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**A Phase 1 HIA Report For the Sibanye Rustenburg Platinum Mines (RPM)
Proposed Meccano 2 & Other Developments Situated near Marikana,
Rustenburg Local Municipality, Bojanala Platinum District Municipality,
Northwest Province**

For:

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FAIRLAND
2030

REPORT: **APAC023/102**

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SUMMARY

APelser Archaeological Consulting cc (APAC cc) was appointed EcoPartners to conduct a Phase 1 Heritage Impact Assessment for the Sibanye Rustenburg Platinum Mines (RPM) Proposed Meccano 2 & Other Developments Situated near Marikana in the Rustenburg Local Municipality, Bojanala Platinum District Municipality of the Northwest Province.

The literature review indicates that there are a number of cultural heritage (archaeological & historical) sites and features in the larger geographical area within which the study & development area footprints fall. A number of cultural heritage sites with related features & material were identified in the study area during the September 2023 field assessment as well. This report discusses the results of the background literature & desktop research, as well as the field-based assessment, and provides recommendations on the way forward at the end.

From a Cultural Heritage point of view, it is recommended that the Sibanye Rustenburg Platinum Mines (RPM) Proposed Meccano 2 & Other Developments can continue taking into consideration the recommendations provided on the way forward.

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1. INTRODUCTION

APelser Archaeological Consulting cc (APAC cc) was appointed EcoPartners to conduct a Phase 1 Heritage Impact Assessment for the Sibanye Rustenburg Platinum Mines (RPM) Proposed Meccano 2 & Other Developments Situated near Marikana in the Rustenburg Local Municipality, Bojanala Platinum District Municipality of the Northwest Province.

The literature review indicates that there are a number of cultural heritage (archaeological & historical) sites and features in the larger geographical area within which the study & development area footprints fall. A number of cultural heritage sites with related features & material were identified in the study area during the September 2023 field assessment as well.

The location and boundaries of the study & development area footprint were provided to the Specialist by the client, and the Desktop Research & field-based assessment focused on this as well as the larger geographical area within which the proposed development is located. The Specialist was escorted and accompanied to the study area by a Security Representative of Sibanye RPM.

2. TERMS OF REFERENCE

The Terms of Reference for the study was 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 are dealt with mainly in. The National Heritage Resources Act (Act 25 of 1999) and the National Environmental Management Act (Act 107 of 1998) are the two main legislations concerning the conservation of cultural resources, used as guidelines when conducting the Heritage Impact Assessment.

3.1. The National Heritage Resources Act (Act 25 of 1999)

According to the National Heritage Resources Act (Act 25 of 1999) (NHRA), 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 of 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 paleontological importance
- g. Graves and burial grounds
- h. Sites of significance relating to the history of slavery
- i. Movable objects (e.g., archaeological, paleontological, meteorites, geological specimens, military, ethnographic, books etc.)

The Heritage Impact Assessment (HIA) process is done to determine whether there are any heritage resources located within the area to be developed as well as to determine the possible impacts of the proposed development. An Archaeological Impact Assessment (AIA) only looks at archaeological resources, such as material remains of human life or activities which are at least 100 years of age, and which are of archaeological interest. A 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 000m² or involve three or more existing erven or subdivisions thereof
- d. Re-zoning of a site exceeding 10 000m²
- e. Any other category provided for in the regulations of SAHRA or a provincial heritage authority

Structures

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

A structure refers to 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.

To alter means any action taken that affects 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 paleontological site or any meteorite;
- b. destroy, damage, excavate, remove from its original position, collect or own any archaeological or paleontological 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 paleontological material or object, or any meteorite; or
- d. bring onto or use at an archaeological or paleontological site any excavation equipment or any equipment that assists in the detection or recovery of metals or archaeological and paleontological 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:

- i. 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;
- ii. 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
- iii. 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 to) 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)**.

3.2. The National Environmental Management Act (No. 107 of 1998)

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.

The specific requirements that specialist studies and reports must adhere to are contained in Appendix 6 of the EIA Regulations.

4. METHODOLOGY

4.1. Review of literature

A review of available literature was undertaken in order to place the development area in an archaeological and historical context. The sources utilized in this regard are indicated in the bibliography. These include Bergh (1999), Huffman (2007) & Lombard et.al (2012).

