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5 FEBRUARY 2007 First EIA Investigation.

10 JUNE 2013 Upgrade of the report.

12 AUGUST 2013 SECOND UPGRADE

FIRST PHASE ARCHAEOLOGICAL & HERITAGE ASSESSMENT OF THE PROPOSED GARONA – FERRUM TRANSMISSION LINE, NORTHERN CAPE

EXECUTIVE SUMMARY

A 400 KV transmission power line is planned from the Garona-Sub Station near Groblershoop to Ferrum Sub-Station at Kathu in the Northern Cape. The power line will predominantly follow the route of existing power lines.

The total distance was investigated for the occurrence of archaeological, historical and other cultural material.

Major obstacles occur at the Kathu Archaeological Complex with specific reference to the extended Stone Age archaeological site at Kathu Pan outside of town. A decade of fieldwork has proven that an unusual conjunction of geological circumstances has led to the stratified preservation of an exceptional human record, representing three phases of the Early Stone Age, two phases of the Middle Stone Age and about the entire Later Stone Age. The Acheulean evidence from at the site is of particular significance. The information provides us with a basic typological framework for a large part of the Middle Pleistocene.

According to the Environmental Consultants, the Ferrum – Garona power line will not affect any of the sites, features or objects of cultural heritage significance identified in the study area. The Kathu Town lands, Kathu pan, Hartnolls 458 and Uitkoms 463 archaeological sites are outside the 4km corridor that is being assessed for this Basic Assessment Report. Mitigation measures and methodology is provided in the EMP if unidentified heritage resources are found during construction phase.

I conclude that the Kathu Pan site should be avoided during the installation of the power line. I also recommend that the relevant landowners and developers

around Kathu Pan should be made aware of the locality and importance of the Kathu Pan archaeological site. I am convinced that when treated in this way, the power line developments will have an insignificant effect on the rich archaeological heritage of the area.

No other cultural or historical remains or graves were found along the proposed route.

Further planning of the proposed project could continue.

INTRODUCTION & DESCRIPTION

Scope and Limitations

Eskom commissioned the archaeological and heritage assessment of the proposed new 400KV transmission line between Garona Sub-Station near Groblershoop to Ferrum Sub-Station at Kathu (Maps 1-3).

The investigation provided the opportunity to examine the route proposed for the transmission power line. It is possible that the long distances and the fact that the total route was not always fully accessible, could have limited the investigation and the recording of the finds.

Methodology

1. Standard archaeological survey and recording methods were applied.
2. A survey of the literature was done to obtain information about the archaeology and cultural heritage of the area.
3. The site was inspected on foot and by vehicle.
4. Layout of the route as well as objects and features were plotted by GPS.
5. Main characteristics of surroundings and features were recorded on camera.

The criteria used in the specific ranking of the sites, is based on the mere presence or absence of archaeological and/or cultural material. In the present case Stone Age material of very high significance were found and will have to be treated with great care.

INVESTIGATION

Two potential corridors were initially proposed for the installation of the 400KV transmission line from the Garona Sub-Station near Groblershoop to the Ferrum

Sub-Station at Kathu (Map 10). The present investigation planned to take the line along the existing power lines for about 150km. The route extends over a slightly changing vegetation cover. The total distance of the route was examined at regular intervals for the occurrence of archaeological, historical and other cultural material.

The original investigation took place on 18 & 19 January 2007 in the company of Dr. Johan du Preez from MDA Environmental Consultants, Bloemfontein. The first EIA investigation had been done on behalf of Bohlweki Environmental Consultants, Johannesburg. Officials from Bohlweki Environmental Consultants, Johannesburg, provided directions for the proposed power line route.

Specific points were investigated on foot and observations were plotted and recorded on camera. The route was examined for possible archaeological and historical material and to establish the potential impact on any cultural material that might be found. The Heritage Impact Assessment (HIA) is done in terms of the National Heritage Resources Act (NHRA), (25 of 1999) and under the National Environmental Management Act, 1998 (Act. 108 of 1998).

The study aims to locate and evaluate the significance of cultural heritage sites, archaeological material, manmade structures older than 60 years, and sites associated with oral histories and graves that might be affected by the proposed developments. Planted and self-sown trees and other types of vegetation determine a major part of the historical landscape of human settlements in villages and towns, on farmyards or even deserted places in the open veld. These features will be identified and taken into consideration during any heritage investigation.

Anglo-Boer War (1900-1902) camping and skirmish sites in the Free State, Northern Cape and North West Province, will be recorded. Distinctive food cans and specific types of fired cartridge cases normally identify these sites. Conflict sites between early White farmers and Bushmen in the Northern Cape and North West Province could contain gunflints and fired cartridge cases and should likewise be noted. From a previous archaeological and heritage assessment, it is known that ash heaps with remains of Anglo-Boer War material occur on strategic places (cf. Dreyer 2007 Pampoenpan, Douglas).

ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

The archaeological environment of the Free State, Northern Cape and North West Province is rich and diverse, representing a long time span of the human occupation. The area around Kathu is exceptionally rich in terms of Stone Age material. Some areas are richer than others and not all the sites are equally significant (Beaumont et al. 1995, Beaumont & Morris 1990). For various reasons, there is still a relative lack in research records. Certain known sites

such as the one at Wonderwerk Cave in the Kuruman Hills, several ancient specularite mines near Postmasburg and a number of significant Stone Age sites and the Kathu Archaeological Complex, made substantial contributions to our knowledge (Beaumont 1990, 2007). According to the technology these artefacts fit in with the later part of the Early Stone Age (Acheulean) (2 million to 150 000 years ago). Beaumont declared that these artefacts resemble the material found in controlled excavations at Wonderwerk Cave, which dated to 500 000 years BP.

Khoi stock farmers moved into this area between AD 400 and AD 1100. Black farming communities followed into the Northern Cape. This phase known as the Later Iron Age (AD 1300 to about 1840 AD), brought people who cultivated crops, kept livestock, produced an abundance of pottery in a variety of shapes and sizes and smelted metals. Extensive stone walled enclosures characterised their semi-permanent settlements. These remnants are known from the prominent Sotho/Tswana settlements at Dithakong, a Bathlaping capital near Kuruman. A number of Korana and Griqua groups, remnants of the Later Stone Age peoples, managed to survive the assimilation by Sotho/Tswana tribes in the region.

