

4.8 Cultural Heritage

Issue	Potential Impact
Cultural Heritage	Disturbance of sites of archaeological and cultural interest including graves

a) Nature of the Impact

Several cultural heritage studies have been undertaken for the project area, including studies undertaken for the RBM Zulti South Services Corridor Project which traverses parallel and in close proximity to the proposed new pipeline. The study areas for the two projects overlap. The following studies were referred to:

- Umlando was contracted by SRK Consulting to undertake an archaeological and cultural heritage survey for the areas to be affected by the proposed servitudes for the RBM Zulti South Services Corridor Project (which includes the current project study area) in 2007.
- Following realignment of the route, a second heritage survey was undertaken by Umlando in October 2010.
- As part of their desktop assessment, Umlando consulted the database for previously recorded sites in the area.
- Work from Umlando's previous survey in the area (Anderson and Anderson 2007) was consulted.
- Sites recorded by the University of Zululand (UZCAC, 2007) were also referred to.
- The servitudes were surveyed and the initial archaeological survey consisted of a foot survey along the selected route.
- During the census and asset inventory of the Relocation Action Plan for the RBM Zulti South Services Corridor Project, field teams attempted to identify, locate and document cultural heritage sites and particularly graves belonging to affected households. While graves and burial sites were the primary focus, other sacred heritage sites such as sacred trees, prayer areas etc. were also included.

Based on review of the numerous studies listed above for the project study area, no sites of cultural heritage significance are found within the servitude and only one archaeological site was identified as being in proximity to the proposed pipeline. The archaeological site (NOZ4) is located 195m to the north of the northern-most extent of the pipeline and although it will not be affected by the pipeline, it will require monitoring during construction.

The area was being cleared at the time of the study and thus the sites were exposed. The earthworks activities however potentially damaged the archaeological site. NOZ4 consists of a scatter of thin-walled pottery and one smoothed stone over an area of ~100m x 100m. The site dates to the Late Iron Age or Historical Period and is of low significance. Umlambo also noted a sensitive area north-east of NOZ4 i.e. further away than 195m from the pipeline. Refer to Table 4-26 below.

Table 4-26: Sites of cultural interest in proximity to the pipeline servitude

Site Name	Type of site	Sensitivity/ Significance	Affected by servitude	Suggested mitigation	South	East
NOZ4	Archaeological	Low	No . 195m away	Monitor	28°46'6.40"	31°58'2.30"
North of NOZ4	Archaeological	Low	No . further than 195m away	Monitor	NE of NOZ4	NE of NOZ4

4.8.1 Direct Impact: Disturbance of sites of archaeological and cultural interest including graves

a) *Planning and Design Phase*

There will be no impacts relating to disturbance of sites of archaeological and cultural interest including graves during the planning and design phase.

b) *Construction Phase*

No sites of cultural heritage significance are found within the proposed servitude (which runs parallel and overlaps with the existing servitude). Only one archaeological site (NOZ4) is located 195m to the north of the northern-most extent of the pipeline and the area north of NOZ4 (i.e. further than 195m from the pipeline) has also been identified as a sensitive area.

The site will not be affected by the pipeline but due to its proximity, it will require monitoring during construction.

c) *Operational, Decommissioning and Closure Phases*

It is not anticipated that the pipeline will be decommissioned and therefore there will be no impacts relating to disturbance of sites of archaeological and cultural interest including graves during the operational and decommissioning phases.

d) *Mitigation Measures*

- 1) The site NOZ4 located 195m from the northern-most reach of the pipeline and the sensitive area to the north of NOZ4 must not be disturbed during construction.
- 2) The site NOZ4 will require regular on-site monitoring during the construction phase.
- 3) Mhlathuze Water will develop a Standard Operating Procedure (SOP) for the reporting and disturbance of heritage resources with specific reference to archaeological sites. This Procedure will be strictly enforced and personnel will be advised of the Procedure and trained in its implementation.
- 4) The SOP will direct that all archaeological sites, including skeletal remains, pieces of pottery and shell middens, that may be uncovered and identified during surveys or reported by construction personnel, will be investigated and based on specific criteria assigned low, medium or high significance.
- 5) An archaeologist will be appointed to undertake a survey of the site and can decide, based on the significance of the site, to allow the site to be destroyed or to first excavate the site further before granting a permit to destroy the site. Only the contracted archaeologist can remove or give the permission to remove markers demarcating archaeological sites once he/she has completed the survey/excavation.
- 6) The SOP must also deal with the reporting and processing of human remains. A procedure is to be put in place for the handling of human remains should they be found. Personnel will be made aware of the requirements of the SOP in dealing with human remains.
- 7) The developer, Mhlathuze Water, will be required to apply for a permit from Amafa KZN to damage any sites older than 60 years, should such a site be uncovered during construction.
- 8) Mhlathuze Water will transfer any cultural heritage artefacts discovered to the Mananga Heritage Centre (owned by the community).

