REPORT ON A SECOND CULTURAL RESOURCES SURVEY FOR THE TWO RIVERS PROJECT DONE ON THE FARM DWARSRIVIER 372 KT, MPUMALANGA PROVINCE

Project no.: 01.06.185

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SUMMARY

A survey was done in order to determine the presence, nature, extent and significance of cultural resources at the Two Rivers Platinum project. During the field survey a number of objects and sites were identified.

It is judged that these will not be impacted upon by the proposed development. However it needs to be taken in consideration for future development planning. The proposed development can therefore continue. Appropriate recommendations are put forward in this report.

Contents

1. Aims of the survey

Archaetnos CC was requested by Groundwater Consultation Services to conduct a second phase 1 survey of historical and archaeological (cultural) resources on the farm Dwarsrivier 372KT, as part of the Two Rivers Platinum project. The reason for a second survey was that additional areas of development were identified and these needed to be surveyed. The aim of the survey was to identify, locate, document and evaluate sites, objects, structures and features of cultural significance found in three specific areas. These areas are the sites where ventilation shafts are to be sunk and a stockpile, plant and conveyor-belt area.

2. Terms of reference

The terms of reference for the study were to:

2.1 Identify all objects, sites, features and structures of an archaeological or historical nature (cultural resources) located in the area of the proposed development (see appendix B).
2.2 Assess the significance of the cultural resources in terms of their historical, social, religious, aesthetic, scientific and tourism value.
2.3 Describe the possible impact of the proposed development on these cultural remains, according to a standard set of conventions.
2.4 Propose suitable mitigation measures to minimise possible negative impacts on the cultural resources.
2.5 Review applicable legislative requirements.

3. Conditions and assumptions

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

- Cultural resources are all non-physical and physical human-made occurrences, as well as natural occurrences that are associated with human activity. These include all sites, structures and artifacts of importance, either individually or in a group, in the history, architecture and archaeology of human (cultural) development.

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

- 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 A).

- The latitude and longitude of an archaeological site is to be treated as sensitive information by the developer, and should not be disclosed to members of the public.

- All recommendations are made with full cognisance of the relevant legislation, in this case the National Heritage Resources Act (No 25 of 1999) of South Africa.

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 law 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 mentioned cultural resources may only be disturbed or moved by an archaeologist and only after a permit has been issued by the South African Heritage Resources Agency (SAHRA).

4.2 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.

5. Methodology

5.1 Survey of literature

A survey of literature was done when the first report was drafted (Van Vollenhoven & Pelser 2001). This gave an indication of previous research done in this area. Various sources were consulted in this regard (see bibliography).

5.2 Field survey

The survey was conducted according to generally accepted archaeological practices. It was concentrated on the areas indicated by the client. In these areas all natural features such as outcrops, streambeds, erosion trenches and areas with unnatural looking vegetation were investigated. The survey was done on foot to ensure that areas inaccessible to motor vehicles are also covered.

5.3 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.

5.4 Presentation of the information

In discussing the results of the survey, a chronological rather than a geographical approach was followed in the presentation of an overview of human occupation and land use in the area. This helps the reader to better understand and facilitate the potential impact of the development. Information on the individual objects, sites, features and structures is presented under section 8 of this report.

6. Description of the area surveyed

The Two Rivers Platinum project is situated on the farm Dwarsrivier 372KT, approximately 25km Southwest of the town Steelpoort, in die Lydenburg district, Mpumalanga Province. It is located on map 2430CC, Kennedy's vale, of the South African 1:50 000 topographic series. The farm lies between the following co-ordinates: 24° 54' - 24° 59'S and 30° 03' - 30° 08'E.

Although the area was described in the previous report (Van Vollenhoven & Pelser 2001: 3-4), it is repeated here in order to ensure that this report can be handled as a complete document.

The farm Dwarsrivier is traversed by the Dwarsrivier and the Klein Dwarsrivier. The confluence of these two rivers is also located on the property. The western portion of the property is very steep and mountainous. The eastern part of the farm generally slopes in a westerly to south-westerly direction, towards the Dwarsrivier. Adjacent to the river slopes are gentle. The elevation at the Klein Dwarsrivier is 920m and it rises to an elevation of between 1513,6m and 1650m to the west. The topography to the east of the Klein Dwarsrivier is gently sloping and then rises suddenly in the southeast of the property. The elevation of these hills varies between 1000 and 1200m (Background Information Document: 4).

The Klein Dwarsrivier divides the farm in an eastern and western area and flows from south to north. This results in a valley between the mountains and it's resulting flood plains. The conveyer belt is to be erected in this area. The area shows indications of being disturbed by the planting of crops at some stage in the past. However currently no crops are cultivated here.

The farm is also drained by the Dwarsrivier, flowing from the southeast to the northwest. The existence of these water sources may have provided a suitable environment for prehistoric people, as water is an important resource for the survival of humans. However the central part of the valley seems to be marshy, which would not have provided a suitable living site.

