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A REPORT ON A PRE- FEASIBILITY HERITAGE STUDY FOR THE PROPOSED YZERMYN COAL MINE CLOSE TO DIRKIESDORP, MPUMALANGA PROVINCE

For:

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REPORT: **AE01211V**

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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. Archaetnos 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. It is the responsibility of the client to submit this report to the relevant heritage authority.

SUMMARY

Archaetnos cc was appointed by WSP Environment & Energy to conduct a heritage study as part of a pre-feasibility study for the proposed Yzermyn Coal Mine. This is close to Dirkiesdorp in the Mpumalanga Province. Information about the infrastructure of the mine is not yet available. Therefore a large area was surveyed.

The fieldwork undertaken revealed eighteen sites of cultural heritage significance. These are discussed in the report.

No final mitigation measures can be proposed as this is a pre-feasibility study. However the importance of the sites is given and possible mitigation measures suggested. The developer also needs to take note that all archaeological and historical sites may not have been identified due to the size of the area as well as the density of vegetation. It also is possible that subterranean archaeological sites may be found later on. These need to be dealt with by an archaeologist.

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1. INTRODUCTION

Archaetnos cc was appointed by WSP Environment & Energy to conduct a cultural heritage study for the proposed Yzermyn Coal Mine. This is situated to the north of Dirkiesdorp in the Mpumalanga Province.

The client indicated the area where the proposed development is to take place, and the survey was confined to this area.

2. TERMS OF REFERENCE

The Terms of Reference for the survey were to:

1. Identify objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located on the property (see Appendix A).

2. Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value (see Appendix B).

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

4. Recommend suitable mitigation measures to minimize possible negative impacts on the cultural resources by the proposed development.

5. Review applicable legislative requirements.

3. CONDITIONS & ASSUMPTIONS

The following conditions and assumptions have a direct bearing on the survey and the resulting report:

1. Cultural Resources are all non-physical and physical man-made occurrences, as well as natural occurrences associated with human activity (Appendix A). These include all sites, structure and artifacts of importance, either individually or in groups, in the history, architecture and archaeology of human (cultural) development. Graves and cemeteries are included in this.

2. The significance of the sites, structures and artifacts is determined by means of their historical, social, aesthetic, technological and scientific value in relation to their uniqueness, condition of preservation and research potential. The various aspects are not mutually exclusive, and the evaluation of any site is done with reference to any number of these aspects.

3. Cultural significance is site-specific and relates to the content and context of the site. Sites regarded as having low cultural significance have already been recorded in full

and require no further mitigation. Sites with medium cultural significance may or may not require mitigation depending on other factors such as the significance of impact on the site. Sites with a high cultural significance require further mitigation (see Appendix C).

4. The latitude and longitude of any archaeological or historical site or feature, is to be treated as sensitive information by the developer and should not be disclosed to members of the public.

5. All recommendations are made with full cognizance of the relevant legislation.

6. It has to be mentioned that it is almost impossible to locate all the cultural resources in a given area, as it will be very time consuming. Developers should however note that the report should make it clear how to handle any other finds that might occur. In this particular case the area was very large and mountainous making it possible that certain areas may not have been surveyed fully. The vegetation cover in certain areas also is very dense making archaeological visibility difficult.

7. Since this is a pre-feasibility study and information relating to the infrastructure of the mine is not available, it is not possible to give mitigation measures. However the importance of sites is indicated and possible mitigation measures are envisaged.

4. 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).

4.1 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 (see Appendix D) 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. 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 thereon. An Archaeological Impact Assessment only looks at archaeological resources. The different phases during the HIA process are described in Appendix E. 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 this 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.

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

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**).

4.2 The National Environmental Management Act

This act (Act 107 of 1998) 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.

5. METHODOLOGY

5.1 Survey of literature

A survey of literature was undertaken in order to obtain background information regarding the area. Sources consulted in this regard are indicated in the bibliography.

5.2 Field survey

The survey was conducted according to generally accepted HIA practices and was aimed at locating all possible objects, sites and features of cultural significance in the area of proposed development. If required, the location/position of any site was determined by means of a Global Positioning System (GPS), while photographs were also taken where needed. The survey was undertaken by a physical survey via off-road vehicle and on foot.

5.3 Oral histories

People from local communities are 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.

5.4 Documentation

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

5.5 Evaluation of Heritage sites

The evaluation of heritage sites is done by giving a field rating of each (see Appendix C) using the following criteria:

• The unique nature of a site
• The integrity of the archaeological deposit
• The wider historic, archaeological and geographic context of the site
• The location of the site in relation to other similar sites or features
• The depth of the archaeological deposit (when it can be determined or is known)
• The preservation condition of the site
• Uniqueness of the site and
• Potential to answer present research questions.

6. DESCRIPTION OF THE AREA

The area that was surveyed is situated more or less 12 km to the west of Dirkiesdorp in the Mpumalanga Province. This is more or less half way between the towns of Wakkerstroom and Piet Retief (Figure 1-2).

