A PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT FOR THE PROPOSED SPITSKOP WIND ENERGY FACILITY AND ASSOCIATED INFRASTRUCTURE ON A SITE NORTH-WEST OF RIEBEECK EAST, BLUE CRANE ROUTE MUNICIPALITY AND MAKANA MUNICIPALITY, EASTERN CAPE PROVINCE.

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NOTE: This report follows the minimum standard guidelines required by the South African Heritage Resources Agency (SAHRA) for compiling a Phase 1 Archaeological Impact Assessment (AIA).

1. EXECUTIVE SUMMARY

1.1. Purpose of the Study

The purpose of the study was to conduct and compile a phase 1 archaeological impact assessment (AIA) for the proposed establishment of the Spitskop Wind Energy Facility and associated infrastructure on a site north-west of Riebeeck East, Blue Crane Route Municipality and Makana Municipality, Eastern Cape Province. The survey was 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.

1.2. Brief Summary of Findings

Very few archaeological heritage remains were observed along the routes proposed for the wind turbines and associated infrastructure. The turbines are proposed to be constructed on the hilltops that range between 500 feet and 1000 feet in height. It is unlikely that these areas would have been suitable occupation areas.

Surface scatters of Middle and Later Stone Age artefacts were observed in and along some of the existing internal access roads. No associated archaeological material or organic remains were documented with the stone artefact surface scatters.

One formal grave area and four informal burial areas were observed near to the or immediately adjacent to the internal farm roads. No historical or archaeological built environment structures and features are expected to be affected negatively. Used and disused reservoirs and drinking troughs were encountered during the survey situated along the internal farm roads.

1.3. Recommendations

The area is of a medium – low archaeological cultural sensitivity, the following recommendations must be considered:

1. Once the final layout (including the positions of the wind turbines; underground cabling; overhead power lines; additional internal access roads, and the substations; and power lines) of the proposed Spitskop Wind Energy Facility has been finalised an archaeological ground-truthing should be conducted and further recommendations be made to protect the archaeological heritage within the area proposed for development.

2. A representative sample of stone artefacts should be collected, either during the archaeological walk-through for the final layout or before the construction activities begin. This collection is to be housed at the Department of Archaeology's archaeological repository at the Albany Museum.

3. The graves must be clearly demarcated and a 20 m – 50 m boundary must be established so as to avoid negative impact to the informal graves especially those situated immediately adjacent to the existing internal farm roads.

4. If concentrations of archaeological heritage material and human remains are uncovered during construction, all work must cease immediately and be reported to the Albany Museum (046 622 2312) and/or the South African Heritage Resources Agency (SAHRA) (021 642 4502) so that systematic and professional investigation/ excavation can be undertaken.

5. Construction managers/foremen should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites.

2. BACKGROUND INFORMATION

The phase 1 archaeological impact assessment (AIA) report has been prepared as part of the Environmental Impact Assessment 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). The Scoping Report has been undertaken (November 2011).

Renewable Energy Systems Southern Africa (Pty) (RES SA) Ltd is proposing to establish a commercial wind energy facility and associated infrastructure. Turbines of between 1.8 MW and 3 MW in capacity are being considered for the site. The total number of turbines proposed for the site could therefore vary depending on the turbine capacity actually used. However, a maximum of 200 turbines is proposed. Depending on the

final selection, the estimated total installed capacity for the proposed Spitskop Wind Energy Facility is up to 420 MW. The final turbine numbers and capacity will be determined based on further site specific studies of wind regime, terrain and environmental constraints and based on the electricity generation allocation given by NERSA and Eskom. Associated infrastructure proposed includes a substation/s, access roads and a power line/s.

An area of 264 km^2 is being considered within which the proposed facility will be constructed. The final footprint area to be utilised for the wind energy facility will be smaller than the area under consideration, and will be dependent on the final site layout and placement of the wind turbines and associated infrastructure. The construction area is expected to affect less than 20% of the study area and the final permanent footprint of the facility less than 10%.

The wind energy facility is proposed on the following farm portions: Farm Steenkampsberg 590; the Remainder of Farm Buffels Drift 61; Farm 597; Portion 1 of Farm 61 Junction Drift; Portion 2, 3, the remainder of Portion 1 and the remaining extent of Farm 60; Portion 2 and 3 of Farm Groot Fontein 138; Portion 1 and the remaining extent of Farm Bosch Fontein 143; Portion 2, 3, and the remainder of Portion 1 of Farm Groot Fontein 140; Portion 2 and the remainder of Portion 1 and the remaining extent of Farm Ebenezer 141; Portion 3, 4 and the remaining extent of farm 144; Portion 3 of farm Modderfontein 302; Portion 1 and the remaining extent of Farm Bothas Hoop 258; the remaining extent of Farm Draai Van Klein Visch Rivier 254; Portion 1 and the remaining extent of Farm Gras Fonteyn 258; Farm Springbok Vlakte 434; Portion 3 and the remaining extent of Farm Driefontein 259; the reminder of Portion 6 and Portion 11 of Farm Witte Poort 262; Portion 1 and Portion 2 of Farm Varkens Kuil 269; the remaining extent of Farm Brand Rug; Portion 1 of Farm Commadagga 264; Farm 369; Portion 2 and the reminder of Portion 1 of Farm Brakfontein 261; Portion 1 and Portion 3 of Farm Commadagga 263; Portion 2, Portion 6, Portion 7, Portion 8, the remainder of Portion 3, the reminder of Portion 4 and the remaining extent of Farm Commadagga 266; Farm Driefontein 436; the remaining extent of Farm 267; Portion 1, Portion 2, the remaining extent of farm 145; the remaining extent of Farm 66; and the remaining extent of Portion 1 of Farm 139.

The proposed Spitskop Wind Energy Facility will include the following infrastructure:

- Wind turbines (between 80 m – 120 m hub height) and concrete/rock adaptor foundations to support them;
- Possibly small transformer outside each turbine which is deemed most suitable for the site. Such a transformer would have its own foundation and housing around it;
- Crane hardstandings;
- Cabling between the turbines, to be laid underground where practical;
- Internal access roads to each turbine;

- Workshop area for control, maintenance, and storage;
- Temporary and permanent met masts for calibration and site monitoring;
- On-site substation/s to facilitate the connection between the wind energy facility and the grid;
- New overhead power lines likely to be connected to Eskom's existing Poseidon Substation near Cookhouse.