Dramatic climate changes resulted in a rapid population growth along the east coast. Increased pressure on natural resources and attempts to control trade during the early 19th century brought the emergence of powerful leaders in the area. The subsequent power struggle resulted in a period of instability in the central parts of Southern Africa. This period of strife or wars of devastation, known as the “difaqane” (Sotho/Tswana) or “Mfecane” (Nguni), affected many of the Black tribes in the interior. Attacks from east of the escarpment initiated by the AmaZulu impis of Chaka in about 1822, were carried on by the AmaNdebele of Mzilikazi and the AmaNgwane of Matiwane into the Free State, thus uprooting among others, the Batlokwa of Sekonyela and Mantatise and various smaller Sotho/Tswana tribes. On their turn, the Batlokwa drove off the Bafokeng of Sebetoane from Kurutlele near Senekal, who, in their effort to escape the pursuit by the AmaNdebele forces, eventually landed up in the Caprivi (Dreyer & Kilby 2003).

This period of unrest also affected the peoples of the Northern Cape, resulting in the displacement of scores of tribesmen, women and children. The stronger tribal groups, such as the AmaNdebele of Mzilikazi, assimilated many of these refugees.

Early European missionaries and travellers ventured into the inland of the country during the 19th century and reached Dithakong as early as 1801. Several of the marauding hordes affected the lives of the Batswana people living at Dithakong near the mission station of Robert and Mary Moffat near Kuruman.

LOCALITY

The 400KV transmission power line is planned from the Garona Sub-Station near Groblershoop to the Ferrum Sub-Station at Kathu (Maps 1-3). The power line will mainly follow the route of existing power lines over a distance of about 150km.

The power line route will pass through changing vegetation, mainly represented by Eragrostis grassland, with a Thorn Veld cover consisting of Swarthaak (*Acacia mellifera*), Blinkblaar-Wag-'n-Bietjie (Buffalo-thorn, *Ziziphus mucronata*) and Driedoring (*Rhigozum trichotomum*), with scatters of Witgat (*Boscia albitunca*) trees. Significant stands of Sand Geelhout trees (Vaalbos) (*Terminalia sericia*) are found in association with Kameeldoring trees (*Acacia erioloba*), at Kathu, Kathu cemetery and the adjacent farm Hartnolls 458 (Map 7). The soil consists of red sterile sand on the surface.

The Eskom Garona Sub-Station is located on a part of the farm Bokpoort 390 in the Groblershoop district. The land is reached from the N10 main road between Groblershoop and Upington and borders on the Sishen-Saldanha railway line.
The following GPS coordinates (Cape scale) were taken (Maps 3-5, 10).

1 Garona Substation	28°44'22"S 021°59'50"E Altitude 952m (Fig.1).
2 Cutting	28°41'35"S 022°04'04"E Altitude 1014m (Fig.3).
4 Pylon 373 (735km)	28°46'48"S 022°15'15"E Altitude 1054m (Fig.4).
5 Pylon 340	28°28'10"S 022°20'22"E Altitude 1100m.
6 Witsan Rd/Powerline	28°07'20"S 022°40'50"E Altitude 1236m.
7 Pylon 162xR385	28°11'17"S 022°45'13"E Altitude 1300m (Fig.5).
8 N14	27°55'09"S 022°48'42"E Altitude 1231m (Fig.6).
9 Kathu	27°42'21"S 023°01'27"E Altitude 1203m.
10 K2 Bend	27°40'11"S 023°00'07"E Altitude 1180m (Fig.7).
11 K3	27°39'57"S 022°58'50"E Altitude 1164m.
12 Ferrum Substation	27°43'35"S 023°03'27"E Altitude 1217m (Fig.8).
2 Kathu Townlands	27°41'26"S 023°04'06"E Altitude 1231m.
3 Kathu Entrance	27°41'24"S 023°04'25"E Altitude 1232m.

4 Kathu Cemetery	27°40’21”S 023°04’34”E Altitude 1241m.
5 Uikoms 4 ESA site	27°40’18”S 023°04’51”E Altitude 1261m.
6 Hartnolls Res Dev	27°40’15”S 023°05’06”E Altitude 1234m.
KATHU PAN	27°39’50”S 023°00’30”E (Beaumont 1990)
KHAI-APPEL	27°40’35”S 023°00’52”E Altitude 1202m (Fig.9).
SISHEN AIR PORT	27°38’58”S 023°59’54”E Altitude 1183m.
RUNWAY SOUTH	27°39’08”S 023°00’15”E Altitude 1184m (Map 5).
WATER TANKS	27°40’20”S 023°00’25”E Altitude 1201m (Fig.10).
KUMBA VILLAGE	27°40’05”S 023°00’38”E Altitude 1190m (Fig.11).
OTHER BUILDINGS	27°39’58”S 023°00’33”E Altitude 1188m (Map 5).
FARM HOUSE	27°40’04”S 023°00’24”E Altitude 1190m (Map 5).
MITTON TRANSPORT	27°41’35”S 023°01’19”E Altitude 1202m (Map 5).
K4	27°42’20”S 023°01’27”E Altitude 1208m (Fig.12).
K5	27°40’22”S 023°00’14”E Altitude 1183m (Fig.13).
K6	27°43’48”S 023°03’17”E Altitude 1220m (Fig.14).

RESULTS

FINDS

GARONA SUB-STATION / BOKPOORT 390

The investigation at Garona Sub-Station produced a small collection of stone flakes (Fig.2). The artefacts, which were collected on the farm Bokpoort 390 and were scattered towards the railway line (28°44’22”S 021°59’50”E Altitude 952m).

Some of the material have convergent flaking, characteristic of the Middle Stone Age industry.

The material used to manufacture the flakes was meta-quartzite and chalcedony from the local lithic sources and a number of lydianite cores occurred (Dreyer 2006, 2012).

KATHU PAN ARCHAEOLOGICAL SITE

The proposed nomination of Kathu Archaeological Complex as a National Heritage Site, consisting of the Kathu Pan Sites, Kathu Cemetery Sites, Kathu Town lands and the Bestwood Sites, is pending.

Kathu Pan archaeological site is situated about 5,5km outside the town of Kathu along the R380 road to Deben (Map 5). Peter Beaumont (1990) indicates the centre of the pan at 27°39'50"S 023°00'30"E (Map 5). Boundaries of the farms Sacha 468, Kathu 465 and Sims 462 run together here at the only source of permanent natural water in the area. The pan covers about 30ha at an altitude of 1178m above sea level. There is an ancient drainage channel made by the floodwater overflow. Test boreholes revealed a 40m combination of calcrete, sand, clays and gravel layers, below the unstable peaty top sediments.