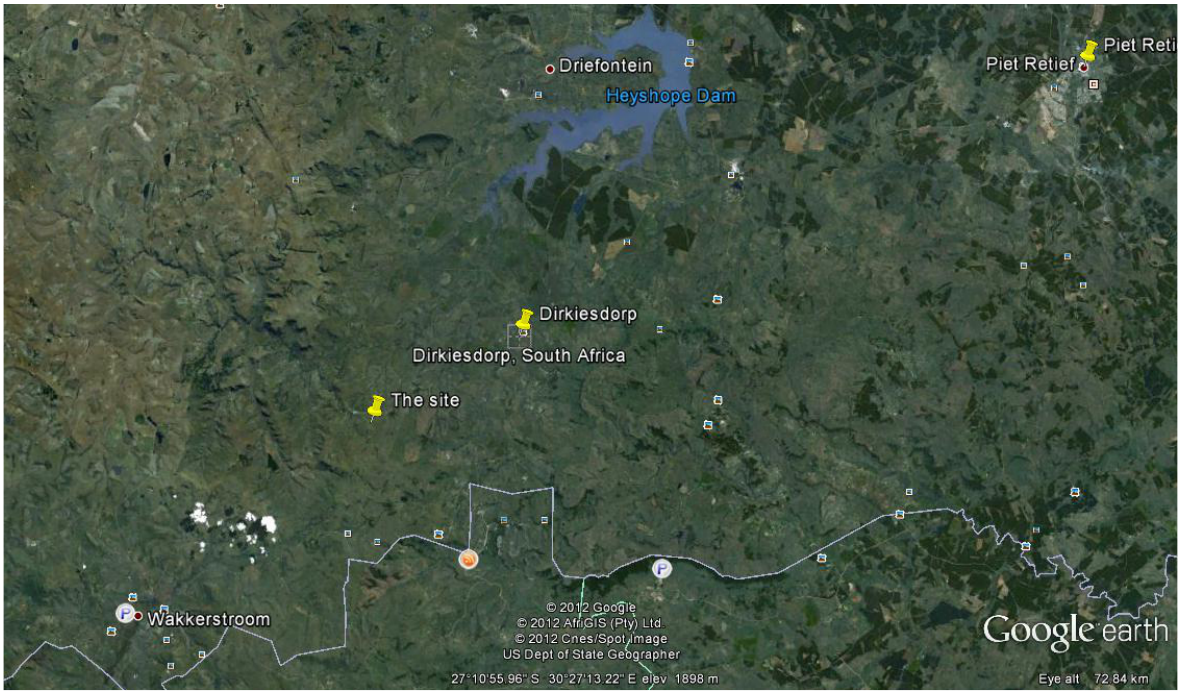

Figure 1 Location of the surveyed area.

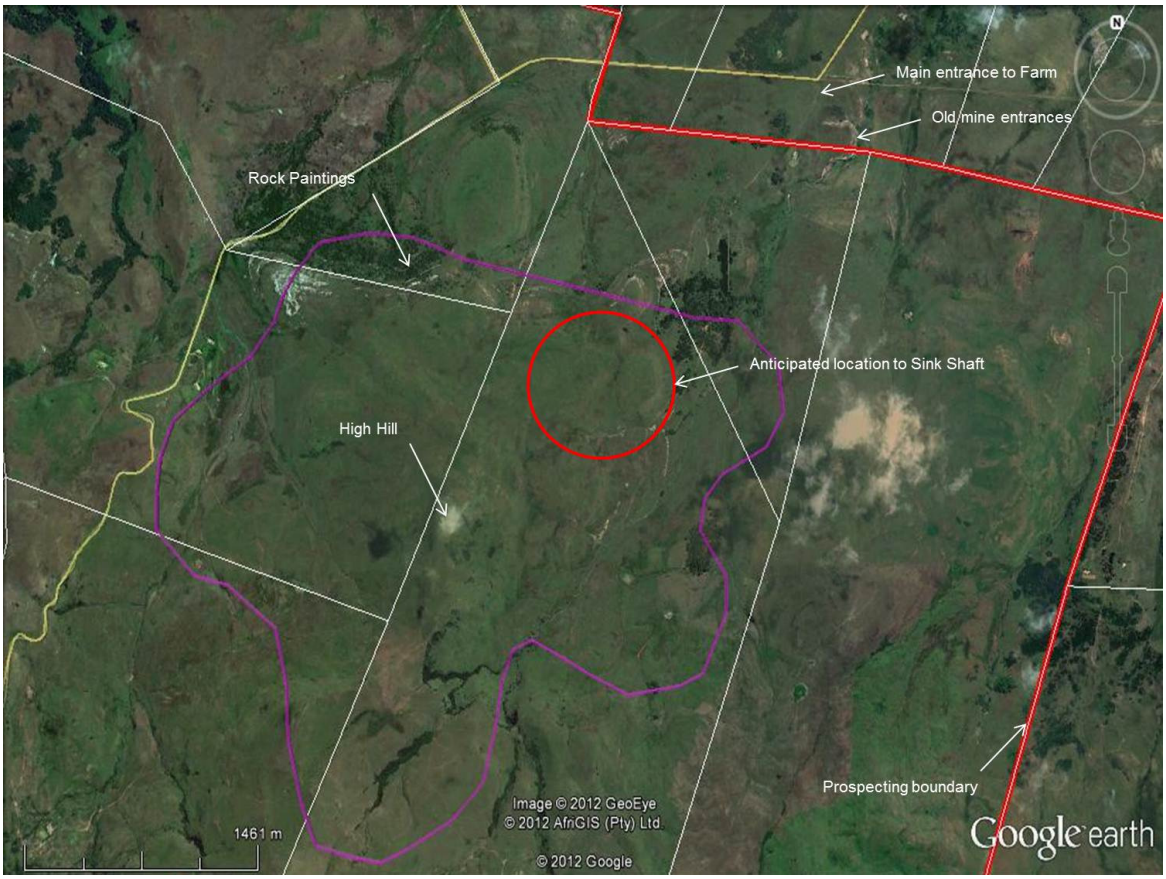

Figure 2 Location of the site indicating the proposed new developments.

The environment of the area is mostly undisturbed. However, some disturbance are seen in certain areas, mainly agriculture, grazing and previous mining activities. The vegetation cover is dominated by grassland with here and there some indigenous trees as well plantations with foreign trees in certain instances (Figure 3-5). During the survey the grass cover was reasonably long, making archaeological visibility difficult.

The area consists of high mountains with valleys in between. The topography therefore varies throughout the surveyed area. A number of rock outcrops are visible as well as a few cliffs. Different rivers and streams also cut through the landscape.

Here and there some homesteads of farm workers are found. No farm house or other farm infrastructure is visible since the farm is only used by the farmer during the winter months for grazing of livestock (Personal Communication: Johan Uys).

Figure 3 **General view of the surveyed area showing mountains, grassland and a plantation.**

