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AN ARCHAEOLOGICAL DESKTOP STUDY FOR THE PROPOSED ELLIOT WIND ENERGY FACILITY ON A SITE WEST OF ELLIOT, SAKHISIZWE LOCAL MUNICIPALITY

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AN ARCHAEOLOGICAL DESKTOP STUDY FOR THE PROPOSED ELLIOT WIND ENERGY FACILITY ON A SITE WEST OF ELLIOT, SAKHISIZWE LOCAL MUNICIPALITY, EASTERN CAPE PROVINCE.

1. EXECUTIVE SUMMARY

The area for the proposed Elliot Wind Energy Facility (WEF) is situated approximately 3km west of the small town of Elliot, Sakhisizwe Local Municipality, in the Eastern Cape Province. A cluster of up to 60 wind turbines is planned to be constructed over an area of approximately 16km².

Several archaeological sites have been recorded surrounding in the area proposed for the Elliot Wind Energy Facility although no sites have been recorded within the immediate area proposed for development. The archaeological heritage spans an occupation period from the Early Stone Age, Middle Stone Age to the Later Stone, as well as evidence of pastoralism and Iron Age farmers. Rock paintings are prolific throughout Southern Drakensberg Mountains.

It is therefore recommended that:

1. A full phase 1 archaeological impact assessment be conducted to establish the range and importance of the exposed and *in situ* archaeological and heritage materials and features, the potential impact of the development and to make recommendations to minimize possible damage to these sites.

2. BACKGROUND INFORMATION

DNA Wind Farm (Pty) Ltd, the wind farm developer, is proposing to establish a commercial wind energy facility and associated infrastructure on a site approximately 3km west of the small town of Elliot, Sakhisizwe Local Municipality, Eastern Cape Province. Based on an extensive pre-feasibility analysis and site identification processes undertaken by DNA Wind Farm, the site situated west of Elliot has been identified for consideration and evaluation as per the requirements of an Environmental Impact Assessment (EIA). The technical feasibility study considered wind resource, access to the electricity grid, accessibility of the site and local site topography. Thorough analysis of potential areas in four provinces of South Africa led DNA Wind Farm to select the site. The overall aim of the design and layout of the facility is to maximize electricity production through exposure to the wind resource, while minimizing infrastructure, operation and maintenance costs, and social and environmental impacts.

The site being considered for the proposed wind energy facility covers an area of approximately 16km². The proposed Farms include: the Remainder of Portion 1 of the Farm Cloeta; Remainder of the Farm Cloete No. 100; Portion 8 of the Farm Groentefontein and Remainder of Portion 1 of the Farm Groentefontein.

The proposed wind energy facility would comprise up to 60 wind turbines with a generating capacity of up to 180MW and associated infrastructure that will include:

- Foundations to support the turbine towers;
- Cables between the wind turbines;
- A substation;
- Overhead power lines (i.e. 66KV distribution lines) which will then link to the existing Eskom transmission line on-site; and
- Internal access roads to each wind turbine.

The Elliot Wind Energy Facility is intended to be registered with the United Nation's Framework Convention for Climate Change as part of the Clean Development Mechanisms Programme.

Savannah Environmental (Pty) Ltd has been contracted to conduct the environmental impact assessment (EIA) by DNA Wind Farm (Pty) Ltd (the developer). This archaeological desktop assessment has therefore been prepared as part of the scoping phase for the proposed project in accordance with the National Environmental Act 107 of 1998, the National Heritage Resources Act 25 of 1999 and guidelines by the South African Heritage Resources Agency (SAHRA).

3. **BRIEF LEGISLATIVE REQUIREMENTS**

Parts of sections 35(4), 36(3) and 38(1) (8) of the National Heritage Resources Act 25 of 1999 apply:

Archaeology, palaeontology and meteorites

35 (4) No person may, without a permit issued by the responsible heritage resources authority—

- (a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;*
- (b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;*
- (d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.*

Burial grounds and graves

36. (3) (a) No person may, without a permit issued by SAHRA or a provincial heritage resources authority—

- (a) *destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;*
- (b) *destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or*
- (c) *bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.*

Heritage resources management

38. (1) *Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorized as –*

- (a) *the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;*
- (b) *the construction of a bridge or similar structure exceeding 50m in length;*
- (c) *any development or other activity which will change the character of the site –*
 - (i) *exceeding 5000m² in extent, or*
 - (ii) *involving three or more erven or subdivisions thereof; or*
 - (iii) *involving three or more erven or divisions thereof which have been consolidated within the past five years; or*
 - (iv) *the costs of which will exceed a sum set in terms of regulations by SAHRA, or a provincial resources authority;*
- (d) *the re-zoning of a site exceeding 10 000m² in extent; or*
- (e) *any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must as the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.*

4. DESCRIPTION OF THE PROPERTY

4.1. Location of Proposed Wind Energy Facility

The area for the proposed Elliot Wind Energy Facility (WEF) is situated approximately 3km west of the small town of Elliot within the Sakhisizwe Local Municipality, Eastern Cape Province. The site is located below the Southern Drakensberg escarpment in the Drakensberg Foothill Moist Grassland lowlands, comprising mainly of agricultural lands. The site is situated between the north-eastern Cape towns of Barkly East approximately 50 km north, Ugie about 40 km west, Cala 20 km south, and Indwe 40 km west.