e) *Significance*

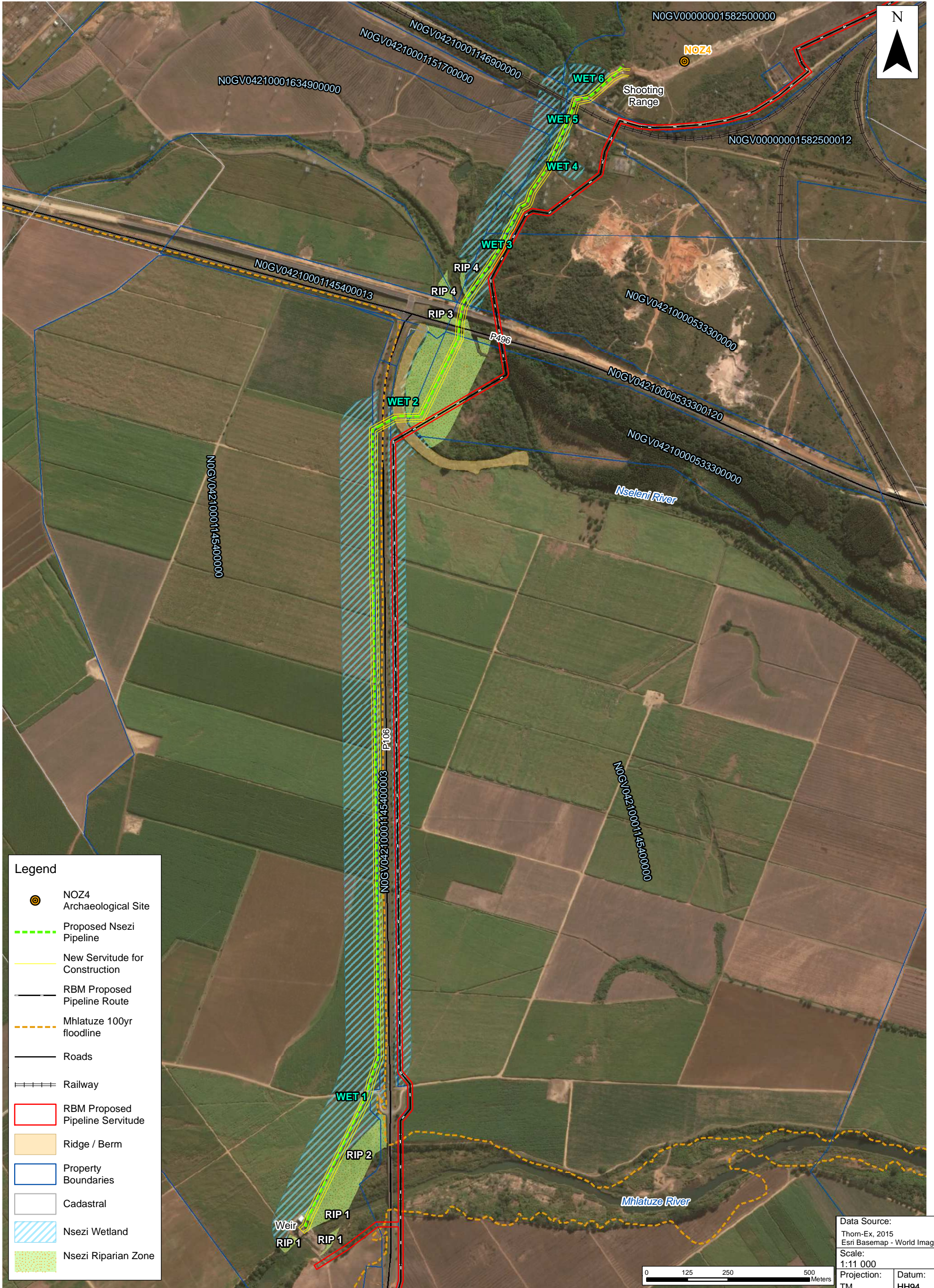
- The degree to which the impact can be reversed: **Low** significance as there are no heritage resources within the pipeline corridor.