Concerning new developments, major obstacles occur at Kathu Archaeological Complex with specific reference to the extended Stone Age site at Kathu Pan. Fieldwork has proven that an unusual conjunction of geological circumstances led to the stratified preservation of an exceptional human record, representing three phases of the Early Stone Age, two phases of the Middle Stone Age and about the entire Later Stone Age. The Acheulean evidence from the site is of particular significance. The information provides a basic typological framework for a large part of the Middle Pleistocene.

Several seasons of excavations by Tony Humphreys and Peter Beaumont had been performed at Kathu Pan. These excavations produced amongst other finds, portions of clay vessels, ostrich eggshell fragments, Middle Stone Age artefacts, prepared cores, long lithic blades, retouched points and material classified as Fauresmith artefacts. Further finds include coarse Acheulean hand axes and a variety of scrapers. The flakes represented the banded ironstone material found in the area. Grass pollen, which gave an indication of the prehistoric vegetation, had been recovered. The investigations at Kathu Pan also produced the remains of large mammals, such as elephant, zebra, rhino, hippo, buffalo and giraffe, together with a variety of antelope and buck.

The Kathu Pan archaeological site is surrounded by several major developments, which are all located within a parameter of about 2km from the pan. Contact with a number of land managers at Kathu including the Head Town planner, revealed that these officials are unaware of the locality and existence of the Kathu Pan archaeological site.

To be able to compare the distances from the Pan and to stress the need for protection and preservation, I have measured the distances of the different features surrounding the Kathu Pan on Google. These calculations are based on the coordinates given by Beaumont (1990) for the centre of the Kathu Pan archaeological site.

Distances from Kathu Pan centre (Map 5):

KHAI-APPEL RESORT	1,43km
SISHEN AIR PORT	1,87km
SOUTHERN END OF RUNWAY	0,81km
WATER TANKS	0,69km
KUMBA VILLAGE	1,31km
Other buildings near village	0,24km
FARM HOUSE	0,46km
MITTON TRANSPORT	3,44km
Pylon K2	0,84km
Pylon K5	1,1km

IMPACT ASSESSMENT

The Kathu Archaeological Complex, Kathu Town lands, Kathu Cemetery and Uitkoms 4 are of very high significance.

From previous research and other heritage impact assessments, we are aware of many important archaeological deposits in the area around Kathu. Heritage authorities and the relevant officials at McGregor Museum, Kimberley, who did the research over a decade, in particular, are very concerned about the preservation of the archaeological sites at Kathu.

The site at Kathu Pan, in this case, is located between the end of the runway at the Kathu Airport, the Khai-Appel Recreation and Camping Resort, the Kumba Village, water storage reservoirs and the Mitton Transport yard. The realisation that the archaeological site at Kathu Pan is almost encroached by general developments in the area came as a shock. Even more upsetting was the fact

that officials in decision-making positions at Kathu and at the Kumba Mine, seem to be ignorant about the existence of this unique site.

The relevant officials include the local Town Planner at Kathu Municipality, for whom it was easy to point out that the land belongs to the mine.

The following list of names of officials in Kathu and at Kumba mine should be informed about the National Heritage site application.

Johann Burger
Town Planner Gamagara Municipality Kathu
053-723 2261
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Liana Blaau
Sishen Airport Manager
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Hansie Esterhuizen (Manager SHEQ).
hansie.esterhuizen@angloamerican.com

Jimmy Walker (Accommodation Manager).
jimmy.walker@angloamerican.com

Mashilo Mokotong (Manager Sustainable Development).
Sishen Mine's liaison with the local municipality.
mashilo.mokotong@angloamerican.com

At Garona, the stone flakes are sparsely distributed on the surface and it is expected that the impact on the cultural heritage remains of the proposed developments will be of minor significance.

MITIGATION

In the case of the material at Bokpoort near the Garona Sub-station, no mitigation measures will be needed.

The present installation of the power line from Garona Sub-station near Groblershoop to the Ferrum Sub-station at Kathu will not affect any of the sites in the Kathu Archaeological Complex. However, the spread of uncontrolled developments in the area outside Kathu should raise serious concerns about the preservation and protection of the Kathu Pan archaeological site.

Kathu Pan archaeological site is surrounded by several developments, including a mine housing scheme, the main landing strip at the Sishen Airport, farming developments, water reservoir tanks, a recreation and camping centre and a transport yard. Enquiries about the awareness of decision makers and land-control officials at the Municipality, Sishen Airport, Kumba Iron Ore Mine and other major establishments in the region, confirmed that people are unaware of the existence and significance of the heritage site.

Mitigation measures will therefore be required in the case of the Kathu Pan archaeological site along the R380 to Deben.

I recommend as follows:

The case of the Kathu Archaeological Complex must be clarified with officials from the McGregor Museum, Kimberley.

The relevant officials at the South African Heritage Resources Agency (SAHRA) in Cape Town should inform all landowners and affected parties in the area around the Kathu Pan of the importance of the archaeological site.

Arrangements should be forwarded to the affected neighbours on how to preserve and protect the site.

Emphasis should be placed on the sensitivity of the area and that the site should not be destroyed by accident or neglect.

The following institutions and officials should be informed:

Heritage Northern Cape should also be involved and taken out to the site.
Shane Christians Kimberley, 053-807 4901, schristians@ncpg.gov.za.

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Mashilo Mokotong (Manager Sustainable Development).
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I gained from previous archaeological investigations in the Kathu and Garona regions. I thank Peter Beaumont for his interest and contributions during previous investigations at Kathu.