Savannah Environmental (Pty) Ltd has been contracted to conduct the environmental impact assessment (EIA) by Renewable Energy Systems (RES) Southern Africa (Pty) Ltd.

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Terms of Reference (ToR)

- Provide an indication of the methodology used in determining the significance of potential environmental (archaeological heritage) impact by conducting and compiling the phase 1 archaeological impact assessment (AIA);
- Describe all environmental issues (archaeological heritage) that were identified during the phase 1 archaeological impact assessment (AIA);
- Assess the significance of direct, indirect and cumulative impacts on the environment (archaeological heritage);
- Describe and comparatively assess all of the alternatives identified during the environmental impact assessment process;
- Make recommendations regarding practical mitigation measures for potentially significant impacts;

- Provide an indication of the extent to which the issue could be addressed by the adoption of mitigation measures;
- Describe any assumptions, uncertainties and gaps in knowledge; and
- Provide an environmental impact statement.

3. BRIEF LEGISLATIVE REQUIREMENTS

Parts of sections 34(1), 35(4), 36(3) and 38(1) (8) of the National Heritage Resources Act 25 of 1999 apply:

Structures

34 (1) No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority

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 5000m^2 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 000m^2 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. BRIEF ARCHAEOLOGICAL BACKGROUND

Little is known about the archaeology of the immediate area, mainly because no systematic archaeological research has been conducted within the area proposed for the Spitskop Wind Energy Facility, although the Department of Archaeology, Albany Museum, archaeological database includes records of several recorded rock art and archaeological sites within the surrounding area. The pre-colonial archaeological record of the Grahamstown region and its immediate surrounds includes the Early Stone Age (ESA), the Middle Stone Age (MSA), the Later Stone age (LSA) as well as pastoralism within the last 2000 years, Later Iron Age farming communities as colonial/historical archaeology. Grahamstown and the wider regions are rich in archaeological remains and sites and include many caves, rock shelters and rock paintings.

Please Note: This is a brief archaeological literature review; an archaeological desktop study was compiled during the scoping phase of the proposed project (Booth 2011).

5. DESCRIPTION OF THE PROPERTY

5.1. Area Surveyed

The area for the proposed Spitskop Wind Energy Facility and associated infrastructure is situated on a site located approximately 6 km north-west of Riebeeck East and

approximately 15 km north-west of Alicedale, Blue Crane Route Local Municipality and Makana Local Municipality, in the Eastern Cape Province. The N10 national road bisects the broader study area and separates the site into an eastern and western section. The study area also includes several main roads including the R335, R400, and R350. The village of Riebeeck East is the nearest settlement. The surrounding towns include Grahamstown (± 35 km south-east), Alicedale (±15 km south), Paterson (±20 km south), and Cookhouse (±33 km north).

The vegetation cover includes the Nama-Karoo Biome, the Fynbos Biome, and the Albany Thicket Biome. Agricultural activity tends to be limited to defined area along the Great Fish River and its tributaries. The Great Fish River runs north of the study area. 132kV, 220kV, and 400kV power lines cross the study area in a predominantly northerly direction to converge at the Poseidon Substation.

5.2. Map

1:50 000 MAPS: 3325BA BRACEFIELD, 3325BB KOMMADAGGA, and 3326AA RIEBEECK OOS

1: 250 000 MAP:

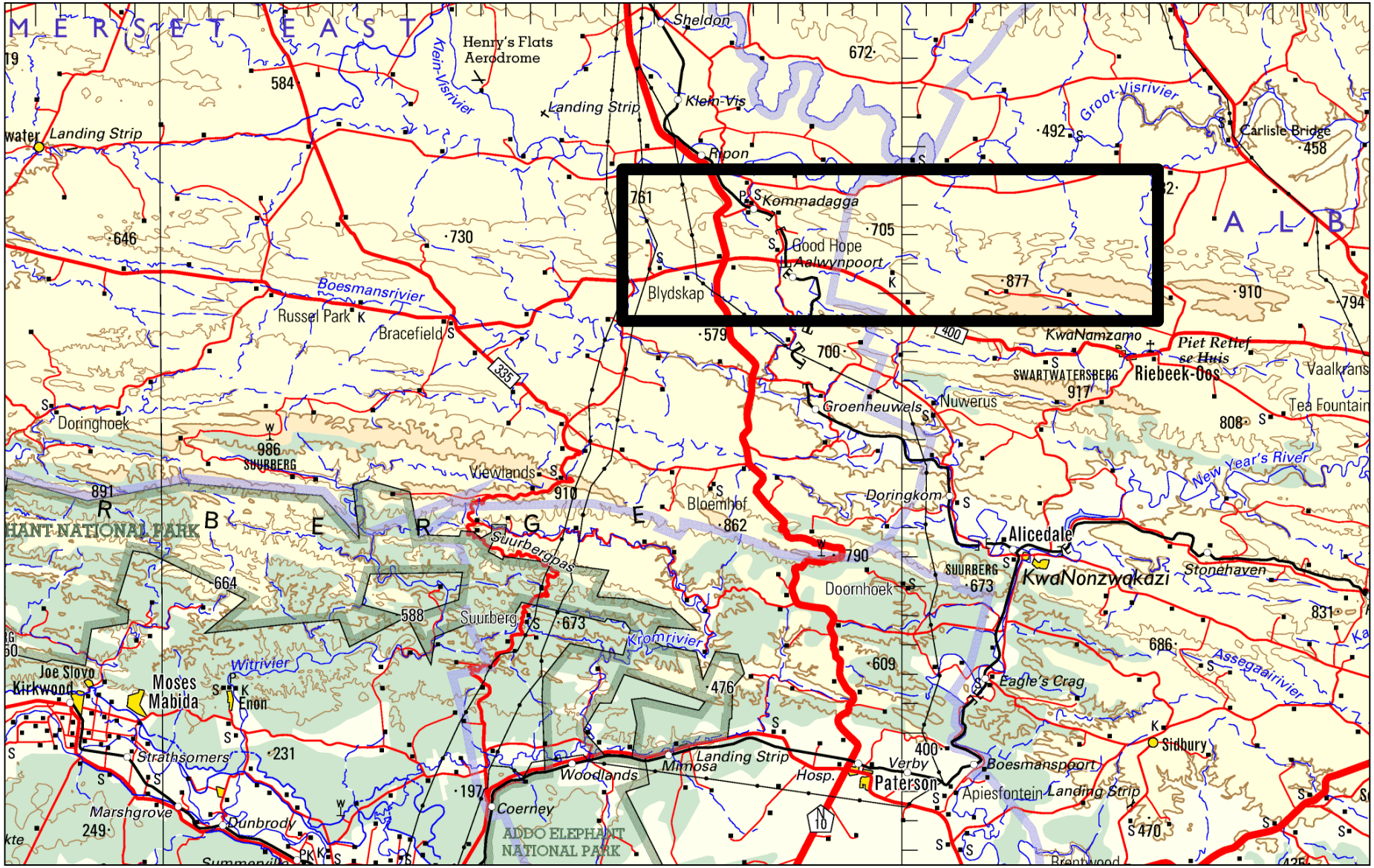

Figure 1. Map 1. A section of the 1:250 000 topographic map showing the location of the area proposed for the Spitskop Wind Energy Facility (Black: proposed area for the Spitskop Wind Energy Facility).

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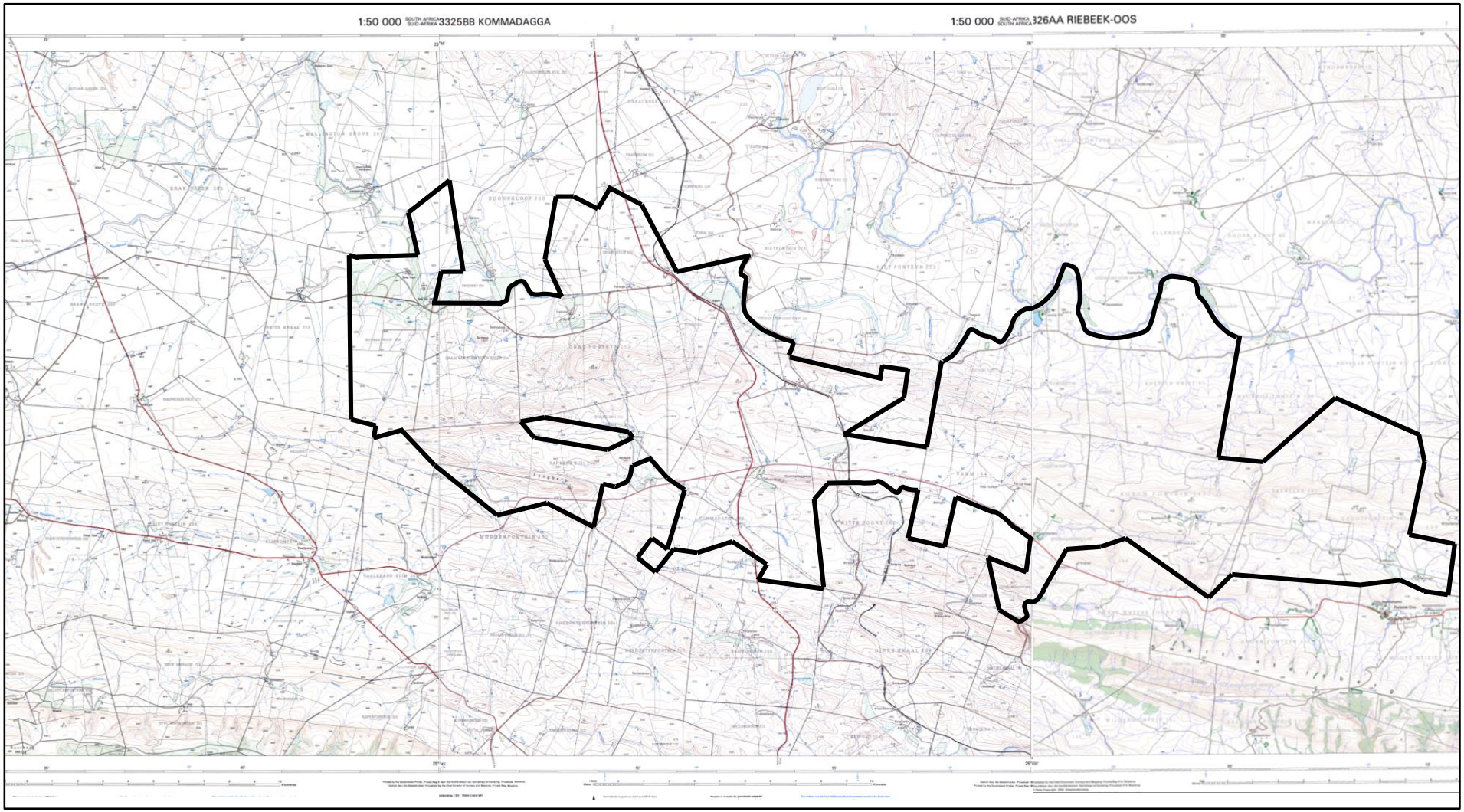

Figure 2. Map 2. 1: 50 000 topographic maps 3325BA BRACEFIELD, 3325BB KOMMADAGGA, and 3326AA RIEBEECK OOS showing the location of the proposed Spitskop Wind Energy Facility.