- The degree to which the impact may cause irreplaceable loss of resources: **Low** significance as above.
- Cumulative impacts: The Zulti South Services Corridor Project lies in close proximity to the proposed pipeline and that project has been issued Environmental Authorisation. Should construction of the two projects overlap in terms of timing and locality, effective management when implementing mitigation measures will be critical to ensure a **Very Low** cumulative impact.
- The degree to which the impact be avoided, managed or mitigated: The pre-mitigation significance of the impact is considered to be **VERY LOW** (20) and with mitigation the significance is remains **VERY LOW** (16).

Refer to Table 4-27 overleaf for the impact significance ratings.

Table 4-27: Cultural Heritage – Significance ratings pre- and post-mitigation for the Construction Phase

Pre-mitigation significance ratings												
Likelihood of impact occurring					Consequence of Impact							
Frequency of Activity	Rating	Frequency of Impact	Rating	Sub-total	Severity of Impact	Rating	Spatial Scope / Extent	Rating	Duration of Impact	Rating	Sub-total	
Annually or less / low	1	Almost never / almost impossible	1	5	Insignificant non-harmful	1	Activity specific	1	One day to one month	1	4	
6 monthly / temporary	2	Very seldom / highly unlikely	2		Small potentially harmful	2	Area / site specific	2	One month to one year	2		
Monthly / infrequent	3	Infrequent / unlikely / seldom	3		Significant slightly harmful	3	Local area (within 5 km of site)	3	One year to ten years	3		
Weekly / life of operation / regularly / likely	4	Often / regularly / likely / possible	4		Great / harmful	4	Regional (neighbouring areas)	4	Life of operation	4		
Daily / permanent / high	5	Daily / highly likely / definitely	5		Extremely harmful	5	National	5	Post closure / permanent	5		
TOTAL PRE-MITIGATION SIGNIFICANCE RATING OF IMPACT									20 – VERY LOW			
Post-mitigation significance ratings												
Likelihood of impact occurring					Consequence of Impact							
Frequency of Activity	Rating	Frequency of Impact	Rating	Sub-total	Severity of Impact	Rating	Spatial Scope / Extent	Rating	Duration of Impact	Rating	Sub-total	
Annually or less / low	1	Almost never / almost impossible	1	4	Insignificant non-harmful	1	Activity specific	1	One day to one month	1	4	
6 monthly / temporary	2	Very seldom / highly unlikely	2		Small potentially harmful	2	Area / site specific	2	One month to one year	2		
Monthly / infrequent	3	Infrequent / unlikely / seldom	3		Significant slightly harmful	3	Local area (within 5 km of site)	3	One year to ten years	3		
Weekly / life of operation / regularly / likely	4	Often / regularly / likely / possible	4		Great / harmful	4	Regional (neighbouring areas)	4	Life of operation	4		
Daily / permanent / high	5	Daily / highly likely / definitely	5		Extremely harmful	5	National	5	Post closure / permanent	5		
TOTAL POST-MITIGATION SIGNIFICANCE RATING OF IMPACT									16 – VERY LOW			



Data Source:	
Thom-Ex, 2015 Esri Basemap - World Imagery	
Scale: 1:11 000	
Projection:	Datum:
TM	HH94
Central Meridian/Zone: Lo31	
Date:	Compiled by:
08/02/2016	GOVD
Project No.	Fig No.
490614	4

**ARCHAEOLOGICAL SURVEY OF THE INHLANSI PROJECT FOR
NOZELELA MINERALS SANDS (PTY) LTD**

For: SRK Consulting

Date:

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INTRODUCTION

Umlando was contracted by SRK Consulting to undertake a heritage survey for the areas to be affected by the proposed servitudes for the Inhlansi Project for Nozalela Mineral Sands (Pty) Ltd, near eSikhaweni, KwaZulu-Natal. This included those sites defined by the KZN Heritage Act as having possible heritage status.

The affected areas are situated mostly adjacent to other servitudes related to roads, power lines, and pipelines. There are two types of servitudes: an electrical powerline that is above the ground, and a pipeline that is ~2m below the ground. The pipeline consists of the Zulti South Mineral Lease Area to the smelter complex and the Mhlatuze Weir to the main pipeline. These servitudes have different affects on the various types of sites.

A total of three new archaeological sites were recorded (and four previously recorded), four recent heritage sites were noted from an oral history project, and four different graves (or areas containing graves) were observed. The KZN Heritage Act protects deals with, and protects, graves older than 60 years. Thus the heritage impact assessment specifically deals with these older graves. A social impact assessment should deal with the more recent graves. We did, however, note and record any graves that we observed during the course of the survey.

METHOD

The method for Heritage assessment consists of several steps.