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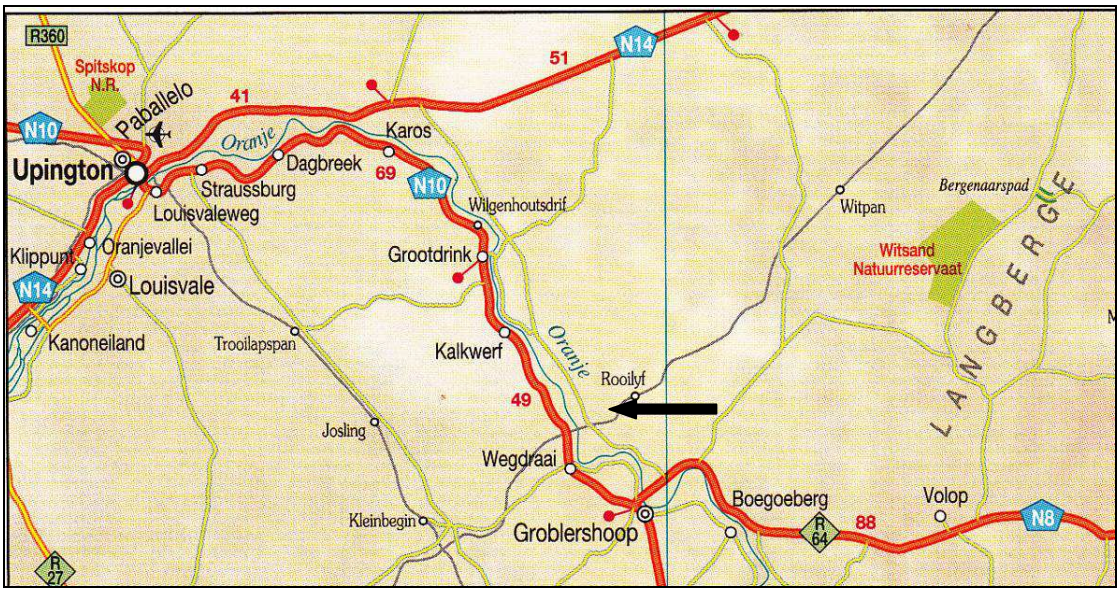
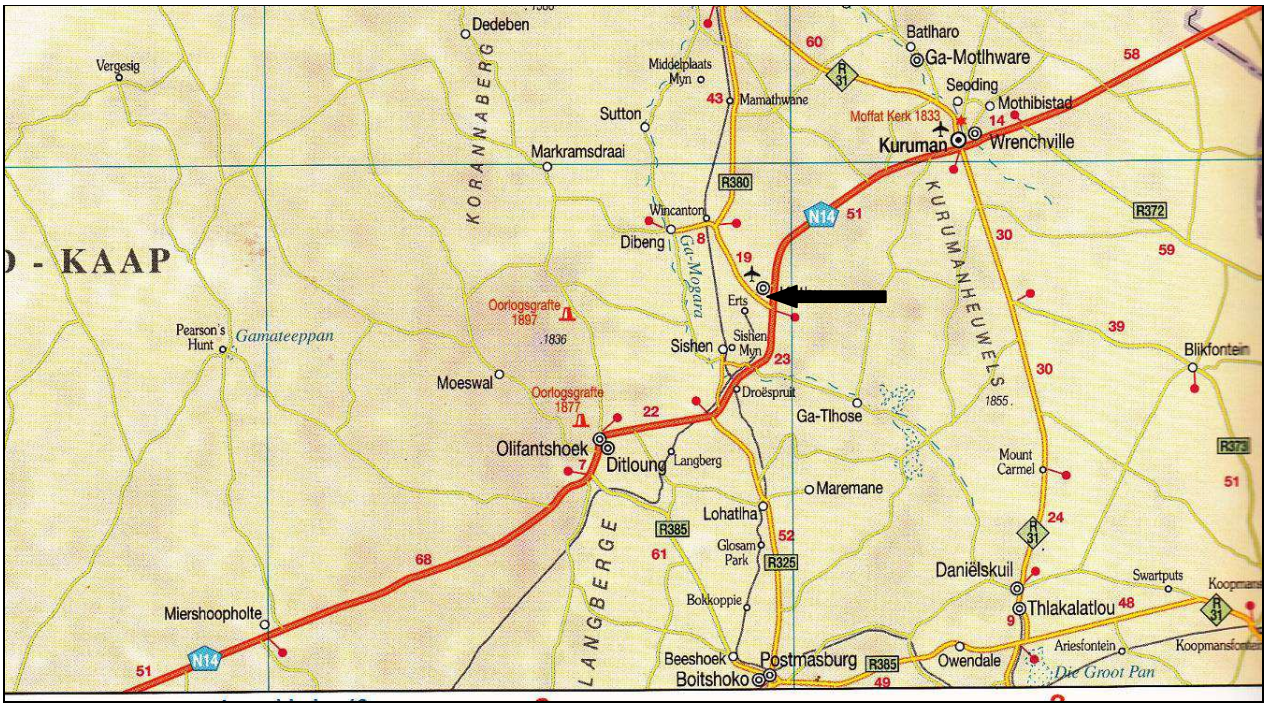
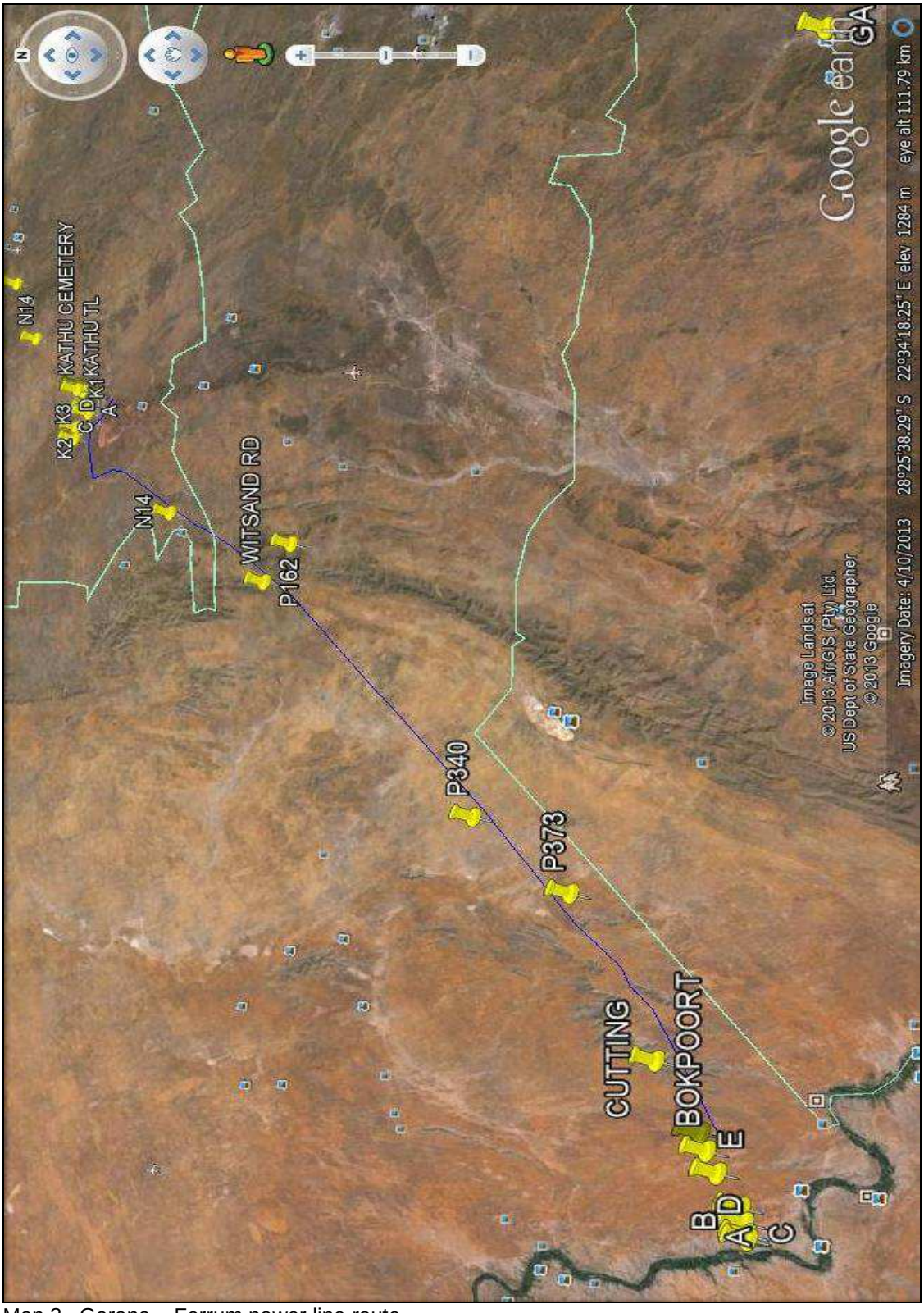
LIST OF ILLUSTRATIONS