4.2. Map

1:50 000 map: 3127 BD ELLIOT

Surrounding 1: 50 000 maps include:

3127 BA KOPSHORN (north-west)
3127 BB BARKLY PASS (north)
3128 AA UGIE (north-east)
3128 AC XUKA DRIFT (east)
3128 CA ALL SAINTS (south-east)
3127 DB ENCGOBO (south)
3127 DA CALA (south-west) AM
3127 BC KUZIKONKWANE / IDA (west) AM

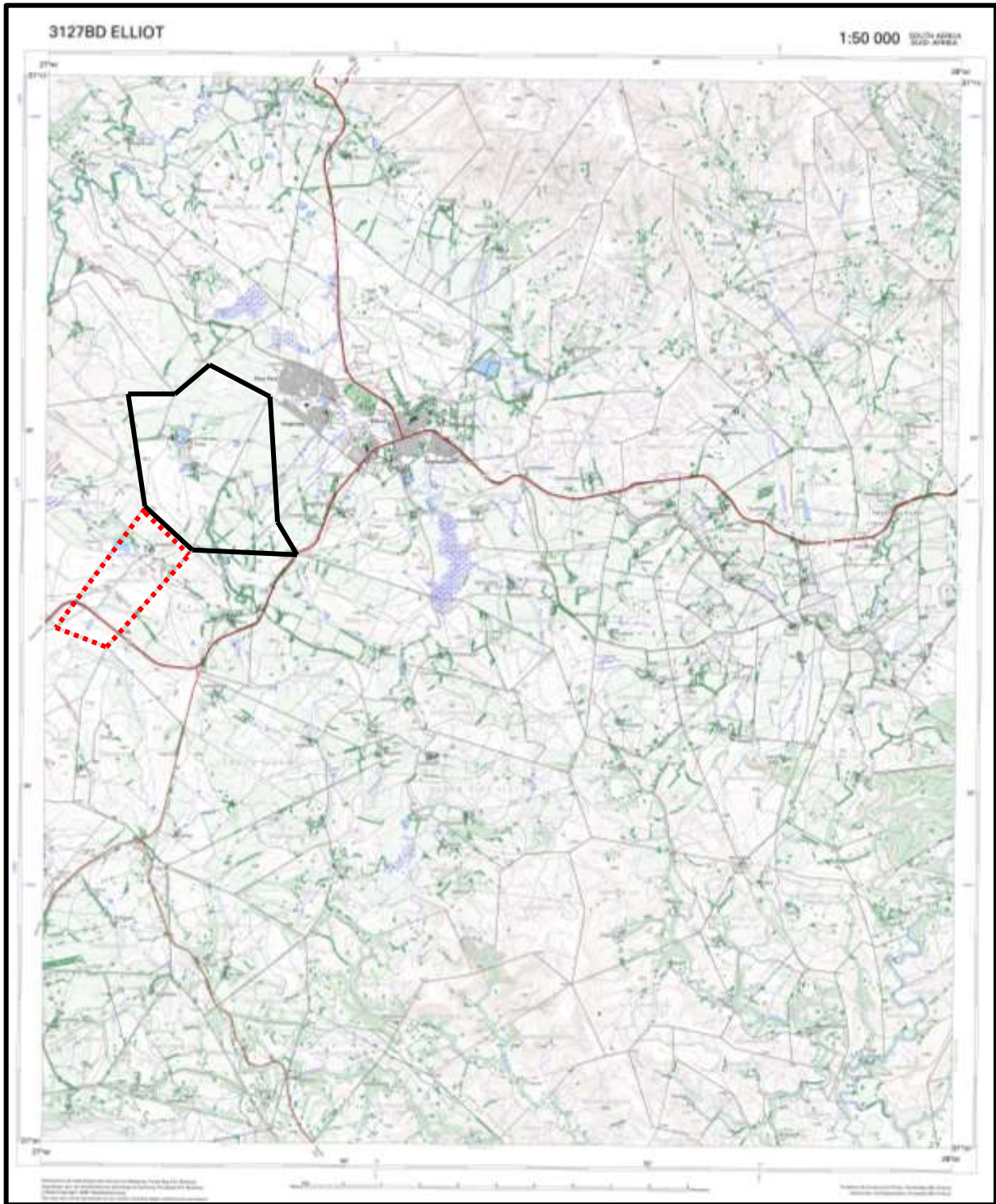


Figure 1. Map 1. 1:50 000 map 3127 BD ELLIOT with the location of the area proposed for the Elliot Wind Energy Facility (WEF) falling inside the solid black line. The red dotted line indicates the farm boundary with the archaeological site (Comaroff) in relation to the proposed Elliot WEF development.

