

**HERITAGE SURVEY OF THE PROPOSED SALENE
LITHIUM MINE AND PROSPECTING RIGHTS,
KWAZULU-NATAL**

**FOR THE INDEPENDENT ENVIRONMENTAL
ADVISOR**

DATE: 29 OCTOBER 2018

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Abbreviations

HP	Historical Period
IIA	Indeterminate Iron Age
LIA	Late Iron Age
EIA	Early Iron Age
ISA	Indeterminate Stone Age
ESA	Early Stone Age
MSA	Middle Stone Age
LSA	Late Stone Age
HIA	Heritage Impact Assessment
PIA	Palaeontological Impact Assessment

INTRODUCTION

“A Prospecting Right (KZN 30/5/1/3/2/10285 PR) has been authorised on Farm Umsinsini No. 13307 and the Farm Longwood No. 10289, covering an extent of 667 ha. The current S102 application seeks to increase that area to 847 ha to include Portions 1, 2 and the remaining extent of the Farm Corner No.11328. These properties fall within the 1:50,000 topographical sheets 3030CB Port Shepstone and 3030DA Hibberdene.

In addition, prospecting activities for the other minerals, namely nickel, graphite, copper, gold, dimension stone, feldspar, rare-earths (all), niobium and Platinum Group Metals (PGMs) will take place on the enlarged prospecting area of 847ha.

Prospecting will be conducted by means of both non-invasive and invasive activities. Invasive activities will include drilling. Drilling activities will be done to confirm the resources as obtained from the initial non-invasive prospecting activities. Data from these geological core boreholes (TNW) will then be used to calculate the resource using computer modelling and geo- statistical principles such as Kriging.

Non-invasive prospecting activities include:

- A geological base map is produced and used as a basis for the exploration programme using existing geological, geophysical and topographical information.
- A geophysical survey is conducted to determine the presence of structures associated with mineral potential.
- The required geological prospecting boreholes are plotted on the base plan.

The invasive prospecting activities required include:

- Geological core boreholes (TNW) will be drilled to confirm the resources as obtained from the initial non-invasive prospecting activities.
- All borehole cores will be logged and the potentially viable seam intersections send for initial analysis” (The Independent Environmental Advisor, Draft EIA 2018).

Need and desirability of the proposed activities

Exploration for Lithium (Li) at is at present on an unprecedented level and is one of the top elements being explored for in the World. This is primarily due to its use in lithium-ion batteries, which are the key to lightweight, rechargeable power for laptops, phones and other digital devices, particularly for electric vehicles.

Lithium (Li) is a light soft silver-white metal commonly found in three types of mineral deposits: brines (saline groundwater), pegmatites (hard rock), and sediments. The contained lithia concentration is generally low and therefore only a limited number of deposits can be economically extracted.

It is the lightest known metal. It is an alkali metal that is soft enough to be cut with a kitchen knife and so low in density that it floats on water. It is also solid at a wide range of temperatures, with one of the lowest melting points of all metals and a high boiling point. It never occurs naturally in nature and is usually found in ionic compounds such as pegmatite. Chile and Australia are the world's largest producers of lithium with their combined production being greater than 75% of the world's production. In Southern Africa, Zimbabwe was the World's fifth biggest lithium producer in 2017.

Like its fellow alkali metal, sodium, lithium is highly reactive and flammable and has to be stored in mineral oil. It reacts with water in a spectacular manner. The combination of Li and water (H₂O) forms lithium hydroxide and hydrogen, which typically bursts into red flame. Lithium is not a rare element, but due to its lower utilisation up to a decade ago, it was not as widely explored for. However, economically extractable concentrations are rare.

The African deposits of lithium are sourced from hard rock deposits, generally associated with Mobile Belts. The host rock is the rare element class of pegmatites belonging to the lithium-caesium-tantalum (LCT) family. The host rock contains the lithium-bearing minerals of spodumene, petalite, lepidolite, amblygonite and eucryptite. Spodumene, a member of the pyroxene–group, may contain up to 3.73% Lithium. Other

economical minerals associated with these pegmatites are: tantalite (coltan), pollucite (caesium), tin, mica, beryl and feldspar.

Spodumene in significant quantities has been found south of the Mzumbe River in Kwa-Zulu Natal” (The Independent Environmental Advisor, Draft EIA 2018)

The Independent Environmental Advisor was contracted by Salene Technologies (Pty) Ltd to undertake the EIA for the proposed prospecting and mining activity. Umlando was subcontracted by The Independent Environmental Advisor to undertake the HIA for the areas to be affected by prospecting and the study general in general.

Fig.'s 1 – 4 show the location of the development.

VEGETATION

“The bulk of Corner consists of KwaZulu-Natal Coastal Belt Grassland with a small portion in the northeast, next to the Mzumbe River, consisting of KwaZulu-Natal Coastal Belt Thornveld.

KwaZulu-Natal Coastal Belt Grassland (KZN Veg. Type 29, SANBI - CB3) consists of a long and broad coastal strip along the KwaZulu-Natal coast from Mthunzini in the North to just short of Port Edward in the south. The altitude ranges from about 20 to 450 m. It consists of highly dissected undulating planes which are thought to have been covered to a great extent with subtropical coastal forest. The KwaZulu-Natal coastal belt is heavily transformed by sugar cane, timber plantations and coastal resorts with interspersed secondary *Aristida* grasslands, thickets and patches of coastal Thornveld. The conservation status is Critically Endangered and only a small part is statutorily conserved in the Ngoye, Mbumbazi and Vernon Crookes forest and nature reserves.

KwaZulu-Natal Coastal Belt Thornveld (KZN Veg Type 41, SANBI - CB6) is found on the coastal strip along the KwaZulu-Natal coast from near Mandini in the north to Oribi Gorge in the south. The altitude ranges from 30-500 m. It is found on steep valley sides and a hilly landscape, mainly associated with drier larger river valleys in the rain shadow of the rain bearing frontal weather systems from the east coast. It consists of bushed grassland, bushland and bushland thicket and open woodland. The conservation status is Vulnerable and only a small part is statutorily conserved in Harold Johnson Nature Reserve.