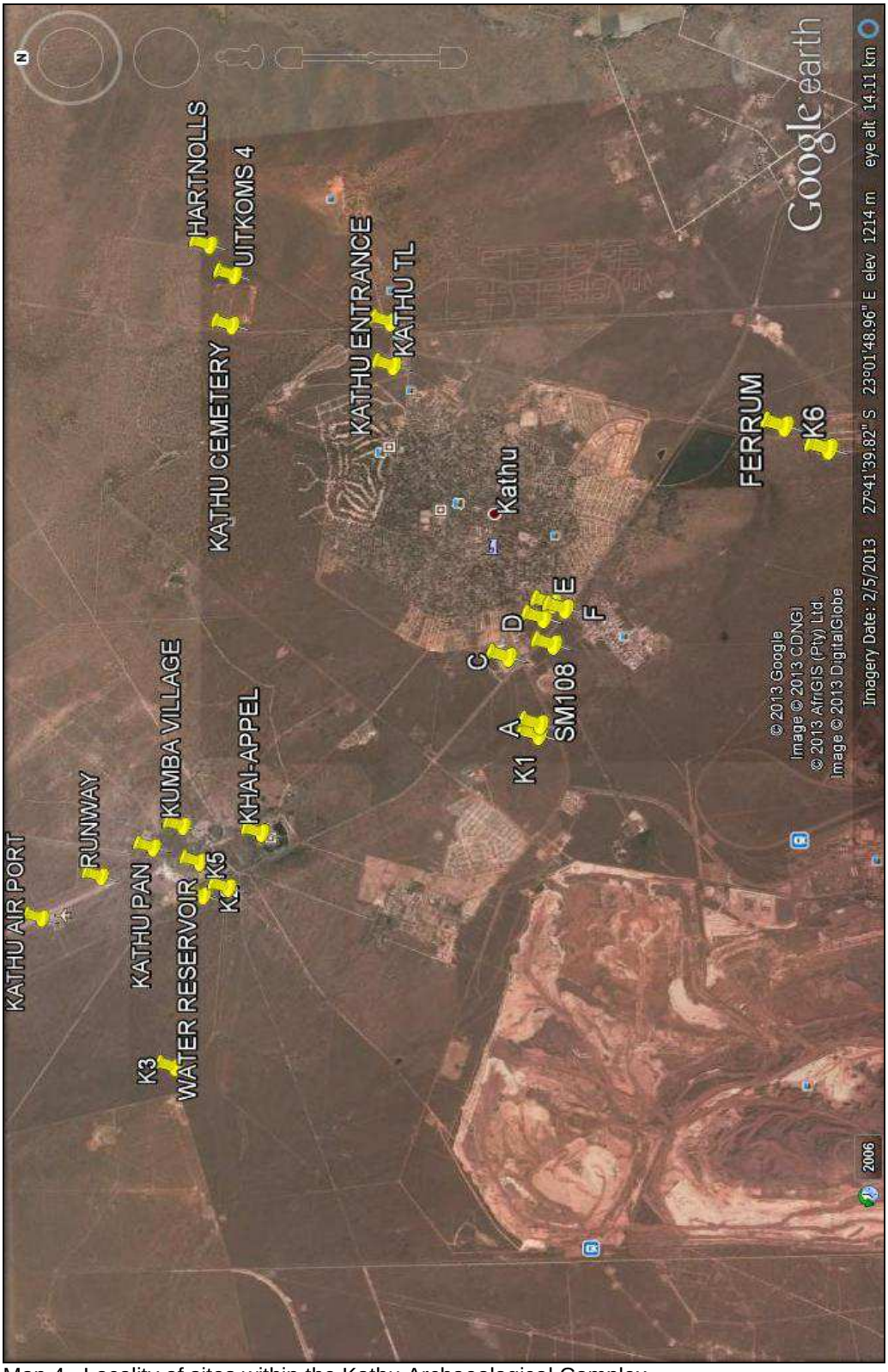
Map 1 Garona Sub-Station near Groblershoop along the Sishen-Saldanha railway line.