Figure 4 **Another view of the surveyed area.**

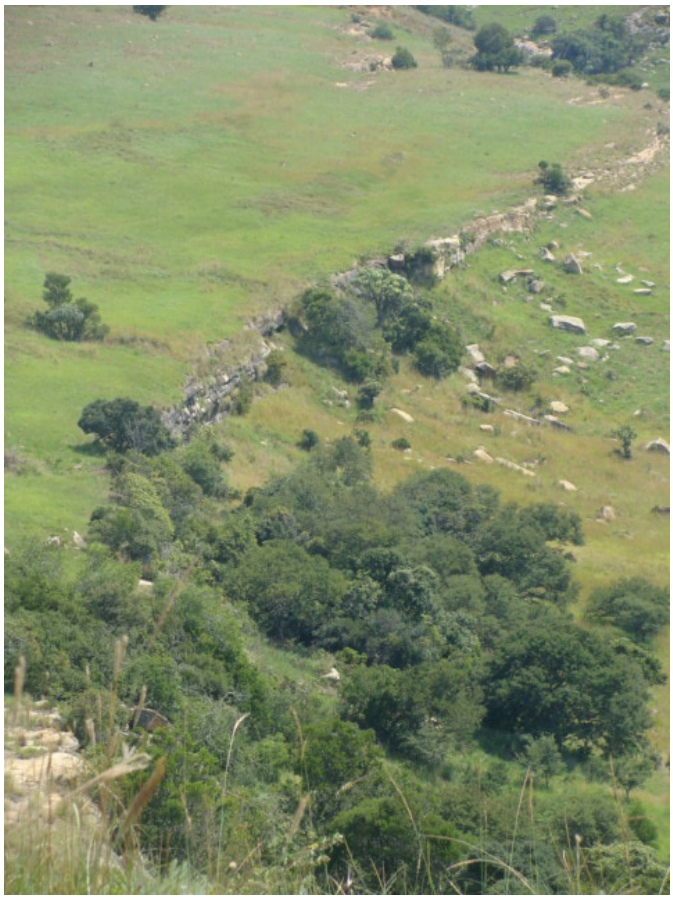

Figure 5 View of a rock cliff in the surveyed area.

7. HISTORICAL CONTEXT

During the survey eighteen sites of cultural heritage significance was located in the area to be developed. However, there always is a possibility that more sites may become known later and that those need to be dealt with in accordance with the legislation discussed above. In order to enable the reader to better understand archaeological and cultural features, it is necessary to give a background regarding the different phases of human history.

Delius (2006: 86) indicates that little research has been done in the southeastern portion of Mpumalanga. Therefore other sources including data bases and text books become more important in providing information, and these have been relied on for this report.

7.1 Stone Age

The Stone Age is the period in human history when lithic material was mainly used to produce tools (Coertze & Coertze 1996: 293). In South Africa the Stone Age can be divided in three periods. It is however important to note that dates are relative and only provide a broad framework for interpretation. The division for the Stone Age according to Korsman & Meyer (1999: 93-94) is as follows:

Early Stone Age (ESA) 2 million – 150 000 years ago
Middle Stone Age (MSA) 150 000 – 30 000 years ago
Late Stone Age (LSA) 40 000 years ago – 1850 - A.D.

No Stone Age sites have been identified by scientists previously in the study area. From a map in Inskeep (1978: 67) it seems as if Early Stone Age material was identified in the south-east of Mpumalanga, but the scale of the map makes it impossible to determine exactly where these sites are situated. Also no Early Stone Age sites in the investigated area are indicated in a fairly recent publication (Mitchell 2002: 43). This is confirmed by Esterhuysen & Smith (2006: 8) who also constitutes that very little evidence of the Early Stone Age was found in Mpumalanga. They also do not mention any specific sites in the area under investigation. It can therefore be stated that no important site dating to the Early Stone Age has been recorded in the study area.

A map showing Late Stone Age sites (Inskeep 1978:85) also indicate that no such sites were found in the south-eastern part of Mpumalanga. The same goes for a map in Phillipson (1985:77) which indicate no Middle or Late Stone Age occurrences here. Similarly no Middle or Late Stone Age sites in the study area are shown on maps by Mitchell (2002: 61, 73, 110, 127, 138, 162). Again Esterhuysen & Smith (2006: 9-10) agrees and they state that very little evidence of the Middle and Late Stone Age was found in Mpumalanga. They do not mention any sites in the Piet Retief/ Wakkerstroom area. This however only indicates the lack of research in the area.

The above mentioned information is confirmed in a historical atlas which also does not show any such sites in the broader geographical area (see Bergh 1999). This includes rock art sites which usually are associated with the Late Stone Age. The lack of evidence probably rather proofs the lack of research in the area as one surely would find rock art sites in the high mountains close to Wakkerstroom and Dirkiesdorp. However, a source on the rock art of Africa (Willcocks, 1984) also does not indicate the recording of any rock art in the Wakkerstroom/ Piet Retief area. This is confirmed by Mitchell (2002: 193, 228) and Smith & Zubieta (2006: 36). Last mentioned publishes a list of known rock paintings and engravings in Mpumalanga, which does not include any in the investigated area. However, a popular publication about Wakkerstroom indicates that rock art have been identified on the farms Rietvlei, Driefontein and Doornhoek (Hofmeyr & Smith 2009: 40). Driefontein is adjacent to the area that has been surveyed for this study.

The database of the South African Heritage Resources Agency (SAHRA) and the Archaeological Data Recording Centre (ADRC) at the National Cultural History Museum (NCHM) also does not list any Stone Age sites in this area. Apart from the lack of research it should be mentioned that the lack of heritage surveys done in the area, may be contributing factors for this.

From the above mentioned it is difficult to state that Stone Age people did utilize and settled in the area. However, it is highly unlikely that they would not have been present here. This is corroborated by Hofmeyr & Smith (2009: ix) which do indicate that San people settled close to Wakkerstroom during the 1500's, but this is not a scientific publication and the information needs to be verified. There probably are many sites to be identified and developers should therefore be careful when any large projects are planned.

A number of natural shelters were seen during the survey and therefore it is possible that these people may have utilized these. One rock art site was found in such a shelter. The close vicinity of water sources and ample grazing would have made it a prime spot for hunting and obtaining water during the past. Therefore one may assume that Stone Age people probably would have used through the area.

7.1 Iron Age

The Iron Age is the name given to the period of human history when metal was mainly used to produce metal artifacts (Coertze & Coertze 1996: 346). In South Africa it can be divided in two separate phases according to Van der Ryst & Meyer (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.

No Early or Middle Iron Age sites have been identified in the area of study (Mitchell 2006: 260; Bergh, 1999: 6-7; Phillipson, 1984: 174; Inskeep, 1978: 120). It however needs to be said that very few Early Iron Age sites have been identified throughout South Africa. Again this points to a lack of research. Proper surveys and research may therefore provide evidence of this period in time in the wider geographical area, especially since Early Iron Age sites are known to both the north and south hereof, in Lydenburg and Kwazulu-Natal. No sites from the Early, Middle or Late Iron Age are included on the SAHRA or NCHM database.

