

**A second Phase 2 archaeological data recovery
at the site of Kathu Townlands
for Erf 5116:
Kathu, Northern Cape Province**



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Acronyms

AIA	Archaeological Impact Assessment
APM Unit.....	Archaeology, Palaeontology, and Meteorite Unit
APMHOB
.....	Archaeology, Palaeontology, Meteorite, Heritage Object and Burial Permit Committee
BIF	Banded Ironstone Formation
DENC.....	The Department of Environment & Nature Conservation
EIA	Environmental Impact Assessment
IDP	Integrated Development Planning
MGS	Modern Ground Surface
MMK.....	McGregor Museums, Kimberley
NHRA	National Heritage Resources Act
RMP	Report Mapping Project
SAHRA.....	South African Heritage Resources Agency
SAHRIS	South African Heritage Resource Information System
SDF	Spatial Development Framework
SOS	Statement of Significance
U of T.....	University of Toronto
UCT.....	University of Cape Town

Executive Summary:

This report describes the scope, history, context, methods and results of the second Phase 2 undertaken in relation with the development currently called “Heritage Square”. The primary aim of this action was to recover a well-provienced and comprehensively documented sample of the archaeological material that is representative of the affected area. This report describes this undertaking. The authors posit that the field work described in this report successfully achieved this aim and produced a dataset where the essential geological and archaeological samples are now curated in the McGregor Museum with precise contextual data. These data will serve as a lasting resource that will benefit archaeologists working to understand the Kathu Complex. **On this basis we recommend that the permit for destruction of the remaining archaeological deposits on Erf 5116 be approved.**

1 Introduction

This report describes the second Phase 2 data recovery on the property of Erf 5116 in the town of Kathu, Northern Cape, in support of a proposed shopping mall called Heritage Square (formerly Rooisands Mall). The primary archaeological resource in danger from this development is the site known as Kathu Townlands, which extends across the western Portion of the project area. The activities reported herein are the result of a complex history both in terms of the archaeology involved as well as the heritage management. As such, a fair amount of context is required before outlining the project objectives, methods and findings.

This report begins with a description of the project location. The property in question has changed designation multiple times throughout the heritage management relevant to the current activity. This description is followed by a brief overview of the history of decisions that have shaped the current project and its management aims. This history involves details that have legal implications. *Nothing contained in this report should be taken as an official legal position of our client(s), SAHRA, the McGregor Museum, or any other relevant parties.* The facts, as currently understood by the authors, are presented here solely in an effort to frame the history and objectives of the current project.¹

Once the scope and purpose of the current activity has been defined, the context of the current action can be provided. This action is a Phase 2 data recovery intended to mitigate the adverse effects of the proposed development. To do this, a broader understanding of the significance and nature of the Kathu Townlands site as well as related deposits is required. Previous management decisions on other portions of the site are also helpful in contextualizing the current recommendations. A significant component to the current project consists of the geological setting of Kathu Townlands, as such a geological context is provided.

This report established that the deposits at Townlands are part of a broader archaeological landscape, and as such a distributional approach is adopted here. Some theoretical context is

¹ As a further disclaimer, the authors are not lawyers. We are archaeologists. Much of the correspondence described here refers to telephonic conversations, meetings, and other conversations of which we have no records. Further, additional documents exist of which we are currently unaware, or to which we do not have access. Therefore, the following discussion is strictly limited to understanding the scope of the current project and should not be viewed as a summation of the legal issues surrounding the archaeological action described in this report.

provided to clarify this approach, its advantages, and why it is the best approach given the nature of the deposits.

This context, in turn delineates the range of required research questions and management aims that shaped the field project. These aims form the field work goals, and as a result dictate the methods employed in data recovery. This is followed by a description of the findings of our data recovery, including what was excavated and where, as well as the nature of the deposits encountered.

Our findings allow us to evaluate the various previous management recommendations, and make our recommendations. The field work described in this report successfully recovered a well-provienced and comprehensively documented sample of the archaeological material that is representative of the affected area.

2 The Project Location

Various maps, previous projects and historic and legal documents referenced in this report refer to the project area using a wide variety of descriptors, so a comprehensive description of the property in question is required.

The development is located on Portion 48 of the farm of Bestwood 459. Portion 459/48 has been subdivided into multiple Erven, including the property in question: Erf 5116. Erf 5116 has been subdivided into Erven 12189, 12190 and 12191². According to documents received from the client, these three Erven have been further subdivided into Erven 9611, 9687, 9688, 9689, 9690, 9692, and 9693 (See Figure 2).

For reasons outlined in the scope of work below, this project was primarily concerned with Erven 9687, 9688, & 9689 along the western edge of the proposed development. Nonetheless, the development is being built across the entirety of the former Erf 5116. Therefore, the most accurate way of describing the project area is to use this larger designation. As such, this report will use Erf 5116 to describe the project area, with the caveat that it has been subdivided and the legal status and ownership of the various sub-Erven that make up Erf 5116 do not form a cohesive legal unit.

Province:	Northern Cape
Magisterial District:	Kuruman
District Municipality:	John Taolo Gaetsewe
Local Municipality:	Gamagara
Town:	Kathu
Map Reference:	2723CA
Parent Farm:	Bestwood 459
Portion (former):	48
Erf:	5116 (since subdivided, twice, see text and Figure 1)

Table 1: Project Location

² These are the current Erven designations according to the most up to date data available from the Survey General's Office in Bloemfonten.

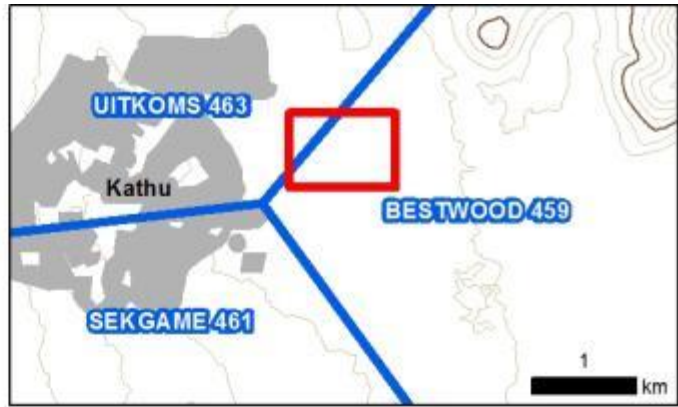


Figure 1: The Project Location



Figure 2: Erven 5116 as currently subdivided (as provided by the client)

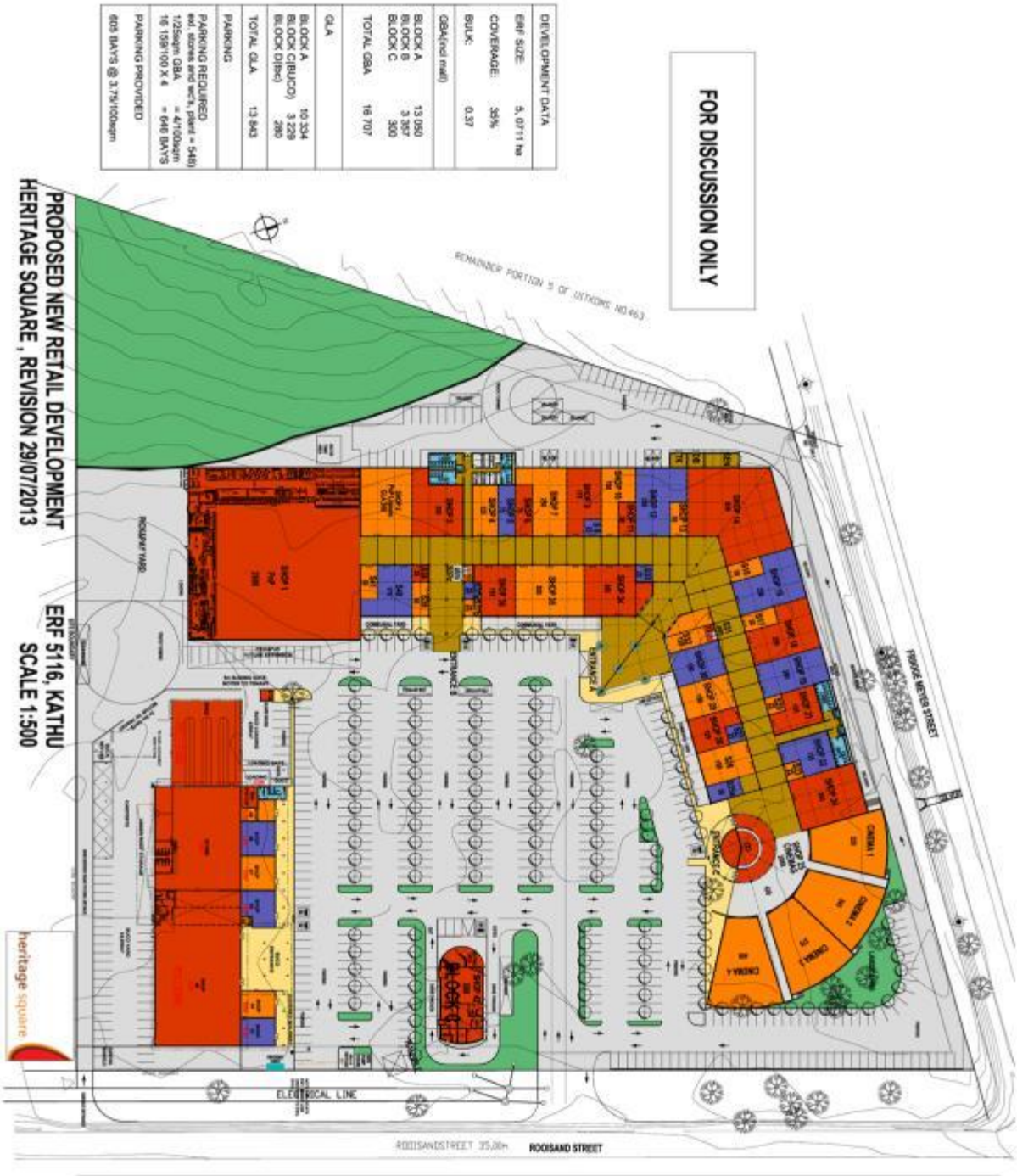


Figure 4: The amended layout in its most recent version (provided by the client on 13 August 2013, dated 29 July 2013)

3 Scope of work & project history

The current project is the second Phase 2 data recovery project undertaken for this development. The current project began on Monday July 1st 2013, when Mr. Walker was contacted by Jaco Minnie of Leon Frank and Partners in regards to helping his client to undertake a Phase 2 mitigation as requested by the Archaeology, Palaeontology, and Meteorite (APM) Unit of the South African Heritage Resources Agency (SAHRA) for the Erven 9687, 9688, & 9689. For SAHRA to be able to consider an application for the destruction of the remainder of the site, additional recording and understanding of the site was requested, since the previous mitigation was not sufficient to grant destruction of the site. Mr Minnie is representing PZK Beleggings 3000 CC, the former owner of the project area. Mr Minnie's client sold the subdivided portions of Erf 5116 to Davilox Pty Ltd who is currently undertaking the development of Heritage Square. The fact that the client is a representative of the seller rather than the developer is significant only in that it indicates the complex history of the current situation. The following discussion outlines briefly the project history only as it specifically relates to the aims and nature of the current project.

From the perspective of our client, the primary aim of the current project is to obtain a destruction permit for the archaeological deposits threatened by the proposed development. To do this, we must mitigate the adverse effects to the significant archaeological resources that have been and will be damaged in the process of constructing the Heritage Square mall. This action is required under Section 35 of the National Heritage Resources Act (NHRA #25 of 1999). Section 35(4)(a) stipulates that:

“(4) No person may, without a permit issued by the responsible heritage resources Authority — (a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site”

In order to obtain such a permit, the developer is required to offset the damage to archaeological heritage that would result from destroying such a resource without investigation. Thus, the developer has contracted the current project to successfully obtain a scientifically significant sample of the resources being destroyed. This sample will serve to lessen the adverse effects caused by the destruction of the remaining threatened archaeological material, and enable the preservation of the valuable information contained within the resource to survive the destruction that will be caused by the building of the mall.

Typically the scope of work required for a Phase 2 is determined by the associated Phase 1 report that evaluates the impact of a specific development activity on the archaeological resources in the project area and determines if a Phase 2 is required. In this particular case however, our scope of work for this Phase 2 is more complicated.

There is no Phase 1 AIA associated with the current development. There is however a previous Phase 1 associated with the property in question that effectively provided clearance for any development activity on the property in question. This AIA did recommend a Phase 2 project, but the recommendations of that AIA do not match the associated final EIA report. This has led to considerable confusion and conflict. These reports are described below to provide a setting for what followed.

The divergent management recommendations that were produced by these reports, resulted in a lengthy series of correspondence framing the scope of work for a Phase 2 project that was undertaken by Mr. Beaumont. The report submitted by Mr. Beaumont was rejected and did not procure a destruction permit that would allow development to proceed. The history of these decisions is also described below as they explicitly frame the scope of the current project.

As such, we've been contracted to undertake the required data recovery work that will enable SARHA to evaluate the significance of the deposit and determine if the developer can obtain the destruction permissions they desire. In this way, our scope of work begins with addressing the concerns SAHRA had with the previous Phase 2 project. We are further required to fulfil (and are limited by) the scope of work produced through the negotiations between SAHRA and the developer that led to this previous Phase 2's objectives. Once these objectives are laid out, the recommendations of the Phase 1 report can be addressed, along with the archaeological context required to frame the objectives sufficient to successfully obtain a destruction permit.

From the perspective of SAHRA, and the archaeological community, the archaeological site of Kathu Townlands was known to exist on the property in question, was well documented as significant, and had been known since at least the early 1990s. Therefore, a permit was required to undertake any activity that would affect this resource. However, from the perspective of the developer, they had conducted the required studies and did not require any further approval from a heritage authority to proceed with development. To re-emphasise the position stated in the introduction, we are not lawyers and nothing said herein should be taken

as supporting the legal basis for either party's position in this matter. Nonetheless the discrepancy between these two positions is central to understanding the scope of the current project.

3.1 Phase 1 AIAs & EIAs related to the current project

The first phase of archaeological heritage management is a required pre-requisite for any second phase project. It defines the nature of the deposit, and recommends the nature of mitigation required in a Phase 2. In this specific case, there have been two separate Phase 1 projects associated with the Phase 2 efforts for the current development, but none specifically undertaken to evaluate the impact of the development of this mall. Initially, the 2006 AIA for Portion 5 of the farm of Uitkoms 463 (Beaumont, 2006b) was regarded by SAHRA as the first phase of this project, and is still linked on the SAHRIS database for the first Phase 2³. Specifics of this project are described in more detail later, but it makes the following management recommendations for the site of Townlands:

“It is recommended that this segment of Portion 5 should be declared a Provincial, or preferably, a National Heritage Site, bearing on the subcontinental beginnings of blade production and pigment usage, by at least 350 000 years ago.” (Beaumont, 2006b: 2)

and

“that area with jaspilite bedrock and about 400 million overlying Acheulean artefacts is an archaeological treasure that deserves National heritage status, and, certainly any use of it for urban development would be a fatal error.” (Beaumont, 2006b: 4)

In the case decision for the Portion 463/5 AIA⁴, SAHRA agreed with the decision to allow the development of Portion 5 to proceed stating:

“The SAHRA Archaeology, Palaeontology and Meteorite unit may support the recommendations of the specialist that development may proceed on the southern and eastern parts of the property subject to our understanding how this will impact on the archaeological site.”

They supported the recommendation to nominate the site stating: “The area demarcated as significant may not be used for any development.” They then state that the following actions should be taken:

³ www.sahra.org.za/content/kathu-Townlands-1-northern-cape

⁴ <http://www.sahra.org.za/content/110400>

“Mr Beaumont will be asked to nominate the site as a National Heritage Site. The site should be fenced and a Site Management Plan would have to be developed to clarify how the site would be safeguarded during development and into the future. The potential importance of having a national heritage site in the area should not be under-estimated.”

By contrast, the current project does not have an associated Phase 1 linked on SAHRIS⁵. However, both the developer and Mr. Beaumont have identified an AIA project (dated the day before the Portion 5 project) as the appropriate Phase 1 to be associated with the development of the mall (Beaumont, 2006c). As described in the correspondence in the next section, it does not appear that this impact assessment (either the AIA or EIA) made it to the SAHRA APM unit for comment or archiving. It was not mapped as part of the Report Mapping Project (Leslie & Walker, 2009), and does not currently exist on SAHRIS either as a GIS layer or as a digital report. This project was undertaken on Portions 4 and 48 of the Farm of Bestwood 459, directly adjacent and east of Uitkoms Portion 463/5 (see Figure 5 for the relationship between these two properties).

The Bestwood 459/48, 459/4 AIA report (Beaumont, 2006c) was embedded within both the draft scoping report EIA (Geldenhuis, 2006a) and the final scoping report EIA (Geldenhuis, 2006b) for this development, and remains unchanged between these two documents. It should be noted that this AIA (and the associated EIAs) were undertaken over a considerably larger area than the current project area (See Figure 5). Further, these impact assessments were undertaken for the proposed Namakwari Safari’s Township development, which did not include a mall being built on Erf 5116 (See Figure 6 for a map of the proposed Namakwari development).

In this assessment, and consistent with other adjacent assessments, Mr. Beaumont distinguishes between the portions of the project area with surface calcrete bedrock and those without. He describes the calcrete as tertiary in origin, and archaeologically sterile. He contrasts what he considers sterile to an area “320 m long by up to 60 m wide, that runs along the northern part of its western boundary” (Beaumont, 2006c: 3) where there exists approximately a meter of ironstone artefacts atop ironstone bedrock.

As such his management recommendations in this report are as follows:

⁵ <http://www.sahra.org.za/content/kathu-Townlands-phase-2-part-2> (at the time of report submission)

“No artefacts, palaeontological bones or graves of any age were found in that preponderant (ca. 99%) Portion of the property that has calcrete bedrock. My conclusion is that the use of that area for housing will have no perceptible impact on the archaeological resources of the Northern Cape. However, the 300 - m - long strip along the western edge of the property is another matter, and, **if the more than 10 million artefacts there are to be sacrificed to urban development, there would first have to be a Phase 2 salvage investigation.**” (Beaumont, 2006c: 4 emphasis ours)

In this report he provides a site boundary for the site of Townlands. This is clearly shared with the Portion 5 AIA maps, and the various issues with this boundary will be described below. Nonetheless, this AIA firmly establishes that the site exists on the property in question, that it is significant, and that if it is to be developed he recommends a Phase 2 data recovery.