There are no wetlands directly on drilling sites, but Longwood has a small patch of Alluvial Wetlands : Subtropical Alluvial Vegetation (KZN 75.1, SANBI AZa 7) – Endangered and there is a small farm dam on Corner which is included on the NFEPA wetland coverage” (The Independent Environmental Advisor, Draft EIA 2018)

FIG. 1 GENERAL LOCATION OF THE STUDY AREA



FIG. 2: AERIAL OVERVIEW OF THE STUDY AREA



FIG. 3: TOPOGRAPHICAL OVERVIEW OF THE STUDY AREA

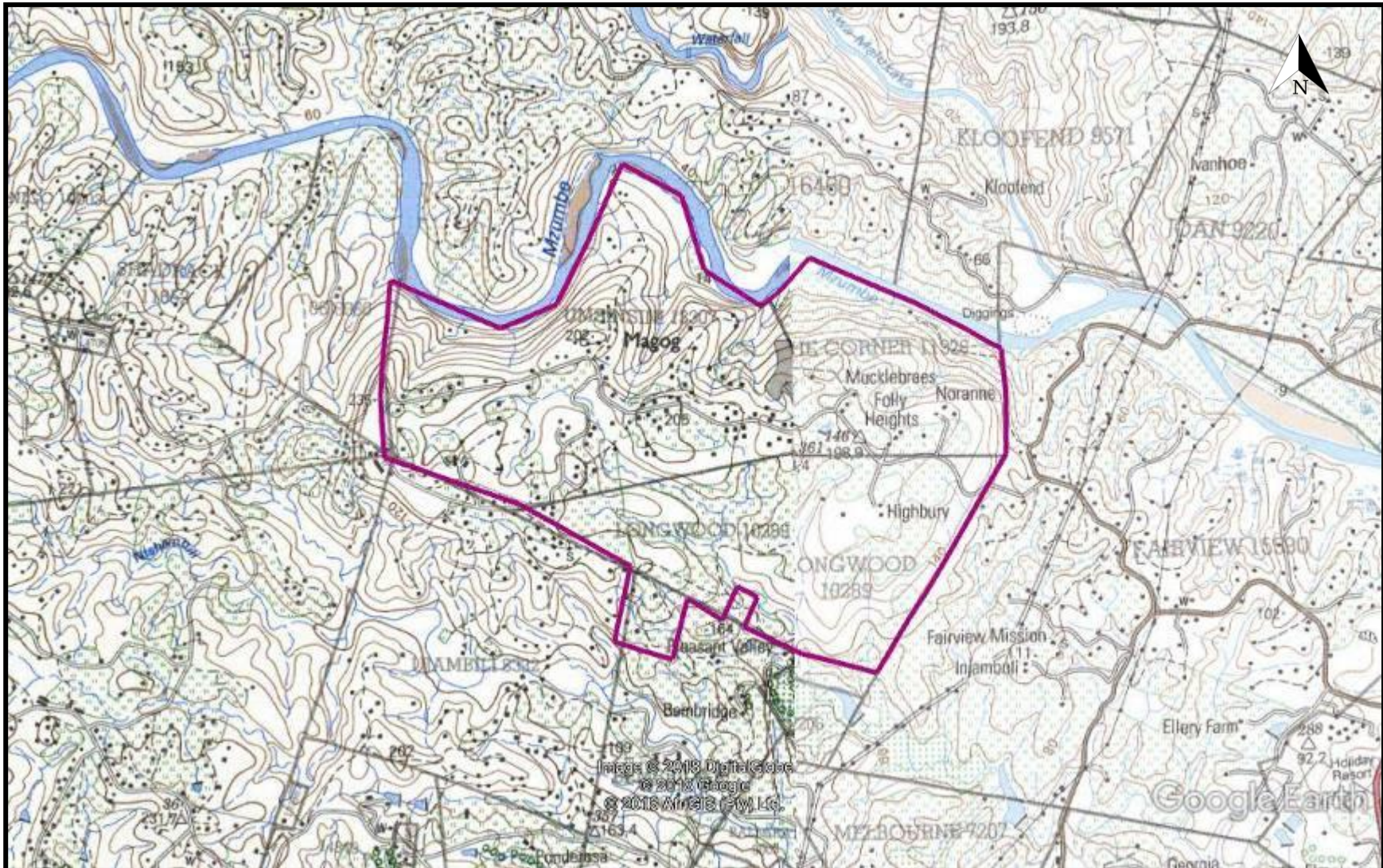


FIG. 4: SCENIC VIEWS OF THE STUDY AREA



KWAZULU-NATAL HERITAGE ACT NO. 4 OF 2008

“General protection: Structures.—

- No structure which is, or which may reasonably be expected to be older than 60 years, may be demolished, altered or added to without the prior written approval of the Council having been obtained on written application to the Council.
- Where the Council does not grant approval, the Council must consider special protection in terms of sections 38, 39, 40, 41 and 43 of Chapter 9.
- The Council may, by notice in the *Gazette*, exempt—
 - A defined geographical area; or
 - defined categories of sites within a defined geographical area, from the provisions of subsection where the Council is satisfied that heritage resources falling in the defined geographical area or category have been identified and are adequately protected in terms of sections 38, 39, 40, 41 and 43 of Chapter 9.
- A notice referred to in subsection (2) may, by notice in the *Gazette*, be amended or withdrawn by the Council.

General protection: Graves of victims of conflict.—No person may damage, alter, exhume, or remove from its original position—

- the grave of a victim of conflict;
- a cemetery made up of such graves; or
- any part of a cemetery containing such graves, without the prior written approval of the Council having been obtained on written application to the Council.
- General protection: Traditional burial places.—
 - No grave—
 - not otherwise protected by this Act; and
 - not located in a formal cemetery managed or administered by a local authority, may be damaged, altered, exhumed, removed from its original position, or otherwise disturbed without the prior written approval of the Council having been obtained on written application to the Council.

The Council may only issue written approval once the Council is satisfied that—

- the applicant has made a concerted effort to consult with communities and individuals who by tradition may have an interest in the grave; and
- the applicant and the relevant communities or individuals have reached agreement regarding the grave.

