

# **ANNUAL 2007 ARCHAEOLOGICAL REPORT**

**For: RICHARDS BAY MINERALS**

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## INTRODUCTION

Umlando was contracted by Richards Bay Minerals (Pty) Ltd to undertake archaeological surveys and excavations in the Zulti North mining lease. These surveys consist of monthly surveys and excavations occur when needed. A total of nineteen new sites were recorded, three sites were continuously monitored and sampled, and one site was excavated.

## METHOD

All sites are grouped according to low, medium and high significance for the purpose of this report. Sites of low significance have no diagnostic artefacts, especially pottery. Sites of medium significance have diagnostic artefacts and these are sampled. Sampling includes the collection of artefacts for future analysis. All diagnostic pottery, such as rims, lips and decorated sherds are sampled, while bone, stone and shell are mostly noted. Sampling occurs on most sites. Sites of high significance are excavated and/or extensively sampled. Those sites that are extensively sampled have high research potential, yet poor preservation of features. We attempt to recover as many artefacts from these sites by means of systematic sampling, as opposed to sampling diagnostic artefacts only.

### Defining significance

Archaeological sites vary according to significance and several different criteria relate to each type of site. However, there are several criteria that allow for a general significance rating of archaeological sites.

These criteria are:

#### 1. State of preservation of:

##### 1.1. Organic remains:

##### 1.1.1. Faunal

##### 1.1.2. Botanical

- 1.2. Rock art
- 1.3. Walling
- 1.4. Presence of a cultural deposit
- 1.5. Features:
  - 1.5.1. Ash Features
  - 1.5.2. Graves
  - 1.5.3. Middens
  - 1.5.4. Cattle byres
  - 1.5.5. Bedding and ash complexes

## **2. Spatial arrangements:**

- 2.1. Internal housing arrangements
- 2.2. Intra-site settlement patterns
- 2.3. Inter-site settlement patterns

## **3. Features of the site:**

- 3.1. Are there any unusual, unique or rare artefacts or images at the site?
- 3.2. Is it a type site?
- 3.3. Does the site have a very good example of a specific time period, feature, or artefact?

## **4. Research:**

- 4.1. Providing information on current research projects
- 4.2. Salvaging information for potential future research projects

## **5. Inter- and intra-site variability**

- 5.1. Can this particular site yield information regarding intra-site variability, i.e. spatial relationships between various features and artefacts?
- 5.2. Can this particular site yield information about a community's social relationships within itself, or between other communities?

## **6. Archaeological Experience:**

6.1. The personal experience and expertise of the CRM practitioner should not be ignored. Experience can indicate sites that have potentially significant aspects, but need to be tested prior to any conclusions.

## **7. Educational:**

- 7.1. Does the site have the potential to be used as an educational instrument?

7.2. Does the site have the potential to become a tourist attraction?

7.3. The educational value of a site can only be fully determined after initial test-pit excavations and/or full excavations.

The more a site can fulfill the above criteria, the more significant it becomes. Test-pit excavations are used to test the full potential of an archaeological deposit. These test-pit excavations may require further excavations if the site is of significance. Sites may also be mapped and/or have artefacts sampled as a form of mitigation. Sampling normally occurs when the artefacts may be good examples of their type, but are not in a primary archaeological context. Mapping records the spatial relationship between features and artefacts.

## **RESULTS**

### **MINING POND A**

**MPA38** was originally recorded in 2006 and was monitored in 2007<sup>1</sup>. We suspected that human skeletal remains would occur; however, we did not observe any. One sherd with ‘finger nail impressions’ and lip notching was observed. Decorated pottery was sampled, and various faunal remains were observed. The pottery dates to the Late Iron Age.

The site is of low significance

### **MINING POND C**

**MPC88** is located along a narrow ridge on the second main dune cordon from the interior. The site consists of a small scatter of diagnostic pottery (possibly Early Iron Age) and one hammer stone. The hammer stone was used as an upper grinding stone as well.

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<sup>1</sup> This site was incorrectly named MPA 37 in the December report.

**MPC89** is located on the top of dune along the second dune cordon from Lake Nhlabane. The site consists of an ephemeral scatter of artefacts over a wide area. The artefacts include:

- Shell: mostly *Perna perna*
- White beach sandstone fragments – for lower grinding stones
- Pottery: mostly adiagnostic and dating to the late Iron Age or Historical Period, however some Mzonjani (Early Iron Age) were observed.

The site is of low significance

**MPC90** is located on the second dune cordon from Lake Nhlabane on a semi-flat area near the top of the dune. It consists of a single shell midden that has been dispersed by bulldozer activity and some adiagnostic pottery. The shell midden consists of brown mussels and limpets

The site is of low significance.

## MINING POND D

**MPD 79** was originally recorded in 2006. Since then, we have sampled the site for stone tools. We set up a base line in the center of the site and placed squares every 10m apart. The analysis for this report has placed all of the tools in one group, as it is not aimed at a spatial analysis. Rather, we were interested in the general results.

MPD79 is a multicomponent site. It contains Late Stone Age, Early Iron Age, and Late Iron Age material. The Iron Age material consists of iron smelting activity, shell middens, pottery, and faunal remains. It is difficult to state which Period is associated with the iron smelting, however the shell midden and faunal remains appear to be associated with the Late Iron Age deposits. While the site is a lag deposit (i.e. several layers have formed one layer), the stone tools are clearly different to the Iron Age Periods. The grinding stones may belong to any of the three Periods.

Our sample consists of those tools visible on the surface and those that are not obviously associated with the Iron Age occupations. We have set up a base line in the center of the site and placed squares every 10m apart. The A line refers to the Lake Nhlabane (west) side, while B refers to the ocean (east) side.

Table 1 summarises the results of our sampling. Table 2 summarises the results according to their squares, i.e. a spatial result. The tables indicate the types of stone tools that one would normally find in a stone tool assemblage of this date.

Table 1 indicates that the formal tools (i.e. stone tools that have been purposefully modified to for a specific function) tend to occur in low percentages: only 4.7% of the total assemblage. This is an acceptable percentage in comparison to other (coastal) sites in southern Africa. These formal tools tend to be made on shale and then dolerite<sup>2</sup>. These consist of scrapers (for hide working), adzes (for woodworking), and a segment (for arrows). The other formal tools are miscellaneous categories of formal tools.

Of interest are the different sizes of the scrapers. Coastal hunter-gatherer sites dating from 4 000 years ago tend to have small scrapers (less than 20cm in length). This site has mostly medium (20cm – 30cm) scrapers, and a few larger (>30cm) scrapers. This could be a result of raw materials as the shales tend not to allow for small stone tools.

The borer (also called a drill or awl) is used to make holes. The one drill that we found fitted exactly into the hole of an *Achatina spp.* bead (found on the site).

Adzes are used for woodworking, specifically for straightening piece of wood. These tools tend to be associated with digging sticks. The general theory is that the harder soils would require bigger bored stones (for weight), and that digging

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<sup>2</sup> The terms Grey or Brown Shale are our terms to denote different types/colours of shale: it is not the correct geological term. This will be ascertained at a later stage. The term dolerite refers to stone that appears to be dolerite; however this is also subject for further analyses. The important point is that they are different raw materials

sticks would wear down faster, and thus there will be an increase in adzes. Areas with soft sand will thus have fewer adzes, as there is less wear on the digging sticks. A total of three adzes were recorded at this site, and this is expected.

