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1ST REPORT ON A PHASE 2 HIA FOR THE THARISA MINERALS MARIKANA MINE NORTH-EASTERN WASTE ROCK DUMP ON ELANDSDRIFT 467JQ, NEAR MARIKANA, NORTHWEST PROVINCE

For:

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REPORT: **APAC018/28**

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DISCLAIMER:

Although all possible care is taken to identify all sites of cultural importance during the survey of study areas, the nature of archaeological and historical sites are as such that it always is possible that hidden or subterranean sites could be overlooked during the study. APELSER ARCHAEOLOGICAL CONSULTING and its personnel will not be held liable for such oversights or for costs incurred as a result thereof.

The South African Heritage Resources Agency (SAHRA) or one of its subsidiary bodies needs to comment on this report and clients are advised not to proceed with any action before receiving these.

SUMMARY

APELSER ARCHAEOLOGICAL CONSULTING cc was appointed by Tharisa Minerals (Pty) Ltd to conduct a Phase 2 Heritage Impact Assessment (HIA) for their Marikana Mine's North-Eastern Waste Rock Dump, located on a portion of the farm Elandsdrift 467JQ. The study area is located near Marikana in the Northwest Province. The first part of this study was Desktop based, with the aims being to determine if there are any possible significant archaeological sites and features in the direct and larger geographical area that need be taken into consideration during mining operations and that could be potentially negatively impacted upon by it. The physical fieldwork phase (site assessments and visits) will be undertaken at a later stage.

Various sources were consulted as part of the study (including a 2014 Phase 1 Report for the development area by Dr.Julius Pistorius). From these sources it is clear that there are a number of known and possible cultural heritage resources (including Stone Age, Rock Art and Iron Age sites) in the larger geographical area, but no known sites on the specific farm portion where the mining-related activities are being undertaken. This report will discuss the results of the desktop study and provide recommendations on the way forward at the end of the document.

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1. INTRODUCTION

APELSER ARCHAEOLOGICAL CONSULTING cc was appointed by Tharisa Minerals (Pty) Ltd to conduct a Phase 2 Heritage Impact Assessment (HIA) for their Marikana Mine's North-Eastern Waste Rock Dump, located on a portion of the farm Elandsdrift 467JQ. The study area is located near Marikana in the Northwest Province. The first part of this study was Desktop based, with the aims being to determine if there are any possible significant archaeological sites and features in the direct and larger geographical area that need be taken into consideration during mining operations and that could be potentially negatively impacted upon by it. The physical fieldwork phase (site assessments and visits) will be undertaken at a later stage.

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The client indicated the location and boundaries of the study area, and the work focused on this.

2. TERMS OF REFERENCE

The Terms of Reference for the study is to:

1. ***Identify all objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located on the portion of land that will be impacted upon by the proposed development;***

2. ***Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value;***

3. ***Describe the possible impact of the proposed development on these cultural remains, according to a standard set of conventions;***

4. ***Propose suitable mitigation measures to minimize possible negative impacts on the cultural resources;***

5. ***Review applicable legislative requirements;***

3. LEGISLATIVE REQUIREMENTS

Aspects concerning the conservation of cultural resources are dealt with mainly in two acts. These are the National Heritage Resources Act (Act 25 of 1999) and the National Environmental Management Act (Act 107 of 1998).

3.1 The National Heritage Resources Act

According to the above-mentioned act the following is protected as cultural heritage resources:

a. Archaeological artifacts, structures and sites older than 100 years

b. Ethnographic art objects (e.g. prehistoric rock art) and ethnography

c. Objects of decorative and visual arts

d. Military objects, structures and sites older than 75 years

e. Historical objects, structures and sites older than 60 years

f. Proclaimed heritage sites

g. Grave yards and graves older than 60 years

h. Meteorites and fossils

i. Objects, structures and sites or scientific or technological value.

The National Estate includes the following:

a. Places, buildings, structures and equipment of cultural significance

b. Places to which oral traditions are attached or which are associated with living heritage

c. Historical settlements and townscapes

d. Landscapes and features of cultural significance

e. Geological sites of scientific or cultural importance

f. Sites of Archaeological and palaeontological importance

g. Graves and burial grounds

h. Sites of significance relating to the history of slavery

i. Movable objects (e.g. archaeological, palaeontological, meteorites, geological specimens, military, ethnographic, books etc.)

A Heritage Impact Assessment (HIA) is the process to be followed in order to determine whether any heritage resources are located within the area to be developed as well as the possible impact of the proposed development on these possible heritage resources. An

Archaeological Impact Assessment (AIA) only looks at archaeological resources. An HIA must be done under the following circumstances:

a. The construction of a linear development (road, wall, power line, canal etc.) exceeding 300m in length

b. The construction of a bridge or similar structure exceeding 50m in length

c. Any development or other activity that will change the character of a site and exceed 5 000m^2 or involve three or more existing erven or subdivisions thereof

d. Re-zoning of a site exceeding 10 000 m^2

e. Any other category provided for in the regulations of SAHRA or a provincial heritage authority

Structures

Section 34 (1) of the mentioned act states that no person may demolish any structure or part thereof which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

A structure means any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith.

Alter means any action affecting the structure, appearance or physical properties of a place or object, whether by way of structural or other works, by painting, plastering or the decoration or any other means.

Archaeology, palaeontology and meteorites

Section 35(4) of the Act deals with archaeology, palaeontology and meteorites. The Act states that no person may, without a permit issued by the responsible heritage resources authority (national or provincial):

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 that assists in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.

e. alter or demolish any structure or part of a structure which is older than 60 years as protected.

The above mentioned may only be disturbed or moved by an archaeologist, after receiving a permit from the South African Heritage Resources Agency (SAHRA). In order to demolish such a site or structure, a destruction permit from SAHRA will also be needed.

Human remains

Graves and burial grounds are divided into the following:

a. ancestral graves

b. royal graves and graves of traditional leaders

c. graves of victims of conflict

d. graves designated by the Minister

e. historical graves and cemeteries

f. human remains

In terms of Section 36(3) of the National Heritage Resources Act, no person may, without a permit issued by the relevant heritage resources authority:

a. destroy, damage, alter, exhume or remove from its original position of 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 or 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; or

c. bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation, or any equipment which assists in the detection or recovery of metals.

