

**A PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT (AIA) FOR THE PROPOSED GRANOR PASSI EFFLUENT EVAPORATION PONDS, LOUWERWATER, SARAH BAARTMAN DISTRICT MUNICIPALITY, KOUGA LOCAL MUNICIPALITY, EASTERN CAPE PROVINCE.**

**Prepared for:** SRK Consulting  
PO Box 21842  
Port Elizabeth  
6000  
Tel: 041 509 4800  
Fax: 041 509 4850  
Contact person: Ms Karissa Nel  
Email: knel@srk.co.za

**Compiled by:** Ms Celeste Booth  
t/a Booth Heritage Consulting  
5 Queens Terrace  
12 Chapel Street  
Grahamstown  
6139  
Tel: 082 062 4655  
Email: cbooth670@gmail.com  
Contact person: Ms Celeste Booth

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## **A PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT (AIA) FOR THE PROPOSED GRANOR PASSI EFFLUENT EVAPORATION PONDS, LOUTERWATER, SARAH BAARTMAN DISTRICT MUNICIPALITY, KOUGA LOCAL MUNICIPALITY, EASTERN CAPE PROVINCE.**

**NOTE:** The phase 1 archaeological impact assessment was conducted as a requirement of the National Heritage Resources Act 25 of 1999, Section 38 (1)(c)(i):

38. (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorized as –

(c) any development or other activity which will change the character of the site –

(i) exceeding 5 000 m<sup>2</sup> in extent

This report has been prepared as part of the Basic Assessment Process being conducted by SRK Consulting. This report follows the minimum standard guidelines required by the South African Heritage Resources Agency (SAHRA) and the Eastern Cape Provincial Heritage Resources Agency (ECPHRA) for compiling a Phase 1 Archaeological Impact Assessment (AIA).

### **1. EXECUTIVE SUMMARY**

#### **1.1. Purpose of the Study**

The purpose of the study was to conduct a phase 1 archaeological impact assessment (AIA) for the proposed Granor Passi Effluent Evaporation Ponds, Louterwater, Sarah Baartman District Municipality, Kouga Local Municipality, Eastern Cape Province.

The survey was conducted to establish the range and importance of the exposed and *in situ* archaeological heritage material remains, sites and features; to establish the potential impact of the development; and to make recommendations to minimize possible damage to the archaeological heritage.

#### **1.2. Brief Summary of Findings**

Isolated Middle Stone Age stone artefacts were observed within the relatively dense vegetation cover and on a dug heap mostly on the upper slopes of the proposed development area. A small koppie is situated on the south western boundary of the site and it is likely that more artefacts would occur around this area and possibly across the site when excavations commence. It is, however, unlikely that the artefacts occur *in situ* as the area has previously been cultivated for agricultural activities.

Four ceramic fragments were observed on the north eastern boundary of the proposed development site. Two fragments are plain white and two have line decorations and images. No historical sites or associated material were observed within the area.

### **1.3. Recommendations**

The overall area is considered as having a *low archaeological significance*, however, the following recommendations must be considered before development continues:

1. If concentrations pre-colonial archaeological heritage material and/or human remains (including graves and burials) are uncovered during construction, all work must cease immediately and be reported to the Albany Museum (046 622 2312) and/or the Eastern Cape Provincial Heritage Resources Agency (ECPHRA) (043 745 0888) so that systematic and professional investigation/excavation can be undertaken. Phase 2 mitigation in the form of test-pitting/sampling or systematic excavations and collections of the pre-colonial shell middens and associated artefacts will then be conducted to establish the contextual status of the sites and possibly remove the archaeological deposit before development activities continue.
2. A person must be trained as a site monitor to report any archaeological sites found during the development. Construction managers/foremen and/or the Environmental Control Officer (ECO) should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites.
3. The developer / ECO / or construction manager must apply to the Eastern Cape Provincial Heritage Resources Agency (ECPHRA) for a destruction permit prior to the commencement of mining activities.

### **1.4. Declaration of Independence and Qualifications**

This section confirms a declaration of independence that archaeological heritage specialist, Ms Celeste Booth, has no financial or any other personal interests in the project for the proposed Granor Passi Effluent Evaporation Pond. Ms Celeste Booth was appointed on a strictly professional basis to conduct a Phase 1 Archaeological Impact Assessment in line with the South African national heritage legislation, the National Heritage Resources Act 25 of 1999 (NHRA 25 of 1999) and in response to the recommendations provided by the Department of Environmental Affairs and according to the environmental impact assessment regulations.

Ms Celeste Booth (BSc Honours: Archaeology) is an archaeologist who has had eight years of full time experience in Cultural Resource Management in the Eastern Cape and sections of the Northern Cape and Western Cape. Ms Booth has conducted several Archaeological Desktop Studies and Phase 1 Archaeological Impact Assessments within the Eastern Cape and in the Karoo region across the Eastern Cape, Northern Cape and Western Cape.

## **2. BACKGROUND INFORMATION**

An integrated BA and Waste Management License application has commenced to assist the proponent, Granor Passi (Pty) Ltd., in determining the extent and significance of the environmental consequences associated with the proposed construction of effluent evaporation ponds for their plant at Louterwater, where juice concentrate is extracted.

At present, effluent from the various processes is collected and pumped to the existing effluent evaporation ponds located approximately 1.5 km north-east of the plant.

The existing effluent evaporation ponds are operational, however routine maintenance cannot be carried out as no alternative system to dispose of effluent is in place. The construction of additional effluent evaporation ponds is proposed to function in a duty / standby configuration to allow for maintenance to be carried out when required. The proposed site is located on Portion 3 and Portion 10 of the Farm Grootkloof No. 301 to the north-east of Louterwater, which is situated along the R62.

### **2.1. Applicant**

Granor Passi (Langkloof) (Pty) Ltd.  
P.O. Box 1  
Louterwater  
6435  
Tel: 042 272 1167

### **2.2. Consultant**

SRK Consulting  
PO Box 2184  
Port Elizabeth  
6000  
Tel: 041 509 4800  
Fax: 041 509 4850  
Contact person: Ms Karissa Nel  
Email: knel@srk.co.za

### **2.3. Terms of reference**

The purpose of the study was to conduct a phase 1 archaeological impact assessment (AIA) for the proposed Granor Passi Effluent Evaporation Ponds, Louterwater, Sarah Baartman District Municipality, Kouga Local Municipality, Eastern Cape Province.

- Establish the range and importance of the exposed and *in situ* archaeological heritage material remains, sites and features;

- Establish the potential impact of the development; and
- Make recommendations to minimize possible damage to the archaeological heritage.

### **3. HERITAGE LEGISLATIVE REQUIREMENTS**

Parts of sections 3(1)(2)(3), 34(1), 35(4), 36(3) and 38(1)(8) of the National Heritage Resources Act 25 of 1999 apply:

#### ***S3. National estate***

3. (1) For the purposes of this Act, those heritage resources of South Africa which are of cultural significance or other special value for the present community and for future generations must be considered part of the national estate and fall within the sphere of operations of heritage resources authorities.

3. (2) Without limiting the generality of subsection (1), the national estate may include –

- (a) places, buildings, structures and equipment of cultural significance;
- (b) places to which oral traditions are attached or which are associated with living heritage;
- (c) historical settlements and townscapes;
- (d) landscapes and natural features of cultural significance;
- (e) geological sites of scientific or cultural importance;
- (f) archaeological and palaeontological sites;
- (g) graves and burial grounds, including –
  - (i) ancestral graves;
  - (ii) royal graves and graves of traditional leaders;
  - (iii) graves and victims of conflict;
  - (iv) graves of individuals designated by the Minister by notice in the Gazette;
  - (v) historical graves and cemeteries; and
  - (vi) other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);
- (h) sites of significance relating to the history of slavery in South Africa;
- (i) movable objects, including –
  - (i) objects recovered from the soil or waters of South Africa, including archaeological and palaeontological 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(xiv) of the National Archives of South Africa

Act (Act No. 43 of 1996).

3. (3) Without limiting the generality of subsections (1) and (2), a place or object is to be considered part of the national estate if it has cultural significance or other special value because of –

- (a) its importance in the community, or pattern of South Africa's history;
- (b) its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- (c) its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- (d) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- (e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- (f) its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- (g) its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa; and
- (i) sites of significance relating to the history of slavery in South Africa.