Regardless of the clarity of this AIA report, the associated Final Scoping EIA Report dramatically complicated the situation. This EIA report contained the AIA described above in its entirety as Annexure 5, and contained a map of the extent of the Townlands archaeological site that was consistent with Mr. Beaumont’s report (see Figure 7). The heritage summary of the AIA describes all of this as follows:

“The study found one area of significance situated along the western border of the study area. This area was found to contain a layer of rubble of between 0m and 1m thick, largely made up of stone artifacts and forms the eastern side of the archaeological site known as “Kathu Townlands” [map reproduced here as Figure 7]. Full details of findings are included in the report attached as Annexure 5.” (Geldenhuys, 2006b: 17-18)

However, the next sentence in the same paragraph goes on to state:

“During a site investigation which was undertaken [sic] by Mr Peter Beaumont (archaeologist), Mr Chris Nel (Land Surveyor) and Mr Len Fourie (town planner) the archaeological site was established and surveyed. During this investigation it was found that **the archaeological site is situated outside the borders of this proposed development and will therefore have no impact in this regard** (see attached surveyed map – [reproduced here as Figure 8])” (Geldenhuys, 2006b: 18, emphasis ours)

This revised map cuts the site off at the property boundary. Unfortunately, this artificial and angular site boundary was the one chosen of the two conflicting maps to be incorporated into the Spatial Development Framework (SDF) for the Gamagara local municipality (See Figure 9⁶). The inclusion of this erroneous site boundary in the SDF has far-reaching implications as

⁶ www.gamagara.co.za/index.php?option=com_docman&task=cat_view&gid=53&Itemid=60

it forms part of the local inventory of heritage resources from which planners are meant to be able to determine if proposed developments might impact upon heritage resources. The NHRA requires in Section 30(5)

“(5) At the time of the compilation or revision of a town or regional planning scheme or a spatial development plan, ... a planning authority shall compile an inventory of the heritage resources which fall within its area of jurisdiction and submit such inventory to the relevant provincial heritage resources authority”

It is beyond the scope of this report to investigate this situation beyond pointing out that this problem exists. This discrepancy appears to be the source of the confusion about the existence of heritage resources in the current project area. Despite this confusion, referring specifically to the AIA as submitted for Bestwood 459 Portions 4 & 48, the resource is on the property in question, was determined to be significant, and a Phase 2 was recommended if development was to proceed that would impact these deposits.

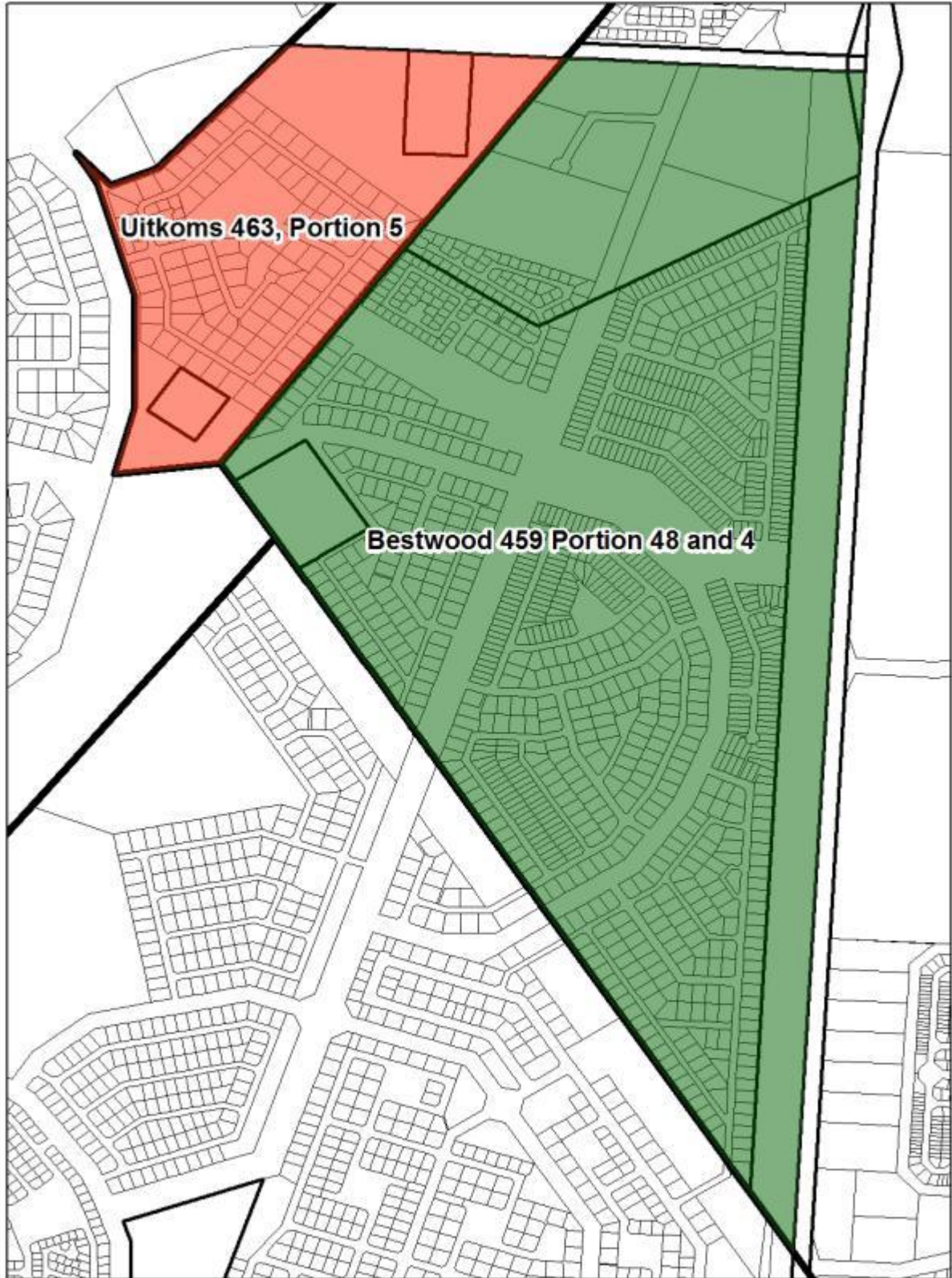


Figure 5: The relationship between Uitkoms Portion 463/5 and Bestwood Portions 459/48 & 459/4

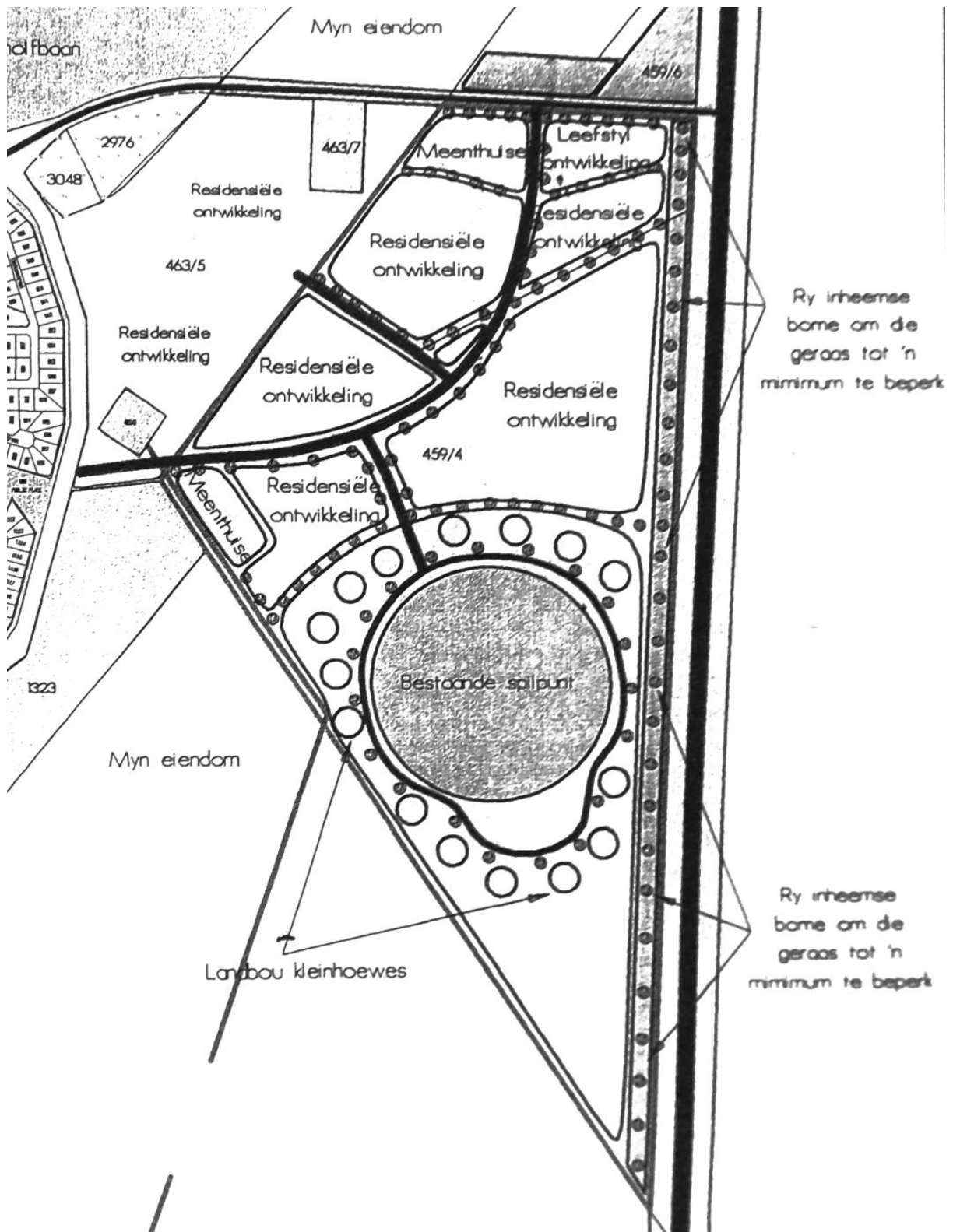
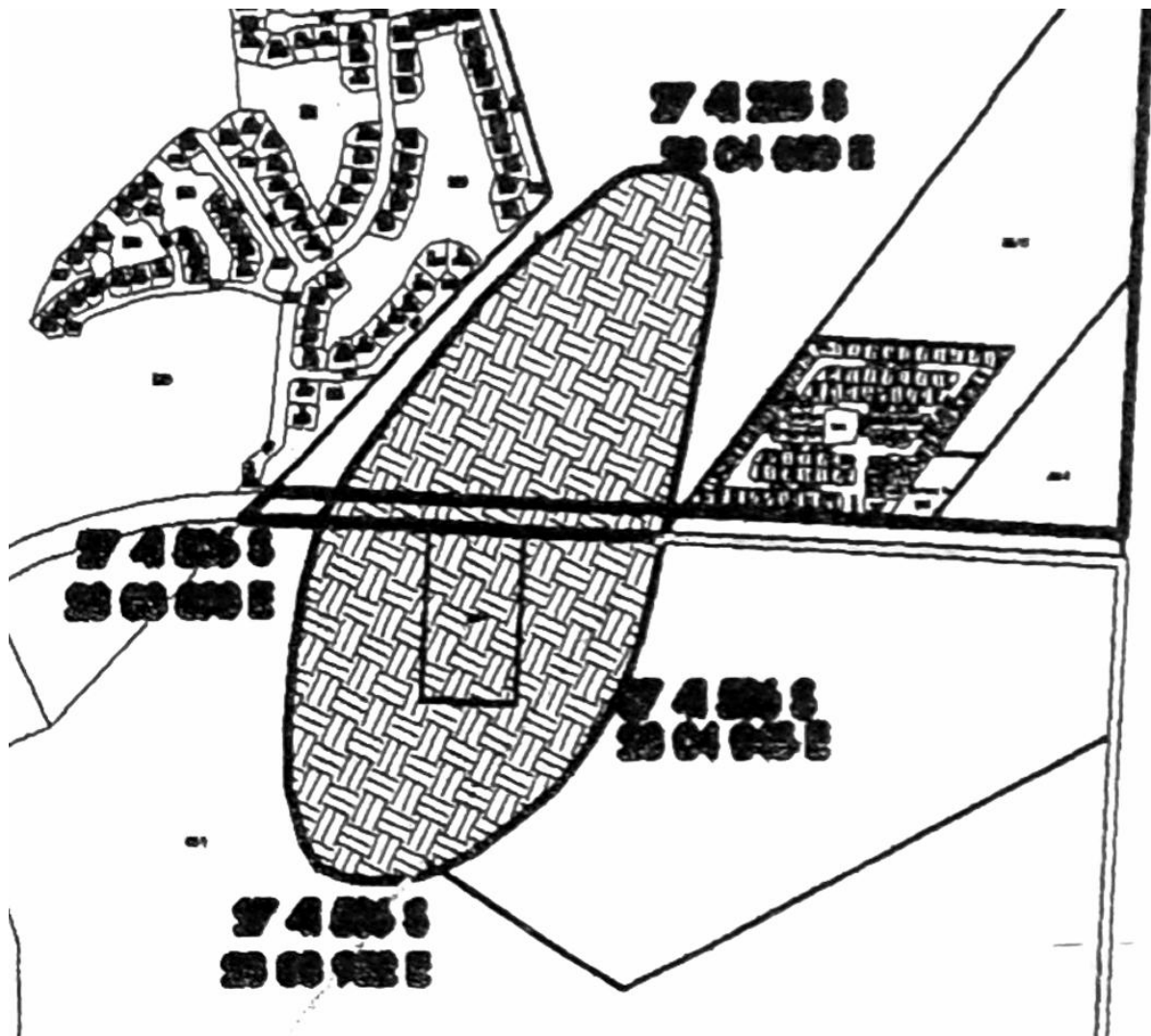


Figure 6: A map of the proposed Namakwari Safari's Township development after (after Geldenhuys, 2006b: Figure 6A)



**Figure 7: A map of the extent of the Townlands archaeological site,
(after Geldenhuys, 2006b: Figure 8)**
This matches fairly closely with the Beaumont 2006b Figure 6 boundary.

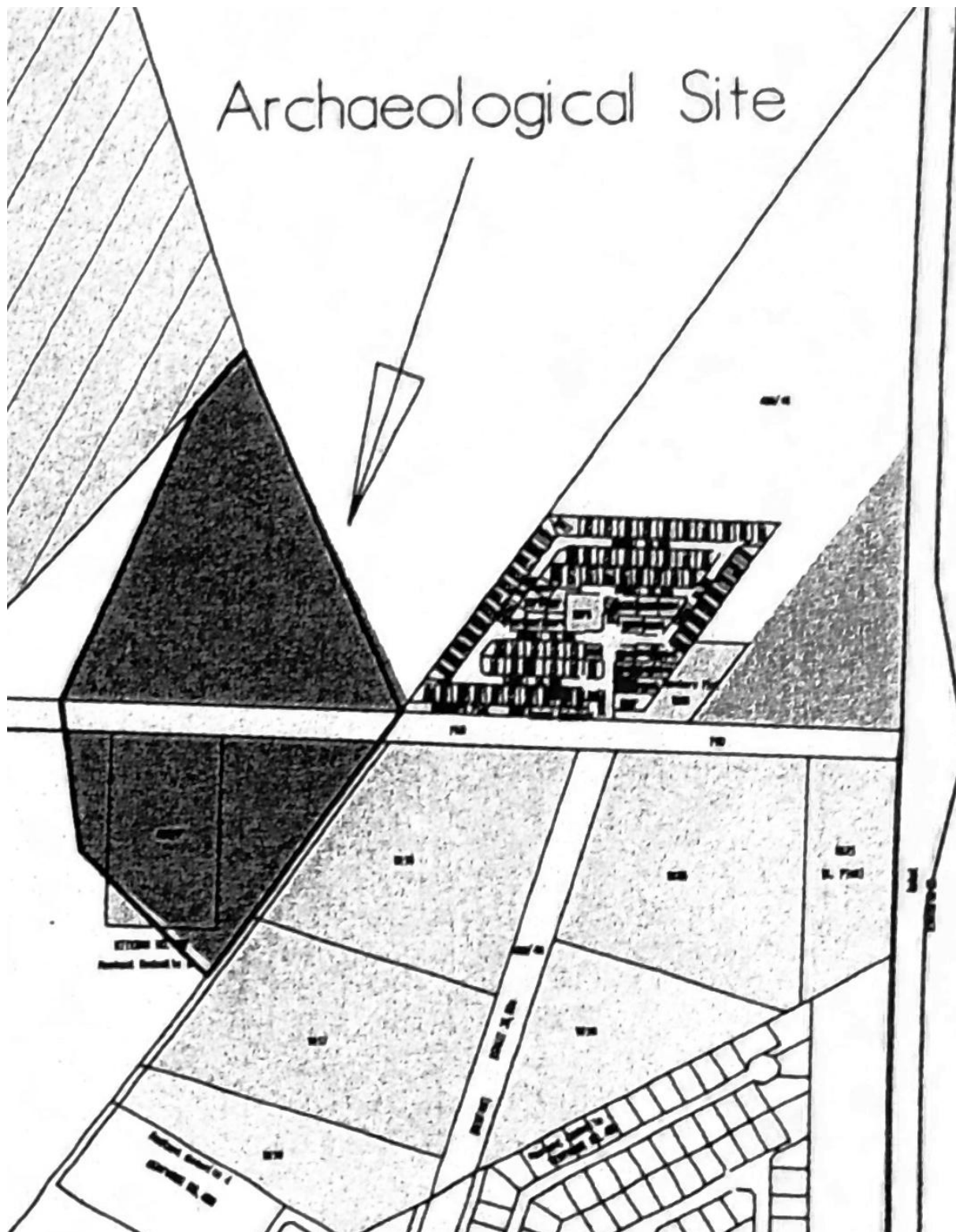


Figure 8: A map of the extent of the Townlands Archaeological site, (after Geldenhuys, 2006b: Figure 10)



Figure 9: Detail of the Spatial Development Framework (SDF) for the Gamagara local municipality⁷

⁷Map 7: Kathu SDF:

www.gamagara.co.za/index.php?option=com_docman&task=cat_view&gid=53&Itemid=60

3.2 A history of decisions that shape the current project

3.2.1 Cease Works Order: March 7, 2013

Since a destruction permit had not been obtained by the developer prior to the commencement of development a Cease Works Order was issued by SAHRA on March 7th, 2013, for the entirety of Erf 5116, evoking Section 35(5)(a):

“(5)When the responsible heritage resources authority has reasonable cause to believe that any activity or development which will destroy, damage or alter any archaeological or palaeontological site is under way, and where no application for a permit has been submitted and no heritage resources management procedure in terms of section 38 has been followed, it may — (a) serve on the owner or occupier of the site or on the person undertaking such development an order for the development to cease immediately for such period as is specified in the order”

And Section 50(10):

“(10)A heritage inspector may, if there is reason to believe that any work is being done or any action is being taken in contravention of this Act or the conditions of a permit issued in terms of this Act, order the immediate cessation of such work or action pending any further order from the responsible heritage resources authority.”

The original layout of the mall development that was halted at this time would have resulted in the mall itself being built atop intact archaeological deposits (see Figure 3).

3.2.2 April 12, 2013

A response to the Cease Works Order was received by SAHRA on the 12th of April 2013. In this letter, the representatives of the developer made a number of points but only two are relevant to the current scope of work. They state (Point 7) that their independent archaeologist maintains that no archaeological sites exist on Erf 5116 that could be damaged by development. Further, they declare (Point 9) that they undertook the proper studies with qualified specialists and submitted them in accordance with the law prior to the commencement of development including an Environmental Impact Assessment (EIA) and an Archaeological Impact Assessment (AIA). This letter does not specify the name of the specialists involved, nor the titles or dates of these reports.

3.2.3 April 16, 2013

SAHRA responded on the 16th of April, asserting that based on a site visit by one of the authors of this report (Dr. Morris) and Ms Smuts of SAHRA, significant archaeological deposits were present on the property being developed, and had been disturbed by

development activities. Further, they quote SAHRA records indicating that the site has been considered significant since at least 2008.