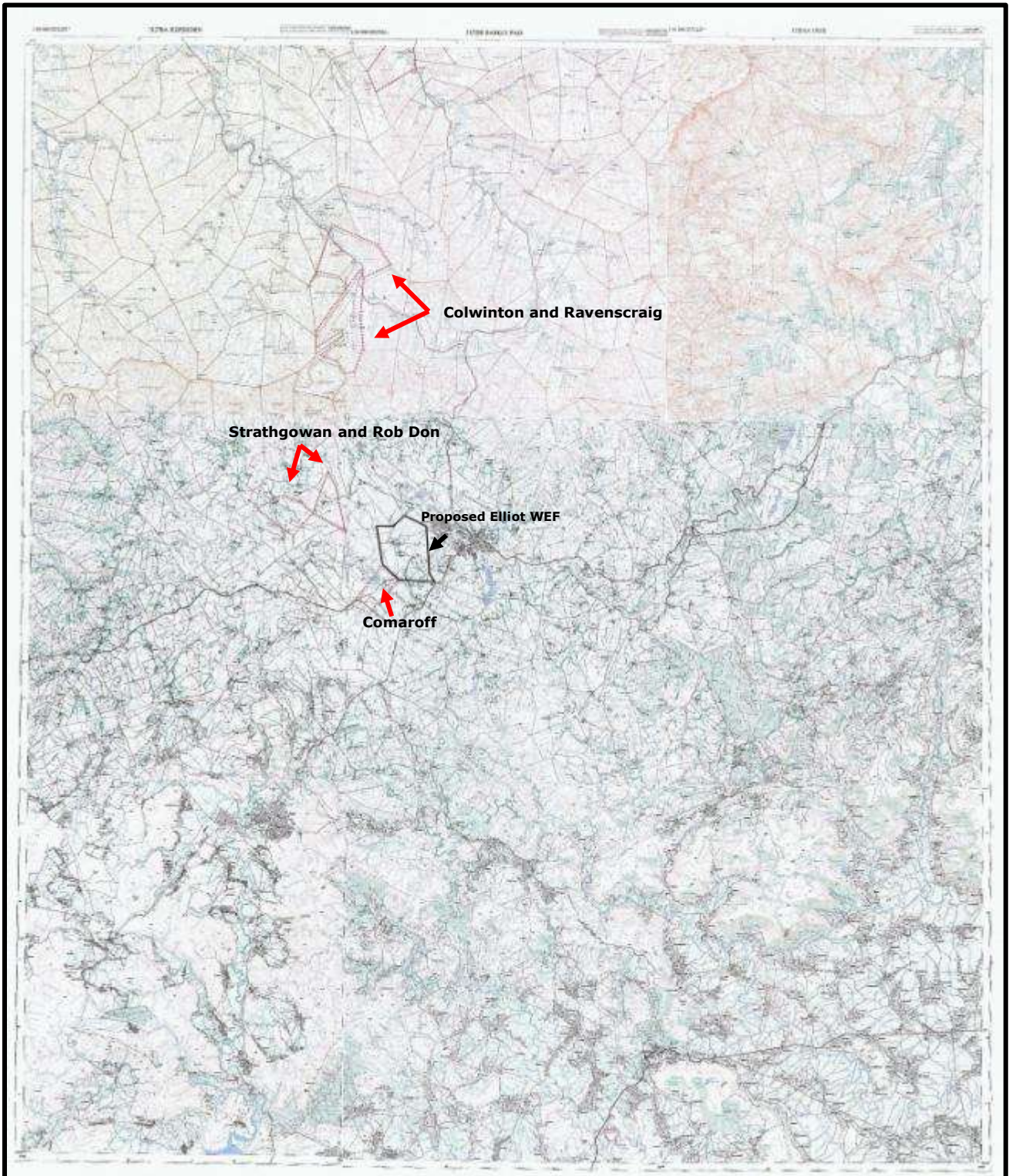


Figure 2. Map 2. 1:50 000 maps 3127 BA KOPSHORN, 3127 BB BARKLY PASS, 3128 AA UGIE, 3128 AC XUKA DRIFT, 3128 DB ENCGOBO, 2127 DA CALA and, 3127 BC KUZU KONKWANE stitched showing the archaeological sites in relation to the area proposed for the Elliot Wind Energy Facility (WEF).



Figure 3. Map 3. Aerial view of the location for the proposed Elliot Wind Energy Facility (WEF).



Figure 4. Map 4. Close-up aerial view of the location for the proposed Elliot Wind Energy Facility and sites located within the surrounding area.