The first step forms part of the desktop assessment. We consulted the database for previously recorded sites in the area. This database included work from our previous survey in the area (Anderson and Anderson 2007) as well as

those sites recorded by the University of Zululand (UZCAC 2007). The servitudes were surveyed and all sites were assessed in terms of their significance.

The initial archaeological survey consisted of a foot survey along the selected route. Areas of dense vegetation were omitted from the survey as archaeological visibility would be zero. We drove along areas of afforestation to observe any buildings, etc. Our experience is that in the older afforested areas archaeological sites tend to be damaged, destroyed, in such a way that the sites do not exist anymore. This is partly due to the destumping process of field clearance used in the early days of afforestation. To counter this, we survey tracks and roads beside the affected area to note if any potential sites could occur.

All sites are grouped according to low, medium and high significance for the purpose of this report.

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?
- 5.3.

6. Archaeological Experience:

6.1. The personal experience and expertise of the Cultural Resource Manager 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. Sites of low significance have no diagnostic artefacts, especially stone tools or pottery. Sites of medium significance have diagnostic artefacts and these are sampled. Test-pit excavations are used to test the full potential of an archaeological deposit and this also occurs in Phase 2. These test-pit excavations may require further excavations if the site is of significance (Phase 3). A Phase 2 may also include observing construction activity at sensitive sites. 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.

A Phase 2 may yield enough material so that further excavations are not required. However, if significant material occurs in the archaeological deposit then it is likely that a Phase 3 will be required. 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 usually 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. All recovered material is deposited with Amafa KZN, Pietermaritzburg.

RESULTS

Table 1 summarises the results of the survey and the location of the sites. We deal with the sites in terms of their categories. The locations of these sites are plotted on Figures 1, 2, 3, 4, and 5. Figure A, at the end of the report, shows the locations of all the sites relative to each other.

Recent graves

These are graves that are younger than 60 years old and have descendants who may be able to claim the remains. As stated above, these types of graves do not fall under the KZN Heritage Act and should be dealt with by the social impact study. All graves are of high significance and may not be disturbed unless the proper process has occurred.

Five areas were observed with graves: NOZ1 a-c and NOZ2, NOZ3. Our informant for NOZ1a-c and NOZ3 was Machili Mpanza. (see figures 1 – 2). NOZ1a-c and NOZ3 occur adjacent to the Main Road P1537.

NOZ1a

Our informant, Machili Mpanza, said she personally buried ~10 family members. The family name is Masinga. These date from 2 years ago to ~20 years ago. There are no formal markings to indicate that there are graves. These graves are about 45m from the road edge and are thus unlikely to be affected by the electricity servitude.

NOZ1b

The person was buried here approximately two years ago. The grave is demarcated with poles around the boundary of the grave. The grave is ~15m - 17m from the edge of the road and is unlikely to be affected by the electrical servitude.

Site Name	Type of site	Sensitivity	Affected by servitude	Suggested mitigation if affected	South	East
NOZ1a	Recent Grave	High	No	N/A	28°53'1.20"	31°57'1.08"
NOZ1b	Recent Grave	High	No	Reburial	28°52'59.42"	31°57'2.72"
NOZ1c	Recent Grave	High	No	Reburial	28°52'58.53"	31°57'4.76"
NOZ2	Recent Grave	High	Yes	Reburial	28°49'44.72"	31°57'50.63"
NOZ3	Recent Grave	High	Unlikely if mitigated	Reburial	see map	see map
NOZ4	Archaeological	Low	Yes	Monitor	28°46'6.40"	31°58'2.30"
North of NOZ4	Archaeological	Low	Yes	Monitor	see map	see map
NOZ5	Archaeological	Low	Yes	Monitor	28°48'17.42"	31°57'33.72"
NOZ6	Archaeological	Low	Yes	Monitor	28°48'52.11"	31°57'20.10"
Ekuphosekeni	Oral History	Medium	No	Monitor	28°52'10.11"	31°59'35.21"
Olakeni	Oral History	Medium	No	Monitor	28°52'10.77"	31°59'36.18"

Enzondweni	Oral History	Mediu m	No	Monitor	28°52'1 1.06"	31°59'2 8.92"
Mgingqilizana	Oral History	Mediu m	No	N/A	28°52'1 4.12"	31°59'1 7.22"
Inkosi Cetshwayo	Oral History	High	No	N/A	28°52'2 0.70"	31°58'1 6.92"
ZS10	Archaeolo gical	Mediu m	No	N/A	28°52'2 0.80"	31°59'3 2.20"
ZS11	Archaeolo gical	Mediu m	No	N/A	28°52'2 4.90"	31°59'3 3.70"
ZS12	Archaeolo gical	Mediu m	No	N/A	28°52'1 4.89"	31°59'3 9.31"
ZS13	Archaeolo gical	Mediu m	No	N/A	28°52'2 4.80"	31°59'4 0.30"

TABLE 1: SUMMARY OF SITES MENTIONED IN THE REPORT

NOZ1c

Our informant did not know the family who lived here, however the grave is recent. The grave is demarcated with wooden poles along the boundary. It is 15m - 18m from the edge of the road and it will not be affected by the electricity servitude.

