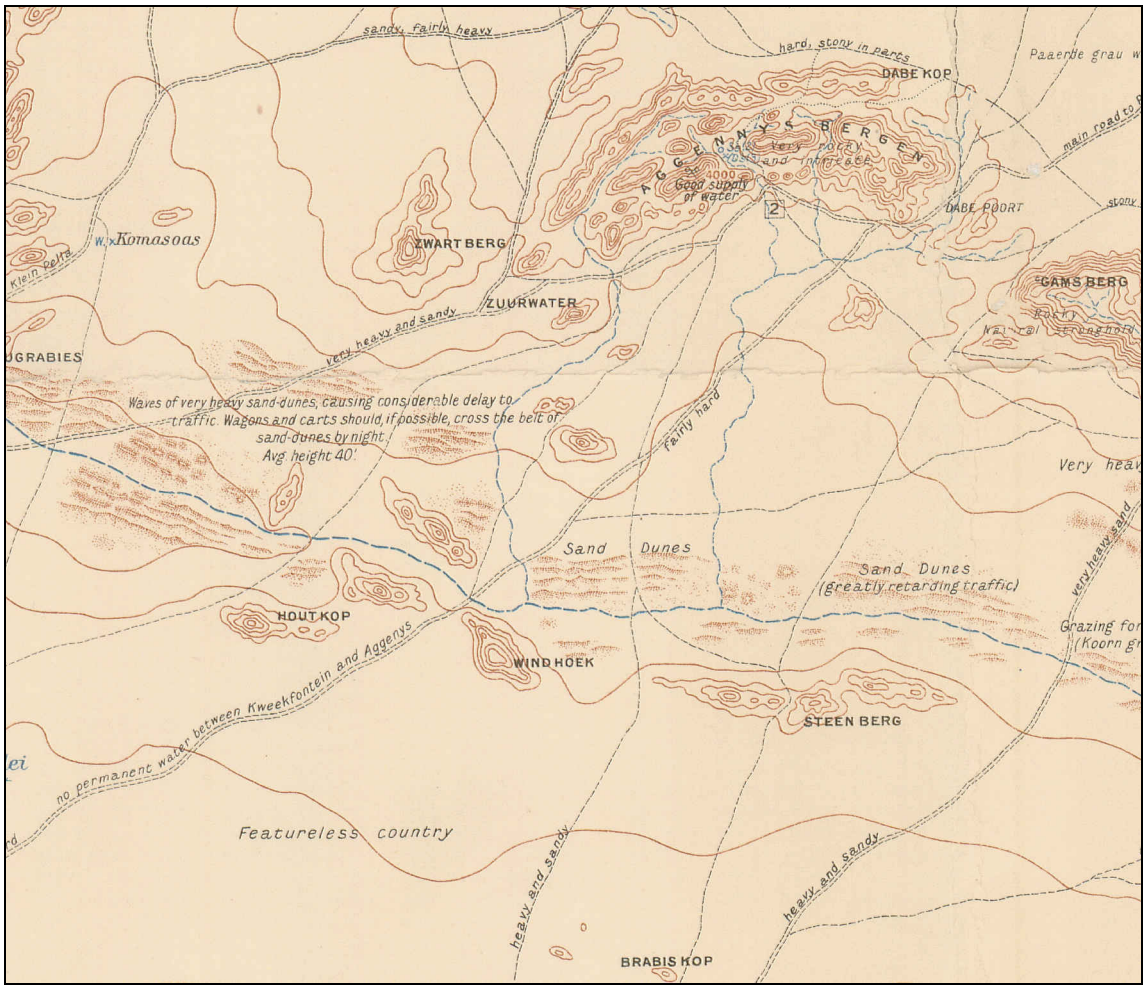
DRAFT PHASE ONE
INTEGRATED HERITAGE IMPACT ASSESSMENT COMPILED IN TERMS OF SECTION 38(8) OF THE NATIONAL HERITAGE RESOURCES ACT, 1999 (ACT 25 OF 1999)

PROPOSED BOESMANLAND SOLAR FARM (75MW): PORTION (300HA) OF THE FARM ZUURWATER 62/6, NAMAQUALAND DISTRICT, NORTHERN CAPE PROVINCE



ON BEHALF OF: Boesmanland Solar Farm (Pty) Ltd

APRIL 2012

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PERCEPTION

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REFERENCES and ACKNOWLEDGEMENTS:

