

**HERITAGE IMPACT ASSESSMENT: PROPOSED  
BORROW PIT ON ERF 784, OLYWENHOUTSDRIF,  
UPINGTON, GORDONIA MAGISTERIAL DISTRICT,  
NORTHERN CAPE**

Required under Section 38(8) of the National Heritage Resources Act (No. 25 of 1999)  
as part of a Heritage Impact Assessment.

*Report for:*

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*On behalf of:*

**Dart Mining CC**



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## SUMMARY

ASHA Consulting (Pty) Ltd was appointed by N.J. van Zyl to assess the potential impacts to heritage resources that might occur through the proposed reopening and expansion of a borrow pit on erf 784, Olywenhoutsdrif Settlement, Upington. The site is located at S28° 30' 03" E21° 13' 39".

The study area is an existing borrow pit and was found to be heavily disturbed by earlier mining, earthmoving and blasted rock fragments. Vegetation was sparse and a few ruined buildings were present.

The desktop study showed that the existing borrow pit and associated ruins likely post-date 1964. The site visit showed that heritage resources were absent from the site. However, the broader landscape is considered a heritage resource but impacts to the landscape were found to be of low significance.

There are no heritage concerns for this project. No areas require avoidance or buffering.

It is recommended that the proposed borrow pit be authorised but subject to the following condition:

- The site must be rehabilitated after closure; and
- If any archaeological material or human burials are uncovered during the course of development then work in the immediate area should be halted. The find would need to be reported to the heritage authorities and may require inspection by an archaeologist. Such heritage is the property of the state and may require excavation and curation in an approved institution.

## Glossary

**Background scatter:** Artefacts whose spatial position is conditioned more by natural forces than by human agency.

**Early Stone Age:** Period of the Stone Age extending approximately between 2 million and 200 000 years ago.

**Handaxe:** A bifacially flaked, pointed stone tool type typical of the Early Stone Age Acheulian Industry. It is also referred to as a large cutting tool.

**Hominid:** a group consisting of all modern and extinct great apes (i.e. gorillas, chimpanzees, orangutans and humans) and their ancestors.

**Later Stone Age:** Period of the Stone Age extending over the last approximately 20 000 years.

## Abbreviations

**APHP:** Association of Professional Heritage Practitioners

**ASAPA:** Association of Southern African Professional Archaeologists

**BA:** Basic Assessment

**CRM:** Cultural Resources Management

**DMRE:** Department of Mineral Resources and Energy

**EMPr:** Environmental Management Program

**ESA:** Early Stone Age

**GP:** General Protection

**GPS:** global positioning system

**HIA:** Heritage Impact Assessment

**LSA:** Later Stone Age

**NBKB:** Ngwao-Boswa Ya Kapa Bokoni

**NEMA:** National Environmental Management Act (No. 107 of 1998)

**NHRA:** National Heritage Resources Act (No. 25) of 1999

**SAHRA:** South African Heritage Resources Agency

**SAHRIS:** South African Heritage Resources Information System

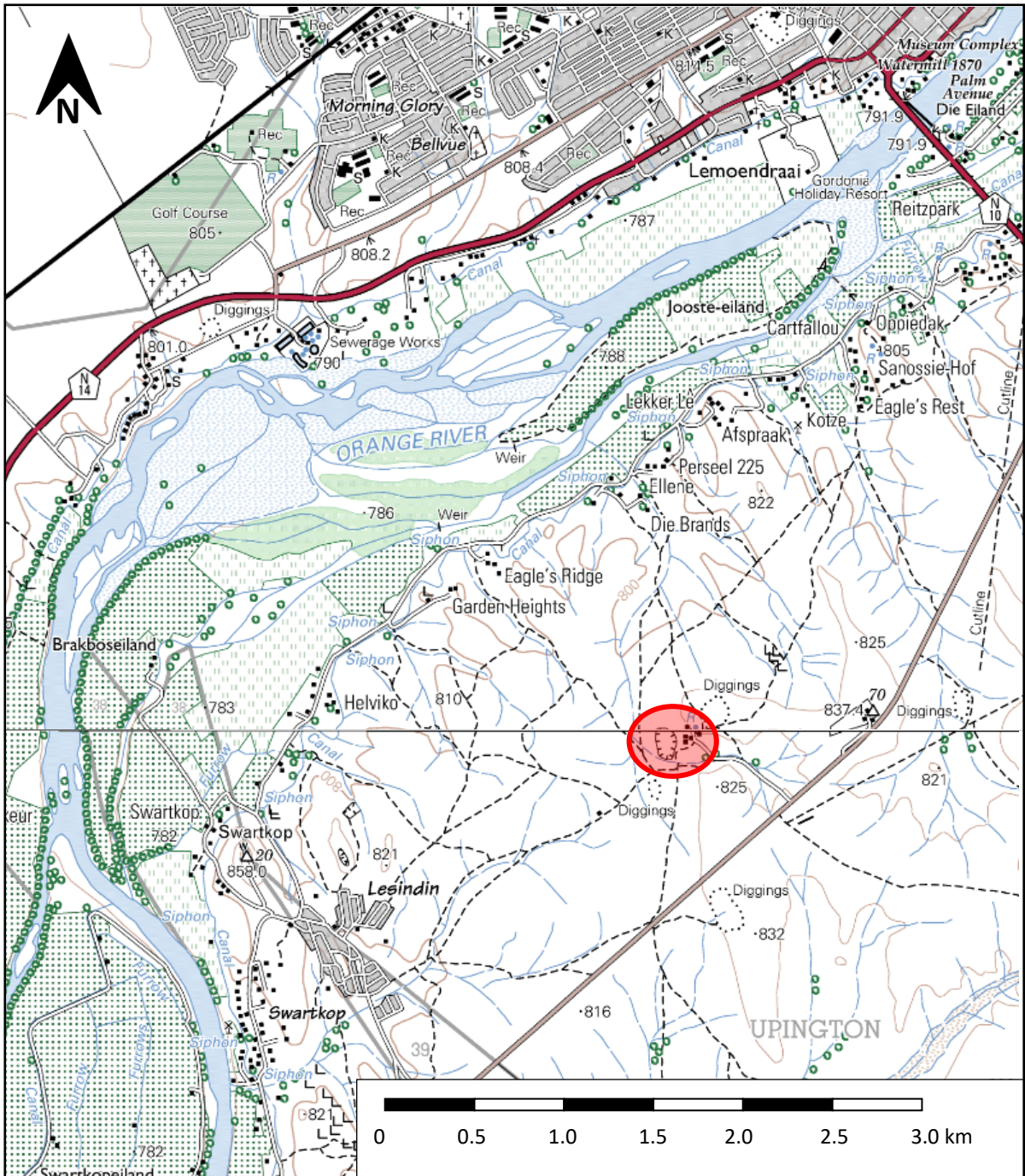
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# 1. INTRODUCTION

