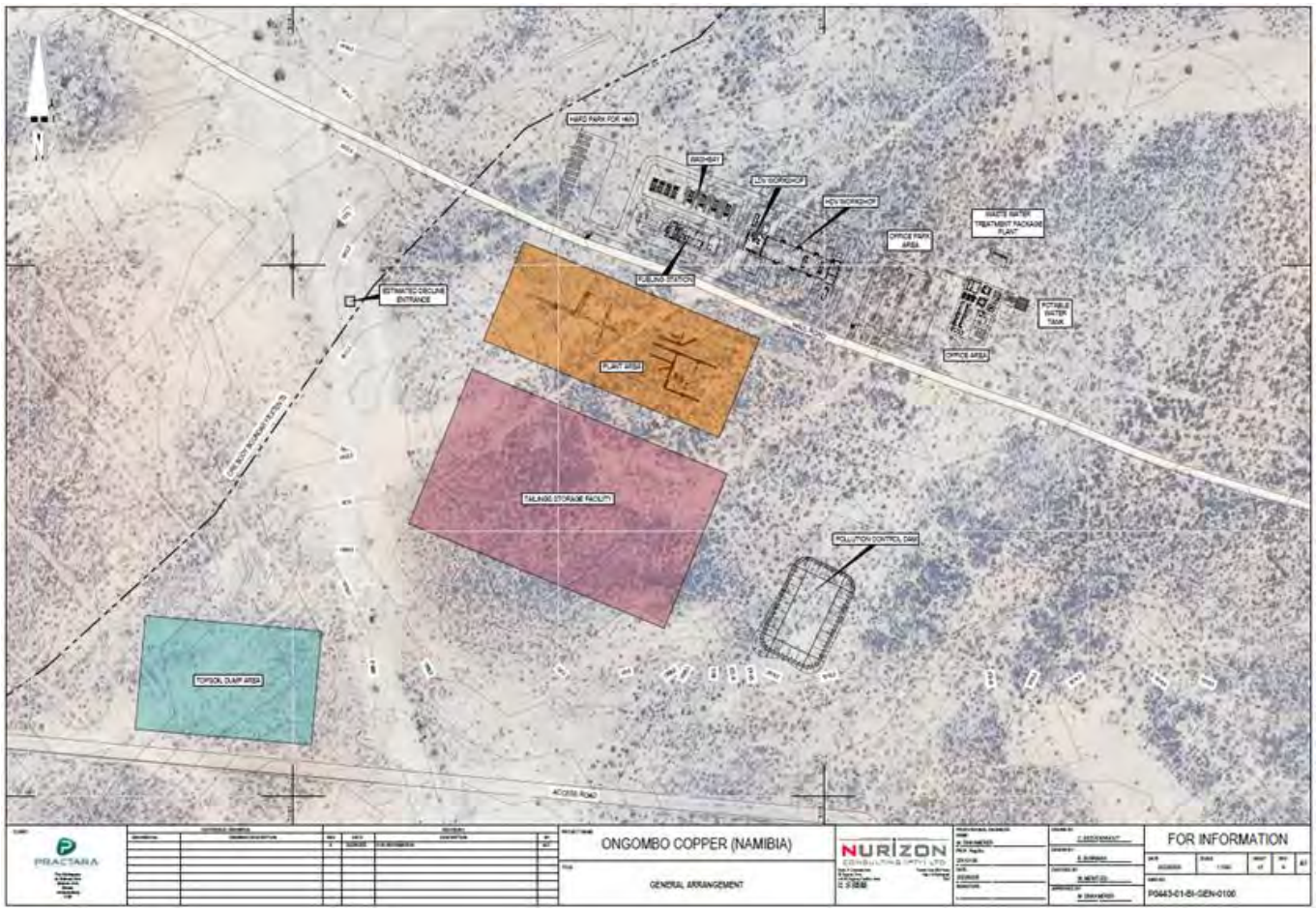

Figure 3 - Proposed site layout for the Ongombo Copper Project

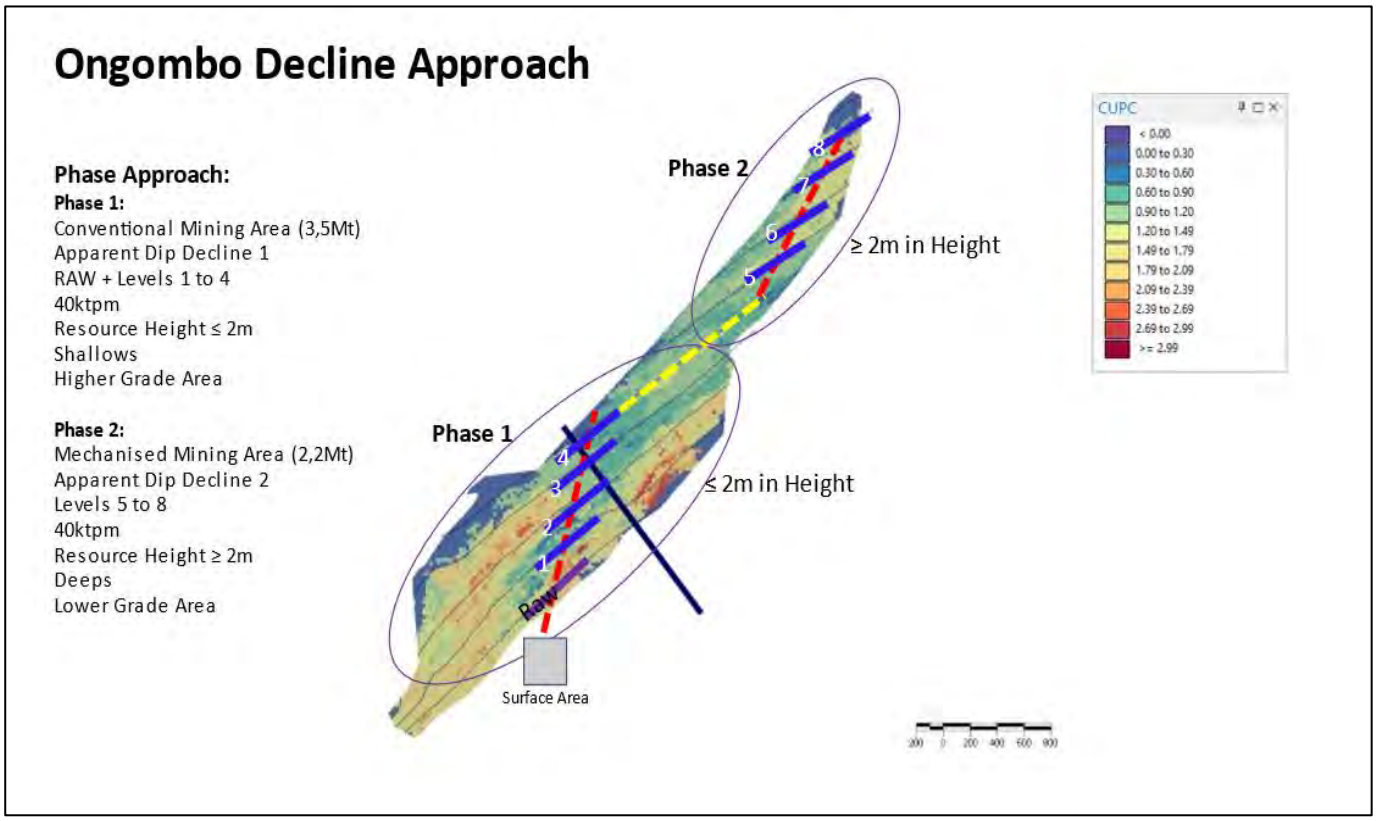

Figure 4 - Proposed decline mining approach for Phase 1 and Phase 2 of the Ongombo Copper Project

The mineral resource for the Project is made up of four areas, the central block, east block, east central block, and the east deeps block. The first three blocks are thin (<2m thick) in nature, while the fourth block is wider potentially being more than 3m but less than 5m thick. Due to the difference in the seam heights of the ore bodies, two mining methods are envisaged: conventional stoping using pneumatic rock drills and scrapers, and bord and pillar mining. Options of both breast and dip mining were considered for extraction of the three areas with breast mining being the preferred mining method as it is possible to establish mining quicker with less preproduction development.

