

SPECIALIST INPUT FOR THE ARCHAEOLOGICAL WALK DOWN SURVEY OF THE PROPOSED NOUPOORT WIND ENERGY FACILITY, NOUPOORT MAGISTERIAL DISTRICT, NORTHERN CAPE

Required under the conditions of authorisation from DEA

Report for:

PGS Heritage

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On behalf of:

SiVEST Environmental Division

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EXECUTIVE SUMMARY

ASHA Consulting (Pty) Ltd was appointed by PGS Heritage to conduct a supplementary specialist assessment to the archaeological walk down survey of the already authorised Noupoot Wind Energy Facility (WEF) to be built on the farm Blydefontein 168, just east of Noupoot, in the Northern Cape Province. Two previous studies had failed to adequately address Stone Age issues and hence a Stone Age specialist was required to survey the site at the request of the South African Heritage Resource Agency (SAHRA). Concern had also been expressed by SAHRA over the lack of detail in the recording of stone structures which had led to a limited understanding of them. The purpose of this report is thus to satisfy the requirements of SAHRA that stemmed from the Environmental Impact Assessment phase of the project.

The study area lies at high altitude (between 1700 and 1800 m above sea level) and is largely open grassland. However, rocky ridges and outcrops (dolerite and sandstone) and a number of river valleys do occur. Vegetation is low but taller vegetation appears in the rockier areas.

A thorough desktop study was conducted in order to inform both the field survey and the assessment of its findings. This revealed that significant pre-colonial archaeological resources are generally rare in the open grasslands, although large numbers of significant pre-colonial structures had been documented in the Seacow Valley to the west of Noupoot. Middle Stone Age occurrences have been investigated in the broader region and a number of *in situ* Later Stone Age sites, including Blydefontein Rock Shelter on the subject farm, have been excavated. These reveal a long sequence of Stone Age occupation in the area. Rock art was another aspect of archaeology noted during the review, with both Bushman and Khoekhoe art expected in the area.

The field study identified many additional pre-colonial sites and a few historical sites that had not been identified by the previous surveys. These include graves found at two of the historical sites, and several rock painting sites. Only one of these new sites (Site32) will experience direct impacts, but indirect (contextual) impacts will occur in places; these are of less concern. Stone Age artefact scatters were uncommon, but two of those found will be directly impacted. A pre-colonial hunting blind, previously recorded by Hutten (2014) was also examined. This was in the way of the initial layout but has now been protected through micro-siting of the relevant road alignment and turbine footprint.

Because most of the expected impacts will be indirect and because the majority of sites have only moderate heritage significance, the impacts are generally considered to be of limited significance. However, the direct impacts to the historical structure (Site 32) are of higher significance. This site will need to be avoided and protected or fully recorded.

As such, it is recommended that the development proceed but subject to the following conditions:

- Should Site 11 (which is currently just outside of the layout area) be in danger at any point, then it should be mitigated through proper *in situ* recording;
- The road layout at Site 32 should be micro-sited to avoid the Site, the suggested adjustment is 20 m from the Site;
- No abnormal vehicles should be allowed north of Turbine N32 on the main access road to the farm because of the proximity of heritage sites to the road;

- Should any widening of the main access road be required in the vicinity of Sites 2 and/or 6 (both north of turbine N32) then all graves and stone-walled structures at these two sites respectively must be clearly fenced off and avoided during construction;
- No stone may be removed from any of the stone-walled historical sites for any reason;
- Construction staff should be prevented from accessing rock art sites where further graffiti might occur; 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 20 000 years ago.

Holocene: The geological period spanning the last approximately 10-12 000 years.

Lammerhok: A small enclosure, usually attached to the side of a larger enclosure, in which lambs were penned.

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.

Pleistocene: The geological period beginning approximately 2.5 million years ago and preceding the Holocene.

Abbreviations

ASAPA: Association of Southern African Professional Archaeologists

CRM: Cultural Resources Management

EIA: Environmental Impact Assessment

ESA: Early Stone Age

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

WEF: Wind Energy Facility

Contents

1. INTRODUCTION	1
1.1. Project description	2
1.2. Terms of reference.....	3
1.3. Scope and purpose of the report.....	3
1.4. The author	3
1.5. Declaration of independence	3
2. HERITAGE LEGISLATION.....	3
3. METHODS	4
3.1. Literature survey	4
3.2. Field survey	5
3.3. Impact assessment.....	5
3.4. Assumptions and limitations	5
4. PHYSICAL ENVIRONMENTAL CONTEXT	6
4.1. Site context	6
4.2. Site description	6
5. CULTURAL HERITAGE CONTEXT	8
5.1. Archaeological aspects	8
5.2. Other aspects.....	10
6. FINDINGS OF THE HERITAGE STUDY	10
6.1. Stone Age artefact scatters	19
6.2. Rock paintings	19
6.3. LSA stone-walled structure.....	22
6.4. Historical ruins	24
6.5. Stone features.....	31
6.6. Graves.....	31
6.7. Summary of heritage indicators and provisional grading	33
7. DISCUSSION OF IMPACTS	33
7.1. Significance	33
7.2. Mitigation and management	34
8. CONCLUSIONS	35
9. RECOMMENDATIONS	35
10. REFERENCES.....	35
APPENDIX 1: MAPPING	40
APPENDIX 2: HISTORIC STRUCTURE LAYOUTS.....	48

1. INTRODUCTION

ASHA Consulting (Pty) Ltd was appointed by PGS Heritage to conduct a supplementary specialist assessment to the archaeological walk down survey of the already authorised Noupoort Wind Energy Facility (WEF) to be built just east of Noupoort in the Northern Cape Province (Figure 1). An earlier Heritage Impact Assessment (HIA; van Schalkwyk 2012) and a heritage management plan after a heritage walkdown (Hutten 2014) had been conducted, but in both cases the authors were not Stone Age specialists and it was deemed by the South African Heritage Agency (SAHRA) that this important aspect of the studies had not been adequately addressed. As such, it was requested that such a specialist examine the layout prior to construction in order to identify any pre-colonial resources that might be affected.

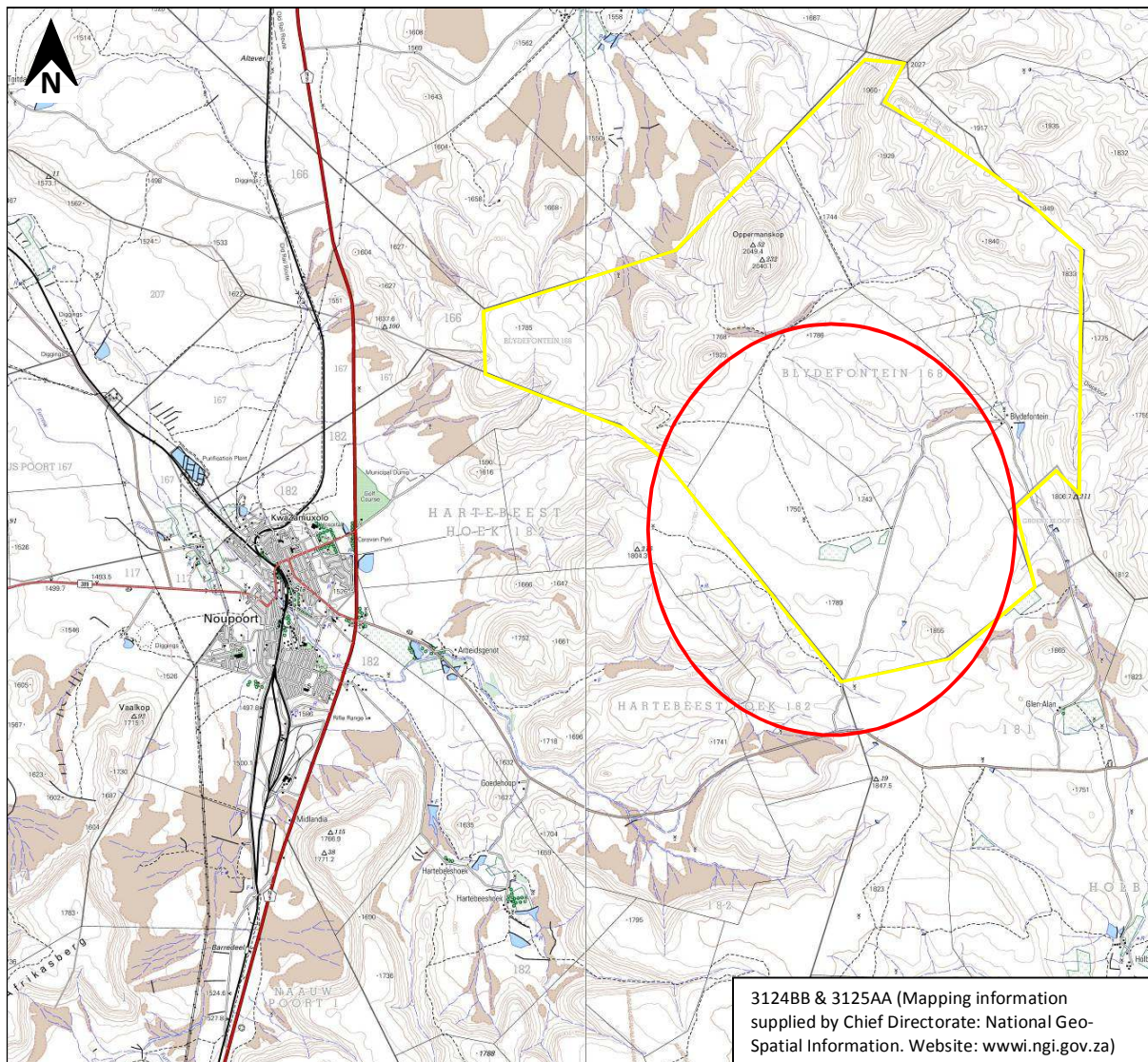


Figure 1: Map showing the location of the study area to the east of Noupoort. The red oval indicates the approximate area within which new infrastructure would be built, while the yellow polygon indicates the entire farm.

1.1. Project description

The proposed project includes the following components:

- 35 wind turbines (reduced from the original proposal of 83 turbines);
- Underground and overhead electrical cabling linking the turbines;
- Overhead 132kV power line linking the wind farm to the Eskom national grid;
- Substation;
- Internal access roads;
- A temporary laydown area for use during construction;
- Buildings for administrative purposes and storage;
- A borrow pit; and
- Fencing.

Note that an existing borehole to the northwest of Turbine 31 will be used as a water source during construction. The project layout is indicated in Figure 2.

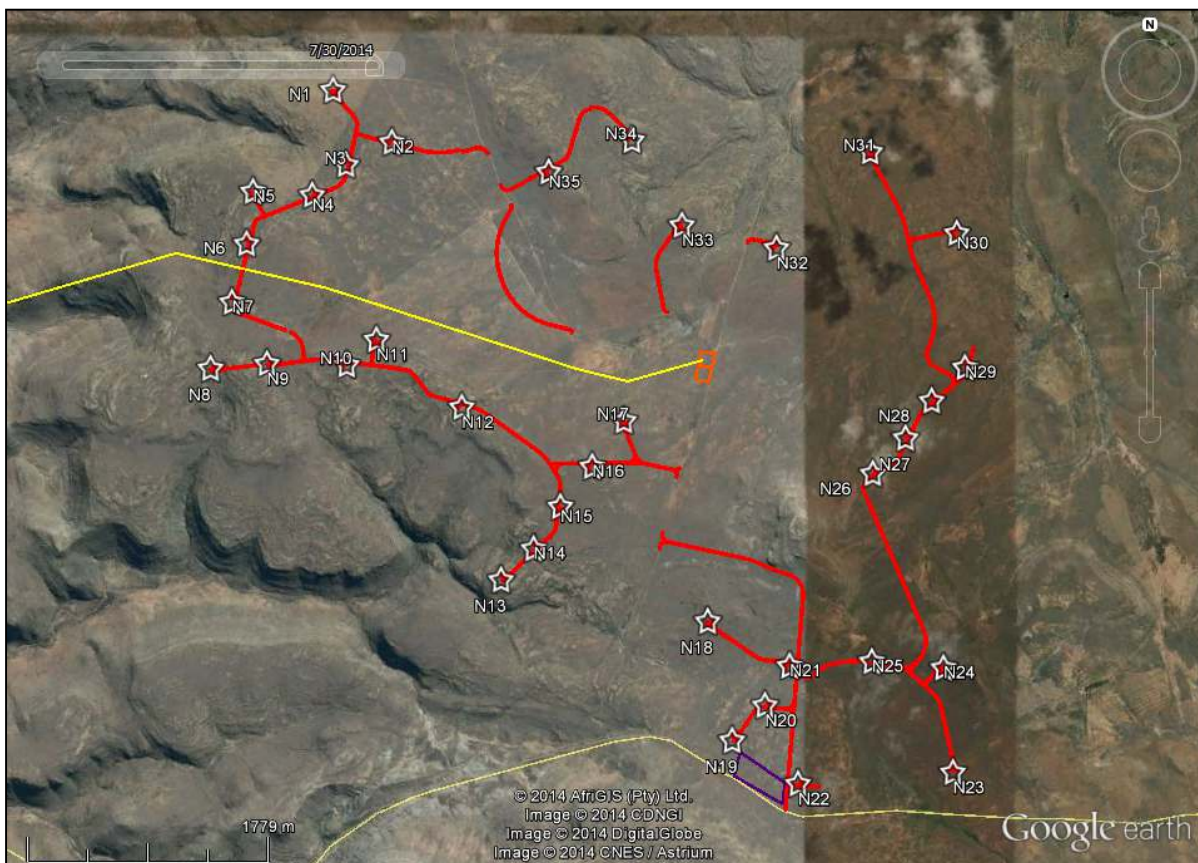


Figure 2: Aerial view of the study area showing the layout of the proposed new infrastructure. Red lines denote new roads, the stars are the turbine positions, the yellow line the power line, the small orange polygons the substation and site buildings and the purple polygon the laydown area.

1.2. Terms of reference

ASHA Consulting was asked to conduct an archaeological study for the already authorised Noupoot WEF in order to satisfy the requirements of SAHRA in this regard. The study was to be carried out by a Stone Age specialist.

In its response to the original HIA (Van Schalkwyk 2012) dated 20 April 2012, SAHRA requested that a Stone Age specialist conduct an assessment of the study area because it appeared that Stone Age resources had not been adequately addressed. They stated that this could take the form of a pre-construction walk down survey. Furthermore, SAHRA also requested a more comprehensive recording of the stone-walled structures found on site because the existing record was inadequate for the purposes of understanding their age and function. This was seen as important because of the large numbers of Stone Age stone-walled structures known from nearby areas.

1.3. Scope and purpose of the report

The present report serves to meet the requirements of SAHRA which were incorporated into the authorisations conditions for the proposed WEF. The survey and report will aim to identify any significant heritage resources before development begins so that these can be managed in such a way as to allow the development to proceed without undue impacts to the fragile heritage of South Africa. The report will outline any mitigation requirements that will need to be complied with from a heritage point of view prior to the start 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 HIAs and archaeological specialist studies in the Western Cape and Northern Cape provinces of South Africa since 2004. 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 Principal Investigator for Stone Age archaeology with the Association of Southern African Professional Archaeologists (ASAPA) CRM section (Member #233).

