



Updated Environmental Management Plan (EMP)

Environmental Clearance Certificate (ECC) Renewal and Transfer for the Continued Operation of the Dimension Stone Mining Activities on Mining Claim (MC) No. 68793 in the Otjohorong Area of the Omaruru District in the Erongo Region, Namibia

MEFT APPLICATION NO.:	APP-003543
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EXECUTIVE SUMMARY

Zanite Investments cc (herein referred to as the Proponent) intends to resume and continue with the quarrying (mining) of dimension stone (granite) on their Mining Claim (hereinafter referred to as the MC, Mining Claim or Project) No. 68793 located in the Otjohorongo Area, about 20km north of Omatjete in the Erongo Region. The locality map of the MC is shown in Figure 1 with approximate point coordinates in Table 1. The MC covers a total surface area of 13.6116 hectares (Ha).

The mining activities which also include quarrying of dimension stone and associated activities such as the re-installation/ construction of prefabricated offices and accommodation facilities, revamping of old access roads to a safe usable state, and re-installation of power supply infrastructure, are legally required by the Namibian law to take care of the environment. This is done by ensuring that the project related activities do not harm the surrounding environment by acquiring environmental clearance. The legal requirement that promotes the management and sustainable development is the Environmental Management Act (EMA) No. 7 of 2007 and its 2012 Environmental Impact Assessment (EIA) Regulations. These Regulations list certain activities that may not be undertaken without an Environmental Clearance Certificate (ECC).

The quarrying activities on Mining Claim No. 68793 had been environmentally cleared on the 12th of October 2015 issued to Best Cheer Investment Namibia (Pty) Ltd, but the ECC has since expired, and therefore, it should be renewed. To ensure that their project activities are compliant with the national environmental legislation that also include holding a valid ECC, they appointed OMAVI Geotechnical & Geo-Environmental Consultants cc, independent Environmental Consultants to assist them with the application for their ECC Renewal and ECC ownership transfer. The proposed ECC ownership transfer is from Best Cheer Investment Namibia (Pty) Ltd to Zanite Investments cc (the holder of Mining Claim 68793).

This document (updated Environmental Management Plan (EMP) has been compiled as a supplementary required document to the ECC Renewal application to be submitted to the Environmental Commissioner. The new ECC has been applied for and submitted to the Ministry of Mines and Energy (MME) as the Competent Authority for the project (submitted on the 7th of March 2022). The date stamped copy of the ECC Renewal Application (Form 1) has been uploaded on the ECC online system (Portal) of the Ministry of Environment, Forestry and Tourism (MEFT) for project registration purposes. The application for ECC Transfer has been submitted to the Environmental Commissioner at the MEFT and upon submission of this EMP / Updated ECC Renewal Report, a new ECC for the project will be considered by the Environmental Commissioner.

The environmental management and mitigation measures (action plans) contained in this EMP will be effectively implemented onsite and are legally binding to the project Proponent. The project site status presents that despite the ECC expiring in October 2018, the current project activities have been undertaken in an environmentally and socially responsible manner to date. Moreover, with some improvements recommended to strengthen the current environmental and social requirements, this will greatly improve environmental management and sustainability by being accountable to the conditions set in the ECC. This will include environmental monitoring of site performance through the submission of bi-annual environmental audit reports to the Environmental Commissioner.

Recommendations and Conclusions

Based on the visual observations of the current environmental and social conditions made during the site visit to Mining Claim and immediate surroundings, it was found that the site operations are halted to allow for the removal of mined dimension stone blocks. Not only that, but the operations have been halted to allow for the renewal of the expired operational authorization (ECC and Mining Claim Rights). The halting of the project activities was further motivated by decline in market demands for granite products. The visual observations/ inspections of the Mining Claim were coupled with pre-visit and post engagements with management / personnel to aid in updating the EMP, in terms of the baseline conditions, and development of the EMP.

The project activities are of a small to medium scale of operation and limited within the MC' boundaries. There are no new planned or anticipated amendments to the current operations onsite. The updated and new management and mitigation measures have been recommended for the continued operations of the current project activities once the ECC and Mining Claim Rights are renewed and project operations resume.

Therefore, OMAVI Consultants are confident that the potential negative impacts associated with the project activities can be mitigated by effectively implementing the recommended management and mitigation action measures and with more effort and commitment put on implementation monitoring (Bi-Annual Monitoring and reporting).

Recommendations

With above said, it is recommended that the project and its associated activities be granted a new Environmental Clearance Certificate, subject to:

- Continued effective implementation of all the management measures (mitigations) provided in in this EMP under section 5.3 (Table 2) and where required, improvement should be effectively put in place.
- Obtaining all required permits, licenses, approvals, and document renewals that may be required for the project activities in future (please refer to the Permitting and Licensing section/Chapter 3 of this EMP).
- Full commitment to constantly improve on the effective implementation of measures, where required.
- The Proponent and all their project workers, contractors and or specialists complying with the legal requirements governing their project and associated activities, including environmental and social (occupational health and safety) precautions provided.
- To avoid late renewal of the ECC or waiting until it expires, the Proponent's Safety, Health & Environmental Officer (or an Environmental Control Officer (ECO), Environmental Consultant) should effectively conduct Environmental (EMP) Compliance Bi-Annual Monitoring and most importantly, ensure timely renewal of the ECC. An ECC Renewal application can be submitted at least 2 to 3 months before the expiry date of the valid ECC to allow time for the evaluation of the ECC Renewal Report or Updated EMP by the DEAF and approval by the Environmental Commissioner; and
- The EMP Compliance check (Bi-Annual Monitoring) should be done within the first 6 months of being issued with the new ECC, which will see progress reporting on the project activities. An Environmental Audit/Compliance/Bi-Annual Report shall be compiled for every monitoring and submitted to the DEAF at the MEFT for archiving (via the ECC Online Portal under the valid ECC details).

Conclusions

As part of the continued environmental management and protection, the recommended management and mitigation of adverse of impacts stemming from the project activities should be effectively implemented, monitored, and reported on by the Proponent (Zanite Investments).

Monitoring needs to be carried out to ensure that any new unforeseen impacts that might arise during the continuation of the project activities are well identified on time, recorded, properly addressed and suitable mitigation measures provided and implemented. Implementing these measures would result in promoting environmental sustainability while ensuring a smooth and harmonious existence and purpose of the project activities in the hosting biophysical and social environments.

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Appendix C: Archaeological & Heritage Impact Write-Up and Management Measures

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LIST OF ABBREVIATIONS

CC:	Close Corporation
CFP:	Chance Finds Procedure (Archaeology and Heritage)
CSR:	Corporate Social Responsibility
DEAF:	Department of Environmental Affairs and Forestry
EIA:	Environmental Impact Assessment
EMP:	Environmental Management Plan
EMA:	Environmental Management Act
ECC:	Environmental Clearance Certificate
ECO:	Environment Control Officer
MAWLR:	Ministry of Agriculture, Water and Land Reform
MC:	Mining Claim
MEFT:	Ministry of Environment, Forestry and Tourism
MME:	Ministry of Mines and Energy
NHC:	National Heritage Council of Namibia
PRO:	Public Relation Officer

1 INTRODUCTION

1.1 Brief Project Background and Location

Zanite Investments cc (herein referred to as the Proponent) intends to resume and continue with the quarrying (mining) of dimension stone (granite) on their Mining Claim (hereinafter referred to as *the MC, Mining Claim or Project*) No. 68793 located in the Otjohorong Area, about 20km north of Omatjete in the Erongo Region. The locality map of the MC is shown in **Figure 1** with approximate point coordinates in **Table 1**. The MC covers a total surface area of 13.6116 hectares (Ha).

The mining activities which include quarrying of dimension stone and associated activities such as the re-installation/ construction of prefabricated offices and accommodation facilities, revamping of old access roads to a safe usable state, and re-installation of power supply infrastructure, are legally required by the Namibian law to take care of the environment. This is done by ensuring that the project related activities do not harm the surrounding environment by acquiring environmental clearance. The legal requirement that promotes the management and sustainable development is the Environmental Management Act (EMA) No. 7 of 2007 and its 2012 Environmental Impact Assessment (EIA) Regulations. These Regulations list certain activities that may not be undertaken without an Environmental Clearance Certificate (ECC). The concerned and relevant listed activities to the mining activities (project) and associated activities in Namibia are:

Mining and quarrying activities:

- *"Listed Activity 3.1 The construction of facilities for any process or activities which requires a license, right of other forms of authorization, and the renewal of a license, right or other form of authorization, in terms of the Minerals (Prospecting and Mining Act, 1992).*
- *•Listed Activity 3.2 other forms of mining or extraction of any natural resources whether regulated by law or not.*
- *•Listed Activity 3.3 Resource extraction, manipulation, conservation, and related activities."*

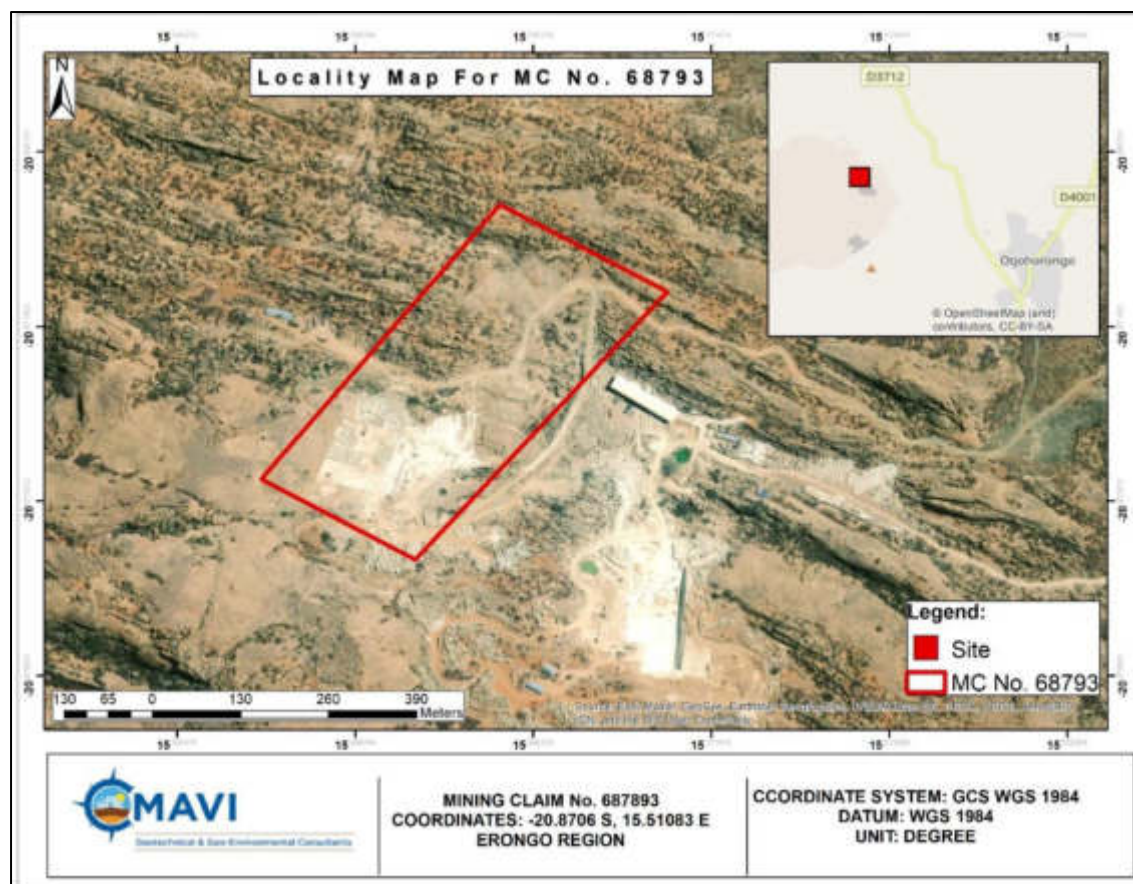


Figure 1: Locality of Mining Claim No. 68793 in the Otjohorongo Area, north of Omatjete Village

Table 1: The approximate corner coordinates of Mining Claim No. 68793

Mining Claim No. 68793	GPS Coordinates
Point A	20°52'23"S 15°30'20"E (-20.873056° / 15.505556°)
Point B	20°52'09"S 15°30'32"E (-20.869167° / 15.508889°)
Point C	20°52'15"S 15°30'40"E (-20.870833° / 15.511111°)
Point D	20°52'23"S 15°30'27"E (-20.873056° / 15.507500°)

The MC was initially granted to the Proponent by the Ministry of Mines and Energy (MME) on the 2nd of July in 2018 and expired on the 1st of July 2020, pending renewal as shown in **Figure 2** below. The renewing of the MC by MME is subject to the renewal of the Environmental Clearance Certificate (ECC) and submitting a valid ECC, among other documentations to the MME. An ECC was issued for the activities on the Mining Claim on the 12th of October 2015 and expired on the 11th of October 2018.



Figure 2: The status of Mining Claim No. 68793 on the Mining Cadastre Portal (pending renewal)

1.2 The Current Environmental Clearance Certificate (ECC)

There has been mining activities undertaken on the MC after the ECC was issued in 2015 (as per the EIA Report and Environmental Management Plan (EMP)) prepared by the Centre for Geosciences Research cc). The mining activities were paused for some years to move the materials (mined granite blocks) at site to the processing facilities. During the pausing/halting of mining on the site, the ECC and Mining Claim have also since expired in 2018 and 2020, respectively. Therefore, there has not been any work undertaken on site, since. The ECC issued for these activities has since expired and had not been renewed. The copy of the current and expired ECC is attached hereto as **Appendix A**.

