

Sustainable community development is our speciality

PHASE 1

ARCHAEOLOGICAL IMPACT ASSESSMENT REPORT

**INVESTIGATIONS FOR THE PROPOSED ESTABLISHMENT OF
AGRICULTURAL CO-OPERATIVES ENTERPRISE (PIGGERY, POULTRY AND
CROP PRODUCTION FARMING) ON FARM LANGKUIL 66, MATJHABENG
LOCAL MUNICIPALITY,
LUJWELEPUTSWA DISTRICT MUNICIPALITY,
FREE STATE PROVINCE**

Compiled for:

**KALAHARI SAFETY HEALTH & ENVIRONMENTAL
CONSULTANTS (PTY)**

P.O. BOX 1824

VUWANI

0952

E-mail: ttshifhumulo@gmail.com

Cell:0735485 446

Compiled by:

VHUFASHU HERITAGE CONSULTANTS

45 Voortrekker St

Polokwane,0700

P.O. Box 456

Ladanna, 0704

Tel: 015 291 3699

Fax: 015 291 3699

E-mail:info@vhhc.co.za

APRIL 2013

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. Vhufahashu Heritage Consultants and its personnel will not be held liable for such oversights or for costs incurred as a result of such oversights.

EXECUTIVE SUMMARY

Copyright: *Copyright in all documents, drawings and records whether manually or electronically produced, which form part of the submission and any subsequent report or project document shall vest in VVHC. None of the documents, drawings or records may be used or applied in any manner, nor may they be reproduced or transmitted in any form or by any means whatsoever for or to any other person, without the prior written consent of Vhufahashu Heritage Consultants..*

Note: This report follows minimum standard guidelines required by the South African Heritage Resources Agency (SAHRA and SAHRIS) for compiling a Phase 1 Archaeological Impact Assessment Report (AIA).

Site name and location: The proposed farm is located north east of Kutlwanong Township; the site is situated approximately 50 kilometers west of Kroonstad, 10 kilometers east of Odendalsrus Central Business District, within Matjhabeng Local Municipality of the Lejweleputswa District, Free State Province. South Africa.

Local Authority: Matjhabeng Local Municipality

Magisterial Authority: Lejweleputswa District Municipality

Developer: Energy Building Farming Group

Date of field work: 17April 2013

Date of report: 22 April 2013

SURVEY AIMS AND ASSESMENT FINDINGS

The Phase 1 Archaeological Scoping Study (Archaeological Impact Assessments) as required in terms of section 38 of the National Heritage Resource Act (Act 25 of 1999) was done for the proposed establishment of Agricultural Co-operative Enterprise Farming activities (Piggery, Poultry and crop Production) within Matjhabeng Local Municipality; Lejweleputswa District; Free State Province; South Africa

The aims with the Phase1 Archaeological Impact Assessment (AIA) program were the following:

- To establish whether any of the type and ranges of heritage resources as outlined in section 3 of the National Heritage Resources Act (Act 25 of 1999) do occur in or near the proposed site , and if so, to establish the significance of these heritage resources.
- To establish whether such heritage resources will be affected by the proposed development activities, and if so, to determine possible mitigation measures that can be applied to these heritage resources.

The phase 1 Archaeological Impact Assessment survey for the proposed establishment of Agricultural farming co-operative enterprise revealed approximately two (2) heritage resources (see the table below) within the range of historical sites, characterized by remnants remains of historical farm building foundations in association with ash middens, within the proposed development corridors. These remains qualify to be protected in term of section 34 (1) of the National Heritage Resources Act 25 of 1999 (see relevant legislative framework Page 10). From the point of view of these heritage resources located on the farm represent an early occupation of the Farm Langkuil. According to one of the co-operative representative Mr. Daniel Mosadi, the site has been proposed to be the most suitable location for the construction of chicken (Broiler) houses and Agricultural School of excellence. These will, however have negative impacts to the identified resources; the integrity of the remains will not be compromised. Should this be unavoidable mitigation management (Phase 2 investigations) and implementation are recommended on these sites. The location details and the field survey findings are presented in a Table below.

SITES NO	GLOBAL POSITIONING SYSTEM CO-ORDINATES	CULTURAL HERITAGE SITE TYPE
SITE 001	GPS S27°.51, 10.3" & E 26°.47.30.1"	<i>Remains of homestead represented by burnt clay bricks foundations, and ash midden.</i>
SITE 002	GPS S27°.50, 47.8 " & E 26°.47.18.3"	<i>Remains of homestead represented by burnt clay bricks foundations, and ash midden.</i>

ACKNOWLEDGEMENTS:

CLIENT NAME: Kalahari Safety Health and Environmental Consultants (PTY)

CLIENT CONTACT PERSON: Mr.Tshifhumulo Nesengani

CELL: 0735-485-446

Email address: ttshifhumulo@gmail.com

HERITAGE CONSULTANT: VHUFHASHU HERITAGE CONSULTANTS CC

HERITAGE AND ARCHAEOLOGICAL SPECIALIST: Mr. Mathoho Ndivhuho. Eric
(BA, BA Hons. Archaeology, University of Venda, MPhil Degree in Archaeology, University
of Cape Town; PhD Candidate University of Pretoria)

Heritage specialist/ ASAPA Accredited Archaeologist

Membership Number # 312

Vhufashu Heritage Consultants

Tel: 015 291 4919

Fax: 015 291 4917

Cell: 0718706947

Email: mathohoe@gmail.com or info @vhhc.co.za

REPORT AUTHOR: Mathoho Ndivhuho Eric

PROFESSIONAL DECLARATION

I, the undersigned, Mr. Ndivhuho Eric Mathoho hereby declare that I am a Professional archaeologist accredited with the association for South African Professional Archaeologist (ASAPA) Membership No 312 and that Vhufahashu Heritage Consultants is an independent consultants with no association or with no any other interest what so ever with any institution, organization, or whatever and that the remuneration earned from consulting work constitute the basis of Company livelihood and income.