The production rate planned from the mine is 40ktpm (40 000 tons per month), this production rate has been set by matching the production rate from stopes to the development rate and the consequent time taken to open up new raise lines for stoping. The main footwall development is planned on an advance rate of 60m per month. The spacing between raises is planned at 200m, resulting in a maximum scrape distance of 100m in the strike gully.

Support structures will be developed for the portals, whereby a temporary box-cut will be created to a depth where the highwall cam be undercut to go underground. Support structures include the following:

- 4.5m long by 38t pre-tensioned full column grouted cable anchors into the bench face;
- 1.5m long grouted roofbolts with the spacing of the support depending upon the ground conditions encountered; and

- Steel fibre or mesh reinforced shotcrete.

Bord and Pillar mining is planned for the deeper and wider sections of the eastern shoot utilising 6m wide bords to a height between 3m and 5m with 7m pillars. Bord and Pillar mining is used in deposits dipping at maximum 15° and is ideally suited for thicknesses between 2m and 5m. Haulage ramps are mined diagonally against the dip of the deposit/orebody at shallow enough slopes to utilise trackless equipment.

Equipment considered for the operation must be appropriate to the stope size of the deposit. Medium sized equipment is planned to be used which includes the following:

- Jumbo drill/s, single or twin boom
- Haul trucks
- Light delivery/duty vehicles (LDVs)
- Charge up vehicles
- Long hole drills
- Loader or scoop
- Personnel carrier

Ventilation is always a concern with underground mining activities; therefore ventilation will be provided to supply fresh air for human respiration and to dilute and remove pollutants in the underground workings. In the case of Ongombo, the principal pollutants will be diesel exhaust fumes, and dust generated from mining. As the mine is shallow, all heat made in the workings as well as that generated by diesel equipment can be removed by adequate ventilation.

The objective of the preliminary plant design is to minimize capital and operating costs and propose a flow sheet that is simple and capable of recovering copper and pyrite from the Ongombo deposit.

The flowsheet option proposed is based the flotation operation at Otjihase Mine. The optimum process route may be established on completion of test work and during the next study phase.
Mineralised waste will be produced in the form of both waste rock from the mining activities and tailings from the processing activities. The location, placement, handling, and storage of the mineralised waste will be determined based on the site alternatives being considered and the mine waste characterisation test work that will be completed as part of the impact assessment phase.

