Phase 1 Archaeological and Heritage Impact Assessment on the farm Bruwer 294 RD within the Tswalu Kalahari Reserve, Northern Cape Province.

Compiled by:

KUDZALA antiquity cc

For **Henwood Environmental Solutions**

Surveyor: Mr JP Celliers

20 August, 2021

I, Jean-Pierre Celliers as authorized representative of Kudzala Antiquity CC , hereby confirm my independence as a specialist and declare that neither I or the Kudzala Antiquity CC have any interest, be it business, financial, personal or other, in any proposed activity, application or appeal in respect of which I was appointed as Heritage Consultant, other than fair remuneration for work performed on this project.

SIGNATURE: 

Table of Contents

Executive summary

Site name and location: An area of approximately 70 ha on the farm Bruwer 294 RD, located within the Tswalu Kalahari Reserve, in respect of the establishment of eight tented camp units and a Staff/ Back of House area.
Purpose of the study: An archaeological and heritage study in order to identify cultural heritage resources in respect of the establishment of tented camp facilities for tourism purposes.

Topographical Maps: 1:50 000 2722 BA (1973, 2001)

EIA Consultant: Henwood Environmental Solutions

Client: Tswalu Kalahari Reserve

Heritage Consultant: Kudzala Antiquity CC.
Contact person: JP Celliers Tel: +27 72 583 1622
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Report date: 20 August 2021

Description and findings:

An Archaeological and Heritage Impact Assessment was undertaken by Kudzala Antiquity CC in respect of the proposed establishment of eight new permanent camp units, each 500 m² in size, and associated facilities on a total proposed development area of approximately 70 hectares located on the farm Bruwer 294 RD within the Tswalu Kalahari Reserve, Northern Cape Province. The study was done with the aim of identifying sites which are of heritage significance on the identified project areas and assess their current preservation condition, significance and possible impact of the proposed action. This forms part of legislative requirements as appears in section 38 of the National Heritage Resources Act (Act No. 25 of 1999). This report can be submitted in support of the National Environmental Management Act (Act 25 of 1998).
The survey was conducted on foot and with the aid of a motor vehicle in an effort to locate archaeological remains and historic sites, structures and features. Archival information including scrutiny of previous heritage surveys of the area formed the baseline information against which the survey was conducted. No significant heritage resources were documented in the proposed development areas. A total of twelve survey orientation locations were documented, sites SO 1-12 which includes a GPS location and photographs of the landscape at that particular location.
In terms of section 34 of the National Heritage Resources Act (NHRA, 25 of 1999), no significant buildings or structures were located.
In terms of section 35 of the NHRA, no significant archaeological sites or features were located.
In terms of section 36 of the NHRA, no graves or gravesites and burial grounds were located.

It is not within the expertise of this report or the surveyor to comment on possible palaeontological remains which may be located in the study area.

Disclaimer: *Although all possible care is taken to identify all sites of cultural importance during the investigation of study areas, it is always possible that hidden or sub-surface sites could be overlooked during the study. Kudzala Antiquity CC will not be held liable for such oversights or for costs incurred as a result of such oversights.*

1. Introduction

1.1. Terms of reference

Kudzala Antiquity CC was commissioned to conduct an archaeological and heritage resources survey in respect of the proposed construction of eight new permanent campsites for tourism purposes. This will be located within the Tswalu Kalahari Reserve, John Taolo Gaetsewe District, Northern Cape Province. The survey was conducted in order to assess the potential impact that the proposed activity may have on archaeological and heritage resources. The survey was conducted for Henwood Environmental Solutions.

1.1.1 Project overview

The client is in the process of obtaining environmental authorization to establish a new tourism camp. The proposal is to construct eight individual permanent tent campsites each within an immediate footprint area of 500m². The units will be spaced evenly from east to west on the southern slope of a section of the Korannaberg Mountains within a larger footprint area of some 70 hectares. An additional 800m² Back of House/ staff area is proposed at a location north-west of the tented camps, all pending environmental authorization.

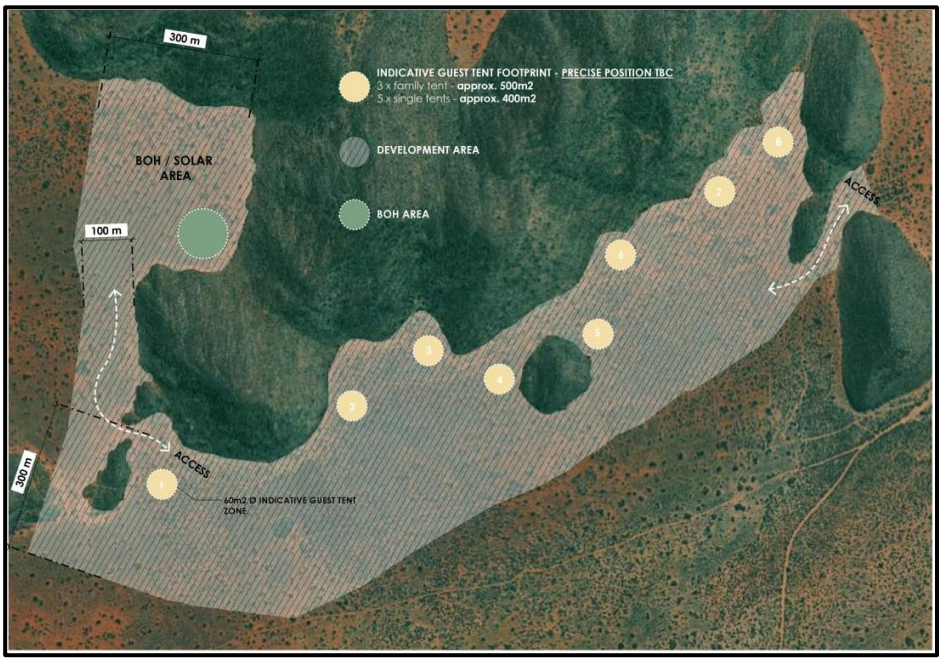


Figure 1.1. The Proposed layout of the new Tswalu Camp.

1.1.2. Constraints and limitations

The archaeological survey consisted of non-intrusive methods which exclusively rely on surface observations. Most of the project footprint area was relatively easy of access but certain areas were difficult to access due to dense vegetation growth (shrub and grass) which resulted in archaeological visibility being low.

1.2. Legislative Framework

The National Heritage Resources Act (NHRA) (Act No. 25, 1999) require that individuals or institutions have specialist heritage impact assessment studies undertaken whenever development activities are planned and such activities trigger activities listed in the legislation. This report is the result of an archaeological and heritage study in accordance with the requirements as set out in Section 38 (3) of the NHRA in an effort to ensure that heritage features or sites that qualify as part of the national estate are properly managed and not damaged or destroyed. Additional relevant legislation includes: The National Environmental Management Act (NEMA), Act No. 107 of 1998 - Section 23(2)(b); and

Mineral and Petroleum Resources Development Act (MPRDA), Act No. 28 of 2002 - Section 39(3)(b)(iii).

The study aims to address the following objectives:

- Analysis of heritage issues;
- Assess the cultural significance of identified places including archaeological sites and features, buildings and structures, graves and burial grounds within a specific historic context;
- Identifying the need for more research;
- Surveying and mapping of identified places including archaeological sites and features, buildings and structures, graves and burial grounds;
- A preliminary assessment of the feasibility of the proposed development or construction from a heritage perspective;
- Identifying the need for alternatives when necessary; and
- Recommending mitigation measures to address any negative impacts on archaeological and heritage resources.

Heritage resources considered to be part of the national estate include those that are of archaeological, cultural or historical significance or have other special value to the present community or future generations.

The national estate may include:

- places, buildings, structures and equipment of cultural significance;
- places to which oral traditions are attached or which are associated with living
- heritage;
- historical settlements and townscapes;
- landscapes and natural features of cultural significance;
- geological sites of scientific or cultural importance;
- archaeological and paleontological sites;
- graves and burial grounds including:
    - (i) ancestral graves;
    - (ii) royal graves and graves of traditional leaders;
    - (iii) graves of victims of conflict;
    - (iv) graves of individuals designated by the Minister by notice in the *Gazette;*
    - (v) historical graves and cemeteries; and other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);
- sites of significance relating to slavery in South Africa;
- movable objects including:

(i) objects recovered from the soil or waters of South Africa, including archaeological and paleontological objects and material, meteorites and rare geological specimens;
(ii) objects to which oral traditions are attached or which are associated with living heritage
(iii) ethnographic art and objects;
(iv) military objects
(v) objects of decorative or fine art;
(vi) objects of scientific or technological interest; and
(vii) books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1 of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).

Cultural resources are unique and non-renewable physical phenomena (of natural occurrence or made by humans) that can be associated with human (cultural) activities (Van Vollenhoven 1995:3). These would be any man-made structure, tool, object of art or waste that was left behind on or beneath the soil surface by historic or pre-historic communities. These remains, when studied in their original context by archaeologists, are interpreted in an attempt to understand, identify and reconstruct the activities and lifestyles of past communities. When these items are removed from their original context, any meaningful information they possess is lost, therefore it is important to locate and identify such remains before construction or development activities commence.

1.2.1. Heritage in Protected areas

In February 2016 Government Gazette no. 40593 the Department of Environmental Affairs published Cultural Heritage Survey Guidelines and Assessment tools for protected areas in South Africa, under the National Environmental Management: Protected Areas Act, 2003 (Act 57, 2003).

In protected areas a basic inventory of the property facilitates confirmation of national heritage resources; conducting of heritage audits; site condition monitoring; prioritising sites by ranking their significance; evaluation of a protected area's heritage; assistance in planning for heritage resources and allocating resources.

Process in compiling the cultural resources inventory for the Tswalu Kalahari Reserve entails significance assessment of the heritage resources, condition assessment and evaluation for grading of the resources. This has not yet been done for the Tswalu Kalahari Reserve and may be a valuable future consideration. A concise history of the establishment and history of the farm Bruwer 294 AD and the Tswalu Reserve is discussed in section 4.1.6 of this report.

1.3. Approach and statutory requirements

The SAHRA Minimum standards of 2007 and 2016 guideline documents, forms the background against which the survey was planned and the report compiled. An Archaeological Impact Assessment (AIA) consists of three phases. This document deals with the first phase. This (phase 1) investigation is aimed at getting an overview of cultural resources in the project area, assigning significance to these resources, assessing the possible impact that the proposed activity may have on these resources, making recommendations pertaining to the management of heritage resources and putting forward mitigation measures where applicable.

When the archaeologist or heritage specialist encounters a situation where the planned project will lead to the destruction or alteration of an archaeological/ heritage site or feature, a second phase investigation is normally recommended. During a phase two investigation mitigation measures are put in place and detailed investigation into the nature of the cultural material is undertaken. Often at this stage, archaeological excavation and detailed mapping of a site is carried out in order to document and preserve the cultural heritage.

Phase three consists of the compiling of a management plan for the safeguarding, conservation, interpretation and utilization of cultural resources (Van Vollenhoven, 2002).

Continuous communication between the developer and heritage specialist after the initial assessment has been carried out may result in the modification of a planned route or development to incorporate or protect existing archaeological and heritage sites.

2. Description of surveyed area

The study area falls within the Tswalu Kalahari Reserve, John Taolo Gaetsewe District, Northern Cape Province.
The survey was carried out on a project footprint consisting of approximately 70 hectares of Koranna-Langeberg Mountain Bushveld.

Landscape: Kalahari Bushveld and part of the Savanna Biome. The landscape is a mixture of plains and interspersed mountain ranges known as the Korannaberg Mountains. The distribution of the Koranna-Langeberg Mountain Bushveld starts from the Tswalu Kalahari Reserve at the northern tip of the Korannaberg and reaches southwards in the form of a number of mountain ridges, to the Langeberg located west of Olifantshoek and further south along the Langeberg towards Volop. Altitude is 1000-1 836 meters at the highest point (Mucina & Rutherford, 2006: 523).

Visibility: Good-Poor in certain areas due to dense shrub and grass cover.

Veld type: Rugged Mountains and steep slopes in parts of the Korannaberg. Generally open shrub-land with moderately open grass cover. *Croton gratissimus* is common in certain places but becomes diminutive south of the Langeberg (Mucina and Rutherford, 2006: 523).

Geology and soils: The geology of the Korannaberg and Langeberg Mountains consists of quartzite, greywacke and lenses of hematite of the Olifantshoek Supergroup. The soils consist of very rocky and shallow sands (Mucina and Rutherford, 2006: 524).