Mr. Mathoho Ndivhuho Eric



.....

Archaeologist and Heritage Consultant for Vhufahashu Heritage Consultants
ASAPA Member

TABLE OF CONTENTS

CONTENT	PAGE
EXECUTIVE SUMMARY	2
SURVEY AIMS AND ASSESMENT FINDINGS	2
ACKNOWLEDGEMENTS:	4
HERITAGE CONSULTANT: VHUFHASHU HERITAGE CONSULTANTS CC.....	4
PROFESSIONAL DECLARATION	5
LIST OF FIGURES	8
ABBREVIATIONS	8
DEFINITIONS	9
1. INTRODUCTION.....	10
2. RELEVANT LEGISLATION.....	10
2.1. THE NATIONAL HERITAGE RESOURCE ACT (25 OF 1999).....	11
2.2. THE HUMAN TISSUE ACT (65 OF 1983)	13
3.TERMS OF REFERENCE.....	14
4.TERMINOLOGY	14
5. METHODOLOGY	16
SOURCE OF INFORMATION	16
6. ASSESSMENT CRITERIA	16
6.1 SITE SIGNIFICANCE	17
6.2 IMPACT RATING	18
6.3 CERTAINTY	19
6.4 DURATION	19
6.5 MITIGATION.....	19
7. REGIONAL SETTING: ARCHAEOLOGY AND HERITAGE.....	20
7.1 .THE EARLY STONE AGE (ESA).....	20

7.2. MIDDLE STONE AGE (MSA)	21
7.3. IRON AGE / FIRST-FARMING COMMUNITIES	22
7.4. ROCK ART (PAINTINGS AND ENGRAVINGS)	23
7.5. HISTORICAL / COLONIAL PERIOD	24
8. SITE LOCATION AND PROJECT DESCRIPTIONS	24
9. ASSESMENT OF SITES AND FINDS	27
9.1. (SITE-001) REMAINS OF HOMESTEAD REPRESENTED BY BURNT CLAY BRICKS FOUNDATIONS, AND ASH MIDDEN.	27
9.2. (SITE-002) REMAINS OF HOMESTEAD REPRESENTED BY BURNT CLAY BRICKS FOUNDATIONS, AND ASH MIDDEN.	28
10. CONCLUSION AND RECOMMENDATIONS	30
11. TOPOGRAPHICAL MAP	31
12. REFERENCE	32

LIST OF FIGURES

Figure 1: View of the study area with eucalyptus plantation on the background	25
Figure 2: Rain water collecting earth dam south of the main gravel access road.....	26
Figure 3: Open shaft recent informal mineral exploration activities noted on site.....	26
Figure 4: Rectangular stone foundation Figure 5: remains of reservoir foundation	27
Figure 6: Circular parked stones. Figure 7: Animal borrowing activities on the ash midden.	28
Figure 8: View of the ash midden where below items were noticed. Some of the noticed items were exposed by animal borrowing activities.	29
Figure 9: Metal object identified on the ash midden surface, this metal objects are commonly associated with wooden Oregon pine window frames	29
Figure 10: One of the identified burnt clay brick bearing identification maker at the central part	30

ABBREVIATIONS

AIA	Archaeological Impact Assessment
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
VHHC	Vhufahashu Heritage Consultants
LIA	Late Iron Age
SAHRA	South African Heritage Resources Agency

DEFINITIONS

Archaeological Material remains resulting from human activities, which are in a state of disuse and are in, on, land and which are older than 100 years, including artifacts, human and hominid remains, and artificial features and structures.

Chance Finds Archaeological artifacts, features, structures or historical cultural remains such as human burials that are found accidentally in context previously not identified during cultural heritage scoping, screening and assessment studies. Such finds are usually found during earth moving activities such as water pipeline trench excavations.

Cultural Heritage Resources Same as Heritage Resources as defined and used in the South African Heritage Resources Act (Act No. 25 of 1999). Refer to physical cultural properties such as archaeological and palaeontological sites; historic and prehistoric places, buildings, structures and material remains; cultural sites such as places of ritual or religious importance and their associated materials; burial sites or *graves* and their associated materials; geological or natural features of cultural importance or scientific significance. Cultural Heritage Resources also include intangible resources such as religion practices, ritual ceremonies, oral histories, memories and indigenous knowledge.

Cultural Significance The complexities of what makes a place, materials or intangible resources of value to society or part of, customarily assessed in terms of aesthetic, historical, scientific/research and social values.

Grave A place of interment (variably referred to as burial), including 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 upon it is referred to as being situated in a cemetery.

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

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

Late Iron Age this period is associated with the development of complex societies and state systems in southern Africa.

Material culture Buildings, structure, features, tools and other artifacts that constitute the remains from past societies.

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

1. INTRODUCTION

Energy Building Farming Group on behalf of Lukhanyiso Agricultural Co-operative has proposed to establish and demarcate sections of Langkuil farm into 90 concession farm holdings, the proposed site is situated 10kilometers east of Odendulsrus Central Business District, under the jurisdiction of the Matjhebeng Local Municipality of the Lejweleputswa District. To ensure that the proposed development meets the environmental requirements in line with the National Environmental Management Act 107 of 1998 as amended in 2010, they appointed Kalahari Safety Health and Environmental Consultants to be the Independent Environmental Assessment Practitioner of the Project. Kalahari Safety Health and Environmental Consultants then appointed Vhufashu Heritage Consultants to conduct an Archaeological and Cultural Heritage Impact Assessment study as part of the Environmental Impact Assessment (EIA) for the proposed project.

