

**HERITAGE ASSESSMENT REPORT  
MERCURY SUBSTATION EXPANSION,  
ZAAIPLAATS 190/3, FEZILE DABI (DC20)  
DISTRICT, FREE STATE, SOUTH AFRICA**

**REPORT FOR PBA INTERNATIONAL**

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**19 June 2007**



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## **EXECUTIVE SUMMARY**

The area of the proposed Mercury substation expansion was surveyed on foot. No sites were discovered, but lithic artefacts were discovered in the backfilled inspection pits on the western side of the surveyed area. It is recommended that shovel testing is undertaken to determine the nature of the artefact occurrence.

## **Background information on the project**

This report forms part of the environmental impact assessment commissioned by Eskom of the area of the proposed Mercury substation expansion.

Developer: Eskom

Consultant: PBA International

Terms of reference: To assess the area of the proposed expansion of the Mercury substation

Legislative requirements: The Heritage Impact Assessment was carried out in terms of the National Environmental Management Act no. 107 of 1998 and following the requirements of the National Heritage Resources Act no. 25 of 1999.

### *Details of the area of the proposed substation expansion:*

Footprint: 900 m x 360 m to the north of the current substation

Current land use: agricultural land for grazing

The area is grassland, with sandy soil. No rock outcrops were observed, nor any rocks lying around on the surface except in the areas of recent disturbance (roads and inspection pits). The Mercury substation is about 4.5 km from Vaal River.

## **Description of area surveyed**

### *Locational Data:*

Map reference: 2726 BB Viljoenskroon (although the farm on which the proposed extension falls extends onto sheet 2626DD Stilfontein)

Province: Free State

Magisterial District: Fezile Dabi (DC20)

Farm: Zaaiplaats 190/3

### *Methodology:*

The area was searched on foot by a team of two people on the afternoon of Thursday 14 June 2007. All observations were recorded by means of a GPS. No sampling was undertaken, and the report is based on a visual inspection of the area. All animal burrows, cattle paths and any other ground disturbance, including the Eskom inspection pits, were examined for traces of subsurface material.

### *Restrictions encountered during the survey:*

Visibility of the surface of the ground was reasonable for most of the surveyed area, apart from the area to the south-west of the road, where the grass was very thick, and it was impossible to see the ground surface beneath.

### *Details of equipment used in the survey:*

GPS: Garmin etrex Summit

Digital camera: Sony cybershot

## **Background to the Archaeology of the area**

No sites in the vicinity have been recorded on the National Museum's database, apart from the rock engraving site of Bosworth, near Klerksdorp. Two other sites have been noted from the literature to occur within 100 kilometers of the surveyed area. These are as follows:

In the Klerksdorp area: (+-22 km north-west of Mercury)

- Rock engravings at Doringhoek (Doornhoek) (Clark 1959:254)

In the Orkney area:

- Iron Age, Type Z site +- 19km west of Mercury (Maggs 1976:38)

## **Description of sites and material observed:**

### *Location:*

All readings were taken using the GPS as detailed above. Accuracy was to a level of 5m.

The area has been disturbed in the past, as is evidenced by a buried plastic pipe. Recent disturbance includes new roads in the south-western section of the surveyed area (see map), along the eastern and southern boundaries (the latter is against the northern fence of the current substation). Further disturbance in the form of various inspection pits was noted in the area. The inspection pits appeared to have been dug with a back-actor and then refilled. All of the disturbed areas were also surveyed for subsurface material which had possibly been brought up to the surface.

### *Description of sites:*

No sites were found in the area surveyed. However, although the inspection pits are now filled up, three of the pits examined yielded archaeological material in the form of stone artefacts.

### *Description of material:*

Three of the inspection pits yielded artefacts. One pit yielded five artefacts, another three and the third one. These artefacts had been brought up from an unknown depth (probably no more than a metre or two), and were mostly undiagnostic flakes with one blade-like flake which could be Middle Stone Age. Raw material included cryptocrystalline, chert and quartz.

### *Distribution of material*

The three inspection pits which yielded material are all in the southern part of the surveyed area (see map). The sandy soils of the area could be wind blown Kalahari sands, which would date to the last 10 000 years. The artefacts may or may not be in situ in the sands, as artefacts can move in sandy contexts through water action, trampling and other circumstances. The occurrence of the artefacts in sandy soils that yielded no other lithic material on the surface has to be investigated further.

