

**A SURVEY OF CULTURAL RESOURCES IN THE
PROPOSED PROJECT OLYMPIA MINING AREA
RITAVI 2 DISTRICT, NORTHERN PROVINCE**

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SUMMARY

A survey of cultural resources in the proposed Project Olympia mining area, Ritavi 2 District, Northern Province.

The aim of the survey was to locate, identify, evaluate and document sites, objects and structures of cultural importance found within the boundaries of the area in which the proposed development is to take place.

A large number of sites have been documented within or just outside the areas of potential impact. Negative impact on cultural sites can be mitigated by collecting data by means of surveys and excavations.

The survey has revealed that P5, P3, P4, and possibly P1, in that order, would be the best options for development, from an archaeological point of view. Development of P2 would have the biggest impact on archaeological sites. TA and TB seem to rank equally, as no sites were identified in these areas. As for the actual mining areas, archaeological sites were identified in both of them.

In section 8 of this report, it is therefore recommended that

- Development can continue only if suitable mitigation measures are applied to the various archaeological sites. In this regard, 19 sites located within the area of potential impact are judged to be of significance and will need mitigation work.
- It should be remembered that no. 4-6, 12-15, 16-17 and 25, 27-28 possibly forms part of larger sites, rather than individual sites. The effect of this is to bring the number of sites that need mitigation down to only 11.
- Careful consideration should also be given to the sites (no. 7, 20, 22) that are judged to be outside the area of potential impact, especially in the case of the archaeological sites. It might be that these sites were linked to each other, either directly or consecutively in time. Understanding this relationship would also be part of the mitigation of the sites that are directly impacted.
- Following on the previous, it should be considered that no. 9 (site 2330CD32), located in Zanghoma, be excavated. If people are to be resettled from Lefara, or if new labourers settle in the area, they might have a negative impact on this site. Preliminary examination indicates that this might be a very important EIA site.

- The developers should be notified that archaeological sites might be exposed during the construction work. If anything is noticed, it should immediately be reported to a museum, preferably one at which an archaeologist is available, so that an investigation and evaluation of the finds can be made.
- The various mitigation measures will produce a lot of historical information about the area as well as objects relating to this. It is recommended that if development takes place, this be presented locally at a site museum.

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1. AIMS OF THE SURVEY

The National Cultural History Museum was requested by **Walmsley Environmental Consultants** to survey an area in the Ritavi 2 District in which it is planned to open up a mine. This area is located approximately 20 km south east from Tzaneen in Northern Province. The aim of the survey was to locate, identify, evaluate and document sites, objects and structures of cultural importance found within the boundaries of the areas that is to be developed.

2. TERMS OF REFERENCE

The **Terms of Reference** for the study were to:

- 2.1 Identify all objects, sites, occurrences and structures of an archaeological or historical nature located in the area of the proposed development.
- 2.2 Assess the significance of the cultural resources in terms of their historical, social, religious, aesthetic and scientific value.
- 2.3 Determine the possible impacts on the known and potential cultural resources in the area of interest. Impacts will be determined or predicted for construction, operation and post operation phases.
- 2.4 Develop mitigation or control measures for impact minimization and cultural resources preservation.
- 2.5 Develop procedures to be implemented if previously unidentified cultural resources are uncovered during the construction.

3. DEFINITIONS AND ASSUMPTIONS

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

- **Cultural resources** are all nonphysical 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 groups, 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.

- Significance is site-specific and relates to the content and context of the site. Sites regarded as having low significance have already been recorded in full and require no further mitigation. Sites with medium to high significance require further mitigation.
- The latitude and longitude of archaeological sites are to be treated as sensitive information by the developer and should not be disclosed to members of the public.

4. LEGISLATIVE REQUIREMENTS

Aspects concerning the conservation of cultural resources are mainly dealt within two acts. These are the National Monuments Act (Act 28 of 1969) and the Environmental Conservation Act (Act 73 of 1989). It is however important to note that new legislation is being prepared and this might come into effect before the end of 1999.

4.1 National Monuments Act

Article 12, subsection 2A of this act states that anyone who wishes to disturb, destroys, alter, remove or export any fossils, rock art or artifacts left at places inhabited by indigenous people before European colonisation, shipwrecks and their contents older than 50 years, buildings and structures that are older than 50 years, as well as paintings or furniture that have been in South Africa for more than 50 or years respectively, may do so only if they have a permit from the National Monuments Council. According to this Act the following resources are protected:

- a. Meteorites and fossils
- b. Prehistoric rock art
- c. Prehistoric tools, ornaments and structures
- d. The anthropological and archaeological contents of graves, rock shelters, caves, middens etc.
- e. Historical sites and archaeological finds, material or artifacts
- f. Declared national monuments
- g. Cemeteries and graves with headstones older than 50 years

The above mentioned may only be disturbed or moved by an archaeologist, after receiving a permit from the National Monuments Council to do so.

4.2 Environmental Conservation Act

This act states that a survey and an evaluation of cultural resources should be undertaken in areas where development, which will change the face of the environment, is to be made. The impact of the development on the cultural resources should also be determined and proposals to mitigate this impact is to be formulated.

4.3 The White Paper on Heritage Resources

The white paper is currently being discussed by parliament and is destined to be promulgated before the end of 1999. It will replace the current National Monuments Act. The types of sites

protected by the new act will be more or less the same than that covered by the current act, but provide more strict measures of protection. One of the changes to the current act is that all graves, cemeteries and structures older than 60 years will be protected, moving away from the 50 year clause.

