

**A PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT FOR THE PROPOSED
200MW ESKOM WIND ENERGY FACILITY, NEAR ABERDEEN, CAMDEBOO LOCAL
MUNICIPALITY, EASTERN CAPE PROVINCE.**

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A PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT FOR THE PROPOSED 200MW ESKOM WIND ENERGY FACILITY, NEAR ABERDEEN, CAMDEBOO LOCAL MUNICIPALITY, EASTERN CAPE PROVINCE.

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 200 MW Aberdeen Eskom Wind Energy Facility, near Aberdeen, Camdeboo Local 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

Surface scatters of predominantly Middle Stone Age stone artefacts were observed over most of the area proposed for the development, these included isolated as well as dense occurrences. Eight areas / sites have been identified that comprise relatively dense scatters of stone artefacts over large areas with several micro-sites within the demarcated sites. It was observed that denser distributions of stone artefacts occurred in the north and central areas of the study area, filtering out towards the south. No associated archaeological material or organic remains were documented with the stone artefact surface scatters.

An historical stonewalling farmstead complex is situated adjacent to one of the proposed access roads. The complex comprised the remains of the house and two kraals.

Packed stones were identified in the south-central area. The packed stone may resemble a kraal that has now collapsed. Fragments of glass and pottery were found within this area, as well as a No. 2 Musket Eley bullet casing associated with the Second Anglo-Boer War.

1.3. Recommendations

The area is of a medium-high cultural sensitivity, the following recommendations must be considered:

1. Once the final layout (including the positions of the wind turbines; underground cabling; overhead power line; additional internal access roads, and the workshop area) of the proposed Aberdeen Eskom 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 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.
3. An alternative access route should be established to avoid negative impact to the stone walling complex (Ab HS1) during the construction and development phases.
4. No development should occur within 50 m of stone walling features.
5. No development should occur within 100 m of the areas marked Ab SW1 and Ab H1.
6. A professional archaeologist must be appointed during all construction and development activities including vegetation clearing and the excavation activities to monitor and identify possible archaeological material remains and features that may occur below the surface and make further appropriate recommendations on removing and / or protecting the archaeological material remains and features.
7. 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.
8. 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).

Eskom Holdings SOC Limited is proposing to establish a commercial wind energy facility and associated infrastructure. The proposed area for the Aberdeen Wind Energy Facility has been considered as potentially suitable for the wind energy development to meet economic, social and environmentally sustainable criteria as well as issues relating to landscape character, value, sensitivity, and capacity. These aspects have been balanced with technical constraining factors affecting the siting of a wind farm, including the wind resource (wind potential, land availability, accessibility, and existing grid infrastructure). Eskom is currently undertaking on-site wind monitoring in order to determine the on-site wind regime and inform the design of the facility.

An area of 8 198 ha is being considered within which the proposed facility will be constructed. The proposed Farms include: Portion 3 of Sambokdoorns 92; Remainder of Portion 4 of Sambokdoorns 92; Remainder of Sambokdoorns 92; Portion 1 of Klipdrift 73; Portion 2 of Farm 94; and Remainder of Portion 2 of Farm 94.

The proposed facility will be made up of a cluster of between 100 wind turbines with an optimal rated capacity of between 1.3 MW and 2MW each and is expected to have a nominal generating capacity of approximately 200MW. Associated infrastructure will include:

- Concrete foundations to support the turbines; cabling between the turbines to be laid underground where practical;
- An on-site substation to facilitate the connection between the facility and the electricity grid, and overhead power line (400kV) feeding into Eskom's electricity grid at the Droërivier Substation, approximately 140 km from the site;
- Internal access roads;
- Borrow pits within the site for construction of access roads; office / workshop area for maintenance and storage; and
- A visitors centre.

Savannah Environmental (Pty) Ltd has been contracted to conduct the environmental impact assessment (EIA) by Eskom Holdings SOC Limited.

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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 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. BRIEF ARCHAEOLOGICAL BACKGROUND

No systematic archaeological research has been conducted within this region of the Eastern Cape, therefore little is known about the archaeology of the immediate area proposed for the Eskom Wind Energy Facility. The Albany Museum holds records of sites recorded mainly to the east of Aberdeen and closer to Graaff Reinet, approximately 75 km to the east of Aberdeen. These are mainly rock art sites and open site scatters of stone artefacts in association with some other organic and material archaeological remains. However, engravings, burials, and historical buildings and structures have also been recorded. The closest heritage site in proximity to the proposed area for development that has been recorded is a rock shelter containing rock paintings, situated approximately 40 km to the east, past Aberdeen. A farm situated approximately 70 km to the north-west of the proposed area has been noted to contain about six Later Stone Age sites including rock shelters with rock paintings. A number of rock engravings have been recorded and published in and around Beaufort West, within approximately 114 km to the west along the R61 (Parkington et al. 2008). And recently, various Middle Stone Age, Later Stone Age, rock shelters, and rock engravings have been recorded about 75 km to the north on a site about 34 km south of Victoria West (Binneman et al. 2011a).

The Karoo landscape has been occupied by humans since the Early Stone Age, spanning an occupation period of about 1.5 million years. Archaeological evidence is usually observed as surface scatters and is widely dispersed across the landscape. Caves are uncommon in the Karoo and open sites (Early Stone Age to the last 2000 years) generally consist of single-level occupations near sources of water such as rivers, streams, and springs. Rock engravings are widespread over the Karoo landscape, substantial research has been conducted within the Northern and Western Cape areas of the Karoo (Parkington et al. 2008). Early travellers and trekboere (Dutch farmers) started entering this part of the Eastern Cape towards the end of the 18th Century and colonial settlement increased towards the second half of the 19th century.

One phase 1 heritage impact assessment (HIA) has been conducted through the area proposed for development (van Schalkwyk 2007) and several phase 1 archaeological impact assessments have been conducted within and surrounding the town of Aberdeen (Binneman 2009a-f).

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 Eskom Wind Energy Facility is located approximately 24 km west of the small Karoo town of Aberdeen within the Camdeboo Local Municipality. The proposed 8189 ha area is situated along the R61 regional road that runs between Aberdeen in the Eastern Cape and Beaufort West in the Western Cape (approximately 108 km to the west of the proposed area for development). Murraysburg is situated about 60 km to the north, and Klipplaat and Jansenville are located between 70 km and 90 km to the south-east of the proposed area for development.

An area of 8 198 ha is being considered within which the proposed facility will be constructed. The proposed Farms include: Portion 3 of Sambokdoorns 92; Remainder of Portion 4 of Sambokdoorns 92; Remainder of Sambokdoorns 92; Portion 1 of Klipdrift 73; Portion 2 of Farm 94; and Remainder of Portion 2 of Farm 94.

The proposed area for development is situated on a relatively flat part of the landscape; however, the Kamdeboo Mountains are situated just to the north-east of the study area. Several perennial streams occur within the proposed area for development as well as smaller dams and reservoirs. The vegetation cover is mainly Nama-Karoo.