NOZ2

NOZ2 is outside of the mining lease and on the border of eSikhaweni and U.V.S. property (see fig. 2). The grave is demarcated with wooden poles, and occurs ~8m southwest from a dirt track. Our informant was not with us at this site; however the relatives are probably in one of the houses nearby. This grave will be affected by the pipeline servitude. This can be rectified if the pipeline is moved 1 – 2 m away from the grave, and thus it will not affect the grave in any manner. The grave area will need to be demarcated and physically shown to the construction crew so that they do not inadvertently impact upon it.

NOZ3

NOZ3 is opposite the road of Machili Mpanza's residence. She was not sure where the graves occurred but only gave a general location. The area is ~200m x 200m in size and will probably not be affected by the electrical servitude. The powerline servitude goes across this area; however, given the nature of powerlines, the structures themselves may occur at either end of the affected area and thus not impact on the potential graves. We suggest that a more in depth interview is undertaken with the informant, and her peers, regarding the exact location of these graves. If this is not resolved, then we suggest that we are on site during the construction phase of the powerline to mitigate when and if necessary.

ORAL HISTORY SITES

These are sites recorded by members of the University of Zululand Centre for Arts and Culture (UZCAC) (2007). The information on the various sites is limited and generally uninformative. We use the site names and locations as provided in the report. Figure 3 is a locality map for the oral history and archaeological sites.

FIGURE 1: LOCATION OF NOZ1A-C, NOZ3 AND INFORMANT'S RESIDENCE



Triple Red Line = Transmission Line

Yellow = graves

Green = Informant's House

FIGURE 2: LOCATION OF NOZ2



Red = Pipeline Yellow = grave

MGINGQILIZANA: MOUNTAIN

This site is on top of a hill and the scene of an alleged mass murder by soldiers. The victims were buried in the hill by the community.

The site is of high significance; however it is unlikely to be affected by the servitude.

ENZONDWENI: MAGCEKENI NYAWO

“This homestead belonged to Magcekeni Nyawo. It was called Enzondweni” (UZCAC, 2007).

The homestead is located on the southern side of the dirt road (that has no name or number) and thus of the servitude as demarcated in the provided map. It is unlikely to be affected by the pipeline if the pipeline remains on the northern side of the road.

EKUPHOSEKENI: NCOMBO KHANYILE

“This homestead belonged to Ncombo Khanyile. It was called Ekuphosekeni” (UZCAC, 2007).

This homestead is located on the northern side of the dirt road (that has no name or number) and may be affected by the pipeline servitude. The boundaries of the house and the pipeline servitude meet. We did not observe any artefacts or distinctive markings suggesting graves at this site.

This site is of medium significance in that it has potential graves. However, the potential graves are unlikely to be on the side of the pipeline servitude.

OLAKENI: KHUWANE NYAWO

“This homestead belonged to Khuwane Nyawo. It was called Olakeni” (UZCAC, 2007).

This homestead is located on the northern side of the dirt road (that has no name or number) and may be affected by the pipeline servitude. The boundaries of the house and the pipeline servitude meet. We did not observe any artefacts or distinctive markings suggesting graves at this site.

This site is of medium significance in that it has potential graves. However, the potential graves are unlikely to be on the side of the pipeline servitude.