1.3 The Application for Renewal and Transfer of the Current ECC

For the project to remain compliant with the environmental legislation and ensure sustainability, a new ECC has been applied for by submitting the application to the Competent Authority (Ministry of Mines and Energy (MME)). This updated Environmental Management Plan (EMP) together with the application to transfer the ECC from Best Cheers Investment Namibia (Pty) Ltd to Zanite Investments is submitted to the Regulatory Authority, Ministry of Environment, Forestry and Tourism (MEFT))'s Department of Environmental Affairs and Forestry (DEAF). The ECC Renewal Application was compiled and submitted to the MME on the 07th of March 2022. The date stamped copy of the ECC Renewal applications is attached hereto as **Appendix B**.

The ECC renewal Report (updated EMP) is submitted to the DEAF at the Ministry of MEFT for evaluation and consideration of the new ECC. The updated EMP includes information of what may have changed between the date of ECC issuance to date. This will also entail the confirmation of the implementation of the environmental management and mitigation measures recommended as part of the initial and approved project EMP under which the current ECC was issued.

1.4 Project Need and Justification

The project is substantiated on the following merits:

- The project will ensure continued and responsible mining of granite, which contributes to local employment, skills transfer, and provision of procurement opportunities in the form of mechanical services, transportation of blocks contracts.
- Socio-economic benefits in the form of local employment to the youth, social corporate responsibility.
- The payment of royalties and taxes to the relevant government institutions from the mining activities and operation of the Mining Claim.

1.5 The ECC Renewal and Transfer Application Process

The process of renewing an ECC includes the following:

1. Compilation of Background Information Document (BID) as a requirement to register the application with the Regulatory Authority (MEFT) – **completed.**
2. Compilation of an ECC Renewal Application and submission to the Office of the Executive Director in the Ministry of Mines and Energy (MME) (project Competent Authority) for notification and recommendations - **completed.**
3. Compilation of the Environmental Management Plan (EMP). This document contains all the proposed project activities and the updated management and mitigation measures

Whereas, for transferring the ECC (from the current ECC holder to the Proponent), the following procedures have been followed:

1. Compilation of an ECC Transfer Application and submission to the Ministry of Environment, Forestry and Tourism (MEFT) (Regulatory Authority for the environment) - **completed.**

The result of this process is a compilation of the updated EMP, i.e., this document which is the require main document by MEFT for ECC renewal consideration.

1.6 Appointed Environmental Consultant

To apply for the ECC Renewal and Transfer, Zanite Investment cc appointed OMAVI Geo-technical and Geo-environmental consultants cc (hereinafter referred to as OMAVI Consultants) as an independent environmental consultant to apply for the ECC Renewal and Transfer and submit the required documents as part of an applications to the Environmental Commissioner at the DEAF/MEFT.

The applications, associated tasks, and compilation of this EMP were done by the OMAVI Consultants' team members as listed below:

- **Ms. Fredrika Shagama (a qualified and experienced hydrogeologist and experienced and registered EAP)** compiled the ECC Renewal and Transfer applications and this EMP.
- **Mr. E. Kanime (an experienced EAP)** reviewed the EMP and contributed to its development.

The description of the project activities on the site (MC) are presented under chapter 2.

2 CURRENT PROJECT ACTIVITIES

In terms of current and ongoing activities on the Mining Claim, there has been some exploration and mining activities conducted on the Mining Claim in the past since the issuance of the ECC. However, project activities (operations) had been halted by the operator to allow time to move the materials (mined granite) to processing facilities and to get the renewal of environmental clearance and activities on the MC. The halting of the project activities was further motivated by decline in market demands for granite products. The project activities on the Mining Claim had included the use of a compressed air powered Jack Hammer drills to drill 5 mm diameter holes to a depth of 200cm. To create weak points for bulk sampling, the holes were drilled in rectangle pattern. During the exploration stage, collected block samples were transported to Walvis Bay for processing as dimension stones and slabs for analysis.

The same procedure had been followed for the mining stage but on a larger and spatially continuous area, i.e., the mined granite blocks had been transported to Walvis Bay for processing as dimension stones and slabs. Besides drilling induced shallow cracks (cutting) into the granites, no blasting had been conducted. The same process will be continued once the ECC, and MC are renewed by MEFT and MME, respectively.

To update the Environmental Management Plan (EMP) of the quarrying operations, a site visit was done on MC68793 and surroundings on the 19th of March 2022. **Figure 3** is a collection of some site photos taken during the site visit.

It should be noted that during the site visit, there was still no active quarrying activities taking place (pending renewal of authorisations, i.e., ECC and Mining Claim).



Figure 3: (A) The project quarry with dimension stone blocks left in situ, (B) Concrete floor remnants – floor of previous prefabricated accommodation and office quarters and (C) Area overlooking the dimension stone block sorting and storage bay

2.1 Services Infrastructure and Resources

The services infrastructures of the Mining Claim are as provided in the EIA Report prepared by the Centre for Geosciences Research cc in 2015 and updated in 2022. These are as follows:

- **Project equipment requirements:** The project activities use two Front End Loader, two Compressors, one Water tank, two 4X4 vehicles, one Diesel tank, two Jack Hummers, one Perforator, one Diamond wire Saw, and one Generator. When the Proponent resumes operations, they will reinstall the grid transformers and use that together with the heavy-duty diesel generators for power supply. The generators will primarily be utilized as back up or when extra power capacity arises. These generators will be installed on concrete pads with protrusion berms for hydrocarbon pollution control in case of unexpected spillages.
- **Water supply requirements:** The water for site operations is sourced from a nearby good yielding household owned borehole. Through a water supply purchase agreement between the borehole owner and Zanite Investment, the water is trucked in water bowsers to the water storage pond onsite. The water pond is refilled as necessary (not daily) to ensure that there is always sufficient water supply for the operations. The water is used efficiently through recycling and re-use on activities such as cooling and washing of quarrying equipment, etc. Therefore, water trucking from the borehole is not done daily or frequently, but only when it is necessary.

Due to the recent heavy rains at the time of the site visit, the water storage pond was filled with rainwater. At the time of the site visit the consulted neighbouring quarry operators indicated that the water in the pond shown in **Figure 4** is all rain water from current rain.



Figure 4: The water supply storage pond onsite

A portable water tank is available on site with a capacity of 10 000 litres. Temporal showers had been available at the accommodation quarters onsite.

- **Electricity (power) supply:** There is a powerline near the Mining Claim (**Figure 5**) and it supplies electricity to the active mining licence such as Ekungungu. The main powerline runs from Okongwe Village to Otjohorongu supplying these village and surrounding areas.

The Zanite Investment project activities (before halted) pulled electricity from this power grid, whereby transformers were installed onsite. The transformers are temporarily uninstalled (removed) from site to avoid theft and possible vandalism. However, they will be installed back onsite once the mining operations resumes, after the renewal of the ECC and Mining Claim by MEFT and MME, respectively.

The electricity from the grid is used to power the mining machine and the accommodation quarters (units).

The grid power will be used in conjunction with a diesel-powered generator (as backup power source).



Figure 5: The electricity (power supply) lines in the project site

- **Waste disposal infrastructure:** Bins will be provided, and all litter will be disposed of at the nearest dumping site (i.e., Omaruru Town Council Dumping site). Solid waste will be mainly rejected plastic, bottles and paper and stone off cuts. No unused machines, part will remain on site. Chemical Toilets (Mobi Loo) will be erected on sites for the use of the workers.

- **Site accessibility:** Access to the site is possible throughout the year. The main access road is the D3712 within the Otjohorongo Reserve but there are various access routes already in place. This is because the area already has other mineral licenses (mining claims and mining licenses) where other exploration and mining activities are ongoing, therefore there will be no need for the construction of any smaller access routes.
- **Health and safety:** All project workers had been well equipped with personal protective equipment (PPE) while performing tasks on site. This included Personal Protective Equipment (PPE) will include safety overalls, hard hats pairs of hand gloves, of safety boots, safety glasses and dust masks.
- **Human resources and accommodation:** The number of people involved in the quarrying and related activities onsite ranges between fifteen (15) and twenty (20). This comprises of fork lifters, front-end loaders, excavator operators, truck drivers (water bowsers and tipper truckers) as well as general workers working in the quarry. The project workers are accommodated in a temporary camp unit (quarters). However, due to the halting of the quarrying activities, the workers from the surrounding communities are currently accommodated at their homes waiting for the resuming of the operations. The specialised workers who are not from the project area had gone back to their homes outside the Otjohorongo area to also wait for operations to resume.

The mined dimension stone (granite) blocks are then prepared to be transported to the processing facility in Walvis Bay. The transportation of the blocks from the quarry (site) is done by a contracted truck transport company. Therefore, no processing of mined blocks is done onsite.

The above-described project activities are governed by certain legislations and these need to be complied with throughout the project life cycle. The applicable/relevant legislations, policies and guidelines are presented under the next chapter.

3 APPLICABLE LEGAL FRAMEWORK AND PERMITTING (LICENSING)

In Namibia, mining (extraction), and manipulation of natural resources are vested in the state and are regulated by the MME whereas sustainable exploitation and management of the environment and use of natural resources is regulated by the MEFT under the EMA No. 7 of 2007.

The Minerals Prospecting and Mining Act (Act No. 33) of 1992 is the principal act governing extraction of mineral resources in the Republic of Namibia.

A review of Namibian legislation, policies, and guidelines applicable and relevant to the project in terms of permits and licenses are given in this chapter. This review serves to inform the project Proponent, and the decision makers at the DEAF of the requirements and expectations, as laid out in terms of these instruments, to be fulfilled for them to continue carrying out the current activities. These are given in **Table 2**.

Table 2: Applicable legislation, policies, and guidelines to the project activities

Legislation	Provisions	Contact Details
Environmental Management Act 2007 Environmental Impact Assessment (EIA) Regulations (EIAR) (GG No. 4878)	<p>Activities listed in Government Notice (GN) No. 29 of GG No. 4878 require an Environmental Clearance Certificate (ECC).</p> <p>The amendment, transfer, or renewal of the ECC (EMA S39-42; EIAR Regs19 & 20).</p> <p>Any future consideration of amendments to this EMP, will require an amendment of the ECC.</p> <p><u>The ECC needs to be renewed every 3 years.</u></p>	<p>Contact details at the Department of Environmental Affairs and Forestry (DEAF), Ministry of Environment, Forestry and Tourism (MEFT), Office of the Environmental Commissioner</p> <p>Mr. Timoteus Mufeti Tel: +264 61 284 2701</p>
National Heritage Act (Act No. 27 of 2004)	<p>The Act makes provision for the protection and conservation of places and objects of heritage significance and the registration of such places and objects. Part V Section 46 of the Act prohibits removal, damage, alteration, or excavation of heritage sites or remains, while Section 48 sets out the 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. Part VI Section 55 Paragraphs 3 and 4 require that any person who discovers an archaeological site should notify the National Heritage Council. Section 51 (3) sets out the requirements for impact assessment. Should any objects of heritage significance be identified during the additional project works, the work must cease immediately in the affected sites and the necessary steps taken to seek authorisation from the Heritage Council.</p>	<p>Ms. Erica Ndalikokule (Head: Heritage Management) – National Heritage Council of Namibia (NHC) Tel: (06) 301 903</p> <p>OR</p> <p>Ms. Agnes Shiningayamwe (Regional Heritage Officer) Tel:(061) 301 903</p>
The Water Act 54 of 1956 The Water Resources Management Act No. 11 of 2013 (unpromulgated)	<p>The Water Act 54 of 1956 was formulated to consolidate and amend the laws relating to the control, conservation and use of water for domestic, agricultural, urban and industrial purposes; to make provision for the control, in certain respects, of the use of sea water for certain purposes; for the control of certain activities on or in water in certain areas.</p>	<p>Mr Franciskus Witbooi (Deputy Director: Water Policy and Water Law Administration (MAWLR)) Tel: (061) 208 7158</p>

Legislation	Provisions	Contact Details
	A Groundwater abstraction and use Permit, the permit for commercial use should be applied for from the Department of Water Affairs (DWA): Directorate of Water Resources Management. When issued, Proponent, the permit should be renewed as required (as stipulated in therein).	
Mineral Prospecting & Mining Act (Act No. 33 of 1992)	Section 49 (2b) (vi): the processing, whether wholly or partly, within Namibia of any mineral or group of minerals found, own or mined by the holder of a mineral licence during any prospecting operations or mining operations.	<p>Mr Erasmus Shivolo (Mining Commissioner): MME Tel: 061 284 8167 (for renewal of the MC)</p> <p>The Proponent should notify the local traditional authority (through the Zeraeua Traditional Authority (ZTA)) of their intention to commence mining activities.</p> <p>Contact details of the ZTA' Office: Chief Manasse Zeraeua and or Hon. Senior Traditional Councillor Fabianus Uaseuapuni, Tel: +264 64 571 053</p>
Petroleum Products and Energy Act (No. 13 of 1990) Regulations (2001)	Regulation 3(2)(b) states that "No person shall possess or store any fuel except under authority of a licence or a certificate, excluding a person who possesses or stores such fuel in a quantity of 600 litres or less in any container kept at a place outside a local authority area"	<p>Carlo Mcleod (MME: Acting Director – Petroleum Affairs Tel.: (061) 284 8291</p>
Forestry Act (No. 12 of 2001) Nature Conservation Ordinance No. 4 of 1975 (as amended)	<p>The area is bear with very little to no vegetation. However, in the case that a protected plant species is encountered during the mining, the permits are required for the removal of such species.</p> <p>Permits are required for the removal of protected plants species.</p>	<p>The nearest Forestry Division Office (MEFT) Mr. Fillemon Kayofa (Acting Director of Forestry Division) Tel: +264 61 208 7320</p>
The Nature Conservation Ordinance, Ordinance of 1975	Section 48 of Chapter 5 of the Ordinance is relevant to the project in that it stipulates that killing, injuring and willing fully disturbance or destroying the wildlife is prohibited. Chapter 6 of the ordinance deals with the protection of flora by prohibiting unpermitted possession of endangered flora species and picking or sale of protected flora species. The site is in a Reserve.	<p>The Department of Wildlife & Parks Division (MEFT) Tel: +264 61 61 284 2518 (Head Office: Windhoek) Tel: +264 64 404 576 (Regional Office: Erongo Region in Swakopmund)</p>

4 ENVIRONMENTAL OVERVIEW (BASELINE)

The environmental overview information of the area has also been obtained from existing literature and that is the recently undertaken site visit and compiled Environmental Scoping Assessment Report compiled for the exploration activities on Exclusive Prospecting License (EPL) 7233 from the immediate north to the western side of Mining Claim 68793. The information was also augmented by the site observations and information made and collected during the site visit in March 2022, respectively.