3. Methodology

This study consists of a detailed archival study in order to understand the study area in a historical timeframe, an archaeological background study which include scrutiny of previous archaeological reports of the area, obtained through the SAHRIS database, and published as well as unpublished written sources on the archaeology of the area, social consultation with people who live nearby and a lastly a physical survey of the affected and immediate area.

The South African Heritage Resources Agency (SAHRA) and the relevant legislation (NHRA) require that the following components be included in an archaeological impact assessment:

- Archaeology;
- Shipwrecks;
- Battlefields;
- Graves;

- Structures older than 60 years;
- Living heritage;
- Historical settlements;
- Landscapes;
- Geological sites; and
- Paleontological sites and objects.

All the above-mentioned heritage components are addressed in this report, except shipwrecks, geological sites and paleontological sites and objects.

The ***purpose*** of the archaeological, archival and heritage study is to establish the whereabouts and nature of cultural heritage sites should they occur on project area. This includes settlements, structures and artefacts which have value for an individual or group of people in terms of historical, archaeological, architectural and human (cultural) development.

The ***aim*** of this study is to locate and identify such objects or places in order to assess and rate their significance and establish if further investigation is needed. Mitigation measures can then be suggested and put in place when necessary.

3.1. Archaeological and Archival background studies

The purpose of the desktop study is to compile as much information as possible on the heritage resources of the area. This helps to provide an historical context for located sites. Sources used for this study include published and unpublished documents, archival material and maps. Information obtained from the following institutions or individuals were consulted:

- Published and unpublished archaeological reports and articles;
- Published and unpublished historical reports and articles;
- Archival documents from the National Archives in Pretoria;
- Historical maps; and
- South African Heritage Resource Information System (SAHRIS) database.

3.1.1. Previous archaeological studies in the area

The SAHRIS database contains a number of archaeological impact assessments (AIA's) and heritage impact assessments which have been conducted in areas surrounding Kuruman, located approximately 150km south-east of Tswalu. They are tabled below. Scrutiny of the database of the Genealogical Society and Google Earth Monuments showed no known graves in the study area.

Table 3.1. Summary of referenced literature, SAHRIS database.

Author	Report date	Project	Results
Anderson, G.	2016	Desktop heritage survey of the proposed Mamatwan Manganese Mine Slimes Dam.	No sites of heritage significance were documented.
Beaumont, P.	2008	Phase 1 Archaeological Impact Assessment Report on Areas At Hotazel Mine On The Farm Hotazel 280, Kgalagadi District Municipality, Northern Cape Province.	No sites of heritage significance were documented.
Birkholtz, P.	2013	Heritage Impact Assessment of the farm Gloria 266, near Hotazel town in the John Toalo Gaetsewe District Municipality in the Northern Cape Province.	Some Stone Age sites were documented.
Coetzee, T.	2012	Archaeological scoping report for the proposed prospecting for iron ore and manganese ore for Amari Manganese (Pty) Ltd on the farms Constantia 309, Simondium 308 and Portions 1, 2, 3 and 8 Of The Farm Goold 329 in the vicinity of District Municipality: Kgalagadi Northern Cape Province.	Some graves, homesteads and several Stone Age artefacts was documented.
Coetzee, T. and George, L.	2013	Archaeological Impact Assessment on Mamantwan, Northern Cape Province.	A Stone Age scatter was documented as well as a historical homestead and five unmarked graves.
Dreyer, C.	2014	First phase archaeological & heritage assessment of the proposed Vaal-Gamagara Water Pipeline Project, Northern Cape Hotazel Alternative Water Pipeline.	No sites of heritage significance were documented.
Fourie, W.	2015	Re-alignment of the R380 and a portion of the Ga-mogara River on a portion of the Farm Kipling 271, near Hotazel in the Northern Cape Province.	No sites of heritage significance were documented.
Huffman, T.M.	2001	Draft archaeological survey of the Smartt/Rissik mine, Northern Cape.	One isolated MSA artefact.
Pelser, A. J. and Van Vollenhoven, A.C.	2011	A report on a heritage impact assessment (HIA) for a proposed new rail crossing over the Gamagara River for the Gloria Mine operations, Assmang Black Rock, on Gloria 266, North of Hotazel, Northern Cape.	Some Stone Age sites
Pistorius, JCC.	2006	A Phase I Heritage Impact Assessment (HIA) Study for The Proposed New United Manganese Of Kalahari (UMK) Mine On The Farms Botha 313, Smartt 314 And Rissik 330 Near Hotazel In The Northern Cape Province Of South Africa.	Stone Age occurrences and historic mining structures.
Pistorius, JCC.	2008	A Phase I Heritage Impact Assessment (HIA) Study for a proposed new power line for the United Manganese of Kalahari (UMK) Mine near Hotazel in the Northern Cape Province of South Africa.	No sites of heritage significance were documented.
Van der Walt, J and Fourie, W.	2006	Hotazel Manganese Mines Wessels Mine on section of the farms Wessels 227, Dibiaghomo 226 and Dikgathlong 268 Mamatwan Mine on section of the farms Goold 329 and Mamatwan 331 Heritage Assessment.	No sites of heritage significance were documented.
Van der Walt, J. & Van der Merwe, R.	2020	Heritage Impact Assessment for new surface infrastructure at United Manganese Kalahari, Hotazel, Northern Cape Province.	Some isolated Stone Age findspots

3.1.2. Historic maps

Historical maps were scrutinized and features that were regarded as important in terms of heritage value were identified and if they were located within the boundaries of the project area they were physically visited in an effort to determine:

(i) whether they still exist;
(ii) their current condition; and
(iii) Significance.

3.1.3. Physical survey

- The survey of the proposed project area was conducted on 10 August 2021
- The survey took one day to complete.
- The documented sites were numbered sequentially.
- Sites were recorded by using a handheld Garmin Oregon 450 GPS unit and the unit was given time to reach an accuracy of at least 5 meters.
- Sites were plotted on 1:50 000 topographical maps which are geo-referenced (WGS 84) and also on Google Earth.
- No sites of archaeological or heritage significance were located. A number of survey orientation locations were mapped for survey purposes.

3.1.4. National Web Based Environmental Sensitivities Screening Tool

The web based tool for screening of environmental sensitivities supplied by the Department Environment Forestry and Fisheries (DEFF) is useful in screening proposed project sites for heritage sensitivities. It is also useful in order to conduct initial site sensitivity verification. Screening results for the proposed development area showed that sensitivities for the Archaeological and Cultural Heritage Theme are low. This was confirmed during the physical survey of the proposed development area. Appendix E contains the results of the screening report by the web based tool.

3.2. Social Consultation

Social consultation forms an important part of identifying sites which may be of heritage significance. The Head of Research at Tswalu for the last fifteen years, Mr Dylan Smith, was consulted about the presence of any heritage resources in the vicinity of the proposed project area. He stated that to his knowledge there are no significant heritage resources i.e. stone tool concentrations, graves or historic structures at the proposed development area.

Field guides Mr. Prince Ngomane and Mr. Clement Motau who has been working at Tswalu as field guides for seven and five years respectively, were consulted about the presence of heritage sites within the project area and they also confirmed that to their knowledge there are no heritage sites or graves present within the proposed project areas.

3.3. Heritage site significance

The South African Heritage Resources Agency (SAHRA) formulated guidelines for the conservation of all cultural resources (sections 6 and 7 of the NHRA, 1999) and therefore also divided such sites into three main categories. These categories might be seen as guidelines that suggest the extent of protection a given site might receive. They include sites or features of local (Grade 3) provincial (Grade 2) national (Grade 1) significance, grades of *local significance* and *generally protected* sites with a variety of degrees of significance.

For practical purposes the surveyor uses his own classification for sites or features and divides them into three groups, those of low or no significance, those of medium significance and those of high significance **(*Also see table 5.2.Significance rating guidelines for sites*).**

Values used to assign significance and impact characteristics to a site include:

- **Types of significance**

The site's scientific, aesthetic and historic significance or a combination of these is established.

- **Degrees of significance**

The archaeological or historic site's rarity and representative value is considered. The condition of the site is also an important consideration.

- **Spheres of significance**

Sites are categorized as being significant in the international, national, provincial, regional or local context. Significance of a site for a specific community is also taken into consideration.

To arrive at the specific allocation of significance of a site or feature, the specialist considers the following:

- Historic context;
- Archaeological context or scientific value;
- Social value;
- Aesthetic value; and
- Research value.

More specific criteria used by the specialist in order to allocate value or significance to a site include:

- The unique nature of a site;
- The integrity of the archaeological deposit;
- The wider historic, archaeological and geographic context of the site;

- The location of the site in relation to other similar sites or features;
- The depth of the archaeological deposit (when it can be determined or is known);
- The preservation condition of the site;
- Quality of the archaeological or historic material of the site; and
- Quantity of sites and site features.

Archaeological and historic sites containing data, which may significantly enhance the knowledge that archaeologists currently have about our cultural heritage, should be considered highly valuable. In all instances these sites should be preserved and not damaged during construction activities. However, when development activities jeopardize the future of such a site, a second and third phase in the Cultural Resource Management (CRM) process is normally advised. This entails the excavation or rescue excavation of cultural material, along with a management plan to be drafted for the preservation of the site or sites.

Graves are considered very sensitive sites and should never under any circumstances be jeopardized by development activities. Graves and burial grounds are incorporated in the NHRA under section 36 and in all instances where graves are found by the surveyor, the recommendation would be to steer clear of these areas. If this is not possible or if construction activities have for some reason damaged graves, specialized consultants are normally contacted to aid in the process of exhumation and re-interment of the human remains.

4. History and Archaeology

4.1. Historic period

4.1.1. Early History

In Southern Africa the domestication of the environment began only a couple of thousands of years ago, when agriculture and herding were introduced. At some time during the last half of the first millennium BC, people living in the region where Botswana, Zambia and Angola are today, started moving southward, until they reached the Highveld and the Cape in the area of modern South Africa. As time passed and the sub-continent became fully settled, these agro-pastoralists, who spoke Bantu languages, started dominating all those areas which were ecologically suitable for their way of life. This included roughly the eastern half of modern South Africa, the eastern fringe of Botswana and the north of Namibia. Historians agree that the earliest Africans to inhabit in the Lowveld in Mpumalanga were of Nguni origin.

The earliest known inhabitants of the Korannaberg area were the San. Their rock engravings can be found throughout this region (Snyman 1983; Tswalu Kalahari Private Game Reserve, 2021).

They lived as hunter gatherers, but with the arrival of the Tswana, Korana, Griekwa and Europeans, they eventually moved further into the Kalahari to Botswana or Namibia or, they were absorbed, particularly within the Korana and the Griekwa (Snyman, 1983).

The Korana, a nomadic Khoikhoi group, arrived in the area during the 1770s and with them came the first European, a German fugitive by the name of Jan Bloem who arrived in the Postmasburg area together with his Korana wife. The Koranas possessed firearms, and this provided them with an advantage over other peoples within the area (Snyman, 1983).

The Tswana arrived in the Northern Cape, from the north, some 500 years ago. However, they only inhabited the area during the early part of the nineteenth century (Snyman, 1983).

In the Kuruman district, the Tswana tribes consist of the baTlhaping and baTlharo. However, the baThlaro, in an attempt to escape the superiority of the BaTlhaping, are generally found further to the west, closer to the study area, where they settled at the foot of the Langberg. Given its proximity, it is likely that they also inhabited the Koronnaberg area (Breutz, 1963).

Both the Korana and the Tswana mined the Blinkklipkop area for what they referred to as sibilo, a rock, which was mixed with fat and applied to the skin to achieve a bright red complexion. The first Europeans to visit this area was the Truter-Somerville Expedition of 1801 (Snyman, 1983).

When in 1820, the Griekwa leader, Andries Waterboer defeated the “Bergenaars” of the Langberge, a gang of hooligans comprising Griekwas, Bushmen, Koranas and Tswanas, the latter were forced to move westward or were assimilated. The Griekwa State then truly came to the fore (Snyman, 1983).

Griekwa influence in the area diminished over the years and after the discovery of diamonds, Britain annexed Griekwaland West in 1871 and it opened the way for European settlement (Snyman, 1983).

