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**ARCHAEOLOGICAL ASSESSMENT FOR THE RHINO  
ANDALUSITE MINE  
SECOND REPORT**

A final Phase 1 report prepared for Rhino Minerals

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**INTRODUCTION**

The Rhino Andalusite Mine, a division of Rhino Minerals, intends to explore for andalusite on the farms Buffelsfontein 350 KQ and Tygerkloof 354 KQ near Thabazimbi in the Limpopo Province. The exploration involves clearing a road and drilling, in order to follow the ore body along the sides of a small range of hills.

Neighbours of the mine called attention to the existence of a possible 'ancient working' in the area and a cave that could have archaeological interest. As a result, Rhino Minerals commissioned Archaeological Resources Management (ARM) to examine the area. In keeping with various Minerals, Environmental and Heritage legislation, ARM was also asked to provide the archaeological component to the mine's Environmental Management Programme.

**METHOD**

ARM staff made three trips to the project area. The first visit took place on 22 November 2004 in the company of Mr. K. Makotore from Rhino Minerals. That visit completed the initial examination of the cave and ancient mine, and part of the Buffelsfontein road system (Huffman, November 2004). The second trip took place on November 30 in the company of Professor P. Bonner (History, Wits University), Dr. S. Hall (Archaeology, UCT) and Dr. D. Miller (archaeo-metallurgy, UCT). This second trip involved a closer examination of the ancient mine as well as a village site recorded on the first visit. The third and final trip occurred between 11 and 13 December. This third trip completed the examination of the road system on Buffelsfontein and the new road through Tygerkloof. In all cases, sites were recorded with a hand-held GPS instrument and then transferred to the 1: 50 000 maps 2427 CA Kaaldraai and 2427 CB Thabazimbi. Site numbers follow Wits' national recording system.

Site significance was determined by standard criteria, including integrity (primary vs. secondary deposit), depth of deposit, number and variety of features, uniqueness and the potential to answer present research questions. Sites with no significance do not require further attention, low to medium significance may require mitigation, while sites with high significance should not be disturbed at all.

## RESULTS

This report combines the results from all three trips (Figure 1).

### *Ancient Working*

**2427 CB 13**, the 'ancient working', stretches from 24 42 42.9S 27 16 12.4E to 24 42 39.3S 27 15 56.3E. It consists of a long open trench (Figure 2) and an under ground stope with at least four ventilation shafts about 20m apart, sealed off in recent times with metal grids (Figure 3). Other than the protective measures, these workings are largely undisturbed. They are unquestionably the result of Pre-Colonial mining, and the technology is similar to the ancient workings at Rooiberg.

Material in the soil heaps alongside the long trench suggests that the miners were after red ochre. The red ochre itself was probably a local phenomenon caused by specific geological conditions. A large tufa deposit on the surface indicates that a spring, or stream, once broke the surface here. The resultant moister appears to have hydrated banded ironstone that had eroded from the hill above, creating a seam of ochre under the natural flow of the spring.

Although the desired mineral was ochre rather than tin, the same method of mining was used for both. Since most of the known ancient tin mines have been destroyed, this site is a rare example of early mining technology. Furthermore, the mine can help clarify the history of tin mining in southern Africa. The site therefore has *high significance*.

### *Road and Drill Zone*

The early miners may have lived in some of the Late Iron Age settlements found in the project area.