Human remains that are less than 60 years old are subject to provisions of the Human Tissue Act (Act 65 of 1983) and to local regulations. Exhumation of graves must conform to the standards set out in the **Ordinance on Excavations** (**Ordinance no. 12 of 1980**) (replacing the old Transvaal Ordinance no. 7 of 1925).

Permission must also be gained from the descendants (where known), the National Department of Health, Provincial Department of Health, Premier of the Province and local police. Furthermore, permission must also be gained from the various landowners (i.e. where the graves are located and where they are to be relocated) before exhumation can take place.

Human remains can only be handled by a registered undertaker or an institution declared under the **Human Tissues Act** (**Act 65 of 1983 as amended**).

Unidentified/unknown graves are also handled as older than 60 until proven otherwise.

3.2 The National Environmental Management Act

This act states that a survey and evaluation of cultural resources must be done in areas where development projects, that will change the face of the environment, will be undertaken. The impact of the development on these resources should be determined and proposals for the mitigation thereof are made.

Environmental management should also take the cultural and social needs of people into account. Any disturbance of landscapes and sites that constitute the nation's cultural heritage should be avoided as far as possible and where this is not possible the disturbance should be minimized and remedied.

4. METHODOLOGY

4.1 *Survey of literature*

A survey of available literature was undertaken in order to place the development area in an archaeological and historical context. The sources consulted in this regard are indicated in the bibliography.

4.2 *Field survey*

Field surveys are conducted according to generally accepted AIA/HIA practices and are aimed at locating all possible objects, sites and features of cultural heritage (archaeological and historical) significance in the area of the proposed development. The location/position of all sites, features and objects is determined by means of a Global Positioning System (GPS) where possible, while photographs are also taken where needed.

4.3 *Oral histories*

People from local communities are sometimes interviewed in order to obtain information relating to the surveyed area. It needs to be stated that this is not applicable under all circumstances. When applicable, the information is included in the text and referred to in the bibliography.

4.4 *Documentation*

All sites, objects, features and structures identified are documented according to the general minimum standards accepted by the archaeological profession. Co-ordinates of individual localities are determined by means of the Global Positioning System (GPS). The information is added to the description in order to facilitate the identification of each locality.

5. DESCRIPTION OF THE AREA

The study area is located at Tharisa Mineral's existing Marikana Mine, near Marikana on the farms Kafferskraal 342 JQ and Elandsdrift 467 JQ. The North-Eastern Waste Rock Dump is situated on a portion of the farm Elandsdrift 467JQ. This is within the Bonjanala Platinum District Municipality and within the Madibeng Local Municipality of the North West Province.

As part of ongoing mine planning Tharisa identified the need for an additional waste rock dump to handle the volume of waste rock produced by the open pit mining operations. Instead of initiating a separate EIA process to cater for this change it was decided to incorporate the new waste rock dump into the current EIA process and as such revise the scoping report. A 2014 Phase I HIA study by Dr. Julius Pistorius focused on the proposed north-eastern waste rock dump (Pistorius 2014: 8-9).

Tharisa's Marikana Mine lies on a relatively flat plain which gently slopes down towards the north. The area has an average elevation of approximately 1200 meters above mean sea level with elevations ranging from 1140m in the south-west to approximately 1320m in the north. North of the mine are a number of gabbro-norite hills. The Magaliesberg Mountain range lays approximately two kilometers to the south of the mine. The perennial Sterkstroom and various non-perennial tributaries of the Sterkstroom and Maretlwane Rivers run in a northerly direction through the mine area. Before the Tharisa Mine was established land use in the area was a mixture of farming, residential, mining, small business and general community activities. Similar land uses still take place although the proportion and scale of individual land uses has changed. There are a number of land users that are actively involved in subsistence and/or commercial farming activities such as livestock, piggery and the cultivating of citrus fruits and vegetables in the vicinity of the mine. There are also land users who own small businesses such as accommodation, shops and restaurants. South of the N4 is a property development project, Living Waters Properties, which is in the early stages of development. Due to overgrazing and subsistence farming practices by informal dwellers as well as the collection of vegetation mainly for firewood, parts of the area have been transformed by misuse. Drainage systems within the area also show evidence of disturbance by agricultural activities. Residential land use i.e. formal, informal and farmsteads is one of the main land uses near the mine (Pistorius 2014:11-12).

The Project Area where the proposed new north-eastern waste rock dump will be established is situated on a level piece of veld which is wedged between Lonmin's infrastructure (north) and a cluster of small hills called Mambakop on the farm Elandsdrift 467JQ.The natural vegetation in the area has been replaced by patches of land which are covered with agricultural fields and by mining activities. The Project Area at large has been scarred by developmental activities such as haul roads, electrical power lines, mining and processing activities as well as other developments which have altered the natural state of the area to a transformed mine landscape which is characteristic of the platinum belt in the North West Province. The area has a history of underground mining and a number of years of opencast mining activities. Consequently, the present condition of the Project Area at large is typically that of disturbed land use areas (Pistorius 2014: 12).

Fig.1: General location of study area (Google Earth 2018).