4.1 Climate

The climatic conditions of the Omatjete and project site area are presented as follows.

4.1.1 Temperatures

The project area experiences average high temperatures of 32°C in April, May and July and low average temperature 10°C in November and December (**Figure 6**).

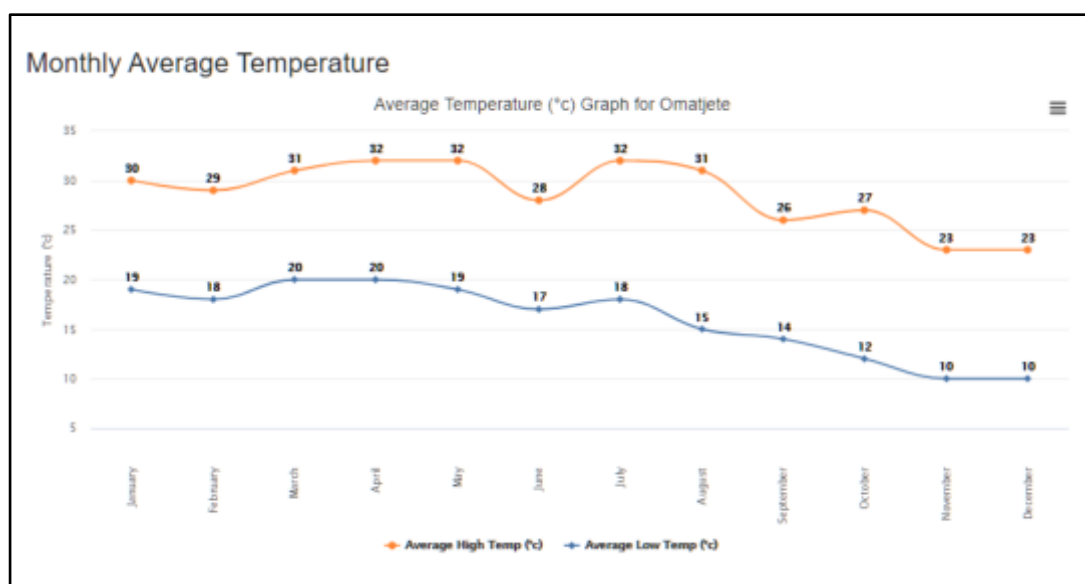


Figure 6: The monthly average temperatures for Omatjete (World Weather Online, 2021)

The Omatjete and surrounding areas including Mining Claim have average maximum temperatures ranging between 21°C in June and 33°C in October. The average minimum temperatures are between 8°C in June and 21°C in January. **Figure 7** below shows minimum and maximum temperatures for a 12 year-period, i.e., 2009 to 2021. The average annual temperature is 25°C.

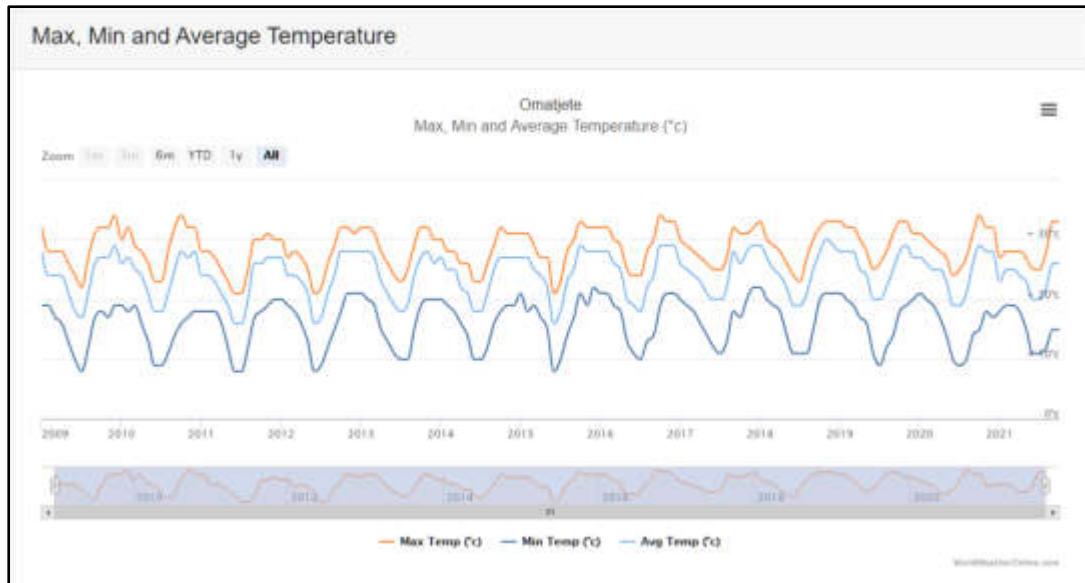


Figure 7: Maximum, minimum, and average temperatures for Omatjete (World Weather Online, 2021)

4.1.2 Rainfall

The average rainfall for Omatjete over a period of twelve (12) years, i.e., from 2009 to 2021 are shown in **Figure 8** and **Figure 9**. The lowest rainfall recorded over this period was less than 8.1 mm in September 2018 with the highest recorded in February 2012 at 557 mm.

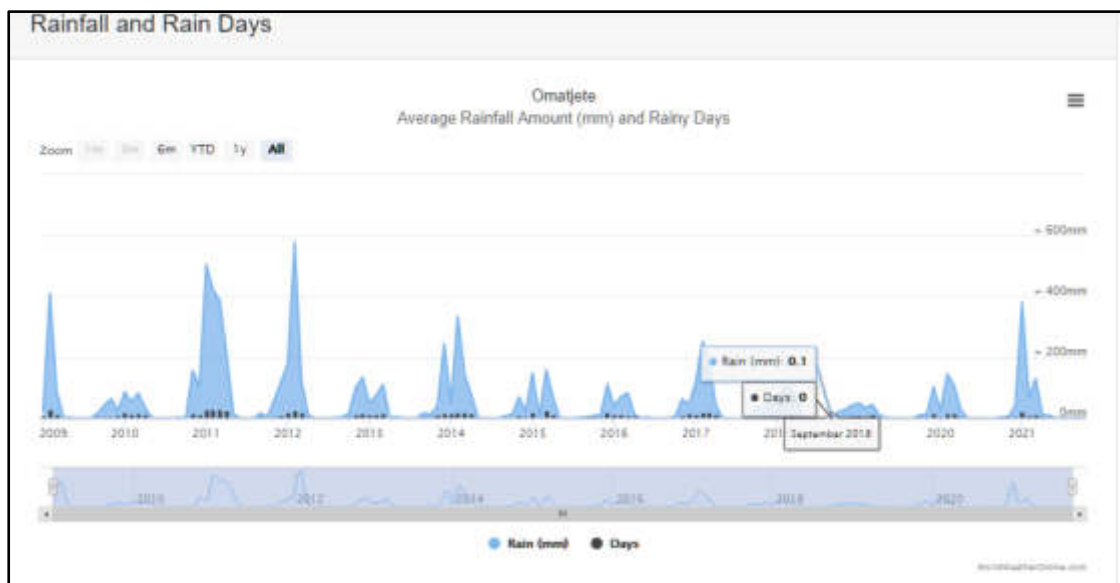


Figure 8: The rainfall & rainy days of the Omatjete area (World Weather Online, 2021)

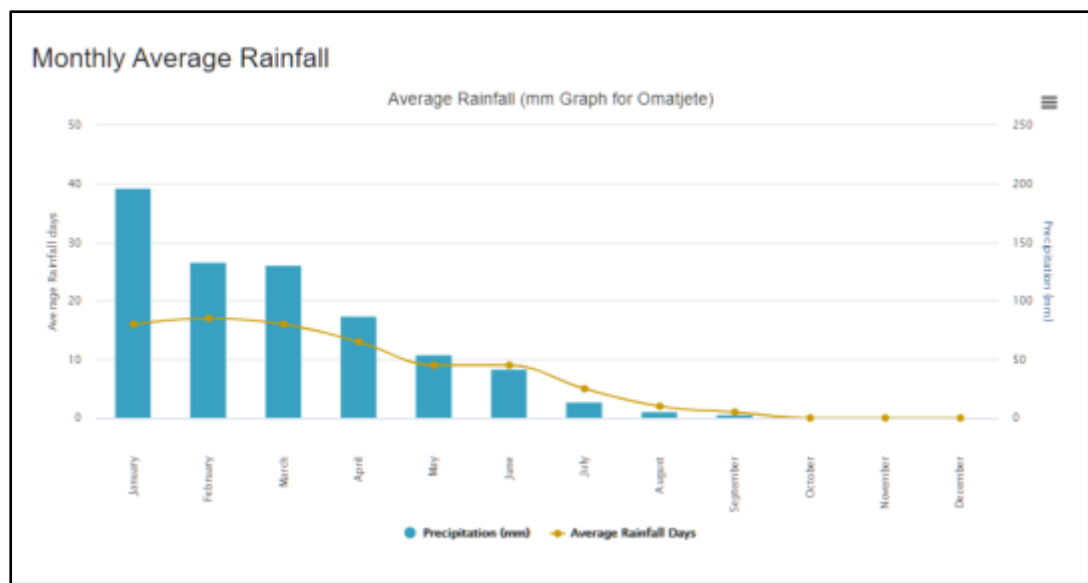


Figure 9: The monthly average rainfall of the Omatjete area (World Weather Online, 2021)

4.1.3 Air and Wind

The current known sources of air pollution in the area are dust emissions from unpaved district and access roads within the area, and emissions from heavy vehicles on the local roads including the D3712, particularly in dry and windy months.

4.1.4 Topography

The project site is located within the Central- Western Plain. According to Mendelson (2002), the plains were largely formed by erosion cutting eastwards into the higher ground, thereby forming the catchment area of several major ephemeral rivers such as the Khan, Omaruru, Swakop and Ugab, which water would all reach the sea when in full flood during good rainy seasons (Erongo Regional Council, 2021). Much of the area lies between 500 and 1000 m above sea level and consists of metamorphic rocks that were forced up out of the sea during the formation of the Gondwana continent some 550 million years ago.

The landscape of the immediate surrounding is heavily disturbed due to the cumulative existing mining of granite in the wider project site area on the quarries. Much of the broader area around the Mining Claim is flat with low hills with some high mountains where the Mining Claim is located (high rocky outcrops) – **Figure 10**.



Figure 10: The topography of the project area

4.1.5 Geology and Soils

The geological map in **Figure 11** shows that much of the Mining Claim (about 80%) is characterized by schists, marble and some quartzite with approximately 20% of the MC to its southwest covered by granites, which is the current target for the mining activities on the MC. Based on the site observations, the site geology is characterized by coarse grained pink, white with speckled black granite overlain by sandy quartz soil cover.