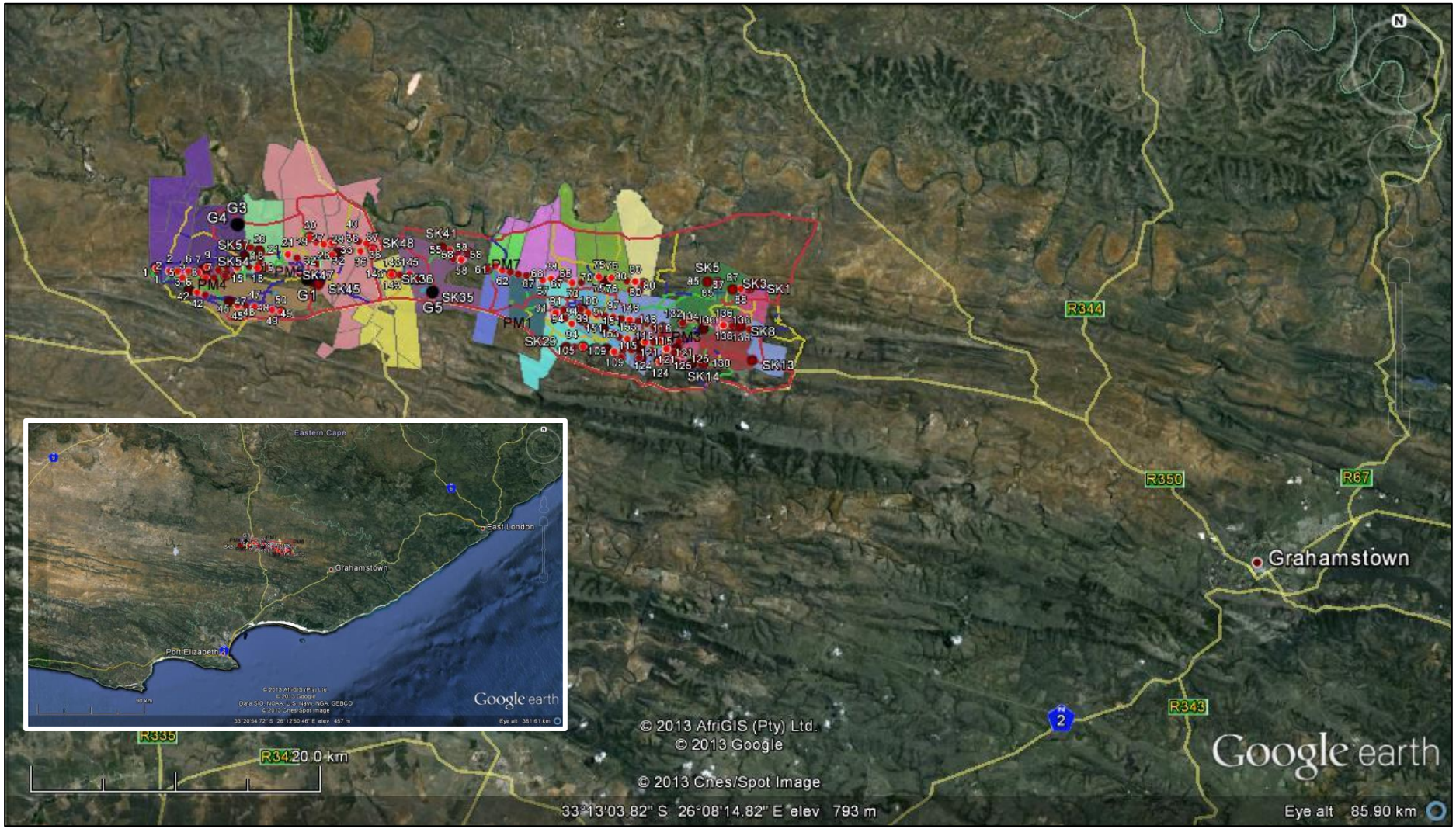

Figure 3. Map 3. Aerial view of the area proposed for the Spitskop Wind Energy Facility.

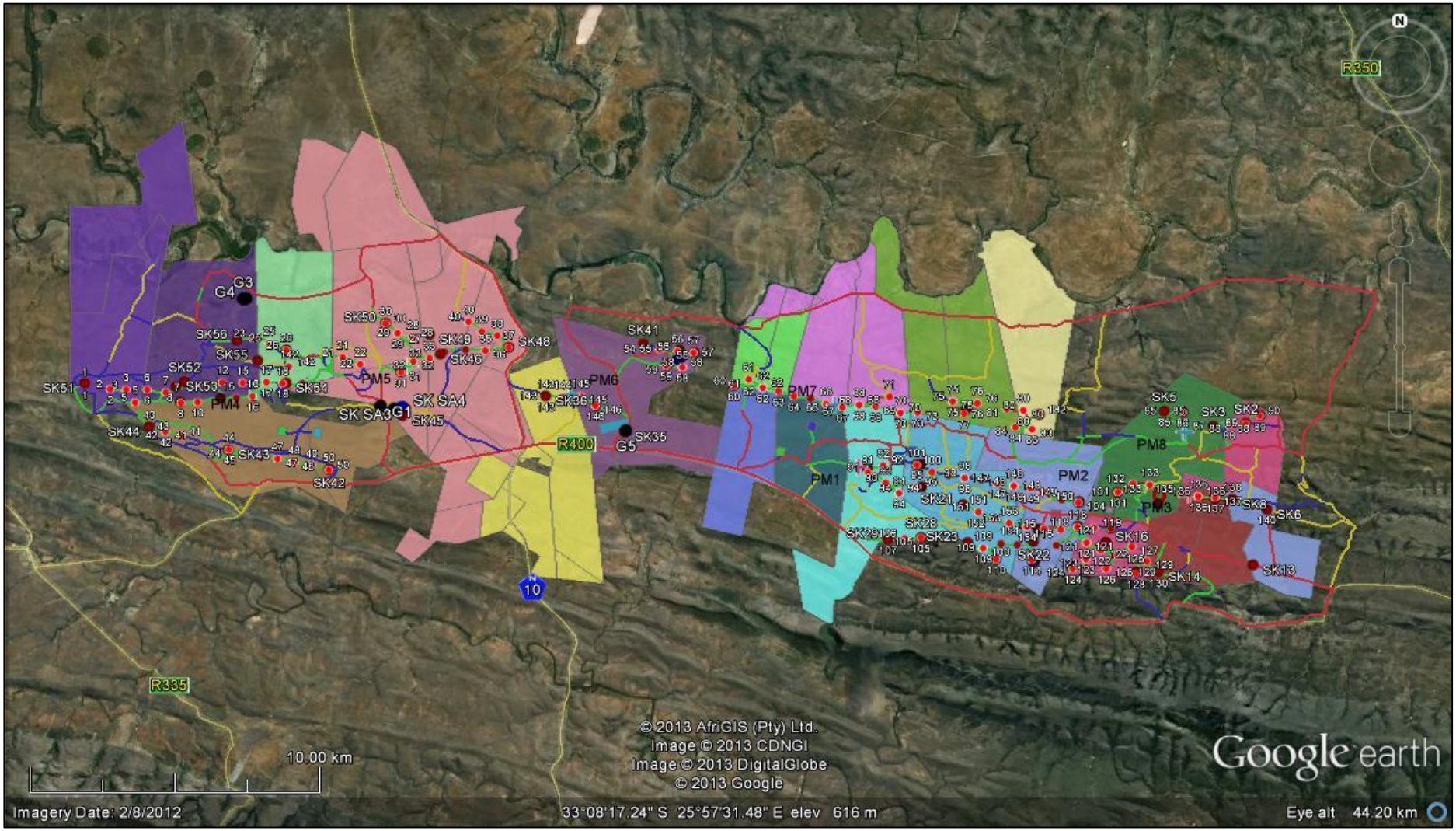

Figure 4. Map 4. Close-up aerial view of the area proposed for the Eskom Wind Energy Facility showing the area surveyed, the distribution of stone artefact scatters and other heritage resources.