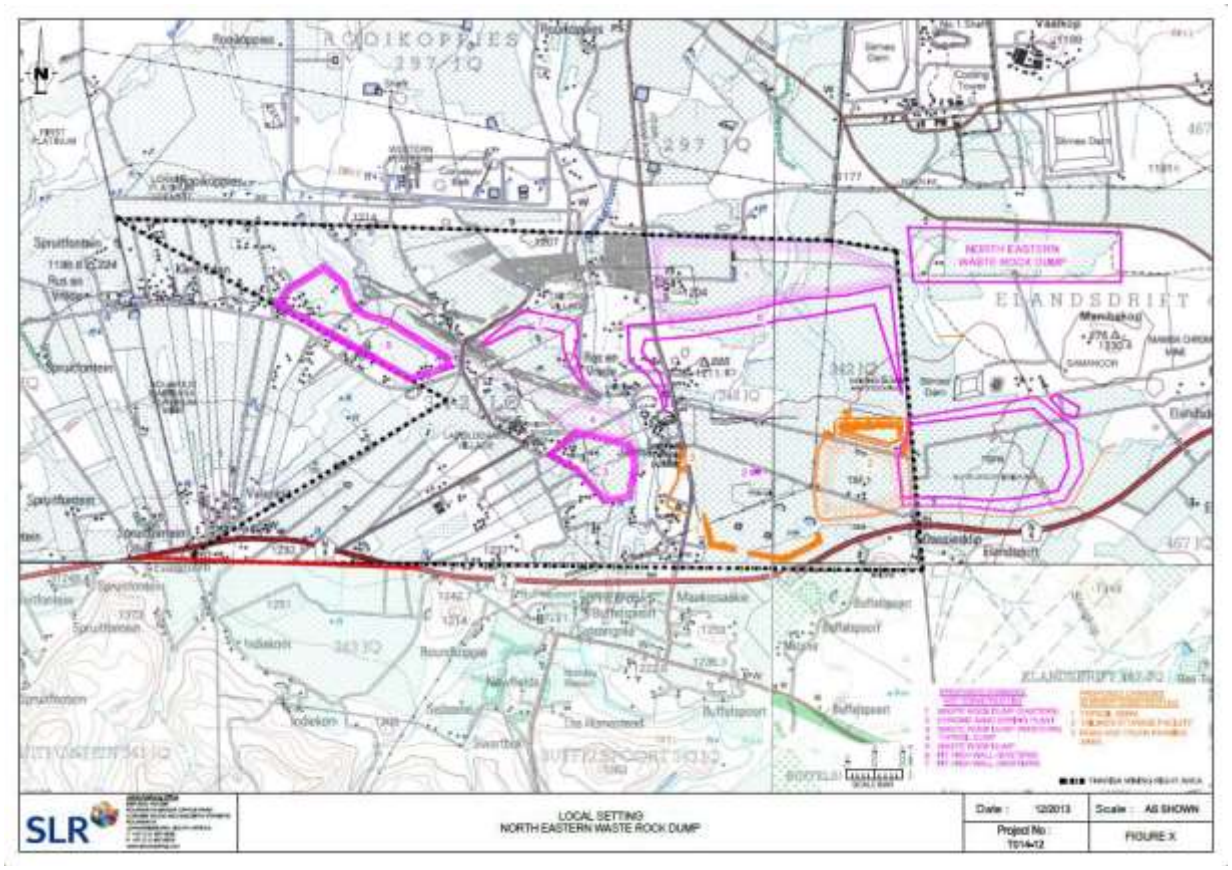

Fig.2: Location of study area (from Pistorius 2014: 10 courtesy SLR).

Fig.3: A view of a section of the study area in 2014 (Photo: Dr. Julius Pistorius).

Fig.4: Another view of the area in 2014 (Photo: Dr. Julius Pistorius).

6. DISCUSSION

The Stone Age is the period in human history when lithic (stone) material was mainly used to produce tools. In South Africa the Stone Age can be divided basically into three periods. It is however important to note that dates are relative and only provide a broad framework for interpretation. A basic sequence for the South African Stone Age (Lombard et.al 2012) is as follows:

Earlier Stone Age (ESA) up to 2 million – more than 200 000 years ago
Middle Stone Age (MSA) less than 300 000 – 20 000 years ago
Later Stone Age (LSA) 40 000 years ago – 2000 years ago

It should also be noted that these dates are not a neat fit because of variability and overlapping ages between sites (Lombard et.al 2012: 125).

The closest known Stone Age sites in the vicinity of Marikana are located in an area known as the Magaliesberg Research Area. It includes rock shelters and rock engravings in the Magaliesberg Mountains. These date back to the Middle and Late Stone Age (Bergh 1999: 4).

The Iron Age is the name given to the period of human history when metal was mainly used to produce artifacts. In South Africa it can be divided in two separate phases according to (Bergh 1999: 96-98), namely:

Early Iron Age (EIA) 200 – 1000 A.D.
Late Iron Age (LIA) 1000 – 1850 A.D.

Huffman (2007: xiii) however indicates that a Middle Iron Age should be included. His dates, which now seem to be widely accepted in archaeological circles, are:

Early Iron Age (EIA) 250 – 900 A.D.
Middle Iron Age (MIA) 900 – 1300 A.D.
Late Iron Age (LIA) 1300 – 1840 A.D.

Late Iron Age sites have been identified in the larger geographical area. In a band stretching roughly from Brits in the east to Zeerust in the west many Iron Age sites have been discovered previously (Bergh 1999: 7-8). These all belong to the Later Iron Age (Bergh 1999: 8-9). A copper smelting site was identified along the Hex River to the northwest of the surveyed area (Bergh 1999: 8). A copper smelting site was identified along the Hex River to the northwest of the surveyed area (Bergh 1999: 8). The closest Earlier Iron Age site is located at Broederstroom near Brits (Bergh 1999: 6).

During earlier times the area was settled by the Fokeng. In the 19th century this group inhabited this area with other Tswana groups including the Kwena and the Po (Bergh 1999: 9-10). During the difaqane these people moved further to the west, but they returned later on (Bergh 1999: 11).

According to the research of Tom Huffman the following Iron Age traditions could be present in the area: (a) the Mzonjani facies of the Urewe tradition (Broederstroom) dating to AD450 – AD750 (b) Olifantspoort facies of the same tradition AD1500 – AD1700 (c) Uitkomst facies of Urewe AD1650 – AD1820 and (d) Buispoort facies of Urewe dating to around AD1700 - AD1840 (Huffman 2007: 127; 171; 191 & 203).

Late Iron Age stonewalled sites have been recorded during earlier surveys for mining development on Elandsdrift 467JQ, Buffelspoort 465JQ and Buffelsfontein 343JQ (Pelser 2009; 2012), and it is possible that similar sites could have been located in this area as well.