1. Almond, J (2012). *Recommended exemption from further palaeontological studies and mitigation (Desktop study) – Proposed 75MW Solar facility on farm Zuurwater 62/6, Namaqualand District, Northern Cape*. Unpublished report, Cape Town
2. Archaeology Contracts Office (August 2011). *Heritage Impact Assessment: Proposed Aggeneis – Oranjemund 400kV line and substations upgrade, Northern Cape*. Unpublished report, Cape Town.
3. Cape Town Archives
4. Chief Directorate: Surveys & Mapping
5. Deeds Office, Cape Town
6. *Lower Orange River Management Plan – Unlocking the Ecotourism Potential of the River*, Draft October 2008
7. Morris, David, 2011. *Heritage Impact Assessment: Black Mountain Concentrated Solar Power Facility at Aggeneys, Northern Cape*. Unpublished report, Kimberley
8. Smith, AB (2012). *Archaeological Report - Proposed 75MW Solar Facility on Farm 62 Zuurwater 62/6, Aggeneys, Northern Cape Province*. Unpublished report, Cape Town
9. South African National Archives Repository
10. Surveyor General's Offices, Cape Town
11. http://www.aggeneys.com/history

ABBREVIATIONS:

CDSM – Chief Directorate: Surveys & Mapping, Mowbray
CTDO – Cape Town Deed's Office
DEA – Department of Environmental Affairs (National)
ECO – Environmental Control Officer
NHRA – National Heritage Resources Act, 1999 (Act 25 of 1999)
NID – Notice of Intent to Develop
HIA – Heritage Impact Assessment
HWC – Heritage Western Cape
KAB – Cape Town Archives Repository
PPP – Public Participation Process
SAB – National Archives Repository
SDF – Spatial Development Framework
SGO – Surveyor General's Office

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COVER PAGE: *Extract from 1906-1914 SG Maps (Source: CDSM)*

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1. INTRODUCTION

PERCEPTION was appointed during February 2012 by *Boesmanland Solar Farm (Pty) Ltd* for the provision of professional services relating to this proposal, as required in terms of Section 38(8) of the National Heritage Resources Act, 1999 (Act 25 of 1999) (NHRA). Sanction for compilation and submission of this application was provided by a representative of the developer duly authorised by ways of a formal appointment (Power of Attorney) attached as Annexure 1.

This submission serves as a Heritage Impact Assessment (HIA) and includes inputs from the following specialist reports sanctioned as part of the HIA:

- Archaeological Impact Assessment (Pre-colonial, Historical) – Prof. Andrew Smith
- Historical background report – SE de Kock
- Recommendation for Mitigation from further palaeontological studies and mitigation (Desktop) – Natura Viva (Dr. John Almond)

2. INDEPENDENCE OF ASSESSOR

The Developer appointed *SE de Kock (PERCEPTION Heritage Planning)* as an independent professional heritage practitioner to facilitate the Heritage Impact Assessment (HIA) process running concurrently with the EIA process, the latter of which is facilitated by *Cape Environmental Practitioners (Pty) Ltd ("CapeEAPrac")*.

According to Regulation 18 of NEMA an EAP must be independent; amongst others have experience in conducting EIA's (as well as specialist reports forming part of such EIA's), perform the work relating to the application in an objective manner, comply with the Act, the environmental Regulations and all other applicable legislation, take into account, to the extent possible the matters relevant to the receiving environment, disclose all material information in the possession of the EAP that reasonably has or may have the potential of influencing a decision, or the objectivity of any submission to the competent authority, which with relation to the HIA refers to the *South African Heritage Resources Agency* as well as *Ngwao Boswa Kapa Bokoni*.

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With relation to the author's appointment to compile and submit to the *South African Heritage Resources Agency* as well as *Ngwao Boswa Kapa Bokoni* a Heritage Impact Assessment in terms of Section 38(8) of the National Heritage Resources Act, 1999 (Act 25 of 1999), it is hereby declared that:

- This consultancy (including the author) is not a subsidiary, legally or financially, of the proponents;
- Remuneration for professional services by the proponent in relation to this proposal is not linked to approval by any decision-making authority responsible for permitting this proposal;
- Neither this consultancy, nor the author has any interests in secondary or downstream as a result of the authorisation of this project.