6. ARCHAEOLOGICAL INVESTIGATION

The archaeological investigation was mostly conducted on foot by following the areas proposed for the wind turbines, roads, and associated infrastructure. Spot checks were conducted from the vehicle when the possibility of archaeological heritage remains could have been encountered. The GPS co-ordinate readings and photographs were taken using a Garmin Oregon 550 unit. The artefact surface occurrences and other heritage resources have been plotted on Figure 4.

The proposed wind turbines will be constructed on the hilltops that range between 500 feet – 1000 feet. The vegetation cover includes the Nama-Karoo Biome, the Fynbos Biome, and the Albany Thicket Biome. The vegetation cover is mostly sparse grass vegetation with some exposed areas making archaeological visibility relatively good throughout the surveyed area. In some instances bush clumps and dense grass cover obscured archaeological visibility (Figures 5-10). The study area is slightly disturbed except by the construction of internal farm roads, farm fences, dams, and reservoirs, and power lines. Natural disturbances such as water movement and some erosion as well as grazing and trampling by domesticated animals may have impacted the original positions of surface scatters of stone artefacts.

Figure 5. View of the landscape and areas proposed for the construction of the wind turbines.

Figure 6. View of the landscape and areas proposed for the construction of the wind turbines.

Figure 7. View of the landscape and areas proposed for the construction of the wind turbines.

Figure 8. View of the landscape and areas proposed for the construction of the wind turbines.

Figure 9. View of the landscape and areas proposed for the construction of the wind turbines.

Figure 10. View of the landscape and areas proposed for the construction of the wind turbines.

Surface scatters of predominantly Middle Stone Age stone artefacts and some Later Stone Age stone artefacts were identified along the existing internal farm roads and disturbed donga areas (Figures 11-13). SK SA1 is situated on the Farm Boschfontein 143 and comprised a few quartzite Middle Stone Age flakes (Figure 15). SK SA2 is situated on the Farm Brakfontein 261 and comprised an exposed surface area with a Middle Stone Age scatter (Figure 11). The area demarcated between the GPS points SK SA3, SK SA4, and SK SA5 is situated on the Farm Grasfonteyn 258 comprised both Middle Stone Age and Later Stone Age stone artefacts (Figure 12-14 and 16). The scatter of Later Stone Age stone artefacts occurred in the existing internal farm was relatively dense and is there regarded as a site (SK GF1). However, no other archaeological heritage remains were observed in association with the scatter. The Later Stone Age scatter was identified by the collection of smaller flakes and retouched scrapers.

The Middle Stone Age stone artefacts were identified by the characteristic facetted platform as well as the associated flake and blade shapes, cores, as well as the heavy patination and weathering. Several artefacts showed evidence of secondary retouch as well as edge-damage that may indicate utilization. The stone artefacts were manufactured on a variety of raw materials including quartzite, shale, and silcrete. Several of the Middle Stone Age stone artefacts area weathered and heavily patinated (Figures 18-22). No associated archaeological material or organic remains were documented with the stone artefact surface scatters.

Figure 11. A surface scatter of stone artefacts observed within an exposed surface area.

Figure 12. Disturbed donga area with exposed stone artefacts.

Figure 13. Exposed stone artefact scatter within an internal farm road.

Figure 14. Examples of Middle Stone Age stone artefacts.

Figure 15. Examples of Middle Stone Age stone artefacts.

Figure 16. Examples of Middle Stone Age cores

It is unlikely that the stone artefacts would be *in situ* and are regarded as being in a secondary and out of context position as they have been washed into the exposed areas and have been disturbed by domestic animal and human activities. However, the stone artefacts that occurred between the shrubs and dense grass vegetation may be in a less disturbed position. It is also possible that stone artefact may occur below the vegetation cover between the surface and 50 – 80 cm below the ground.

Five areas contained graves and informal burials. G1 and G2 are situated on the Farm Grasfonteyn 258. G1 is not included in the development zone and should therefore, not be negatively affected during the development activities of the project. G2 is situated immediately adjacent to the internal farm road near to the labourers cottages and should be appropriately mitigated before any development activity commences. The informal burial area comprises both built up and informal burials, as well as stone-packed burials (Figures 17-19). G3 and G4 are situated on the Farm Draai Van Klein Visch Rivier 254 and are not expected to be negatively affected during the development activity. G3 consists of two formally enclosed graves dating to 1942 (Figure 20). G4 is situated adjacent to the internal farm road and has not been formally enclosed. The area comprises informal graves with headstones as well as stone packed burials (Figure 21-22). G5 is situated opposite the Good Hope railway siding along the road off the R400 secondary road that connects to the Kommadagga railway siding. The graves are not formally enclosed and should not be affected during the development activities unless an upgrade is proposed for the road along which they occur.

Figure 17. View of the informal graves situated at G2.

Figure 18. View of the informal graves situated at G2.

Figure 19. View of the informal graves situated at G2.

Figure 20. View of the formally enclosed graves situated at G3.

Figure 21. View of the informal graves with headstones situated at G3.

Figure 22. View of the informal stone packed graves situated at G4.

No historical or archaeological built environment structures and features are expected to be affected negatively. The foundations of the remains of a building were identified at the area marked SK BE1 on the Farm Grasfonteyn 258 (Figure 23). It is unlikely that these remains will be negatively affected during the development activities as the road as not been demarcated as an access route. Several functional and disused reservoirs and drinking troughs were encountered during the survey situated along the internal farm roads (Figure 24). Beacons were encountered on some of the hilltops and are not expected to be negatively impacted by the development activities (Figure 25).