INKOSI CETSHWAYO HOMESTEAD

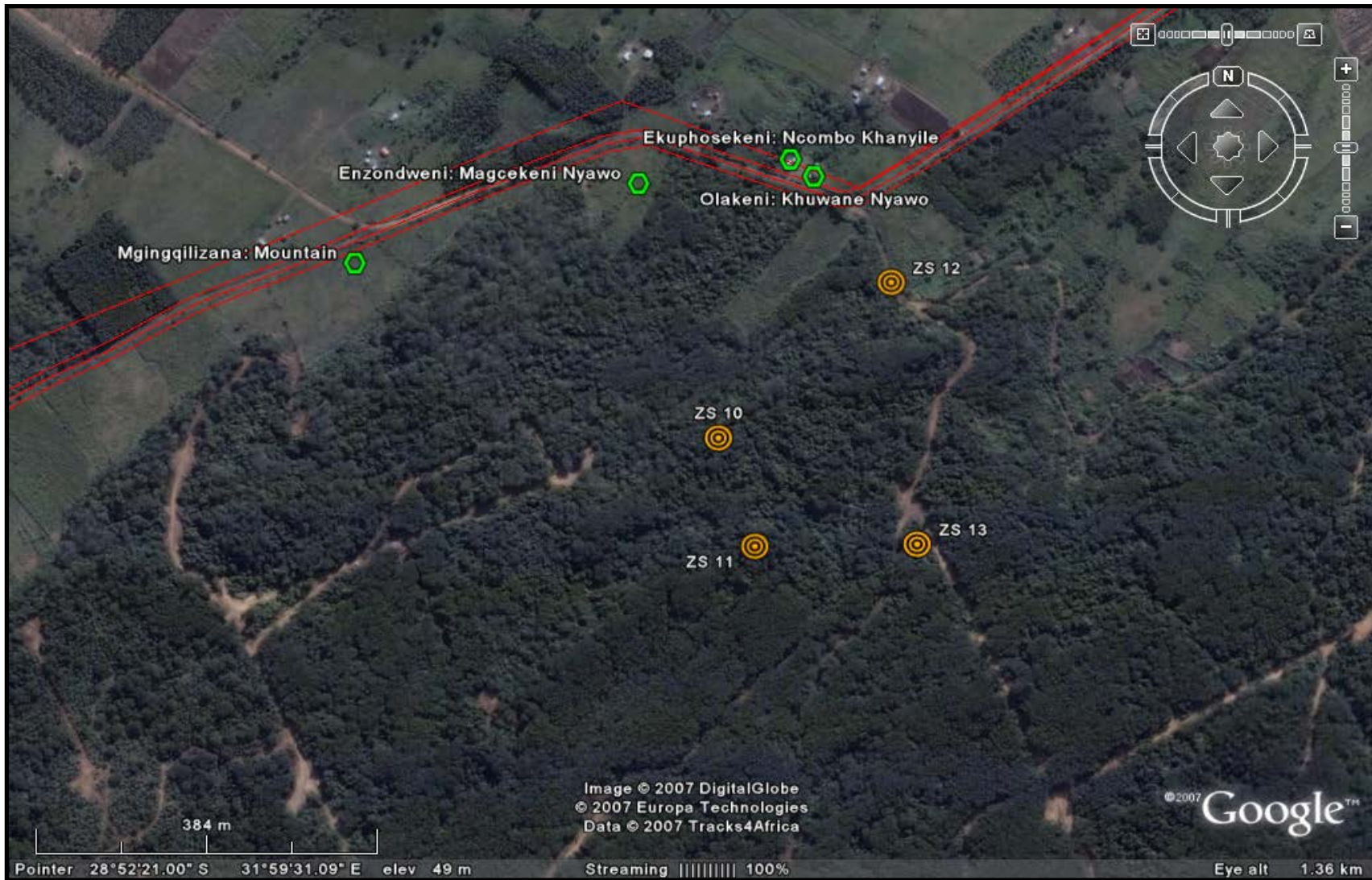
Inkosi Cetshwayo’s homestead is located at least 500m away from the pipeline servitude. It is significant enough to note in this report, especially if offices or other temporary facilities are to be erected.

The site is of high significance to the community and should not be disturbed.

ARCHAEOLOGICAL SITES

The archaeological sites can be divided into two sections; those recorded during the pre-feasibility survey of the Zulti South Mineral Lease Area (Fig. 3), and those for the Nozalela Mining servitudes (Fig. 4 and Fig. 5). The former are prefixed with ZS, and the latter with NOZ. The ZS sites all occur just outside of the pipeline servitude, but are noted in the report for their proximity.

FIGURE 3: LOCATION OF ORAL HISTORY AND THE ZULTI SOUTH ARCHAEOLOGICAL SITES



Red Line = Pipeline

Green Circle = Oral History sites

Yellow Circle = Archaeological sites

ZS10

This site is located on the top of a dune. It has been disturbed by the drilling activity. Several artefacts were observed in the road cuttings.

The artefacts consist of:

- undecorated pottery sherds – one sherd had an *isumpa* for a rope handle. The pottery included light brown and red sherds.
- lower grinding stone fragments made from beach sandstone
- faunal remains – mostly domestic cattle
- one piece of slag

The site probably pre-dates 1850 AD because of the occurrence of slag.

