

**MONITORING OF ROCK ART SITES NEAR
SONAE NOVOBORD (PTY) LTD, WITRIVIER,
MPUMALANGA**

DATE: SEPTEMBER 2008

By Gavin Anderson & Louise Anderson

Umlando: Archaeological Tourism and Resource Management

PO Box 102532, Meerensee, 3901

Phone/fax: 035-7531785 cell: 0836585362



TABLE OF CONTENTS

TABLE OF CONTENTS	2
TABLE OF FIGURES.....	2
INTRODUCTION	3
INTRODUCTION	3
METHOD	4
RESULTS	8
BOT1	8
BUNDU	9
LOWLANDS.....	23
RESULTS.....	45
CONCLUSION AND MANAGEMENT PLAN	45

TABLE OF FIGURES

FIGURE 1: LOCALITY MAP OF THE SURVEYED AREA	6
FIGURE 2: LOCALITY OF BOT1.....	7
FIGURE 3a: PANEL AT BOT1 PHOTOGRPAHED IN 2006	10
FIGURE 3b: PANEL AT BOT1 PHOTOGRPAHED IN 2008.....	11
FIGURE 3c: PANEL AT BOT1 PHOTOGRPAHED IN 2006	12
FIGURE 3d: PANEL AT BOT1 PHOTOGRPAHED IN 2008.....	13
FIGURE 4: LOCALITY OF BUNDU1	14
FIGURE 5a: GENERAL PANEL AT BUNDU PHOTOGRAPHED IN 2000	15
FIGURE 5b: GENERAL PANEL AT BUNDU PHOTOGRAPHED IN 2006.....	16
FIGURE 5c: GENERAL PANEL AT BUNDU PHOTOGRAPHED IN 2008	16
FIGURE 6a: IMAGES OF HUMANS AND ARROWS AT BUNDU PHOTOGRAPHED IN 2000 ...	18
FIGURE 6b: IMAGES OF HUMANS AND ARROWS AT BUNDU PHOTOGRAPHED IN 2006 ...	19
FIGURE 6c: IMAGES OF HUMANS AND ARROWS AT BUNDU PHOTOGRAPHED IN 2008 ...	20
FIGURE 7: LOCALITY OF LOWLANDS SITES	25
FIGURE 8a: GENERAL IMAGES AT ULOW1 PHOTOGRAPHED IN 2000	26
FIGURE 8a: GENERAL IMAGES AT ULOW1 PHOTOGRAPHED IN 2000	26
FIGURE 8b: GENERAL IMAGES AT ULOW1 PHOTOGRAPHED IN 2006.....	27
FIGURE 8c: GENERAL IMAGES AT ULOW1 PHOTOGRAPHED IN 2008	28
FIGURE 9a: GENERAL IMAGES AT ULOW2 PHOTOGRPAHED IN 2000	33
FIGURE 9b: GENERAL IMAGES AT ULOW2 PHOTOGRPAHED IN 2006.....	34
FIGURE 9c: GENERAL IMAGES AT ULOW2 PHOTOGRPAHED IN 2008	35
FIGURE 10a: GENERAL IMAGES AT ULOW3 PHOTOGRPAHED IN 2000	36
FIGURE 10b: GENERAL IMAGES AT ULOW3 PHOTOGRPAHED IN 2006.....	37
FIGURE 10c: GENERAL IMAGES AT ULOW3 PHOTOGRPAHED IN 2008	38
FIGURE 11a: GENERAL IMAGES AT ULOW4 PHOTOGRPAHED IN 2000	39
FIGURE 11b: GENERAL IMAGES AT ULOW4 PHOTOGRPAHED IN 2006.....	40
FIGURE 11c: GENERAL IMAGES AT ULOW4 PHOTOGRPAHED IN 2008	41
FIGURE 12a: GENERAL IMAGES AT ULOW5 PHOTOGRPAHED IN 2000	42
FIGURE 12b: GENERAL IMAGES AT ULOW5 PHOTOGRPAHED IN 2006.....	43
FIGURE 12c: GENERAL IMAGES AT ULOW5 PHOTOGRPAHED IN 2008.....	44