Utilised pieces are flakes that have been used, but not formally modified. The most common occurring category is that of flakes. While the two types of shale dominate the raw materials, there is an increase in quartz and quartzite. Of interest is the occurrence of CCS (cryptocrystalline silicates): at this site the CCS is banded agate. These are volcanic glass, in origin, and tend to occur in volcanic rocks or are found in the larger rivers. The point is that CCS is not locally available.

The waste category indicates that the flakes are the highest occurring type of waste material. These are stone artefacts that have not been used. The high occurrence of chunks could be a result of the iron smelting activities of from the Iron Age levels. That is, the upper levels would have produced "chunks" whilst breaking iron ore with hammer stones. A high incidence of chips (small flakes less than 10mm in size) would indicate that the stone tools were made at the site. While this does not appear to be the case for MPD79, one must remember that the smaller tools would have sunk into the sand. Furthermore the increase of CCS waste at the site, in comparison to other CCS categories) suggests that stone tools were in fact made at the site. Lastly, the higher percentage of normal flakes (and cores) indicates that stone tools were made at the site.

Cores are also suggestive of the types of stone tools being made. Bipolar cores tend to yield four small flakes for every time the core is struck. Single Platform cores tend to yield more defined (or shaped) flakes, in contrast to irregular cores that produce flakes with a variety of shapes and sizes. The site produced mostly irregular cores, followed by Bipolar and Single Platform Cores. The results from the raw material analyses indicate that Brown and Grey Shales tend to be the more preferred raw materials, followed by Quartz and Quartzite, then Dolerite and CCS.



Some Middle Stone Age (MSA) flakes occur on the site. These either are demineralised or have a faceted platform: both indicators for MSA tools. The occurrence of these tools at the site does not imply that there is a MSA level; rather, that MSA stone tools have been brought in from elsewhere during the LSA.

The stone tools from this site appear to be typical of middle Holocene, or Wilton, assemblage. That is, it probably dates between 4 000 and 2 000 years ago. This is a similar age to STMB.

The comparison between STMB and MPD79 indicate two different types of sites in terms of raw materials and stone tool categories. STMB favours Quartzite and Quartz, whereas MPD79 favours the shales. The occurrence of a high percentage of dolerite at STMB is a classification error and it should refer to a black-like quartz. That is it was differentiated from white quartz, but labelled as dolerite.

The overall percentages at the site are similar in that waste is the most common occurring category, followed by cores, utilised pieces, and then formal tools. The main differences occur in the types of cores and formal tools at each site. STMB has a much higher percentage of Irregular Cores, followed by Split Pebble Cores, and then very few other types of cores (fig. 5). STMB only has five formal tools, and these are mostly scrapers (fig. 6). We believe that these differences are a result of site function. STMB is mainly a shell midden with people living around there for a short period of time. The stone tools required for shell fish procurement do differ from a normal living site, hence the more “crude” stone tools at STMB.

The main differences between the two sites are:

- MPD79 has a much higher percentage of formal tools
- MPD79 has more utilised flakes
- MPD79 has a more cores in a larger variety.
- MPD79 tends to use shale as a raw material, while STM has quartz and quartzite.