3.2.4 April 23, 2013

A letter from SAHRA dated the 23rd of April notes that the EIA and AIA report previously mentioned by the developer were undertaken for the development of Portions 4 and 48 of Bestwood 459 (Beaumont, 2006c). They state:

“After conducting a thorough search we are unable to locate any information regarding the Bestwood 4 and 48 Site. It further appears, from correspondence with the Environmental Assessment Practitioner (Ms Marquerite Geldenhuys) that the Final Scoping Report was not submitted to SAHRA, but directly to the DENC⁸, despite containing significant amendments, in terms of the heritage component, from the Draft Scoping Report.”

They reference a Record of Decision by the Northern Cape Department of Tourism Environment and Conservation dated the 23rd October 2006 that gave development approval but had conditions for the existence or discovery of archaeological resources. In this letter (Point 5.1), SAHRA uses the site border provided by Mr. Beaumont in 2006 as the most ‘official’ border for the extent of the Townlands site (Beaumont, 2006b)⁹. This letter also established the various mitigation options that have shaped this project, including:

Option 1: (Point 5.2) Do not develop anything atop the archaeologically sensitive area, thus preserving the deposits *in situ*.

Option 2: (Point 5.3) Develop a parking area on top of the deposits, thus allowing the area to be used, but preserving the deposits *in situ* (under a protective cover).

This option would require a permitted Phase 2 archaeological investigation be undertaken, and a report submitted to SAHRA to determine the nature of the deposit in question (Point 5.4). Such an investigation is required for an informed decision about the impact that capping the deposit with a parking area would have upon the deposit. This investigation would also serve to lessen the adverse effects of development upon these deposits by producing a scientifically useful sample for further research on the Portion of the site that will be destroyed, damaged, or become inaccessible. The archaeological activity proposed in Point

⁸ The Department of Environment & Nature Conservation

⁹ Issues with this specific report and the determination of the extent of the site will be discussed when covering the history of work on Townlands itself.

5.4 is limited compared to the data recovery required for a full destruction permit, as outlined in Option 3.

Option 3: (Point 5.5) If the developer does not (or cannot) create a parking area on top of the archaeologically sensitive area, and wants to build upon the sensitive area in question, SAHRA requires a much more comprehensive data recovery. They state that this Phase 2 “must be sufficiently comprehensive to reflect the significance of the site, its research potential and the density of the artefactual material”.

Regardless of which of these options is chosen by the developer, this letter also requires an archaeological monitor during construction (Point 5.6). They also request some form of landscaping buffering between edge of the development and the remaining Portion of the site on Portion 5 of Uitkoms 463, or Erf 5116 depending (Point 5.7).

3.2.5 April 24, 2013

Representatives of the developer replied the following day. The majority of this response is not relevant to the current project. However, as to the options proposed by SAHRA above, the developer (“without conceding that it has any legal duty to do so”) agreed to alter the layout of the development to place a parking area over the ‘sensitive area’ (Point 9). However, they refused to halt development while an archaeological investigation was undertaken to see if this was a viable option (Point 10). They did agree to hire an archaeological monitor to monitor the construction, as well as agreeing to the landscaping requirements outlined in Point 5.7 of SAHRA’s letter that would buffer the existing deposit from the negative visual impact of the backside of a mall.

3.2.6 April 25, 2013

SAHRA responded the following day. Again, much of this response is not relevant to the actions described in this report. However, SAHRA affirms that a Phase 2 investigation must be undertaken to proceed with the development, even if the layout is altered to only place a parking area atop the ‘sensitive area’ and that it cannot rescind the Cease Works Order until full agreement with the terms outlined in the letter dated April 23 can be given.

3.2.7 Undated permit application (granted May 6, 2013)

At some point the following week, Mr. Peter Beaumont was engaged to undertake the required Phase 2 investigations. His undated permit application¹⁰ was accepted and a permit issued (Permit 250) on the 6th of May¹¹. His application outlined a work plan including excavating six square meters (three 1x2 trenches) sampling the deposit in the south, the middle and the north of the property in question, excavating from the surface to the ironstone bedrock. He planned to excavate 5 cm levels and to report upon the thickness of the archaeology in each of these three trenches, as well as counts and a typology of the artefacts recovered, such that he could make recommendations as to if Option 2 or Option 3 was viable for the current development.

3.2.8 May 7-11, 2013

These are the reported dates where Mr. Beaumont undertook his field work for his Phase 2 (Beaumont, 2013).

3.2.9 May 23, 2013

A letter was sent from SAHRA to the developer on this date that documents a change in the scope of the project. In this letter, the properties in question were limited from Erf 5116 to Erven 9687, 9688 and 9689 for the first time in the series of correspondence provided to the authors of this report. Further, approval for the commencement of development was given in this letter, provided that the terms of the Cease Works Order continued to be met. Moreover, they give approval for Option 2, the parking lot option, provided the mitigation process is completed and the appropriate destruction permits are obtained.

3.2.10 June 6, 2013

Mr. Beaumont's report about his Phase 2 data recovery was submitted to SAHRA in early June¹² (Beaumont, 2013). He had dug one 1x1 unit, not the six square meters that was outlined in his permit application. It is unclear where exactly he dug this unit as no map or coordinate was provided. He did not excavate the unit to bedrock, but rather stopped at 170 cm below surface, and estimated that the deposit continued to 190 cm. This estimate was

¹⁰ http://www.sahra.org.za/sites/default/files/additionaldocs/Project_proposal_0.pdf

¹¹ <http://www.sahra.org.za/content/118561>
<http://www.sahra.org.za/node/118544>

¹² Although his submitted report is dated 15 May 2013, the report was submitted to SAHRA 6 June.
<http://www.sahra.org.za/content/kathu-Townlands-phase-2>

based on a mechanical excavation nearby whose origin is unclear¹³. He did not collect all of the assemblage that he had excavated for curation at the McGregor Museum, and did not provide any details as to the nature of the assemblage that was recovered.

His management recommendations in this report include the following:

“In my opinion it is questionable whether those two features [?] justify increasing the already vast proclaimed extent of the Townlands site. Indeed, some would argue that, since its limits have been mapped, the preservation of a more modest and maintainable Portion would suffice” (Beaumont, 2013: 2)

He expands upon this theme later in the report, saying:

“Furthermore from a scientific point of view, the sheer number of uniformly Late Acheulean artefacts on the Townlands site far exceeds any conceivable research purpose or museum storage capacity, which makes the preservation of each and every one of them pointless.

...

the Bestwood strip [the Portion of Townlands on the property in question], representing ~7% of the total Townlands site extent, should be sacrificed, thereby allowing the developer to continue with his original plans” (Beaumont, 2013: 11)

He thus makes the recommendation that Option 3 (complete destruction) is viable based on the quantity of artefacts present in the remaining portions of the Townlands site. He further implies that data recovery is not required for the same reasons.

In addition, he specifically addresses the management solution of the parking lot; Option 2 from SAHRA’s letter dated April 23rd. He points out that given the topography in this limited area, to cap this Portion of the site would require considerable fill, a retaining wall, and result in a parking area that was on a different level from the rest of the mall. He states that this is more expense than the developer is willing to outlay.

Thus the original Option 2, which we will now refer to as Option 2a, was determined not to be viable by Mr Beaumont in his Phase 2 report. We concur with this determination. The deposits cannot be capped due to issues with their relative elevation in relationship with the mall. Nonetheless, the parking lot option has remained in the list of potential solutions. Indeed, it is the preferred recommendation given by this report. However, this amended parking lot option (henceforth Option 2b) will damage the deposit. In this choice, the archaeological deposits must be graded to the level of the mall, and then filled with rubble

¹³ It is likely that this trench matches what we are calling Trench A.

and paved with paving bricks. The implications of Option 2b will be discussed throughout this report and dealt with in detail in the management recommendations.

3.2.11 June 20 2013

On the 20th of June, the SAHRA APMHOB permit committee rejected the Phase 2 report submitted by Mr. Beaumont and refused to issue a destruction permit for the property in question. Their reasons for rejecting the report were as follows:

- Only one 1x1m unit was excavated rather than the three 1x2m trenches as proposed.
- No map was provided for the placement of this unit.
- The artefact collection sampling strategy was unclear and not in accordance with the proposed scope of work.
- The legal framework describing the reason for the Phase 2 was stated incorrectly.
- No description of the levels excavated or the nature of the deposits was provided.
- Bedrock was not reached, so the depth of the deposit remains unknown.
- No artefact analysis was provided by the report.

The case decision stated:

“SAHRA requests that a new excavation be undertaken in fulfilment of the SAHRA request of the 23rd of April 2013. ... We recommend that the excavation team comprises appropriately trained personnel.”¹⁴

3.3 Scope of work for the current project in light of this history

The history of decisions outlined above has framed the scope of work for the current project. The project area was established as Erven 9687, 9688 and 9689 and not Erf 5116. The maximum number of three 1x2 meter trenches had been previously set and agreed to as sufficient to mitigate the damage to the deposits caused by the development (for a total of 6m²). These were to be dug to bedrock so that the actual depth of the deposit could be determined. These were to be distributed at a minimum in three separate areas investigating the nature of the deposit in the north, center, and southern portions of the impacted deposits. Maps of the project area, including the location of all excavations, must be included in the report. A rationale for sampling strategies (if employed) must be provided. Detailed descriptions of the stratigraphy and individual levels dug must be reported. Preliminary artefact analysis must be included in the report.

¹⁴ <http://www.sahra.org.za/content/122705>

In discussing the scope of work with the client, Mr Minnie specifically requested that we undertake a large enough data recovery project so that submitting a destruction permit to enable Option 3 was a viable option. This was the only available option, as Option 2b would require a full destruction permit as well. After establishing our client's goals, we consulted with SAHRA as to what would satisfy them given the current situation. It was requested, that as a first step before firm decisions were made about exactly how to proceed, that we establish the current situation of the deposits on the property in question. Once established, we were required to procure sufficient data to enable the permit committee to make an informed decision about the construction of the parking lot (Option 2b) or full destruction (Option 3); that we procure sufficient data to better understand the scope and nature of the deposits on this specific property so that we have some idea of what will be lost as a result of this development. Further we had to establish the relevant regional archaeological research questions in consultation with the lead researcher in the region (Professor Michael Chazan), such that we could obtain a scientifically useful sample of the deposits (thus effectively mitigating the adverse effect of this development).

As such, our objectives were as follows:

1. Establish the current status of the archaeological material that is directly threatened by the development.
2. Gather sufficient data to enable informed decisions about the potential destruction of this Portion of the site of Townlands.
3. Gather sufficient data to enable further scientific archaeological study of the material collected.
4. Make recommendations to SAHRA and to our client as to how the current development can minimise its impact on the significant archaeological resource that will be (or have been) damaged or destroyed in the course of development.

The authors, in consultation with personnel from the APM unit at SAHRA, have developed the work plan outlined in this document. We gratefully acknowledge their contribution, but fully accept any deficiencies in this plan or our report as our own. Following this plan, we undertook the required research and fieldwork to meet these goals as quickly and efficiently as possible.

4 Previous research & context

4.1 Introduction: archaeological research context

The project area is nested between the sites of Wonderwerk and Kathu Pan, both of which have provided stratified sequences relevant to the deposits at Townlands. The site is extremely important in its ability to contribute to our understanding of Stone Age behaviour and highly rare in the extraordinary density of stone artefacts. The published findings and interpretations of the Townlands site include raw material procurement, or quarrying, and initial manufacture of Early Stone Age tools. Evidence of early pigment (specularite) use has also been described from Townlands excavations (Beaumont & Bednarik, 2013: 12). There are numerous other related sites (both regionally and globally) in terms of time period and hominid behaviour that inform the current research.

Unfortunately, only minimal archaeological research has been able to be undertaken at the site, and this has resulted in a paucity of data and publications. While this situation increases the fragility of the resource as well as the need to protect it, it also hinders effective management as the extent of the deposit is unclear. This history is provided to clarify what is known (and what isn't) about the deposit. The current state of knowledge about the site and surrounding deposits frames the plan of action outlined herein to best comply with the requirements made by SAHRA on the 23rd of April 2013.

This project has been undertaken in consultation with the research project, led by Professor Chazan, that is currently investigating the ESA archaeological sites in and around Kathu. This research project has agreed to consult with this project and contribute research funds to extend the field work of this Phase 2 beyond the minimum scope required by our client. This close relationship has allowed the current data recovery to feed directly into ongoing research, and provide a research perspective into the current project. The research team led by Prof. Chazan will undertake the final artefact analysis of the material collected by this project at its own expense. Further, the potential analysis of samples recovered from this project will also be done under this research project. The goal of the field work described herein was to provide this research team (of which all the authors are a part) with a data set that will be able to contribute to research questions about human behaviour in the past.

The main data required for further research was a series of laterally distributed excavations sampling the deposit across the project area excavated with vertical and horizontal control.

These require profiles, locations, and surface elevations. Samples of calcrete and if possible an OSL sample tube of sand should be obtained for potential dating in the future. The current project has achieved and exceeded all the goals required to undertake further research on the material from the project area

The history of work on the Townlands site, and related nearby deposits, reveal a slightly different set of research questions. These relate to the nature of the deposits, site formation processes and geomorphology. From this previous work, it is clear that the 'edges' of the site have been defined by the surface geomorphology and underlying geology. As a result, a geo-archaeological context of the deposits and the surrounding matrix is fundamental for understanding the site. Unfortunately, previous efforts have not included the expertise of a geologist. The issue of the geological setting of the site is one of the most important aspects of the current project and as a result, a geo-archaeologist was flown in from Canada (at the expense of Prof. Chazan) to consult on this aspect of the current work.

This section on the previous research and context covers a history of work and management on the Townlands site and related deposits. This section is more focused on what has been done and what has been discovered and less on how the deposits have been interpreted. An analysis of how these highly significant archaeological deposits can inform us as to past hominid behaviour will be incorporated into the follow up research publications. The current report is more concerned with describing the nature and extent of the deposit in question, to enable a more cohesive management of the extensive and important archaeological landscape around Kathu.

The main difficulty in reviewing the previous work is understanding where deposits are located, and where they are not. The extent and location of the archaeological deposit that is impacted by the current development has not been reported consistently. The prior methods for determining any edge to the deposits are at present unclear. In the case of the ESA deposits in the vicinity of Kathu, the entire concept of site and site boundary is unhelpful, and this area should rather be thought of as a landscape

However useful non-site archaeology may be for understanding the nature of archaeological deposits and past behaviour, the paradigm has significant flaws for the purposes of heritage management. To manage and protect an archaeological resource, where the deposit actually is (and isn't) is a pre-requisite piece of information. The practicalities of management require us to draw lines around things we call 'site' and distinguish them from what we call 'not-

site'. Much of the history provided here is about how, why, and where these lines have been drawn.

4.2 Kathu Townlands: a description and history

The archaeological deposit at Townlands was initially discovered in 1980 by Naas Viljoen, farm owner (Thackeray & Thackeray, 1980; Beaumont, 1990; 1999; 2004; 2006b; 2013).

The site was first described in a permit report (NMC PER/1/231) describing the results of a large scale survey for archaeological resources in the region (Thackeray & Thackeray, 1980).

No site map was provided, and the site is described as:

“Kathu Quarry: This is an ironstone quarry site with Early and ?Middle Stone Age material about 4km east of the town, halfway between the town and the hills to the east. It can be reached by driving through the town and taking the last road to the left. About 1km before reaching the hill is a low pile of stones in a field to the left, about 100m from the road” (Thackeray & Thackeray, 1980: 8)

Shortly afterwards, the site was used as a source of road gravel, and this resulted in an archaeologist working directly with the deposits. This version of the site discovery is described as:

“In 1980, while excavating at Kathu Pan 1, the then farm manager, Naas Viljoen, called by to tell me that he had noticed municipal employees surfacing some nearby sand roads with jaspilite clasts, that, on examination, proved to be mainly artefacts, the source of which was traced to a quarry flanking the pony club entrance, ~300 m along the main road into Kathu from the N14” (Beaumont, 2013: 3)

Excavations at the site were conducted in 1982, and then again in 1990 (Beaumont, 1990).

The site is described as:

“Located on the original western edge of the farm Bestwood, and now c. 300m along the road into Kathu, from its junction with the Kuruman/Postmasburg highway, at approximately 27° 41' 30”S, 22° 4' 0”E, is an Acheulean open site that was discovered by Naas Viljoen in 1980, and investigated by way of two excavations some 300m apart in 1982 and 1990” (Beaumont, 1990: 96).

A map of the location of these excavations has not been published, and their exact location is currently unknown. However their location has been described as being “in the vicinity of the Kathu Equestrian Club entrance gate” (Beaumont, 2004: 52), thus putting them in the northern Portion of the site, likely north of the road. No site map was provided indicating the extent of the deposits or the variability of the surface assemblage. The 1990 field work established that the site extended south of the road but it was not established how far south

(Beaumont, 2006b). The size and extent of the site was described in 1990 as: “the site has an estimated area of 250 000 sq m, with east – west and north – south extents of c. 350 and 750m respectively” (Beaumont, 1990: 97).

No map of the site’s extent was published in the 1990 conference excursion field guide and no description about the horizontal distribution of artefacts was provided. Further, the methods used to determine the extent of the site were not provided. It is unclear how the estimated area was determined, and what off-site looks like. The artefact estimates provided in this and later reports appear to be a simple extrapolation of the two excavated squares assuming the site is homogenous in density and depth across its entirety.

The next publication to describe the site is the 2004 excursion guide (Beaumont, 2004). No further field work had been undertaken, and much of the description is identical to the 1990 publication. However, this site description includes the site of ‘Uitkoms’ (this site is described below as Uitkoms 1) as an extension or continuation of the Townlands deposit. The field work undertaken at Uitkoms 1 is described in more detail below. What is important here is that the site expanded from roughly 700 meters in length to include deposits more than 2 km away as a continuation of the same deposit.

The first published maps of Townlands were reported in series of Archaeological Impact Assessments were undertaken to the north, south and east of the site (Beaumont, 2006b; a; c). These assessments report the size of the site was as: “It was established that this handaxe locality stretched over ca. 45 000 m² of the property” (Beaumont, 2006b: 2). No explanation or notice is given for the dramatic shift from 250 000 m² as reported in 1990 to this smaller size¹⁵.

The main site boundary used by SARHA for the Townlands site for the current project was adopted from these reports, notably the only report that offers a complete circle around the site (Beaumont, 2006b). Across these three reports, five GPS points are given for the edges of the deposit. Four maps (or partial maps) are provided of the site area as well. These four maps do not match with each other, nor do they match the given GPS coordinates (See Figure 10).

¹⁵ The actual areas of the site extent as mapped in this AIA are as follows: Figure 6 version of site: 27,6595 m² Figure 8 version of site: 26,8050 m² and the site area as estimated from given GPS points: 12,5740 m². It is unclear how the estimates of 250,000 or 45,000 were derived.

These assessment reports do not offer a detailed description of the field methods used to establish this boundary. There is no description of survey coverage, transect interval, surface visibility, or variability of surface assemblage. The report states: “Over two hours was spent walking over the full extent of this terrain on the afternoon of Thursday 25 May 2006” (Beaumont, 2006b: 3). The nature of this ‘walking’ was described later as “A random foot search” (Beaumont, 2006b: 4). No sub-surface investigations were undertaken to determine the extent of the deposit that was not exposed on the surface.

These assessment reports (two described individually below, one above) divided the archaeologically sensitive areas (site) from area that did not require mitigation (not-site), based on superficial geology between jaspilite bedrock and calcrete deposits. In accordance with these findings, these reports (and others that followed) consistently made the recommendation that a proposed development can proceed, so long as it is limited to the calcrete bedrock portions of the properties evaluated.