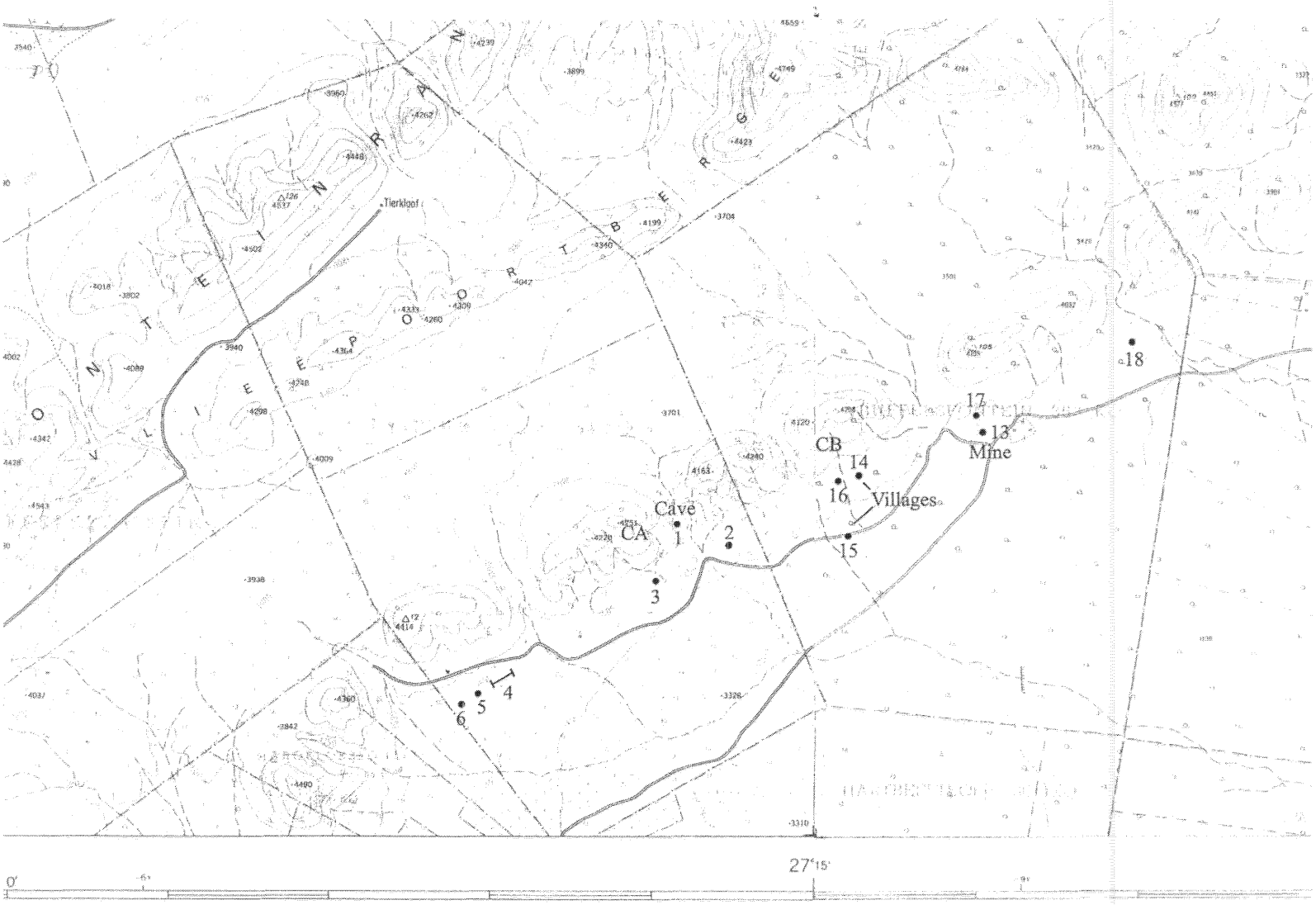


Figure 1. Archaeological sites recorded during the assessment on maps 2427CA and 2427CB.

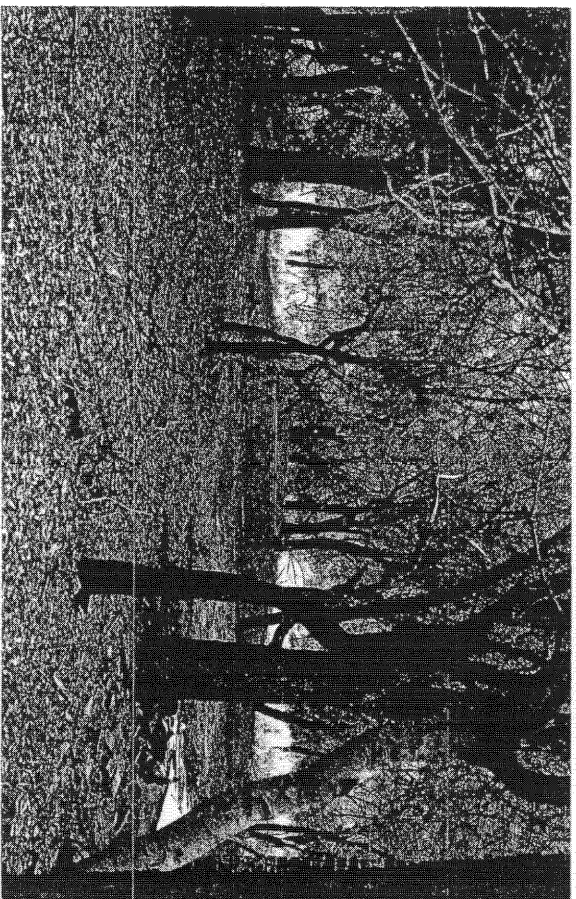
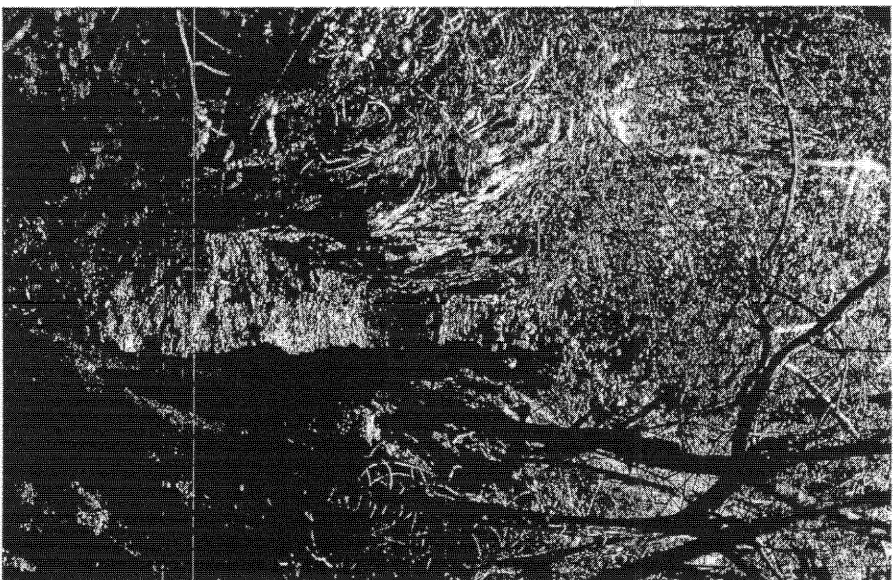


