

PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT

for

I-CAT (Pty) Ltd

on

**a Portion of Portion 25 of the Farm
Vlakfontein 523 JR, Bronkhorstspuit,
Gauteng**

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A Phase 1 Archaeological Impact Assessment for I-Cat International Consulting & Trading (Pty) Ltd on a Portion of Portion 25 of the Farm Vlakfontein 523 JR, Bronkhorstspuit, Gauteng

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Executive Summary

The author was appointed by I-CAT (Pty) Ltd to undertake a Phase 1 Archaeological study for JCJ Developments (Pty) Ltd on a Portion of Portion 25 of the Farm Vlakfontein 523 JR, Bronkhorstspuit. The study area is located about five kilometres southwest of Bronkhorstspuit and borders the R25 road to the north. The aim of the study is to determine the scope of archaeological resources which could be impacted on by the proposed mixed use development including a fuel station, convenience store small retail centre, and food court.

Due to no visible material remains within the area demarcated for development pertaining to heritage resources and subject to adherence of the recommendations and approval by SAHRA the development of the proposed filling station and convenience shop may continue. Should skeletal remains be exposed during development and construction phases, all activities must be suspended and the relevant heritage resources authority contacted (See National Heritage and Resources Act, 25 of 1999 section 36 (6)). Also, should culturally significant material be discovered during the course of the said development, all activities must be suspended pending further investigation by a qualified archaeologist.

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1. Project Background

1.1 Introduction

I-CAT (Pty) Ltd appointed the author to undertake an Archaeological study for JCJ Developments (Pty) Ltd on a Portion of Portion 25 of the Farm Vlakfontein 523 JR, Gauteng Province (**Figures 1 & 2**). The study area is located in the north-western corner of Portion 25, close to the Mpumalanga Province boundary. The purpose of this study is to examine the demarcated study area in order to determine if any archaeological resources of heritage value will be impacted on by the proposed filling station and convenience shop, as well as to archaeologically contextualise the general study area. The aim of this report is to provide the developer with information regarding the location of heritage resources on the portion demarcated for development.

In the following report I discuss the implication for the construction of a filling station and convenience shop and its associated activities on the demarcated Portion of Portion 25 with regard to heritage resources. The legislation section included serves as a guide towards the effective identification and protection of heritage resources and will apply to any such material unearthed during development and construction phases on the demarcated study area.

1.2 Legislation

The South African Heritage Resources Agency (SAHRA) aims to conserve and control the management, research, alteration and destruction of cultural resources of South Africa and to prosecute if necessary. It is therefore crucially important to adhere to heritage resource legislation contained in the Government Gazette of the Republic of South Africa (Act No.25 of 1999), as many heritage sites are threatened daily by development. Conservation legislation requires an impact assessment report to be submitted for development authorisation that must include an AIA if triggered.

AIAs should be done by qualified professionals with adequate knowledge to (a) identify all heritage resources that might occur in areas of development and (b) make recommendations for protection or mitigation of the impact of the sites.

1.2.1 The EIA and AIA processes

Phase 1 Archaeological Impact Assessments generally involve the identification of sites during a field survey with assessment of their significance, the possible impact that the development might have, and relevant recommendations.

All Archaeological Impact Assessment reports should include:

- a. Location of the sites that are found;
- b. Short descriptions of the characteristics of each site;
- c. Short assessments of how important each site is, indicating which should be conserved and which mitigated;
- d. Assessments of the potential impact of the development on the site(s);
- e. In some cases a shovel test, to establish the extent of a site, or collection of material, to identify the associations of the site, may be necessary (a pre-arranged SAHRA permit is required); and
- f. Recommendations for conservation or mitigation.

This AIA report is intended to inform the client about the legislative protection of heritage resources and their significance and make appropriate recommendations. It is essential to also provide the heritage authority with sufficient information about the sites to enable the authority to assess with confidence:

- a. Whether or not it has objections to a development;

- b. What the conditions are upon which such development might proceed;
- c. Which sites require permits for mitigation or destruction;
- d. Which sites require mitigation and what this should comprise;
- e. Whether sites must be conserved and what alternatives can be proposed to relocate the development in such a way as to conserve other sites; and
- f. What measures should or could be put in place to protect the sites which should be conserved.

When a Phase 1 AIA is part of an EIA, wider issues such as public consultation and assessment of the spatial and visual impacts of the development may be undertaken as part of the general study and may not be required from the archaeologist. If, however, the Phase 1 project forms a major component of an AIA it will be necessary to ensure that the study addresses such issues and complies with Section 38 of the National Heritage Resources Act.

1.2.2 Legislation regarding archaeology and heritage sites

National Heritage Resource Act No.25 of April 1999

Buildings are among the most enduring features of human occupation, and this definition therefore includes all buildings older than 60 years, modern architecture as well as ruins, fortifications and Farming Community settlements. The Act identifies heritage objects as:

- objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects, meteorites and rare geological specimens;
- visual art objects;
- military objects;
- numismatic objects;
- objects of cultural and historical significance;
- objects to which oral traditions are attached and which are associated with living heritage;
- objects of scientific or technological interest;
- books, records, documents, photographic positives and negatives, graphic material, film or video or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National

Archives of South Africa Act, 1996 (Act No. 43 of 1996), or in a provincial law pertaining to records or archives;

- any other prescribed category.

