

**PRE-CONSTRUCTION ARCHAEOLOGICAL SURVEY:  
PROPOSED DU PLESSIS DAM PV1 SOLAR ENERGY  
FACILITY AND ASSOCIATED POWER LINE,  
NORTHERN CAPE**

SAHRA Case ID.: 2194, 7405, 7410

*Report for:*

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## SUMMARY

ASHA Consulting (Pty) Ltd was appointed by Landscape Dynamics Environmental Consultants (Pty) Ltd to conduct a pre-construction archaeological survey for the 75 MW Du Plessis Dam PV1 solar energy facility and its associated power line, located on the north-western outskirts of De Aar, Northern Cape. A centre point for the authorised photo-voltaic (PV) facility footprint area is S30° 37' 52" E24° 02' 20".

The survey aimed to revisit the already known sites, while the entire development footprint was also covered in detail to identify any further significant sites that might be present and might require avoidance or mitigation.

Two known sites requiring mitigation – one historical and one Later Stone Age (LSA) – were revisited and recorded in greater detail, while one further small LSA site also requiring mitigation was found. Some potential graves were also revisited and found to not be graves. The three culturally significant sites are summarised in the table below.

Waypoint	Site name	Location	Grade	Mitigation
643	DPD2021/001	S30 37 41.6 E24 02 17.2	GPB	Grid the site and collect artefacts. 20-40 m <sup>2</sup> likely to be needed to get an academically useful sample of artefacts. Minimal excavation and sieving may be needed, but most material is expected to be on the surface.
J030	DPD2013/006	S30 37 55.0 E24 02 35.4	GPA	Grid the site and collect artefacts. 80-120 m <sup>2</sup> likely to be needed to get a good proportion of the site. Some excavation and sieving may be needed, but most material is expected to be on or very close to the surface.
J035	DPD2013/009	S30 37 41.0 E24 02 15.3	GPB	Grid the site and collect artefacts. 200-300 m <sup>2</sup> should be covered, possibly in 2x2 m squares. All material expected to be on the surface, but a careful search of the surface will be needed.

If the sites cannot be avoided with a 30 m buffer then mitigation must be carried out under a permit issued to the archaeologist by SAHRA. It is noted that none of the sites is of high significance and that archaeological mitigation is thus fully acceptable if avoidance is found to be difficult. Note that no construction should occur over the area of the sites (including the 30 m buffer) until the mitigation report has been approved by SAHRA or unless agreement has been reached with them for development to proceed while the report is still in preparation.

## Glossary

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

**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.

**Middle Stone Age:** Period of the Stone Age extending approximately between 200 000 and 20 000 years ago.

## Abbreviations

**APHP:** Association of Professional Heritage Practitioners

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

**CRM:** Cultural Resources Management

**EMPr:** Environmental Management Program

**ESA:** Early Stone Age

**GP:** General Protection

**GPS:** global positioning system

**HIA:** Heritage Impact Assessment

**LSA:** Later Stone Age

**MSA:** Middle Stone Age

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

**SAHRA:** South African Heritage Resources Agency

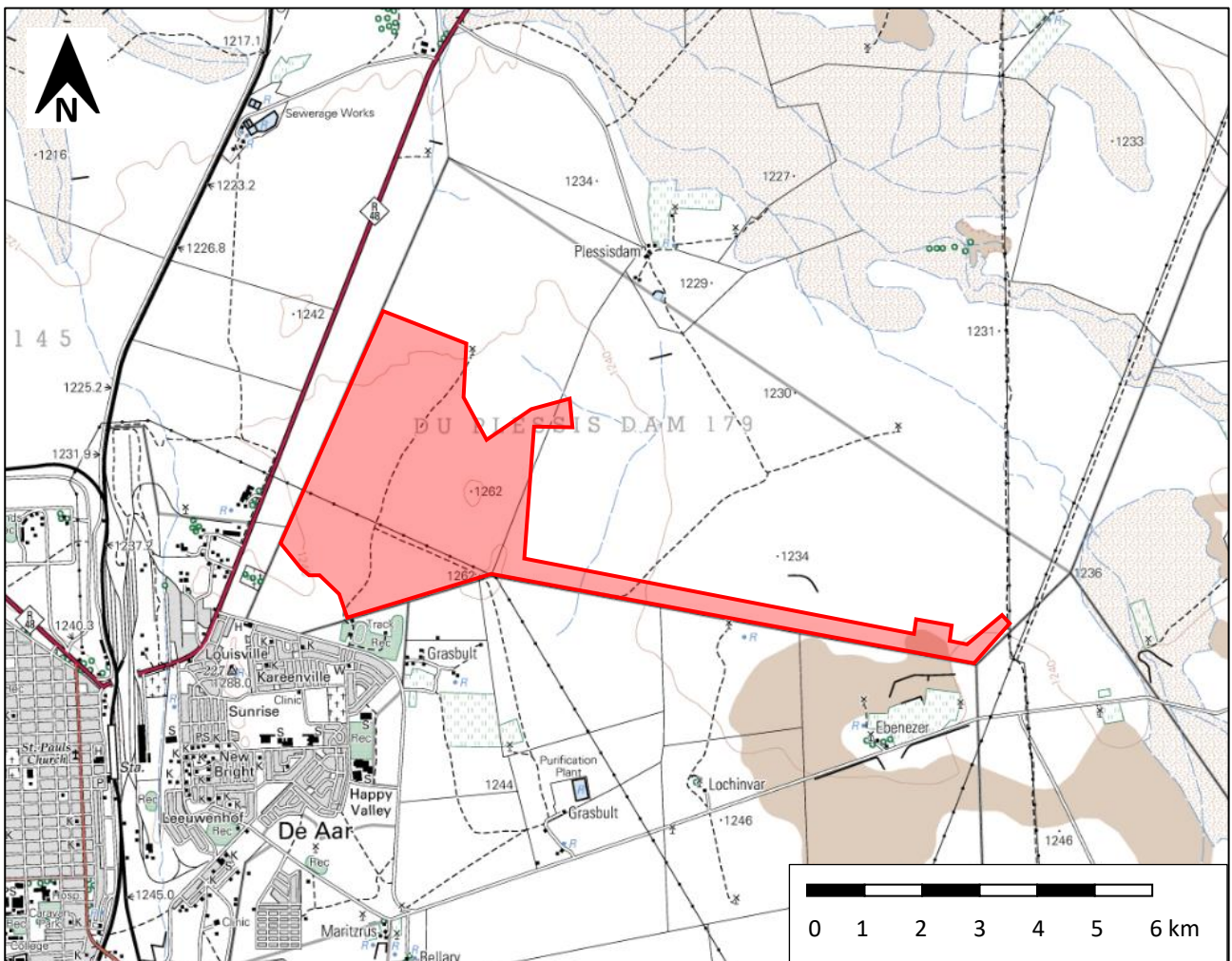
**SAHRIS:** South African Heritage Resources Information System