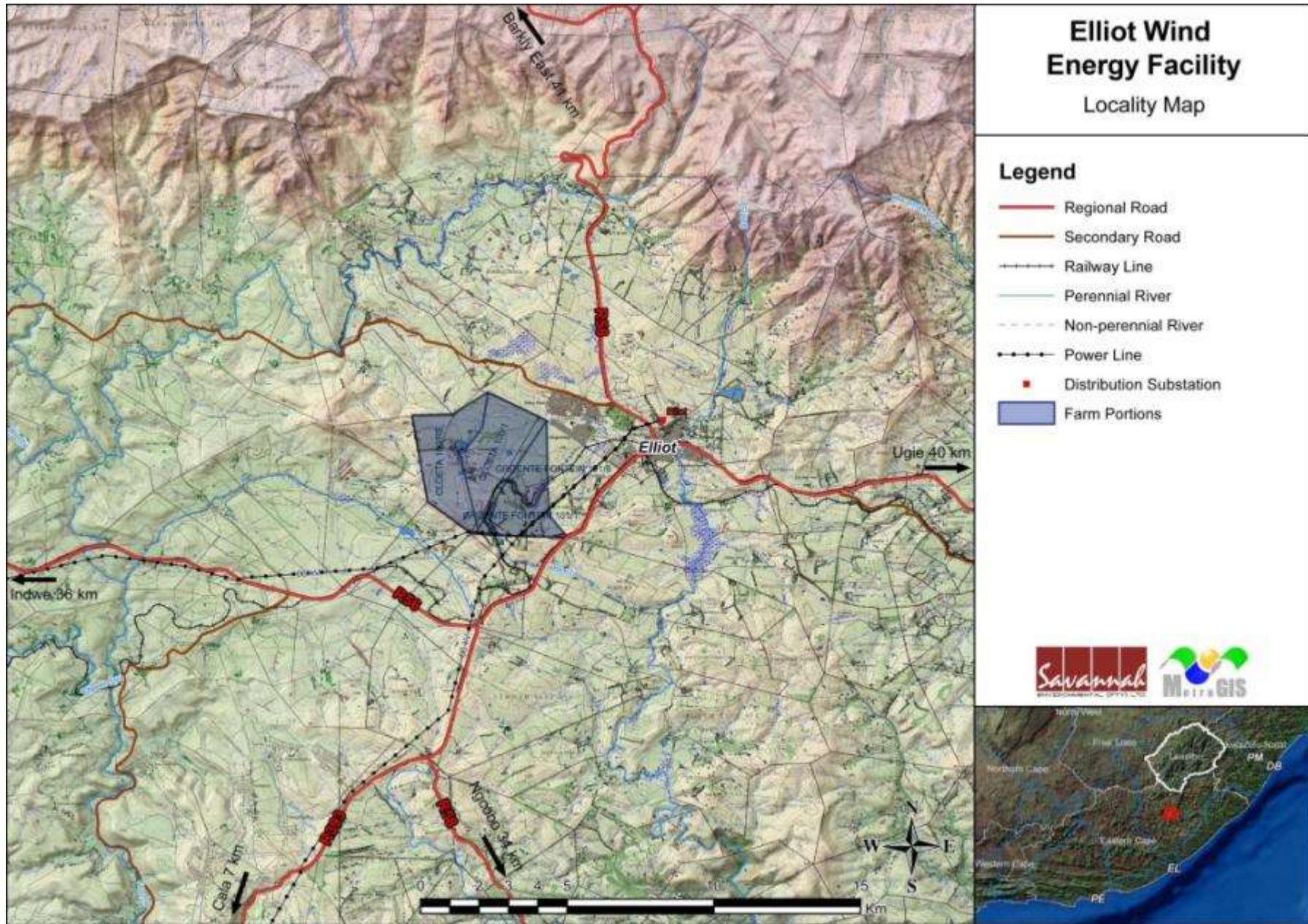


Figure 5. Map 5. GIS map showing the location and layout of the proposed are for the Elliot Wind Energy Facility (courtesy of Savannah Environmental (Pty) Ltd).

5. DESCRIPTION OF THE AFFECTED ENVIRONMENT: ARCHAEOLOGICAL BACKGROUND

Several archaeological sites have been recorded in the surrounding area proposed for the Elliot Wind Energy Facility although no sites have been recorded within the immediate area proposed for development. The Albany Museum database holds limited information of archaeological sites for the north Eastern Cape, however, records are held at several institutions including the University of the Transkei (now Walter Sisulu University), the University of Fort Hare, and the Rock Art Research Institute at the University of the Witwatersrand. Rock art research, mainly conducted by researchers from the Rock Art Research Institute, University of the Witwatersrand, have been conducted around the Barkly East, Ugie, Maclear, Dordrecht and other areas in the Southern Drakensberg escarpment of the north-eastern Cape. Middle Stone Age and Later Stone Age sites have also been excavated and researched during the 1970's. In addition, recent cultural assessments (Anderson 2007; Smith 2010; Van Schalkwyk 2003 and; Van Schalkwyk & Wahl 2007) conducted mainly within the areas surrounding the proposed area for development provides information on predicted archaeological findings.

The literature consulted shows evidence of an archaeological heritage that spans from the Early Stone Age, Middle Stone Age to the Later Stone, as well as evidence of pastoralism and Iron Age farmers. Rock paintings are prolific throughout Southern Drakensberg Mountains. The region is also significant historically as a frontier between hunter-gatherers, pastoralists, Nguni-speaking farming communities and European settlers.

5.1. THE EARLY STONE AGE (1.5 MILLION - 250 000 YEARS AGO)

The Early Stone Age from between 1.5 million and 250 000 years ago refers to the earliest that *Homo sapiens sapiens* predecessors began making stone tools. The earliest stone tool industry was referred to as the Olduvan Industry originating from stone artefacts recorded at Olduvai Gorge, Tanzania. The Acheulian Industry, the predominant southern African Early Stone Age Industry, replaced the Olduvan Industry approximately 1.5 million years ago, is attested to in diverse environments and over wide geographical areas. The hallmark of the Acheulian Industry is its large cutting tools (LCTs or bifaces), primarily handaxes and cleavers. Bifaces emerged in East Africa more than 1.5 million years ago (mya) but have been reported from a wide range of areas, from South Africa to northern Europe and from India to the Iberian coast. The end products were similar across the geographical and chronological distribution of the Acheulian techno-complex: large flakes that were suitable in size and morphology for the production of handaxes and cleavers perfectly suited to the available raw materials(Sharon 2009).

The most well known Early Stone Age site in southern Africa is Amanzi Springs, situated about 10km north-east of Uitenhage, near Port Elizabeth (Deacon 1970). In a series of

spring deposits a large number of stone tools were found *in situ* to a depth of 3-4m. Wood and seed material preserved remarkably very well within the spring deposits, and possibly date to between 800 000 to 250 000 years old. A few important Early Stone Age sites are known from a number of Ciskei sites including Middledrift commonage and wide flood plain along the Keiskamma River, streams and erosion channels show Early Stone Age material on silcrete sandstone, from within the fluvial deposits (Derricourt 1973). Early Stone Age handaxes were documented and recorded on a site near Indwe (Smith 2010).

It is, therefore, possible that surface scatters of Early Stone Age artefacts such as handaxes, flakes, and cores may be encountered during the survey, especially within the ploughed and disturbed agricultural lands.