Figure 2. Site 1, ancient working. Open trench (above), ventilation shaft protected by bricks and grid (below).

The best remains, **2427 CB 14**, occur at the junction of Mining Sections 8 and 9 (24 42 56.1S 27 15 18.6E). The remains include upper and lower grindstones and at least four, burnt daga (mud and dung mixture) structures, two of which were living huts (Figure 4). In addition, the bases of two iron-smelting furnaces (Figure 5) stand upslope of the daga houses. We originally thought the associated pottery belonged to the *Iron facies* of the Moloko group. A larger sample, however, shows that it should be assigned to the *Roiberb facies* of Moloko (Figure 6), dating to between AD 1600 and 1800. Maize grindstones associated with a collapsed grain bin suggest that this village dates to 1750, when the Portuguese introduced maize at Maputo. The wide variety of features and good preservation gives CB 14 *medium significance*.

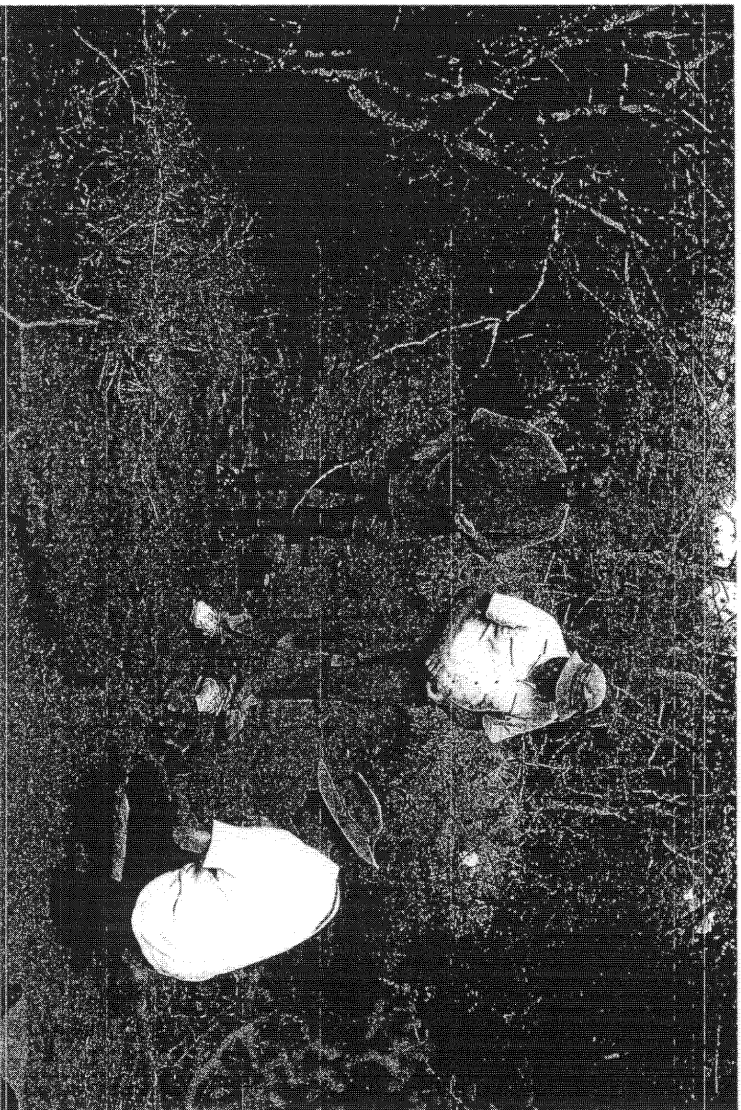


Figure 4. Daga hut floor exposed at 2427 CB 14.