5.2. Map

1:50 000 MAPS: 3223BC KUNNA, 3223BD KAMDEBOO, 3223DA KIEWITSKUIL, 3223DB
KAAPSEPOORTJIE

1: 250 000 MAP: 3122 BEAUFORT WEST

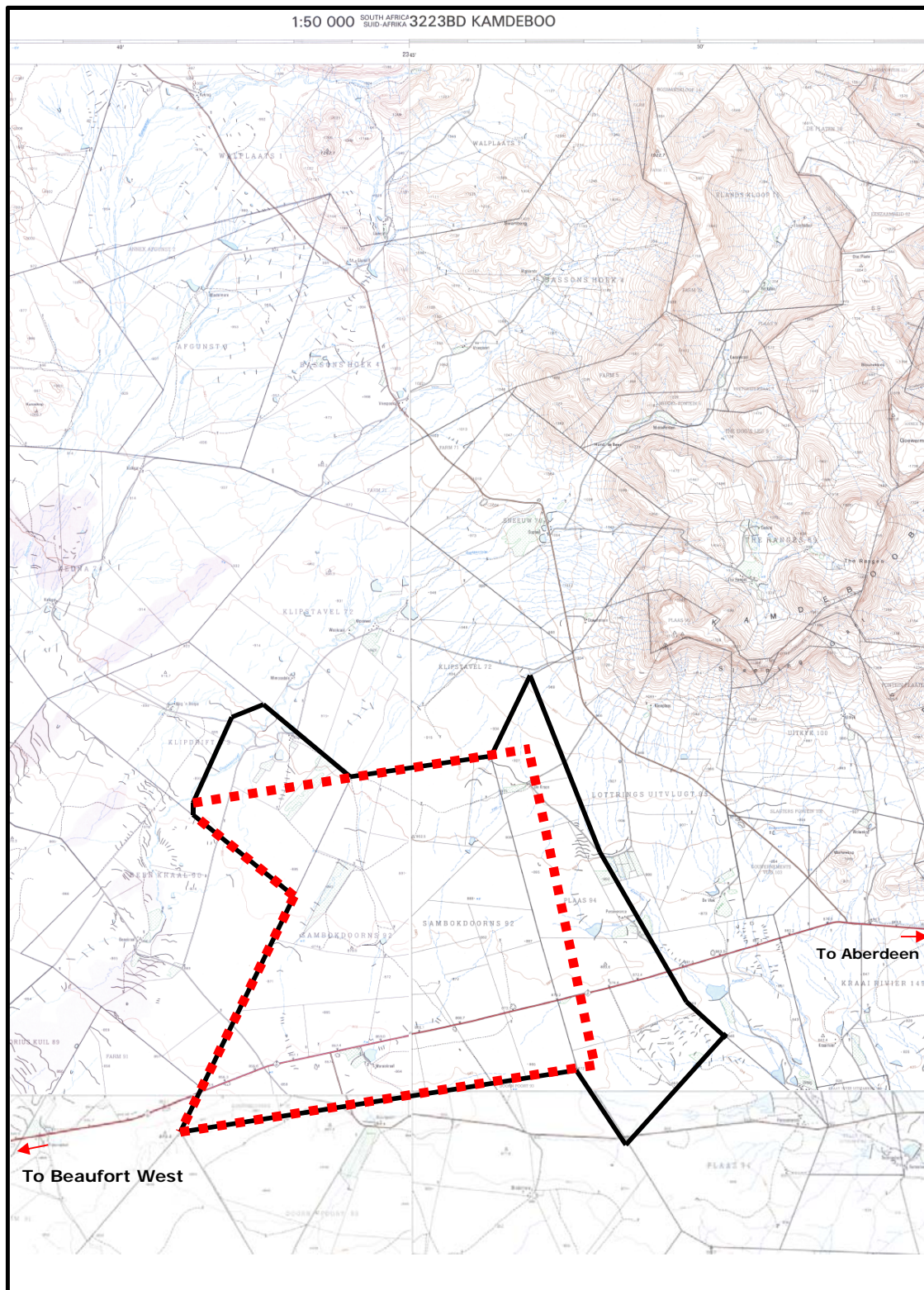


Figure 1. Map 1. 1:50 000 topographic maps 3223BC KUNNA, 3223BD KAMDEBOO, 3223DA KIEWITSKUIL, 3223DB KAAPSEPOORTJIE showing the location of the area proposed for the Eskom Wind Energy Facility (Black: farm boundary; Red: proposed area for the Eskom Wind Energy Facility).

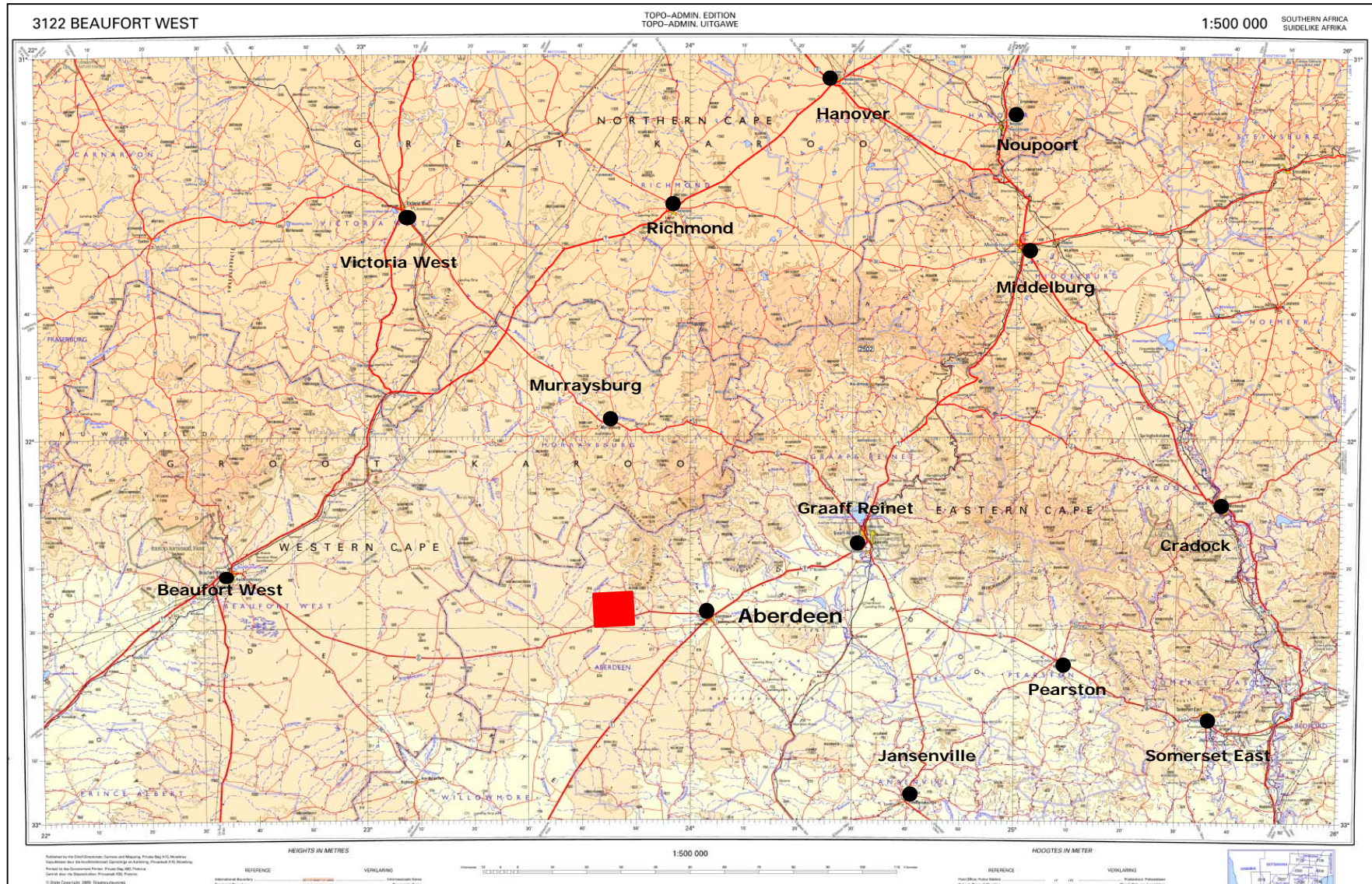


Figure 2. Map 2. 1:250 000 topographic map 3122 BEAUFORT WEST showing the location of the proposed Eskom Wind Energy Facility near Aberdeen.