General protection: Battlefield sites, archaeological sites, rock art sites, palaeontological sites, historic fortifications, meteorite or meteorite impact sites.—

- No person may destroy, damage, excavate, alter, write or draw upon, or otherwise disturb any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, meteorite or meteorite impact site without the prior written approval of the Council having been obtained on written application to the Council.
- Upon discovery of archaeological or palaeontological material or a meteorite by any person, all activity or operations in the general vicinity of such material or meteorite must cease forthwith and a person who made the discovery must submit a written report to the Council without delay.
- The Council may, after consultation with an owner or controlling authority, by way of written notice served on the owner or controlling authority, prohibit any activity considered by the Council to be inappropriate within 50 metres of a rock art site.
- No person may exhume, remove from its original position or otherwise disturb, damage, destroy, own or collect any object or material associated with any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, meteorite or meteorite impact site without the prior written approval of the Council having been obtained on written application to the Council.
- No person may bring any equipment which assists in the detection of metals and archaeological and palaeontological objects and material, or excavation equipment onto any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, or meteorite impact site, or

- use similar detection or excavation equipment for the recovery of meteorites, without the prior written approval of the Council having been obtained on written application to the Council.
- The ownership of any object or material associated with any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, meteorite or meteorite impact site, on discovery, vest in the Provincial Government and the Council is regarded as the custodian on behalf of the Provincial Government.” (KZN Heritage Act of 2008)

METHOD

The method for Heritage assessment consists of several steps.

The first step forms part of the desktop assessment. Here we would consult the database that has been collated by Umlando. These databases contain archaeological site locations and basic information from several provinces (information from Umlando surveys and some colleagues), most of the national and provincial monuments and battlefields in Southern Africa (<http://www.vuvuzela.com/googleearth/monuments.html>) and cemeteries in southern Africa (information supplied by the Genealogical Society of Southern Africa). We use 1st and 2nd edition 1:50 000 topographical and 1937 aerial photographs where available, to assist in general location and dating of buildings and/or graves. The database is in Google Earth format and thus used as a quick reference when undertaking desktop studies. Where required we would consult with a local data recording centre, however these tend to be fragmented between different institutions and areas and thus difficult to access at times. We also consult with an historical architect, palaeontologist, and an historian where necessary.

The survey results will define the significance of each recorded site, as well as a management plan.

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 or features. Sites of medium significance have diagnostic artefacts or features and these sites tend to be 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 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.

Defining significance

Heritage 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.

8. Other Heritage Significance:

8.1. Palaeontological sites

8.2. Historical buildings

8.3. Battlefields and general Anglo-Zulu and Anglo-Boer sites

8.4. Graves and/or community cemeteries

8.5. Living Heritage Sites

8.6. Cultural Landscapes, that includes old trees, hills, mountains, rivers, etc related to cultural or historical experiences.

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. This occurs in Phase 2. These test-pit excavations may require further excavations if the site is of significance (Phase 3). 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.

The above significance ratings allow one to grade the site according to SAHRA's grading scale. This is summarised in Table 1.

TABLE 1: SAHRA GRADINGS FOR HERITAGE SITES

SITE SIGNIFICANCE	FIELD RATING	GRADE	RECOMMENDED MITIGATION
High Significance	National Significance	Grade 1	Site conservation / Site development
High Significance	Provincial Significance	Grade 2	Site conservation / Site development
High Significance	Local Significance	Grade 3A / 3B	
High / Medium Significance	Generally Protected A		Site conservation or mitigation prior to development / destruction
Medium Significance	Generally Protected B		Site conservation or mitigation / test excavation / systematic sampling / monitoring prior to or during development / destruction
Low Significance	Generally Protected C		On-site sampling monitoring or no archaeological mitigation required prior to or during development / destruction

RESULTS

DESKTOP STUDY

The desktop study consisted of analysing various maps for evidence of prior habitation in the study area, as well as for previous archaeological surveys. The archaeological database indicates that there are archaeological sites in the general area (fig. 5). These sites include all types of Stone Age and Iron Age sites. Many of the sites are shell middens that occur along the first dune cordon in this area. This is due to the proximity of rock outcrops that provided a source of protein by means of seashells. The shell middens may be living areas or food processing areas. They often contain human remains. One site occurs on the edge of the study area: 2931AD 004.

No national monuments, battlefields, or historical cemeteries are known to occur in the study area.

The 1937 aerial photographs (fig. 6) indicate there are 34 features that appear to be structures in the study area. These are either built structures or what appear to be farm labourers' houses. The photographs show many small-scale crop fields that would be associated with houses. These are mostly on the Umsinsini.

The 1972 topographical maps (fig. 7) indicate that there was almost a six fold increase in population. Most of the houses/buildings are either on top of the 1937 features, or have been continuously occupied. There is an increase in the number of buildings and wattle-and-daub type structures. This means that any buildings on the property would probably post-date the 60-year mark; however, some would need to be proved older or younger.

The location of the features from 1937 and 1972 are given ion Table 2.

