



## National Heritage Council of Namibia

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### OFFICE OF THE DIRECTOR

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#### APPLICATION FOR CONSENT

(Sections 53(7) and 55(8) of the National Heritage Act, 2004 (Act No.27 of 2004))

#### CONDITIONS AND INSTRUCTIONS

1. The receipt issued serves as a reference when making enquiries.
2. Works and activities applied for under section C, of this application, is subject to an environmental impact assessment at the applicant's expense.
3. Instructions for completion:

**Applicants must complete the relevant parts of this application.**

#### A. APPLICANT'S DETAILS

1. Name and address of applicant

**Ludi Namibia Mining and Investments (Pty) Ltd,  
10 Babs Street Ludwigsdorf  
P. O. Box 210  
WINDHOEK NAMIBIA**

2. Full name and designation of the person in charge of undertaking the works or activities:

**Ms. Mia Liu  
Ludi Namibia Mining and Investments (Pty)Ltd.  
P. O. Box 210 Windhoek, NAMIBIA  
Mobile: +264 81 358 6938  
Email: [mialiu1212@hotmail.com](mailto:mialiu1212@hotmail.com)**

3. Full name and personal details of researcher, contractor or person in charge of the proposed works or activities:

#### ENVIRONMENTAL CONSULTANTS

**Dr Sindila Mwiya (Environmental Assessment Practitioner- EAP)  
Risk-Based Solutions (RBS) CC  
41 Feld Street Ausspannplatz, Cnr of Lazarett and Feld Street  
P. O. Box 1839, WINDHOEK, NAMIBIA, Tel: +264 - 61- 306058; Fax: +264 - 61- 306059,  
Mobile: + 264-811413229; Email: [smwiya@rbs.com.na](mailto:smwiya@rbs.com.na)**

## ARCHEOLOGICAL SPECIALIST CONSULTANT

Mr. Mowa Eliot Sibungo  
Trading as ESM Trading cc.  
Mobile: 0812066372  
Email: esmowa@gmail.com

4. Academic qualifications, skills, occupation and competencies of the person in charge mentioned under A2 above.

1. **Ms. Mia Liu is an employee of Ludi Mining and Investments (Pty) Ltd who work closely with the General and Mine Managers and is a qualified and experienced business person responsible for operations, administrative and logistics. She has experience in business operations and management of exploration and mining contractors.**
2. **Dr Sindila Mwiya is a qualified and experienced Environmental Consultant who was the Environmental Assessment Practitioner (EAP) for the project. Dr Sindila Mwiya has more than eighteen (18) years of practical field-based technical industry experience in Environmental Assessment (SEA, EIA, EMP, EMS), Energy (Renewable and Non-renewable energy sources), onshore and offshore resources (minerals, oil, gas and water) exploration / prospecting, operation and utilisation, covering general and specialist technical exploration and recovery support, Health, Safety and Environment (HSE) permitting for Geophysical Surveys such as 2D, 3D and 4D Seismic, Gravity and Electromagnetic Surveys for mining and petroleum (oil and gas) operations support, through to engineering planning, layout, designing, logistical support, recovery, production / operations, compliance monitoring, rehabilitation, closure and aftercare projects lifecycles.**
3. **Mr. Mowa Eliot Sibungo is a qualified and experienced Archaeologist and Heritage Specialist consultant responsible for archaeological contribution to the Environmental Impact Assessment (EIA) report for the ongoing marble mining activities in the Mining License (ML) No. 205 in Karibib District in Erongo Region. He holds a Bachelor of Education: Full Major in History, Geography and Environmental studies (UNAM 2008), a Master of Arts in Maritime Archaeology and History. (University of Bristol 2010) and ongoing PhD in Archaeology candidate (2018- 2020 University of Pretoria), South Africa.**

5. Previous permits issued in Namibia:

None

6. Period for which permit is required:

**The Consent is required for the duration of the ongoing exploration and mining operations within the Mining ML No. 205, preferable to be aligned with the Environmental Clearance Certificate (ECC), therefor valid for a period of three (3) years, renewable.**

7. Date by which permit is required: **March 2021**

### **B: WORKS OR ACTIVITIES**

15. Geographic location and address (farm, village, settlement, town, region, magisterial district, constituency, Global Positioning System coordinates) of the site, protected place or protected object where works or activities are proposed:

**Ludi Namibia Mining and Investments (Pty) Ltd (the Proponent) holds minerals rights under the Mining License (ML) No. 205. The ML 205 is situated in the Karibib District, Erongo Region and was granted on the 19/03/2019**

and will expire on the 18/03/2029. The ML 205 covers a total area of 502.796 Ha (Figs. 1 and 2). The following is the summary of the key components of the ongoing mining operations in ML 205:

1. **Commodity Group:** Dimension stone, marble.
2. **Size of Deposit:** 32 million cubic meters and will continuous ongoing exploration activities, this amount will increase by fourfold.
3. **Type/s of Marble:** Grey- white and Black marble.
4. **Estimated life of mine:** 25 years and beyond.
5. **Socioeconomic benefits / Project Motivation:** Employment opportunities, value addition, in-situ potential underground minerals resources and high beneficiation opportunities in Karibib / Walvis Bay and additional socioeconomic benefits in terms of capital investments, license rental fees, royalties payable to Government, export earnings, foreign direct investments, and various taxes payable to the Government.
6. **Mining Technique:** Quarry, with a diamond wire saws and stone cutting machines used for cutting out the 5 m<sup>3</sup> rectangular blocks.
7. **Processing:** Further processing of the mined-out marble blocks will take place either in Karibib or Walvis Bay. At the processing plant, a giant saw is used to cut up the marble into more manageable pieces.
8. **Sources of Water Supply:** Groundwater from a local borehole to be drilled.
9. **Sources of Electricity Supply:** Diesel generator and solar.
10. **Mining and operational equipment:** 2 Loaders, 2 Excavators, 4 Generators, 4 Air Compressors, 8 Wire Saws, 8 Stone Cutting Machine, 16 Water Tanks, 6 Wendy Houses and 10 Containers, and.
11. **Waste Rock: Waste rock will be used for mine rehabilitation.** The effective capacity of the waste rock facility will vary but is likely to be in range of 100 × 90 m<sup>3</sup>, calculated with 0.85 as capacity utilization coefficient of waste rock.