5.2. THE MIDDLE STONE AGE (250 000 – 30 000 YEARS AGO)

The Middle Stone Age spans a period from 250 000-30 000 years ago and focuses on the emergence of modern humans through the change in technology, behaviour, physical appearance, art and symbolism. Various stone artefact industries occur during this time period, although less is known about the time prior to 120 000 years ago, extensive systemic archaeological research is being conducted on sites across southern Africa dating within the last 120 000 years (Thompson & Marean 2008). The large handaxes and cleavers were replaced by smaller stone artefacts called the Middle Stone Age flake and blade industries. Surface scatters of these flake and blade industries occur widespread across southern Africa although rarely with any associated botanical and faunal remains. It is also common for these stone artefacts to be found between the surface and approximately 50-80cm below ground. Fossil bone may in rare cases be associated with Middle Stone Age occurrences (Gess 1969). These stone artefacts, like the Earlier Stone Age handaxes are usually observed in secondary context with no other associated archaeological material.

The Middle Stone Age is distinguished from the Early Stone Age by the smaller-sized and distinctly different stone artefacts and *chaîne opératoire* (method) used in manufacture, the introduction of other types of artefacts and evidence of symbolic behaviour. The prepared core technique was used for the manufacture of the stone artefacts which display a characteristic faceted striking platform and includes mainly unifacial and bifacial flake blades and points. The Howiesons Poort Industry (80 000-55 000 years ago) is distinguished from the other Middle Stone Age stone artefacts: the size of tools are generally smaller, the range of raw materials include finer-grained rocks such as silcrete, chalcedony, quartz and hornfels, and include segments, backed blades and trapezoids in the stone toolkit which were sometimes hafted (set or glued) onto handles. In addition to stone artefacts, bone was worked into points, possibly hafted, and used as tools for hunting (Deacon & Deacon 1999).

Other types of artefacts that have been encountered in archaeological excavations include tick shell (*Nassarius kraussianus*) beads, the rim pieces of ostrich eggshell (OES)

water flasks, ochre-stained pieces of ostrich eggshell and engraved and scratched ochre pieces, as well as the collection of materials for purely aesthetic reasons. Although Middle Stone Age artefacts occur throughout the Eastern Cape, the most well-known Middle Stone Age sites include the type-site for the Howiesons Poort stone tool industry, Howiesons Poort (HP) rock shelter, situated close to Grahamstown and Klasies River Mouth Cave (KRM), situated along the Tsitsikamma coast. Middle Stone Age sites are located both at the coast and in the interior across southern Africa.

Middle Stone Age people occupied the Southern Drakensberg area before 29 000 BP (Opperman 1996) until between 22 5000 BP and 20 9000 BP (Opperman & Heydenrych 1990). During the colder Bottleneck Stadial the uplands appear to have been abandoned by people and rock glaciers (Lewis & Harvey 1993), head deposition (Lewis & Dandis 1985) and frost churning (Harvey & Lewis 1991) occurred at the high altitudes (Lewis 2002). Strathalan Cave B is situated in the foothills of the Southern Drakensberg range approximately 10 km north-east of Maclear contained a terminal Middle Stone Age continuous occupation from between 28 000 to about 22 000 years ago. The site deposit revealed a sequence of Middle Stone Age occupation floors characterized by the presence of grass bedding materials. The stone artefact collection included slender blades and wooden tools were also used. The subsistence system was based on the hunting of medium-large antelopes and the gathering of plant foods (Opperman & Heydenrych 1990; Opperman 1992).

Surface scatters of Middle Stone Age stone artefact industries occur widely as in the former homelands of the Ciskei and Transkei (Derricourt 1973). Smith (2010) recorded several isolated surface scatters of Middle Stone Age stone artefacts including flakes, blades and cores on a site near Indwe.

It is therefore likely that surface scatters of Middle Stone Age stone artefacts may be encountered within the area proposed for development. Such occurrences may also occur between the surface and approximately 50-80cm below ground. It is rare that these particular stone artefacts are found to be in association with other archaeological remains and are usually out of context owing to natural disturbances over time and, more recently, owing to human impact.

5.3. THE LATER STONE AGE (30 000 YEARS – RECENT) AND PASTORALISM WITHIN THE LAST 2000 YEARS

5.3.1. The Later Stone Age (30 000 years – recent)

The Later Stone Age (LSA) spans the period from about 20 000 years ago until the colonial era, although some communities continue making stone tools today. The period between 30 000 and 20 000 years ago is referred to as the transition from the Middle Stone Age to Later Stone Age; although there is a lack of crucial sites and evidence that represent this change. By the time of the Later Stone Age the genus *Homo*, in southern

Africa, had developed into *Homo sapiens sapiens*, and in Europe, had already replaced *Homo Neanderthalensis*.

The Later Stone Age is marked by a series of technological innovations, new tools and artefacts, the development of economic, political and social systems, and core symbolic beliefs and rituals. The stone toolkits changed over time according to time-specific needs and raw material availability, from smaller microlithic Robberg (20/18 000-14 000ya), Wilton (8 000-the last 500 years) Industries and in between, the larger Albany/Oakhurst (14 000-8 000ya) and the Kabeljous (4 500-the last 500 years) Industries. Bored stones used as part of digging sticks, grooved stones for sharpening and grinding and stone tools fixed to handles with mastic also become more common. Fishing equipment such as hooks, gorges and sinkers also appear within archaeological excavations. Polished bone tools such as eyed needles, awls, linkshafts and arrowheads also become a more common occurrence. Most importantly bows and arrows revolutionized the hunting economy. It was only within the last 2000 years that earthenware pottery was introduced, before then tortoiseshell bowls were used for cooking and ostrich eggshell (OES) flasks were used for storing water. Decorative items like ostrich eggshell and marine/fresh water shell beads and pendants were made.