The proposed activities form part of the development process, where application for Environmental Assessment Authorization must be completed. Archaeological Impact Assessment (AIA) report form part of a series of appendices prepared for Environmental Impact Assessment (Basic Assessments) Report to be submitted to the to the Department of Economic Development, Tourism and Environmental Affairs (DETA) Free State Office, in support of the application as amended by the National Environmental Management (NEMA) Act No. 107 of 1998. Information presented in this report form the basis of Archaeological resources assessment of the proposed project as the proposal constitutes an activity, which may potentially be harmful to heritage resources that may occur in the proposed demarcated area.

The National Heritage Resources Act (NHRA - Act No. 25 of 1999) protects all structures and features older than 60 years (section 34), archaeological sites and material (section 35) and graves and burial sites (section 36). In order to comply with the legislation, the Applicant requires information on the heritage resources, and their significance that occur in the demarcated area. This will enable the Applicant to take pro-active measures to limit the adverse effects that the development could have on such heritage resources.

2. RELEVANT LEGISLATION

Two sets of legislation are relevant for the study with regards to the protection of heritage resources and graves.

2.1. The National Heritage Resource Act (25 of 1999)

This Act established the South African Heritage Resource Agency (SAHRA) as the prime custodians of the heritage resources and makes provision for the undertaking of heritage resources impact assessment for various categories of development as determined by section 38. It also provides for the grading of heritage resources (section 7) and the implementation of a three-tier level of responsibility and functions from heritage resources to be undertaken by the State, Provincial and Local authorities, depending on the grade of heritage resources (section 8)

In terms of the National Heritage Resource Act 25, (1999) the following is of relevance:

Historical remains

Section 34 (1) No person may alter or demolish any structure or part of a structure, which is older than 60 years without a permit issued by the relevant Provincial Heritage Resources Authority.

Archaeological remains

Section 35(3) Any person who discover archaeological or Paleontological object or material or a meteorite in the course of development or agricultural activity must immediately report the find to the responsible heritage resource authority or the nearest local authority or museum, which must immediately notify such heritage resources authority.

Section 35(4) No person may, without a permit issued by the responsible heritage resources authority-

- destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
- destroy, damage, excavate, remove from its original position, collect or own any archaeological or paleontological material or object or any meteorite;
- trade in ,sell for private gain, export or attempt to export from republic any category of archaeological or paleontological material or object or any meteorite; or
- bring onto or use at an archaeological or paleontological site any excavation equipment or any equipment which assist with the detection or recovery of metal or archaeological material or object or such equipment for the recovery of meteorites.

Section 35(5) When the responsible heritage resource authority has reasonable cause to believe that any activity or development which will destroy, damage or alter any archaeological or paleontological site is underway, and where no application for a permit has been submitted and no heritage resource management procedures in terms of section 38 has been followed, it may

- serve on the owner or occupier of the site or on the person undertaking such development an order for the development to cease immediately for such period as is specified in the order
- carry out an investigation for the purpose of obtaining information on whether or not an archaeological or paleontological site exists and whether mitigation is necessary;
- if mitigation is deemed by the heritage resources authority to be necessary, assist the person on whom the order has been served under paragraph (a) to apply for a permit as required in subsection (4); and
- recover the cost of such investigation from the owner or occupier of the land on which it is believed an archaeological or paleontological site is located or from the person proposing to undertake the development if no application for a permit is received within two week of the order being served.

Subsection 35(6) the responsible heritage resource authority may, after consultation with the owner of the land on which an archaeological or paleontological site or meteorite is situated; serve a notice on the owner or any other controlling authority, to prevent activities within a specified distance from such site or meteorite.

Burial grounds and graves

Section 36 (3) No person may, without a permit issued by SAHRA or a provincial heritage resources authority:

- (i) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
- (ii) bring onto or use at a burial ground or grave any excavation equipment, or any equipment which assists in detection or recovery of metals.

Subsection 36 (6) Subject to the provision of any person who in the course of development or any other activity discover the location of a grave, the existence of which was previously unknown, must immediately cease such activity and report the discovery to

the responsible heritage resource authority which must, in co-operation with the South African Police service and in accordance with regulation of the responsible heritage resource authority-

- (l) carry out an investigation for the purpose of obtaining information on whether or not such grave is protected in terms of this act or is of significance to any community; and
if such grave is protected or is of significance, assist any person who or community which is a direct descendant to make arrangements for the exhumation and re-interment of the contents of such grave or, in the absence of such person or community, make any such arrangement as it deems fit.

Cultural Resource Management

Section **38(1)** Subject to the provisions of subsection (7), (8) and (9), any person who intends to undertake a development*...

- must at the very earliest stages of initiating such development notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

development means any physical intervention, excavation, or action, other than those caused by natural forces, which may in the opinion of the 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:

- (i) Construction, alteration, demolition, removal or change of use of a place or a structure at a place;
- (ii) Any change to the natural or existing condition or topography of land, and
- (iii) Any removal or destruction of trees, or removal of vegetation or topsoil;

place means a site, area or region, a building or other structure

structure means any building, works, device or other facility made by people and which is fixed to the ground.

2.2. The Human Tissue Act (65 of 1983)

This act protects graves younger than 60 years, these falls under the jurisdiction of the National Department of Health and the Provincial Health Department. Approval for the

exhumation and reburial must be obtained from the relevant provincial MEC as well as relevant Local Authorities.

3. TERMS OF REFERENCE

The terms of reference for the study were to undertake an archaeological impacts assessment on the proposed power line and associated substation establishment project and submit a specialist report, which addresses the following:

- Executive summary
- Scope of work undertaken
- Methodology used to obtain supporting information
- Overview of relevant legislation
- Results of all investigations
- Interpretation of information
- Assessment of impact
- Recommendation on effective management measures
- References

4. TERMINOLOGY

The Heritage impact Assessment (HIA) referred to in the title of this report includes a survey of heritage resources as outlined in the National Heritage resources Act, 1999 (Act No 25 of 1999). Heritage resources, (Cultural resources) include all human-made phenomena and intangible products that are result of the human mind. Natural, technological or industrial features may also be part of heritage resources, as places that have made an outstanding contribution to the cultures, traditions and lifestyle of the people or groups of people of South Africa.