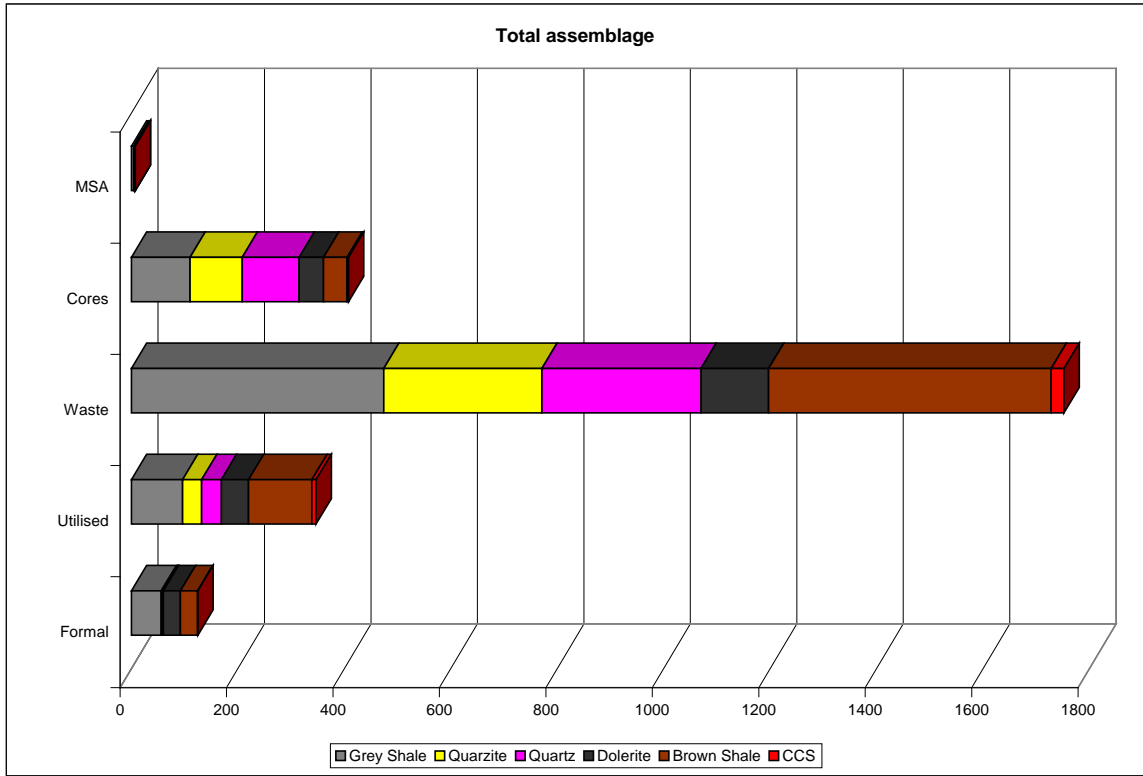
TABLE 1: STONE TOOL FREQUENCIES FROM MPD79

	Grey Shale	Quartzite	Quartz	Dolerite	Brown Shale	CCS	Ttl	%
<b>FORMAL</b>								
Small Scraper	14	1	0	2	12	0	<b>29</b>	<b>23.20</b>
Medium Scraper	23	0	0	19	15	1	<b>58</b>	<b>46.40</b>
Large Scraper	10	1	0	6	3	0	<b>20</b>	<b>16.00</b>
Backed Scraper	0	0	0	0	0	0	<b>0</b>	<b>0.00</b>
Scraper-Adze	0	0	0	0	0	0	<b>0</b>	<b>0.00</b>
Adze	1	0	0	1	1	0	<b>3</b>	<b>2.40</b>
Segment	2	0	0	0	0	0	<b>2</b>	<b>1.60</b>
MRP	3	1	1	2	1	0	<b>8</b>	<b>6.40</b>
Backed Piece	2	0	0	2	0	0	<b>4</b>	<b>3.20</b>
Borer/Drill/ Awl	1	0	0	0	0	0	<b>1</b>	<b>0.80</b>
Burin	0	0	0	0	0	0	<b>0</b>	<b>0.00</b>
<b>Total</b>	<b>56</b>	<b>3</b>	<b>1</b>	<b>32</b>	<b>32</b>	<b>1</b>	<b>125</b>	<b>100.00</b>
<b>UTILISED</b>								
Flakes	86	36	36	47	115	8	<b>328</b>	<b>94.52</b>
Blades	9	0	1	2	3	0	<b>15</b>	<b>4.32</b>
Bladelets	0	0	0	0	0	0	<b>0</b>	<b>0.00</b>
H.E.D.	1	0	0	2	1	0	<b>4</b>	<b>1.15</b>
<b>Total</b>	<b>96</b>	<b>36</b>	<b>37</b>	<b>51</b>	<b>119</b>	<b>8</b>	<b>347</b>	<b>100.00</b>
<b>WASTE</b>								
Chips	108	15	19	3	60	4	<b>209</b>	<b>11.93</b>
Chunks	37	43	57	9	51	2	<b>199</b>	<b>11.36</b>
Flakes	318	239	221	115	419	18	<b>1330</b>	<b>75.91</b>
Blades	11	0	2	0	1	0	<b>14</b>	<b>0.80</b>
Bladelets	0	0	0	0	0	0	<b>0</b>	<b>0.00</b>
<b>Total</b>	<b>474</b>	<b>297</b>	<b>299</b>	<b>127</b>	<b>531</b>	<b>24</b>	<b>1752</b>	<b>100.00</b>
<b>Cores</b>								
Bipolar	30	6	6	25	8	1	<b>76</b>	<b>18.63</b>
Irregular	65	83	81	18	31	0	<b>278</b>	<b>68.14</b>
Single Platform	15	6	6	3	5	2	<b>37</b>	<b>9.07</b>
Bladelet	0	0	0	0	0	0	<b>0</b>	<b>0.00</b>
Blade	0	3	14	0	0	0	<b>17</b>	<b>4.17</b>
<b>Total</b>	<b>110</b>	<b>98</b>	<b>107</b>	<b>46</b>	<b>44</b>	<b>3</b>	<b>408</b>	<b>100.00</b>
<b>MSA</b>								
MSA Flake	4	1	0	2	0	0	<b>7</b>	<b>100.00</b>
<b>Total</b>								
Formal	56	3	1	32	32	1	<b>125</b>	<b>4.74</b>
Utilised	96	36	37	51	119	8	<b>347</b>	<b>13.15</b>
Waste	474	297	299	127	531	24	<b>1752</b>	<b>66.39</b>
Cores	110	98	107	46	44	3	<b>408</b>	<b>15.46</b>
MSA	4	1	0	2	0	0	<b>7</b>	<b>0.27</b>
<b>Total</b>	<b>740</b>	<b>435</b>	<b>444</b>	<b>258</b>	<b>726</b>	<b>36</b>	<b>2639</b>	<b>100.00</b>

**TABLE 2: SUMMARY OF STONE TOOLS PER SQUARE**

Square	Formal									Utilised				Debitage				Cores				MSA Flakes	Upper G/stone	Grand Total			
	Scrapers			Adze	Segment	MRP	Backed Piece	Borer/ Drill/ Awl	Ttl	Flakes	Blades	Bladelets	H.E.D.	Ttl	Chips	Chunks	Flakes	Blades	Ttl	Bipolar	Irregular				Single Platform	Split Pebble	Ttl
	Small	Medium	Large																								
A00	6	8	3	0	0	0	1	0	18	72	4	0	0	76	70	57	273	1	401	4	41	5	3	53	1	2	548
A010	7	6	2	2	1	1	2	0	21	103	6	0	0	109	67	98	262	8	435	15	108	9	10	142	6	4	707
A020	2	9	3	0	0	3	0	1	18	40	1	0	2	43	13	10	177	0	200	5	19	1	2	27	0	0	288
A030	5	8	3	1	0	2	0	0	19	21	1	0	0	22	3	3	121	1	128	11	17	4	0	32	0	0	201
A040	4	10	6	0	1	0	0	0	21	47	1	0	0	48	30	14	204	0	248	12	14	0	0	26	0	1	343
A050	4	6	2	0	0	0	0	0	12	9	0	0	0	9	12	6	88	2	108	2	9	1	0	12	0	0	141
A060	0	3	0	0	0	0	0	0	3	5	1	0	1	7	6	2	34	0	42	2	6	3	1	12	0	0	64
A070	1	3	0	0	0	0	0	0	4	5	0	0	0	5	4	0	46	2	52	12	8	6	0	26	0	0	87
A080	0	2	1	0	0	0	1	0	4	6	0	0	1	7	1	1	31	0	33	4	12	1	0	17	0	0	61
A090	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10	0	2	1	0	3	0	0	13
A100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	3	0	0	3	0	0	4
A110	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	2
A130	0	0	0	0	0	0	0	0	0	2	0	0	0	2	1	0	23	0	24	0	1	1	0	2	0	1	28
A140	0	3	0	0	0	1	0	0	4	11	0	0	0	11	2	4	28	0	34	7	9	2	1	19	0	0	68
A150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	7	0	9	0	2	0	0	2	0	0	11
B010	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	1	12	0	13	0	3	0	0	3	0	1	18
B020	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	3
B030	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	2
B040	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	4
B050	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	2
B060	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	0	3	0	0	3	0	0	5
B070	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	1	1	4	1	0	6	0	0	8
B080	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	0	2	0	1	0	0	1	0	1	4
B090	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
B100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1
B110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	3
B120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3	0	0	1	1	0	2	0	0	5
B130	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	3
B140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	1	1	4	1	0	6	0	0	8
B150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>29</b>	<b>58</b>	<b>20</b>	<b>3</b>	<b>2</b>	<b>8</b>	<b>4</b>	<b>1</b>	<b>125</b>	<b>328</b>	<b>15</b>	<b>0</b>	<b>4</b>	<b>347</b>	<b>209</b>	<b>199</b>	<b>1330</b>	<b>14</b>	<b>1752</b>	<b>76</b>	<b>278</b>	<b>37</b>	<b>17</b>	<b>408</b>	<b>7</b>	<b>10</b>	<b>2632</b>