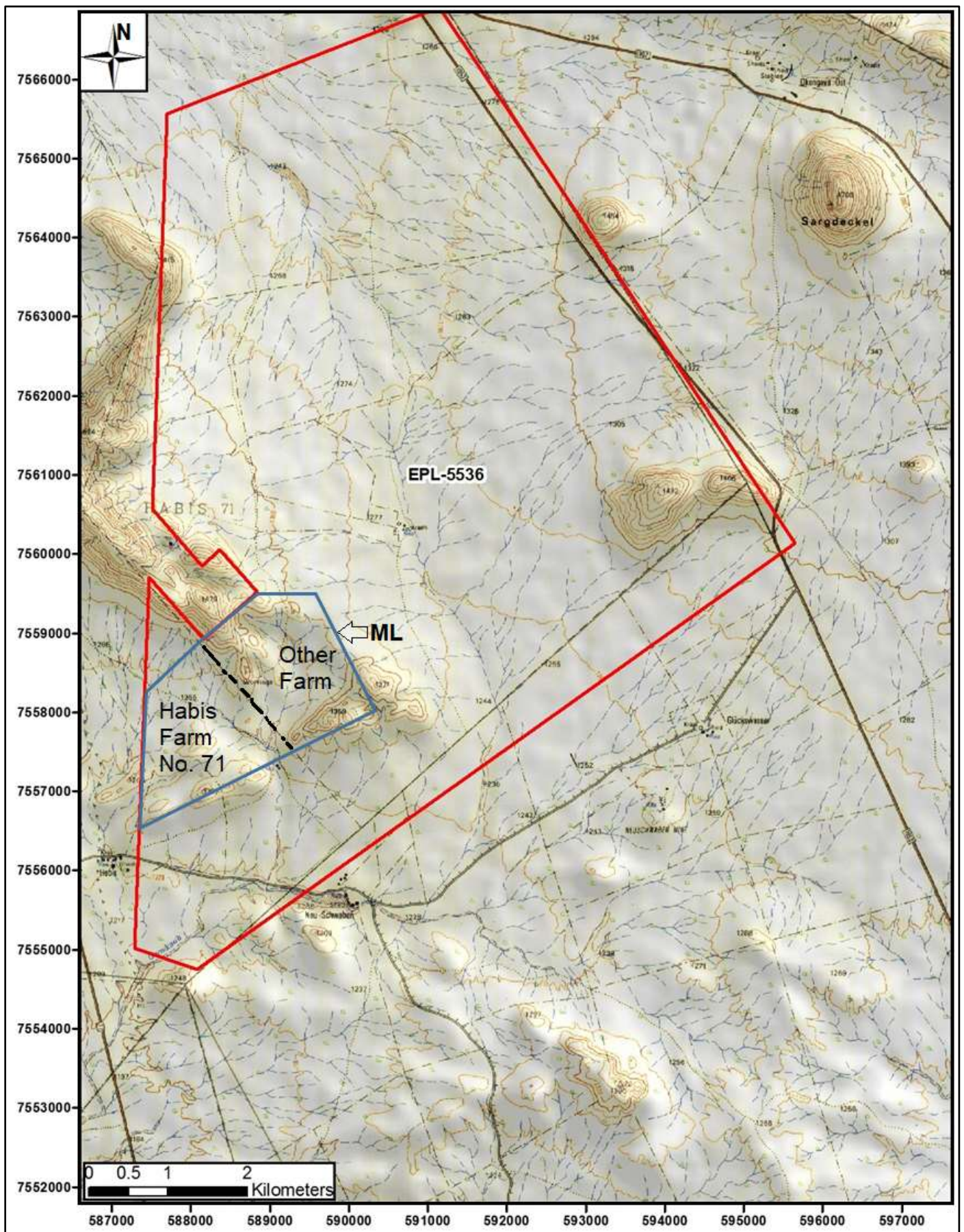


Figure 1: Detailed location of the ML 205 falling within the EPL 5536 and showing the two (2) privately owned farms covered by the ML 205 Area (Data Source: Geological Survey of Namibia).



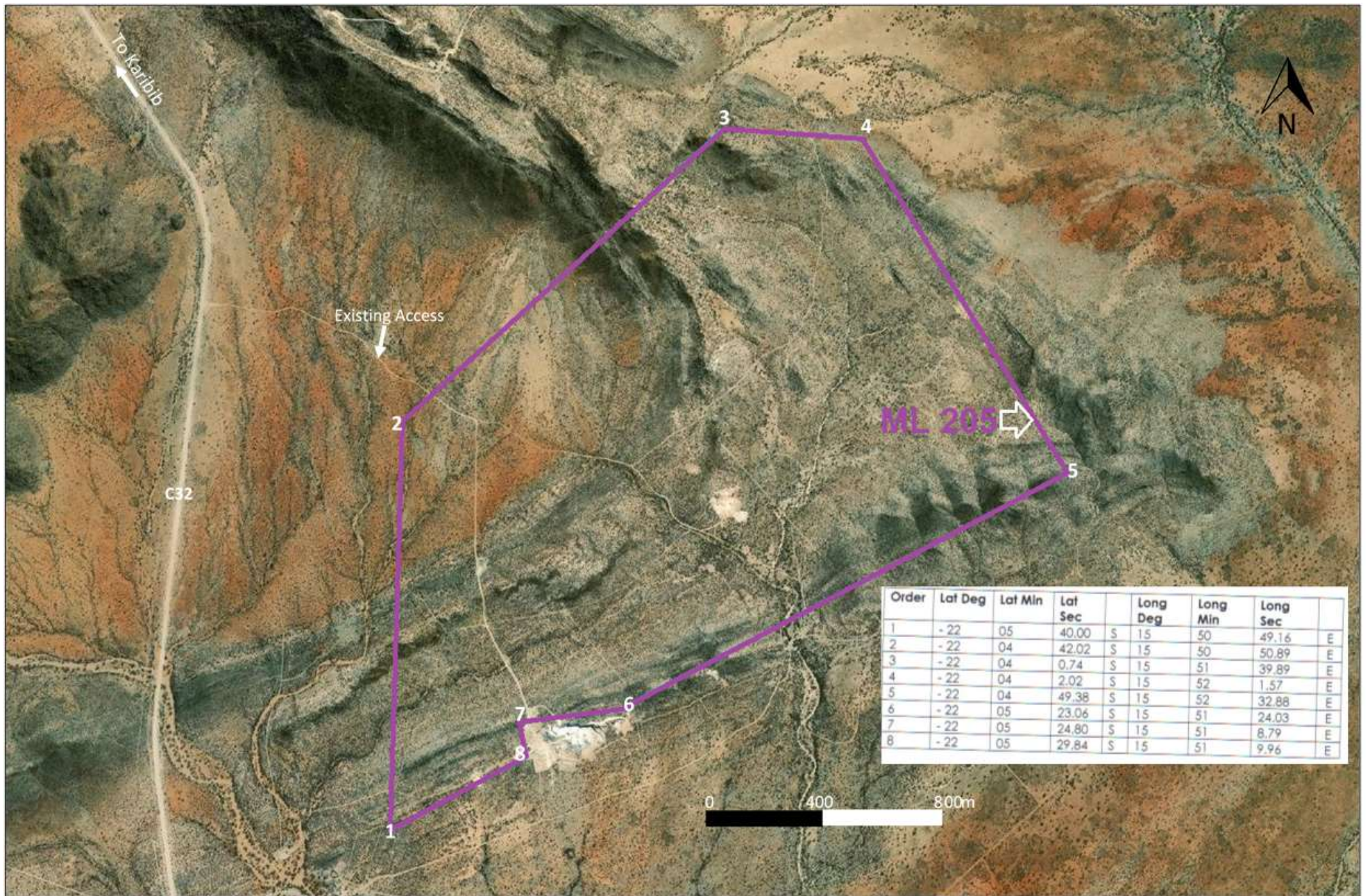


Figure 2: Detailed location of the 502 Ha ML 205 area with respect to the existing access roads and quarries / excavations in the area (Source: Google Earth, 2021).



16. Detailed description of the nature of works or activities for which the permit is applied for: (e.g. excavation, construction, filming etc) (*Attach additional and supporting information if the space on the form is insufficient.*)

The following is the summary of the key components of the ongoing marble mining and exploration operations:

**1. Exploration Undertaken / Ongoing to expand the delineated resources**

- (i) Initial desktop exploration activities (no field-work undertaken).
- (ii) Regional reconnaissance field-based mapping and sampling activities.
- (iii) Initial local field-based mapping and sampling activities.
- (iv) Detailed local field-based activities such as local geological mapping, geochemical mapping, and sampling, trenching and drilling of closely spaced boreholes and bulk sampling.
- (v) Detailed geological mapping and sampling including approximately 6,500 m of drilling completed.
- (vi) Hydrogeological survey.
- (vii) Mineralogy test work completed.
- (viii) Environmental Assessment (EA) covering Scoping and Environmental Management Plan (EMP) to support the application for Environmental Clearance Certificate (ECC) for the current ongoing exploration activities leading the preparation of the feasibility report and application for a Mining License (ML) completed ECC for exploration issued by the Office of the Environmental Commissioner in the Ministry of Environment, Forestry and Tourism (MEFT).
- (ix) Environmental Assessment (EA) covering Scoping, Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) to support the application for Environmental Clearance Certificate (ECC) for the Mining License application (this EIA), and.
- (x) Preparation of the feasibility report supported by technical reports inclusive of the ore reserve and resources, geotechnical engineering, documents detailing technical viability, mine planning, forecasts of estimated expenditure and financial feasibility studies, with applicable plans (completed).