The term 'pre –historical' refers to the time before any historical documents were written or any written language developed in a particular area or region of the world. The historical period and historical remains refer, for the project area, to the first appearance or use of 'modern' Western writing brought South Africa by the first colonist who settled in the Cape in the early 1652 and brought to the other different part of South Africa in the early 1800.

The term 'relatively recent past' refers to the 20th century. Remains from this period are not necessarily older than sixty years and therefore may not qualify as archaeological or

historical remains. Some of these remains, however, may be close to sixty years of age and may in the near future, qualify as heritage resources.

It is not always possible, based on the observation alone, to distinguish clearly between archaeological remains and historical remains or between historical remains and remains from the relatively recent past. Although certain criteria may help to make this distinction possible, these criteria are not always present, or when they are present, they are not always clear enough to interpret with great accuracy. Criteria such as square floors plans (a historical feature) may serve as a guideline. However circular and square floors may occur together on the same site.

The 'term sensitive remains' is sometimes used to distinguish graves and cemeteries as well as ideologically significant features such as holy mountains, initiation sites or other sacred places. Graves in particular are not necessarily heritage resources if they date from the recent past and do not have head stones that are older than sixty years. The distinction between 'formal' and 'informal' graves in most instances also refers to graveyards that were used by colonists and by indigenous people. This distinction may be important as different cultural groups may uphold different traditions and values with regard to their ancestors. These values have to be recognized and honored whenever graveyards are exhumed and relocated.

The term 'Stone Age' refers to the prehistoric past, although Late Stone Age people lived in South Africa well into the historical period. The Stone Age is divided into an Early Stone Age (3Million years to 150 000 thousand years ago) the Middle Stone Age (150 000 years ago to 40 years ago) and the Late Stone Age (40 000 years to 200 years ago).

The term 'Early Iron Age' and Late Iron Age respectively refers to the periods between the first and second millenniums AD.

The 'Late Iron Age' refers to the period between the 17th and the 19th centuries and therefore includes the historical period.

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

The term 'study area' or 'project area' refers to the area where the developers wants to focus its development activities (refer to plan)

Phase I studies refers to survey using various sources of data in order to establish the presence of all possible types of heritage resources in a given area.

Phase II studies includes in-depth cultural heritage studies such as archaeological mapping, excavating and sometimes laboratory work. Phase II work may include documenting of rock art, engravings or historical sites and dwellings; the sampling of archaeological sites or shipwrecks; extended excavation of archaeological sites; the exhumation of bodies and the relocation of grave yards, etc. Phase II work may require the input of specialist and require the co-operation and the approval of SAHRA.

5. METHODOLOGY

Source of information

Most of the information was obtained through the initial site visit made on the 17 April 2013 by Mr. Mathoho Ndivhuho Eric and Mr. Munyai Rudzani Richard, where a systematic inspection of the proposed establishment site was covered along linear transects which resulted in the maximum coverage of the entire routes. Standard archaeological observation practices were followed; Visual inspection was supplemented by relevant written source, and oral communications with local communities from the surrounding area. In addition, the site was recorded by hand held GPS and plotted on 1:50 000 topographical map. Archaeological/historical material and the general condition of the terrain were photographed with a Canon 1000D Camera.

6. ASSESMENT CRITERIA

This section describes the evaluation criteria used for determining the significance of archaeological and heritage sites. The significance of archaeological and heritage sites were based on the following criteria:

- The unique nature of a site
- The amount/depth of the archaeological deposit and the range of features (stone walls, activity areas etc.)
- The wider historic, archaeological and geographic context of the site.
- The preservation condition and integrity of the site
- The potential to answer present research questions.

6.1 Site Significance

The site significance classification standards as prescribed and endorsed by the South African Heritage Resources Agency (2006) and approved by the Association for Southern African Professional Archaeologists (ASAPA) for the Southern African Development Community (SADC) region, were used as guidelines in determining the site significance for the purpose of this report.

FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
National Significance (NS)	Grade 1	-	Conservation; National Site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; Provincial Site nomination
Local Significance (LS)	Grade 3A	High Significance	Conservation; Mitigation not advised
Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of site should be retained)
Generally Protected A (GP.A)	Grade 4A	High / Medium Significance	Mitigation before destruction
Generally Protected B (GP.B)	Grade 4B	Medium Significance	Recording before destruction

Generally Protected C (GP.C)	Grade 4C	Low Significance	Destruction
------------------------------	-------------	------------------	-------------

Grading and rating systems of heritage resources

6.2 Impact Rating

VERY HIGH

These impacts would be considered by society as constituting a major and usually permanent change to the (natural and/or cultural) environment, and usually result in severe or very severe effects, or beneficial or very beneficial effects.

Example: The loss of a species would be viewed by informed society as being of VERY HIGH significance.

Example: The establishment of a large amount of infrastructure in a rural area, which previously had very few services, would be regarded by the affected parties as resulting in benefits with VERY HIGH significance.

HIGH

These impacts will usually result in long term effects on the social and /or natural environment. Impacts rated as HIGH will need to be considered by society as constituting an important and usually long term change to the (natural and/or social) environment. Society would probably view these impacts in a serious light.

Example: The loss of a diverse vegetation type, which is fairly common elsewhere, would have a significance rating of HIGH over the long term, as the area could be rehabilitated.

Example: The change to soil conditions will impact the natural system, and the impact on affected parties (e.g. farmers) would be HIGH.

MODERATE

These impacts will usually result in medium- to long-term effects on the social and/or natural environment. Impacts rated as MODERATE will need to be considered by the public or the specialist as constituting a fairly unimportant and usually short term change to the (natural and/or social) environment. These impacts are real, but not substantial.

Example: The loss of a sparse, open vegetation type of low diversity may be regarded as MODERATELY significant.