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. HERITAGE LEGISLATION

The National Heritage Resources Act (NHRA) No. 25 of 1999 protects a variety of heritage resources as follows:

- Section 34: structures older than 60 years;
- Section 35: palaeontological, prehistoric and historical material (including ruins) more than 100 years old;

- 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 of the NHRA, 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.”

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, Section 3(3) describes the reasons a place or object may have cultural heritage value.

Most such resources were assessed at the HIA phase. However, the present report focuses on Stone Age archaeological resources and also reassesses the stone-built structures recorded by van Schalkwyk (2012).

3. METHODS

3.1. Literature survey

A survey of available literature was carried out to assess the general heritage context into which the development would be set. This literature included published material, unpublished commercial reports and online material, including reports sourced from the South African Heritage Resources Information System (SAHRIS).

3.2. Field survey

The WEF layout was subjected to a detailed foot survey, while obvious locations for archaeological sites in close proximity to the layout were also examined. The fieldwork took place on the 17th to the 19th of August 2014. During the survey the positions of finds were recorded on a hand-held GPS receiver set to the WGS84 datum. 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 most of the WEF layout had been surveyed and marked on the ground. This assisted with the survey, guiding the walk-paths. The track log created during the survey can be seen in Appendix 1.

3.3. Impact assessment

No formal impact assessment is carried out since that was conducted during the Environmental Impact Assessment (EIA) phase of the project. However, an assessment of heritage significance of the identified heritage resources will be presented in order to guide any mitigation requirements that might be necessary.

3.4. Assumptions and limitations

In this dry and generally eroding landscape, it is assumed that most archaeological resources on higher-lying ground would be visible at the surface. In the valleys, where sediment accumulation is likely, archaeological resources may be buried to some degree, particularly within the flood plains of rivers.

The study was carried out at the surface only and hence any completely buried archaeological sites will not be readily located. Because the terms of reference required only a resurvey of the WEF layout and a re-recording of sites improperly recorded during previous surveys, it was not possible to explore the landscape in full. This meant that some rock art sites and other visually sensitive heritage sites may not have been located. During the present survey a best attempt was made to visit all obvious and promising rock shelters that were openly visible from the turbine locations. The large historical settlement at 'Site 1' was only briefly visited and could not be recorded in detail due to time constraints. Although a few small sections were not physically walked, from the understanding of the landscape gained during the survey it can be confidently stated that this will not have had any significant bearing on the outcome of the report.

4. PHYSICAL ENVIRONMENTAL CONTEXT

4.1. Site context

The site is largely grazing land. The turbine positions are between 4.5 km and 10.0 km to the east of the town of Noupoort and the N9 national road linking Colesburg and Middleburg.

4.2. Site description

The study area is located in the sandstone mountains to the east of Noupoort and much of the land under consideration forms a plateau lying above 1700 m above sea level. It is largely gently undulating grassland with scattered small bushes in places (Figures 3 and 4) but sporadic rock outcrops of both sandstone and dolerite, often with larger bushes associated, do occur (Figure 5). In places there are large sheets of exposed bedrock and in places these trap water in depressions commonly referred to by archaeologists as 'water bakke' (Figure 6). Higher peaks occur in the distance around the study area (Figure 4). Farm tracks and fences criss-cross the area and a few wind pumps and kraals (made of corrugated iron) are present. Figures 7 and 8 show two panoramic views across the broader landscape in which the WEF will be sited. Figure 9 shows the appearance of the survey pegs which were followed during the survey. Figures 10 and 11 show the nature of the western slopes of the mountain and the low-lying plain across which the power line will run towards Noupoort.



Figure 3: View across the grasslands of the plateaux.



Figure 4: View across the plateaux towards the taller peaks to the north of the site.



Figure 5: Rock outcrop and bushes in the northern part of the study area.



Figure 6: Sheet of bedrock with a 'waterbak' holding water.



Figure 7: View across the study area towards the north showing the broad grassy plains and distant mountains.



Figure 8: View towards the north from the summit of a dolerite hill.



Figure 9: *The survey pegs indicating the road layout.*



Figure 10: *View down the mountain along the power line route.*

Figure 11: *View along the power line route at the base of the mountain. Noupoort lies in the background to the right.*

5. CULTURAL HERITAGE CONTEXT

This section of the report establishes what is already known about heritage resources in the vicinity of the study area. What is found during the field survey may then be compared with what is already known in order to gain an improved understanding of the significance of the newly reported resources. The review focuses largely on pre-colonial archaeology, since it is that aspect of heritage that is most relevant to the present report.

5.1. Archaeological aspects

Although not as well studied as other regions like the Western Cape's Cederberg and Elands Bay areas, the central Karoo has been a focus of archaeological research since the 1960s when Garth Sampson began studying the Stone Age archaeological remains in the region. His work included two primary research projects; the first was in the vicinity of the Gariep Dam where he excavated, among other sites, the Riversmead Rock Shelter (Sampson & Sampson 1967), the Zaaifontein Rock

Shelter (Sampson 1967a), the Glen Elliot Shelter (Sampson 1967b) and the open site of Zeekoegat 13 (Sampson 1967c). This work was followed up by a description of the local Middle Stone Age sequence (Sampson 1968) and then a broader look at the Stone Age in general from the area (Sampson 1972).

Sampson then initiated his ambitious Seacow Valley research project in the area immediately west of Noupoot (Sampson 1985). In this project some 5000 km² of the upper and middle parts of the catchment were surveyed for archaeological traces. The most significant aspect of this work relates to the many pre-colonial stone-built structures recorded across the landscape. These structures were interpreted to be the kraals of Stone Age herders who lived in the valley and built the kraals between about AD 1000 and AD 1750 (Sampson 2010). Analysis of the shapes of the structures allowed Hart (1989) to assemble a typology of kraal types. Analysis of the pottery from the Seacow Valley has shown that a number of stylistic changes took place through time (Sampson *et al.* 1989), with later direct dating of potsherds (Sampson 2010; Sampson *et al.* 1997; Sampson & Vogel 1995) indicating that this pottery sequence stretched back 1000 years, supporting the ages of the kraals as noted above. Sampson (2010) has considered the evidence of his research in great detail concluding that three different economies were in existence during the last 1000 years in the Seacow Valley. These were represented by hunter-gatherers, the so-called 'hunters-with-sheep' and herders. Relationships between the proponents of these three economies are not fully understood but are likely to have been quite variable both spatially and temporally (see for example Orton 2012; Sadr 2003; Smith 1998). The historical difficulty in identifying herder sites has not helped our understanding of their archaeology, but since the discovery of fairly ephemeral recent open sites attributable to herders the approach to their study has changed somewhat (Arthur 2008; Fauvelle-Aymar *et al.* 2006). The association of geometric rock art with Khoekhoe herders has also made contributions here (see below), although this research is still on-going.

Pre-colonial kraals and their distribution on the southern African landscape are poorly understood. The vast majority of those ever recorded lie within the Seacow Valley and why this should be the case is a matter for speculation. However, they have been found as isolated occurrences in, for example, Sutherland (Hart 2005; Orton & Halkett 2011), the Olifants River valley near Clanwilliam (Orton & Hart 2005) and on the west coast at Simon se Klip (Jerardino & Maggs 2007). They are generally differentiable from colonial period stone-walled structures through their contrasting construction styles: pre-colonial kraals tend to be organic in plan form and built from piled stones, sometimes utilising natural outcrops, while colonial period structures (whether kraals or serving other purposes) were generally square (or at least more geometric) and built from two neatly packed skins with a rubble fill (Hart 1989). While colonial structures are often quite clear when located, pre-colonial kraals can be very difficult to spot after many centuries of natural degradation and a trained eye is often required.

A number of other commercial archaeological and heritage surveys have been conducted in the vicinity of Noupoot in recent years. These have been in more open country than the present project's location, but nevertheless they invariably show the presence of scatters of MSA and occasionally LSA artefacts across the landscape (Booth 2011a, 2011b; Booth & Sanker 2012a, 2012b, 2012c, 2012d, 2012e). In some instances, knapping sites could be discerned with one noted as being at the foot of a koppie (Booth & Sanker 2012a, 2012c). Sampson's (1972) analysis of the MSA artefacts he collected suggested three or four phases with typological changes occurring between phases. He makes no mention of the kinds of artefacts now commonly associated with the Still Bay and Howieson's Poort industries of the MSA. According to Tim Hart (pers. comm.

2014) there are still unexcavated MSA deposits in Blydefontein Rock Shelter. There is thus the possibility that one or both of these industries might still be represented in the area.

Another important aspect of pre-colonial archaeology already alluded to is rock art. Two forms are found: painting and engraving. Among the rock art from the drier western part of South Africa discussed by Rudner and Rudner (1968), they describe the paintings from the three rock shelters excavated by Sampson in the late 1960s. Although fine-line paintings occur, the majority of motifs appear to be “finger-painted grid designs” (Rudner & Rudner 1968: 42). Recent research has attributed such art to Khoekhoe herders (Eastwood & Smith 2005; Orton 2013; Smith & Ouzman 2004). Of interest is the observation that in one instance geometric art was painted over an animal image (Rudner & Rudner 1968). An important rock art site located in this region is near Middelburg. Ouzman (2005:106) describes this site as having “an explicitly multi-authored rock art assemblage” with components likely relating to both the San (fine-lined human and animal images) and the Khoekhoen (multiple rows of finger dots). In general, engravings can be expected on dark-coloured dolerite boulders in open settings and painted art on steep cliffs, particularly in rock shelters that may or may not have been occupied as well.

Of direct relevance to the present project is Blydefontein Rock Shelter which lies within the present study area in the eastern part of the eponymous farm some 1.8 km from the nearest turbine placement. The site is located in a south-west-facing sandstone cliff along the Oorlogspoort River. The site is of very high importance for the deep sequence of pre-colonial archaeological deposits it contains. Radiocarbon dating of the sequence indicates that it has terminal Pleistocene LSA material at the base of the 0.7 m deep excavation (that did not reach bedrock), which is overlain by early Holocene LSA, mid-Holocene LSA and finally a very strong pulse of late Holocene LSA (Bousman 2005). These four periods – referred to by the industrial names Robberg, Oakhurst, Wilton and Smithfield respectively – reveal strongly contrasting artefact types.

5.2. Other aspects

Historical archaeological material will no doubt be present in the landscape, although away from farmsteads, where ash and rubbish dumps might be found, it is likely to be very limited. An exception, however, is remains pertaining to the Anglo-Boer War which may be found in a variety of contexts across the interior of South Africa. The railway junction at Noupoot was an important one that was held by the British but it does not appear that any serious fighting took place in the area. The British had a line of Block Houses extending between Noupoot and De Aar (Grobler 2004).

6. FINDINGS OF THE HERITAGE STUDY

This section describes the heritage resources recorded in the study area during the course of the project. Table 1 lists and describes the finds, while the sections that follow give further context, illustrations and mapping of the locations. Note that only certain representative examples are illustrated, although all were photographed in the field. Appendix 1 maps all the finds together, while Appendix 2 provides sketches of the various historical stone walled sites recorded during the survey.

Table 1: List of heritage resources located during the survey. Note that site numbers from the previous surveys have been retained with new site numbers allocated from 13 onwards.

Site	GPS ID	Location	Type	Description	Significance
1	054	S31 09 29.8 E25 04 04.9	Historical ruin	This is the farm werf on Blydefontein. Several structures are present including a stone shed with corrugated iron roof. To the northeast of the buildings (some of which are modern) is a stone-built sheep dig and lei water, while the old farmhouse documented by Van Schalkwyk (2012) and an associated outbuilding have been demolished and the stone reused in a new building (one old wall of the outbuilding remained partly standing at the time of the visit). Nearby was a structure that was not visited due to time constraints but appears to be a small square structure located beneath two large trees at the edge of the agricultural lands.	Medium
	055	S31 09 30.7 E25 04 02.7			
2	068	S31 09 23.1 E25 03 56.7	Graves	Seventeen graves aligned east-west. One has a broken tea cup on it (not old). All graves have plain sandstone head and/or footstones but one has an inscription on the back of the headstone: "CORNEELIA COCK . B.O 1919 D.O 1951"	High
3	046	S31 08 56.8 E25 03 59.6	Rock art	Blydefontein Rock Shelter (see Bousman 2005). Long series of interlinking rock shelters spanning 50 m along the base of the cliff. A stone wall runs across the entire front of the site. It has multiple components as follows (refer to diagram in appendix): A: Square stone enclosure inside the shelter with a pit inside it. This looks to be the excavation – a vertical section is visible in one place. B: Dense hornfels scatter in the dripline of the shelter. C: Painted graffiti: "J.L. lob3sehagnit." D: Large Khoekhoen rock art panel with numerous vertical finger smears, circles, U-shapes, grids and other markings all in red. Graffiti reads: "E.M. Hart 31.3.1936", "24.1.05" and lots of scratched marks (some over the art). E: Small, faded panel of Khoekhoen rock art made with finger smears in red. F: Some faded red Khoekhoen art with bold grey painted graffiti over the top: "Jan A. Schoombie 13 Nov 1889" and ".....wederlien". To the right is a	High
	067	S31 08 57.9 E25 04 00.2	Deposit		
			Historical ruin		

Site	GPS ID	Location	Type	Description	Significance
				<p>double line of finger dots in red.</p> <p>G: Two panels with compositions in finger dots and smears, all in red. To their right are some more red finger dots and a horizontally elongated motif that may have been partly removed when a fragment of wall detached. Overlying the dots is painted graffiti reading: "Johanna Baspeens", while some scratches occur above the elongated motif. In the rock scar to the right is engraved: "...T MvomByArr 1 11 42" (or something similar) and painted: "P. Katte" and "Van Wijnkat".</p> <p>H: Lots of painted graffiti on this panel: "R.T. Benadie" (on the left), "Deetty Esterhuysen", "9.10.05 Caledon. cc.", "Johanna M. Schoombie", a 'tree-like motif, "Johanna Burger", Jannsen P", "James", S..... Jansen" (scratched), "John" (scratched), "J Le Roux", "RH Meintjes 1/9/1934", "The war began in 1900 end in 1908" (the '8' in this last is composed of two separate circles with one lower than the other text), "DW BENIE 11-5(or 6)-66", "anne V. WIJnGard", "H.A. WATERS 4.12.1906" and, on a higher panel, "..... Schoombie 9.....". Also three red filled shapes and some grey (historical) paint.</p> <p>I: This is the deepest part of the entire shelter. On the left are some grey paint smears. There are hundreds of red finger dots spread over a width of 4 m with a finger-painted possible human on the far right. Also a group of red horizontal lines below the dots. Above the dots is graffiti: "VZ" in grey paint next to a red motif. On the roof of the shelter near the lip are to large finger dot compositions in red. One of them has a white finger smear and a white 'cross-in-grid' design. Part of one of the finger ot compositions and part of the 'cross-in-grid' have come off and is presumably buried in the deposit below.</p>	
4	051	S31 08 19.7 E25 03 23.6	Historical ruin	Large farm werf. Very large rectangular dry-stone kraal to the north of the road. A threshing floor of 17 m diameter lies on the south edge of the road.	Medium
	052	S31 08 18.3 E25 03 19.9		Several (at least four including one kraal) ruins occur on the north side of the river. This complex was not recorded in detail due to time constraints.	
	053	S31 08 19.2 E25 03 12.9		Very likely to be graves in this area.	