**2. Project Planning, Design and Preconstruction Undertaken**

The project planning, design and preconstruction stage of the marble mine / quarry and supporting infrastructure covered the following components:

- Preparation of plans, field-based surveying, and layouts.
- General site clearing of the pit area, administration block, waste rock, supporting infrastructure such as sorting / storage yard, workshop, water, electricity and other related infrastructures.
- Access roads clearing and upgrading as maybe required.

- Top soil removal, levelling, and storage / stockpiling of potential key resources materials.
- Development of the temporary construction camp, and.
- Installation of campsites, offices, workshops, storage facilities.

### **3. Extracting the Marble (Mining)**

The marble mine layout covering the quarry, workshop, yard / storage/ sorting area, administration area and waste rock dumps are confined to the existing disturbed area as far as practically possible. Fig. 3 illustrates the mine and supporting infrastructure to layout. The selection of the mine support infrastructure areas (yard, workshop and administrative) has been carefully considered with respect to the already existing access and topographic low laying requirements for easy trucks access to the mining area. The mining technique to be used will involve the use of diamond wire saws and stone cutting machines to extract / mine 5m<sup>3</sup> rectangular blocks as illustrated in Fig. 4. The rectangular shape will make it easier to shape the marble into useful objects during further processing.

### **4. Ongoing and Final Rehabilitation**

Ongoing rehabilitation shall be undertaken as mining operations progresses. Areas where mining has been undertaken shall be rehabilitated and once the whole mining operations ceases, then the final rehabilitation shall be undertaken leading to the mine closure and aftercare stages. The following is the summary of the key actions that must be undertaken as part of the ongoing and final rehabilitation for the ongoing mining operations:

- (i) Before commencing with the construction or mining activities, the topsoil shall be removed from all affected areas and stockpiled and used for ongoing and final rehabilitation as maybe applicable.
- (ii) All structures shall be removed including concrete platforms and foundations unless they can be used for some other activities beyond the mine closure.
- (iii) All infrastructure shall be removed – pipelines, power lines, buildings, scrap metals etc..
- (iv) Shallow excavations shall be filled with waste rocks while deep excavation shall be secured including fencing the peripheral.
- (v) All compacted soils, such as roadways, sites beneath slabs, and stockpile areas shall be ripped to loosen soil if not required for other activities beyond the mine closure.
- (vi) Stormwater retention dams should be retained to trap runoff for use during the mine aftercare stage as well as for any other activities to be undertaken beyond mine closure, and.
- (vii) Rock waste shall be refilled in the excavated pit or trimmed off to resemble natural landforms and clad with waste rock or coarse rocks from the local ephemeral river channels or offcuts from the nearby quarries.



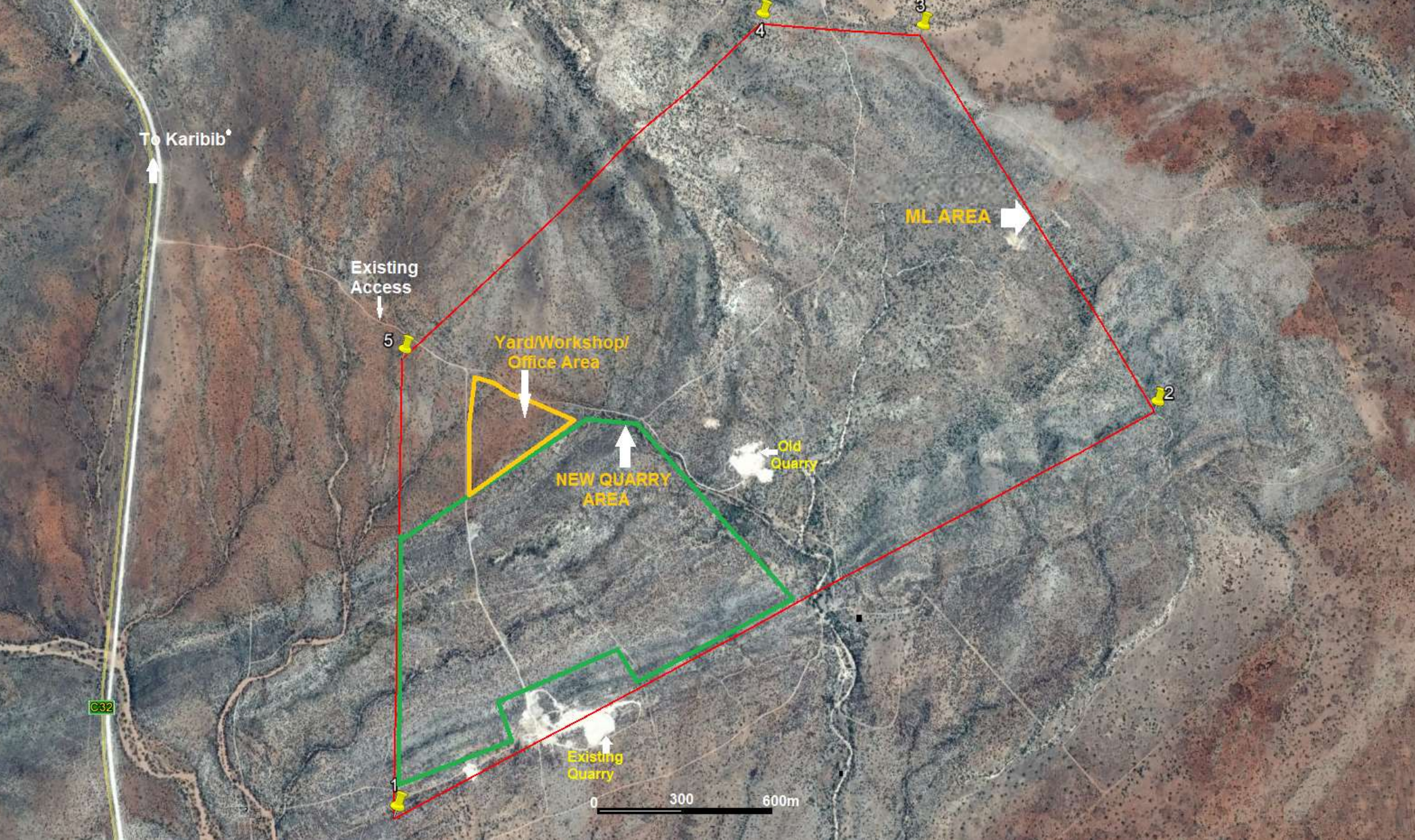


Figure 3: Marble mine / quarry layout (Source: Google Earth, 2017).