# Contents

Glossary.....	iii
Abbreviations .....	iii
<b>1. INTRODUCTION .....</b>	<b>1</b>
1.1. Brief project description .....	2
1.2. Terms of reference .....	2
1.3. Scope and purpose of the report .....	2
1.4. The author .....	2
1.5. Declaration of independence .....	3
<b>2. LEGISLATIVE CONTEXT .....</b>	<b>3</b>
2.1. National Heritage Resources Act (NHRA) No. 25 of 1999 .....	3
<b>3. METHODS.....</b>	<b>4</b>
3.1. Literature survey and information sources .....	4
3.2. Field survey.....	4
3.3. Grading .....	5
3.4. Assumptions and limitations .....	5
<b>4. SITE DESCRIPTION .....</b>	<b>6</b>
<b>5. FINDINGS .....</b>	<b>9</b>
5.1. Archaeological sites .....	15
5.2. Graves.....	20
<b>6. CONCLUSIONS .....</b>	<b>21</b>
<b>7. RECOMMENDATIONS .....</b>	<b>23</b>
<b>8. REFERENCES .....</b>	<b>23</b>
<b>APPENDIX 1 – Curriculum Vitae .....</b>	<b>24</b>

# 1. INTRODUCTION

ASHA Consulting (Pty) Ltd was appointed by Landscape Dynamics Environmental Consultants (Pty) Ltd to conduct a pre-construction archaeological survey for the 75 MW Du Plessis Dam PV1 solar energy facility and its associated power line, located on the north-western outskirts of De Aar, Northern Cape (Figure 1). A centre point for the authorised photo-voltaic (PV) facility footprint area is S30° 37' 52" E24° 02' 20". Due to some changes to the naming of PV facilities in the past, there is some confusion as to which comments from the South African Heritage Resources Agency (SAHRA) actually apply to this project. Three cases (2194, 7405, 7410) relate to the farm and the need for the survey was not completely clear. However, for precautionary reasons, all three cases are referenced and a survey has been carried out. The work also forms part of the updating of the Environmental Management Programme (EMPr) for the project. The project was awarded Preferred Bidder (PB) status in Bid Window 5 of the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP), as such Financial Close (FC) is aimed for end April 2022 with construction commencing approximately one month after FC.

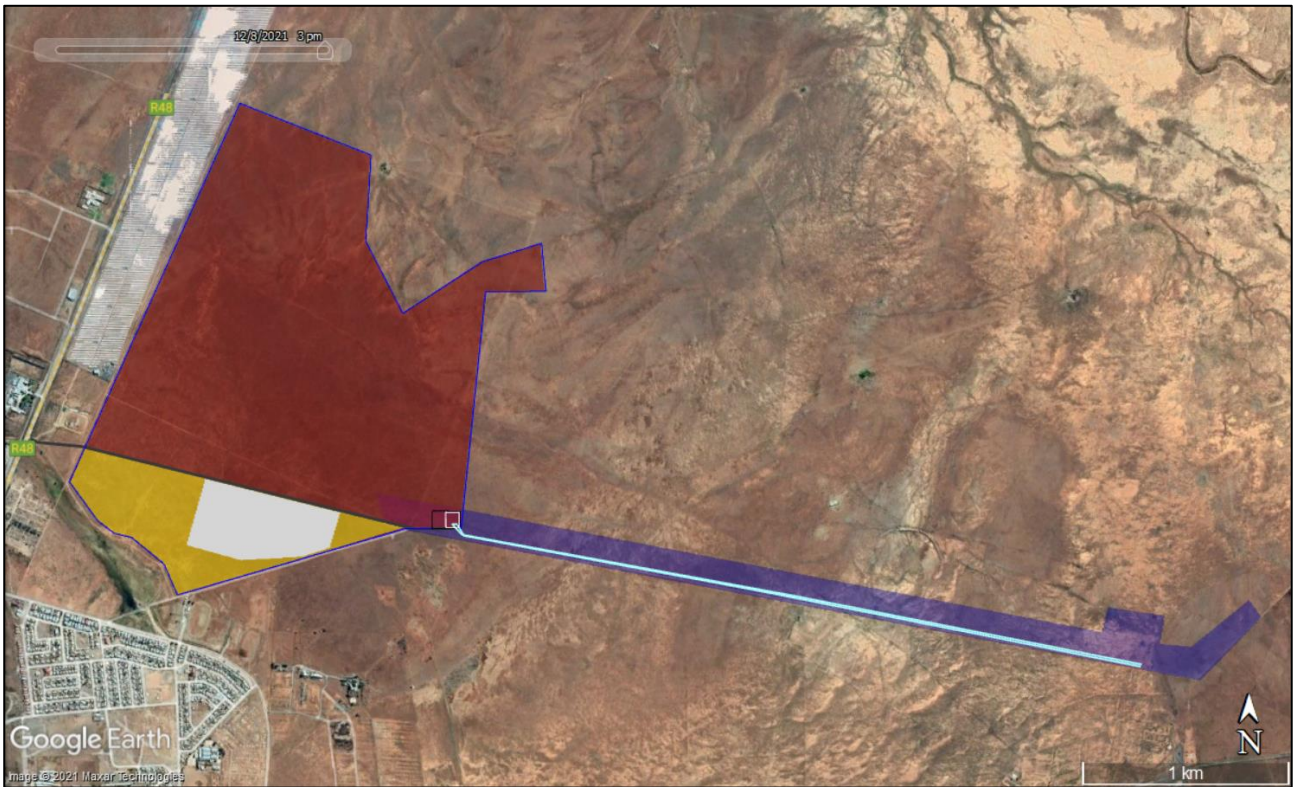


**Figure 1:** Extract from 1:50 000 topographic map 3024CA showing the location of the site (red shaded polygon). Source of basemap: Chief Directorate: National Geo-Spatial Information. Website: [www.ngi.gov.za](http://www.ngi.gov.za).