The question of the site boundary does not inform research questions about past behaviour, but is vital to protect those deposits that are able to inform these questions. The current project scope was partly limited by this previous determination to the detriment of the extant deposit.

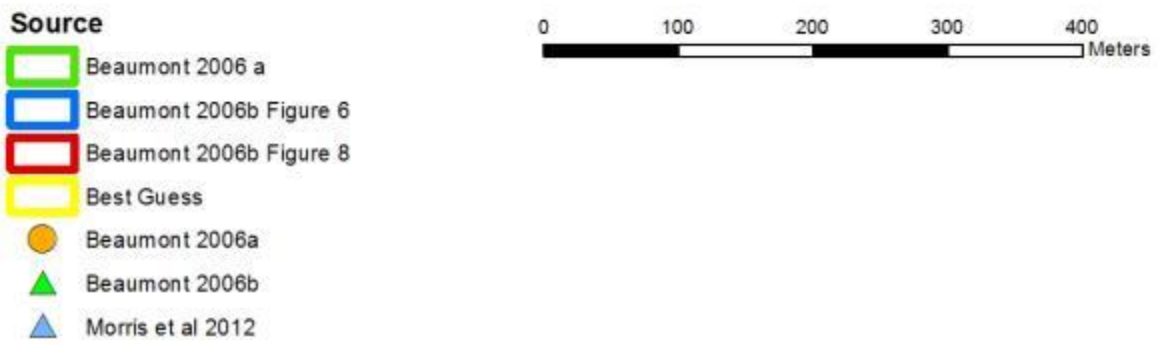
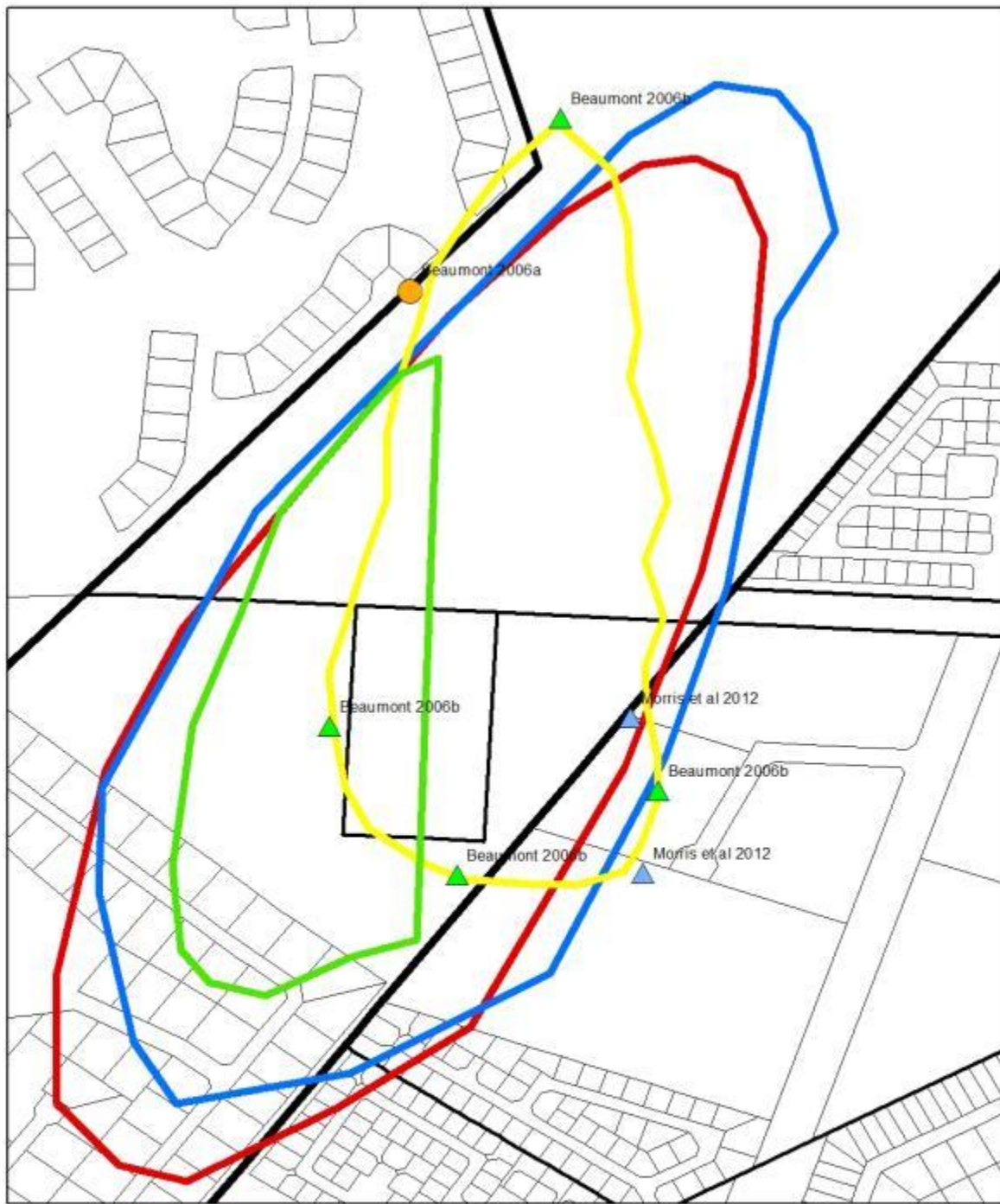


Figure 10: Various site boundaries for the Townlands site

4.3 Related archaeological deposits & theoretical context

The Townlands site is one component of a series of localities in the area surrounding Kathu which have evidence of a density of Earlier Stone Age (ESA) deposits that is unparalleled in South Africa, possibly the world. The density of deposits presents a challenge both for archaeological research methodology and, as we return to in Section 7, to cultural heritage management. The Kathu Complex is best seen as an archaeological landscape rather than a series of small discreet sites.

Landscape approaches to archaeology, particularly those that can be described as distributional or non-site, are the most useful paradigm for understanding the nature of these deposits and in managing them. This family of landscape approaches resulted from the combined push of behavioural ecology and inventory survey brought about through heritage management laws in the 1970s and early 1980s. Contract archaeological inventory survey brought to archaeology a variety of concerns that had not been previously considered. These concerns led to questioning the validity of the entire concept of archaeological sites, and a resulting transformation of survey methods and interpretations of artefact discard patterns (e.g. Dancey, 1974; Thomas, 1975; Klinger, 1976; Foley, 1980; 1981b; a; Dunnell & Dancey, 1983; Camilli, *et al.*, 1988; Dunnell, 1992; Ebert, 1992; Wandsnider, 1992; Wandsnider & Camilli, 1992).

A very similar thrust of archaeological theory has been employed in East Africa for entirely different reasons. These related approaches were developed to address issues raised by large scale synchronic landscapes such as those found between datable tuft deposits found in the Rift Valley. These approaches to procuring high resolution assemblages from secure contexts that are laterally distributed has produced a high volume of research since their development in the mid-1970s (e.g. Isaac & Harris, 1975; 1980; Isaac, *et al.*, 1981; Stern, 1993; Rogers, 1996; Blumenschine & Peters, 1998; Potts, *et al.*, 2000; Blumenschine, *et al.*, 2008; Braun, *et al.*, 2008).

Both of these research contexts apply to the deposits at Kathu. The common theme between them is the idea that the arbitrary construct of the archaeological site is deeply flawed and causes more confusion than utility (e.g. Hope-Simpson, 1983; Gallant, 1986)

The archaeological deposits at Kathu are enormous and represent a tremendous amount of early human activity. The Kathu Complex presents an opportunity unique in South Africa to

explore early human behaviour at the scale of the landscape rather than discreet sites. This set of localities also raises the obvious question of why hominin occupation was so dense in this particular area. A review of these deposits (as individual 'sites') is useful. Kathu Pan 1 is located to the west of the town of Kathu while the Townlands site and the remainder of localities identified to date are to the east of the town along the western flank of the Kuruman Hills. Most of the other localities are known from very brief pedestrian survey and limited excavations, with the exception being the deposits at Bestwood.

4.3.1 *Kathu Pan*

The site of Kathu Pan 1 has produced a sequence of ESA deposits including St 4a attributed to the Fauresmith and dated to ca. 500,000 BP. Research on this site has produced the earliest evidence for human use of spears for hunting (Wilkins, *et al.*, 2012) and some of the earliest known evidence of blade production (Wilkins & Chazan, 2012). Kathu Pan 1 is unique among the sites of the Kathu Complex in that it includes faunal remains (Klein, 1988). The fauna from Kathu Pan 1 include species such as hippopotamus that point to a far wetter environment than is found in the region today.

4.3.2 *Bestwood*

The archaeological deposits on the Farm of Bestwood 459, specifically those discovered in a sand quarrying activity, were first described in 2008 (Dreyer, 2008). These deposits have since become a central portion to the archaeological research being undertaken at Kathu (Chazan, *et al.*, 2012). A preliminary investigation in 2010 identified a lithic industry characterized by well-made handaxes, well retouched scrapers, occasional blades and a great diversity of core types, including choppers, polyhedrons, discoidal cores and unidirectional Levallois cores. In 2012, excavations by Chazan and Walker opened an area of 36 m² exposing these deposits in plan. This excavation confirmed that the industry found in surface collection is found *in situ* in a single horizon under the covering sands. Artefacts are all extremely fresh and do not show evidence of either transport or extensive exposure. It is highly likely that archaeological material extends beyond the limits of the quarry. A field visit by Chazan and Morris in 2011 found handaxes in a disused quarry approximately 1 km. to the south that is now filled by dumped calcrete blocks. Further field observations in 2012 and 2013 in adjacent sand quarry operations have revealed artefact rich deposits directly beneath the sands further to the south.

The sands that cover the Bestwood 1 archaeological horizon extend to north between two hills. Early Stone Age tools are found dispersed across these hills, in some areas at very high density, lying directly on exposed bedrock.

4.3.3 *Uitkoms*

There are also archaeological materials in the area around the Kathu Cemetery and across the farm of Uitkoms that have been designated by Beaumont as Uitkoms 1, 2, 3 & 4. At Uitkoms 1 foot search and a test pit pointed to similar lithic densities, debitage frequencies those found at Kathu Townlands 1 (Beaumont 2008). Uitkoms 4 is described as a buried site at approximately -100 m wide, “where bifaces are very similar to those from the quarries, but with a formal tool incidence about a thousand times higher, and like that at a typical occupation site” (Beaumont 2008: 3). There has not yet been any controlled excavation at Uitkoms 4 or analysis of collections from Uitkoms 1.

Uitkoms 2 & 3 are observed artefact deposits in road cuts along the N14.

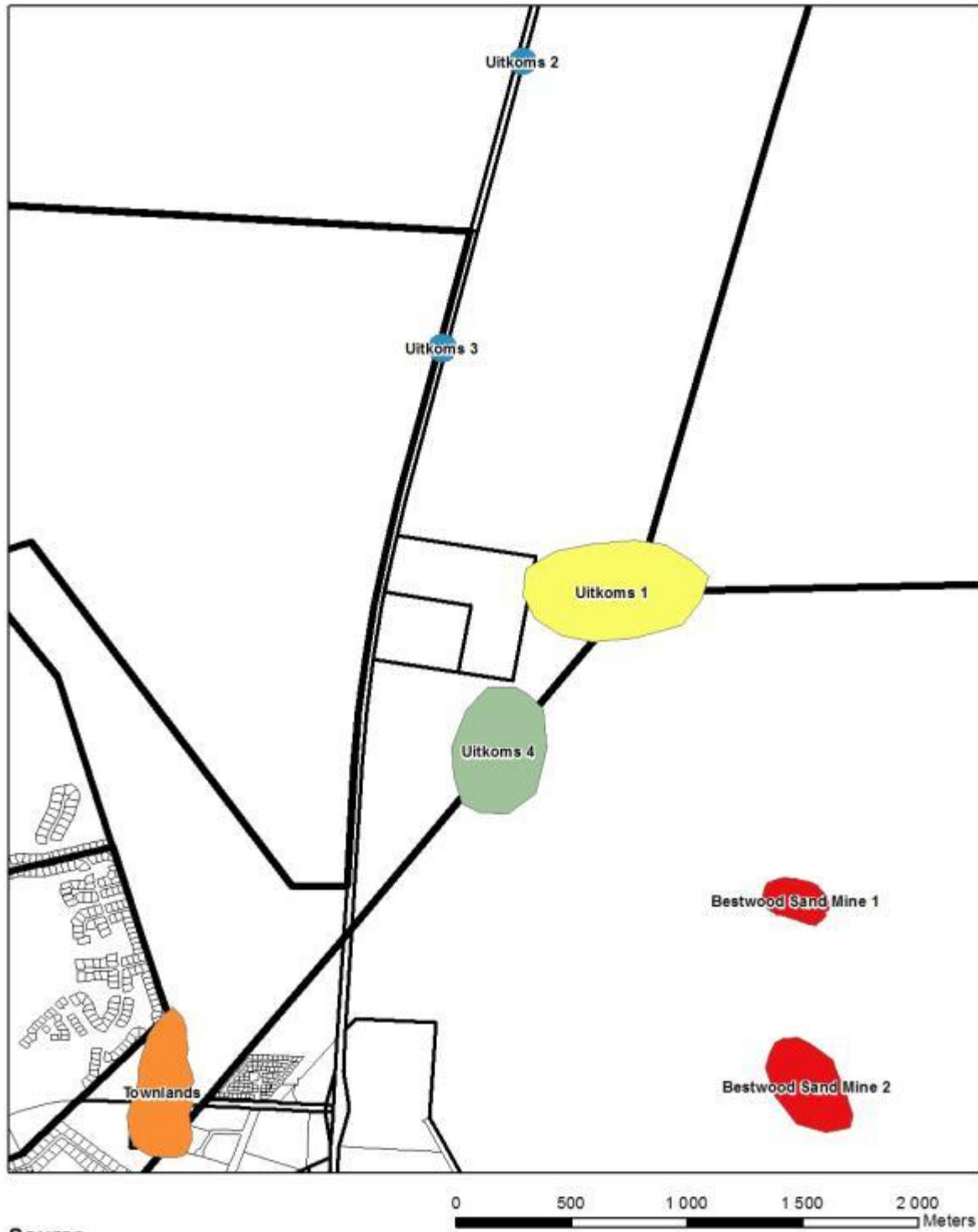


Figure 11: Map of related deposits as previously identified

4.4 Geological setting

The bedrock lithology is Precambrian, with exposures of Banded Ironstone Formation (BIF), which belong to the Kuruman Formation within the late Archean to earliest Paleoproterozoic Transvaal Supergroup (Knoll & Beukes, 2009). There is a wide degree of variability within the BIF in the Kuruman Formation both in terms of the scale of banding and the percentage of chert (SiO₂) relative to iron. The outcroppings at the Townlands sites are dominated by chert and show no fine scale banding. As a result the structure of these rocks is ideal for stone tool manufacture and it is likely that the availability of high quality raw material is a major reason for repeated exploitation of the resource and the high density of stone tool and knapping debris at Townlands. The term jaspellite is used to describe the rocks belonging to the Banded Ironstone Formation with high chert content and little banding and has been previously applied to all the BIF present at the Townlands locale. This report uses the term ‘ironstone’ to describe this formation as a whole. At present we do not have sufficient data to be more specific.

The Kuruman Hills are today drained by a series of ephemeral streams that flow northwest. None of these streams pass through the research area, the closest drainage is the Vermulsleegte, which is located 2 km north east of the site. There is evidence for far more substantial drainage systems at some point in the geological past in the area around Kathu. At the Bestwood site the archaeological horizon is underlain by at least ten meters of river gravels and similar deposits are known from other localities in the region, although no such deposits are known at the Townlands site.

Previous management decisions have been made based on the presence of ‘calcrete bedrock’ which has been stated to be tertiary in age. This is unfortunate. The age(s) of the calcrete along the edges of this deposit are unknown. Further, calcrete does not form as part of the geologic stratigraphy, but rather post-depositionally. Its stratigraphic relationship to the BIF or any other geological horizon does not necessarily follow the law of superposition. Calcretes are “the product of a combination of near-surface diagenetic processes that cause the dissolution, mobilisation and precipitation of a variety of minerals. Calcretes develop as a result of carbonates in solution moving laterally and vertically through sediments, which, over time, become progressively concentrated until they precipitate out as low-Mg calcite crystals” (Nash & McLaren, 2003: 3). Calcretes develop in arid or semi-arid environments but the context for the development of these deposits can vary depending on local conditions.

Calcretes are a common feature in the area around Kathu and figure significantly in the deposits in the vicinity of Townlands. There is evidence that there were multiple cycles of calcrete formation in the Kathu area. Kathu Pan 1 is a doline infill of a thick calcrete formation. The earliest archaeological assemblage at Kathu Pan 1 is typologically Early Acheulean and thus its age is older than 1 million years. This deposit is underlain by at least two meters of red sands. Thus the formation of the calcretes at Kathu Pan 1 must be considerably older than the archaeological deposits and thus must have formed more than 1 million years ago. At the Mamatwan Mine near Hotazel a calcrete horizon approximately 2 meters thick produced Optically Stimulated Luminescence ages of 113,000 and 108,000 years ago, and thus are considerably younger than the calcretes at Kathu Pan (Bateman, *et al.*, 2003). Without detailed analysis it is not possible to determine the age of the calcrete deposits at the Townlands sites. During fieldwork samples were collected that will make it possible (at a later date) to determine the nature and age of these deposits.

Stable sands derived from the Kalahari are found on the surface of at Townlands and make up the matrix within which most of the artifacts are found. As with calcretes there were likely multiple cycles of sand accumulation in the Kathu area. Research at Wonderwerk Cave has demonstrated that Kalahari sands were blowing into this region by 2 million years ago (Matmon, *et al.*, 2012) and it is likely that the sands at the base of Kathu Pan 1 are of such an early age. At the Bestwood 1 site Kalahari sands overlie the archaeological horizon and are thus of a much younger age. At the Mamatwan Mine the Kalahari sands produced Optically Stimulated Luminescence ages ranging from 62-44,000 years ago.

4.5 Management history of Townlands and related deposits

4.5.1 Prior Relevant Archaeological Phase 1 projects

In addition to the Bestwood 549 Portion 48 and 4 AIA, nine other AIA projects have been undertaken around the edges of Kathu Townlands, and on adjacent related properties that provide useful information for the current project. A review of these projects establishes the current body of heritage management for the site of Kathu Townlands, some information regarding its extent and other related deposits. This discussion is primarily limited to management recommendations, and the physical distribution of archaeological resources.

The project areas for most of these impact assessments were mapped as part of the Report Mapping Project (Leslie & Walker, 2009). The project areas as published by that project,

while roughly close to the actual project areas, all needed to be remapped for this report as they were not accurate enough for the purposes here. This is not a reflection on the accuracy of the report mapping project as a whole, but rather on a combination of poor reporting of the project location in these reports combined with the massive scale of the mapping project. In every case, we've been able to provide a more accurate project area than was previously determined. These eight previous projects are outlined in Table 3 and mapped in Figure 10. These projects will be discussed in chronological order outlining management recommendations and findings.