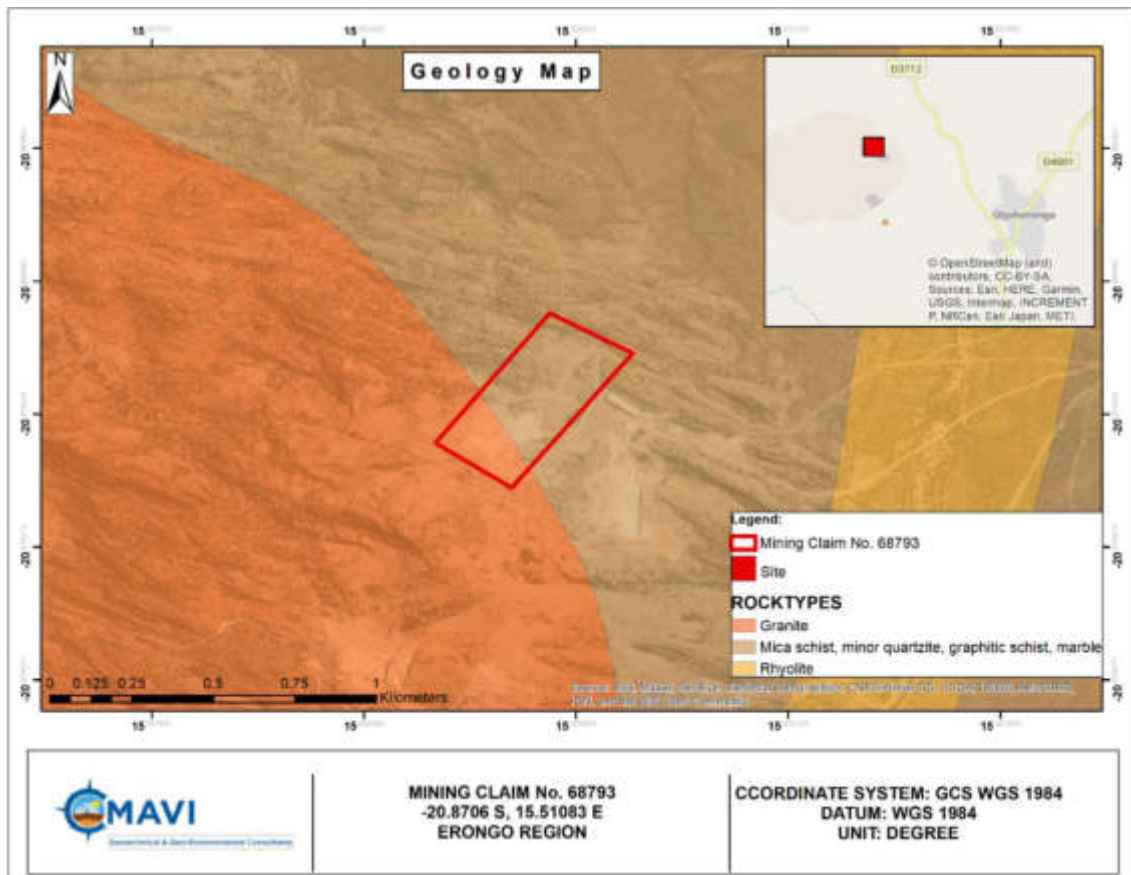


Figure 11: The geology map of the Mining Claim and surrounding project area

In terms of soil, the project site is overlain by Eutric Regosols. The Eutric Regosols are medium or fined textured soils of actively eroding landscape, the thin layers lying directly above the rock surfaces from which they formed. The central regions of the country are dominated by Regosols, which are especially susceptible to erosion where there is any degree of slope. Vegetation cover on these thin soils is generally sparse because they cannot provide most plants with sufficient water or nutrients. Areas with Eutric Regosols can support low-density stock farming or wildlife (Mendelsohn, 2003).

The site soils are influenced by the geology. The soils of the project site are light brown to grey loamy sandy soils and in some site areas loamy sand soil with gravel pebbles that may be site activities influenced such as the DR3712 to the eastern side of the Mining Claim.

4.1.6 Hydrogeology and Hydrology

The Mining Claim and surrounding areas falls within the Central Namib-Windhoek Groundwater Basin. These basins were demarcated based mainly on geological structures and groundwater flow. The project site is situated within the Omdel aquifer, The Omdel Aquifer is in an ephemeral west flowing river system and as such comprises of mainly unconsolidated fine to coarse grained sediments. The aquifer is largely unconfined, primary in nature and is classified as a moderate to high productive groundwater source (Centre for Geosciences Research, 2015).

This area generally has only moderate to poor groundwater potential. The groundwater potential of fractured aquifers in the Swakop Group of the Damara Sequence is generally low. However, the carbonates such as marbles are of moderate potential and at properly selected targets like fracture zones and karstified contact zones, even high yields can be found. This depends on the amount of rainfall and associated weathering and recharge (Christelis and Struckmeier, 2011). According to Lohe *et al.*, (2021), the bands of marble and quartzite in these otherwise phyllitic metamorphic rocks are of hydrogeological significance.

As typical of the Basin rock units, the Mining Claim is mainly covered by the rock bodies with little groundwater potential (as shown in the map in **Figure 12**) and limited potential aquifer. At some areas the aquifers' potential is locally moderate which probably explains the good water supply for the nearby villages such as Otjohorong (as indicated by some community members in the area).

The low groundwater potential in some areas around the Mining Claim is attributed to the type of rock units underlying the Mining Claim and their non-fractured/faulted nature limiting the storage, transmission, and easy flow of groundwater.

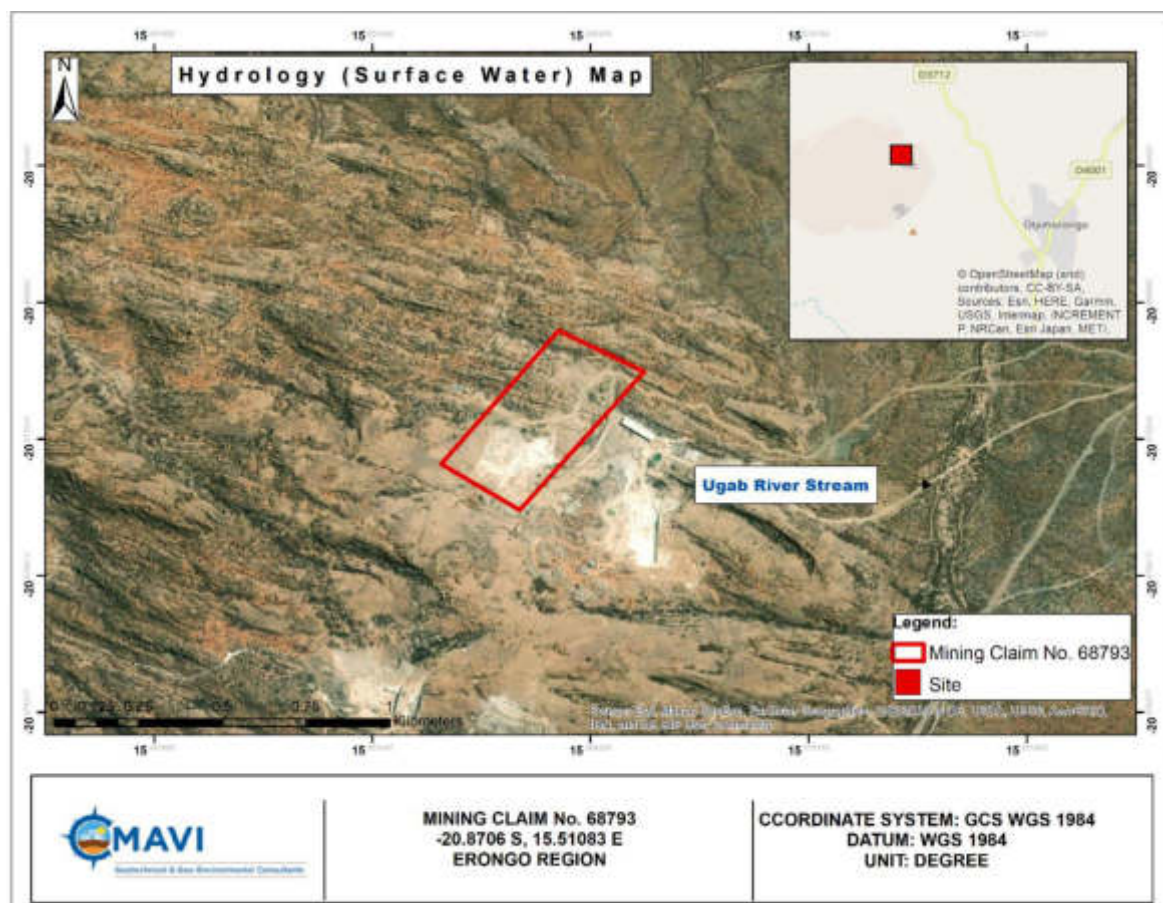


Figure 13: The hydrology map of the Mining Claim area

4.2 Biodiversity: Fauna and Flora

4.2.1 Fauna

Domestic animals: The project site and broader area is communal therefore houses livestock such as cattle, sheep, goats, horses, donkeys, and chickens.

Wildlife: The Mining Claim is found within Otjohorongo Community Reserve; therefore, several wild animals are likely to be housed within the Mining Claim (although unlikely owing to frequent human presence and vehicle movement) as well as in the wider area. Some of the wildlife known based on the information provide by locals include Ostriches, Guinea Fowls, Jackals.

Numerous bird species, insects as well as other animals may be found in the area (Centre of Geosciences Research, 2015).

4.2.2 Flora

According to the Centre of Geosciences Research (2015), the thornbush Savanna is the dominant vegetation type over the project area in the Otjohorong area in the Erongo region of Namibia. Generally, the vegetation the characteristic feature is grassland with trees and bigger shrubs in dense or open clumps of varying size. Over large part of the general Otjohorong area, *Acacia* spp. are very dominant and in some places bush encroachment by *Acacia mellifera* is taking place. Other characteristic species include *Acacia reficiens*, *A. erubescens* and *A. fleckii*. The common grasses include *Antephora pubescens*, *Brachiaria nigropedata*, *Digitaria* spp., *Stipagrostis uniplumis* and *Schmidtia pappophoroides*.

The project site is covered by medium to high density grass cover with shrubs and young trees of the following species:

- Blackthorn (*Acacia mellifera*),
- Mopane/butterfly (*Colophospermum mopane*) – dominant, and
- Purple pod terminalia (*Terminalia prunioides*) - **Figure 14**.



Figure 14: Young shrubs of *Terminalia prunioides* and grass cover

4.3 Social Demography

The Erongo Region has a population of 150 809 people, accounting to a 7.1% of the country's total population. The average population density of 2.4 persons/km². Out of the total population, 79 823 were men and 70 986 were women (Namibia Statistics Agency, 2011).

4.3.1 Constituency Population

The Erongo Region has seven constituencies comprising Arandis, Daures, Karibib, Swakopmund, Omaruru, Walvis Bay Rural, and Walvis Bay Urban. The project area falls under the Daures Constituency and according to the 2011 National Housing and Population Census, the population of the Constituency was recorded at 11 350 out of which 5 309 were men and 6 041 were women (Namibia Statistics Agency, 2011).

4.3.2 Local Economic Activities

According to the Erongo Regional Council (2022), the economy of the Erongo Region mainly depends on mining, fishing, agriculture, and tourism.

The Region's whole eastern part and certain western parts are characterized by livestock farming on commercial farms in the districts of Karibib, Usakos and Omaruru, and in the communal areas (Erongo Regional Council, 2022).

A. Farming

The common farming activity within and around the Mining Claim is communal by small-scale farming (livestock farming) with goats, cattle, sheep and horses and donkeys. These, especially cattle, sheep and goats provide the main source of both food and through sales, income for the communities.

The livestock farming depends heavily on the rainy season; hence, most farmers usually suffer losses of herd of cattle during prolonged drought periods.

B. Conservancies and Tourism

The Erongo Region is home to two national parks, a seal reserve, four communal conservancies and several private game reserves or farms. Namibia is well known for its strong position on the conservation of its environment, the actual proclamation of various areas as reserves and the necessary acts, rules, regulations, and procedures to safeguard its rich and unique biodiversity. More than 42% of land in Namibia is under some form of conservation management. There are community-based organisations local people manage and utilise the wildlife and tourism resources in their areas, thereby deriving direct and indirect mutual benefits. These conservancies together with the about 54 other similar conservancies in the country enjoy employment creation, revenue, in-kind benefits, capacity building and other benefits.

With regards to tourism, the Erongo Region offers some of the most spectacular and popular tourist destinations as well as a variety eco-, wildlife, cultural and adventure tourism opportunities.

The common tourism activities especially in the project area include game seeing in the community reserves such as the Otjohorong Community Reserve.

Some commercial farms in the Erongo Region and farms further to the east of MC68793 serve as hunting and guest establishments, while some have been converted into game farms or reserves for regional and international tourist. Due to these activities, these commercial farms provide employment to a substantial number of people in the areas (Erongo Regional Council, 2021).

C. Mining Activities

The mineral exploration and mining operations are moderately held activities in the Erongo Region. Exploration activities are common in the Erongo Region and provides livelihood to many of the Region's residents. Mining is practiced at both small-scale (on mining claims owned by communities), medium and large-scale level, depending on the commodities of interest as well as available technical and financial resources.

According to Centre for Geoscience Research (2015), the area in which the Mining Claim lies has a great potential for granite exploration due to the inselberg topography. There are also already other exploration and mining activities of granite taking place in the project area by other companies. Therefore, the project will not be an unfamiliar scenario for the surrounding community.

As mentioned above, there are already existing active mineral licenses (both EPLs, mining claims and mining licenses) around the vicinity of the Mining Claim and some of these are shown on the map in **Figure 15**.