Example: The provision of a clinic in a rural area would result in a benefit of MODERATE significance.

LOW

These impacts will usually result in medium to short term effects on the social and/or natural environment. Impacts rated as LOW will need to be considered by society as constituting a fairly important and usually medium term change to the (natural and/or social) environment. These impacts are not substantial and are likely to have little real effect.

Example: The temporary changes in the water table of a wetland habitat, as these systems are adapted to fluctuating water levels.

Example: The increased earning potential of people employed as a result of a development would only result in benefits of LOW significance to people living some distance away.

NO SIGNIFICANCE

There are no primary or secondary effects at all that are important to scientists or the public.

Example: A change to the geology of a certain formation may be regarded as severe from a geological perspective, but is of NO SIGNIFICANCE in the overall context.

6.3 Certainty

DEFINITE: More than 90% sure of a particular fact. Substantial supportive data exist to verify the assessment.

PROBABLE: Over 70% sure of a particular fact, or of the likelihood of an impact occurring.

POSSIBLE: Only over 40% sure of a particular fact, or of the likelihood of an impact occurring.

UNSURE: Less than 40% sure of a particular fact, or of the likelihood of an impact occurring.

6.4 Duration

SHORT TERM : 0 – 5 years

MEDIUM: 6 – 20 years

LONG TERM: more than 20 years

DEMOLISHED: site will be demolished or is already demolished

6.5 Mitigation

Management actions and recommended mitigation, which will result in a reduction in the impact on the sites, will be classified as follows:

- **A** – No further action necessary
- **B** – Mapping of the site and controlled sampling required
- **C** – Preserve site, or extensive data collection and mapping required; and
- D** – Preserve site

7. REGIONAL SETTING: ARCHAEOLOGY AND HERITAGE.

Maggs (1976) corroborated by Binnerman *et al* (2011) suggested that the archaeology of the study area remains unknown with very little systematic archaeological research conducted. Previous archaeological impact assessments conducted in the surrounding area coupled with various literature reviews from early travelers, explores and researchers has records of existence of cultural material remains from different periods. The study area boost the existence of Stone Age, Iron Age and Colonial periods (marked by graves and battle fields). These three period phases have been studied in order to assess possible existence of archaeological heritage and material remains during the survey program.

7.1 .THE EARLY STONE AGE (ESA)

The Early Stone Age spans a period of between 1.5 million and 250 000 years ago and refers to the earliest Homo *sapiens* predecessors began making stone artifacts. Archaeological material finger prints (Stone tool artifacts) of these earliest periods have been found at Olduvai Gorge. This Gorge is located in Tanzania; the stone artifact industry was referred to as the Olduwan Industry. Most of the stone artifacts recovered were not neatly made and they were very crude in makings. The industries were later replaced by the Acheulian stone tool Industry which is attested to in diverse environments and over wide geographical areas. The Industry is characterized by large cutting tools mostly dominated by hand axes and cleavers. Bifaces emerged in East Africa more that 1.5 million years ago (mya) but have been reported from a wide range of areas, from South Africa to northern Europe and from India to the Iberian coast. The end products were astonishingly similar across the geographical and chronological distribution of the Acheulian techno-complex: large flakes that were suitable in size and morphology for the production of hand axes and cleavers perfectly suited to the available raw materials (Sharon 2009).

Archaeological records from the Orange Free State came primarily from cave fillings, small lakes or spring and karts accumulations few of which are older than 200,000 years. One of the remarkable finds was from the alluvial gravel of the Vaal River, which painted a picture

of important faunas and collection of Acheulian artifacts that figured significantly in the archaeological exploration of south Africa, in contrast to alluvial histories which involves many variables operating over large basins, the sedimentary sequence of pans as well as spring site tend to be less difficult to interpret, the records is commonly localized in smaller area. The Florisbad spring which is located 46kilometers north of Bloemfontein is one of the remarkable sites which provided an insight on the accumulation of fauna and associated artifacts which consist of un- retouched middle Stone Age assemblages, well developed Oldwan type of acheulian, archaic homosapien cranium, in general the Florisbad fauna belong to the early florisian (Butzer, 1984)

Early Stone Age of the Karoo includes the so-called “Victoria West industry”. From as early as 1915, stone artifacts which were of a “peculiar character”, referred to as hand-axes and tortoise-cores by Reginald A. Smith, were plentiful within the Victoria West district. The latter were only found in certain areas and the hand-axes occurred in conjunction with the cores or without them (Smith,1919). During the 1920’s A.H.J. Goodwin (1926, 1946), identified the Victoria West stone artifacts industry, presumably referring to those artifacts with a “peculiar character” found within the district, the wider Karoo region, as well as along the Vaal River. They comprised mainly of stone artifacts that had been manufactured using a prepared core technique, and were regarded as being transitional between the Early Stone Age and Middle Stone Age. Recent research has established that the Victoria West cores were the “evolutionary step” towards the Levallois prepared core industry, indicating an outward spread of this technological change (Lycett, 2009). Early Stone Age stone artifacts endure for long periods and generally occur as open air Surface scatters either as isolated occurrences or in large quantities and very rarely in association with other archaeological heritage, plant and material remains. One of South Africa’s most remarkable Earlier Stone Age sites is Amanzi Springs, excavated by H.J. Deacon during the 1970’s.The site produce large number of stone artifacts in association with wood and seeds materials, this remains possibly date to between 800 000 to 250 000 years old (Binnerman *et al*, 2011).