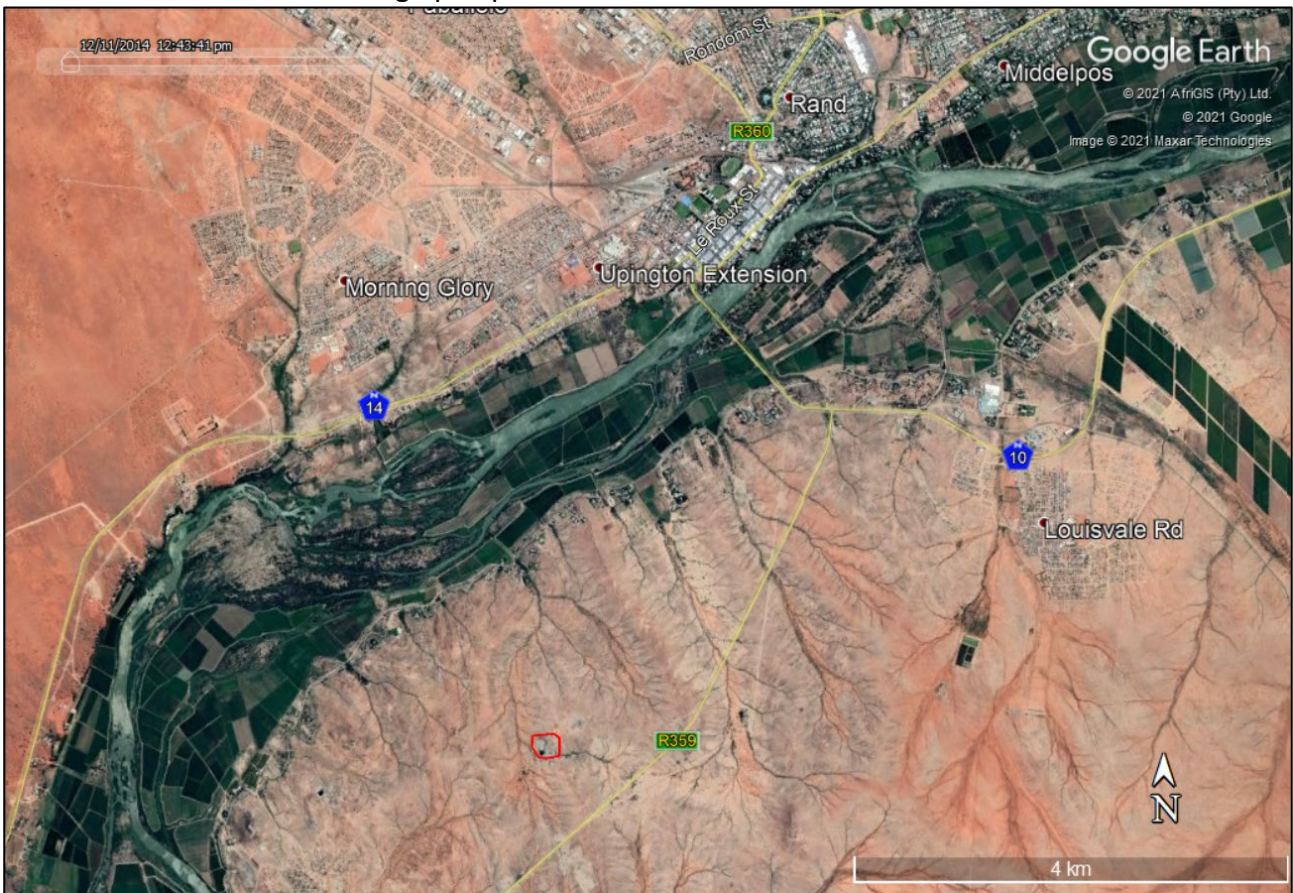
ASHA Consulting (Pty) Ltd was appointed by N.J. van Zyl to assess the potential impacts to heritage resources that might occur through the proposed reopening and expansion of a borrow pit on erf 784, Olywenhoutsdrif Settlement, Uppington (Figures 1 & 2). The site is located at S28° 30' 03" E21° 13' 39".



**Figure 1:** Extract from 1:50 000 topographic maps 2821 AC and 2821 CA showing the location of the site (red shaded oval) relative to the R359 road to the southeast and the N14 and Uppington to the north of the Orange River. Source of basemap: Chief Directorate: National Geo-Spatial Information. Website: [www.ngi.gov.za](http://www.ngi.gov.za).



It is noted that a previous application to reopen the borrow pit was approved by SAHRA in 2012. That application was, however, for a substantially smaller area which effectively included only the northern section of the existing open pit.



**Figure 2:** Aerial view of the area to the southwest of Upington showing the relationship between the site (red polygon), Upington and the cultivated landscape along the Orange River.