4.2. Field survey

The field assessment component of the study is conducted according to generally accepted HIA practices and aimed at locating all possible objects, sites, and features of heritage 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 detail photographs are also taken where needed. Where possible grids are walked in the area where development is proposed.

The field-based assessment was conducted on the 29th of September 2023.

4.3. Documentation

All sites, objects, features, and structures identified are documented according to a general set of minimum standards. 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. PROJECT DESCRIPTION

The project is related to the Sibanye Rustenburg Platinum Mines (RPM) Proposed Meccano 2 & Other Developments Situated near Marikana, Rustenburg Local Municipality, Bojanala Platinum District Municipality, Northwest Province. This forms part of the Environmental Authorization Process related to the Application.

6. DESCRIPTION OF THE AREA

A description of the larger geographical & study/development area is provided by Pistorius in his 2012 Heritage Register Report for the Lonmin Project (Pistorius 2012: 9-10).

“The Lonmin Project Area involves the Karee Mine and Western Platinum Mine which both are located at Marikana in the west as well as the Eastern Platinum Mine near Segwaelane in the east. The mine lease area stretches from the Karee Mine which is west of Marikana to the east across the Central Bankeveld towards the village of Sonop in the east and roughly covers a surface area of approximately 120km². This elongated swath of land runs from the eastern borders of the Rustenburg District across the farms Schaapkraal 292JQ, Zwartkop alias Zwartkoppies 296JQ, Rooikoppies 297JQ, Brakspruit 299JQ (west), Wonderkop 400JQ and Middelkraal 466JQ (centre) and Turffontein 462JQ and Kareepoort 407JQ (east) towards

Sonop and Madibeng in the east. The Lonmin Project Area falls under the Madibeng and the Rustenburg Local Municipalities in the Bojanala Platinum District in the North-West Province of South Africa.

Topographically the area can be divided into a mountainous terrain in the north which covers farms such as Schaapkraal 292JQ, Wonderkop 400JQ and Turffontein 462JQ whilst the southern part is marked by a flat, outstretched terrain with smaller kopjes and knolls dotting farms such as Middelkraal 466JQ, Rooikoppies 297JQ and Elandsdrift 467JQ which fall outside the Lonmin Project Area. The northern part of the project area is scarcely populated although the two villages known as Marikana and Segwaelane occur in the Lonmin Project Area. The towns of Maumong, Bapong and Modderspruit occur outside the mine's borders. The southern part of the project area is flat and developed and contains the bulk of the mine's infrastructure which is associated with Eastern Platinum Ltd and Western Platinum Ltd. The Lonmin Project Area is bisected by the Elandsdriftspruit and the Elandskraalspruit who converge in the south before flowing into the Middelkraaldam. The Maretlwane flows from the Middelkraaldam on Schaapkraal 292JQ to the north where it joins the Gwatlhe (Sterkstroom). Smaller streams in the area are the Hoedspruit and Brakspruit in the west and the Modderspruit in the east.

A series of norite hills which run from Onderstepoort in the east to the Pilanesberg in the west runs across the Lonmin Project Area. These hills are associated with the remnants of stone walled sites which were occupied by Tswana and Ndebele speaking communities during the Late Iron Age and Historical Period “.

The area that had to be assessed in September 2023 is mostly located close to the Karee, Hoedspruit & Meccano 2 mines and associated activities, and include various Tailings Dams, Return Water Dams, Remining Plan, Booster Pump Stations and the K3/K4 Concentrators. The area has therefore been extensively impacted and altered from its original natural and historical landscape as a results of these activities, while earlier extensive agricultural activities also had a major impact. Other impacts include a railway line to the south of the study area, with many of the new pipeline routes and possible new powerline feeds and lines following existing routes and servitudes.

These activities would have had a major impact on any significant cultural heritage (archaeological and/or historical) sites, features or material if it had existed here in the past. That being said, a number of previously identified sites do exist in the larger area, while two sites were identified during the September 2023 field assessment.