4.4 Graves, cemeteries and skeletal remains

There are several laws and bylaws pertaining to the exhumation and reinterment of human remains. All graves older than 50 years are protected under the **National Monuments Act**. This holds true for unmarked as well as marked graves. In the latter case, it also includes the headstone.

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 (ie 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)**.

5. METHODOLOGY

5.1 Preliminary investigation

5.1.1 Survey of the literature

A survey of the relevant literature was conducted with the aim of reviewing the previous research done and determining the potential of the area. In this regard, various anthropological, archaeological and historical sources were consulted - see the list of references below.

5.1.2 Data bases

The **Archaeological Data Recording Centre (ADRC)**, housed at the National Cultural History Museum, Pretoria, was consulted.

5.1.3 Other sources

The topocadastral and other maps were also studied - see the list of references below.

5.2 Field survey

The field survey was done according to generally accepted archaeological practices, and was aimed at locating all possible sites, objects and structures. The area was subdivided into an imaginary grid, using the most obvious topographical features such as valleys, ridges and the river self. Each block of the grid was then surveyed by the members of the survey team walking over it. Special attention was given to outcrops, cliffs were inspected for rock shelters, while stream beds and unnatural topographical occurrences such as trenches, holes and clusters of trees were investigated.

Although the whole area was surveyed, special attention was given to the areas of direct impact, that is P1-5, TA & TB and the mining areas.

5.3 Documentation

All sites, objects and structures identified were documented according to the general minimum standards accepted by the archaeological profession. Coordinates of individual localities were determined by means of the **Global Positioning System (GPS)**¹ and plotted on a map. This information was added to the description in order to facilitate the identification of each locality.

6. DESCRIPTION OF THE AREA

The boundaries of the study area are as follows (see map 1):

south west	R36 from the Letsitele River to the outskirts of Lenyenye;
north west	the Letsitele river;
north	the dirt road from the Letsitele River across the top section of Berlyn 670LT;
east	R529 from the dirt road on Berlyn to the dirt road on Keulen 669LT;
south	top ridge along Keulen to Kingstone 657LT
se-ssw	boundary of Kingstone to Rita and across to R36.

Large sections of the area are currently under cultivation - mixed crops and sisal plantations. Most of the cultural resources in these areas are therefore judged to be destroyed, or disturbed out of context, depending on the depth of the topsoil and the depth of the cultivation. That there used to be sites in some sections, are deduced from the fact that sites are found on the periphery of the cultivated fields, in other words, those sections that have not been ploughed. It is therefore possible to find some more sites when development takes place and the overburden is removed.

7. DISCUSSION

Very little evidence of Stone Age occupation of the area was found during the survey. This basically consists of a few ESA stone tools in dry stream beds, and a few MSA tools at the base of the various hills. No rock shelters that were used for human habitation, were found.

Although the Stone Age occurred over a much longer period of time, archaeologists are currently more interested in the Iron Age. In the Letaba basin archaeological sites dating to this period is of great significance.

¹ According to the manufacturer a certain deviation may be expected for each reading. Care was, however, taken to obtain as accurate a reading as possible, and then correlate it with reference to the physical environment before plotting it on the map.

About 1800 years ago new people brought a new way of life to southern Africa. For the first time people lived in settled villages cultivating such domestic crops as sorghum, millet and cow peas. They herded cattle as well as sheep and goats. These new people, according to archaeological evidence, spoke early variations of the Bantu Language. Because they produced their own iron tools, archaeologists call this time the Iron Age. It is arbitrarily divided into Early (AD 200-1000) and Late (AD 1000-1850) periods for convenience, but also to denote widespread events.

Iron Age sites are characterised by the remains of huts (clay floors, clay used for the walls), pottery, remains of metal working, faunal and other material. The pottery, decorated in distinctive styles, is used by archaeologists to identify different groups of people and to determine their movement.

The earliest Iron Age pottery in South Africa was found on the farm Silver Leaves (also known as Narrowdale 604LT) just to the south of Tzaneen. Radio carbon dating of the site places it age to AD 270-330. The ceramic style indicates that these people had moved down from East Africa and belongs to the Kwale Branch of the Early Iron Age Urewe Tradition.

A different, well-known group of Iron Age sites lies more to the east in the Hans Merensky Nature Reserve. Here Iron Age people process salt from the mineral springs. Excavations have yielded a sequence of Iron Age activities, encompassing 4 ceramic phases: Silver Leaves (AD 270-330), Matakoma (or Happy Rest) (c. AD 350-600), Eiland (AD 900-1300) and Letaba (1550-present) (Evers 1981).

The current survey has revealed that sites from at least two of these phases, ie Eiland and Letaba are present in the study area. In addition, other sites, dating to the period AD 600, and possibly relating to the Mzonjani (AD 450-550) Msuluzi (AD 600-750) facies are also present.

One of the reasons for people wanting to settle here is no doubt the alluvial and colluvial soils in the area. The other significant factor seems to be the occurrence of iron ore (magnetite). This is deduced from the fact that the remains of iron smelting are present in most of the sites dating to all of the phases. Unfortunately, it was possible to identify the remains of only one possible furnace. Furnaces were usually destroyed after use, for fear of witchcraft.