TABLE 2: LOCATION OF FEATURES NOTED IN THE DESKTOP STUDY

NAME	LATITUDE	LONGITUDE
b1	-30.598109760	30.474863360
b2	-30.597722980	30.475876340
b3	-30.597656810	30.477053930
b4	-30.586592540	30.486757200
b5	-30.589293140	30.488410350
b6	-30.599079020	30.475881070
b7	-30.597213880	30.480728950
b8	-30.590065700	30.487558290
b9	-30.596426120	30.483184730
b10	-30.595826580	30.483533260
b11	-30.595315330	30.484475890
b12	-30.595269570	30.485384200
b13	-30.596549530	30.481965970
b14	-30.590651710	30.486690090
b15	-30.594637430	30.486701390
b16	-30.595711630	30.485569450
b17	-30.595570020	30.486565320
b18	-30.596509050	30.486348680
b19	-30.591969910	30.491165520
b20	-30.592388250	30.491742600
b21	-30.593316750	30.491092530
b22	-30.594651420	30.491010740
b23	-30.593893460	30.495132630
b24	-30.595843710	30.495501360
b25	-30.595511610	30.491667670
b26	-30.596532140	30.490936540
b27	-30.596250410	30.493020340
b28	-30.597435460	30.491638290
b29	-30.597686650	30.490946030
b30	-30.596405840	30.494665960
b31	-30.596932910	30.498744420
b32	-30.597869600	30.497591300
b33	-30.597869160	30.499199070
b34	-30.598083080	30.498577920
b35	-30.598600360	30.499052620
b36	-30.598529300	30.498416260
b37	-30.599530250	30.498930260
b38	-30.599135520	30.498392830
b39	-30.599739320	30.496966790
b40	-30.599992710	30.498810070
b41	-30.600936730	30.498059280
b42	-30.601070310	30.499313610
b43	-30.601943710	30.499178860
b44	-30.599390740	30.493751750
b45	-30.599552120	30.492940650
b46	-30.599091460	30.491115140
b47	-30.598537380	30.490690750
b48	-30.598538990	30.490046210
b49	-30.598769180	30.489137240
b50	-30.599528180	30.489989260
b51	-30.599917600	30.489056850

b52	-30.599136440	30.488334210
b53	-30.599527970	30.488737010
b54	-30.601835030	30.492539060
b55	-30.602014670	30.489644560
b56	-30.602880010	30.497860120
b57	-30.604076840	30.498762680
b58	-30.606665980	30.499179760
b59	-30.606734130	30.498797900
b60	-30.608725460	30.495630990
b61	-30.609944370	30.495845780
b62	-30.609388720	30.495174300
b63	-30.609826070	30.494126330
b64	-30.610227730	30.494995220
b65	-30.610541140	30.495604670
b66	-30.610821530	30.494915440
b67	-30.613001080	30.498775900
b68	-30.609870940	30.489177860
b69	-30.612514680	30.489340500
b70	-30.611949190	30.487673670
b71	-30.606773440	30.486427830
b72	-30.605016650	30.490036430
b73	-30.606348190	30.484323600
b74	-30.605120200	30.482082370
b75	-30.604841320	30.481526510
b76	-30.604703730	30.480888730
b77	-30.604545400	30.481924140
b78	-30.603981440	30.484462690
b79	-30.603242700	30.484573060
b80	-30.603034210	30.483495280
b81	-30.602710320	30.484573240
b82	-30.601715200	30.483927960
b83	-30.601774670	30.485126170
b84	-30.601335060	30.484689470
b85	-30.600993380	30.484118350
b86	-30.600897660	30.486899790
b87	-30.599629220	30.488069050
b88	-30.600146570	30.487390690
b89	-30.599751600	30.486990450
b90	-30.599282500	30.486485860
b91	-30.598721430	30.485951010
b92	-30.597955810	30.485520320
b93	-30.600196650	30.483015060
b94	-30.600707060	30.482747500
b95	-30.601164700	30.481861930
b96	-30.602480730	30.481007590
b97	-30.597935910	30.480835670
b98	-30.601190170	30.476286090
b99	-30.602822590	30.478866470
b100	-30.603947280	30.480457260
b101	-30.604176620	30.479683850
b102	-30.602364850	30.477613830
b103	-30.602845940	30.476939550
b104	-30.602228610	30.476589870
b105	-30.601929580	30.476232540
b106	-30.602341400	30.474876900

b107	-30.602799990	30.475933160
b108	-30.601831980	30.472352630
b109	-30.593076490	30.509232480
b110	-30.593215980	30.509848010
b111	-30.600448390	30.500375250
b112	-30.600744240	30.501127460
b113	-30.601057700	30.500011180
b114	-30.601614100	30.501214150
b115	-30.602589600	30.506545840
b116	-30.602903740	30.504485830
b117	-30.603569530	30.503993860
b118	-30.605360890	30.512900980
b119	-30.599178420	30.515774540
b120	-30.600445560	30.507840990
b121	-30.598845460	30.511629950
b122	-30.598120210	30.505477940
b123	-30.604340490	30.507773660
b124	-30.603587310	30.510768700
A1	-30.593826169	30.473148507
A2	-30.597710852	30.475439853
A3	-30.595037120	30.478871972
A4	-30.596282374	30.478372000
A5	-30.597491310	30.476436755
A6	-30.599218707	30.473667648
A7	-30.598756000	30.476482556
A8	-30.597908762	30.480660084
A9	-30.596947369	30.480161020
A10	-30.601568488	30.471949308
A11	-30.603066329	30.475476729
A12	-30.601261043	30.478879422
A13	-30.601693428	30.482097226
A14	-30.602844368	30.483310937
A15	-30.599994232	30.482622221
A16	-30.593279764	30.485919141
A17	-30.594266089	30.486199410
A18	-30.597997190	30.485617224
A19	-30.604081715	30.484108652
A20	-30.600807667	30.489706450
A21	-30.609758850	30.488281354
A22	-30.603278060	30.495859860
A23	-30.598935216	30.500391131
A24	-30.600469530	30.508224465
A25	-30.606603328	30.499347288
A26	-30.600788377	30.501184175
A27	-30.601520041	30.490133496
A28	-30.604505816	30.507646708
A29	-30.593668801	30.497924765
A20	-30.600781408	30.496210908
A31	-30.612156764	30.505198614
A32	-30.597465938	30.505961602
A33	-30.595938265	30.503224449
A34	-30.598112296	30.505539028