A number of non-perennial tributaries of both rivers rise in the mountainous areas. One of these, a tributary of the Klein Dwarsrivier clearly becomes a large river during periods of high rainfall, as it has cut into to underlying soil, resulting in extremely deep dongas.

Geologically speaking the farm is located in the southern part of the eastern Bushveld Complex. The study area is underlain by lithologies of the Rustenburg layered suite, Critical Zone of the eastern Bushveld Complex. The typical assemblage is that of the Winterveld Norite-Anorthosite Formation. This formation comprises alternating layers of chromatite, pyroxenite, norite and anorthosite. Mafic rocks of the eastern Bushveld Complex, which host the UG2 chromes seam and Merensky Reef, form a roughly north-south belt 180 km long and up to 40 km wide (Background Information Document: 4). The underlying geology provides suitable material for the making of stone tools, therefore providing Stone Age people with suitable living conditions.

The vegetation of the area forms part of Acocks's (1988) Sourish Mixed Bushveld. In more contemporary terms, it would be classified simply as Mixed Bushveld. The area is suggested to contain numerous vascular plant species, restricted to that part of the country and new species are described on a regular basis. Some of the latest includes Gladiolus sekhukhuniensis and Rhoicissus sekhukhuniensis (Background Information Document: 4). This type of environment probably does not differ much from that in Iron Age times and even during the Late Stone Age. It would have provided suitable living conditions, especially ample building material as well as fuel for household purposes.

The fauna on the farm is dependent on the soil, plant and water resources of the area. It is these basic biophysical resources that afford suitable habitat and food to the range of fauna that exist there. A number of threatened animal species occur within the wilderness habitat of the project area (Background Information Document: 4). During the previous survey a Duiker was spotted. As hunting was an important aspect of prehistoric existence, the availability of animals would favour human occupation, especially during the Stone Age.

The climate of the area is described as sub-humid, and can be locally described as normally hot and dry. The area falls within the summer rainfall zone and receives most of its annual rainfall during the period October to March, with a mean annual rainfall of 703mm. Temperature data show that summers are warm with temperatures rarely exceeding 30° C, whilst the winters are mild (Background Information Document: 4). These climatic conditions are suitable for human occupation and might not have differed much in prehistoric times.

Therefore it seems that the area was very suitable for human occupation, especially during the Late Stone and Iron Age.

7. Discussion

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.

The Stone Age is well represented in the area. Although only one site was identified, a large variety of stone tools dating from the Middle and Late Stone Age were identified. These were scattered around all over the area that was surveyed and clearly showed signs of being exposed to water.

It should be kept in mind that Early Stone Age material was also identified during the previous survey (Van Vollenhoven & Pelser 2001: 5). Middle Stone Age tools outnumbered the Late Stone Age. It included cores, scrapers, flakes, blades and points. The same types of artifacts were identified for the Late Stone Age.

These tools were made from different kinds of volcanic rock, which is suitable for the making of lithic artifacts because of its hardness. Most of the tools were probably washed down into the valley from the mountain slopes. Clear signs of surface water flowing from uphill were found.

Stone Age people most probably inhabited the mountains. The ridges show overhanging rock shelters which could have been used by these people. As it is known that some of these contain rock art, it increases the chance of finding Stone Age sites. This should be taken into consideration if any development is planned in these areas.

The mountains would certainly have provided ample shelter for Stone Age people. The valley on the other hand would have been as easy hunting ground for these people as migrating animals would easily have been trapped and killed here. The site that was found proves this theory.

7.2 Iron Age

The Iron Age is the name given to the period of human history when metal was mainly used to produce 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.

The area that was surveyed forms part of the Lydenburg-Steelpoort area, a location known for its Early Iron Age occurrences (Inskeep 1978: 128-132; Phillipson 1985: 171-183; Bergh 1999: 6). It however needs to be stated that few Early Iron Age sites have so far been identified. Pottery that were found during the first survey in 2001, were positively identified as belonging to the Early Iron Age (Personal communication: A Meyer & JCC Pistorius).

The area more to the south in the direction of Roossenekal is known for it's Late Iron Age occurrences and is linked to the Ndzundza Ndebele (Bergh 1999: 7; Personal communication: JCC Pistorius; Bergh 1999: 158).

Iron Age artifacts were found in isolated spots in the surveyed area. It includes hammer and rubbing stones as well as a whetstone. Potsherds were also found, but as these were undecorated nothing more could be deduced. One Iron Age site was discovered. It should however be mentioned that one of the sites that were found during the previous survey, site no. 1, also occurs in this area (Van Vollenhoven & Pelser 2001: 7).

The vegetation of the area is suitable for the farming communities of the Iron Age, as these people herded livestock and planted different crops. The topography is also suitable for Iron Age settlement.

7.3 Historical age

The historical age started when the first people that were able to read and write moved into the area. This would have been in die middle of the 19th century when the Voortrekkers of Andries Hendrik Potgieter moved here from further west. On 30 July 1845 he established the town of Andries-Ohrigstad. Historical information further suggests that the Pedi might have occupied the area at this stage (Bergh & Ferreira 1999: 131).