4.1.2. Colonial settlement

During and shortly after the Difaqane Period (1820’s-1830’s) the interior of Southern Africa became settled and explored by missionaries, traders, hunters and explorers. The first of these expeditions were that of Truter & Somerville in 1801 and they reached Dithakong near Kuruman (Bergh, 1999). Soon afterwards more followed including the Donovan & Cowan expedition of 1808 and Burchell (1811 expedition) and Campbell (1813 and 1820 expeditions) which resulted in the establishment of the Maropeng Mission Station by fellow missionary James Read, near Kuruman in 1817 (Bergh, 1999). In 1820 the well-known missionary Robert Moffat replaced Read and the mission station later became known as the Moffat Mission Station.

In 1885, Crown Colony of Bechuanaland was established, and it consisted of the “electoral divisions” of Mafeking, Vryburg Kuruman, Taung and Gordonia. In 1895, the Crown Colony of Bechuanaland was transferred to the Cape Colony (Breutz, 1963).

Native Reserves were first defined by British Bechuanaland Proclamation No. 220 of 1895. (Breutz, 1963).

Figure 4.1. Bechuanaland Map of 1885 (Juta and Company Ltd. 1885).

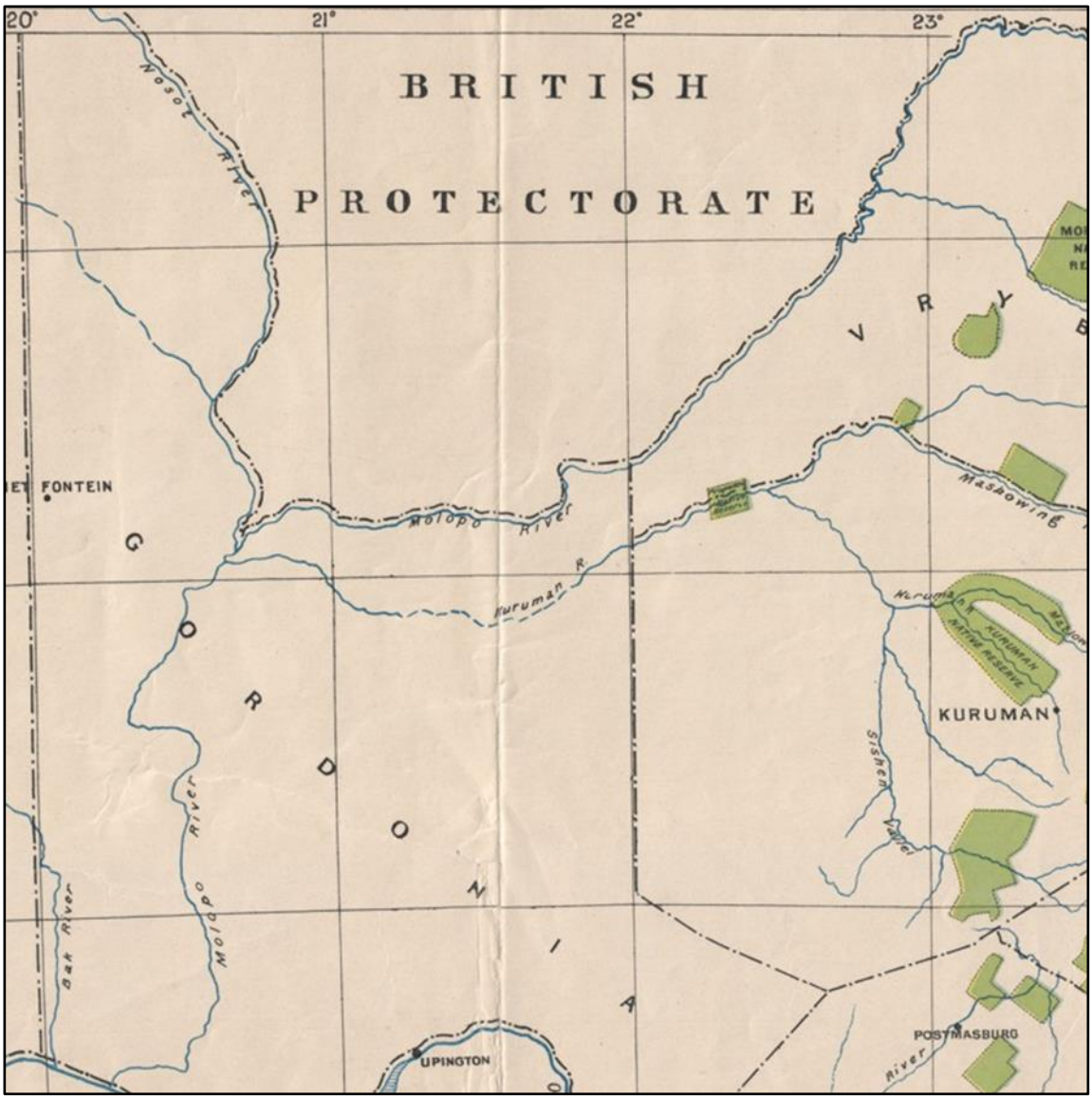


Figure 4.2. A map, circa 1905, indicating land reserved for Natives in green. The study area is located approximately 100 km. to the northwest of the town Kuruman where no Native Reserves can be seen (South African Native Affairs Commission, Circa 1905).

4.1.3. Historic maps of the study area

In 1930 the farm Bruwer, Kuruman district was sold in terms of Crown Grant to Piet Lodewikus Vermeulen. In 1949 the district of Postmasburg was proclaimed and from then on, the farm Bruwer fell within this district. Today, the farm is known as Bruwer 294 RD, in the John Taolo Gaetsewe district (NASA, SAB URU: 1144 2087; Breutz 1963; Municipalities of South Africa, 2021).

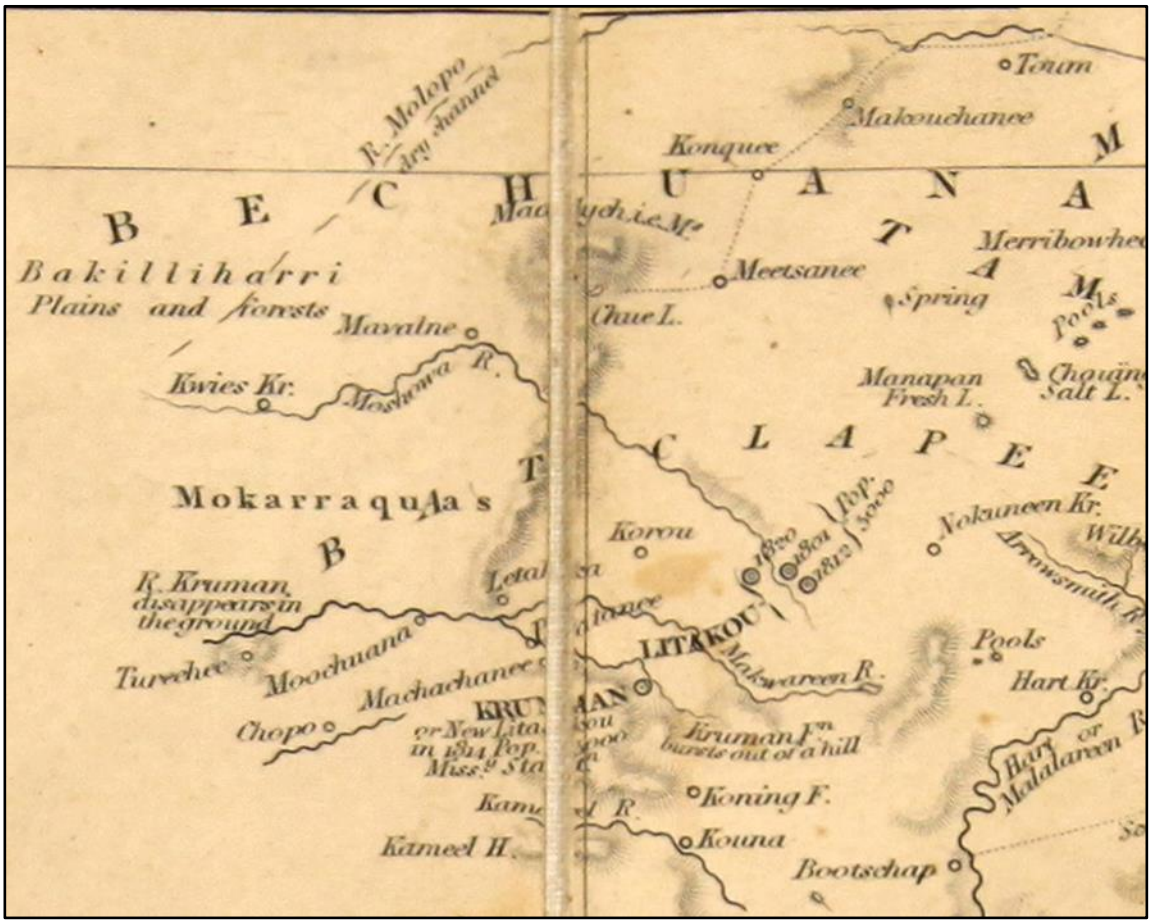


Figure 4.3. A map dated 1834, showing the peoples living in the Kuruman area at that time (Owen,1834).

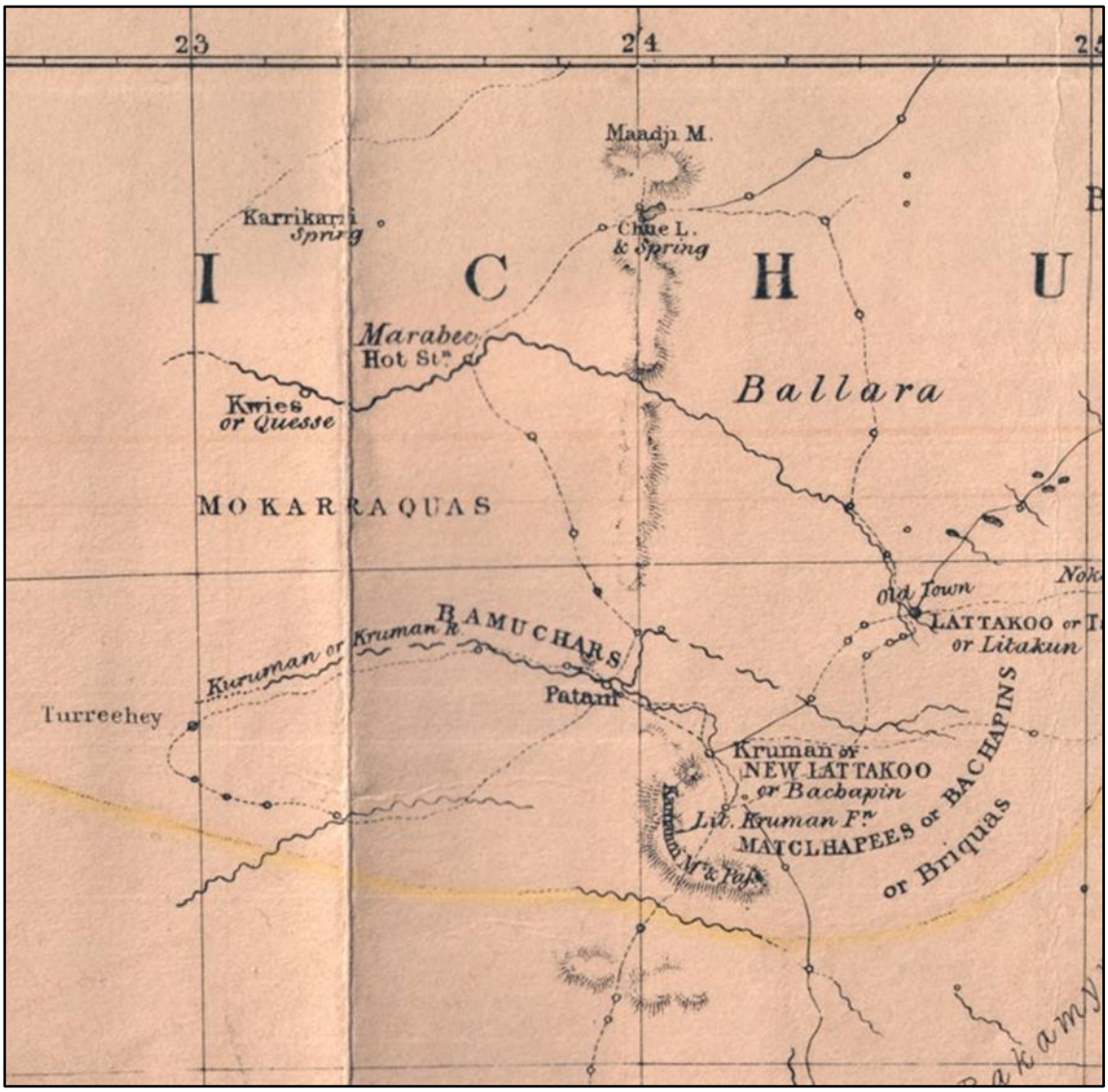


Figure 4.4. A map, dated 1853, showing the peoples living in the Kuruman area at the time (Arrowsmith, 1853).