INTRODUCTION

Umlando was contracted by Sonae Novobord (Pty) Ltd. to undertake regular monitoring of selected rock art sites near the upgraded particle board dry preparation plant. There was public concern that certain emissions from the new processing plant may have negative effects on rock art images in the surrounding area. Sonae Novobord (Pty) Ltd. contacted SAHARA for guidance on how the art may be monitored. SAHARA had informed Novobord that they were not legally bound to undertake such an assessment, as there is no direct proof that the emissions would affect the potential art. However, Novobord undertook the assessment, as it would be the ethically correct procedure.

The initial 2006 survey covered an area in a ~3km radius of the plant (fig. 1). Several known rock art sites were visited and other archaeological sites were recorded. The report noted that one needs to consider several external factors if there is a change in the art (Anderson 2006: 23-24).

“These factors include:

- Human activity... that includes rubbing of the art, graffiti..., and/or removing the art.
- Natural water seepage
- Natural exfoliation
- Other negative environmental factors from neighbouring industries
- Other negative environmental factors from industries “upwind” from sites, e.g. there have been suggestions that the coal stations in the Witbank region have increased the effect of acid rain in the Nelspruit area. Any change to an environment should cause an effect on that environment. We would presume that if the change is constant and over a long period of time, then the changes, or the effects of those changes, may either stabilise or increase. Thus, if the emissions at Novobord do effect the art, there is a greater chance that more damage may occur in the initial years of the emissions. Although the long term effects would also need to be foreseen. If the emissions do have the effect of destroying the art then we need to monitor the first years more regularly than later years.

The 2006 management plan for the rock art was suggested as follows:

“First, Sonae Novobord keeps accurate records of the emissions along its perimeters. This is normally subject to an internal and external environmental audit. Second, the rock art sites are visited every year for the first five years. These visits will re-record the images and compare them with previous images. We can then determine if any changes in the art are global (i.e. amongst all of the sites) or local (i.e. site specific). If no changes are observed after this phase then a less intense monitoring program of every 2 – 5 years should be established. The nature of the monitoring phases will change though time according to necessity.

If changes are observed, and can be directly attributed to the emissions caused by Sonae Novobord, then alternative strategies are needed for monitoring and assessing the images. However, any claims to any form of deterioration of the art will need to be thoroughly documented and proven. We do not believe that it would be easy, or correct, to target any one company.”

The aim of the second (2008) survey was thus to see if there was any immediate change in the art.

METHOD

The initial report suggested that several earlier photographs of the various sites are obtained, to form some form of baseline study. We are still in the process of obtaining these photographs. Dr. BW Smith¹ has agreed to allow us access to the rock art database in his department if comparisons are required at a later date. At the moment, we have been given access to those photographs available on the webpage (www.sarada.co.za),. These are of a lower resolution than those on the main digital database, but serve as a good comparison of the sites from 2000. We have consulted this database as part of this report.

¹ Director, Rock Art Research Institute, Archaeology Division of the School of Geography, Archaeology and Environmental Studies University of the Witwatersrand

Our second survey recorded the sites as if 'for the first time' on vidcam. We intended to see if any images have disappeared since the initial recording in 2006. A vidcam and digital camera were used for these recordings.

A main concern for comparisons is one of the quality of the photos in relation to changing technologies. Our first recordings were done with a 2 mega pixel camera, while the second was with an 8 mega pixel camera. The second survey thus has pictures of a much higher quality. Other records may have lower photographic quality, e.g. 35mm camera film. This difference is noticeable between our 2006 and 2008 photographs where the more recent sometimes show the art to be better preserved.