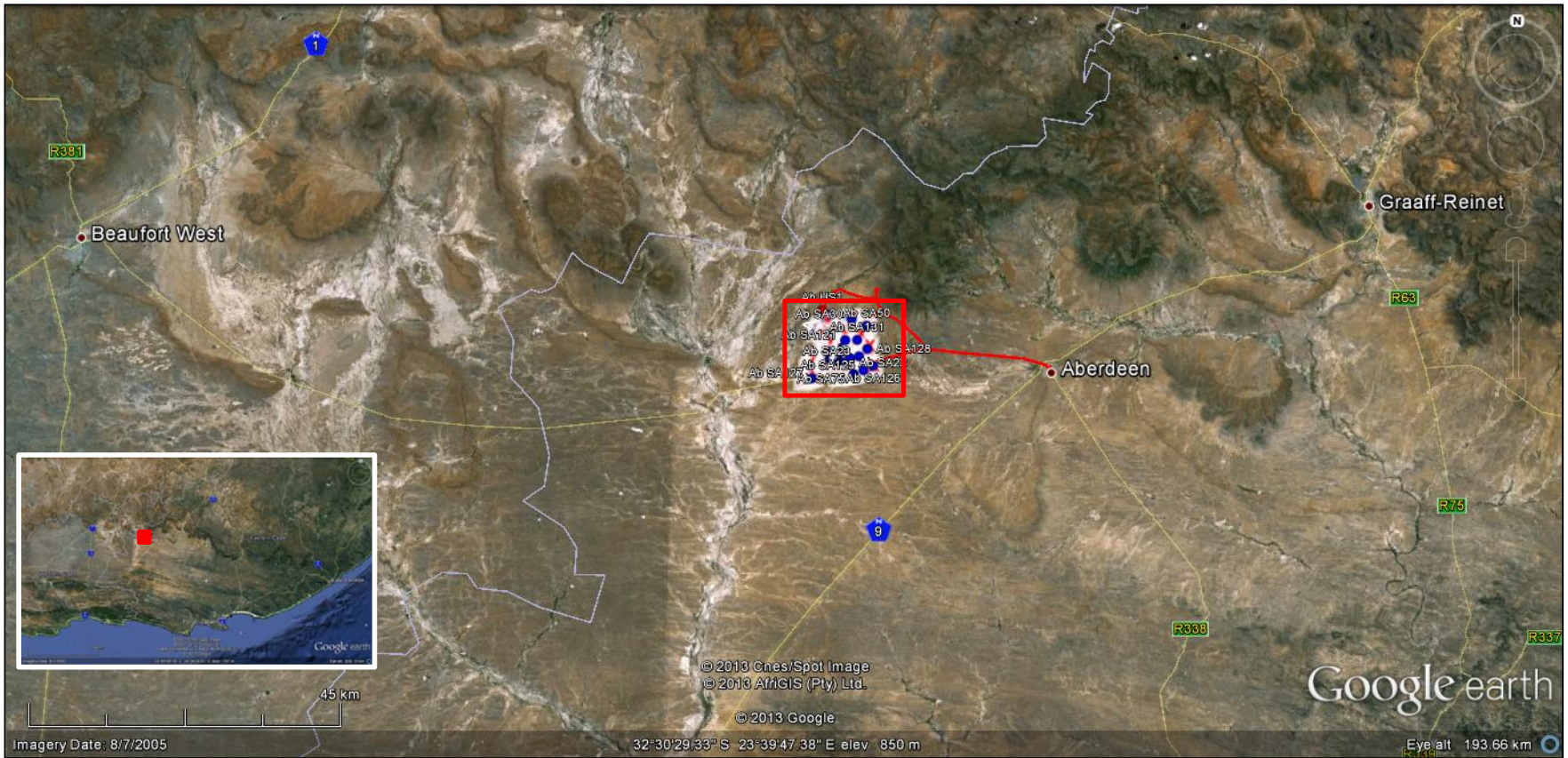


Figure 3. Map 3. Aerial view of the area proposed Eskom Wind Energy Facility near Aberdeen.

6. ARCHAEOLOGICAL INVESTIGATION

The archaeological investigation was mostly conducted on foot by following the areas proposed for the wind turbines, roads, and associated infrastructure. The GPS coordinate readings and photographs were taken using a Garmin Oregon 550 unit. The artefact surface occurrences and other heritage resources have been plotted on Figures 3-4.

The proposed area for development will occur on the flat plains with several intermittent streams occurring within the proposed development area. The vegetation cover is sparse with several exposed areas making archaeological visibility relatively good throughout the surveyed area (Figures 5-8). In some instances bush clumps obscured archaeological visibility (Figure 9). The study area is relatively undisturbed except in areas where internal farm roads, farm fences, dams, and reservoirs have been constructed (Figures 10-11). 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 12).



Figure 5. View of the general landscape and sparse vegetation cover.



Figure 6. View of the general landscape and sparse vegetation cover with the Kamdeboo Mountains in the distance (not included in the proposed development area).



Figure 7. View of the exposed areas making for very good archaeological visibility.



Figure 8. View of the exposed areas making for very good archaeological visibility.



Figure 9. Example of bush clumps that occurs occasionally within the study area.



Figure 10. View of an internal farm road as an example of a disturbance of the land surface.



Figure 11. View of an internal farm fence as an example of a disturbance of the land surface.



Figure 12. Domestic stock grazing the landscape.

Surface scatters of predominantly Middle Stone Age stone artefacts and some Later Stone Age stone artefacts were identified over the entire area proposed for the development of the wind energy facility and associated infrastructure. Eight areas comprising several cores and relatively densely distributed surface scatters of mainly Middle Stone Age stone artefacts were identified (Figures 13-14). However, isolated occurrences of stone artefacts were also documented between the eight identified sites.

One stone artefact resembling an Early Stone Age hand-axe may represent the later Early Stone Age or transitional into the early Middle Stone Age (Figure 15). The Middle Stone Age stone artefacts were identified by the characteristic faceted platform as well as the associated flake and blade shapes as well as the heavy patination and weathering. Several artefacts showed evidence of secondary retouch as well as edge-damage that may indicate utilization (Figures 16-17). The stone artefacts were manufactured on a variety of raw materials including hornfels, quartzite, shale, and chalcedony. Several of the Middle Stone Age stone artefacts area weathered and heavily patinated (Figures 18-22).

It was observed that denser distributions of stone artefacts occurred in the north and central areas of the study area, filtering out towards the south. These large areas were identified by the vast number of cores and distribution of similar stone artefacts (Figures 23-28). No associated archaeological material or organic remains were documented with the stone artefact surface scatters.



Figure 13. Example of the denser stone artefact surface scatters.



Figure 14. Example of denser stone artefact surface scatters.



Figure 15. Example of the hand-axe shaped tool.



Figure 16. Examples of general stone artefacts occurring within the proposed development area.



Figure 17. Examples of general stone artefacts occurring within the proposed development area.



Figure 18. Example of the stone artefact and differing raw materials.



Figures 19-22. Examples of differing raw materials and patination.



Figure 23. Examples of the recurring cores / implements distributed across the proposed development area.



Figure 24. . Examples of the recurring cores / implements distributed across the proposed development area.



Figures 25-26. Examples of the recurring cores / implements distributed across the proposed development area.



Figures 27-28. Examples of other types of cores distributed across the landscape.

Eight large areas / sites were identified to contain denser distributions of cores and other stone artefacts: Klipdrift 1; Klipdrift-Sambokdoorns 1; Sambokdoorns-Farm 1; Sambokdoorns 1; Sambokdoorns 2; Sambokdoorns 3; Sambokdoorns 4; and Sambokdoorns 5.

Klipdrift 1 is situated on the Portion 1 of the Farm Klipdrift 73 in the north-west corner of the proposed development area (Figure 29). The area is approximately 2800 m x 590 m in extent and includes the stone artefact general distribution points Ab SA56, Ab SA117-Ab SA119, Ab SA61-Ab SA73, and Ab SA 52. The stone artefacts occurred within the route proposed for the road and the underground cables that will connect the seven turbines to be situated within this area. Numerous concentrations (micro-sites) of stone artefacts occurred within the area and included several cores distributed across the area. No associated organic or other archaeological heritage material was documented in relation to the stone artefact surface scatters.