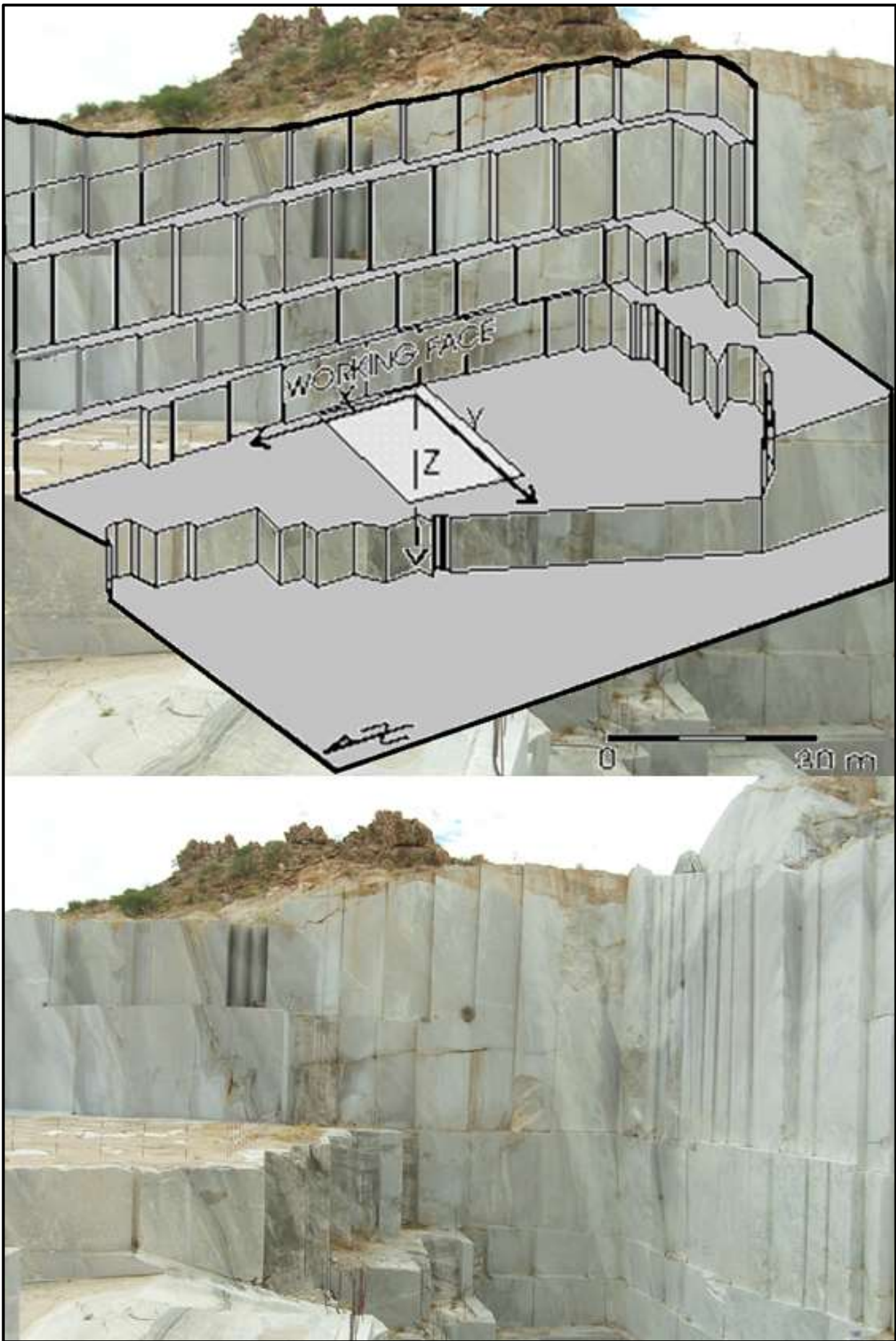
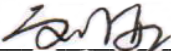


Figure 4: Detailed quarry design and mining techniques, (RBS, 2017).

**C: UNDERTAKING BY APPLICANT**

17. I 1. **Ms. Mia Liu** (the person in charge of undertaking the works or activities) and (where applicable) being head of **Ludi Mining Investments (Pty) Ltd**, institute, hereby undertake to strictly observe the terms and conditions under which the National Heritage Council may issue the permit.

Signature  dated **16<sup>th</sup> March 2021**


Permit No. .... **(For office use only)**  
*(Consecutive number & year of issue)*





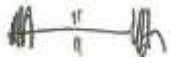
Trading as ESM Trading cc.Reg no: cc/2013/05545

Email: [esmowa@gmail.com](mailto:esmowa@gmail.com) Mobile: 0812066372.

<b>Title</b>	<b>Desktop archaeological impact assessment component of the Environmental Impact Assessment study report for the proposed marble mining on a Mining License 205, Karibib, Erongo region.</b>		
<b>Compiled for:</b>	Ludi Namibia Mining and Investments (Pty) Ltd		
<b>On behalf of Proponent:</b>	Risk-Based Solutions (RBS) CC Po Box 1839, Windhoek Namibia 41 Feld Street Ausspannplatz Cnr of Lazarett and Feld Street, Windhoek		
<b>Practitioner</b>	ESM Cultural Heritage Consultants Trading as ESM TRADING cc Contact Person: Mr Eliot Mowa Contact Number: +264 (81) 206 6372 Email: <a href="mailto:esmowa@gmail.com">esmowa@gmail.com</a>		
<b>Report date</b>	15/03/2021		
	<b>Name</b>	<b>Signature</b>	<b>Date</b>
<b>Archaeologist</b>	Eliot Mowa		15/10/2021

## DECLARATION

I, Mr. Eliot Mowa, hereby declares that I do not have any personal or financial interests in the proposed marble mining development within the Mining license No. 205, nor its developers or any of its subsidiaries, other than remunerations for the work performed.



Eliot Mowa, M.Sc

Archaeologist



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## 1. Introduction

Ludi Namibia Mining and Investments (Pty) Ltd is considering a possible marble mining operation in the area known as ML 205. It is a discrete Habis granite-hosting Marble (Nkb) belonging to the well known Swakop Group and Karibib Formation (Fig. 2). The ML 205 site is located about 25km south from Karibib and adjacent to the existing area of ongoing mining operations 204 near Karibib in central Namibia.

In order to fulfil the Environmental Assessment process directed by the Environmental Management Act (2007) and its Regulations (2012), Ludi Namibia Mining and Investments (Pty) Ltd appointed Risk-Based Solutions (RBS) CC, a Consulting Arm of Foresight Group Namibia (FGN) (Pty) Ltd to carry out the EIA study. Accordingly, Risk-Based Solutions CC has subcontracted the undersigned, E. Mowa to conduct this desktop archaeological assessment component. In addition to the EIA, Heritage Impact Assessments (HIA) is also required by the National Heritage Act (No. 27 of 2004).

According to the Heritage Act, *'no person may destroy, damage, excavate, alter or remove from its original position, or change the planning status of any heritage without a permit issued by the National Heritage Council of Namibia'*. Therefore, Section 51 (3) sets out the requirements for impact assessment such as provision for archaeological studies while section 48 outlined procedure for application and granting of permits such as might be required in the event of damage to a protected site occurring as an inevitable result of development. This is important in order to determine if archaeological or any other cultural heritage resources may be associated with the proposed mining development.

The archaeological assessment presented here is largely desktop based, therefore the present report relied on existing data from available records of archaeological surveys carried out in the immediate vicinity of the mining operations and generally in central Namibia which provided a baseline of this assessment. The Central Erongo Region is reported to one of the richest archaeological records yielding evidence of human occupation from Middle Stone Age sequences throughout the Holocene and recently historical period. Such data have been substantially uncovered during decades of scientific research and through a series of detailed archaeological surveys carried out in the course of mining operations, exploration and the development of infrastructure required by these operations.

## 2. Terms of Reference

The primary task of this desktop study was to identify:

- Sensitive heritage and cultural resources that could be affected by the mining operations;
- Anticipated potential impacts on heritage and culture resources arising from the proposed mining operations; and



- Management actions to avoid or reduce negative impacts heritage and culture resources that might be discovered within the project site.

### 3. Methodology

In Namibia, archaeological assessment typically combines three standardized methodologies. desktop study, followed by field/foot survey and detailed field investigations. These are ICOMOS international guidelines as well as those formulated by the Quaternary Research Services (QRS) in Namibia.

Against this background, information from the desk archaeological study was produced from available archaeological geospatial data, available records of archaeological surveys carried out in near Karibib as a result of mining operations and scientific research in Central Namibia. In order to establish the heritage significance of the resources, and their vulnerability to possible disturbance in the course mining operation, the assessment criterias below developed by QRS (Kihana 2012) established parallel 0-5 scales, summarized in Table 1 below.