With regards to activities and work on archaeological and heritage sites this Act states that:

“No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.” (34. [1] 1999:58)

and

“No person may, without a permit issued by the responsible heritage resources authority:

- (a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;*
- (b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;*
- (c) trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or*
- (d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.”(35. [4] 1999:58)*

and

“No person may, without a permit issued by SAHRA or a provincial heritage resources authority:

- (a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;*
- (b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority;*
- (c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) and excavation equipment, or any equipment which assists in the detection or recovery of metals.” (36. [3] 1999:60)*

On the development of any area the gazette states that:

“...any person who intends to undertake a development categorised as:

- (a) the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;*
- (b) the construction of a bridge or similar structure exceeding 50m in length;*
- (c) any development or other activity which will change the character of a site-*
 - i. exceeding 5000m² in extent; or*
 - ii. involving three or more existing erven or subdivisions thereof; or*
 - iii. involving three or more erven or divisions thereof which have been consolidated within the past five years; or*
 - iv. the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;*
- (d) the re-zoning of a site exceeding 10000m² in extent; or*
- (e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.” (38. [1] 1999:62-64)*

and

“The responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection (2)(a): Provided that the following must be included:

- (a) The identification and mapping of all heritage resources in the area affected;*
- (b) an assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6(2) or prescribed under section 7;*
- (c) an assessment of the impact of the development on such heritage resources;*
- (d) an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;*

- (e) *the results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;*
- (f) *if heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and*
- (g) *plans for mitigation of any adverse effects during and after the completion of the proposed development.”*
(38. [3] 1999:64)

Human Tissue Act and Ordinance 7 of 1925

The Human Tissues Act (65 of 1983) and Ordinance on the Removal of Graves and Dead Bodies (Ordinance 7 of 1925) protects graves younger than 60 years. These fall under the jurisdiction of the National Department of Health and the Provincial Health Departments. Approval for the exhumation and re-burial must be obtained from the relevant Provincial MEC as well as the relevant Local Authorities. Graves 60 years or older fall under the jurisdiction of the National Heritage Resources Act as well as the Human Tissues Act, 1983.

2. Study Area and Project Description

2.1 Location & Physical environment

The closest town to the study area is Bronkhorstspuit, which is located five kilometres northeast of the proposed filling station. eMalahleni is located 53 km to the east of the study area and Pretoria 50 km to the west-northwest. The study area falls within the City of Tshwane Metropolitan Municipality in the Gauteng Province. In terms of vegetation the study area falls within the Grassland Biome which is typically associated with summer rainfall regions. This Biome covers approximately 28% of South Africa. According to the vegetation classification by Mucina & Rutherford (2006) this area falls within the Rand Highveld Grassland. Patches of Gold Reef Mountain Bushveld are found around the area demarcated for development. Rand Highveld Grassland tend to occur between rocky ridges from Pretoria to eMalahleni and vary between sour grassland and sour shrubland. On a local scale the vegetation consists exclusively of recently slashed grass cover.

Quartzite ridges of the Witwatersrand Supergroup and Pretoria Group, as well as Selons River Formation of the Rooiberg Group are found in the area. Soils vary significantly in quality, with shallow Glenrosa and Mispah forms occurring on rocky ridges (Mucina & Rutherford 2006).

The study area falls within the summer rainfall region and experiences very dry winters. The average annual rainfall varies between 570 mm and 730 mm (Mucina & Rutherford 2006). The average maximum temperature for the study area ranges from 17.8 °C in June to 26.7 °C in January. The lowest temperatures occur during July and drop to an average of 1.6 °C during the night (SA Explorer accessed 03/09/2016).

In terms of topography the general area consists of sloping plains and a series of ridges with undulating surrounding plains. Altitudes may vary between 1300 and 1635 MASL (metres above sea level) but occasionally reach 1760 MASL. The average elevation of the project area is 1400 MASL and slopes from the elevated western side to the lower eastern side.

The study area falls within the Quaternary catchment B20D within the Wilge River catchment. The closest water source to the study area is the Bronkhorstspuit River, a perennial river located 120 m to the east. Bronkhorstspuit Dam is located 3.5 km to the south.

A portion of the area demarcated for development (indicated as 'developed area' on **Figures 5 & 10-11**) consists of a fuel depot and guard house. This area has been completely cleared of vegetation. Parts of this section is also surrounded by a brick wall. The area to the east of the study area is utilised as a grazing field while roads border the study area to the north and west. What appears to be a residence borders the study area to the south. It should also be noted that powerlines run along the western border and cuts through the northern section of the area demarcated for development.

The area demarcated for development was previously ploughed and used for grazing. The area, therefore, is significantly disturbed.

2.2 Project description

The proposed filling station, convenience store and associated construction will cover roughly 8 ha (**Table 1 & Figure 2**). It should be noted that the exact extent of the project has not yet been confirmed. The following activities / infrastructure will be associated with the planned development: Office, shop, retail park, restaurant, retail parking, roads, office park, office parking, truck depot, office & tuck shop ablution, and water & sanitation systems. The duration of the project will be between 8 and 12 months.

A preference will also be given to the local population for employment opportunities during and after the construction of the filling station.

Table 1: Property name & coordinates

Property	Portion	Map Reference (1:50 000)	Coordinates
Vlakfontein 523 JR	Portion of Portion 25	2528 DC	S: -25.858403 E: 28.700114