Klipdrift-Sambokdoorns 1 is situated on Portion 1 of the Farm Klipdrift 73 and Portion 3 of the Farm Sambokdoorns 92 about 700 m south-east of the site Klipdrift 1 (Figure 29). The area is approximately 1315 m x 570 m in extent and includes the stone artefact general distribution points Ab SA 31, Ab SA57-Ab SA60, and Ab SA 112-Ab SA114. The stone artefacts occurred within the route proposed for the road and the underground cables that will connect the four turbines to be situated within this area. Several isolated surface scatters of stone artefacts occurred between the two areas (as per the route followed) as well as along some of the connecting internal farm roads. Numerous concentrations (micro-sites) of stone artefacts occurred within the area and included several cores distributed across the area. No associated organic or other archaeological heritage material was documented in relation to the stone artefact surface scatters.

Sambokdoorns-Farm 1 is situated on the Remainder of the Farm Sambokdoorns 92, Portion 2 of Farm 94, and Portion 2 of the Farm 94 on the eastern edge of the proposed development area about 360 m south of the homestead that is designated as a no development area (Figure 30). The area is approximately 1650 m x 520 m in extent and includes the stone artefact general distribution points Ab SA44-Ab SA53 and Ab SA101-Ab SA103. The stone artefacts occurred within the route proposed for the road and the underground cables that will connect the five turbines to be situated within this area. This area has some concentration of cores and stone artefacts, however, not as numerous as those previously mentioned. No associated organic or other archaeological heritage material was documented in relation to the stone artefact surface scatters.

Sambokdoorns 1 is situated on Portion 3 of the Farm Sambokdoorns 92, in the most northern and central area of the proposed development area (Figure 30). The area is approximately 2130 m x 650 m in extent and includes the stone artefact general distribution points Ab SA24-Ab SA35 and Ab SA107-Ab SA109. The stone artefacts occurred within the route proposed for the road and the underground cables that will connect the six turbines to be situated within this area. Several isolated surface

scatters of stone artefacts occurred between the two areas (as per the route followed) as well as along some of the connecting internal farm roads. Numerous concentrations (micro-sites) of stone artefacts occurred within the area and included several cores distributed across the area. No associated organic or other archaeological heritage material was documented in relation to the stone artefact surface scatters.

Sambokdoorns 2 is situated on the Portion 3 of the Farm Sambokdoorns 92 about 700 m south-east of the site Sambokdoorns 1 (Figure 30). The area is approximately 260 m x 200 m in extent and includes the stone artefact general distribution points Ab SA38- Ab SA 42 as well as AB OES1. The stone artefacts and ostrich eggshell fragments occurred within the route proposed for the road and the underground cables that will connect the two turbines to be situated within this area. Several isolated surface scatters of stone artefacts occurred between the two areas (as per the route followed) as well as along some of the connecting internal farm roads. This area has some concentration of cores and stone artefacts, however, not as numerous as those previously mentioned. No associated organic or other archaeological heritage material was documented in relation to the stone artefact surface scatters.

Sambokdoorns 3 is situated on the Remainder of the Farm Sambokdoorns 92 about 1800 m south of Sambokdoorns 1 and 1500 m south of Sambokdoorns 2 respectively, several surface scatters of stone artefacts were also encountered between these sites (Figure 31). Sambokdoorns 3 is approximately 1680 m x 480 m in extent and includes the stone artefact general distribution points Ab SA1-Ab SA6 and Ab SA81-Ab SA83. The stone artefacts occurred within the route proposed for the road and the underground cables that will connect the four turbines to be situated within this area. This area has some concentration of cores and stone artefacts, however, not as numerous as those previously mentioned. No associated organic or other archaeological heritage material was documented in relation to the stone artefact surface scatters.

Sambokdoorns 4 is situated on the Remainder of Portion 4 of the Farm Sambokdoorns 92 about 2000 m south-west of the site Sambokdoorns 3 and 1100 m west of the site Sambokdoorns 5 (Figure 31). The area is approximately 640 m x 360 m in extent and includes the stone artefact general distribution points Ab SA91-Ab SA96. The stone artefacts occurred within the route proposed for the road and the underground cables that will connect the four turbines to be situated within this area. Several isolated surface scatters of stone artefacts occurred between the three areas (as per the route followed) as well as along some of the connecting internal farm roads. This area has some concentration of cores and stone artefacts, however, not as numerous as those previously mentioned. No associated organic or other archaeological heritage material was documented in relation to the stone artefact surface scatters.

Sambokdoorns 5 is situated on the Remainder of the Farm Sambokdoorns 92 about 800m immediately south of Sambokdoorns 3 and 1100 m east of Sambokdoorns 4 (Figure 31). The area is approximately 1060 m x 520 m in extent and includes the stone

artefact general distribution points Ab SA9-Ab SA16. The stone artefacts occurred within the route proposed for the road and the underground cables that will connect the three turbines to be situated within this area. Several isolated surface scatters of stone artefacts occurred between the three areas (as per the route followed) as well as along some of the connecting internal farm roads. This area has some concentration of cores and stone artefacts, however, not as numerous as those previously mentioned. No associated organic or other archaeological heritage material was documented in relation to the stone artefact surface scatters.

A collapsed circular dry packed stone wall feature was identified within Sambokdoorns 5 area (Ab SW1). Some pottery and broken glass fragments (AB H1) as well as No. 2 musket bullet casing was found within close proximity of the stone walling feature.

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.

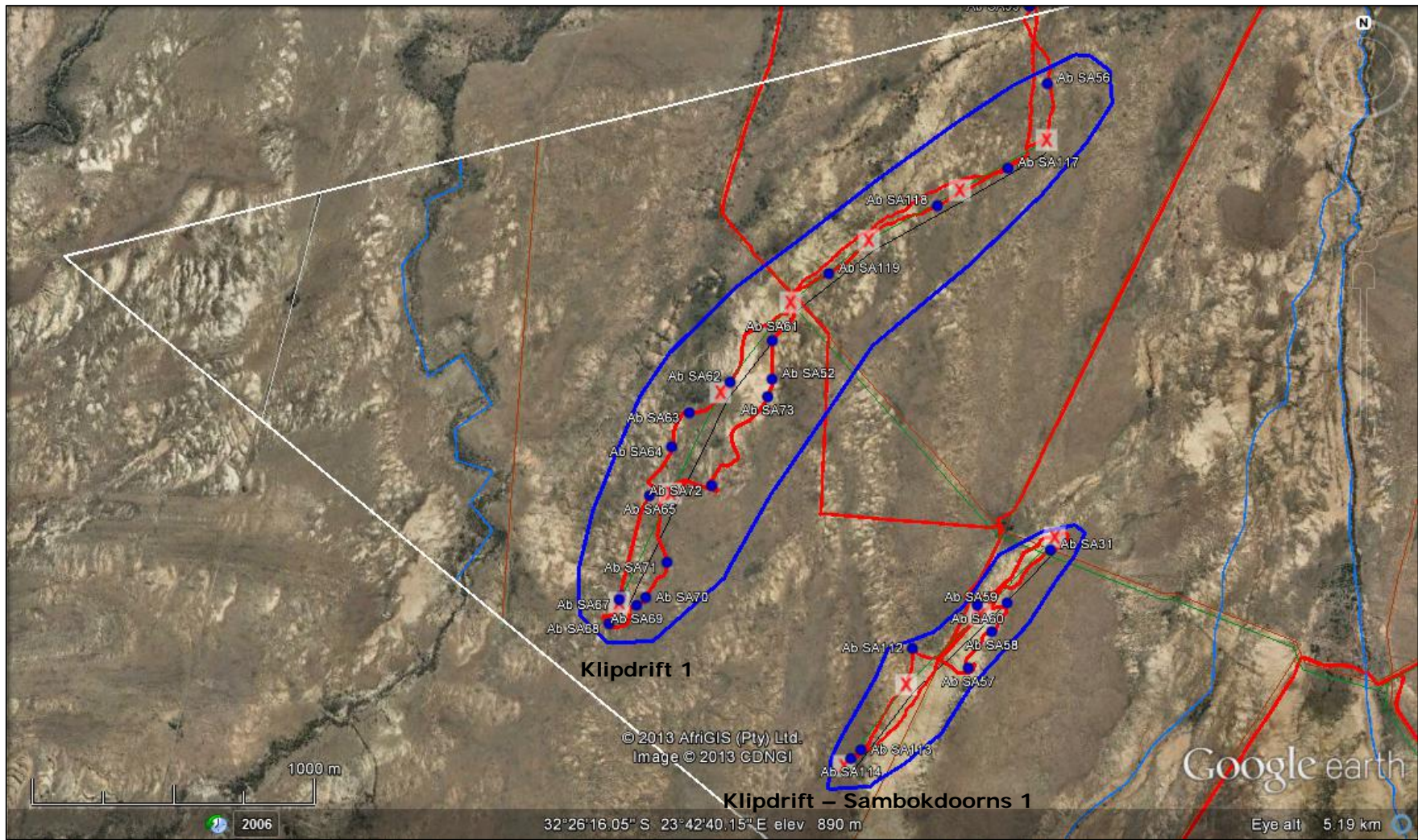


Figure 29. Close-up aerial view of the extent of the sites Klipdrift 1 and Klipdrift-Sambokdoorns 1.