During the 18th and 19th centuries, various Sotho-speaking groups, such as the Letswalo, Thabina, Maake and Kgaga, and Tsonga-speaking people, settled in the area. Remains of these more recent settlements were also identified during the survey.

In summary, the area under study seems to be rich enough in Iron Age history to make, on further investigation, a significant contribution to our understanding of the past.

8. RECOMMENDATIONS

A large number of sites have been documented within or just outside the areas of potential impact. Negative impact on cultural sites can be mitigated by collecting data by means of surveys and excavations.

The survey has revealed that P5, P3, P4, and possibly P1, in that order, would be the best options for development from an archaeological point of view. Development of P2 would have the biggest impact on archaeological sites. TA and TB seem to rank equally, as no sites were identified in these areas. As for the actual mining areas, archaeological sites were identified in both of them.

It is therefore recommended that

- Development can continue only if suitable mitigation measures are applied to the various archaeological sites. In this regard, 19 sites located within the area of potential impact are judged to be of significance and will need mitigation work. These are (see also Table 1 & Appendix 2):

No.	Site No.	Classification	Proposed mitigation
4	2330BB27	Iron Age	2 = controlled sampling
5	2330CD28	Iron Age	2 = controlled sampling
6	2330CD29	Iron Age	2 = controlled sampling
8	2330CD31	Historic	Relocation of graves
9	2330CD32	Iron Age	2 = controlled sampling
10	2330CD33	Historic	Relocation of graves
11	2330CD34	Iron Age	2 = controlled sampling
12	2330CD35	Iron Age	2 = controlled sampling
13	2330CD36	Iron Age	2 = controlled sampling
14	2330CD37	Iron Age	2 = controlled sampling
15	2330CD38	Iron Age	2 = controlled sampling
16	2330CD39	Iron Age	2 = controlled sampling
17	2330CD40	Iron Age	2 = controlled sampling
24	2330CD47	Iron Age	2 = controlled sampling
25	2330CD48	Iron Age	2 = controlled sampling
26	2330CD49	Historic	2 = controlled sampling
27	2330CD50	Iron Age	2 = controlled sampling
28	2330CD51	Iron Age	2 = controlled sampling
34	2330CD57	Iron Age	2 = controlled sampling

- It should be remembered that no.s 4-6, 12-15, 16-17 and 25, 27-28 possibly forms part of larger sites, rather than individual sites. The effect of this is to bring the number of sites that need mitigation down to only 11.
- Careful consideration should also be given to the sites (no. 7, 20 22) that are judged to be outside the area of potential impact, especially in the case of the archaeological sites. It might be that these sites were linked to each other, either directly or consecutively in time. Understanding this relationship would also be part of the mitigation of the sites that are directly impacted.

- Following on the previous, it should be considered that no. 9 (site 2330CD32), located in Zanghoma, be excavated. If people are to be resettled from Lefara, or if new labourers settle in the area, they might have a negative impact on this site. Preliminary examination indicates that this might be a very important EIA site.
- The developers should be notified that archaeological sites might be exposed during the construction work. If anything is noticed, it should immediately be reported to a museum, preferably one at which an archaeologist is available, so that an investigation and evaluation of the finds can be made.
- The various mitigation measures will produce a lot of historical information about the area as well as objects relating to this. It is recommended that if development takes place, this be presented locally at a site museum.

9. REFERENCES

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8.2.2 Maps

1: 50 000 Topocadastral maps - 2330CD

9. PROJECT TEAM

J van Schalkwyk
S Moifatswane

APPENDIX 1: STANDARDIZED SET OF CONVENTIONS USED TO ASSESS THE IMPACT OF PROJECTS ON CULTURAL RESOURCES

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 data to verify assessment
- Probable: More than 70% sure of a particular fact, or of the likelihood of that impact occurring
- Possible: Only more than 40% sure of a particular fact, or of the likelihood of an impact occurring
- Unsure: Less than 40% sure of a particular fact, or the likelihood of an impact occurring

Status of the impact:

With mitigation and the resultant recovery of material, a negative impact can be turned positive. Describe whether the impact is positive (a benefit), negative (a cost) or neutral

Recommended management action:

For each impact, the recommended practically attainable mitigation actions which would result in a measurable reduction of the impact, must be identified. This is expressed according to the following:

- 1 = no further investigation/action necessary
- 2 = controlled sampling and/or mapping of the site necessary
- 3 = preserve site if possible, otherwise extensive salvage excavation and/or mapping necessary
- 4 = preserve site at all costs

Legal requirements:

Identify and list the specific legislation and permit requirements which potentially could be infringed upon by the proposed project, if mitigation is necessary.

APPENDIX 2: SURVEY RESULTS²

[Previous site numbers relate to other known sites on a particular ¼ degree sheet already documented in the ADRC, and does not necessarily refer to sites occurring on or close to the specific area of development.]

1. Site number: 2330CD24

Location: Mohlaba's Location 567LT: S 23°56'07.4"; E 30°17'42.2" [X 2648504.794; Y - 131835.905]

Description: An open area without vegetation. Some pottery located here. Seems to be a homestead that was abandoned within the last 50 years or less.

Discussion: This site falls outside the area of direct impact.

Significance of impact: Low

Certainty of prediction: Definite

Status of impact: Neutral

Recommended management action: 1 = no further investigation/action necessary

Legal requirements: None

2. Site number: 2330CD25

Location: Mohlaba's Location 567LT: S 23°55'58.0"; E 30°17'52.8" [X 2648230.728; Y - 132143.464]

Description: Hut clay with a few pieces of undecorated pottery, possibly LIA.