The historical age started with the first recorded oral histories in the area. It includes the moving into the area of people that were able to read and write. Early travelers have moved through this part of the Northwest Province. This included David Hume in 1825, Robert Scoon and William McLuckie in 1829 and Dr. Robert Moffat and Reverend James Archbell in 1829 (Bergh 1999: 12, 117-119).

Hume again moved through this area in 1830 followed by the expedition of Dr. Andrew Smith in 1835 (Bergh 1999: 13, 120-121). In 1836 William Cornwallis Harris visited the area. The well-known explorer Dr. David Livingstone passed through this area between 1841 and 1847 (Bergh 1999: 13, 119-122).

The Battle of Buffelspoort (3 December 1900) was also fought in close vicinity of the development area during the Anglo-Boer War (1899-1902).

Dr. Julius Pistorius's 2014 Phase 1 HIA for the North-Eastern Waste Rock Dump aimed at establishing whether any of the types and ranges of heritage resources ('national estate') as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) do occur in the Project Area and, if so, to determine the significance of these heritage resources. A further aim was to make recommendations regarding the mitigation of significant heritage resources that may be affected by the proposed north-eastern waste rock dump (Pistorius 2014: 5).

According to Pistorius Focused archaeological research has been conducted in the North West Province for several decades. This research consisted of surveys and excavations of Stone Age and Iron Age sites as well as of the recording of rock art and historical sites in this area. The North West Province has a rich heritage comprised of remains dating from the pre-historical and from the historical (or colonial) periods of South Africa. Pre-historical and historical remains in the North West Province of South Africa form a record of the heritage of most groups living in South Africa today. Various types and ranges of heritage resources that qualify as part of South Africa's 'national estate' occur in the North West Province (Pistorius 2014: 5-6).

An initial Phase I HIA study for Tharisa's Marikana Mine was done by Pistorius in 2007 and identified the following types and ranges of heritage resources in the area:

- Stone walled settlements dating from the Late Iron Age and historical period.
- Graveyards, historical as well as contemporary.
- A historical village and homestead.
- Mining heritage remains.
- Isolated and randomly scattered stone tools.
- Historical houses and outdated discarded agricultural implements.

The following information regarding the prehistory & history of the study area was obtained from the 2014 Phase 1 HIA by Dr. Julius Pistorius (p.19-23):

"Tharisa is located to the north of the Magaliesberg which is known for its rich and diverse range of heritage resources. Stone Age sites are scattered along the Magaliesberg and are also found in caves and rock shelters in the mountain. Rock engraving sites are located further towards Maanhaarrand and Rustenburg in the west. Blockhouses along the Magaliesberg and colonial farm homesteads are still common in Marikana and on the outskirts of Brits (Madibeng). The most abundant heritage, however, are those that date from the Late Iron Age and which are associated with the numerous Tswana chiefdoms who occupied this region during the last four centuries. The interaction between the climate, geology, topography, and the fauna and flora of the Central Bankeveld established a milieu in which the first Tswana found a suitable living environment in order to practise herding, agriculture, metal working and trading. It was here that their chiefdoms flourished during AD1600 to AD1840.

The settlements of these early Tswana chiefdoms are characterised by an impressive and elaborate stone-built tradition. Hundreds and perhaps thousands of sites were built along the bases of the granite hills. The most formidable of these chiefdoms close to Tharisa were

the Kwena Môgôpa and the Kwena Môgale (Bapô) the latter whose spheres of influence overlapped with Tharisa's mine lease area. Further to the west, closer to Rustenburg was the Fôkeng chiefdom while several Kgatla spheres of influence emerged further to the west near Brits. The Kgatla were subjected by Mzilikazi and were used as labourers to build one of the Ndebele's villages, probably known as emHlalandlela, which is located to the north-east of Tharisa. The Bapô, a people whose earliest ancestors were descended from the Amambô Nguni from Kwa Zulu/Natal, arrived in the Magaliesberg during the 16th or 17th centuries. They established a sphere of influence close to Tharisa. One of their capitals was Tlhôgôkgôlô (Wolhuterskop). Several of the chiefs of this clan where known by the name of Môgale. The name of the Magalies Mountains (Magaliesberg) was derived from the name Môgale.

Numerous difaqane wars were fought during the last quarter of the 18th century and during the first quarter of the 19th century in the Central Bankeveld. These wars led to the displacement of large numbers of Tswana in the Bankeveld. The difaqane wars were caused by the Ndebele (Matabele) of Mzilikazi who arrived from the Vaal River region to occupy the Bankeveld in August 1827. The Ndebele destroyed the Kwena Môgôpa, the Kgatla and what had remained of the Bapô after an earlier defeat by the Pedi of Thulare. These wars exacerbated the havoc started earlier in the Bankeveld and gradually became a characteristic feature of historical events in this region during the early 19th century. The Ndebele established several settlement complexes in the Central Bankeveld from whence they maintained their grip on the indigenous population. Four of these Zulu/Nguni residences (imisi) and military kraals (amakhanda) have been discovered during the course of earlier archaeological surveys.

Internal strife between the various Tswana chiefdoms also seems to have been on the increase from the latter half of the 18th century onwards. Paternal relatives fought against each other to attain the chieftaincy of the various Tswana chiefdoms. Succession disputes also led to the splintering of the existing chiefdoms into a growing number of independent spheres of influence in the Bankeveld. During the early 19th century travellers, traders and missionaries visited the Central Bankeveld where they encountered the devastated Tswana chiefdoms. They also mentioned that numerous Tswana tribes were displaced. These travellers included the traders Robert Schoon and William McLuckie in August 1829. They were soon followed by the missionary Robert Moffat who visited Mzilikazi in an umuzi near what is today Pretoria. In June 1835 Charles Bell and other members of Andrew Smith's expedition visited a Ndebele village near Rustenburg which Bell subsequently painted. One year later, in December 1836, Cornwallis Harris also visited the Central Bankeveld where he painted the village of emHlalandlela.