## **Statement of Significance (Heritage Value)**

The significance of these artefacts is difficult to determine (in terms of Heritage value) with the current small sample.

## Field Rating

The field rating for the area would be:

Generally Protected B (Field Rating IV B): this site should be recorded before destruction (generally Medium significance);

After shovel test pits the rating may change to:

Generally Protected C (Field Rating IV C): this site has been sufficiently recorded (in the Phase 1). It requires no further recording before destruction (generally Low significance).

See recommendations below.

## Risk preventative measures associated with construction

Summary of the measures

<b>Aspect</b>	
Existing and newly discovered sites of archaeological interest	Artefacts noted in three inspection pits. These were subsurface, so extent and character of context unknown
<b>Impact</b>	
Damage to existing and newly discovered sites	Substation foundations may impact on artefact occurrence (depending on depth of both)
<b>Mitigation</b>	
Identify roles and responsibilities	Archaeological investigation (shovel testpits) to determine significance of artefact occurrence. Further mitigation may be required (but unlikely)
Regulations and permits	Permit required from SAHRA

## Recommendations

The foundations of the substation (pylons and buildings) will have an impact on subsurface material, depending on the depth of the foundations and the material. It appears that there is subsurface material on the western side of the substation expansion area.

The following recommendation is made:

That shovel testing (under permit from SAHRA) is carried out in the south-western side of the proposed substation area. On the basis of the shovel test pits, further mitigation, or not, will be recommended.

A small area of the inspection pit should be opened to reveal the profile of the pit, and the opened area can be extended slightly in order to understand the nature of the artefact occurrence.

**NOTE:** Should the developer encounter any heritage resources, not reported on in this document, and as defined and protected by the NHRA (1999) during the course of development, the developer should immediately cease operation in the immediate vicinity and report the site to SAHRA or an ASAPA accredited CRM archaeologist.

## References:

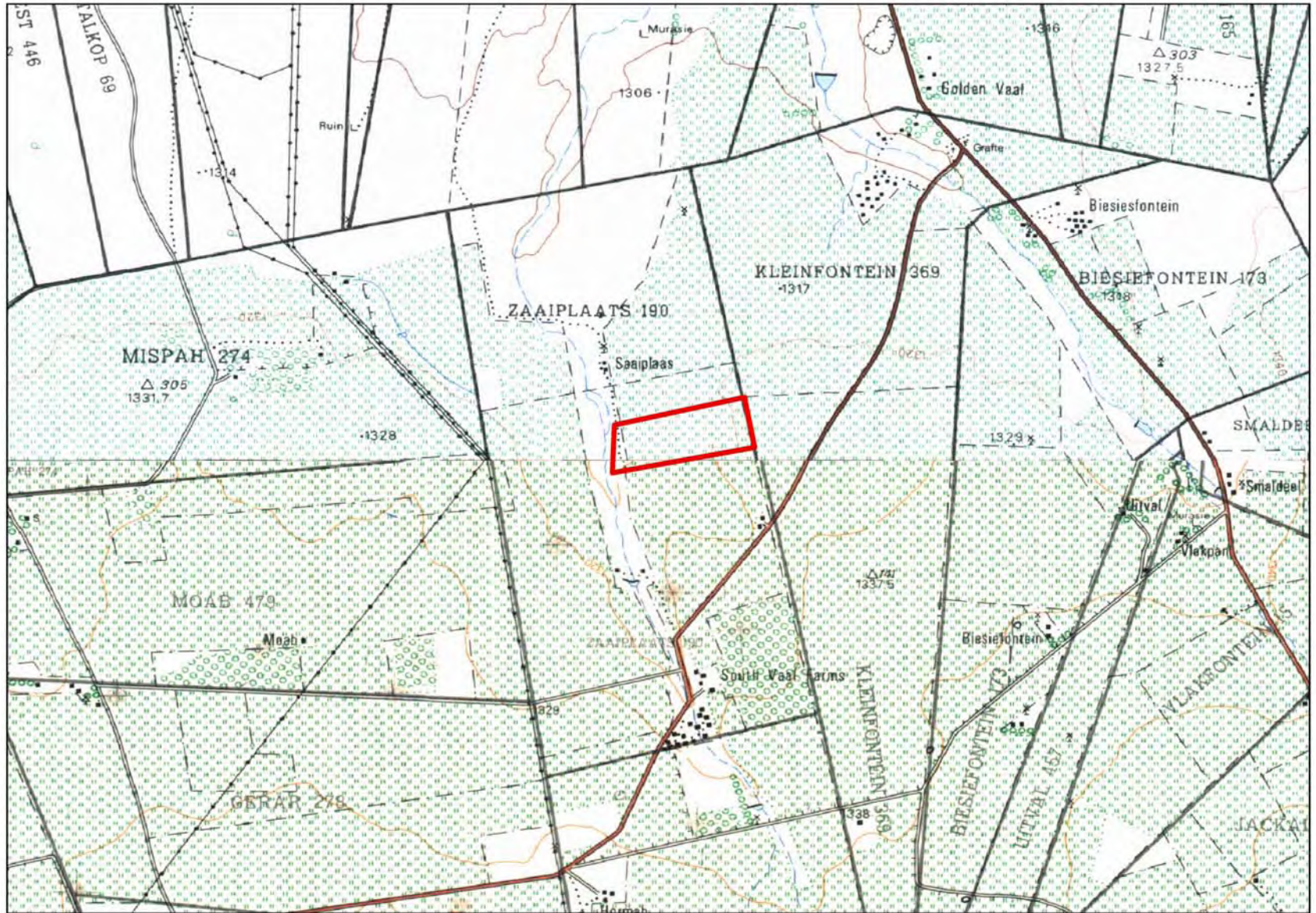
Clark, J. D. 1959. *The Prehistory of Southern Africa*. Penguin Books.