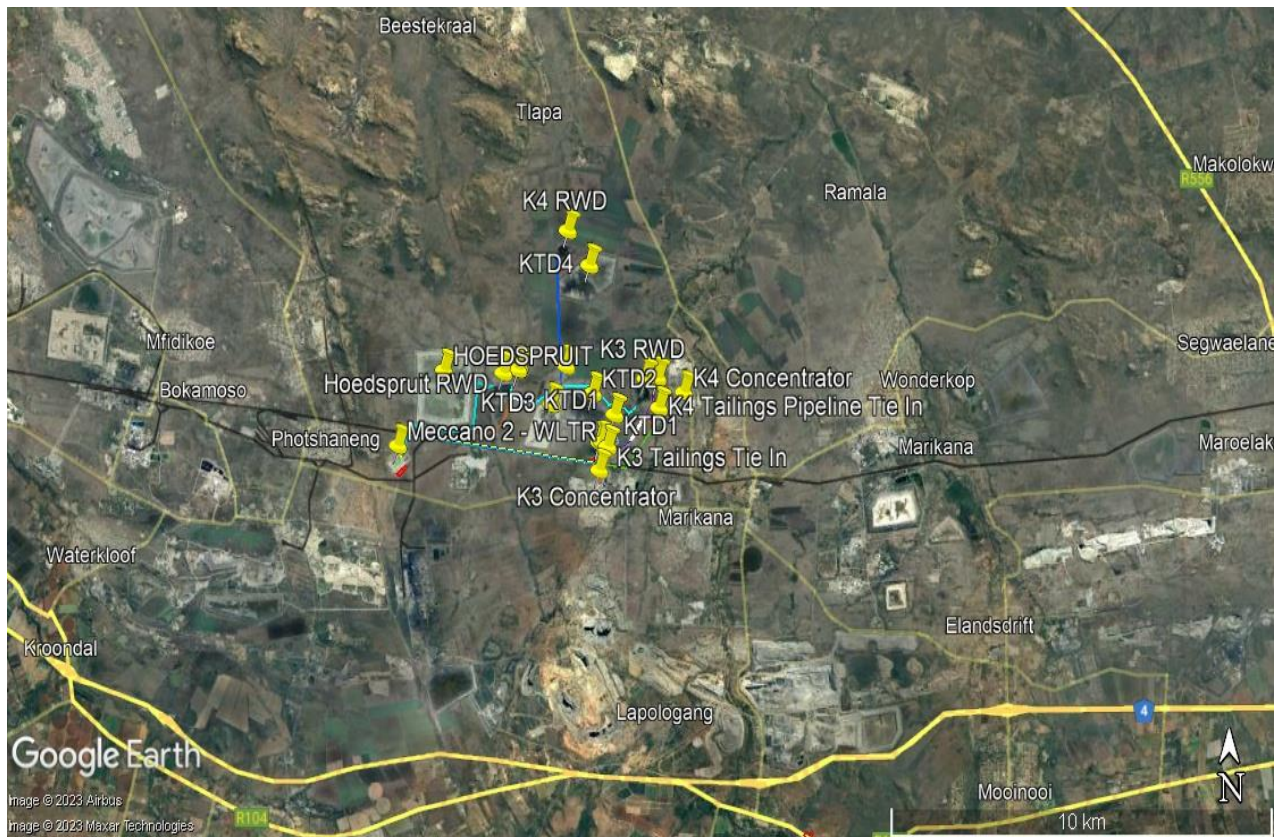


Figure 1: General location of the Study & Mining Development Area (Google Earth 2023).



Figure 2: Closer view of the study & Mining Development Area (Google Earth 2023).

7. DISCUSSION

7.1 Stone age

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 into three periods as listed below. It is 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). Rock engravings are located further towards Maanhaarrand and Rustenburg in the west (Pistorius 2012: 20).

There are no known Stone Age sites or material in the study & development area, and none were identified during the September 2023 field assessment. If any Stone Age artifacts are to be found in the area, then it would more than likely be single, out of context, stone tools.

7.2 Iron age

The Iron Age is the name given to the period of human history when metal was mainly used to produce metal artifacts. In South Africa it can be divided in two separate phases (Bergh1999: 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.