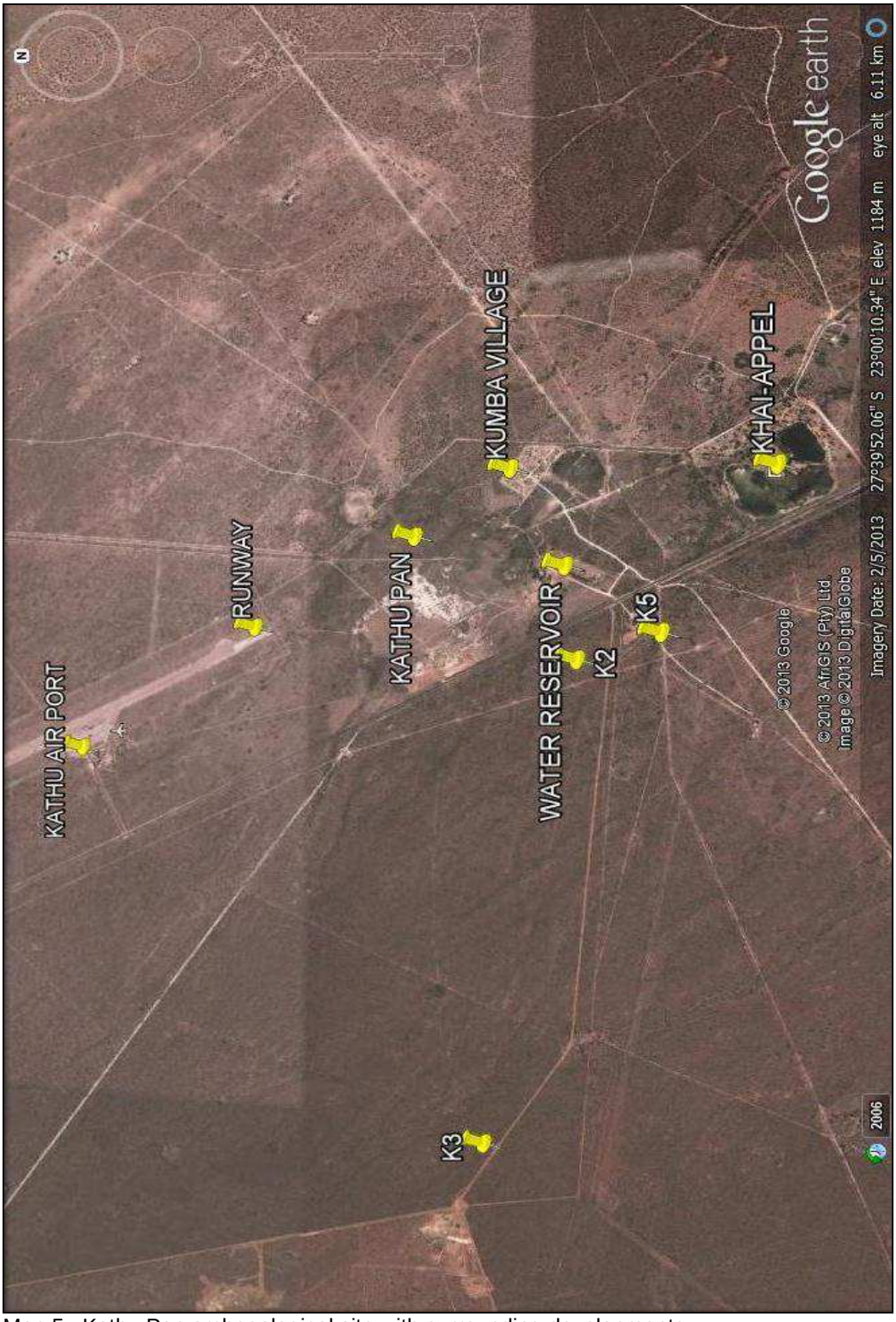
Map 2 N14 main road from Upington to Kathu. Ferrum Sub-station indicated outside Kathu.



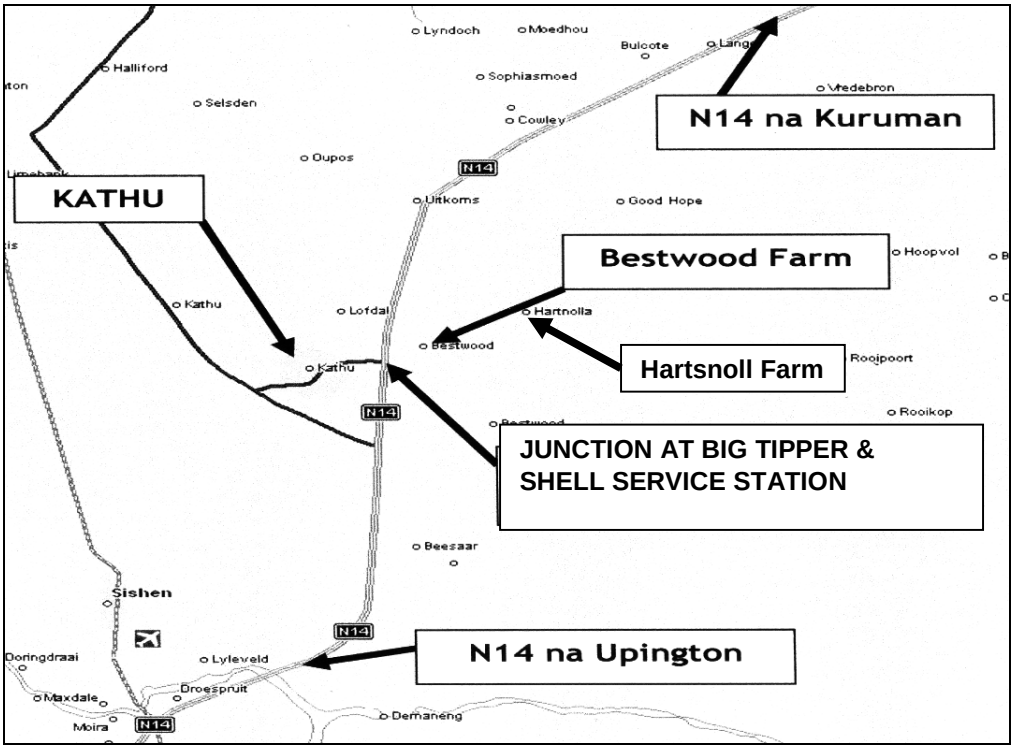
Map 3 Garona – Ferrum power line route.