#### ***S34. Structures***

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.

#### ***S35. Archaeology, palaeontology and meteorites***

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

- (a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
- (b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;
- (d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.

#### ***S36. Burial grounds and graves***

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

- (a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which



- contains such graves;
- (b) 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
- (c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.

### ***S38. Heritage resources management***

38. (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorized as –

- (a) the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length;
- (b) the construction of a bridge or similar structure exceeding 50 m in length;
- (c) any development or other activity which will change the character of the site –
  - (i) exceeding 5 000 m<sup>2</sup> in extent, or
  - (ii) involving three or more erven or subdivisions thereof; or
  - (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or
- (iv) the costs of which will exceed a sum set in terms of regulations by SAHRA, or a provincial resources authority;
- (d) the re-zoning of a site exceeding 10 000 m<sup>2</sup> in extent; or
- (e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must as the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

## **4. ARCHAEOLOGICAL BACKGROUND**

Little systematic archaeological research has been conducted within the immediate area of the proposed development site. However, several sites situated to the south along the Tsitsikamma coast from Cape St Francis stretching to the Robberg Peninsula at Plettenberg Bay, within the Tsitsikamma and Outeniqua Mountains to the south and within the Kouga and Baviaanskloof Mountains to the north have been excavated and researched from the 1920's. These sites will be mentioned under the relevant sections below.

F.W. FitzSimons (1906-1936 PEM Director) played a very significant part in the early investigation of anthropological sites in the Eastern Cape, particularly along the Tsitsikamma coast (Shauder) who explored all the known rock dwellings from Coldstream to Groot River. FitzSimons excavated many rock shelters between Knysna and Kareedouw Pass along the Tsitsikamma coast. Nine sites between the Bloukrans

River and the Storms River including at the Bloukrans River Mouth, Lottering River Mouth, Elandsbos River Mouth, Kleinbos River Mouth, Storms River Mouth, Witcher's Cave and Nature's Valley Cave (Turner).

Furthermore, excavations were also undertaken in the Kouga and Baviaanskloof Mountain ranges including Rautenbach's Cave and Nuwekloof Shelter about 40 km north of the proposed area for development. Kleinpoort Shelter and Groot Kommandoskloof Shelter to the east of the abovementioned sites and The Havens Cave situated further to east.

Several relevant archaeological and heritage impact assessments have been conducted within the immediate vicinity, Hankey and Patensie, as well as the wider region towards Humansdorp and along the coastal areas of Oyster Bay, St Francis, Jeffreys Bay, and Van Stadens. These impact assessments have identified several Early, Middle, and Later Stone Age stone artefacts distributed within the regions as well as evidence of Khoekhoen pastoralist occupation and/or interaction by the presence of broken earthenware pot sherds.

#### **4.1. Early Stone Age (ESA) - 1.5 million to 250 000 years ago**

The Early Stone Age from between 1.5 million and 250 000 years ago refers to the earliest that *Homo sapiens sapiens* predecessors began making stone tools. The earliest stone tool industry was referred to as the Olduvai Industry originating from stone artefacts recorded at Olduvai Gorge, Tanzania. The Acheulian Industry, the predominant southern African Early Stone Age Industry, replaced the Olduvai Industry approximately 1.5 million years ago, is attested to in diverse environments and over wide geographical areas. The hallmark of the Acheulian Industry is its large cutting tools (LCTs or bifaces), primarily handaxes and cleavers. Bifaces emerged in East Africa more than 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 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 handaxes and cleavers perfectly suited to the available raw materials (Sharon 2009).

One of the most well-known Early Stone Age sites in southern Africa is Amanzi Springs (Deacon 1970), situated about 10 km north-east of Uitenhage. The site is situated on a north-facing hill overlooking the Coega River. The earliest reference to the spring was made by an early traveller, Barrow (1801). FitzPatrick first reported stone artefacts in the area in 1924. Ray Inskip (Inskip 1965) conducted a small-scale excavation of the site in 1963. It was only in 1964 and 1965 that large scale excavations were conducted by Hilary Deacon. In a series of spring deposits a large number of stone tools were found *in situ* to a depth of 3-4 m. Wood and seed material preserved remarkably very well within the spring deposits, and possibly date to between 800 000 to 250 000 years old.

Other Early Stone Age sites that contained preserved bone and plant material include Wonderwerk Cave in the Northern Province, near Kimberly and Montagu Cave in the Western Cape, near the small town of Montagu (Mitchell 2007). Early Stone Age sites have also been reported in the foothills of the Sneeuberge Mountains (in Prins 2011).

#### **4.2. Middle Stone Age (MSA) – 250 000 – 30 000 years ago**

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, behaviour, physical appearance, art and symbolism. Various stone artefact 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). The large handaxes and cleavers were replaced by smaller stone artefacts called the Middle Stone Age flake and blade industries. 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 artefacts to be found between the surface and approximately 50-80 cm below ground. Fossil bone may in rare cases be associated with Middle Stone Age occurrences (Gess 1969). These stone artefacts, like the Earlier Stone Age handaxes are usually observed in secondary context with no other associated archaeological material.

The Middle Stone Age is distinguished from the Early Stone Age by the smaller-sized and distinctly different stone artefacts and *chaîne opératoire* (method) used in manufacture, the introduction of other types of artefacts and evidence of symbolic behaviour. The prepared core technique was used for the manufacture of the stone artefacts which display a characteristic faceted striking platform and includes mainly unifacial and bifacial flake blades and points. The Howiesons Poort Industry (80 000 - 55 000 years ago) is distinguished from the other Middle Stone Age stone artefacts: the size of tools are generally smaller, the range of raw materials include finer-grained rocks such as silcrete, chalcedony, quartz and hornfels, and include segments, backed blades and trapezoids in the stone toolkit which were sometimes hafted (set or glued) onto handles. In addition to stone artefacts, bone was worked into points, possibly hafted, and used as tools for hunting (Deacon & Deacon 1999).

Other types of artefacts that have been encountered in archaeological excavations include tick shell (*Nassarius kraussianus*) beads, the rim pieces of ostrich eggshell (OES) water flasks, ochre-stained pieces of ostrich eggshell and engraved and scratched ochre pieces, as well as the collection of materials for purely aesthetic reasons. Although Middle Stone Age artefacts occur throughout the Eastern Cape, the most well-known Middle Stone Age sites include the type-site for the Howiesons Poort stone tool industry, Howiesons Poort (HP) rock shelter, situated close to Grahamstown, and Klasies River Mouth Cave (KRM), situated along the Tsitsikamma coast. Middle Stone Age sites are located both at the coast and in the interior across southern Africa.

### 4.3. Later Stone Age (LSA) – 30 000 years ago – recent (100 years ago)

The Later Stone Age (LSA) spans the period from about 20 000 years ago until the colonial era, although some communities continue making stone tools today. The period between 30 000 and 20 000 years ago is referred to as the transition from the Middle Stone Age to Later Stone Age; generally there is a lack of crucial sites and evidence that represent this change. By the time of the Later Stone Age the genus *Homo*, in southern Africa, had developed into *Homo sapiens*, and in Europe, had already replaced *Homo neanderthalensis*.

The Later Stone Age is marked by a series of technological innovations, new tools and artefacts, the development of economic, political and social systems, and core symbolic beliefs and rituals. The stone toolkits changed over time according to time-specific needs and raw material availability, from smaller microlithic Robberg (20/18 000-14 000 ya), Wilton (8 000-the last 500 years) Industries and in between, the larger Albany/Oakhurst (14 000-8 000ya) and the Kabeljous (4 500-the last 500 years) Industries. Bored stones were used as part of digging sticks, grooved stones for sharpening and grinding, and stone tools fixed to handles with mastic also become more common. Fishing equipment such as hooks, gorges and sinkers also appear within archaeological excavations. Polished bone tools such as eyed needles, awls, linkshafts and arrowheads also become a more common occurrence. Most importantly bows and arrows revolutionized the hunting economy. It was only within the last 2 000 years that earthenware pottery was introduced, before then tortoiseshell bowls were used for cooking and ostrich eggshell (OES) flasks were used for storing water. Decorative items like ostrich eggshell and marine/fresh water shell beads and pendants were made.