Figure 23. View of the foundation of the remains of a building (SK BE1)

Figure 24. Example of the disused drinking troughs occurring along the internal farm roads.

Figure 25. Example of one of the beacons situated on the hilltops.

7. DESCRIPTION OF SITES

7.1. Stone Artefact Occurrences and Scatters:

Stone artefacts were encountered as the area marked SK SA1 – SK SA5. The demarcated area between the points SK SA3 – SK SA5 comprised both Middle and Later Stone Age stone artefacts. The Later Stone Age scatter is considered a site (SK GF1) by the relatively dense collection of Later Stone age stone artefacts occurring within and adjacent to the internal farm road.

The stone artefact occurrences, scatters, and site are considered as having a medium archaeological cultural significance.

The stone artefact occurrences and scatters has been allocated a heritage grading of Grade III (NHRA 25 of 1999) being worthy of conservation by local authorities.

(See Table 7.2.1 for descriptions and co-ordinates)

7.2. Graves

One area comprising formal graves and four areas comprising informal burials were identified. It is expected that the burials situated at the points marked G2 and possibly G5 may be negatively affected by the development activities. G2 must be appropriately mitigated. Similarly if the road off the R400 connecting to the Kommadagga railway siding is used as an access point and must be upgraded the burials at G5 must be appropriately mitigated.

(See Table 7.2.1 for descriptions and co-ordinates)

7.2. GPS CO-ORDINATES AND SITES FOR THE PROPOSED SPITSKOP WIND ENERGY FACILITY.

TABLE 7.2.1: GPS CO-ORDINATES AND SITES FOR THE PROPOSED SPITSKOP ENERGY FACIITY.

REFERENCE	DESCRIPTION	CO-ORDINATES	HERITAGE RATING
General GPS Points			
SK1	General GPS Point	33°08'14.00"S; 26°09'25.60"E	N/A
SK2	General GPS Point	33°08'22.80"S; 26°09'05.90"E	N/A
SK3	General GPS Point	33°08'26.20"S; 26°08'11.70"E	N/A
SK4	General GPS Point	33°08'10.60"S; 26°07'41.00"E	N/A
SK5	General GPS Point	33°08'09.70"S; 26°07'15.30"E	N/A
SK6	General GPS Point	33°09'58.90"S; 26°09'29.90"E	N/A
SK7	General GPS Point	33°10'53.40"S; 26°09'05.30"E	N/A
SK8	General GPS Point	33°09'47.90"S; 26°08'43.80"E	N/A
SK9	General GPS Point	33°09'47.10"S; 26°08'20.70"E	N/A
SK10	General GPS Point	33°06'40.50"S; 26°06'10.60"E	N/A
SK11	General GPS Point	33°09'51.50"S; 26°05'18.90"E	N/A
SK12	General GPS Point	33°09'10.30"S; 26°01'47.80"E	N/A
SK13	General GPS Point	33°11'01.70"S; 26°09'14.50"E	N/A
SK14	General GPS Point	33°11'09.10"S; 26°07'05.80"E	N/A
SK15	General GPS Point	33°11'09.90"S; 26°06'35.50"E	N/A
SK16	General GPS Point	33°10'36.40"S; 26°05'28.90"E	N/A
SK17	General GPS Point	33°11'03.80"S; 26°05'08.80"E	N/A
SK18	General GPS Point	33°10'20.50"S; 26°06'01.90"E	N/A
SK19	General GPS Point	33°10'24.30"S; 26°05'02.20"E	N/A
SK20	General GPS Point	33°10'22.20"S; 26°04'24.20"E	N/A
SK21	General GPS Point	33°09'55.00"S; 26°02'44.10"E	N/A
SK22	General GPS Point	33°10'35.90"S; 26°04'18.60"E	N/A
SK23	General GPS Point	33°10'37.70"S; 26°02'50.90"E	N/A
SK24	General GPS Point	33°10'56.20"S; 26°03'28.90"E	N/A
SK25	General GPS Point	33°10'57.30"S; 26°04'20.90"E	N/A
SK26	General GPS Point	33°09'51.60"S; 26°05'18.30"E	N/A
SK27	General GPS Point	33°09'10.70"S; 26°01'42.40"E	N/A
SK28	General GPS Point	33°10'32.55"S; 26°01'49.00"E	N/A
SK29	General GPS Point	33°10'34.70"S; 26°01'04.80"E	N/A
SK30	General GPS Point	33°09'35.40"S; 26°01'48.90"E	N/A
SK31	General GPS Point	33°09'15.80"S; 26°00'36.60"E	N/A
SK32	General GPS Point	33°08'13.90"S; 26°04'27.20"E	N/A
SK33	General GPS Point	33°08'09.45"S; 26°02'48.20"E	N/A
SK34	General GPS Point	33°07'42.60"S; 25°57'37.10"E	N/A
SK35	General GPS Point	33°08'35.00"S; 25°55'11.10"E	N/A
SK36	General GPS Point	33°07'54.90"S; 25°53'24.90"E	N/A
SK37	General GPS Point	33°08'05.90"S; 25°54'31.70"E	N/A