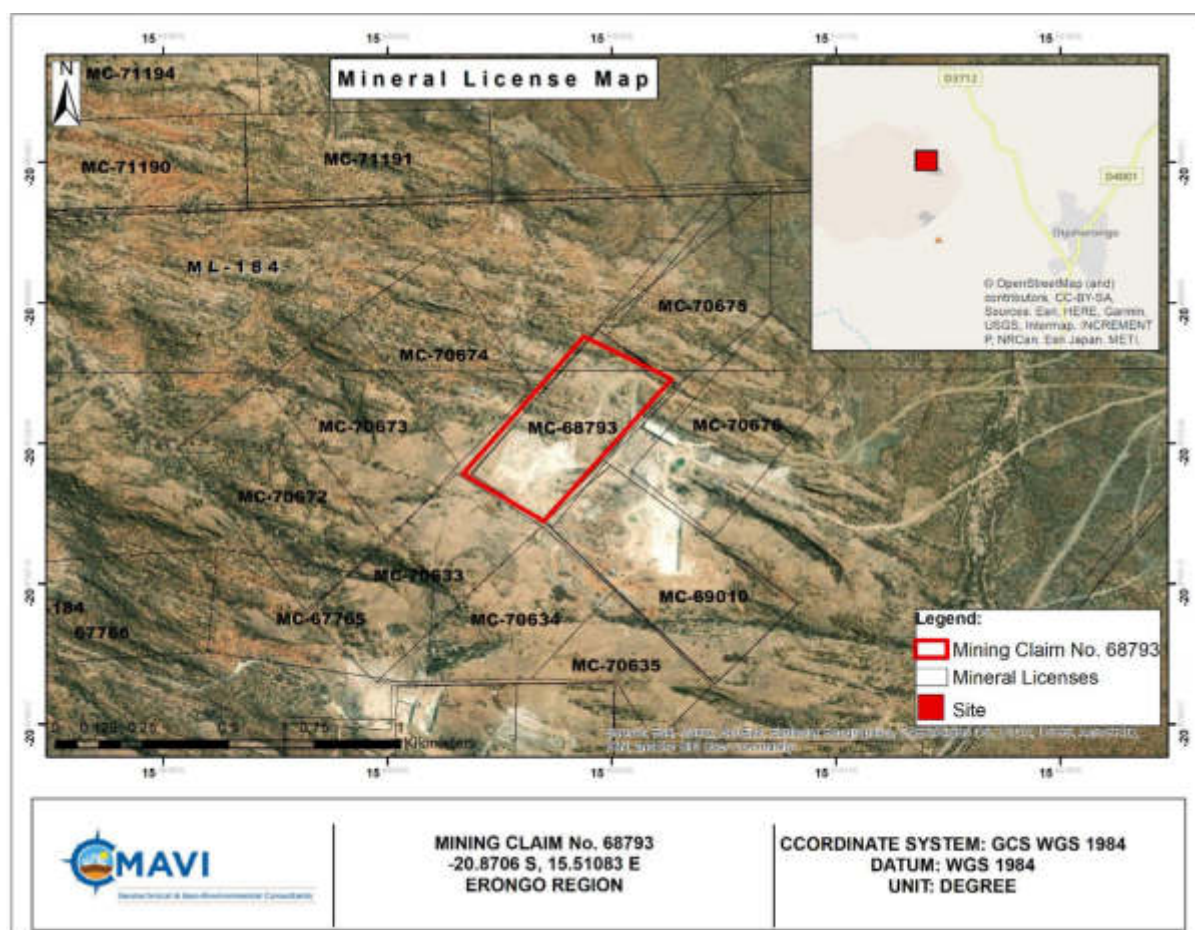


Figure 15: The mineral licenses around the Mining Claim

The mining Sector in the Region has been characterized by the establishment and expansion of several Uranium mines over the past decade due to an increased demand for this energy source. The Erongo Region also accommodates the mining of commodities such as gold, marble, granite, salt, and semi-precious stones (Erongo Regional Council, 2022)

4.4 Services Infrastructure

The project site is in a rural set up, but it has the most basic services for the people. The following services infrastructure have been observed near the site and for the general project area:

- **Water Supply:** The Omatjete Village itself is said to be experiencing water shortages although the villages close to MC 68793 have some boreholes with good supplies.
- **Electricity:** There is a powerline east of the Mining Claim and it supplies electricity to the active mining licence of Ekungungu. The main powerline runs from Okongwe Village to Otjohorongu supplying these village and surrounding areas.
- **Roads:** The Mining Claim is accessible from the district road, D3712 from Omatjete to the north or D2344 from the south and then via local access (gravel) roads. Therefore, the project used and will continue to use these existing roads to access the project site.

There is a closed off cemented stabilized access at the Mining Claim as shown in **Figure 16**.



Figure 16: Cement stabilized access road onsite leading to the quarry

4.5 Archaeology and Cultural Environment

The most abundant traces of human occupation in the Namib Desert are stone artefacts. These are easily recognizable as isolated finds and as surface scatters on the gravel plains of the Namib. Other less common traces include shell middens (usually within less than 5 km of the coast), natural rock shelters with evidence of occupation, including rock art, and stone features such as hut circles, hunting blinds and grave cairns. Historical sites include cemeteries, old mine workings, and remnants of World War I military camps. While some kinds of archaeological sites such as the larger grave cairns are highly visible, their significance is not obvious (Kinahan, 2020).

Given the known sensitivity of the project area in terms of heritage and culture, an Archaeological site walkover was done by a specialist (Archaeologist Mr. Roland Mushi) during the site visit conducted on the 19th of March 2022. An Archaeological & Heritage Write-Up based on field observations was compiled and is attached hereto as Appendix C. The Write-Up also include the mitigation measures on how to minimize and or avoid the impact of the quarrying and related activities on the archaeological and heritage resources in and around the site.

It should be noted that the project site area and surroundings, geology and landscape are heavily disturbed due to historical and ongoing dimension stone quarrying, block storage, sorting, and haulage activities. As a result, archaeological and heritage resources in the area may already have been disturbed and possibly damaged. However, OMAVI Consultants acknowledges that stringent practices must be implemented by both the project proponent and the custodian organ of state (the National Heritage Council) to ensure that any remaining archaeological and heritage resources in the area are preserved and protected from the planned activities.

OMAVI further acknowledges that despite the seemingly sensitive nature of the area and its surrounds, little coverage of the Archaeology component in the 2015 EIA Report and its EMP was found. The above-mentioned Archaeological Write-Up has been prepared to document the surviving observed archaeological and heritage resources for their protection going forward.

5 ENVIRONMENTAL IMPACTS AND MANAGEMENT MEASURES

5.1 Identified Key Environmental Impacts

The project activities are associated with different adverse environmental impacts. It is therefore crucial and the aim of this EMP to update the previous management and mitigation measures to avoid and or reduce their significance on the environment, while maximizing the project benefits. The potential impacts that have been identified to be associated with the project activities are as follows:

Anticipated positive impacts:

- The project will ensure continued and responsible mining of granite, which contributes to local employment, skills transfer, and provision of procurement opportunities in the form of mechanical services, transportation of blocks contracts.
- Socio-economic benefits in the form of local employment to the youth, social corporate responsibility.
- The payment of royalties and taxes to the relevant government institutions from the mining activities and operation of the Mining Claim.

The following potential negative impacts are had been identified and as updated from the 2015 EIA Report):

- Potential disturbance of existing pastoral systems,
- Archaeological and heritage resources impact,

- Physical land / soil disturbance,
- Impact on local biodiversity (fauna and flora) and habitat disturbance,
- Potential impact on water resources and soils,
- Air quality (compromise the surrounding air quality),
- Visual impacts due to land scars from stripping for granite blocks,
- Potential occupational health and safety risks,
- Vibrations and noise associated with dimension stone quarrying,
- Vehicular traffic safety & impact on services infrastructure (e.g., local roads), and
- Environmental pollution (waste generation).

5.2 EMP Implementation Roles and Responsibilities

To ensure that there is accountability in EMP implementation to mitigate the potential negative impacts listed above, different persons (parties) are assigned with different tasks of implementation the EMP (management and mitigation measures).

It should be noted that the project Proponent is ultimately responsible for the implementation of the EMP. However, they may delegate this responsibility at any time, as they deem necessary during the project phases (usually an Environmental Control Officer). The roles and responsibilities of all the parties involved in the effective implementation of this EMP are as follows

5.2.1 The Department of Environmental Affairs and Forestry (DEAF) of the MEFT

As the environmental custodian is responsible for enforcing compliance with the EMA, its regulations and full implementation of this EMP. The authority is also responsible for the reviewing of bi-annual reports submitted by the Proponent and grant ECC renewal after every 3 years following an environmental audit.

Further Monitoring institutions include but not limited to:

- **The National Heritage Council of Namibia (NHC):** for archaeological and heritage resources (sites and objects).
- **Ministry of Mines and Energy:** for compliance to the relevant project (quarrying and related activities) requirements, including work progress on site, petroleum products' storage and handling on site, etc.

5.2.2 The Site Manager (or the Proponent)

This Manager who may also be the Proponent, will be responsible for the following:

- Development and management of schedules for daily activities in compliance with the EMP.

- Managing/overseeing the implementation of this EMP and updating and maintaining it when necessary.
- Ensure that relevant commitments contained in the EMP Action Plans are adhered to.
- Ensure the relevant staff is trained in procedures entailed in their duties.
- Through consultations and cooperation with the ECO, issuing fines to individuals who may be in breach of the EMP provision and if necessary, removing such individuals from the site.
- Setting up and managing the schedule for the day-to-day activities.
- Ensuring all incidents are recorded and documented.
- Undertaking an annual review of the EMP and amending the document when necessary.

5.2.3 Environmental Control Officer (ECO)

The ECO will be responsible for ensuring that project activities are completed on time, efficiently and sustainably. The ECO's duties and responsibilities will include:

- Planning and carrying out site inductions to the workers on-site and visitors to the worksite(s).
- Ensuring compliance with relevant environmental and related authorisations and license conditions.
- Ensure that the requirements of the EMP are carried out during applicable activities throughout the project life span.
- Monitor the overall implementation of the EMP.
- Identifying and appointing of appropriately qualified specialists (were necessary) to undertake the programmes in a timeous manner and to acceptable standards.

The ECO will also identify with the help of a qualified Archaeologist (to inspect, identify, advise management, and recover remains) implement the Chance Finds Procedure on site. The CFP

5.2.3.1 Archaeology: Chance Finds Procedure (CFP) Implementation Roles

The following personnel have been assigned responsibilities as per the Chance Finds Procedure (**Appendix 1**):

- **Operator:** To exercise due caution if archaeological remains are found
- **Foreman:** To secure site and advise management timeously
- **Superintendent:** To determine safe working boundary and request inspection.

5.2.4 Public Relation Officer (PRO)

The Public Relation Officer will be responsible for the following tasks:

- Liaison between the affected farmers (property owners) and/or occupiers of land as well as Traditional Authority, other stakeholders, and Zanite Investment.
- Ensure effective communication with stakeholders (affected farmers or landowners or occupiers of land), media (if necessary) and the public.
- Managing public relations issues.
- Preparing and submitting public relations reports, if required.
- Collaborating with personnel and maintaining project-related open communication among personnel.
- Cooperate with all relevant interested and affected parties/stakeholders.

5.3 Environmental Management and Mitigation Measures

This section deals with the management plan actions for the enhancement of potential benefits and management, and mitigation of potential adverse impacts for the continued project operations. The measures have been presented together with key performance indicators, responsible person(s), resources or proof and the timeline of such management actions. The five forms the headings of **Table 3** and they are briefly explained as follows:

- Environmental aspect and issues for which management actions are required,
- Proposed impact enhancement/ mitigation measures,
- Key performance indicator (KPI) for monitoring success levels of management actions,
- Responsible person(s) for implementing the proposed management actions,
- Resources required for implementing management actions and monitoring, and
- Implementation timeframes for the proposed management actions.

The measures to manage and mitigate the adverse impacts identified are presented in **Table 3** below.

Table 3: Environmental & Social Management and mitigation measures for the project activities

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
CONTINUED QUARRYING (MINING) PHASE						
Authorizations	Lack of Agreements, Permits/ Licenses	-All the required agreements and licenses or permits should be applied for and signed, respectively as required. -The permits, agreements referred to herein include: (a) Groundwater Abstraction & Use Permit from the Department of Water Affairs of the Ministry of Agriculture, Water and Land Reform (MAWLR) (b) Onsite Petroleum storage permits from Ministry of Mines and Energy (MME)	-Applicable permits and licenses to be obtained from relevant authorities and kept on site for records keeping and future inspections -Groundwater Abstraction & Use Permit -Onsite petroleum storage permits obtained	-Proponent	-Permits and Licenses	Prior to commencement of activities (if not obtained)
Communication between the Proponent and local communities on issues arising from quarrying activities	Lack of communication (proper liaison) between communities and Proponent	-The Proponent should appoint a Public Relation Officer (PRO) to liaise with the communities. -A clear communication procedure/plan which should include a grievance	-A PRO is appointed, and their contact details provided to local community leaders for easy communication in events of grievances.	-Proponent	-Complaint's logbook -PRO contact details to be provided to the community leaders	PRO appointed on commencement of activities

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		mechanism should be compiled	-Ongoing Stakeholders' and Public Engagement		-Records of Stakeholders' and Public Consultations	
Corporate Social Responsibility (CSR)	Social commitment failures	<p>-The Proponent should consider providing and or donating services whenever possible.</p> <p>-Infrastructure such as campsite/accommodation unit and field workstation structures should be donated to the community through the Traditional Authority post-mining for distribution / allocation to the needy communities.</p> <p>-The Proponent should consider collaborating with other operators in the area to help in maintaining and improving the public roads.</p>	-Visible commitment to ensure that the local community is benefitting from the project	-Proponent	<p>-Office of the Constituency Councillor</p> <p>-Local Development Committee to monitor implementation of the CSR</p>	Throughout the phase

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		<p>-The project owner (Proponent) should fulfil their promises of CSR, upon proper consultation with the local development committees to establish what the community really needs and then provide for them accordingly however, they can afford to.</p>				
<p>Archaeology and heritage</p>	<p>Accidental disturbance and destruction of archaeological or heritage objects and sites</p>	<p>-A "No-Go-Area" should be put in place where there is evidence of archaeological site, rock paintings, cave/rock shelter or past human dwellings. It can be a demarcation by fencing off or avoid the site completely by not working closely or near the known site. The 'No-Go Option' might have a NEUTRAL impact significance.</p> <p>-On site personnel (s) and contractor crews must be sensitized to exercise and recognize "Chance Finds</p>	<p>-Preservation of all artefacts that are discovered on and around project area</p> <p>-Cessation of work upon discovery/unearthing of unknown objects.</p> <p>-Archaeologist to be present on-site when quarrying close to identified rock paintings and or rock caves.</p>	<p>-Site Manager</p> <p>-ECO</p> <p>-Archaeologist</p>	<p>-Technical Consultant (Archaeologist to help identify and advise on heritage object discovery)</p> <p>-Salvage equipment</p> <p>-Flag tapes</p> <p>-GPS (site marking)</p>	<p>-Archaeologist to be present on-site during excavations</p> <p>-Throughout the phase</p>