Hunting and gathering made up the economic way of life of these communities; therefore, they are normally referred to as hunter-gatherers. Hunter-gatherers hunted both small and large game and gathered edible plantfoods from the veld. For those that lived at or close to the coast, marine shellfish and seals and other edible marine resources were available for gathering. The political system was mainly egalitarian, and socially, hunter-gatherers lived in bands of up to twenty people during the scarce resource availability dispersal seasons and aggregated according to kinship relations during the abundant resource availability seasons. Symbolic beliefs and rituals are evidenced by the deliberate burial of the dead and in the rock art paintings and engravings scattered across the southern African landscape.

The majority of hunter-gatherer archaeological sites found usually date from the past 10 000 years where San hunter-gatherers inhabited the landscape living in rock shelters and caves as well as on the open landscape. These latter sites are difficult to find because they are in the open veld and often covered by vegetation and sand. Sometimes these sites are only represented by a few stone tools and fragments of bone. The preservation of these sites is poor and it is not always possible to date them

(Deacon and Deacon 1999). Caves and rock shelters, however, in most cases, provide a more substantial preservation record of pre-colonial human occupation.

Later Stone Age sites occur both at the coast (caves, rock shelters, open sites and shell middens) and in the interior (caves, rock shelters and open sites) across southern Africa. There are more than a few significant Later Stone Age sites in the Eastern Cape. The most popular are the type-sites for the above-mentioned stone artefact industries, namely Wilton (for the Wilton Industry), Melkhoutboom (for the Albany Industry), both rock shelters situated to the west of Grahamstown, and Kabeljous Rock Shelter (for the Kabeljous Industry) situated just north of Jeffreys Bay. Caves and rock shelters that were occupied by the San during the Later Stone Age sometimes contain numerous paintings along the walls.

The majority of archaeological sites found in the area date from the past 10 000 years (called the Later Stone Age) and are associated with the campsites of San hunter-gatherers and Khoi pastoralists. These sites are difficult to find because they are in the open veld and often covered by vegetation and sand. Sometimes these sites are only represented by a few stone tools and fragments of bone. The preservation of these sites is poor and it is not always possible to date them Africa (Deacon & Deacon 1999).

Augussie Shelter situated in the foothills of the Kouga Mountains some 30 km north-west of Kareedouw. Plant material preserved to an estimated date of 5-6000 years BP. A broken digging stick dated to 4490 ±60 (Pta17) BP. (Binneman 1994).

The Havens Cave (THC) was the first inland site in a series of test excavations in the south-eastern Cape Mountains. The age of the basal deposits was estimated at 10 500 BP and comprise a typical Albany Stone Tool Industry, i.e., quartzite flake industry with large scrapers as the only formal tool type. The surface units yielded well-preserved plant material, which included a wide variety of edible and medicinal remains and an in situ grass lined storage pit. The Havens Cave, Rautenbach's Cave (Deacon & Brooker 1976) and Paardeberg Cave (unpublished report) were all occupied continuously from this period to possibly historical times. (Binneman 1997). The raw materials from the Havens Cave especially quartz crystals were highly preferred for formal stone tools during the Wilton period especially in units containing relatively high numbers of ostrich eggshell remains and *N. kraussianus* beads. Paardeberg Cave in the Langkloof, some 40 km north-west of the Havens Cave, silcrete was a major raw material (unpublished report) and was virtually absent from other sites in the Baviaanskloof (Binneman 1997).

Rautenbach's Cave (RC) and Nuwekloof Shelter (NK) in the Baviaanskloof River valley was excavated during the early 1980's and yielded well-preserved botanical remains, storage pits and other lined hollows dating within the last ca 2000 years BP. The aim of the research excavations was to investigate the socio-economic strategies and settlement patterns during the Holocene Later Stone Age for this region.

Forest Hall Shelter is about 2 km east of Keurboomstrand and some 800 m east of Matjes River shelter. The site contained human remains and artefacts resembling the Strandloper Industries that date to the last 3000 years or so. However, radiocarbon dates clearly indicate early Holocene occupation is would therefore be contemporaneous to the Albany Industry of the southern Cape (Deacon 1984) (Wilson 1988).

Between 4500 and 2000 BP coastal hunter-gatherers buried on the Robberg Peninsula and adjacent Plettenberg Bay contained large quantities of high-trophic-level marine protein. This contrasts with the more mixed diet reflected in skeletons from Matjes River Rock shelter only 14 km along the shore. Robberg Peninsula – Nelson Bay Cave is one of several dozen archaeological sites – from 3300 BP. Early Holocene (10000 BP – 8000 BP and Late Holocene (post 4000 BP) dates in this region compared to an almost lack of radiocarbon dates between 8000 BP and 4000 BP from archaeological sites in the interior of the country, beyond the Fold Belt. (Sealy 2006).

#### **4.4. Last 2 000 years – Khoekhoen Pastoralism**

Until 2000 years ago, hunter-gatherer communities traded, exchanged goods, encountered and interacted with other hunter-gatherer communities. From about 2 000 years ago the social dynamics of the southern African landscape started changing with the immigration of two 'other' groups of people, different in physique, political, economic and social systems, beliefs and rituals. One of these groups, the Khoekhoen pastoralists or herders entered southern Africa with domestic animals, namely fat-tailed sheep and goats, travelling through the south towards the coast. Khoekhoen pastoralist sites are often found close to the banks of large streams and rivers. They also introduced thin-walled pottery common in the interior and along the coastal regions of southern Africa. Their economic systems were directed by the accumulation of wealth in domestic stock numbers and their political make-up was more hierarchical than that of the hunter-gatherers.

The most significant Khoekhoen pastoralist sites in the Eastern Cape include Scott's Cave near Patensie (Deacon 1967), Goedgeloof shell midden along the St. Francis coast (Binneman 2007) and Oakleigh rock shelter near Queenstown (Derricourt 1977). Often, these archaeological sites are found close to the banks of large streams and rivers. It is much more difficult to locate Khoekhoen open sites, owing to their settlement pattern and lack of stone artefacts, makes evidence of occupation almost 'invisible'.

The most common archaeological sites along the nearby coast are shell middens (relatively large piles of marine shell) found usually concentrated opposite rocky coasts, but also along sandy beaches (people refer to these as 'Strandloper middens') (Rudner 1968). These were campsites of San hunter-gatherers, Khoi herders and KhoiSan peoples who lived along the immediate coast (up to 5 km) and collected marine foods. Mixed with the shell are other food remains, cultural material and often human remains are found in the middens. In general, middens date from the past 6 000 years. Also

associated with middens are large stone floors which were probably used as cooking platforms (Binneman 2001, 2005).

13 pieces of pottery were found in the bedding unit of the Havens Cave (Binneman 1997).

#### **4.5. Human Remains**

It is difficult to detect the presence of archaeological human remains on the landscape as these burials, in most cases, are not marked at the surface. Human remains are usually observed when they are exposed through erosion or construction activities for development. Several human remains have been rescued eroding out of the dunes along this coastline. In some instances packed stones or rocks may indicate the presence of informal pre-colonial burials.

The Albany Museum Database holds records of human remains that have been exposed and collected for conservation and curation within the wider region especially along the coastal areas. Cultural Resource Management practitioners whilst conducting archaeological heritage impact assessments have also recorded formal historical and contemporary cemeteries and informal burials within the wider region.

Human remains have been located in several of the sites excavated along the Tsitsikamma coast and interior Outeniqua Mountains such as Whitcher's as well as Klasies River Cave and The Havens Cave (Hall & Binneman 1987).

#### **4.6. Rock Art (Paintings and Engravings)**

Rock art is generally associated with the Later Stone Age period mostly dating from the last 5 000 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, the Karoo stretching from the Eastern Cape (Cradock area) into the Northern Cape as well as the Western Cape, and Namibia. 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 andesite 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).