Maggs, T. M. O’C. 1976. *Iron Age Communities of the Southern Highveld*. Natal Museum, Pietermaritzburg.

## MAPS:

<b>Legend Map 1-2</b>					
<b>Mercury Substation Survey</b>					
<b>Map Signage</b>	<b>Notes</b>	<b>South</b>	<b>East</b>	<b>Latitude(Y)</b>	<b>Longitude(X)</b>
<b>B</b>	Boundary point	26 59 58.8	26 49 16.9	-26.99967	26.82136
<b>B</b>	Boundary point	26 59 46.8	26 49 14.4	-26.99630	26.82067
<b>B</b>	Boundary point	26 59 53.4	26 48 42.9	-26.99817	26.81192
<b>B</b>	Boundary point	27 00 05.0	26 48 42.4	-27.00139	26.81178
<b>L</b>	EW_Line	26 59 51.1	26 48 56.4	-26.99750	26.81564
<b>L</b>	EW_Line	26 59 52.3	26 48 49.1	-26.99786	26.81364
<b>R</b>	Road	26 59 56.8	26 48 47.6	-26.99911	26.81322
<b>R</b>	Road	27 00 02.5	26 48 57.5	-27.00069	26.81597
<b>BR</b>	Burrow check	26 59 50.7	26 49 15.2	-26.99742	26.82089
<b>IP_A</b>	Inspection pits with artefacts	26 59 58.0	26 48 50.3	-26.99944	26.81397
<b>IP_A</b>	Inspection pits with artefacts	27 00 00.4	26 48 54.0	-27.00011	26.81500
<b>IP_A</b>	Inspection pits with artefacts	26 59 52.0	26 48 48.7	-26.99778	26.81353