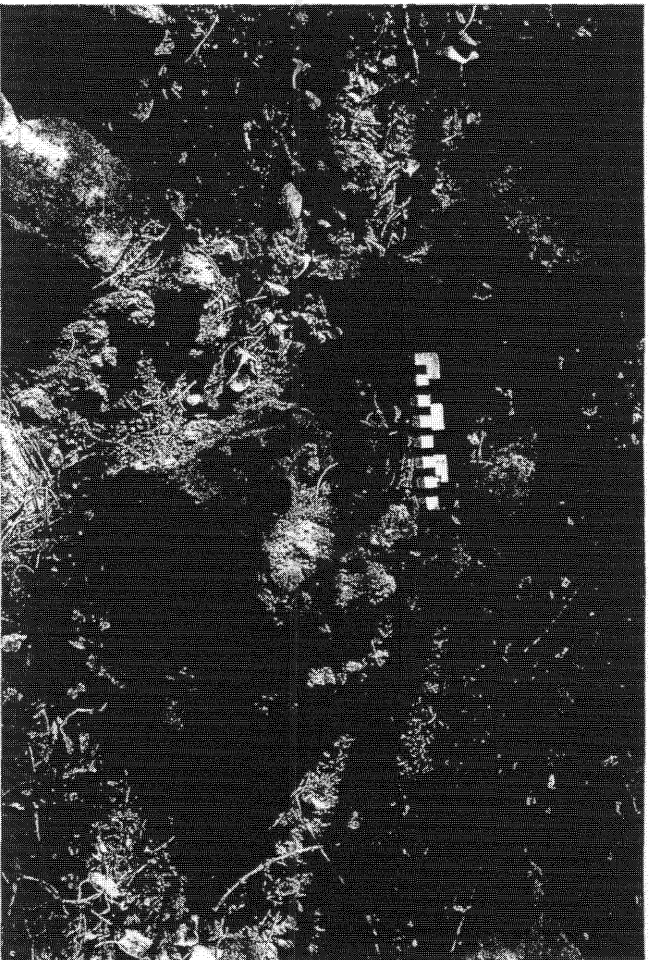


Figure 5. Remains of iron smelting furnace at 2427 CB 14.

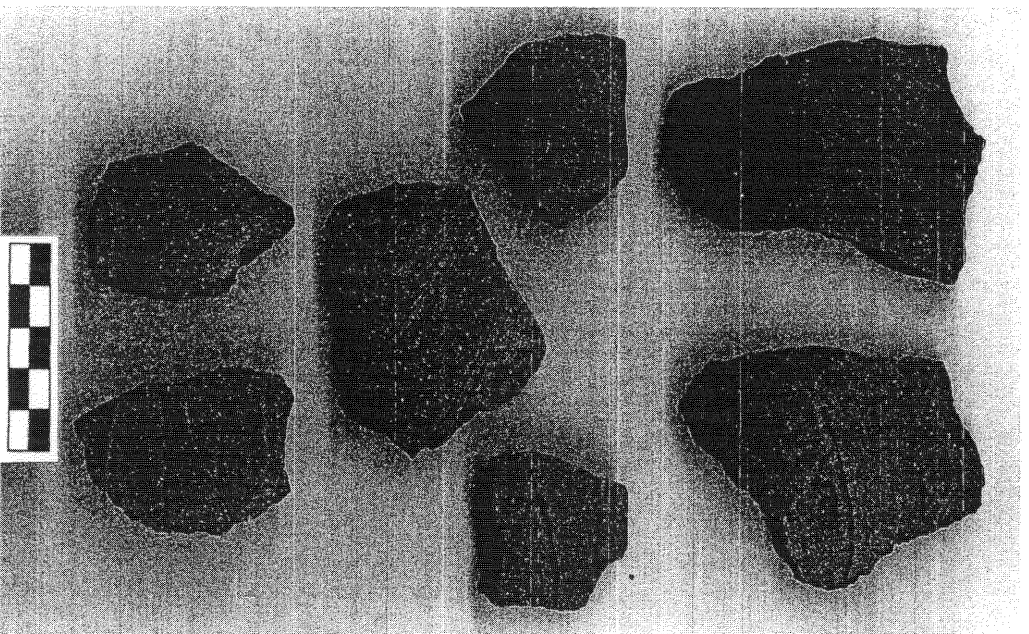


Figure 6. Rooiberg pottery from 2427 CB 14.

