

Trading as ESM Trading cc.Reg no: cc/2013/05545 Email: esmowa@gmail.com. esmheritage@gmail.com Mobile: 0812066372.

# Heritage Impact Assessment (HIA) for Omitiomire Copper Project on ML 197 near Windhoek in the Khomas Region.

**Compiled by:** 

Dr. Eliot Mowa,

B.Ed: (UNAM)

MA: Maritime Archaeology (University of Bristol).

PhD: Archaeology (University of Pretoria).

Compiled for:

**Environmental Compliance Consultancy.** 

November 2023

# Contents

Key Concepts and Terms	6
Executive Summary	9
1. Introduction	9
2. Site Description and Location	
3. Legislations	
4. Approach to study	
4.1 Terms of Reference	
4.2 Methodology	
5. Assumptions and Limitations	16
6. Geology of Omitiomire	
6.0 Brief Heritage Setting of the Project Area	
7.0 Fieldwork Findings and Observations	21
8. Recommendation	24
9. Conclusions	
References	27

## **Table of Figures**

Table of Figures
Figure 1.Site Locality covering ML 197 and surrounding settlement establishment. Source: Mining
Cadastre 2023
Figure 2. Geological composition of Omitiomire17
Figure 3 Open copper mining pin within ML 197. Note blue/greenish exides are synonymous with copper
element indicators
Figure 4. The flat grassy plain within the North section of Omitiomire farm shows the cleared landscape
which serves as grazing for livestock and wild animals22
Figure 5. Top Photograph: Weather station and weather instruments within ML197. Bottom photograph
Uninhabited burnt Farmstead ruins within the same precinct
Figure 6. Ruins and rubble next to an operational concrete water tank (far right) within the Southern
portion of Omitiomire farm

Authorship: This Report has been prepared by Dr Eliot Mowa. The report is for the review of the National Heritage Council of Namibia.

**Copyright**: This report and the information it contains is subject to copyright and may not be copied in whole or part without written consent of the authors.

This report can however be reproduced by IDT and The National Heritage Council of Namibia for the purposes of the Archaeological and Heritage Management in accordance with the National Heritage Act, 27 of 2004

**Geographic Co-ordinate Information:** Geographic co-ordinates in this report were obtained using a handheld Garmin Global Positioning System device. The manufacturer states that these devices are accurate to within +/- 5 m.

Maps: Maps included in this report use data extracted from the NTS Map and Google Earth Pro.

**Disclaimer:** The Authors are not responsible for omissions and inconsistencies that may result from information not available at the time this report was prepared.

The Archaeological and Heritage Impact Assessment Study was carried out within the context of tangible and intangible cultural heritage resources as defined by the National Heritage Council Regulations and Guidelines as to the authorisation of the proposed copper mining activity.

#### DECLARATION

We hereby declare that we do:

- 1. have knowledge of and experience in conducting archaeological assessments, including knowledge of Namibian legislation, specifically the National Heritage Act (27 of 2004), as well as regulations and guidelines that have relevance to the proposed activity;
- 2. perform the work relating to the application objectively, even if this results in views and findings that are not favorable to the applicant;
- 3. comply with the aforementioned Act, relevant regulations, guidelines, and other applicable laws. We also declare that we have no interest or involvement in:
  - (i) the financial or other affairs of either the applicant or his consultant; and
  - (ii) the decision-making structures of the National Heritage Council of Namibia.

Signed by:

A 11 Uh

Dr E.S.Mowa

## Key Concepts and Terms

Abbreviation	Description
AIA	Archaeological Impact Assessment
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
LIA	Late Iron Age
NHA	Nation Heritage Act, Act 27 of 2004
SM	Site Manager
NHCN	National Heritage Council of Namibia
ESA	Later Stone Age
EPL	Exclusive Prospecting License
ECC	Environmental Clearance Certificate
CFP	Chance Find Procedure
EMA	Environmental Management Act

**Periodization Archaeologists** divide the different cultural epochs according to the dominant material finds for the different periods. This periodization is usually region-specific, such that the same label can have different dates for different areas. This makes it important to clarify and declare the periodization of the area one is studying.