Legend  
 Surveyed Area

900 450 0 900 Meters

1:50 000 Sheets  
 2626DD & 2726BB

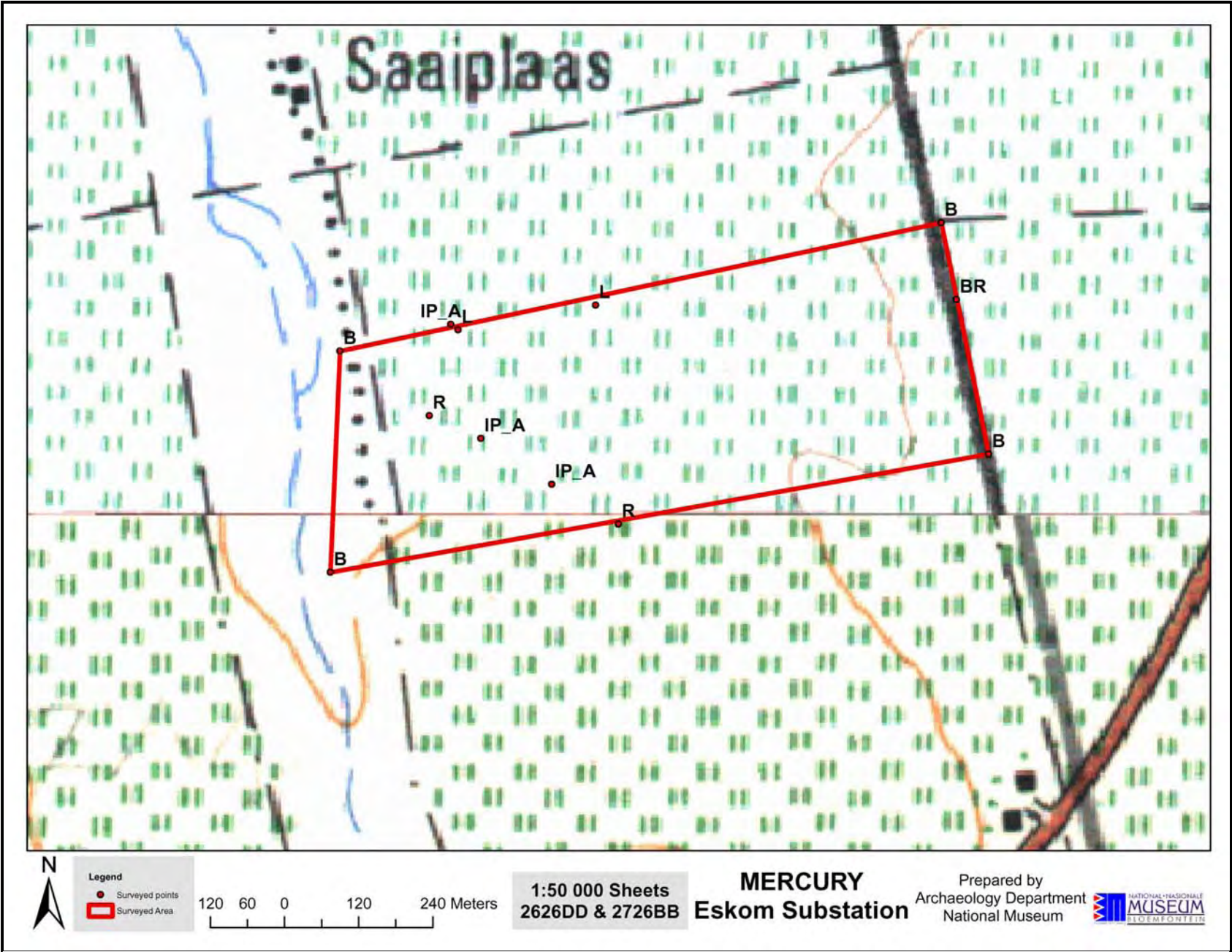
**MERCURY**  
**Eskom Substation**

Prepared by  
 Archaeology Department  
 National Museum



Map 1: LOCATION OF SURVEYED AREA, ZAAIPLAATS 190/3, FEZILE DABI (DC20) DISTRICT, FREE STATE, SOUTH AFRICA





Map 1: LOCATION OF SURVEYED AREA, ZAAIPLAATS 190/3, FEZILE DABI (DC20) DISTRICT, FREE STATE, SOUTH AFRICA



**PHOTO ESSAY:**



Photo 1: General view looking west over surveyed area



Photo 2: General view looking SE over surveyed area





Photo 3: Thick grass cover SW of dirt road



Photo 4: Clear area





Photo 5: Animal burrow – no visible artefacts





Photo 6: Cattle paths



Photo 7: Buried pipe – indicating previous disturbance





Photo 8: Road running NW to SE – Photograph taken looking SE





Photo 9: Cleared area looking south on eastern boundary of surveyed area



Photo 10: Cleared area looking west on southern boundary of surveyed area





Photo 11: Inspection pit



Photo 12: Inspection pit





Photo 13: Inspection pit containing artefacts (see photo 14)





Photo 14: Stone artefacts



Photo 15: Stone artefacts