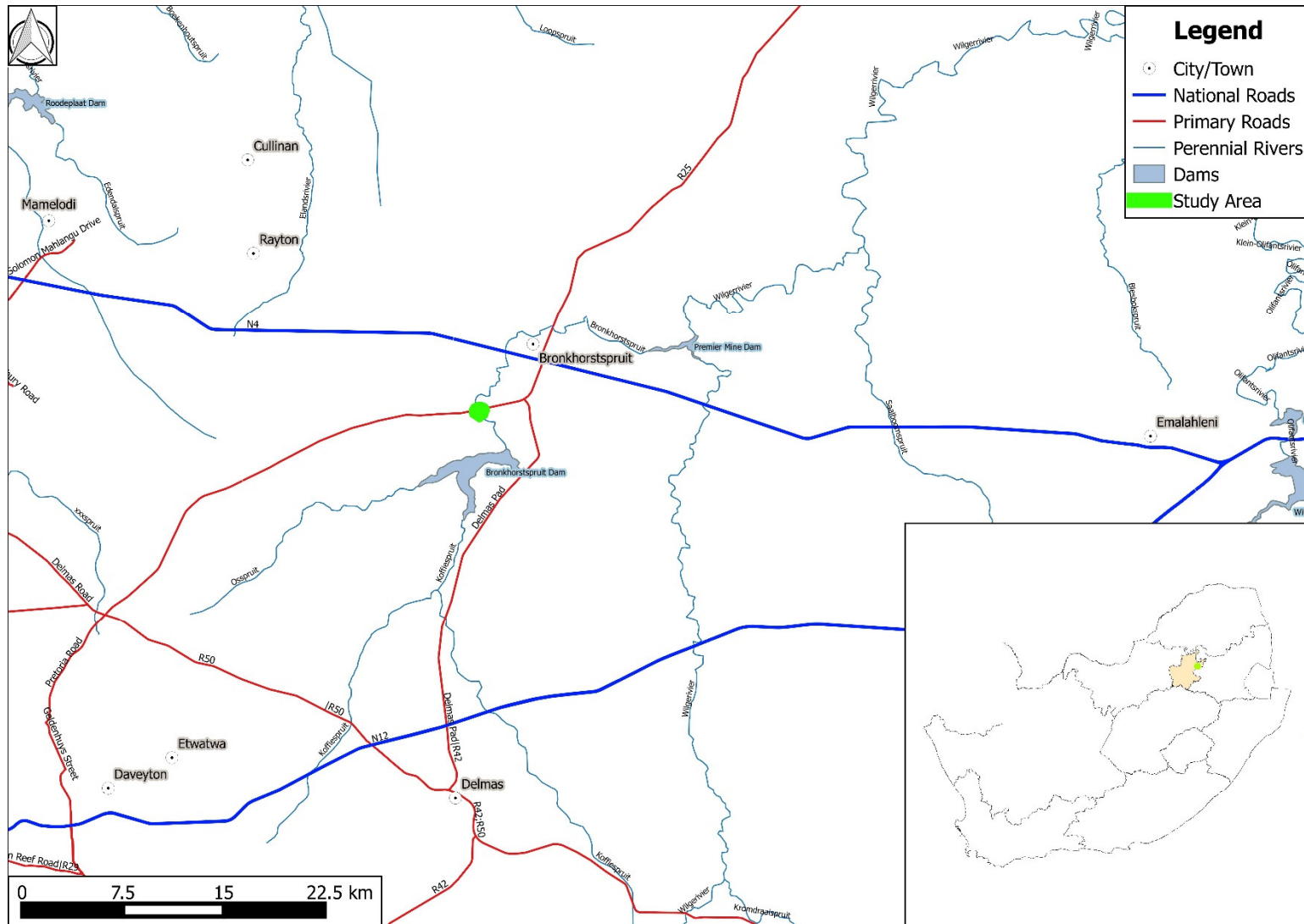


Figure 1: Regional and Provincial location of the study area.