Map Label (F.10)	RMP MAP_ID	Report Date	Project Name	Reference	SAHRIS Link
A	MAPID_00906	30-Apr-2006	Kalahari Gholf en Jag Expansion	(Beaumont, 2006a)	SAHRIS Link¹⁶
B	Not Mapped by RMP	29-May-2006	Bestwood 459 Portion 48 and 4	(Beaumont, 2006c)	Not on SARHIS
C	MAPID_00918	30-May-2006	Uitkoms 463, Portion 5	(Beaumont, 2006b)	SAHRIS Link¹⁷
D	MAPID_00997	28-Jun-2006	Hartnolls 458 1st Phase 1	(Dreyer, 2006)	SAHRIS Link¹⁸
D	MAPID_00998	17-Jan-2007	Hartnolls 458 2nd Phase 1	(Beaumont, 2007)	SAHRIS Link¹⁹
E	MAPID_01686	06-Feb-2008	Portion of Sekgame 461	(Beaumont, 2008b)	SAHRIS Link²⁰
F	MAPID_01687	07-Feb-2008	Uitkoms 463, Portion 8	(Beaumont, 2008c)	SAHRIS Link²¹
G	MAPID_01692	12-Jun-2008	Bestwood 459 Portion 49	(Beaumont, 2008a)	SAHRIS Link²²
H	MAPID_01617	11-Aug-2008	Bestwood Estates	(Dreyer, 2008)	SAHRIS Link²³

Table 2: Previous AIA projects relevant to the Townlands site and the current project.

¹⁶ <http://www.sahra.org.za/content/9-2-055-0002-20060430-mcgm>

¹⁷ <http://www.sahra.org.za/content/9-2-055-0002-20060530-mcgm>

¹⁸ <http://www.sahra.org.za/content/9-2-055-0002-20060628-PAHS>

¹⁹ <http://www.sahra.org.za/content/9-2-055-0002-20070117-McGM>

²⁰ <http://www.sahra.org.za/content/9-2-032-0001-20080206-mcgm>

²¹ <http://www.sahra.org.za/content/9-2-032-0001-20080207-mcgm>

²² <http://www.sahra.org.za/content/9-2-055-0002-20080612-mcgm>

²³ <http://www.sahra.org.za/content/9-2-055-0002-20080811-pahs>

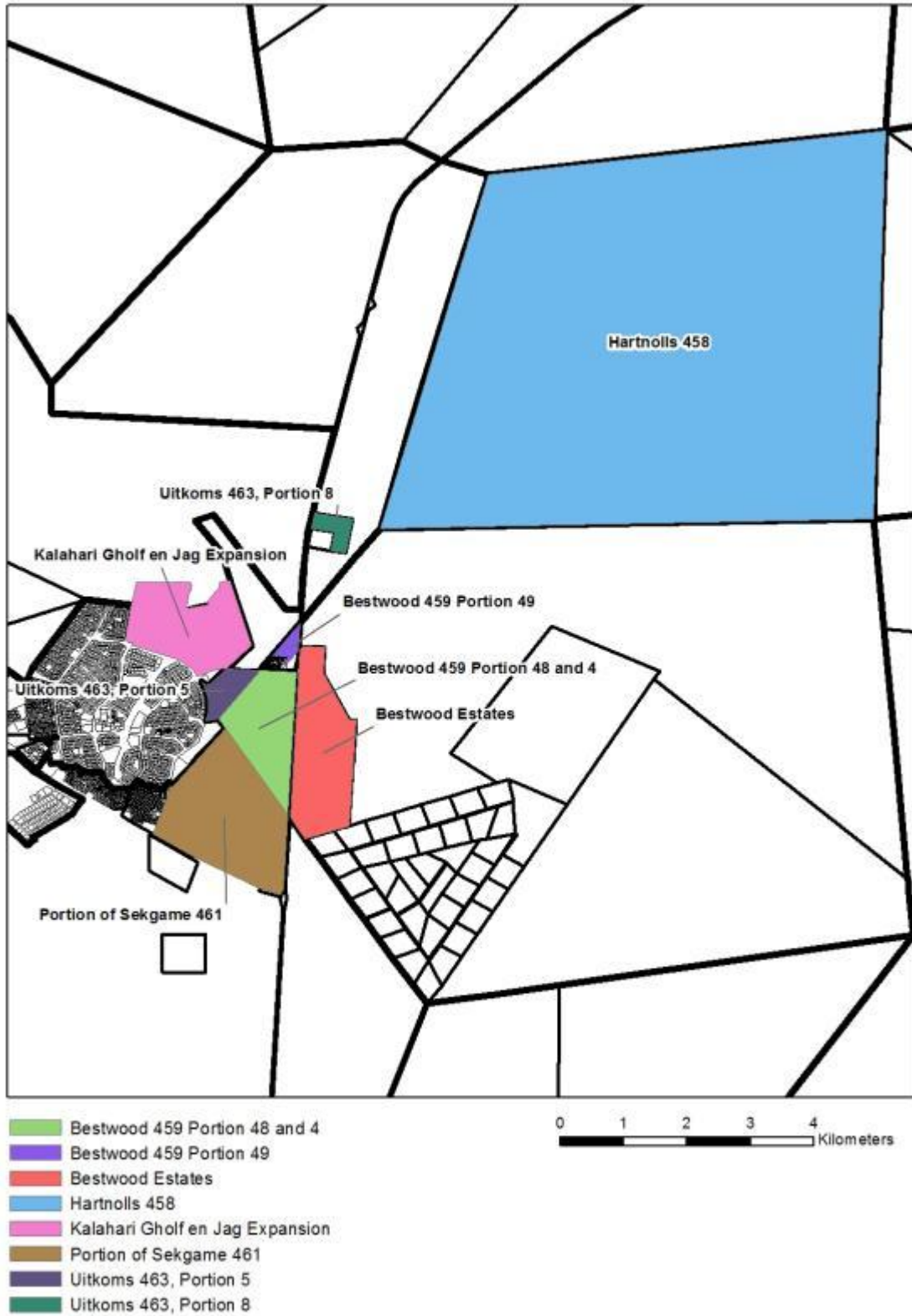


Figure 12: Previous AIA project locations relevant to the Townlands site and the current project.

4.5.1.1 Kalahari Gholf en Jag Expansion (30-Apr-2006)

This AIA project was undertaken to enable the expansion of the golf estates (Beaumont, 2006a). A non-systematic foot survey was undertaken across the project area in an effort to identify archaeological resources for a total of five hours. No sub-surface investigations were undertaken to determine the extent of the deposit that was not exposed on the surface. The site of Townlands was determined not to extend into the project area. However, a GPS point (27 41'18.3" S, 23 3'55.8" E) is given where the Townlands deposit does extend into the project area. The edge of the Townlands site was plotted as outside the project area on a map that appears to be largely consistent with the Uitkoms 463, Portion 5 site boundary (see Figure 10).

The management recommendations were based on the absence of observed superficial archaeology and the presence of calcrete bedrock. The assessment determined that the proposed expansion would not damage heritage resources, but if further development were to take place further investigation would be required.

In addition to Townlands, this report describes some of the Kathu Pan localities, and provides coordinates and descriptions for the following two sites that do not appear to be reported elsewhere.

Name	Description (Quoted from: Beaumont, 2006a) ²⁴	Location
Reserve 1	An Iron Age (Tswana?) ceramic surface scatter excavated in 1989.	27° 40' 30" S 23° 02' 00" E
Reserve 2	A small and shallow "Late Pietersburg" site was excavated there in 1989.	27° 40' 00" S 23° 03' 30" E

Table 3: Under reported sites mentioned by the Kalahari Gholf en Jag Expansion assessment report.

4.5.1.2 Bestwood 459 Portion 48 and 4 (29-May-2006)

This project was discussed in detail above as the associated Phase 1. The eastern edge of the Townlands site was mapped, consistent with the Uitkoms 463, Portion 5 site boundary (see Figure 10).

²⁴ DM thinks neither of these sites has actually been excavated, just identified.

4.5.1.3 Uitkoms 463, Portion 5 (30-May-2006)

This project was undertaken to facilitate a housing development in the southern Portion of Portion 463/5, which has since been built. The primary aim of this project was to find the southern edge of the deposit. This report provided the first published complete map of the extent of the site of Kathu Townlands. This site map was used by SAHRA (with modification) to define the site extent for the current project.

A non-systematic foot survey was undertaken across the project area in an effort to identify archaeological resources for a total of two hours. No sub-surface investigations were undertaken to determine the extent of the deposit that was not exposed on the surface. As before, the management recommendations were based on the absence of observed superficial archaeology and the presence of calcrete bedrock.

4.5.1.4 Hartnolls 458 1st Phase 1 (28-Jun-2006)

This project does not include a portion of the Townlands site, as defined by Beaumont (Beaumont, 2006b). However, the report does include a portion of Uitkoms 1 as defined by Beaumont (Beaumont, 2008c), and describes a continuation of the geomorphology and deposits seen at the Townlands site.

This project was undertaken to assess the impact of a proposed housing development. No methods of investigation were provided in the report, just that the project area was visited on the 1st of June 2006 and investigated. The report states that ESA artefacts were discovered across the project area where the gravels were exposed. It makes the conclusion and recommendation that:

The distribution of these artefacts seems to be fairly general and widespread and the impact on the cultural heritage remains of the proposed development sites at Hartnolls 458 will be of minor significance” (Dreyer, 2006: 1)

Although no clear description was provided for exactly where these artefacts are distributed, this report indicates that the general pattern seen at Townlands and Bestwood of artefacts being associated with gravels and being buried by sand continues at least this far north, and possibly further as the entire farm of Hartnolls 458 was characterised in this way.

4.5.1.5 Hartnolls 458 2nd Phase 1 (17-Jan-2007)

A supplemental impact assessment for the same proposed development on the same property was undertaken shortly after the above assessment was submitted. This report consists primarily of a background study, and a paragraph detailing a visit to the site of Uitkoms 4 (aka the Dreyer site or the Cemetery site), by the authors of these AIA reports. No description of visiting the proposed project location is provided.

This report describes the excavations undertaken at Uitkoms 1 are briefly described as comparable to the findings at Townlands. The extent of the exposed surface artefact rich gravels is described here as being hundreds of meters in extent and the “foot recce” attempting to find the limit was abandoned after an hour. This report also provides descriptions and GPS locations for Uitkoms 2 and 3. These were identified in 2006 in road cuts on the N14²⁵.

The management recommendations provided in this assessment differ from the previous. They include a recommendation to undertake a foot survey on the property in question to determine the extent of the surface deposit. A Phase 2 investigation of the northwest slopes of the Kathu hill within the project area is recommended as it is likely deposits similar to those found at Uitkoms 4 will be discovered under the sands there as well. Finally, some of the proposed housing foundations will not penetrate the red sands and therefore will not have an impact on the archaeological deposits.

Attached to the AIA report as posted on SARHIS is an additional email stating:

“It is likely that there are hundreds of millions, if not billions, of artefacts in the hills of Hartnolls. These probably span the same interval as the jaspilite - based assemblages at Kathu Pan, namely -0.5 - 1.0 Myr ago. My own opinion is that developers should not be given a free hand to damage this unique (albeit neglected) heritage.”

This description matches Mr. Beaumont’s descriptions of the Townlands site and extends this deposit further north and east than had been previously determined.

4.5.1.6 Portion of Sekgame 461 (06-Feb-2008)

This project does not include a portion of the Townlands site, as defined by Beaumont (Beaumont, 2006b). However, the project area is nearby and described as the calcrete

²⁵ It does not say by whom or why.

bedrock that has been considered sterile and thus the site boundary. This project was undertaken to facilitate a housing development. A non-systematic foot survey was undertaken across the project area in an effort to identify archaeological resources for a morning. No sub-surface investigations were undertaken to determine the extent of the deposit that was not exposed on the surface.

The entire project area was described as being underlain by tertiary calcrete bedrock, and therefore archaeologically sterile. This bedrock is “usually covered by northward thickening and up to 1.0 m deep red Hutton Sands” (Beaumont, 2008b: 4). As such it is unclear how the presence of calcrete bedrock across the entire property was established.

The report describes 11 isolated artefacts found in road cuts beneath the sand, but determines that the entire property contains no significant heritage resources. No further work was recommended.

4.5.1.7 Uitkoms 463, Portion 8 (07-Feb-2008)

This project does not include a portion of the Townlands site, as defined by Beaumont (Beaumont, 2006b). However, the project describes and defines the site of Uitkoms 1, which may be a continuation of the same deposit as Townlands. Further, the geological setting provided in this report matches those previously given.

This project was undertaken as an investigation into the possibility of building a housing development of eco-estates. A non-systematic foot survey was undertaken across the project area in an effort to identify archaeological resources over the course of an afternoon. No sub-surface investigations were undertaken to determine the extent of the deposit that was not exposed on the surface.

The report describes the geological setting as “rarely exposed banded ironstones / jaspilites of Precambrian age” mostly covered by the Hutton Sands (Beaumont, 2008c: 4). Although aware of the nearby site of Uitkoms 4 where a similar deposit was excavated in 2007 and entirely buried beneath the sand, this report considers the sands here to be archaeologically sterile. Examination of bioturbation disturbances in the sand was cited as evidence for there not being archaeological deposits beneath the sand.

The project identified a site boundary for Uitkoms 1 (Beaumont, 2008c: 7, Figure 2), which has been previously unpublished. Given the description of exposed gravels with artefacts

being distinct from the Hutton sands that cover these gravels, this boundary appears to be limited to the surface exposure of gravels atop the Kathu hill.

Given these findings, the management recommendations made by this report were that protection should be provided for the site of Uitkoms 1, but that the majority of the project area that is covered by sand could be developed with no adverse effect on heritage resources.

4.5.1.8 Bestwood 459 Portion 49 (12-Jun-2008)

This project does not include a portion of the Townlands site, as defined by Beaumont (Beaumont, 2006b). However, the project area is nearby and described as the calcrete bedrock that has been considered sterile and thus the site boundary. The project was undertaken to evaluate the impact of re-zoning the property for commercial purposes, which has since been re-zoned as such. A non-systematic foot survey was undertaken across the project area in an effort to identify archaeological resources. No sub-surface investigations were undertaken to determine the extent of the deposit that was not exposed on the surface.

This assessment report describes finding only four jaspilite artefacts within the project area. No map or location information as to where these were found is provided. The context of discovery appears to be that each had been brought to the surface by bioturbation. The geological context is described as being a calcrete ridge that separates the archaeological deposits of Townlands and Uitkoms. Superficial exposure of calcrete bedrock is described across the project area. Jaspilite rubble is noted as being exposed in the northern portion of the project area in a modern disturbance.

The project identified a site boundary for Uitkoms 1 that varies slightly from the boundary previously provided (Beaumont, 2008a: 6, Figure 1). This same map also contains a boundary for Uitkoms 4, but it is not clear what that boundary might be based upon given previous descriptions of the site as buried. Given these findings, the report determines that no heritage resources exist on the property that may be harmed by re-zoning the property for commercial use.

4.5.1.9 Bestwood Estates (11-Aug-2008)

This project does not include a portion of the Townlands site, as defined by Beaumont (Beaumont, 2006b). However, the project area is just across the N14 and on the other side of the 'Calcrete ridge' described by (Beaumont, 2008a), and thus relevant. The project was

undertaken to evaluate the impact of a large housing development called 'Bestwood Estates'. Construction of this development has begun.

No methods of investigation were provided in the report, just that the project area was visited on the 6th of August 2008 and investigated. At least two mechanical excavations of archaeological test pits were undertaken, and GPS coordinates and photographs were provided for two of these excavations²⁶. The excavations were described as archaeologically sterile, but no description of the resulting trenches was provided. From the photographs provided of the back dirt from these test pits, it appears as if only the red Hutton sands were excavated and neither the calcrete nor the ironstone that underlie these sands were reached.

The area examined is also unclear. The report does provide a map indicating the proposed development with GPS points provided for some of the corners, but this location does not match the actual location of the development as it is being built, as it exists on the Kathu SDF, nor does it match the property boundary GIS data provided by the Surveyor General for this development²⁷.

Further, the report describes the archaeological deposits discovered in the sand mine located on the farm of Bestwood which is far outside the proposed development. This appears to be the first description of these deposits in the archaeological literature. Artefacts were collected by this project from the sand mine, but it is unclear if they were actually collected and removed from the property and housed in a curation facility, or just gathered up for a photograph and left in the project area²⁸.

The management recommendations given by this impact assessment are that the proposed development will not impact upon heritage resources and no mitigation measures are required. This recommendation was tempered by the caveat that there is a likelihood that archaeological deposits may be discovered during the course of construction. If discovered, construction should cease and these deposits will need evaluated for their significance.

²⁶ No associated permit for this activity is linked to this report on SARHIS, and it appears the only permit issued for work on the Farm of Bestwood 549 is Permit 72 issued to Michael Chazan and David Morris. <http://www.sahra.org.za/node/2026>

²⁷ These three sources are consistent, and the map of the project location provided in Figure 10 of this report conforms to the actual location of the development rather than the project area as reported in this impact assessment.

²⁸ No collection permit for this activity was found by the current authors on the SARHIS database.

4.5.2 *Other development activity impacting the Townlands site*

In addition to these known heritage management projects, other development has occurred that has impacted upon the deposits at Townlands, and provides some information relevant to understanding the deposit and its setting. These are outlined in Table 5 and Figure 11. The authors are unaware of any related heritage management activity for these developments. Assessment reports may have been undertaken but have not made it into the SAHRIS system or SAHRA archives at the present time.