These periods are nothing a little more than convenient time brackets because their terminal and commencement are not absolute and there are several instances of overlap. In the present study, relevant archaeological periods are given below;

Early Stone Age (~ 2.6 million to 250 000 years ago)

Middle Stone Age (~ 250 000 to 40-25 000 years ago)

Later Stone Age (~ 40-25 000, to recently, 100 years ago)

Early Iron Age (~ AD 200 to 1000)

Late Iron Age (~ AD1100-1840)

Historic (~ AD 1840 to 1950, but a Historic building is classified as over 60 years old)

**Definitions** Just like periodization, it is also critical to define key terms employed in this study. Most of these terms derive from Namibian National Heritage legislation and its ancillary laws, as well as international regulations and norms of best practice. The following aspects have a direct bearing on the investigation and the resulting report:

**Cultural (heritage) resources** are all non-physical and physical human-made occurrences, and natural features that are associated with human activity. These can be singular or in groups and include significant sites, structures, features, Eco facts, and artifacts of importance associated with the history, architecture, or archaeology of human development.

**Cultural significance** is determined using aesthetic, historic, scientific, social, or spiritual values for past, present, or future generations.

**Value** is related to concepts such as worth, merit, attraction, or appeal, concepts that are associated with the (current) usefulness and condition of a place or an object. Although significance and value are not mutually exclusive, in some cases the place may have a high level of significance but a lower level of value. Often, the evaluation of any feature is based on a combination or balance between the two.

**Isolated finds** are occurrences of artifacts or other remains that are not in situ or are located apart from archaeological sites. Although these are noted and recorded, but do not usually constitute the core of an impact assessment, unless they have intrinsic cultural significance and value.

**In-situ** refers to material culture and surrounding deposits in their original location and context, for example, an archaeological site that has not been disturbed by farming.

Archaeological sites/materials are remains or traces of human activity that are in a state of disuse and are in, or on, land and which are older than 100 years, including artifacts, human and hominid remains, and artificial features and structures. According to the Namibia National Heritage Act (NNHA) (Act No. 27 of 2004), no archaeological artifact, assemblage, or settlement (site) and no historical building or structure older than 60 years may be altered, moved or destroyed without the necessary authorization from the National Heritage Council or a provincial heritage resources authority.

**Historic materials** are remains resulting from human activities, which are younger than 100 years, but no longer in use, including artifacts, human remains, and artificial features and structures.

**Chance finds** means archaeological artifacts, features, structures, or historical remains accidentally found during development.

A grave is a place of interment (variably referred to as burial) and includes the contents, headstone, or other marker of such a place, and any other structure on or associated with such place. A grave may occur in isolation or in association with others where it is referred to as being situated in a cemetery (contemporary) or burial ground (historic).

A site is a distinct spatial cluster of artifacts, structures, and organic and environmental remains, as residues of past human activity.

**Heritage Impact Assessment (HIA)** refers to the process of identifying, predicting, and assessing the potential positive and negative cultural, social, economic, and biophysical impacts of any proposed project, which requires authorization of permission by law and which may significantly affect the cultural and natural heritage resources. Accordingly, an HIA must include recommendations for appropriate mitigation measures for minimizing or circumventing negative impacts, measures enhancing the positive aspects of the proposal, and heritage management and monitoring measures.

The impact is the positive or negative effects on human well-being and/or on the environment.

**Mitigation** is the implementation of practical measures to reduce and circumvent adverse impacts or enhance the beneficial impacts of an action.

**Mining heritage sites** refer to old, abandoned mining activities, underground or on the surface, which may date from the pre-historical, historical, or the relatively recent past.

**Study area or 'project area'** refers to the area where the developer wants to focus its development activities (refer to plan).

**Phase I** studies refers to surveys using various sources of data and limited field walking to establish the presence of all possible types of heritage resources in any given area.

#### **Executive Summary**

A field survey was carried out on ML 197 in Khomas Region as part of the heritage impact assessment. This survey was supplemented by desktop information about heritage within and around Omitiomire farm. No significant heritage resources were found within the boundaries of ML 197.