A second Moloko settlement (24 43 17.7S 27 15 12.8E), **2427 CB 15**, lies exposed in a farm road a few hundred metres below the first village. The pottery appears to be the same. Pottery, stone, burnt daga and a few pieces of iron slag are scattered along the road for about 50m. This site stands outside the project area and is not in further danger. In any case, it has *low significance*.

Another pottery scatter and an upper grindstone marks a Rooiberg village, **2427 CB 16**, at 24 42 56.6S 27 15 10E. This site has *no significance*.

The new road works on Tygerkloof exposed five other Late Iron Age villages. Site **2427 CA 2** (24 43 20.8S 27 14 28E) consists of Rooiberg pottery scattered around surveyor peg ESS 0835. This site has *no significance*.

Site **2427 CA 3** (24 43 34.5S 27 14 02E) contains Rooiberg pottery and some burnt daga in the road, as well as a bottom grindstone and a low stone arc above the road. Because of the daga, this site has *low to medium significance*.

Site **2427 CA 4** stretches from 24 44 05S 27 13 09E to 24 44 09S 27 13 02E. Rooiberg pottery clusters around peg ESS 0780, while burnt daga and an iron slag concentration (06.7S 06.9E) lie in the road a few meters to the west. Four more daga patches (Figure 7) and another slagheap are visible in the road further west. These features may have originally belonged to more than one homestead. The size and variety of features gives this site *medium significance*.





Figure 7. Burnt daga in road at 2427 CA 4.

Site **2427 CA 5** (24 44 12.5S 27 12 57.8E), near peg ESS 0779, yielded a few pieces of graphite pottery and therefore it probably belongs to the Rooiberg facies. A few pieces of burnt daga give this site *low to medium significance*.

Site **2427 CA 6** (24 44 15.8S 27 12 52.6E), near the west end of the drilling area, encompasses Rooiberg pottery and an iron slag concentration in the road. Another area contains clay blowpipes about 30m to the west. The evidence for metal production gives this site *low to medium significance*.

#### Cave

Site **2427 CA 1**, the cave (24 43 12.4S 27 14 12E), is located near the new power line (Figure 8). It occurs in a tufa deposit on the steep slope of a low hill. Recent flowstone covers most walls, and small stalagmites hang from the drip line. The cave itself is about 10m wide and 4m deep, with a flat floor. A few potsherds lie on the floor. Stone artefacts are not obvious, but a Stone Age deposit could be covered by flowstone. Some walls appear to retain the vestiges of red ochre painting, and there is one crude yellow figure. Presumably, the cave had ritual significance to early black farmers in the area.

Because of the power line, the cave is well away from the mining zone, and mining activities do not pose a threat.

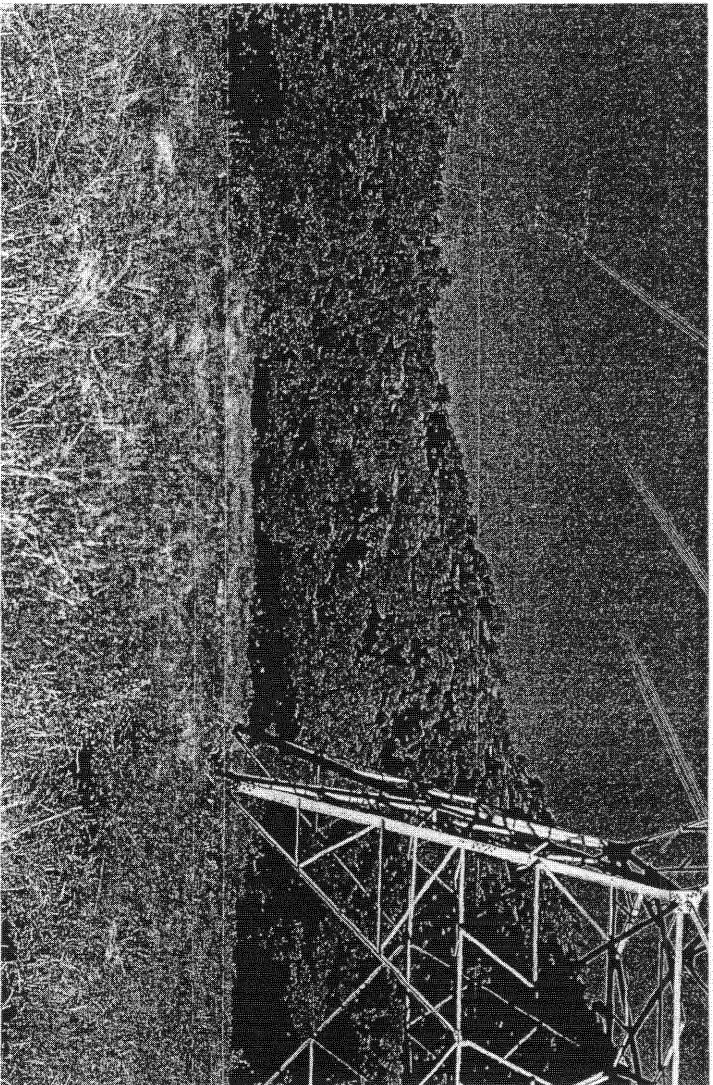


Figure 8. Cave site 2427 CA 1 in centre distance.