Site	GPS ID	Location	Type	Description	Significance
5	038	S31 08 59.2 E25 03 52.7	Historical ruin	Dry-stone kraal built up against a northeast-facing sandstone outcrop. It is built with two skins and a rubble fill. It is about 14 m in diameter and has an opening to the west and a small probably <i>lammerhok</i> at its northeast corner. One fragment of bright green bottle glass was noted. Below the kraal is a long, somewhat disjointed wall of some 230 m. In one place a section runs up to the cliff. It appears as though this wall could have edged an old road running along the base of the sandstone outcrop.	Medium
	039	S31 08 59.5 E25 03 55.4			
	040	S31 08 58.6 E25 03 53.8			
	042	S31 08 56.0 E25 03 52.8			
	043	S31 08 55.6 E25 03 53.9			
	049	S31 08 59.3 E25 03 58.3			
	041	S31 08 56.7 E25 03 52.8			
6	017	S31 10 05.8 E25 03 03.5	Historical ruin	Very large historical settlement with many dry-stone structures. All are built with two skins with a rubble fill. The site is bisected by the present farm access road. It lies on a northwest-facing slope with two large kraals being built up against sandstone outcrops. The structures are various sizes with the smallest about 1.5 m diameter and the largest some 25 m by 32 m. One semi-circular wall was very thick, c. 1.2 m. A variety of different types of ceramics was found associated with the northernmost structures along with a bottle base and some tin. A <i>trapvloer</i> (threshing floor) is located further to the northwest in the river valley. The edges are low walls rather than the typical standing slabs and it is 13 m in diameter. The mapped area is some 100 m by 110 m.	High
	018	S31 10 05.7 E25 03 02.7			
	019	S31 10 04.8 E25 03 03.6			
	020	S31 10 05.0 E25 03 05.1			
	021	S31 10 06.0 E25 03 04.6			
	022	S31 10 07.0 E25 03 05.0			
	023	S31 10 06.0 E25 03 05.6			
	024	S31 10 06.5 E25 03 05.7			
	025	S31 10 07.2 E25 03 04.4			

Site	GPS ID	Location	Type	Description	Significance
	026	S31 10 07.1 E25 03 03.7			
	060	S31 10 03.9 E25 03 02.1			
7	030	S31 09 42.0 E25 03 09.4	Historical ruin	Very large historical ruin composed of long walls on both sides of a deeply incised river. They do not appear to have been a dam wall. A second river lies east of the eastern wall. The wall on the east side is 95 m long in an L-shape with an opening to the north near the elbow, while the wall on the west side is 150 m long and is gently wavy in shape. The area between the donga and the western wall seems very likely to have been cultivated in the past.	Medium
	031	S31 09 42.3 E25 03 07.7			
	032	S31 09 43.4 E25 03 06.8			
	033	S31 09 43.7 E25 03 06.2			
	034	S31 09 39.3 E25 03 05.1			
	035	S31 09 39.4 E25 03 04.8	Graves		
8	071	S31 11 51.3 E25 02 28.9	Historical ruin	Dry-stone walling built up against a north-facing sandstone outcrop. Walls are built with two skins and a rubble fill. Three rusted tins found here.	Medium
9	001	S31 11 39.3 E25 02 21.7	Historical ruin	Very large settlement built with dry-stone walling. At least six structures, some built up against a south-facing sandstone outcrop. All walls are built with two skins and a rubble fill. Two enclosures have been recently damaged by a road being pushed through them. In the area to the north of the southernmost structure there was blue, green, black, purple and clear glass, stoneware and some iron (including a bedpost).	High
	002	S31 11 37.4 E25 02 20.1			
	003	S31 11 36.9 E25 02 22.4			
	004	S31 11 36.1 E25 02 20.9			
10	069	S31 09 35.4 E25 00 50.5	Historical ruin	Small square structure of dry-stone walling. Built with two skins and a rubble fill. It is approximately 4 m by 4 m in size and has an entrance opening towards the northeast.	Medium

Site	GPS ID	Location	Type	Description	Significance
11	070	S31 10 57.5 E25 03 44.9	Stone feature	This is a small semi-circular stone structure with the highest part of the wall in the middle. It is 1.5 m diameter and built with piled dolerite cobbles. While the structure is similar to walling made during the Anglo-Boer War, the location up in the mountains and the presence of three stone artefacts (one an endscraper) suggests that this is an LSA hunting blind. It lies on a prominent rise (dolerite outcrop) in the middle of a large plain. The structure lies about 20 m from the centre of the base of Turbine N27.	Medium
12	061	S31 10 43.6 E25 02 29.0	Stone feature	This is a small U-shaped structure made from piled slabs of sandstone. While it could be an LSA hunting blind, its angle facing along the slope rather than across the valley suggests it is more likely historical and of unknown function.	Low
13	005	S31 11 32.6 E25 02 14.4	Historical ruin	Dry-stone walling built up against an east-facing sandstone outcrop. Forms two larger enclosures and two smaller ones.	Medium
14	006	S31 10 34.3 E25 02 48.6	Stone feature	Stone cairn that looks like it was once part of an old fence line. Not a grave.	Low
15	007	S31 11 36.4 E25 02 10.2	Rock art	San rock art site in the north side of a small gorge. Beautiful line of five eland with heads facing different ways. Other art painted over one of the eland has come off. Other small animal figures to the right appear to have come off as well, leaving a stain on the rock. Below the eland are two small black finger-painted figures. One hornfels flake was found in the shelter. Graffiti: "1951" and some other writing.	High
16	008	S31 11 36.6 E25 02 10.2	Rock art	Khoekhoen rock art facing north, directly opposite the eland. Main panel is painted on the roof and consists of alternating red and white lines and dots. The panel has been vandalised by scratching. A second panel occur on vertical rock to the left but is very poorly preserved. It has c. 7 long vertical finger smears and a possible oval to the right – all in dark red. A panel of graffiti occurs on the roof above this second panel and includes: "Dries Venter 16.10.55", "MOLLIE NICK JOHAN BETTIE MARIE 12/3/50", B. Prinsloo" and a variety of other scratched text and scribbles. This shelter is visible from turbines N13 & N14.	High

Site	GPS ID	Location	Type	Description	Significance
17	009	S31 11 36.0 E25 02 10.7	Rock art	Shelter with a small wall in its left end extending out from the back. Wall may be historical. This shelter faces south and is located just east of the eland. Khoekhoen rock art with three typical grid designs painted on the horizontal roof. Graffiti carved into a boulder on the floor of the cave reads: "H. LEMON", "PLEE PMARX" enclosed by a heart and "J. BUYS 19/10/30".	High
18	010	S31 11 33.4 E25 02 11.3	Artefact scatter	Stone artefact scatter located on an open sandstone area. Artefacts are of mixed age and one adze was noted. There was also some glass present.	Low-Medium
19	011	S31 11 31.9 E25 02 11.2	Artefact scatter	Small south-facing rock shelter with some glass and a number of hornfels flakes on its talus slope. Also a (possibly) copper button.	Low
20	012	S31 11 34.5 E25 02 12.5	Artefact scatter	Stone artefact scatter located on an open sandstone area. Two retouched pieces were noted, a double-backed point and an endscraper.	Low-medium
21	013	S31 10 35.8 E24 58 57.2	Stone feature	Small stone feature (not a grave). Possibly an erosion control measure?	Low
	014	S31 10 38.0 E24 58 57.6	Stone feature	Small stone feature (not a grave). Possible an erosion control measure?	Low
22	015	S31 10 09.2 E25 02 56.4	Historical ruin	Dry-stone kraal built up against a southeast-facing sandstone outcrop that has a rock shelter in it. It overlooks a stream bed. Two larger rocks included in the wall, opening lies in the north-western end. The walling is made with two skins and a rubble fill. The structure is heavily overgrown with bush.	Medium
---	016	S31 10 10.9 E25 03 01.8	---	This is an area with rocks pushed into piles from road building. It is not a heritage site.	---
23	027	S31 09 40.0 E25 03 11.9	Stone feature	Dry-stone retaining wall to protect historical road from erosion during river floods. It creates a narrow platform skirting the base of a rock outcrop.	Low
	028	S31 09 39.0 E25 03 12.4			
	029	S31 09 40.4 E25 03 11.7			

Site	GPS ID	Location	Type	Description	Significance
24	036	S31 09 35.7 E25 03 09.9	Rock art	Southeast-facing rock shelter overlooking standing water in the river. It has big, bold, Khoekhoen-style rock art on its back wall – the roof is too flaky to paint on. The upper left panel has a series of c. 7 crosses (4 above and 3 below). Lower left panel has a figure like an “m” with four legs. Right hand panel has a series of bold red and white vertical stripes (possible apron designs), a white circle and a 5-legged “m” in white. Below the possible aprons is a series of finger dots. Grafitti reads: “E.M. Hart ... 1936”. Two hornfels flakes noted on talus.	High
25	037	S31 09 36.4 E25 03 10.5	Artefact scatter	Dense LSA artefact scatter at the foot of the slope below the Khoekhoen rock art site. All artefacts are in hornfels which appears quite fresh – this suggests a recent site. Scatter is about 8 m diameter but probably includes a few hundred artefacts. One endscraper and one large cone-shaped single platform core.	Medium
26	044	S31 08 56.6 E25 03 58.0	Rock art	Row of finger dots on the vertical back wall of a 1 m high shelter beneath a boulder that has collapsed away from the main cliff.	Medium
27	045	S31 08 56.4 E25 03 58.9	Rock art	White antelope with its spine outlined in black and with black horns. It is in a small shelter at the base of the cliff. A line of recently chipped marks encloses the left and upper sides of the image.	High
28	047	S31 08 59.1 E25 04 00.6	Graffiti	Isolated graffiti reading: “W Couks” (possibly) and “Sydney Johnson”.	Low
29	048	S31 09 00.4 E25 04 00.6	Stone feature	This appears to have been a dam across the river but the silts below the wall are now eroded several meters below the level of the surviving bit of walling.	Low
30	050	S31 08 24.7 E25 03 28.3	Historical ruin	Dry-stone walling running up the hill. This site was not recorded due to time constraints. Also a line of stone fence posts on the floodplain below the walling.	Medium
31	056	S31 12 14.6 E25 03 57.7	Artefact scatter	LSA artefact scatter on a low hill of dolerite with sand cover over south-eastern part. Scatter all on hornfels except one small dolerite flake. One MSA artefact included.	Low

Site	GPS ID	Location	Type	Description	Significance
32	057	S31 11 51.8 E25 03 21.7	Historical ruin	Dry-stone walled structure of 3 m by 3 m with an opening to the east. Walls are made with two skins and a rubble fill. It lies on the north side of a small dolerite ridge and is built of dolerite blocks. It lies directly within the surveyed road alignment.	Medium
33	058	S31 12 17.7 E25 03 16.8	Stone feature	Small cairn located on a dolerite ridge.	Low
34	059	S31 11 23.4 E25 02 53.7	Artefact scatter	Light scatter of hornfels artefacts located in a patch of hornfels nodules. This is the only hornfels 'quarry' seen during the survey.	Low
35	062	S31 10 41.6 E25 02 16.6	Stone feature	Stone mound likely related to an old fence line that has now been removed.	Low
36	063 064	S31 10 30.1 E24 59 22.8 S31 10 31.0 E24 59 21.2	Historical ruin	Dry-stone walled kraal made from two skins with a rubble fill but now very badly collapsed. It is 23 m by 12 m in size. A smaller structure lies to the west. It is about 3 m by 3 m and is also made of two skins with rubble fill. To the northeast of the kraal is a light scatter of dumped glass, ceramics and metal. Included in this was a very clear example of an adze made on bottle glass. It had backing on its opposing edge.	Medium
---	065	S31 10 29.7 E24 59 19.3	---	Ground dolerite boulder with the ground surface about 50 cm long. Probably a lower grindstone.	Low
37	066	S31 10 29.2 E24 59 32.7	Stone feature	Two piled stone features on opposite sides of a deeply eroded river. Was probably a dam before it burst and eroded down.	Low

6.1. Stone Age artefact scatters

Only a few artefact scatters were located. Perhaps the most significant one, Site 25 (GPS 037), was found just below a Khoekhoen rock art site but the two sites do not seem to be related. All the artefacts were made on hornfels which is to be expected for this area where little else is available (Figure 12). The scatter included an endscraper which is very typical of assemblages from this area (Figure 13). Two other good scatters were found away from the proposed infrastructure close to other rock art sites (Site 18 (GPS 010) & Site 20 (GPS 012)). Although two artefact scatters were found within the layout footprint (Site 31 (GPS 056) at turbine N23 and Site 34 (GPS 059) in the road alignment north of turbine N18), no significant artefact scatters will be impacted by the planned infrastructure. Site 34 was located on a patch of hornfels nodules. This was the only such patch seen during the survey. It no doubt served as a locality from which hornfels was collected for flaking. A few isolated MSA artefacts were noted; these were distinctive by their heavily weathered state and resultant orange patina. These can be considered background scatter and are of no heritage significance in this instance.

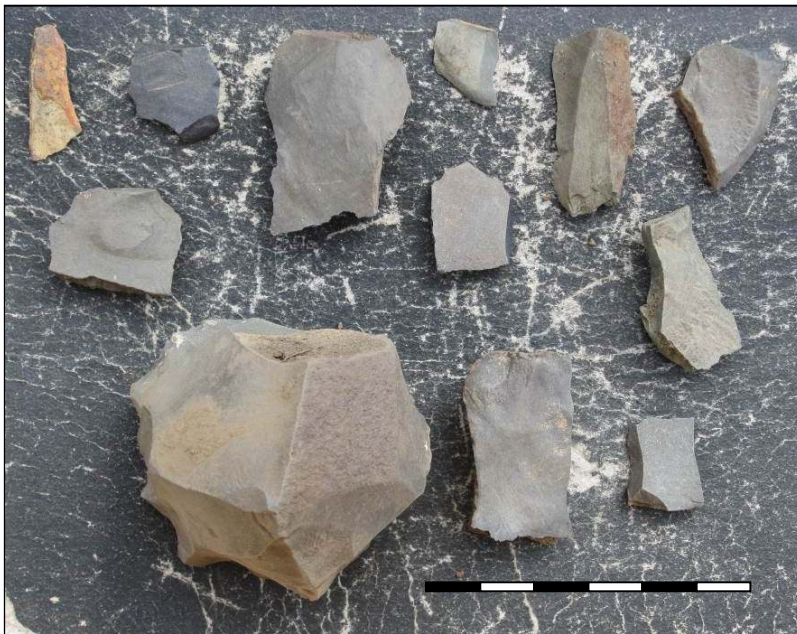


Figure 12: LSA stone artefacts from Site 25 (GPS 037). All the artefacts are made on hornfels. Scale in cm.



Figure 13: Endscraper from Site 25. Scale in cm.