Before 1970 a large number of painted stones (approximately 40) were found mainly along the southern Cape coastal belt and adjacent Cape Mountains (Rudner 1971). The oldest painted stone from the southern and eastern Cape is from an occupation unit at

Boomplaas Cave dated to 6400 BP (Deacon *et al.* 1976). Rudner (1971) suggested that the majority of the painted stones were cover stones for burials. However, none of the 12 painted stones found since 1970 (those from Apollo Cave, Boomplaas Cave and Klasies River Cave 5) were associated with burials or found close to burials (Lewis-Williams 1984). Other contexts in which painted stones have been found include storage pits such as at Boomplaas Cave the Cango Valley where four painted stones were found in association with storage pits (Deacon *et al.* 1976; Deacon 1982). Painted stones from the Eastern Cape were identified Klasies River Cave 5 situated along the coast west of Humansdorp and Groot Kommandokloof Cave situated in the Kouga Mountains some 30 km north-east of Joubertina and was excavated by Dr Johan Binneman (Binneman & Hall 1993).

A small cave situated about Whitcher's Cave contain several rock paintings of human figures (Shauder). Several Bushman painting rock art sites occur in the mountains ranges to the north and south of the proposed development area.

## **5. DESCRIPTION OF THE PROPERTY**

### **5.1. Location data**

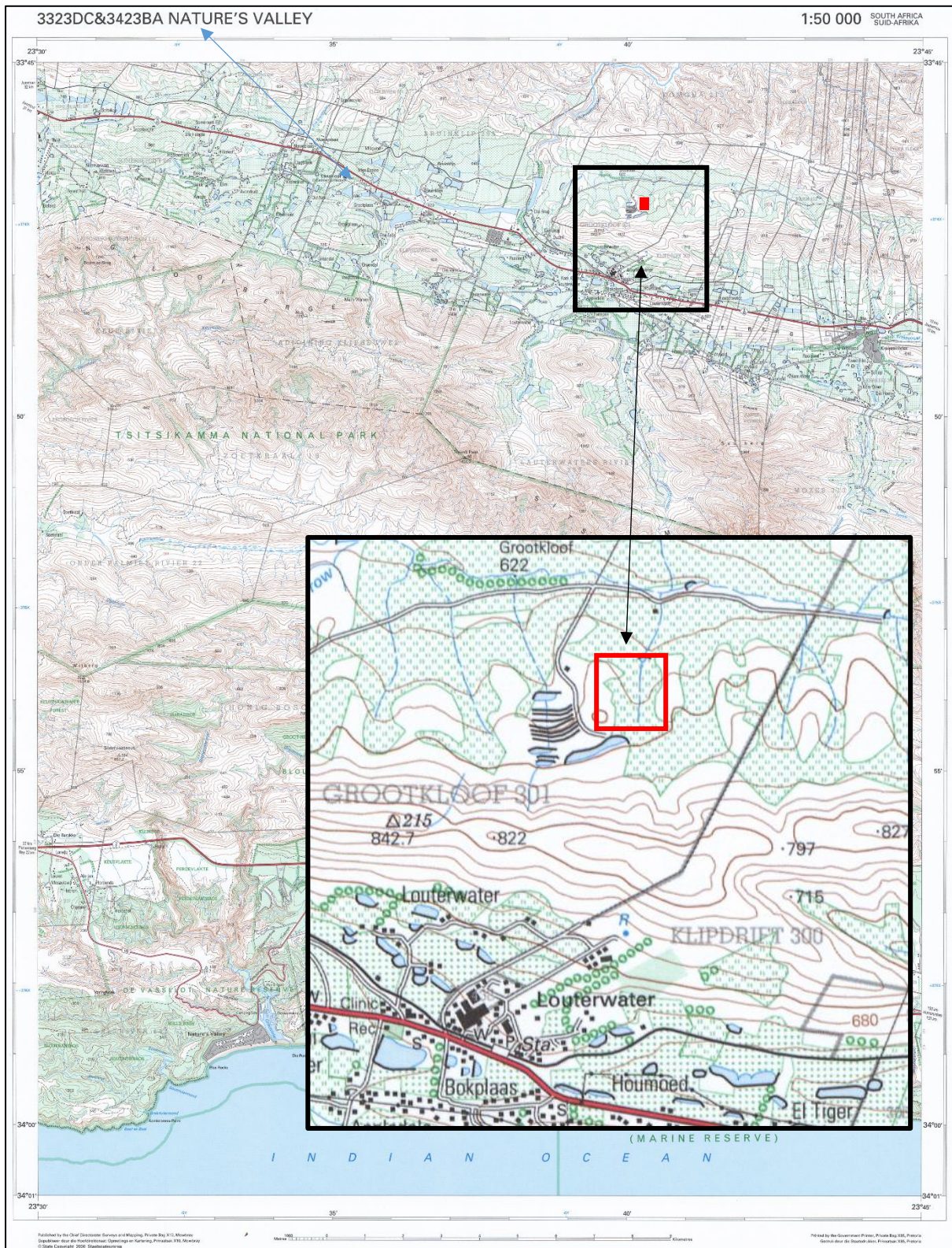
The proposed area for the effluent evaporation pond is located on Portion 3 and Portion 10 of the Farm Grootkloof No. 301 to the north-east of Louterwater, about 3 km north of the R62 passing through the Langkloof.

The site is located on the foothills of the Kouga Mountains and Baviaanskloof to the north. The Kouga River flows east-west about 6.5 km to the north. The Tsitsikamma Mountain Range is to the south of the town of Louterwater. The site is situated only 20 km from the nearest coastline (as the crow flies), divided by the Tsitsikamma Mountain Range.

### **5.2. Map**

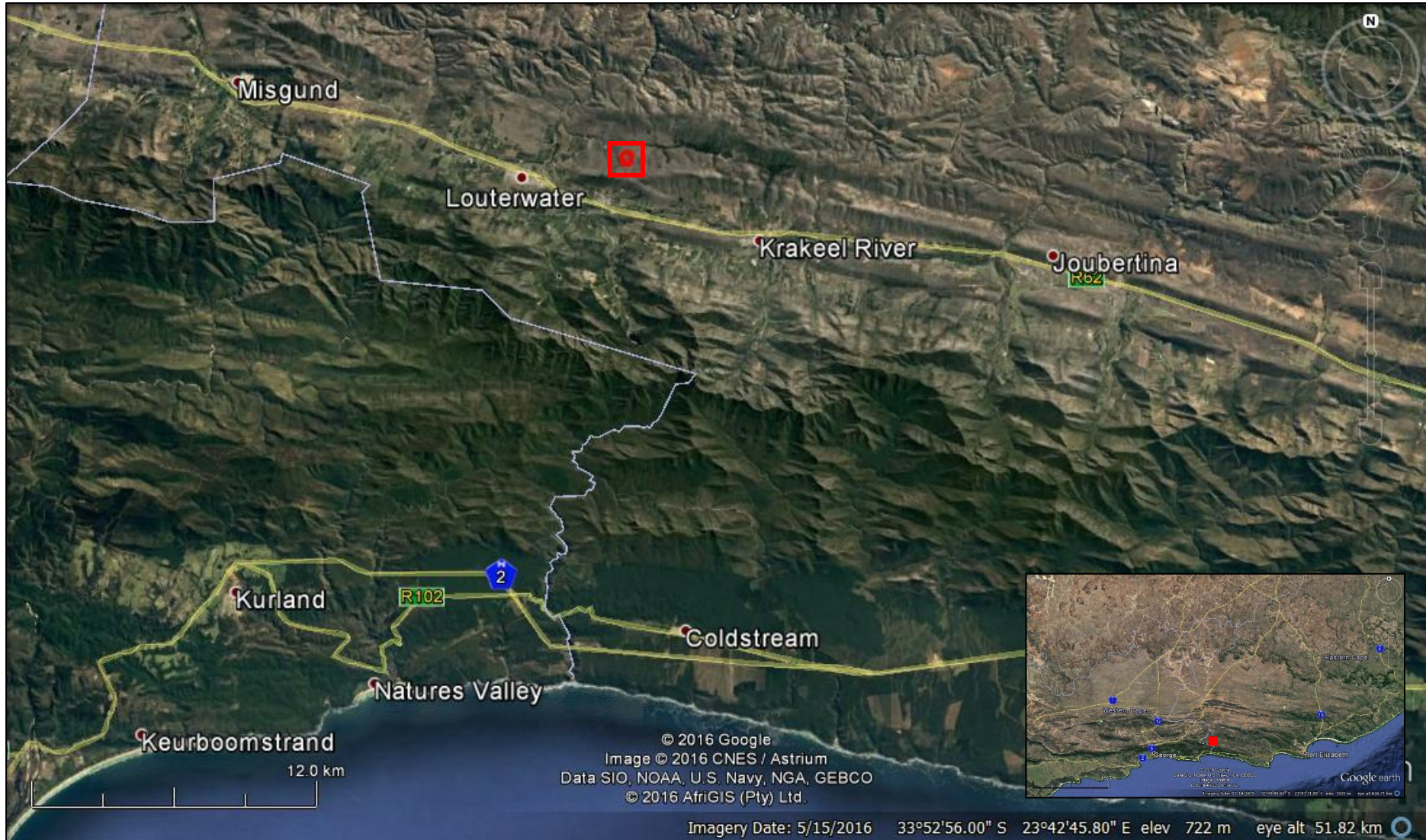
1:50 000 Map: 3323DC & 3423BA NATURE'S VALLEY