#### *Quarry Area*

Middle Stone Age (ca. 250 000 to 25 000 years ago) artefacts (Site **2427 CB 17**), such as cores and flakes, lay scattered over a low knoll above the ochre mine (24 42 34.7S 27 15 59.6E). Quartz was the preferred raw material. This site has *no significance*.

#### *Area 6*

East of the present working pit, the flat terrain carries a good cover of arable red soil deposited by a stream flowing between the hills. An arc of stone-and-daga grain bin foundations (Figure 9) on this red soil (Figure 10) marks an Early Iron Age settlement (Site **2427 CB 18**). The arc (24 42 11.3S 27 16 58.5E) is about 150-200m across and may represent one large village. The pottery belongs to both the *Mzoviani* and *Happy Rest facies* (Figure 11), and, if associated, dates the site to about AD 500. One fragment (Figure 12) comes from a clay sculpture, known as a Lydenburg Head, and is rare.

Because of the clay sculpture, large size and good state of preservation, CB 18 has *medium significance*.

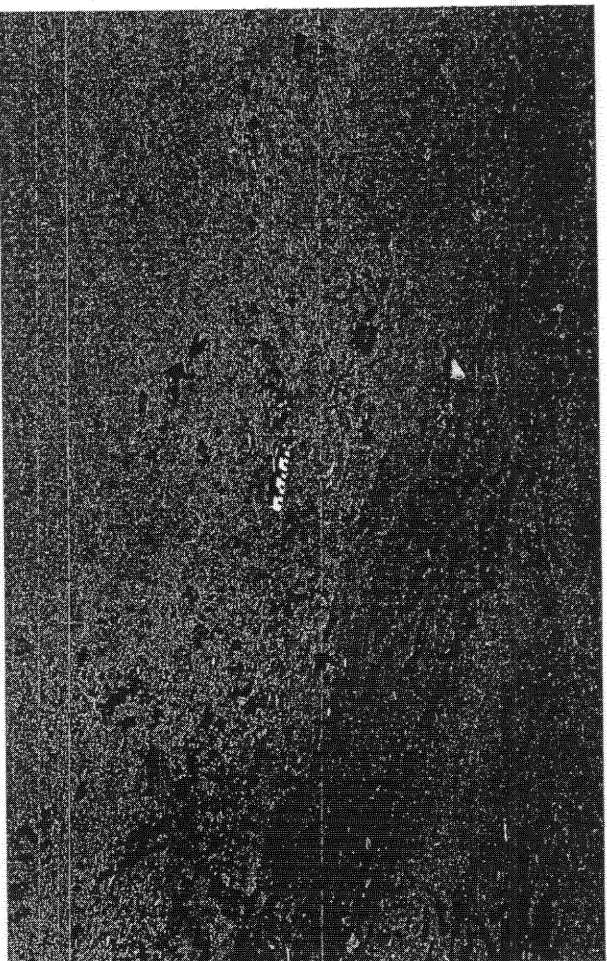


Figure 9. Stone-and-daga grain bin foundation at 2427 CB 18.