There are two shortfalls (in hindsight) in our first two surveys. These are:

1. We did not use a Munsel colour chart scale for the photographs. This would have countered the difference in the colours in the various photographs
2. Photographs were taken from different locations or angles at the second survey. This was largely due to the growth of trees around the site and we did not have permission to remove/break vegetation from the landowners, e.g. see the Bundu site, and ULOW2

We should have photographed each site from the same angle, and the same image(s). This was countered by better technology that allowed us to photograph more images than previously. We also have access to the RARI digital database that has the pictures at 30MB per picture (B. Smith pers. comm.): This is very high resolution.

FIGURE 1: LOCALITY MAP OF THE SURVEYED AREA

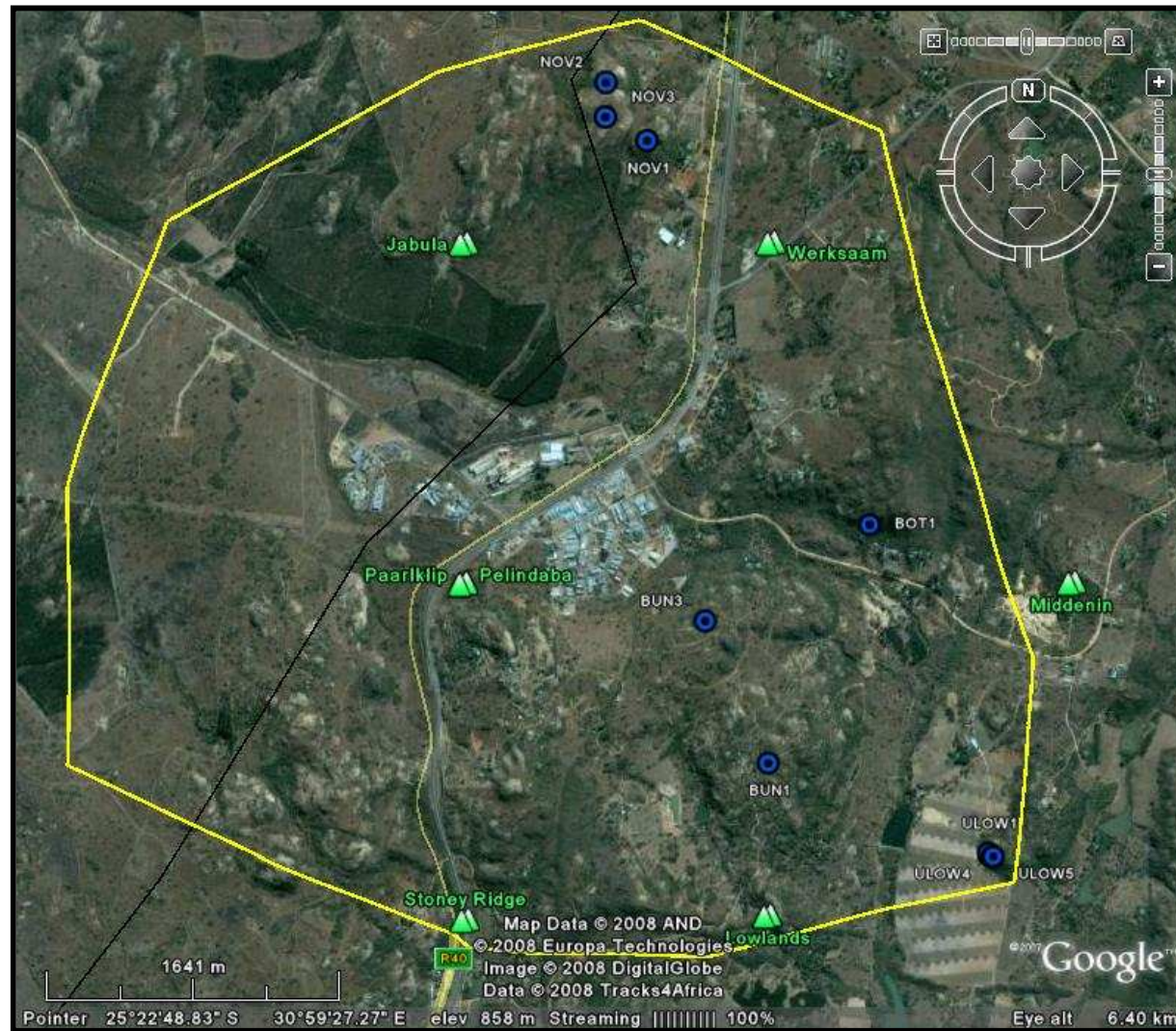
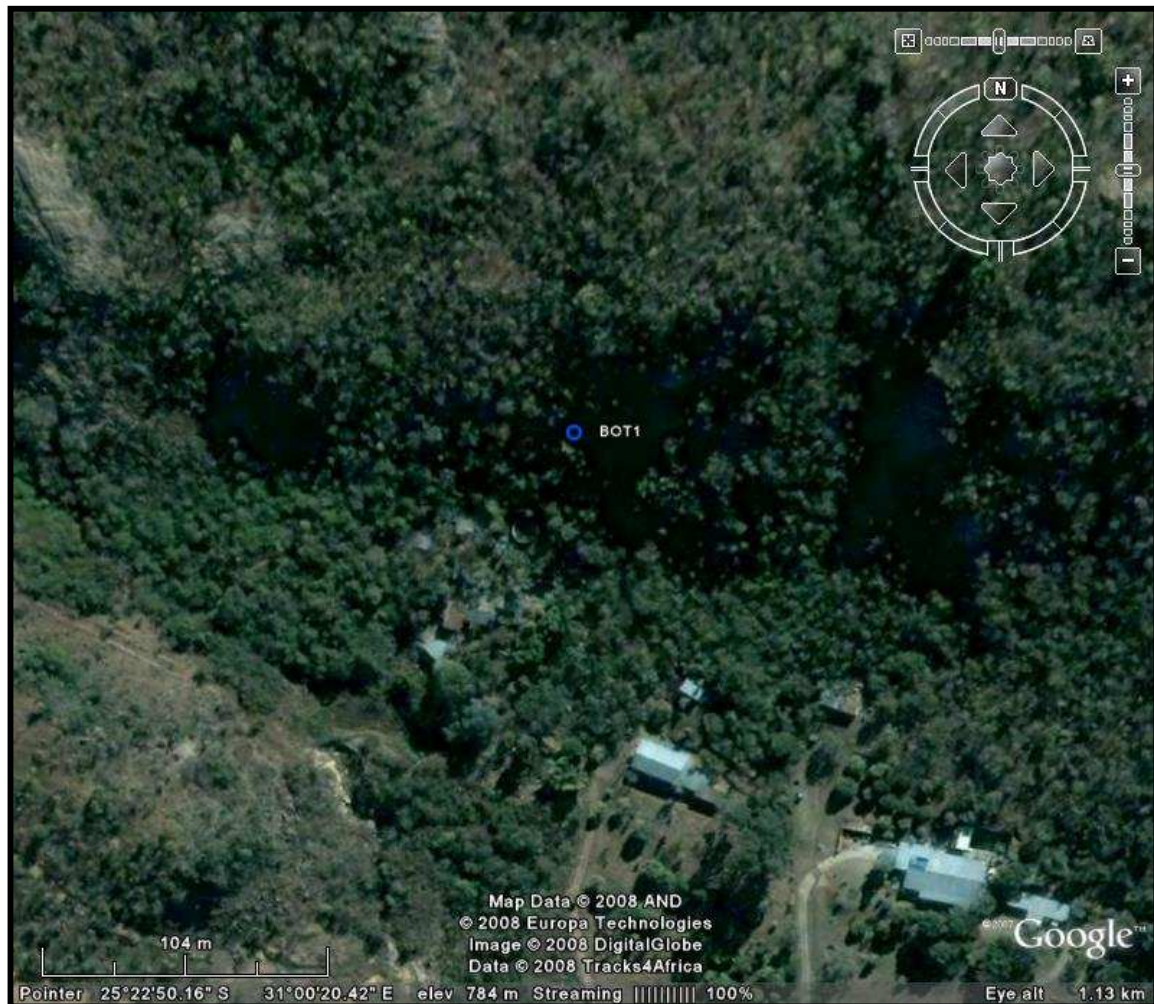


FIGURE 2: LOCALITY OF BOT1



RESULTS

For the purpose of the report, we will cut and paste the descriptions of the art from the 2006 report and use the same pictures as comparisons. All photographs dating to 2000 are from the Rock Art Research Institute, Wits, and reproduced with permission from their web page.