Discussion: This site falls outside the area of direct impact.

Significance of impact: Low

Certainty of prediction: Definite

Status of impact: Neutral

Recommended management action: 1 = no further investigation/action necessary

Legal requirements: None

3. Site number: 2330CD26

Location: Mohlaba's Location 567LT: S 23°57'02.8"; E 30°17'25.8" [X 2650223.674; Y - 131356.121]

Description: Old water furrow, with a short section of stone wall diagonal to it. The latter is possibly the result of when the furrow was made.

Discussion: This feature currently seems of no significance.

Significance of impact: Low

Certainty of prediction: Definite

Status of impact: Neutral

Recommended management action: 1 = no further investigation/action necessary

Legal requirements: None

² See Appendix 1 for an explanation of the conventions used in assessing the cultural remains.

4. Site number: 2330CD27

Location: Mohlaba's Location 567LT: S 23°56'47.8"; E 30°17'18.9" [X 2649754.199; Y - 131165.320]

Description: Iron slag, potsherds and pieces of tuyeres that indicates that there possibly was an furnace in the vicinity. It was, however, not located. This possibly forms part of the same site as is indicated in no. 5 & 6.

Discussion: If mining takes place, this site will be impacted upon.

Significance of impact: High

Certainty of prediction: Definite

Status of impact: Negative

Recommended management action: 2 = controlled sampling and/or mapping of the site necessary

Legal requirements: NMC permit

5. Site number: 2330CD28

Location: Mohlaba's Location 567LT: S 23°56'47.2"; E 30°17'22.2" [X 2649730.385; Y - 131253.187]

Description: Scattering of pottery, possibly dating to the so-called Letaba phase. This possibly forms part of the same site as no. 4 & 6.

Discussion: If mining takes place, this site will be impacted upon.

Significance of impact: High

Certainty of prediction: Definite

Status of impact: Negative

Recommended management action: 2 = controlled sampling and/or mapping of the site necessary

Legal requirements: NMC permit

6. Site number: 2330CD29

Location: Mohlaba's Location 567LT: S 23°56'54.9"; E 30°17'23.2" [X 2649973.720; Y - 131279.239]

Description: Remains of hut clay exposed in the road that was made for prospecting purposes. Other similar features might be located in the area, but is currently still covered by the topsoil. This possibly forms part of the same site as no. 4 & 5.

Discussion: If mining takes place, this site will be impacted upon.

Significance of impact: High

Certainty of prediction: Definite

Status of impact: Negative

Recommended management action: 2 = controlled sampling and/or mapping of the site necessary

Legal requirements: NMC permit

7. Site number: 2330CD30

Location: Berlyn 670LT: S 23°55'43.2"; E 30°22'04.4" [X 2647836.193; Y -139244.797]

Description: Surface scattering of potsherds. The vegetation is currently too dense to locate any other features.

Discussion: This site seems to fall just outside the area that is to be impacted upon.

Significance of impact: Low

Certainty of prediction: Definite

Status of impact: Neutral

Recommended management action: 1 = no further investigation/action necessary

Legal requirements: None

8. Site number: 2330CD31

Location: Keulen 669LT: S 23°55'01.9"; E 30°20'53.7" [X 2646552.442; Y -137269.121]

Description: Cemetery containing ± 5 graves, 3 with headstones.

Discussion: This site is located quite close to the proposed development and the graves will have to be relocated if it is in the way of the development.

Significance of impact: Medium

Certainty of prediction: Probable

Status of impact: Negative

Recommended management action: Relocation of graves

Legal requirements: Dept of Health, Provincial Dept of Health, Premier of Province, local police, NMC, landowners

9. Site number: 2330CD32

Location: Mohlaba's Location 567LT: S 23°54'55.7"; E 30°20'04.2" [X 2646348.325; Y -135865.520]

Description: An Early Iron Age site with pottery that represent at least two components. An earlier phase probably dating to c. AD 600 and a later phase which date to c. AD 800.

Discussion: This seems to be an extensive site. It is located in the village of Zangoma and is therefore already being impacted upon by people living there. With the proposed development, new labourers will be moving in and other people might be resettled here. The indirect impact of the proposed development on this site will eventually be very high.

Significance of impact: Medium

Certainty of prediction: Possible

Status of impact: Negative

Recommended management action: 2 = controlled sampling and/or mapping of the site necessary

Legal requirements: NMC permit

10. Site number: 2330CD33

Location: Mohlaba's Location 567LT: S 23°56'28.6"; E 30°19'07.6" [X 2649191.822; Y -134243.958]

Description: Large cemetery containing approximately 50 graves. A substantial number have headstones.

Discussion: If P2 is developed, this site will be impacted upon.

Significance of impact: High

Certainty of prediction: Definite

Status of impact: Negative

Recommended management action: Relocation of graves

Legal requirements: Dept of Health, Provincial Dept of Health, Premier of Province, local police, NMC, landowners

11. Site number: 2330CD34

Location: Mohlaba's Location 567LT: S 23°56'36.3"; E 30°19'20.6" [X 2649432.187; Y -134609.284]

Description: Concentration of iron slag, tuyeres and the possible remains of a furnace. Other evidence in the immediate area might have been destroyed by later quarrying activities in the area.