SK38	General GPS Point	33°07’19.90”S; 25°56’07.00”E	N/A
SK39	General GPS Point	33°07’06.00”S; 25°56’44.50”E	N/A
SK40	General GPS Point	33°07’03.20”S; 25°56’24.30”E	N/A
SK41	General GPS Point	33°06’56.50”S; 25°55’35.80”E	N/A
SK42	General GPS Point	33°09’18.10”S; 25°48’32.90”E	N/A
SK43	General GPS Point	33°08’55.90”S; 25°46’18.70”E	N/A
SK44	General GPS Point	33°08’17.50”S; 25°05’08.80”E	N/A
SK45	General GPS Point	33°10’19.00”S; 26°50’11.90”E	N/A
SK46	General GPS Point	33°07’08.30”S; 25°51’03.70”E	N/A
SK47	General GPS Point	33°07’28.50”S; 25°50’11.60”E	N/A
SK48	General GPS Point	33°07’00.40”S; 25°52’35.10”E	N/A
SK49	General GPS Point	33°06’46.30”S; 25°50’49.60”E	N/A
SK50	General GPS Point	33°06’33.50”S; 25°49’49.70”E	N/A
SK51	General GPS Point	33°07’41.60”S; 25°43’06.10”E	N/A
SK52	General GPS Point	33°07’39.60”S; 25°45’20.90”E	N/A
SK53	General GPS Point	33°07’45.40”S; 25°45’49.80”E	N/A
SK54	General GPS Point	33°07’41.00”S; 25°47’58.90”E	N/A
SK55	General GPS Point	33°07’15.90”S; 25°46’58.40”E	N/A
SK56	General GPS Point	33°06’52.80”S; 25°46’30.00”E	N/A
SK57	General GPS Point	33°07’03.80”S; 25°47’36.80”E	N/A
SK58	General GPS Point	33°08’02.40”S; 25°45’15.10”E	N/A
SK59	General GPS Point	33°07’58.20”S; 25°46’09.00”E	N/A
SK60	General GPS Point	33°07’55.50”S; 25°46’53.80”E	N/A
Stone Artefacts			
SK SA1	MSA SA	33°10’58.50”S; 26°04’19.20”E	III
SK SA2	MSA SA	33°07’12.40”S; 25°56’23.70”E	III
SK SA3	LSA SA in road	33°08’09.50”S; 25°50’13.00”E	III
SK SA4	MSA SA	33°08’08.10”S; 25°50’11.40”E	III
SK SA5	Core	33°08’08.10”S; 25°50’12.70”E	III
Graves			
G1	Informal burial	33°08’06.60”S; 25°49’42.80”E	Protected
G2	Informal burial	33°08’09.90”S; 25°50’01.10”E	Protected
G3	Formal, enclosed graves (1942)	33°06’06.20”S; 25°46’37.60”E	Protected
G4	Informal burials	33°06’06.00”S; 25°46’22.60”E	Protected
G5	Informal burials	33°08’33.60”S; 25°55’12.90”E	Protected
Rock Art			
RA1	Rock Art (recorded)	33°10’00.00”S; 26°06’00.00”E	III
Built Environment			
SK BE1	Foundations of remains of structure	33°05’56.90”S; 25°46’40.20”E	

8. ASSESSMENT OF THE SIGNIFICANCE AND OF THE ARCHAEOLOGICAL HERITAGE RESOURCES FOR THE PROPOSED SPITSKOP WIND ENERGY FACILITY.

TABLE 8.1.: ASSESSMENT OF THE SIGNIFICANCE THE PROPOSED ABERDEEN ESKOM WIND ENERGY FACILITY - The destruction of the stone artefact occurrences and scatters

Nature: The destruction of the stone artefact occurrences and scatters.		
	Without mitigation	**With mitigation**
Extent	Local (2)	Local (1)
Duration	Permanent (5)	Permanent (5)
Magnitude	Very High (10)	Low (4)
Probability	Highly Probable (4)	Probable (3)
Significance	High (68)	Low (30)
Status (positive or negative)	Negative	Negative
Reversibility	None	Low
Irreplaceable loss of resources?	Yes	Low
Can impacts be mitigated?	Yes	Yes
Mitigation: • Once the final layout (including the positions of the wind turbines; underground cabling; overhead power lines; additional internal access roads, and the substations; and power lines) of the proposed Spitskop Wind Energy Facility has been finalised an archaeological ground-truthing should be conducted and further recommendations be made to protect the archaeological heritage within the area proposed for development. • A representative sample of stone artefacts should be collected and during the archaeological walk-through for the final layout or before the construction activities begin to be housed at the Department of Archaeology's archaeological repository at the Albany Museum. • If concentrations of archaeological heritage material and human remains are uncovered during construction, all work must cease immediately and be reported to the Albany Museum (046 622 2312) and/or the South African Heritage Resources Agency (SAHRA) (021 642 4502) so that systematic and professional investigation/ excavation can be undertaken. • Construction managers/foremen should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites.		
Cumulative impacts: • Irreplaceable loss of archaeological heritage resources.		
Residual impacts: • Irreplaceable loss of archaeological heritage resources.		

TABLE 8.2.: ASSESSMENT OF THE SIGNIFICANCE THE PROPOSED SPITSKOP WIND ENERGY FACILITY – The destruction of the formal and informal graves.

Nature: The destruction of the formal and informal graves		
	Without mitigation	**With mitigation**
Extent	Local (2)	Local (1)
Duration	Permanent (5)	Permanent (5)
Magnitude	Very High (10)	Low (4)
Probability	Highly Probable (4)	Probable (3)
Significance	High (68)	Low (30)
Status (positive or negative)	Negative	Negative
Reversibility	None	Low
Irreplaceable loss of resources?	Yes	Low
Can impacts be mitigated?	Yes	Yes
Mitigation: • The graves must be clearly demarcated and a 20 m – 50 m boundary must be established so as to avoid negative impact to the informal graves especially those situated immediately adjacent to the existing internal farm roads. • If concentrations of archaeological heritage material and human remains are uncovered during construction, all work must cease immediately and be reported to the Albany Museum (046 622 2312) and/or the South African Heritage Resources Agency (SAHRA) (021 642 4502) so that systematic and professional investigation/ excavation can be undertaken. • Construction managers/foremen should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites.		
Cumulative impacts: • Irreplaceable loss of archaeological heritage resources.		
Residual impacts: • Irreplaceable loss of archaeological heritage resources.		

9. RECOMMENDATIONS

The area is of a medium – low archaeological cultural sensitivity, the following recommendations must be considered:

1. Once the final layout (including the positions of the wind turbines; underground cabling; overhead power lines; additional internal access roads, and the substations; and power lines) of the proposed Spitskop Wind Energy Facility has been finalised an archaeological ground-truthing should be conducted and further recommendations be made to protect the archaeological heritage within the area proposed for development.

2. A representative sample of stone artefacts should be collected either during the archaeological walk-through for the final layout or before the construction activities begin to be housed at the Department of Archaeology's archaeological repository at the Albany Museum.

3. The graves must be clearly demarcated an a 20 m – 50 m boundary must be established so as to avoid negative impact to the informal graves especially those situated immediately adjacent to the existing internal farm roads.