## 1.1. The proposed project

### 1.1.1. Project description

Mining will be in the form of an opencast mine that will continue from an existing borrow pit. Access will be taken via the R359 and existing gravel road that leads to the existing borrow pit. Disturbed areas will be demarcated as laydown and stockpile areas. Any virgin areas allocated for mining and stockpiling would first be stripped of all available topsoil. This topsoil would be stockpiled separately for later use when the quarry is rehabilitated. Any oversize material and rocks will be removed and stockpiled separately for later use when the quarry is rehabilitated.

The proposed activity will entail blasting using explosives in order to loosen the hard rock from the existing quarry. The loosened hard rock will be crushed and screened using a mobile crusher, whereafter it will be transported to be stockpiled until sold. Equipment storage will be in containers and portable ablution facilities will be provided. A stockpile area of less than 0.5 ha will be developed. It will also serve as parking area and laydown area with a service bay for minor repairs and maintenance of machinery.

At final closure all leftover product stockpiles as well as oversize material will be backfilled into the excavation and the sides of the excavation will be profiled to form an even depression.

### 1.1.2. Identification of alternatives

There are no alternatives for this project aside from the No-Go Alternative. The location and mining methodology are determined by the existing quarry with suitable target rock and the nature of that rock.

### 1.1.3. Aspects of the project relevant to the heritage study

All aspects of the proposed development are relevant, since excavations for foundations and/or services may impact on archaeological and/or palaeontological remains, while all above-ground aspects create potential visual (contextual) impacts to the cultural landscape and any significant heritage sites that might be visually sensitive.

## 1.2. Terms of reference

ASHA Consulting was asked to assess the potential heritage impacts of the proposed project based on both a site visit and desktop research. Recommendations to avoid or minimise heritage impacts should be provided.

## 1.3. Scope and purpose of the report

A heritage impact assessment (HIA) is a means of identifying any significant heritage resources before development begins so that these can be managed in such a way as to allow the development to proceed (if appropriate) without undue impacts to the fragile heritage of South Africa. This HIA report aims to fulfil the requirements of the heritage authorities such that a comment can be issued by them for consideration by the National Department of Mineral Resources and Energy (DMRE) who will review the Basic Assessment (BA) and grant or refuse authorisation. The HIA report will outline any management and/or mitigation requirements that will need to be complied with from a heritage point of view and that should be included in the conditions of authorisation should this be granted.

## 1.4. The author

Dr Jayson Orton has an MA (UCT, 2004) and a D.Phil (Oxford, UK, 2013), both in archaeology, and has been conducting Heritage Impact Assessments and archaeological specialist studies in South Africa (primarily in the Western Cape and Northern Cape provinces) since 2004 (please see curriculum vitae included as Appendix 1). He has also conducted research on aspects of the Later Stone Age in these provinces and published widely on the topic. He is an accredited heritage practitioner with the Association of Professional Heritage Practitioners (APHP; Member #43) and also holds archaeological accreditation with the Association of Southern African Professional Archaeologists (ASAPA) CRM section (Member #233) as follows:

- Principal Investigator: Stone Age, Shell Middens & Grave Relocation; and
- Field Director: Colonial Period & Rock Art.

## 1.5. Declaration of independence

ASHA Consulting (Pty) Ltd and its consultants have no financial or other interest in the proposed development and will derive no benefits other than fair remuneration for consulting services provided.



## 2. LEGISLATIVE CONTEXT

### 2.1. National Heritage Resources Act (NHRA) No. 25 of 1999

The NHRA protects a variety of heritage resources as follows:

- Section 34: structures older than 60 years;
- Section 35: prehistoric and historical material (including ruins) more than 100 years old as well as military remains more than 75 years old, palaeontological material and meteorites;
- Section 36: graves and human remains older than 60 years and located outside of a formal cemetery administered by a local authority; and
- Section 37: public monuments and memorials.

Following Section 2, the definitions applicable to the above protections are as follows:

- Structures: “any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith”;
- Palaeontological material: “any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace”;
- Archaeological material: a) “material remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years, including artefacts, human and hominid remains and artificial features and structures”; b) “rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years, including any area within 10m of such representation”; c) “wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the Republic, as defined respectively in sections 3, 4 and 6 of the Maritime Zones Act, 1994 (Act No. 15 of 1994), and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation”; and d) “features, structures and artefacts associated with military history which are older than 75 years and the sites on which they are found”;
- Grave: “means a place of interment and includes the contents, headstone or other marker of such a place and any other structure on or associated with such place”; and
- Public monuments and memorials: “all monuments and memorials a) “erected on land belonging to any branch of central, provincial or local government, or on land belonging to any organisation funded by or established in terms of the legislation of such a branch of government”; or b) “which were paid for by public subscription, government funds, or a public-spirited or military organisation, and are on land belonging to any private individual.”

Section 3(3) describes the types of cultural significance that a place or object might have in order to be considered part of the national estate. These are as follows:

- 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 a particular community or cultural group for social, cultural or spiritual reasons;
- h) 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.

While landscapes with cultural significance do not have a dedicated Section in the NHRA, they are protected under the definition of the National Estate (Section 3). Section 3(2)(c) and (d) list “historical settlements and townscapes” and “landscapes and natural features of cultural significance” as part of the National Estate. Furthermore, some of the points in Section 3(3) speak directly to cultural landscapes.

Section 38(8) of the NHRA states that if an impact assessment is required under any legislation other than the NHRA then it must include a heritage component that satisfies the requirements of S.38(3). Furthermore, the comments of the relevant heritage authority must be sought and considered by the consenting authority prior to the issuing of a decision. Under the National Environmental Management Act (No. 107 of 1998; NEMA), as amended, the project is subject to a BA. The present report provides the heritage component. Ngwao-Boswa Ya Kapa Bokoni (Heritage Northern Cape; for built environment and cultural landscapes) and the South African Heritage Resources Agency (SAHRA for archaeology and palaeontology) are required to provide comment on the proposed project in order to facilitate final decision making by the DMRE.