During the 1882-1883 the ZAR government was at war with the Nzundza Ndebele people of this region (Bergh 1999: 192-195). One of the battles was fought alongside the Dwarsrivier. Remains of Boer fortifications from this war can still be seen in the Roossenekal area (Personal communication: JCC Pistorius).

No historical sites were identified during this survey, although some artifacts, e.g. glass bottles and metal objects, were seen.

8. Individual description of identified sites

8.1 Stone Age

Although only one Stone Age site was identified, Stone Age material was found throughout the surveyed area.

8.1.1 Site number: 1

Description: Middle and Late Stone Age artifacts are scattered around some large boulders. The amount of stone tools and flakes clearly shows that this is a factory site. Types of tools include points, blades and different types of scrapers. A large amount of quarts are found on the site, although these do not seem to have been used for tool making. (Quarts were frequently used during the Late Stone Age.) Some of the tools were subjected to water, meaning that it was probably washed down from higher up the mountain slopes. The majority however was definitely made on the site. Some potsherds were found, but it was broken on the decoration, making positive identification impossible.

Locality: GPS: 24° 57' 00"S
30° 05' 20"E

Discussion: This is a very important Stone Age site that will need to be investigated further in the case of this particular area being subjected to mining activities. Other areas with ridges and boulders might also contain such sites, but these were not investigated as it is further away from the surveyed area.

Cultural significance: High

Significance of impact: Medium

Certainty of prediction: Definite

Recommended management action: As the site seems to be just outside the area to be effected, no management action is required. Should the development however be increased in this area, the site should be excavated by an archaeologist.

Legislative requirements: Site may only be disturbed by an archaeologist, after a permit has been issued by the South African Heritage Resources Agency (SAHRA).

8.2 Iron Age

8.2.1 Site number: 2

Description: The area seems to have been disturbed as the vegetation differs from the surrounding area. There might be middens, but due to the density of the vegetation, this is uncertain. A rock outcrop was used for grinding purposes. Upper grinding stones were found over a large area.

The site was recently disturbed with the sinking of borehole no. 46.

Locality: GPS: 24° 57’ 06”S
30° 05’ 20”E
It is next to bore hole no. 46.

Discussion: This is the most important find of the survey. The site shows most of the characteristics of an Early Iron Age site. It is located close to water, in the valley rather than against the mountain slopes and no stone walling or signs of iron working are visible. (Of course this may change once the vegetation has been cleared).

As very little is known about the Early Iron Age, the importance of the site is increased. Coupled with this are being known for Early Iron Age activities, the importance of the site is further enhanced.

This site could be part of site no. 1 from the previous survey, as it is known that Early Iron Age sites consist of a number of loosely placed activity areas forming a large site (Personal Communication: JCC Pistorius).

Cultural significance: High

Significance of Impact: High

Certainty of prediction: Definite

Recommended management action: **Mitigation is required.** The site needs to be investigated through archaeological methods in order to date it. Excavation may also lead to a larger ceramic sample that can be used for comparative purposes. However the site may be demolished after archaeological investigation is finished.

As the site seems to be part of the one that was discovered during the previous survey in 2001, it can be handled as one, therefore requiring mitigation only once.

Legislative requirements: Site may only be disturbed by an archaeologist, after a permit has been issued by SAHRA.

8.3 Historical Age

No historical sites were identified, although some historical artifacts were found in the surveyed area.

9. Conclusions and recommendations

9.1 The amount of Stone Age material found during the survey indicates that humans used the area since early times. The Stone Age site that was identified, proves that sites are located on the slopes and on top of mountainous areas. Should developments be planned for these in future, an archaeologist should be consulted in order to determine if this is the case and to evaluate any sites according to legislation.

9.2 The Iron Age is also represented in the area of the proposed development. The site that was identified, seems to be part of site no. 1 which was discovered in 2001. This site needs to be mitigated. Archaeological excavation is necessary in order to determine the extent and date thereof and to increase the ceramic sample for comparative purposes. After such an archaeological investigation the site may be demolished.

9.3 The developer should be on the look out for similar signs of Iron Age occupation as the density of the vegetation made it impossible during the survey to be certain that everything of cultural importance was spotted. Bearing this in mind, areas where the vegetation shows signs of being disturbed and where Candelabra (Naboom) trees grow, should especially be handled with caution.

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Appendix A

Significance of impact:

- Low — where the impact will not have an influence on or require to be significantly accommodated in the project design
- Medium — where the impact could have an influence, which will require modification of the project design or alternative mitigation
- High — where it would have a "no-go" implication on the project regardless of any mitigation

Certainty of prediction:

- Definite: More than 90% sure of a particular fact. Substantial supportive date to verify assessment.
- Probable: Over 70% sure of a particular fact, or of the likelihood of that impact occurring.
- Possible: Only over 40% sure of a particular fact, or of the likelihood of an impact occurring.
- Uncertain: Less that 40% sure of a particular fact, or the likelihood of and impact occurring.

Appendix B

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 coincidal find of movable cultural objects.

Object: Artifact (cultural object).

(Also see Knudson 1978: 20).