6.2. Rock paintings

Despite no rock art being found in the previous surveys, several painted sites were found. Following the requirements of the survey, only obvious rock shelters in close proximity to the layout were examined, but there are no doubt other rock art sites in the study area. Three rock art sites were found in a small kloof 450 m southeast of turbines N13 and N14 (Figure 14). One of the sites faces directly towards these turbines and it was because the shelter was plainly visible during the walk-down that the kloof was investigated.



Figure 14: View towards the northwest showing the kloof containing three rock art sites. The ridge in the background will have turbines N13 and N14 standing on it. Site 15 lies in the shelter just left of centre, while Site 17 is in the deeper recess at the far right.

The first of the three sites, Site 15 (GPS 007), was predominantly a Bushman painting, although it has had later over-painting, perhaps by Khoekhoen herders. The main panel shows a beautifully executed line of five eland facing to the right but with their heads in different positions (Figure 15). Below this, in a small corner, are two small black finger-painted figures that might be far later additions by Bushmen artists (Figure 16). These figures are at odd angles and are likely representative of dancing. Little is known about such figures which have often been found in positions peripheral to typical Bushman paintings (Ben Smith, pers. comm. 2014). The rightmost eland on the main panel was poorly preserved, partly because of later over-painting which appears to have subsequently weathered off (Figure 17). A single hornfels flake was found in the shelter. The left hand side of this painting has been slightly marred by recent graffiti.



Figure 15: View of the rock art panel at Site 15 (GPS 007). The first four eland from left to right are approximately 700 mm long. The images in the dotted ovals are illustrated in Figures 16 and 17.



Figure 16: *Small panel with two black figures. Each figure is approximately 60 mm long.*



Figure 17: *The remains of painted images on the left hand side of the main panel. The body of the clearest animal is about 30 mm long.*

The second site, Site 16 (GPS 008), was located immediately across the kloof and it was this one that is openly visible from the turbine locations. It is a Khoekhoe site and the main panel of art is painted on the roof and consists of red and white lines and finger dots (Figure 18). A second panel lies on vertical rock but is very poorly preserved. A panel of graffiti bears a variety of names and two dates (1950 and 1955). Graffiti occurs on the primary art panel as well (Figure 18). The third site lies back on the north side of the kloof and also consists of geometric Khoekhoen art. Carved graffiti on a boulder below the paintings includes a date of 1930.



Figure 17: *Khoekhoen rock art at Site 16 (GPS 008).*

Site 24 (GPS036) is another Khoekhoe rock art site, this time located in the northern part of the study area in full view of turbine N31 which will stand 800 m to its southeast. The main panel has a

series of bold images that might well be interpreted as loin cloths (Figure 18). Two other smaller and less well preserved panels are also present. Graffiti in this site is relatively minor.



Figure 18: *The main panel of rock art at Site 24 (GPS 036).*

In the vicinity of Blydefontein Rock Shelter there are a number of panels of rock art. Two are sufficiently separated from the main rock shelter to be listed as separate sites (Sites 26 (GPS044) and 27 (GPS045)). The majority of the art here seems to be Khoekhoe art. Since these sites will not be affected by the proposed WEF they are not discussed further. Nevertheless, the presence of a number of Khoekhoe rock painting sites in the study area shows that pre-colonial herders did make use of this high altitude landscape, presumably for grazing their livestock.

Many dolerite outcrops were noted in the study area but none preserved the kinds of surfaces suitable for engravings and thus this type of rock art is highly unlikely to occur in the study area.

6.3. LSA stone-walled structure

One small stone-walled structure recorded by Hutten (2014; Site 11 (GPS070)) can, from its position and construction technique, be confidently assigned to the LSA. It is a small semi-circular structure with the middle section being tallest (Figure 19). It is made from immediately available dolerite cobbles that have simply been piled on top of one another. The structure is probably a hunting blind because its location on a koppie in the middle of a wide plain is perfect for game spotting. Three stone artefacts, including an endscraper, were found at the site (Figure 20). The site lay within about 20 m of the centre of the original location of turbine N27 but with this turbine having now been moved slightly northwards – its centre is now 45 m away – the site should be easily protected during construction and operation of the facility (Figure 21).



Figure 19: The small LSA hunting blind at Site 11 (GPS 070).



Figure 20: The three stone artefacts found at Site 11. The left one is an endscraper. Scale in cm.



Figure 21: The spatial relationship between the pre-colonial hunting blind (point marked 070) and the proximate wind turbine (marked N27). The earlier location of Turbine N27 is indicated to illustrate themicro-siting that has taken place.

6.4. Historical ruins

A large number of historical stone-walled structures are present across the study area. These vary considerably in size from large settlements of more than 100 m diameter to single structures, probably shepherd's huts, of just 3 m diameter. All have one feature in common indicating their historical rather than pre-colonial origin: they are constructed in the typical manner of two outer skins with a central fill of smaller 'rubble' (Figures 22 & 23). This contrasts strongly with the method described in section 6.3 above.



Figure 22: Double skin and rubble fill wall at Site 6 (GPS 017).



Figure 23: Double skin and rubble fill wall at Site 10 (GPS 069).

It is not possible to directly determine the age of these structures, but a few factors do contribute to the formation of some ideas. The farm was granted as a Quitrent on 22 May 1893. It is likely that the land would have already been in use by European farmers for some years prior to this date and the survey diagram (created in 1892) indicates the positions of what can only be assumed from the remains currently present at these locations to be settlements (Figure 24). These include the two areas identified by Van Schalkwyk (2012) as the present farmstead (Site 1), an earlier farmstead (Site 4) and also one other location in between them where much stone walling was present (Site 5). This strongly suggests that most if not all of the structures in these locations date to at least the late 19th century.



Figure 24: Survey diagram of Blydefontein 168 as registered in 1893. The red circles indicate areas likely to have been in use by the time of the 1892 survey and which appear to correlate with Sites 1, 4 and 5. The inset shows the relationship between these sites and the proposed WEF to the south.

Another aspect overlooked in both earlier heritage reports is the presence of historical archaeological material associated with the structures. Such material was noted on several of the sites. Figures 25 to 27 illustrate examples. On Site 9 the bicolour and brown stoneware sherds likely post-date 1860 (production date in England). Stonewares were very cheap mass-produced wares, rather like today's plastic products (Klose & Malan 2009). Chinese ginger jars are common finds on 19th century sites and the single small sherd shown at upper right in Figure 27 likely originates from one of these jars. The sherd with the three thin green lines in Figure 26 may be late 18th to early 19th century, while the red sponge-printed sherd in Figure 27 might have been manufactured anytime between the early 19th and early 20th centuries. The sherd at top right in Figure 25 is a transfer-printed ware. Such wares were manufactured for a long period of time from the mid-18th century until the early 20th century (Klose & Malan 2009). The glass fragments are less easy to identify. The dark blue bottle fragment might belong to a poison bottle, while the pale

green fragments might well be from mineral water bottles (see for example Lastovica & Lastovica 1980). The moulded bottle base in Figure 26 is certainly a wine bottle.



Figure 25: Historical artefacts from the southern part of Site 9 (GPS 001). They include glassware of various colours and both refined earthenware and stoneware ceramics. Scale in cm.



Figure 26: Historical artefacts from Site 6 (GPS 017). They include a moulded wine bottle base, some refined earthenwares and a bone, likely a cow foot bone. Scale in cm.



Figure 27: Historical artefacts from Site 6 (GPS 017). They include glass, refined earthenwares and one sherd of a Chinese ginger jar (top right). Scale in cm.

On the whole, the ceramics and glass from these sites are difficult to identify because they are relatively few in number and small in size. However, occupation of these sites probably started from sometime in the mid- to late 19th century and continued on into the mid-20th century. This latter age is supported by the presence of a grave dated 1951 (discussed below).

The historical structures took a variety of forms (see diagrams in Appendix 2). Some were clearly kraals, occasionally with a lammerhok, others were likely to have been herder's huts, while some were clearly far larger settlements with many structures. The presence of threshing floors at Site 4 and Site 6 and the sheer size of some of the sites indicate a far more permanent settlement than was suggested by Van Schalkwyk (2012).

It is notable that recent changes to the historic farm werf at site 1 have occurred. The old farmhouse pictured in Figure 10 of the Van Schalkwyk (2012) report is no longer extant – it appears to have been demolished and replaced by a modern building.

Figures 28 to 37 show various aspects of the ruined historical structures. They include kraals, dwelling structures and walls serving other purposes. The kraal at Site 36 (Figures 36 & 37) is in extremely poor condition. It seem likely that many of the better building stones could have been removed leaving only a pile of smaller 'rubble' from the wall filling. Nevertheless, careful observation showed that the remains of the original two outer skins were still present within the rubble.



Figure 28: Historical walling at Site 8 (GPS 071).



Figure 29: Historical structure at Site 9 showing a doorway with stone lintel.



Figure 30: The same structure as shown in Figure 29.



Figure 31: Lammerhok kraal (left) and other walling (right) at Site 1.



Figure 32: Stone structure at Site 6. It was likely a dwelling.



Figure 33: The extra thick wall (c. 1.2m) at Site 6. This wall is also made of two skins with a rubble fill.



Figure 34: The kraal built up against the cliff at Site 5.



Figure 35: The vicinity of Site 5 (taken from GPS point 039). The kraal (GPS 038) is circled and the northern half of the long wall is marked by the long line. The grave lies at the star (GPS 041).



Figure 36: The kraal at Site 36 (GPS 063). The dump lies to the right of the picture.



Figure 37: The badly tumbled walls at Site 36. It is likely that the stones forming the outer skins have been removed and reused.

6.5. Stone features

A few small stone features were encountered during the survey. Some of these are likely to be erosion control measures or connected with old fence lines and are of no further concern. A stone cairn was located on a hilltop and is of unknown function (Site 33, GPS 058; Figure 38). Another odd feature was a small, semi-circular structure of piled slabs. Despite the construction technique, this feature just did not give the impression of being pre-colonial.



Figure 38: Stone cairn on a dolerite ridge at Site 33 (GPS 058).



Figure 39: Semi-circular structure of piled slabs at Site 12 (GPS 061).

6.6. Graves

In contrast to the HIA (van Schalkwyk 2012) which only located the main farm graveyard, graves were found to be present in three different places. It is considered very likely that other graves will be present on the farm as well, particularly in the vicinity of Site 4 in the far north. The main farm graveyard is located at Site 2 (GPS 068). Seventeen graves appear to be present with just one of them having a named and dated headstone (Figures 40 & 41). The person, Corneelia Cock, died in 1951. It is interesting to note how informally people were being buried as recently as 1951. This perhaps betrays the remoteness of the rural situation at that time. The other graves were located at Site 5 (GPS 041; Figure 42) and Site 7 (GPS 035; Figures 43 & 44); in both cases the graves are placed to the west of very long walls and in neither case are any obvious dwellings evident in proximity.



Figure 40: The graveyard at Site 2 (GPS 068).

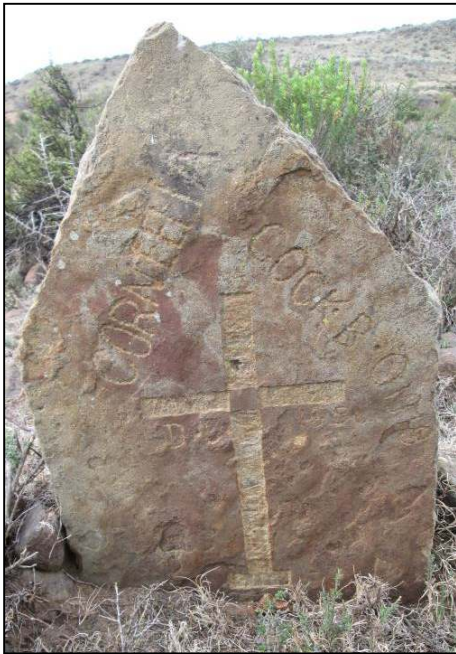


Figure 41: The only inscribed gravestone in the graveyard.



Figure 42: The single grave at Site 5 (GPS 041).



Figure 43: The southern grave at Site 7 (GPS 035).



Figure 44: The northern grave at Site 7 (GPS 035).

6.7. Summary of heritage indicators and provisional grading

In general, the main heritage indicators of concern are the graves, the large set of historical ruins and the several rock painting sites. With one exception (Site 32 which falls within a road alignment), impacts to all of these would be indirect, contextual impacts. Only two sites (Sites 31 and 34), both of them LSA artefact scatters, would be directly impacted by the currently proposed layout. Neither are of any great concern. Although graves are present, these are well away from the footprint area and contextual impacts to them are not of concern.

In terms of provisional grading (field rating), the historical ruins can collectively be placed into the Grade III category as suggested by Van Schalkwyk (2012). However, this category is very broad and, using the finer divisions of Grade III as employed by Heritage Western Cape (2012) one could refer to these ruins as Grade IIIB in that they are excellent examples of their kind but their preservation state mitigates against a higher grading. Individually, each might only be classified at IIIC. The rock art sites would merit a provisional 3A grading with the artefact scatters left ungraded. Graves are automatically of high significance and not generally graded.

7. DISCUSSION OF IMPACTS

No formal impact assessment is required at this stage because the report is purely fulfilling the requirements of the authorities stemming from the impact assessment phase. However, a brief statement on impacts is still needed to motivate for mitigation actions that might be required.

7.1. Significance

With one exception, impacts to the historical ruins will all be indirect and of low intensity because they are purely contextual. One ruin (Site 32, GPS 057) that was not previously recorded was found to lie within the road layout. It will require protection through micro-siting of the road. Besides this, and with the exception of some small stone features of low significance located along the power line route, the nearest that any of the new infrastructure will come to historical ruins is about 40 m. This is at Site 36 (GPS 063) where the power line passes a historical kraal at the foot of

the mountain close to Noupoort. The significance of the impacts to these ruins, assuming avoidance of Site 32, can be collectively assessed as low. It should be noted that the recent damage to the stone walling at Site 9 and demolition of the farmhouse and outbuilding at Site 1 are in no way connected with the proposed development.

Six further rock art sites were found in addition to the one – Blydefontein Rock Shelter – previously recorded by Van Schalkwyk (2012). Two of these will experience indirect impacts through being within direct line of sight of turbines. Site 24 (GPS 036) is located 800 m from Turbine N31 to its southeast, while Site 16 (GPS 008) faces two turbines, N13 and N14 some 450 m to its northwest. Both are geometric rock painting sites but neither is of the level of significance that would necessitate further mitigatory actions. The most significant site found, Site 15 (GPS 007), is a Bushman painting that faces away from the turbines and will thus not be impacted. Graffiti is present at most of the rock art sites but again this is not connected with the proposed development – all appears to date from the mid-20th century or earlier.

The pre-colonial hunting blind at Site 11 (GPS 070) is located within the area that could be directly impacted by construction of Turbine N27, some 25 m south of the proposed hard standing area. The site has medium heritage significance and with potential direct impacts of very high intensity the significance of impacts here could be rated as high. The site would need protection or full recording prior to construction. Adequate mitigation would reduce the significance of the impacts to low. It does seem feasible, however, that the site can be cordoned off and successfully protected during construction and operation of the facility.