However the historical atlas does show that a large number of Late Iron Ages sites are found in the south-east of Mpumalanga. Late Iron Age sites are the easiest of all archaeological sites to identify as it usually contains a variety of stone walls and are situated against the slopes or on top of hills and mountains. In a band stretching from Wakkerstroom in the east to far within the boundaries of the Free State Province, 823 sites have been identified. Unfortunately no specific sites are mentioned (Bergh 1999: 7).

At none of these sites signs of archaeo-metallurgy were found (Bergh 1999: 8-9). Inskeep (1978: 135) does however indicate that iron ore was mined by prehistoric people in the broader geographical area. Again his information is not location specific.

Other scholars (Inskeep 1978: 137; Huffman 2007: 32) also indicate stone walled settlements in this area, without giving any particulars of the locations or mentioning any names of sites. According to Esterhuysen & Smith (2006: 11) Late Iron Age people moved into the Highveld areas of Mpumalanga by the 12th century. Huffman (2007: 301) indicates that Iron Age people from the Maguga facies of the Kalundu tradition inhabited this area as early as 1100 A.D. He also does not mention specific sites.

During CA 1760 Swazi people settled at kwaMadlangampisi. This was the start of the Tshabalala dynasty (Hofmeyr & Smith 2009: ix). Even today the Swazi's are the most dominant group in the area.

The people that inhabited the southern parts of Mpumalanga before the 19th century were the Bakgatla, Barolong, Bantwane, Bakone, Bakopa and Southern Ndebele communities (Makhura 2006: 42). The Eastern-Sotho, in this case consisting of the BaPai, inhabited an area close to modern day Swaziland during the 17th century (Makhura 2006: 50). The sites mentioned probably are the remains of their settlements.

Again it should be emphasized that chances are good that more Iron Age material will be identified in this area, should more research and heritage surveys be done in future.

7.2 Historical Age

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. This era is sometimes called the Colonial era or the recent past.

Due to factors such as population growth and a decrease in mortality rates, more people inhabited the country during the recent historical past. Therefore and because less time has passed, much more cultural heritage resources from this era have been left on the landscape. It is important to note that all cultural resources older than 60 years are potentially regarded as part of the heritage and that detailed studies are needed in order to determine whether these indeed have cultural significance. Factors to be considered include aesthetic, scientific, cultural and religious value of such resources.

None of the early trade routes in the interior of South Africa went through the area of study (Bergh 1999: 9). However it is possible that due to the little research in the area, this still has to be discovered. It also is possible that secondary routes did pass through the south-east of Mpumalanga.

At the beginning of the 19th century a Sotho group, the Phuthing, inhabited the western section of southern Mpumalanga. To the south-east the Swazi were present (Delius 2006: 83-86; Bergh 1999: 10). It was therefore mainly the Swazi who inhabited the south-eastern parts of Mpumalanga during this time (Makhura 2006: 55; Mitchell 2006: 371). In 1800 Dingiswayo fled to Hlubi close to Wakkerstroom. He died in 1818 and his empire was taken over and strengthened by Shaka (Hofmeyr & Smith 2009: ix).

During the Difaquane (1820-1837) the Ndebele of Mzilikazi moved through this landscape and some even settled here. As a result the Phuthing fled to the south. The Swazi now moved to the north and west, therefore inhabiting the area (Bergh 1999: 11; Bergh & Bergh 1984: 22). One would therefore expect remains of settlements of all three these groups, although the Ndebele of Mzilikazi usually didn't develop their own settlements but reused those of the people they conquered.

Early white travelers did not travel to this area (Bergh 1999: 12-13). White farmers only moved into the south-eastern Mpumalanga after 1853 when the government of the South African Republic (ZAR or Transvaal) traded the land from the Swazi. Wakkerstroom

became a town and district in 1859 (Bergh 1999: 17-19). The town was originally known as Marthinus Wesselstroom. Dirk Cornelius Uys was the founder of the town. He and his wife are buried in the municipal cemetery in the town (Smit n.d.: 1). The town mainly served as market for local farmers (Hofmeyr & Smith 2009: 42).

Missionaries also came to this part of the country during the 19th century. The Dutch Reformed Church and the Hermannsburg Missionaries established mission stations at Volksrust and Wakkerstroom during this time (Bergh 1999: 57).

During the Anglo-Transvaal War (1880-1881) the south-eastern part of Mpumalanga was the focus point of battles between the British and the Boers. The British had a camp in Wakkerstroom and were beleaguered by the Boers. Three important battles were fought during this time. These were at Laingsnek on 25 January 1881, Schuinshoogte on 8 February 1881 and Amajuba on 27 February 1881. The Boers were victorious in all of these which led to peace being declared (Bergh 1999: 46). Although these sites are all situated close to the town of Volksrust, it does indicate that commandos may have moved through the entire area. In the Wakkerstroom cemetery there is a commemorative stone for 18 British soldiers who died during this War (Smit n.d.: 1).

The broader geographical area also experienced some action during the Anglo-Boer War (1899-1902). During the British offensive, Lt-genl R Buller moved through the area and occupied Volksrust on 12 June 1900. He then moved further to the north and reached Amersfoort on 7 August 1900. At this time Boer commandos were placed at Laingsnek and Amajuba, but Buller had them on the retreat. They moved through Volksrust and Amersfoort. The only battle in this area was on 22 July 1900 when a skirmish broke out to the north of Volksrust, between the Boer commando of General D Joubert and the British troops under command of Genl Coke (Bergh 1999: 51). There were however also a skirmishes, namely at Kastrolsnek, close to Wakkerstroom (Hofmeyr & Smith 2009: 96).

The British later established a concentration camp for the Boer woman and children in Volksrust (Bergh 1999: 54). A memorial for British soldiers who died during the War is found in the Wakkerstroom municipal cemetery (Smit n.d.: 1).

The British also occupied Wakkerstroom and established a large camp here. This included blockhouses at Kastrolsnek (Hofmeyr & Smith 2009: 99). They also erected some blockhouses (small fortifications) in the broader geographical area during this War. Between Volksrust and Wakkerstroom they build 19 of these and the line of blockhouses was completed on 6 February 1902. Unfortunately it is not known how many of these survived even partially.

Between Wakkerstroom and Piet Retief the remains of 11 blockhouses were identified. Some of these are no more than a few stones left on some farms (Van Vollenhoven & Van den Bos, 1997: 67-77). Again this indicates that both Boer and British commandos moved through the area and remains of their fortifications may be found along these routes.

