

THE ARCHAEOLOGICAL EXCAVATIONS AT PED3 AND EKU4,
PORT EDWARD, KWAZULU-NATAL

FOR EKUBO ECO ESTATE
&
STAR CHOICE TRADINGS (PTY) LTD

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EXECUTIVE SUMMARY

Umlando excavated two archaeological sites that were to be affected by the development of the Ekubo Eco Estate, north of Port Edward. These excavations are the cumulative result of several surveys and test-pit excavations that have occurred for this development over the last few years. Two areas were marked as having high significance and these were excavated. The first excavations occurred in 2005 and were test-pit excavations. These excavations tested the potential of the site. The test-pit excavations concluded that further mitigation would be required.

PED3 has been marked as a possible location of the campsite for the survivors of the São João shipwreck. The 2006 excavations consisted of 84 2m x 2m squares on PED3. Several artefacts relating to the São João were recovered, as well as a Late Stone Age site. No features or significant finds relating to the São João were observed.

EKU4 consisted of 14 2m x 2m squares on two plots in 2006 and sixteen squares were excavated in the 2005 season. This site consisted of a Late Iron Age (LIA) and a Middle Stone Age (MSA) deposit. No features and significant artefacts were recovered from the LIA deposit. The MSA deposit consisted of a variety of stone tools of which some were potential features.

We believe that the archaeological excavations at the Ekubo Eco Estate are complete. However, both sites would require monitoring by a qualified archaeologist during any construction activity. The monitoring may stop construction if excavations are required.

INTRODUCTION

The KwaZulu Natal Heritage Act of 1997 protects the historical and archaeological sites. The National Heritage Resources Act of 1999 protects those archaeological areas within the Admiralty Reserve. Both Amafa aKwaZulu Natali and the South African Heritage Resources Agency (SAHRA) have been informed of all developments and reports regarding this development. The development occurs just north of Port Edward on land that was previously used as a dairy farm.

The wreck of the São João and the possible survivor campsite is an area of concern for this development. Preliminary research (Maggs 1984; Burger 2003) suggests that the general area of development is the likely location of the 1552 São João campsite. Shipwreck campsites are of high significance for several reasons. The vessels often carried cargo to-from Europe and the East and thus they would leave evidence of such trade. Campsites are rare in southern Africa, as many have been inadvertently destroyed by development. Those few that may survive are thus important because of the rarity. A shipwreck often results in loss of life. Graves of these mariners should also occur in the vicinity of the shipwreck and/or camp. Researchers have noted that there may be a mass grave of approx. 150 sailors and slaves dating to the São João in the development area.

The possibility of the São João shipwreck campsite in the affected area has been a major source of concern with this development.

The initial survey in July 2004 by Umlando, in conjunction with previous research, demarcated several areas as having archaeological sites, or a potential São João campsite (Fig. 1).

Several test-pit excavations were undertaken by Umlando in 2005 to determine the potential of the each site. The test-pit excavations at PED3 yielded several São João artefacts in the upper layers, a few Late Iron Age (LIA) artefacts in the upper and middle layers, and a Late Stone Age (LSA) deposit in the lower layers. Both the São João and LSA levels were considered significant.

The test-pit excavations at EKU4 noted that site had the potential to yield information regarding the early to mid-19th century. We also thought that skeletal remains might occur on the site as organic remains were well preserved.

METHOD

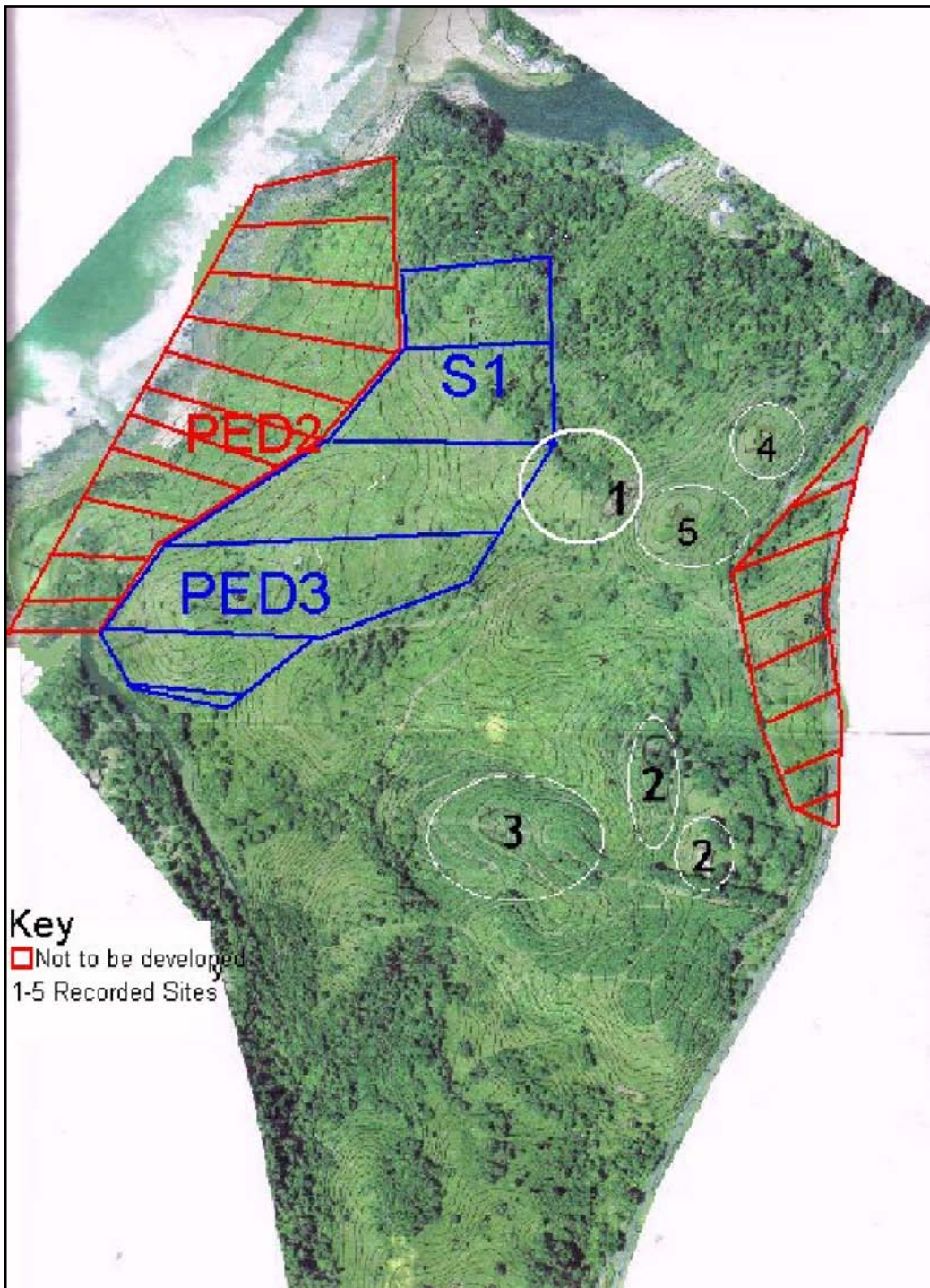
Several plots were demarcated as being sensitive and at least five excavation squares per plot. Those plots that had been previously impacted by old roads, sand borrowing activity, or had steep slopes, had fewer excavations.

The locations of these squares tend to be in the housing footprints. They are also in close proximity to each other so that large features (such as the mass grave) would not be missed if they did occur on the plot.

Each excavation square was 2m x 2m in size and varied in depth. In general, the squares went to a depth of 0.7m; however, a few went down to 1m in depth. The basal layers were noted due to the beginnings of a hard red clay, granite-like boulders, or a light aeolian beach sand. The basal layers were extended by 20 cm – 30 cm, as test spits, in most of the squares. These are not shown in the stratigraphic drawings. On a few occasions, termite nests were encountered, and these affected the depth of the square.

The layers were excavated in 10 cm spits according to the slope of the surface. These spits would only change if a change in soil colour or type occurred.

Fig. 1: Location of sites in the Ekubo Eco Estate Development



PED3

PED3 is located along the northeastern part of the development (Fig. 1). Sixteen plots were excavated. The site is concentrated along the top of the hill, and only a few artefacts are located along the lower slopes. The lower slopes were selected as potential peripheries of the São João campsite. One porcelain sherd had been recorded in this lower area during the test-pit excavations. In 2006, 87 new squares were excavated and 34 squares in 2005, i.e. a total of 121 squares (Fig. 2). The general location of the 2005 excavations are illustrated in Figure 2.

STRATIGRAPHY

Three main occupation levels, or horizons, occur at PED3: São João, LIA, and LSA. The São João levels occur consistently in the upper 30cm. The LIA levels tend to occur between 20 cm and 50 cm below the surface. The LIA layers are followed by a 10 cm – 30 cm hiatus, and then the LSA levels. The LSA levels occur between 50 cm – 100 cm below the surface. The main types of layers are depicted in figures 3a – 3i.

These levels are important, especially when considering the São João horizon. If the LIA, or LSA levels are reached first, then that square is unlikely to have São João artefacts. Moreover, if these lower levels are located then it is unlikely that the mass grave occurred in this square, as there is no intrusion.

The upper 10cm – 20 cm tend to be a humic brown sand with roots. A dark brown, brown-black, dark brown or brown sand that varies in texture and density follows this. We were extra careful with those squares that had only a brown sand, as this may have been evidence of an inverted stratigraphy, and thus evidence for a burial. These brown layers varied from 20cm – 50cm in depth. The next layer is mostly a transition layer from the brown sandy layers to a light brown sandy layer. Occasionally there is no transition layer. This light brown sandy layer tends to be the lowest occupational horizon. The last layer is a gradual change from the light brown sand to a very light brown to yellow-white layer of sand that rest on a layer of boulders.