## 1. Introduction

Omitiomire copper project operated by Craton Mining and Exploration (Pty) Ltd in Namibia (the proponent) has appointed ECC Environmental Compliancy Consultancy to conduct an Environmental Scoping Assessment (ESA) and apply for the Environmental Clearance Certificate (ECC) to the Competent Authority following the Environmental Management Act (EMA) No. 7 of 2007 and its 2012 EIA Regulations. ECC in turn requested ESM Archaeological and Cultural Heritage Consultants (undersigned heritage specialist) on behalf of the proponent to conduct a Heritage Impact Assessment (HIA) at Mining License 197 (hereafter ML 197). The Mining license is located approximately 140 km by road northeast of Windhoek in central Namibia, a semi-arid savannah-type grazing land in the Khomas Region. The assessment did not yield significant heritage resources.

Craton Mining and Exploration (Pty) Ltd wish to undertake mining activities within the license to extract copper and its associated ores. Thus, this heritage impact assessment report is meant to fulfil the legal requirements for applying an Environmental Clearance. Heritage assessment must be conducted because mining activities are one of the environmentally destructive activities to both fauna, flora and tangible cultural heritage resources.

Due to the destructive tendency of such activities, which may include earth moving/ land alteration operations, it is a pre-requisite to conduct an Archaeological and Heritage Impact Assessment (AIA) as obligated by the National Heritage Act, Act No. 27 of 2004 and, in part, by the Environmental Management Act, Act No. 7 of 2007. The main thrust of the provisions is to protect

and salvage cultural/ archaeological and environmental resources from potential destruction resulting from exploration or mining activities. It was against this background that a Heritage Impact Assessment (HIA) was carried out on the above–mentioned Mining License to fulfil the following objectives:

a) To identify and document cultural heritage/ archaeological materials and sites occurring within and around ML197.

b) To assess the nature and scale of the impact on heritage resources.

c) To recommend mitigation strategies for the cultural heritage resources that might occur in the area proposed for mining operation which can potentially be destroyed in the course of such activities.

# 2. Site Description and Location

As already indicated ML 197 is located approximately 140 km northeast of Windhoek in the Khomas Region.

Regarding land ownership, the ML 197 covers Omitiomire farm which can be divided into three sections, Omitiomire North, South and West. The farm is owned by a local farmer, activities on the farm include farming in the form of livestock farming and game as evidenced by wildlife population within the farm. Further, a greater part of the northern section of Omitiormire is characterized by a large cleared flat land, one suitable for crop cultivation even though there is no evidence of such activities taking place within the recent past. Nevertheless, this flat area does support an almost replete resource for grazing domestic and wild animals alike.

Lastly, the vegetation is dominated by acacia trees that are part of the Khomas regional biome, more so in this part of the region aided by good rainfall and sandy terrain making it easier for root penetration supporting significantly taller acacias compared to those found elsewhere in the region.



Figure 1.Site Locality covering ML 197 and surrounding settlement establishment. Source: Mining Cadastre 2023.

## 3. Legislations

In most cases where the aspect of mining is involved, cultural and archaeological evidence located within areas earmarked for development or mining usually faces the danger of either partial erasure or destruction. The legal instrument for the protection of heritage sites and objects in Namibia is the National Heritage Act (No. 27 of 2004).

To ensure that this unique heritage of our past is protected and well documented, the National Heritage Act 27 of 2004 and EIA Terms of Reference concerning the assessment of impacts of the proposed development on the cultural and heritage resources associated with the receiving environment shall be used to guide the mining exercise. The statutory mandate of heritage impact assessment studies is to encourage and facilitate the protection and conservation of archaeological and cultural heritage sites, following the provisions of the National Heritage Act, Act 27 of 2004 and Environmental Management Act (EMA) No. 7 of 2007 and its 2012 EIA Regulations. The National Heritage Act (Section 1 of 2004) defines heritage resources as those of geological and rare objects; paleontological; archaeological; ethnographic objects; historical objects/sites; maritime heritage; built monuments; mining sites as well as objects of scientific interests.

# 4. Approach to study

#### 4.1 Terms of Reference

The main task of the archaeological survey and assessment was to identify and record all sensitive archaeological sites within the limits of ML 197 that could negatively be affected by the abovementioned project. The assessment also intended to establish the heritage significance of possible resources and assess their vulnerability, estimate the extent of the possible impacts and establish mitigation measures. This study is intended to satisfy the requirements of the Environmental Management Act (7 of 2007), and those of the National Heritage Act (27 of 2004).