The Bankeveld was rich in fauna which attracted the Griqua and the first white hunters to the region. Ivory was plentiful, with herds of elephants roaming the area. Ivory and the skins of the wide variety of fauna were sought after as precious trade commodities. Although the Tswana hunted the fauna of the Bankeveld, they were more renowned as agriculturists and cattle herders than as hunters. Complex causes led to the unfolding of the numerous Tswana chiefdoms and their spheres of influence throughout the Bankeveld during the last decades of the 18th century and during the first decades of the 19th century. These causes were multidimensional and included the ecological potential of the region, the social and political formation and expansion of different spheres of influence, the establishment of short and long distance trade relations and local and regional wars. These

causes and historical events were complex and are not fully recorded in oral traditions or in any other records.

Some of the earliest Voortrekkers who moved across the Magaliesberg in the early 19th century established themselves on the farms Kafferskraal and Witpensfontein (today Rustenburg) and Schaapkraal, to the west and north of the study area. Since the second half of the 19th century, farmers and workers have occupied the Rustenburg District (including the Mooinooi, Marikana, Hartebeespoort and Brits areas). Tobacco and citrus farming, together with cattle herding, became a subsistence pattern that has lasted to this day. Old farm homesteads, agricultural implements and other infrastructure such as tobacco drying sheds may still exist on farms adjacent to the study area. During the Second/Anglo Transvaal Boer War (1899-1902) British blockhouses were built along the ridge of the Magaliesburg, from Pretoria in the east to Rustenburg in the west. Several of these structures are located in Kommandonek and in Pampoennek in the Magaliesberg, to the south of Tharisa .

After the discovery of the Merensky Reef in 1929, the economy of the area was gradually changed from farming into platinum and chrome mining. What started as small scale mining activities north of the Magaliesberg during the 20th century was soon eclipsed by the rise of the platinum mining complex near Rustenburg. The discovery of the Merensky Reef and the accompanying platinum boom was soon followed by the establishment of numerous chrome and norite mines in the North-West Province".

The earliest map for Elandsdrift 467JQ that could be obtained from the database of the Chief Surveyor General (www.csg.dla.gov.za) dates to 1894 and is for Portion 3 (CSG Document 10547076). It indicates that the farm was then numbered as No.284 and was located in the District of Rustenburg and Hex Rivier Ward. The whole of the original farm was given by Government deed to one Lourentz Stefanus du Plessis on the 7th of July 1850, with Portion 3 only surveyed officially in October 1890.

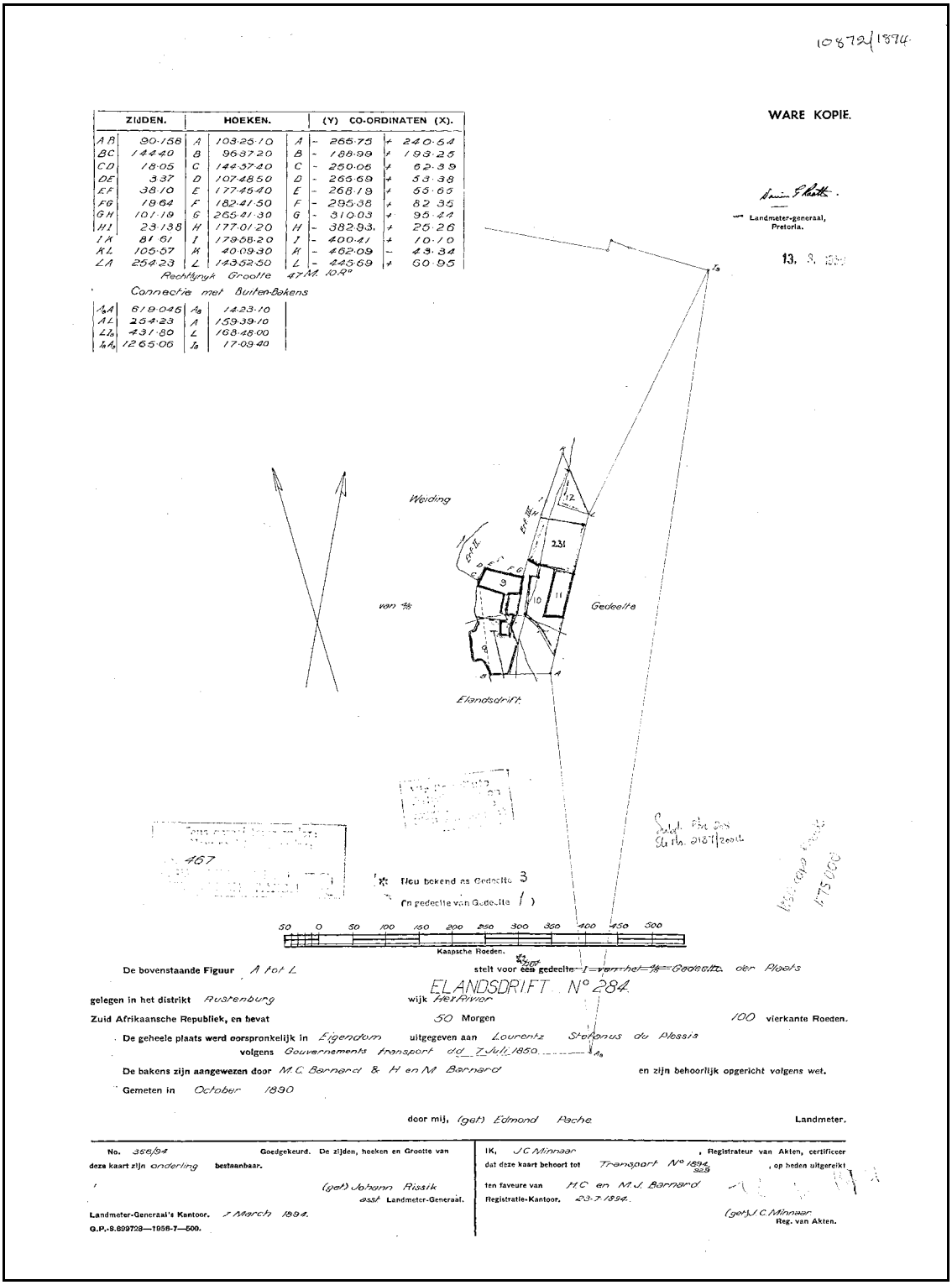

Fig.5: 1894 map of Portion 3 of Elandsdrift 467JQ (www.csg.dla.gov.za).