BOT1

Approx. 100-200m up a steep hill from the Botes' residence (fig. 2). The site is visible from the road as a large boulder with an overhang, halfway up the hill.

The art is situated in three main areas. On the far left, it is very faded. In the middle are three outlined images; while on the right are a series of images. This will deal with the images from right to left (fig 3a-d).

Far Right:

Long line ending in two possible feet facing left. To the right is an outline of the rump and tail of an animal. Approx. 60 cm below is an impala-type of animal (horns are curved). The animals are in a medium faded state of preservation.

Just below this are two humans in a bending forward position (fig. 3a-b). Right human is holding onto the hips of the left human. The former is only visible from the torso upwards. Both humans have Nguni cattle-type horns on their heads. These are in a medium faded condition. Below this is a faded human facing left. Only the upper body remains. The human is holding a bow.

Around the corner, to the left, is the second or middle frieze (fig. 3c-d). This frieze consists of two antelope and one human. The outlines of these images are fairly well preserved despite the water erosion. The water has, however eroded the non-red paint. The main antelope is a possible bushbuck, (although it could

be a nyala or a kudu) facing the human. I suggest bushbuck due to the size of the horns, tucked tail, and stripes on the mouth area. The stripes on the body and mouth are still clearly visible. Below this antelope is the rear view of a possible similar antelope. The human is a male with an erect penis and signs of steatopygia. The important feature is that the lines of the bushbuck are reproduced on the head and torso of the human.

To the left of this frieze is an area of smeared and/or washed ochre. No specific images can be observed.

This panel could not be located on the RARI digital rock art web page.

Assessment: There has been no visible change in the preservation of the art.

BUNDU

Bundu² is situated to the north of Nelspruit and nearly opposite Novobord (fig. 4). ... Only one rock art site was recorded in the area.

This site consists of various panels on three boulders (Fig. 5a-c). The main panel is located in an exfoliated area. A part of this area is washed by water and the art is poorly preserved. Other areas of the boulder are fairly well preserved. Two other panels exist on two separate boulders. Both of these panels are poorly preserved as people viewing the art at the main panel have rubbed [against] them.

² Bundu is a resort in Witrivier

FIGURE 3a: PANEL AT BOT1 PHOTOGRPAHED IN 2006



FIGURE 3b: PANEL AT BOT1 PHOTOGRPAHED IN 2008



FIGURE 3c: PANEL AT BOT1 PHOTOGRAPHED IN 2006



FIGURE 3d: PANEL AT BOT1 PHOTOGRPAHED IN 2008



FIGURE 4: LOCALITY OF BUNDU1



FIGURE 5a: GENERAL PANEL AT BUNDU PHOTOGRAPHED IN 2000



FIGURE 5b: GENERAL PANEL AT BUNDU PHOTOGRAPHED IN 2006



FIGURE

5c:

GENERAL PANEL AT BUNDU PHOTOGRAPHED IN 2008



FIGURE 6a: IMAGES OF HUMANS AND ARROWS AT BUNDU PHOTOGRAPHED IN 2000



FIGURE 6b: IMAGES OF HUMANS AND ARROWS AT BUNDU PHOTOGRAPHED IN 2006



FIGURE 6c: IMAGES OF HUMANS AND ARROWS AT BUNDU PHOTOGRAPHED IN 2008



Panel 1

Panel 1 consists of four humans, one antelope and a few smears (fig. 6 a-c). The smears are in faded orange-red, with a faded human facing left. This human is carrying a bow and long stick, and possible quiver. There is a group of three males, all of whom are facing left. The two left-hand side males each have one leg raised up. The middle human has had bits of its face chipped off, either in an attempt to remove the art or the ochre. The far right male is in a walking position and is holding a long stick, a bow, and several arrows. The arrows are the most intriguing part of this image as they are composite arrows. The arrows consist of three parts (from bottom to top):