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		<p>Heritage” during their mining works.</p> <p>-A landscape approach of the site management must consider culture and heritage features in the overall mining infrastructures within and beyond the license boundaries.</p> <p>-If there is a possibility of encountering or unearthing of archaeological materials then it is better to change the layout design to avoid the destruction that can occur.</p> <p>-Direct damage to archaeological or heritage sites should be avoided as far as possible and, where some damage to significant sites is unavoidable, scientific/historical data should be rescued after obtaining necessary permits from NHC.</p> <p>-The Proponent and Contractors should adhere to the provisions of Section 55 of</p>				

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		<p>the National Heritage Act in event significant heritage and culture features are discovered while conducting mining (quarrying) works</p> <p>-There should be a controlled movement of the contractor, mining crews, equipment, setting up of camps and everyone else involved in the mining activities to limit the proliferation of informal pathways, gully erosion and disturbance to surface and sub-surface artifacts such as stone tools and other buried materials etc.</p> <p>-All project related laydown should be done in previously damaged areas, where project camps should also be located unless crews could be accommodated.</p> <p>-Mining operations and maintenance staff should be educated and informed of their environmental obligations. Meaningful</p>				

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		<p>penalties for damages should be stipulated, and the main contractor should be held responsible for all transgressions.</p> <p>-It is essential that cognizance be taken of the larger cultural landscape of the area to avoid the destruction of previously undetected heritage sites. Should any previously undetected heritage resources be exposed or uncovered during mining activities, these should immediately be reported to the heritage specialist or heritage authority (National Heritage Council of Namibia).</p> <p>-Whoever is going to oversee mitigation and monitoring measures should have the authority to stop any mining activities that is in contravention with the National Heritage Act of 2004 and National Heritage Guidelines.</p>				

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
Pastoral land	Impact on grazing areas	<p>-Any unnecessary removal or destruction of grazing land, due should be avoided.</p> <p>-Vegetation found on the site, but not in the targeted quarrying areas should not be removed but left to preserve biodiversity and grazing land.</p> <p>-Workers should refrain from driving off road and creating unnecessary tracks that may contribute to soil erosion and loss of grazing land.</p> <p>-Environmental awareness on the importance of the preservation of grazing land for local livestock should be provided to the workers</p>	<p>-Little damage on grass cover and vegetation</p> <p>-Maximum effort implemented to curb loss of grazing areas within the MC.</p>	<p>-Site Manager</p> <p>-ECO</p>	<p>-None</p>	<p>Throughout the phase</p>
Land use (physical soils)	Land degradation	<p>-Overburden should be handled more efficiently during site works to avoid erosion when subjected erosional processes.</p> <p>-Prevent creation of huge piles of waste rocks by</p>	<p>-No proliferation of informal vehicle tracks.</p> <p>-No new erosion gullies.</p>	<p>-Site Manager</p> <p>-ECO</p>	<p>-Complaint's logbook</p>	<p>Throughout the phase</p>

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		<p>performing sequential backfilling, where possible.</p> <p>-Stockpiled topsoil and overburden waste rocks should be used to backfill the disturbed site areas/spots.</p> <p>-Soils that are not within the intended and targeted footprints of the site areas should be left undisturbed and soil conservation implemented as far as possible.</p> <p>-Project vehicles/machinery should stick to access roads provide and or meant for the project operations but not to unnecessarily create further tracks on site by driving everywhere resulting in soil compaction.</p>				
Water resource	Over-abstraction (Water demand and availability)	-Water abstracted from borehole through trucking should be used efficiently, and recycling and re-using of water on certain site activities should be encouraged,	-Proof/ recording/ quantification of water saving efforts -No complaints of water level drops and short in	-Site Manager -ECO	-Permit issuance (or water purchasing agreements and abstraction & use	Throughout the phases

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		<p>where necessary and possible.</p> <p>-A Permit to abstract and use the water from the local borehole should be applied for from MAWLR.</p> <p>-Water reuse/recycling methods should be implemented as far as practicable such that the water used to cool off quarrying equipment should be captured and used for the cleaning of project equipment, if possible.</p> <p>-Water storage tanks should be inspected daily to ensure that there is no leakage, resulting in wasted water on site.</p> <p>-Water conservation awareness and saving measures training should be provided to all the project workers for accountability.</p>	<p>supply from local water users</p>			

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
Soil and water resources	Soil and water resources pollution	<p>-Spill control preventive measures should be in place on site to management soil contamination, thus preventing and or minimizing the contamination from reaching water resources bodies. Some of the soil control preventive measures that can be implemented include:</p> <p>(a) Identification of oil storage and use locations on site and allocate drip trays and polluted soil removal tools suitable for that specific surface (soil or hard rock cover) on the sites.</p> <p>(b) Maintain equipment and fuel storage tanks to ensure that they are in good condition thus preventing leaks and spills.</p> <p>(a) The oil storage and use locations should be visually inspected for container or tank condition and spills.</p>	<p>-No complaints of pollutants on the soils and eventually in the water due to quarrying activities.</p> <p>-No visible oil spills on the ground or contaminated/polluted spots.</p>	-ECO	<p>-Complaint's logbook</p> <p>-Waste containers</p> <p>-Non-permeable material to cover the ground surface at areas where hydrocarbons and potential pollutants are handled.</p>	Throughout the phase

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		<p>(b) Maintain a fully provisioned, easily accessed spill kit. Spill kits should be located throughout the active project sites contain the floor dry absorbent material and absorbent booms, pads, mats. These would be suitable for ground surface areas that are covered mainly by hard rocks.</p> <p>-All project employees should be sensitized about the impacts of soil pollution and advised to follow appropriate fuel delivery and handling procedures.</p> <p>-The Proponent should develop and prepare countermeasures to contain, clean up, and mitigate the effects of an oil spill. This includes keeping spill response procedures and a well-stocked cache of supplies easily accessible.</p> <p>-The site areas where hydrocarbons will be utilized,</p>				

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		<p>the surface should be covered with an impermeable plastic liner (e.g., an HDPE liner), carefully placed to minimize risk of puncturing, to prevent any spillages from getting into direct contact with the soils and prevent eventual infiltration into the ground.</p> <p>-Project machines and equipment should be equipped with drip trays to contain possible oil spills when operated on site.</p> <p>-In cases of accidental fuel or oil spills on the soils from site vehicles, machinery and equipment, the polluted soil should be removed immediately and put in a designate waste type container for later disposal as per the preceding bullet point. The removed polluted soil should either be completely disposed of or cleaned and returned to where it was taken from on</p>				

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		<p>site or can be replaced with a cleaner soil. This is to ensure that the pollutants contained in the soil does not infiltrate into the site soils and eventually reach to groundwater.</p> <p>-Although fuel (diesel) required for equipment will be stored in a tank, drip trays must be readily available to clean up spills on time.</p> <p>-Polluted soil must be collected and transported away from the site to an approved and appropriately classified hazardous waste treatment facility.</p> <p>-Washing of equipment contaminated hydrocarbons, as well as the washing and servicing of vehicles should take place at a dedicated area, where contaminants are prevented from contaminating soil or eventually runoff to water</p>				

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		resources, especially during rainy seasons. -Toilet water should be treated using by discharging into chemical toilets and periodically emptied out before reaching capacity and transported to a wastewater treatment facility.				
Biodiversity	Loss of Fauna and Flora	<p>Flora:</p> -The unnecessary removal of vegetation should be avoided to promote a balance between biodiversity and project activities. -Vegetation found within the MC, but not in the targeted quarrying site areas should not be removed but left to preserve biodiversity on the site. -Shrubs or trees found near selected sampling or quarrying spots should not be unnecessarily removed. -The movement of vehicle and machinery should be	-Incident reports of illegal hunting of wildlife by the project crew/workers. -No complaints of livestock theft, snaring or killing of livestock and wildlife by the project personnel -No disturbance to unmarked areas. No complaints from locals regarding unauthorised	-ECO	-Complaint's logbook	Throughout the phase

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		<p>restricted to existing roads and tracks to prevent unnecessary damage to the vegetation.</p> <p>-No onsite vegetation should be cut or used for firewood related to the project activities. The Proponent should provide firewood for his onsite camping workers from authorized firewood producer or seller.</p> <p>-Make use of the existing road network as much as possible and avoid off-road driving.</p> <p>-Vegetation clearing to be kept to a minimum. The vegetation of the site is largely low and open and therefore whole-sale vegetation clearing should only be applied where necessary and within the project footprint.</p> <p><u>Fauna (domestic and wild)</u></p> <p>-Workers should refrain from disturbing, killing or stealing</p>	<p>vegetation removal or cutting down of trees</p>		<p>-Anti-poaching unit of the Namibian Police Force</p> <p>-MEFT's Wildlife Protection Unit</p>	

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		<p>domestic and wild animals and killing small soil and rock outcrops' species found on site.</p> <p>-Poaching (illegal hunting) of wildlife from the area is strictly prohibited.</p> <p>-Environmental awareness on the importance of biodiversity preservation should be provided to the workers.</p>				
Visual and Tourism	Visual impact on tourists, locals, and travellers	<p>-The Proponent should consider the implementation of continuous rehabilitation programme, by using overburden waste rocks.</p> <p>-The Proponent to utilize waste rubble to rock blind exposed rock faces and stockpiled topsoil to partially back fill site areas mined areas.</p> <p>-Consider quarrying away from the crests of the mountain and outcrops as possible.</p>	<p>-Visible rehabilitation efforts</p> <p>-little to no complaints of visual nuisance</p>	<p>-Proponent</p> <p>-Site Manager</p> <p>-ECO</p>	<p>-Topsoil</p> <p>-Overburden rocks or rubbles</p> <p>-Local vegetation for re-vegetation purposes</p>	Throughout the phases

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
Air Quality	Air quality (dust)	<p>-Project related vehicles travelling on access roads should not be driven at a speed more than 40 km/h to avoid dust generation around and within the site area, which will in turn minimise air quality.</p> <p>-Ensure that the quarrying schedule is limited to the given number of days of the week. This will keep the vehicle-related dust level minimal in the area.</p> <p>-Dust control measures such as reasonable amount of water spray should be used on gravel roads and near quarrying sites to suppress the dust that may be emanating from certain area of the MC.</p> <p>-Dust masks, eye protective glasses and other respiratory personal protective equipment (PPE) such as face masks should be provided to the workers on site drilling</p>	<p>-Dust suppression measures implemented</p> <p>-Visible efforts to curb dust</p>	<p>-Site Manager</p> <p>-ECO</p>	<p>-Grievance logbook</p> <p>-Dust suppression water tanks</p>	<p>Throughout the phase</p>

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		<p>areas, where they are exposed to dust.</p> <p>-Project vehicles and heavy machines should not be left idling when not in use, such that they emit air polluting gases.</p>				
Waste management	Environmental pollution	<p>-Project workers should be sensitized to dispose of waste in a responsible manner and not to litter.</p> <p>-After each daily works, there should not be waste left scattered on site, but rather be disposed of in allocated site waste containers.</p> <p>-No waste may be buried or burned on site or anywhere else throughout the project lifecycle.</p> <p>-All project site areas should be equipped with separate waste bins for hazardous and general/domestic waste to be contained until it will be transported to designated waste sites.</p>	<p>-A register of all waste generated on site is kept on site.</p> <p>-All waste disposal permits from relevant authorities are available on site.</p> <p>-No littering on and around the project site</p>	<p>-Proponent</p> <p>-Site Manager</p> <p>-ECO</p>	<p>-Funds to acquire waste storage bins/ drums; and transport all waste from the site.</p> <p>-Waste storage containers</p>	Throughout the phases.