Results of the 2014 Phase 1 HIA Fieldwork & Current Phase 2 work

During the 2014 Phase 1 HIA by Pistorius the Project Area was surveyed with a vehicle whilst pedestrian surveys were conducted from a main track that was travelled with a vehicle and which was recorded with a mounted GPS instrument. The aim with the survey was to geo-reference, describe and photograph heritage resources whenever they existed. Literature

relating to the pre-historical and the historical unfolding of the Bankeveld was also reviewed. This review focused primarily on the pre-history as well as the Historical Period of the central part of the Bankeveld. The literature research contextualized the pre-historical and historical background of the Central Bankeveld which contributed to a better understanding of the identity and meaning of heritage sites which occur in and near the Project Area. The desktop study also involved consulting heritage data banks maintained at institutions such as the North West Provincial Heritage Resources Agency in Mafikeng, the Archaeological Data Recording Centre at the National Flagship Institute (now Ditsong Museum of Cultural History) in Pretoria and the national heritage resources register at the South African Heritage Resources Agency (SAHRIS) in Cape Town. Maps outlining the Project Area were also consulted (Pistorius 2014: 24-25).

According to Pistorius it is possible that his Phase I HIA study may have missed heritage resources in the proposed north-eastern rock waste dump as sites may occur in the tall grass which covered whole of the Project Area as well as in the clumps of vegetation which are concentrated along the eastern edge of the Project Area as well as towards its central part. It is also possible that heritage resources may lie below the surface of the earth and may only be exposed once development commences. He recommended that if any heritage resources of significance is exposed during any phase of the establishment of the north-east waste rock dump the South African Heritage Resources Authority (SAHRA) should be notified immediately, all development activities must be stopped and an archaeologist accredited with the Association for Southern African Professional Archaeologist (ASAPA) should be notified in order to determine appropriate mitigation measures for the discovered finds. This may include obtaining the necessary authorization (permits) from SAHRA to conduct the mitigation measures (2014: 25-26).

Finally, Pistorius indicates that the Phase I HIA study for the proposed north-eastern waste rock dump did not reveal any of the types and ranges of heritage resources as outlined in Section 38 of the National Heritage Resources Act (No 25 of 1999). He then concluded that there is no reason from a heritage point of view why the development of the proposed north-eastern waste rock dump should not proceed (Pistorius 2014: 33).

The 2018 Phase 2 Heritage Assessment for which APAC has been appointed has not included any fieldwork yet and only focused on a desktop-based background study. It is clear from this study that there is a possibility of a range of cultural heritage (archaeological and/or historical) resources being present in the specific and larger study area. However, Pistorius did not identify any during his 2014 fieldwork although he mentions the limitations he faced (dense vegetation) at the time. From Pelser's current desktop assessment it is also very clear that the study area has undergone major changes since the initial 2014 assessment, mainly due to mining developments and activities related to the establishment of the North-Eastern Waste Rock Dump. Evidence for this is mainly found on aerial images (**Google Earth**) of the study area (**see Figures 6 to 11 below**).

It is clear from these images that very little of the original vegetation and topographical features of the study area still exists. Only small sections are still currently unchanged or impacted. It is therefore envisaged that if any cultural heritage sites did exist here in the past (if indeed they did and were missed in 2014) it might have been extensively disturbed or even destroyed as a result of the mining related activities that have taken place here between 2014 and 2018. ***It is therefore recommended that the Phase 2 fieldwork will concentrate on***

sections of the study area (the North-Eastern Waste Rock Dump area) that has not been disturbed, while other already disturbed sections will be visited to screen for the possibility of the exposure and disturbance of previously unknown cultural heritage resources such as unmarked burials and grave sites, stone-walled Iron Age remains and historical features and cultural material.

Fig.6: The study area in approximately 1984. Note the overwhelming agricultural nature (Google Earth 2018).

Fig.7: The study area in 2004 (Google Earth 2018).