It is further hereby certified that the author has 15 years professional experience (3 years of which were abroad) as urban planner and 8 years professional experience as heritage practitioner (2 years of which were abroad). The author holds the following qualifications:

- Town and Regional Planning (B-Tech, CPUT, 1997)
- Environmental Impact Assessment Management – Heritage, Environmental (Dipl/ Masters, Dublin University, 2002)
- Architectural & Urban Conservation (CDP, UCT, 2007)
- Urban Design (CPD, UCT, 2009).

The author is professionally registered as follows:

- Town and Regional Planner – Irish Planning Institute (IRL)
- Accredited Heritage Practitioner – Association for Professional Heritage Practitioners

- Member – International Association of Impact Assessment (SA)
- Able to register as Town and Regional Planner with South African Council for Planners

3. BACKGROUND

This report follows notification of the South African Heritage Resources Agency by CapeEAPrac of the proposed solar installation/ Scoping and Environmental Impact reporting to be initiated in terms of the National Environmental Management Act, 1998 (Act 125 of 1998) and its subsequent response dated 11th January 2012 as summarised below (copy attached as part of Annexure 2):

- *That a Heritage Impact Assessment is required consisting of"/ incorporating the following specialist studies and detailed site analysis with an integrated set of recommendations:*
  - *Archaeological Impact Assessment;*
  - *Palaeontological Impact Assessment;*
  - *Built environment issues;*
  - *Burial grounds and graves;*
  - *Analysis of Cultural landscape issues;*
  - *Analysis of Visual – Spatial issues.*

4. METHODOLOGY

As part of this HIA report the author has studied, visited, photographed and assessed the study area and its environs over a period of approximately two months, which more specifically involved the following:

- Studying ownership history and social history pertaining to the site and its environs from relevant primary sources obtained in the National Archives, Cape Town Archives and Deeds Office;
- Field work carried out on 23rd February 2012;
- Negotiations, discussions with consultant team regarding nature and detailed design of proposed development;
- Focussed public participation process aimed at soliciting heritage-related comments from community members regarding proposed development and running concurrent with EIA Process;
- With relation to compilation of this HIA:
  - Research (site specific but also local context/ environs);
  - Identification of heritage-related issues and concerns;
  - Analysis of development site and its environs;
  - Identification of contextual spatial informants;
  - Transpose findings of Archaeological Impact Assessment and Palaeontological Impact Assessment into this report;
  - Establishing cultural significance, based on criteria set out in NHRA;
  - Identification of heritage-related design informants based on the above;
  - Assess conformity of final proposed site layout to design informants identified.

5. DESCRIPTION OF STUDY AREA

The farm Zuurwater 62/6, located in the Namaqualand district and jurisdiction area of the Khai-Ma Local Municipality and comprises 1,927.197ha. The property is approximately 65km west of Pofadder and is bound to the east by the Black Mountain Mine and town of Aggeneys as illustrated with the locality plan below (Figure 1). The proposed development site (c. 300ha) is situated just north of the N14 National Road but is visually screened from the N14 through a series dunes extending from the N14 to a nearby inselberg named Hoedekop. Photographs of the site and its environs are attached as part of Annexure 3.