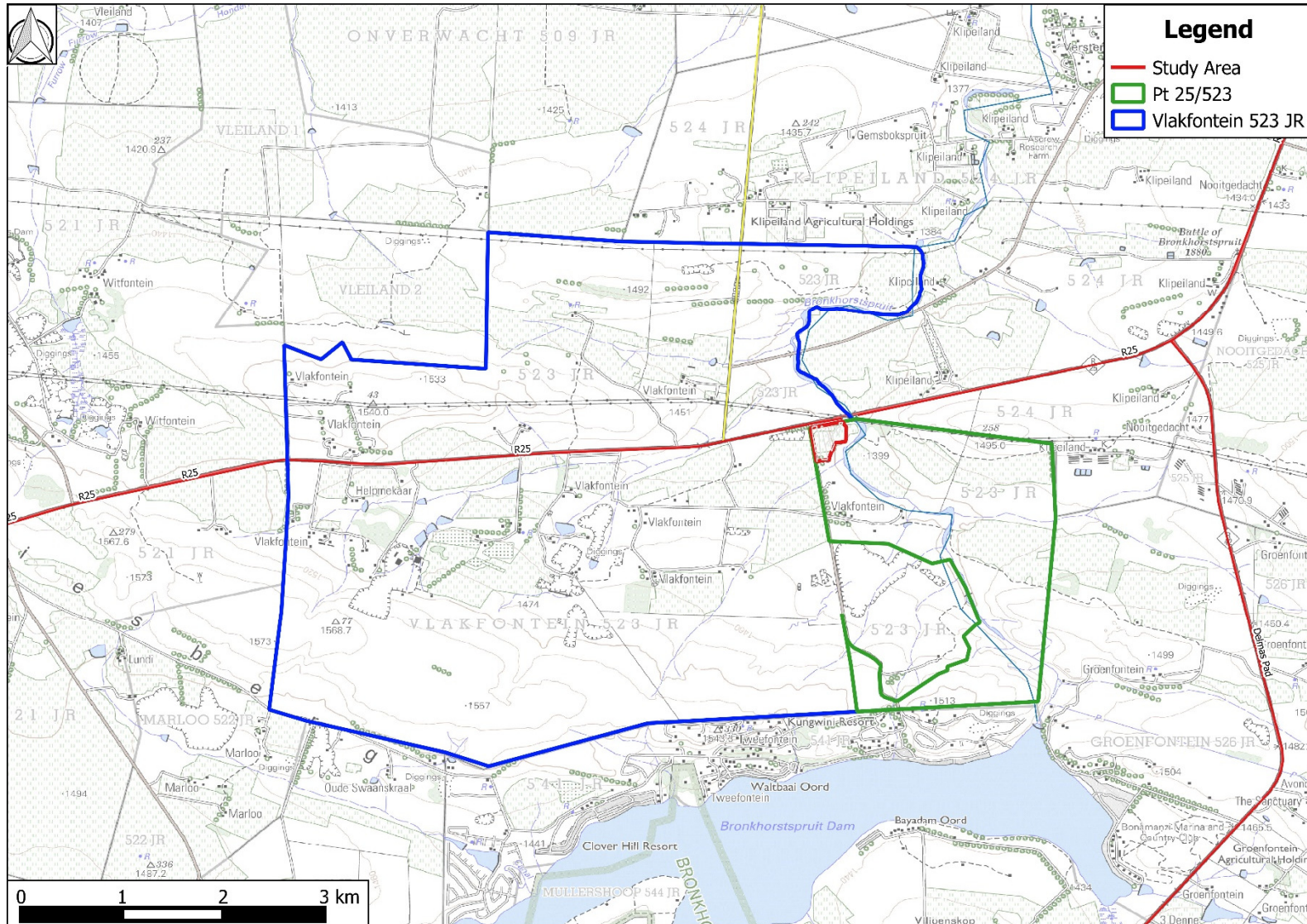


Figure 2: Segment of SA 1: 50 000 2528 DC indicating the study area.

3. Archaeological Background

Southern African archaeology is broadly divided into the Early, Middle and Later Stone Ages; Early, Middle and Later Iron Ages; and Historical or Colonial Periods. This section of the report provides a general background to archaeology in South Africa and also focuses on more site specific elements where relevant.

3.1 The Stone Age

The earliest stone tool industry, the Oldowan, was developed by early human ancestors which were the earliest members of the genus *Homo*, such as *Homo habilis*, around 2.6 million years ago. It comprises tools such as cobble cores and pebble choppers (Toth & Schick 2007). Archaeologists suggest these stone tools are the earliest direct evidence for culture in southern Africa (Clarke & Kuman 2000). The advent of culture indicates the advent of more cognitively modern hominins (Mitchell 2002: 56, 57)

The Acheulean industry completely replaced the Oldowan industry. The Acheulean industry was first developed by *Homo ergaster* between 1.8 to 1.65 million years ago and lasted until around 300 000 years ago. Archaeological evidence from this period is also found at Swartkrans, Kromdraai and Sterkfontein. The most typical tools of the ESA are handaxes, cleavers, choppers and spheroids. Although hominins seemingly used handaxes often, scholars disagree about their use. There are no indications of hafting, and some artefacts are far too large for it. Hominins likely used choppers and scrapers for skinning and butchering scavenged animals and often obtained sharp ended sticks for digging up edible roots. Presumably, early humans used wooden spears as early as 5 million years ago to hunt small animals.

Middle Stone Age artefacts started appearing about 250 000 years ago and replaced the larger Early Stone Age bifaces, handaxes and cleavers with smaller flake industries consisting of scrapers, points and blades. These artefacts roughly fall in the 40-100 mm size range and were, in some cases, attached to handles, indicating a significant technical advance. The first *Homo sapiens* species also emerged during this period. Associated sites are Klasies River Mouth, Blombos Cave and Border Cave (Deacon & Deacon 1999).

Although the transition from the Middle Stone Age to the Later Stone Age did not occur simultaneously across the whole of southern Africa, the Later Stone Age ranges from about 20 000 to 2000 years ago. Stone tools from this period are generally smaller, but were used to do the same job as those from previous periods; only in a different, more efficient way. The Later Stone Age is associated with: rock art, smaller stone tools (microliths), bows and arrows, bored stones, grooved stones, polished bone tools, earthenware pottery and beads. Examples of Later Stone Age sites are Nelson Bay Cave, Rose Cottage Cave and Boomplaas Cave (Deacon & Deacon 1999).

3.2 The Iron Age & Historical Period

The Historical period mainly deals with Europe's discovery, settlement and impact on southern Africa. Some topics covered by the Historical period include Dutch settlement in the Western Cape, early mission stations, Voortrekker routes and the Anglo Boer War. This time period also saw the compilation of early maps by missionaries, explorers, military personnel, etc. **Figure 3** indicates the rough location of the study area on a map compiled by Merensky in 1875.



Figure 3: Rough indication of the study area on a map compiled by Merensky (Extract from: Merensky 1875).

One example of Later Iron Age activity in the area, although a considerable distance towards the east, was a Swazi attack on Kôpa forces in May of 1864 as well as Ndzundza Ndebele and Pedi movements (Bergh 1999: 176). Some stone-walled enclosures are also found in the general region. Voortrekker history in the general area is more readily available as a result of the Tregardt and Van Rensburg trek, as well as the Battle of Bronkhorstspuit in 1880.

According to history Louis Tregardt and Johannes van Rensburg's northward treks during the 1830's were forced in a different direction after reaching the Middelburg area. Here difficult terrain forced the treks in a western direction towards Spitskop and Renosterkop in the vicinity of present day Bronkhorstspuit. From here they again turned in a northern direction along the Olifants River towards the Strydpoort Mountains to reach

Soutpansberg. Some of the place names to the north of Bronkhorstspuit referring to the Voortrekker route are: Vlooiokop, Trichardspoor and Renosterpoort (Rex 1969: 1-3).