Figure 2: Excavation Plan and related Erf Numbers for PED3

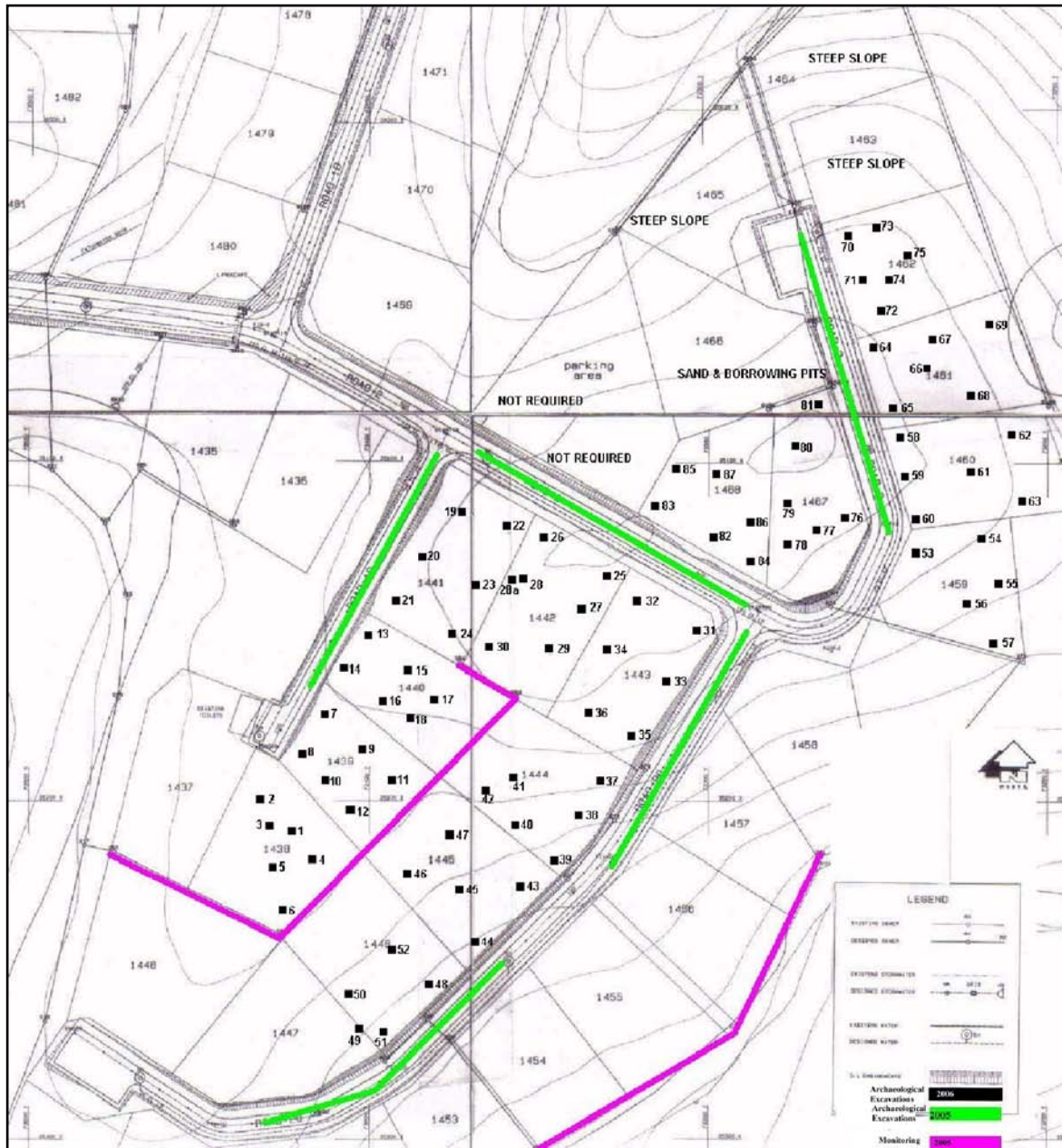


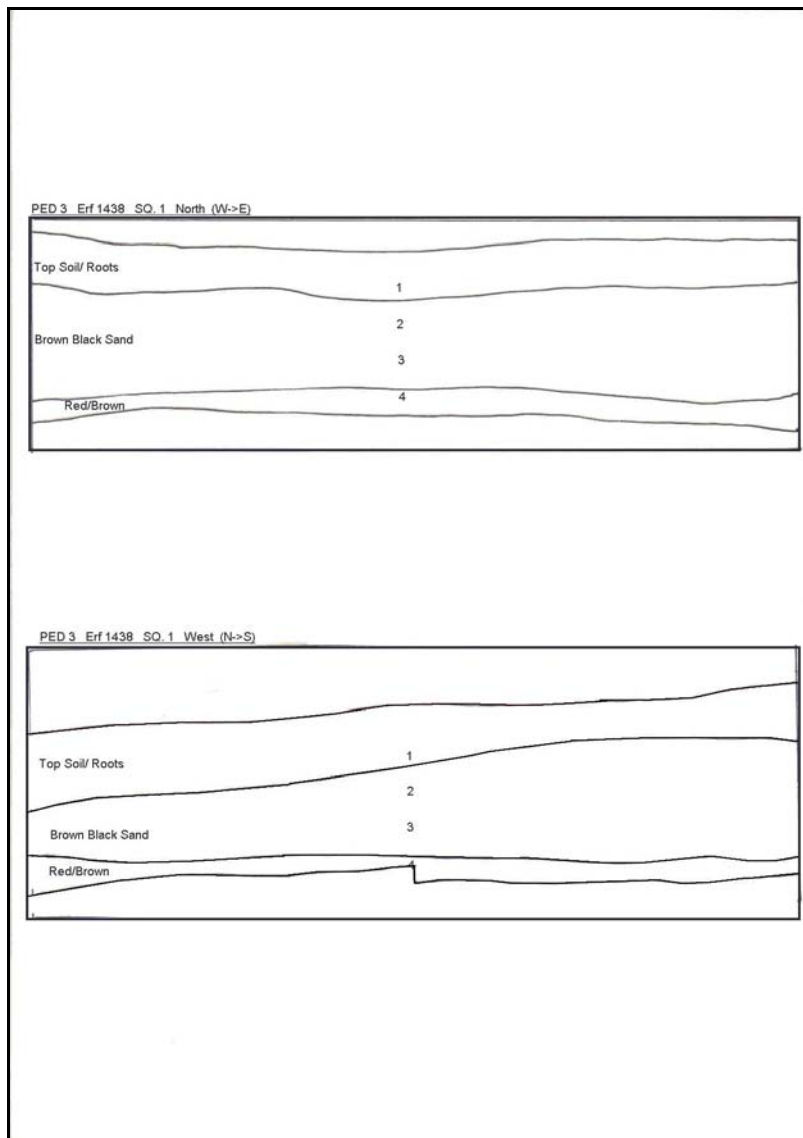
Figure 3a: PED3 Erf 1438 Sq. 1

Figure 3b: PED3 Erf 1442 Sq. 28

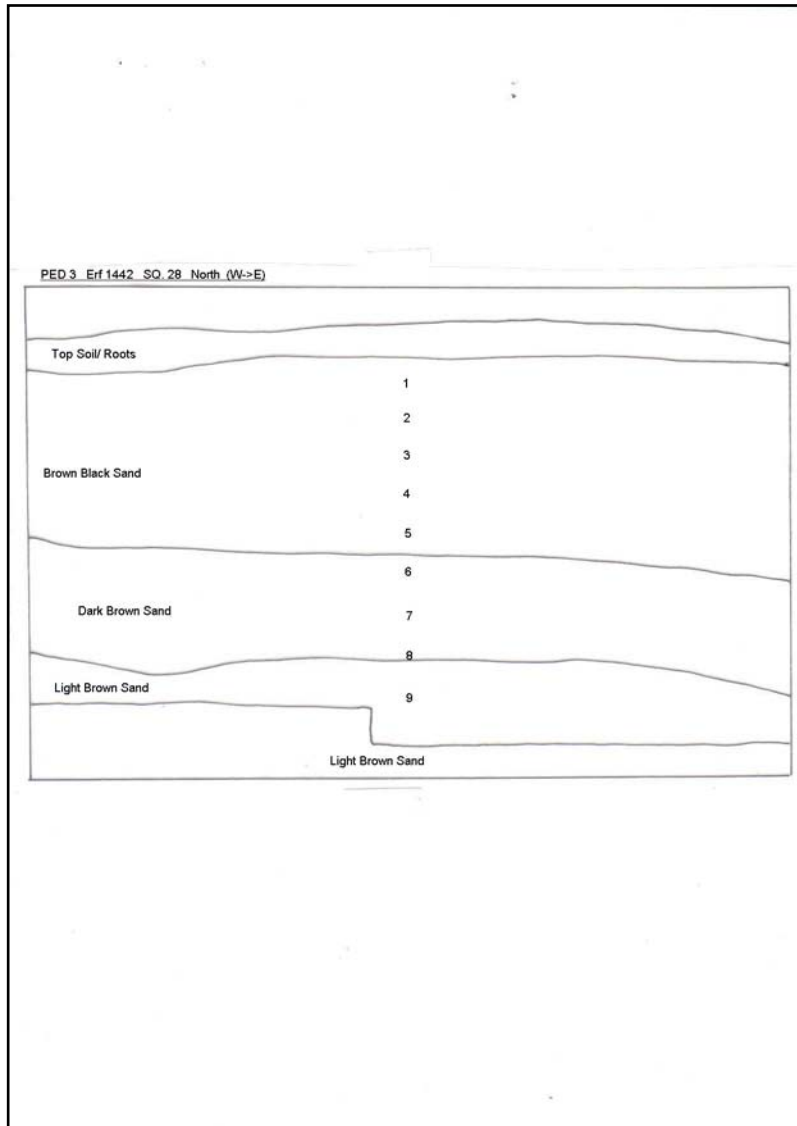


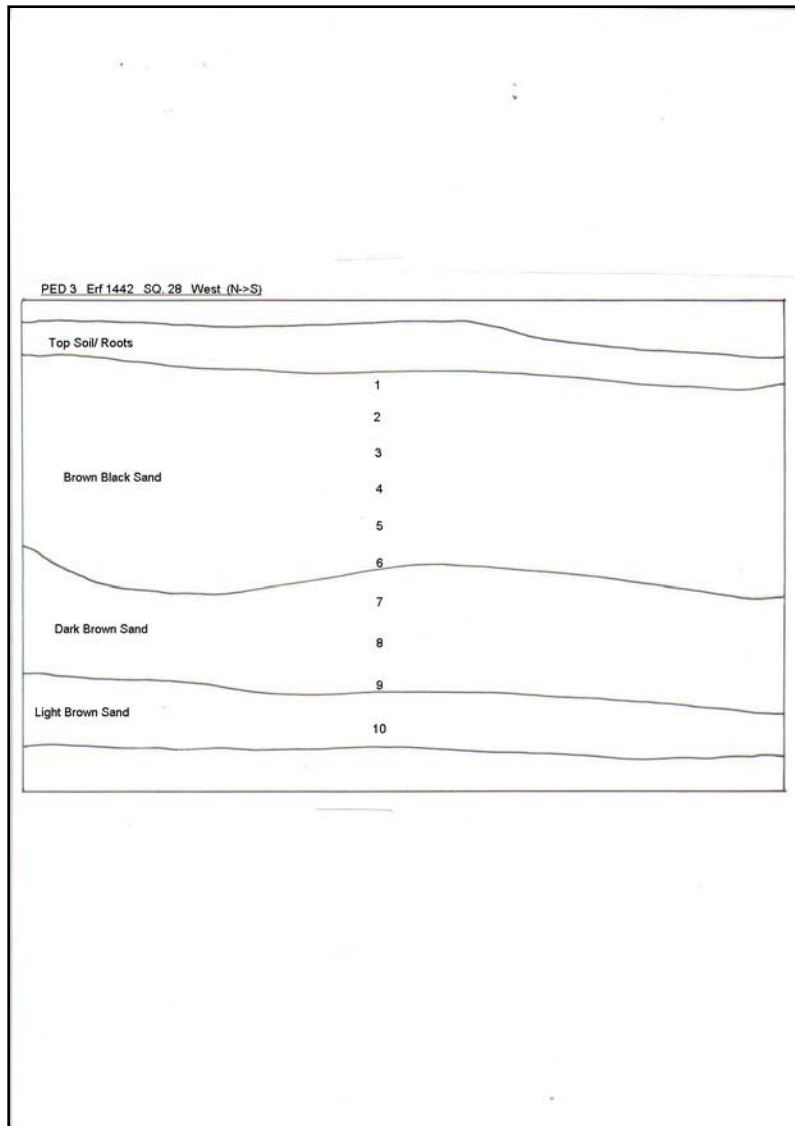
Figure 3c: PED3 Erf 1442 Sq. 28

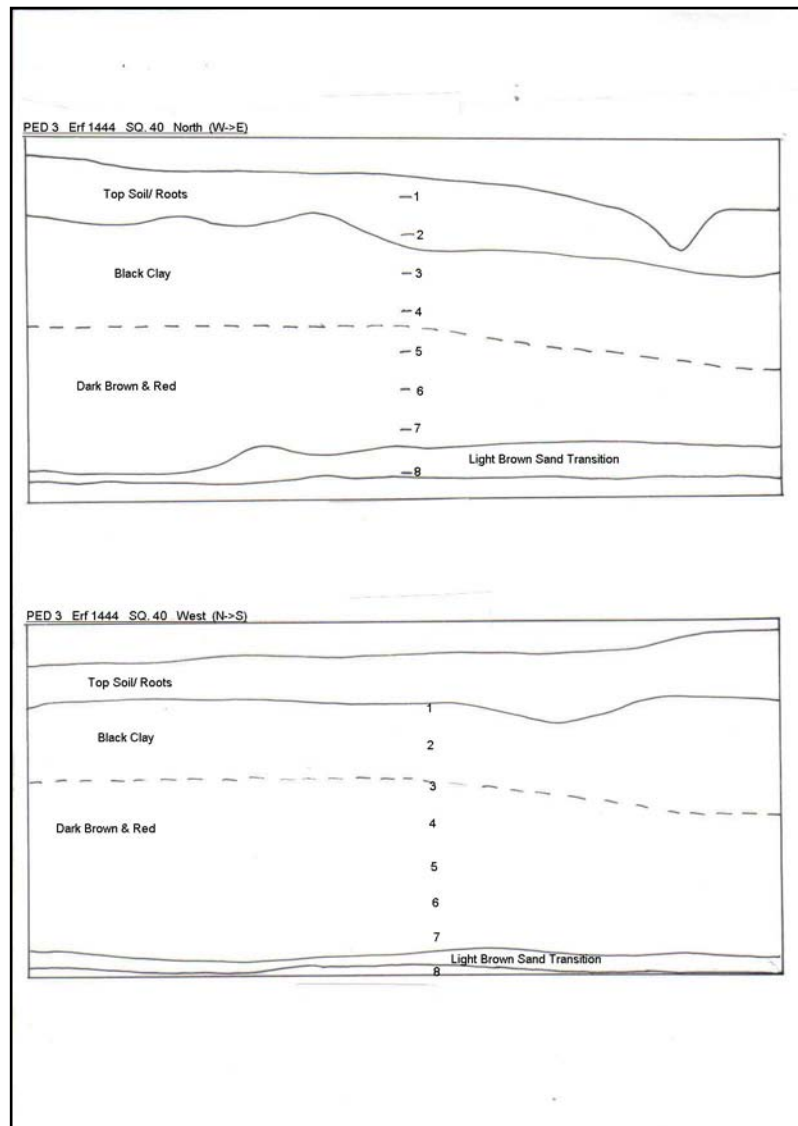
Figure 3d: PED3 Erf 1444 Sq. 40

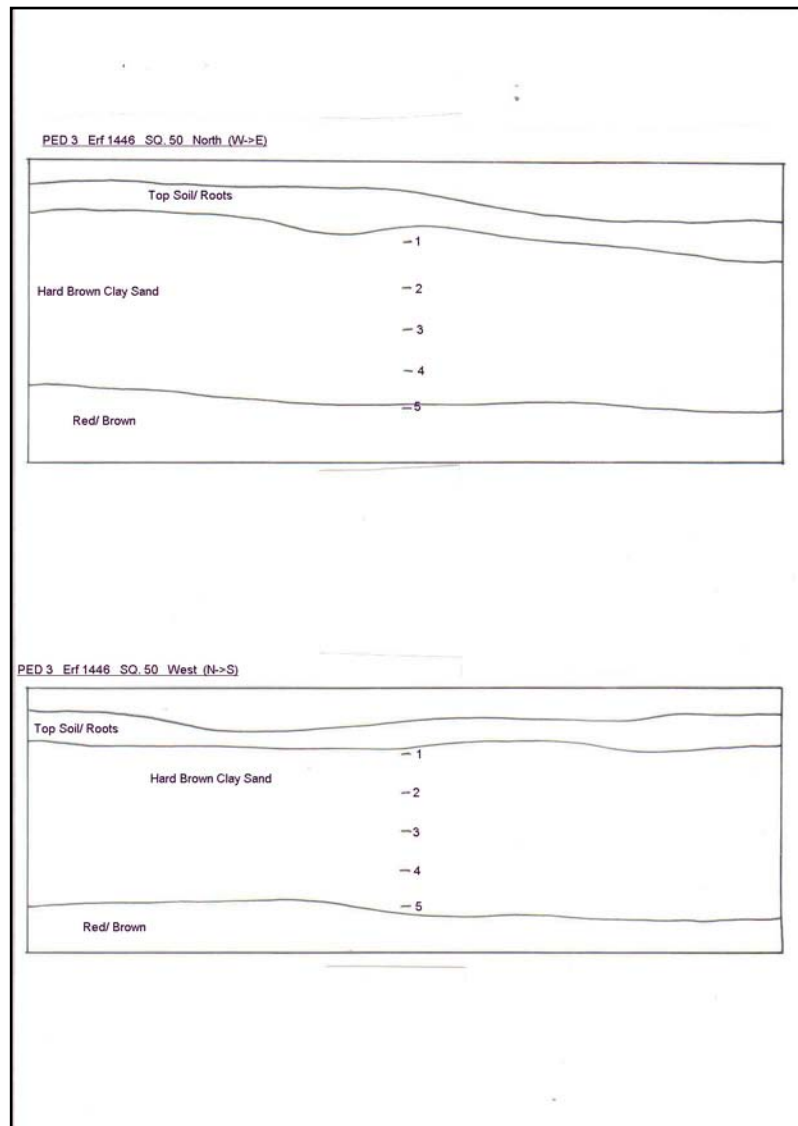
Figure 3e: PED3 Erf 1446 Sq. 50

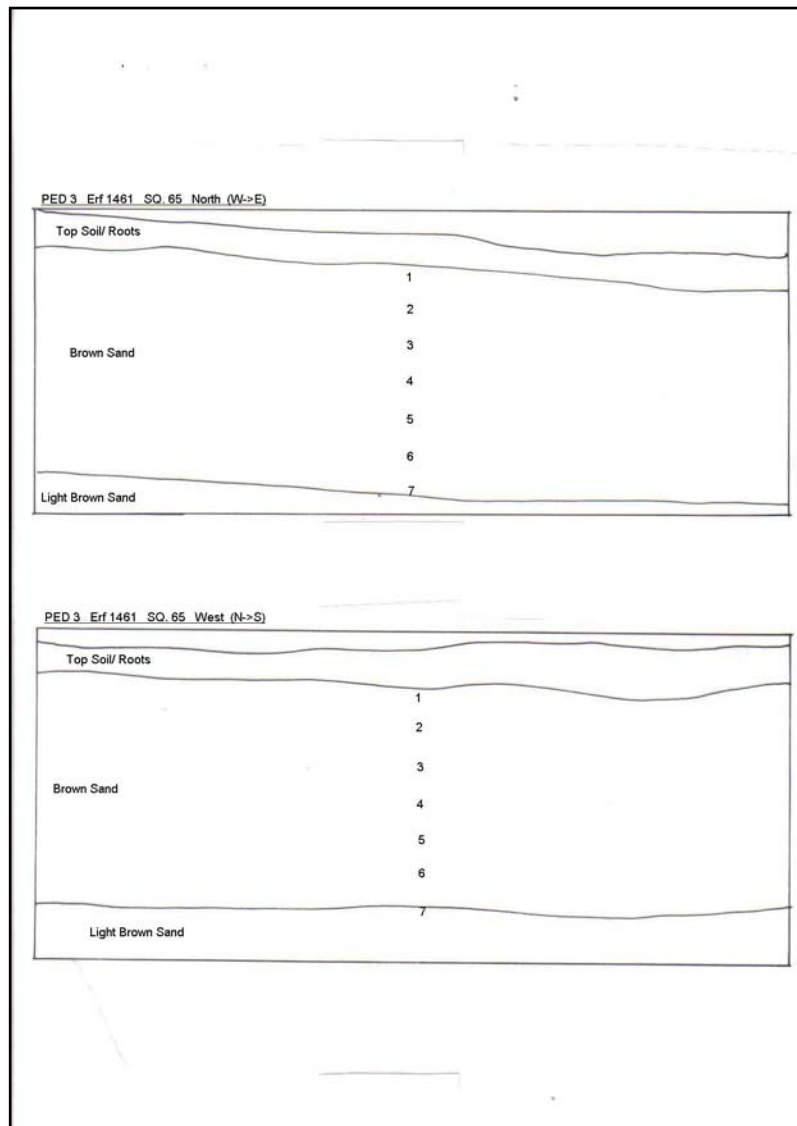
Figure 3f: PED3 Erf 1461 Sq. 65

Figure 3g: PED3 Erf 1461 Sq. 69

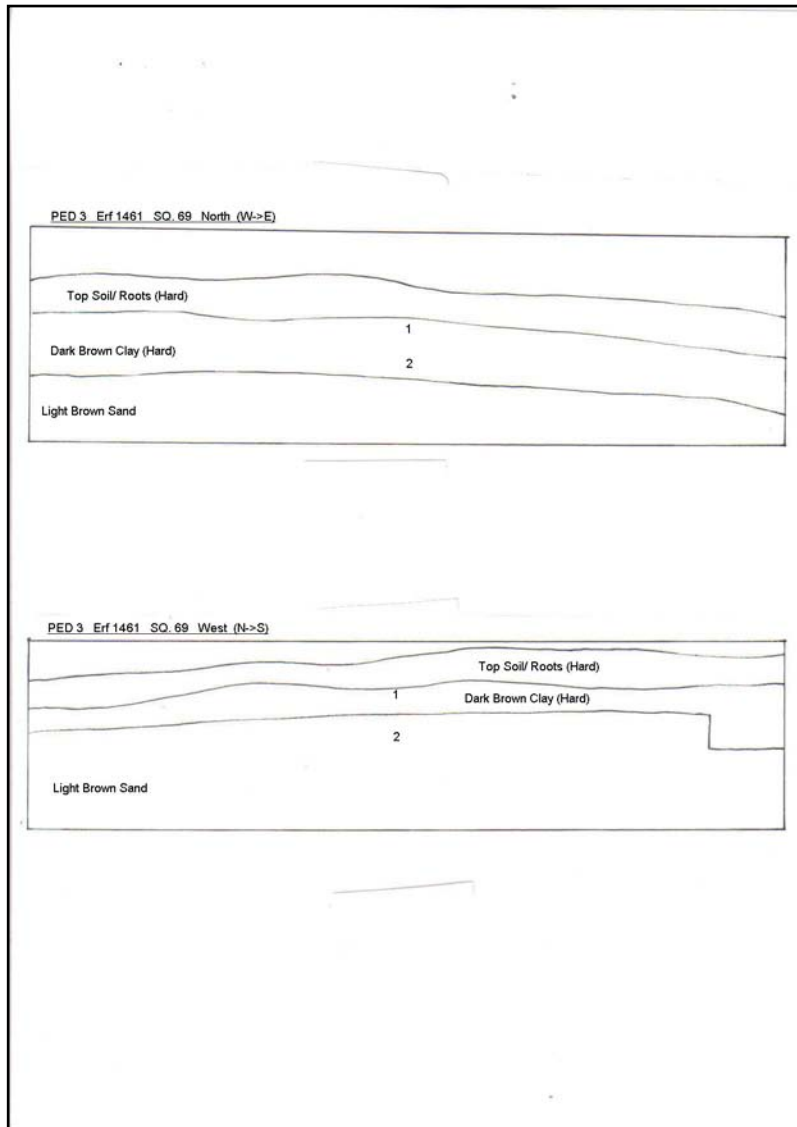


Figure 3h: PED3 Erf 1462 Sq. 63

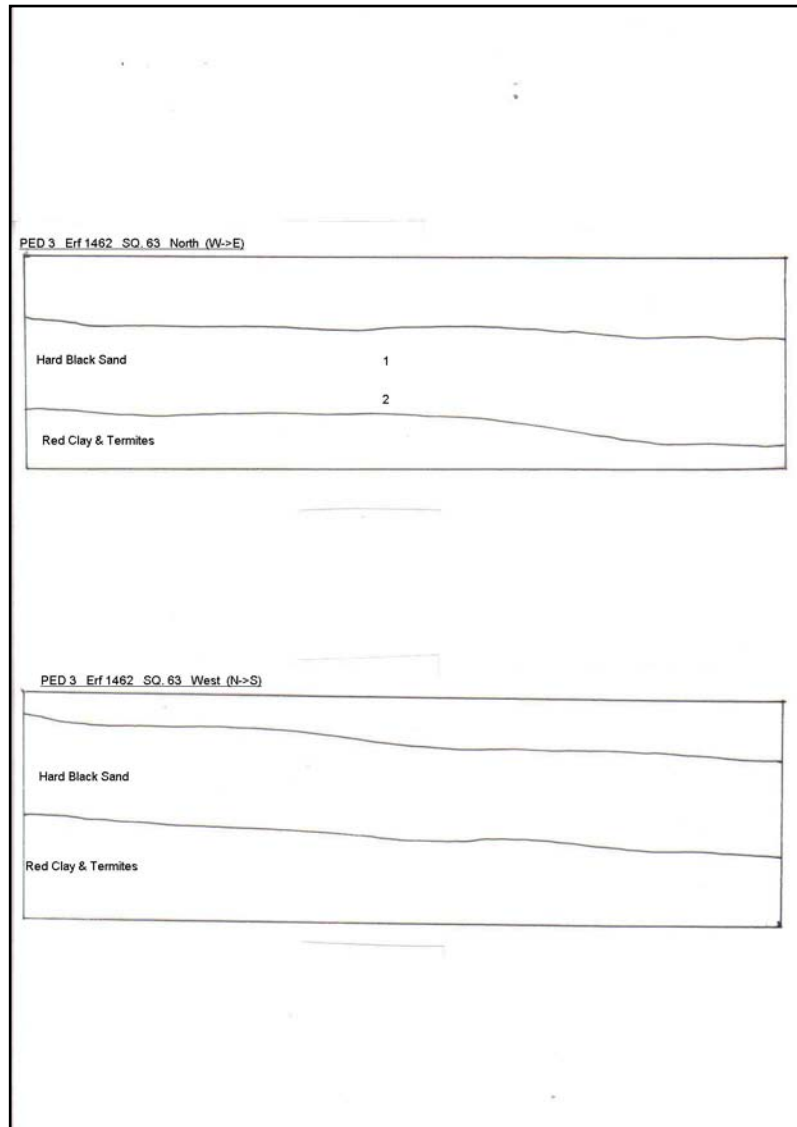
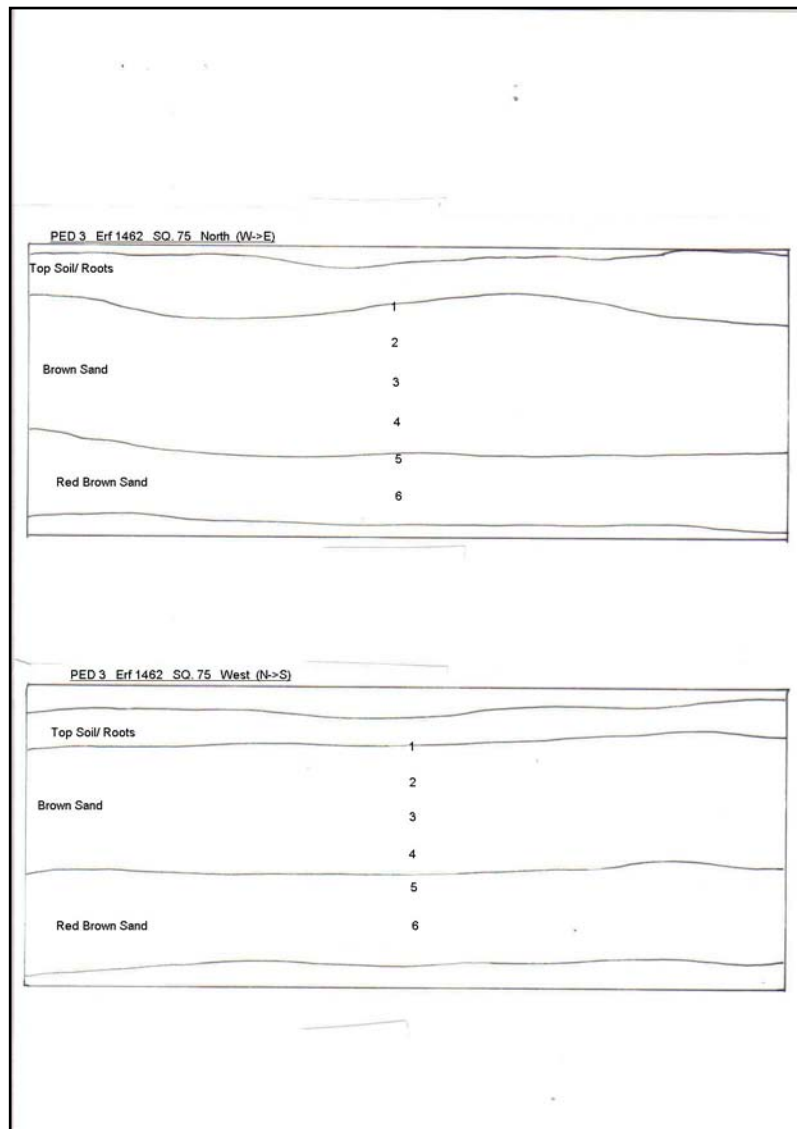


Figure 3h: PED3 Erf 1462 Sq. 75

The occupational horizons tend to be associated with specific sand colours and are summarised in Table 1.

Table 1: Summary Of Soil And Cultural Horizons At PED3

Centimeters below surface	Soil colour	Associated Horizon	Spit
0 - 30	Brown and roots	São João	1 – 3
20 - 60	Various brown sands	Late Iron Age	1 – 4