Two Stone Age artefact scatters were found to occur within the proposed layout and would thus experience direct impacts of high intensity. One, Site 31 (GPS 056), is located at Turbine N23, while the other, Site 34 (GPS 059) is within the road layout 480 m north of Turbine N18. Neither of these has much heritage significance and the significance of the impacts are rated as being low.

7.2. Mitigation and management

Only one site, Site 32, requires direct mitigation. This could take one of two forms. *In situ* preservation is always the most desirable option and to this end, and recognising that the WEF layout has been all but finalised, it is recommended that, if possible, the road layout should be moved at least 20 m to the north or 40 m to the south.

Another site, Site 11, should be clearly fenced in order to assist with its protection during construction. This fencing could be removed post-construction on condition that the safety of the site could be guaranteed. During decommissioning, the fence should be re-erected such that the site would once again be protected from harm by machinery and vehicles accessing the area. If for any reasons this site could not be protected, it would be acceptable to allow its destruction on condition that it is fully recorded. Such recording should include:

- A detailed photographic record;
- Plan and section drawings; and
- A thorough search for and *in situ* documentation of associated stone artefacts.

8. CONCLUSIONS

The most significant heritage resources located and recorded during the survey were graves, rock art and the suite of historical structures present throughout the study area. This study was requested by SAHRA to address the lack of in depth description of pre-colonial heritage resources in the previous HIA (van Schalkwyk 2012) and Heritage Management Plan (Hutten 2014). The rock art sites, in particular, are a significant omission from the original HIA conducted on the farm and should also have been identified. This report is deemed to have complied with the requirements of SAHRA (see Section 1.2) in that:

- An archaeologist with Principal Investigator status for Stone Age archaeology conducted the survey; and
- The historical ruins were properly documented with evidence presented for their age and associations.

In all but one case, impacts will be indirect, acceptable and easily managed. The exception will require intervention through alteration of the project layout. Should this site be dealt with in a satisfactory manner then there are no further objections to the project proceeding into the construction phase.

9. RECOMMENDATIONS

It is recommended that the development proceed but subject to the following conditions:

- Should Site 11 (which is currently just outside of the layout area) be in danger at any point, then it should be mitigated through proper *in situ* recording;
- The road layout at Site 32 should be micro-sited to avoid the Site, the suggested adjustment is 20 m from the Site;
- No abnormal vehicles should be allowed north of Turbine N32 on the main access road to the farm because of the proximity of heritage sites to the road;
- Should any widening of the main access road be required in the vicinity of Sites 2 and/or 6 then all graves and stone-walled structures at these two sites respectively must be clearly fenced off and avoided during construction;
- No stone may be removed from any of the stone-walled historical sites for any reason;
- Construction staff should be prevented from accessing rock art sites where further graffiti might occur; 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.

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APPENDIX 1: MAPPING

This section presents mapping indicating the spatial locations of the recorded heritage resources. The first image provides the context of the finds in terms of the entire development area with boxes indicating areas enlarged in the following images.

The following key is applicable to all the images:

- Pink lines: proposed new layout for the WEF.
- Dark blue lines: existing roads to be reused.
- Yellow line: proposed power line route.
- Numbered white stars and red cross-hairs: proposed turbine locations.
- Numbered yellow diamonds: GPS co-ordinates of heritage sites and individual components of heritage sites as appropriate.
- Green polygons: outlines of sites with medium to high heritage significance. Sites with low significance are denoted only by their GPS co-ordinates.
- The light blue lines indicate the drive and walk paths.

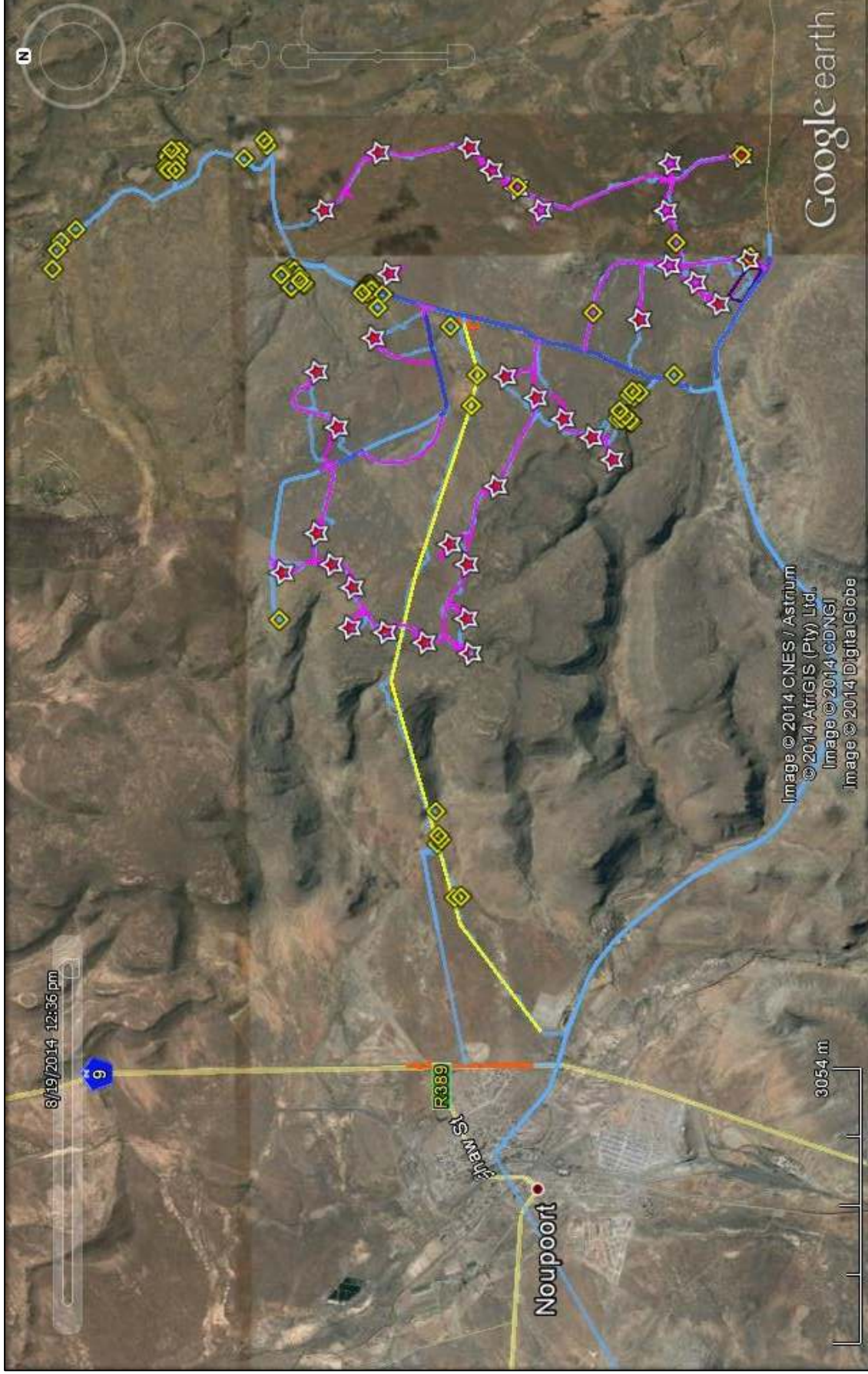


Figure A1: Aerial view of the entire study area.

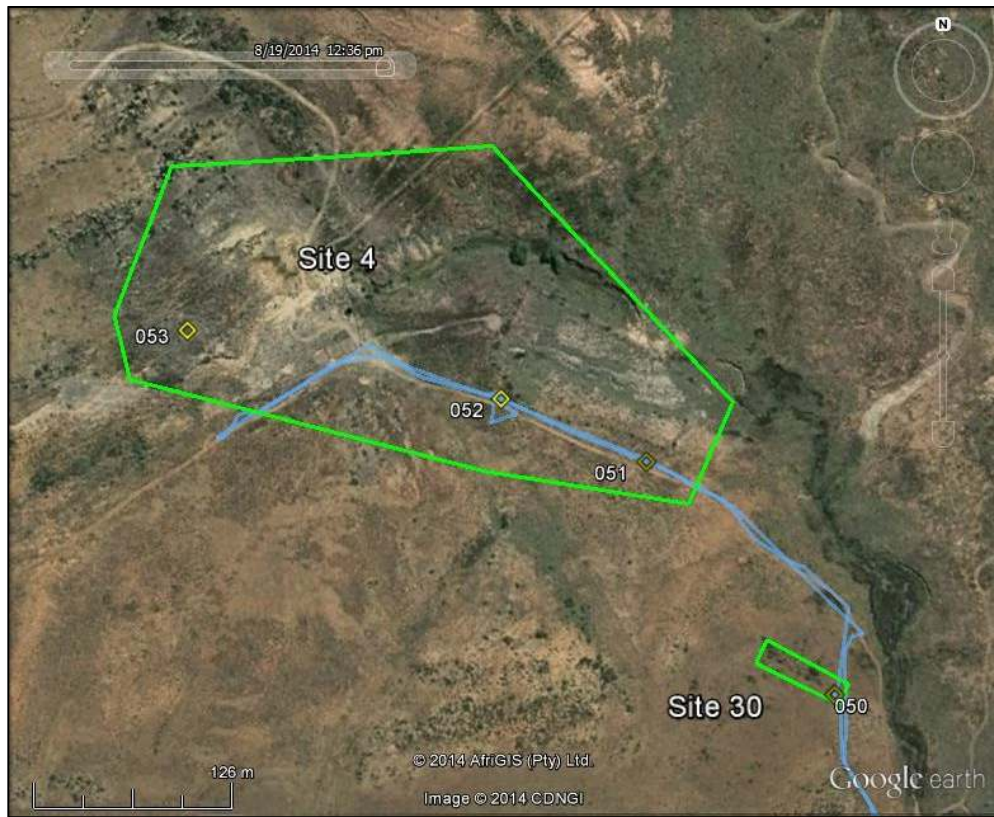


Figure A1 Box 1: Site 4 and Site 30. Some ruins in the north of Site 4 are not marked by GPS points.

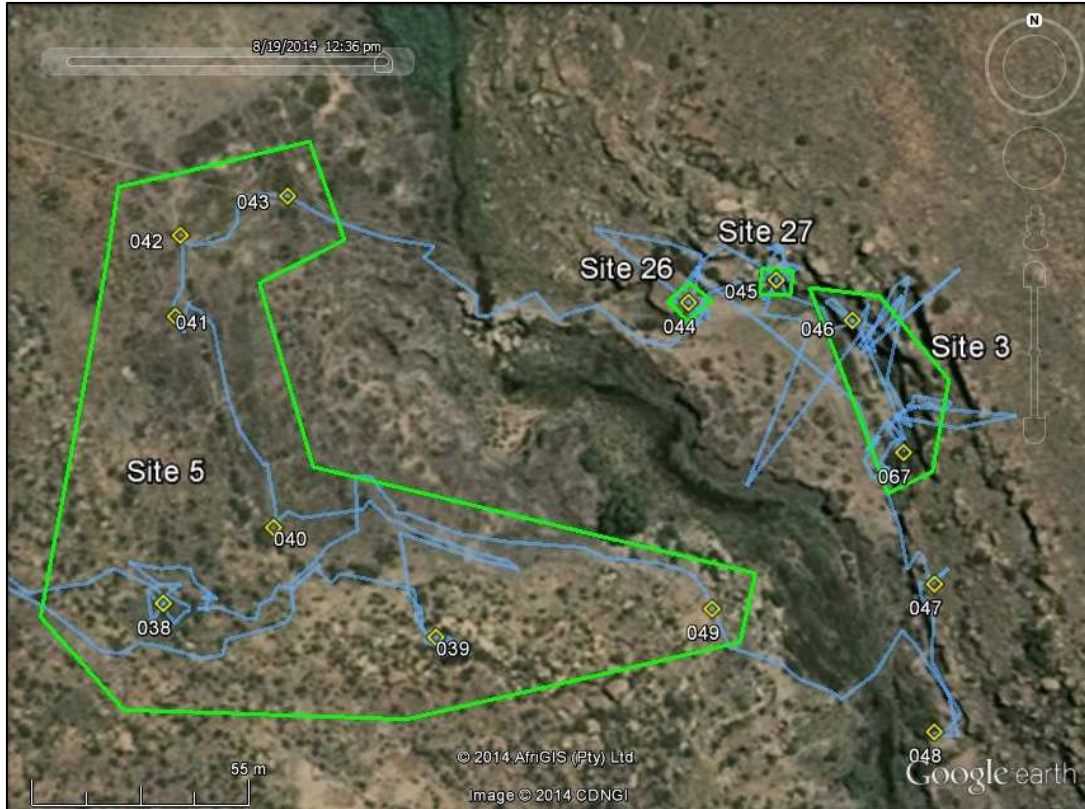


Figure A1 Box 2: Site 5, Site 26, Site 27 and Site 3.



Figure A1 Box 3: Site 1 and Site 2.

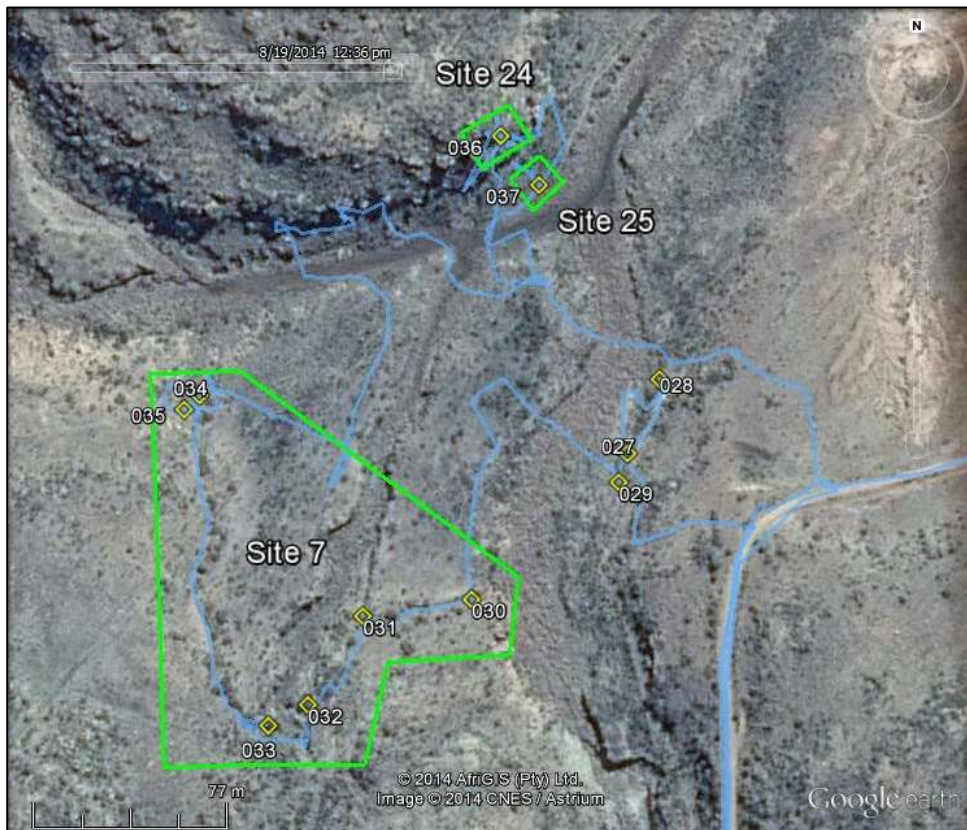


Figure A1 Box 4: Site 7, Site 24, Site 25 and site 23 (GPS 027, 028 & 029).