A further indication of the lack of research and heritage work in the south-east of Mpumalanga comes from the SAHRA list of declared heritage sites. The only declared provincial sites in the area are buildings and streetscapes in some of the towns.

Although not formally declared, many historical buildings are found in south-eastern Mpumalanga. This would be mostly sandstone buildings typical of the years approximately 1870-1920 as well as Victorian architecture from the 1890's to early in the twentieth century. Many of the latter were probably built during the Anglo- Boer War and are usually made of corrugated iron. However these are mostly to be found in the towns with only a few located on farms.

The last kind of heritage site to refer to is graves. All graves older than 60 years are regarded as being heritage graves. Those with an unknown date are also regarded as heritage graves. Graves of this age will be found in all the formal municipal cemeteries in the area. However, many informal cemeteries on farms and close to traditional homesteads are also present. It is impossible to predict where these may be located as they are placed randomly within communities. Some of these were indeed found within the surveyed area.

The historical features and sites se are mostly dominant in and around the historically white towns, but some will be found on remote areas on farms and in the mountains. As is the case with the prehistory of the area, proper research and heritage surveys in the area are needed to compile a more complete list.

8. DISCUSSION OF SITES IDENTIFIED DURING THE SURVEY

8.1 Site 1

The site consists of two small circular structures made from stone (Figure 6). The stones are nothing more than a foundation and the size thereof is approximately 2,5 m in diameter. It may have been used for ritual initiation purposes during the Late Iron Age, but it also may have another, yet unknown function.

Figure 6 One of the stone circles at site no. 1.

GPS: 27°13.435'S
30°18.461'E

The site has a **medium** cultural significance based on its historic and social value. It has a general local significance and is therefore given a rating of Grade B (IVB). This report is seen as ample mitigation and it may therefore be demolished during site development.

Impact rating:

Consequence (C) = severity + duration + extent/ 3
= 3 + 5 + 2/ 3
= 10/ 3
= 3.33

Likelihood (L) = frequency + probability/ 2
= 2 + 3/ 2
= 5/ 2
= 2.5

Environmental significance = C x L
= 3.33 x 2.5
= 8.325 – Low to medium

8.2 Site 2

The site consists of a semi-circular stone wall of approximately 4 m long and 0,5 m high (Figure 7). It is on a high vantage point and a flat stone on top gives the impression that it may have a defensive purpose. It is therefore suggested that it may be a fortification wall erected during the Anglo Boer War.

GPS: 27°13.372'S
30°18.480'E

The site has a **medium** cultural significance based on its historic value. It has a general local significance and is therefore given a rating of Grade B (IVB). A phase II study is recommended. This should entail the drawing of the structure after which it may be demolished.

Figure 7 Site no. 2, a defensive wall.

Impact rating:

Consequence (C) = severity + duration + extent/ 3
= 3 + 5 + 3/ 3
= 11/ 3
= 3.66

Likelihood (L) = frequency + probability/ 2
= 2 + 3/ 2
= 5/ 2
= 2.5

Environmental significance = C x L
= 3.66 x 2.5
= 9.15 – Low to medium

8.3 Site 3

This is a Late Iron Age/ Historical structure. It is a circular stone enclosure (Figure 8) used for keeping cattle. The structure is approximately 30 m in diameter and the walls still 0,5 m high. Since no other structure is found nearby, this is a cattle outpost.

GPS: 27°13.490'S
30°18.448'E

The site has a **low** cultural significance since it is not very unique. It has a general local significance and is therefore given a rating of Grade C (IVC). This report is seen as ample mitigation and it may therefore be demolished during site development.

Impact rating:

Consequence (C) = severity + duration + extent/ 3
= 3 + 5 + 2/ 3
= 10/ 3
= 3.33

Likelihood (L) = frequency + probability/ 2
= 2 + 3/ 2
= 5/ 2
= 2.5

Environmental significance = C x L
= 3.33 x 2.5
= 8.325 – Low to medium

Figure 8 Part of the stone walling at site no. 3.

8.4 Site 4

This is another Late Iron Age/ Historical site consisting of one circular stone wall (Figure 9). The structure is approximately 30 m in diameter and 0,30 m high. Again this is probably a cattle outpost. It is situated in one of the saddles between the high ridges.

GPS: 27°13.863'S
30°17.756'E

Impact rating:

Consequence (C) = severity + duration + extent/ 3
= 3 + 5 + 2/ 3
= 10/ 3
= 3.33

Likelihood (L) = frequency + probability/ 2
= 2 + 3/ 2
= 5/ 2
= 2.5

Environmental significance = C x L
= 3.33 x 2.5
= 8.325 – Low to medium

Figure 9 Part of the stone walling site no. 4.

The site has a **low** cultural significance based on its historic and social value. It has a general local significance and is therefore given a rating of Grade B (IVB). This report is seen as ample mitigation and it may therefore be demolished during site development.

8.5 Site 5

This is another Late Iron Age/ Historical site consisting of one circular stone wall (Figure 10-11). The structure is approximately 20 m in diameter and 0,30 m high. Again this is probably a cattle outpost. It is situated in one of the saddles between the high ridges and reasonably close to sites 4 and 6.

GPS: 27°13.775'S
30°13.755'E

The site has a **low** cultural significance based on its historic and social value. It has a general local significance and is therefore given a rating of Grade B (IVB). This report is seen as ample mitigation and it may therefore be demolished during site development.

Figure 10 Site no. 5.

Impact rating:

Consequence (C) = severity + duration + extent/ 3
= 3 + 5 + 2/ 3
= 10/ 3
= 3.33

Likelihood (L) = frequency + probability/ 2
= 2 + 3/ 2
= 5/ 2
= 2.5

Environmental significance = C x L
= 3.33 x 2.5
= 8.325 – Low to medium

Figure 11 View of site no. 5 and 6. This gives an indication of the location of such sites. The saddles between the high mountains should therefore be regarded as areas where stone walled sites may be identified.

8.6 Site 6

This is a Historical site consisting of a rectangular enclosure (Figure 12). The structure has measurements of approximately 6 x 4 m and 0,80 m high. Again this is probably a cattle outpost. It is situated in one of the saddles between the high ridges and reasonably close to sites 4 and 5.

GPS: 27°13.722'S
30°17.723'E

The site has a **low** cultural significance based on its historic and social value. It has a general local significance and is therefore given a rating of Grade B (IVB). This report is seen as ample mitigation and it may therefore be demolished during site development.