It should be kept in mind that the trekkers were on a constant lookout for favourable areas to settle. The area between Suikerbosrand near Heidelberg, and Renosterkop near Cullinan probably seemed favourable because of the abundant water sources, ample game and grazing fields. In addition to natural resources, it is argued that the area was sparsely populated as a result of Ndebele western movements under Mzilikazi during the 1820's and 1830's. Because of the agricultural and grazing potential of the area, most members of the Potgieter Commission, who followed Tregardt and Van Rensburg's tracks, and some of their relatives and descendants settled from the 1840's onward on farms along the Apies, Elands, Wilge and Olifants Rivers, as well as along the Morelettaspruit and Bronkhorstspuit (Rex 1969: 7-8).

The Battle of Bronkhorstspuit

In 1874 Lord Carnarvon, the Colonial State Secretary, wished to unite British territory and the two Republics under the British flag. Because none of these states were in favour of uniting, Carnarvon reasoned that through uniting with the Transvaal, the others would follow. Due to poor relations, the only option left was annexation. In 1877 Shepstone was sent from Natal to Pretoria with a police force of 25 with the goal to annex the Transvaal. On 12 April 1877, Shepstone raised the British flag and the Transvaal was annexed without firing a single shot. Several deputations were sent to England to regain independence, but both failed. Consequently S. P. J. Kruger, P. Joubert and M. W. Pretorius decided to gather the nation at Paardekraal to discuss the future of the Transvaal. During the meeting, which lasted from 12 to 16 December 1880, it was decided that Heidelberg would serve as the seat of the government. British forces were stationed in most of the towns, but were too weak to launch attacks on the Boer forces. British forces were therefore ordered from Lydenburg to support forces in Pretoria. Upon receiving this news, Frans Joubert was sent from Heidelberg to Pretoria with a force consisting of between 200 and 300 men to intercept and stop these reinforcements. According to the historian, Theal, the British forces under Col. Anstruther consisted of 257 men and 34 wagons. On 20 December 1880 they arrived at the place known today as Bronkhorstspuit. A brief exchange of words in which Joubert requested Anstruther to discontinue his mission resulted in a 10 to 20 minute battle over open field. After a significant amount of casualties on the British side, Col. Anstruther, who was mortally wounded, requested that the white flag be raised. According to Theal, 66 on the British side were killed and 72 wounded. Later, 10 of the wounded died as well. On the Boers' side, one commando member was killed in action and another five wounded. Later, another succumbed to his wounds. The captives were transported to Heidelberg and from there to the Vaal River. From there they were allowed to go to the Free State. This was the first open battle of the First Boer War (Roodt 1949: 7-9).

The photo below (**Figure 4**) depicts the settlement of Paul Grobler on the farm Klippeiland, where the Battle of Bronkhorstspuit took place. Grobler bought the farm from Salomon Prinsloo in the 1850's and renamed it from

Kalkoenkrans to Klippeiland. One of the wounded commando members was treated in this homestead. In the background the homesteads of Marthinus Johannes Grobler can be observed (Rex 1969: 14).

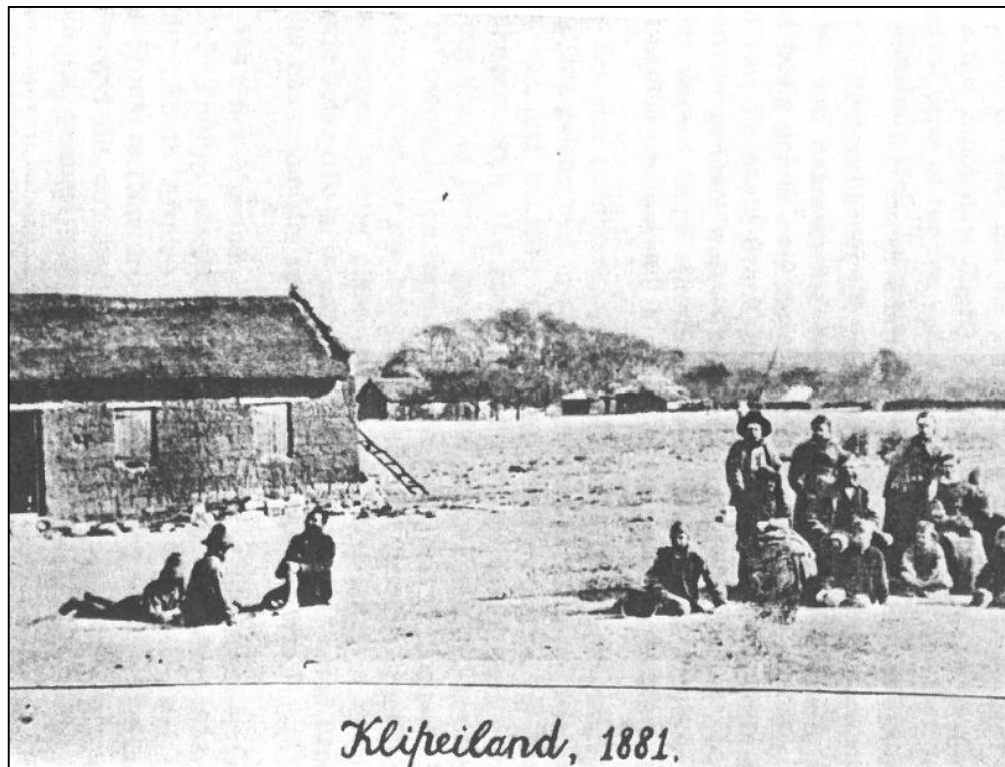


Figure 4: Grobler residence on Klippeiland (adapted from Rex 1969).

4. Methodology

I conducted archaeological reconnaissance of the study area through a systematic pedestrian site survey (**Figure 5**). The transects were spaced roughly 50 m apart and were recorded via GPS (Global Positioning System). General site conditions were recorded via photographic record (**Figures 6 – 11**). Also, the site was inspected beforehand on Google as well as black and white aerial imagery in order to identify possible heritage remains. No remains, however, were observed on aerial imagery. The transects stretched in a north – south direction and good visibility allowed inspection of the surrounding area. The total area surveyed was 9.3 hectares.