The site is of medium archaeological significance.

ZS11

This site is located west of ZS10 along the same drill path. The site has been extensively damaged by the drill path and several artefacts were located along the road cuttings.

The artefacts include:

- Different types of pottery. One near complete pot was sampled
- Faunal remains
- Possible human remains
 - cranium fragment
 - tooth fragment
 - cervical vertebrae

The site is of high archaeological significance.

ZS 12

ZS 12 consists of a scatter of artefacts over a ~ 50m radius. The artefacts area as follows:

- thin-walled pottery sherds, of which some have a brown burnish
- marine shell consisting of *P. perna*.
- one white beach sandstone grinding stone
- probable domesticated bovid.
- 1 possible human bone

The site is of high significance as there are potential human remains.

ZS 13

ZS 13 is located in a small depression at the base of the dunes. The depression covers a wide area; however, the artefacts are concentrated on the eastern side. Several artefacts were observed as well as a human burial. These are as follows:

- Several pottery sherds
 - one shell-impressed (comb stamped) - classic of Zulti north Type 7 pottery. This is associated with formative Nguni people and dates between 1200AD – 1500 AD
- Bovid bone: probably domesticated cattle
- Human remains were scattered in a small area. We located a possible burial area, but only a part of the pelvis was visible. We collected a cranium fragment, and some ribs.

The site is of high significance, because of the human remains.

While these ZS sites are in close proximity to Mgingqilizana, they are older and not related in time, especially the human remains.

NOZ4

This area is currently being cleared and thus the sites are exposed. The earthworks activities are potentially damaging the archaeological site. Further northeast along the route the vegetation becomes thicker resulting in poor archaeological visibility.

NOZ4 (see figure 4) consists of a scatter of thin-walled pottery and one smoothed stone over an area of ~100m x 100m. The site dates to the Late Iron Age or Historical Period.

NOZ4 is of low significance. However it should be monitored during construction.

NOZ5

Part of NOZ5 (see figure 5) is located in the pipeline servitude. NOZ5 consists of a scatter of Late Iron Age (LIA) or Historical Period (HP) pottery, fragments marine shell, faunal remains and grinding stones. This scatter occurred over a large area. The marine shell fragments suggest that there may be a midden on the site. The artefacts increase in density in an easterly direction.

The site appears to be of low significance; however, we suggest that the area to be affected by the pipeline is monitored during the construction phase. Sampling and/or excavation may occur during the monitoring phase.

NOZ6

NOZ6 (see figure 5) is a scatter of pottery sherds dating to the LIA or HP.

The site appears to be of low significance; however, we suggest that the area to be affected by the pipeline is monitored during the construction phase, since it will probably occur at the same time as NOZ5.

We did not observe sites from NOZ4 north-eastwards for ~6km (see red area in figure 4). We believe this is more a case of the vegetation obscuring potential.

CONCLUSION AND MANAGEMENT

A total of seven archaeological sites, four areas with graves, and three sites relating to the living heritage were recorded and/or noted during the course of the survey. These sites vary in significance and required mitigation.

The more significant sites are those relating to human burials. At least one site/grave (NOZ2) will be affected by the pipeline servitude. This can be mitigated by moving the pipeline a few meters away from the grave. If this is not an option then relocation of all graves should be undertaken by an organisation experienced in these matters. The area defined as NOZ3 may be affected, however if the structures are placed on either side of the sensitive area, then they will not affect the potentially sensitive area.

There are three sites relating to the living heritage of the area. Unfortunately there was little information available regarding the sites, and we did not observe artefacts or features in these areas. We suggest that these areas are monitored during the construction phase, if they are to be affected.