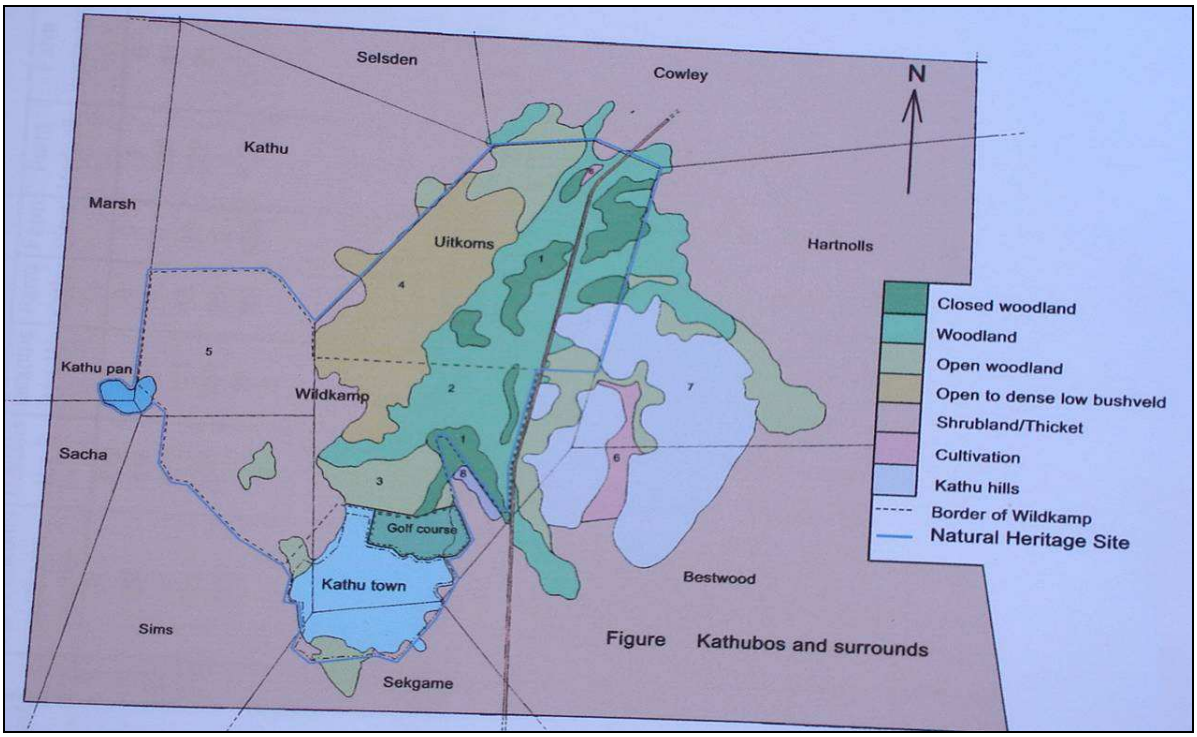
Map 4 Locality of sites within the Kathu Archaeological Complex.



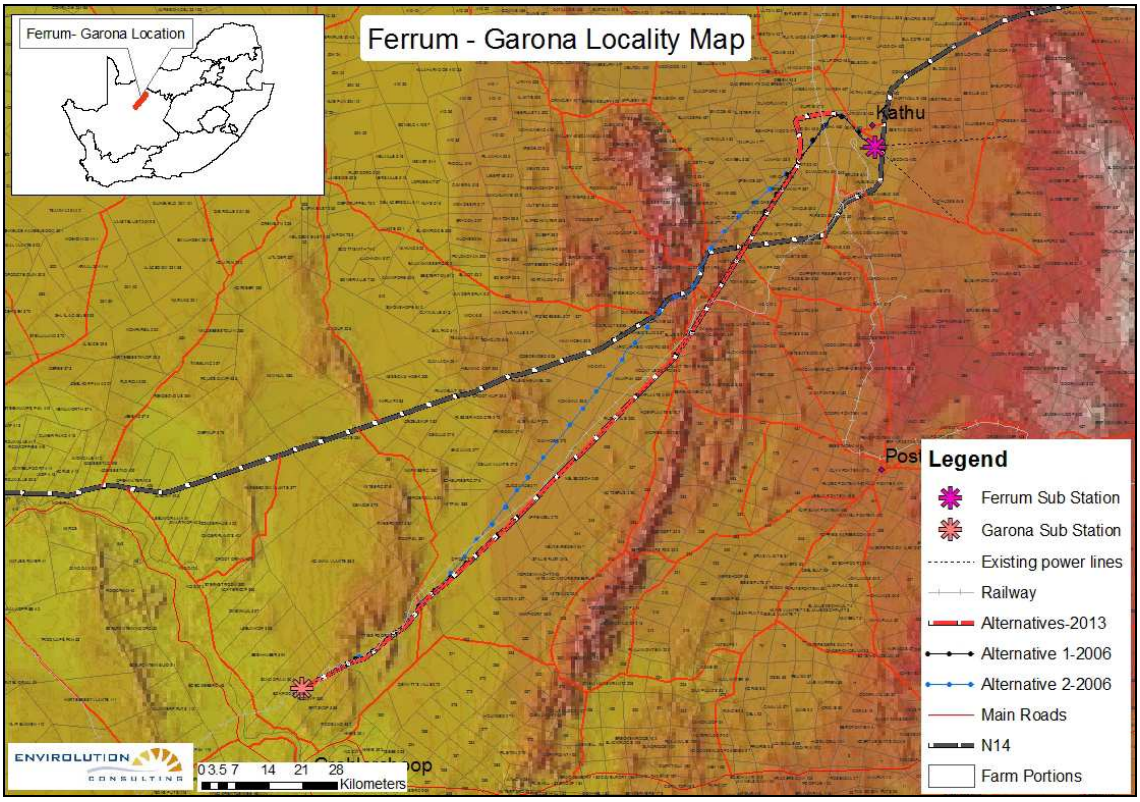
Map 5 Kathu Pan archaeological site with surrounding developments..



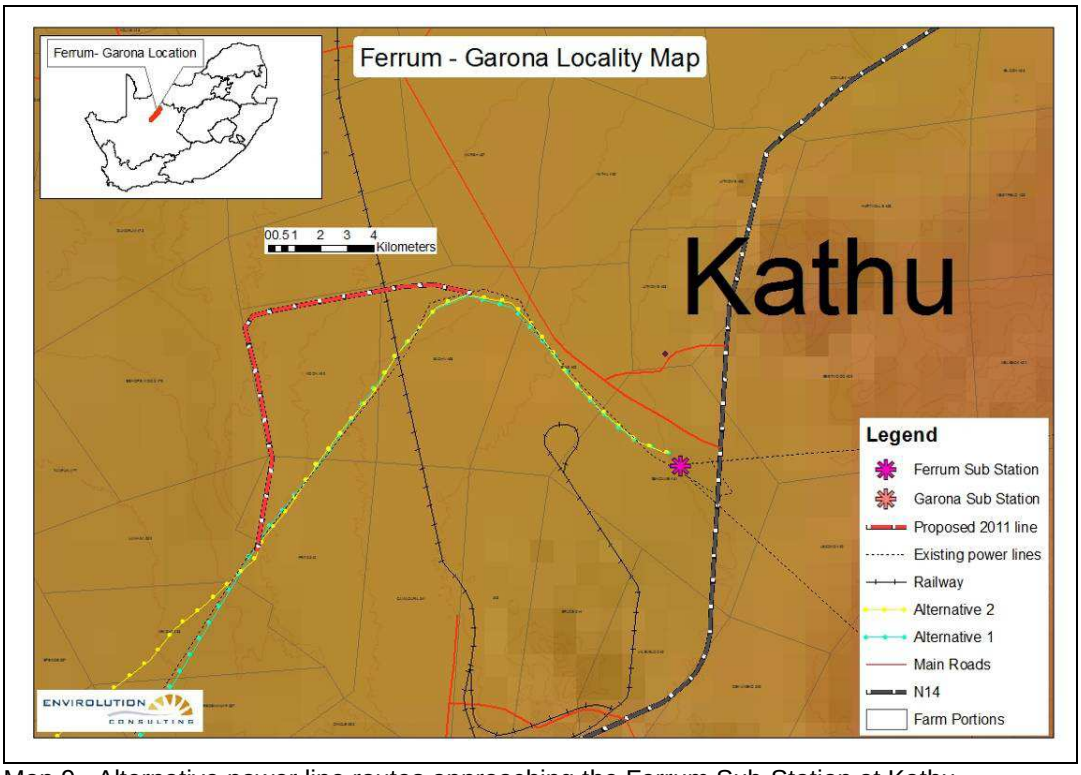
Map 6 Locality of Later Stone Age sites near Kathu in relation to the N14.