FIG. 5: LOCATION OF KNOWN HERITAGE SITES NEAR THE STUDY AREA

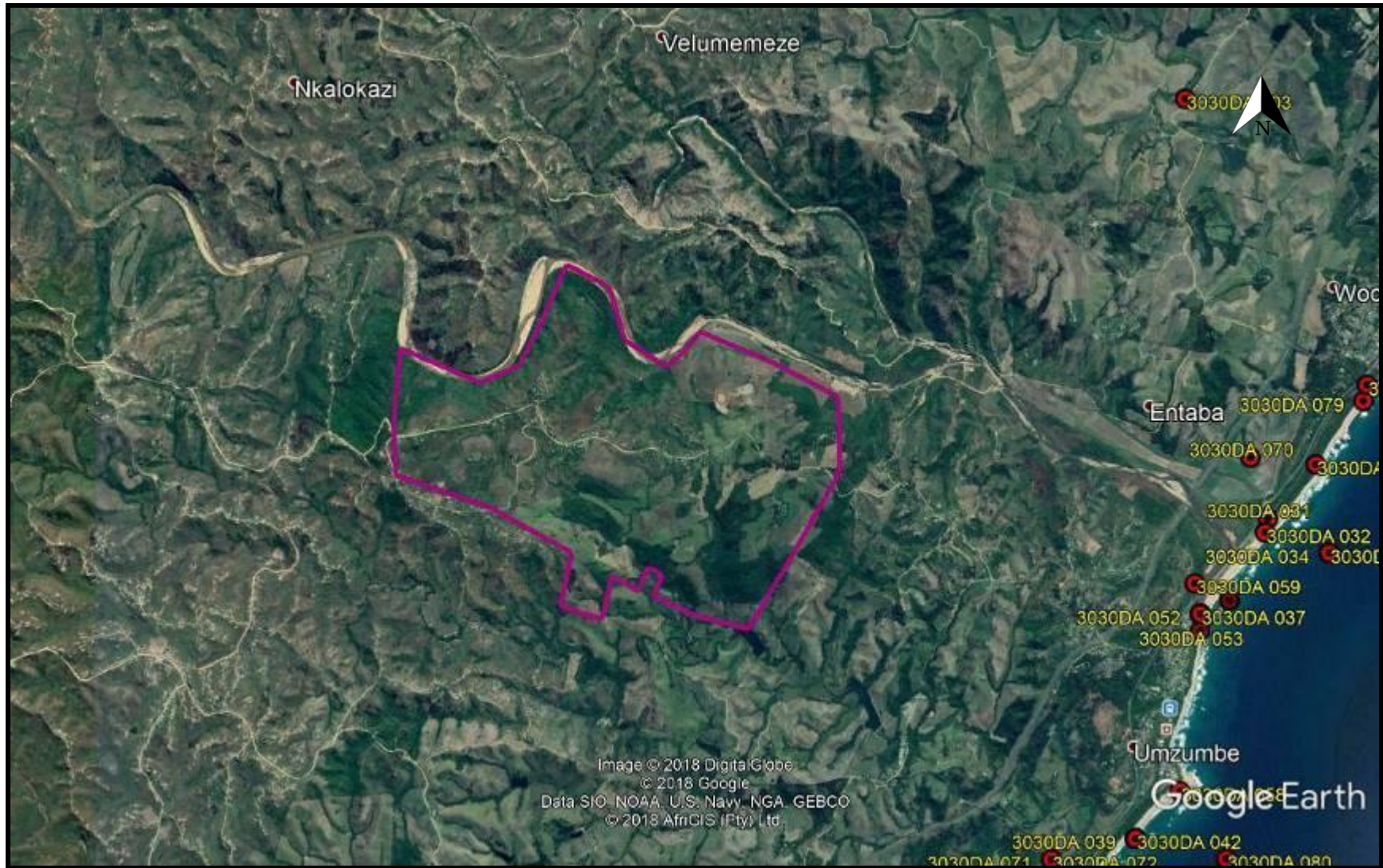
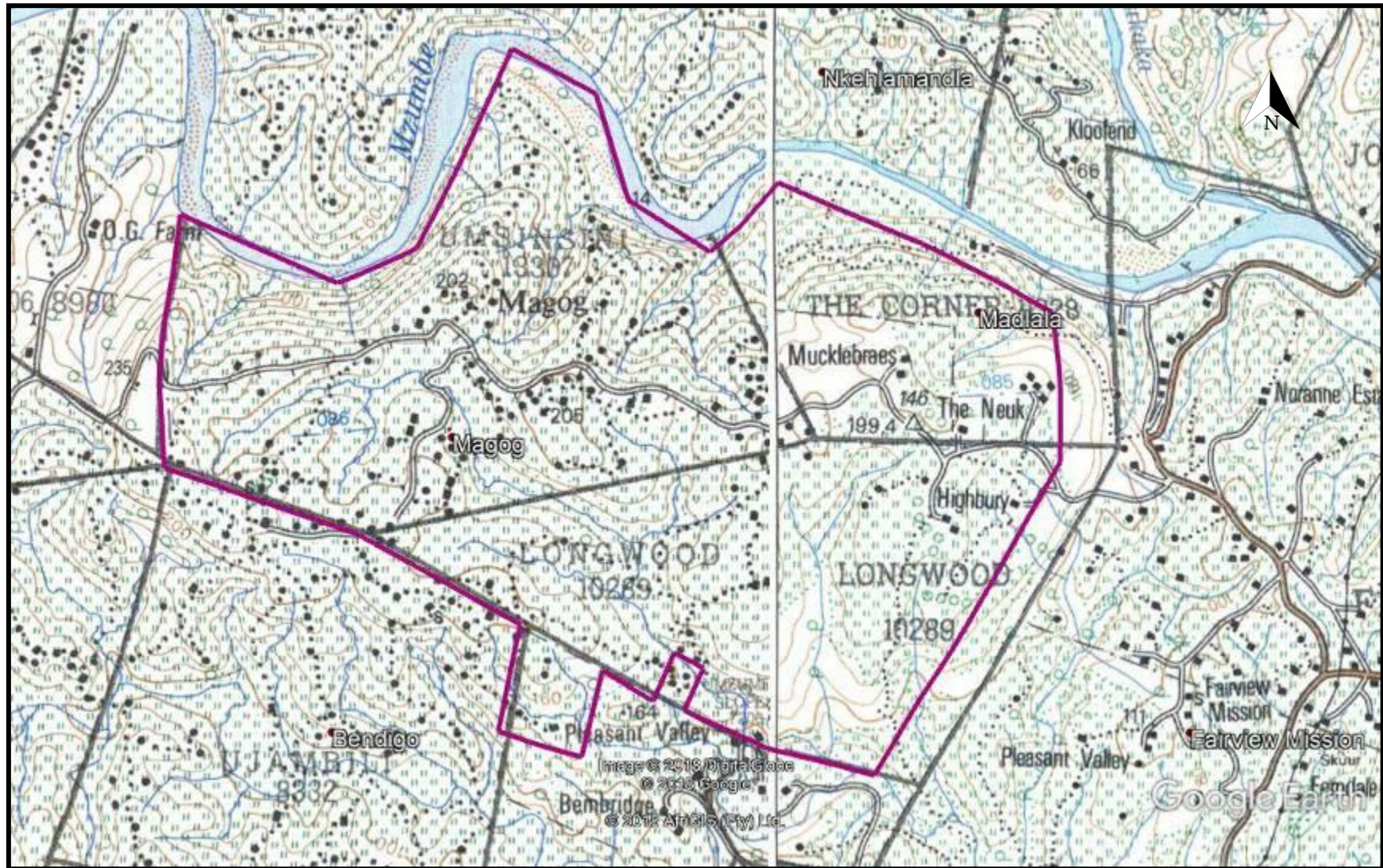