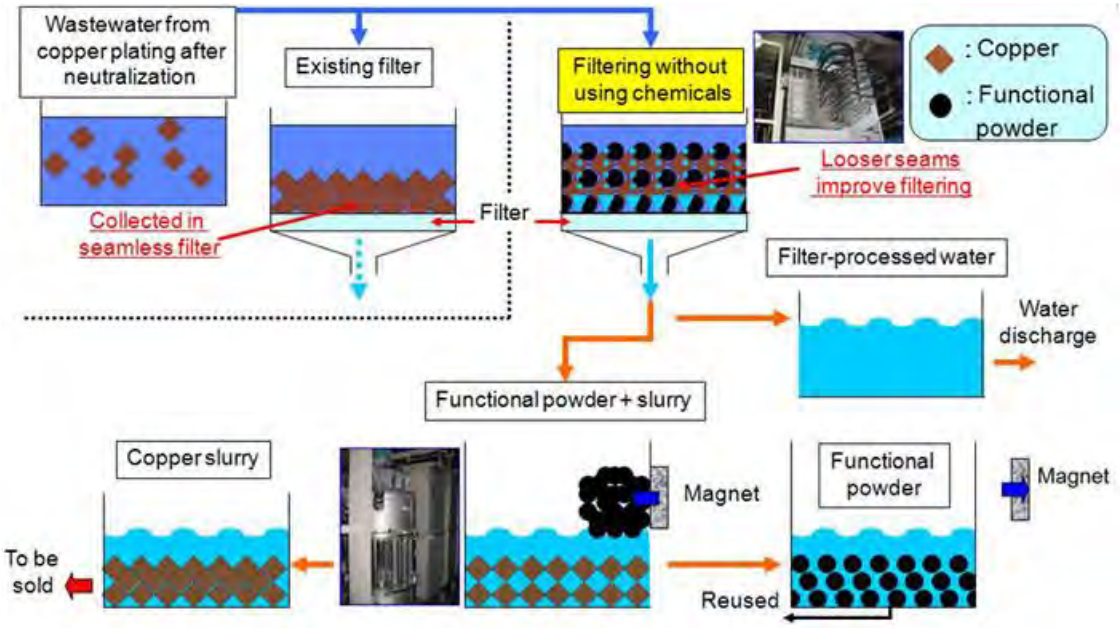

Figure 5 - Typical Copper Process Flow

2 CONSIDERATION OF ALTERNATIVES

Best practice environmental assessment methodology calls for consideration and assessment of alternatives to a proposed Project. During the assessment phase, alternatives will be considered and assessed. The alternatives will aim to optimize designs and processes to reduce potential impacts. Some aspects where alternatives may be required could include:

- Different types of technology or operation;
- Access;
- Mining methods such an open pit mining; and
- Processing off site at an established mining site.

3 THE ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT PROCESS

The ESIA for the proposed Project is being conducted by ECC and will be undertaken in terms of the Environmental Management Act, 2007 and its regulations. The process followed for this ESIA is set out in the flowchart in Figure 6.

ECC has been contracted by Shali Group Holdings (Pty) Ltd, as the independent Environmental Assessment Practitioner (EPA) to facilitate the whole ESIA process. Prior to the start of the proposed Project, an environmental clearance certificate is required in terms of the Environmental Management Act, 7 of 2007 and the associated EIA Regulations.

A final decision relating to the above-mentioned application will be made by Ministry of Environment, Forestry and Tourism (MEFT): Department of Environmental Affairs (DEA).

The related environmental process will include:

1. Screening phase (completed).
2. Scoping phase which includes baseline studies and the development of the Terms of Reference (ToR) for the ESIA (initiated).
3. Assessment Phase which includes impact prediction and evaluation of alternatives, assigning mitigation measures and developing monitoring and conceptual rehabilitation plans. This phase culminates in the drafting of the ESIA report and Environmental Management Plan (EMP) and submission to the appropriate competent authorities (future phase).

The main objectives of the ESIA are to:

a) Provide information describing the proposed Ongombo Copper Project and associated activities.
b) Provide an independent environmental and social assessment of the activities associated with the proposed Project.
c) Develop management and mitigation measures associated with any identified potential impacts where necessary.