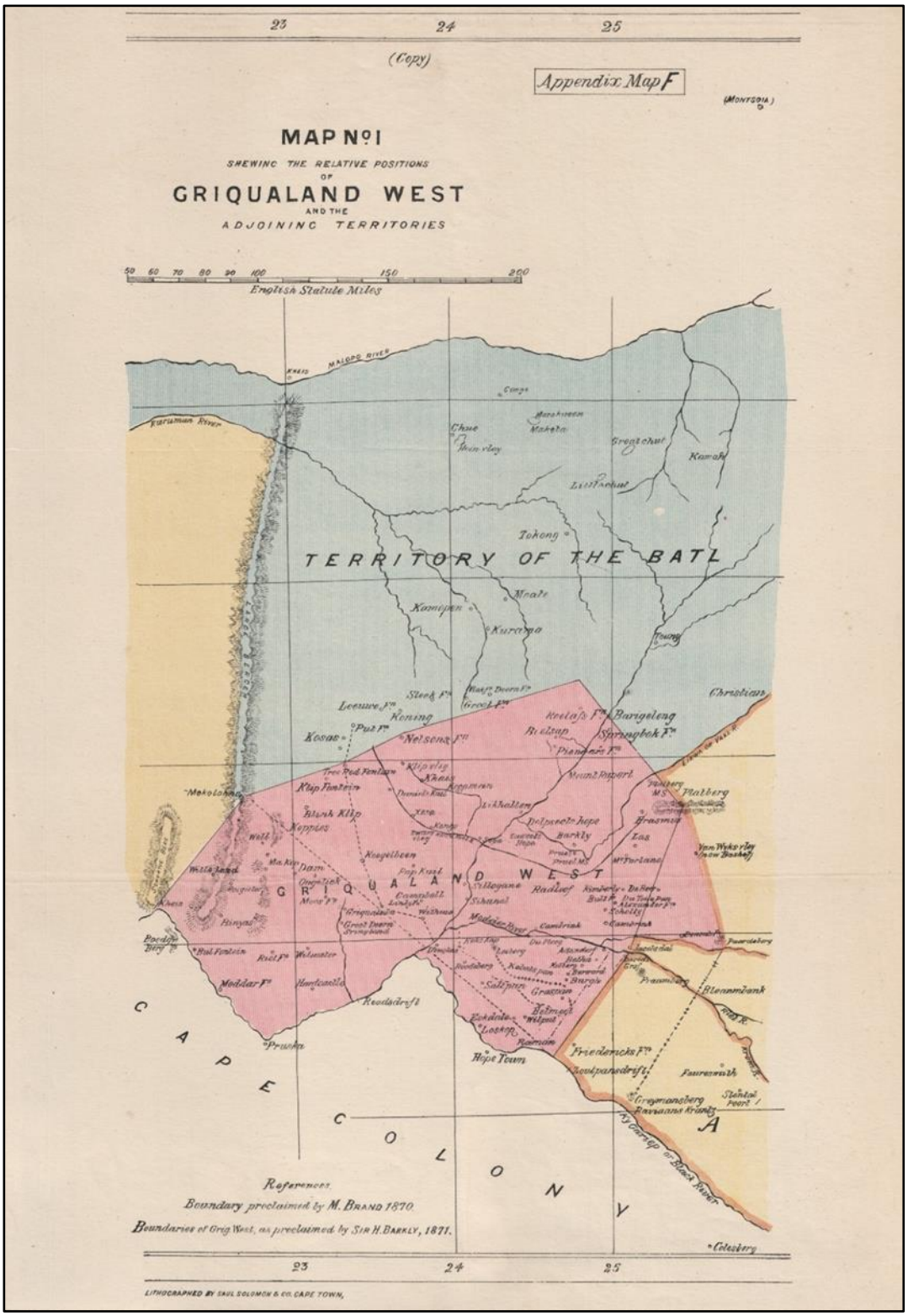


Figure 4.5. A map, dated 1882, showing the relative positions of Griqualand West and the adjoining territories. The map indicates that, at the time, the study area was located in baTlhaping territory (Solomon, 1882).

Figure 4.6. Circa 1905 map indicating the location of the Koranna Berg in relation to its surrounds (Miller, T.M.1904-1906).

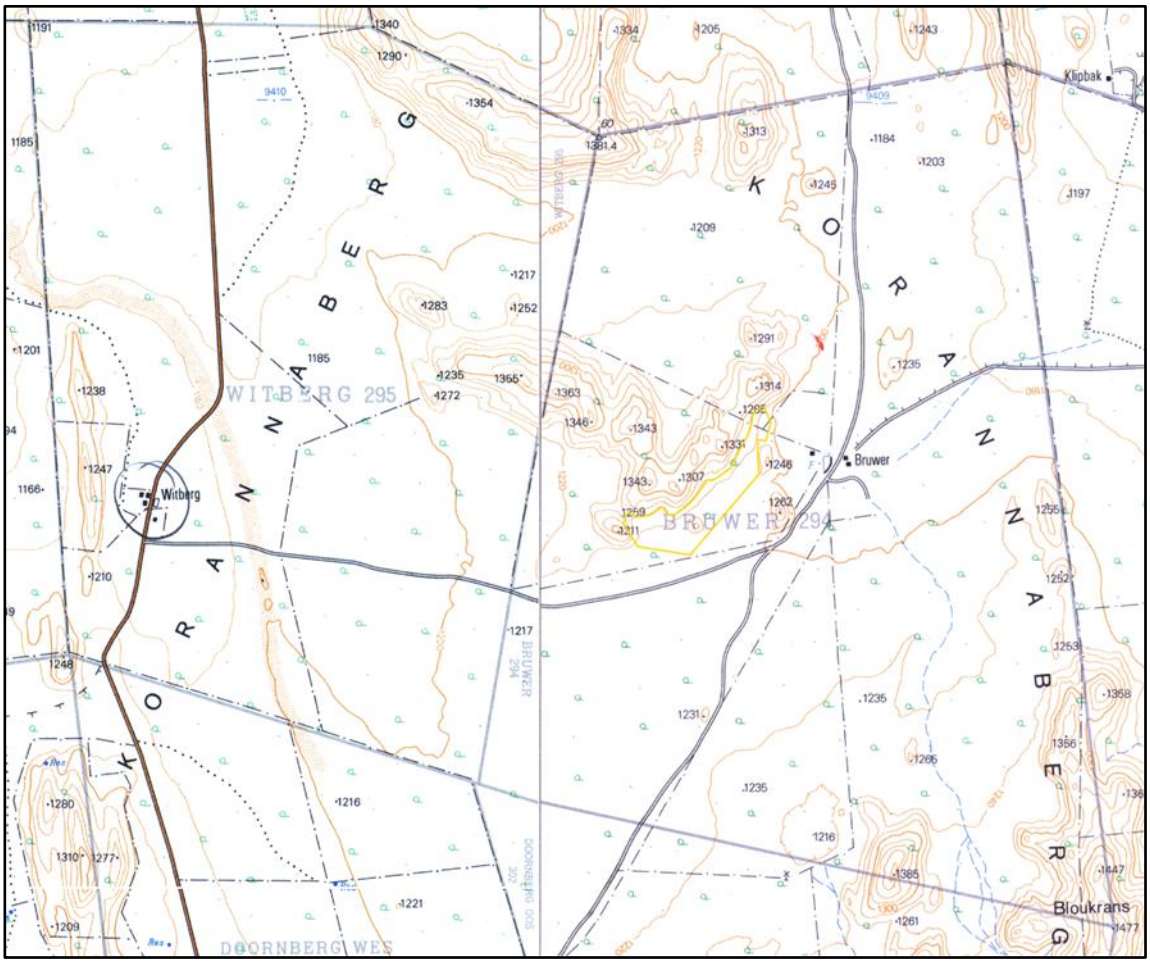


Figure 4.7. A Topographical Map of the farm Bruwer 294 RD in 1973. The yellow border shows the approximate location of the study area. No developments can be seen within the study area, but a dam, three buildings and roads are visible east of the study area (Topographical Map, 2722 AB,1973)

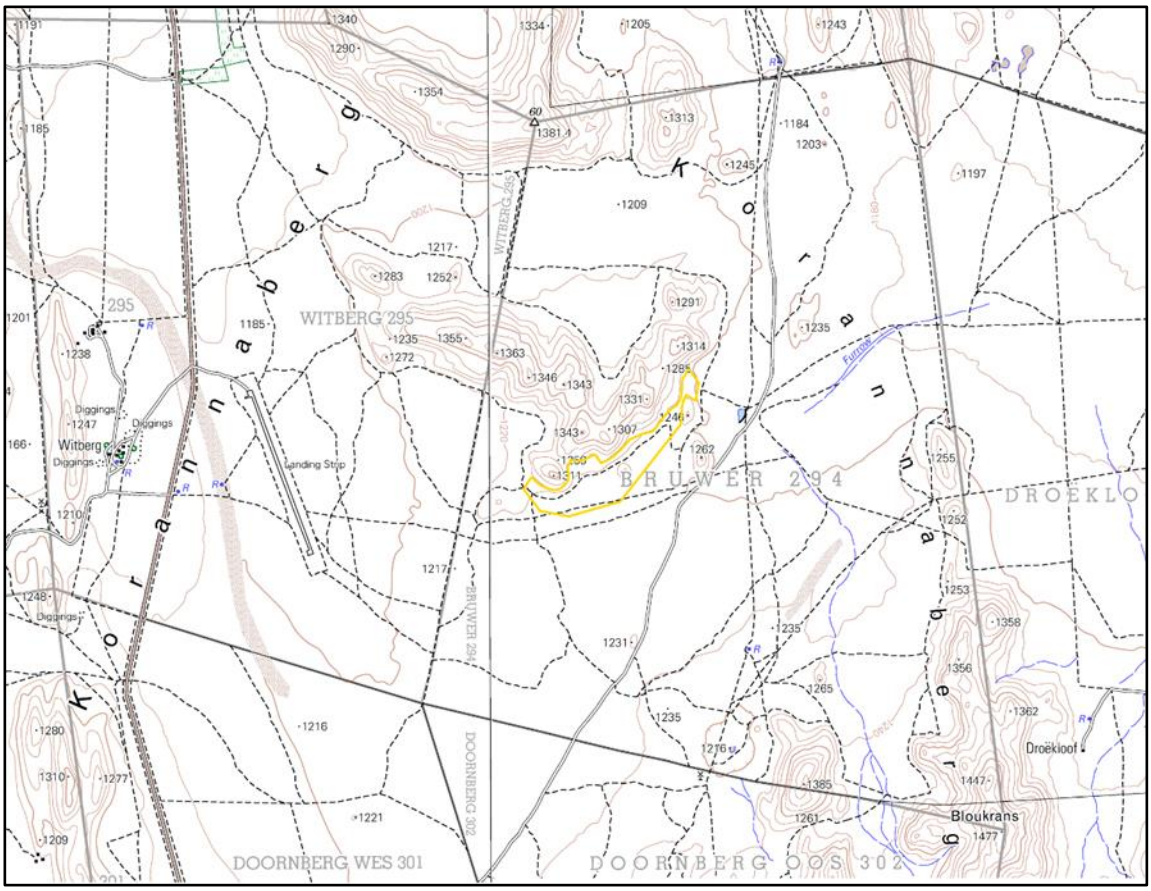


Figure 4.8. A Topographical Map of the farm Bruwer 294 RD dated 2001. The yellow border shows the approximate location of the study area. No developments can be seen within the study area. A road, dam and furrow can be seen to the east of the study area (Topographical Map, 2722 AB, 2001).

4.1.6. Historical overview and development of the farm Bruwer 294 RD

Record of historical landowners

On 1 August 1930, title to the farms Bruwer and Doornberg Oos, division of Kuruman, were awarded to Piet Lodewikus Vermeulen in terms of Crown Grant. The farms Bruwer measuring 2868 morgen, 274 square roods and Doornberg Oos, 1331 morgen, 17 777 square feet were sold to Vermeulen for a purchase price of £555.0.5. All mineral rights were reserved to the Crown (NASA, SAB URU: 1144 2087).