### 3. METHODS

#### 3.1. Literature survey and information sources

A survey of available literature was carried out to assess the general heritage context into which the development would be set. The information sources used in this report are presented in Table 1. Data were also collected via a field survey.

**Table 1: Information sources used in this assessment.**

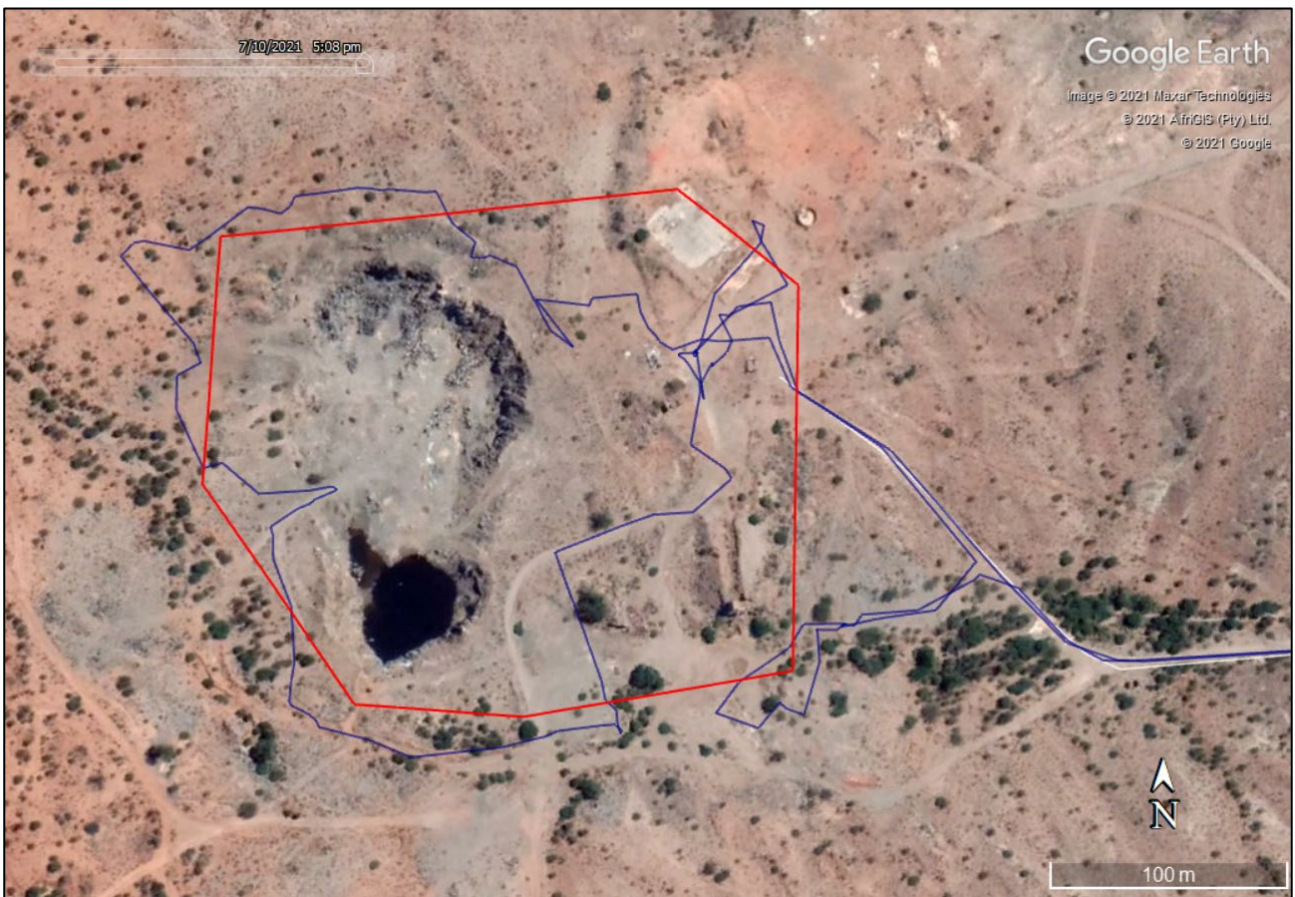
Data / Information	Source	Date	Type	Description
Maps	Chief Directorate: National Geo-Spatial Information	Various	Spatial	Historical and current 1:50 000 topographic maps of the study area and immediate surrounds
Aerial photographs	Chief Directorate: National Geo-Spatial Information	Various	Spatial	Historical aerial photography of the study area and immediate surrounds
Aerial photographs	Google Earth	Various	Spatial	Recent and historical aerial photography of the study area and immediate surrounds
Cadastral data	Chief Directorate: National Geo-Spatial Information	Various	Survey diagrams	Historical and current survey diagrams, property survey and registration dates
Background data	South African Heritage Resources Information System (SAHRIS)	Various	Reports	Previous impact assessments for any developments in the vicinity of the study area

Palaeontological sensitivity	South African Heritage Resources Information System (SAHRIS)	Current	Spatial	Map showing palaeontological sensitivity and required actions based on the sensitivity.
Background data	Books, journals, websites	Various	Books, journals, websites	Historical and current literature describing the study area and any relevant aspects of cultural heritage.

### 3.2. Field survey

The site was subjected to a detailed foot survey on 10 July 2021. This was during winter but, in this very dry area, the season makes no meaningful difference to vegetation covering and hence the ground visibility for the archaeological survey. Other heritage resources are not affected by seasonality. During the survey the positions of finds and survey tracks were recorded on a hand-held Global Positioning System (GPS) receiver set to the WGS84 datum (Figure 3). Photographs were taken at times in order to capture representative samples of both the affected heritage and the landscape setting of the proposed development.