Ranking	Significance
0	No archaeological significance
1	Disturbed or secondary context, without diagnostic material
2	isolated minor find in undisturbed primary context, with diagnostic material
3	Archaeological site (s) forming part of an identifiable local distribution or group
4	Multi-component site (s), or central site (s) with high research potential
5	Major archaeological site (s) containing unique evidence of high regional significances

**Table 1: Rating scales for the assessment of archaeological significance developed by John Kinahan (2012).**

Ranking	Vulnerability
0	Not vulnerable
1	No threat posed by current or proposed development activities
2	Low or indirect threat from possible consequences of development (e.g. soil erosion)
3	Probable threat from inadvertent disturbance due to proximity of development
4	High likelihood of partial disturbance or destruction due to close proximity of development
5	Direct and certain threat of major disturbance or total destruction

**Table 2: Rating scales for the assessment of archaeological vulnerability developed by John Kinahan (2012).**

## 4. Legal requirement

In Namibia, the legal instrument for the protection of heritage resources is the National Heritage Act (27 of 2004). The Act prohibits removal, damage, alteration or excavation of heritage sites or remains (Part V Section 46 ) while Part VI Section 55 Paragraphs 3 and 4 require that any person who discovers an archaeological site should notify the National Heritage Council. Heritage sites or remains are defined in Part 1, Definitions 1, as “any remains of human habitation or occupation that are 50 or more years old found on or beneath the surface”.

However, although Section 51 (3) outlines requirements for impact assessment, the Act lacks regulations for the implementation of the Act in relations to heritage assessments. Nevertheless, the Environmental Impact Assessment Regulations (Govt Notice 30 of 2012) applies to the management of impacts on culture and remains

## 5. Geographical location

The proposed mining development, ML 205 is located on Farm Habis, 25km south of Karibib in Erongo region (Fig.1) The area proposed for the mining development measures 502.7960 Hectares and a Mining License 205 was issued in March 2019 with a validity period of 10 years - March 2029.

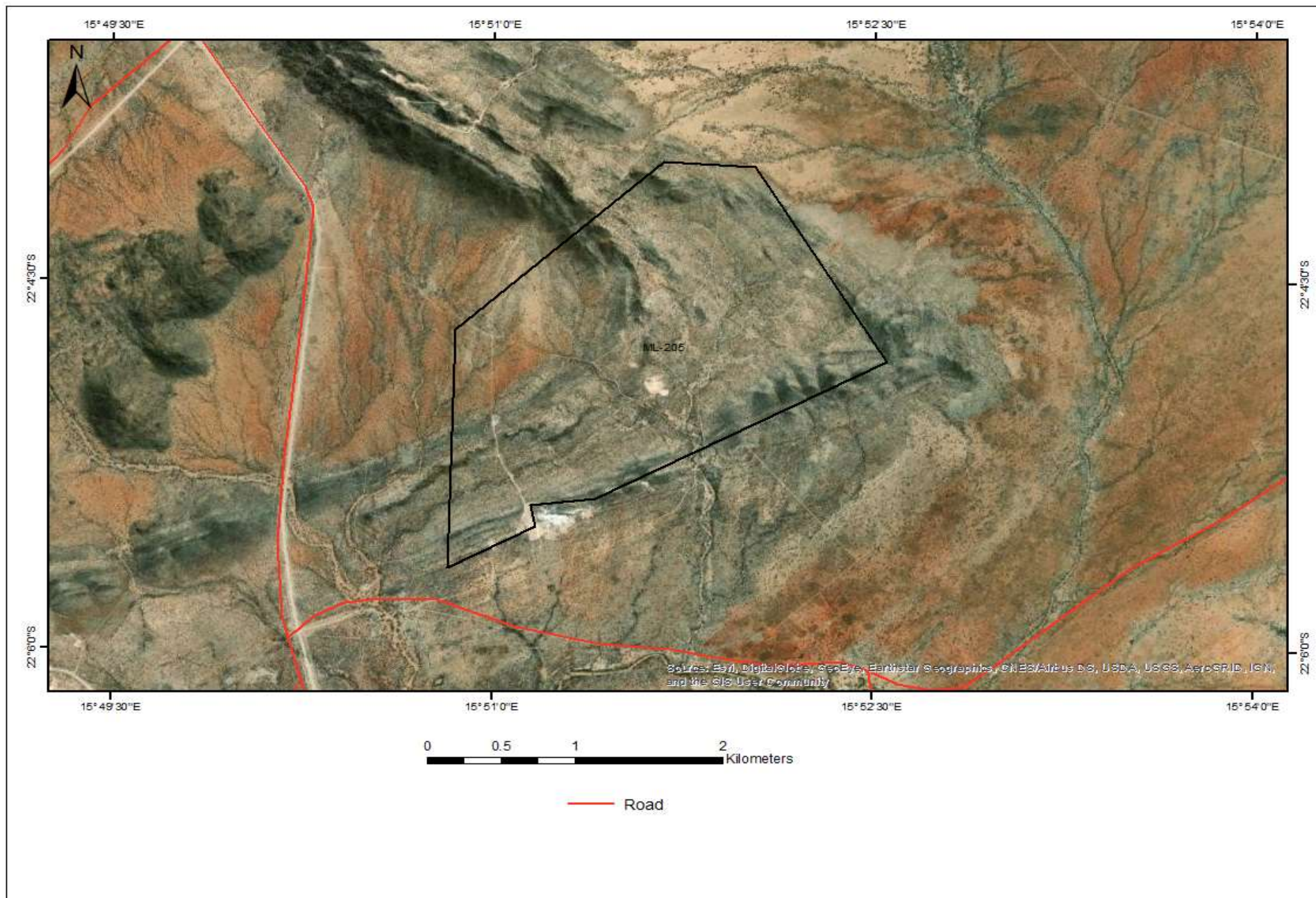


Figure 1: A simplified aerial map of ML 205, prepared for RBS. Credits: Author



## 6. Geophysical context

Karibib's geographical proximity to Erongo mountains made it susceptible to orographic precipitations and other moisture. Such beneficial positioning translates to localized microclimates thereby affording favorable living environment that supports a rich diversity of flora and fauna (Mendelsohn *et al.* 2002). Isolated granite outcrops, plains and ephemeral drainage river courses that characterise Karibib locality are all important habitats for human occupations.

Geologically, the granite hills and outcrops near Karibib are directly linked to other key Erongo inselbergs i.e. the Brandberg, Erongo and Spitzkoppe formed roughly 135 million years ago as a result of tectonic and magmatic activities that eventually led to the separation of the African and South American continents. Known for their mineral deposits, these rich archaeological localities have been subjected to extensive large and small-scale mining exploitations for decades.

However, marble (Nkb) is the main targeted geological horizon for dimension stone mining development in ML 205. Therefore, the attached geological map (Fig.2) attests the lithocodes that characterises project area. It is dominated mainly by marble Karibib Formation, Quaternary (Qs) sediments with surficial deposits and restricted Habis granite.