On 28 November 1995, Barend Frederik Hendrik van Zyl sold the farm Bruwer 294 RD, held under title deed T722/1984, to Tswalu Game Lodge (Pty) Ltd for a purchase price of R900 000. On 19 March 1996, Tswalu Game Lodge (Pty) Ltd became the registered owner of the farm (Windeed Search Engine, 2021).

No further details regarding registered owners of Bruwer 294 RD could be traced.

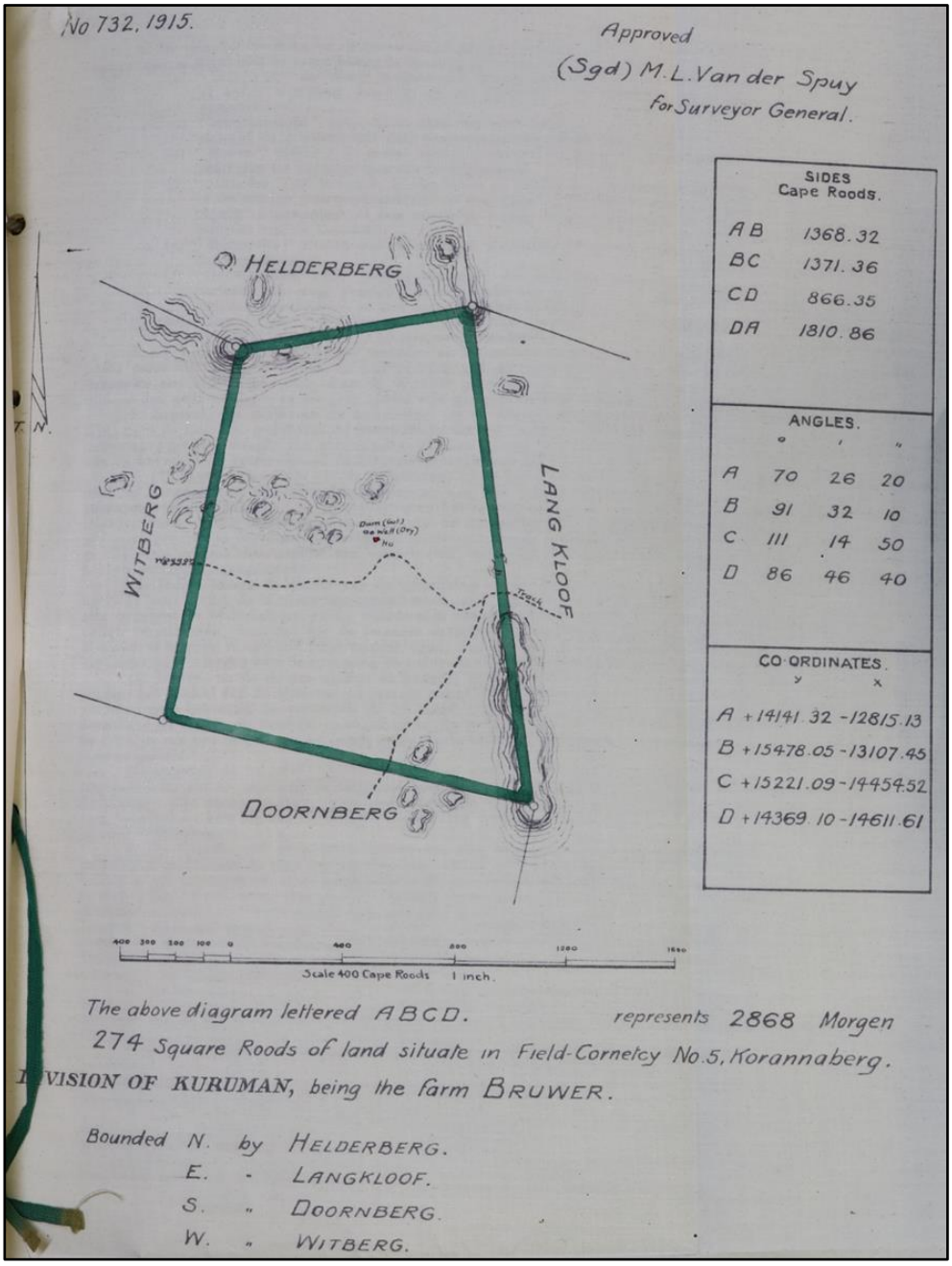


Figure 4.9. A sketch plan dated 1915, showing the farms Bruwer. Note inscription “Dam (Gat) Well (Dry)” probably indicating that there was no water at the time.The farm Doornberg which was granted under the same Crown Grant can be seen to the south (NASA, SAB MNW: 1035 MM1854/30).

History of land use at Bruwer 294 RD and the Tswalu Kalahari Reserve

No information regarding the history of land use for the farm Bruwer 294 RD could be traced. However, given the location and the climatic conditions, it is likely that livestock and game farming was practiced here.

Tswalu Kalahari Reserve, located in the Southern Kalahari or Green Kalahari, is the largest Private Nature Reserve in South Africa with an extent of some 110 000 hectares. This is concomitant to its unique setting which includes the Korannaberg to the east and undulating Kalahari sand dunes on the western side (https://tswalu.com). Tswalu means “new beginning”in the Setswana language and this came into effect when the Tswalu Foundation was established in 2009 by owners, the Oppenheimer family. They had a vision of encouraging and facilitating environmental research in addition to wildlife and ecological conservation (https://tswalu.com).

An interesting feature at Tswalu and located on the farm Dedeben, is the historic Dedeben Police outpost which was established circa 1880. It was originally utilized by the Cape Mounted Rifles who were stationed there. At that time, it was the northernmost police outpost in the Gordonia Province of South Africa and known for the use of camels during police patrols (https://tswalu.com). The buildings are still used today as the Tswalu centre for research.

4.2. Archaeology

The Archaeological sequence of Southern Africa is divided into the Early, Middle and Late Stone Ages, the Early, Middle and Later Iron Ages and the Colonial Settlement and Historical Periods.

4.2.1. Stone Age

The Early Stone Age (ESA)

In South Africa the ESA dates from about 2 million to 250 000 years ago, in other words from the early to middle Pleistocene. The archaeological record shows that as the early ancestors progressed physically, mentally and socially, bone and stone tools were developed. One of the most influential advances was their control of fire and diversifying their diet by exploitation of the natural environment (Esterhuizen & Smith in Delius, 2007).

The earliest tools date to around 2.5 million years ago from the site of Gona in Ethiopia. Stone tools from this site shows that early hominids had to cognitive ability to select raw material and shape it for a specific application. Many bones found in association with stone tools like these have cut marks which lead scientists to believe that early hominids purposefully chipped cobblestones to produce flakes with a sharp edge capable of cutting and butchering animal carcasses. This supplementary diet of higher protein quantities ensured that brain development of hominids took place more rapidly.

Mary Leaky discovered stone tools like these in the Olduwai Gorge in Tanzania during the 1960s. The stone tools are named after this gorge and are known as relics from the Oldowan industry. These tools, only found in Africa, are mainly simple flakes, which were struck from cobbles. This method of manufacture remained for about 1.5 million years. Although there is continuing debate about who made these tools, two hominids may have been responsible. The first of these was an early form of *Homo* and the second was *Paranthropus robustus*, which became extinct about 1 million years ago (Esterhuizen & Smith in Delius, 2007).

Approximately 1.7 million years ago, more specialised tools known as Acheulean tools, appeared. These are named after tools from a site in France by the name of Saint Acheul, where they were first discovered in the 1800s. It is argued that these tools had their origin in Africa and then spread towards Europe and Asia with the movement of hominids out of Africa. These tools had longer and sharper edges and shapes, which suggest that they could be used for a larger range of activities, including the butchering of animals, chopping of wood, digging roots and cracking bone. *Homo ergaster* was probably responsible for the manufacture of Acheulean tools in South Africa. This physical type was arguably physically similar to modern humans, had a larger brain and modern face, body height and proportion very similar to modern humans. *Homo ergaster* was able to flourish in a variety of habitats in part because they were dependent on tools. They adapted to drier, more open grassland settings. Because these early people were often associated with water sources such as

rivers and lakes, sites where they left evidence of their occupation are very rare. Most tools of these people have been washed into caves, eroded out of riverbanks and washed downriver.

Middle Stone Age (MSA)

A greater variety of tools with diverse sizes and shapes appeared by 250 000 before present (BP). These replaced the large hand axes and cleavers of the ESA. This technological advancement introduces the Middle Stone Age (MSA). This period is characterised by tools that are smaller in size but different in manufacturing technique (Esterhuizen & Smith in Delius, 2007).

In contrast to the ESA technology of removing flakes from a core, MSA tools were flakes to start with. They were of a predetermined size and shape and were made by preparing a core of suitable material and striking off the flake so that it was flaked according to a shape which the toolmaker desired. Elongated, parallel-sided blades, as well as triangular flakes are common finds in these assemblages. Mounting of stone tools onto wood or bone to produce spears, knives and axes became popular during the MSA. These early humans not only settled close to water sources but also occupied caves and shelters. The MSA represents the transition of more archaic physical type (*Homo)* to anatomically modern humans, *Homo sapiens.*

Later Stone Age (LSA)

Early hunter gatherer societies also known as San and Khoi people were responsible for a number of technological innovations and social transformations during this period starting at around 20 000 years BP. Hunting of animals proved more successful with the innovation of the bow and link-shaft arrow. These arrows were made up of a bone tip which was poisoned and loosely linked to the main shaft of the arrow. Upon impact, the tip and shaft separated leaving the poisoned arrow-tip imbedded in the prey animal. Additional innovations include bored stones used as digging stick weights to uproot tubers and roots; small stone tools, mostly less than 25mm long, used for cutting of meat and scraping of hides; polished bone tools such as needles; twine made from plant fibres and leather; tortoiseshell bowls; ostrich eggshell beads; as well as other ornaments and artwork (Esterhuizen & Smith in Delius, 2007).

In the Northern Cape there a large number of heritage sites have been documented (Beaumont & Morris, 1990; Morris & Beaumont, 2004). One of the most significant is Wonderwerk Cave which demonstrates a high resolution of Stone Age occupation ranging from the Early Stone Age to the Late Stone Age. Archaeological sites in this region normally occur close to permanent water sources (Beaumont & Vogel, 2006). In the vicinity of Kuruman more specifically in the Kuruman Hills, two rock shelters contain Later Stone Age remains as well as Rock Art. More evidence of rock art is also visible at Danielskuil and on Carter Block (Morris, 2005:3). Rock engravings depicting a range of resident animals are also located within the Tswalu Kalahari Reserve. These were probably made by

small non-Bantu hunter-gatherer or herder groups collectively known as Khoisan known to have occupied the central Kalahari since the Later Stone Age approximately 30 000 years ago (Barbieri, et.al. 2013).

Specularite workings associated with Later Stone Age people and material as well as older Fauresmith industry (Early Middle Stone Age) sites represented at Lylyveld, Demaneng, Mashwening, King, Rust en Vrede, Paling, Gloucester and Mount Huxley (Van der Walt & Van der Merwe, 2020).

Previous archaeological surveys have shown that drainage lines, rocky outcrops and hills, river banks and confluences are places where especially Stone Age archaeological finds are concentrated. They were probably used as settlement camps due to their proximity to water sources (Webley & Halkett, 2008).

Figure 4.10. Two examples of rock engravings at Tswalu. On the left an Ostrich is discernible and on the right an Eland, Southern Africa's largest antelope.

4.2.2. Early Iron Age

The period referred to as the Early Iron Age (AD 200-1500 approx.) started when presumably Karanga (north-east African) herder groups moved into the north eastern parts of South Africa. It is believed that these people may have been responsible for making of the famous Lydenburg Heads, ceramic masks dating to approximately 600AD. They are also known to have been Bantu speaking farmers and herders belonging to the UreweTradition. The oldest archaeological site associated with the Urewe Tradition is known as Silver Leaves with a dating range between AD 280-450 and has

known distribution in the North-eastern Mpumalanga and Limpopo Provinces of South Africa (Klapwijk, 1974; Klapwijk & Huffman,1996).

Iron Age farmers settling in Southern Africa from the north-western parts of Africa are known as the Kalundu Tradition, based on linguistic provenance of the associated Bantu groups. The oldest archaeological site associated with this group is known as Happy Rest (AD 500-750) and located in Limpopo Province (Huffman, 2007).