It should be noted that amount of time between the dates of the field inspection and final report do not materially affect the outcome of the report.



**Figure 3:** Aerial view of the study area (red polygon) showing the survey tracks (blue lines).

### 3.3. Grading

It is intended under S.7(2) that the various provincial authorities formulate a system for the further detailed grading of heritage resources of local significance but this is generally yet to happen. SAHRA

(2007) has formulated its own system<sup>1</sup> for use in provinces where it has commenting authority. In this system sites of high local significance are given Grade IIIA (with the implication that the site should be preserved in its entirety) and Grade IIIB (with the implication that part of the site could be mitigated and part preserved as appropriate) while sites of lesser significance are referred to as having 'General Protection' (GP) and rated as GP A (high/medium significance, requires mitigation), GP B (medium significance, requires recording) or GP C (low significance, requires no further action).

### **3.4. Consultation**

The NHRA requires consultation as part of an HIA but, since the present study falls within the context of an EIA which includes a public participation process (PPP), no dedicated consultation was undertaken as part of the HIA. Interested and affected parties would have the opportunity to provide comment on the heritage aspects of the project during the PPP.

### **3.5. Assumptions and limitations**

The field study was carried out at the surface only and hence any completely buried archaeological sites would not be readily located. The entire site was heavily disturbed by earthmoving and blasted rock fragments related to the earlier quarrying activities which meant that any archaeology present would have already been covered over or disturbed.

## **4. PHYSICAL ENVIRONMENTAL CONTEXT**

### **4.1. Site context**

The site lies within an undeveloped, rural context some 5 km south of central Upington. An existing borrow pit already occurs along with some ruined infrastructure and the area is serviced by an existing gravel road.

### **4.2. Site description**

The site has an existing borrow pit and many piles of rocks and earth. A ramp has been created in the south-eastern part of the study area and leads to a large ruined concrete structure that is assumed to relate to the processing of mined materials. The site is very sparsely vegetated with grass dominating. Almost the entire surface has been physically disturbed by mining and earthmoving activities. Even beyond the physically disturbed areas (and generally outside of the present application area) it is evident that many rock fragments from blasting are lying on the surface. Figures 4 to 13 illustrate the study area.

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<sup>1</sup> The system is intended for use on archaeological and palaeontological sites only.





**Figure 4:** View towards the south through the eastern part of the study area showing the disturbed surface and road leading towards some ruined infrastructure presumably related to processing of the excavated rock.



**Figure 5:** View towards the west through the central part of the study area.

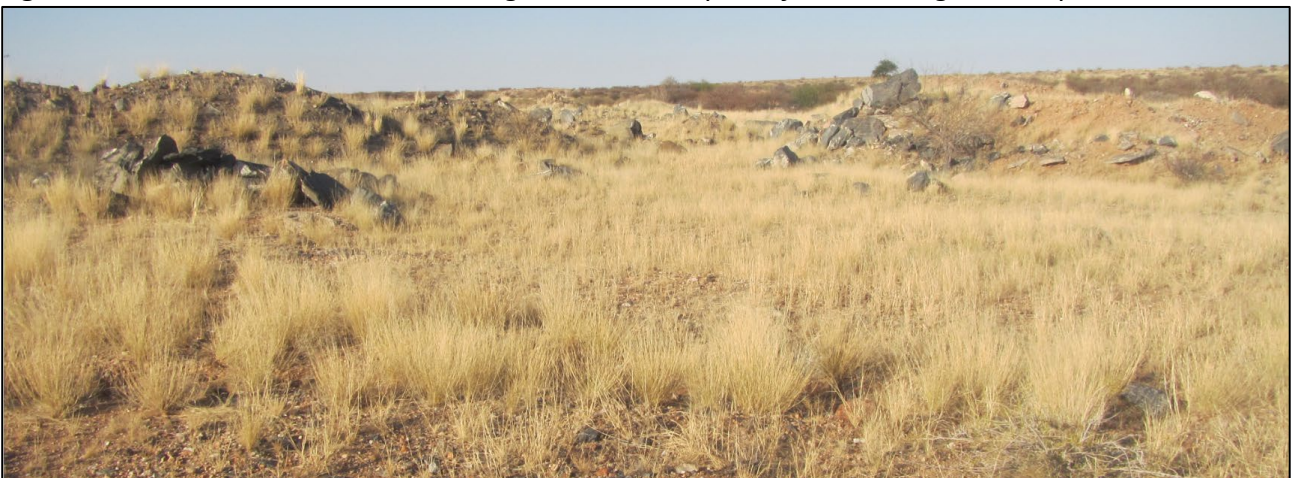




**Figure 6:** View towards the west towards abandoned rock dumps along the western margin of the study area.



**Figure 7:** View towards the north through the western part of the existing borrow pit.



**Figure 8:** View towards the south from the northern edge of the study area. The existing borrow pit is behind the berms.





**Figure 9:** View towards the southwest across the eastern part of the existing borrow pit.



**Figure 10:** View towards the south showing the remains of an earlier structure.



**Figure 11:** View towards the west over a large cement floor located in the north-eastern corner of the study area.





**Figure 12:** View of the ruined processing infrastructure located at the end of the road in Figure 4.



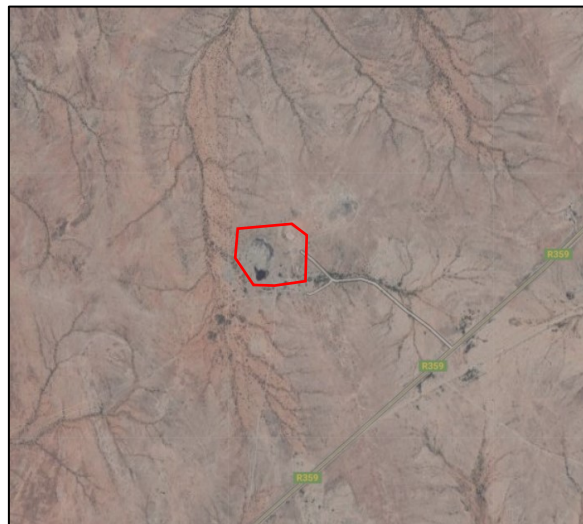
**Figure 13:** View of the undisturbed surface some 35 m beyond the north-western corner of the study area. It is strewn with blasted rock fragments.