Impact rating:

Consequence (C) = severity + duration + extent/ 3
= 3 + 5 + 2/ 3
= 10/ 3
= 3.33

Likelihood (L) = frequency + probability/ 2
= 2 + 3/ 2
= 5/ 2
= 2.5

Environmental significance = C x L
= 3.33 x 2.5
= 8.325 – Low to medium

Figure 12 Site no. 6.

8.7 Site 7

This is another Late Iron Age/ Historical site. It consists of one circular stone wall with a diameter of about 3 m and 0,50 m high (Figure 13). This is a hut most likely used by the cattle herder at one of these outposts (it is reasonably close to these).

GPS: 27°13.677'S
30°17.663'E

The site has a **low** cultural significance based on its historic and social value. It has a general local significance and is therefore given a rating of Grade B (IVB). This report is seen as ample mitigation and it may therefore be demolished during site development.

Figure 13 Remains of a stone hut marked as site no. 7.

Impact rating:

Consequence (C) = severity + duration + extent/ 3
= 3 + 5 + 2/ 3
= 10/ 3
= 3.33

Likelihood (L) = frequency + probability/ 2
= 2 + 3/ 2
= 5/ 2
= 2.5

Environmental significance = C x L
= 3.33 x 2.5
= 8.325 – Low to medium

8.8 Site 8

This is another Late Iron Age/ Historical site consisting of a circular stone walled enclosure (Figure 14). The structure has a diameter of approximately 25 m and 0,50 m high. Again this is probably a cattle outpost.

GPS: 27°13.621'S
30°17.617'E

The site has a **low** cultural significance based on its historic and social value. It has a general local significance and is therefore given a rating of Grade B (IVB). This report is seen as ample mitigation and it may therefore be demolished during site development.

Figure 14 Stone walled enclosure marked site no. 8.

Impact rating:

Consequence (C) = severity + duration + extent/ 3
= 3 + 5 + 2/ 3
= 10/ 3
= 3.33

Likelihood (L) = frequency + probability/ 2
= 2 + 3/ 2
= 5/ 2
= 2.5

Environmental significance = C x L
= 3.33 x 2.5
= 8.325 – Low to medium

8.9 Site 9

This is a small grave yard consisting of at least six graves (Figure 15). It is found at the site of an abandoned homestead. The graves are stone packed and have no headstones or information.

The graves therefore have an unknown date of death, but is seems as if the homestead was abandoned fairly recently. Therefore the graves are more than likely younger than 60 years. It should however be regarded as heritage graves until this can be confirmed.

GPS: 27°13.865'S
30°16.852'E

Figure 15 One of the graves at site no. 15.

Graves always are regarded as having a **high** cultural significance. These graves are of a local significance and are therefore given a rating of Grade IIIB. It may therefore be mitigated.

There are two options when dealing with graves. The first would be to fence it in and write a management plan for the preservation thereof. This option will come into play if there is no direct impact on the graves. It should be kept in mind that there always is a secondary impact on graves since families may not have access thereto once a mine comes into operation.

The second option is to have the graves exhumed and the bodies reburied. This option is preferred when graves cannot be avoided by the development.

Before exhumation can be done a process of social consultation is needed in order to find the associated families and obtain permission from them. For graves younger than 60 years only an undertaker is involved in the process, but for those older than 60 years or with an unknown date of death, an undertaker and archaeologist should be involved.

Impact rating:

Consequence (C) = severity + duration + extent/ 3
= 4 + 5 + 3/ 3
= 12/ 3
= 4

Likelihood (L) = frequency + probability/ 2
= 2 + 3/ 2
= 5/ 2
= 2.5

Environmental significance = C x L
= 4 x 2.5
= 10 – Medium

8.10 Site 10

This is another Late Iron Age/ Historical site. It consists of two structures. The first one is similar to the hut remains (site 7) made of stone (Figure 16). The second one consists of a circular stone walled structure with an L-shaped wall attached thereto (Figure 17). This first structure is a hut most likely used by the cattle herder at the outposts. The second is the cattle kraal linked thereto.

GPS: 27°13.505'S
30°17.736'E

The site has a **medium** cultural significance based on its historic value. It has a general local significance and is therefore given a rating of Grade B (IVB). A phase II study will be needed if the site is to be demolished. This would entail drawing a plan of the site.

Impact rating:

Consequence (C) = severity + duration + extent/ 3
= 3 + 5 + 2/ 3
= 10/ 3
= 3.33

Likelihood (L) = frequency + probability/ 2
= 2 + 3/ 2
= 5/ 2
= 2.5

Environmental significance = C x L
= 3.33 x 2.5
= 8.325 – Low to medium

Figure 16 Remains of stone hut at site no. 10.

Figure 17 Part of the stone walling at the kraal of site no. 10.

8.11 Site 11

This is the ruins of a house and outbuildings from the Historical period. It is found within a wattle and eucalyptus plantation and may therefore possibly be linked to the forestry history

of the area. There are two main structures, the first being a house and the second a rondavel. The structures are built from stone (Figure 18).

Figure 18 Site no. 11.

GPS: 27°13.459'S
30°18.839'E

The site has a **low** cultural significance based on its historic value as it is not very unique. It has a general local significance and is therefore given a rating of Grade C (IVC). This report is seen as ample mitigation in this regard.

Impact rating:

Consequence (C) = severity + duration + extent/ 3
= 3 + 5 + 2/ 3
= 10/ 3
= 3.33

Likelihood (L) = frequency + probability/ 2
= 2 + 3/ 2
= 5/ 2
= 2.5

Environmental significance = C x L
= 3.33 x 2.5
= 8.325 – Low to medium

8.12 Site 12

The site consists of stones packed in an L-shape (Figure 19). The function thereof is unknown, but it may have something to do with the outline of a farm road.

GPS: 27°13.782'S
30°18.549'E

The site has a **low** cultural significance based on its historic value as it is not very unique. It has a general local significance and is therefore given a rating of Grade C (IVC). This report is seen as ample mitigation in this regard.

Impact rating:

Consequence (C) = severity + duration + extent/ 3
= 3 + 5 + 2/ 3
= 10/ 3
= 3.33

Likelihood (L) = frequency + probability/ 2
= 2 + 3/ 2
= 5/ 2
= 2.5

Environmental significance = C x L
= 3.33 x 2.5
= 8.325 – Low to medium

Figure 19 Stone wall at site no. 1.