Pistorius identified a fairly large number of LIA sites in the Lonmin Area during his 2012 study, the details which will not be repeated here. Most of these sites are however not located close to the areas that were to be assessed by Pelsers in September 2023.

“The largest number of heritage occurrences consists of single Late Iron Age sites or clusters of these stone walled settlements, some of whom constitute cultural landscapes of some proportions. These sites, clusters of sites and cultural landscapes mostly occur along the base line and some higher plateaux of the series of norite hills in the northern part of the Lonmin Project Area. Scattered stone walled sites also occur on level ground in either the central or the southern part of the Lonmin Project Area” (Pistorius 2012: 32-33).

There are some Iron Age sites, features or material close to the study and in the larger geographical area, with one sites identified during the September 2023 field assessment.

7.3 Historic 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. 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).

During his 2012 study, Pistorius recorded a relatively large number of graveyards in the Lonmin Project Area. These included graveyards with historical significance (older than sixty and even hundred years) and graveyards which date from the recent past. The number of settlements which date from the recent past were not high. Not all of these remains were recorded as the majority had low significance. Most of the historical houses in the Lonmin Project Area have been destroyed. However, according to Pistorius, the number that still exists may rise if a house-to-house survey of these structures is made in rural settlements (Pistorius 2012: 33).

There are some known recent historical sites and features close to the study & in the larger geographical, but none in the areas that had to be assessed recently. One unknown recent historical site was identified during the September 2023 field assessment.

Results of the Field-based Assessment

The field assessment conducted in September 2023 focused mainly on new water/slurry pipeline routes & connections, new (potential) Overhead Powerlines, access roads, remining and booster pump area, as well as a new Stockpile Pad and Loading Area.

Most of the areas that had to be assessed is located in areas that had already been extensively impacted by mining-related activities, earlier agricultural developments and others such as ESKOM Powerlines and servitudes, railway line and roads. The potential of finding intact and undisturbed cultural heritage (archaeological and/or historical) sites, features or material is therefore deemed low. However, a number of previously recorded archaeological and historical sites are located in close proximity to the areas that had to be assessed in 2023. None of these will however be directly impacted by the proposed mining-related development actions. These sites include some Iron Age sites – mainly in the form of pottery scatters – as well as the remains of historical structures (farmsteads/farmworker homesteads) that were deemed of fairly low significance at the time. No further mitigation measures were required for most of these sites. A number of these resources have also been evidently directly impacted (probably demolished already) by mining-related developments such as tailings dams and other infrastructure that are situated in the locations where these were used.

The most significant of these sites was a graveyard (informal cemetery) containing around 24 graves located close to the Hoedspruit Tailings Dam. The site is located close to the proposed New Powerline feeding the Hoedspruit Return Water (RW) Pumps. This proposed new powerline will only be developed should the existing Powerline be found to be not big enough. However, Graves and Grave Site always carry a High Significance Rating from a Cultural Heritage point of view, and care should be taken therefore not to impact negatively on the site. If the site and graves can not be avoided by placing a buffer zone around it in order to protect it in situ, then they can be relocated after all the required legal processes

and requirements had been adhered to. The site were not located and assessed during the September 2023 field assessment.



Figure 3: Map showing the distribution and location of previously recorded archaeological & historical sites in the larger area and specific study areas (Google Earth 2023). The most significant of these is Site SSL/RPM 140 which is a grave site.

Two previously unrecorded sites were identified during the September 2023 assessment. Both of these are located in the general area close to the New K4 Return Water Pipeline to RWD 280HDPE, although they will not be directly impacted.

Site 1 is situated close to some rocky outcrops and a low rocky (norite/granite) ridge. The site contains a number of small scatters of pottery (undecorated) and some sections of low stone-walling that are representative of various enclosures for livestock and possibly hut bays. The site dates to the Late Iron Age, and is similar to those identified in the larger study area during previous assessments such as those by Pistorius in 2012. Although the site will not be directly impacted by the new pipeline development, care should still be taken to avoid the archaeological site by placing a buffer zone of at least 30m around it within which no development should be allowed.