Discussion: If P2 is developed, this site will be impacted upon.

Significance of impact: High

Certainty of prediction: Definite

Status of impact: Negative

Recommended management action: 2 = controlled sampling and/or mapping of the site necessary

Legal requirements: NMC permit

12. Site number: 2330CD35

Location: Keulen 669LT: S 23°56'45.6"; E 30°19'31.8" [X 2649721.314; Y -134923.246]

Description: Early Iron Age site with what seems to be Eiland phase (c. AD 900-1200) pottery, as well as hut floors and slag. It might form part of a larger site - see no. 13.

Discussion: If P2 is developed, this site will be impacted upon.

Significance of impact: High

Certainty of prediction: Definite

Status of impact: Negative

Recommended management action: 2 = controlled sampling and/or mapping of the site necessary

Legal requirements: NMC permit

13. Site number: 2330CD36

Location: Keulen 669LT: S 23°56'44.6"; E 30°19'40.1" [X 2649692.724; Y -135155.362]

Description: Concentration of iron slag and pieces of tuyeres. It might form part of a larger site - see no. 12.

Discussion: If P2 is developed, this site will be impacted upon.

Significance of impact: High

Certainty of prediction: Definite

Status of impact: Negative

Recommended management action: 2 = controlled sampling and/or mapping of the site necessary

Legal requirements: NMC permit

14. Site number: 2330CD37

Location: Keulen 669LT: S 23°56'51.6"; E 30°19'43.3" [X 2649908.989; Y -135246.632]

Description: Hut floor, hut clay and potsherds. From the potsherds, it seems as if this site dates to a later period than those sites located more to the west - see no. 12-13.

Discussion: If P2 is developed, this site will be impacted upon.

Significance of impact: High

Certainty of prediction: Definite

Status of impact: Negative

Recommended management action: 2 = controlled sampling and/or mapping of the site necessary

Legal requirements: NMC

15. Site number: 2330CD38

Location: Keulen 669LT: S 23°56'43.6"; E 30°19'52.7" [X 2649665.338; Y -135514.701]

Description: Iron slag, pieces of tuyeres and potsherds.

Discussion: If P2 is developed, this site will be impacted upon.

Significance of impact: High

Certainty of prediction: Definite

Status of impact: Negative

Recommended management action: 2 = controlled sampling and/or mapping of the site necessary

Legal requirements: NMC permit

16. Site number: 2330CD39

Location: Keulen 669LT: S 23°56'06.5"; E 30°19'50.9" [X 2648523.309; Y -135474.566]
Description: Clay and floor of an Iron Age hut found in an old road. As there are no potsherds, it is difficult to establish the age. Other similar structures might be located in the area, but is currently still covered with topsoil and vegetation. Might be part of site no. 17.
Discussion: If mining takes place, this site will be impacted upon.
Significance of impact: High
Certainty of prediction: Definite
Status of impact: Negative
Recommended management action: 2 = controlled sampling and/or mapping of the site necessary
Legal requirements: NMC permit

17. Site number: 2330CD40

Location: Keulen 669LT: S 23°56'08.8"; E 30°19'53.8" [X 2648594.852; Y -135555.894]
Description: Letaba style pottery being washed out. Might be part of site no. 16.
Discussion: If mining takes place, this site will be impacted upon.
Significance of impact: High
Certainty of prediction: Definite
Status of impact: Negative
Recommended management action: 2 = controlled sampling and/or mapping of the site necessary
Legal requirements: NMC permit

18. Site number: 2330CD41

Location: Keulen 669LT: S 23°56'11.4"; E 30°21'02.0" [X 2648693.175; Y -137483.392]
Description: Remains of a clay pot that was buried in an old termetry. It was used to catch termites as food source.
Discussion: This site is not of much significance and can be ignored.
Significance of impact: Low
Certainty of prediction: Definite
Status of impact: Neutral
Recommended management action: 1 = no further investigation/action necessary
Legal requirements: None

19. Site number: 2330CD42

Location: York 656LT: S 23°58'20.0"; E 30°17'40.0" [X 2652596.589; Y -131735.838]
Description: Stone walling of historical age on Ritaskop. According to Mr J Witt of Tzaneen Museum there used to be some stone walling here. He stated, however, that the walls could have been "robbed" and used by local people to build houses with. The walling could not be found, which indicates that Mr Witt might be correct.
Discussion: This site falls outside the area of impact.
Significance of impact: Low
Certainty of prediction: Definite
Status of impact: Neutral
Recommended management action: 1 = no further investigation/action necessary
Legal requirements: None

20. Site number: 2330CD43

Location: York 656LT: S 23°58'05.9"; E 30°17'29.8" [X 2652160.097; Y -131451.495]
Description: Iron slag, pottery and pieces of tuyeres.

Discussion: This site falls outside the area of impact.

Significance of impact: Low

Certainty of prediction: Definite

Status of impact: Neutral

Recommended management action: 1 = further investigation/action necessary

Legal requirements: None

21. Site number: 2330CD44

Location: York 656LT: S 23°58'04.7"; E 30°17'43.1" [X 2652126.597; Y -131824.958]

Description: Cemetery with ± 50 graves, some with headstones.

Discussion: This site falls outside the area of impact.

Significance of impact: Low

Certainty of prediction: Definite

Status of impact: Neutral

Recommended management action: 1 = no further investigation/action necessary

Legal requirements: None

22. Site number: 2330CD45

Location: Kingstone 657LT: S 23°58'08.8"; E 30°17'49.9" [X 2652257.622; Y -132018.812]

Description: Large concentration of iron slag and pieces of tuyeres.