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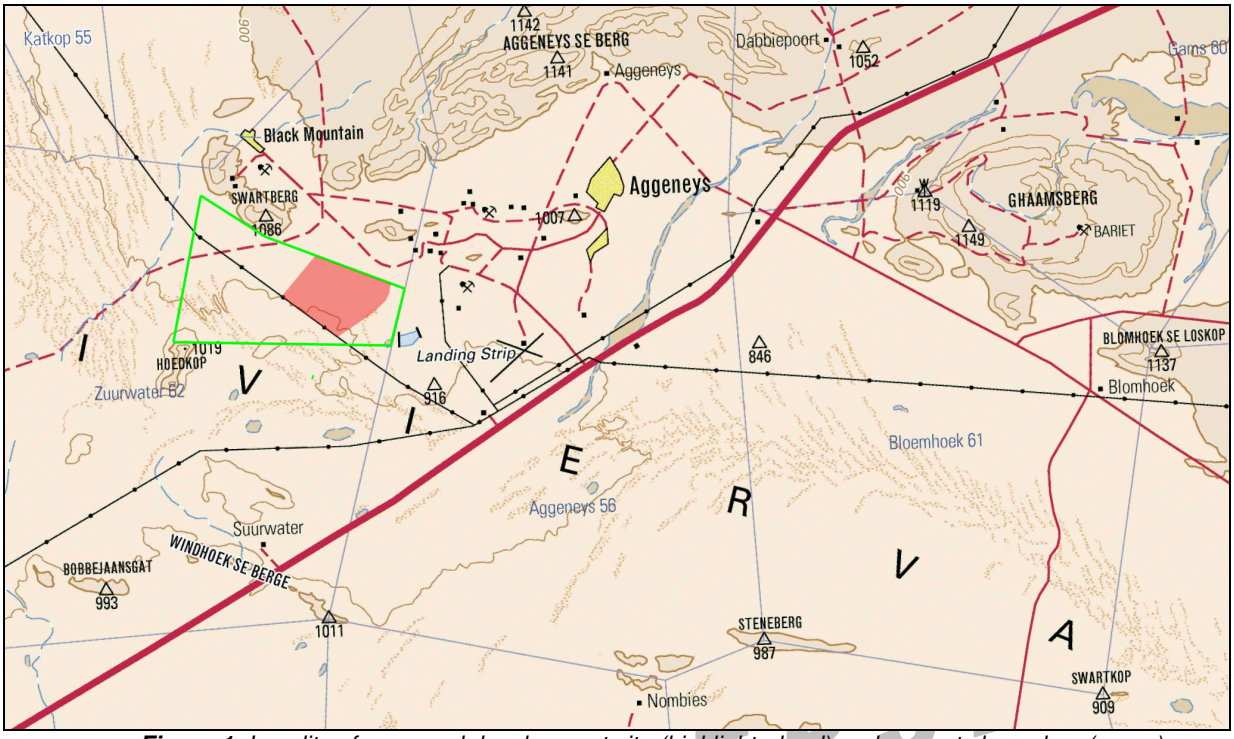

Figure 1: *Locality of proposed development site (highlighted red) and property boundary (green) (Source: 1:250,000 Topocadastral series, CDSM)*

Figure 2: *Recent aerial view of proposed development site (red) shown in relation to Black Mountain Mine, local airfield and N14 National road. Part of Zuurwater 62/6 boundary shown (black) (Source: Google Earth Pro)*

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The site forms part of a gently southeast-facing/ flat, arid and desert landscape characterised by scattered Inselbergs consisting of solid basement rock surrounded by wind-blown Kalahari dune sands (orange to red in colour). Limited sheet wash and colluvuim were noted. Vegetation is sparse and mainly included grass and low-growing shrubs interspersed. *Hoodia* plants were noted along the dune system lining the ESKOM 66kV transmission line, which also lines the southern boundary for the proposed development site. The existing Black Mountain mining operation bounds the site to the east and northeast.

Vehicular access to the site is either from existing roads via the N14 and entrance road to Aggeneys/ Black Mountain Mine (latter with special permission) or alternatively via a series of narrow tracks – also from the N14 but approaching the property from the east.

No buildings, ruins or any other structures were noted on or within the direct proximity of the proposed development site. Annotated photographs of the site and its environs are attached as part of Annexure 3.

6. DEVELOPMENT PROPOSAL AND ALTERNATIVES

The proposed development would entail clusters of 10 Photovoltaic arrays (each taking up an area of approximately 20ha). Internal electrical reticulation associated with the proposal would most likely be installed (400mm – 1000mm) underground. Access to the site is currently being investigated. Additional infrastructure to be accommodated on site would include a substation and auxiliary buildings (maintenance and storage), the exact location of which have not been finalised. The site would include an area for maintenance, storage and five water tanks each with 10 kilolitre capacity. Possible water sources identified at this stage include a pipeline from a nearby windmill or alternatively from the adjoining Black Mountain Mine as illustrated through the conceptual site layout provided to us by the developer is attached as Annexure 4.

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7. HISTORICAL BACKGROUND

Basic historical background research was commissioned as a specialist input into this Heritage Impact Assessment report and focussed primarily on available primary sources obtained in the Cape Town Archives, National Archives Repository, Deeds Office and Surveyor General's Office.