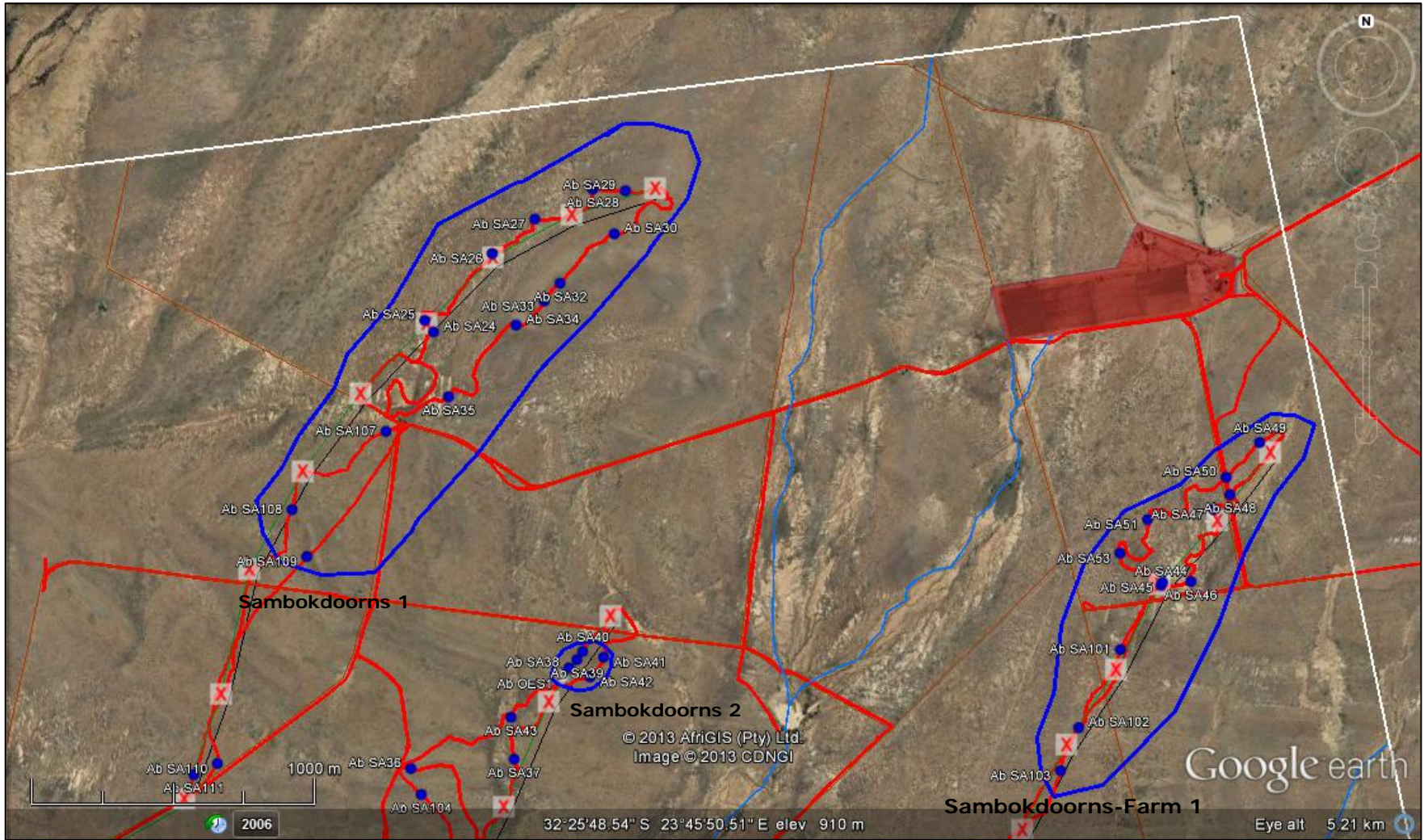


Figure 30. Close-up aerial view of the extent of the sites Sambokdoorns-Farm 1, Sambokdoorns 1, and Sambokdoorns 2.

An historical stone-walling farmstead complex is situated adjacent to one of the existing internal farm roads and is not included within the proposed development area (Figure 32; see Figure 31 for position). The complex comprised the remains of a relatively large dry-pack stone wall kraal, a house, and an intact stone wall kraal. Some of the walls of the kraal are still erect, however, most have collapsed (Figure 33). The walls of the house have mostly collapsed and only one wall and pillars remains erect (Figure 34). The smaller intact kraal is situated across from the dry-packed stone walling kraal near the internal farm road (Figure 35).

A collapsed circular dry packed stone wall feature was identified within Sambokdoorns 5 area (Ab SW1). Packed stone seems to occur west and south around the circular feature (Figures 36-37; see Figure 31 for position). Some pottery and broken glass fragments (AB H1) as well as No. 2 musket Eley bullet casing was found within close proximity of the packed stone and stone walling feature.



Figure 32. View of the farmstead showing the stone-packed kraals and the remains of the dwelling.



Figure 33. View of the dry-packed stone walling kraal in relation to the internal farm road.



Figure 34. View of the remains of the dwelling.



Figure 35. View of the smaller intact stone-wall kraal.



Figure 36. View of the circular stone packed features and adjacent collapsed possible stone packed walling.



Figure 37. Close-up view of the circular dry-packed stone walling feature.

Isolated scatters of stone artefacts and established farmstead buildings occur on the extent of proposed development area south of the R63. Stone artefacts were identified on the exposed surface areas as adjacent to the internal farm roads. The relatively dense distributions of stone artefacts have been identified by eight areas that comprised several and some micro-sites.

7. DESCRIPTION OF SITES

7.1. Stone Artefact Occurrences and Scatters:

Eight large areas / sites were identified to contain denser distributions of cores and other stone artefacts:

1. Kliptdrift 1 is situated on the Portion 1 of the Farm Klipdrift 73 in the north-west corner of the proposed development area. The area is approximately 2800 m x 590 m in extent and includes the stone artefact general distribution points Ab SA56, Ab SA117-Ab SA119, Ab SA61-Ab SA73, and Ab SA 52.

2. Klipdrift-Sambokdoorns 1 is situated on Portion 1 of the Farm Klipdrift 73 and Portion 3 of the Farm Sambokdoorns 92 about 700 m south-east of the site Klipdrift 1. The area is approximately 1315 m x 570 m in extent and includes the stone artefact general distribution points Ab SA 31, Ab SA57-Ab SA60, and Ab SA 112-Ab SA114.

3. Sambokdoorns-Farm 1 is situated on the Remainder of the Farm Sambokdoorns 92 and Portion 2 of Farm 94 on the eastern edge of the proposed development area about 360 m south of the homestead that is designated as a no development area. The area is approximately 1650 m x 520 m in extent and includes the stone artefact general distribution points Ab SA44-Ab SA53 and Ab SA101-Ab SA103.

4. Sambokdoorns 1 is situated on Portion 3 of the Farm Sambokdoorns 92, in the most northern and central area of the proposed development area (Figure 30). The area is approximately 2130 m x 650 m in extent and includes the stone artefact general distribution points Ab SA24-Ab SA35 and Ab SA107-Ab SA109.