#### 4.2 Methodology

This Heritage & Archaeological Impact Assessment followed desktop-based assessments and field surveys. These methodologies are standards for environmental and heritage assessment in Namibia, which are in line with international best practices. Desktop information was fashioned from current and existing heritage archives. These were taken from existing heritage records comprising those from the National Heritage Council, archaeological GIS spatial data and record that has been substantially exposed during the last decades, by a series of detailed archaeological assessments carried out during the mineral investigation and mining operations, and the development of infrastructure required by these operations. These sources were then supplemented by site visit fieldwork within ML 197.

Sensitivity and susceptibility rating scales, aimed at establishing the nature of vulnerability and sensitivity of heritage resources that are likely to be impacted by mining activities, were adopted as per assessment objectives. Their vulnerability to the disturbance in the course of mining including drilling and possible open-cast mining operations.

 Table 1: Rating scales for the assessment of archaeological significance and vulnerability as

 developed by the Kinahan (2012).

Level of significance	Grading	Description
Exceptional/upper higher	5	<ul> <li>Major national heritage resources</li> <li>A rare and outstanding example</li> <li>Containing unique evidence of high regional and national significance</li> </ul>
Considerably high	4	<ul> <li>Very important to the heritage of the region</li> <li>A high degree of integrity/ authenticity</li> <li>Multi-component site and objects</li> <li>High research potential</li> </ul>
Moderate	3	<ul> <li>Contributes to the heritage of the locality and region</li> <li>Have some altered or modified elements, not necessarily detracting from the overall significance of the place</li> <li>Forming part of an identifiable local distribution or group</li> </ul>
		Research potential
Low	2	<ul> <li>Isolated minor find in undisturbed primary context, with diagnostic materials</li> <li>Makes some contribution to the heritage of the locality, usually in combination with similar places or objects</li> </ul>
Little	1	<ul> <li>Makes a little contribution to the heritage resources of the locality</li> <li>Heritage resources in a disturbed or secondary context, without diagnostic or associated heritage</li> </ul>

Zero/ no significance	0	Absence of heritage resources
		Highly disturbed or secondary context, without diagnostic or
		associated heritage

#### Scale Vulnerability Description

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

Concerning each specific source of impact risk to heritage resources, the assessment methodology estimated the extent of the impact, the magnitude of the impact, and the duration of these impacts. The scales of estimation are set out and explained in Table 2.

# Table 2: Assessment criteria for the evaluation of cumulative impacts on archaeological sites developed by the QRN.

CRITERIA	CATEGORY	DESCRIPTION
Extent or spatial	National	Within Namibia
influence of	Regional	Within the Region
impact	Local	On site or within 200 m of the impact site impact
Magnitude of	High	Social and/or natural functions and/ or processes are
impact (at the	Medium	severely altered
indicated spatial	Low	Social and/or natural functions and/ or processes are
scale)	Very Low	notably altered
	Zero	Social and/or natural functions and/ or processes are
		slightly altered

		Social and/or natural functions and/ or processes are
		negligibly altered
		Social and/or natural functions and/ or processes
		remain unaltered
Duration of	Short Term	Up to 3 years
impact	Medium Term	4 to 10 years after construction
	Long Term	More than 10 years after construction

# 5. Assumptions and Limitations

This heritage impact assessment described here relies on desktop studies supported by field assessment. It is possible to predict the likely occurrence of further archaeological sites with some accuracy and to present a general statement of the local archaeological site distribution. Nevertheless, it is critical as a precautionary measure and best practice, for the proponent to strictly follow the chance find procedure as the mining project progresses should any archaeological objects be found during drilling and trenching. The Chance Finds procedure is outlined in the National Heritage Council booklet, (2017) also included in this report.

# 6. Geology of Omitiomire.



Figure 2. Geological composition of Omitiomire.

ML 197 is located in central Namibia, within what can be classified as part of the Kalahari sand veld, notwithstanding the locality's proximity to the regional boundary between the Khomas and Omaheke Regions an area known for the Kalahari Desert's deep sand. The terrain is a predominantly flat landscape dominated by lush acacia trees with grassland vegetation; a typical feature of the Namibian tree and shrub savanna biome. This is a testament to the good seasonal rains received in the area.