## 1.1. Brief project description

The project includes, among other things, solar panels, internal cabling, transformers, a facility substation, battery energy storage system (BESS), an approximately 4 km long grid connection, control building, laydown area, perimeter fencing and an access road. A simplified layout is shown in Figure 2.



**Figure 2:** Simplified layout of Du Plessis Dam PV1. Red = PV panels, white shading = BESS, yellow shading = laydown area, black and white squares = facility and Eskom substations, purple shading = powerline corridor, turquoise line = preferred powerline route, black line = access road.

## 1.2. Terms of reference

ASHA Consulting was asked to conduct a ground survey of the entire PV project area, inclusive of the laydown area and powerline corridor.

## 1.3. Scope and purpose of the report

The pre-construction survey report aims to document all archaeological heritage resources within the project area so that avoidance or mitigation can be planned in advance of construction.

## 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 archaeological heritage resources and graves as follows:

- 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;; and
- Section 36: graves and human remains older than 60 years and located outside of a formal cemetery administered by a local authority.

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

- 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”; and
- 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”.

### 3. METHODS

#### 3.1. Literature survey and information sources

Because the site had been previously studied, a literature review is already available (Orton & Webley 2013). No new review has been undertaken, but relevant literature is referred to as needed. 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.

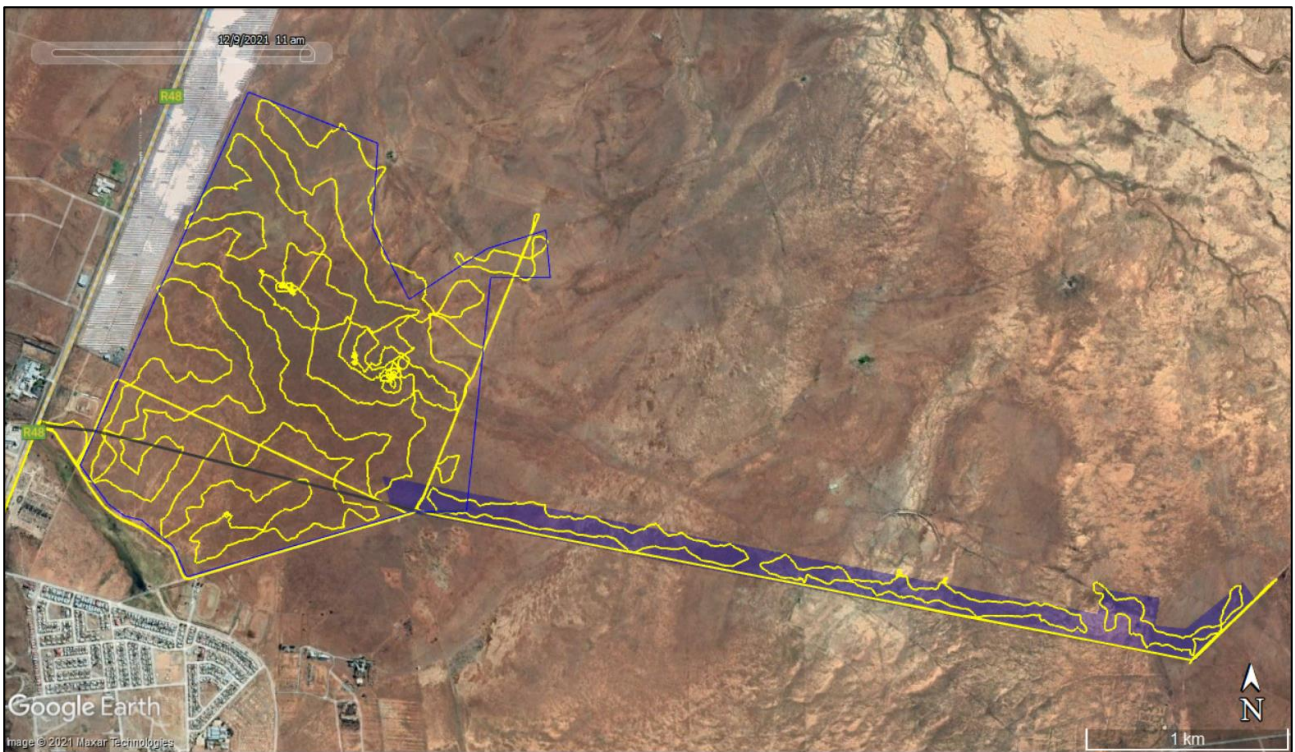
Data / Information	Source	Date	Type	Description
Maps	Chief Directorate: National Geo-Spatial Information	Various	Spatial	Historical and current 1:50 000 topographic maps of the study area and immediate surrounds
Aerial photographs	Google Earth	Various	Spatial	Recent and historical aerial photography of the study area and immediate surrounds
Background data	Existing HIA by Orton & Webley	2013	Report	Previous impact assessment for the study area

#### 3.2. Field survey

The site was subjected to a detailed foot survey on 8 and 9 December 2021. 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.

The extents of the artefact scatters were mapped using the GPS to create “clouds” of waypoints. Waypoints are made where artefacts are seen, but it should be noted that in the main part of the scatter there may be many artefacts visible at once and represented by relatively few waypoints. The general clustering shows the densest part of the scatter.