**Figure 1. 1:50 000 topographic map 3323DC & 3423BA NATURE'S VALLEY (2000 edition) showing the location of the proposed effluent evaporation pond on the Farm Grootkloof 301.**





**Figure 2. Aerial view showing the location of the area proposed for the effluent evaporation pond on the Farm Grootkloof 301 and the surrounding towns.**



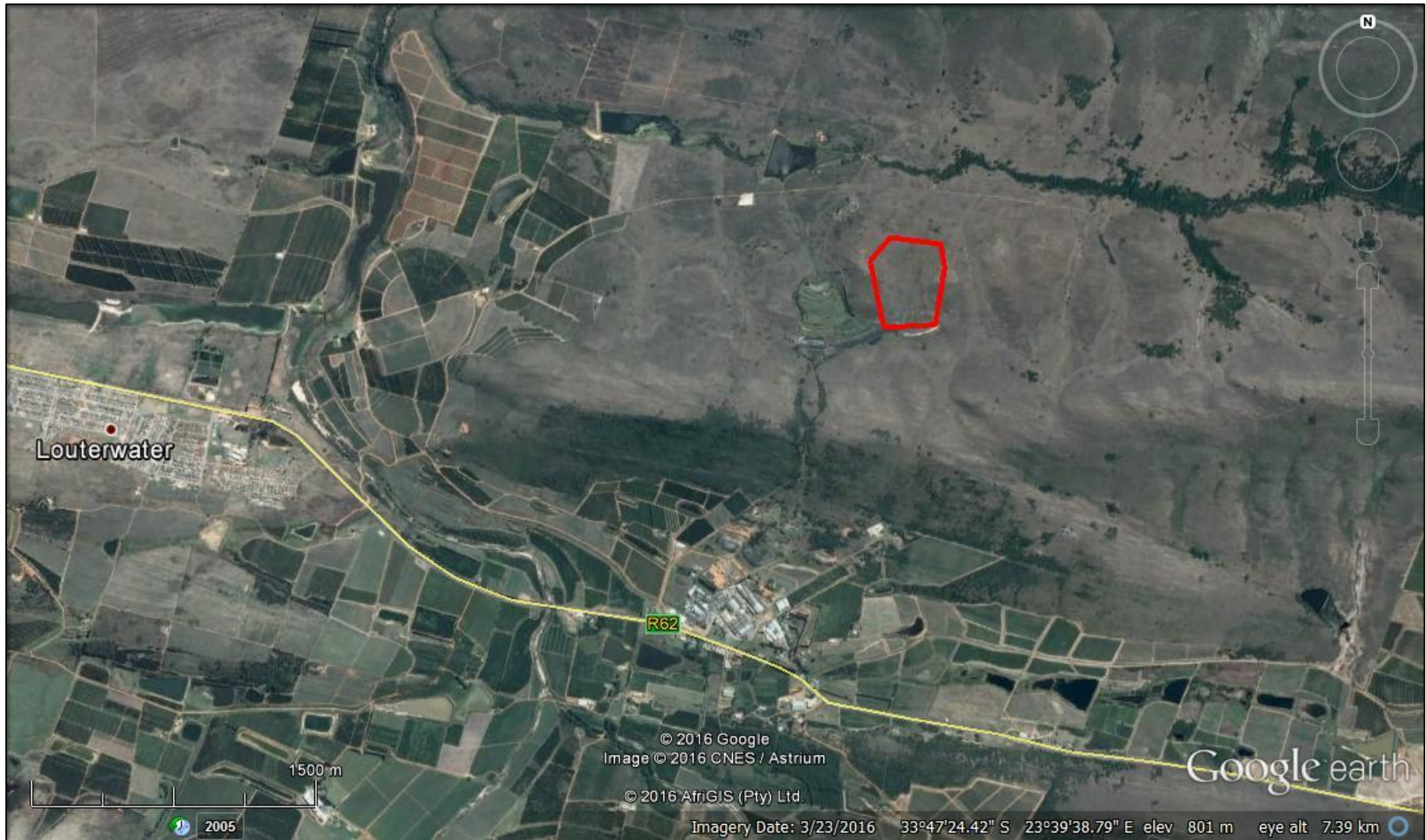
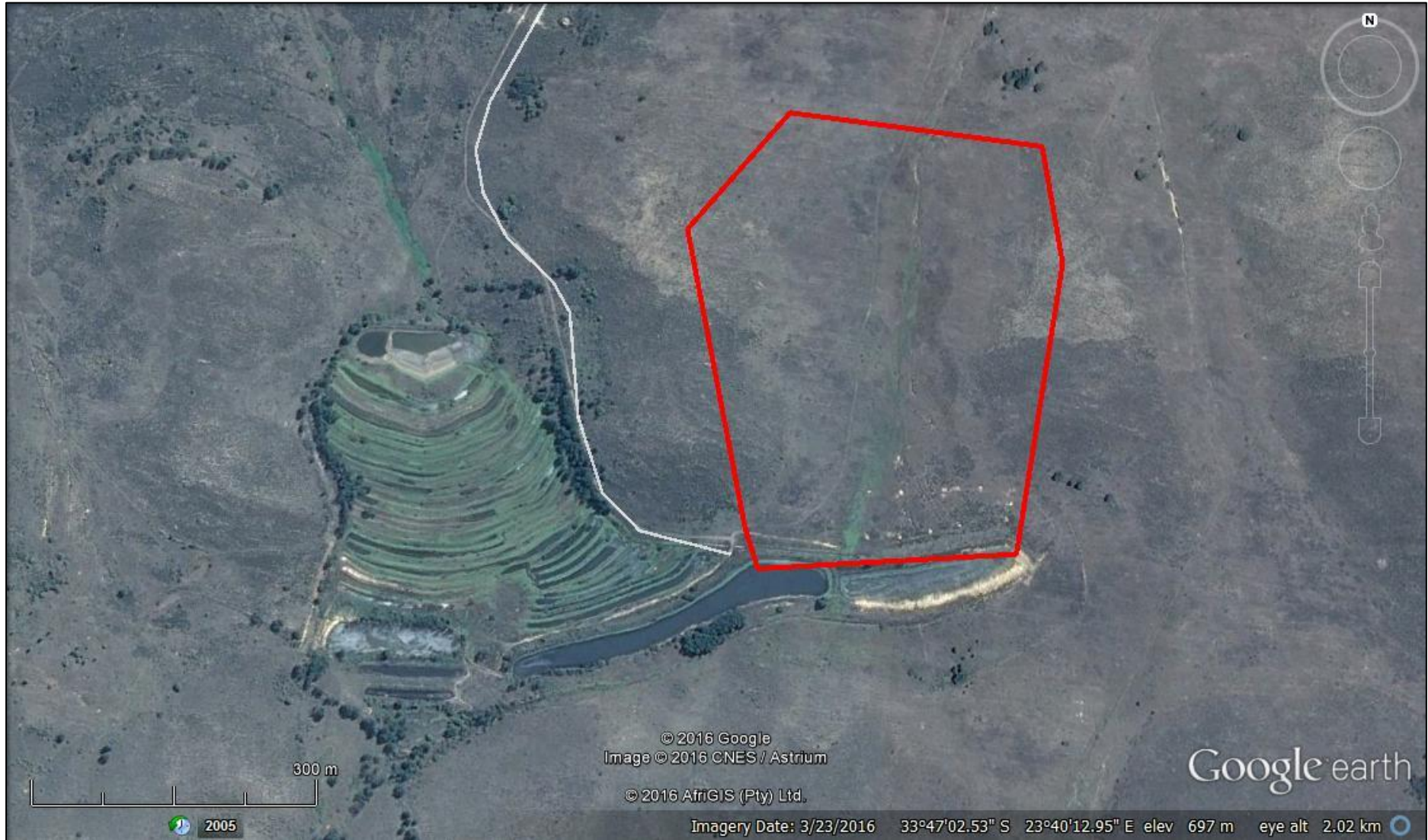