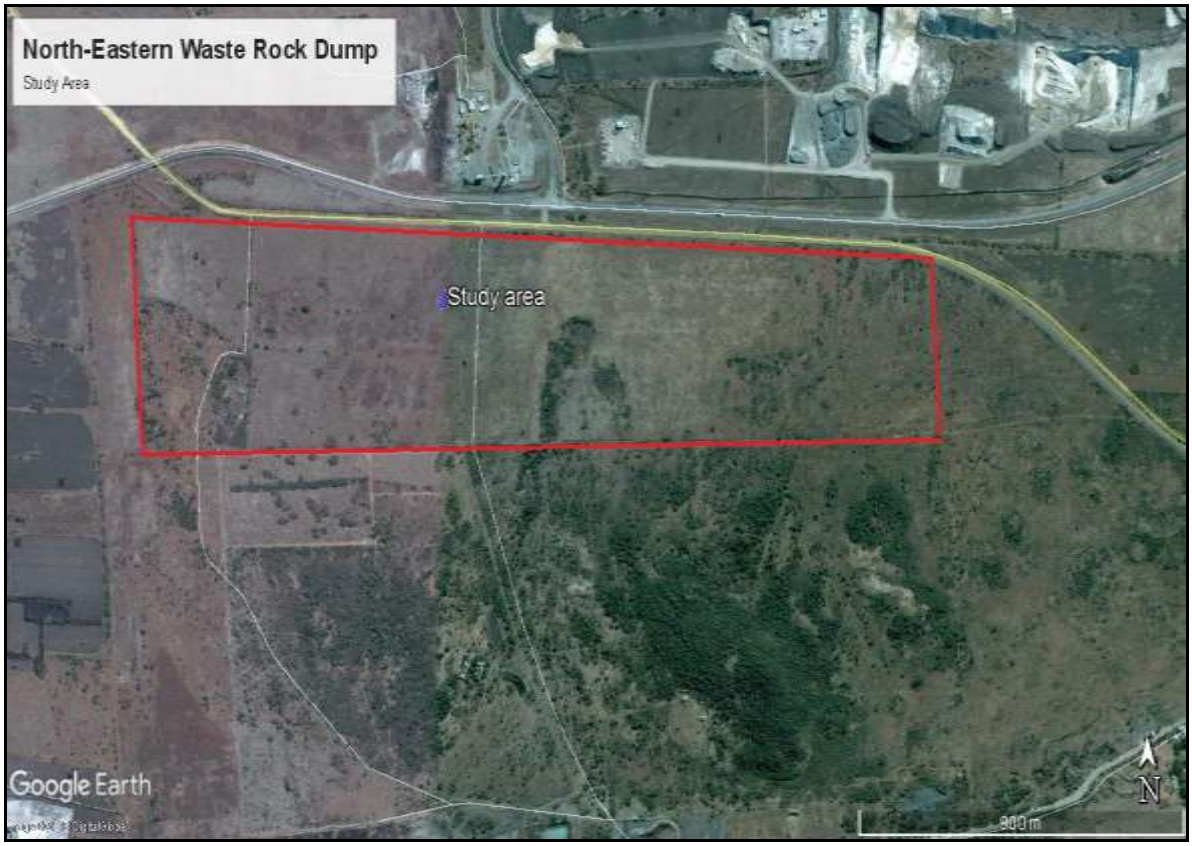

Fig.8: The study area in 2009. Very little had changed between 2004 and 2009 (Google Earth 2018).

Fig.9: The study area in 2009. Some mining related activities & the development of settlements close to the Mine and the study area is visible (Google Earth 2018).

Fig.10: The study area in 2014 as it looked like during the Phase 1 HIA (Google Earth 2018).

Fig.11: The study area early 2018. It has been nearly completely transformed & very little of the area's original vegetation & natural environment exists (Google Earth 2018).

7. CONCLUSIONS AND RECOMMENDATIONS

APELSER ARCHAEOLOGICAL CONSULTING cc was appointed by Tharisa Minerals (Pty) Ltd to conduct a Phase 2 Heritage Impact Assessment (HIA) for their Marikana Mine's North-Eastern Waste Rock Dump, located on a portion of the farm Elandsdrift 467JQ. The study area is located at Tharisa Mineral's existing Marikana Mine, near Marikana on the farms Kafferskraal 342 JQ and Elandsdrift 467 JQ. The North-Eastern Waste Rock Dump is situated on a portion of the farm Elandsdrift 467JQ. This is within the Bonjanala Platinum District Municipality and within the Madibeng Local Municipality of the North West Province.

The first part of the current study was Desktop based, with the aims being to determine if there are any possible significant archaeological sites and features in the direct and larger geographical area that need be taken into consideration during mining operations and that could be potentially negatively impacted upon by it. Various sources were consulted as part of the study. From these sources it is clear that there are a number of known and possible cultural heritage resources (including Stone Age, Rock Art and Iron Age sites) in the larger geographical area, but no known sites on the specific farm portion where the mining-related activities are being undertaken.

As part of ongoing mine planning Tharisa identified the need for an additional waste rock dump to handle the volume of waste rock produced by the open pit mining operations. Instead of initiating a separate EIA process to cater for this change it was decided to

incorporate the new waste rock dump into the current EIA process and as such revise the scoping report. A 2014 Phase I HIA study by Dr. Julius Pistorius focused on the proposed north-eastern waste rock dump. According to Pistorius it is possible that his Phase I HIA study may have missed heritage resources in the proposed north-eastern rock waste dump as sites may occur in the tall grass which covered whole of the Project Area as well as in the clumps of vegetation which are concentrated along the eastern edge of the Project Area as well as towards its central part. It is also possible that heritage resources may lie below the surface of the earth and may only be exposed once development commences.

Finally, Pistorius indicates that the Phase I HIA study for the proposed north-eastern waste rock dump did not reveal any of the types and ranges of heritage resources as outlined in Section 38 of the National Heritage Resources Act (No 25 of 1999) and he then concluded that there is no reason from a heritage point of view why the development of the proposed north-eastern waste rock dump should not proceed.

The 2018 Phase 2 Heritage Assessment for which APAC has been appointed has not included any fieldwork yet and only focused on a desktop-based background study. It is clear from this study that there is a possibility of a range of cultural heritage (archaeological and/or historical) resources being present in the specific and larger study area. From the current desktop assessment it is also very clear that the study area has undergone major changes since the initial 2014 assessment, mainly due to mining developments and activities related to the establishment of the North-Eastern Waste Rock Dump. It is clear from aerial images of the area that very little of the original vegetation and topographical features of it still exists. Only small sections are still currently unchanged or impacted. It is therefore envisaged that if any cultural heritage sites did exist here in the past (if indeed they did and were missed in 2014) it might have been extensively disturbed or even destroyed as a result of the mining related activities that have taken place here between 2014 and 2018. It is therefore recommended that the Phase 2 fieldwork will concentrate on sections of the study area (the North-Eastern Waste Rock Dump area) that has not been disturbed, while other already disturbed sections will be visited to screen for the possibility of the exposure and disturbance of previously unknown cultural heritage resources such as unmarked burials and grave sites, stone-walled Iron Age remains and historical features and cultural material.

8. REFERENCES

General and Closer views of the study area location between 1984 & 2018: Google Earth 2018.

Study Area Location Map: from Pistorius 2014 and courtesy SLR Consulting (Africa) (Pty) Ltd.

Bergh, J.S. (red.). 1999. **Geskiedenisatlas van Suid-Afrika. Die vier noordelike provinsies.** Pretoria: J.L. van Schaik.

Huffman, T.N. 2007. **Handbook to the Iron Age: The Archaeology of Precolonial Farming Societies in Southern Africa**. Pietermaritzburg: Kwazulu-Natal University Press.

Knudson, S.J. 1978. **Culture in retrospect.** Chicago: Rand McNally College Publishing Company.