- The main shaft with the arrow heads facing down (heads not shown);
- A middle area that connects the two shafts; this consists of a (bone) link shaft and/or a sinew binding with a glue. This is probably the “bulbous” part observed in the images.
- The tail of the arrow that consists of another shaft with the feathers. In these images, the tails of the arrows are very poorly preserved and were probably painted in a different colour.
- Below this is a faded antelope

Panel 2:

Large male with infibulated penis facing left. Below him is a very faded antelope. To the right of these two images are various water smeared areas of pigment. Within this general smeared area is a faded antelope facing right and the torso of another antelope.

Panel 3:

Panel three consists of a general water smeared area in faded ochre, and several humans and animals. The top right is a line that splits into two in an orange pigment. One fork of this line extends to the edge of the exfoliated area,

while the other line touches a hartebeest/bontebok below it. The alternative to this forked line is that of a human facing left with the legs painted so as to extend to various parts of the rock face.

At the base of this panel is a duiker-like antelope and an indeterminate antelope facing left. Above this is another faded antelope with ears that are larger than the other antelope in this frieze.

To the right of these antelope is a large, faded antelope in orange and white. It appears to be a hartebeest or bontebok. The stomach and base of the neck is painted in white. The muzzle of the antelope is also in white and clearly defines the shape of the antelope's mouth. The ears are small and are erect. Below and to the left of this orange antelope are two smaller antelope (impala or duiker). One of these is superimposed on the orange antelope.

Above the orange antelope are two very faded images. These consist of a human and antelope facing left

Panel 4:

This area is the bottom central area. Generally, it consists of a much smeared area of red and orange ochre with a few images still visible. More importantly are the remains of two late white images (in reference to the Drakensberg Late White images). These are images that tend to occur last in the painted sequence of the art.

On the far left are the faded remains of the legs of an animal or human. To the right is a human facing left in a walking position. Scratching or pecking has damaged this human. Between these two images is a small faded antelope. Above these images is a small duiker facing left in white pigment. It is poorly preserved. To the left of this duiker is an area of indeterminate white paint. Above these are two images in red and white paint. The body is in red while the horns

are in white. There is also a possible outline often animal in white. Above this are very faded human legs.

Panel 5:

This is on the left-hand side boulder. The area originally had several images, but these have been smeared by humans viewing the main art panel. Only a few images are now visible. On the right-hand side are two faded antelope facing right. Below these, and to the left, are three faded humans walking towards the left. At the bottom, right is an antelope with a long neck, facing left.

Panel 6:

Main area consists of smeared ochre and natural rock stains. One image is painted on the left-hand side. This image has human legs with a bulbous body.

Assessment: There has been no visible change in the preservation of the art.

LOWLANDS

The original Farm Lowlands has been subdivided. We limited our survey to the area adjacent to (east of) Bundu (fig. 7). Other sites have been previously recorded on the original farm, but these are outside the study area. One main rock outcrop occurs in this area. Several boulders lie on this rock outcrop, creating overhangs and crevices suitable for painting. In addition to the art, there are several human-made terraces that contain Stone Age and Late Iron Age artefacts. In addition to these general living areas, the entire outcrop is a series of stone walls and terraces, and possible burials. These date to the Late Iron Age and post-date c. AD 1600, but appear to pre-date the 20th century. Several excavations have occurred in various parts of the site and I presume these are from people searching for the alleged "Kruger Millions".