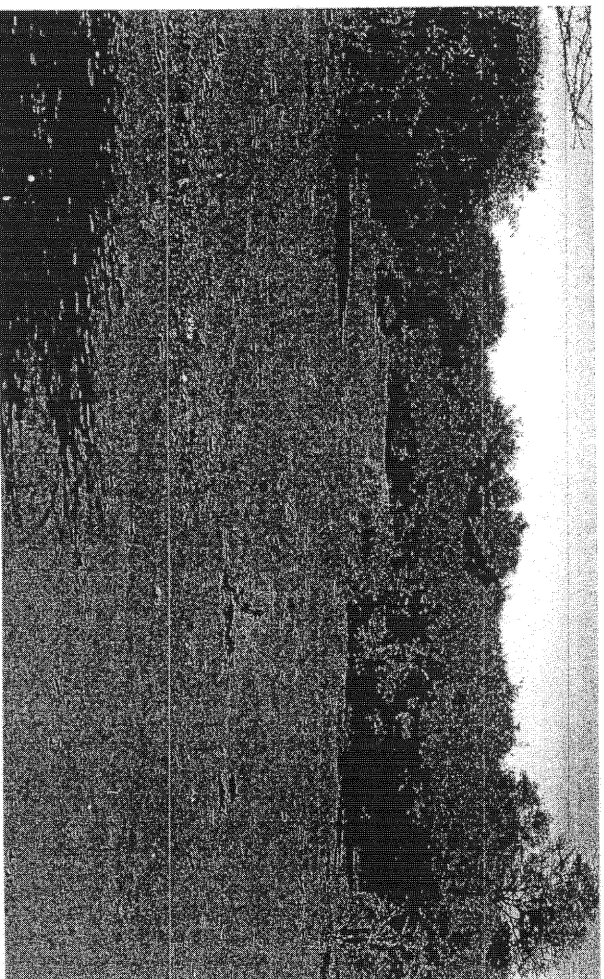


Figure 10. Site 2427 CB 18 in red soil area. Note daga feature to left.

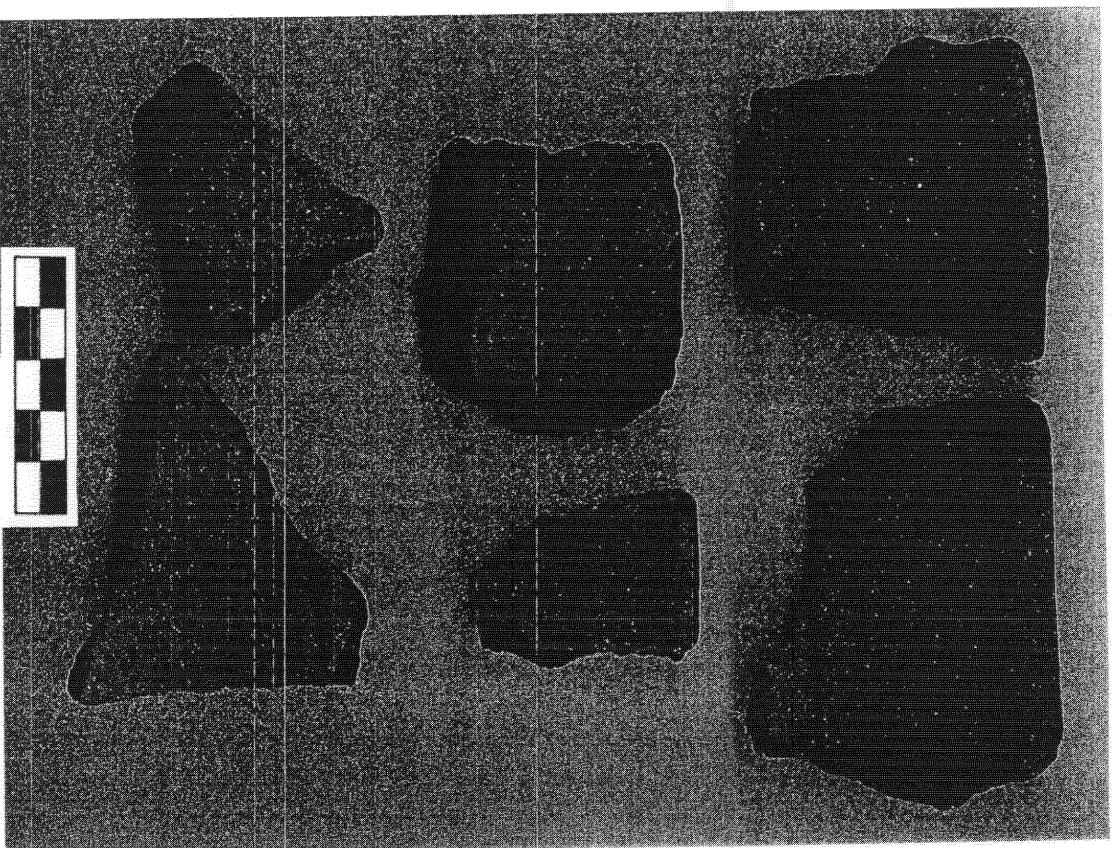


Figure 11. Early Iron Age pottery from 2427 CB 18.

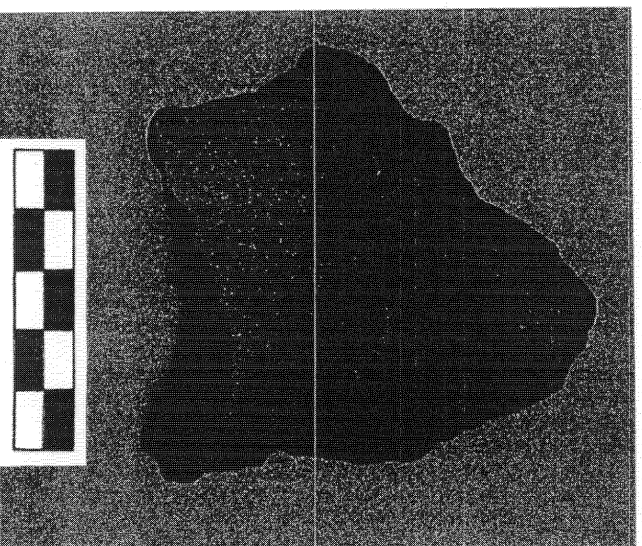


Figure 12. Fragment of clay sculpture from 2427 CB 18.