Hunting and gathering made up the economic way of life of these communities; therefore, they are normally referred to as hunter-gatherers. Hunter-gatherers hunted both small and large game and gathered edible plantfoods from the veld. For those that lived at or close the coast, marine shellfish and seals and other edible marine resources were available for the gathering. The political system was mainly egalitarian, and socially, hunter-gatherers lived in bands of up to twenty people during the scarce resource availability dispersal seasons and aggregated according to kinship relations during the abundant resource availability seasons. Symbolic beliefs and rituals are evidenced by the deliberate burial of the dead and in the rock art paintings and engravings scattered across the southern African landscape.

Later Stone Age sites occur both at the coast (caves, rock shelters, open sites and shell middens). The majority of archaeological sites found in the area would date from the past 10 000 years where San hunter-gatherers inhabited the landscape living in rock shelters and caves as well as on the open landscape. These latter sites are difficult to find because they are in the open veld and often covered by vegetation and sand. Sometimes these sites are only represented by a few stone tools and fragments of bone. The preservation of these sites is poor and it is not always possible to date them (Deacon and Deacon 1999). Caves and rock shelters, however, in most cases, provide a more substantial preservation record of pre-colonial human occupation.

The Southern Drakensberg was reoccupied by hunter-gatherers before 10 000 BP (Opperman 1987) but was subsequently abandoned in the Holocene after ca. 6 000 BP, only to be reoccupied by 3 000 BP (Tusenius 1989). Ecological evidence suggests that the southern Drakensberg may have been too dry to support the animals and plants

needed for the existence of hunter-gatherer people between 6 000 and some time before 3 000 BP (Tusenius 1989).

The north-eastern Cape forms a link between the better watered eastern half of South Africa and the drier west. The wettest conditions apparently existed around 2700 BP, probably correlating with an increase in human occupation in the Southern Drakensberg following the possible abandonment of that area during the dry phase(s) of preceding millennia (Rosen *et al.* 1999).

The succession of stone artefact Industries within the Later Stone Age of the Drakensberg region of the north-eastern Cape demonstrates that the resources of this area, which is characterized by a steep ecological gradient, were consistently exploited throughout end Pleistocene and Holocene following the amelioration of conditions after the cold maximum of the Late Pleistocene. The culture stratigraphic sequence is very comparable to that recorded in Lesotho, the middle Orange River basin and the southern and eastern Cape (Opperman 1982).

Several sites adjacent to and in the wider region of the area proposed for development have been researched and dated. Bonawe (Opperman 1982) is a rock shelter situated below the escarpment about 7 km west of Elliot adjacent to the area proposed for the development of the wind energy facility. The site has been radiocarbon dated to 8 040 \pm 100 B.P. (uncalibrated) (Pta-1709) (Tusenius 1989) and contained end-Pleistocene and Holocene material. Te Vrede is also a rock shelter situated below the escarpment near Ugie and was dated to 10 000 \pm 120 B.P. (Pta-3202) and 8 100 \pm 80 Pta-3204 (uncalibrated dates B.P.), containing end Pleistocene and Holocene material (Opperman 1982). The sites of Colwinton, Ravenscraig, Prospect and Wartrail occur above the escarpment within the Barkly East District north of the proposed area for development. Colwinton Rock Shelter contained end Pleistocene and Holocene material including faunal remains, stone artefacts and pottery (Opperman 1982). The stone tool analysis reveals a sequence of three industries in cultural sequence of the southern and eastern Cape, Lesotho and Middle Orange River. The site has been dated to 6 270 \pm 40 B.P. (Pta-2550) (uncalibrated). Ravenscraig has been charcoal dated to 10 000 \pm 80 B.P. (Pta-3194) (uncalibrated) and contained end Pleistocene and Holocene material. Strathalan Cave A that forms part of the cave complex adjacent to Strathalan B Cave (Middle Stone Age materials) near Maclear dated to 9 400 \pm 900 (Pta-4634) (uncalibrated) (Opperman 1996).

5.3.1. Pastoralism within the Last 2000 years

Until 2000 years ago, hunter-gatherer communities traded, exchanged goods, encountered and interacted with other hunter-gatherer communities. From about 2000 years ago the social dynamics of the southern African landscape started changing with the immigration of two 'other' groups of people, different in physique, political, economic and social systems, beliefs and rituals. Relevant to the study area, one of these groups, the Khoekhoe pastoralists or herders entered southern Africa with domestic animals, namely fat-tailed sheep and goats, travelling through the south towards the coast. They

also introduced thin-walled pottery common in the interior and along the coastal regions of southern Africa. Their economic systems were directed by the accumulation of wealth in domestic stock numbers and their political make-up was more hierarchical than that of the hunter-gatherers. The most significant Khoekhoe pastoralist sites in the Eastern Cape include Scott's Cave near Patensie (Deacon 1967), Goedgeloof shell midden along the St. Francis coast (Binneman 2007) and Oakleigh rock shelter near Queenstown (Derricourt 1977). Often, these archaeological sites are found close to the banks of large streams and rivers. Little detailed pastoralist research has been conducted within the area proposed for development except for the incidences of ceramics recorded during excavations. Colwinton Rock Shelter situated north towards Barkly East above the escarpment yielded evidence of pre-agriculturalist ceramics within the excavation as well as at Bonawe Rock Shelter 7km west of Elliot (Opperman 1982; Mazel 1992).