Lombard, M., L. Wadley, J. Deacon, S. Wurz, I. Parsons, M. Mohapi, J. Swart & P. Mitchell. 2012. **South African and Lesotho Stone Age Sequence Updated (I).** South African Archaeological Bulletin **67** (195): 120–144, 2012.

Pelser, A.J. 2009. **Report on a Heritage Impact Assessment Study for a proposed new Residential Town on Portions 53, 95 & 96 of the farm Buffelspoort 343 JQ, Madibeng Local Municipality, Northwest Province**. Unpublished Report Archaetnos cc AE905. For K2M Technologies. March 2009.

Pelser, A.J. 2012. **A Report on Archaeological Impact Assessment for the proposed Mooinooi Township Development on Portion 34 and the Remaining Extent of Portion 1 of the farm Elandsdrift 467 JQ, near Mooinooi, Northwest**. Unpublished Report Archaetnos cc AE01207P. For Maxim Planning Solutions. March 2012.

Pelser, A.J. 2012. **A Report on an Archaeological Impact Assessment for the proposed Phoenix Platinum Mine Tailings Dam on Portions 22 and 23 of the Farm Buffelsfontein 465JQ, close to Mooinooi, Northwest Province**. Unpublished Report APelser Archaeological Consulting cc. APAC012/14. For Prescali Environmental Consulting. October 2012.

Pistorius, J.C.C. 2007. **A Phase I Heritage Impact Assessment (HIA) study for the proposed new Tharisa Mine on the farms Kafferskraal 342JQ and Elandsdrift 467JQ near Marikana in the North-West Province.** Unpublished report for Metago Environmental Engineers.

Pistorius, J.C.C. 2014. **A Phase I Heritage Impact Assessment Study for the Proposed North-East Rock Waste Dump for the Tharisa Minerals (Pty) Ltd near Marikana in the North-West Province**. Unpublished Report Prepared for: SLR Consulting (Africa) (Pty) Ltd. June 2014.

Republic of South Africa. 1999. **National Heritage Resources Act** (No 25 of 1999). Pretoria: the Government Printer.

Republic of South Africa. 1998. **National Environmental Management Act** (no 107 of 1998). Pretoria: The Government Printer.

Chief Surveyor General Database (www.csg.dla.gov.za). Document: 10547076.

APPENDIX A

DEFINITIONS:

Site: A large place with extensive structures and related cultural objects. It can also be a large assemblage of cultural artifacts, found on a single location.

Structure: A permanent building found in isolation or which forms a site in conjunction with other structures.

Feature: A coincidental find of movable cultural objects.

Object: Artifact (cultural object).

(Also see Knudson 1978: 20).

APPENDIX B

DEFINITION/ STATEMENT OF HERITAGE SIGNIFICANCE:

Historic value: Important in the community or pattern of history or has an association with the life or work of a person, group or organization of importance in history.

Aestetic value: Important in exhibiting particular aesthetic characteristics valued by a community or cultural group.

Scientific value: Potential to yield information that will contribute to an understanding of natural or cultural history or is important in demonstrating a high degree of creative or technical achievement of a particular period

Social value: Have a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.

Rarity: Does it possess uncommon, rare or endangered aspects of natural or cultural heritage.

Representivity: Important in demonstrating the principal characteristics of a particular class of natural or cultural places or object or a range of landscapes or environments characteristic of its class or of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the nation, province region or locality.

APPENDIX C

SIGNIFICANCE AND FIELD RATING:

Cultural significance:

- Low: A cultural object being found out of context, not being part of a site or without any related feature/structure in its surroundings.
- Medium: Any site, structure or feature being regarded less important due to a number of factors, such as date and frequency. Also any important object found out of context.
- High: Any site, structure or feature regarded as important because of its age or uniqueness. Graves are always categorized as of a high importance. Also any important object found within a specific context.

Heritage significance:

- Grade I: Heritage resources with exceptional qualities to the extent that they are of national significance
- Grade II: Heritage resources with qualities giving it provincial or regional importance although it may form part of the national estate
- Grade III: Other heritage resources of local importance and therefore worthy of conservation

- **Field ratings:**
- i. National Grade I significance: should be managed as part of the national estate
- ii. Provincial Grade II significance: should be managed as part of the provincial estate
- iii. Local Grade IIIA: should be included in the heritage register and not be mitigated (high significance)
- iv. Local Grade IIIB: should be included in the heritage register and may be mitigated (high/ medium significance)
- v. General protection A (IV A): site should be mitigated before destruction (high/medium significance)
- vi. General protection B (IV B): site should be recorded before destruction (medium significance)
- vii. General protection C (IV C): phase 1 is seen as sufficient recording and it may be demolished (low significance)

APPENDIX D

PROTECTION OF HERITAGE RESOURCES:

Formal protection:

- National heritage sites and Provincial heritage sites – Grade I and II
- Protected areas - An area surrounding a heritage site
- Provisional protection – For a maximum period of two years
- Heritage registers – Listing Grades II and III
- Heritage areas – Areas with more than one heritage site included
- Heritage objects – e.g. Archaeological, palaeontological, meteorites, geological specimens,
- Visual art, military, numismatic, books, etc.

General protection:

- Objects protected by the laws of foreign states
- Structures – Older than 60 years
- Archaeology, palaeontology and meteorites
- Burial grounds and graves
- Public monuments and memorials

APPENDIX E

HERITAGE IMPACT ASSESSMENT PHASES

1. **Pre-assessment or Scoping Phase** – Establishment of the scope of the project and terms of reference.

2. **Baseline Assessment** – Establishment of a broad framework of the potential heritage of an area.

3. **Phase I Impact Assessment** – Identifying sites, assess their significance, make comments on the impact of the development and makes recommendations for mitigation or conservation.

4. **Letter of recommendation for exemption** – If there is no likelihood that any sites will be impacted.

5. **Phase II Mitigation or Rescue** – Planning for the protection of significant sites or sampling through excavation or collection (after receiving a permit) of sites that may be lost.

6. **Phase III Management Plan** – For rare cases where sites are so important that development cannot be allowed.