Discussion: This site falls outside the area of impact.

Significance of impact: Low

Certainty of prediction: Definite

Status of impact: Neutral

Recommended management action: 1 = no further investigation/action necessary

Legal requirements: None

23. Site number: 2330CD46

Location: Mohlaba's Location 567LT: S 23°57'17.6"; E 30°17'55.9" [X 2650680.716; Y -132202.938]

Description: Hut clay, together with undecorated pottery. Possibly an EIA site.

Discussion: This site falls outside the area of direct impact.

Significance of impact: Low

Certainty of prediction: Possible

Status of impact: Negative

Recommended management action: 1 = no further investigation/action necessary

Legal requirements: None

24. Site number: 2330CD47

Location: Mohlaba's Location 567LT: S 23°57'07.3"; E 30°18'30.2" [X 2650363.471; Y -133169.960]

Description: Hut clay and pottery of undetermined age, possibly LIA.

Discussion: If P1 is developed, this site will be impacted upon.

Significance of impact: High

Certainty of prediction: Definite

Status of impact: Negative

Recommended management action: 2 = controlled sampling and/or mapping of the site necessary

Legal requirements: NMC permit

25. Site number: 2330CD48

Location: Mohlaba's Location 567LT: S 23°56'01.1"; E 30°19'11.6" [X 2648343.643; Y - 134364.982]

Description: Hut clay with some undecorated pottery. Possible EIA site. The site is located in a road that was made for prospecting. Other such features, still covered with topsoil, might be in the vicinity. In all probability it forms part of a larger site - see no. 27 & 28.

Discussion: If mining takes place, this site will be impacted upon.

Significance of impact: High

Certainty of prediction: Definite

Status of impact: Negative

Recommended management action: 2 = controlled sampling and/or mapping of the site necessary

Legal requirements: NMC permit

26. Site number: 2330CD49

Location: Mohlaba's Location 567LT: S 23°56'07.6"; E 30°19'17.8" [X 2648548.362; Y - 134538.384]

Description: Ruins of an old shop, with the remains of the garden. It is probably older than 50 years and is therefore protected by the Monuments Act. It is believed that the road was realigned at some stage, as this site now actually lies to the west of the road.

Discussion: If mining takes place, this site will be impacted upon.

Significance of impact: High

Certainty of prediction: Definite

Status of impact: Negative

Recommended management action: 2 = controlled sampling and/or mapping of the site necessary

Legal requirements: NMC permit

27. Site number: 2330CD50

Location: Mohlaba's Location 567LT: S 23°56'03.6"; E 30°19'22.0" [X 2648426.396; Y - 134658.286]

Description: Hut clay and potsherds, possibly dating to the EIA, exposed in an old road. IT possibly forms part of a larger site - see no. 25 & 28.

Discussion: If mining takes place, this site will be impacted upon.

Significance of impact: High

Certainty of prediction: Definite

Status of impact: Negative

Recommended management action: 2 = controlled sampling and/or mapping of the site necessary

Legal requirements: NMC permit

28. Site number: 2330CD51

Location: Mohlaba's Location 567LT: S 23°55'57.4"; E 30°19'26.6" [X 2648224.537; Y - 134790.250]

Description: Hut clay and potsherds showing Eiland phase characteristics, exposed in an old road. In all probability it forms part of a much larger site - see no. 25 & 27.

Discussion: If mining takes place, this site will be impacted upon.

Significance of impact: High

Certainty of prediction: Definite

Status of impact: Negative

Recommended management action: 2 = controlled sampling and/or mapping of the site necessary

Legal requirements: NMC permit

29. Site number: 2330CD52

Location: Mohlaba's Location 567LT: S 23°55'35.2"; E 30°19'53.3" [X 2647560.863; Y - 135551.498]

Description: Cemetery containing ± 35 graves, some with headstones.

Discussion: This site falls just outside the area of direct impact.

Significance of impact: Low

Certainty of prediction: Probable

Status of impact: Neutral

Recommended management action: 1 = no further investigation/action necessary

Legal requirements: None

30. Site number: 2330CD53

Location: Mohlaba's Location: S 23°54'49.1"; E 30°19'30.1" [X 2646133.119; Y -134905.995]

Description: Low, circular structures of stone. No other cultural material present. Probably dating to the last 50-100 years.

Discussion: This site falls outside the area of direct impact.

Significance of impact: Low

Certainty of prediction: Definite

Status of impact: Neutral

Recommended management action: 1 = no further investigation/action necessary

Legal requirements: None

31. Site number: 2330CD54

Location: Mohlaba's Location 567LT: S 23°55'08.4"; E 30°18'31.6" [X 2646702.340; Y - 133249.109]

Description: Remains of a clay pot that was buried in an old termetry. It was used to catch termites as food source.

Discussion: If P3 is developed, this site will be impacted upon. It is, however, not a site of any significance and can be ignored.

Significance of impact: Low

Certainty of prediction: Definite

Status of impact: Neutral

Recommended management action: 1 = no further investigation/action necessary

Legal requirements: None

32. Site number: 2330CD55

Location: Mohlaba's Location 567LT: S 23°56'00.2"; E 30°17'11.1" [X 2648281.395; Y - 130955.367]

Description: Cemetery with ± 50 graves, next to the road.