The art is concentrated along the southern side of the outcrop and are all relatively close to each other. A total of five different "sites" were recorded. These begin from the northernmost images and end at the southern side. Some of these have been previously recorded. I have prefixed the site name with a U, for Umlando, so as not to confuse them with the other recordings. RARI (Wits) has grouped ULOW1-5 together as one site, whereas I have kept them separate, as they are on different rock faces.

ULOW1

The site is located between two boulders and is east facing. The images are poorly preserved as a result of water erosion (fig. 8 a-c). The top left human is very faded and painted on an exfoliated area. To the right are two faded humans who are also painted in an exfoliated area. The two humans are holding hands. The left-hand side human is facing right, standing upright, while the right-hand side human is facing left, and slanting to the left. Below these humans is a single human (~15cm in height) facing the group of humans to the right and a small palette. There are four faded humans in this group and they are in a walking position, facing right. Below, and to the right, is a faded human facing right, in an exfoliated area. This human has been scratched and/or pecked.

Assessment: There has been no visible change in the preservation of the art.

ULOW2

The site is ~10m south of ULOW1, and is located on a large exfoliated section of a boulder that is northwest facing (fig. 9 a-c). This panel is of interest in that it has two different styles of painting, if not artists from different cultural backgrounds.

FIGURE 7: LOCALITY OF LOWLANDS SITES



FIGURE 8a: GENERAL IMAGES AT ULOW1 PHOTOGRAPHED IN 2000



FIGURE 8b: GENERAL IMAGES AT ULOW1 PHOTOGRAPHED IN 2006



FIGURE 8c: GENERAL IMAGES AT ULOW1 PHOTOGRAPHED IN 2008



The art is as follows (from top left to right):

- Three thick horizontal orange finger smears
- Two red vertical lines
- Two horizontal orange finger smears
- Row of three horizontal finger smears.
- Row of very faded humans with finger dots above them (or these are finger smears with finger dots above) and to the left are more finger dots.
- Very faded human to the right
- Above right is a double row of red finger dots.
- Two eland torsos (outline and fill motif), with no head, legs, etc.
- Below eland is area of faded/smearred paint/images
- Below right is group of faded orange finger dots in a long row.
- Below are three horizontal rows of red finger dots.
- Below and to right is a row of faded orange finger dots. Two vertical crayon lines occur over the orange and red finger dots.
- Below left are two humans and an eland torso in medium state of preservation. The eland has a human to the upper left and right of it, and it has been chipped/pecked. The right human has a bow in one hand, while a thin line emanates from its other hand. This line touches the eland, and to the human on the left.

Assessment: There has been no visible change in the preservation of the art.

ULOW3

The site is ~20m south of ULOW2 and is located in a crevice created by two boulders. The images at this site are fairly well preserved, and are probably one

of the best preserved panels in this survey (fig. 10 a-c). There are pottery sherds and stone tools on the ground.

The art is as follows:

- All elephant and antelope images, in red, are outlined and then infilled.
- (male?) Human (20-25 cm) facing a large (tusks/male?) elephant (~21cm from chest to rump). The human has tassels at each knee. These two images are superimposed on a row of elephant below.
- Row of three elephant walking to the left, and getting smaller from right to left.. The far left elephant is the most faded. The next two elephant appear to be walking with trunk-to-trail. The ears of both are outlined. Possible fourth elephant on the far right.
- Below the third elephant, and superimposed over its hind legs, is a small antelope with a long neck. Another similar antelope is below it. Both antelope would have had white(?) legs. These two antelope are possibly rhebuck.
- Row of four hartebeest (?) facing left in a reasonably well preserved state.
- On the far left is another hartebeest facing right. The main hartebeest has been chipped/pecked and with black pen/khoki graffiti.
- To the right are one red and one orange klipspringer/duiker. These are faded.
- Above these duiker, and below the fourth elephant are two human legs in black.
- To the right of the orange duiker is a human facing right in a bent forward posture, and an orange pallet.
- Below is a wildebeest facing left and a small rhebuck.