**Figure 3:** Aerial view of the study area (blue polygon and purple shading) showing the survey tracks (yellow lines).

### 3.3. Grading

S.7(1) of the NHRA provides for the grading of heritage resources into those of National (Grade I), Provincial (Grade II) and Local (Grade III) significance. Grading is intended to allow for the identification of the appropriate level of management for any given heritage resource. Grade I and II resources are intended to be managed by the national and provincial heritage resources authorities respectively, while Grade III resources would be managed by the relevant local planning authority. These bodies are responsible for grading, but anyone may make recommendations for 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. 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. Similarly, it is not always possible to determine the depth of archaeological material visible at the surface. Previous experience suggests that archaeological sites

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

were largely located on the crests of hills. This pattern is assumed to continue to hold true with such locations being targeted for survey. Due to the impracticability of a comprehensive survey, it is still possible that some very small sites might have been missed in between the survey paths. However, it is assumed that such sites would generally be small and of low significance. All the most significant sites are likely to have been found.

#### 4. SITE DESCRIPTION

The site is a relatively flat landscape but with minor relief in places, most notably in the central to south-eastern part of the PV footprint area. A dolerite dyke runs through this area and exposed dolerite is also present in other parts of this slightly higher-lying land. An existing PV facility is located on the western boundary of the present PV site and three powerlines currently run through the southern part of the PV site. Firebreak roads have been cleared along the margins of the study area with Google Earth aerial photography suggesting this to have happened between December 2018 and April 2020. Figures 4 to 9 show views of the study area.



**Figure 4:** View towards the west along the powerline corridor from its eastern end.





**Figure 5:** View towards the north-west through the centre of the PV site showing the relatively flat landscape. The white line (arrowed) is a neighbouring PV facility and represents the north-western boundary of the present study area.



**Figure 6:** View towards the east through the southern part of the PV site where the laydown area and BESS will be situated. This area is very flat.





**Figure 7:** View towards the south through the western part of the PV site showing one of just two outcrops of dolerite boulders seen in the study area.



**Figure 8:** View towards the northeast in the eastern part of the PV site showing the crest of the highest hill in the PV site (summit in middle ground of photograph).



**Figure 9:** View towards the east from the point where the authorised access road leaves an existing gravel road. The new road will run straight ahead through the centre of this view.

## 5. FINDINGS

This section describes the heritage resources recorded in the study area during the course of the project. Note that no desktop study appears here because this can be consulted in the impact assessment report for the site (Orton & Webley 2013).

Table 2 lists all the archaeological materials known from within the study area (note that any sites falling outside of the PV site and powerline corridor are excluded from this list). The list is split into new sites recorded in 2021, already known sites that were revisited and reassessed and those that were not revisited (the latter restricted to a handful of inconsequential localities).



**Table 2:** List of archaeological sites recorded during the survey. Text in italics is the site description from Orton and Webley (2013: appendix 2). The table includes only sites falling within the present study area.

Waypoint	Site name	Location	Description	Significance, Grade, Mitigation
NEW RECORDS				
571	---	S30 38 34.2 E24 05 09.0	Ephemeral background scatter of heavily patinated hornfels stone artefacts located in a flat silty area. They are likely MSA in age.	Very low GPC
572	---	S30 38 30.6 E24 04 53.2	Ephemeral background scatter of heavily patinated hornfels stone artefacts located in a flat silty area. They are likely MSA in age.	Very low GPC
573	---	S30 38 37.8 E24 04 55.2	Ephemeral background scatter of heavily patinated hornfels stone artefacts located in a flat silty area. They are likely MSA in age.	Very low GPC
574	---	S30 38 27.7 E24 04 17.7	Ephemeral background scatter of heavily patinated hornfels stone artefacts located in a flat silty area. They are likely MSA in age.	Very low GPC
618	---	S30 37 48.2 E24 02 32.0	A small scatter of fragments of black glass located along the dolerite dyke that runs from NW to SE through the PV site. They are likely from a single wine bottle, whose base was present.	Very low GPC
627	---	S30 37 54.6 E24 02 33.5	Two pieces of pale green glass, one of which is the base of the bottle. The other piece shows what may be flaking along its edge, but could equally likely be a result of trampling.	Very low GPC
643	DPD2021/001	S30 37 41.6 E24 02 17.2	A light scatter of hornfels artefacts dating to the LSA. One thumbnail scraper was seen. The scatter was about 10 m in diameter (as shown by a GPS plot of artefacts) and, although small, a sample could very quickly be collected.	Low GPB <b>4 hours</b>
662	---	S30 37 54.4 E24 02 30.7	An ephemeral LSA stone artefact scatter with about 7 hornfels artefacts seen.	Very low GPC
663	---	S30 37 40.6 E24 02 15.0	A dolerite rock with a ground patch on it.	Very low GPC
664	---	S30 37 40.8 E24 02 15.5	A dolerite rock with a ground patch on it.	Very low GPC
665	---	S30 37 16.8 E24 02 08.0	Ephemeral background scatter of heavily patinated hornfels stone artefacts located in a flat silty area. They are likely MSA in age.	Very low GPC



666	---	S30 38 07.4 E24 02 23.2	Ephemeral background scatter of variably patinated hornfels stone artefacts located in a flat silty area. Most are likely to be MSA in age, but some less patinated artefacts might be LSA or else very late MSA.	Very low GPC
667	DPD2021/002	S30 38 16.9 E24 02 05.0	A dolerite boulder outcrop with bushes and a trees growing out of it. The surrounding area had a low density scatter of mixed materials including MSA background scatter artefacts, LSA artefacts and historical materials (glass and metal fragments). Most LSA is on the west side of the outcrop, while MSA and historical materials seem to be mostly a short distance east of the outcrop (c. 20 m). There is also some modern glass here.	Very low GPC
668	---	S30 38 13.6 E24 02 09.5	A scatter of body and basal fragments of a cream and brown stoneware jug. It seems possible the top broke off somewhere else and the item continued being used before being broken and discarded here.	Very low GPC
669	---	S30 37 40.3 E24 01 58.4	Ephemeral background scatter of heavily patinated hornfels stone artefacts located in a flat silty area. They are likely MSA in age.	Very low GPC
670	---	S30 38 05.0 E24 01 54.5	Ephemeral background scatter of heavily patinated hornfels stone artefacts located in a flat silty area. They are likely MSA in age.	Very low GPC
<b>PREVIOUSLY RECORDED SITES REVISITED</b>				
J029	DPD2013/006	S30 37 55.3 E24 02 35.0	<i>J029: LSA hornfels and OES scatter. Also one CCS endscraper. (= 087 from 2011 survey)</i>	Medium GPA <b>16 hours</b>
J030	(includes DPD2011/014, DPD2011/013, DPD2011/014)	S30 37 55.0 E24 02 35.4	<i>J030: LSA hornfels scatter with some burnt bone and grass-tempered pottery. May well be subsurface deposits here. Site is on the summit of a large, low hill. Some dense patches of artefacts over about 10 – 15 m diameter area.</i>	
086		S30 37 54.6 E24 02 35.6	<i>086: LSA hornfels scatter on the crest of the hill.</i>	
087		S30 37 55.3 E24 02 35.2	<i>087: LSA hornfels scatter on the crest of the hill.</i>	
			The site was re-examined and waypoints were used to delimit the scatter. This revealed the scatter to be about 35 to 40 m across with a number of outlying artefacts present further away, but not towards the south. The bones and pottery were not seen but the survey focused on recording the size of the site rather than its content which was already known. A hornfels scraper was seen, however, along with a few fragments of ostrich eggshell. It was clear from the artefact plotting that the four waypoints recorded during the 2011 and 2013	