5. Sambokdoorns 2 is situated on the Portion 3 of the Farm Sambokdoorns 92 about 700 m south-east of the site Sambokdoorns 1 (Figure 30). The area is approximately 260 m x 200 m in extent and includes the stone artefact general distribution points Ab SA38-Ab SA 42 as well as AB OES1.

6. Sambokdoorns 3 is situated on the Remainder of the Farm Sambokdoorns 92 about 1800 m south of Sambokdoorns 1 and 1500 m south of Sambokdoorns 2 respectively, several surface scatters of stone artefacts were also encountered between these sites. Sambokdoorns 3 is approximately 1680 m x 480 m in extent and includes the stone artefact general distribution points Ab SA1-Ab SA6 and Ab SA81-Ab SA83.

7. Sambokdoorns 4 is situated on the Remainder of Portion 4 of the Farm Sambokdoorns 92 about 2000 m south-west of the site Sambokdoorns 3 and 1100 m west of the site Sambokdoorns 5. The area is approximately 640 m x 360 m in extent and includes the stone artefact general distribution points Ab SA91-Ab SA96.

8. Sambokdoorns 5. Sambokdoorns 5 is situated on the Remainder of the Farm Sambokdoorns 92 about 800m immediately south of Sambokdoorns 3 and 1100 m east of Sambokdoorns 4. The area is approximately 1060 m x 520 m in extent and includes the stone artefact general distribution points Ab SA9-Ab SA16.

Several isolated surface scatters of stone artefacts occurred between the three areas (as per the route followed) as well as along some of the connecting internal farm roads. Surface scatters of predominantly Middle Stone Age stone artefacts and some Later Stone Age stone artefacts were identified over the entire area proposed for the development of the wind energy facility and associated infrastructure.

The eight sites identified are considered as having a medium-high cultural significance

The isolated stone artefact occurrences and scatters are considered as having a medium-low 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. Stonewalling Farmstead Complex

An historical stone-walling farmstead complex (Ab HS1) is situated adjacent to one of the existing internal farm roads and is not included within the proposed development. The complex comprised the remains of a relatively large dry-pack stone wall kraal, a house, and an intact stone wall kraal.

The Stonewalling Farmstead Complex is considered as having a medium-high cultural significance.

The Stonewalling Farmstead Complex 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)

7.3. Packed Stones

A collapsed circular dry packed stone wall feature was identified within Sambokdoorns 5 area (Ab SW1). Packed stone seems to occur west and south around the circular feature.

The packed stone features are considered as having a medium-low cultural significance.

The packed stone features have 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)

7.4. Historical Artefacts

Some pottery and broken glass fragments (AB H1) as well as No. 2 musket bullet casing was found within close proximity of the packed stone and stone walling feature.

The historical artefacts are considered as having a medium-low cultural significance.

The historical artefacts have 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. GPS CO-ORDINATES AND SITES FOR THE PROPOSED ABERDEEN ESKOM WIND ENERGY FACILITY.

TABLE 7.2.1: GPS CO-ORDINATES AND SITES FOR THE ABERDEEN ESKOM ENERGY FACILITY.

REFERENCE	DESCRIPTION	CO-ORDINATES	HERITAGE RATING
Stone Artefacts			
Ab SA1	Stone artefact scatter	32° 27'42.50"S; 23° 44'47.90"E	III
Ab SA2	Stone artefact scatter	32° 27'44.60"S; 23° 44'48.30"E	III
Ab SA3	Stone artefact scatter	32° 27'49.60"S; 23° 44'45.80"E	III
Ab SA4	Stone artefact scatter	32° 28'00.60"S; 23° 44'45.10"E	III
Ab SA5	Stone artefact scatter	32° 28'02.00"S; 23° 44'45.00"E	III
Ab SA6	Stone artefact scatter (scraper; hornfels; Later Stone Age)	32° 28'02.50"S; 23° 44'43.80"E	III
Ab SA7	Stone artefact scatter	32° 28'08.30"S; 23° 44'35.90"E	III
Ab SA8	Stone artefact scatter	32° 28'15.80"S; 23° 44'38.80"E	III
Ab SA9	Stone artefact scatter	32° 28'31.40"S; 23° 44'33.00"E	III
Ab SA10	Stone artefact scatter	32° 28'37.30"S; 23° 44'31.40"E	III
Ab SA11	Stone artefact scatter	32° 28'40.10"S; 23° 44'31.60"E	III
Ab SA12	Stone artefact scatter	32° 28'43.40"S; 23° 44'33.60"E	III
Ab SA13	Stone artefact scatter (adze? ; hematite)	32° 28'44.80"S; 23° 44'31.20"E	III
Ab SA14	Stone artefact scatter	32° 28'50.40"S; 23° 44'28.10"E	III
Ab SA15	Stone artefact scatter	32° 28'53.80"S; 23° 44'28.20"E	III
Ab SA16	Stone artefact scatter	32° 28'57.00"S; 23° 44'28.00"E	III
Ab SA17	Stone artefact scatter	32° 28'59.10"S; 23° 44'29.10"E	III
Ab SA18	Stone artefact scatter	32° 28'58.10"S; 23° 44'41.30"E	III
Ab SA19	Stone artefact scatter (with retouch / edge-damage)	32° 28'59.50"S; 23° 44'43.40"E	III
Ab SA20	Stone artefact scatter	32° 28'56.40"S; 23° 44'58.20"E	III
Ab SA21	Stone artefact scatter	32° 28'43.10"S; 23° 44'46.60"E	III
Ab SA22	Stone artefact scatter	32° 28'39.50"S; 23° 45'30.20"E	III
Ab SA23	Stone artefact scatter	32° 28'30.10"S; 23° 46'19.20"E	III
Ab SA24	Stone artefact scatter (Middle Stone Age; very weathered)	32° 25'51.10"S; 23° 45'07.20"E	III
Ab SA25	Stone artefact scatter (chalcedony; retouched; Later Stone Age)	32° 25'49.80"S; 23° 45'06.00"E	III
Ab SA26	Stone artefact scatter	32° 25'42.20"S; 23° 45'15.10"E	III
Ab SA27	Stone artefact scatter	32° 25'38.30"S; 23° 45'20.80"E	III
Ab SA28	Stone artefact scatter (exposed stone artefact area)	32° 25'34.90"S; 23° 45'28.60"E	III
Ab SA29	Stone artefact scatter (relatively dense)	32° 25'35.10"S; 23° 45'33.00"E	III
Ab SA30	Stone artefact scatter (shale cores)	32° 25'40.00"S; 23° 45'31.50"E	III
Ab SA31	Stone artefact scatter (cores)	32° 26'43.10"S; 23° 43'20.10"E	III
Ab SA32	Stone artefact scatter (denser)	32° 25'45.50"S; 23° 45'24.20"E	III