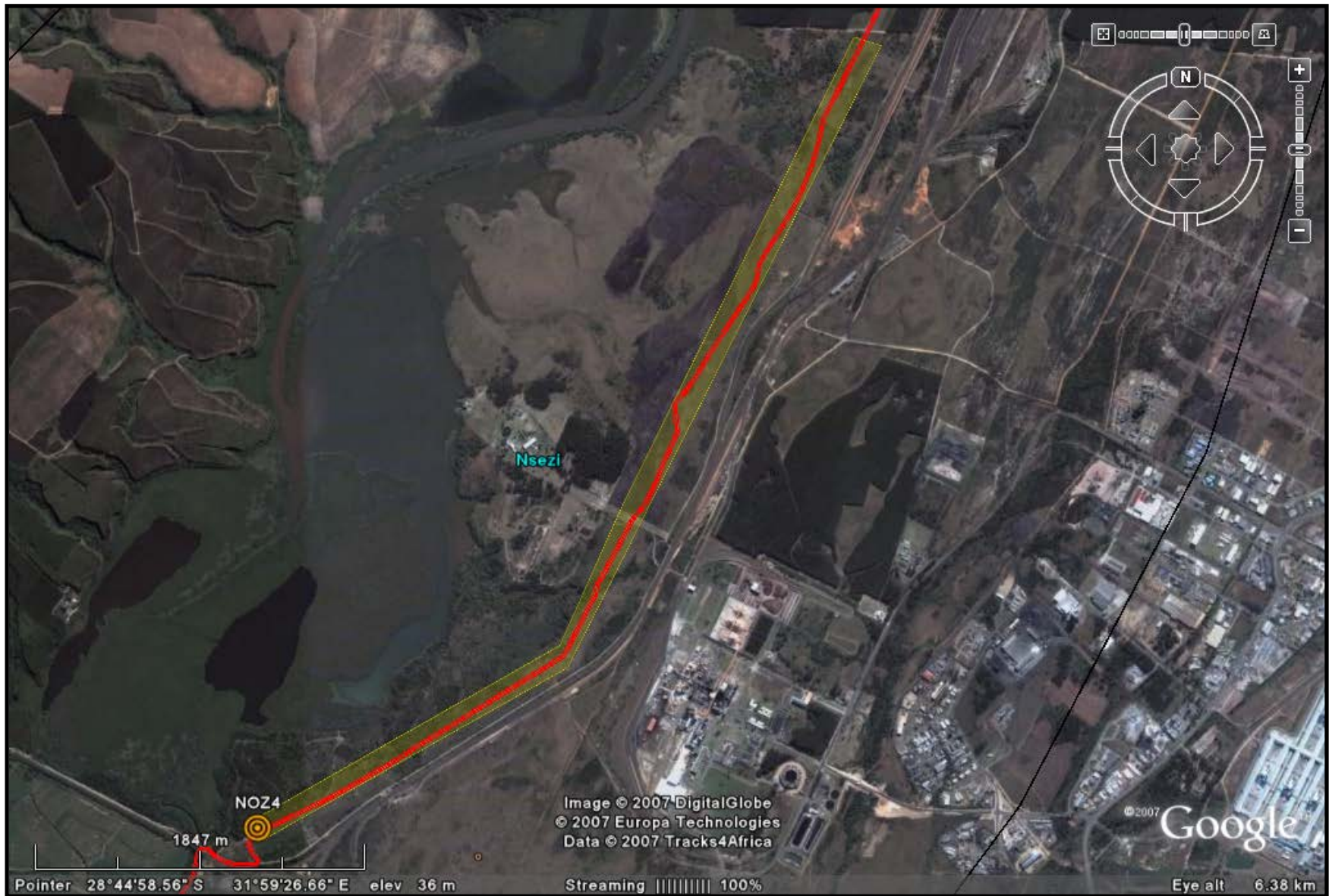
Three archaeological sites will be affected by the pipeline: NOZ4, NOZ5 and NOZ6. These will require on site monitoring during the construction phase. We also noted a sensitive area northeast of NOZ4, and suggested that this area is regularly monitored during the construction phase. We suggest that this area is regularly monitored during the construction phase. Monitoring will allow any sites and/or artefacts that may be exposed during the course of the construction phase, to be record and sample.

The developer, in this case Nozalela Mineral Sands (Pty) Ltd, will be required to apply for a permit from Amafa KZN to damage the various sites older than 60 years. The company who deals with the human graves will apply for their permits from the various departments. Umlando will also need to apply for permits for sampling and/or excavation of the various sites.

In Summary, the following sites require monitoring during the construction phase:

- NOZ2
- NOZ3
- NOZ4
- NOZ5
- NOZ6
- Olakeni: Khuwane Nyawo
- Ekuphosekeni: Ncombo Khanyile

FIGURE 4: LOCATION OF NOZ4 AND SENSITIVE AREA REQUIRING MONITORING



Red = pipeline Yellow Outline + Fill = extent of sensitive area Yellow Circle = Archaeological site

FIGURE 5: LOCATION OF NOZ5 AND NOZ6



Red = pipeline Yellow Outline + Fill = extent of site Yellow Circle = Archaeological site

Figure A: Locations of all sites

REFERENCES

G. Anderson and L. Anderson 2007. The Pre-Feasibility Study of the Archaeological Survey Of The Zulti South Mining Lease.

UZCAC 2007. A Cultural Heritage Research Study. Mkhwanazi and Dube Traditional Authorities. University Of Zululand - Centre For Arts And Culture