			survey are all one site, with J030 (SPS2013/006) being the central location of these.	
J032  085	DPD2011/012	S30 37 53.6 E24 02 40.2  S30 37 53.3 E24 02 40.3	<i>J032: Ephemeral scatter of historical glass. (085 of 2011 survey)</i> <i>085: Scatter of LSA hornfels and historical artefacts on a rise (slope break) on the side of a low hill. Some possible stone alignments may indicate something structural here.</i>  A small scatter of fragments of green glass located along the dolerite dyke that runs from NW to SE through the PV site. They are likely from a single bottle.	Very low GPC
J033	DPD2013/007	S30 37 52.8 E24 02 28.6	<i>Ephemeral LSA hornfels scatter on low ridge.</i> Reinspection revealed about 9 artefacts, including a scraper-type piece. Not a conventional scraper and fairly large.	Very low GPC
J034	DPD2013/008	S30 37 51.9 E24 02 28.4	<i>Ephemeral LSA hornfels scatter on low ridge.</i>  On revisiting this site, no artefacts could be seen. There was some animal excavation at this point but it seems unlikely this would have obscured all artefacts unless the scatter was exceedingly small.	Very low GPC
J036	---	S30 37 38.5 E24 02 11.5	<i>Possible ground rock.</i>  Further examination suggests the rock is ground. No other precolonial artefacts were seen here.	Very low GPC
J037	DPD2013/010	S30 37 40.8 E24 01 52.4	<i>Scatter of historical, probably Anglo-Boer War, remains on crest of low hill. Also some LSA hornfels artefacts. Half the site has been destroyed by the SEF over the fence.</i>  A firebreak/road has been made over what was left of this site after development of the neighbouring PV facility and nothing was visible except a few pieces of thick wire and rare glass fragments. Originally rated low significance.	Very low GPC
575 J059	DPD2013/014	S30 38 26.3 E24 04 09.5	<i>Background (MSA) hornfels scatter but in good density. Inside the very back end of the dam.</i>	Very low GPC

			Ephemeral background scatter of heavily patinated hornfels stone artefacts located in a flat silty area. One substantially less weathered artefact (a core) was also present and is likely to be from the LSA. The other artefacts are likely MSA in age. Originally suggested for mitigation but does not seem worthy and, in any case, will not be impacted. Only the area within and immediately adjacent to the powerline corridor was checked. Recorded as J059 before but a new waypoint was made (575).	
J060	DPD2013/015	S30 38 27.0 E24 04 09.3	<i>Two or three probable graves. Seem aligned east-west.</i>  A closer examination of this area showed that similar rocks appear on the surface over an area of about 30 m diameter and that there are variably sized "piles" throughout this area. These features are no longer considered to be graves.	n/a
071	---	S30 38 31.8 E24 04 38.0	<i>Background scatter of MSA in a silty area with shale gravel.</i>	Very low GPC
088	---	S30 37 55.8 E24 02 35.0	<i>Small stone semi-circle of 1 m diameter.</i>  The semi-circle is open towards the southwest and the alignment contains just four small rocks standing no more than 15 cm above the ground. They were definitely placed in that pattern and occur on a sandy substrate. Two fragments of green glass and a piece of metal were seen.	Very low GPC
090	DPD2011/015	S30 37 30.7 E24 01 57.5	<i>LSA hornfels scatter.</i>  A firebreak/road has been made over this site and nothing was visible. Originally rated low significance.	n/a
J035  L055	DPD2013/009	S30 37 41.0 E24 02 15.3  S30 37 40.2 E24 02 16.5	<i>Three stone features/structures on the crest of a small rocky hill that rises perhaps 2 m from the surrounding plains. Surrounded by historical artefacts likely from Anglo-Boer War. Tin lids, bullet, glass bottles. Also some LSA hornfels artefacts here. (L055 (Scatter of dark green bottle glass) and L056 (glass and tins) are same site).</i>	Low GPB <b>2 hours</b>

L056		S30 37 40.5 E24 02 15.7	On closer examination the stone features appear to be natural rocks from the underlying dolerite dyke. There are concentrations in a few places, but nothing to suggest any attempt to pile rocks on top of each other – the concentrations are thus weathering high points in the underlying dolerite. The artefact scatter was found to be quite low density with glass fragments representing four bottles (two black glass, one green and one clear) being present, along with about four tins and a single four-holed metal button embossed with SUSPENDER (located 1 m SE of waypoint 663). Also present here was a dolerite rock with some anthropogenic scratches on it. They do not form any sort of image and what they represent is thus unclear.	
PREVIOUSLY RECORDED SITES NOT REVISITED				
084	---	S30 37 53.9 E24 02 42.0	<i>Tiny LSA hornfels scatter with one core and three flakes.</i>	Very low GPC
089	---	S30 37 51.0 E24 02 35.6	<i>Possible stone structure and some bullet cases.</i>	Very low GPC
J031	---	S30 37 52.7 E24 02 38.3	<i>Low density hornfels scatter of mixed age.</i>	Very low GPC
J038	---	S30 38 18.1 E24 02 32.2	<i>Ephemeral mixed age hornfels scatter on high ground. One OES fragment too.</i>	Very low GPC

## 5.1. Archaeological sites

Background scatter artefacts were seen in a number of areas but were most common on the low-lying and very flat land in the eastern part of the powerline corridor. These artefacts are generally very well weathered indicating a great age (Figure 10), but a few younger and less weathered artefacts were also seen in places. A few diagnostic MSA artefacts were noted within the background scatter, and even among them differential weathering (and hence age) was evident (e.g. Figures 11 & 12). Also present were isolated historical artefacts such as a fragment of pink bottle glass (Figure 13), a sardine tin (Figure 14) and a rifle cartridge (age unknown). Although the bullet bears a headstamp with “ELEY LONDON” on it, Eley is an ammunitions company that commenced operation in 1828 so there is a wide range of potential manufacture dates.