8.13 Site 13

This is a recent site inside of the riverbed of one of the streams in the surveyed area. It consists of stone walls which seem to have the function of damming up the river (Figure 20). According to the farmer this was done by the previous farmer (J Uys: Personal communication).

GPS: 27°13.792'S
30°18.596'E

The site has a **low** cultural significance based on its historic value as it is not very unique. It has a general local significance and is therefore given a rating of Grade C (IVC). This report is seen as ample mitigation in this regard.

Figure 20 Possible dam wall at site no. 13.

Impact rating:

Consequence (C) = severity + duration + extent/ 3
= 3 + 5 + 2/ 3
= 10/ 3
= 3.33

Likelihood (L) = frequency + probability/ 2
= 2 + 3/ 2
= 5/ 2
= 2.5

Environmental significance = C x L
= 3.33 x 2.5
= 8.325 – Low to medium

8.14 Site 14

Site 14 consists of three structures. It is the remains of three buildings built from stone (Figure 21). All of these are connected to the early mining history of the area. Two of these probably are houses, but the third is quite large. It may be communal accommodation or it may have been used for offices.

GPS: 27°13.200'S
30°17.170'E

Figure 21 One of the buildings at site no. 14.

The site has a **medium** cultural significance based on its historic and aesthetic value. It has a general local significance and is therefore given a rating of Grade B (IVB). The buildings should be documented if it is going to be demolished.

Impact rating:

Consequence (C) = severity + duration + extent/ 3
= 3 + 5 + 2/ 3
= 10/ 3
= 3.33

Likelihood (L) = frequency + probability/ 2
= 2 + 3/ 2
= 5/ 2
= 2.5

Environmental significance = C x L
= 3.33 x 2.5
= 8.325 – Low to medium

8.15 Site 15

Site 15 consists of a number of shafts and related features linked to the early mining history of the area (Figure 22). The shafts are cut into the rock face and seem to run in a horizontal direction.

GPS: 27°13.321'S
30°17.269'E

The site has a **medium** cultural significance based on its historic value. It has a general local significance and is therefore given a rating of Grade B (IVB). This report is seen as ample mitigation in this regard and it may therefore be demolished if needed.

Impact rating:

Consequence (C) = severity + duration + extent/ 3
= 3 + 5 + 2/ 3
= 10/ 3
= 3.33

Likelihood (L) = frequency + probability/ 2
= 2 + 3/ 2
= 5/ 2
= 2.5

Environmental significance = C x L
= 3.33 x 2.5
= 8.325 – Low to medium

Figure 22 The entrance to one of the shafts.

8.16 Site 16

This is a small grave yard (amatuna) consisting of at least six graves (Figure 23). Two of these are fenced in by a stone wall. It is found at the site of a homestead. This most likely means that one will find some family graves at all the homesteads in the surveyed area. The graves are stone packed and have headstones made from stone, but without any information.

The graves therefore have an unknown date of death, but is seems as if the homestead was abandoned fairly recently. Therefore the graves are more than likely younger than 60 years. It should however be regarded as heritage graves until this can be confirmed.

GPS: 27°13.585'S
30°16.841'E

Graves always are regarded as having a **high** cultural significance. These graves are of a local significance and are therefore given a rating of Grade IIIB. It may therefore be mitigated.

There are two options when dealing with graves. The first would be to fence it in and write a management plan for the preservation thereof. This option will come into play if there is no direct impact on the graves. It should be kept in mind that there always is a secondary impact on graves since families may not have access thereto once a mine comes into operation.

The second option is to have the graves exhumed and the bodies reburied. This option is preferred when graves cannot be avoided by the development. Before exhumation can be done a process of social consultation is needed in order to find the associated families and obtain permission from them. For graves younger than 60 years only an undertaker is

involved in the process, but for those older than 60 years or with an unknown date of death, an undertaker and archaeologist should be involved.

Figure 23 The two fenced in graves at site no. 16.

Impact rating:

Consequence (C) = severity + duration + extent/ 3
= 4 + 5 + 3/ 3
= 12/ 3
= 4

Likelihood (L) = frequency + probability/ 2
= 2 + 3/ 2
= 5/ 2
= 2.5

Environmental significance = C x L
= 4 x 2.5
= 10 – Medium

8.17 Site 17

Site 17 is a rock shelter with rock paintings against the back wall. No sign of Stone Age artifacts have been found, but these may be concealed under a layer of soil and rodent droppings on the floor of the shelter. The whole rock face have been weathered and there probably were much more paintings originally. It also is possible that the paintings may have been damaged by people who tried to remove it.

The panel consists of two sections (Figure 24-25). On the left hand side one figure is visible and on the right a number of at least eight figures. These are divided by red ochre lines in between. All the figures are monochrome – only red ochre has been used. The figure on the left hand side may be that of a woman.

Rock art are usually linked to the San people. It dates to the Late Stone Age.

GPS: 27°13.297'S
30°17.595'E

The site is regarded as having a **high** cultural significance due to its aestetic, historical, scientific and social value. Every rock art site is unique. The painting has a local significance and is therefore given a rating of Grade IIIB. It may therefore be mitigated. (Normally a site such as this one would be given a rating of Grade IIIA. However, this site is exposed to such an extent that the rock art will not last for very long.) It should therefore be mitigated by having it documented by drawing thereof. It should however never be demolished on purpose (the site should be avoided) and should be preserved as long as natural factors allows.

Figure 24 View of the rock painting at site no. 17.

Figure 25 Another view of the rock painting at site no. 17.

Impact rating:

Consequence (C) = severity + duration + extent/ 3
= 5 + 5 + 4/ 3
= 14/ 3
= 4.66

Likelihood (L) = frequency + probability/ 2
= 2 + 5/ 2
= 7/ 2
= 3.5

Environmental significance = C x L
= 4.66 x 3.5
= 16.31 – Medium to high

8.18 Site 18

This is another area containing a number of shafts and related features linked to the early mining history of the area (Figure 26). The shafts are cut into the rock face and seem to run in a horizontal direction.

GPS: 27°12.878'S
30°19.367'E

The site has a **high** cultural significance based on its historic and scientific value. The site is given a higher grading as site no 15 for two reasons. Firstly the site is aesteticly more pleasing and accessible which means it should be much easier to utilise for research purposes. Secondly some artifacts close to the entrance were found indicating that this particular shaft dates back to the late 19th/ early 20th century.