FIG. 6: STUDY AREA IN 1937



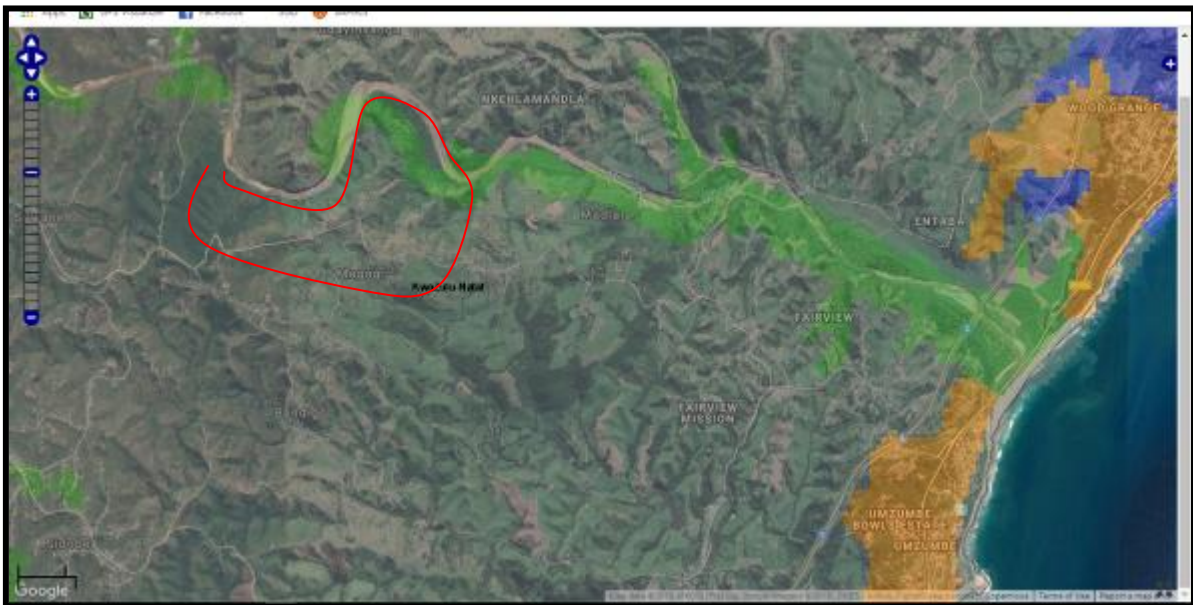
FIG. 7: STUDY AREA IN 1968



PALAEONTOLOGICAL IMPACT ASSESSMENT

The study area is in an area of no palaeontological sensitivity in most areas except along the lower flood plains near the Umzumbe River (fig. 8). This area will not be affected by prospecting or mining. However, if any fossils are noted during construction then they need to be reported to Amafa KZN.

FIG. 8: PALAEONTOLOGICAL SENSITIVITY OF THE UMZUMBE AREA



COLOUR	SENSITIVITY	REQUIRED ACTION
RED	VERY HIGH	field assessment and protocol for finds is required
ORANGE/YELLOW	HIGH	desktop study is required and based on the outcome of the desktop study, a field assessment is likely
GREEN	MODERATE	desktop study is required
BLUE	LOW	no palaeontological studies are required however a protocol for finds is required
GREY	INSIGNIFICANT/ZERO	no palaeontological studies are required
WHITE/CLEAR	UNKNOWN	these areas will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map.

FIELD SURVEY

A field survey was undertaken in October 2018. The area consists mostly of sugar cane fields, in very shallow soils. Some of the area has indigenous forest. The rest of the area tends to contain various types of housing. Most of the houses are on the top of the hills, since the hills tend to be very steep.

The main objective of the field survey was to survey the locations of the proposed drilling areas in relation to heritage issues. The location of the drilling areas are shown in fig. 9. The second aspect of the survey was to survey the area in general for heritage issues that might occur if mining rights are granted.

Most of the houses that were recognised in the desktop study have been built over, or rebuilt over time. According to one informant people stay in the same house but just renovate as and when is required. The rest were destroyed by sugar cane farming.

No heritage sites occur within 20m radius of proposed drilling areas. There would be no further objections to the drilling areas.

The heritage issues can be divided into 5 main categories:

1. Archaeological sites
2. Historical buildings
3. Graves
4. Muthi trees
5. Shembe shrine

The locations of recorded heritage sites are shown in fig. 10.

FIG. 9: LOCATION OF DRILLING AREAS



FIG. 10: LOCATION OF RECORDED HERITAGE SITES



ARCHAEOLOGICAL SITES

Only two archaeological sites were recorded in the study area, LIT01 and LIT02. LIT01 and LIT02 occur on the same general hill but are ~200m apart.

LIT01

LIT01 occurs on the higher part of the hill, just below the forested area. It has been exposed by sugar cane farming. The area is noticeable in that it has a much deeper soil deposit than other hills. The site consists of a scatter of undecorated thin-walled shards of various colours and thickness (fig. 11). The shards are mostly brown to orange-brown in colour. A single upper and lower (maize) grinding stone. The artefacts are in a secondary context and there is no archaeological deposit. The site probably dates to the Historical Period.