60 - 150	Light brown to yellow –white	Late Stone Age	5 - 11
~150	Bedrock	Sterile	

Table 2 summarises the artefacts recovered from the excavations at PED3 and EKU4.

SÃO JOÃO ARTEFACTS

The São João artefacts consist mainly of Chinese porcelain fragments as described by Maggs (1984). One carnelian bead, glass bottles fragments, and possibly some bovid bones, are also associated with the site. A total of 22 porcelain fragments were recovered and these are from 21 different plates or bowls. Fig 4 illustrates some of these fragments. The porcelain fragments tend to have the standard blue and white hand painted motifs associated with the São João and São Bento (Maggs 1984). One small white porcelain top was recorded in Erf 1462.

Table 2: Summary of artefacts and associated ages from PED3 and EKU4

Site	EKU4	EKU4	PED3	PED3
Associated Age	Late Iron Age	Middle Stone Age	São João / Late Iron Age	Late Stone Age
Pottery	1039	42	376	17
Daga	31	0	2	0
Glass	1	0	26	1
Bone	0	0	16	2
Glass Bead	4	0	2	0
Soil Sample	9	7	12	5
Shell	400	0	31	0
Porcelain	0	0	20	2
Bored Stone	0	1	0	1
Ocherous	14	2	13	15
Smoothed Stone	12	17	18	46
Manuport	0	0	3	0
Upper Grinding Stone (UGS)	78	203	27	134
Lower Grinding Stone	13	29	7	32
Irregular Core	36	114	11	31
Irreg. Core from UGS	46	115	4	108
Single Platform Core	0	2	3	17
Bipolar Core	2	14	1	5
Flakes	148	235	100	356
Utilised Flakes	27	10	50	104
MSA Flake	16	4	10	13
Scraper	3	0	7	29
Adze	0	0	1	1
MSA Point	0	3	0	0

Figure 4: Examples of Porcelain fragments from PED3



The carnelian bead is the standard red-white carnelian bead and was ~0.5cm long. Burger (2004) also found a carnelian bead in the vicinity of PED3.

The glass fragments tends to be handmade (with the characteristic bubbles) and dark green in colour (fig. 5). The glass tends to be from the neck and rim areas of various bottles. Some of the glass fragments postdate the São João levels.

Several bovid bones were located in Erf 1462 in the same soil horizon as the carnelian bead and ceramic top. We are not certain if these faunal remains are recent, or belong to the São João or Late Iron Age occupations.