It is, therefore highly likely that Later Stone Age stone artefacts and possible open sites containing additional archaeological material remains may be encountered during the survey, despite the evidence of Khoekhoen herders mark on the landscape may be less evident.

5.4. ROCK ART (PAINTINGS AND ENGRAVINGS)

Rock art is generally associated with the Later Stone Age period mostly dating from the last 5000 years to the historical period. It is difficult to accurately date the rock art without destructive practices. The southern African landscape is exceptionally rich in the distribution of rock art which is determined between paintings and engravings. Rock paintings occur on the walls of caves and rock shelters across southern Africa and are prolific in the Southern Drakensberg, north-eastern Cape extending the entire Drakensberg range into KwaZulu-Natal and Lesotho. Rock engravings are limited to the Karoo and Northern Cape Regions and do not generally occur within the north Eastern Cape region and former Transkei region.

Rock art research within the Southern Drakensberg has been conducted by several researchers and students from the Rock Art Research Institute, University of the Witwatersrand, over a period of 25 years, with a well established database of site from Maclear, Tsolo, Barkly East, Ugie, Dordrecht and the wider region and extent of the Drakensberg range and Maluti Mountains. The South African Rock Art Database established by the Rock Art Research Institute is a useful source for rock art site information across southern Africa.

Rock paintings occur on the farms Crossmalof, Rob Don and Strathgowan (National Cultural History Museum) and it is likely that there are others (Fairley & Kerry 2007). The Farm Crossmalof neighbours the eastern border of the area proposed for development. The Farms Rob Don and Strathgowan are situated further west of the area proposed for development.

5.5. THE IRON AGE

The Nguni-speaking agropastoralists or 'first-farming communities' or Iron Age communities entered southern Africa along the east coast within the last 2000 years. They owned domestic stock, namely goats, sheep and cattle. Their pottery was different to that of the Khoekhoe, in the shape, thickness, heavy decoration and variety of the vessels. First farming communities lived a relatively sedentary way of life, they planted sorghum and millet, and were therefore limited to settle in the summer rainfall areas. In addition, first farming communities possessed the skill of metal working, having the ability to mine and work iron, copper, tin and even gold. Their economic systems were also based on the accumulation of wealth through ownership and their political organization was slightly more hierarchical than that of the Khoekhoe.

Much research has been conducted on the Iron Age (IA) across southern Africa, therefore resulting in well established chronological and typological frameworks and settlement and economic patterns for the Iron Age sequence (Huffman 2007). The Iron Age sequence is based on ceramic phases determined by vessel profile and decoration motif and placement. In comparison to other areas containing Iron Age sites only a small amount of Iron Age research has been conducted in the Eastern Cape thus far, a few important Eastern Cape Early Iron Age Sites (EIA) sites include Kulubele situated in the Kei River Valley near Khomga (Binneman 1996), Ntsitsana situated in the interior Transkei, 70 km west of the coast, along the Mzimvubu River (Prins & Granger 1993), and Canasta Place situated on the west bank of the Buffalo River (Nogwaza 1994). Previous investigations into the Early Iron Age in the Transkei and Ciskei includes work at Buffalo River Mouth (Wells 1934; Laidler 1935), at Chalumna River Mouth (Derricourt 1977) and additional research by Feely (1987) and Prins (1989).

The Early Iron Age (EIA) first-farming communities during the first millennium AD generally preferred to occupy river valleys within the eastern half of southern Africa owing to the summer-rainfall climate that was conducive for growing millet and sorghum. Thus far the closest documented and well-researched Early Iron Age site is located within the Great Kei River Valley. The site is situated some 200 m below the plateau and 60 km inland from the coast, within the borders of the Transkei, approximately 100 km up the coast towards Durban. There has in the past been some speculation that Early Iron Age populations may have spread well south of the Transkei into the Ciskei, possibly up to the Great Fish River (Binneman *et al.* 1992), however, no further research has been undertaken to confirm these statements. A closer Early Iron Age site has been documented to the south of East London (Cronin 1982). Thicker and decorated pottery sherds, kraals, possible remains of domesticated animals, upper and lower grindstones and storage pits are associated for identifying EIA sites. The sites are generally large settlements, but the archaeological visibility may in most cases be difficult owing to the organic nature of the homesteads. Metal and iron implements are also associated with EIA communities. Hilltop settlement is mainly associated with Later Iron Age (LIA) settlement patterns that occurred during the second millennium AD. The Later Iron Age

communities later moved from settlement in river valleys to the hilltops. Later Iron Age settlements have been formally recorded by the Albany Museum and cover a relatively extended area in comparison with the Early Iron Age settlement patterns. With the exception of the Tembu, stone buildings which characterizes the Iron Age sites of Sotho areas, is absent in the Transkei and Ciskei, and a pattern of some mobility without, it is presumed, a stone working technology of significance, makes the allocation of sites a major problem(Derricourt 1973).

Very few Iron Age remains, features and, sites have been recorded within the area proposed for development and surrounding region, however, it is possible that Iron Age heritage remains may be encountered during the survey.

5.6. HUMAN REMAINS

It difficult to detect the presence of archaeological human remains on the landscape as these burials, in most cases, are not marked at the surface. Human remains are usually observed when they are exposed through erosion. In some instances packed stones or rocks may indicate the presence of informal pre-colonial burials.