Discussion: This site falls outside the area of potential impact.

Significance of impact: Low

Certainty of prediction: Definite

Status of impact: Neutral

Recommended management action: 1 = no further investigation/action necessary

Legal requirements: None

33. Site number: 2330CD56

Location: Mohlaba's Location 567LT: S 23°56'36.7"; E 30°17'05.0" [X 2649409.078; Y - 130775.450]

Description: Cemetery containing ± 5 graves

Discussion: This site falls outside the area of potential impact.

Significance of impact: Low

Certainty of prediction: Definite

Status of impact: Neutral

Recommended management action: 1 = no further investigation/action necessary

Legal requirements: None

34. Site number: 2330CD57

Location: Mohlaba's Location 567LT: S 23°56'43.3"; E 30°18'24.9" [X 2649623.669; Y - 133032.615]

Description: Iron slag, pieces of tuyeres and potsherds being washed out.

Discussion: If mining takes place, this site will be impacted upon.

Significance of impact: High

Certainty of prediction: Definite

Status of impact: Negative

Recommended management action: 2 = controlled sampling and/or mapping of the site necessary

Legal requirements: NMC permit

35. Site number: 2330CD58

Location: Mohlaba's Location 567LT: S 23°57'31.5"; E 30°16'47.3" [X 2651090.603; Y - 130251.265]

Description: Pottery of recent origin being washed out.

Discussion: This sites falls outside the area of impact

Significance of impact: Low

Certainty of prediction: Definite

Status of impact: Neutral

Recommended management action: 1 = no further investigation/action necessary

Legal requirements: None

APPENDIX 3: GIS MAPPING

1. 2330CD24: S 23°56'07.4"; E 30°17'42.2" [X 2648504.794; Y -131835.905]
2. 2330CD25: S 23°55'58.0"; E 30°17'52.8" [X 2648230.728; Y -132143.464]
3. 2330CD26: S 23°57'02.8"; E 30°17'25.8" [X 2650223.674; Y -131356.121]
4. 2330CD27: S 23°56'47.8"; E 30°17'18.9" [X 2649754.199; Y -131165.320]
5. 2330CD28: S 23°56'47.2"; E 30°17'22.2" [X 2649730.385; Y -131253.187]
6. 2330CD29: S 23°56'54.9"; E 30°17'23.2" [X 2649973.720; Y -131279.239]
7. 2330CD30: S 23°55'43.2"; E 30°22'04.4" [X 2647836.193; Y -139244.797]
8. 2330CD31: S 23°55'01.9"; E 30°20'53.7" [X 2646552.442; Y -137269.121]
9. 2330CD32: S 23°54'55.7"; E 30°20'04.2" [X 2646348.325; Y -135865.520]
10. 2330CD33: S 23°56'28.6"; E 30°19'07.6" [X 2649191.822; Y -134243.958]
11. 2330CD34: S 23°56'36.3"; E 30°19'20.6" [X 2649432.187; Y -134609.284]
12. 2330CD35: S 23°56'45.6"; E 30°19'31.8" [X 2649721.314; Y -134923.246]
13. 2330CD36: S 23°56'44.6"; E 30°19'40.1" [X 2649692.724; Y -135155.362]
14. 2330CD37: S 23°56'51.6"; E 30°19'43.3" [X 2649908.989; Y -135246.632]
15. 2330CD38: S 23°56'43.6"; E 30°19'52.7" [X 2649665.338; Y -135514.701]
16. 2330CD39: S 23°56'06.5"; E 30°19'50.9" [X 2648523.309; Y -135474.566]
17. 2330CD40: S 23°56'08.8"; E 30°19'53.8" [X 2648594.852; Y -135555.894]
18. 2330CD41: S 23°56'11.4"; E 30°21'02.0" [X 2648693.175; Y -137483.392]
19. 2330CD42: S 23°58'20.0"; E 30°17'40.0" [X 2652596.589; Y -131735.838]
20. 2330CD43: S 23°58'05.9"; E 30°17'29.8" [X 2652160.097; Y -131451.495]
21. 2330CD44: S 23°58'04.7"; E 30°17'43.1" [X 2652126.597; Y -131824.958]
22. 2330CD45: S 23°58'08.8"; E 30°17'49.9" [X 2652257.622; Y -132018.812]
23. 2330CD46: S 23°57'17.6"; E 30°17'55.9" [X 2650680.716; Y -132202.938]
24. 2330CD47: S 23°57'07.3"; E 30°18'30.2" [X 2650363.471; Y -133169.960]
25. 2330CD48: S 23°56'01.1"; E 30°19'11.6" [X 2648343.643; Y -134364.982]
26. 2330CD49: S 23°56'07.6"; E 30°19'17.8" [X 2648548.362; Y -134538.384]
27. 2330CD50: S 23°56'03.6"; E 30°19'22.0" [X 2648426.396; Y -134658.286]
28. 2330CD51: S 23°55'57.4"; E 30°19'26.6" [X 2648224.537; Y -134790.250]
29. 2330CD52: S 23°55'35.2"; E 30°19'53.3" [X 2647560.863; Y -135551.498]
30. 2330CD53: S 23°54'49.1"; E 30°19'30.1" [X 2646133.119; Y -134905.995]
31. 2330CD54: S 23°55'08.4"; E 30°18'31.6" [X 2646702.340; Y -133249.109]
32. 2330CD55: S 23°56'00.2"; E 30°17'11.1" [X 2648281.395; Y -130955.367]
33. 2330CD56: S 23°56'36.7"; E 30°17'05.0" [X 2649409.078; Y -130775.450]
34. 2330CD57: S 23°56'43.3"; E 30°18'24.9" [X 2649623.669; Y -133032.615]
35. 2330CD58: S 23°57'31.5"; E 30°16'47.3" [X 2651090.603; Y -130251.265]

APPENDIX 4: GLOSSARY AND ABBREVIATIONS

This section is included to give the reader some necessary background. It must be kept in mind, however, that these dates are all relative and serve only to give a very broad framework for interpretation.