The artefacts were found scattered over several plots, however they tend to be concentrated around the following plots: Erf 1442, 1443, 1460, 1461, 1462, 1467, and 1468. That is near the top of the hill, although one sherd and a piece of glass was recovered south of Erf 1447.

No features relating to the São João were recovered from any of the excavated squares.

LATE IRON AGE ARTEFACTS

The LIA artefacts are concentrated around the top of the hill especially in the following plots: Erf 1460, 1461, 1462, 1467, and 1468. The artefacts consist of pottery sherds, some marine shell and a few grinding stones. The sherds of at least two (near) complete vessels were recovered. These may be re-assembled later for display purposes.

The marine shell consists of limpets, brown mussel, whelks, and oyster. There are no distinct shell middens and these shell fragments tend to occur in very small, or isolated, instances. The shell may also belong to the São João levels or the more recent past.

Figure 5: Hand Made Glass Bottle Fragment from the PED3 area



Several upper grinding stones and a few lower grinding stones were excavated. These are the standard grinding stones associated with LIA occupations. No maize lower grinding stones were recovered. This suggests that the LIA levels predate c. 1550 AD, as this is when maize occurs initially in KwaZulu Natal.

The pottery is undecorated and mostly brown in colour. A few sherds have a red burnish. The following two styles were recovered:

- Round lip with slightly everted rim
- Round lip with tapered rim

No features relating to the LIA levels were recovered from the excavated squares.

LATE STONE AGE FEATURES AND ARTEFACTS

The LSA artefacts consisted of stone tools and one burial. Several features were recorded in the LSA levels. These consisted of small stone circles, or caches, of tools (called stone concentrations). These were mapped in their respective squares. Figure 6 illustrates one of these stone features.

The most important feature from this site is that of a human burial. The grave was located in Sq 61 – 61A, Spit 6. The grave is 1,5m x 1m in size. The top of the grave consisted of a layer of granite stones and three grinding stones that formed an oval shape (fig. 7a). Below this was a narrower second layer of stones. One stone was in a vertical position. Below this layer were ~six adult teeth, possibly from the mandible. The crowns of the teeth faced eastwards. No other bone was found in the grave.

We excavated the entire area underneath, and besides the burial stones, until we reached the bedrock layer 40cm below the second layer of stones. No further human material was recovered. The sand was very wet from the ~1.2m below the surface, hence the poor preservation of organic material.

Figure 6: Concentration of stone tools at PED3



Figure 7a: Gravestones from the Human Burial at PED3; Sq. 61 – 61A



We believe that the skeleton was in a horizontal position, i.e. lying on its side. The 40cm of space between the lower layer of burial stones and bedrock makes it impossible to be in a sitting position. There is no evidence that the body was interred from the LIA layers, as the stratigraphy is uniformly dark brown above and besides the graves stones. No burial pit was observed in the sections.

The position of the skeleton, the lack of evidence of a burial pit, and the very poor preservation of human remains suggest that the skeleton is associated with the LSA layers, and not the LIA layers. This is of high significance, as it may be the first recorded hunter-gatherer skeleton/burial for KZN. Erf 1444, Sq. 53 had a much smaller feature of stones that had the appearance of a cairn. No human remains were located underneath this feature (Figure 7b).

The raw materials and their frequencies are summarised in Table 3 and illustrated in Figure 8. The stone tools are made from a variety of raw materials that include:

- Quartz
- Quartzite
- Sandstone
- Granite
- Shale
- Dolerite
- Cryptocrystalline silicates (agate, opaline, chalcedony, etc.)

The occurrence of the cryptocrystalline silicates (CCS) is significant as they are not locally available. The formal tools and utilized blades tend to be made from CCS and dolerite. Quartzite and granite tend to be the preferred material for lower grinding stones. Upper grinding stones tend to be made from river/beach pebbles that are mostly quartzite. Quartzite and dolerite are the preferred materials for the general artefacts.

Figure 7b: Possible Cairn from PED3; Sq. 53

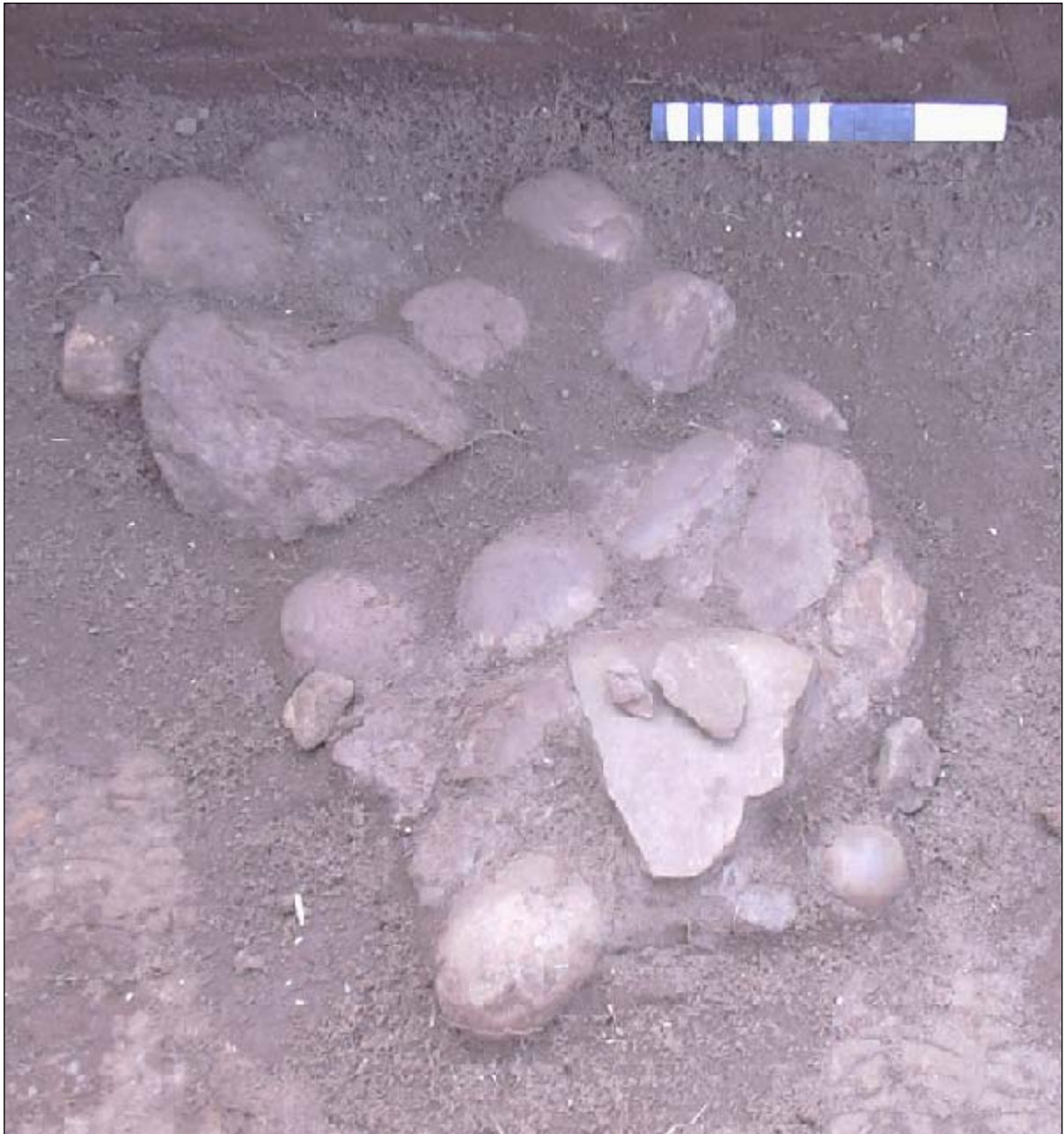


Table 3: Stone Tool Raw Material Frequencies From EKU4 & PED3

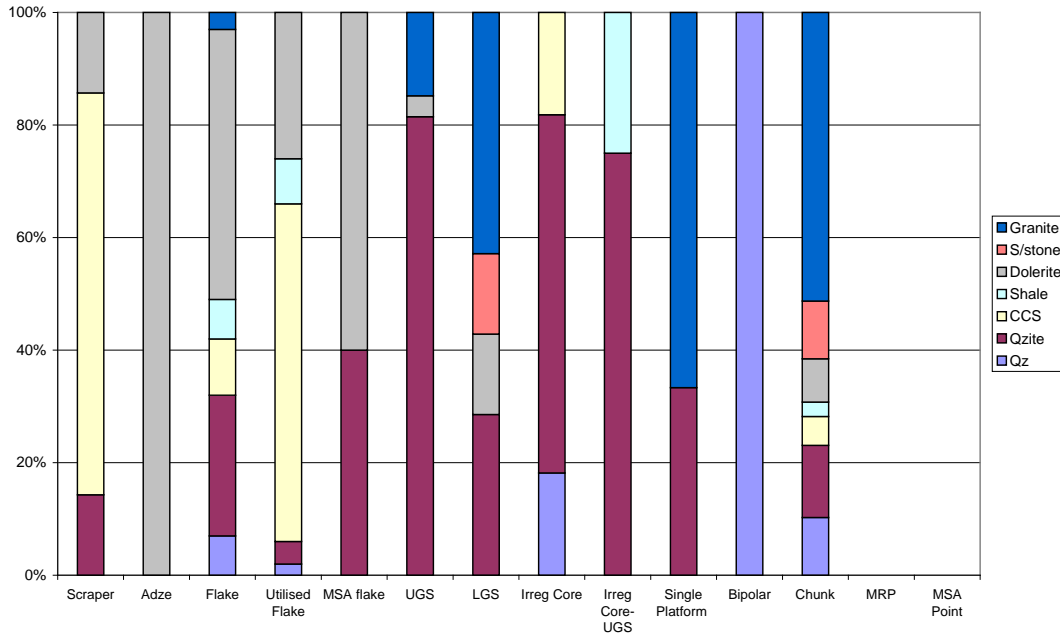
		Quartz	Quartzite	CCS	Shale	Dolerite	Sand stone	Granite
EKU4 LIA	Scraper	0	0	2	0	1	0	0
	Adze	0	0	0	0	0	0	0
	Flake	17	57	3	17	42	4	8
	Utilised Flake	0	2	4	11	8	2	0
	MSA flake	0	15	0	0	1	0	0
	UGS	2	46	0	0	2	4	24
	LGS	0	7	0	0	0	0	6
	Irregular Core	2	29	1	0	1	0	3
	Irregular Core- UGS	0	31	0	0	11	1	3
	Single Platform	0	0	0	0	0	0	0
	Bipolar	0	2	0	0	0	0	0
	Chunk	1	9	0	1	3	0	13
	MRP	0	0	0	0	1	0	0
	MSA Point	0	0	0	0	0	0	0
	Total	22	198	10	29	70	11	57
EKU4 MSA	Scraper	0	0	0	0	0	0	0
	Adze	0	0	0	0	0	0	0
	Flake	28	161	1	14	25	0	6
	Utilised Flake	0	2	0	2	6	0	0
	MSA flake	0	2	0	1	1	0	0
	UGS	0	188	0	0	2	10	3
	LGS	0	24	0	0	0	2	3
	Irregular Core	12	90	0	2	8	1	1
	Irregular Core- UGS	0	111	0	0	4	0	0
	Single Platform	0	1	0	0	1	0	0
	Bipolar	1	13	0	0	0	0	0
	Chunk	0	9	0	1	1	0	0
	MRP	0	0	1	0	0	0	0
	MSA Point	0	0	0	2	1	0	0
		41	601	2	22	49	13	13

Table 3: Stone Tool Raw Material Frequencies From EKU4 & PED3 (cont.)