Locally the Nossob River pass through ML 197, a major water source within the greater Omaheke region including the regional capital Gobabis. Geological composition as observed from the surface is composed of red sand, however this is a misleading top thin layer, underneath it, lies

two rock compositions; first Para-/Othogneiss, Metasediments, Granite, Amphib rock type of Kheisian formation, second by Serpentinite; Chlorite/Mica Schist of Cambrian formation.

It is thus suspected that the two rock types contain the primary copper elements that are being sought after. A brief site visit to the open cast mining hole (Figure 3) shows the rock containing suspected copper oxides with their identical blue-greenish hue.



Figure 3 Open copper mining pin within ML 197. Note blue/greenish exides are synonymous with copper element indicators.

# 6.0 Brief Heritage Setting of the Project Area

The area understudy covered by ML197 has a rich heritage dating from the Holocene period. According to Kinahan (2012), the greater part of central, north and western Namibia was occupied by groups of San people, whose presence has been widely documented through research in central western Namibia, and eastern Namibia.

To this end, central part of Namibia including the area understudy, was first occupied by the San (Hailom) people that are assumed to have been assimilated into the local community (Dierks 2002). Moreover, the area was occupied by the Damara of the Ainin traditional community. According to Dierks (2002). The !Ainîn later permanently settled at !Nawases 11 km NE of Rehoboth in the mid-1700s under the reign of chief Xomalkhāb between 1725- 1750. Several Damara clans arrived around Rehoboth, Windhoek and Okahandja areas during this intervening period until 1845 when the first Nama arrived under Willem Swartbooi. At the same time a German missionary named Franz Heinrich Kleinschmidt from the German Rhenish missionary society began his mission service in the area. The area between Windhoek and Okahandja fell under both the Nama and Herero spheres of influence just before the advent of German colonialism in Namibia. The two groups occasionally raided each other`s clans in bitter rivalry primarily stemming from the need for livestock grazing land.

In particular pockets of Nama under Hendrick Witbooi on horses, armed with guns persistently raided the primitively armed Herero communities around Okahandja for cattle and grazing pasture land. Okahandja and Windhoek were by then comprised of Southern Herero communities. The advent of European colonialism in Africa took advantage of these existing conflicts such that they adopted the infamous divide-and-rule strategy. The effectiveness of such was not only evident in ceasing fighting between the warring ethnic groups, but succeeded in sowing intertribal divisions within the Herero communities. The German colonial mission succeeded in convincing Samuel Maharero that payment for their protection against Nama raids would be with livestock.

The German colonial administrators accumulated a large number of livestock from Samuel Maharero `s subjects in addition to grazing land which culminated in a large population of Herero being confined in small areas and becoming essentially landless.

The situation was worsened with the advent of the rinderpest epidemic that wiped out 70% of the remaining Herero cattle within the same period. This only made resentment against Samuel Maharero's rule reach zenith among his subjects as well as undermined the traditional rule of law, which partly culminated in a revolt against German occupation that sparked the first War of National Resistance and the resulting genocide against the Nama and Herero populations.

With such a historical background of past events within central Namibia, remnants of early settlers, European missionaries and hunters of the precolonial era might be found within the ML 197.

"Omitiomire" seeming to sound like a Herero name, can best in the absence of reliable sources, plausibly with some low level of uncertainty imply that at some point in history, the area was habited by Herero communities which gave birth to the name before colonialism and land dispossession.

Nonetheless, the regional sequence is simplified as follows; Early to mid-Pleistocene (ca. 2my1to 0.128my; OIS2 6, 7, 19 &c): which is represented by surface scatters of stone tools and artefact debris, usually transported from original context by fluvial action, and seldom occurring in sealed stratigraphic context. Holocene period, which is characterized by evidence of human occupation through lithic artefacts, cave occupation and rock art. Then the precolonial period largely covered the early modern world until the colonial era when there was an absence or availability of written records.

# 7.0 Fieldwork Findings and Observations

A field survey was carried out within ML197 in Omitiomire farm to locate and record important archaeological features within the license. No significant heritage resources were found within the precinct of ML 197.



Figure 4. The flat grassy plain within the North section of Omitiomire farm shows the cleared landscape which serves as grazing for livestock and wild animals.