Significance: The site is of low significance

Mitigation: No further mitigation is required, although there is always a possibility of subsurface graves.

SAHRA Rating: 3C

FIG. 11: ARTEFACTS AT LIT01



LIT02

LIT02 is located ~200m southwest of LIT01. LIT02 is significantly smaller than LIT01 and has fewer artefacts, even though both are dispersed over an approx. area of 100m radius. LIT02 consists of pottery similar to LIT01. It also has two MSA stone tools. These artefacts are shown in fig. 12. There is no archaeological deposit at LIT02.

Significance: The site is of low significance

Mitigation: No further mitigation is required, although there is always a possibility of subsurface graves.

SAHRA Rating: 3C

FIG. 12: POTTERY SHARDS AND MSA TOOLS AT LIT02



HISTORICAL BUILDINGS

There are two main types of historical buildings in the study area: farm buildings and general stores. The farm buildings are mostly the houses, but can include storage rooms, pump stations, dips, etc.. All buildings that might be damaged due to mining will need to be assessed by an architect historian.

The Neuk

The Neuk, on the Farm The Corner, has several buildings on it. One building, near the mortuary and Coffin factory, occurs on the 1937 and 1972 maps. While the other main farm compound only occurs on the 1972 map. Fig. 13 shows the older building, while I was denied permission to photograph the main compound in a very friendly manner, due to competing companies for the same mining rights! All buildings have been modified since the original structures were built.

FIG. 13: THE NEUK BUILDING



Significance: The building will need to be assessed by an architect historian

Mitigation: The building will need to be assessed by an architect historian

SAHRA Rating: Pending

MUCKLEBRAES

Mucklebraes, on the Farm The Corner, is made up of several buildings. Most of the buildings post-date 1980s. However, one building occurs on the 1937 map and it is a house that has been modified over time (fig. 14). The other buildings are shown in fig. 15:

Significance: The building will need to be assessed by an architect historian

Mitigation: The building will need to be assessed by an architect historian

SAHRA Rating: Pending

FIG. 14: BUILDING AT MUCKLEBRAES



FIG. 15: RECENT BUILDINGS AT MUCKLEBRAES, THE CORNER



HIGHBURY

The main farmhouse, Highbury, has been severely changed since 1937, while the additional house, on the opposite hill, has been abandoned (fig. 16).

Significance: The building will need to be assessed by an architect historian

Mitigation: The building will need to be assessed by an architect historian

SAHRA Rating: Pending

FIG. 16: RECENT BUILDING AT HIGHBURY, FARM THE CORNER



FARM LONGWOOD LABOURER'S HOUSES

These building are supposed to be on the original Longwood Farmhouse, according to the current landowner (fig. 17). There was no evidence of the house, but this was expected since more recent buildings have been erected. The newer buildings are an example of spatial planning and need further investigation.

Significance: The building will need to be assessed by an architect historian

Mitigation: The building will need to be assessed by an architect historian

SAHRA Rating: Pending

FIG. 17: LABOURERS' HOUSES ON FARM LONGWOOD



BEMBRIDGE

The ruins on the Farm Bembridge occur on the 1937 aerial photographs. The buildings are now ruins with just the shell remaining (fig. 18). The buildings will need to be assessed by a qualified architect historian while any rubbish dumps would be considered archaeological in nature.

Significance: The building will need to be assessed by an architect historian

Mitigation: The building will need to be assessed by an architect historian. Any rubbish dumps relating to the building might require sampling or excavation.

SAHRA Rating: Pending

FIG. 18: BUILDING ON FARM BEMBRIDGE



VUKUZHAKOLE GENERAL STORE

The Vukuzhakele General Store has been in existence since 1937 (as it occurs on the 1937 aerial map). The building has been abandoned for several years as the owners stopped using the store for various reasons. There is a family cemetery near the house as well as two graves behind the main house. Fig. 19 shows some of these features.

The family who owns the store has an interesting history. The family consists of E. Canana who was a white Jewish female, who married T Newel Dambuza. The Newell side of the Dambuza family could be related to a white Muslim male. Some of the family has dropped an 'l' in Newell as well. The importance of this is that these marriages took place under the apartheid years. Moreover, the people worked and lived in the General Store that was a central hub of social activity when it was active. The store and its surrounds thus have a living heritage status and oral history status.

Significance: The building and its surrounds have a high social significance in terms of living heritage and oral history.

Mitigation: The building needs to be assessed in terms of its architectural significance. The oral history of the family needs to be officially recorded and directly associated with the building. The building needs to be accurately recorded. If mining does occur in this area, early rubbish dumps will be exposed. These dumps are of historical value and need to be sampled. This needs to occur before mining begins.

SAHRIS Rating: 3b

FIG. 19: GENERAL VIEWS OF THE VUKUZHAKOLE GENERAL STORE



GRAVES

A total of five gravesites and two cemeteries were recorded in the study area. Some of the gravesites consisted of one or two graves, while cemeteries consist of more than two graves. I only recorded human graves that were near the road or possibly near drilling holes. I did notice many graves behind houses suggesting that the study area will have many graves that will require mitigation. Some of the graves are older than 60 years.

Grave styles varied from stone cairns, bricked and infilled features, to headstones (fig. 20).

Significance: All human graves are of high significance and require mitigation if affected.

Mitigation: If mining rights were granted, then a full Public Participation Process will be required. This is explained in detail under 'MITIGATION'.

SAHRA Rating: 3a

SHEMBE TEMPLE

Only one Shembe Temple was noted in the study area (fig. 21). It occurs near the road and is currently in use.

Significance: All places of religious activity are considered to be of high significance.

Mitigation: If mining rights were granted, then consultation with the community who uses the Temple will be required. This normally involves removing the temple to another location.

SAHRA Rating: 3b

FIG. 20: TYPES OF GRAVES IN THE STUDY AREA



FIG. 21: SHEMBE TEMPLE IN THE STUDY AREA**MUTHI TREES**

One *muthi* tree was noted during the survey (fig. 22). It is a *Bridelia micrantha*, or Mitzeeri (Barry James pers. comm.). The tree is used for a variety of ailments. Several other muthi trees probably exist in the study area.