		Quartz	Quartzite	CCS	Shale	Dolerite	Sand stone	Granite
PED3 LIA / São João	Scraper	0	1	5	0	1	0	0
	Adze	0	0	0	0	1	0	0
	Flake	7	25	10	7	48	0	3
	Utilised Flake	1	2	30	4	13	0	0
	MSA flake	0	4	0	0	6	0	0
	UGS	0	22	0	0	1	0	4
	LGS	0	2	0	0	1	1	3
	Irregular Core	2	7	2	0	0	0	0
	Irregular Core- UGS	0	3	0	1	0	0	0
	Single Platform	0	1	0	0	0	0	2
	Bipolar	1	0	0	0	0	0	0
	Chunk	4	5	2	1	3	4	20
	MRP	0	0	0	0	0	0	0
	MSA Point	0	0	0	0	0	0	0
		15	72	49	13	74	5	32
PED3 LSA	Scraper	2	1	10	1	15	0	0
	Adze	0	0	0	0	1	0	0
	Flake	8	89	30	51	161	4	13
	Utilised Flake	0	8	44	7	45	0	0
	MSA flake	0	1	0	0	11	1	0
	UGS	6	96	4	1	8	3	16
	LGS	0	15	0	2	0	4	11
	Irregular Core	0	12	13	0	5	0	1
	Irregular Core- UGS	0	59	0	2	43	2	2
	Single Platform	0	12	0	0	5	0	0
	Bipolar	1	4	0	0	0	0	0
	Chunk	8	6	6	2	10	1	37
	MRP	0	1	0	0	3	0	0
	MSA Point	0	0	0	0	0	0	0
		25	304	107	66	307	15	80

Figure 8: Stone Tool Raw Material Frequencies From PED3

Late Iron Age Stone Raw Materials for Stone Tools from PED3



Late Stone Age Stone Raw Materials for Stone Tools from PED3

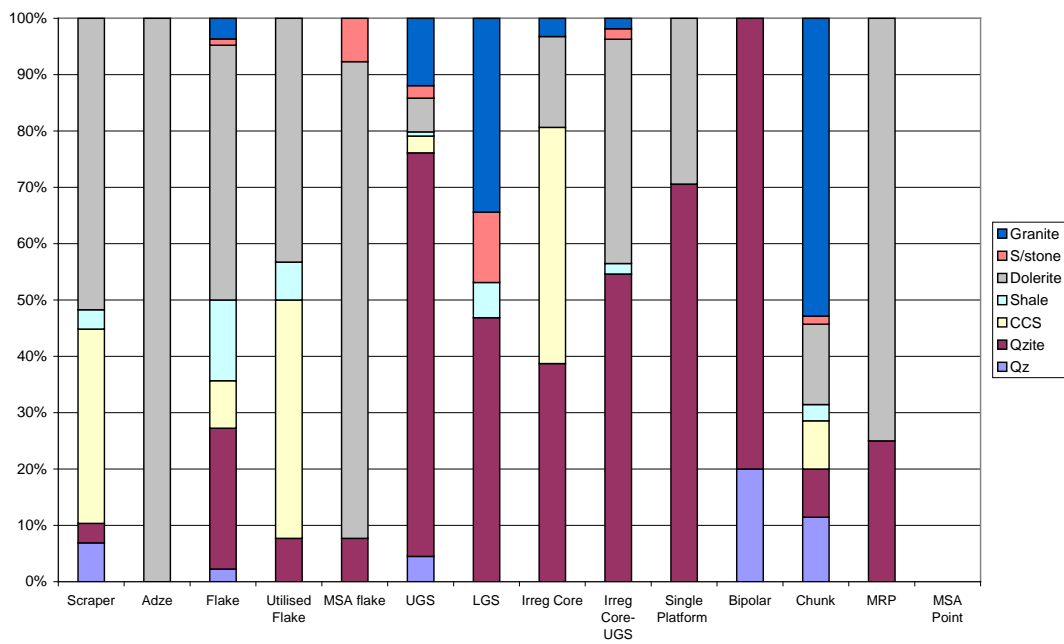
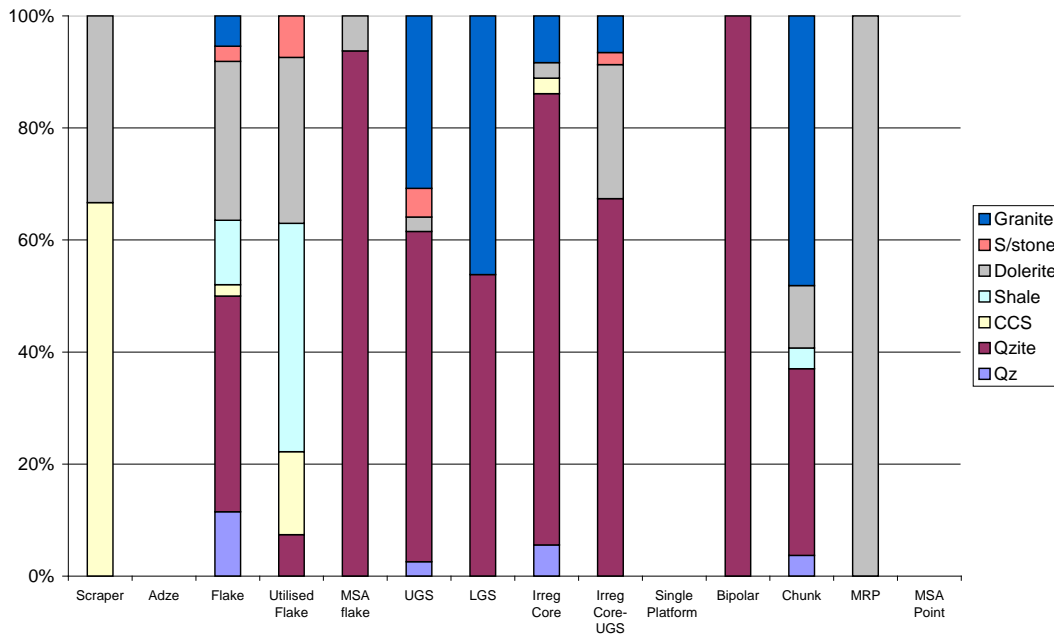
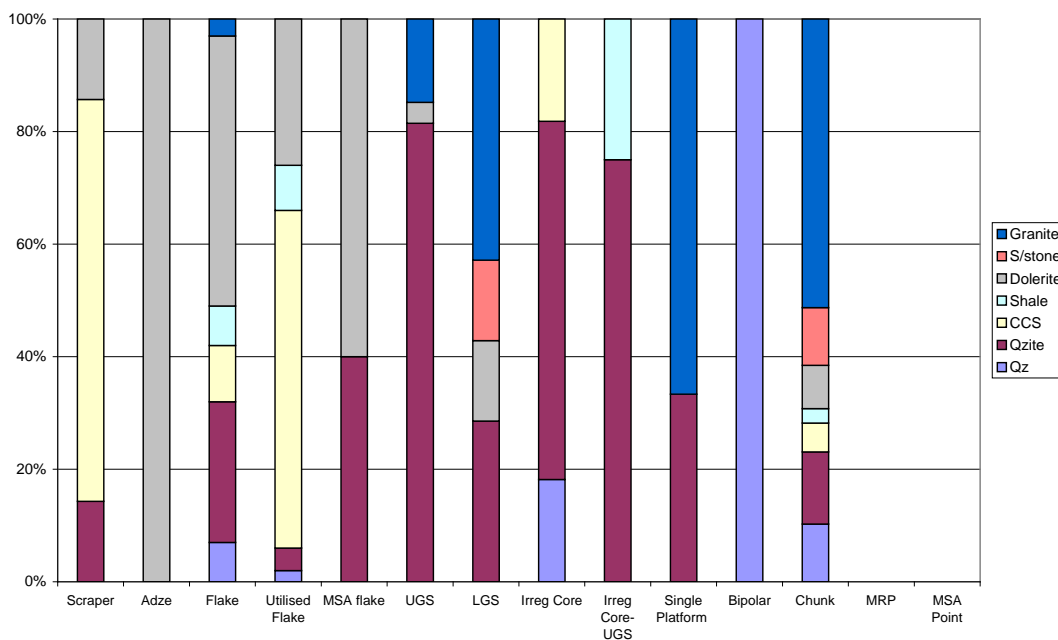


Figure 9: Stone Tool Raw Material Frequencies for Stone Tools From Eku4

Late Iron Age Stone Raw Materials for Stone Tools from Eku4



Middle Stone Age Stone Raw Materials for Stone Tools from Eku4



One small shale bored stone was recorded in Erf 1467. This bored stone is probably a weight for a hunting net.

Only 15 pieces of stone with a high iron-oxide content, i.e. ochreous, were recovered. A similar amount was recovered in the upper layers as well.

Upper grinding stones were abundant on the site. Some of these grinding stones were also used as hammer stones or pestles. The lower grinding stones were made mostly on quartzite, dolerite, and granite.

These upper grinding stones were also utilised to make irregular cores (sometimes referred to as pebble cores). These types of cores were the most prevalent, as opposed to the single platform and bipolar types of cores.

The flakes tend to be standard LSA flakes, and most of them do not have visible signs of utilisation (microscopic analyses may yield different results). Utilised flakes tend to be made mostly from CCS and dolerite.

A few small and large end scrapers were recovered from the site, as well as some adzes. These stone tools are consistent with assemblages dating to the last 4000 years (with the exception of the large end scrapers). The site can be dated to between 2000 and 4000 years ago, as agriculturists arrived in the area at 1700 years ago.

EKU4

EKU4 is located adjacent to a hill of similar height (EKU5): there is a saddle between the two hills. We chose EKU4 as a more significant site as it had higher visibility of artefacts on the surface after the area had been cleared. The initial test-pit excavations in 2005 yielded a shell midden and a complete pot, pottery sherds, grinding stones and a few glass beads. Sixteen squares were excavated in these excavations.