**FIGURE 1: COMPARISON OF STONE TOOLS FROM MPD79 AND STM  
MPD79:**



**STM**

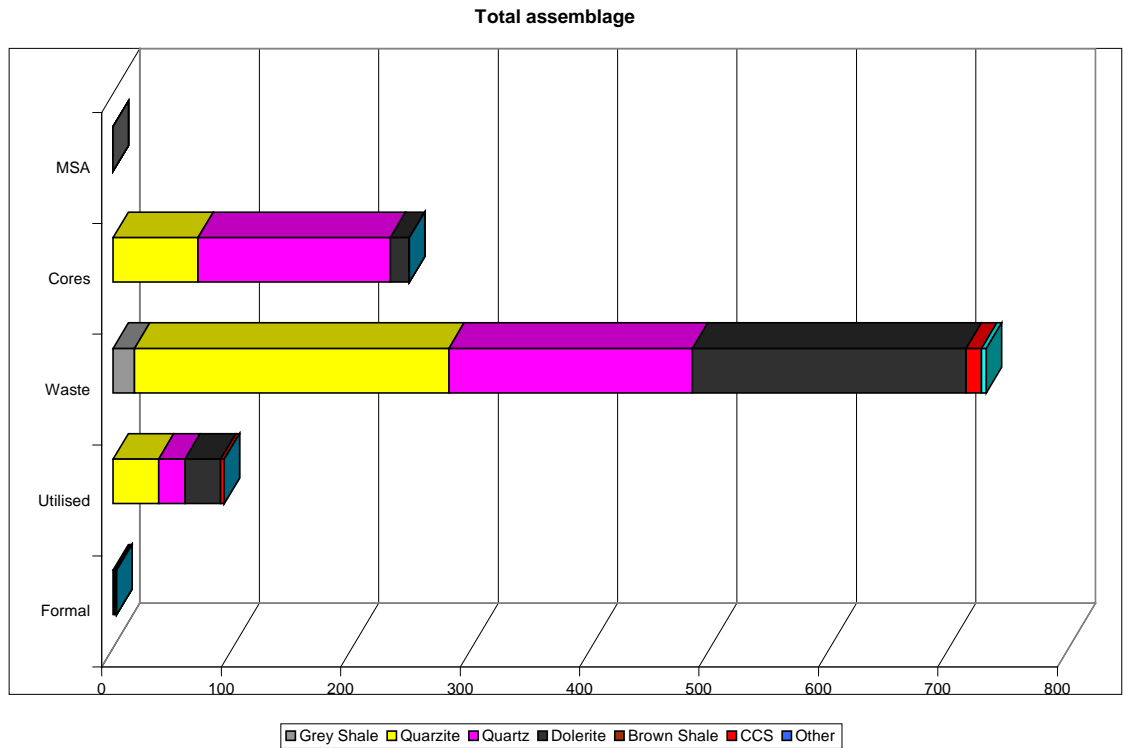
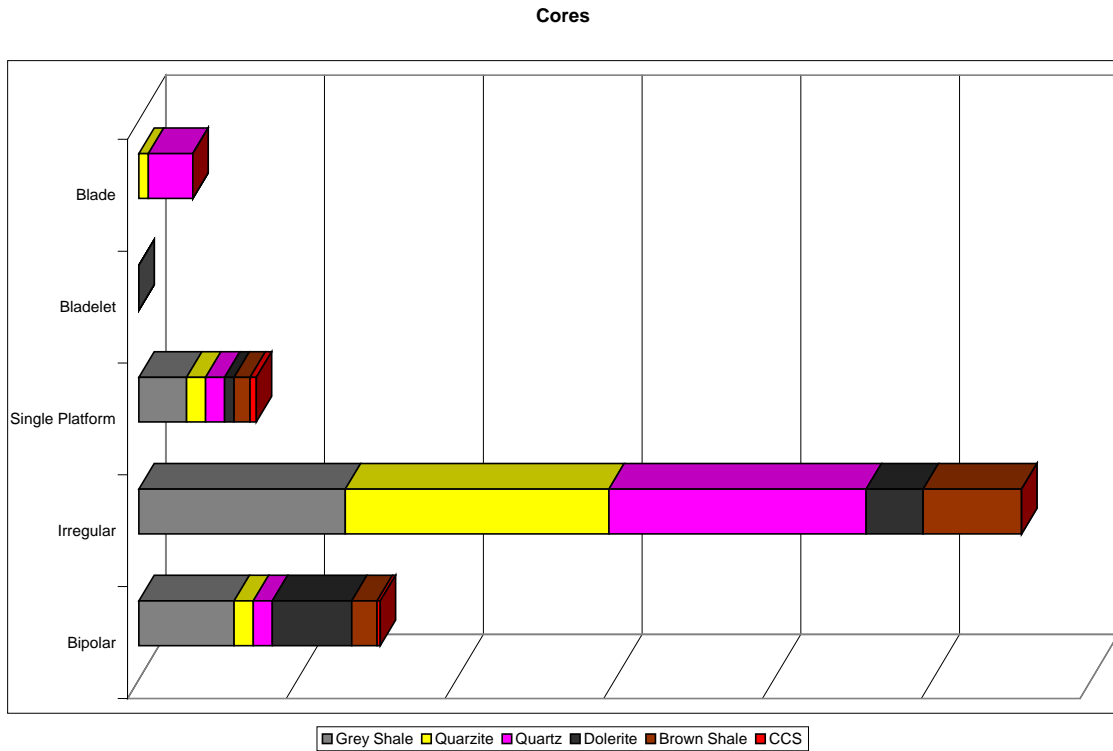


FIG. 2: COMPARISON OF CORES FROM MPD79 AND STMB

MPD79



STMB

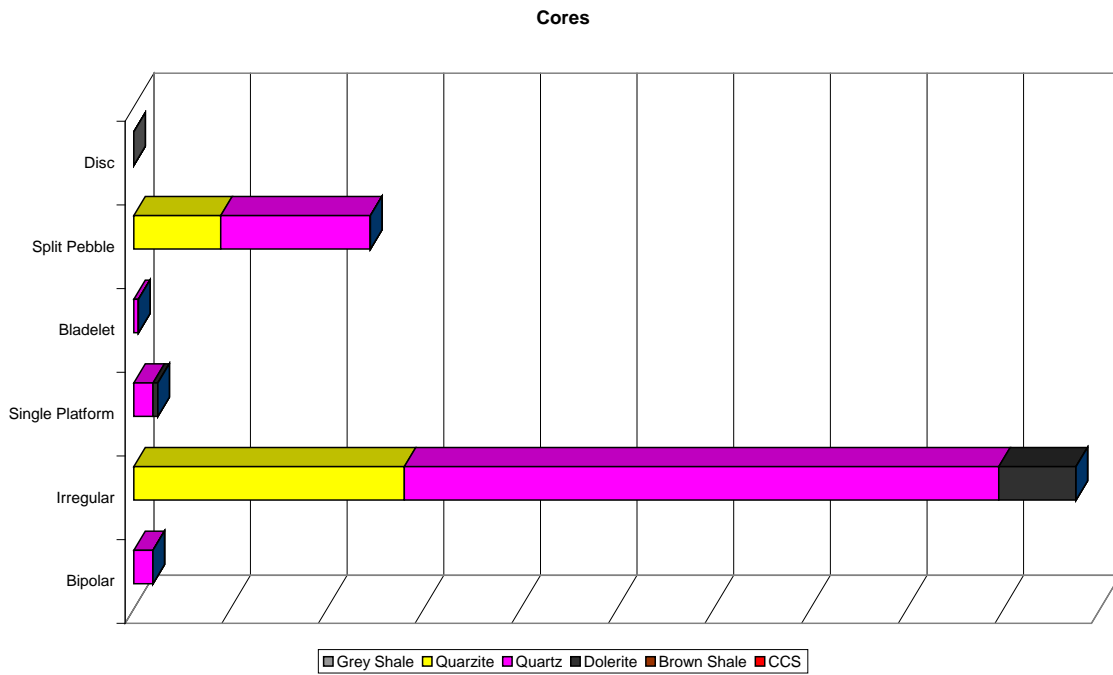
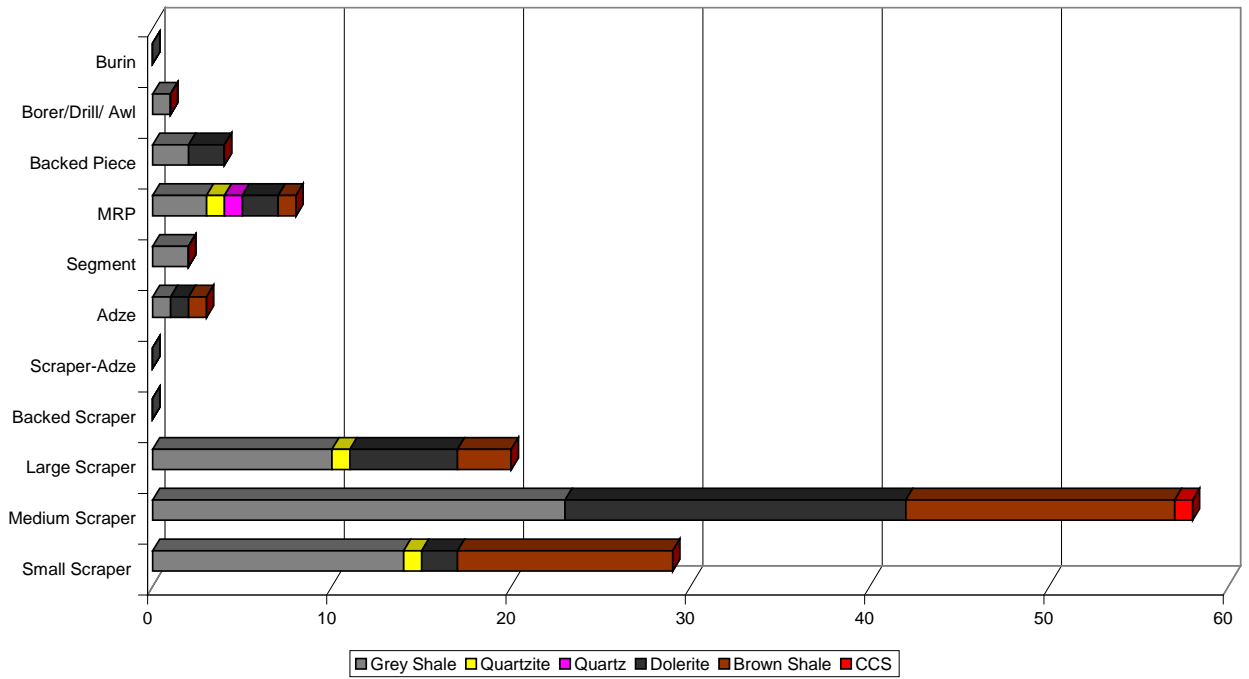