4. If concentrations of archaeological heritage material and human remains are uncovered during construction, all work must cease immediately and be reported to the Albany Museum (046 622 2312) and/or the South African Heritage Resources Agency (SAHRA) (021 642 4502) so that systematic and professional investigation/ excavation can be undertaken.

5. Construction managers/foremen should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites.

10. CONCLUSION

The survey for the Spitskop Wind Energy Facility was mostly conducted on foot by following the routes for the turbines, underground cabling, access roads, and associated infrastructure. Very few archaeological heritage remains were encountered during the survey, especially along the routes for the proposed turbines. The turbines are proposed to be constructed on the hilltops that range between 500 feet – 1000 feet in height. However, surface scatters of Middle Stone Age and Later Stone Age stone artefacts were recorded in some low lying areas within exposed surface and disturbed donga areas. One Later Stone Age site (SK GF1) was identified within the demarcated area (SK SA3 – SK SA5) that comprised both Middle and Later Stone age stone artefacts and situated within and adjacent to the internal farm road. It is unlikely that the stone artefact surface scatters that occur on the exposed surface areas are positioned *in situ*; however, stone artefacts may occur between 50 – 80 cm below the surface. One area containing formal graves and four areas containing informal burials were documented, situated adjacent to some of the proposed access roads to be used during the development. No historical and archaeological features that would be negatively affected during the development activities were documented during the survey.

The proposed development would have negative implications on the archaeological heritage remains documented within the proposed area during all phases of the development. The negative implications include the destruction of the surface scatters of stone artefacts and further occurrences that are not immediately visible. The recommendations must be considered as appropriate mitigation measures to protect and conserve the archaeological heritage remains observed within the proposed development area and further archaeological remains that may occur and are not immediately visible on the surface.

11. GENERAL REMARKS AND CONDITIONS

NOTE: This report is a phase 1 archaeological impact assessment (AIA) only and does not include or exempt other required specialist assessments as part of the heritage impact assessments (HIAs).

The National Heritage Resources Act (Act No. 25 of 1999, Section 35 [Brief Legislative Requirements]) requires a full Heritage Impact Assessment (HIA) in order that all heritage resources including all places or objects of aesthetics, architectural, historic, scientific, social, spiritual, linguistic, or technological value or significance are protected. Thus any assessment should make provision for the protection of all these heritage components including archaeology, shipwrecks, battlefields, graves, and structures older than 60 years, living heritage, historical settlements, landscapes, geological sites, palaeontological sites and objects.

It must be emphasized that the conclusions and recommendations expressed in this phase 1 archaeological impact assessment (AIA) are based on the visibility of archaeological remains, features and, sites and may not reflect the true state of affairs. Many archaeological remains, features and, sites may be covered by soil and vegetation and will only be located once this has been removed. In the event of such archaeological heritage being uncovered (such as during any phase of construction activities), archaeologists or the relevant heritage authority must be informed immediately so that they can investigate the importance of the sites and excavate or collect material before it is destroyed. The onus is on the developer to ensure that this agreement is honoured in accordance with the National Heritage Resources Act No. 25 of 1999 (NHRA 25 of 1999).

Archaeological Specialist Reports (desktops and AIA's) will be assessed by the relative heritage resources authority. The final decision rests with the heritage resources authority that may confirm the recommendations in the archaeological specialist report and grant a permit or a formal letter of permission for the destruction of any cultural sites.

12. REFERENCES

Booth, C. 2011. An Archaeological Desktop Study for the Proposed Spitskop Wind Energy Facility. Prepared for Savannah Environmental (Pty) Ltd.

National Heritage Resources Act 25 of 1999.

APPENDIX A: GRADING SYSTEM

The NHRA stipulates the assessment criteria and grading of archaeological sites. The following categories are distinguished in Section 7 of the Act:

- Grade I: Heritage resources with qualities so exceptional that they are of special national significance;
- Grade II: Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within the context of a province or a region; and
- Grade III: Other heritage resources worthy of conservation on a local authority level.

The occurrence of sites with a Grade I significance will demand that the development activities be drastically altered in order to retain these sites in their original state. For Grade II and Grade III sites, the applicable mitigation measures would allow the development activities to continue.

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

1. Human Remains:

All human remains exposed during all the phases of the construction activities must be reported to the archaeologist, nearest museum or relevant heritage resources authority. Construction must be halted until the archaeologist has investigated and removed the human remains. Human remains may be exposed when a grave or informal burial has been disturbed. In general, the remains are buried in a flexed position on the side and may also be buried in a sitting position with a flat stone capping the location of the burial. Developers are requested to be aware of the exposing human remains.

2. Stone Artefacts:

Stone artefacts are difficult for the layman to identify. Large accumulations of flaked stones that do not appear to have been distributed naturally must be reported. If the stone artefacts are associated with bone / faunal remain or any other associated organic and material cultural artefacts development must be halted immediately and reported to the archaeologist, nearest museum or relevant heritage resources authority.

3. Large Stone Features:

Large stone features occur in different forms and sizes, however, are relatively easy to identify. The most common features are roughly circular stone walls (mostly collapsed), usually dry packed stone, and may represent stock enclosures, the remains of wind breaks or, cooking shelters. Other features consist of large piles of stones of different sizes and heights are known as *isisivane*. These features generally occur near river and mountain crossings. The purpose and meaning of the *isisivane* are not fully understood, however, interpretations include the representation of burial cairns and symbolic value.

4. Freshwater Shell Middens:

Accumulations of freshwater shell middens comprising mainly freshwater mussel occur along the muddy banks of rivers and streams and were collected by pre-colonial communities as a food resource. The freshwater shell middens generally contain stone artefacts, pottery, bone and, sometimes even human remains. Freshwater shell middens may be of various sizes and depths, an accumulation that exceeds $1m^2$ in extent must be reported to the archaeologist, nearest museum or, relevant heritage resources authority.

5. Historical Artefacts and Features:

These are relatively easy to identify and include the foundations and remains of buildings, packed dry stone walling representing domestic stock kraals. Other items include historical domestic artefacts such as ceramics, glass, metal and military artefacts and dwellings.

6. Fossil Bone:

Fossil bones may embedded in geological deposits. Any concentrations of bone whether fossilized or not must be reported.