In 2006 fifteen squares were excavated in two plots: Erf 1353 and Erf 1354. One side of the hill had been previously damaged by illegal construction activity, and the western side had been excavated in 2005. The 2006 excavations thus concentrated on the central part of the site.

Figure 10 shows the excavation plan for this site.

STRATIGRAPHY

The occupational horizons tend to be associated with specific sand colours and are summarised in Table 2. A few of these are depicted in Figure 11a – 11b.

Table 4: Summary Of Soil And Cultural Horizons At Eku4

Centimeters below surface	Soil colour	Associated Horizon	Spit
0 - 40	Various brown sands	Late Iron Age	1 – 4
40 - 100	Light Brown Sand	Middle Stone Age	5 - 10
~100	Hard Red Sand	Sterile	

It is thus similar to PED3. The first layer is ~10cm thick, and few artefacts are located in this layer. The next layer is the Brown Sand layer. It varies in shades of brown, but is distinct from the other layer. The Late Iron Age occupation is restricted to this horizon (i.e. Spits 1 – 4). The Middle Stone Age (MSA) layers are located mostly in the Light Brown Sand layer (i.e. Spits 5 – 10), although some tools are located in the lower parts of the Brown Sand layer. The Hard Red Clay layer demarcated the end of the human occupation horizons.

Figure 10: Excavation Plan for EKV4

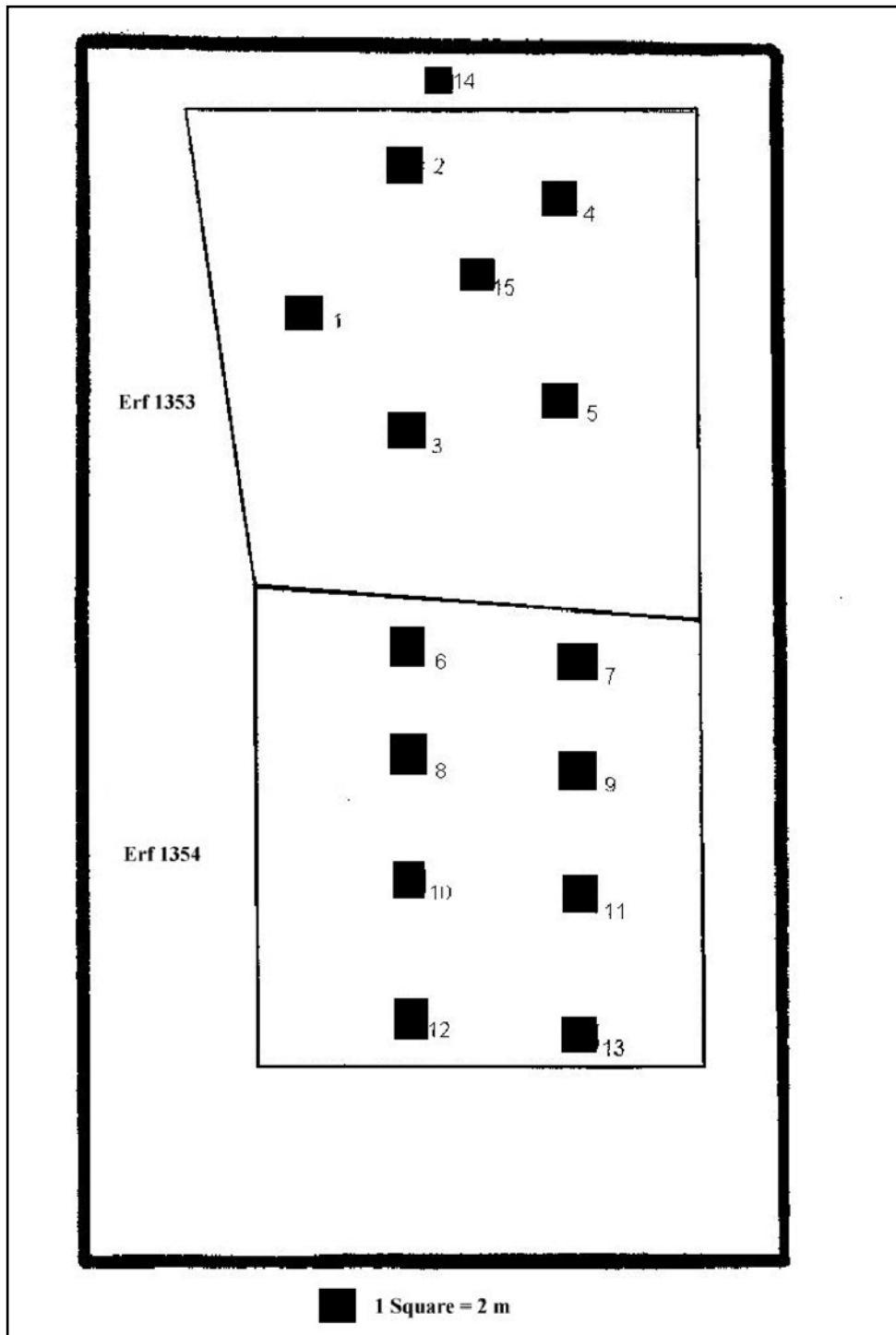


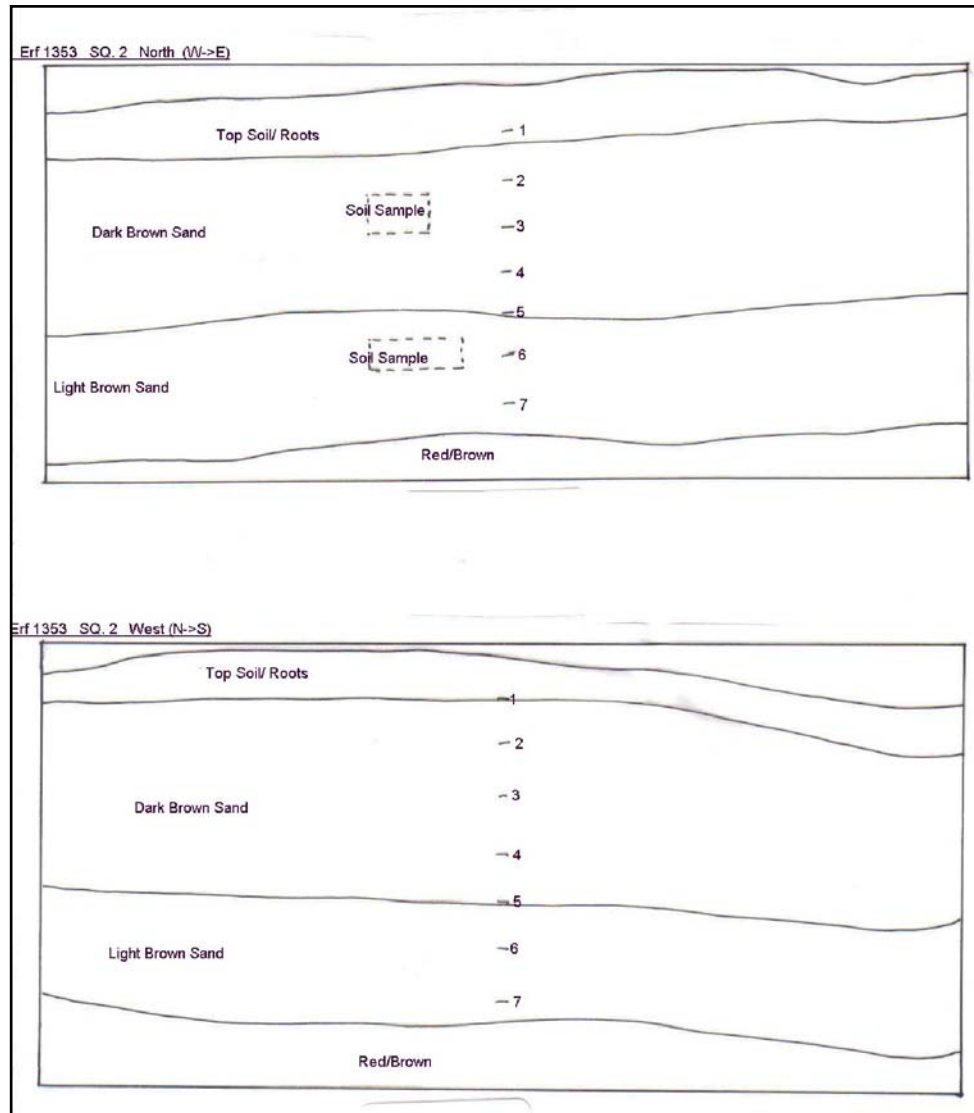
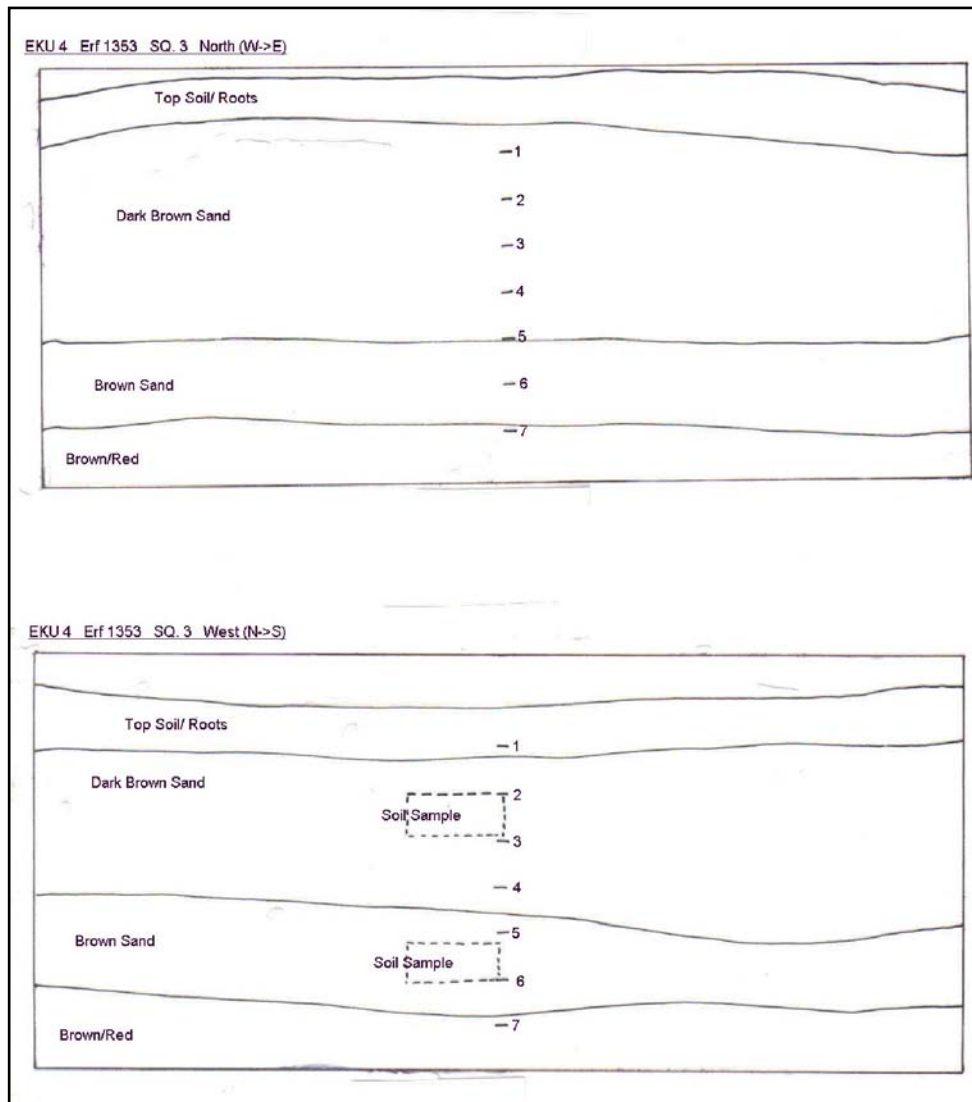
Figure 11a: Stratigraphy of EKU4

Figure 11b: Stratigraphy of Eku4

LATE IRON AGE FEATURES AND ARTEFACTS

Several daga (hut floor) fragments were observed on the site. The daga is rough on one side and smoothed on the other. One fragment had mat impressions on it.