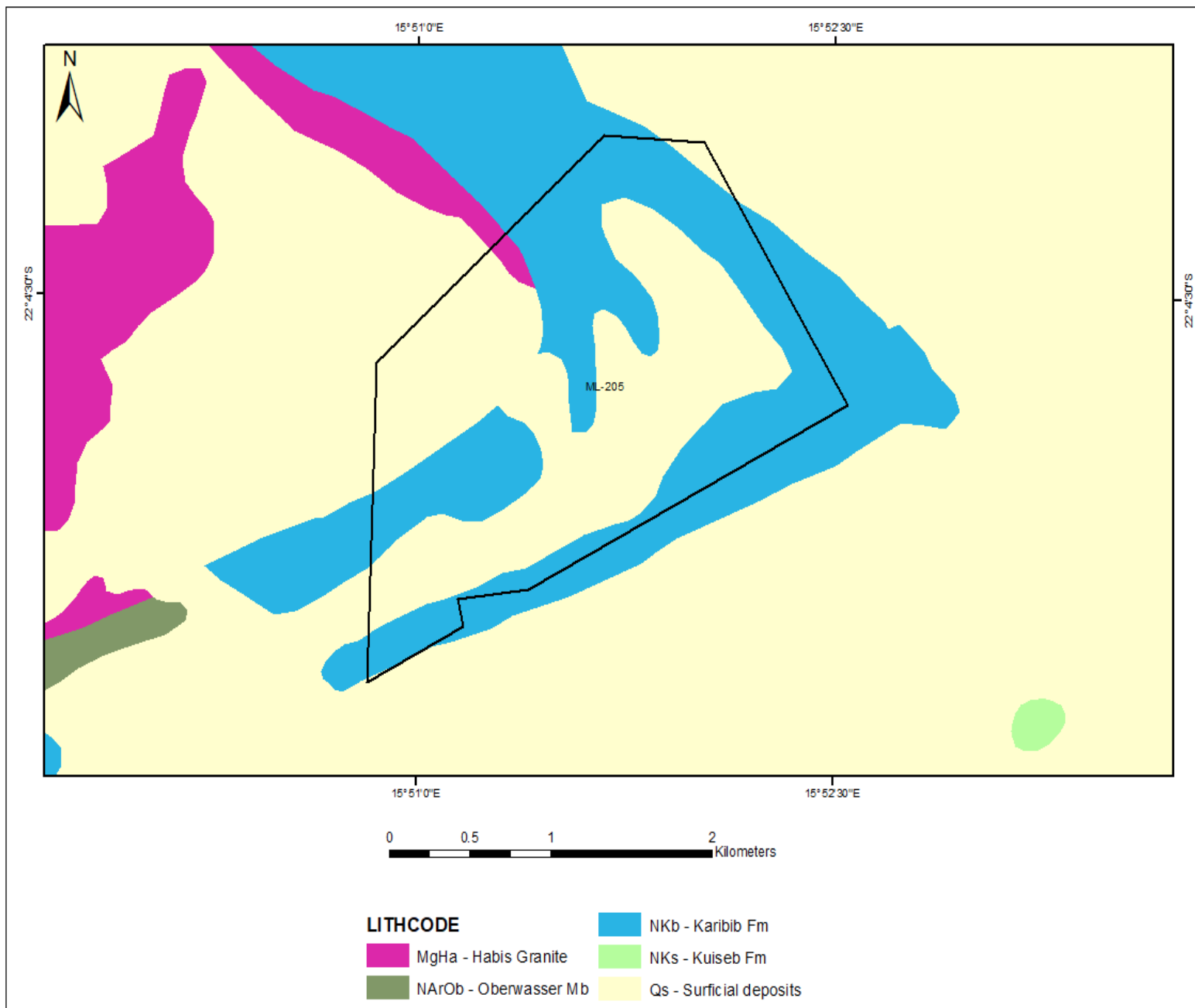


Figure 2: A Simplified local geological map of the ML 205 Prepared for RBS. Credits: Author

## 7. Regional archaeological context

Available archaeological records indicate that early humans in Central Namibia, Erongo region dates back from the Early Stone Age period, more than one million years ago as evidenced by hominin fossils from (Kinahan 2017). The geospatial data on the distribution of archaeological sites shows that sites are concentrated mainly in the central highlands, escarpment and Namib Desert (Fig. 3).

These sites are scattered finds, relatively intense, particularly in Central Namib. The sequence of such occupation is well represented, but it is reportedly reduced towards the interior of the country due to lack of stratigraphy, inadequate research and the fact that Central Namib is distressed by current physical resource extraction activities such as mining and quarrying as well as other related infrastructure developments in the region.



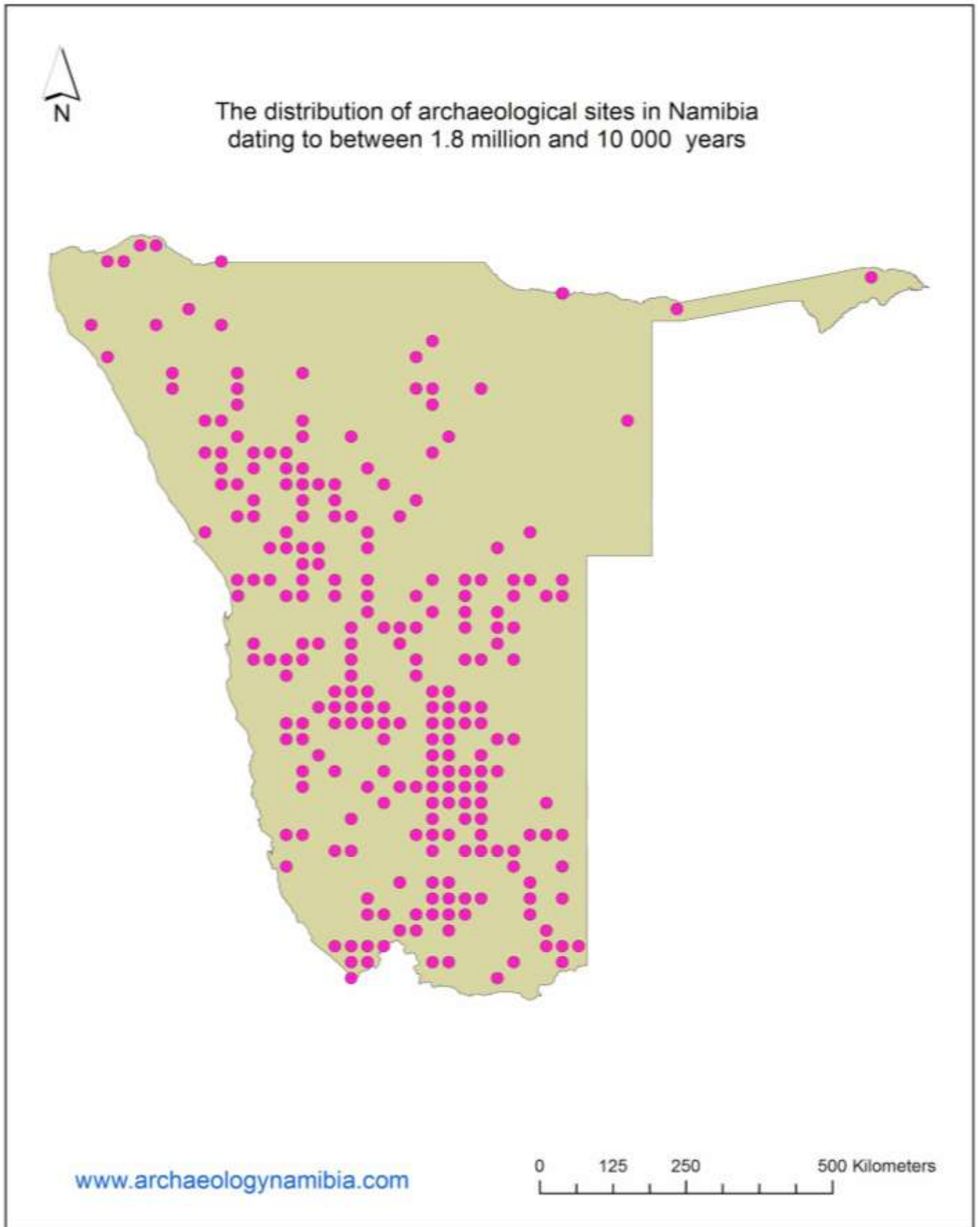


Figure 3: Is the general distribution of archaeological sites in Namibia, reference to ESA sites. Map credits: John Kinahan, 2012.