STONE AGE

Early Stone Age (ESA)	2 000 000 - 150 000 Before Present
Middle Stone Age (MSA)	150 000 - 30 000 BP
Late Stone Age (LSA)	30 000 - until c. AD 200

IRON AGE

Early Iron Age (EIA)	AD 200 - AD 1000
Late Iron Age (LIA)	AD 1000 - AD 1830

HISTORICAL PERIOD

Since the arrival of the white settlers - c. AD 1840 in this part of the country

Eiland facie of the EIA, ie. c. AD 900-1200

Letaba facie of the LIA, ie. c. AD 1600-1800

NMC = National Monuments Council

tuyeres - clay pipes used as part of the bellows during iron smelting

Table 1: Summary of sites and impact assessment in the Olymia Mining Area (see Appendix 2)

Site no. site	Type of of impact	Significance prediction	Certainty of of impact	Status	Recommended management action requirement	Legal	
D2330CD24	Historic	Low	Definite	Neutral	1 = no further action necessary	None	
D2330CD25	Iron Age	Low	Definite	Neutral	1 = no further action necessary	None	
D2330CD26	Historic	Low	Definite	Neutral	1 = no further action necessary	None	
D2330CD27	Iron Age	High	Definite	Negative	2 = controlled sampling/mapping necessary	NMC permit	
D2330CD28	Iron Age	High	Definite	Negative	2 = controlled sampling/mapping necessary	NMC permit	
D2330CD29	Iron Age	High	Definite	Negative	2 = controlled sampling/mapping necessary	NMC permit	
D2330CD30	Iron Age	Low	Definite	Neutral	1 = no further action necessary	None	
D2330CD31	Historic	Medium	Probable	Negative	Relocation of graves necessary	Various Acts	
D2330CD32	Iron Age	Medium	Possible	Negative	2 = controlled sampling/mapping necessary	NMC permit	
D2330CD33	Historic	High	Definite	Negative	Relocation of graves necessary	Various Acts	
D2330CD34	Iron Age	High	Definite	Negative	2 = controlled sampling/mapping necessary	NMC permit	
D2330CD35	Iron Age	High	Definite	Negative	2 = controlled sampling/mapping necessary	NMC permit	
D2330CD36	Iron Age	High	Definite	Negative	2 = controlled sampling/mapping necessary	NMC permit	
D2330CD37	Iron Age	High	Definite	Negative	2 = controlled sampling/mapping necessary	NMC permit	
D2330CD38	Iron Age	High	Definite	Negative	2 = controlled sampling/mapping necessary	NMC permit	
D2330CD39	Iron Age	High	Definite	Negative	2 = controlled sampling/mapping necessary	NMC permit	
D2330CD40	Iron Age	High	Definite	Negative	2 = controlled sampling/mapping necessary	NMC permit	
D2330CD41	Iron Age	Low	Definite	Neutral	1 = no further action necessary	None	
D2330CD42	Historic	Low	Definite	Neutral	1 = no further action necessary	None	
D2330CD43	Iron Age	Low	Definite	Neutral	1 = no further action necessary	None	
D2330CD44	Historic	Low	Definite	Neutral	1 = no further action necessary	None	
D2330CD45	Iron Age	Low	Definite	Neutral	1 = no further action necessary	None	
D2330CD46	Iron Age	Low	Possible	Neutral	1 = no further action necessary	None	
D2330CD47	Iron Age	High	Definite	Negative	2 = controlled sampling/mapping necessary	NMC permit	
D2330CD48	Iron Age	High	Definite	Negative	2 = controlled sampling/mapping necessary	NMC permit	

D2330CD49	Historic	High	Definite	Negative	2 = controlled sampling/mapping necessary	NMC permit	
D2330CD50	Iron Age	High	Definite	Negative	2 = controlled sampling/mapping necessary	NMC permit	
D2330CD51	Iron Age	High	Definite	Negative	2 = controlled sampling/mapping necessary	NMC permit	
D2330CD52	Historic	Low	Probable	Neutral	1 = no further action necessary	None	
D2330CD53	Historic	Low	Definite	Neutral	1 = no further action necessary	None	

Site no. site	Type of of impact	Significance prediction	Certainty of of impact	Status	Recommended management action requirement	Legal	
D2330CD54	Iron Age	Low	Definite	Neutral	1 = no further action necessary	None	
D2330CD55	Historic	Low	Definite	Neutral	1 = no further action necessary	None	
D2330CD56	Historic	Low	Definite	Neutral	1 = no further action necessary	None	
D2330CD57	Iron Age	High	Definite	Negative	2 = controlled sampling/mapping necessary	NMC permit	
D2330CD58	Historic	Low	Definite	Neutral	1 = no further action necessary	None	