FIG. 3: COMPARISON OF FORMAL TOOLS FROM MPD79 AND STMB

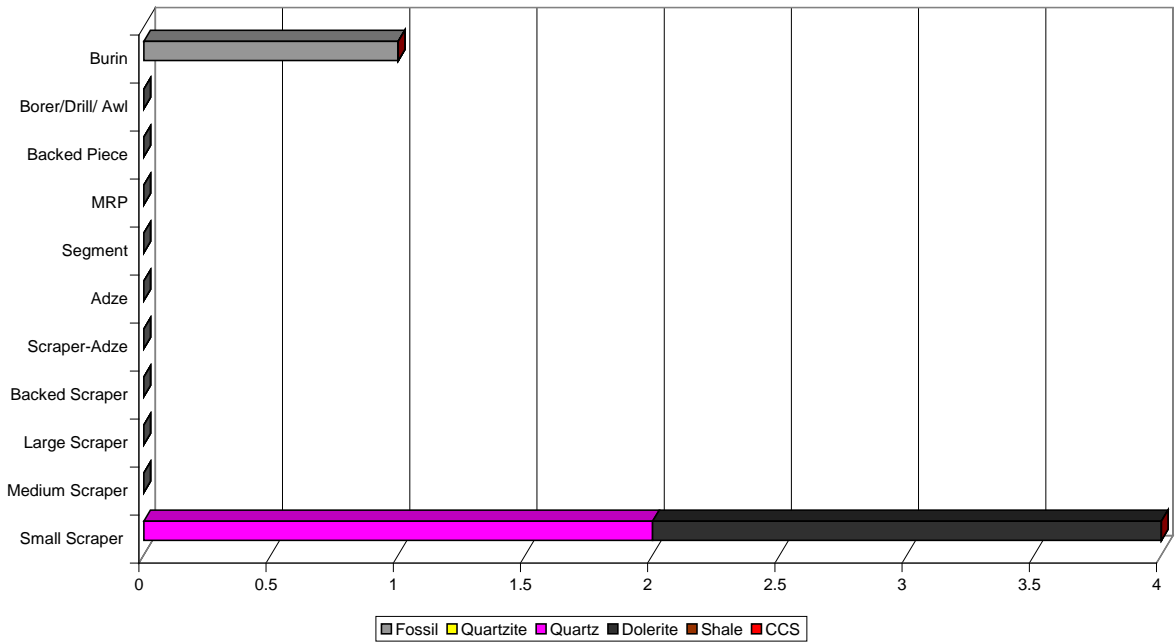
MPD79

Formal Tool Frequency and Raw materials



STMB

Formal Tool Frequency and Raw materials



**MPD 80**

The site is located on a small round hill on the third dune cordon from the sea. The site consists of undecorated thin-walled pottery, a tapered rim with flat lip, two upper grinding stones, and one lower grinding stone made from white beach sandstone. At the base of the hill is a scatter of *P. perna*.

The site is of low significance and no further mitigation is required.

**MPD 81**

MPD 81 is located on a small dune on the third dune cordon from Lake Nhlabane. The site consists of a small scatter of pottery and grinding stones. The pottery is undecorated. The grinding stones consist of two small lower grinding stones made from white beach sandstone, and one quartz upper grinding stone.

The site is of low significance and no further mitigation is required.

**MPD 82**

The site is located on a small hill between the second and third dune cordon the beach. The site consists of a small scatter of shell (*P. perna*) that was exposed and dispersed by bulldozer activity. More of the site may occur under the vegetation.

The site is of low significance and no further mitigation is required.

**MPD83**

MPD83 is located on a small dune just behind the second dune cordon from the interior. The site is ~10m in diameter and consists of a scatter of brown mussels and a few undecorated sherds.

The site is of low significance and no further mitigation is required.

**MPD90** consists of a scatter of artefacts along the second dune cordon from the beach. It consists of a shell midden of brown mussel and limpets, adiagnostic pottery, upper and lower grinding stones.

The site is of low significance

## MINING POND E

**MPE62** is located on the top of the second dune from the lake. The dune is small and dome-shaped of ~20m diameter. The site has grinding stones and a small scatter of pottery. Only one decorated sherd was observed. This is an Ntshekane sherd (embossed chevron pattern at neck-shoulder). This dates the site to between 1 300 – 1 100 years ago. This Phase in the Early Iron age is rare in the dunes: approx. four such sites have been recorded in the mining lease. Most of these occur on the top of the dune system. This is unlike the other EIA sites that occur in the valley bottoms of the dune system.

The site is of low significance and was sampled.