GPS Location of site: S25 39 56.40 E27 26 23.70

Site 2 consists of the remains (mostly foundations) of various structures that were possibly a farmstead with related infrastructure, including farmworkers homesteads. The age of the

structures could not be determined, but it is likely less than 60 years of age based on the brick and cement construction observed. The site is not deemed of high significance due to its general bad state of preservation (with the structures on it being mostly demolished/vandalised). The possibility of the presence of graves close to the site should always be considered, but none were identified during the assessment. The site will not be directly impacted by the proposed mining-related developments.

GPS Location of site: S25 40 13.20 E27 26 29.30



Figure 4: Map showing the location of the two sites recorded in September 2023 (Google Earth 2023).



Figure 5: A view around the K3 Return Water Dam area.



Figure 6: General view of area around K3, with mining activities in the distance visible.



Figure 6: View of existing pipelines.



Figure 7: A view of the pipeline route close to the KTD1 & 2 area.



Figure 8: Another general view of the study area showing the characteristic landscape & topography.



Figure 9: View of the area between KTD2 & KTD3 showing the existing pipelines and routes.



Figure 10: A view of the pipeline route close to the tie into the existing K4 RW Pipeline towards the KTD4 dam.



Figure 11: The norite/granite ridge close to the K4 pipeline and where Site 1 is located.



Figure 12: A section of LIA stone walling at Site 1.



Figure 13: Remnants of a stone-walled enclosure at Site 1.



Figure 14: Fragments of undecorated Iron Age pottery at Site 1.



Figure 15: Agricultural fields visible around the areas of the pipeline towards KTD4.



Figure 16: A view of some the demolished structures on Site 2.



Figure 17: Remains of farmstead/homestead at Site 2.



Figure 18: General view of the study area taken towards the Hoedspruit RWD. Note the old agricultural fields.



Figure 19: A view of the railway line route between the K3 Tailings Tie-in and the Meccano 2 area.



Figure 20: Another general view of the study area around the Hoedspruit RWD area.



Figure 21: A view of the existing pipeline between and close to the Hoedspruit RWD areas.



Figure 22: A view of the general area around the Meccano 2 – WLTR section.



Figure 23: Another general view of the area close to Meccano 2. The area has been extensively impacted by earlier agricultural and existing mining-related activities.

Impact Assessment and Mitigation Measures

The significance of impacts is determined using the following criteria:

Probability: describes the likelihood of the impact actually occurring

- **Improbable:** the possibility of the impact occurring is very low, due to the circumstances, design or experience.
- **Probable:** there is a probability that the impact will occur to the extent that provision must be made therefore.
- **Highly probable:** it is most likely that the impact will occur at some stage of the development.
- **Definite:** the impact will take place regardless of any prevention plans and there can only be relied on mitigation measures or contingency plans to contain the effect.

Duration: the lifetime of the impact

- **Short Term:** the impact will either disappear with mitigation or will be mitigated through natural processes in a time span shorter than any of the phases.
- **Medium Term:** the impact will last up to the end of the phases, where after it will be negated.
- **Long Term:** the impact will last for the entire operational phase of the project but will be mitigated by direct human action or by natural processes thereafter.
- **Permanent:** the impact is non-transitory. Mitigation either by man or natural processes will not occur in such a way or in such a time span that the impact can be considered transient.

Scale: the physical and spatial size of the impact

- **Local:** the impacted area extends only as far as the activity, e.g., footprint
- **Site:** the impact could affect the whole or measurable portion of the abovementioned property.
- **Regional:** the impact could affect the area including the neighboring residential areas.

Magnitude/Severity: Does the impact destroy the environment, or alter its function

- **Low:** the impact alters the affected environment in such a way that natural processes are not affected.
- **Medium:** the affected environment is altered, but functions and processes continue in a modified way.
- **High:** function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases.

Significance: This is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required.

- **Negligible:** the impact is non-existent or unsubstantial and is of no or little importance to any stakeholder and can be ignored.
- **Low:** the impact is limited in extent, has low to medium intensity; whatever its probability of occurrence is, the impact will not have a material effect on the decision and is likely to require management intervention with increased costs.
- **Moderate:** the impact is of importance to one or more stakeholders, and its intensity will be medium or high; therefore, the impact may materially affect the decision, and management intervention will be required.
- **High:** The impact could render development options controversial or the project unacceptable if it cannot be reduced to acceptable levels; and/or the cost of management intervention will be a significant factor in mitigation.