7.1 Introduction

Details pertaining to earliest property ownership could not be fully researched due to logistic problems associated with unscheduled maintenance by the National Archives. However, web-based Deeds Office records (www.deeds.gov.za) confirm that the Farm Zuurwater 62/6 is currently registered to Blommeland Boerdery CC and held under title deed number T22329/2008. A copy of the current S.G. Diagram could not be obtained from the Surveyor General's Office. However, a copy of the S.G. Diagram for the original farm Aggeneys 56, directly to the east, first surveyed and granted in 1895, is attached as Annexure 5. The current property boundaries have been transposed onto a historic map of the area in Figure 3 below.

General archival references pertaining to the Aggeneys area include issuing of a title deed in 1915 in respect of "Lot No. 407", named Aggeneys, situated in the division of Namaqualand[1]. Further reference is made to issuing of a title deed during 1926 in respect of Lot No. 505 (Zuurwater), Namaqualand in favour of JCN Boonzaaier and others[2] while portions of Crown Land situated at Zuurwater, Namaqualand was leased and/or sold to unnamed parties/ entities during 1931 and 1940[3].

[1] *SAB, Volume 22258, Ref. 2810*
[2] *SAB, Volume 811, Ref. 332*
[3] *KAB, Volume 9.8 Ref. 15/1/2/53*

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7.2 Early history

According to un-referenced secondary sources[4], Northern Namaqualand as well as southern Namibia were occupied by the Great Namaqua tribe who were herders (goats, sheep, cattle) while the Namnykoa tribe kept primarily along the river corridor and a third group, the Einiqua, occupied areas further east of Aggeneys – currently forming part of the Augrabies National Park. Smaller San and "Hottentot" communities were however spread out between these tribes and seem to have generally maintained sensitive relationships with their stronger neighbours.

The argument for higher density early occupation along the Orange River corridor as opposed to smaller groups in the hinterland with its much lower carrying capacity is supported through available research for the area (e.g. Morris, Beaumont). For example[5], "Late Holocene Later Stone Age (LSA) sites are the predominant archaeological trace noted in past surveys in the Aggeneys- Pofadder region (Morris 1999a-b, 2000a-c, 2001, 2010)" [6] and "virtually all the Bushmanland sites so far located appear to be ephemeral occupations by small groups in the hinterland on both sides of the [Orange] river" (1995:263). This was in sharp contrast to the substantial herder encampments along the Orange River floodplain itself (Morris & Beaumont 1990), which reflected the "much higher productivity and carrying capacity of these bottom lands". It then also seems likely that competition over resources may have led to marginalisation of hunter gatherers who then rather focussed their activities closer to available water sources.

Furthermore, "Surveys have located signs of human occupation mainly in the shelter of granite inselbergs, on red dunes which which provided clean sand for sleeping, or around the seasonal pans (Beaumont el al. 1995:264). Possibly following good rains, herders moved into the Orange River hinterland, as attested archaeologically at sites with ample pottery near Aggeneys and, east of Pofadder, at Schuitdrift South – Morris 1999a)". "No substantial sites have been found previously in the survey area. Only very sparse localized scatters of stone tools have been seen in places, with limited traces in the hills (e.g. an MSA site at the top of Gamsberg) or at the bases of hills" (Morris, 2011).

Trekboers' moving into the interior from the c. 1770's inevitably resulted in conflict with many of these indigenous peoples and by the early 19th century the influence of various missionary groups entering the area caused many descendants of the Khoekhoen to be limited to mission land in isolated pockets in the Namaqualand and margin lands of the Richtersveld, where in some instances, their indigenous language (Nama) is still spoken by elders.

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7.3 General history pertaining to Aggeneys area

According to Morris (2011), the name *Achenijs* appeared for the first time in written form in 1859. Archival and oral history sources appear to be at odds with relation to the origin of the name "Aggeneys/ Aggeneis". An article titled "Brief history of Aggeneys", published in *The Cape Argus* in July 1973, refers to it being a local kloof where a commando of farmers encircled and killed an entire group of marauding Bushmen, who had their stronghold in these mountains. After this it is said the area became known as "Place of Blood", though Nama Coloured people have referred to it as "The Place of Water" – no doubt due to the numerous natural springs found in the Aggeneys Mountains (Nienaber & Raper 1977:173). Another interpretation refer to it as meaning "Place of Red Clay", which may refer to clayish soils found in lower-lying areas within the proximity that are overgrown by reeds (reviewed in Morris 2000a:10).