Map Label (F.11)	Development
Z	Khudunyane Estates
Y	Kathu Equestrian Club Roads
X	Water Tower and buried pipeline

Table 4: Other Development activity in the vicinity of the Townlands site

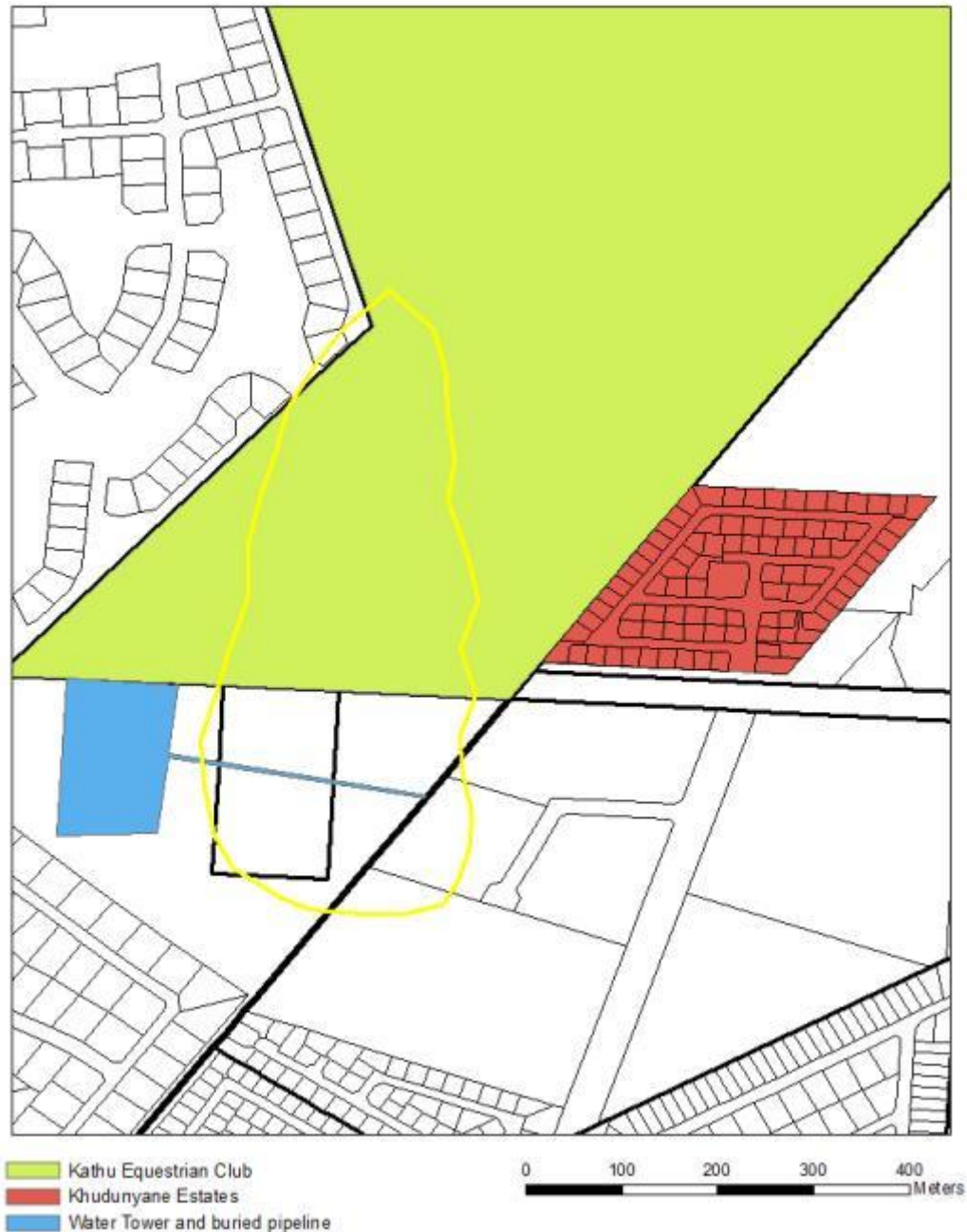


Figure 13: The location of these developments

4.5.2.1 Khudunyane Estates

This housing development exists right on the edge of the Townlands deposit as defined by Beaumont (Beaumont, 2006b). One of the authors (DM) was able to make a quick site visit while construction was underway. At this time, he only observed sand and calcrete. No artefacts, nor ironstone bedrock were seen being uncovered by the construction activities. It is possible a Phase 1 AIA and/or EIA exist for this development but for various reasons have

not been submitted to SAHRA or another heritage authority for review. Knowing the findings of such an assessment report would prove helpful in understanding the deposits at Townlands.

4.5.2.2 Kathu Equestrian Club Roads

During the current activity it was noticed that roads are being graded into the site deposits. These roads are cutting roughly 20-30 cm into the deposit and are exposing a large number of artefacts (see Figure 14). Although damaging the central portion of the deposits, a brief recognisance of these road cuts did provide useful information for understanding the deposit. The central portion of the site, as previously defined, was consistently artefact rich and devoid of calcrete blocks at the surface. Surface calcrete did begin to appear around the ‘edges’ of the site as previously defined.



Figure 14: Road cut into the deposit of Townlands on the north side of Frikkie Meyer Street behind the Equestrian Club fence.

4.5.2.3 The water tower and buried pipeline

A large water tower has been built on the western edge of the site as previously defined. It is possible a Phase 1 AIA and/or EIA exist for this development, as it was undertaken by the municipality. Knowing the findings of this activity would prove helpful in understanding the deposits at Townlands.

At some point after the water tower was built, a buried pipeline was placed across the site of Townlands. Like the graded roads, the resulting disturbed deposit provides some information about the nature of the deposit. If an additional impact assessment for the digging of this trench (roughly 300 m long just on the deposits, it isn't clear how long overall) was undertaken, it does not appear to have been submitted to a heritage authority. The trench cuts directly through the deposit. The exposed destroyed deposit is primarily artefact rich ironstone rubble but also contains some calcrete as well as non-artefactual ironstone rubble.

4.6 Management aims and research questions

The extent of Earlier Stone Age deposits across the Townlands site pose a substantial challenge in the context of one of the most rapidly developing municipalities in South Africa. Halting all development across areas with archaeological significance is not possible in this context, nor is comprehensive data recovery of archaeological deposits to be effected by construction. The quantity of archaeological material is simply too massive for data recovery beyond limited samples. The situation is further complicated by the piecemeal nature of previous efforts at impact assessment and a lack of clarity about the precise location of proposed construction in relation to areas to be effected by development.

The approach that guided this project was a landscape approach based on methodologies widely used in East Africa and North American contract archaeology. The goal of this approach is to gain an understanding of the depositional context of the archaeological material and to collect representative well provenienced assemblages of stone tools which will serve a lasting resource for research after this portion of the deposits have been destroyed. We emphasize the flexibility of the methods used to produce the most insight within a short window of time available for fieldwork. We also point to the partnership between research and cultural heritage management to maximize the funds available and to coordinate the demands of these two very different approaches to the archaeological site.

The excavations were guided by a number of specific research questions that coordinate with the management aims of advising the developer on how best to proceed. The first question was the depth and density of archaeological material across the area. From a management perspective it is essential to delineate the limits of the site. The second question regarded the depositional mechanisms that might account for the build up of artefacts. Thus, it is essential to understand if the artefacts are found where they were first deposited as the result of human activity or if artefacts have been transported and redeposited by geological processes such as fluvial action. The third question is the possibility that there are distinct temporal components within the build up of artefacts at the site or if all of the artefacts date to a single period of occupation. A final question is the relationship between the calcrete deposits and artefact accumulation. A guiding principle of previous assessments has been that the calcretes are archaeologically sterile but this has not been tested. From a research perspective understanding the relationship between the calcretes and the archaeological assemblages is crucial to reconstructing the landscape of human occupation as well as managing this significant deposit.

It is important to emphasize that the fieldwork in and of itself does not answer these questions. However, the essential geological and archaeological samples are now curated in the McGregor Museum with precise contextual data and this will serve as a lasting resource that will serve archaeologists working to understand the Kathu Complex for decades to come.

5 Methods and description of work

To accomplish these aims and address these questions, a multi-disciplinary international team was assembled. The current action and resulting report was led by Dr. Morris (MMK) and Mr. Walker (UCT). Professor Michael Chazan (U of T) was significantly involved at every juncture providing expertise, additional funds, and research guidance. Ms Lukich (U of T) was the project geo-archaeologist and additionally contributed significantly to the field work and the production of this report. As such, we four are listed as the authors of the current report. Other experts of the research team were also consulted as to proper methods, placement and storage of scientific samples to ensure their later utility for scientific research.

An experienced excavation crew was hired from the National Museums Bloemfontein's (NMB). Florisbad Research Centre in Soutpan, Free State. The crew consisted of: Abel Dichakane, Adam Thibeletsh, Jacob Maine, Peter Ntulini, Sam Tmapo, and Mahloko 'Roger' Moses. Between the six of them, they have over 60 years experience in excavating archaeological and paleontological deposits. This project could not have been accomplished without their participation and expertise.

5.1 Field work Aims:

To address the questions and aims posited above the following actions were considered to be the minimum amount of field work required by the current project:

- Establish the current state of the deposits and attempt to determine what damage, if any, has already been incurred through development activity.
- Establish the depth, relative elevation, and distribution of the archaeological deposits within the effected property. This provides both a scientific context for the deposits as well as a management context to understand the impact of development on the deposit.
- Excavate a sufficient number of trenches to establish the geological setting of the deposits across the effected property.
- Excavate a sufficient number of representative well provenienced archaeological assemblages. These require both horizontal and vertical control as well as lateral distribution in order to characterise the deposit.

5.2 Limitations of the fieldwork & implemented solutions

Every archaeological project has its limitations. Ours included limits set upon our scope of work by prior decisions and actions that defined both the area that could be investigated, the number of excavations required, as well as providing significant urgency resulting from active construction of the development in question while fieldwork was being undertaken.

The current project was also hampered by the limited scope and quality of previous work on these deposits. Many of the questions posed herein deal with the extent and nature of the deposits rather than with specific archaeological research questions. A minimum baseline of descriptive information is required prior to positing research questions, and to a large extent the requisite knowledge was insufficient to posit more specific questions given the current state of our knowledge. However, the close cooperation of academic researchers with this data recovery has ensured that the data collected can (and actually will) be able to address more specific questions and contribute to our knowledge about past behaviour.

The nature of the deposit itself also posed challenges. As described above, we were not confident that the demarcated 'sensitive area' conformed to the existing extent of archaeological deposits. The edges of the archaeological deposit had been previously estimated by surface calcrete assumed to be older than the deposits. As described in the geological context above, this interpretation of the surface morphology is problematic. In fact, given the available evidence we were confident that the archaeological deposit was larger than the small piece of property under dispute at the moment. Further, the non-site geology on the margins of the deposit are as important to the scientific understanding of this deposit as the archaeology itself. As a result, with cooperation with the land owners and developers as well as SAHRA's approval, our scope of investigation was larger than just the 'sensitive' area under dispute. This was done to provide the best possible scientific and management information, but also to avoid any further complications for this development if related archaeological deposits are uncovered outside the 'sensitive area'.

The deposits themselves are astonishingly artefact rich and extremely deep. Previous excavations nearby (described above) suggested we would encounter up to 2 meters of artefact rich deposit that have been reported to average roughly 900 artefacts for a 100x100x10 cm level. For us to excavate the 6 m² that was required by the original scope of work, would then potentially result in over 108,000 artefacts which would then need to be analyzed, and curated in perpetuity by the McGregor Museum. This scope of recovery (while being a tiny percentage of the effected deposit) is far beyond the requirements of later analysis.

Since the goal was to obtain vertically controlled samples over a distributed area, we shifted the recovery concept from three 1x2 meter trenches to five 1x1 meter units. This shift increased the horizontal sampling while decreasing both the scope of work as well as the

resulting artefact assemblage. These five 1x1 units were later reduced to three 100x50 cm, and two 50x50 cm units to further constrain the amount of material collected. Nonetheless, roughly 50 full boxes of artefacts resulted from these five smaller units.

A decision to utilize mechanical excavations as a central aspect to the methods employed by this project was made to overcome a number of different limitations and achieve aims both scientific and practical. To address our questions about the nature of the geological context, site formation and palaeoenvironment a larger window into the deposit than could practically be archaeologically excavated was required. Further, the prospect of excavating into ironstone rubble to a depth of two meters within a 1x1, never minding something smaller, poses a significant safety hazard for the excavator, and is logistically difficult to work in the tight quarters. As a result, we supervised the excavation our own trenches utilizing a mechanical excavator (and operator) generously provided by the contractors on site. We also took advantage of a large trench that had been excavated by the developer, and two existing mechanical excavation whose history and purpose is unknown, but whose placement is useful.

While destructive, mechanical trenching in this instance we feel is thoroughly justified from both a practical and scientific standpoint. Outside the ‘sensitive area’ the developer has already been given permission to develop. This area was already considered acceptable to destroy and any information we could obtain from this portion of the project area was thus a bonus and not destructive. Within the ‘sensitive area’, we dug two mechanical trenches and slightly expanded one of the two existing trenches. This allowed us to obtain a larger window into the deposits, obtain larger profiles, as well as carefully choose the location of our archaeological excavations. Practically speaking, excavations were undertaken from the trench wall providing a safe working environment.

5.3 Field methods

The methods employed for the field portion of this project were a combination of mechanical and hand excavations designed to maximise data recovery while minimizing cost. Horizontal control of the field work, as well as mapping the development activities was undertaken by GPS using waypoint averaging. All relevant features were mapped with waypoints averaged for a minimum of 5 minutes. Vertical control was maintained in each archaeological unit by use of a datum, line level and string. All elevations were measured based on depth from the modern ground surface. Overall vertical correlation between units and trenches across the

project area was made possible by correlating the horizontal location with a high resolution topographic map of the project area provided by the developer with 20 cm contour intervals (See Figure 16). While this method is slightly less accurate than utilizing the traditional total station, it is sufficient to determine the relative position of these deposits to each other across the site.

Mechanical trenches were dug under the supervision of either Mr. Walker or Ms Lukich with every effort made to minimize the damage to surrounding deposits. Trenches were dug to expose the deposit in profile and their length was minimized, except in the case of the geological trenches J & K. Each was excavated to either ironstone bedrock, or cacrete nodules made further excavation impossible. As a point of comparison, the developer trench (described in our findings) took over two weeks for the developer to mechanically excavate.

Once dug, most trenches had their profiles cleaned by hand, as well as the bottom of the trench cleaned out by hand. This material was not screened. All trenches were documented by GPS and photographically. Profiles were photographed.

For each of the archaeological units, a section of the exposed trench profile was selected. The area to be excavated was measured from the trench wall (not on a grid) and excavations begun. These were dug in 10 cm levels using a line level datum to determine depth below modern ground surface. All recovered material from each level was screened, and all artefacts collected by level. The top of every archaeological level was photographed and selections of the artefacts recovered were also photographed. The quantity of material recovered was astronomical and will be analysed by a later research project. However as a preliminary analysis the weight of the recovered artefacts for each level was taken and is provided here along with photographs of some of the artefacts. Each level was described in a field book as to its composition and a description of the stratigraphy encountered is provided for each archaeological unit and trench excavated.

At the end of fieldwork, all archaeological excavations (trench and square) were backfilled mechanically under direct supervision of the permit holder. This included trenches A and B that had already been dug prior to the current fieldwork.

Samples of cacrete for analysis and dating were recovered, along with a few OSL samples in hopes of being able to date the overlying sands at some later date. These potential future analyses are not part of the current action and the developer is not required to pay for

further investigation beyond what has already been undertaken. The proposed lithic, dating and geological work that the current project will enable will form part of the ongoing research project being undertaken presently at Kathu.

Decisions about trench and archaeological square placements were based on field decisions and the state of the project area at the time of the field work. Therefore a description of the project area provides a setting for these decisions, as well as fulfilling our need to evaluate the current state of the 'sensitive area'.

An extensive amount of photographic and geographic data was collected in the process of field work, including over 1500 photos. These data in digital form, along with the artefacts and field notes are housed at the McGregor Museum for curation.

5.4 State of the project area at the commencement of field work

When field work commenced on the 5th of August, construction outside the 'sensitive area' had commenced. This is in accordance with the permission given in the letter from SAHRA dated May23rd 2013. Foundations had been laid and some floors were being constructed. Over most of the southern portion of Erf 5116 the surface had been graded and filled with rubble to provide a foundation for the development being constructed.

The 'sensitive area' was split into three separate zones and fenced off prior to our arrival. This fenced seems to be based on the two most recent GPS points illustrated above. The fence connects these two by a straight line. As a result, artefacts were observed in the rubble exposed around the fence posts. While this is unfortunate, it does also indicate that the area immediately adjacent to these fence posts was primarily undisturbed. The three separate zones of the sensitive area are as follows:

Zone 1 has two parts. The northern part has been partially paved with brick, contains a picnic table, a braai area, portable toilets, and an air conditioned trailer with a built awning over the table. This serves as the head contractor's site office. The southern portion is a habitation area for construction labourers with multiple shacks, a field shower, portable toilet, braai and cooking areas and a small garden planted into the site.

Zone 2 is currently used for storage, parking and rubbish. Various sub-contactors have taken advantage of the locked fenced area to provide security for their equipment. There is no built aspect to Zone 2.

Zone 3 is the remaining portion of Erf 9687 that is currently outside the construction fence. This area has not been impacted by the current development. At the time of field work, it was strewn with rubbish and has been used extensively as a toilet area. There are two mechanically excavated pits that indicate the archaeological deposits here are almost 2 meters deep.