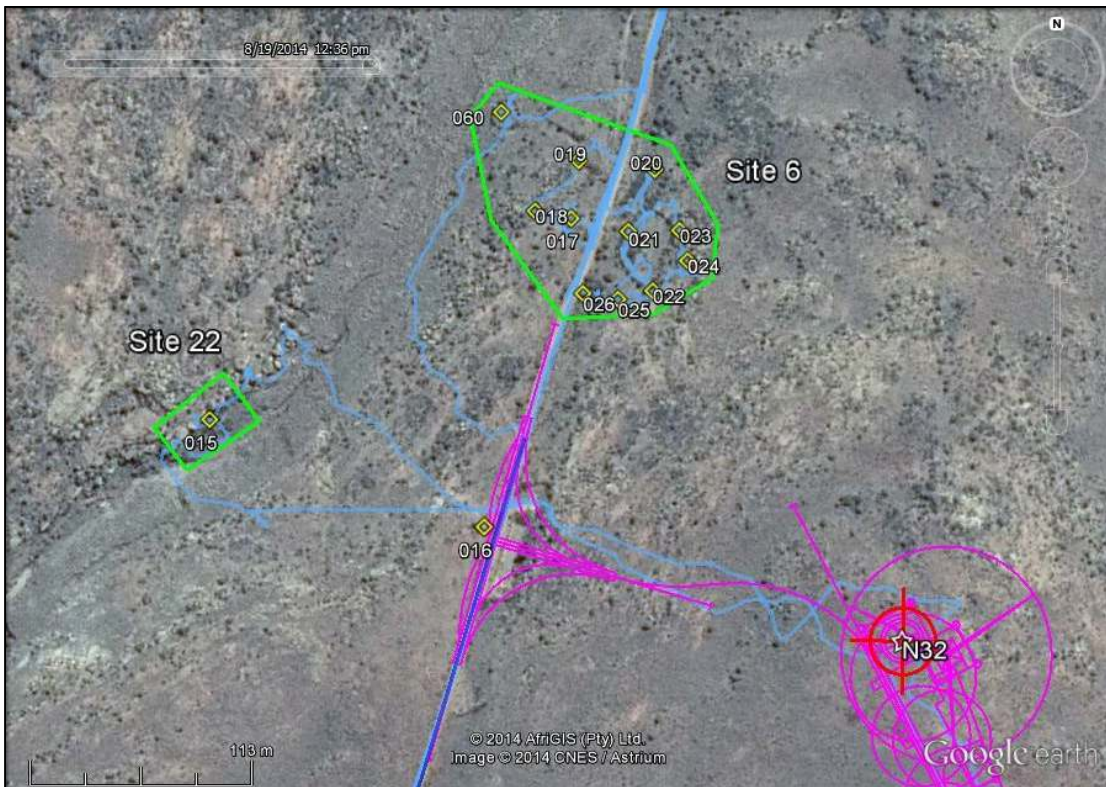


Figure A1 Box 5: Site 22 and Site 6. Note that GPS 016 marks a position with material that looks like walling but is not – it is of no concern.

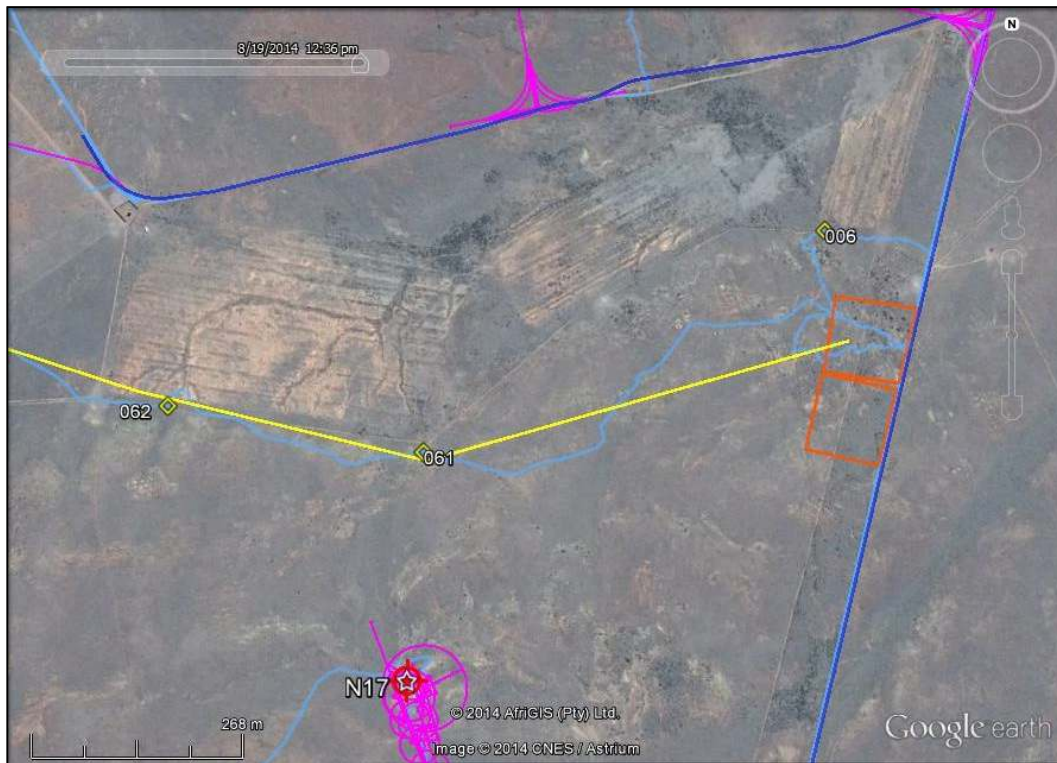


Figure A1 Box 6: Sites 35 (GPS 062), 12 (GPS 061) and 14 (GPS 006) along the eastern part of the power line route.

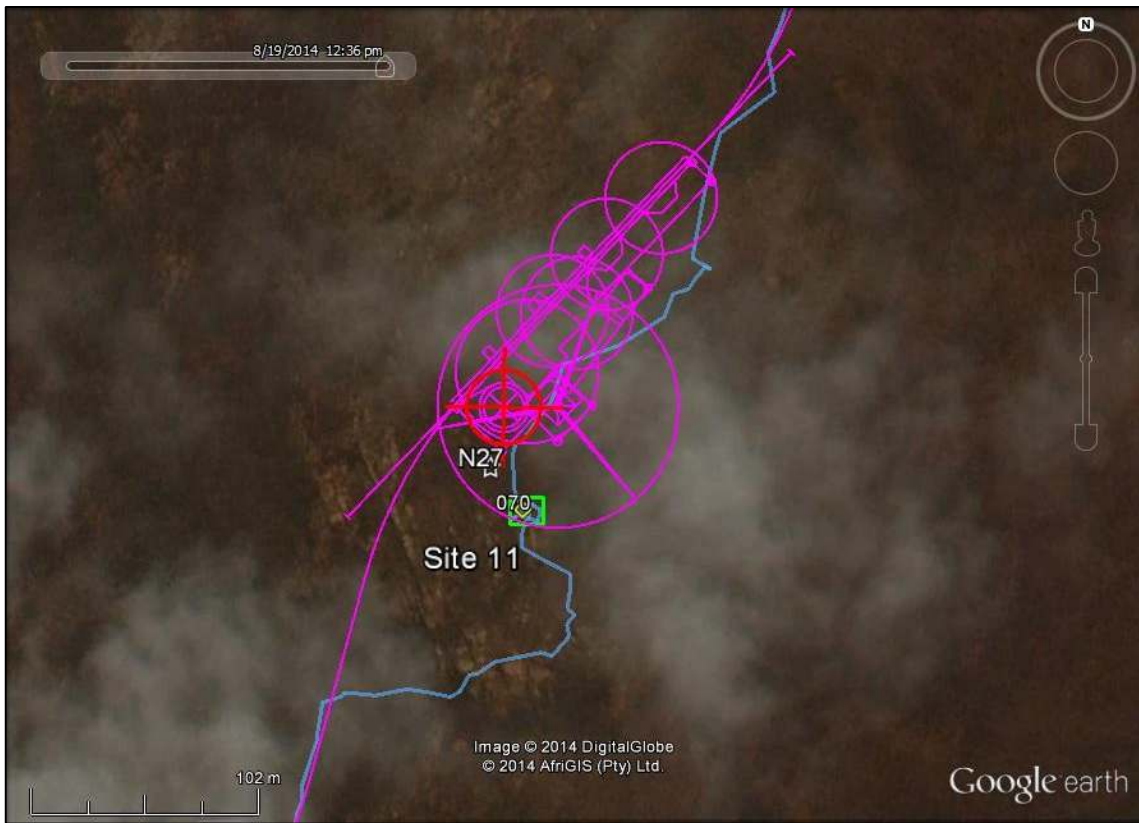


Figure A1 Box 7: Site 11.



Figure A1 Box 8: Site 34 (GPS 059).

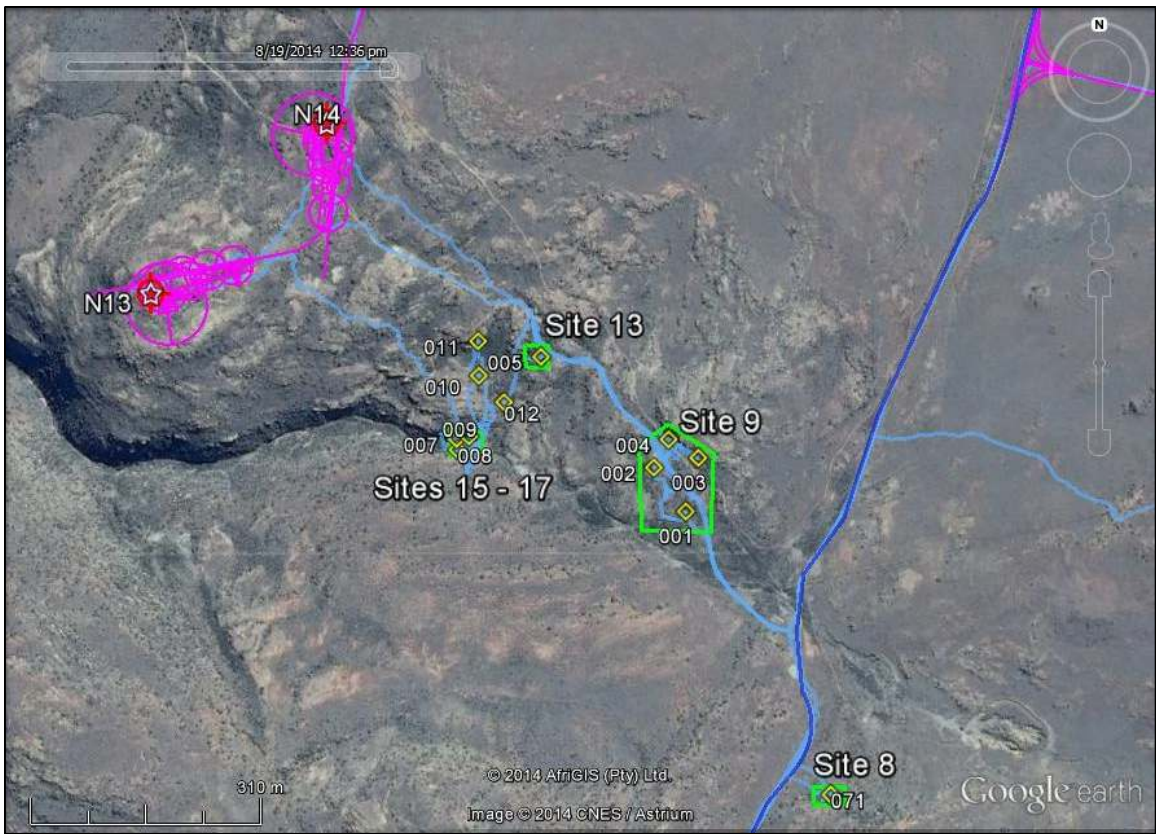


Figure A1 Box 9: Site 8, Site 9, 13 and 15 to 20 (see enlargement below).

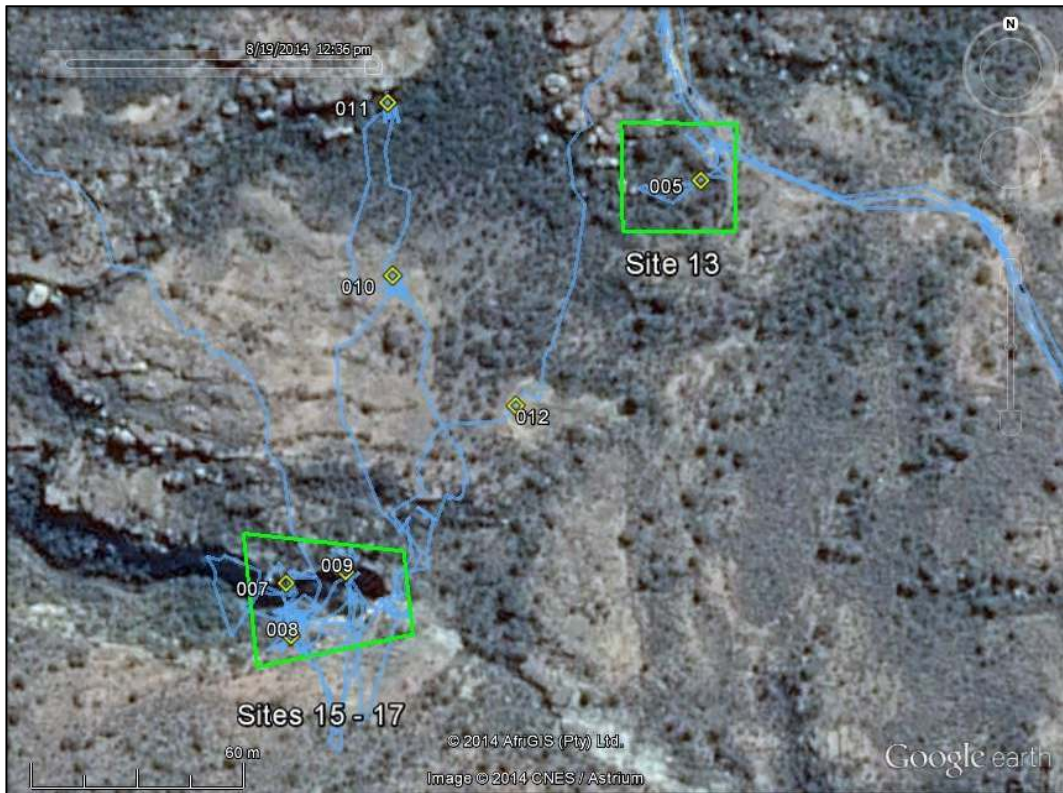


Figure A1 Box 9a: Site 13, 15, 16, 17, Sites 18 (GPS010), 19 (GPS 011) and 20 (GPS 012).