The reconnaissance of the area under investigation served a twofold purpose:

- To obtain an indication of heritage material found in the general area as well as to identify or locate archaeological sites on the area demarcated for development. This was done in order to establish a heritage context and to supplement background information that would benefit developers through identifying areas that are sensitive from a heritage perspective.

- All archaeological and historical events have spatial definitions in addition to their cultural and chronological context. Where applicable, spatial recording of these definitions were done by means of a handheld GPS during the site visit.

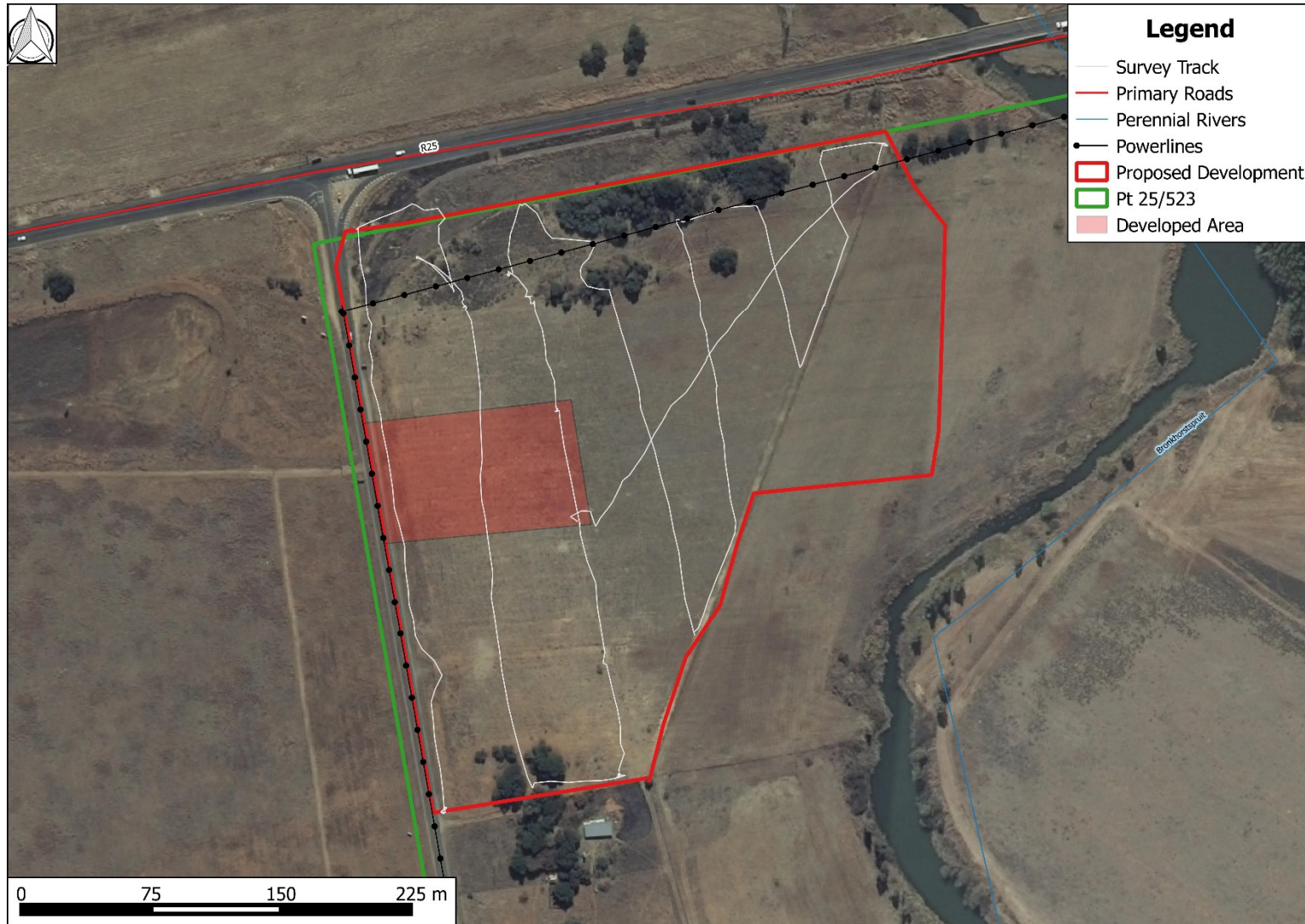


Figure 5: Study area with survey tracks.



Figure 6: Northern perspective of the study area from the south-western corner.



Figure 7: Environment from the northwest towards the southeast.



Figure 8: Environment from the southeast towards the north.



Figure 9: Site conditions as seen from the north-western corner.



Figure 10: Developed section indicating a parts of a brick wall.



Figure 11: Developed section indicating the fuel depot and guard house.

4.1 Sources of information

At all times during the survey I followed standard archaeological procedures for the observation of heritage resources. As most archaeological material occurs in single or multiple stratified layers beneath the soil surface, I paid special attention to disturbances; both man-made such as roads and clearings, and those made by natural agents such as burrowing animals and erosion. I recorded locations of archaeological material remains by means of a Garmin Oregon 550 GPS and photographed these sites as well as general conditions on the terrain with a Sony Cyber-shot camera.

I conducted a literature study, which incorporated previous work done in the region, in order to place the study area into context from a heritage perspective.

Tinus Strydom bought the property in 2005 and is in the process of selling the land. According to Mr. Strydom there are no ruins, graves or other material of heritage importance on the area demarcated for development (Tinus Strydom, pers. Comm. 2016).