It is possible that informal burials and eroding human remains may be encountered during the survey. Formal graves and family cemeteries related to the farmsteads may also be encountered.

6. ASSESSMENT OF THE SIGNIFICANCE OF THE POSSIBLE ARCHAEOLOGICAL HERITAGE RESOURCES

Nature: The destruction occurrences of Archaeological Heritage Remains, Features and, Sites		
	Without mitigation	With mitigation
Extent	Regional (5)	Low (1)
Duration	Permanent (5)	Permanent (5)
Magnitude	Very High (10)	Moderate (6)
Probability	Highly Probable (4)	Improbable (2)
Significance	High (80)	Low (24)
Status (positive or negative)	Negative	Negative
Reversibility	None	Low
Irreplaceable loss of resources?	Yes	Low
Can impacts be mitigated?	Yes	Yes
Mitigation: <ul style="list-style-type: none"> It is difficult to establish the range of possible archaeological heritage remains, features, and sites that may occur within the area proposed for development. Therefore, the mitigation for the scoping phase to prevent the destruction of archaeological sites will be to conduct a Phase 1 Archaeological Impact Assessment (AIA) to establish the range and importance of the exposed and <i>in situ</i> archaeological heritage material remains, sites and features; to establish the potential impact of the development; and to make recommendations to minimize possible damage to the archaeological heritage. 		
Cumulative impacts: <ul style="list-style-type: none"> Irreplaceable loss of archaeological heritage resources. 		
Residual impacts: <ul style="list-style-type: none"> Irreplaceable loss of archaeological heritage resources. 		

7. CONCLUSIONS AND RECOMMENDATIONS

No archaeological heritage remains, features, or sites have been recorded within the area proposed for Elliot Wind Energy Facility. However, the surrounding area and region has previously and is currently being well researched. Surface scatters of Early Stone Age handaxes and Middle Stone Age stone artefacts have been recorded near Indwe approximately 45km west of the proposed site. Middle Stone Age rock shelter sites containing blade stone artefacts and wooden artefacts as well as preserved bedding have been recorded near to Maclear approximately 62km NE of the site. Several Later Stone Age sites have been excavated and researched within the surrounding area and wider region, the closest site situated 3km west of the proposed area for development. Several rock art sites within the surrounding area and wider have also been recorded, the closest site situated on the adjacent neighbouring farm of the proposed area for development. Although very little Iron Age sites have been researched within the area, there may be a possibility that these may be encountered. Graves, both formal (identifiable on the landscape) and informal (identifiable when exposed below the surface if no surface identification is present) may also be encountered during the survey.

It is therefore recommended that:

1. A Phase 1 Archaeological Impact Assessment (AIA) be conducted to establish the range and importance of the exposed and *in situ* archaeological heritage material remains, sites and features; to establish the potential impact of the development; and to make recommendations to minimize possible damage to the archaeological heritage.

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APPENDIX A: IDENTIFICATION OF ARCHAEOLOGICAL FEATURES AND MATERIAL FROM THE SURROUNDING INLAND AREAS: guidelines and procedures for developers

1. Identification of Iron Age archaeological features and material

- Upper and lower grindstones, broken or complete. Upper grindstone/rubber will be pitted.
- Circular hollows –sunken soil, would indicate storage pits and often associated with grindstones.
- Ash heaps, called middens with cultural remains and food waste such as bone.
- Khaki green soils would indicate kraal areas.
- Baked clay/soil blocks with or without pole impressions marks indicate hut structures.
- Decorated and undecorated pots sherds.
- Iron slag and/or blowpipes indicate iron working.
- Human remains may also be associated with khaki green soils.
- Metal objects and ornaments.

2. Shell middens

Shell middens can be defined as an accumulation of marine shell deposited by human agents rather than the result of marine activity. The shells are concentrated in a specific locality above the high-water mark and frequently contain stone tools, pottery, bone and occasionally also human remains. Shell middens may be of various sizes and depths, but an accumulation which exceeds 1 m² in extent, should be reported to an archaeologist.

3. Human skeletal material

Human remains, whether the complete remains of an individual buried during the past, or scattered human remains resulting from disturbance of the grave, should be reported. In general the remains are buried in a flexed position on their sides, but are also found buried in a sitting position with a flat stone capping or in ceramic pots. Developers are requested to be on alert for these features and remains.

4. Fossil bone

Fossil bones may be found embedded in deposits at the sites. Any concentrations of bones, whether fossilized or not, should be reported.

5. Stone artefacts

These are difficult for the layman to identify. However, large accumulations of flaked stones which do not appear to have been disturbed naturally should be reported. If the stone tools are associated with bone remains, development should be halted immediately and archaeologist notified.

6. Stone features and platforms

These occur in different forms and sizes, but easily identifiable. The most common are an accumulation of roughly circular fire cracked stones tightly spaced and filled in with charcoal and marine shell. They are usually 1-2metres in diameter and may represent cooking platforms for shell fish. Others may resemble circular single row cobble stone markers. These occur in different sizes and may be the remains of wind breaks or cooking shelters.

7. Large stone cairns

The most common cairns consist of large piles of stones of different sizes and heights are known as *isisivane*. They are usually near river and mountain crossings. Their purpose and meaning is not fully understood, however, some are thought to represent burial cairns while others may have symbolic value.

8. Historical artefacts or features

These are easy to identify and include foundations of buildings or other construction features and items from domestic and military activities.