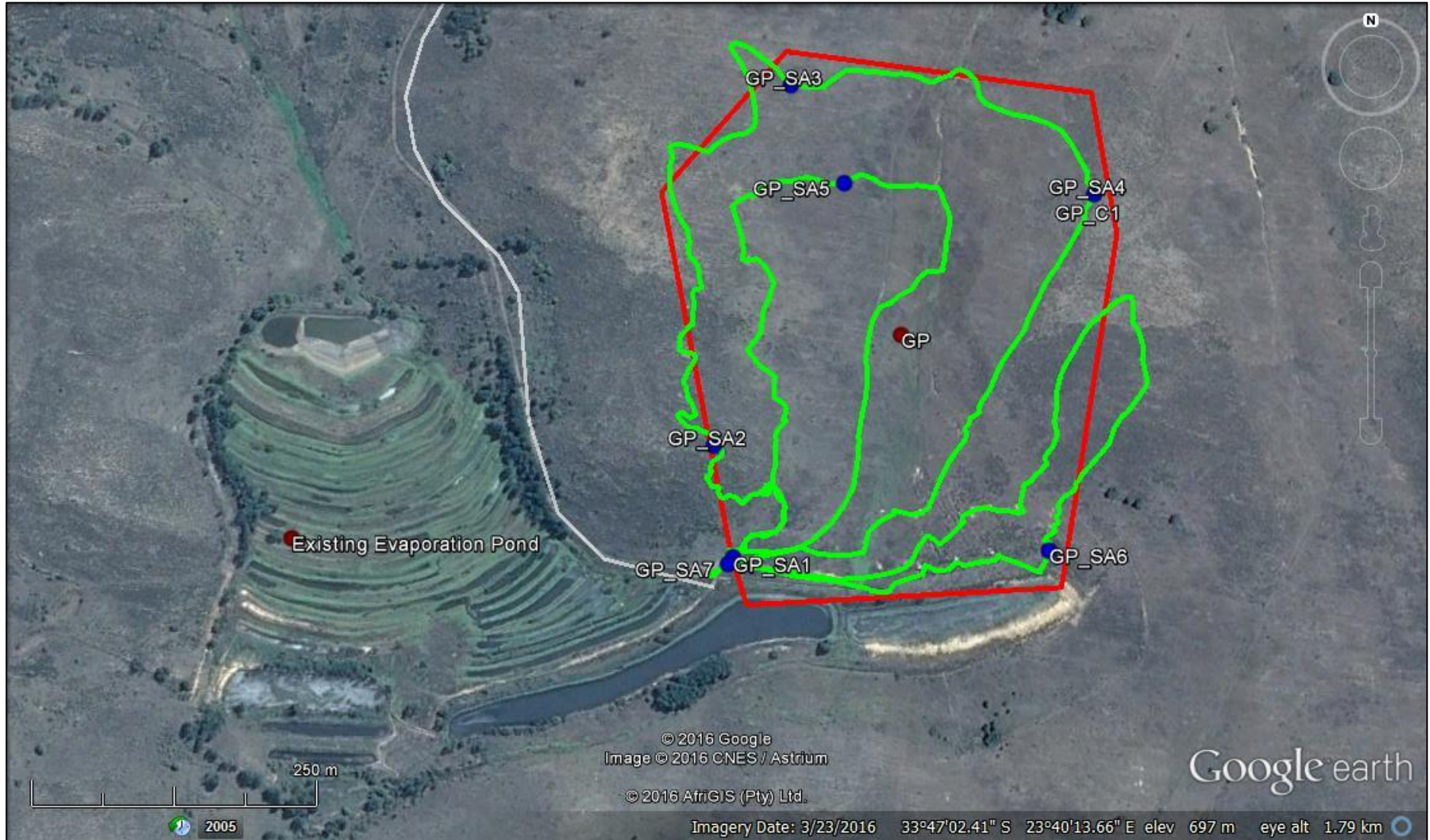
Figure 3. View of the area proposed for the effluent evaporation pond on the Farm Grootkloof 301 in relation to the town of Louterwater.





**Figure 4. Close-up view of the area proposed for the effluent evaporation pond next to the existing Granor Passi effluent evaporation pond.**





**Figure 5. Close-up view of the area proposed for the effluent evaporation pond (red boundary area) showing the occurrences of stone artefacts (blue dots: GP\_SA1-GP\_SA7) and ceramics (yellow dot: GP\_C1) and survey track (green line).**

## 6. ARCHAEOLOGICAL INVESTIGATION

### 6.1. Methodology

A literature review was conducted and has been included in the report (Section 4) to provide insight into the archaeological background of the wider region between the Kouga / Baviaanskloof Mountain Ranges and the coast and furthermore along the Tsitsikamma coastline. A few archaeological impact assessments have been consulted and referenced in Section 13.

The survey conducted on foot and exposed cultural remains were recorded with a GPS device. GPS co-ordinates and photographs were taken using a Garmin Oregon 650 GPS unit.

### 6.2. Results of the Archaeological Investigation

The proposed development area is covered in a variety of dense grass and scrub vegetation that obscured archaeological visibility during the survey (Figures 6-11). Very few exposed surface areas occurred in the area, including some surface erosion, the internal road that runs through the site and diggings that seemed to have been test pits to determine the potential for the construction of the proposed evaporation pond, [these](#) were investigated for possible archaeological heritage remains (Figures 12-15). Stone packed erosion walls were placed on the slopes of the site (Figure 16).

Four ceramic fragments were observed on the north eastern boundary of the proposed development site (Figures 17-18). Two fragments are plain white and two have line decorations and images. No historical sites or associated material were observed within the area.

Isolated Middle Stone Age stone artefacts were observed within the relatively dense vegetation cover and on a dug heap mostly on the upper slopes of the proposed development area (Figures 19-23). The artefacts manufactured on quartzite raw material are mostly crude and weathered showing some edge-damage and modification, except for the artefact identified in the dug head. A small koppie is situated on the south western boundary of the site and it likely that more artefacts would occur around this area and possibly across the site when excavations commence. It is, however, unlikely that the artefacts documented occur *in situ* as the area has previously been cultivated for agricultural activities.

No other organic material or archaeological heritage remains were documented in association with the stone artefacts. It is, however, it is possible that stone artefacts may occur between the surface and 50-80cm below ground.





**Figure 6. View of the general landscape of the proposed evaporation pond area facing north.**



**Figure 7. View of the general landscape of the proposed evaporation pond area facing north east.**





**Figure 8. View of the general landscape of the proposed evaporation pond area facing east.**



**Figure 9. View of the general landscape of the proposed evaporation pond area facing south west with a view of the koppie on the development boundary.**





**Figure 10. View of the general landscape from the centre of the proposed evaporation pond area facing north.**



**Figure 11. View of the general landscape from the centre of the proposed evaporation pond area facing south.**





**Figure 12. Example of surface eroded area.**



**Figure 13. Example of the road as a surface exposed area.**





**Figure 14. Example of diggings investigated for any possible archaeological heritage remains.**



**Figure 15. Example of diggings investigated for any possible archaeological heritage remains.**





**Figure 16. Example of stone packed erosion prevention walls.**



**Figure 17 and Figure 18. View of the ceramics fragments documented on the eastern slope of the proposed development area (GP\_C1, Figure 5).**





**Figure 19 - Figure 22. Examples of stone artefacts observed within the proposed development area.**





**Figure 23. One Middle Stone Age stone artefact encountered on the dug heap associated with the diggings occurring within the proposed development area.**

## **7. GRADING OF SITES:**

### **7.1. Middle Stone Age stone artefact occurrences**

A few isolated Middle Stone Age stone artefacts were documented within the proposed development area.