## 5. FINDINGS OF THE HERITAGE STUDY

This section describes the heritage resources recorded in the study area during the course of the project.

### 5.1. Palaeontology

The study area is underlain by volcanic and plutonic bedrocks of the Namaqua-Natal Metamorphic Province. These rocks are entirely unfossiliferous (Almond & Pether 2009) as shown by the extract from the SAHRIS Palaeosensitivity Map shown in Figure 14.



**Figure 14:** Extract from the SAHRIS Palaeosensitivity map showing the entire study area and surrounds to be of zero palaeontological sensitivity (grey shading).

## **5.2. Archaeology**

### **5.2.1. Desktop study**

The Orange River is well-known historically to have hosted groups of Khoekoen who grazed their livestock along the fertile banks of the river. Bushmen bands were also seen by historical travellers through the area. Away from the river people would have grazed their livestock or hunted game after good rains when the grass was green. Despite the records of precolonial people inhabiting the Orange River corridor, the archaeological record in this region tends to be quite sparse, perhaps because most has been destroyed through the cultivation of the areas nearest the river. The majority of finds are typically isolated stone artefacts that are attributed to background scatter (e.g., Gaigher 2012; Morris 2014, 2018a, 2018b; Van Schalkwyk 2014a, 2014b). However, in areas attractive to prehistoric people, such as bedrock outcrops with hollows that accumulate water after rains, artefact densities can be significantly elevated (e.g., Morris 2012). Based on findings in undisturbed areas elsewhere (e.g., Orton & Webley 2014), it is highly likely that much precolonial occupation was once present close to the Orange River but near Upington the environment along the edge of the river is so heavily transformed that such resources would have been long lost.

Orton (2015) worked about 8 km northeast of the present study area and found background scatter artefacts to be present in low densities. Among these was an Early Stone Age (ESA) handaxe made on an igneous rock. Flaked quartz outcrops were noted and an outcrop of granite boulders was found to be a focus of occupation for Later Stone Age (LSA) people. Finds there included flaked stone artefacts, grindstones and some pottery. Another LSA scatter was noted in a sandy area alongside an ephemeral stream. Morris (2018a, 2018b) assessed sand mining in stream beds within some 5 km to the south of the present study area. He noted that LSA sites do occur close to these stream beds.

### **5.2.2. Site visit**

No archaeological materials were seen in the study area. The historical ruins present in the study area are younger than 100 years (see below) and are thus not archaeological. Given that a stream bed occurs just to the west of the study area, it is anticipated that some sites may be present in the surrounding area and could even have occurred on site prior to the mining that has already taken place.

## **5.3. Graves**

No graves were seen in the study area. Given the hard substrate and extent of disturbance, none are expected to occur.

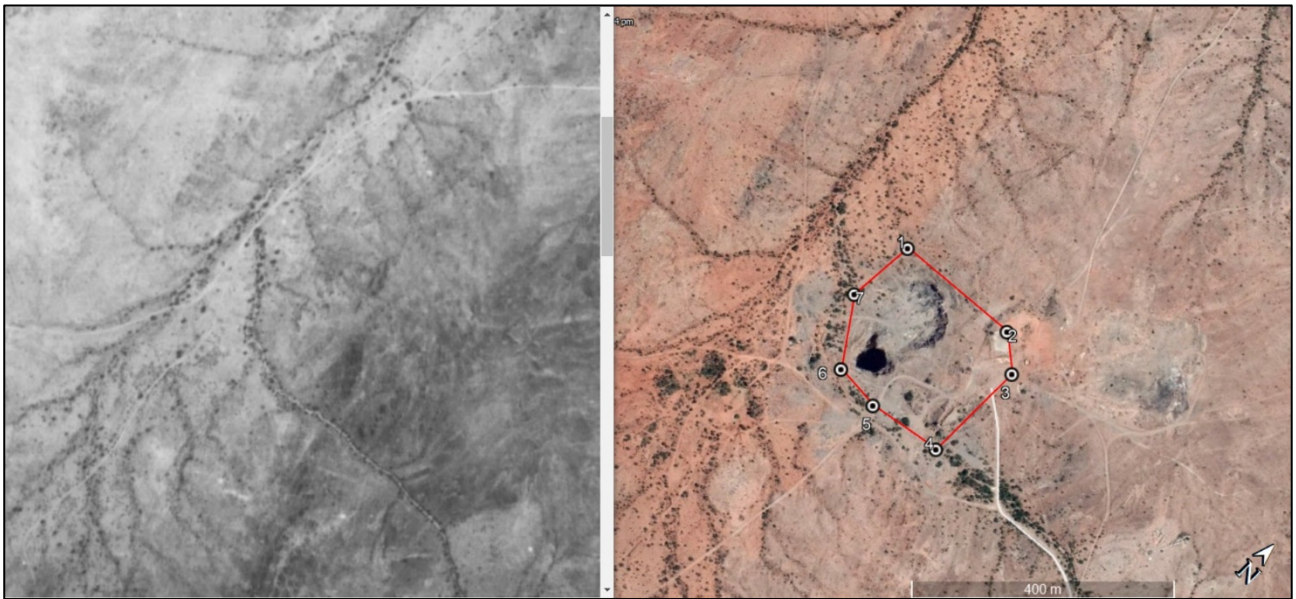
## **5.4. Historical aspects and the Built environment**

### **5.4.1. Desktop study**

Upington owes its roots to a mission station started in 1871 by Reverend Christiaan Schröder. The town was founded in 1873 and originally known as Olyfenhoudtsdrif because of the many olive trees growing there. The town was renamed after Sir Thomas Upington, Prime Minister of the Cape between 1884 and 1886 (Wikipedia 2021a & b). The alluvial soils along the banks of the Orange River are extensively cultivated, largely with vineyards, and this lends the area a strong sense of place.