Both upper and lower grinding stones were recovered. Most of the lower grinding stones were fragmented. These grinding stones were located across the whole site and tend to be made from quartzite.

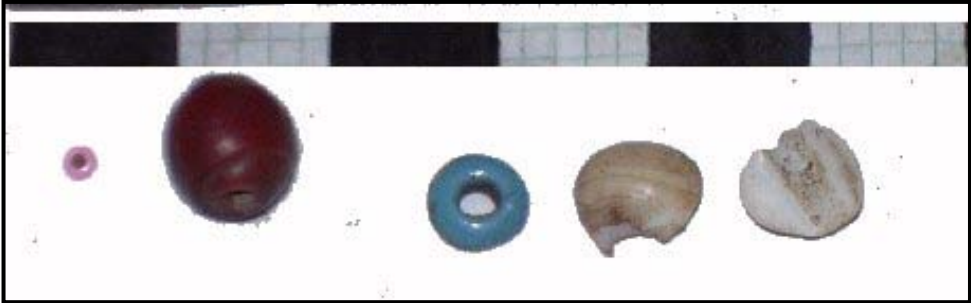
Five glass trade beads were recorded from the site (Fig. 12). Three beads were a maximum of 0.5cm in diameter. These can be described as follows:

- Round light pink (<0.5 cm in diameter)
- Round navy blue (<0.5 cm in diameter)
- Round white (<0.5 cm in diameter)
- Oblong opaque red with semi-cylindrical groove (~1 cm in diameter)
- Transparent Indian red on white (<0.5 cm in diameter)

Three species of marine shell were present on the site: *Perna perna*, *Ostridaeae spp.*, and *Patella spp.* These were located in Sq. 65 (test-pit excavations) within, and underneath, a complete cooking vessel. Another shell midden was observed; however it is on the surface and does not appear to be related to the LIA occupation.

There is a very high concentration of pottery at this site, in comparison to PED3. The pottery from the site is mainly thin-walled and undecorated, i.e. standard LIA pottery. The pottery is mostly brown in colour and a few sherds have a black burnish.

Figure 12: Glass Beads Located at EKU4



The pottery can be described as follows:

- Two horizontal incisions on a small sherd.
- *isumpa* (warts) on the body
- Tapered rim with flat lip
- Tapered rim with round lip
- Straight rim with flat lip
- Straight rim with round lip
- Straight rim with flat everted lip
- Everted rim with round lip
- Everted rim with everted round and incised(?) lip
- Black burnish

Two unusual “finds” occur at this site. There is a distinct lack of animal bones and we were expecting to uncover at least one burial. The organic artefacts are well preserved, and human burials often occur in these types of sites. They are located either under the house floor or in the cattle byre. Unfortunately, we did not find these. We believe that they may still occur on the site.

MIDDLE STONE AGE FEATURES AND ARTEFACTS

Most of the Stone Age occupation at EKU4 dates to the MSA. Only a few LSA artefacts were recovered, and they tend to occur in the upper layers. The MSA occupation at the site contains more artefacts than the LIA occupation. Over 30 stone concentrations were recorded, and in a few instances, large portions of the layer, in a square, were covered with artefacts.

The artefacts tend to be made from quartz, quartzite, granite, shale, and dolerite (Table 3; Figure 9). Most of the artefacts tend to be standard MSA artefacts, however a few blades and unifacial points were observed. Most of the artefacts consisted of upper grinding stones that have been modified into hammer stones or irregular cores.

CONCLUSIONS AND MANAGEMENT PLAN

The proposed presence of the São João has been discussed in the academic literature for some time (see Maggs 1984; Burger 2003). Moreover, artefacts from the São João have been uncovered by the public and researchers between Tragedy Hill and PED3. The artefacts are widely dispersed and unfortunately, most of them have not been recorded *in situ*, or at all. While Burger (2003) notes the potential of Tragedy Hill as a site, she also notes that it lacks the area to support the ~500 survivors, and thus she opts for PED2 and PED3. The occurrence of 21 different porcelain fragments strongly suggests that the PED2 - 3 areas are a potential occupation area. That is, this is more than a chance occurrence. We are left with three possible scenarios:

1. The São João campsite was located at the base of Tragedy Hill, and the artefacts from PED3 were deposited later. Although there is little evidence for a LIA, occupation in the São João layers.
2. PED2-3 was the location of the campsite and artefacts located at Tragedy Hill are either part of a Late Iron occupation (e.g. the copper bracelets), and that the São João artefacts are a result of post-São João collections (see Burger 2003).
3. The São João campsite cannot be properly identified. The artefacts were once placed in a central location by the survivors of the shipwreck. Thereafter, these artefacts have been redistributed by local people through time. Unfortunately, there is no mention in the literature of which material was brought to shore and what was left aboard ship.

Option 2 is the more plausible choice for a campsite (see Burger 2003). However, the most important archaeological aspect of this campsite should be noted. First, the people only stayed in the area for twelve days, 450 years ago. This short occupation is unlikely to leave much evidence. Second, LIA farmers and farmers from the more recent past have systematically worked the ground. The upper 30cm of deposit has thus been churned over for many years. The São João artefacts are located in these upper 30cm.

Thus, even if PED3 (or PED2) is the proper location of the São João, there are no identifying (or significant) features to indicate a campsite, and we are only left with a handful of artefacts. The site is thus unlikely to yield any significant finds, as no significant

finds have been located during the archaeological excavations of 121 squares. PED3 is however, significant for the hunter-gatherer burial.

It would be a rare occurrence if we were to locate another burial on PED3, although it cannot be excluded. We need to manage for this possibility. Furthermore, artefacts from the São João may still occur on PED3 and these would need to be collected if exposed by building activity. PED3 thus requires monitoring during the construction phase at specific plots.

The excavations at EKU4 are complete and we do not believe that further excavations would yield new types of artefacts. We are concerned that no human skeletal remains were uncovered during the course of the excavations. We thus suggest that all earthworks in this area are monitored. Monitoring, at all sites, may temporarily stop construction activity if deemed necessary, to recover, or excavate, material.

Other areas require monitoring. These were demarcated as S1 and PED2 in previous reports. The latest development maps do however indicate that PED2 is not zoned for development.

The following plots (Table 5 and Figure 13) require archaeological monitoring during any construction activity:

Table 5: Sites that require further monitoring during construction phase.

Archaeological site	Erf No.
PED3	1441
PED3	1442
PED3	1443
PED3	1459
PED3	1460
PED3	1461
PED3	1462
PED3	1467
PED3	1468
EKU4	1353
EKU4	1354
S1	1387
S1	1388
S1	1389
S1	1390
S1	1391
S1	1392
S1	1393
S1	1394
S1	1395
S1	1404
S1	1405
S1	1406
S1	1407
S1	1408
S1	1409
S1	1410
S1	1411
S1	1412
S1	1413
S1	1414
S1	1415
S1	1416
S1	1417
S1	1418

Figure 13: The various Erfs of Ekubo Eco Estate



The monitoring activity has been written into the Environmental Management Plan of the estate development, and no development may occur unless an archaeologist is on site. All individual developments would need to advise the archaeologist timeously (at least two months) before development begins.

The future monitoring is planned as follows:

- The buyer is informed of the sensitivity of the site. All sensitive plots have been tagged for automatic notification.
- The buyer gives notice of intent to build (a 2 month process for approval)
- The archaeologist is informed regarding potential dates
- The builders and buyers are not allowed to begin construction unless an archaeologist is present
- Archaeologist will monitor the excavations of the foundations of the house, and if necessary any other subsurface features.
- Buyers have three years to build the house from date of sale

Several transgressions have occurred in the development by the contractor, specifically by Stedone Developments. These transgressions have been noted and are under discussions. The main transgression occurs at PED3 where two areas were effected. The first occurred in 2005 where Stedone had placed a water, or sewage line, in the demarcated 'no-go' area of Erfs 1460 – 1463. Stedone admitted to this infringement. The second transgression was the excavation of a manhole, and associated pipes, on Erf 1468 (at the boundary of Erf 1466, 1467, and 1468). Permission for this excavation was never granted, nor was it supervised. In addition to this, although on a smaller scale, was the erection of the electricity box No.002290 on Erf 1466. This feature is outside of the area that was initially demarcated as the road reserve in 2005. This was undertaken by the company Malesela T & D.

The transgressions are as follows:

1. Malesela T & D.

1.1. Construction of electrical box No.002290 on the margin of Erf 1456. This is outside of the area monitored in 2005 by Umlando.

2. Stedone:

- 2.1. Excavation of pipelines in our areas indicated as S1 and PED2 in the archaeological survey report.
- 2.2. Excavation and removal of soil on Eku4. This occurred between Erf 1363 and 1353, 1354 and 1362, 1355 and 1361. This removed the Late Iron Age deposit of the eastern part of the site.
- 2.3. Excavation of area for Pump Station No. 1 without approval or required monitoring.
- 2.4. Excavation of concrete pipelines in Erf 1468, and extended into Erf 1467 and possibly 1466.

The two companies have failed to comply with the archaeological management plan, as well as the RoD. These occurred despite clear indications and demarcations of where developments may not occur. The developer has also requested that all companies comply with the RoD.

Amafa aKwaZulu-Natal would need to address this. The developer is prepared to impose monetary fines for these transgressions in conjunction with the Environmental Control Officer and Amafa aKwaZulu-Natali .

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