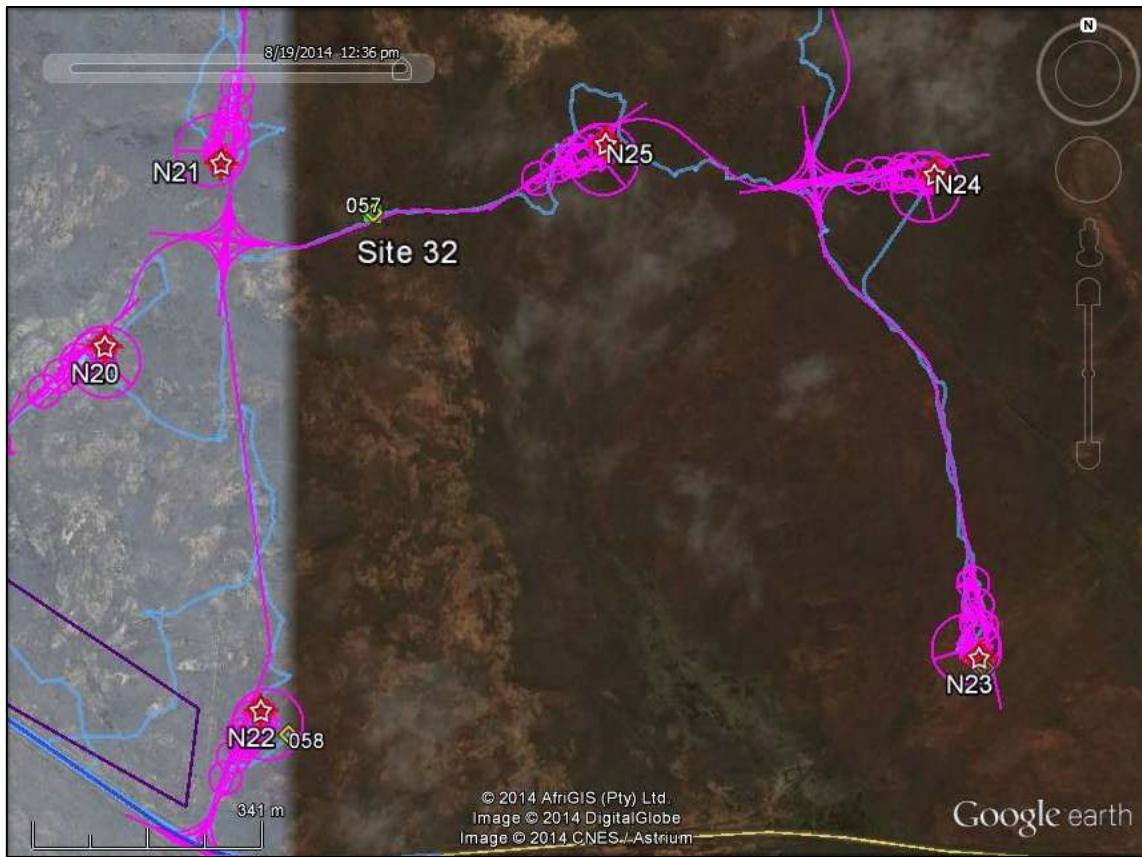


Figure A1 Box 10: Site31 (GPS 056), Site 32 and Site 33 (GPS 058).

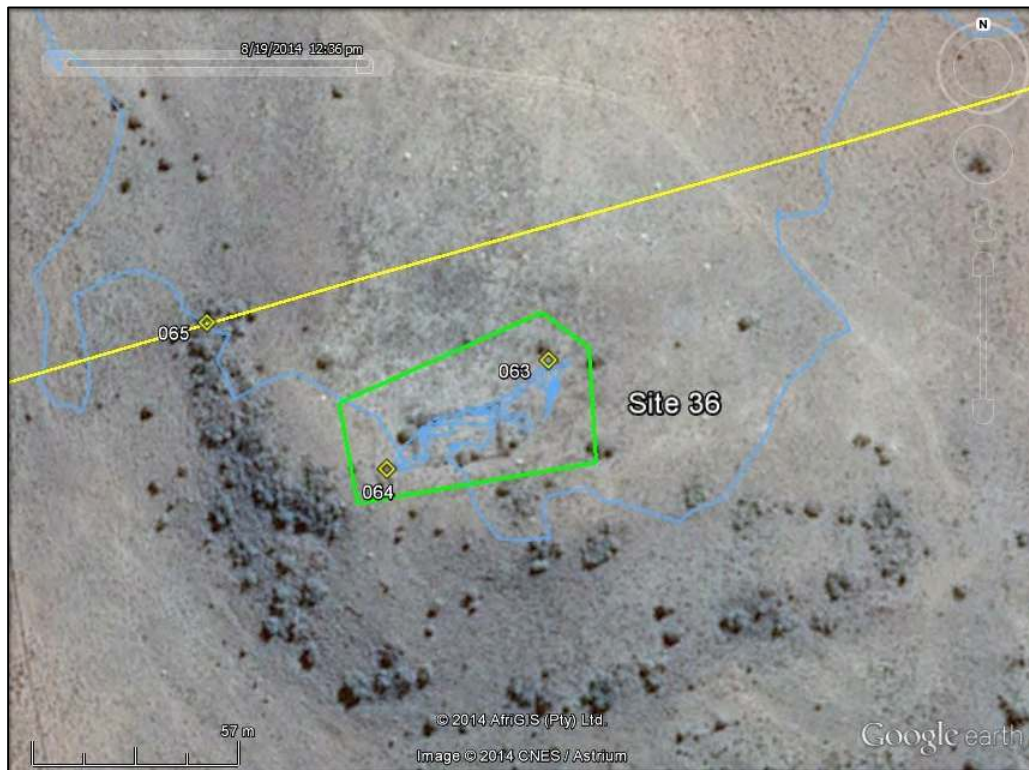


Figure A1 Box 11: Site36. GPS 065 is an isolated occurrence of no concern.

APPENDIX 2: HISTORIC STRUCTURE LAYOUTS

In this appendix layout maps of all but two of the built historic ruins are presented. The exceptions are Site 4 which could not be properly surveyed due to time constraints and Site 1 which was not properly surveyed because the primary heritage resource had been recently demolished. In the diagrams that follow, thick black lines denote rock outcrops and thin dotted lines erosion gullies (in both cases the labels are placed on the high ground to be read facing the lower areas). All built features are indicated in grey lines. All GPS co-ordinates are indicated and the positions of graves are shown by red stars with their GPS co-ordinates. A north arrow and selected dimensions of the built structures are indicated in each diagram.

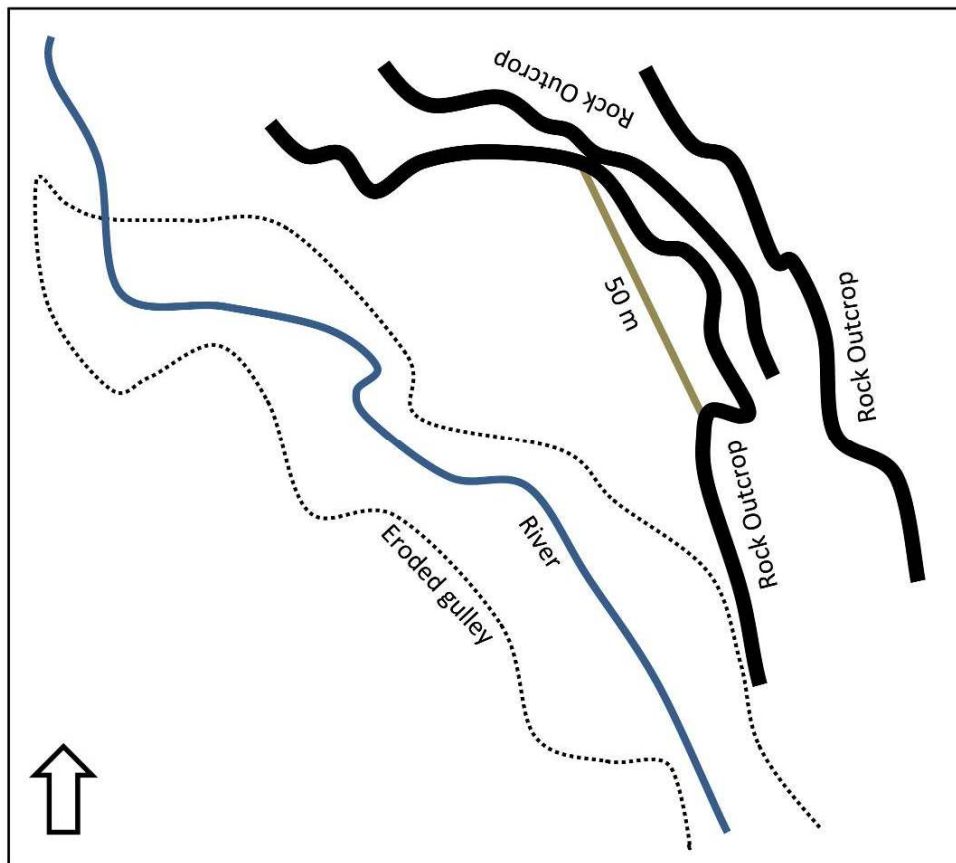


Figure A2.1: Site 3.

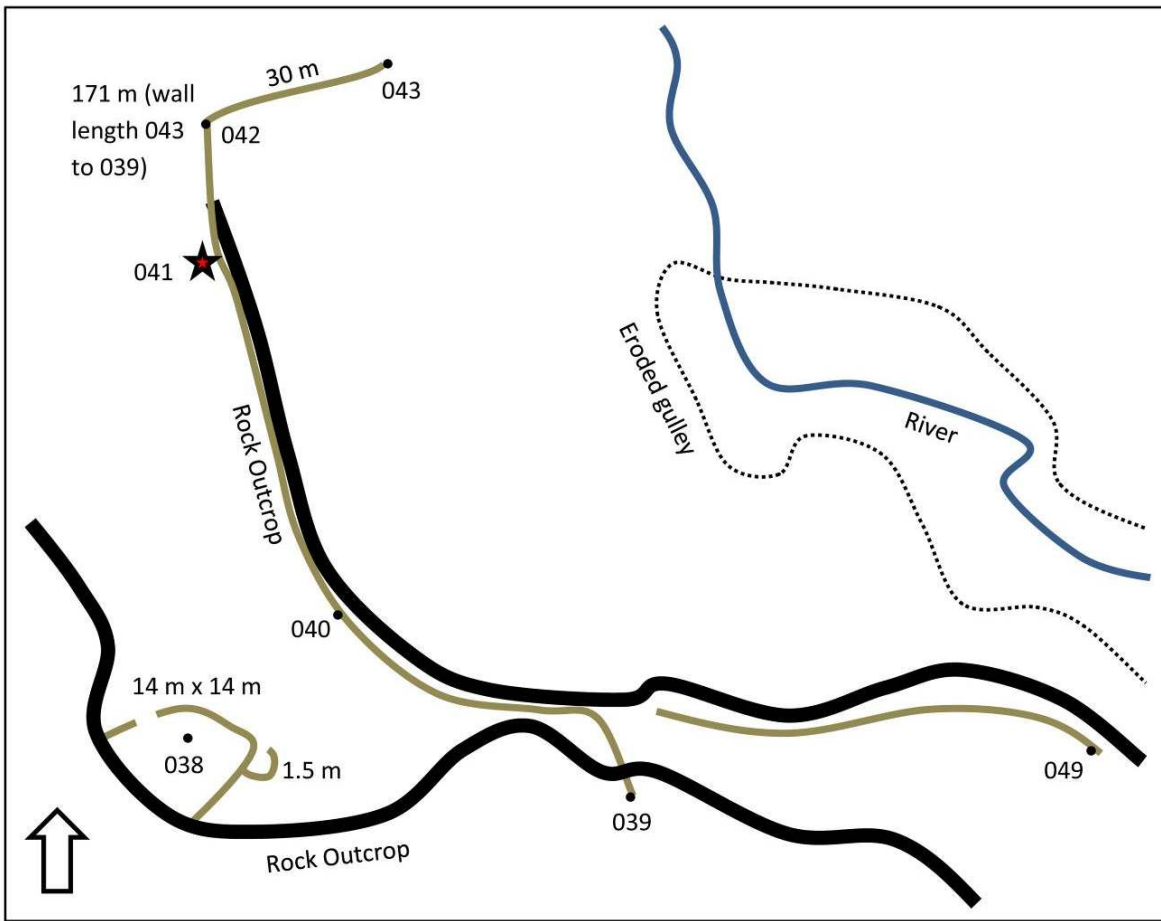


Figure A2.2: Site 5.

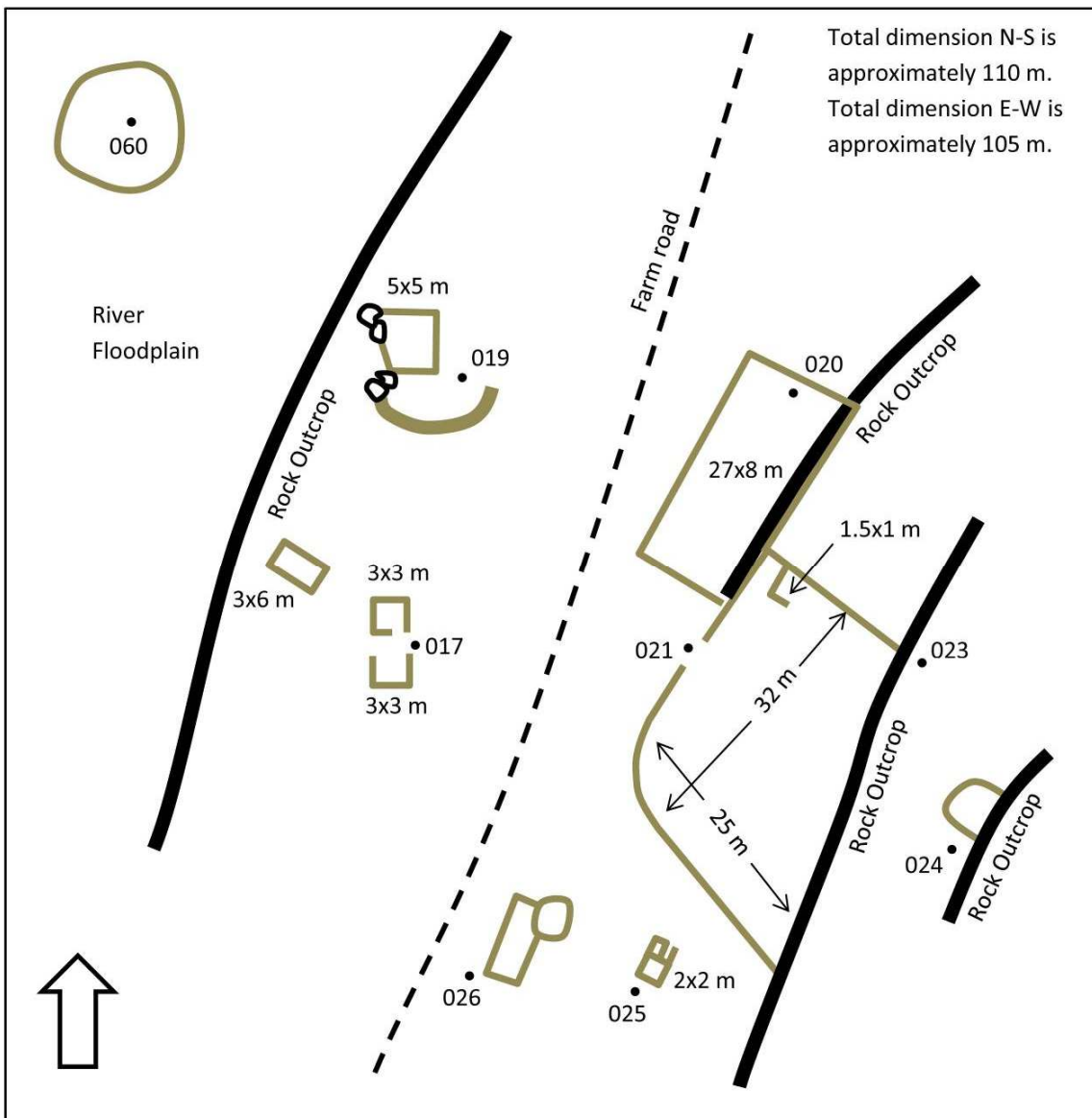


Figure A2.3: Site 6.