## DISCUSSION AND RECOMMENDATIONS

The Early Iron Age is of present research interest because it was the first time when black farmers moved into South Africa. According to the ceramic evidence, the early farmers moved south in two streams: some people came down the East Coast to Mocabique and then inland, while others came from the west through Angola and Botswana (Huffman 1989). We know that by the 7<sup>th</sup> century AD, the two had merged to various degrees in different places. The two types of pottery at 2427 CB 18 may well be evidence for the earliest interaction.

The clay sculpture adds further interest to the Early Iron Age site. First found in the Lydenburg district (Inskip & Maggs 1975), these 'heads' probably represented supernatural forces invoked during initiations and related rituals. Because chiefs normally controlled such rituals, CB 18 was most probably a chief's headquarters.

Site 2427 CB 18 is clearly worthy of further attention. First, the complex should be mapped to determine the spatial layout and number of homesteads. Secondly, several features should be excavated to uncover architectural details, as well as to provide a large ceramic sample, carbon for radiocarbon dating, and more fragments of clay sculptures. Furthermore, although Rhino Minerals does not intend to mine Area 6, site CB 18 still needs to be demarcated to avoid unforeseen damage.

The two Late Iron Age villages with medium significance also require mitigation. The first Moloko village, Site 2427 CB 14, is the best example located in the project area. Some of the huts and the two furnaces should be excavated. Site 2427 CA 4, at the west end, should receive the same treatment.

The people living in these villages may well have worked the red ochre mine. This possibility helps to explain the development of tin mining and bronze working in southern Africa. Evidentially, bronze objects first appear at Mapungubwe at the Shashi-Limpopo junction in the 13<sup>th</sup> century AD, but the bronze was imported (Fouche 1937; Miller 2002). Later, during the Great Zimbabwe phase, AD 1300 to 1450, full-time specialists produced bronze bangles and ceremonial spears from tin sources in

Zimbabwe, such as Cornucopia near Rusape (Prendergast 1979). As the demand for bronze objects grew, someone discovered tin deposits in the Waterberg. Or perhaps the tin was known as a result of earlier copper working (Grant, *et al.* 1994). Whatever the origin, two different kinds of evidence show that Rooiberg tin was traded north: first, a tin ingot found on the floor of a 16<sup>th</sup> century house at Great Zimbabwe bears the chemical fingerprint of the Rooiberg area (Grant 1999), and secondly, the Transvaal Red Balloon tree, endemic to a small area around the Waterberg, grows as an exotic at Khami, the 15<sup>th</sup> to 17<sup>th</sup> centuries successor to Great Zimbabwe near present-day Bulawayo. Now, the 16<sup>th</sup> century is when Western Sotho-Tswana (such as Bakwena, Bakgatla, etc.) lived around Rooiberg. They are recognised by their distinctive pottery, called Madikwe (Huffman 2002), and they mined tin using techniques developed in Zimbabwe for gold. Sometime around AD 1650, Madikwe pottery changed into the Rooiberg style (Hall 1985), reflecting the incorporation of BaFokeng people from the south. Radiocarbon dates from Rooiberg and other evidence show that Sotho-Tswana continued to mine the tin. It is therefore most likely that Rooiberg people, living in settlements such as 2427 CB 14, mined the red ochre with the same techniques. This is why we originally thought the miners were after tin. The red ochre itself had a high trade value, and the mine was probably part of the larger trade network. Maize spread along this network from Maputo, and this is probably why there are maize grindstones on CB 14.

Even though Rooiberg people dug the trench and stope for red ochre and not tin, the ancient working, 2427 CB 13, is still worthy of official recognition as a heritage site. Fortunately, it lies outside the mining zone, but it nevertheless needs protection against accidental damage and other unforeseen dangers. (Fencing has already started). Furthermore, the impact of blasting on the underground stope needs to be monitored by specialists as part of the mine's normal operation.

Finally, mining does not endanger the cave, 2427 CA 1, but visitors pose a threat to the flowstone. Perhaps the cave should be fenced and a small notice board erected warning visitors about the fragile nature of the formation.

If the mitigation measures for the cave, ochre mine, and Iron Age villages are accepted, there is no archaeological reason why the mining project should not continue.

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