The farm owner who has been living on this farm for some time, stated that he is not aware of any heritage resources within Omitiomire farm. As such the heritage specialist accompanied by a Craton Employee Mr Jeremiah Naftali (pers. comm) surveyed the length and breadth of ML 197 to establish the facts on the ground, which, as stated earlier the farm is largely an active livestock and game farm. The northern section has one old building or farmstead that is essentially abandoned and in ruins. Residue of smoke can be seen in the old main house (Figure 5) indicating that at some point in time, the building was gutted by fire. The farmstead is still being utilized as a drinking waterpoint for livestock in the area. Water tanks and other installations are being utilized by the farm owner including a seeming weather station enclosure with weather instruments.

The second ruins are located close to the copper mining area (Figure 6). It was established through Mr Jeremiah Naftali (pers.comm) that these ruins were the first farmstead settlement within Omitiomire as far as his knowledge is concerned. These ruins, unlike those in Figure 5 is completely flattened with only a pile of bricks and floor as evidence of a structure that once was in place. Nonetheless, a concrete water storage tank and associated installations for animal drinking are still in place and utilized, needless to say on the day the heritage specialist was conducting a field survey, horses were observed drinking water there.



Figure 5. Top Photograph: Weather station and weather instruments within ML197. Bottom photograph Uninhabited burnt Farmstead ruins within the same precinct.



Figure 6. Ruins and rubble next to an operational concrete water tank (far right) within the Southern portion of Omitiomire farm.

# 8. Recommendation

Specific Recommendation:

 No significant heritage resources were found in Omitiomire as such , adherence to the Chance find procedure outlined below in case of finds during the mining operation is highly reccomended.

Chance Finds Procedure (CFP) Management Guideline:

ML197 is a very important mining infrastructure development area subject to heritage & archaeological assessment at the planning stage. These assessments were desktop- and fieldwork-based, and the survey relied on surface observation using noninvasive methods, as such if available paleontological and archaeological resources in the subsurface remain vulnerable'.

Significant subsurface heritage resources might be discovered in the course of mining activities. To this effect, we recommend onsite personnel and contractors must be informed to be able to identify and perceive "chance finds heritage" in the course of their work. The recommendations in this report cover the reporting and management of such findings. The CFP covers the actions to be taken from the discovery of a heritage site or object to its investigation and assessment by a trained archaeologist. The CFP is intended to ensure compliance with the relevant provisions of the National Heritage Act (27 of 2004), especially Section 55 (4): "A person who discovers any archaeological objects must as soon as possible report the discovery to the council". The procedure of reporting set out below must be observed so that heritage materials are reported to the authorities.

A. Responsibilities:

**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 recovers remain

B. Procedure:

Action by the person (operator) identifying archaeological or heritage material

- If operating machinery or equipment: **stop work**
- Identify the site with flag tape
- Determine GPS position if possible
- Report findings to foreman
- C. Action by Foreman:
  - Report findings, site location and actions are taken to the superintendent
  - Cease any works in the immediate vicinity
- D. Action by Superintendent
  - Visit the site and determine whether work can proceed without damage to findings;
  - Determine and mark the exclusion boundary
  - Site location and details to be added to the Archaeological Heritage database system
- E. Action by Archaeologist

- Inspect site and confirm the addition to AH database system;
- Advise National Heritage Council and request a permit to remove findings;
- Recovery, packaging and labelling of findings for transfer to National Museum
- F. In the event of discovering Human Remains
  - Actions as above;
  - Field inspection by archaeologist to confirm that remains are human;
  - Advise and liaise with NHC Guidelines; and
  - Recovery of remains and removal to National Museum or National Forensic Laboratory, or as directed.

## 9. Conclusions

In Conclusion, this assessment yielded no heritage resources within the precinct of the ML 197. We, therefore, recommend that the chance find procedure be adopted in the event of chance finds during mining. It is therefore against this heritage impact assessment we recommend consent issuance from the authorities.

# References

Britz, Rudolf; Lang, Hartmut; Limpricht, Corenlia (1999). A Concise History of the Rehoboth Basters until 1990. Rehoboth: Klaus Hess Publisher. p. 12

Dierks, Klaus (2002). Chronology of Namibian History – From Pre-Historical Times To Independent Namibia. Namibia: Namibia Scientific Society.

Environmental Management Act No. 7 of 2007. Government Gazzete

Mr Naftali Jeremiah. Personal Communication. 2023.

National Heritage Act 27 of 2004.2004.Government Gazzete