**Figure 10:** Background scatter artefacts from waypoint 575. The central one is a core and is less patinated and hence younger than the other artefacts. Scale in cm.



**Figure 11:** A diagnostic, triangular MSA flake. Scale in cm.



**Figure 12:** A diagnostic, triangular MSA flake with a faceted platform. Scale in mm.





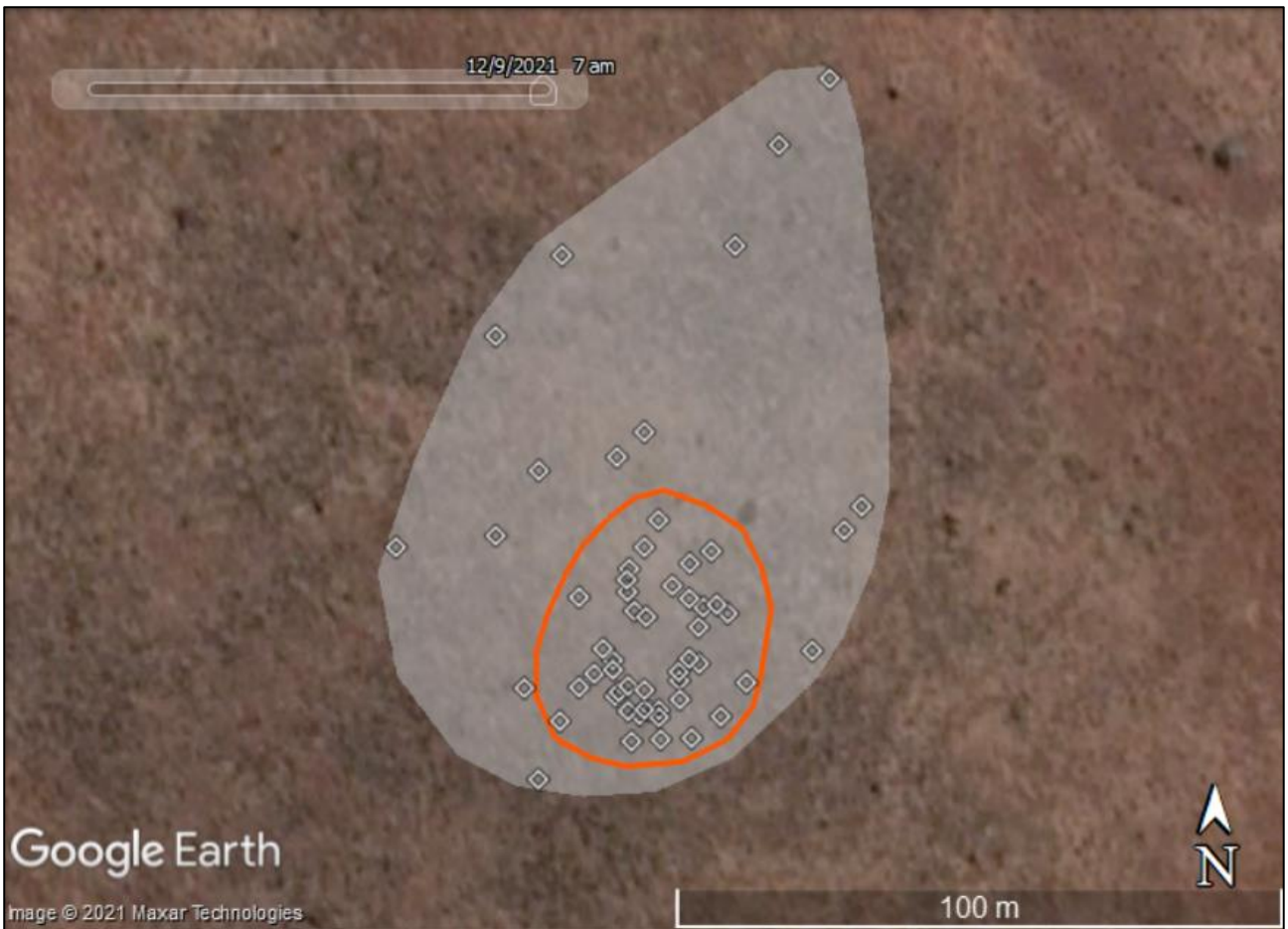
**Figure 13:** A pink glass fragment. Scale in cm.

**Figure 14:** A sardine tin embossed with NORVÈGE. Scale in cm.

**Figure 15:** The headstamp of a rifle cartridge.

A few LSA sites were recorded. The largest and most significant (at waypoint J030) is located in the highest-lying part of the study area. This is a low hill formed by the underlying dolerite. A quick plot of artefact distribution showed the site to have a core of about 35 to 40 m across but a far larger area contained low density scatter, especially extending towards the north (Figure 16). Figure 17 shows some of the stone artefacts from this site. All other LSA sites were very small and generally had too few artefacts to be culturally significant. Figure 18 shows a large thumbnail-like scraper with a slightly serrated working edge from one such scatter at waypoint J033. Another similar but somewhat denser site was located at waypoint 643 (Figure 19) and has enough artefacts to merit a sample being collected. A thumbnail scraper was seen there.





**Figure 16:** Map of the scatter at waypoint J030. Note that the waypoints do not all represent single artefacts but are merely an indication of the distribution and relative density of finds.