Mason (1964, 1965, 1967, 1968) started the first scientific Early Iron Age archaeological excavation in the Lowveld, followed by N.J. van der Merwe and Scully. M. Klapwijk (1973, 1974) also excavated an EIA site at Silverleaves and Evers and van den Berg (1974) excavated at Harmony and Eiland, both EIA sites.

4.2.3. Late Iron Age

The later phases of the Iron Age (AD 1600-1800's) are represented by various farming communities including some Nguni and Sotho-Tswana speakers. They found the Northern Cape areas sparsely populated by Khoisan groups who were representatives of the Late Stone Age (LSA) and known as the "first peoples". This period of contact is also described as the Ceramic Late Stone Age (De Jong, 2010). Most of the LSA groups were consequently assimilated by the Iron Age communities and only a few retained their originality including the Korana and Griqua.

5. Site descriptions, locations and impact significance assessment

A total of twelve survey orientation locations were documented, sites SO 1-12 which includes a GPS location and photographs of the landscape at that particular location. At two of the survey locations, SO 1 and SO 5, a single isolated stone tool was found and probably associated with the Late Stone Age (LSA). The artefacts are out of context and is scattered too sparsely to be of significance apart from mentioning them in this report.

The survey orientation sites are tabled in Appendix B and their photos in Appendix D. A map of their location is also provided in Appendix C.

Tables indicate the ***site significance rating scales and status*** in terms of possible impacts of the proposed actions on any located or identified heritage sites (**Table 5.5 & 5.6).**

Table 5.1. Summary of located sites and their heritage significance

Type of site	**Identified sites**	**Significance**
Graves and graveyards	None	N/A
Late Iron Age	None	N/A
Early Iron Age	None	N/A
Historical buildings or structures	None	N/A
Historical features and ruins	None	N/A
Stone Age sites or features	SO1; SO5	Low

Table 5.2. Significance rating guidelines for sites

Field Rating	**Grade**	**Significance**	**Recommended Mitigation**
National Significance (NS)	Grade 1	High Significance	Conservation, nomination as national site
Provincial Significance (PS)	Grade 2	High Significance	Conservation; Provincial site nomination
Local significance (LS 3A)	Grade 3A	High Significance	Conservation, No mitigation advised
Local Significance (LS 3B)	Grade 3B	High Significance	Mitigation but at least part of site should be retained
Generally Protected A (GPA)	GPA	High/ Medium Significance	Mitigation before destruction
Generally Protected B (GPB)	GPB	Medium Significance	Recording before destruction
Generally Protected C (GPC)	GPC	Low Significance	Destruction

5.1. Description of located sites

Survey orientations:

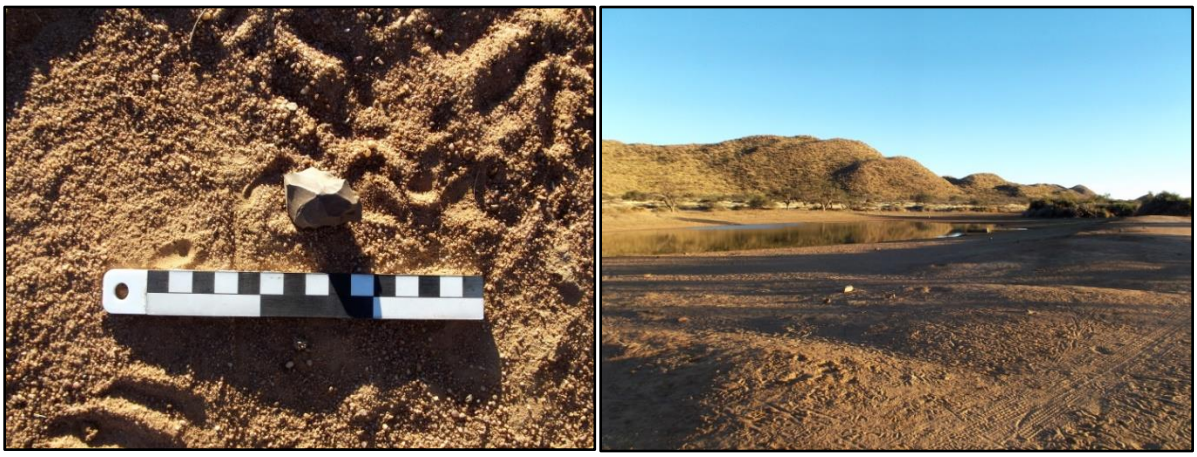
5.1.1. Site SO 1.

Location: See Appendix B and D (fig. 1)

Description: Survey orientation location. Found a single isolated LSA core.

Impact of the proposed development/ activity: N/A. Outside of the proposed development area.

Recommendation: N/A



A single isolated MSA core recorded at SO 1. Photo view north-west.

5.1.2. Site SO 2.

Location: See Appendix B and D (fig. 2)

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A


Photo view north

5.1.3. Site SO 3.

Location: See Appendix B and D (fig. 3)

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A


Photo view south-west

5.1.4. Site SO 4.

Location: See Appendix B and D (fig. 4)

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A


Photo view south-east

5.1.5. Site SO 5.

Location: See Appendix B and D (fig. 5)

Description: Survey orientation location. Found a single isolated LSA flake.

Impact of the proposed development/ activity: Low. Artefact occurrence is minimal.

Recommendation: Monitoring during construction phase.

A single isolated flake encircled in yellow on top of a quartzite rock. Photo view north-west.

5.1.6. Site SO 6.

Location: See Appendix B and D (fig. 5)

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A


Photo view south

5.1.7. Site SO 7.

Location: See Appendix B and D (fig. 6)

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A


Photo view south-west

5.1.8. Site SO 8.

Location: See Appendix B and D (fig. 7)

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A


Photo view north-east

5.1.9. Site SO 9.

Location: See Appendix B and D (fig. 8)

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A


Photo view south

5.1.10. Site SO 10.

Location: See Appendix B and D (fig. 9)

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A


Photo view north

5.1.11. Site SO 11.

Location: See Appendix B and D (fig. 10)

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A


Photo view west

5.1.12. Site SO 12.

Location: See Appendix B and D (fig. 11)

Description: Survey orientation location.

Impact of the proposed development/ activity: N/A

Recommendation: N/A

 Photo view east

TABLE 5.3. General description of located sites and field rating.

Site No.	Description	Type of significance	Degree of significance	NHRA heritage resource & rating
SO1	Survey orientation location. Isolated LSA tool	N/A	Archaeological: Low Historic: N/A	Section 35. GP C. Low significance
SO2	Survey orientation location	N/A	Archaeological: N/A Historic: N/A	None
SO3	Survey orientation location	N/A	Archaeological: N/A Historic: N/A	None
SO4	Survey orientation location	N/A	Archaeological: N/A Historic: N/A	None
SO5	Survey orientation location. Isolated LSA tool	N/A	Archaeological: Low Historic: N/A	Section 35. GP C. Low significance.
SO6	Survey orientation location	N/A	Archaeological: N/A Historic: N/A	None
SO7	Survey orientation location	N/A	Archaeological: N/A Historic: N/A	None
SO8	Survey orientation location	N/A	Archaeological: N/A Historic: N/A	None
SO9	Survey orientation location	N/A	Archaeological: N/A Historic: N/A	None
SO10	Survey orientation location	N/A	Archaeological: N/A Historic: N/A	None
SO11	Survey orientation location	N/A	Archaeological: N/A Historic: N/A	None
SO12	Survey orientation location	N/A	Archaeological: N/A Historic: N/A	None

TABLE 5.4. Site condition assessment and management recommendations.

Site no.	Type of Heritage resource	Integrity of cultural material	Preservation condition of site	Relative location	Quality of archaeological/ historic material	Quantity of site features	Recommended conservation management
SO 1	Archaeology. Isolated LSA tool	Poor	N/A	Bruwer 294 RD, Tswalu	Archaeology: Low Historically: N/A	-	N/A
SO 2	N/A	N/A	N/A	Bruwer 294 RD, Tswalu	Archaeology: N/A Historically: N/A	-	N/A
SO 3	N/A	N/A	N/A	Bruwer 294 RD, Tswalu	Archaeology: N/A Historically: N/A	-	N/A
SO 4	N/A	N/A	N/A	Bruwer 294 RD, Tswalu	Archaeology: N/A Historically: N/A	-	N/A
SO 5	Archaeology. Isolated LSA tool	Poor	N/A	Bruwer 294 RD, Tswalu	Archaeology: Low Historically: N/A	1	Monitor during construction. Chance find Protocol
SO 6	N/A	N/A	N/A	Bruwer 294 RD, Tswalu	Archaeology: N/A Historically: N/A	-	N/A
SO 7	N/A	N/A	N/A	Bruwer 294 RD, Tswalu	Archaeology: N/A Historically: N/A	-	N/A
SO 8	N/A	N/A	N/A	Bruwer 294 RD, Tswalu	Archaeology: N/A Historically: N/A	-	N/A
SO 9	N/A	N/A	N/A	Bruwer 294 RD, Tswalu	Archaeology: N/A Historically: N/A	-	N/A
SO10	N/A	N/A	N/A	Bruwer 294 RD, Tswalu	Archaeology: N/A Historically: N/A	-	N/A
SO 11	N/A	N/A	N/A	Bruwer 294 RD, Tswalu	Archaeology: N/A Historically: N/A	-	N/A
SO 12	N/A	N/A	N/A	Bruwer 294 RD, Tswalu	Archaeology: N/A Historically: N/A	-	N/A

TABLE 5.5. Significance Rating Scales of Impact

Site No.	Nature of impact	Type of site	Extent	Duration	Intensity	Probability	Score total
SO 1	N/A	N/A	N/A	N/A	N/A	N/A	-
SO 2	Camp construction	N/A	Tent footprint	Short term	Moderate (2)	Possible (2)	4
SO 3	Camp construction	N/A	Tent footprint	Short term	Moderate (2)	Possible (2)	4
SO 4	Camp construction	N/A	Tent footprint	Short term	Moderate (2)	Possible (2)	4
SO 5	Camp construction	N/A	Tent footprint	Short term	Moderate (2)	Possible (2)	4
SO 6	Camp construction	N/A	Tent footprint	Short term	Moderate (2)	Possible (2)	4
SO 7	Camp construction	N/A	Tent footprint	Short term	Moderate (2)	Possible (2)	4
SO 8	Camp construction	N/A	Tent footprint	Short term	Moderate (2)	Possible (2)	4
SO 9	Camp construction	N/A	Tent footprint	Short term	Moderate (2)	Possible (2)	4
SO 10	Camp construction	N/A	Tent footprint	Short term	Moderate (2)	Possible (2)	4
SO 11	Camp construction	N/A	Tent footprint	Short term	Moderate (2)	Possible (2)	4
SO 12	Camp construction	N/A	BOH area	Short term	Moderate (2)	Possible (2)	4

***Notes:** Short term ≥ 5 years, Medium term 5-15 years, Long term 15-30 years, Permanent 30+ years

Intensity: Very High (4), High (3), Moderate (2), Low (1)

Probability: Improbable (1), Possible (2), Highly probable (3), Definite (4)

TABLE 5.6. Site current status and future impact scores

Site No.	Current Status	Low impact (4-6 points)	Medium impact (7-9 points)	High impact (10-12 points)	Very high impact (13-16 points)	Score Total
SO 1	Neutral	-	-	-	-	-
SO 2	Neutral	-	7	-	-	7
SO 3	Neutral	-	7	-	-	7
SO 4	Neutral	-	7	-	-	7
SO 5	Neutral	-	7	-	-	7
SO 6	Neutral	-	7	-	-	7
SO 7	Neutral	-	7	-	-	7
SO 8	Neutral	-	7	-	-	7
SO 9	Neutral	-	7	-	-	7
SO 10	Neutral	-	7	-	-	7
SO 11	Neutral	-	7	-	-	7
SO 12	Neutral	-	7	-	-	7

5.2. Cumulative impacts on the heritage landscape

Cumulative impacts can occur when a range of impacts which result from several concurrent processes have impact on heritage resources. The importance of addressing cumulative impacts is that the total impact of several factors together is often greater than one single process or activity that may impact on heritage resources. Construction of the proposed camp will probably impact on the area at SO 5 where the isolated LSA flake was identified. The site is however considered to be of low significance as the find is random and of low frequency. Therefore any cumulative or additional impacts other than the proposed construction of a new camp should similarly have low additional or compounded impacts as there are in essence no significant heritage sites present.

Also see section 6.1. Recommended management measures.