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		<p>-Hazardous waste, including emptied chemical containers should be safely stored on site where they cannot be accessed and used by unformed locals for personal use. These containers can then be transported to the nearby approved hazardous waste sites for safe disposal. No waste should be improperly disposed of on site or in the surroundings, i.e., unapproved waste sites.</p>				
	<p>Wastewater generated by project workers living on-site.</p>	<p>-Washing of hydrocarbon contaminated equipment, as well as the washing and servicing of vehicles should take place at a dedicated area, where contaminants are prevented from contaminating soil or water resources.</p> <p>-With regards to sanitation, the site should be equipped with enough portable toilets that should be emptied in</p>	<p>-Adequate toilet facilities on site.</p> <p>-Secured vehicles and equipment washing area</p>	<p>-Site Manager</p> <p>-ECO</p>	<p>-Chemical toilets, waste treatment agents/chemicals</p> <p>-Wastewater discharge permits</p>	<p>Throughout the phase</p>

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		<p>accordance with their manufacturers' instruction.</p> <p>-Sewage waste should be stored as per the portable chemical toilets supplied on site and regularly disposed of at the nearest wastewater treatment facility.</p>				
Noise	Noise	<p>-Noise from project vehicles and equipment on the working sites of the MC should be at acceptable levels.</p> <p>-Quarrying hours should be restricted to between 08h00 and 17h00 to avoid noise and vibrations and the movement of vehicles before or after hours, thus disturbing the tranquillity in the area.</p> <p>-When operating the drilling machinery onsite, workers should be equipped with personal protective equipment (PPE) such as earplugs to reduce exposure to excessive noise.</p>	<p>-Noise generating activities are limited to weekdays only.</p> <p>-PPE provided to workers operating noisy equipment and in noisy site areas.</p>	<p>-Site manager</p> <p>-ECO</p>	<p>-Clearly written placards with operational hours in a day placed at one of the visible access roads to sites</p>	Throughout the phase

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		<p>-The transportation of mining materials, equipment and machinery should be limited to once or twice a week only, but not every day.</p>				
Health and Safety	Occupational & Community Health and Safety	<p>-The site safety of all personnel will be the Proponent's responsibility and should be adhered to as per the requirements of the Labour Act (No 11 of 2007) and the Public Health Act (No. 36 of 1919).</p> <p>-The heavy vehicle, equipment and fuel storage area should be properly secured to prevent any harm or injury to the Proponent's personnel or local people and animals.</p> <p>-Heavy vehicle, equipment and fuel storage site should be properly secured, and appropriate warning signage placed where visible.</p> <p>-As part of their induction, the project workers should be</p>	<p>-Compilation of Comprehensive Health and Safety Plan</p> <p>-Regular health screening of workers</p> <p>-Bi-annual health and safety audits done.</p> <p>-All onsite workers and visitors equipped with PPE.</p>	<p>-Site Manager</p> <p>-Proponent</p> <p>-ECO</p>	<p>-Health and Safety Policies</p> <p>-Funds to acquire health and safety related equipment. and to pay for employee medical services</p> <p>-First Aid training for at least 1 personnel at each work site</p> <p>-Distribution of condoms to all project workers every month</p> <p>-Sexual health education.</p>	

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		<p>provided with an awareness training of the risks of mishandling equipment and materials on site as well as health and safety risk associated with their respective jobs.</p> <p>-All onsite project employees and authorized site visitors (including inspectors) should be properly equipped with adequate personal protective equipment (PPE) such as coveralls, gloves, safety boots, earplugs, dust masks, safety glasses, etc.</p> <p>-An emergency preparedness plan should be compiled, and all personnel appropriately trained.</p> <p>-Workers should not be allowed to drink alcohol prior to and during working hours as this may lead to mishandling of equipment which results into injuries and other health and safety risks.</p>				

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		-The workers should be engaged in health talks and training about the dangers of engaging in unprotected sexual relations which results in contracting HIV/AIDS and other sexual related infections.				
Fires	Accidental fire outbreak	-Portable fire extinguishers should be provided on sites (per vehicle and working sites). -No open fires should be created by project personnel. -Potential flammable areas and structures such as fuel storage tanks should be marked as such with clearly visible signage.	-No Fires recorded (due to presence of workers)	-Site Manager -ECO	-Fire extinguishers (1 per vehicle) and 1 per working site	Throughout the phase
Vehicular Traffic	Traffic safety	-The transportation of project materials, equipment and machinery should be limited to once or twice a week only, but not every day to reduce the pressure on local roads. -The heavy truck loads should comply with the maximum	-No complaints from members of the public regarding vehicular traffic issues related to the project -All personnel operating the project vehicles and machinery are	-Site Manager -ECO	-Vehicular traffic compliance to be included in the annual environmental audit reporting	Throughout the phase

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		<p>allowed speed limit for respective vehicles while transporting materials and equipment/machinery on the public and access roads (40km/h).</p> <p>-Drivers of all project phases' vehicles should be in possession of valid and appropriate driving licenses and adhere to the road safety rules.</p> <p>-Drivers should drive slowly (40km/hour or less) and be on the lookout for livestock and wildlife as well as locals.</p> <p>-The Proponent should ensure that the site access roads are well equipped with temporary road signs conditions to cater for vehicles travelling to and from site throughout the project's life cycle.</p> <p>-Project vehicles should be in a road worthy condition and serviced regularly to avoid</p>	<p>appropriately licensed and possession of valid driving licenses.</p> <p>-The vehicles are driven at the recommended speed.</p> <p>-Demarcated areas for parking, offloading, and loading zones are on sites</p>			

Aspect	Impact	Management & Mitigation Measure(s)	Key Performance Indicator (KPI)	Responsible Person	Resources	Timeline
		accidents owing to mechanical faults. -Vehicle drivers should only make use of designated site access roads provided and as agreed. -Vehicle's drivers should not be allowed to operate vehicles while under the influence of alcohol.				
Local resources and services infrastructure	Overuse of existing roads	-The heavy trucks transporting materials and services to site should be scheduled to travel at least twice or thrice a week to avoid daily travelling to site, unless on cases of emergencies.	The local roads are frequently maintained by the Proponent in collaboration with other operators in the area -The movement of heavy trucks is limited -Wate saving measures are implement	-Proponent -Site Manager	-Road maintenance excavator/bulldozer -onsite water storage tanks	Throughout the phase

5.4 Planning for Rehabilitation of the Abandoned Quarry

Successful rehabilitation requires careful consideration of the local ecological context in combination with rehabilitation goals. The most important steps in undertaking a successful rehabilitation are planning and environmental awareness (environmental education) on the importance of progressive rehabilitation and its importance to the environment. Furthermore, to successfully implement the planned rehabilitation, practically, this will depend on a few factors, namely the:

- Rehabilitation program,
- Characteristics of the site to be rehabilitated,
- Nature of disturbance,
- Rehabilitation methods, and
- Resources availability.

To ensure that the quarry is rehabilitate successfully, Zanite Investment will first need to consider the following factors, and according to Lintukangus *et al.*, (2011):

- size of the area,
- topography of the area,
- water (quality, depth, and temperature),
- quarry faces (height, and fracturing/soundness),
- quarry benches (width and fracturing/soundness),
- piles of leftover stone (form and height),
- ownership, points of compass,
- scenery, flora, and fauna,
- geological values,
- human settlement, and
- status of land use planning.

The use of an abandoned quarry should also consider the surroundings in terms of transport facilities, population structure, services, tourist attractions and seasonal variations (Lintukangus *et al.*, (2011).

For this reason, before the end of the quarry life cycle, a Rehabilitation Plan should be prepared. The aim of the rehabilitation plan and measures is to ensure that the disturbed sites are left close to their pre-quarrying state as much as possible

6 RECOMMENDATIONS AND CONCLUSIONS

The quarrying activities on Mining Claim No. 68793 had been environmentally cleared on the 12th of October 2015 issued to Best Cheer Investment Namibia (Pty) Ltd, but the ECC has since expired, and therefore, it should be renewed. To ensure that their project activities are compliant with the national environmental legislation that also include holding a valid ECC, they appointed OMAVI Geotechnical & Geo-Environmental Consultants cc, independent Environmental Consultants to assist them with the application for their ECC Renewal and ECC ownership transfer. The proposed ECC ownership transfer is from Best Cheer Investment Namibia (Pty) Ltd to Zanite Investments cc (the holder of Mining Claim 68793).

The environmental management and mitigation measures (action plans) contained in this EMP will be effectively implemented onsite and are legally binding to the project Proponent. The project site status presents that despite the ECC expiring in October 2018, the current project activities have been undertaken in an environmentally and socially responsible manner to date. Moreover, with some improvements recommended to strengthen the current environmental and social requirements, this will greatly improve environmental management and sustainability by being accountable to the conditions set in the ECC. This will include environmental monitoring of site performance through the submission of bi-annual environmental audit reports to the Environmental Commissioner.

Based on the visual observations of the current environmental and social conditions made during the site visit to Mining Claim and immediate surroundings, it was found that the site operations are halted to allow for the removal of mined dimension stone blocks. Not only that, but the operations have been halted to allow for the renewal of the expired operational authorization (ECC and Mining Claim Rights). The visual observations/ inspections of the Mining Claim were coupled with pre-visit and post engagements with management / personnel to aid in updating the EMP, in terms of the baseline conditions, and development of the EMP.

The project activities are of a small to medium scale of operation and limited within the MC' boundaries. There are no new planned or anticipated amendments to the current operations onsite. The updated and new management and mitigation measures have been recommended for the continued operations of the current project activities once the ECC and Mining Claim Rights are renewed and project operations resume.

Therefore, OMAVI Consultants are confident that the potential negative impacts associated with the project activities can be mitigated by effectively implementing the recommended management and mitigation action measures and with more effort and commitment put on implementation monitoring (Bi-Annual Monitoring and reporting).

With above said, it is recommended that the project and its associated activities be granted a new Environmental Clearance Certificate, subject to:

- Continued effective implementation of all the management measures (mitigations) provided in in this EMP under section 5.3 (Table 2) and where required, improvement should be effectively put in place.
- Obtaining all required permits, licenses, approvals, and document renewals that may be required for the project activities in future (please refer to the Permitting and Licensing section/Chapter 3 of this EMP).
- Full commitment to constantly improve on the effective implementation of measures, where required.
- The Proponent and all their project workers, contractors and or specialists complying with the legal requirements governing their project and associated activities, including environmental and social (occupational health and safety) precautions provided.
- To avoid late renewal of the ECC or waiting until it expires, the Proponent's Safety, Health & Environmental Officer (or an Environmental Control Officer (ECO), Environmental Consultant) should effectively conduct Environmental (EMP) Compliance Bi-Annual Monitoring and most importantly, ensure timely renewal of the ECC. An ECC Renewal application can be submitted at least 2 to 3 months before the expiry date of the valid ECC to allow time for the evaluation of the ECC Renewal Report or Updated EMP by the DEAF and approval by the Environmental Commissioner; and
- The EMP Compliance check (Bi-Annual Monitoring) should be done within the first 6 months of being issued with the new ECC An Environmental Audit/Compliance/Bi-Annual Report shall be compiled for every monitoring and submitted to the DEAF at the MEFT for archiving (via the ECC Online Portal under the valid ECC details).
- Dedication from competent authorities to hold offenders accountable for any breaches

6.1 Conclusions



As part of the continued environmental management and protection, the recommended management and mitigation of adverse of impacts stemming from the project activities should be effectively implemented, monitored, and reported on by the Proponent (Zanite Investments).

Monitoring needs to be carried out to ensure that any new unforeseen impacts that might arise during the continuation of the project activities are well identified on time, recorded, properly addressed and suitable mitigation measures provided and implemented. Implementing these measures would result in promoting environmental sustainability while ensuring a smooth and harmonious existence and purpose of the project activities in the hosting biophysical and social environments.

7 LIST OF REFERENCES

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Credentials

COMPILED BY:		REVIEWED BY:
FN. Shagama		E. Kanime
 (Signature)		 (Signature)



REPUBLIC OF NAMIBIA

MINISTRY OF ENVIRONMENT AND TOURISM

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Cnr of Dr. Kenneth David Kaunda Street
& Robert Mugabe Avenue
Private Bag 13306
Windhoek
Date: 12 October 2015

OFFICE OF THE ENVIRONMENTAL COMMISSIONER

Managing Director
Best Cheer Investment Namibia (Pty) Ltd
P.O. Box 4676
Walvis Bay
Namibia

Dear Sir/Madam

SUBJECT: ENVIRONMENTAL CLEARANCE FOR THE PROPOSED EXPLORATION ACTIVITIES ON THE MINING CLAIM NO. 68793, OTJOHORONGO AREA, OMARURU DISTRICT, ERONGO REGION

The Environmental Scoping Report and Environmental Management Plan submitted are sufficient as it made provisions of the environmental management concerning the project's activities. From this perspective regular environmental monitoring and evaluations on environmental performance should be conducted. Targets for improvements should be established and monitored throughout this process.

This Ministry reserves the right to attach further legislative and regulatory conditions during the operational phase of the project.

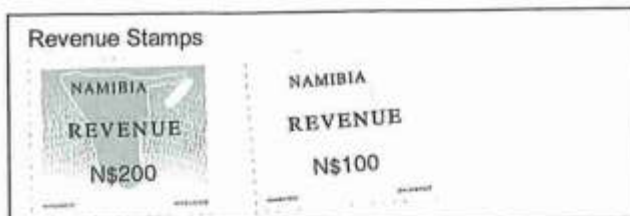
On the basis of the above, this letter serves as an environmental clearance for the project to commence. However, this clearance letter does not in anyway hold the Ministry of Environment and Tourism accountable for misleading information, nor any adverse effects that may arise from this project's activities. Instead, full accountability rests with Best Cheer Investment Namibia (Pty) Ltd and their consultants.

This environmental clearance is valid for a period of 3 (three) years, from the date of issue unless withdrawn by this office.

Yours sincerely,


Teofilus Nghitila
Office of the
ENVIRONMENTAL COMMISSIONER





ANNEXURE 1

FORMS

Form 1

REPUBLIC OF NAMIBIA

ENVIRONMENTAL MANAGEMENT ACT (No. 7 of 2007)

(Section 32)

APPLICATION FOR ENVIRONMENTAL CLEARANCE CERTIFICATE – RENEWAL (APP NO. APP-003543)

PART A: DETAILS OF APPLICATION

- | | | |
|----|-----------------------------|--|
| 1. | Name: | Zanite Investments CC |
| 2. | Business Reg. No.: | CC/2002/0788 |
| 3. | Correspondence Address: | P. O. Box 31 Omaruru, Namibia |
| 4. | Name of Contact Person: | Mr. Etuna Kanime |
| 5. | Position of Contact Person: | Appointed Environmental Assessment Practitioner |
| 6. | Telephone No.: | +264 81 478 6303 |
| 7. | Fax No: | N/A |
| 8. | E-mail Address: | info@omavi.com.na |



PART B: SCOPE OF THE ENVIRONMENTAL CLEARANCE CERTIFICATE

1. THE ENVIRONMENTAL CLEARANCE CERTIFICATE IS FOR:

The 'listed activities' that are relevant or related to the mining of dimension stone (granite) project are listed below:

MINING AND QUARRYING ACTIVITIES

"Listed Activity 3.1 The construction of facilities for any process or activities which requires a license, right of other forms of authorization, and the renewal of a license, right or other form of authorization, in terms of the Minerals (Prospecting and Mining Act, 1992).

