

## 6 POTENTIAL IMPACTS AND SOURCES OF THREATS OR RISK

Xstrata Coal is currently evaluating the potential mining of the coal reserves on the farm Sandbaken 363 IS in the Zandbaken Project site. Xstrata Coal plans to mine the No. 2 seam via underground mining methods at an average depth of 40 m below surface. Coal will not be processed on site. Stockpiles on site will be in the form of topsoil on overburden. The proposed Zandbaken Project site is a greenfields area and the extent of the project area is approximately 2 890 ha.

The GS-IDP was reviewed to gain a more detailed understanding of the development context within which the Zandbaken Project area is situated. The GS-IDP represented a five-year plan to guide socio-economic development within the district municipality. Four economic sectors (agriculture, mining, manufacturing and tourism) within the Gert Sibande District Municipality were identified to promote economic growth and create employment.

Although the GS-IDP does not make references to heritage resources, it aims to increase tourism-based business and theme parks. Furthermore, the identified sectors such as agriculture, mining and tourism comprise specific types or categories of development that may impact on heritage resources in various manners. These may include increased farming, resettlement, land claims, and prospecting activities. Proposed development relative to the Zandbaken Project must therefore be taken into account.

The fossil potential of the underlying geology of the Zandbaken Coal Mine remains unknown, but there is a low potential of finding fossils in the rocks. Potential impacts may occur during the construction phase of the development which will entail substantial excavations into the superficial sediment cover as well as the underlying bedrock. These notably include site clearing and the removal of topsoil and vegetation, the construction of infrastructure such as haul roads, pipelines and storm water diversion beams, and the excavations for the underground mine. All these developments may adversely affect potential fossil heritage within the study area by destroying, disturbing or permanently sealing-in fossils that are then no longer available for scientific research or other public good.

**Table 6-1: Potential impacts on the heritage resources**

Source of risk	Potential impact	Extent	Probability
Blasting	Damage to structures older than 60 years and burial grounds and graves	Site specific	Medium

Source of risk	Potential impact	Extent	Probability
Influx of people	Vandalism, destruction of structures older than 60 years and burial grounds and graves	Site specific	Medium
Creation of mine	Change of sense of place and landscape character	Cultural landscape	Medium
Subsurface mining into bedrock	Damage or destruction of fossil resources	Site specific	Medium

These potential impacts and sources of threats and risk are limited to the impact footprint. These threats and risks will be greatest during the construction phase, where the potential to damage or destroy unidentified heritage resources is high.

## 7 RECOMMENDATIONS AND CONCLUSIONS

### 7.1 Recommendations

Based on the results of the cartographic survey, a significant number of potential heritage resources may occur within and around the Zandbaken Project area. These heritage resources include residential settlements, homesteads, stonewalling as well as burial grounds and graves.

Based on the above findings and taking into consideration the size of the proposed underground footprint which is approximately 22.82 ha, the following recommendation was considered:

- A Phase 1 HIA is recommended for the actual footprint and not the entire proposed project area as mining will be limited to the underground impacts and will not impact on heritage resources located on the surface. Surface impacts will be limited to the construction of the offices and a workshop and other surface infrastructure. The following components are recommended:
  - A Palaeontological Impact Assessment (PIA);

- An Archaeological Impact Assessment (AIA);
- A Visual Impact Assessment (VIA).

## 7.2 Conclusion

Xstrata Coal was granted a Prospecting Right in terms of Section 17 of the MPRDA for the farms Zandbaken 585 IR, Sandbaken 363 IS and Bosmans Spruit 364 IS in the Gert Sibande District Municipality of the Mpumalanga Province. A MRA for the proposed Zandbaken Project will be submitted to the Regional Office of the DMR, Mpumalanga, in November 2012. Digby Wells has been appointed by Xstrata Coal to conduct an EIA in support of the MRA in accordance to both the MPRDA and the NEMA.

Xstrata Coal is currently evaluating the potential mining of the coal reserves on the farm Sandbaken 363 IS Portion 3 of the Zandbaken Project site. It is currently planned to mine the No. 2 seam via underground mining methods at an average depth of 40 m below surface. No processing of coal will occur on site as it will be trucked to Sasol or Eskom plants. Stockpiles on site will be limited to small amounts of topsoil or hard overburden. The proposed Zandbaken Project site is a greenfields area. The extent of the project area is approximately 2 890 hectares (ha) but the actual extent of the proposed underground mine footprint is only about 22.82 ha.

As part of the EIA, a Heritage Statement was required for the project area. The Heritage Statement included a detailed and comprehensive baseline study characterising the cultural landscape. The Heritage Statement was submitted in support of the NID to the relevant heritage authorities.

The GS-IDP was reviewed to gain a more detailed understanding of the development context within which the Zandbaken Project area is situated. The GS-IDP represented a five-year plan to guide socio-economic development within the district municipality. Four economic sectors (agriculture, mining, manufacturing and tourism) within the Gert Sibande District Municipality were identified to promote economic growth and create employment.

Although the GS-IDP does not make references to heritage resources, it aims to increase tourism-based business and theme parks. Furthermore, the identified sectors such as agriculture, mining and tourism comprise specific types or categories of development that may impact on heritage resources in various manners. These may include increased farming, resettlement, land claims, and prospecting activities. Proposed development relative to the Zandbaken Project must therefore be taken into account.

No screening site visit could be conducted as access could not be arranged in time. Therefore all information contained in this Heritage Statement is based on desktop research.

Based on the results of the palaeontology desktop study, a Palaeontological Impact Assessment is recommended.

Based on the cartographic survey, a significant number of potential heritage resources may occur within and around the project area. These heritage resources include residential settlements, homesteads, stonewalling as well as burial grounds and graves.

Based on the above findings, a Phase 1 Heritage Impact Assessment (HIA) is recommended for the actual impact footprint of approximately 22.82 ha and not the entire proposed project area as mining will be limited to underground impacts and will not impact on heritage resources located on the surface. Surface impacts will be limited to the construction of the offices and a workshop and other surface. The HIA must also include:

- An Archaeological Impact Assessment;
- A Palaeontological Impact Assessment; and
- A Visual Impact Assessment.

## 8 REFERENCES

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## 8.2 Databases

Chief Surveyor General

National Automated Archival Information Retrieval System (NAARS)

University of the Witwatersrand (WITS) Archaeology Site Database

Genealogical Society of South Africa database

Council for Geosciences database

Geological Society of South Africa database

South African Heritage Resources Information Systems (SAHRIS)

## 8.3 Legislation

National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA)

Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA)

National Heritage Resources Act, 1999 (Act No. 25 of 1999) (NHRA)

South African Heritage Resources Agency (SAHRA) Minimum Standards

Association of Southern African Professional Archaeologists (ASAPA) Constitution and Code of Ethics

International Council on Monuments and Sites (ICOMOS) Guidance on Heritage Impact Assessments for Cultural World Heritage Properties (2010)