4.1.1 Previous research

Clover Hill Development, Bronkhorstspuit Dam

A phase 1 HIA was done for the Clover Hill Housing Estate, which is located on the Farm Tweefontein 541 JR and 3.2 km southwest of the study area. The Housing Estate is located on the banks of the Bronkhorstspuit Dam. The HIA revealed several stone-walled enclosures belonging to the Later Iron Age, as well as potshards and middens. Several structures with a square layout were also located, but probably do not exceed 60 years (National Cultural History Museum 2003).

Nooitgedacht 525JR

The HIA survey done for the development of a housing estate on Portion 9 of the Farm Nooitgedacht 525 JR, located six kilometres northeast of the proposed development, revealed two heritage sites. It is in the same area where the Battle of Bronkhorstspuit took place. These sites date to the Historic period (Van Schalkwyk 2007).

4.2 Limitations

The vegetation of the study area consists predominantly of short grassland which offered good visibility during the time of surveying (August 2016). Access restrictions, however, prohibited the surveying of a small section to the east of the area demarcated for development. This section is roughly 1.3 hectare in size, fenced-off and is currently utilised as a grazing field for horses. However, the visibility from the side that was surveyed was good as the grass cover is short (**Figure 12**).



Figure 12: Small section of area not surveyed.

5. Archaeological and Historical Remains

5.1 Stone Age Remains

I found no Stone Age archaeological remains within the demarcated study area.

Although I located no Stone Age archaeological remains, such artefacts may occur in the area. These artefacts are often associated with rocky outcrops or water sources. **Figures 13 - 15** below are examples of stone tools often associated with the Early, Middle and Later Stone Age of southern Africa.

Archaeological studies done on the surrounding areas also did not locate material pertaining to the Stone Age.

According to Bergh (1999: 5) no major Stone Age archaeological sites are located in the direct vicinity of Bronkhorstspuit.

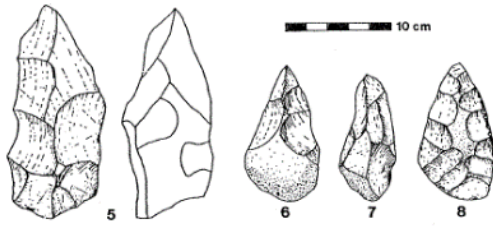


Figure 13: ESA artefacts from Sterkfontein (Volman 1984)

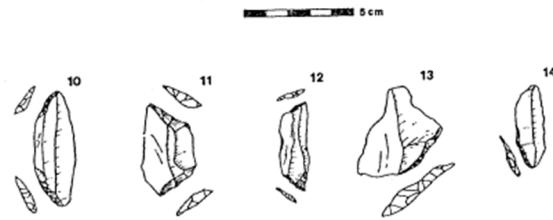


Figure 14: MSA artefacts from Howiesons Poort (Volman 1984)

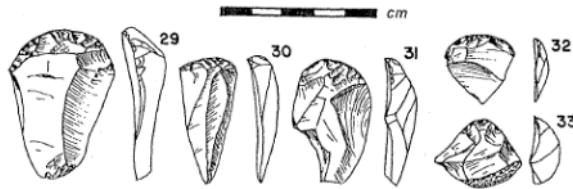


Figure 15: LSA scrapers (Klein 1984)

5.2 Iron Age Farmer Remains

I found no Iron Age Farmer remains within the demarcated study area.

The study conducted by the National Cultural History Museum for the development of the Clover Hill housing estate, however, located 8 stone-walled enclosures. Middens and potshards are associated with these sites. These sites were rated as having a high significance and controlled sampling and/or mapping was recommended (National Cultural History Museum 2003).

5.3 Historical Remains

I found no Historical remains within the demarcated study area.

Van Schalkwyk (2007) identified two heritage sites relating to the development on Portion 9 of the Farm Nooitgedacht 525 JR. This is the location where the Battle of Bronkhorstspuit took place. The workshops where the Lazarus wagon works used to be are also located here. Two monuments are associated with the Battle of Bronkhorstspuit: One for the British forces killed in action and one for the Boers. The monument

commemorating the fallen British forces and the Lazarus wagon works fall on the Farm Nooitgedacht 525 JR, while the monument commemorating the Boer forces is located on the Farm Klippeiland 524 JR. Accordingly the wagon works were constructed by Mr Lazarus, who later opened a garage in Bronkhorstspuit. His business eventually resulted in the Lazarus motor retail centre in Centurion (Van Schalkwyk (2007). It was recommended that the British monument be preserved at all cost as it falls within the area demarcated for development, while the Boer monument required no further investigation as it falls outside of the impacted area. The recommendation for the Lazarus wagon works was controlled sampling and/or mapping of the site.

5.4 Recent remains

I located several broken roof tiles of recent origin within the area demarcated for development. Towards the north of the study area a significant amount of these tiles are located (**Figure 16 & Figure 17**). Mr. Strydom confirmed that these tiles were used for the building of roads and were brought to the site from Marley Roofing in Bronkhorstspuit in 2015 (Tinus Strydom, pers. Comm. 2016). The production of Marley roof tiles began in 1971 with its first factory in Olifantsfontein, Gauteng and produced Mendip and Ludlow concrete tile profiles.

The study done by The National Cultural Museum (2003) for the development of a housing estate on Portion 9 of the Farm Nooitgedacht 525 JR revealed two sites angular in form. These enclosures belonged to farm labourers and were built with clay bricks. It is unlikely that the enclosures exceed 60 years. These sites were rated as having a high significance, but required no further investigation (Van Schalkwyk 2007).



Figure 16: Double Roman roof tiles produced by Marley.



Figure 17: Pieces of roof tiles on the area demarcated for development.

5.5 Graves

No graves were observed during the survey of the area demarcated for development.