**MPE63** is ~60m north of MPE 62, on the top of the adjacent dune. The site is approx. ~40m in radius and consists of a scatter of shell, stone, and pottery. We initially thought that the site was small; however, it extended much further after the vegetation was cleared. We have been monitoring and sampling the site since it was recorded. The artefacts consist of the following:

- Pottery is thin walled and suggestive of LIA pottery.
- The shell consists of brown mussels (*P. perna*), oyster (*Ostridaeae spp.*) and whelk (the large bulbous whelk). These are scattered all over the site, but at least four concentrations were observed.
- Grinding stones consisted of lower grinding stones on white beach sandstone and upper grinding stones on river pebbles.
- A small clay dagga pipe.
- Faunal remains including aquatic mammal and medium to large bovids
- Human remains consisting of isolated skeletal parts scattered all over the site.
- Iron smelting artefacts that include slag and iron ore. The slag was observed on the northern and southern part of the site.



The site is of medium significance

**MPE64** is ~150m east of MPE62, on the top of tall dune that has a flattened top. The top has a diameter of ~100. It may also be part of a site that was recorded in 2004. The site consists of a scatter of artefacts that have been disturbed by bulldozer activity. There are at least 3-4 individual shell middens that are in a secondary context. The middens consist mainly of *P. perna*.

The scatter of pottery occurs throughout the site and most of it is undecorated. Only one sherd was decorated with thick lip notching. The pottery is thin walled and similar to other LIA pottery.

The site is of low significance

#### **MPE65**

Site is located on top of a small knoll-like dune. It extends for a ~10m radius, but it may extend into the vegetated area as well. There is a semi-intact midden of *P. perna* and oyster, as well as some undecorated pottery.

The site is of low significance.

#### **MPE66**

This site is situated on the ridge of the second dune from the ocean. Site consists of one main midden of *P. perna* and oyster. One small piece of undecorated pottery was observed. The site probably extends further into the vegetation.

The site is of low significance.

#### **MPE67**

This site is relatively small and compacted and consists of probably 1-2 houses/huts and several middens directly behind it. The site covers about a 10m -15m radius. The shell middens are medium sized and include whelk, mussel and oyster. The pottery is LIA and one has incised rim and 'fingernail'

impressions. The site belongs to Group 5 pottery and thus dates to the early part of the LIA.

The site is of low significance

**MPE68** is located along the first dune cordon from the lake. It consists of an ephemerals scatter of pottery sherds, some bovid bone, shell fragments, and upper grinding stones. One Early Iron Age sherd dating to the Mzonjani Period was observed.

The site is of low significance.

**MPE69** is a large scatter of artefacts on the top of a dune with a trig. beacon. The shell consists of *Perna perna* (Brown mussel), oyster, whelk and limpets. Bovid bones were observed, as well as a human anklebone. The pottery consists of mostly undecorated sherds One sherd had lip notching and another sherd had horizontal and vertical rows of "fingernail" impressions.

Other artefacts include white beach sandstone lower grinding stones and various upper grinding stones.

#### **MPE70**

Site is ~150m east of MPE68. It has been exposed by the bulldozer path. It is currently an ephemeral scatter of pottery and marine shell.

The site is of low significance

### **ASCENT MINING SERVICES (AMS)**

**AMS9** was revisited and sampled throughout 2007. The site consists of Late Stone Age, one EIA sherd, but mostly LIA material. A total of four individual human skeletons came from this site, of which one may date to the Historical Period, but at least predating 1940 AD.

These artefacts consisted of several decorated sherds, grinding stones, slag, and stone. We also sampled a few stone tools of which one was a classic thumbnail scraper. This tool is associated with hunter-gatherers and predates the arrival of farmers along the coastal area some 1 700 years ago. This has made us rethink some of the stone material from the site. We had previously thought that the stone artefacts were a result of the iron smelting process. That is the flakes and cores were from crushing stone for the iron ore. We now realise that many of these are in fact part of the early hunter-gatherer occupation.

This is now the third hunter-gatherer site we have recorded in the dune system.

We located the fragmented remains of a human cranium on the slope where Skeleton 1 (SK1) was approximately recorded<sup>3</sup>. We excavated the area surrounding the cranium but could not locate any other human remains. We believe this to be related to SK1, as no cranium was recorded for SK1. The cranium has been separately boxed from SK1, and labelled as SK1(?).

A path had been partially opened by a bulldozer. This activity removed sand and allowed a burial to be exposed (SK4). We had previously sampled two arm bones in this area and realised that we now had the scattered remains of a human skeleton. This is the fourth skeleton from the area. Two humeri and fragments of a femur and/or pelvis were visible on the surface. This suggested that the bulldozer had removed the upper parts of the skeleton and dispersed it. This would be the norm as these people tend to be buried in a sitting position.

After we had removed the surface bones, we started excavating a bit deeper to make sure that we had not missed any other bones. We then located a few fragmentary hand and foot bones. These were relatively *in situ* and showed that the person was buried with their hands between their feet and pelvis. Further excavations yielded parts of the vertebra column, ribs, knee cap(s), cranium, and mandible, and fragments of various long bones and phalanges. The cranium was

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<sup>3</sup> Skeleton was had mostly slumped with the dune and we had an approximate location.

very fragmented. We managed to remove the entire cranium by covering it with a plastic bag as we excavated. The cranium contents were thus sampled.

We even found part of the pelvis below the feet bones, cranium, and spine. The position of these bones suggests that the skeleton had been originally in an upright position; however, post-depositional factors had seriously displaced the body parts. The skeleton had been literally pushed downwards and then outwards in a 'starfish' shape.

The skeleton is generally poorly preserved. It is very fragile and the bones are thin and weathered. The long bones appear to be short, indicating a person of small stature. The teeth are worn down, suggesting the person is relatively old. We estimate that approximately 50% of the skeleton was recovered.

We also recorded a concentration of glass beads located just outside of the dune and near SK4. The beads were in a metal tin and associated with a complete pot, a brass spoon, a brass bracelet, (figures 4 – 6) and probably Skeleton 4 (from previous excavations – see March 2007 report). These artefacts were found in an ashy fireplace within 1m from Skeleton 4.

We removed as many glass beads that we could from the fireplace, as we did for the pottery sherds. The metal tin was too rusted and fragmented. It appears as if the beads had been placed in the tin, and then in the fireplace: several beads were "rusted" onto the inside of the tin. The pot, bracelet and spoon were also located in the fireplace. These artefacts are not directly associated with the burial, i.e. they are not grave goods, but are associated with the burial by proximity.

These artefacts were photographed, and Table 3 summarises the beads.

Most of the artefacts from AMS9 date to the Late Iron Age, and probably between AD 1 300 – AD 1600; the glass beads associated with Skeleton 4 are however more recent and may date to the more recent past, and associated with the Sokhulu people. Skeleton 4 was always separate from the main part of

AMS9. This means that Skeleton 4 will probably need to be reburied after the mining operations. A radiocarbon date will place this skeleton in the correct context. There is a possibility that the Skeleton 4 and the fireplace were deposited at different times.