Ab SA33	Stone artefact scatter (implement / core)	32° 25'47.60"S; 23° 45'22.10"E	III
Ab SA34	Stone artefact scatter (possible knapping)	32° 25'50.30"S; 23° 45'18.30"E	III
Ab SA35	Stone artefact scatter	32° 25'58.40"S; 23° 45'09.20"E	III
Ab SA36	Stone artefact scatter	32° 26'40.70"S; 23° 45'04.00"E	III
Ab SA37	Stone artefact scatter (Later Stone Age)	32° 26'39.70"S; 23° 45'17.90"E	III
Ab SA38	Stone artefact scatter	32° 26'29.20"S; 23° 45'25.30"E	III
Ab SA39	Stone artefact scatter	32° 26'28.30"S; 23° 45'26.40"E	III
Ab SA40	Dense begins	32° 26'27.40"S; 23° 45'27.20"E	III
Ab SA41	Stone artefact scatter (Later Stone Age; micro core)	32° 26'28.00"S; 23° 45'30.00"E	III
Ab SA42	Stone artefact scatter (chip; flake)	32° 26'30.30"S; 23° 45'28.20"E	III
Ab SA43	Stone artefact scatter	32° 26'34.90"S; 23° 45'17.50"E	III
Ab SA44	Stone artefact scatter	32° 26'19.80"S; 23° 46'44.90"E	III
Ab SA45	Stone artefact scatter	32° 26'19.50"S; 23° 46'45.20"E	III
Ab SA46	Stone artefact scatter (core)	32° 26'19.40"S; 23° 46'48.90"E	III
Ab SA47	Stone artefact scatter	32° 26'11.20"S; 23° 46'51.90"E	III
Ab SA48	Stone artefact scatter (implement / core)	32° 26'09.50"S; 23° 46'54.10"E	III
Ab SA49	Stone artefact scatter	32° 26'03.60"S; 23° 46'58.10"E	III
Ab SA50	Stone artefact scatter (small implement / core)	32° 26'07.50"S; 23° 46'53.60"E	III
Ab SA51	Stone artefact scatter (exposed stone artefact area)	32° 26'12.30"S; 23° 46'43.10"E	III
Ab SA52	Stone artefact scatter (core)	32° 26'23.80"S; 23° 42'42.40"E	III
Ab SA53	Stone artefact scatter (exposed stone artefact area)	32° 26'16.20"S; 23° 46'39.40"E	III
Ab SA54	Stone artefact scatter (exposed stone artefact area)	32° 25'25.80"S; 23° 43'16.50"E	III
Ab SA55	Stone artefact scatter	32° 25'41.30"S; 23° 43'16.90"E	III
Ab SA56	Stone artefact scatter (implements / cores)	32° 25'50.10"S; 23° 43'19.30"E	III
Ab SA57	Stone artefact scatter (implement / core)	32° 26'56.60"S; 23° 43'09.10"E	III
Ab SA58	Stone artefact scatter (implement / core)	32° 26'52.50"S; 23° 43'12.20"E	III
Ab SA59	Stone artefact scatter (implement / core)	32° 26'49.20"S; 23° 43'14.30"E	III
Ab SA60	Stone artefact scatter	32° 26'49.50"S; 23° 43'10.30"E	III
Ab SA61	Stone artefact scatter (implement / core)	32° 26'19.40"S; 23° 42'42.40"E	III
Ab SA62	Stone artefact scatter (shale; blade core)	32° 26'24.20"S; 23° 42'36.80"E	III
Ab SA63	Stone artefact scatter	32° 26'27.70"S; 23° 42'31.30"E	III
Ab SA64	Stone artefact scatter (implement / core)	32° 26'31.50"S; 23° 42'28.90"E	III
Ab SA65	Stone artefact scatter	32° 26'37.10"S; 23° 42'25.90"E	III
Ab SA66	Stone artefact scatter	32° 26'48.60"S; 23° 42'22.20"E	III
Ab SA67	Stone artefact scatter	32° 26'49.00"S; 23° 42'21.90"E	III
Ab SA68	Stone artefact scatter	32° 26'51.80"S; 23° 42'20.50"E	III
Ab SA69	Stone artefact scatter	32° 26'49.60"S; 23° 42'24.30"E	III
Ab SA70	Stone artefact scatter (flake; chalcedony; faceted platform; patinated)	32° 26'48.70"S; 23° 42'25.50"E	III
Ab SA71	Stone artefact scatter (dense stone artefact scatters)	32° 26'44.70"S; 23° 42'28.30"E	III
Ab SA72	Stone artefact scatter (implement / core)	32° 26'36.00"S; 23° 42'34.30"E	III

Ab SA73	Stone artefact scatter (core)	32° 26'25.80"S; 23° 42'41.90"E	III
Ab SA74	Stone artefact scatter	32° 30'03.10"S; 23° 45'36.90"E	III
Ab SA75	Stone artefact scatter (core)	32° 29'53.20"S; 23° 45'53.90"E	III
Ab SA76	Stone artefact scatter	32° 29'51.20"S; 23° 45'57.20"E	III
Ab SA77	Stone artefact scatter	32° 29'49.40"S; 23° 46'00.00"E	III
Ab SA78	Stone artefact scatter	32° 29'49.70"S; 23° 46'05.70"E	III
Ab SA79	Stone artefact scatter	32° 29'51.70"S; 23° 46'00.10"E	III
Ab SA80	Stone artefact scatter (core)	32° 29'54.30"S; 23° 44'20.70"E	III
Ab SA81	Stone artefact scatter	32° 27'41.10"S; 23° 44'48.80"E	III
Ab SA82	Stone artefact scatter	32° 27'33.70"S; 23° 44'50.00"E	III
Ab SA83	Stone artefact scatter	32° 27'19.00"S; 23° 44'53.40"E	III
Ab SA84	Stone artefact scatter	32° 27'21.90"S; 23° 43'53.40"E	III
Ab SA85	Stone artefact scatter	32° 27'35.20"S; 23° 43'36.30"E	III
Ab SA86	Stone artefact scatter	32° 28'09.80"S; 23° 43'18.70"E	III
Ab SA87	Stone artefact scatter	32° 28'16.20"S; 23° 43'10.10"E	III
Ab SA88	Stone artefact scatter	32° 28'30.10"S; 23° 42'46.00"E	III
Ab SA89	Stone artefact scatter	32° 29'43.00"S; 23° 41'54.20"E	III
Ab SA90	Stone artefact scatter	32° 29'41.90"S; 23° 42'17.70"E	III
Ab SA91	Stone artefact scatter	32° 28'58.50"S; 23° 43'32.50"E	III
Ab SA92	Stone artefact scatter	32° 28'54.80"S; 23° 43'39.70"E	III
Ab SA93	Stone artefact scatter	32° 28'51.30"S; 23° 43'33.50"E	III
Ab SA94	Stone artefact scatter (site; cores; dense surface scatter)	32° 28'49.70"S; 23° 43'33.70"E	III
Ab SA95	Stone artefact scatter (very weathered)	32° 28'46.20"S; 23° 43'39.70"E	III
Ab SA96	Stone artefact scatter (in road)	32° 28'54.00"S; 23° 43'33.70"E	III
Ab SA97	Stone artefact scatter (in road)	32° 28'46.20"S; 23° 43'34.00"E	III
Ab SA98	Stone artefact scatter	32° 28'08.60"S; 23° 43'49.40"E	III
Ab SA99	Stone artefact scatter (in road; Middle Stone Age; weathered)	32° 28'17.30"S; 23° 43'28.60"E	III
Ab SA99	Stone artefact scatter (in road)	32° 28'19.80"S; 23° 43'29.20"E	III
Ab SA101	Stone artefact scatter (dense scatter 4 20cm and point)	32° 26'27.10"S; 23° 46'39.50"E	III
Ab SA102	Stone artefact scatter	32° 26'36.00"S; 23° 46'33.90"E	III
Ab SA103	Stone artefact scatter	32° 26'40.90"S; 23° 46'31.50"E	III
Ab SA104	Stone artefact scatter	32° 26'43.70"S; 23° 45'05.40"E	III
Ab SA105	Stone artefact scatter	32° 26'56.80"S; 23° 45'09.60"E	III
Ab SA106	Stone artefact scatter	32° 27'03.10"S; 23° 45'06.00"E	III
Ab SA107	Stone artefact scatter	32° 26'02.40"S; 23° 45'00.70"E	III
Ab SA108	Stone artefact scatter	32° 26'11.20"S; 23° 44'48.10"E	III
Ab SA109	Stone artefact scatter	32° 26'16.60"S; 23° 44'50.10"E	III
Ab SA110	Stone artefact scatter	32° 26'40.20"S; 23° 44'37.90"E	III
Ab SA111	Stone artefact scatter	32° 26'41.40"S; 23° 44'34.70"E	III
Ab SA113	Stone artefact scatter (higher number artefact between SA28-29)	32° 27'06.00"S; 23° 42'54.60"E	III
Ab SA112	Stone artefact scatter	32° 26'54.40"S; 23° 43'01.50"E	III
Ab SA114	Stone artefact scatter	32° 27'07.00"S; 23° 42'53.30"E	III
Ab SA115	Stone artefact scatter	32° 25'22.50"S; 23° 43'33.40"E	III