6. Summary of findings and recommendations

A total of twelve survey orientation locations were documented, sites SO 1-12 which includes a GPS location and photographs of the landscape at that particular location. At two of the survey locations, SO 1 and SO 5, a single isolated stone tool was found which is probably associated with the Late Stone Age (LSA). The artefacts are out of context and is scattered too sparsely to be of significance apart from mentioning them in this report.

In terms of the archaeological component of the Act (25 of 1999, section 35) two isolated stone tools were documented. One is outside of the proposed development area (Site SO1) and the other close to one of the tent unit footprints inside of the proposed development area. Due to the isolated nature and low frequency of the find, this is not regarded as being a significant archaeological site. Monitoring during construction activities is recommended as part of the proposed implementation of a chance find protocol in the EMP (Also see section 6.1).

In terms of the built environment in the project area (section 34 of the Act) two sites were identified in the study area. They are of no heritage significance.

In terms of burial grounds and graves (section 36 of the Act) no graves or gravesites were identified in the study area.

It is not within the expertise of this report or the surveyor to comment on possible paleontological remains which may be located in the study area.

The bulk of archaeological remains are normally located beneath the soil surface. It is therefore possible that some significant cultural material or remains were not located during this survey and will only be revealed when the soil is disturbed. Should excavation or large scale earth moving activities reveal any human skeletal remains, broken pieces of ceramic pottery, large stone tool concentrations or large quantities of sub-surface charcoal or any material that can be associated with previous occupation, a local museum or qualified archaeologist should be notified immediately. This will also temporarily halt such activities until a heritage specialist has assessed the finds. It should be noted that if such a find occurs it may have further financial implications.

6.1. Recommended management measures

The possibility of the occurrence of sub surface artefacts cannot be excluded. Therefore if finds such as stone tool concentrations, bone and fossils are found, a chance find protocol is recommended. This is done by including a chance find protocol in the EMP which may consist of the following:

- The contractors and workers should be notified that archaeological sites might be exposed during the construction work.

- Should any heritage artefacts be exposed during excavation, work on the area where the artefacts were discovered, shall cease immediately and the Environmental Control Officer shall be notified as soon as possible;
- All discoveries shall be reported immediately to a museum, preferably one at which an archaeologist is available, so that an investigation and evaluation of the finds can be made. Acting upon advice from these specialists, the Environmental Control Officer will advise the necessary actions to be taken;
- Under no circumstances shall any artefacts be removed, destroyed or interfered with by anyone on the site; and
- Contractors and workers shall be advised of the penalties associated with the unlawful removal of cultural, historical, archaeological or paleontological artefacts, as set out in the National Heritage Resources Act (Act No. 25 of 1999).

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Appendix A – Terminology

Terminology

"Alter" means any action affecting the structure, appearance or physical properties of a place or object, whether by way of structural or other works, by painting, plastering or other decoration or any other means.

"Archaeological" means –

- Material remains resulting from human activity which 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 or structures;
- Rock Art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years, including any area within 10m of such representation;
- Wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the Republic, as defined respectively in sections 3, 4 and 6 of the Maritime Zones Act, 1994 (Act No. 15 of 1994), and any cargo, debris or artifacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation; and
- Features, structures and artefacts associated with military history which are older than 75 years and the sites on which they are found;

"Conservation", in relation to heritage resources, includes protection, maintenance, preservation and sustainable use of places or objects so as to safeguard their cultural significance;

"Cultural significance" means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance;

"Development" means any physical intervention, excavation, or action, other than those caused by natural forces, which may in the opinion of a heritage authority in any way result in a change to the nature, appearance or physical nature of a place, or influence its stability and future well-being, including –

- construction, alteration, demolition, removal or change of use of a place or a structure at a place;
- carrying out any works on or over or under a place;

- subdivision or consolidation of land comprising, a place, including the structures or airspace of a place;
- constructing or putting up for display signs or hoardings;
- any change to the natural or existing condition or topography of land; and
- any removal or destruction of trees, or removal of vegetation or topsoil;

"Expropriate" means the process as determined by the terms of and according to procedures described in the Expropriation Act, 1975 (Act No. 63 of 1975);

"Foreign cultural property", in relation to a reciprocating state, means any object that is specifically designated by that state as being of importance for archaeology, history, literature, art or science;

"Grave" means a place of internment and includes the contents, headstone or other marker of such a place, and any other structure on or associated with such place;

"Heritage resource" means any place or object of cultural significance;

"Heritage register" means a list of heritage resources in a province;

"Heritage resources authority" means the South African Heritage Resources Agency, established in terms of section 11, or, insofar as this Act (25 of 1999) is applicable in or in respect of a province, a provincial heritage resources authority (PHRA);

"Heritage site" means a place declared to be a national heritage site by SAHRA or a place declared to be a provincial heritage site by a provincial heritage resources authority;

"Improvement" in relation to heritage resources, includes the repair, restoration and rehabilitation of a place protected in terms of this Act (25 of 1999);

"Land" includes land covered by water and the air space above the land;

"Living heritage" means the intangible aspects of inherited culture, and may include –

- cultural tradition;
- oral history;
- performance;
- ritual;
- popular memory;
- skills and techniques;
- indigenous knowledge systems; and
- the holistic approach to nature, society and social relationships;

"Management" in relation to heritage resources, includes the conservation, presentation and improvement of a place protected in terms of the Act;

"Object" means any moveable property of cultural significance which may be protected in terms of any provisions of the Act, including –

- any archaeological artifact;
- palaeontological and rare geological specimens;
- meteorites;
- other objects referred to in section 3 of the Act;

"Owner" includes the owner's authorized agent and any person with a real interest in the property and –

- in the case of a place owned by the State or State-aided institutions, the Minister or any other person or body of persons responsible for the care, management or control of that place;
- in the case of tribal trust land, the recognized traditional authority;

"Place" includes –

- a site, area or region;
- a building or other structure which may include equipment, furniture, fittings and articles associated with or connected with such building or other structure;
- a group of buildings or other structures which may include equipment, furniture, fittings and articles associated with or connected with such group of buildings or other structures;
- an open space, including a public square, street or park; and
- in relation to the management of a place, includes the immediate surroundings of a place;

"Site" means any area of land, including land covered by water, and including any structures or objects thereon;

"**Structure"** means any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith.

Appendix B – List of sites

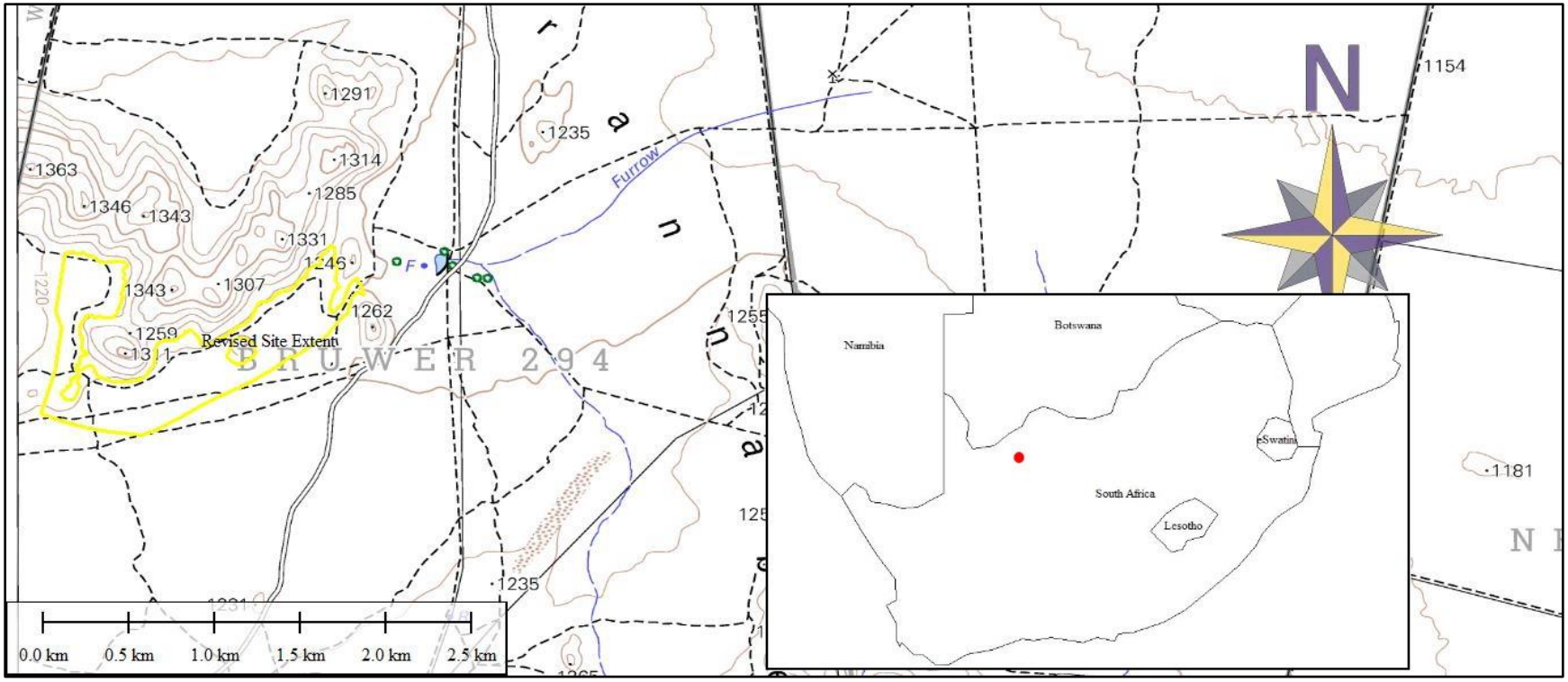
List of sites

Twelve survey orientation locations were documented. The sites were named SO 1-12.

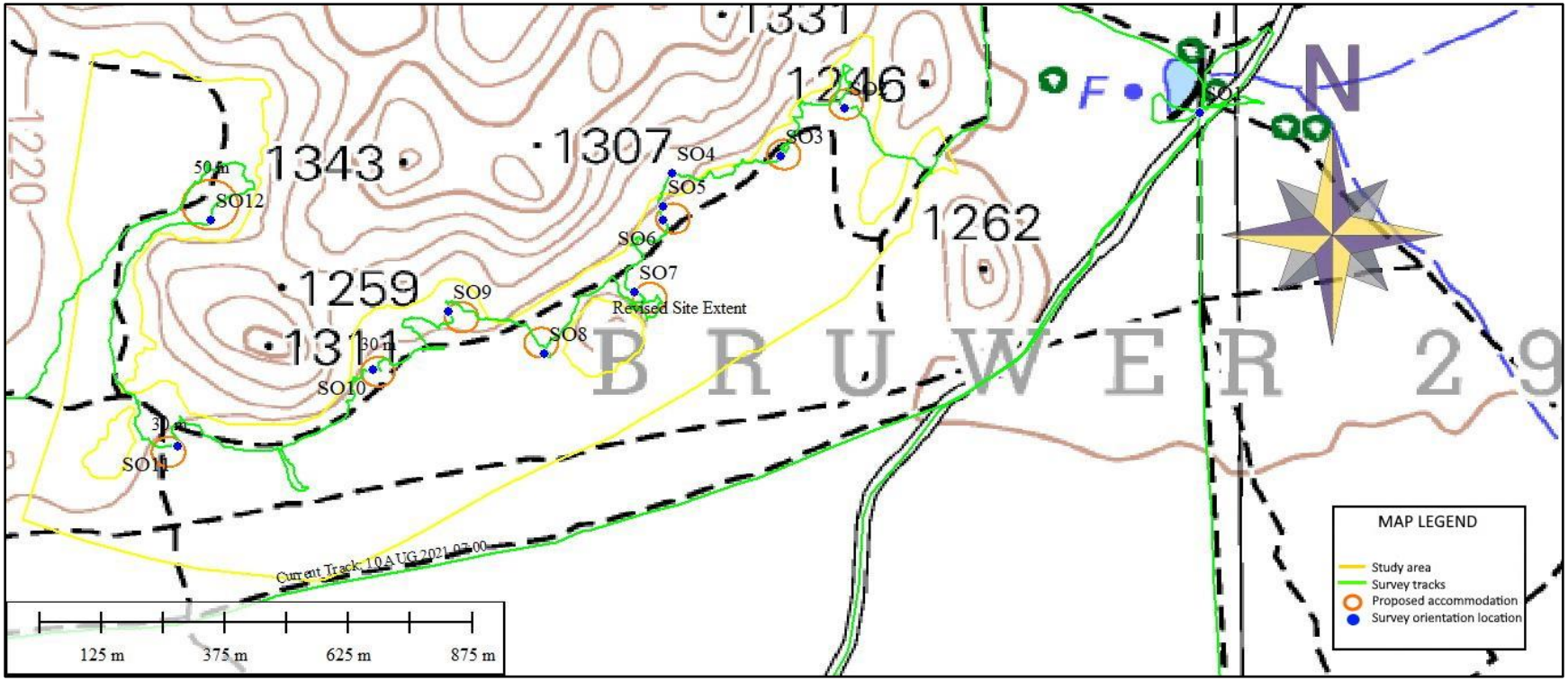
Table A. Survey Orientation Locations.