**TABLE 3: GLASS BEADS FROM AMS9**

Description	Number
Large white	16
Medium white	525
Small white	21
Pink	1
Turquoise	2
Dark Navy Blue	158
Red on white	4
Navy Blue and White Stripes	21
Bright blue	4

**FIGURE 4: GLASS BEADS FROM AMS9**



FIGURE 5: GLASS BEADS FROM AMS9

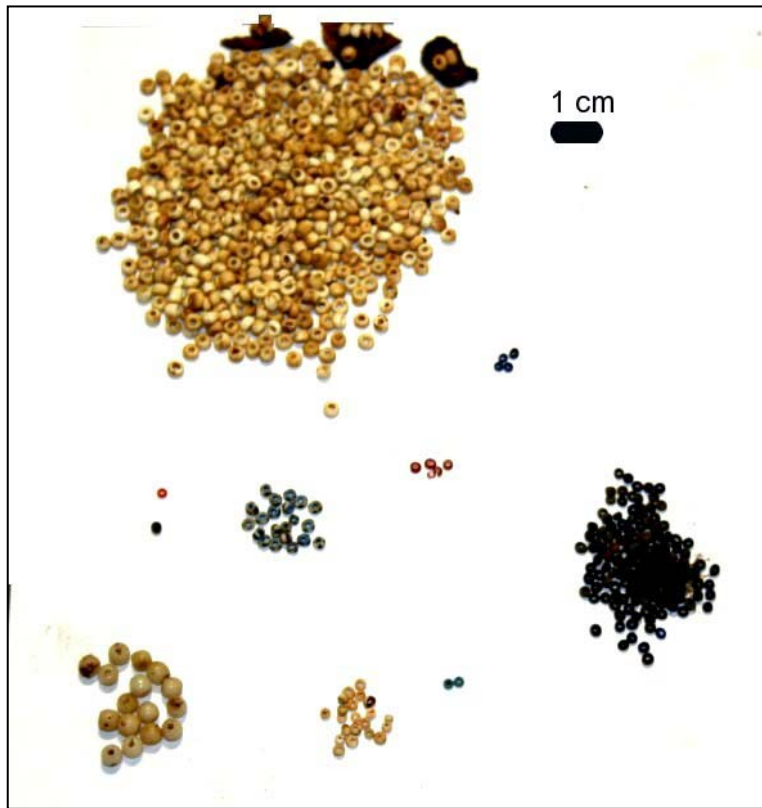


FIGURE 6: BRASS SPOON AND BANGLE FROM AMS9



We had demarcated the site at one stage with yellow poles; however bulldozers had ignored these markings and went through the eastern part of the site. This was reported to RBM officials and the transgression was noted. To counter further damage to the site, we (RBM and Umlando) decided to demarcate the site with wind netting and signage stating that it was an archaeological site. We will also be using the RBM induction courses to inform people about the occurrences of sites and what may (not) be done. The signage will be used at other sites that are being monitored.

### **AMS 13**

The site is located on a low hill between the first and second dune cordon from the sea. The site consists of a small scatter of shell and pottery. Shell is consists of *P. perna* and large amount of oyster. The pottery is undecorated and both black and brown in colour. One fragment of a smoking pipe with horizontal incisions was sampled. Three upper grinding stones were also observed.

The site is of low significance and no further mitigation is required.

### **SHARK TOOTH MIDDEN (STM)**

We began excavations of STM in 2001, and completed the main middens in 2004. The excavations at STMB began in 2005, and continued with the excavations over three periods in 2007: January, April-May, and September-November. The last excavations were conducted over four weeks with three members of the community between September and November. They were trained in basic excavation and supervised during thereafter.

Our aim was to find the edges of the living area and to complete the excavations of the entire site. In addition to this, features and interesting finds were plotted. We completed the excavations ahead of schedule and spent the rest of the budgeted time sorting and analysing the material. There was more material than what we had expected and we had to hire an additional sorter to continue working<sup>4</sup>. We are still analysing the material and data basing the results.

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<sup>4</sup> She works four days per week and completes sorting the material on the 7 December.

Table 5 summarises the work analysed so far.

We divided the site into 205 1m x 1m squares. Each square was then divided into four 50cm x 50cm quads. In normal situations one would plot every artefact excavated. However, the tree roots and burrowing animal have moved the material around so that they are not in their original position. The results from plotting would thus not be entirely valid. We chose the smaller quads as this would allow for artefact movement, but still give some form information on spatial location. The artefacts are then plotted with archview that assigns them a random position in that quad. Spatial information is thus not lost. RBM has undertaken to do the archview plotting for us.

The whole of STM(B) consists of several shell middens along the western and eastern area of the site, while the living area is in the middle. There were no shell middens along the north and southern parts of the site. These areas had a notable amount of hardened sand granules and a sudden decrease in artefacts.

The site consists of several small concentrations of stone that were either upper grinding stones or hammer stones. Only two areas were considered to be proper features. Both are concentrations of stone tools that may have been either a stone tool working area, or hearths (see fig. 7)

The artefacts have yielded some interesting information.

### **Adornments**

We had always assumed that *Nassarius krausianus* (Nassa.) was used for adornments. Most of the beads occur in the shell middens, suggesting that they may be part of the general shell fish collection debitage. Some may have been used for necklaces. Unfortunately most of the beads are weathered making the identification of beads difficult.

*Conus spp.* and *Cowrie spp.* (money cowrie?) occur and these were very likely used for adornments, especially as necklaces, especially the money



cowries. Other adornments included oyster pendants, *Tivela* spp. pendants, and Ostrich Eggshell (OES) beads. The OES beads may be from the shell of *Achatina* spp.. The two look very similar as beads.

**TABLE 4: SUMMARY OF ARTEFACTS CURRENTLY ANALYSED AT STMB**

CATEGORY			
	Bone fragments		81
	Donax Scraper		271
	Coral		239
	Clay		4
FISH	Teeth		1380
	Jaw		261
	Otolith		39
STONE	Cores		408
	Flakes		1208
	Utilised		180
	Ochre		89
	Upper g/stone		147
	Lower g/stone		196
ADORNMENTS	Nassa.		801
	O.E.S.		17
	Cowrie		48
	Conus		2
	Pendant (oyster)		9
SHELL	P. perna	Left Hinges	12166
		Right Hinges	12440
	Weight (grams)		138834

## Shell

Most of the shell is from *Perna perna* (Brown mussel), followed by *Ostridae* spp. (oyster), and to a much lesser degree *Patella* spp. (limpets). The most interesting spatial arrangements are that oyster tends to occur in the living area more so than the mussels.

We have counted the left and right hinges of brown mussel to obtain some indication of the amount of mussels eaten at STMB: This is called a Minimum Number of Individuals (MNI). So far the people have eaten approx. 12 500 mussels. This is a substantial amount however it probably is over a hundred years or more. We need to date STMB, and compare it with STM. The middens at STMB are substantially smaller than those at STM and may not date to the same time.

FIGURE 7: CONCENTRATION OF STONE TOOLS



## Stone

The entire excavations at STM yielded less than 10 stone tools. STMB has, so far, yielded 2 228 pieces of stone that have been modified in some manner. The assemblage has very few formal tools (i.e. tools modified for a specific function). It compares very different to MPD79 where ~2.5% of the stone tools are formal tools. At STMB the formal tool count is less than 0.5% of the total assemblage. This would normally suggest that the site would be a shell fish processing site, however it is too far from the beach, and too high up the dune to be a mere food processing area.

The stone tools are, however, very standard of a coastal shell midden. We believe that the low frequency of utilised flakes (over normal flakes) is that many of the tools have been eroded and smoothed along the edges. It is thus difficult to determine if the tool was utilised or if it is debitage. We would believe that there should be more utilised flakes.

The high incidence of upper and lower grinding stone (fragments) is acceptable, as the meat from the shell was probably softened by bashing, i.e. tenderising. The grinding stones are not large.