Aerial photography from 1941 shows no development in the study area (Figure 15). Jumping forwards in time, the 1957 image shows that there was definitely no borrow pit (Figure 16). The image resolution is not good enough to determine whether any structures were present but it is

highly unlikely that structures would have occurred there in the absence of the borrow pit given the isolated nature of the area and lack of any proximate farming.



**Figure 15:** 1941 and modern aerial photography showing that there was no development of any sort present on the site 80 years ago.



**Figure 16:** 1964 and modern aerial photography showing that there was no borrow pit present on the site 57 years ago.

#### 5.4.2. Site visit

No historical heritage remains were found in the study area.

### 5.5. Cultural landscapes and scenic routes

The site is very degraded as a result of the earlier quarrying activities and the partial demolition of the related structures. Aside from the modern quarrying activities and related features, there are no other signs of anthropogenic activity in the local area.



The cultivated landscape along the Orange River is a significant cultural landscape but is sufficiently far removed from the proposed mine that impacts will not occur. The R359 is not a well-travelled route and is not considered a scenic route. The N14 on the opposite side of the Orange River, however, is very well used for travelling between the local towns. It is considered a scenic route in parts, although much of the area close to Upington is quite unkempt. The N14 is, in any case, too far away to be impacted.

### **5.6. Statement of significance and provisional grading**

Section 38(3)(b) of the NHRA requires an assessment of the significance of all heritage resources. In terms of Section 2(vi), “cultural significance” means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance. The reasons that a place may have cultural significance are outlined in Section 3(3) of the NHRA (see Section 2 above).

No fossils were found and none can be present due to the nature of the geology.

No archaeological resources were found and none are expected due to the extensive disturbance of the area.

No graves were found and none are expected due to the extensive disturbance of the area.

No historical resources were found and none are expected due to the extensive disturbance of the area.

The cultural landscape is largely natural but the immediate area has, of course, been transformed by modern mining. The riparian landscape has high local significance for its aesthetic, social and technological values but the landscape around the study area has low/negligible local significance.

### **5.7. Summary of heritage indicators**

There are no heritage concerns for this project and because no impacts are expected, no indicators are required.

## **6. ASSESSMENT OF IMPACTS**

Impacts to palaeontology, archaeology, graves and historical sites are not expected. Only the cultural landscape might be impacted and this is thus the only aspect assessed here.

### **6.1. Impacts to the cultural landscape**

Direct negative impacts to the landscape would occur during all phases of the project but would cease once rehabilitation has been completed. Impacts would be as a result of disturbance to the landscape through the introduction of machinery and noise. However, the site is quite remote and located far from commonly frequented areas which means that the impact will be of low intensity. In fact, due to the remoteness, there is a chance that the impact will not even be noticeable hence the assigned probability is ‘probable’. The significance is expected to be **low negative** (Table 2). Minimal mitigation measures can be proposed and these are effectively only best practice measures. Nevertheless, if rehabilitation is successful, the post-mitigation significance would be **low positive**. There are no fatal flaws.

**Table 2: Assessment of impacts to the cultural landscape.**

Potential impacts on the cultural landscape	
Nature and status of impact:	Direct, negative
Extent and duration of impact:	Local, medium term
Intensity	Low
Probability of occurrence:	Probable
Degree to which the impact can be reversed:	High
Degree to which the impact may cause irreplaceable loss of resources:	Low
Cumulative impact prior to mitigation:	Low
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Low negative
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	<ul style="list-style-type: none"> <li>- Maintain a tidy working area.</li> <li>- Keep disturbance within approved area.</li> <li>- Ensure effective rehabilitation.</li> </ul>
Cumulative impact post mitigation:	Low positive
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low positive

## 6.2. Evaluation of impacts relative to sustainable social and economic benefits

Section 38(3)(d) of the NHRA requires an evaluation of the impacts on heritage resources relative to the sustainable social and economic benefits to be derived from the development.

The project would provide a small number of jobs but, importantly, it would also feed construction materials into the local economy. These benefits certainly outweigh the very minimal heritage impacts expected.

## 6.3. Existing impacts to heritage resources

There are currently no obvious threats to heritage resources on the site. The site has already been disturbed by mining but, without activity drawing attention to the site the impacts are considered as being of **negligible negative** significance.

## 6.4. The No-Go alternative

If the project were not implemented then the site would stay in the unkempt and disused state in which it currently finds itself. Although the heritage impacts with implementation would be greater than the existing impacts, the loss of socio-economic benefits is more significant and suggests that the No-Go option is less desirable. It is also notable that with implementation there is the opportunity to properly rehabilitate the site after closure of the borrow pit.

## 6.5. Cumulative impacts

Cumulative impacts are of no concern here because the project is small and isolated. It is also focused on the site of earlier impacts which is far preferred over establishing a new borrow pit elsewhere. It offers the opportunity to rehabilitate a site that was not rehabilitated in the past and, overall, the final cumulative impact of the two mining projects will likely be positive.

## 6.6. Levels of acceptable change

Any impact to an archaeological or palaeontological resource or a grave is deemed unacceptable until such time as the resource has been inspected and studied further if necessary. Impacts to the landscape are difficult to quantify but in general a development that visually dominates the landscape from many vantage points is undesirable. None of these impacts is expected.



## **7. INPUT TO THE ENVIRONMENTAL MANAGEMENT PROGRAM**

There are no heritage requirements over and above the best practice measures that need to be incorporated into the Environmental Management Program (EMPr). The best practice measures include:

- Maintain a tidy working area.
- Keep disturbance within approved area.
- Ensure effective rehabilitation.