The stone artefacts are considered as having a *low cultural significance* and have been allocated a heritage grading of:

*'General' Protection C (Field Rating IV A):* These sites have been sufficiently recorded (in the Phase 1). It requires no further recording before destruction (usually Low significance).

## 8. COORDINATES AND SITES FOR THE PROPOSED GRANOR PASSI EFFLUENT EVAPORATION PONDS, LOUWERWATER, SARAH BAARTMAN DISTRICT MUNICIPALITY, KOUGA LOCAL MUNICIPALITY, EASTERN CAPE PROVINCE.

**Table 1. Coordinates and sites for for the proposed Granor Passi Effluent Evaporation Ponds, Louwerwater, Sarah Baartman District Municipality, Kouga Local Municipality, Eastern Cape Province.**

REFERENCE	DESCRIPTION	CO-ORDINATE	HERITAGE GRADING
GP	Centre point of the proposed effluent evaporation pond area	33°46'52.19"S; 23°40'20.11"E	N/A
GPE	Centre point of the existing effluent evaporation pond	33°47'05.81"S; 23°40'02.38"E	N/A
GP_SA1	Middle Stone Age artefact	33°47'06.27"S; 23°40'14.23"E	General Protection C (Field Rating IV C)
GP_SA2	Middle Stone Age artefact	33°47'03.07"S; 23°40'13.58"E	'General' Protection C (Field Rating IV C)
GP_SA3	Middle Stone Age artefact	33°46'52.57"S; 23°40'16.27"E	General Protection C (Field Rating IV C)
GP_SA4	Middle Stone Age artefact	33°46'55.78"S; 23°40'26.88"E	General Protection C (Field Rating IV C)
GP_SA5	Middle Stone Age artefact	33°46'55.44"S; 23°40'18.15"E	General Protection C (Field Rating IV C)
GP_SA6	Middle Stone Age artefact	33°47'06.07"S; 23°40'25.07"E	'General' Protection C (Field Rating IV C)
GP_SA7	Middle Stone Age artefact	33°47'06.45"S; 23°40'14.07"E	General Protection C (Field Rating IV C)
GP_C1	Ceramics scatter	33°46'55.75"S; 23°40'26.92"E	Not graded

## 9. CULTURAL LANDSCAPE

Cultural landscapes are increasingly becoming a significant considering factor when conducting various archaeological and heritage impact assessments for proposed developments. The areas investigated for the proposed sand mining are considered as having a medium - low cultural heritage significance.

This section gives a brief introduction to the concept of cultural landscape and its relation to various aspects of the dynamic interaction of humans as cultural agents and the landscape as a medium. A description of the interwoven relationships of humans with the landscape over time will be given including the archaeological, historical, and contemporary connections. Lastly, the living heritage makes up a small part of the study undertaken, its significance will be highlighted in relation to the communities who still identify with the area and retain a sense of identity to the landscape.

### 9.1. Concept of Cultural Landscape

Cultural landscapes can be interpreted as complex and rich extended historical records conceptualised as organisations of space, time, meaning, and communication moulded through cultural process. The connections between landscape and identity and, hence,

memory are fundamental to the understanding of landscape and human sense of place. Cultural landscapes are the interface of culture and nature, tangible and intangible heritage, and biological and cultural diversity. They represent a closely woven net of relationships, the essence of culture and people's identity. They are symbol of the growing recognition of the fundamental links between local communities and their heritage, human kind, and its natural environment. In contemporary society, particular landscapes can be understood by taking into consideration the way in which they have been settled and modified including overall spatial organisation, settlement patterns, land uses, circulation networks, field layout, fencing, buildings, topography, vegetation, and structures. The dynamics and complex nature of cultural landscapes can be regarded as text, written and read by individuals and groups for very different purposes and with very many interpretations. The messages embedded in the landscape can be read as signs about values, beliefs, and practices from various perspectives. Most cultural landscapes are living landscapes where changes over time result in a montage effect or series of layers, each layer able to tell the human story and relationships between people and the natural processes.

The impact of human action on the landscape occurs over time so that a cultural landscape is the result of a complex history and creates the significance of place in shaping historical identities by examining a community's presence or sense of place. The deeply social nature of relationships to place has always mediated people's understanding of their environment and their movements within it, and is a process which continues to inform the construction of people's social identity today. Social and spatial relationships are dialectically interactive and interdependent. Cultural landscape reflects social relations and institutions and they shape subsequent social relations.

Cultural landscapes tell the story of people, events, and places through time, offering a sense of continuity, a sense of the stream of time. Landscapes reflect human activity and are imbued with cultural values. They combine elements of space and time, and represent political as well as social and cultural constructs. Culture shapes the landscape through day-to-day routine and these practices become traditions incorporated with a collective memory the ultimate embodiments of memorial consciousness', examples such as monuments, annual events and, archives. As they have evolved over time, and as human activity has changed, they have acquired many layers of meaning that can be analysed through archaeological, historical, geographical, and sociological study.

Indigenous people, European explorers, missionaries, pastoralists, international and domestic travellers all looked or look at similar landscapes and experience different versions of reality. Regardless of the power of different cultural groups, however, all groups create cultural landscape and interpret them from their own perspectives. This gives rise to tensions and contradictions between groups, invariably expressed in landscape forms as well.



The dynamics and complex nature of cultural landscapes can be regarded as text, written and read by individuals and groups for very different purposes and with very many interpretations. The messages embedded in the landscape can be read as signs about values, beliefs, and practices from various perspectives.

Most cultural landscapes are living landscapes where changes over time result in a montage effect or series of layers, each layer able to tell the human story and relationships between people and the natural processes. A common theme underpinning the concept of ideology of landscape itself is the setting for everything we do is that of the landscape as a repository of intangible values and human meaning that nurture our very existence. Intangible elements are the foundation of the existence of cultural landscapes, and that are still occupied by contemporary communities, Landscape, culture and collective memory of a social group are intertwined and that this binds the individuals to their community. Culture shapes their everyday life, the values bind gradually, change slowly, and transfer from generation to generation – culture is a form of memory. We see landscapes as a result of our shared system of beliefs and ideologies. In this way landscape is a cultural construct, a mirror of our memories and myths encoded with meanings which can be read and interpreted. Pivotal to the significance of cultural landscapes and the ideas of the ordinarily sacred is the realisation that it is the places, traditions, and activities of ordinary people that create a rich cultural tapestry of life, particularly through our recognition of the values people attach to their everyday places and concomitant sense of place and identity.

Living heritage means cultural expressions and practices that form a body of knowledge and provide for continuity, dynamism, and meaning of social life to generations of people as individuals, social groups, and communities. It also allows for identity and sense of belonging for people as well as an accumulation of intellectual capital current and future generation in the context of mutual respect for human, social and cultural rights.

Protection of these cultural landscapes involves some management issues such as successful conservation is based on the continuing vital link between people and their landscapes. This link can be disrupted or affected by for instance economic reasons. Other threats can also be attributed to urban expansion and development, tourism, war and looting and something beyond our human intervention: natural disasters and climate change. Cultural landscape management and conservation processes bring people together in caring for their collective identity and heritage, and provide a shared local vision within a global context. Local communities need, therefore, to be involved in every aspect of identification, planning and management of the areas as they are the most effective guardians of landscape heritage.

Most elements of living heritage are under threat of extinction due to neglect, modernisation, urbanisation, globalisation, and environmental degradation. Living heritage is at the centre of people's culture and identity, it is important to provide space for its continued existence. Living heritage must not be seen as merely safeguarding the

past, but it must be seen as safeguarding the logic of continuity of what all communities or social groups regard as their valuable heritage, shared or exclusive.

In some instances, villages may capitalise on local landscape assets in order to promote tourism. Travel and tourism activities are built around the quest for experience, and the experience of place and landscape is a core element of that quest. It is a constant desire for new experiences that drives tourism, rather than a quest for authenticity. It is, therefore, important to engage actively with the tourism industry so that aspects of life and landscape important to cultural identity, including connection with place are maintained.