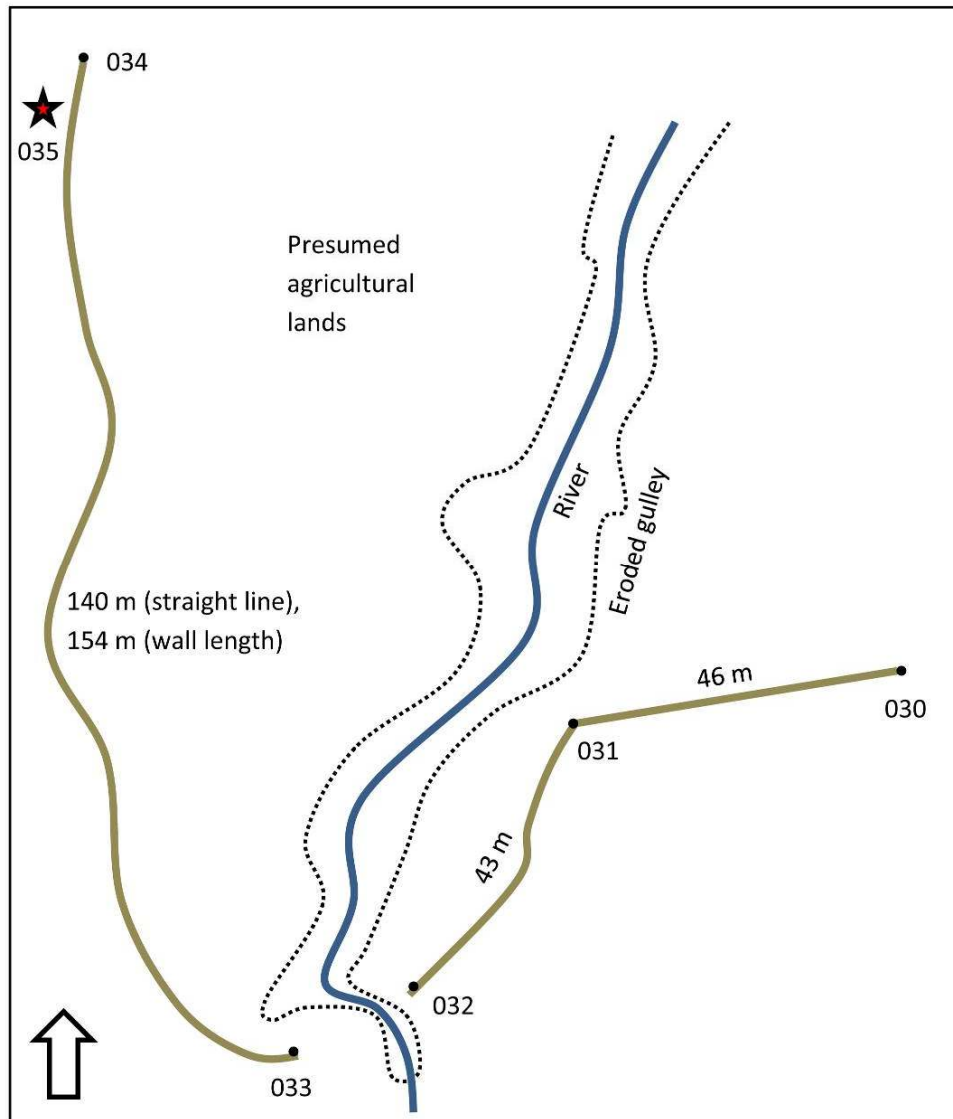


Figure A2.4: Site 7.

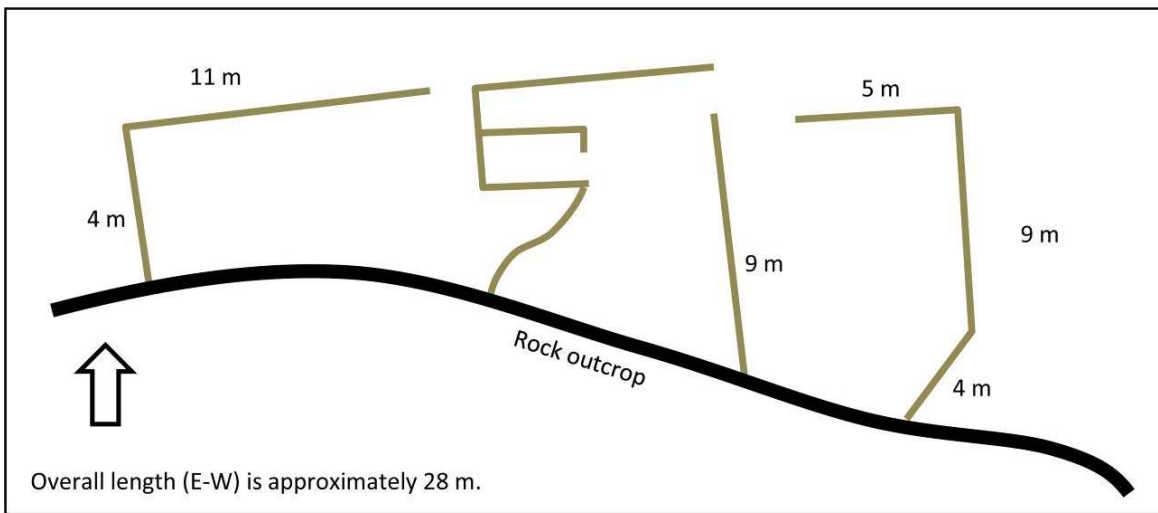


Figure A2.5: Site 8.

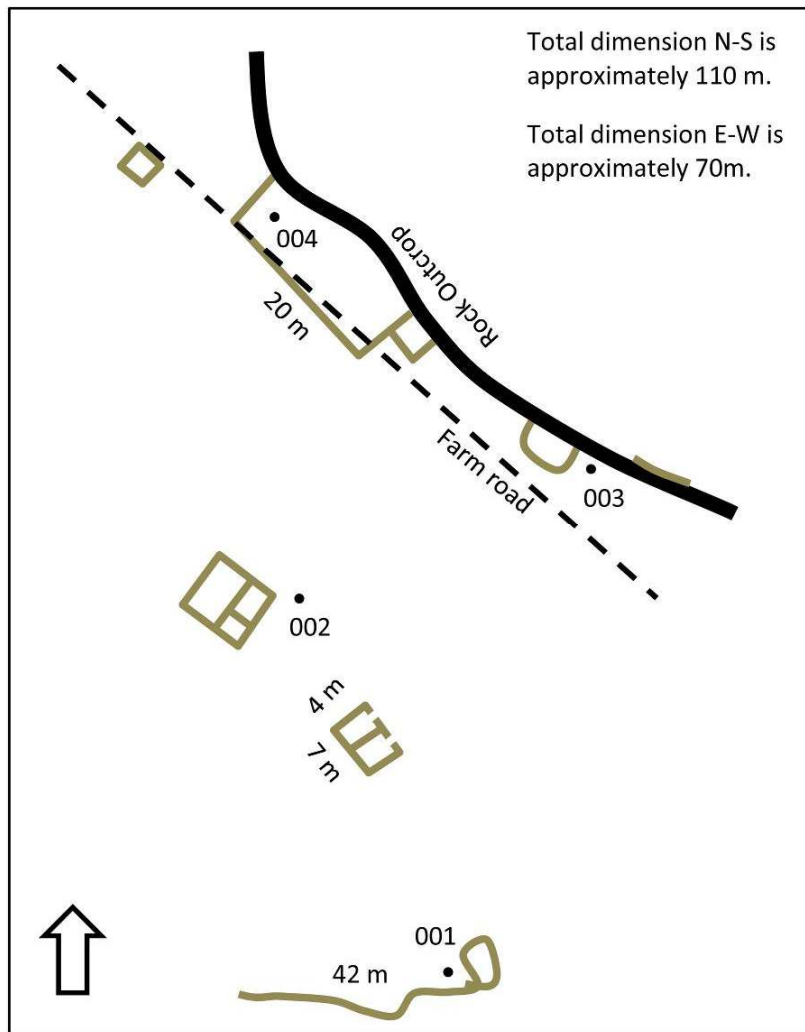


Figure A2.6: Site 9.

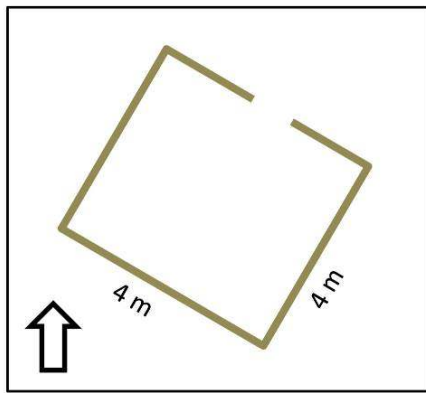


Figure A2.7: Site 10.

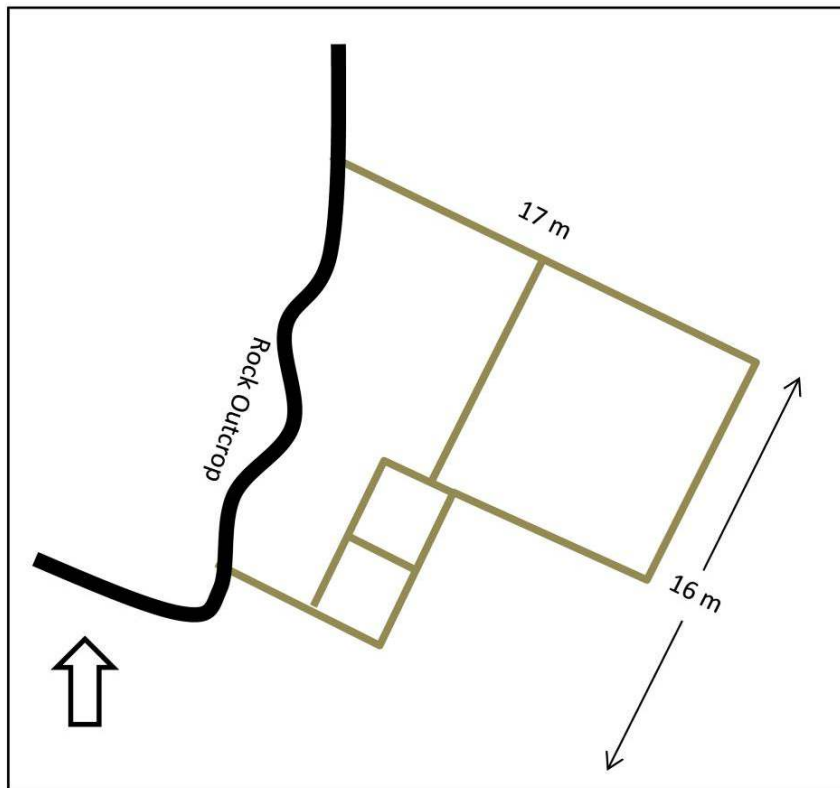


Figure A2.8: Site 13.

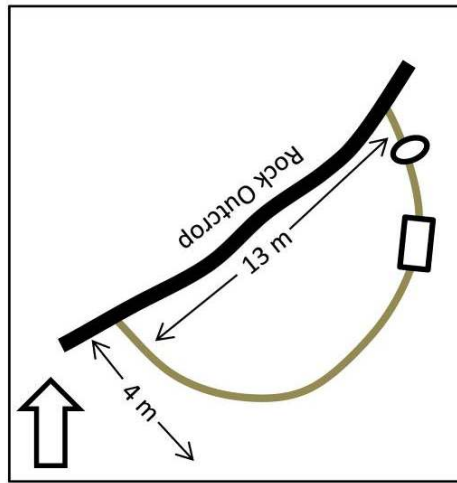


Figure A2.9: Site 22.

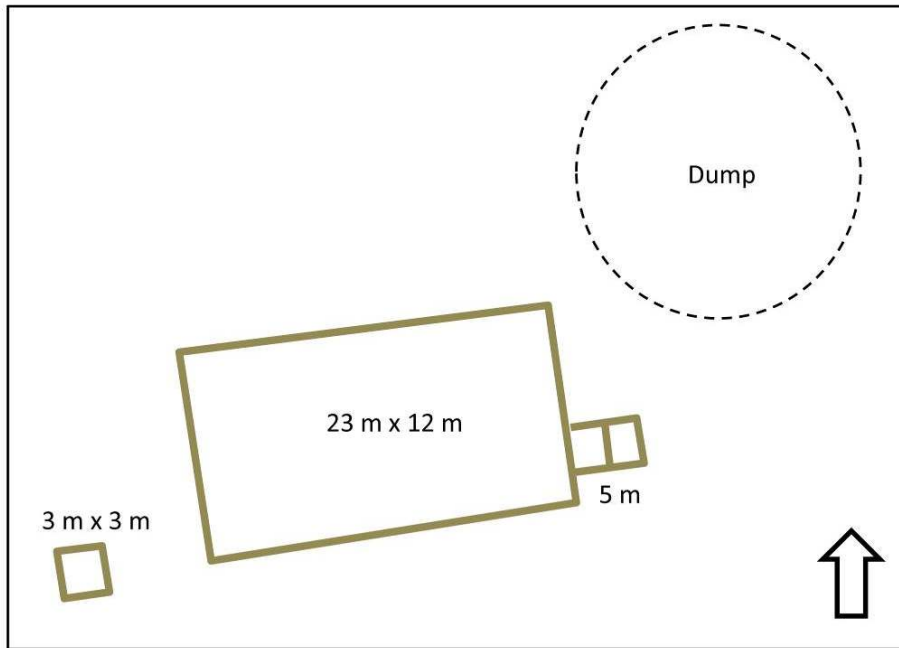


Figure A2.10: Site 36.