The National Cultural Museum (2003) identified one informal cemetery that consists of roughly 20 graves in the vicinity of the Clover Hill housing estate. The majority of the graves do not have inscriptions and fall outside of the area of development. Therefore the significance rating was regarded as low and required no further investigation.

Van Schalkwyk (2007) identified a modern cemetery on the Farm Nooitgedacht 525 JR but noted that it would most likely not be impacted on and therefore do not require any further investigation.

6. Evaluation

The significance of an archaeological site is based on the amount of deposit, the integrity of the context, the kind of deposit and the potential to help answer present research questions. Historical structures are defined by Section 34 of the National Heritage Resources Act, 1999, while other historical and cultural significant sites, places and features, are generally determined by community preferences.

A fundamental aspect in the conservation of a heritage resource relates to whether the sustainable social and economic benefits of a proposed development outweigh the conservation issues at stake. There are many aspects that must be taken into consideration when determining significance, such as rarity, national significance, scientific importance, cultural and religious significance, and not least, community preferences. When, for whatever reason the protection of a heritage site is not deemed necessary or practical, its research potential must be assessed and if appropriate mitigated in order to gain data / information which would otherwise be lost. Such sites must be adequately recorded and sampled before being destroyed.

No heritage resources were observed within the demarcated study area.

6.1 Field Rating

All sites should include a field rating in order to comply with section 38 of the National Heritage Resources Act (Act No. 25 of 1999). The field rating and classification in this report is prescribed by SAHRA.

Table 2: Field Ratings

Rating	Field Rating/Grade	Significance	Recommendation
National	Grade 1		National site
Provincial	Grade 2		Provincial site
Local	Grade 3 A	High	Mitigation not advised
Local	Grade 3 B	High	Part of site should be retained
General protection A	4 A	High/Medium	Mitigate site
General Protection B	4 B	Medium	Record site
General Protection C	4 C	Low	No recording necessary

*No sites of heritage importance were observed on the area demarcated for development.

7. Statement of Significance & Recommendations

7.1 Statement of significance

The study area: A Portion of Portion 25 of the Farm Vlakfontein 523 JR

I observed no material of heritage importance within the demarcated study area. The study area is disturbed as a fuel depot and guardhouse are located on the portion demarcated for development. It should also be noted that the study area was previously exposed to agricultural activities such as ploughing, planting and grazing. Other disturbances include a significant area cleared of vegetation, trenches, a brick wall and powerlines running along the northern and western border of the study area.

7.2 Recommendations

The following recommendations are made in terms with the National Heritage Resources Act (25 of 1999) in order to avoid the destruction of heritage remains in the area demarcated for development:

- Because archaeological artefacts generally occur below surface, the possibility exists that culturally significant material may be exposed during the development and construction phases, in which case all activities must be suspended pending further archaeological investigations by a qualified archaeologist. Also, should skeletal remains be exposed during development and construction phases, all activities must be suspended and the relevant heritage resources authority contacted (See National Heritage Resources Act, 25 of 1999 section 36 (6)).
- Should the need arise to expand the development beyond the surveyed area mentioned in this study, the following applies: a qualified archaeologist must conduct a full Phase 1 Archaeological Impact Assessment (AIA) on the sections beyond the demarcated areas which will be affected by the expansion, in order to determine the occurrence and extent of any archaeological sites and the impact development might have on these sites.
- From a heritage point of view, development may proceed on the demarcated portion, subject to the abovementioned conditions and recommendations.

8. Addendum: Terminology

Archaeology:

The study of the human past through its material remains.

Artefact:

Any portable object used, modified, or made by humans; e.g. pottery and metal objects.

Assemblage:

A group of artefacts occurring together at a particular time and place, and representing the sum of human activities.

Context:

An artefact's context usually consist of its immediate *matrix* (the material surrounding it e.g. gravel, clay or sand), its *provenience* (horizontal and vertical position within the matrix), and its *association* with other artefacts (occurrence together with other archaeological remains, usually in the same matrix).

Cultural Resource Management (CRM):

The safeguarding of the archaeological heritage through the protection of sites and through salvage archaeology (rescue archaeology), generally within the framework of legislation designed to safeguard the past.

Excavation:

The principal method of data acquisition in archaeology, involving the systematic uncovering of archaeological remains through the removal of the deposits of soil and other material covering and accompanying it.

Feature:

An irremovable artefact; e.g. hearths or architectural elements.

Ground Reconnaissance:

A collective name for a wide variety of methods for identifying individual archaeological sites, including consultation of documentary sources, place-name evidence, local folklore, and legend, but primarily actual fieldwork.

Matrix:

The physical material within which artefacts is embedded or supported, i.e. the material surrounding it e.g. gravel, clay or sand.

Phase 1 Assessments:

Scoping surveys to establish the presence of and to evaluate heritage resources in a given area.

Phase 2 Assessments:

In-depth culture resources management studies which could include major archaeological excavations, detailed site surveys and mapping / plans of sites, including historical / architectural structures and features. Alternatively, the sampling of sites by collecting material, small test pit excavations or auger sampling is required.

Sensitive:

Often refers to graves and burial sites although not necessarily a heritage place, as well as ideologically significant sites such as ritual / religious places. *Sensitive* may also refer to an entire landscape / area known for its significant heritage remains.

Site:

A distinct spatial clustering of artefacts, features, structures, and organic and environmental remains, as the residue of human activity.

Surface survey:

There are two kinds: (1) unsystematic and (2) systematic. The former involves field walking, i.e. scanning the ground along one's path and recording the location of artefacts and surface features. Systematic survey by comparison is less subjective and involves a grid system, such that the survey area is divided into sectors and these are walked ally, thus making the recording of finds more accurate.

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Maps

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