## **9.2. Archaeological Landscape**

Despite no archaeological research having been conducted within the immediate of the proposed development area. The literature review has indicated that the wider region was not devoid of pre-colonial occupation. From the evidence the region has been transversed and occupied for the last 250 000 years, however with several gaps where the area was not conducive or attractive for human habitation. Later Stone Age cave sites are prevalent in the wider Kouga / Baviaanskloof and Tsitsikamma / Outeniqua Mountain Ranges with very little Khoekhoen pastoralism and Middle Stone Age occupation yet uncovered. More research is required to uncover the signatures of these populations which current research in the area may uncover.

The region has a rich and yet not fully explored pre-colonial and historical landscape dynamics of social and economic interaction between groups of hunter-gatherers, Khoekhoen, and early settlers and travellers. The coastal landscape is exceptionally rich in archaeological sites as it provides not only attractive site for occupation but also provides a source of marine resources in close proximity to available terrestrial resources as well as fresh water sources available from nearby rivers.

Pre-colonial human remains are mostly unmarked and invisible on the landscape, however, in some instances, they may be marked by organised piles of stones.

## **10. CONCLUSION**

The survey was conducted by on foot. A Garmin Oregon 650 GPS unit was used to take photographs and points of location of heritage and cultural material identified during the survey. Archaeological visibility was obscured by the dense vegetation cover. The survey was limited to surface investigation and no test pitting was conducted.

A few isolated Middle Stone Age stone artefacts were documented in amongst the dense vegetation cover and diggings. It is therefore possible that similar stone artefacts will be uncovered during the excavation and construction activities. Four ceramic fragments

were documented, however, no historically associated sites were identified which may indicate that these fragments may be more modern than historically significant.

The proposed development would have negative implications on the archaeological heritage remains documented and occurring below the dense vegetation cover during all phases of the development. The negative implications include the destruction of the possible *in situ* or collections of stone artefacts and/or other associated material below ground that are not immediately visible on the surface. The recommendations must be considered as appropriate mitigation measures to protect and conserve the archaeological heritage remains observed within the proposed development area and further archaeological remains that may occur and are not immediately visible on the surface. However, it is unlikely that the artefacts documented and that may possibly be uncovered occur *in situ* as the area in the past has been continuously cultivated for agricultural purposes. The artefacts have been graded as having a low cultural significance and development may proceed as planned. It is recommended that the developers / applicants apply for a destruction permit (as per the National Heritage Resources Act 25 of 1999, Section 35) for development to continue.

Consultation with the Gamtkwa Khoisan Council was conducted telephonically both before and after the field survey to inform them of the project and report back after the survey was conducted. They will make further comments once they have received the Phase 1 Archaeological Impact Assessment (AIA) report for the project.

## **11. RECOMMENDATIONS**

The overall area is considered as having a *low archaeological significance*, however, the following recommendations must be considered before development continues:

1. If concentrations pre-colonial archaeological heritage material and/or human remains (including graves and burials) are uncovered during construction, all work must cease immediately and be reported to the Albany Museum (046 622 2312) and/or the Eastern Cape Provincial Heritage Resources Agency (ECPHRA) (043 745 0888) so that systematic and professional investigation/excavation can be undertaken. Phase 2 mitigation in the form of test-pitting/sampling or systematic excavations and collections of the pre-colonial shell middens and associated artefacts will then be conducted to establish the contextual status of the sites and possibly remove the archaeological deposit before development activities continue.
2. A person must be trained as a site monitor to report any archaeological sites found during the development. Construction managers/foremen and/or the Environmental Control Officer (ECO) should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites.

3. The developer / ECO / or construction manager must apply to the Eastern Cape Provincial Heritage Resources Agency (ECPHRA) for a destruction permit prior to the commencement of mining activities.

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#### **14. GENERAL REMARKS AND CONDITIONS**

**NOTE:** This report is a phase 1 archaeological impact assessment (AIA) only and does not include or exempt other required specialist assessments as part of the heritage impact assessments (HIAs).

The National Heritage Resources Act (Act No. 25 of 1999, Section 35 [Brief Legislative Requirements]) requires a full Heritage Impact Assessment (HIA) in order that all heritage resources including all places or objects of aesthetics, architectural, historic, scientific, social, spiritual, linguistic, or technological value or significance are protected. Thus any assessment should make provision for the protection of all these heritage components including archaeology, shipwrecks, battlefields, graves, and structures older than 60 years, living heritage, historical settlements, landscapes, geological sites, palaeontological sites and objects.

It must be emphasized that the conclusions and recommendations expressed in this phase 1 archaeological impact assessment (AIA) are based on the visibility of archaeological remains, features and, sites and may not reflect the true state of affairs. Many archaeological remains, features and, sites may be covered by soil and vegetation and will only be located once this has been removed. In the event of such archaeological heritage being uncovered (such as during any phase of construction activities), archaeologists or the relevant heritage authority must be informed immediately so that they can investigate the importance of the sites and excavate or collect material before it is destroyed. The onus is on the developer to ensure that this agreement is honoured in accordance with the National Heritage Resources Act No. 25 of 1999 (NHRA 25 of 1999).

Archaeological Specialist Reports (desktops and AIA's) will be assessed by the relevant heritage resources authority. The final comment/decision rests with the heritage resources authority that may confirm the recommendations in the archaeological specialist report and grant a permit or a formal letter of permission for the destruction of any cultural sites.

## **APPENDIX A: GRADING SYSTEM**

The National Heritage Resources Act 25 of 1999 stipulates the assessment criteria and grading of archaeological sites. The following categories are distinguished in Section 7 of the Act and the South African Heritage Resources Agency:

- National: This site is suggested to be considered of Grade 1 significance and should be nominated as such. Heritage resources with qualities so exceptional that they are of special national significance.
- Provincial: This site is suggested to be considered of Grade II significance and should be nominated as such. Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within the context of a province or a region
- Local: This site is suggested to be Grade IIIA significance. This site should be retained as a heritage register site (High significance) and so mitigation as part of the development process is not advised.
- Local: This site is suggested to be Grade IIIB significance. It could be mitigated and (part) retained as a heritage register site (High significance).
- 'General' Protection A (Field Rating IV A): This site should be mitigated before destruction (usually High/Medium significance).
- 'General' Protection B (Field Rating IV B): This site should be recorded before destruction (usually Medium significance).
- 'General' Protection C (Field Rating IV C): This site has been sufficiently recorded (in the Phase 1). It requires no further recording before destruction (usually Low significance).

## **APPENDIX B: IDENTIFICATION OF ARCHAEOLOGICAL FEATURES AND MATERIAL FROM INLAND AREAS: guidelines and procedures for developers**

### 1. Human Skeletal material

Human remains, whether the complete remains of an individual buried during the past, or scattered human remains resulting from disturbance of the grave, should be reported. In general the remains are buried in a flexed position on their sides, but are also found buried in a sitting position with a flat stone capping and developers are requested to be on the alert for this.

### 2. Freshwater mussel middens

Freshwater mussels are found in the muddy banks of rivers and streams and were collected by people in the past as a food resource. Freshwater mussel shell middens are accumulations of mussel shell and are usually found close to rivers and streams. These shell middens frequently contain stone tools, pottery, bone, and occasionally human remains. Shell middens may be of various sizes and depths, but an accumulation which exceeds 1 m<sup>2</sup> in extent, should be reported to an archaeologist.

### 3. Stone artefacts

These are difficult for the layman to identify. However, large accumulations of flaked stones which do not appear to have been distributed naturally should be reported. If the stone tools are associated with bone remains, development should be halted immediately and archaeologists notified

### 4. Fossil bone

Fossil bones may be found embedded in geological deposits. Any concentrations of bones, whether fossilized or not, should be reported.

### 5. Large stone features

They come in different forms and sizes, but are easy to identify. The most common are roughly circular stone walls (mostly collapsed) and may represent stock enclosures, remains of wind breaks or cooking shelters. Others consist of large piles of stones of different sizes and heights and are known as *isisivane*. They are usually near river and mountain crossings. Their purpose and meaning is not fully understood, however, some are thought to represent burial cairns while others may have symbolic value.

### 6. Historical artefacts or features

These are easy to identified and include foundations of buildings or other construction features and items from domestic and military activities.