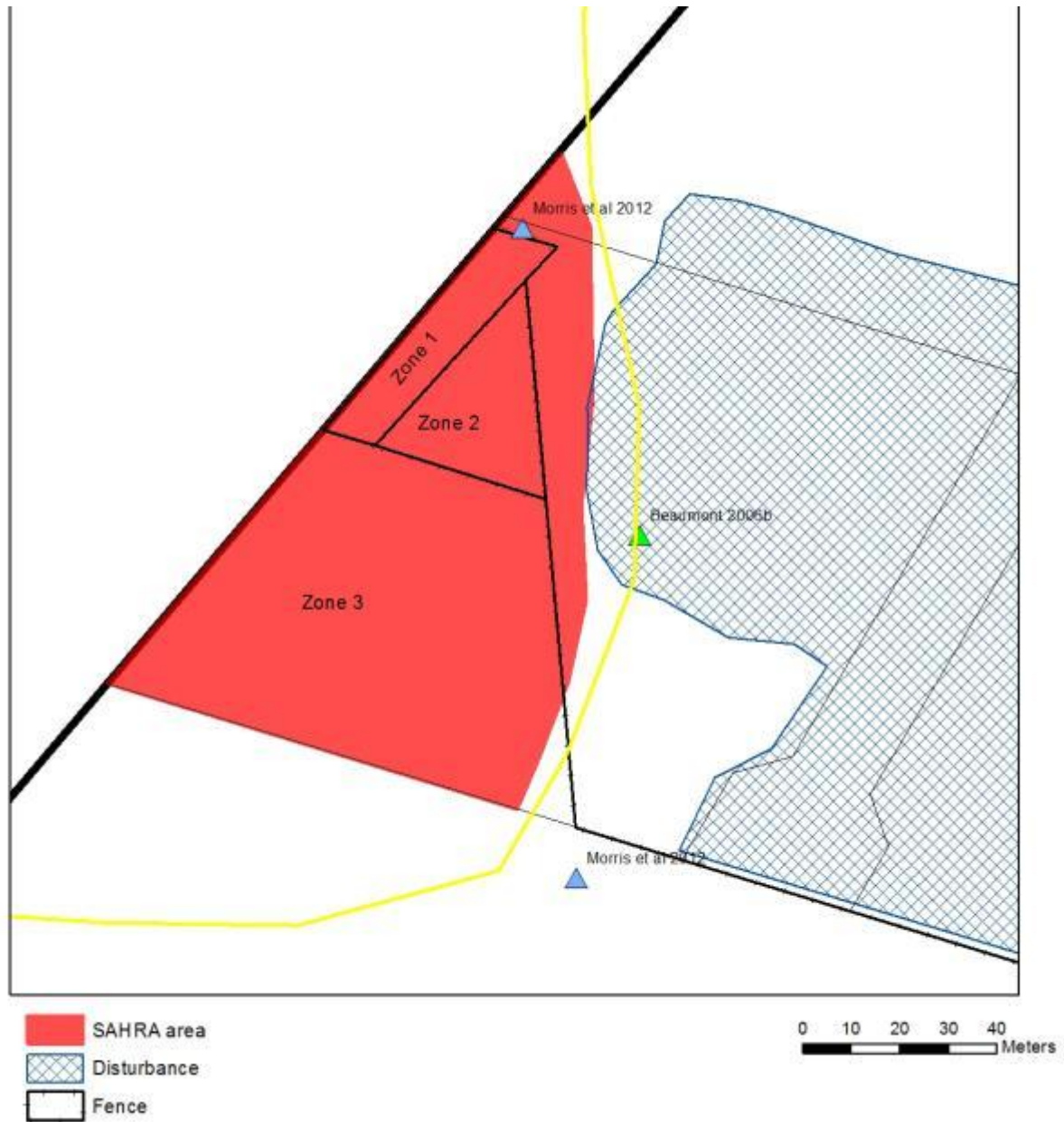


Figure 15: State of the project area at the beginning of field work

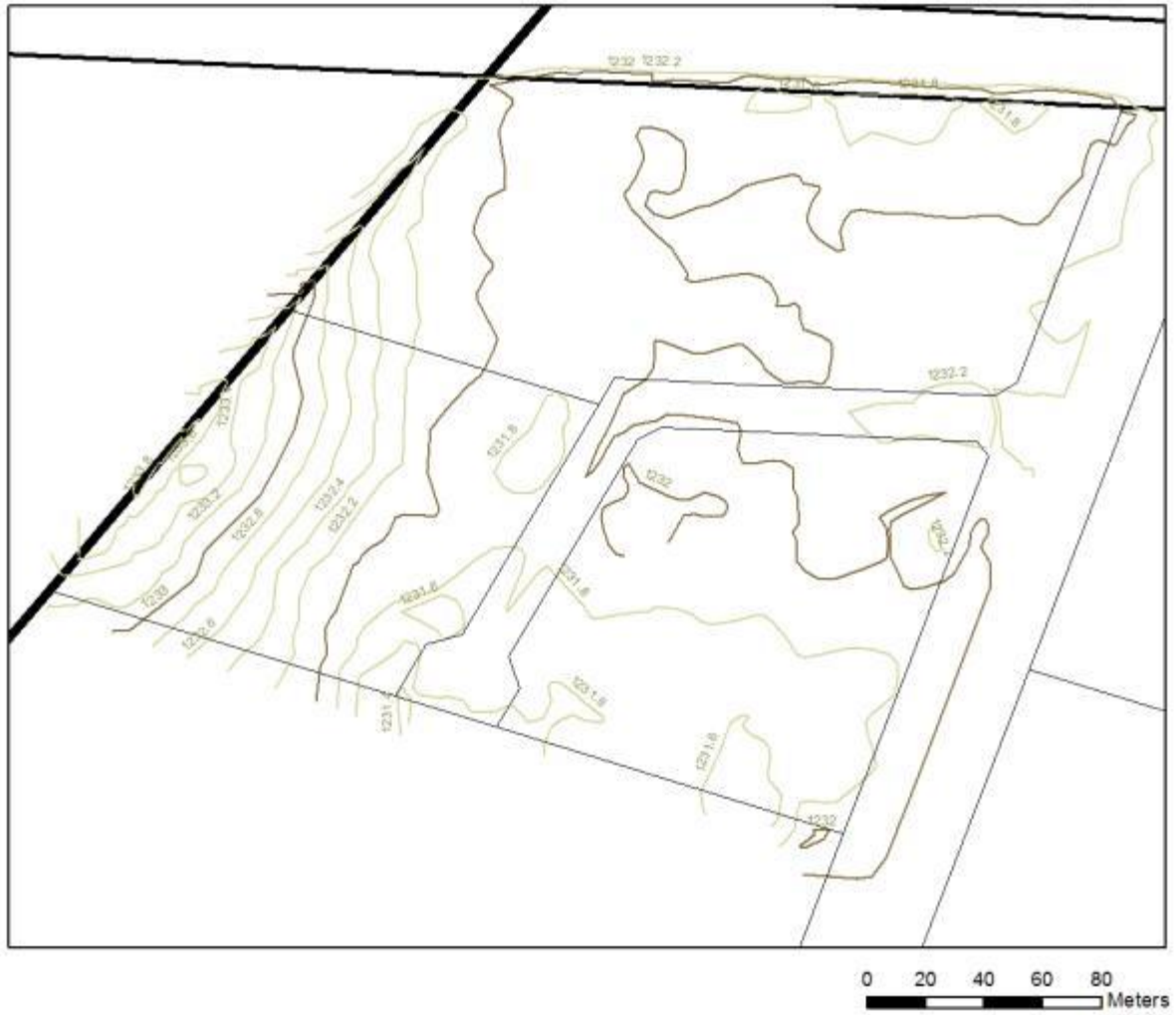


Figure 16: Topography as provided by the client.

6 Findings

This section describes the findings of our excavations. This includes the final trench placements, profiles and stratigraphy, as well as the location and descriptions of each of the archaeological units. Each description contains the rationale for the specific trench placement. This section is concluded with an overall description of the findings across the project area as a whole.

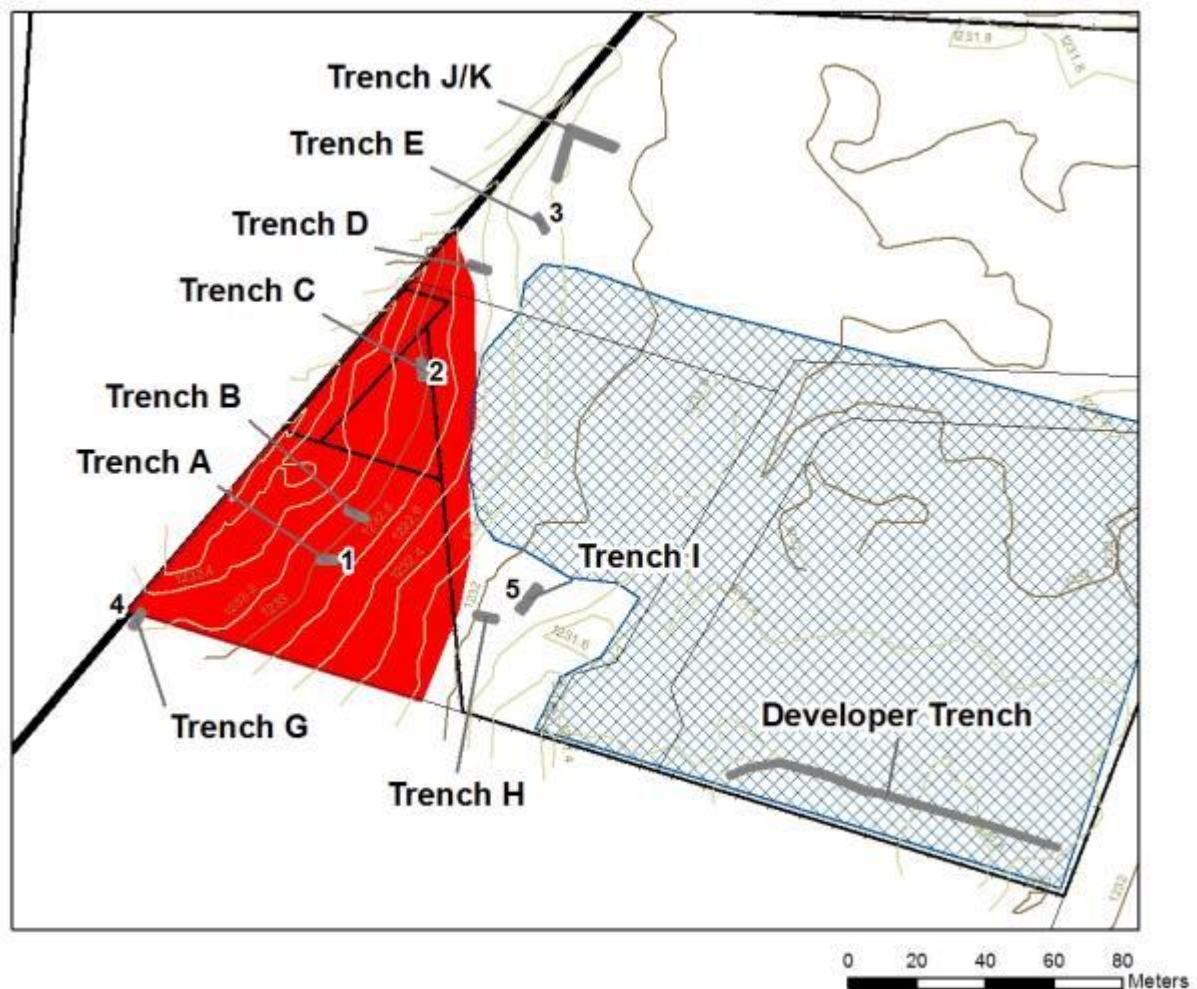


Figure 17: Map of trench locations and archaeological squares in project area

6.1 Trench Descriptions

6.1.1 Trench A

Trench A was located in the centre of the area labelled Zone 3 above. The trench existed when field work commenced and its origin and purpose remain unknown. The trench was roughly 5 m long and is the width of a backhoe bucket (~80 cm). Prior to archaeological excavation, the trench floor and walls were cleaned and straightened. This trench was not mechanically excavated by the current project, all our work here was done by hand.

Archaeological square 1 was excavated into the eastern end of this trench to a depth of 180 cm below modern ground surface. The nature of the stratigraphy, profile and artefacts encountered are described below with the description of Square 1.



Figure 18: Trench A, looking east towards the completed Square 1 profile.

6.1.2 *Trench B*

Trench B was located a few meters north of Trench A. This trench was also dug before we arrived, but we do not know why or by whom. As the existing trench had not reached bedrock, mechanical excavations were undertaken to take it deeper. After our additional excavation, the trench was roughly 6 m long and is the width of a backhoe bucket (~80 cm). Due to the similarities to Trench A, it was decided that an archaeological sample from Trench B would not be a priority. The profiles and trench bottom was cleaned and photographed. The trench was approximately 220 cm deep when bedrock was encountered. A small number of artefacts were noticed during the cleaning and documenting of the profiles and these were photographed and collected, and given the context of Trench B and an estimate of depth below surface.

The profile consists of superficial surface sands (~2cm), followed by an apparently homogenous artefact rich ironstone rubble to a depth of ~220 cm below surface. This ends in solid slabs of ironstone bedrock.



Figure 19: Trench B

6.1.3 *Trench C*

Trench C was dug into the parking/storage area labelled as Zone 2 above. This area was chosen to provide a distributed window into the deposits. The trench was roughly 6 m long and is the width of a backhoe bucket (~80 cm). Archaeological square 2 was excavated into the northern end of this trench to a depth of 90 cm below modern ground surface. The nature of the stratigraphy, profile and artefacts encountered are described below with the description of Square 2.



Figure 20: Trench C

6.1.4 Trench D

Trench D was dug just north of the sensitive area, to see the nature of the deposit. Surface artefacts were observed nearby. Large slabs of ironstone were encountered almost immediately. The trench was photographed, but not cleaned.



Figure 21: Trench D

6.1.5 *Trench E*

Trench E was dug outside the previously demarcated site boundary in an area considered previously to be sterile. This area was chosen initially to characterise the non-site deposits and see the theoretical interface between the sterile calcrete and ironstone. However, a large amount of archaeological deposits were encountered beneath roughly 40 cm of sand. The trench was roughly 5 m long and is the width of a backhoe bucket (~80 cm). Archaeological Square 3 was excavated into the northern end of this trench to a depth of 120 cm below modern ground surface. The nature of the stratigraphy, profile and artefacts encountered are described below with the description of Square 3.



Figure 22: Trench E after cleaning prior to the excavation of Square 3

Note the block of calcrete embedded inside the ironstone rubble.

MGS to Bedrock here is ~120 cm.

6.1.6 *Trench G*

Trench G was dug in the southwest corner of the project area²⁹. This area was chosen to provide information about the portions of the deposit that will not be effected by this development to the south and east. Due to a GPS error in the field (locating the corner of the Erf in question with a waypoint), the trench was excavated about 4 meters into the adjacent property. There are no landmarks at this spot to indicate property edges. The trench was 5 meters long and is the width of a backhoe bucket (~80 cm). Archaeological Square 4 was excavated into the northern end of this trench to a depth of 130 cm below modern ground surface. The nature of the stratigraphy, profile and artefacts encountered are described below with the description of Square 4.

²⁹ We did not end up excavating what had been designated as Trench F and as a result this letter was skipped.



Figure 23: Trench G prior to cleaning



Figure 24: Profile of Trench G prior to the excavation of Square 4.
MGS to Bedrock here is ~130cm.

6.1.7 *Trench H*

Trench H was dug outside the previously demarcated site boundary in an area considered previously to be sterile. This area was chosen initially to characterise the non-site deposits and see the theoretical interface between the sterile calcrete and ironstone. However, archaeological deposits were encountered. The trench was roughly 5.5 m long and is the width of a backhoe bucket (~80 cm). The profiles and trench bottom were cleaned and photographed. The trench was approximately 100 cm deep when bedrock was encountered.



Figure 25: Trench H

6.1.8 Trench I

Trench I was dug outside the southeast corner of the defined site boundary. This area was chosen initially to characterise the non-site deposits and see the theoretical interface between the sterile calcrete and ironstone. However, archaeological deposits were encountered. The trench was roughly 5.5 m long and is the width of a backhoe bucket (~80 cm). The profiles and trench bottom were cleaned and photographed. Archaeological Square 5 was excavated into the eastern side of this trench to a depth of 100 cm below modern ground surface. The nature of the stratigraphy, profile and artefacts encountered are described below with the

description of Square 5. The placement of this square included a nodule of calcrete with embedded ironstone in the sidewall to better understand the relationship with the sands and gravels.



Figure 26: Trench I and Square 5
The white top layer is modern concrete dust from prior disturbance.

6.1.9 Trenches J & K

These trenches were dug in an L shape adjacent to visible surface calcrete. This area was chosen initially to characterise the non-site deposits and see the theoretical interface between the sterile calcrete and ironstone. However, archaeological deposits were encountered. While no archaeological squares were excavated here, some artefacts were collected. These provenienced by the associated calcrete formation, and given a rough depth below surface. Each trench was roughly 14 meters long, and the width of a backhoe bucket (~80 cm). Depth varied considerably as the backhoe had difficulty in excavating between the calcrete nodules.

Five calcrete formations were investigated in the trench. These were cleaned, photographed, GPS'd, named, and sampled. These include: Tiger, Popcorn, Gravel City, Mishmash and Ugly (See Figure 27). Two sections of profile were cleaned and photographed. One was directly adjacent to Ugly at the deepest portion of the trench; extending down 180 cm to ironstone bedrock. The other was adjacent to the formation named 'Gravel City'.

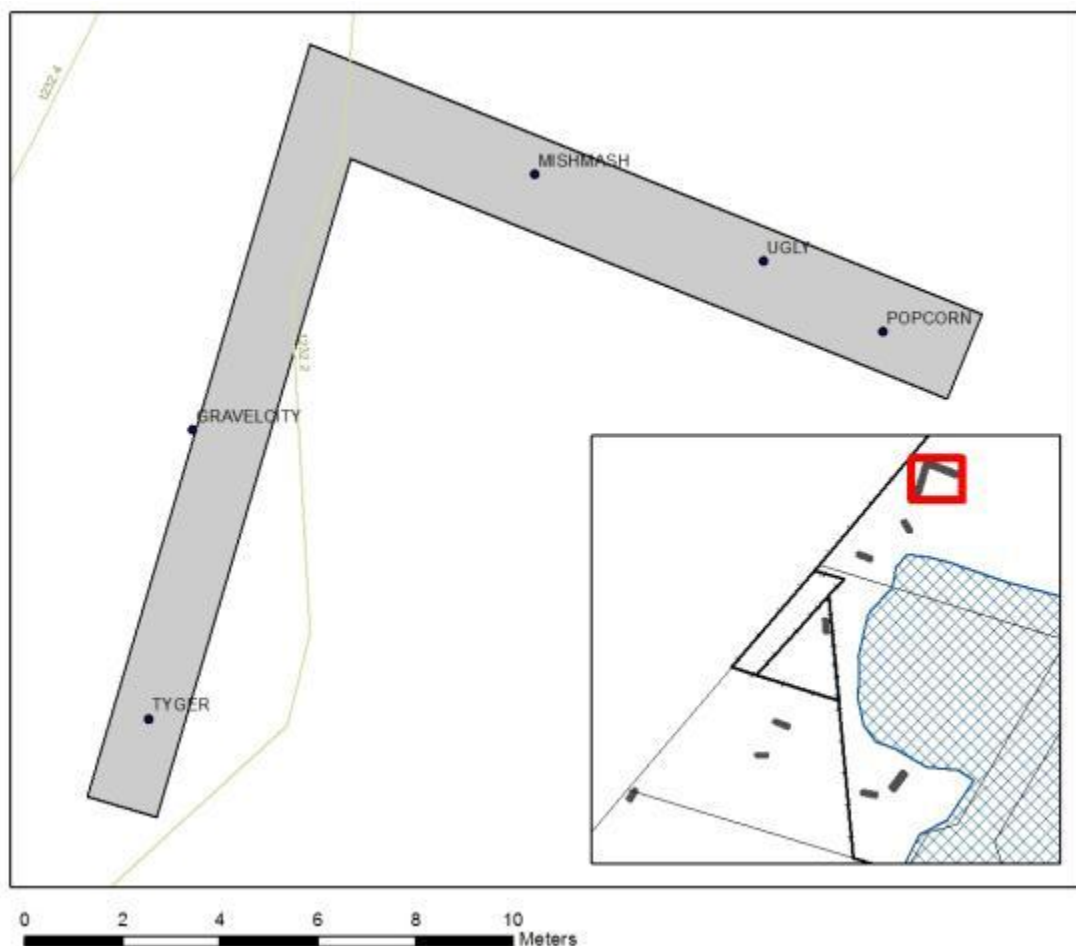


Figure 27: Plan map of the calcrete formations in trenches J & K

Figure 28: Rough mosaic of the profile of Trench J

Figure 29: Rough mosaic of the profile of Trench K

6.1.9.1 *Tiger*

Located at: S27.69140 E23.06755

This is an example of a striped calcrete nodule with embedded ironstone. It was cleaned off, photographed, measured and sampled.



Figure 30: Calcrete formation: Tiger

6.1.9.2 *Popcorn:*

Located at: S27.69133 E23.06768

An example of bubbly, bulbous calcrete actively absorbing pebbles with artifacts nearby, nicknamed “Popcorn” It was cleaned off, photographed, measured and sampled.



Figure 31: Calcrete formation: Popcorn

Gravel City:

Located at: S27.69135 E23.06756

This calcrete formation is a complex of multiple calcrete nodules with surrounding in situ gravels. It had profile on both sides of the trench cleaned, along with being cleaned down to bedrock. During this process, discovered a nodule of calcrete on the floor too. This complex shows how the calcrete is growing between ironstone layers, and possibly pushing up the gravel layer in to the sand. Both sides were photographed, measured, and a sample was taken of the calcrete to show it growing between bands of ironstone.



Figure 32: Detail of calcrete formation: Gravel City

6.1.9.3 Mishmash:

Located at: S27.69130 E23.06762

This calcrete formation contains large pieces of bedrock and pebbles/cobbles of all sizes. With calcrete growing between gravels and artefacts. It was cleaned off with gravels surrounding left *in situ*. It was photographed, measured, and samples taken.



Figure 33: Plan view of the calcrete formation: Mishmash

6.1.9.4 Ugly:

Located at: S27.69131 E23.06766

Ugly is a large nodule of calcrete spanning width of trench with two sections. One side of this nodule was hand excavated down to bedrock through gravel into a depth of over 180 cm. This side also had profile cleaned and photographed extensively. In addition to calcrete samples, two OSL tubes were collected here. Tube A was closer to the calcrete and 1m deep, Tube B farther away though at the same level, right above the gravels, 90cm down.



Figure 34: Calcrete formation: Ugly

6.1.10 Developer Trench

This trench was excavated along the southern portion of the development to lay water pipe. The excavator informed us that it took over 2 weeks to excavate through the calcrete. This trench provides a window into ‘not-site’ desposits. In the western portion of the trench calcrete nodules are intermixed with sand, by the eastern end, these have become two distinct strata. The presence of ironstone gravels within the calcrete was significantly smaller. Also, very few artefacts were observed. Of note was a flake embedded in calcrete found (and collected) roughly two-thirds down the trench from the western side (see Figure 35). A sample of calcrete from the eastern end of this trench was obtained from the backdirt pile.

