

**THE ARCHAEOLOGICAL EXACAVATIONS AT HILLENDALE MINE, KZN**

**For Tigor Pty Ltd.**

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## **INTRODUCTION**

UMLANDO routinely surveys the Hillendale Mine site for TICOR Kwa-Zulu Natal (Pty) Ltd. TICOR personnel informed us of the existence of an Iron Age furnace as we were not due to survey the area for a while. Our assessment suggested further excavation as no complete furnace had yet been excavated in this area. By doing this, the furnace would be removed completely prior to the topsoil clearance.

### **HIL20**

HIL20 is located on the south of the road from the Harbour Lights resort (S28<sup>0</sup> 49' 48.6", E31<sup>0</sup> 56' 13.0"). It was exposed during previous road cutting activities. The site consists of a single, partially exposed furnace, in the road cutting, under sugarcane and a termite mound, as well as a variety of potsherds in the vicinity. Both Early and Late Iron Age sherds are located in this area and thus the furnace can only be dated to the last 1 700 years. However, the furnace and the potsherds are most likely in association with a nearby, previously recorded, Early Iron Age site<sup>1</sup>.

### **METHOD**

The main furnace was still imbedded in the road cutting, under a termite mound and below the sugarcane. We removed the sugarcane above what was surmised to be the extent of the furnace. The termite mound was excavated to the level of the top of the furnace and then the remaining soil was cleared away to reveal the outline of the top of the furnace. A platform was dug into the road cutting below the furnace and the termite mound was removed to the exposed furnace wall.

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<sup>1</sup> More Early Iron Age sherds are located in this area.

Samples of the slag were taken, as well as soil samples, clay samples, ash samples and a charcoal sample (for use in C14 dating). Samples were also submitted to the Hillendale laboratory for analysis.

We decided to divide the furnace into four quadrants, as the furnace walls were friable. This would allow for removal of the furnace whilst still keeping the wall as intact as possible. It would also allow for the walls to be re-assembled at a later stage. Even with these precautions the wall still collapsed.

A digital record (photographic and video) was taken of the excavation.

### **THE FURNACE**

The furnace was only partially exposed by the road cutting and a termite mound surrounds it (fig. 1). The rim of the furnace appears to be a circular/oval hole was dug into the ground and lined with clay, and then hardened with use. This is unlike other (Early) Iron Age furnaces in Kwa-Zulu Natal where the wall varies from 5 cm to 15 cm in thickness

The furnace wall consists of fire hardened clay, with a max. diameter of 80 cm at the top (fig. 2). The furnace wall is approximately 5cm wide at the top and gradually becomes thinner until it is almost non-existent at the base. The base of the furnace consisted of small fragments of slag, a single large piece of bloom, compacted grey ash and some charcoal. The tuyères were located near the top of the furnace.

The furnace as a whole yielded very few large pieces of slag, two pieces of bloom and tuyère fragments. There is a minimum number of 2 tuyères.

**FIG. 1: INITIAL VIEW OF HIL20 FURNACE**



**FIG. 2: PROFILE OF THE PART OF THE HIL20 FURNACE**



**FIG. 3: COMPLETE PROFILE OF HIL20 FURNACE**



The low frequency and weight of slag and tuyéres suggest that this may be a smithing site and not a smelting site – see Table 1.

**Table 1: List of Artefacts and Weights from Hill 20**

<b><u>ARTEFACT</u></b>	<b><u>TOTAL</u></b>
C14 Sample	1 (approx. 20 grams)
Soil Sample	1
Soil Sample from outside furnace wall	1
Ash Sample	1
Tuyéres	3.12 kg
Furnace Wall NW Quadrant	3.05kg
Furnace Wall NE Quadrant	4.91kg
Furnace Wall SW Quadrant	5.71kg
Furnace Wall SE Quadrant	2.77kg
Total Furnace	16.44kg
Slag Sample	4.93kg

### **MANAGEMENT PLAN**

The furnace and associated artefacts have been removed. However, other smelting sites in Kwa-Zulu Natal suggest that they seldom occur as a single feature. It is possible that more furnaces still occur in the adjacent sugarcane. Alternatively, the road cutting removed the other remaining furnaces, if they existed. We suggest that we be contacted before mine clearance removes the adjacent sugarcane/topsoil. This would allow for an archaeologist to be on site if any secondary furnaces occur.

## **CONCLUSION**

The salvage excavation of the furnace at HIL20 took place over two days. The furnace and associated artefacts were removed. They will be curated (and stored) at the offices of Amafa aKwazulu Natali in Pietermaritzburg.

The furnace is a rare example of Early Iron Age metalworking. This type of furnace shape is unrecorded. Samples of slag, soil, ash and clay were removed and a full photographic record of the excavations exist.

The salvage excavation of this furnace is complete. However, the possibility of secondary furnaces on the site is definite and a management plan will have to be put in place. We suggest that on-site monitoring occur during sugarcane clearance. We would need to be notified in advance of such activity.

The sample sent to the Tigor labs are hoped to yield information regarding raw material used for making the iron, the source of these raw materials, and if possible, the temperatures required to smelt the iron.