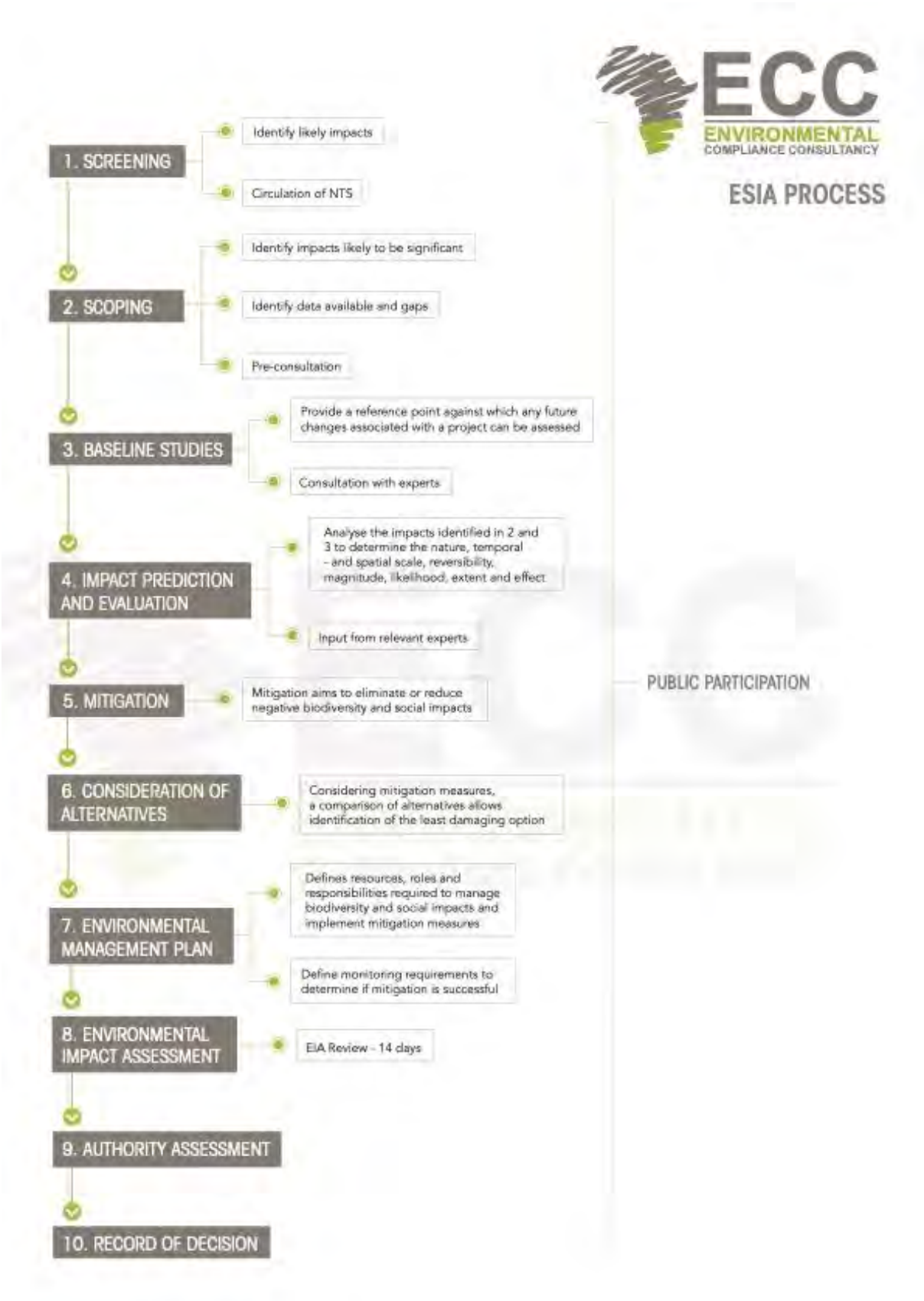

Figure 6 - Flowchart of the environmental and social assessment process

A review of the planned project was undertaken and the screening findings against the listed activities was conducted; the findings of which are summarised in Table 3.

Table 3 – Listed activities triggered by the proposed project

LISTED ACTIVITY	MINING ACTIVITY
ENERGY GENERATION, TRANSMISSION AND STORAGE ACTIVITIES The construction of facilities for: (1a) The generation of electricity. (1b) The transmission and supply of electricity.	- The Ongombo Project will need to generate and or transmit electricity for its operations. - It is very likely that the proposed Project will connect to the national power grid supplied by NamPower. - Alternatively, the Proponent may possibly consider developing a renewable energy plant (i.e. solar) for the generation of supplementary power. - Power generated by renewals if any, will be used to supply the proposed Ongombo project, and potential surplus could be redirected into the national grid.
WASTE MANAGEMENT, TREATMENT, HANDLING, AND DISPOSAL ACTIVITIES (2.1) The construction of facilities for waste sites, treatment of waste and disposal of waste. (2.2) Any activity entailing a scheduled process referred to in the Atmospheric Pollution Prevention Ordinance, 1976. (2.3) The import, processing, use and recycling, temporary storage, transit or export of waste.	- The Project will require waste sites for the disposal of mineralised and non-mineralised waste. Hazardous waste may be generated by the operation. - Facilities for the disposal of waste will need to be constructed. - In terms of the Atmospheric Pollution Prevention Ordinance Act, the bulk storage and handling of mineralised or metallic ore on waste dumps designed to hold 100 000 metric tonnes or more, is defined as a scheduled process.
MINING AND QUARRYING ACTIVITIES (3.1) The construction of facilities for any process or activities which requires a license, right or other form of authorization, and the renewal of a license, right or other form of authorization, in terms of the Minerals (Prospecting and Mining Act), 1992. (3.2) Other forms of mining or extraction of any natural resources whether regulated by law or not.	- This listed activity infers the provisions of the Minerals (Prospecting and Mining) Act 33 of 1992. The very nature of the Project is mining, which therefore triggers this listed activity.