- To the right are two palettes, and one human with bow and arrow. This human is facing left. One palette is painted on an image with two (human?) legs.
- Below the wildebeest are two geometric finger paintings.
- To the right of the wildebeest is a rhebuck. Facing left on top of a palette.
- To its right is an orange rhebuck (~4cm in size).
- At the very bottom is the outline of a possible cave, or semi-circle. This is also finger painted.

Assessment: There has been no visible change in the preservation of the art.

ULOW4

This site is ~10m southeast of ULOW3 and is located underneath a large boulder that sits on the main outcrop. The paintings occur at the far back of the boulder. The roof ranges from ~80cm ~ 30cm in height, and a depth of ~2m. It is a tight fit! The overhang faces southeast.

There are two images at this site (fig. 11 a-c): one human and one palette. The human is walking downwards, or vertically. The palette may have been rubbed, or smeared. This rubbing or smearing would have been done intentionally.

Assessment: There has been no visible change in the preservation of the art.

ULOW5

The site is located on the other side of the boulder from ULOW4. It is a large image, ~63cm in length (fig. 12 a-c). The painting is very faded and appears to be in a water seepage area. Our 2006 recording stated that “the animal is facing right and has a long tail. The head was probably in a different colour and is either an elephant or an eland.” It is possible that the head is facing down and backwards as if the antelope is cleaning its hind legs.

FIGURE 9a: GENERAL IMAGES AT ULOW2 PHOTOGRPAHED IN 2000



FIGURE 9b: GENERAL IMAGES AT ULOW2 PHOTOGRPAHED IN 2006



FIGURE 9c: GENERAL IMAGES AT ULOW2 PHOTOGRPAHED IN 2008



FIGURE 10a: GENERAL IMAGES AT ULOW3 PHOTOGRPAHED IN 2000



FIGURE 10b: GENERAL IMAGES AT ULOW3 PHOTOGRPAHED IN 2006



FIGURE 10c: GENERAL IMAGES AT ULOW3 PHOTOGRPAHED IN 2008



FIGURE 11a: GENERAL IMAGES AT ULOW4 PHOTOGRPAHED IN 2000



FIGURE 11b: GENERAL IMAGES AT ULOW4 PHOTOGRPAHED IN 2006



FIGURE 11c: GENERAL IMAGES AT ULOW4 PHOTOGRPAHED IN 2008



FIGURE 12a: GENERAL IMAGES AT ULOW5 PHOTOGRPAHED IN 2000



FIGURE 12b: GENERAL IMAGES AT ULOW5 PHOTOGRPAHED IN 2006



FIGURE 12c: GENERAL IMAGES AT ULOW5 PHOTOGRPAHED IN 2008



Assessment: There has been no visible change in the preservation of the art.

RESULTS

There was no visible change in the art between the two visits and with the comparisons of photographs taken in 2000.

CONCLUSION AND MANAGEMENT PLAN

The archaeological monitoring of the three rock art areas near Sonae Novobord was undertaken in 2006, with a follow-up survey in 2008. The aim of the survey was to determine if there had been any clear changes in the art in terms of preservation. We also consulted a web page with photographs dating to 2000, and compared these photographs with the 2006 and 2008 photographs. There are no visible changes in the art.

Our initial report suggested that surveys should be undertaken every year to monitor the art in 'response' to the presumed increased emissions from Sonae Novobord. One of the management plans was to undertake annual surveys of each site and compare these for each year. However, this year we used photographs dating back to eight years ago and indicate that there is no change in the art over the last decade. We hypothesised that if the emission were detrimental to the art, then they may have had a more immediate effect. This is not the case.

We do not have any evidence to suggest that there has been any significant change in the art over eight years. We believe that an annual monitoring program is unnecessary and that the monitoring intervals should be increased. We suggest that the next survey is undertaken in two years time and the results are then re-assessed.

We re-iterate our previous statement that it would be very difficult to hold Sonae Novobord directly responsible for any changes in the art, especially since other external environmental factors may be responsible, such as acid rain, and natural exfoliation.