The significance is calculated by combining the criteria in the following formula:

Sum (Duration, Scale, Magnitude) x Probability

S = Significance weighting; Sc = Scale; D = Duration; M = Magnitude; P = Probability

With a few sites (mainly of medium to low significance) located in the general study area, but not to be impacted on directly by the proposed development activities, the impacts on recorded and known heritage sites will be Negligible.

Aspect	Description	Weight
Probability	Improbable	1
	Probable	2
	Highly Probable	4
	Definite	5
Duration	Short Term	1
	Medium Term	3
	Long Term	4
	Permanent	5
Scale	Local	1
	Site	2
	Regional	3
Magnitude/Severity	Low	2
	Medium	6
	High	8
Significance	Sum (Duration, Scale, Magnitude)	x Probability
	Negligible	≤20

	Low	>20≤40
	Moderate	>40≤60
	High	>60

Results: $1+2+2 \times 1 = 5$ i.e., ≤20

Based on the assessment it is clear that there are some cultural heritage sites and features present in the larger geographical area within which the study & proposed development areas is located. It is therefore always possible that similar archaeological and recent historical sites, features and material could be present here. It is therefore recommended that a Chance Find Protocol be drafted and implemented for the Sibanye RPM Project. This will ensure that, should any previously unknown and unrecorded sites, features and cultural material deposits be exposed during any development activities, that these could be investigated by a Heritage Specialist in order to provide recommendations on their significance and on the way forward in terms of possible mitigation measures.

8. CONCLUSIONS AND RECOMMENDATIONS

APelser Archaeological Consulting cc (APAC cc) was appointed EcoPartners to conduct a Phase 1 Heritage Impact Assessment for the Sibanye Rustenburg Platinum Mines (RPM) Proposed Meccano 2 & Other Developments Situated near Marikana in the Rustenburg Local Municipality, Bojanala Platinum District Municipality of the Northwest Province.

The literature review indicates that there are a number of cultural heritage (archaeological & historical) sites and features in the larger geographical area within which the study & development area footprints fall. A number of cultural heritage sites with related features & material were identified in the study area during the September 2023 field assessment as well. Most of the areas that had to be assessed is located in areas that had already been extensively impacted by mining-related activities, earlier agricultural developments and others such as ESKOM Powerlines and servitudes, railway line and roads. The potential of finding intact and undisturbed cultural heritage sites, features or material was therefore deemed low. A number of previously recorded archaeological and historical sites are located in close proximity to the areas that had to be assessed in 2023. None of these will however be directly impacted by the proposed mining-related development actions. The most significant of these sites was an informal cemetery containing around 24 graves located close to the Hoedspruit Tailings Dam. The site is located close to the proposed New Powerline feeding the Hoedspruit Return Water (RW) Pumps. This proposed new powerline will only be developed should the existing Powerline be found to be not big enough. Graves and Grave Site always carry a High Significance Rating from a Cultural Heritage point of view, and care should be taken therefore not to impact negatively on the site. If the site and graves cannot be avoided by placing a buffer zone around it in order to protect it in situ, then they can be relocated after all the required legal processes and requirements had been adhered to.

Two sites were identified in the area during the recent assessment. None of the sites will however be directly impacted upon by the current mining-related developments.

Based on the desktop and field-based assessment it is clear that there are some cultural heritage sites and features present in the larger geographical area within which the study & proposed development areas is located. It is always possible that similar (previously unknown) archaeological and recent historical sites, features and material could still be present here. It is recommended that a Chance Find Protocol be drafted and implemented for the Sibanye RPM Project.

Finally, from a Cultural Heritage point of view, it is recommended that the Proposed Sibanye RPM Meccano 2 & Other Developments be allowed to continue, taking into consideration the recommendations provided above.

The often-subterranean nature of cultural heritage resources (including low stone-packed or unmarked graves) should also be taken into consideration. Should any previously unknown or buried sites, features or material be uncovered during any development actions then an Archaeological expert should be contacted to investigate and provide recommendations on the way forward.

9. REFERENCES

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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.

Aesthetic 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, paleontological, 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, paleontology 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.