LISTED ACTIVITY	MINING ACTIVITY
(3.3) Resource extraction, manipulation, conservation and related activities.	
FORESTRY ACTIVITIES (4.) The clearance of forest areas, deforestation, afforestation, timber harvesting, or any other related activity that requires authorisation in terms of the Forest Act, 2001 (No. 12 of 2001) or any other law.	- Vegetation clearing will be required for site construction and infrastructure establishment. - During operations, vegetation clearing will be required as the Project develops.
WATER RESOURCE DEVELOPMENT (8.1) The abstraction of ground or surface water for industrial or commercial purposes. (8.2) The abstraction of groundwater at a volume exceeding the threshold authorised in terms of the law relating to water resources. (8.4) Construction of canals and channels, including the diversion of the normal flow of water in a riverbed, and water transfer schemes between water catchments and impoundments. (8.5) Construction of dams, reservoirs, levees, and weirs. (8.6) Construction of industrial and domestic wastewater treatment plants and related pipeline systems. (8.8) Construction and other activities in watercourses within flood lines. (8.9) Construction and other activities within a catchment area.	- Ground and surface water may be abstracted to support the operation. - Dewatering underground workings will be required to ensure safe mining operations. -The sourced groundwater may likely exceed the threshold authorised in terms of the Water Act, and therefore permits for abstraction must be sourced. - A pond may be constructed to provide water for the process plant. - Pipeline systems will be used to transport water or slurry within the site.
HAZARDOUS SUBSTANCE TREATMENT, HANDLING AND STORAGE (9.1) The manufacturing, storage, handling or processing of a hazardous substance defined in the Hazardous Substances Ordinance, 1974. (9.2) Any process or activity which requires a permit, licence or other form of authorization, or the	- The mining operations and proposed process plant triggers this activity, as both fuel and hazardous substances are required for mining and processing. - Bulk fuel may be required for onsite generation of electricity and for refuelling the mining fleet. - Consumer installation certificates are required for bulk fuel storage and dispensing.

LISTED ACTIVITY	MINING ACTIVITY
modification of or changes to existing facilities for any process or activity which requires amendment of an existing permit, licence or authorization or which requires a new permit, licence or authorization in terms of a governing the generation or release of emissions, pollution, effluent or waste. (9.4) The storage and handling of a dangerous goods, including petrol, diesel, liquid petroleum gas or paraffin, in containers with a combined capacity of more than 30 cubic meters at any one location.	- Hazardous reagents will be used within the copper extraction and processing plant.
INFRASTRUCTURE 10.1 The construction of: (j) masts of any material or type, and of any height, including those used for telecommunication broadcasting and radio transmission.	- Powerlines and telemetry for water and tailings pumping will be required. - Radio and telecommunication towers will be required for the site.

3.1 SCOPING

The scoping phase is directed towards defining the range and nature of anticipated potential impacts that may have significance to the biophysical and social environments at the scale of the proposed operations. The appropriate available data and the literature are identified forming the starting point for assessment of the required baseline and specialist studies that may be required for assessment of the Project impacts.

3.2 BASELINE STUDIES

For the proposed Project, baseline information will be obtained through the existing studies as well as any extra specialist studies due to any gaps identified.