## 8. Local archaeological setting

A large number of archaeological sites recorded in Central Namib are mainly of Holocene occupations. These sites chronologically date in the last 5 000 years and are attributed to the Late Stone Age (LSA) cultures as shown in (Fig. 4).

At a local level, they are of quite heritage importance as they provide evidence of significant human evolutionary and technological advances with specific adaptations to extreme arid environments.

The densest archaeological sites of heritage significance are recorded in granite areas of Brandberg Mountain (Pager 1989–2006; Lenssen-Erz 2001 and Gwasira 2011); Erongo Mountains, (Breuil 1960; Pleurdeau et al 2012 and Nankela 2017) and surrounding farms (Nankela 2013) and Spitzkoppe Mountain (Kinahan 1990; Nankela 2019).

Many of these archaeological records are attributed to the Hunter-Gatherers, the present day ancestors of San people as well as occupations linked to Herders. Some of these significant sites are protected as national monument sites such as those in Erongo Mountains i.e. Farm Ameib, Paula's Cave and Omandumba Farms; Brandberg Monument Area; Bushman Paradise and Spitzkoppe Mountains.

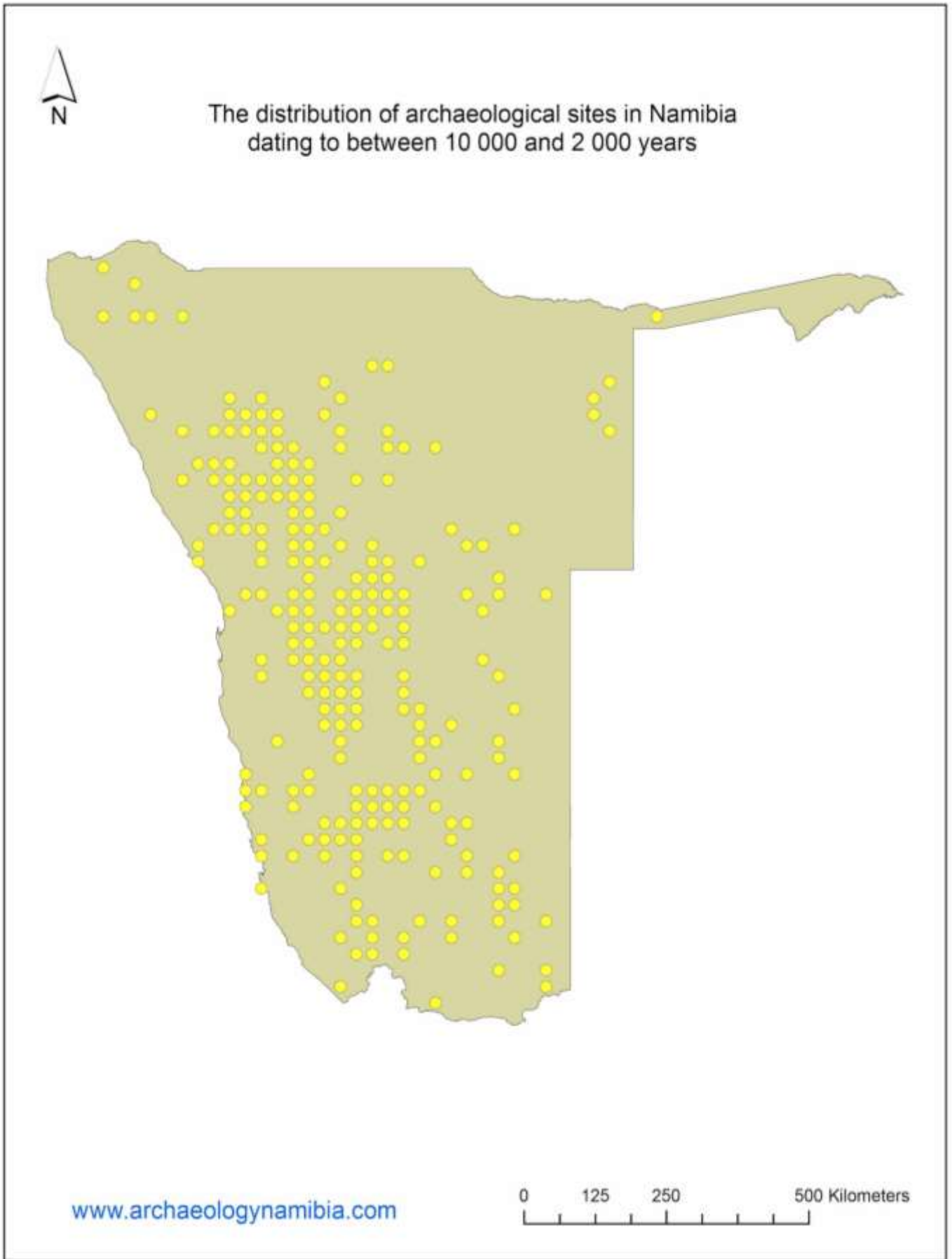


Figure 4: The distribution of archaeological sites in Namibia over the last 10 000 years ago. Map credits: Kinahan 2012



## 9. Desktop assessment results in ML 205

Geospatial data on the archaeology of Central Namib in particular as well as previous archaeological surveys undertaken in vicinity of Karibib and the mining areas surrounding ML 250 had uncovered significant heritage resources within the footprint of the ML 205. In particular, a survey carried out by John Kinahan (2017) led to the discovery of impressive new evidence relating to the Khoe pastoralists in the region. It is reported that a large collection of ceramic vessels from Habis (current location of M250) represent an important addition to the regional archaeological data.

According to Kinahan (2017) such evidence is linked to the regional-scale network associated with coastal and inland early trading of copper in the region. However, no detailed investigations including archaeological excavation have been carried out at the site to establish a sequence of human occupation.

The diagnosis was probably based on the stylistic analyses, regional context and context of discovery. The vessel appears to have been discovered in a granite deposit of the ML 205 (Fig. 2 and 5).

No other heritage resources were reported in this area, however, the eighteenth century reports of early colonial history related to mining in the Karibib area suggests a mix of trade and missionary activities between Karibib and Otjimbingwe area. It is therefore probable to assume that ML 205 will likely have some sites of archaeological and historical significance and that these will most likely date to the late pre-colonial and early colonial periods. If they do occur, such resources will form part of the general interest of heritage in the area.