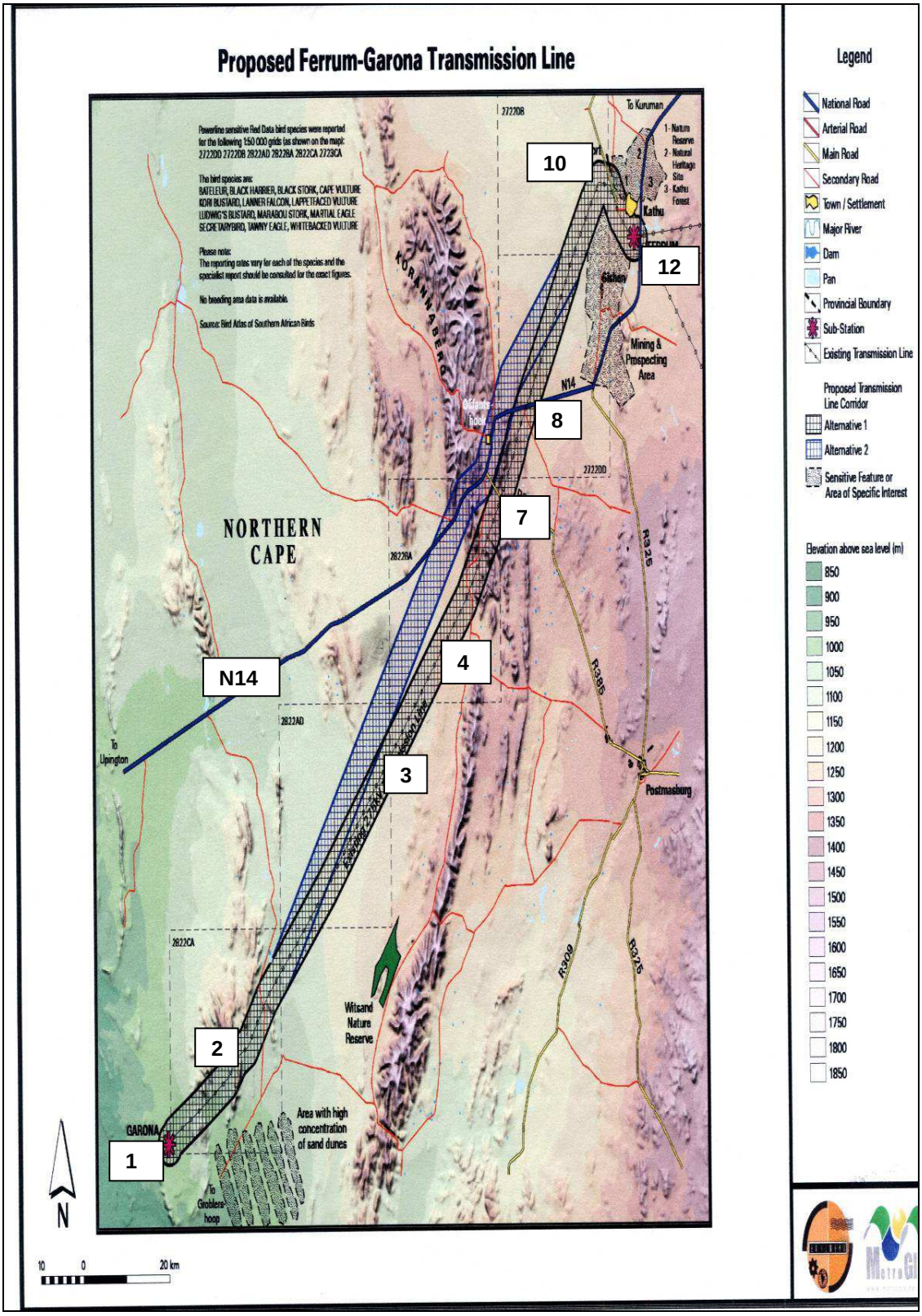
Map 7 Official map showing locality of Erioloba Forrest around Kathu.



Map 8 Proposed power line routes between Garona and Ferrum Sub-Stations.



Map 9 Alternative power line routes approaching the Ferrum Sub-Station at Kathu.



Map 10 Route corridor between Garona Sub-Station and Ferrum near Kathu. Coordinate points indicated.

Fig.1 Garona Sub-Station near Groblershoop (Point 1 Map 10).

Fig.2 Stone flakes from Bokpoort made out of chalcedony, banded ironstone and meta-quartzite. (Pocketknife = 84mm).

Fig.3 Point 2. The cutting for the railway line.

Fig.4 Point 4. Pylon 373 (735km).

Fig.5 Point 7. Crossing the R385 road.

Fig.6 Point 8. Crossing the N14.

Fig.7 Point 10. K3 at Kathu.

Fig.8 Point 12. Ferrum Sub-Station at Kathu.

Fig.9 Khai-Appel recreation resort.

Fig.10 Water supply reservoir at Kathu.

Fig.11 Kumba village at Kathu.

Fig.12 Pylon K4 outside Kathu.

Fig.13 Pylon K5 outside Kathu.

Fig.14 Pylon K6 at Ferrum outside Kathu.

Fig.15 Pylon K6 at Ferrum outside Kathu.