The ESIA will focus on the environmental receptors that could be affected by the proposed Project. ECC will also engage with stakeholders, I&APs and the Proponent to seek input into the assessment. The baseline studies chapter is broken into three sections, the baseline context, environmental (physical and biological) and social (includes economic).

Desktop studies a well as all available field surveys and specialist studies from the Project area will be used to help define the baseline. These studies also give a further indication whether there are any local or regional future developments that could impact the Project or vice versa.

Lastly the socio-economic section of the baseline studies helps to gain information on the governance, demographic profile, social stratification (employment, education, crime, infectious disease), occupation and livelihood (economic activities, occupations in study area, employment rates), land patterns (noise and vibrations) and access to services (drinking water, sanitation, healthcare facilities etc.).

3.3 TERMS OF REFERENCE

Based on the stakeholder engagement through the defined public consultation process including any written correspondence and the baseline studies, the ToR for the impact assessment will be finalised and confirmed with the Environmental Commissioner.

3.4 STAKEHOLDER ENGAGEMENT

The public and key stakeholders receive invitations to register as I&APs. After the presentation of the proposed Project and ESIA process through the defined public consultation process, a period of time for input will be granted for the Environmental Assessment Practitioner (EAP) to receive any additional concerns or comments raised from registered I&AP's. All feedback from the initial public consultation process will be incorporated into the scoping report.

3.5 SCOPING REPORT

The scoping report will be drafted and made available to the registered I&APs for comment before being submitted to the competent authority and MEFT. The scoping report will contain a description of the Project and the bio-physical and socio-economic environments, the specialist baseline studies, stakeholder engagement report and the terms of reference for the ESIA.

3.6 ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT PHASE

3.6.1 POTENTIAL IMPACTS

The potential social and economic impacts should be considered with due regard to the nature and scale of the proposed operations its location within the broader ecological, commercial and social environments. The potential environmental and social impacts that have been anticipated may include the following:

- Heritage impacts
- Power and water supply
- Water use, contamination and management
- Waste management

- Visual impacts
- Biodiversity impacts
- Socio-economic and social impacts; such as job creation, staff housing and accommodation
- Potential air quality pollution impacts
- Noise, vibration and blasting impacts

3.6.2 DRAFT ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

An EMP shall be developed for the proposed Project setting out auditable management actions for the Project to ensure careful and sustainable management measures are implemented for their activities in respect of the surrounding environment and community. The EMP becomes the legally binding commitments upon approval of the EMP and issuing of the environmental clearance certificate. Environmental clearance certificates are issued for a period of 3 years and renewal is subject to compliance with the provisions and conditions of the environmental clearance certificate.

4 THE WAY FORWARD – PUBLIC PARTICIPATION

Public participation is an important part of the ESIA process. It allows you, the public and stakeholders to raise concerns or provide valuable local environmental knowledge that can benefit the assessment process as well as aid the planning process for the scoping phase of the defined assessment process. At this phase ECC will perform the following:

- Prepare and submit the application for the environmental clearance certificate in the prescribed manner.
- Identify relevant key stakeholders, authorities, municipalities, environmental groups and interested or affected members of the public, hereafter referred to as I&APs.
- Carry out a public consultation process in accordance with Regulation 21 of the EMA 2007 including:
    - Distribute the BID for the Proposed Ongombo Copper Project (this document)
    - Advertise the environmental application and call for registration of I&APs in two national newspapers.
    - Open an I&AP register, record all comments of I&APs and present such comments, as well as responses provided by ECC, in the comments and responses report, which will be included in the scoping report that shall submitted with the application.
- Prepare a scoping report and provide same to registered I&APs for comment.
- Submit the scoping report and the I&AP comments to the competent authority and Environmental Commissioner for a record of decision.

Your request for registration as an I&AP as well as any comments on the BID or Project must be submitted in writing and can be emailed using the details in the contact us section below. Registration as an I&AP for the project can be completed online on ECCs website on the projects page, or by using this link: https://eccenvironmental.com/projects/

Registration as an I&AP should be submitted on or before **31 May 2022**.

We welcome any enquiries regarding this document and its content. Please contact:
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www.eccenvironmental.com
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