The site receives a field rating of provincial significance, meaning Grade II. The site may therefore not be demolished and should be managed as part of the provincial estate.

Impact rating:

Consequence (C) = severity + duration + extent/ 3
= 4 + 5 + 4/ 3
= 13/ 3
= 4.33

Likelihood (L) = frequency + probability/ 2
= 2 + 3/ 2
= 5/ 2
= 2.5

Environmental significance = C x L
= 4.33 + 2.5
= 10.825 – Medium

Figure 26 Entrance to the mine at site no. 18.

9. CONCLUSIONS AND RECOMMENDATIONS

It is concluded that the assessment of the area was conducted successfully. In the surveyed area 18 sites (Figure 27) of cultural significance have been found.

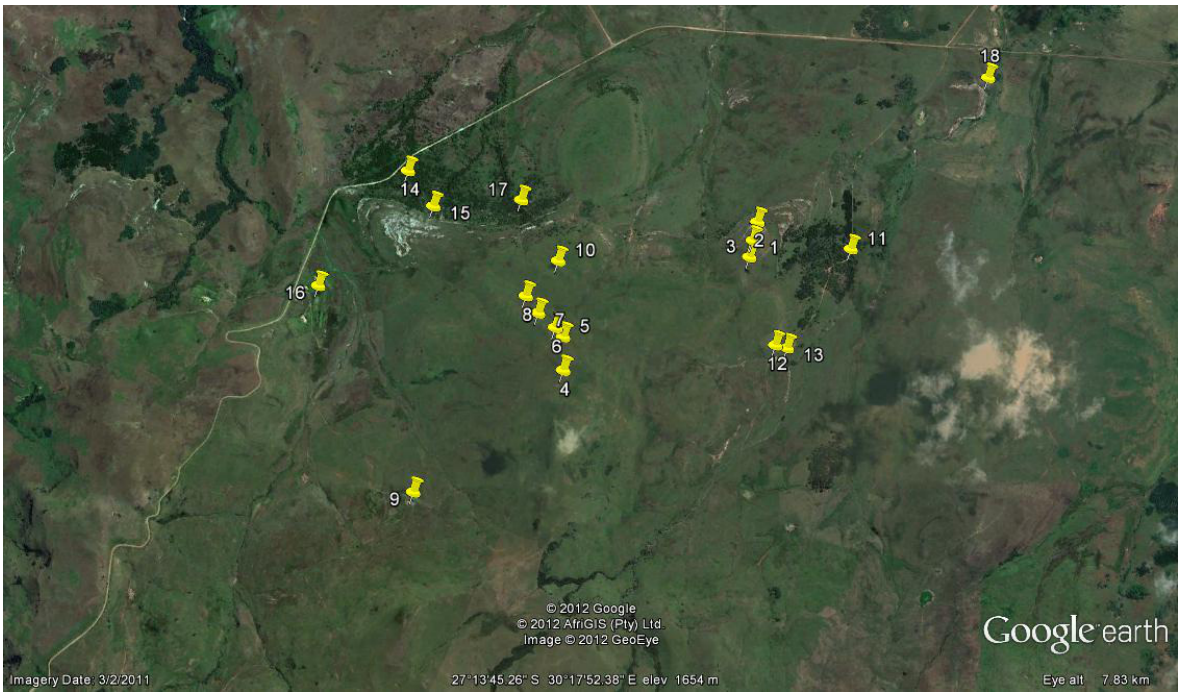

Figure 27 Google map indicating the location of sites found during the survey.

The final recommendations are as follows:

- It needs to be states that this is a pre-feasibility study. Therefore no information on the placement of infrastructure and the mine plan is available. Recommendations given are therefore very broad and should be taken into consideration during future planning.

- In all instances where it is indicated that sites may be demolished, this means if the development will have an impact thereon. Should it not be the case, the sites should be left to natural degradation.

- Sites number 3, 4, 5, 7 and 8 (Late Iron Age/ Historical sites) as well as site 6, 11, 12 and 13 (recent Historical sites) all have a low cultural significance. This report is seen as ample mitigation and it may therefore be demolished during development.

- Site number 1 (stone circles) and number 15 (old mine shafts) are regarded as having a medium cultural significance. The report is also seen as ample mitigation in this regard and these may therefore also be demolished during development.

- Site number 2 (fortification wall), number 10 (Late Iron Age/ Historical site) and number 14 (old mine buildings) are given a cultural significance of medium. These should however be further mitigated by drawing plans thereof after which it may be demolished.

- Sites number 9 and 16 (graves) have a high cultural significance. Should it be directly impacted on by the mine the graves may be exhumed and the human remains reburied. Before this may happen the necessary advertising, possible social consultation and permitting applications should be implemented. Should these not be impacted on directly, there will definitely be a secondary impact. The graves should then be fenced in a management plan for the preservation and maintenance thereof be written.

- Site number 17 (rock art) is also regarded as having high cultural significance. The rock art should therefore be documented. Due to natural factors it would unfortunately be impossible to preserve the site. It may however not be demolished, but should be left to deteriorate via natural processes. Even if there is no direct impact, the site should be documented as it is of high scientific value a record thereof needs to be retained for eternity.

- Site number 18 (old mine shaft) is also given a rating of high cultural significance. It should be preserved and managed, but no documentation more than what was done in this report is needed.

- The recommendations therefore mean that the areas where sites number 17 and 18 are found, are no-go areas.

- It should be remembered that due to the natural factors indicated in the report and the size of the surveyed area, it is possible that more cultural sites may be present. Also the subterranean presence of archaeological and/or historical sites, features or artifacts are always a distinct possibility. As indications of all three phases of past human activities were found this increase the possibility. Therefore a detailed survey is recommended once information is available on infrastructure, the mine plan and other site developments. Care should also be taken when development work commences that if any more artifacts are uncovered, a qualified archaeologist be called in to investigate.

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APPENDIX A

DEFINITION OF TERMS:

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:

- National Grade I significance	should be managed as part of the national estate
- Provincial Grade II significance	should be managed as part of the provincial estate
- Local Grade IIIA	should be included in the heritage register and not be mitigated (high significance)
- Local Grade IIIB	should be included in the heritage register and may be mitigated (high/ medium significance)
- General protection A (IV A)	site should be mitigated before destruction (high/ medium significance)
- General protection B (IV B)	site should be recorded before destruction (medium significance)
- 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.