7.2. MIDDLE STONE AGE (MSA)

The large Early Stone Age hand axes and cleavers were replaced by smaller stone tools called the Middle Stone Age flake and blade industries. The Middle Stone Age spans a period from 250 000-30 000 years ago and focuses on the emergence of modern humans through the change in technology, behavior, physical appearance, art, and symbolism. Various stone artifact industries occur during this time period, although less is known about the time prior to 120 000 years ago, extensive systemic archaeological research is

being conducted on sites across southern Africa dating within the last 120 000 years (Thompson & Marean, 2008). Surface scatters of these flake and blade industries occur widespread across southern Africa although rarely with any associated botanical and faunal remains. It is also common for these stone artifacts to be found between the surface and approximately 50-80cm below ground. Fossil bone may be associated with MSA occurrences. These stone artifacts, like the Earlier Stone Age hand axes are usually observed in secondary context with no other associated archaeological material. An early South African Middle Stone Age stone artifact industry referred to as the Mangosian had a very wide distribution stretching across Limpopo, the eastern Orange Free State, around Cape Point and Natal (Malan 1949). This stone artifact industry, according to the period, may have represented the final development that the prepared core technique of the Middle Stone Age reached prior to its replacement by the microlithic techniques of the Later Stone Age. It was reported that these stone artifacts were made predominantly on indurate shale raw materials in the Free State (the then Orange Free State) Malan (1949) also made mention that there are variations of Middle Stone Age assemblages throughout south Africa (Binnerman *et al*, 2011).

7.3. IRON AGE / FIRST-FARMING COMMUNITIES

The Early Iron Age first-farming communities during the first millennium AD generally preferred to occupy river valleys within the eastern half of southern Africa owing to the summer-rainfall climate that was conducive for growing millet and sorghum. This region sees a numerous stone walled structures as well as pottery dating between the 16th and 18th centuries, and it lies on a frontier zone, where hunter-gatherers came into contact with agro-pastoralists (Thorp 1996). Some settlements are not characterized by the presence of stone walls, but rather cattle dung deposits with pits and burials (Huffman 1982). The south-eastern Free State is a landscape of contact between migrating Iron Age first farming communities and San hunter-gatherers. During the sixteenth and eighteenth centuries the Iron Age farmers began to move across the Vaal River and into the Free State. As they moved into the area, the first-farming communities came into contact with hunter-gatherers (Klatzow, 1994). Thicker and decorated pottery shards, kraals, possible remains of domesticated animals, upper and lower grindstones and storage pits are associated for identifying Early Iron Age sites. The sites are generally large settlements, but the archaeological visibility may in most cases be difficult owing to the organic nature of the homesteads. Metal and iron implements are also associated with Early Iron Age communities. Hilltop settlement is mainly associated with Later Iron Age settlement patterns that occurred during the second millennium A.D. The Later Iron Age communities

later moved from settlement in river valleys to the hilltops. Later Iron Age settlements have been formally recorded and cover a relatively extended area in comparison with the EIA settlement patterns. Iron Age Settlements have been recorded along the Caledon River Valley, that were settled by the Fokeng group that eventually settled at Metlaeeng, after dwelling the foot of Ntsuana-tsatsi between Frankfort and Vrede (Walton, 1953).

7.4. ROCK ART (PAINTINGS AND ENGRAVINGS)

Rock art is generally associated with the Later Stone Age period mostly dating from the last 5000 years to the historical period. It is difficult to accurately date the rock art without destructive practices. The southern African landscape is exceptionally rich in the distribution of rock art which is determined between paintings and engravings. Rock paintings occur on the walls of caves and rock shelters across southern Africa. Rock engravings, however, are generally distributed on the semi-arid central plateau, with most of the engravings found in the Orange-Vaal basin, to the Karoo. At some sites both paintings and engravings occur in close proximity to one another especially in the Karoo and Northern Cape. The greatest concentrations of engravings occur on the basement rocks and the intrusive Karoo dolerites, but sites are also found on about nine other rock types including dolomite, granite, gneiss, and in a few cases on sandstone (Morris 1988). The south-eastern Free State area has many recordings of cattle paintings and these are often depicted in conflict scenes. These include figures with the “hourglass” Sotho shields, which could refer to the Difaqane, where discord and unrest was prominent.

There are very few paintings of sheep, and one such site is situated on the farm Kwartelfontein near Smithfield, and is found associated with depictions of cattle (Man hire *et al.* 1986: 24). Other rock art that has been recorded here includes men walking with hunting dogs painted in brick red ochre, on the farm Strathmere, Steynsburg District, which was traced by Townley Johnson in 1983 (Woodhouse, 1984:4). Paintings have also been documented in the Rouxville area, which include a depiction of a blesbok (Loubser, *et al.* 1990: 108). Rock paintings of human figures occur in the Aliwal North District (Schoonraad, 1960: 12). Maria Wilman recorded engraving sites between Colesburg and Middelburg (Parkington, *et al.* 2008:33). Rock art of the Middelburg area includes a site with numerous styles such as fine-lined paintings of antelope and human figures, probably done by San individuals, as well as red, yellow, black, orange and white finger dots done in the Khoekhoen style. Other figures include medium-grained white chalky paints with red accents such as fat tailed sheep; two horse-and riders; a black rhinoceros; and two stretched-out and spotted animal skins or aprons (Ouzman, 2005: 106).

7.5. HISTORICAL / COLONIAL PERIOD

Historical archaeology refers to the last 500 years when European settlers and colonialism entered into southern Africa. The route between Graaff Reinet and Bloemfontein is the same route followed by Afrikaans pioneers of the Great Trek. There are various monuments, statues and memorials dedicated to the voyage and its people. The south-eastern Free State is filled with Boer War historical encounters, stories, and material remains. The areas surrounding Bloemfontein feature prominently in Boer War history. Colesburg is known for a number of historical events. A skirmish between the Boers and the Griquas, including Adam Kok (the head of the Philippolis Griquas) occurred in 1845 near Colesburg. One Griqua was killed and 6 captured, while five Boers had been killed and had gained 300 horses and 3600 heads of cattle (Walker, 1938: 349).