Archaeology and Heritage Sites

The emergence of modern humans and their ancestors have lived in Namibia for more than one million years, and there are fossil remains of lineal hominin ancestors as early as the Miocene Epoch (Kinahan, 2017). Namibia has a relatively complete sequence covering the mid-Pleistocene to Recent Holocene period, represented by thousands of archaeological sites mainly concentrated in the central highlands, escarpment, and Namib Desert. Abundant evidence has been found of human occupation since at least the mid-Pleistocene (Shackley, 1985). The geospatial data on the distribution of archaeological sites shows that sites are concentrated mainly in the central highlands, escarpment, and Namib Desert. Furthermore, studies on the Holocene Later Stone Age (LSA) in Namibia predominantly rely on the archaeological evidence found in rock-shelters, despite a wealth of open-air surface assemblages. A total of 73 stratified rock-shelter sites in Namibia provide chronological information. The majority are located on the western margins of the Great Escarpment, closely corresponding to the distribution of Namibian rock art sites (Scherz, 1986; Kinahan, 2011).

Archaeology and cultural heritage are a finite resource and as such, measures should be implemented to protect these heritage resources wherever they occur. Identified within this report are few of archaeological and heritage sites that are located within the immediate locality of the Mining Claim No. 68793. Archaeologically, these sites include rock paintings that are in an already disturbed area or most probably destroyed by mining and other related activities, and therefore the few located heritage sites can still be protected and preserved as reported herein. These identified and undisturbed sites still have considerable potential for educational, scientific and tourism assets for present and future generations.

Furthermore, the areas surrounding the Otjohorongo Reserve have been the focus of several archaeological surveys and assessments for some time now. These surveys and studies have helped to determine the local heritage and archaeological sites. The surveys also helped to establish the relationship between archaeological sites and the types of terrain that characterize the area, including the granite outcrops, boulders of various size and shapes, hills and the pegmatite across the landscape. The presence of pre-historic rock art in the vicinity is astounding and occur in the rock caves/shelters that are formed with different shape and sizes (**Figure 1 - 3**).

Findings of the Archaeological and Heritage sites on MC 68793 – Description of Sites

This section describes the archaeological and heritage resources recorded in the study area during the project surface survey, and they are presented in the Table 1 follow.

Waypoint	Location	Elevation	Description of the findings
027	S 20° 52' 23.4" E 15° 30' 23.3"	1171 m	Mining / Quarrying area – This is where the mining activities took and will take place (targeted sites)
028	S 20° 52' 19.8" E 15° 30' 20.5"	1173 m	Rock shelter overlooking the mountain cliff (No-Go Zone)
029	S 20° 52' 15.3" E 15° 30' 20.6"	1135 m	Dilapidated structures i.e., houses and remains of foundation of structures.
030	S 20° 52' 15.2" E 15° 30' 34.7"	1127 m	A Cave with some bone remains, facing western direction (This archaeological feature requires a Buffer / No-Go Zone)
031	S 20° 52' 16.7" E 15° 30' 37.7"	1137 m	Rock paintings of different animal figures on a big granite boulder. This heritage resource/art is facing northern direction (Buffer zone/No-Go Zone)
032	S 20° 52' 26.2" E 15° 30' 53.6"	1138 m	Rock shelter – outside the Mining Claim boundaries
033	S 20° 53' 14.0" E 15° 30' 29.6"	1138 m	Rock cave/shelter – outside the Mining Claim boundaries (coordinates taken 35-40 meters from the feature)
034	S 20° 52' 23.2" E 15° 30' 28.9"	1116 m	Rock shelter – This archaeological feature is still in use i.e., evidence of current human occupation (outside the Mining Claim boundaries)

Archaeological and heritage findings within the curtilage of Mining Claims 68793



Figure 1: A- Rock painting of animal and B- Rock shelter



Figure 2: C - Rock paintings of different figures and D- a rock shelter/cave



Figure 3: E - Animal figure depicted on the rock and F- Ruins of the old buildings

Description of 'No-Go-Zone' Areas

The locality of the project site is deemed as a viewscape or cultural landscape of that part of the landscape in the Erongo region. Therefore, following identification of some heritage sites within the boundaries of the project site, the map below (**Figure 4**) indicates the located archaeological and heritage significance that needs to be protected and should be completely avoided from the impact of mining activities including constructions and other related activities.

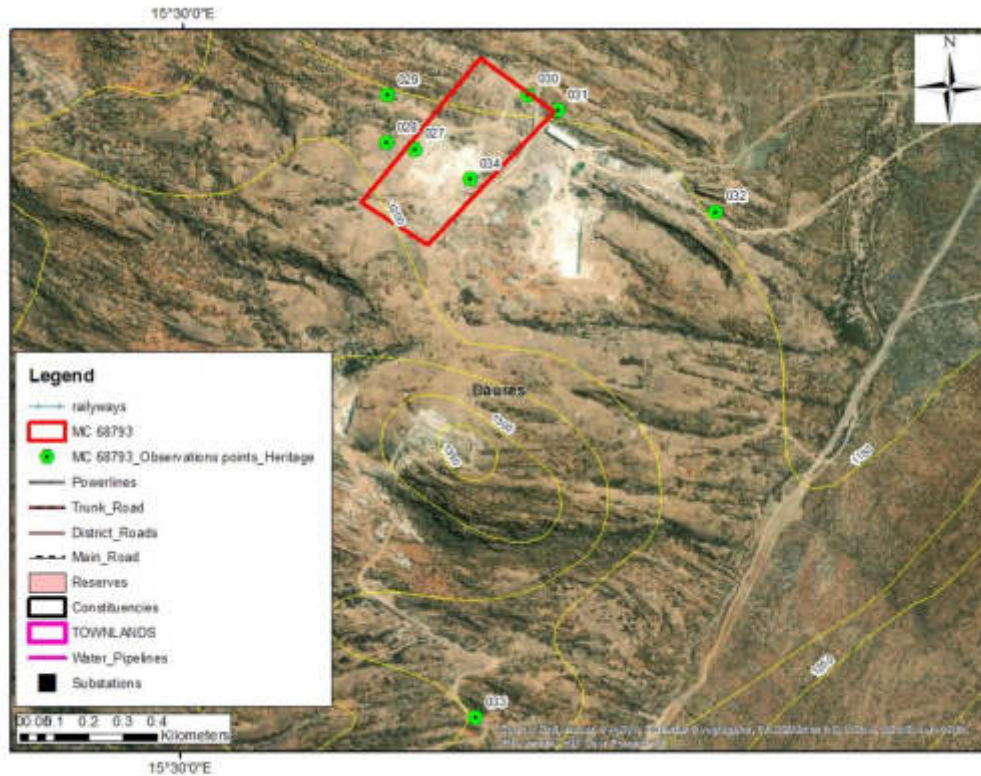


Figure 4: Aerial view of the located heritage sites within and outside the MC 68793

Recommended Mitigation Measures on Heritage Management Plans (Mitigation Plan)

Management and Mitigation Action plans for the Mining phases on Mining Claim No. 68793

Aspect	Impact	Management and Mitigation measures	Key Performance Indicator (KPI)	Implementation Responsibility	Timeframe
(Chance Find Procedure) Archaeological and heritage resources i.e. Rock art and rock shelters/caves	Accidental disturbance and destruction of archaeological or cultural objects and sites of heritage significance.	<p>- A "No-Go-Area" should be put in place where there is evidence of archaeological site, rock paintings, cave/rock shelter or past human dwellings. It can be a demarcation by fencing off or avoid the site completely by not working closely or near the known site. The 'No-Go Option' might have a NEUTRAL impact significance.</p> <p>-On site personnel (s) and contractor crews must be sensitized to exercise and recognize "Chance Finds Heritage" during their mining works.</p> <p>-A landscape approach of the site management must consider culture and heritage features in the overall mining infrastructures within and beyond the license boundaries.</p> <p>-If there is a possibility of encountering or unearthing of archaeological materials then it is better to change the layout</p>	<p>Protection and Preservation of all artefacts, objects and rock art that are known, discovered on and around the mining site</p> <p>No-Go Areas avoided</p>	Proponent, Contractor, Sub-contractor, Operator, Foreman, Superintendent, Environmental Control Officer (ECO), or Site Manager	Throughout the mining activities

Aspect	Impact	Management and Mitigation measures	Key Performance Indicator (KPI)	Implementation Responsibility	Timeframe
		<p>design to avoid the destruction that can occur.</p> <p>-Direct damage to archaeological or heritage sites should be avoided as far as possible and, where some damage to significant sites is unavoidable, scientific/historical data should be rescued after obtaining necessary permits from NHC.</p> <p>-The Proponent and Contractors should adhere to the provisions of Section 55 of the National Heritage Act in event significant heritage and culture features are discovered while conducting mining (quarrying) works.</p> <p>-Subject to the recommendations herein made and the implementation of the mitigation measures and adoption of the project Archaeological Management Plan (AMP)/EMP should be complied with.</p> <p>-An archaeologist/ Heritage specialist or Site manager should be onsite to monitor all significant earth moving activities that</p>			

Aspect	Impact	Management and Mitigation measures	Key Performance Indicator (KPI)	Implementation Responsibility	Timeframe
		<p>may be implemented as part of the proposed project activities.</p> <p>-Show overall commitment and compliance by adapting "<i>minimalistic or zero damage approach</i>".</p> <p>-In addition to these recommendations above, there should be a controlled movement of the contractor, mining crews, equipment, setting up of camps and everyone else involved in the mining activities to limit the proliferation of informal pathways, gully erosion and disturbance to surface and sub-surface artifacts such as stone tools and other buried materials etc.</p> <p>-All project related laydown should be done in previously damaged areas, where project camps should also be located unless crews could be accommodated.</p> <p>-mining operation and maintenance staff should be educated and informed of their environmental obligations. Meaningful penalties for damages</p>			

Aspect	Impact	Management and Mitigation measures	Key Performance Indicator (KPI)	Implementation Responsibility	Timeframe
		<p>should be stipulated, and the main contractor should be held responsible for all transgressions.</p> <p>-It is essential that cognizance be taken of the larger cultural landscape of the area to avoid the destruction of previously undetected heritage sites. Should any previously undetected heritage resources be exposed or uncovered during mining activities, these should immediately be reported to the heritage specialist or heritage authority (National Heritage Council of Namibia).</p> <p>-Whoever is going to oversee mitigation and monitoring measures should have the authority to stop any mining activities that is in contravention with the National Heritage Act of 2004 and National Heritage Guidelines as well as the overall project EMP</p>			

Chance Find Procedure (CFP)

This Procedure applies to the Proponent's permanent employees, its subsidiaries, contractors and subcontractors, and service providers. The aim of this Procedure is to establish monitoring and reporting procedures to ensure compliance and implementation with this policy and its associated procedures. The mining/quarrying crew must be properly inducted to ensure they are fully aware of the procedures regarding chance finds as discussed below.

- If during the operations or closure phases of this mining project, any person employed by the Proponent, contractors and subcontractors, or service provider, finds any artefact of cultural significance or rock engraving, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.
- It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find and confirm the extent of the work stoppage in that area.
- The on-site Manager/foreman/ superintendent will inform the ECO of the chance find and its immediate impact on operations. The ECO will then contact professional archaeologist or Heritage specialist for an assessment of the finds who will notify the National Heritage Authority (NHC) of Namibia.

References

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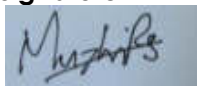
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APPENDIX D: CHANCE FINDS PROCEDURE (AFTER KINAHAN, 2020)

Areas of proposed development activity are subject to heritage survey and assessment at the planning stage. These surveys are based on surface indications alone, and it is therefore possible that sites or items of heritage significance will be found during development work. The procedure set out here covers the reporting and management of such finds.

Scope: The “*chance finds*” procedure covers the actions to be taken from the discovery of a heritage site or item to its investigation and assessment by a trained archaeologist or other appropriately qualified person.

Compliance: The “chance finds” procedure is intended to ensure compliance with relevant provisions of the National Heritage Act (27 of 2004), especially Section 55 (4): “*a person who discovers any archaeological objectmust as soon as practicable report the discovery to the Council*”. The procedure of reporting set out below must be observed so that heritage remains reported to the NHC are correctly identified in the field.

Manager/Supervisor must report the finding to the following competent authorities:

- **National Heritage Council of Namibia’s Head Office (061 244 375) and Technical Office (061 301 903)**
- **National Museum (061 276800),**
- **National Forensic Laboratory (061 240461).**

Archaeological material must NOT be touched. Tempering with the materials is an offence under the heritage act and punishable upon conviction by the law.

Responsibility:

Operator: To exercise due caution if archaeological remains are found

Foreman: To secure site and advise management timeously

Superintendent: To determine safe working boundary and request inspection

Archaeologist: To inspect, identify, advise management, and recover remains

Procedure:

Action by person identifying archaeological or heritage material:

- a) If operating machinery or equipment stop work
- b) Identify the site with flag tape
- c) Determine GPS position if possible
- d) Report findings to foreman

Action by foreman

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

Action by superintendent

- a) Visit site and determine whether work can proceed without damage to findings
- b) Determine and mark exclusion boundary
- c) Site location and details to be added to project GIS for field confirmation by archaeologist

Action by Archaeologist

- a) Inspect site and confirm addition to project GIS
- b) Advise NHC and request written permission to remove findings from work area
- c) Recovery, packaging and labelling of findings for transfer to National Museum

In the event of discovering human remains

- a) Actions as above
- b) Field inspection by archaeologist to confirm that remains are human
- c) Advise and liaise with NHC and Police
- d) Recovery of remains and removal to National Museum or National Forensic Laboratory, as directed.