Ab SA116	Stone artefact scatter	32° 25'41.20"S; 23° 43'16.90"E	III
Ab SA117	Stone artefact scatter	32° 25'59.70"S; 23° 43'14.10"E	III
Ab SA118	Stone artefact scatter	32° 26'04.00"S; 23° 43'04.60"E	III
Ab SA119	Stone artefact scatter	32° 26'11.80"S; 23° 42'50.00"E	III
Ab SA120	Stone artefact scatter	32° 30'06.70"S; 23° 44'33.80"E	III
Ab SA121	Stone artefact scatter	32° 27'17.70"S; 23° 45'00.10"E	III
Ab SA122	Stone artefact scatter	32° 30'02.40"S; 23° 45'05.80"E	III
Ab SA123	Stone artefact scatter	32° 29'51.50"S; 23° 45'20.80"E	III
Ab SA124	Stone artefact scatter (dense stone artefact scatter)	32° 27'53.10"S; 23° 44'47.60"E	III
AbT36	SA scats exposed areas	32° 28'46.40"S; 23° 43'35.90"E	III
Ab OES1	Ostrich eggshell fragment	32° 26'30.50"S; 23° 45'24.50"E	III
Historical			
Ab SW1	Collapsed pen	32°28'43.40"S; 23°44'33.50"E	III
Ab SW2	Stone walling	32°29'54.20"S; 23°44'20.90"E	III
Ab SW3	Stone walling	32°29'59.80"S; 23°44'24.40"E	III
Ab HS1	Homestead and kraals	32°28'12.80"S; 23°44'26.30"E	III
Ab H1	No. 2 Musket Eley bullet casing	32°28'42.00"S; 23°44'31.70"E	III
Ab BE1	Foundations	32°29'50.30"S; 23°44'05.60"E	III

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

TABLE 8.1.: ASSESSMENT OF THE SIGNIFICANCE THE PROPOSED ABERDEEN ESKOM WIND ENERGY FACILITY - The destruction of the eight identified sites.

Nature: The destruction of the eight identified sites.		
	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)	Medium (30)
Status (positive or negative)	Negative	Negative
Reversibility	None	Low
Irreplaceable loss of resources?	Yes	Low
Can impacts be mitigated?	Yes	Yes
<p>Mitigation:</p> <ul style="list-style-type: none"> Once the final layout (including the positions of the wind turbines; underground cabling; overhead power line; additional internal access roads, and the workshop area) of the proposed Aberdeen Eskom 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. A professional archaeologist must be appointed during all construction and development activities including vegetation clearing and the excavation activities to monitor and identify possible archaeological material remains and features that may occur below the surface and make further appropriate recommendations on removing and / or protecting the archaeological material remains and features. 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. 		
<p>Cumulative impacts:</p> <ul style="list-style-type: none"> Irreplaceable loss of archaeological heritage resources. 		

Residual impacts:

- Irreplaceable loss of archaeological heritage resources.

TABLE 8.2.: 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)	Medium (30)
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"> • Once the final layout (including the positions of the wind turbines; underground cabling; overhead power line; additional internal access roads, and the workshop area) of the proposed Aberdeen Eskom 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. • A professional archaeologist must be appointed during all construction and development activities including vegetation clearing and the excavation activities to monitor and identify possible archaeological material remains and features that may occur below the surface and make further appropriate recommendations on removing and / or protecting the archaeological material remains and features. • 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. 		

<p>Cumulative impacts:</p> <ul style="list-style-type: none"> • Irreplaceable loss of archaeological heritage resources.
<p>Residual impacts:</p> <ul style="list-style-type: none"> • Irreplaceable loss of archaeological heritage resources.

TABLE 8.3.: ASSESSMENT OF THE SIGNIFICANCE THE PROPOSED ABERDEEN ESKOM WIND ENERGY FACILITY – The destruction of the Farmstead Complex.

Nature: The destruction of the Farmstead Complex.		
	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)	Medium (30)
Status (positive or negative)	Negative	Negative
Reversibility	None	Low
Irreplaceable loss of resources?	Yes	Low
Can impacts be mitigated?	Yes	Yes
<p>Mitigation:</p> <ul style="list-style-type: none"> • Once the final layout (including the positions of the wind turbines; underground cabling; overhead power line; additional internal access roads, and the workshop area) of the proposed Aberdeen Eskom 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. • An alternative access route should be established to avoid negative impact during the construction and development phases. • 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. 		
<p>Cumulative impacts:</p> <ul style="list-style-type: none"> • Irreplaceable loss of archaeological heritage resources. 		
<p>Residual impacts:</p> <ul style="list-style-type: none"> • Irreplaceable loss of archaeological heritage resources. 		

TABLE 8.4.: ASSESSMENT OF THE SIGNIFICANCE THE PROPOSED ABERDEEN ESKOM WIND ENERGY FACILITY – The destruction of the stonewalling features.

Nature: The destruction of the stonewalling features.		
	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)	Medium (30)
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"> Once the final layout (including the positions of the wind turbines; underground cabling; overhead power line; additional internal access roads, and the workshop area) of the proposed Aberdeen Eskom 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. No development should occur within 50 m of stone walling features. 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:		
<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. 		

TABLE 8.4.: ASSESSMENT OF THE SIGNIFICANCE THE PROPOSED ABERDEEN ESKOM WIND ENERGY FACILITY – The destruction of the historical artefacts.

Nature: The destruction of the historical artefacts.		
	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)	Medium (30)
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"> Once the final layout (including the positions of the wind turbines; underground cabling; overhead power line; additional internal access roads, and the workshop area) of the proposed Aberdeen Eskom 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. A professional archaeologist must be appointed during all construction and development activities including vegetation clearing and the excavation activities to monitor and identify possible archaeological material remains and features that may occur below the surface and make further appropriate recommendations on removing and / or protecting the archaeological material remains and features. 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:		
<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. 		

9. RECOMMENDATIONS

The area is of a **medium-high** cultural sensitivity, the following **recommendations** must be considered:

- Once the final layout (including the positions of the wind turbines; underground cabling; overhead power line; additional internal access roads, and the workshop area) of the proposed Aberdeen Eskom 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 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.
 3. **An alternative access** route should be established to avoid negative impact to the stone walling complex (Ab HS1) during the construction and development phases.
 4. **No development should occur within 50 m of stone walling features.**
 5. **No development should occur within 100 m** of the areas marked Ab SW1 and Ab H1.
 6. A professional archaeologist must be appointed during all construction and development activities including vegetation clearing and the excavation activities to monitor and identify possible archaeological material remains and features that may occur below the surface and make further appropriate recommendations on removing and / or protecting the archaeological material remains and features.
 7. 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.
 8. 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 Aberdeen Eskom Wind Energy Facility was mostly conducted on foot by following the proposed positions of the wind turbines and related underground cabling and access roads, as well the associated infrastructure. Archaeological visibility was relatively good throughout the survey owing to the sparse grass vegetation and large exposed surface areas, although some areas comprised dense brush and grass vegetation that slightly obscured archaeology visibility. Eight large areas / sites

comprising several cores and surface scatters of stone artefacts were identified. These areas comprised several micro-sites that were difficult to determine individually, therefore the demarcation of the larger areas. Mainly isolated surface scatters of Middle Stone Age stone artefacts were observed distributed across the proposed development area. 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 stone walling farmstead complex was documented outside of the area proposed for the wind turbines, however, caution must be taken if the existing internal road farm will be upgraded for access to the turbines and associated infrastructure, and otherwise it is preferable that an alternative route be established. One collapsed circular stone walling feature with possible associated historical artefacts was documented near to the proposed positions of wind turbines, underground cabling, and access route. The appropriate mitigation measures should be implemented to protect and conserve the significant archaeological and historical heritage resources.

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 stone walling features and associated historical artefacts, as well as 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.

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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 1m² 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 be embedded in geological deposits. Any concentrations of bone, whether fossilized or not, must be reported.