Near Colesburg at Alleman's Drift, Adam Kok, along with many British individuals, created a beacon declaring the whole country from that point to be British Territory, though not including areas that were in control by the Portuguese and native tribes. In the early days of colonialism the Karoo was still a sparse and unknown area. It was only until the early travelers and pioneer European farmers ventured into this harsh landscape and documented their encounters with the San hunter-gatherers and Khoekhoen that had originally inhabited the landscape. Therefore, the towns of the Great Karoo were established much later. Between the years 1860 and 1875, there was an increase of travels through the Karoo between Graaff Reinet, Middelburg and Colesburg, due to the improvement of the Frontier Wagon Track or Public Roads Network (Neville *et al.* 1994).

8. SITE LOCATION AND PROJECT DESCRIPTIONS

The proposed farm is located north east of Kutlwanong Township; the site is situated approximately 50 kilometers west of Kroonstad, 10 kilometers east of Odendalsrus Central Business District, within Matjhabeng Local Municipality of the Lejweleputswa District, Free State Province. South Africa.

The proposed site covers approximately 2000 hectares of slightly flat section of land previously used as Langkuil farm ploughing zones, the proposed development entails demarcation of 90 concession farm holding, section of already demarcated farms have been fenced, with individual isolated structures (galvanized shacks). Few of demarcated land had boreholes equipped with windmill and water storage facilities. The study area is dominated by *Acacia species*, with sparsely distributed, some forming pockets and other

arranged in a linear forms, some of these tall exotic plants are old *Eucalyptus trees*. The veldt is capable of supporting a stand of indigenous grass species occurring on open savanna patches and water course some of these grasses are utilized by domestic livestock since the area was disturbed and previously used as livestock grazing area, water shed, or wetlands where noted within the proposed site where rain water runoff collect and used as livestock drinking area. The western section of the disturbed area is the only section with pioneer indigenous vegetation with identifiable trees and shrubs which include *Acacia Karoo*, *Acacia tortilis*, (*Agave Sisalana*, *Opuntia ficus- indica* are alien species) (Acocks 1975; Mucina and Rutherford 2006). The site is located on the following global positioning system co-ordinates (GPS S 27°. 49.58.8" E 26°.47'.19. 6").



Figure 1: View of the study area with *Eucalyptus* plantation on the background



Figure 2: Rain water collecting earth dam south of the main gravel access road.



Figure 3: Open shaft, recent informal mineral exploration activities noted on site

9. ASSESMENT OF SITES AND FINDS

This section contains the results of the heritage sites/find spot assessments. The phase 1 Archaeological impact assessment program as required in terms of the section 38 of the National Heritage Resource Act (Act 25 of 1999) was done for the proposed project.

9.1. (SITE-001) Remains of homestead represented by burnt clay bricks foundations, and ash midden.

The site is located at the following global positioning system co-ordinates (GPS S27°.51, 10.3 & E 26°.47.30.1). The area is situated approximately 400 meters further north east of Kutlwanong community cemetery, west of the main access gravel road leading to Langkuil game farm. The area can be identified by the presence of pioneer *Eucalyptus* plantation and occasional lines of *Agave Sisalana* (Giant Sisal) plants. The site is characterized by rectangular parked stones; remnants remains of house, water reservoir foundations, and recent exploration mine shaft, the initial depth could not be established. Adjacent to the shaft, circular stones supported by cement mixture and ash middens were noted. According to Mr. Daniel Mosadi an elderly Sotho /Tswana origin man pointed out that the circular parked stone remains were the remains of fish pond while that the rectangular stone foundation was used as livestock pan by the farmer. He further alluded that they use to visit the farm while they were still young during that time a military commando unit used to station within the farm.



Figure 4: Rectangular stone foundation

Figure 5: remains of reservoir foundation



Figure 6: Circular parked stones. **Figure 7:** Animal borrowing activities on the ash midden.

9.2. (SITE-002) Remains of homestead represented by burnt clay bricks foundations, and ash midden.

The site is located at the following global positioning system co-ordinates (GPS S27°.50, 47.8 & E 26°.47.18.3). The area is located approximately 200 meters north east of site 1, the site is located adjacent to the newly constructed farm fence. The site has been indicated by the presence of a single *Opuntia ficus- indica* plant, there are occasional lines of mud burnt bricks and ash midden, with glass and broken pieces of bottles some of the noted elements includes rusted iron pieces. Further to the fence a rectangular foundation of concrete posts were noticed. Possibilities are that the area might have been used as an old farm shed or store room.



Figure 8: View of the ash midden where below items were noticed. Some of the noticed items were exposed by animal borrowing activities.



Figure 9: Metal object identified on the ash midden surface, this metal objects are commonly associated with wooden Oregon pine window frames