'Ochre' should probably be changed to 'ocherous'. These are mostly fragments of small nodules of hematite or high iron oxide. We did not observe any ochre stains on the stones or adornments to indicate that it was being used for decorative purposes.

## Fish

A total of 1380 fish teeth have been counted so far. This is misleading as the fish jaw has many teeth in it. The total of 261 fish jaws is a better indicator of the number of fish eaten at the site. Fish vertebrae and spines are also found but in fewer numbers. The more important aspect of the fish remains is the occurrence of otoliths. Otoliths are the ear bones of fish and are species specific.

### **Mammal Bone**

Mammal bone is rare at the site. When found it tends to be in, or near, the shell middens. Shell preserves bone in the acidic soil. The bone is mostly that of small bovid.

### **Donax scrapers**

Donax scrapers are utensils made from *Donax spp.* It is a term coined from the west coast, and these shells are probably not *Donax spp.*, but *Venerupis spp.*. It is difficult to identify the shells as many are partially eroded and their colours are missing. A specialist will need to correctly identify the shell species.

### **Miscellaneous**

Several fragments of coral occur on the site. These are probably part of the general debitage of shell fish collecting.

Four clay nodules have been found. These are small pieces of clay that are disc-like in shape. They have not been fired.

Two fragments of pottery have been found at the site. We believe these are intrusive and do not form part of the site. The pottery fragments date to the Mzonjani Phase of the Early Iron Age (1 700 – 1 500 years ago).

## **RADIOCARBON DATES**

We received the results of the radiocarbon dates submitted in January 2006. The delay was a result of a problem with the CSIR's dating machines, and no dates were sampled until all inconsistencies were fixed. Table 5 lists the new and old dates from the RBM sites.

TABLE 5: RADIOCARBON DATES

Site name	Square	Lens	Type of sample	14C years	std dev	Calibrated Date <sup>5</sup>		
						max	probabl e	min
				<b>Before Present (1950)</b>				
AMS3	2	Lens 1	Bone	655	50	1298	1352	1406
AMS3	5	Lens 3 (NW quad)	Bone	680	45	1575	1647	1671
MPB50	7	5	Marine shell	890	20	1441	1451	1461
MPD245/00	Bone2	2A	Bone	560	50	1403	1417	1433
MPD245/00	3	2	Marine shell	860	50	1537	1634	1665
MPD245/00	Shell2	2A	Marine shell	1060	45	1418	1441	1464
MPD32	1	1	Marine shell	1095	20	1295	1303	1312
MPD40	13	1	Marine shell	985	20	1388	1401	1412
MPD43	/	1	Bone	830	50	1220	1256	1277
MPD43	/	1	Marine shell	1390	50	1122	1189	1239
MPE 99/7	4.5	SM2-3	Marine shell	990	50	1451	1479	1515
MPE02	/	2	Bone	500	90	1409	1436	1487
MPE02	1	1	Marine shell	790	20	1499	1515	1529
MPE02	/	2	Marine shell	990	40	1456	1479	1507
MPE10	4.2	3B	Bone	670	50	1293	1308	1400
MPE10	7.1	10	Marine shell	1000	50	1446	1473	1507
MPE10	6.1	5c	Marine shell	1090	50	1398	1426	1451
MPE10	6.4	8	Marine shell	1100	50	1392	1421	1446
MPE10	4.1	3b	Marine shell	1515	20	1029	1040	1051
MPE10	4.2	3B	Marine shell	1590	60	913	990	1032
MPE99/6	15.1	BOL1A	Marine shell	850	20	1625	1642	1654
MPE99/7	Sa1	SM2	Bone	440	35	1445	1462	1492
MPE99/7	Sa1	SM2	Marine shell	760	15	1681	1688	1695
MPE99/7	4.9	SM4	Marine shell	1000	50	1446	1473	1507
STM	28.4	DBS2	Bone	830	60	1202	1256	1280
STM	26.6	DBRS	Bone	1370	100	637	676	780
STM	26.3	Lens 22 (Bulk)	Bone	1570	150	390	544	657
STM	28.1	Lens 23	Bone	1960	180	115	79	322
STM		20	Bone	2285	40	382	368	303
STM		20	Marine shell	3440	60	1253	1163	1075
STM		C	Marine shell	3840	60	1705	1638	1560

A total of 31 radiocarbon dates have been submitted to the CSIR since 1995. Unfortunately most of these were on marine shell. Neither the CSIR dating laboratory, nor us, knew that there would be a large discrepancy between marine shell and bone. This discrepancy is taken into account for south and west coast marine shell dates, as they have a large data base and have correlated the differences. Unfortunately, the west coast calibration does not work for the east coast and our sample size is still too small to make any valid statements. In a general term the marine shell gives a much older date than a bone date from the

<sup>5</sup> Calibrated dates in red refer to BC, those in Blue are AD

same site and level<sup>6</sup>. We have started to send of samples of both when possible; however many sites do not have much bone or charcoal. The older sites may have bone, but they carbon content in these tend to very low and are thus not reliable.

The flashing dates from Table 5 are only those that are currently reliable. The calibrated dates (in BC or AD) are the 'true' age of the site, as these dates take into account the various fluctuations that occur along the radiocarbon dating curve.

The dates do not show anything unexpected in the general sequence of KZN. Of interest is the following about the RBM sites:

- Glass beads date as far back as the 1400s in the dunes, although these are not the oldest in KZN.
- The oldest dagga pipe dates to 1445 AD
- Shell impressed pottery (Group 7) dates from to the 1400s to probably the late 1500s. This is associated with the Thembi-Tonga speaking people.
- Circular, square and triangular impressions on pottery date from the 1000s to the late 1300s
- We lack dates, or sites, from the 1500s to late 1700s
- Bush pig, or warthog, or domestic pig occurs in the dunes at 1220AD. A dagga pipe was found at the base of the dunes near the site; however it cannot be reliably associated with the 1220AD date.
- The oldest site in the dunes is Shark Tooth Midden, dating between 1163BC to 390AD. This is a San hunter-gatherer site.

The various dates from Shark Tooth Midden need some explanation. STM and STMB are definitely hunter-gatherer sites and predate the arrival of agropastoralists in the area. The samples of the more recent bone dates of 1256AD, 676 AD, and 544 AD, have high percentages of modern carbon in the

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<sup>6</sup> A comparison between dates from the same site from Table 5 illustrates this.

sample. This means that they are either as recent as they appear to be, or they were contaminated between the time they were originally deposited to the time they were dated. It could also be a combination of both. When we take samples for radiocarbon dating, we do not touch the material and place it straight into the bag, stating it is for radio-carbon dating. We thus believe that the bone from the more recent STM dates is a result of:

- Post deposition and pre-excavation contamination; or,
- The animal died at the time of the date, and the remains filtered down to the level of the site through time.

The samples (of more recent dates) do not occur in shell middens, but in layers above them, and we thus favour the second explanation. We believe the older dates are the more accurate dates for STM. There is too little bone at STMB for a radiocarbon date.

## **OTHER ACTIVITIES**

Umlando, with Origin Designs Pty (Ltd), completed the upgrade of the Mananga Heritage Centre. This included the following:

- All of the displays have been changed and improved
- The floors have been sealed
- The lighting has been improved
- Fans have been installed
- New displays at Room 3 have been added. These now include the display of traditional 18<sup>th</sup> Century Zulu dress and artefacts.