Significance: The muthi trees vary in their significance according to their use. Local users would be able to rate the trees accordingly.

Mitigation: If mining rights were given, then a sapling should be planted in a non-affected area as soon as possible.

SAHRA Rating: varies

FIG. 22: MUTHI TREE IN STUDY AREA



GENERAL MITIGATION

Prospecting activities will not affect any heritage sites. No further mitigation is required for prospecting.

If mining rights were obtained then several mitigation measures will be required. The archaeological sites will require a permit from Amafa KZN for their destruction. While the sites are of low significance, they still require legal permission to be destroyed. There is always the possibility of subsurface graves at the site. Any exposed human remains need to be reported to the SAPS and Amafa KZN immediately. A 20m buffer around the remains must be erected until further investigation has been completed.

All buildings older than 60 years will need to be assessed by a qualified architect historian. The Vukuzhakele General Store is more than a building and has a rich oral history. This needs to be recorded in detail.

The Shembe Temple can be moved to a new location with consultation of the current users.

All *muthi* trees need to be noted and replaced. This normally is by planting a sapling in an unaffected area. This should be done in advance of the mine so that the tree may grow.

The biggest heritage issue relating to the proposed mine, if granted will be human graves. A full Public participation process will be required where the relocation of ancestral remains need to be discussed. The developer must follow the guidelines mentioned below otherwise the project may be brought to halt. The process of grave removals is a complex one that requires community consultation, advertisements, several permits, and finally reburial. Moreover,

those graves older than 60 years require a qualified archaeologist to undertake the entire process. This process is summarised as follows¹:

In terms of the National Heritage Resources Act (No. 25 of 1999), and KZN Heritage Act of 1997 and 2008, graves older than 60 years (not in a municipal graveyard) are protected. Human remains younger than 60 years should be handled only by a registered undertaker or an institution declared under the Human Tissues Act. Anyone who wishes to develop an area where there are graves older than 60 years is required to follow the process described in the legislation (section 36 and associated regulations). The specialist will require a permit from the heritage resources authority:

- Determine/ confirm the presence of the graves on the property. Normally the quickest way to proceed is to obtain the service of a professional archaeologist accredited to undertake burial relocations. The archaeologist will provide an estimate of the age of the graves. There may be a need for archival research and possibly test excavations (permit required).
- The preferred decision is to move the development so that the graves may remain undisturbed. If this is done, the developer must satisfy SAHRA/KZN Heritage that adequate arrangements have been made to protect the graves on site from the impact of the development. This usually involves fencing the grave(yard) and setting up a small site management plan indicating who will be responsible for maintaining the graves and how this is legally tied into the development. It is recommended that a distance of 10-20 m is left undisturbed between the grave and the fence around the graves.
- If the developer wishes to relocate or disturb the graves:

¹ Information supplied by SAHRA, and it applies to KZN, although falling under the KZN Heritage Act.

- A 60-day public participation (social consultation) process as required by section 36 (and regulations - see attachment), must be undertaken to identify any direct descendants of those buried on the property. This allows for a period of consultation with any family members or community to ascertain what their wishes are for the burials. It involves notices to the public on site and through representative media. This may be done by the archaeologist, who can explain the process, but for large or sensitive sites a social consultant should be employed. Archaeologists often work with undertakers, who rebury the human remains.
- If as a result of the public participation, the family (where descendants are identified) or the community agree to the relocation process then the graves may be relocated.
- The archaeologist must submit a permit application to SAHRA/KZN Heritage for the disinterment of the burials. This must include written approval of the descendants or, if there has not been success in identifying direct descendants, written documentation of the social consultation process, which must indicate to SAHRA's satisfaction, the efforts that have been made to locate them. It must also include details of the exhumation process and the place to which the burials are to be relocated. (There are regulations regarding creating new cemeteries and so this usually means that relocation must be to an established communal rural or formal municipal cemetery.)
- Permission must be obtained before exhumation takes place from the landowner where the graves are located, and from the owners/managers of the graveyard to which the remains will be relocated.
- Other relevant legislation must be complied with, including the Human Tissues Act (National Department of Health) and any ordinances of the Provincial Department of Health). The archaeologist can usually advise about this.

CONCLUSION

Salene Technologies proposes to undertake prospecting activity on the Erfs in the South Coast of Kwa-Zulu Natal. The area is just inland from Umzumbe and near the Umzumbe River. The HIA was divided into two aspects: prospecting and mining.

Several heritage sites were noted during the survey. However, prospecting activity will not affect any of these sites. If mining rights are granted, then several heritage sites may/will be affected. These types of sites include:

- Two archaeological sites
- Several historical buildings
- Many human graves
- A Shembe Temple
- *Muthi* trees

All of the heritage sites can be mitigated and should not stop any mining activity, provided appropriate public consultation is undertaken. This is specifically in relation to human graves.

REFERENCES

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117_37A, Flight path 46, photo 35718
3030CB Port Shepstone 1972, 2000
3030DA Hibberdene 1972, 2000
Natal Museum Site Record Database
SAHRIS Database
Umlando Database

EXPERIENCE OF THE HERITAGE CONSULTANT

Gavin Anderson has a M. Phil (in archaeology and social psychology) degree from the University of Cape Town. Gavin has been working as a professional archaeologist and heritage impact assessor since 1995. He joined the Association of Professional Archaeologists of Southern Africa in 1998 when it was formed. Gavin is rated as a Principle Investigator with expertise status in Rock Art, Stone Age and Iron Age studies. In addition to this, he was worked on both West and East Coast shell middens, Anglo-Boer War sites, and Historical Period sites.

DECLARATION OF INDEPENDENCE

I, Gavin Anderson, declare that I am an independent specialist consultant and have no financial, personal or other interest in the proposed development, nor the developers or any of their subsidiaries, apart from fair remuneration for work performed in the delivery of heritage assessment services. There are no circumstances that compromise the objectivity of my performing such work.

A handwritten signature in black ink, appearing to read 'Gavin Anderson', with a horizontal line underneath.

Gavin Anderson
Archaeologist/Heritage Impact Assessor