**Figure 17:** Stone artefacts from J030. Scale in mm.



**Figure 18:** A large thumbnail-type scraper from J033. Scale in mm.



**Figure 19:** Map of the scatter at waypoint 643. Note that the waypoints do not all represent single artefacts but are merely an indication of the distribution and relative density of finds.

Although historical materials were seen in various places as part of the general background scatter, only one concentration of such artefacts was noted. This was recorded by Orton & Webley (2013) as J035, L055 and L056. Re-examination suggested that these three waypoints are all part of a single low density scatter of material spread over the crest of a very low hill formed by the underlying dolerite. The finds only represent a small number of original items (c. 4 bottles, 4 tins and a single button), but it is possible that further small items might be present. Although it cannot be proved, the scatter may well relate to the Anglo-Boer War and could be of interest in recording the material culture of the time. Figure 20 shows a selection of items from the site. At this site there were also some scratches on a dolerite boulder (Figure 21). Their meaning is unknown, but they are definitely anthropogenic.





**Figure 20:** Artefacts from the historical scatter at waypoint J035. Scales in cm & mm.





**Figure 21:** *Scratched dolerite rock at waypoint*

## **5.2. Graves**

A possible set of graves was recorded by Orton and Webley (2013) at waypoint J060. This area was revisited and examined very carefully. While there were indeed some suspicious mounds of rocks, it soon became clear that similar rocks occurred in variably-sized clusters across a fairly wide area here and that these were in fact exposures of underlying bedrock. There was clearly no order to the rocks and there are now considered to not be anthropogenic and thus not graves.

No other possible graves were seen anywhere in the study area.



**Figure 22:** Stone mounds at waypoint J060.



**Figure 22:** Stone mounds at waypoint J060.

## 6. CONCLUSIONS

The pre-construction survey revisited those sites already on record and also tried to cover the study area as comprehensively as possible to check for further sites. The high ground running through the centre of the PV site was given the most attention because it was quite clear that this was where most of the sites were. Many further occurrences of archaeological material were found, but just two of these were worthy of being referred to as sites rather than background scatter. Altogether there are three sites that will require further work in the form of archaeological mitigation if they cannot be avoided. Two were reported by Orton and Webley (2013), while the third was found during the present survey. The further requirements are summarised in Table 3 and their locations are shown in Figures 23 and 24. Also shown in Figure 23 is the large historical farm complex recorded by Orton & Webley (2013) and not discussed further in the present report. It lies about 200 m away from the power line corridor and about 300 m from the preferred route and will be safe from harm. Nonetheless, due to its very high significance, it is indicated for the record.

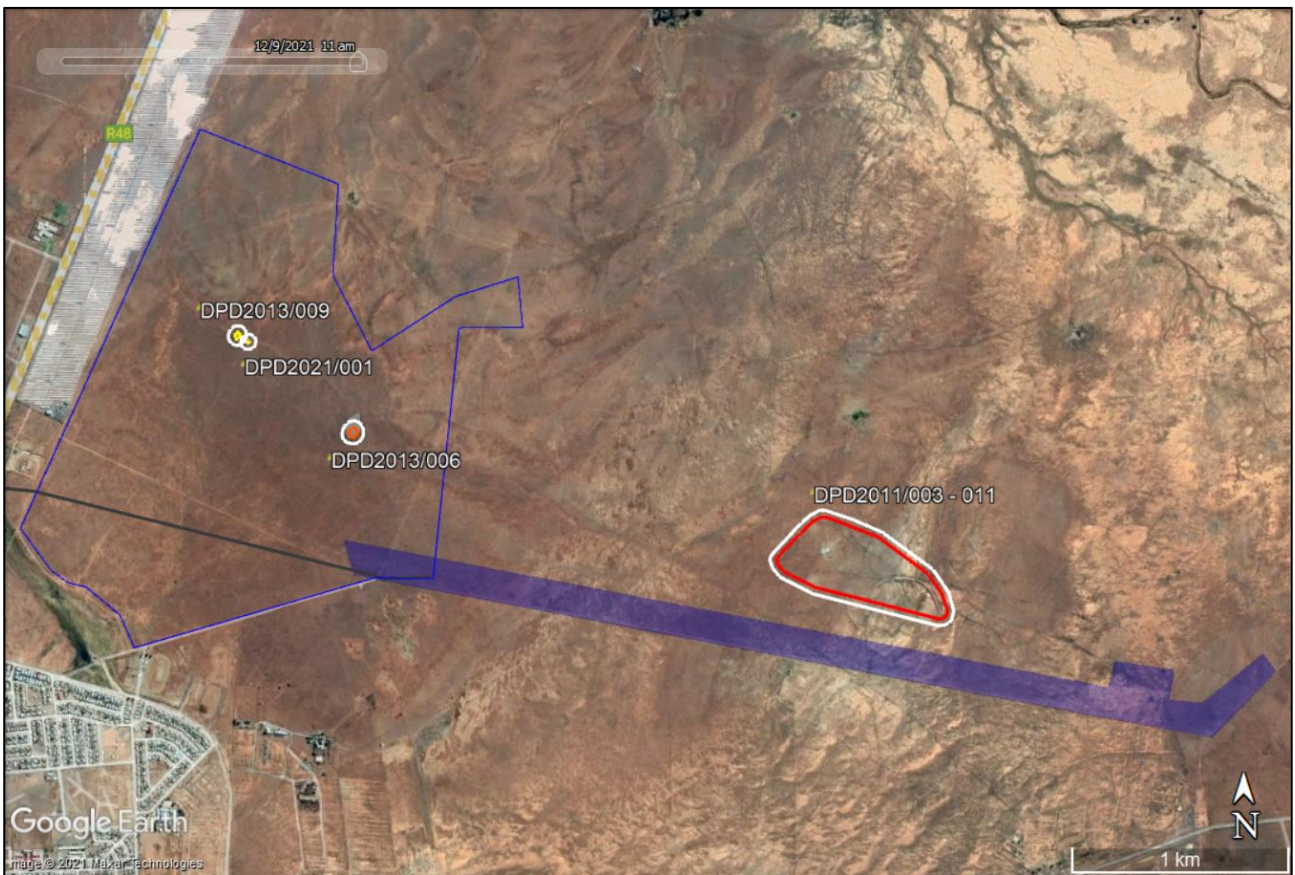
**Table 3:** List of archaeological sites requiring further attention.