References to a farm at Aggeneys (c. 1872) emphasize its importance to "Trekboere" as the first watering point reached after the Kweekfontein in the Springbok area[7]. Highly informative

[4] *Lower Orange River Management Plan – Unlocking the Ecotourism Potential of the River, Draft October 2008*
[5] Morris, David, 2011. *Heritage Impact Assessment: Black Mountain Concentrated Solar Power Facility at Aggeneys, Northern Cape.* Unpublished report, Kimberley
[6] *Used with permission from author (telecon 19th March 2012)*
[7] *www.aggeneys.com/history*

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annotations included in early mapping (1906 to 1914) e.g. refer to the alignment of wagon and cart routes as well as availability of water and conditions likely to be encountered along these early travelling routes through the area.

An extract from the above mapping (Refer Figure 4 below) describes one of the routes from Okiep to Pella, which traversed the proposed development site as crossing a "wave of very heavy sand dunes causing considerable delay to traffic" of 40ft (c. 12.2m) average height. It further advises that, "wagons and carts should, if possible, cross the belt of sand dunes by night". The map also shows a "fairly hard" track between Kweekfontein and Pella (yellow, Figure 3), the alignment of which appears to have preceded the existing N14 National road.

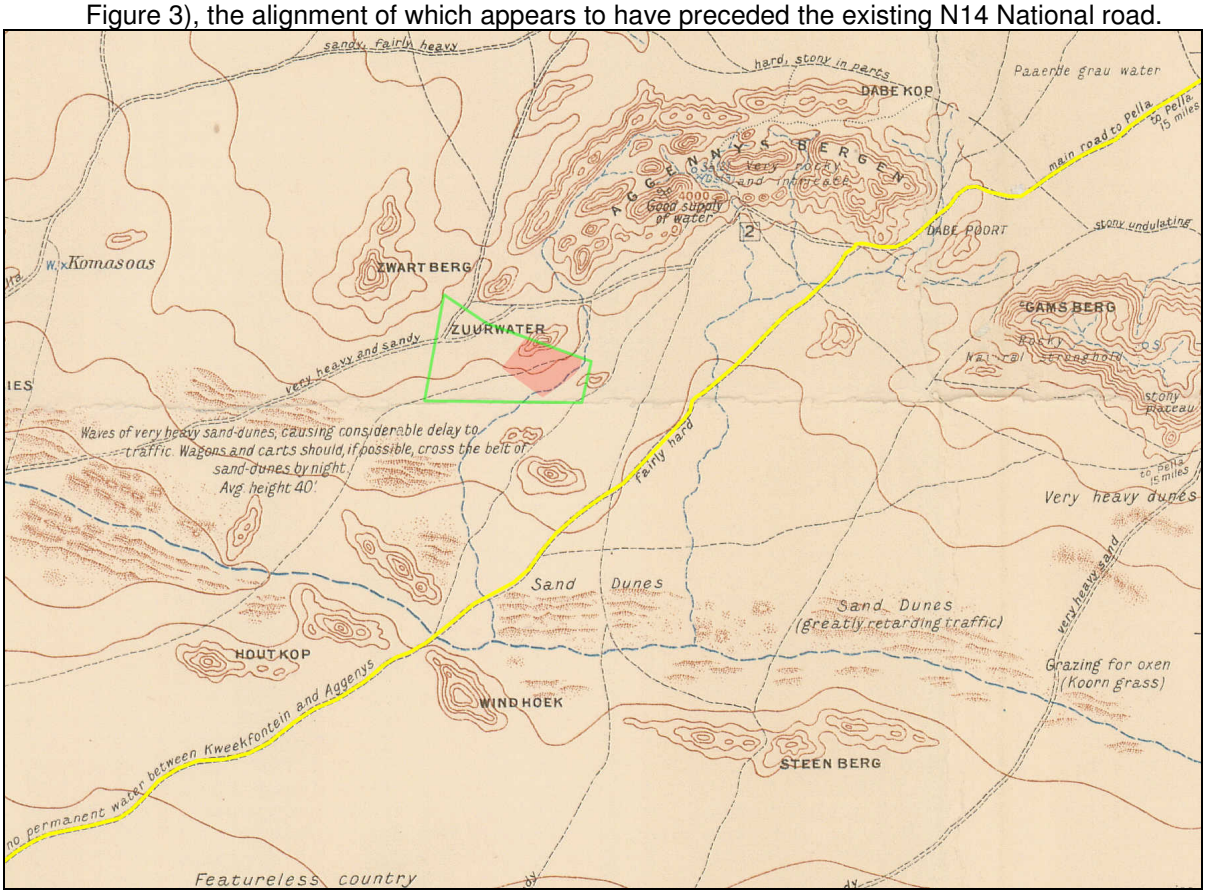

Figure 3: *Extract from 1906-1914 compilation of SG Maps highlighting subject development site boundary in green and proposed development site hatched in red (Source: CDSM)*