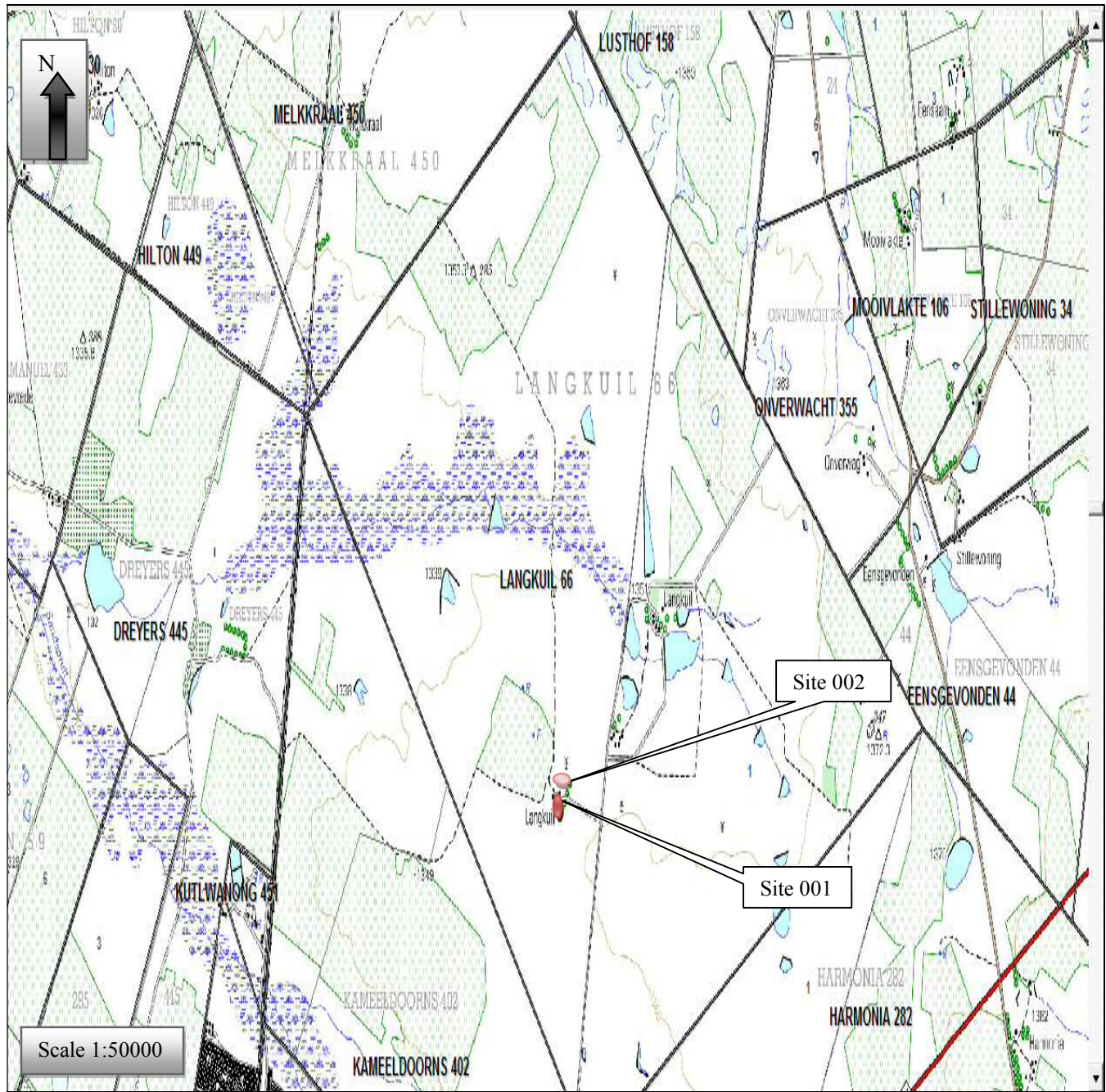


Figure 10: One of the identified burnt clay brick bearing identification maker on the central part

10. CONCLUSION AND RECOMMENDATIONS

Significant direct and indirect impacts will be felt by the construction of different infrastructures and it may, however be possible to mitigate these heritage resources sites. From an archaeological and cultural heritage resources perspective we therefore recommends second phase (Phase 2) archaeological investigations to be conducted within the identified sites before the construction of co-operative infrastructures proceeds.

11. TOPOGRAPHICAL MAP



12. REFERENCE

Acocks, J.P.H. 1975. Veld types of South Africa. *Memoir of the Botanical survey of South Africa*, 40.

Binnemann, J. Booth, C. & Higgit, N.2011. An archaeological desktop study and phase 1 archaeological impact assessment (AIA) for the proposed clidet data between Bloem fontein, Orange Free State and Graaf Reinet, Eastern Cape Province, Colesburg Orange free state Province and port Elisabeth, eastern Cape province, George, Aliwal north and Eastern London eastern cape Province.

Boeyens, J.C.A. 2005. Oral traditions, historical identity and Tlokwa history at Maratodi. *Proceeding of the 12th congress of the Pan African Archaeological Association for prehistory and related studies*, July, Gaborone.

Deacon, J. 1997. Report: Workshop on Standards for the Assessment of Significance and Research Priorities for Contract Archaeology. *South African Association of Archaeology*. No. 49,

Goodwin, A.J.H. 1926.the Victorian west industries: in Goodwin A.J.H. &van Riet Lowe c (eds) *The south African cultures of South Africa*. Annals of the South African museums

Goodwin, A.J.H. 1946. Earlier, Middle and Later. *South African Archaeological Bulletin* 3(1):74-76

Huffman, T.N.1982. Archaeology and Ethno-history of the African Iron Age. *Annual review of Anthropology* 11:133-150

Klatzow, S.1994. Roosfontein, a contact site in the eastern Orange free state.*The South African Archaeological Bulletin*, 49 (159)9-15

Lycett.S.J.2009.Are Victoria west cores"Proto-levallois" A phylogenetic assessment. *Journal of human evolution*, Vol. 56:175-199

Malan, B.D.1949. Mongosian and Howiesonpoort. *The south African archaeological Bulletin*,4 (13):34-36

Mucina. L & Rutherford, M.C, 2006. The vegetation of South Africa, Lesotho and Swaziland. *Sterlitzia* 19.South African National Biodiversity Institute, Pretoria.

Neville, D. Sampson, B.E & Sampson, C.G 1994. The frontier wagon track system in the sea cow valley, north eastern Cape. *The South African Archaeological Bulletin* 49(160)65-72

Schoonraad, M. 1960. Preliminary survey of rock art of the Limpopo Valley. *South African Archaeological Bulletin* 15(57)10-13

Sharon, G. 2009. Acheulian Giant- Core technology. *Current Anthropology* 50(3) 335-357

Smith, R.A. 1919. Recent finds of the Stone Age in Africa. *Man* 19:100-106

Thorp, C.R. 1996. A preliminary report on evidence of interaction between hunter gatherers and farmers along the hypothesized frontier in the eastern Free State. *The South African Archaeological Bulletin* 51:57-63

Walton, J. 1953. An Early Fokeng-Hlakoana settlement at Metlaeeng, Basuthuland. *The South African Archaeological Bulletin*, 8(29)3-11