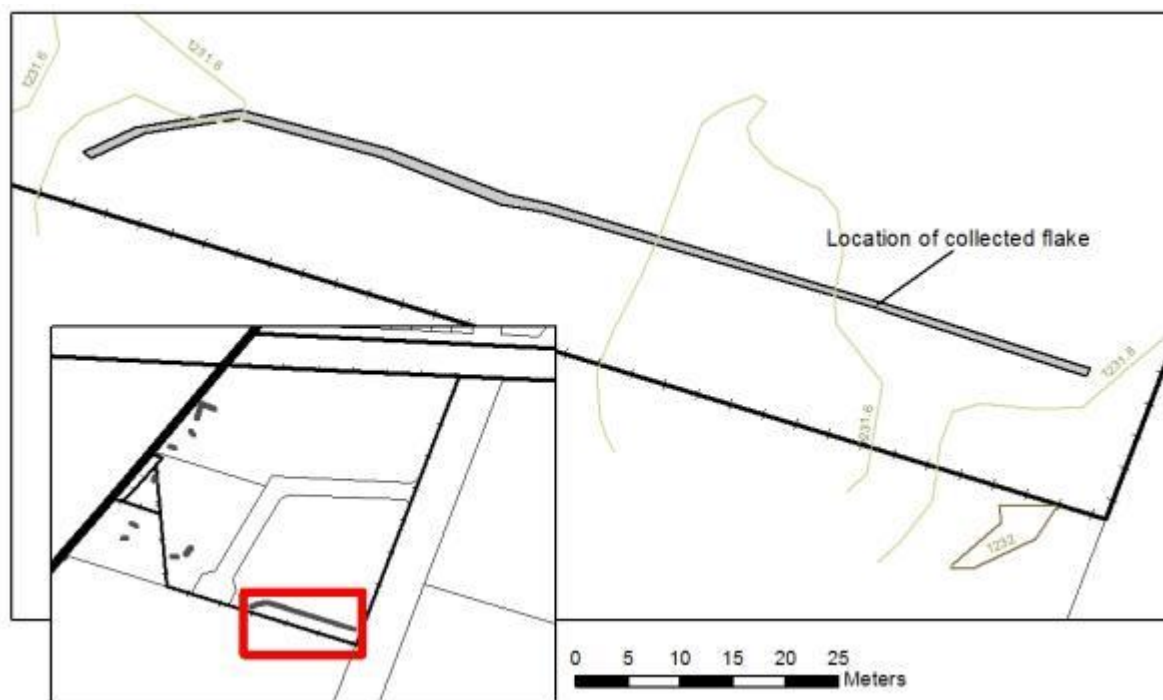


Figure 35: Map of the location of the ‘Developer trench’



**Figure 36: Developer trench from the western end looking east
(deposit is mostly sand, with some calcrete)**



**Figure 37: Developer trench from the centre of the trench looking east
(deposit is mostly calcrete with some sand)**

6.2 Archaeological Unit Descriptions

6.2.1 Square 1

This 100 x 50 cm excavation is located in the central portion of the ‘sensitive area’. A previously excavated trench (A) existed when the project began. We cleaned the 1 meter eastern end of the trench in preparation for the excavation. A line datum was set at 10 cm above modern ground surface and used for vertical control.

Observation of the sediments being brought out by level indicated a relatively uniform matrix with the presence of large ironstone clasts and artifacts, ranging from pebble to cobble size. All within a sandy matrix with very small (1-2mm) sub-angular clasts. We noticed a prevalence of larger artifacts in the upper levels (1-7, approximately), and an excess of micro-debitage in the lower levels. This will need to be confirmed by the artefact analysis. Almost all artefacts were of ironstone, with a few exceptions, made from possibly quartzite.

Square	Level	Weight of artefacts	m below MGS		Absolute depth	
			top	bottom	top	bottom
1	1	13.4	0.0	0.1	1232.9	1232.8
1	2	20.4	0.1	0.2	1232.8	1232.7
1	3	17.2	0.2	0.3	1232.7	1232.6
1	4	21	0.3	0.4	1232.6	1232.5
1	5	27.2	0.4	0.5	1232.5	1232.4
1	6	14.8	0.5	0.6	1232.4	1232.3
1	7	14.8	0.6	0.7	1232.3	1232.2
1	8	22.8	0.7	0.8	1232.2	1232.1
1	9	14.4	0.8	0.9	1232.1	1232.0
1	10	22	0.9	1.0	1232.0	1231.9
1	11	9.4	1.0	1.1	1231.9	1231.8
1	12	13.4	1.1	1.2	1231.8	1231.7
1	13	13.8	1.2	1.3	1231.7	1231.6
1	14	7	1.3	1.4	1231.6	1231.5
1	15	5.8	1.4	1.5	1231.5	1231.4
1	16	12	1.5	1.6	1231.4	1231.3
1	17	16.8	1.6	1.7	1231.3	1231.2
1	18	15.8	1.7	1.8	1231.2	1231.1

Table 5: Overview of Square 1



Figure 38: Abel Dichakane excavating Square 1



Figure 39: A selection of artefacts recovered from 1:16



Figure 40: Final profile of Square 1, including bedrock base at 180 cm below MGS

6.2.2 Square 2

This 100 x 50 cm excavation is located in the ‘sensitive area’ in Zone 2. The excavation was undertaken within Trench C. The walls and floor of the trench were cleaned and documented prior to excavation. A line datum was set at 10 cm above modern ground surface and used for vertical control. Human error led to the mixing of levels 1 & 2 and as a result these were provenienced together. The square was excavated to bedrock at 90 cm below surface.

At the top of level 6, large slabs of iron stone were encountered across part of the Unit. While removable, these were indistinguishable from bedrock had they expanded across the entirety of the unit. Nonetheless artefacts were recovered in the remaining four levels until bedrock was eventually reached.

Artefacts were of varying sizes, from micro-debitage to large handaxes, however it was noticed that almost all of the artefacts were made from oolitic ironstone, rather than the alternative simply banded. It appeared to be more crystalline and therefore a better material for knapping, however these are just quick field observations and more in depth research is required to determine the cause of this pattern. Of particular interest was the tip of a broken handaxe found in level 5 and the refitting base recovered from level 7.

Square	Level	Weight of artefacts	m below MGS		Absolute depth	
			top	bottom	top	bottom
2	1&2	20.2	0.0	0.2	1233.1	1232.9
2	3	17.4	0.2	0.3	1232.9	1232.8
2	4	17	0.3	0.4	1232.8	1232.7
2	5	11.4	0.4	0.5	1232.7	1232.6
2	6	12.6	0.5	0.6	1232.6	1232.5
2	7	10.4	0.6	0.7	1232.5	1232.4
2	8	15.2	0.7	0.8	1232.4	1232.3
2	9	4.2	0.8	0.9	1232.3	1232.2

Table 6: Overview of Square 2



Figure 41: Abel Dichakane & Sam Tmapo checking elevation with line datum while excavating Square 2

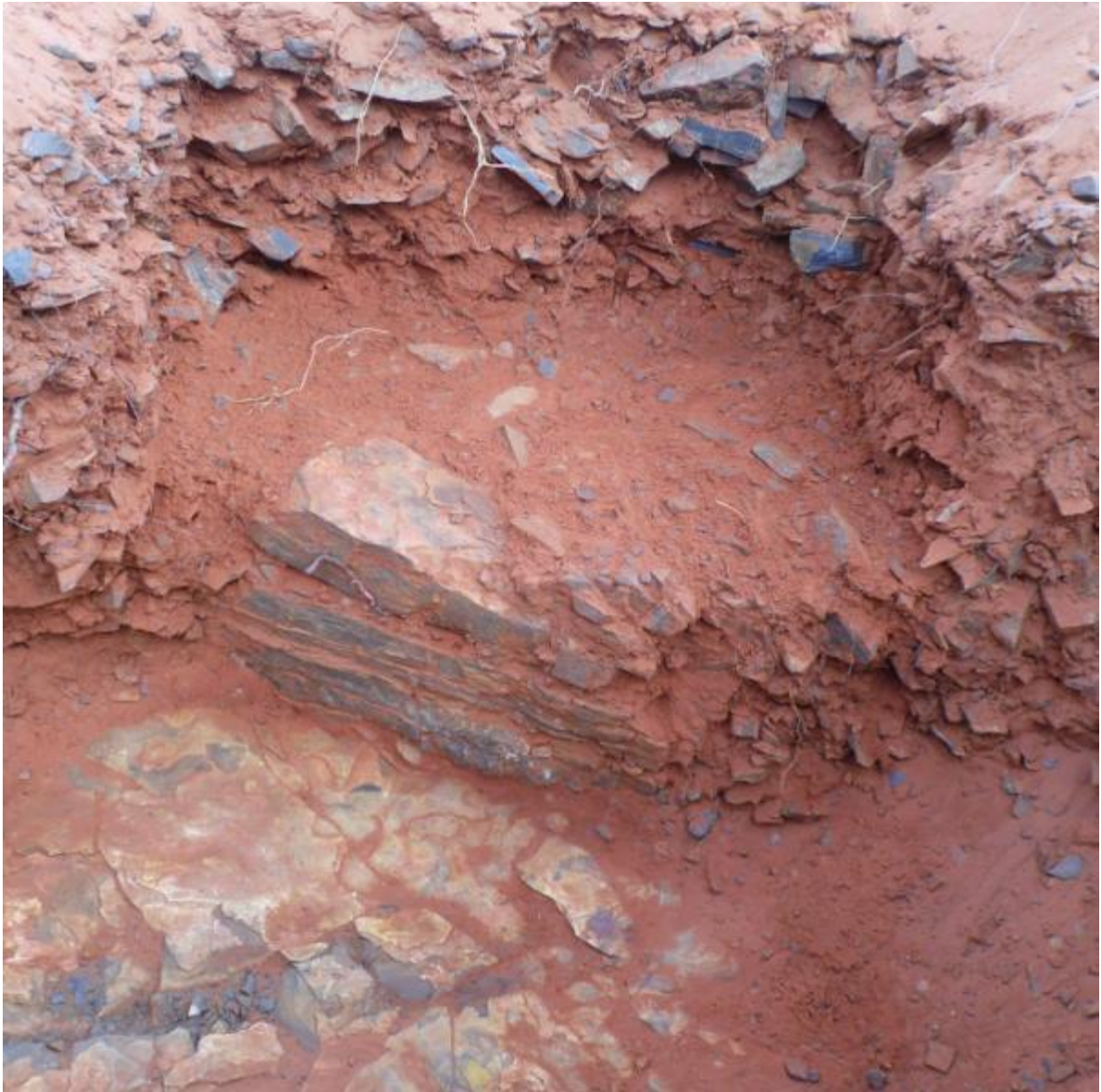


Figure 42: Square 2 at the top of level 6, slabs of ironstone evident in profile and plan.



**Figure 43: Broken handaxe refit across levels from Square 2
(tip from level 5, base from level 7)**



Figure 44: Selection of artefacts recovered from 2:7



Figure 45: Complete excavation of Square 2 to bedrock

6.2.3 Square 3

Square 3 was a 100 x 50 cm unit dug into Trench E which was ‘outside’ the site area. A line datum was set at 10 cm above modern ground surface and used for vertical control.

Levels 1-4a consisted of moderately sorted with consistent presence of very small (1-2mm) sub-angular pebbles, along with some small flakes. The remainder is sand, which is well compacted, but not cemented. Towards the bottom of level 4, at approximately 35 cm below surface, the gravels began along with the high artefact counts. We excavated the sand in Level 4 as 4A, and the Gravels as 4B to the arbitrary level of 40 cm below surface.

Transition between the sand and gravel layers was characterized by sudden appearance of large, cobble-sized clasts (sub-angular to sub-rounded). In the screen for 4B, range of sizes from sand matrix to the same small pebbles found with the sand, to larger pebbles and then to small and large cobble sizes. The Ironstone artefacts in this square are of lesser quality than the oolitic ones from Square 2. This material appears to be more grainy and less crystalline.

Beginning at level 9, artefact density began to decrease, but these levels were not sterile.

In addition to having the gravel entirely buried by sand, this square is the first to encounter calcrete. In this instance, the calcrete was forming within the ironstone and contains ironstone clasts (as observed in some of the trenches described above).

Square	Level	Weight of artefacts	m below MGS		Absolute depth	
			top	bottom	top	bottom
3	1	0.1	0.0	0.1	1232.1	1232.0
3	2	0.1	0.1	0.2	1232.0	1231.9
3	3	0.6	0.2	0.3	1231.9	1231.8
3	4A	0.6	0.3	0.4	1231.8	1231.7
3	4B	3.6				
3	5	18.4	0.5	0.6	1231.7	1231.6
3	6	4	0.6	0.7	1231.6	1231.5
3	7	7.6	0.7	0.8	1231.5	1231.4
3	8	5.8	0.8	0.9	1231.4	1231.3
3	9	2.8	0.9	1.0	1231.3	1231.2
3	10	3.2	1.0	1.1	1231.2	1231.1
3	11	0.1	1.1	1.2	1231.1	1231.0

Table 7: Overview of Square 3



Figure 46: Calcrete forming within the ironstone gravels.



Figure 47: Completed excavation of Square 3 showing sand overburden, gravel interfacing with the calcrete, and bedrock base.



Figure 48: A selection of artefacts from 3:7

6.2.4 Square 4

This was the first of two 50x50 cm squares excavated. The decreased excavation was chosen to minimize the volume of material being collected, which still maintaining vertical integrity. This unit was dug into the side of Trench G in the southwestern most part of the project area. Part of the intent of this excavation was to provide data indicating the nature of the deposit to the west and south of the current project area. As before, a line datum was established 10 cm above MGS and used for vertical control.

The type and amount of artefacts recovered here is typical for the Townlands site. The deposits in this square and trench conform to those encountered in Square 1, and Trenches A & B. This deposit was marginally shallower with bedrock appearing at 130 cm below MGS.

Square	Level	Weight of artefacts	m below MGS		Absolute depth	
			top	bottom	top	bottom
4	1	0.1	0.0	0.1	1233.3	1233.2
4	2	0.2	0.1	0.2	1233.2	1233.1
4	3	4.4	0.2	0.3	1233.1	1233.0
4	4	15.2	0.3	0.4	1233.0	1232.9
4	5	8.2	0.5	0.6	1232.9	1232.8
4	6	4.4	0.6	0.7	1232.8	1232.7
4	7	7.4	0.7	0.8	1232.7	1232.6
4	8	3.6	0.8	0.9	1232.6	1232.5
4	9	5.2	0.9	1.0	1232.5	1232.4
4	10	10.8	1.0	1.1	1232.4	1232.3
4	11	7.4	1.1	1.2	1232.3	1232.2
4	12	2.4	1.2	1.3	1232.2	1232.1
4	13	0.1	1.3	1.4	1232.1	1232.0

Table 8: Overview of Square 4



Figure 49: Completed 50x50 excavation to bedrock at a depth of ~ 140 cm below MGS.



Figure 50: Handaxe insitu, top of level 6

6.2.5 Square 5

This square was dug in concert with trenches I & H to investigate the affected area just east of the sensitive area. Again the excavation was limited to a 50x50 cm.

This excavation was unusual for the number of large roots. Although reasonably close to trenches A & B (~45 meters), the deposits here are fairly different. It appears to me more similar to that found in Trench E.

Sands with small pebble clasts as found with the other units was present for approximately 50cm, followed by a sharp contact with the same ironstone gravel. At this level there is also contact with the calcrete, which has internalized some of the ironstone (see photos). Some gravel may have also been pushed up around the calcrete as it grew.

Square	Level	Weight of artefacts	m below MGS		Absolute depth	
			top	bottom	top	bottom
5	1	0.1	0.0	0.1	1231.9	1231.8
5	2	0.2	0.1	0.2	1231.8	1231.7
5	3	0.2	0.2	0.3	1231.7	1231.6
5	4	0.1	0.3	0.4	1231.6	1231.5
5	5	4.8	0.5	0.6	1231.5	1231.4
5	6	9.4	0.6	0.7	1231.4	1231.3
5	7	7.2	0.7	0.8	1231.3	1231.2
5	8	0.8	0.8	0.9	1231.2	1231.1
5	9	0.6	0.9	1.0	1231.1	1231.0
5	10	0.1	1.0	1.1	1231.0	1230.9

Table 9: Overview of Square 5



Figure 51 Overview of the matrix at Square 5. Note the calcrete nodule within (below and above) the ironstone.



Figure 52: A selection of artefacts from 5:6

7 Management Recommendations

The fieldwork successfully recovered a well-provenience d and comprehensively documented sample of the archaeological material that is representative of the affected area. **On this basis we recommend that the permit for destruction be approved.** As indicated above, complete recovery is not an option in this context. However, we are confident that the recovered sample will serve the research community to understand the position of this particular area within the larger context of the Townlands site and the broader Kathu Complex.

Regarding the various mitigating options proposed through the course of the current project, specifically Option 2b and Option 3 above, we do not feel it is required to limit the destruction permit to the building of the parking lot. It is unlikely that the shape of the development will be altered from the plan presented in Figure 4 above. Nonetheless, the damage that will be done to the deposit in grading and levelling to create foundations for the parking lot is identical to the damage that would have happened for building the mall as originally proposed. On this basis, we recommend a complete destruction permit be approved without a qualification as to the nature of development.

While we support the application of the destruction permit and find that the developer is in conformity with all legal requirements, we encourage the developer to consider setting aside the area slated for use as a parking lot to serve as a landscaped outdoor area, perhaps with gravels overlain atop the deposits to protect them. This step would preserve the area of densest archaeological deposits on Erf 5116. An alternative, more limited, potential mitigating option would be to identify a smaller area to be preserved within the sensitive area. This area could be fairly limited in size, yet spared the grader. It would exist as a small island of intact deposit in the parking lot.

However, we do not feel that either of these options to preserve a portion of the deposit to be essential. Very little is known about the remaining portion of the Townlands deposit, but a very large amount of it exists on the adjacent property. Evidence from Square 4 shows that the deposit remains quite deep on the western edge of the project area, and presumably is quite deep across much of the area previously demarcated as the site.

There is however reason for concern about the back side of the mall including parking, service entrances and waste removal facing the area of the Townlands Site slated for

nomination for National Heritage status and included by the municipality as an area for heritage tourism development. Previous discussion (outlined above) included provisions for landscaping this border to mitigate this particular impact on the future enjoyment of the Townlands site. We wish to re-emphasise the need for such a measure.

Our excavations and research presented here shows that considerably more deposit exists outside the area previously demarcated as sensitive. The lower portions of these deposits will remain undamaged beneath much of Erf 5116. Some sort of indication should be tied to this property requiring further archaeological investigation should further development ever be proposed (such as underground parking, or deeper foundations to support additional levels). The mechanics of doing so, nor how binding such a qualification might be, is unclear to us. If such a thing was possible, this would be a good place to apply it.

The successful completion of the Phase 2 data recovery described in this report allows for the destruction of the site without a complete loss of archaeological information. This is a successful balancing of the needs of development and the needs of archaeological research. The rapid development of the town of Kathu in combination with the extensive Earlier Stone Age deposits do not allow for either complete recovery or complete preservation.

The lack of a coordinated management plan for the Kathu region has been a hindrance in to effective management as well as development. The creation of a coordinated heritage management plan is of the utmost urgency both to preserve the unique archaeological heritage of the Kathu Complex and to expedite the rapid pace of development in the town of Kathu.

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