## **8. CONCLUSIONS**

There are no heritage concerns for this project. No areas require avoidance or buffering.

### **8.1. Reasoned opinion of the specialist**

Because there are no significant impacts expected, it is the opinion of the heritage specialist that the proposed project should be authorised in full.

## **9. RECOMMENDATIONS**

It is recommended that the proposed borrow pit be authorised but subject to the following condition:

- The site must be rehabilitated after closure; and
- If any archaeological material or human burials are uncovered during the course of development then work in the immediate area should be halted. The find would need to be reported to the heritage authorities and may require inspection by an archaeologist. Such heritage is the property of the state and may require excavation and curation in an approved institution.

## **10. REFERENCES**

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# APPENDIX 1 – Curriculum Vitae



*Curriculum Vitae*

**Jayson David John Orton**

ARCHAEOLOGIST AND HERITAGE CONSULTANT

## Contact Details and personal information:

**Address:** 23 Dover Road, Muizenberg, 7945  
**Telephone:** (021) 788 1025  
**Cell Phone:** 083 272 3225  
**Email:** jayson@asha-consulting.co.za

**Birth date and place:** 22 June 1976, Cape Town, South Africa  
**Citizenship:** South African  
**ID no:** 760622 522 4085  
**Driver's License:** Code 08  
**Marital Status:** Married to Carol Orton  
**Languages spoken:** English and Afrikaans

## Education:

SA College High School	Matric	1994
University of Cape Town	B.A. (Archaeology, Environmental & Geographical Science) 1997	
University of Cape Town	B.A. (Honours) (Archaeology)*	1998
University of Cape Town	M.A. (Archaeology)	2004
University of Oxford	D.Phil. (Archaeology)	2013

\*Frank Schweitzer memorial book prize for an outstanding student and the degree in the First Class.

## Employment History:

Spatial Archaeology Research Unit, UCT	Research assistant	Jan 1996 – Dec 1998
Department of Archaeology, UCT	Field archaeologist	Jan 1998 – Dec 1998
UCT Archaeology Contracts Office	Field archaeologist	Jan 1999 – May 2004
UCT Archaeology Contracts Office	Heritage & archaeological consultant	Jun 2004 – May 2012
School of Archaeology, University of Oxford	Undergraduate Tutor	Oct 2008 – Dec 2008
ACO Associates cc	Associate, Heritage & archaeological consultant	Jan 2011 – Dec 2013
ASHA Consulting (Pty) Ltd	Director, Heritage & archaeological consultant	Jan 2014 –

## Professional Accreditation:

Association of Southern African Professional Archaeologists (ASAPA) membership number: 233

CRM Section member with the following accreditation:

- Principal Investigator: Coastal shell middens (awarded 2007)  
Stone Age archaeology (awarded 2007)  
Grave relocation (awarded 2014)
- Field Director: Rock art (awarded 2007)  
Colonial period archaeology (awarded 2007)

Association of Professional Heritage Practitioners (APHP) membership number: 43

- Accredited Professional Heritage Practitioner

### ➤ **Memberships and affiliations:**

South African Archaeological Society Council member	2004 – 2016
Assoc. Southern African Professional Archaeologists (ASAPA) member	2006 –
UCT Department of Archaeology Research Associate	2013 –
Heritage Western Cape APM Committee member	2013 –
UNISA Department of Archaeology and Anthropology Research Fellow	2014 –
Fish Hoek Valley Historical Association	2014 –
Kalk Bay Historical Association	2016 –
Association of Professional Heritage Practitioners member	2016 –

### **Fieldwork and project experience:**

Extensive fieldwork and experience as both Field Director and Principle Investigator throughout the Western and Northern Cape, and also in the western parts of the Free State and Eastern Cape as follows:

#### Feasibility studies:

- Heritage feasibility studies examining all aspects of heritage from the desktop

#### Phase 1 surveys and impact assessments:

- Project types
  - Notification of Intent to Develop applications (for Heritage Western Cape)
  - Desktop-based Letter of Exemption (for the South African Heritage Resources Agency)
  - Heritage Impact Assessments (largely in the Environmental Impact Assessment or Basic Assessment context under NEMA and Section 38(8) of the NHRA, but also self-standing assessments under Section 38(1) of the NHRA)
  - Archaeological specialist studies
  - Phase 1 archaeological test excavations in historical and prehistoric sites
  - Archaeological research projects
- Development types
  - Mining and borrow pits
  - Roads (new and upgrades)
  - Residential, commercial and industrial development
  - Dams and pipe lines
  - Power lines and substations
  - Renewable energy facilities (wind energy, solar energy and hydro-electric facilities)

#### Phase 2 mitigation and research excavations:

- ESA open sites
  - Duinefontein, Gouda, Namaqualand
- MSA rock shelters
  - Fish Hoek, Yzerfontein, Cederberg, Namaqualand
- MSA open sites
  - Swartland, Bushmanland, Namaqualand
- LSA rock shelters
  - Cederberg, Namaqualand, Bushmanland
- LSA open sites (inland)
  - Swartland, Franschhoek, Namaqualand, Bushmanland
- LSA coastal shell middens
  - Melkbosstrand, Yzerfontein, Saldanha Bay, Paternoster, Dwarskersbos, Infanta, Knysna, Namaqualand
- LSA burials
  - Melkbosstrand, Saldanha Bay, Namaqualand, Knysna
- Historical sites
  - Franschhoek (farmstead and well), Waterfront (fort, dump and well), Noordhoek (cottage), variety of small excavations in central Cape Town and surrounding suburbs
- Historic burial grounds
  - Green Point (Prestwich Street), V&A Waterfront (Marina Residential), Paarl

### **Awards:**

Western Cape Government Cultural Affairs Awards 2015/2016: Best Heritage Project.