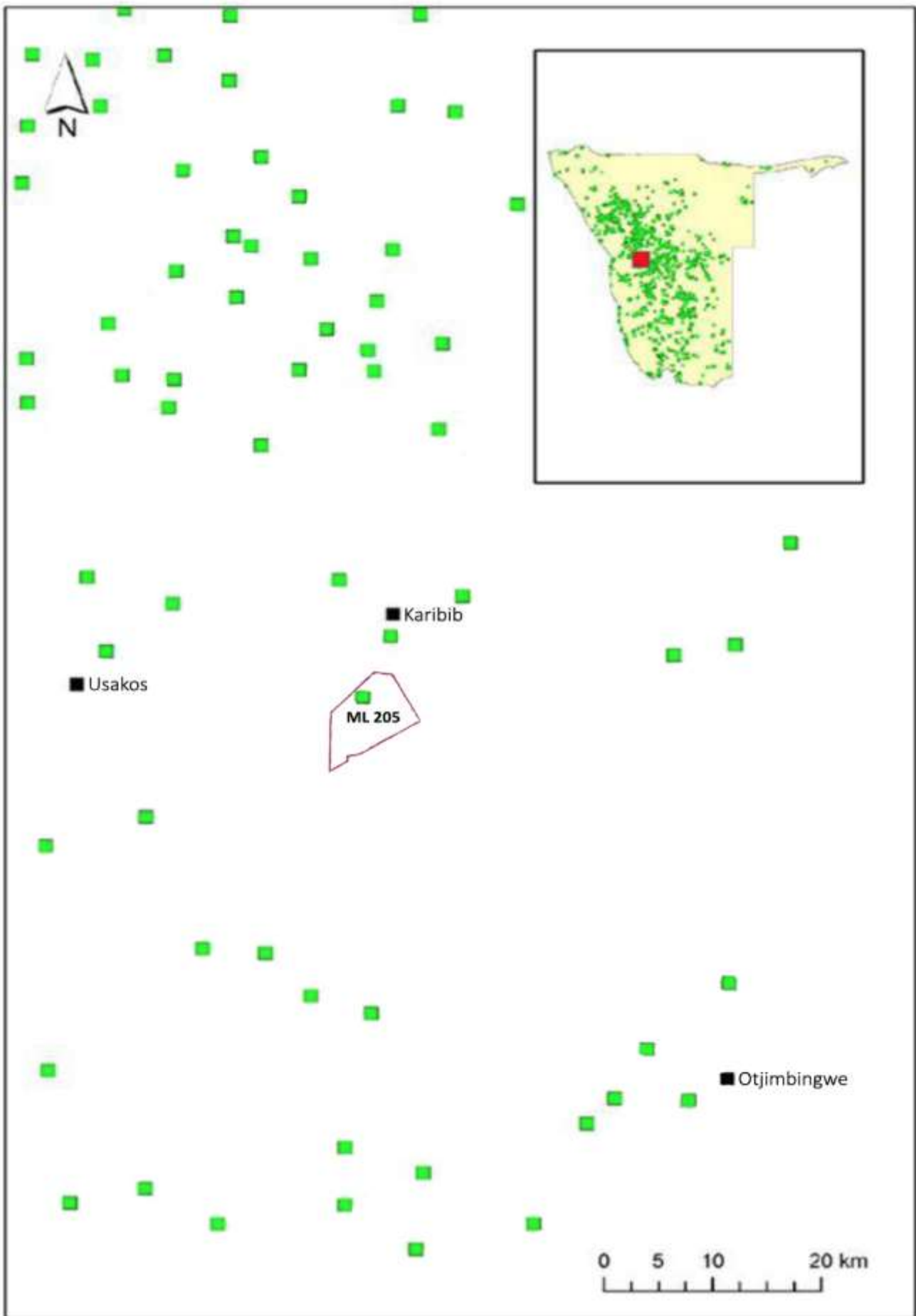


Figure 5: An edited map of archaeological sites in Central Namib, reference to the archaeological site in ML 205. Map credits: (Kinahan 2017).

## 10. Impact Assessment on Heritage

This assessment has located significant heritage feature within the footprint of the ML 205. Therefore, such archaeological feature is vulnerable and must be avoided. Since no detailed survey has been carried out in ML 205 and the fact that archaeological signatures are highly mobile in nature, the possibility of finding other features is possible and therefore their cultural settings can easily be disturbed or worse destroyed since mining operations are also extensive. However, the targeted marble lithocodes is the rocky outcrop areas in the ML 205, as a result, Habis Granite will likely have rock shelters containing stratified archaeological deposits.

This is the area that requires further detailed examination to locate, record, interpret, estimate heritage significance and other possible features within the footprint of the mining area as well as develop mitigation measures to be adopted in the event of encroachment by mining activity. Other possible areas of interest for archaeological remains are along seasonal river courses. If such sites occur, the nature of possible archaeological remains would most likely be of diagnostic nature in either primary and or secondary contexts from late precolonial history to hostocic periods. If no field survey is carried to confirm or dismiss this assumption, the expected nature of impact would be in the form of direct physical disturbance. It is therefore recommended that before mining operation commence, a detailed field investigation is carried out while the management actions are adopted including the 'Chance Find Procedure'.

The discovered heritage resource is currently vulnerable to mining development. The consequence of the impact would be localized, and its significance would be high. The interpretation of this assessment would indicate a local significance, indicating that the risk of archaeological impact is medium and will influence the project decision. From the cumulative impact perspective, it is expected that the project will have a negligible cumulative impact on a known archaeological site listed in the report.

## 11. Management Actions

The proponent must be advised on the following recommended actions below:

- a) A detailed field survey within the ML 205 must be carried out to confirm existing findings and determine any other possible cultural and heritage features;
- b) A landscape approach of the site management must consider culture and heritage features in the overall planning of mining infrastructures within and beyond the License boundaries;
- c) The proponent is advised to make an application to the National Heritage Council for a Consent to allow detailed assessment of the area in relation to activity or development believed to be an archaeological sites.;
- d) The proponent should engage an archaeologist to survey the area in advance before the issuing of clearance for the explorations to proceed; and
- e) The proponent and contractors should be made aware of the provisions of Section 55 (4) of the National Heritage Act in event significant heritage and culture features are discovered in the course of mining operation.

### Chance Finds Procedure (CFP) management guideline:

ML 205 is an important mining infrastructure development area subject to heritage & archaeological assessment at the planning stage. These assessments were desktop-based with no field inspections and as highlighted field inspection will have to be carried out before commencement of mining activities. Regardless of the outcome of field inspection significant subsurface heritage resources might be discovered. Thus during the course of mining onsite personnel and contractors must be sensitized to recognize “chance finds heritage” in the course of their work. The procedure set out here covers the reporting and management of such finds. The CFP covers the actions to be taken from the discovery of a heritage site or item to its investigation and assessment by a trained archaeologist. The CFP is intended to ensure compliance with the relevant provisions of the National Heritage Act (27 of 2004), especially Section 55 (4): *“a person who discover any archaeological objects must as soon as possible report the discovery to the council”* The procedure of reporting set out below must be observed so that heritage remains are reported to the authorities.

#### A. Responsibilities:

<b>Operator</b>	To exercise due caution if archaeological remains are found
<b>Foreman</b>	To secure site and advise management timeously
<b>Superintendent</b>	To determine safe working boundary and request inspection
<b>Archaeologist</b>	To inspect, identify, advice management, and recovers remains

#### B. Procedure:



Action by person (operator) identifying archaeological or heritage material

- ⇒ If operating machinery or equipment: **stop work**
- ⇒ Identify the site with flag tape
- ⇒ Determine GPS position if possible
- ⇒ Report findings to foreman

C. Action by foreman:

- ⇒ Report findings, site location and actions taken to superintendent
- ⇒ Cease any works in immediate vicinity

D. Action by superintendent

- ⇒ Visit site and determine whether work can proceed without damage to findings
- ⇒ Determine and mark exclusion boundary
- ⇒ Site location and details to be added to Archaeological Heritage database system

E. Action by archaeologist

- ⇒ Inspect site and confirm addition to AH database system
- ⇒ Advise National Heritage Council and request a permit to remove findings
- ⇒ Recovery, packaging and labeling of findings for transfer to National Museum

F. In the event of discovering human remains

- ⇒ Actions as above
- ⇒ Field inspection by archaeologist to confirm that remains are human
- ⇒ Advise and liaise with NHC Guidelines
- ⇒ Recovery of remains and removal to National Museum or National Forensic Laboratory, or as directed.

## 12. Conclusion

This project for dimension stone on ML 205 needs further fieldwork assessment to ascertain the archaeological footprints identified from previous studies within ML 205. Such fieldwork will satisfy the current concerns regarding the potential cumulative destruction of archaeological resources. Fieldwork will be complemented by this desktop studies of ML 205 near Karibib to achieve the archaeological impact assessment requirements.

The footprint of the dimension stone mining largely covers the Habis granite south of Karibib, the area is rich in archaeological resource from the precolonial period that is valuable in understanding the early pastoral communities and their immediate vicinity, an area that appears to have had importance for prehistoric human settlement.

Depending on the nature of the outcome of the field survey the impacts of the proposed development can be managed to acceptable levels as provided for by the chance find procedure (CFP) recommended herein.

Based on the findings of this desktop study, it is recommended that fieldwork be carried out before an Environmental Clearance Certificate is issued.



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