Site Name	Date of compilation	GPS Coordinates		Photo figure No.
SO 1	10/08/2021	S27°12,0540'	E022°31,3562'	1
SO 2	10/08/2021	S27°12,0487'	E022°30,9697'	2
SO 3	10/08/2021	S27°12,1012'	E022°30,9000'	3
SO 4	10/08/2021	S27°12,1196'	E022°30,7819'	4
SO 5	10/08/2021	S27°12,1555'	E022°30,7714'	5
SO 6	10/08/2021	S27°12,1705'	E022°30,7720'	5
SO 7	10/08/2021	S27°12,2488'	E022°30,7406'	6
SO 8	10/08/2021	S27°12,3167'	E022°30,6428'	7
SO 9	10/08/2021	S27°12,2705'	E022°30,5380'	8
SO 10	10/08/2021	S27°12,3337'	E022°30,4567'	9
SO 11	10/08/2021	S27°12,4168'	E022°30,2435'	10
SO 12	10/08/2021	S27°12,1712'	E022°30,2798'	11

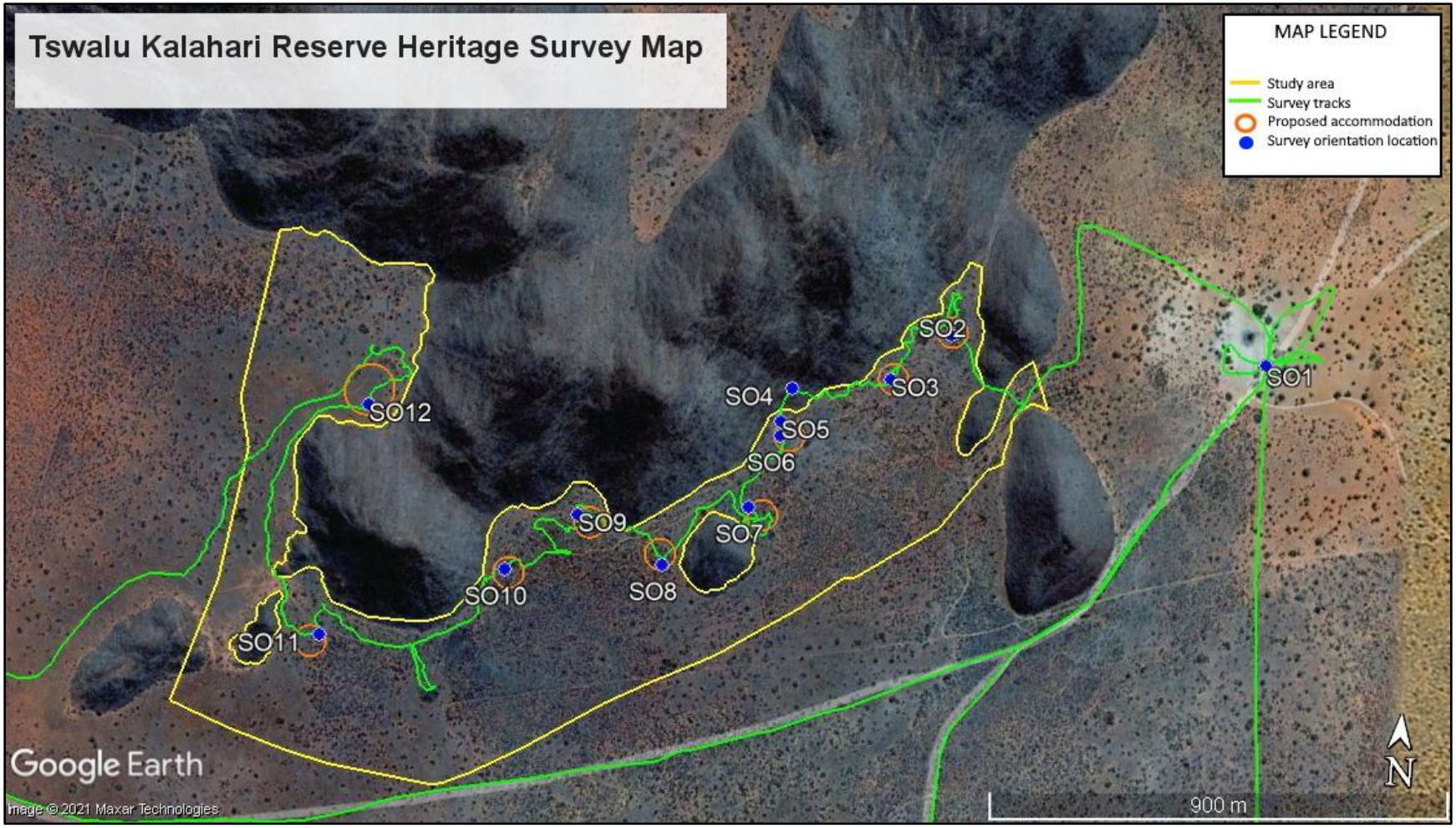
Appendix C – Maps



Regional Map 1:50 000 Topographical Map 2722 BA (2001).



Topographical Map 1:50 000 2722 BA (2001)



Aerial view: Google Earth 2021.

Appendix D – Photos

Survey Orientation Photos

Fig. 1. Site SO1. Photos taken in a western and south-eastern direction.

Fig. 2. Site SO2. Photos taken in a western and southern direction.

Fig. 3. Site SO3. Photos taken in a northern and southern direction.

Fig. 4. Site SO 4. Photos taken in a western and southern direction.

Fig. 5. Site SO 5 & SO 6. Photos taken in a southern and north-western direction.

Fig. 6. Site SO 7. Photos taken in a north-western and north-eastern direction.

Fig. 7. Site SO 8. Photos taken in a south-western and north-western direction.

Fig. 8. Site SO 9. Photos taken in a northern and western direction.

Fig. 9. Site SO 10. Photos taken in a southern and western direction.

Fig. 10. Site SO 11. Photos taken in a northern and south-eastern direction

Fig. 11. Site SO 12. Photos taken in a northern and southern direction.

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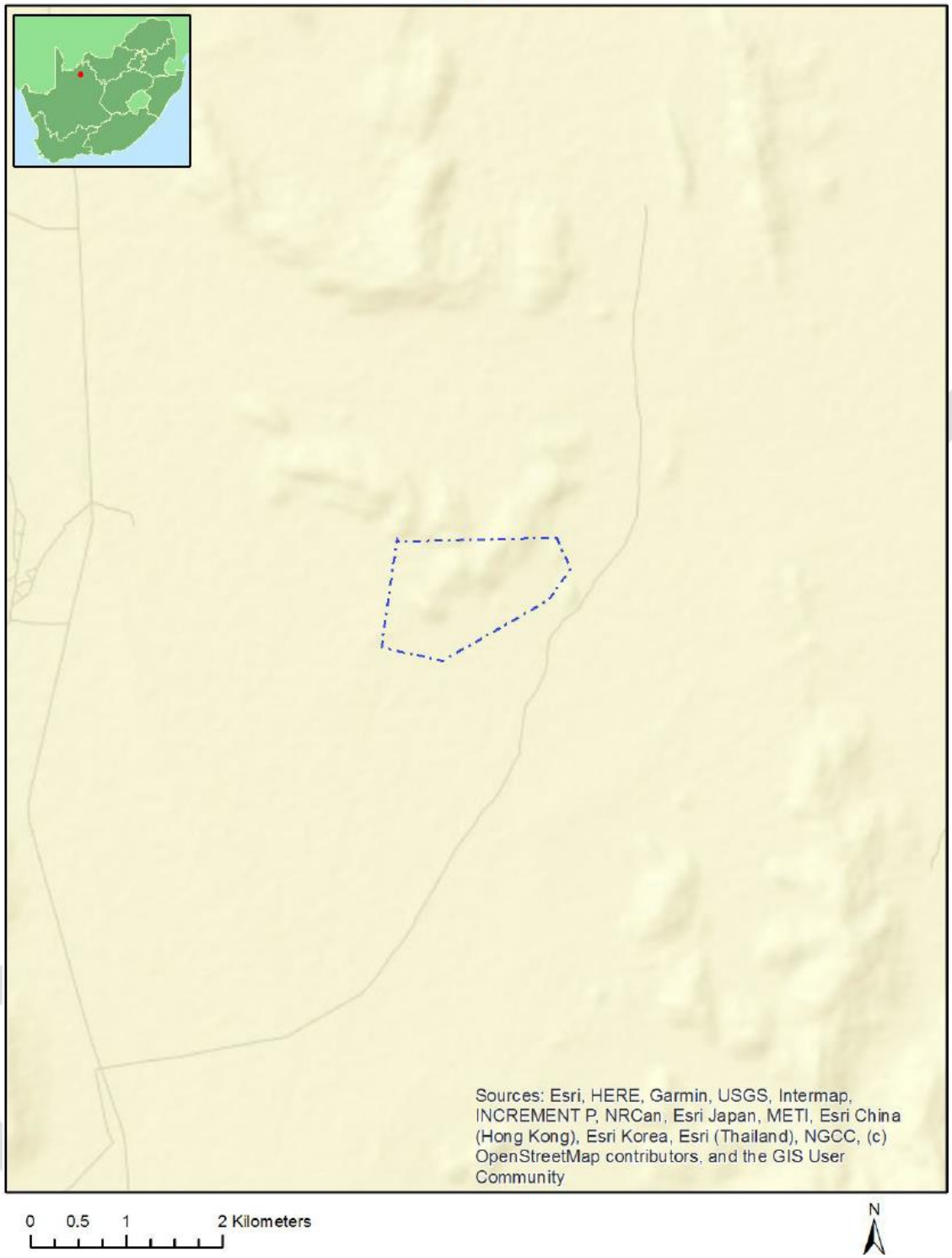
Appendix E – Environmental Sensitivities Screening

SCREENING REPORT FOR AN ENVIRONMENTAL AUTHORIZATION AS REQUIRED BY THE 2014 EIA REGULATIONS – PROPOSED SITE ENVIRONMENTAL SENSITIVITY

Compiled from the National Web Based Environmental Sensitivities Screening Tool

General Orientation: Proposed Tented Camp Accommodation, Tswalu Kalahari Reserve



Cadastral details of the proposed site

Property details:

No	Farm Name	Farm/ Erf No	Portion	Latitude	Longitude	Property Type
1	BRUWER	294	0	27°12'11.76S	22°31'15.56E	Farm
2	BRUWER	294	0	27°12'11.76S	22°31'15.56E	Farm Portion

Theme	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
Agriculture Theme			X	
Animal Species Theme			X	
Aquatic Biodiversity Theme	X			
Archaeological and Cultural Heritage Theme				X
Civil Aviation Theme		X		
Defence Theme				X
Paleontology Theme			X	
Plant Species Theme				X
Terrestrial Biodiversity Theme	X			

Specialist assessments identified

Based on the selected classification, and the environmental sensitivities of the proposed development footprint, the following list of specialist assessments have been identified for inclusion in the assessment report. It is the responsibility of the EAP to confirm this list and to motivate in the assessment report, the reason for not including any of the identified specialist study including the provision of photographic evidence of the site situation.

No	Specialist assessment	Assessment Protocol
1	Landscape/Visual Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
2	Archaeological and Cultural Heritage Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
3	Palaeontology Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
4	Terrestrial Biodiversity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Terrestrial_Biodiversity_Assessment_Protocols.pdf
5	Aquatic Biodiversity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Aquatic_Biodiversity_Assessment_Protocols.pdf
6	Avian Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Avifauna_Assessment_Protocols.pdf
7	Socio-Economic Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
8	Plant Species Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Plant_Species_Assessment_Protocols.pdf
9	Animal Species Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Animal_Species_Assessment_Protocols.pdf

MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low sensitivity