Waypoint	Site name	Location	Grade	Mitigation
643	DPD2021/001	S30 37 41.6 E24 02 17.2	GPB	4 hours Grid the site and collect artefacts. 20-40 m <sup>2</sup> likely to be needed to get an academically useful sample of artefacts. Minimal excavation and sieving may be needed, but most material is expected to be on the surface.
J030	DPD2013/006	S30 37 55.0 E24 02 35.4	GPA	16 hours Grid the site and collect artefacts. 80-120 m <sup>2</sup> likely to be needed to get a good proportion of the site. Some excavation and sieving may be needed, but most material is expected to be on or very close to the surface.



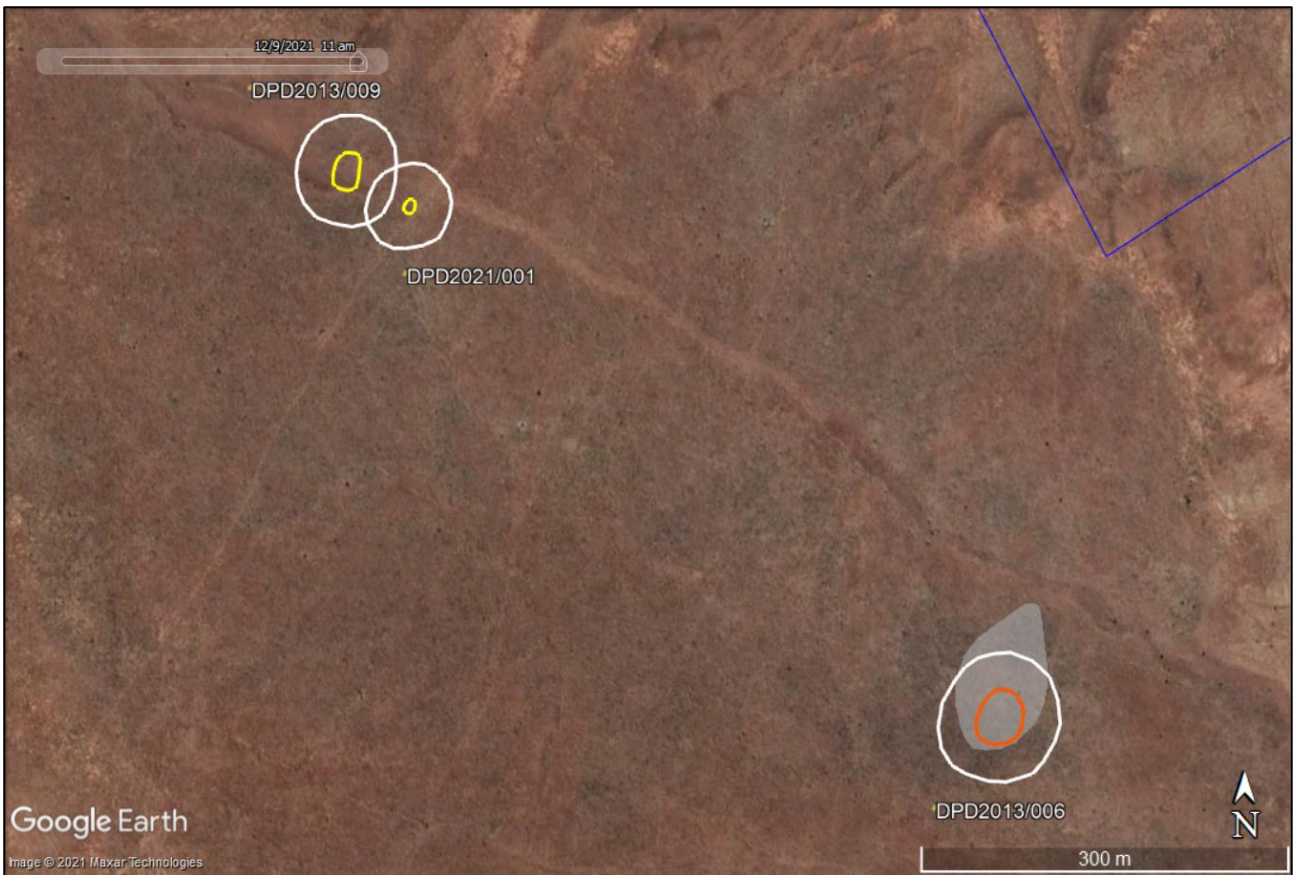
J035	DPD2013/009	S30 37 41.0 E24 02 15.3	GPB	2 hours Grid the site and collect artefacts. 200-300 m <sup>2</sup> should be covered, possibly in 2x2 m squares. All material expected to be on the surface, but a careful search of the surface will be needed.
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The mitigation actions described above can be very easily effected by a team of two archaeologists over 3 days. The sampled materials will then be analysed and reported on prior to being stored in the McGregor Museum, Kimberley. This work must be done under a permit issued to the lead archaeologist (principal investigator) by SAHRA. Note that the relevant areas should preferably remain undeveloped until SAHRA has approved the mitigation report.



**Figure 23:** Map of the entire study area showing the sites requiring further attention if they cannot be avoided. Yellow ovals = GPB, orange oval with surrounding white oval = GPA. Red = IIIA site not discussed here but shown for the record. White ovals are 30 m buffers.





**Figure 24:** Larger scale view of the three archaeological sites within the PV area. The grey shaded area is the limit of low density artefact scatter around site DPD2013/006. Note that the buffer is around the core area of the site and not around the very low density surrounding scatter.

## 7. RECOMMENDATIONS

- The three sites at DP2013/006, DP2013/009 and DP2021/001 should be avoided with a buffer of at least 30 m or else sampled as detailed in this report.
- 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.

## 8. REFERENCES

Orton, J. & Webley, L. 2013. Heritage Impact Assessment for multiple proposed solar energy facilities on Du Plessis Dam 179, De Aar, Northern Cape. Unpublished report prepared for Aurecon South Africa (Pty) Ltd. Diep River: ACO Associates cc.

# 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.