Information obtained from SAHRA as well as other sources indicate the following sites of cultural significance in the Aggeneys area and broader region:

- *Pella*, a Catholic mission church built in 1878, date plantations;
- *Onseepkans*, a declared national monument, mission and church as well historic bridge;
- *Goodhouse*, graves and church, historic buildings

7.4 Conclusions

Based on the above research, areas within the proximity of natural water sources and along the base of Inselbergs are potentially sensitive from archaeological perspective, though these were assessed by a suitably-qualified archaeologist as a specialist heritage-study to this heritage impact assessment (Refer Section 8.4). From a much broader perspective the Aggeneys area has associations with the following historic themes:

- Pre-colonial history and indigenous inhabitants;
- Various conflicts between e.g. "Trekboers" and local tribes (including Nama wars);
- Early mining activities.

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However, no archival references referring to these historic themes, which include the possibility of grave sites/ burial ground on proposed development site and/ or lands directly contiguous to it, could be located.

8. HERITAGE RESOURCES & ISSUES

With relation to the integrated mapping of all heritage resources and/ or occurrences noted on the site please note that:

- Integrated heritage resource mapping, including the built environment, archaeological and palaeontological occurrences are presented through Annexure 6;
- Archaeological, Palaeontological and aspects pertaining to the Built environment have been transposed into this report have been included on the above mapping where possible. Please however refer to respective specialist reports for detailed mapping and visual presentations.

8.1 Built environment

During fieldwork carried out on 23rd February 2012 no buildings, ruins or any other structures were noted on the site. Furthermore, no structures considered to be of cultural significance were located within the proximity of the proposed development site boundaries.

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8.2 Landscape issues

8.2.1 *Cultural landscape context*

The term "*cultural landscape*" refers to the imprint created on a natural landscape through human habitation and cultivation over an extended period of time. While the Northern Cape has been inhabited for many ten of thousands of years (pre-colonial history) prior to Western settlement (colonial history), the nomadic lifestyles of early inhabitants are not always as evident within the landscape than the significant imprints made by humans during the last two – three hundred years. Unlike ancient landscapes in parts of the world where intensive cultivation over periods much longer than locally have allowed natural and cultural components of the landscape to become interwoven, climatic conditions prevailing with this arid, semi-desert landscape mostly precluded large-scale cultivation, save within the proximity of perennial rivers such as the Orange River or other places with a reliable water source.

Ultimately, definition of a cultural landscape is informed by the following elements, weighed through professional opinion, public values and statutory (legal) framework:

- Natural Landscape
- Public Memory
- Social History
- Historical Architecture
- Palaeontology
- Archaeology

Given the absence of early aerial photography for the area, identifying any Pre-Modern traditional landscape patterns occur within the direct proximity of the proposed development site has been met with some difficulty. In this case, primary traditional landscape features evident within the current landscape are limited to existing farm tracks, none of which are considered to be of cultural significance.

8.3 Visual-Spatial issues

The N14 National road alignment between Springbok and Pofadder is just south of Aggeneys and is the most important route through this area and offers unique views across the surrounding landscape, which is sensitive to visual encroachment through possible inappropriate development. The proposed development site would be set back from the N14

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National road by at least 5km and would not be visible from any main roads or other important public vantage points.

Taken in conjunction with this setback as well as the flat nature of this landscape, the entire development site is in fact hidden from view through natural landscape features such as Inselbergs and a series of high dunes, extending between Hoedkop and the N14 as clearly illustrated through the annotated aerial image below (Figure 4). Historic maps of the area dating back to 1906 – 1914 describes this dune system as being, *"waves of very heavy sand-dunes causing considerable delay to traffic [wagons and carts]*" and 40ft (c. 12.2m) in height.

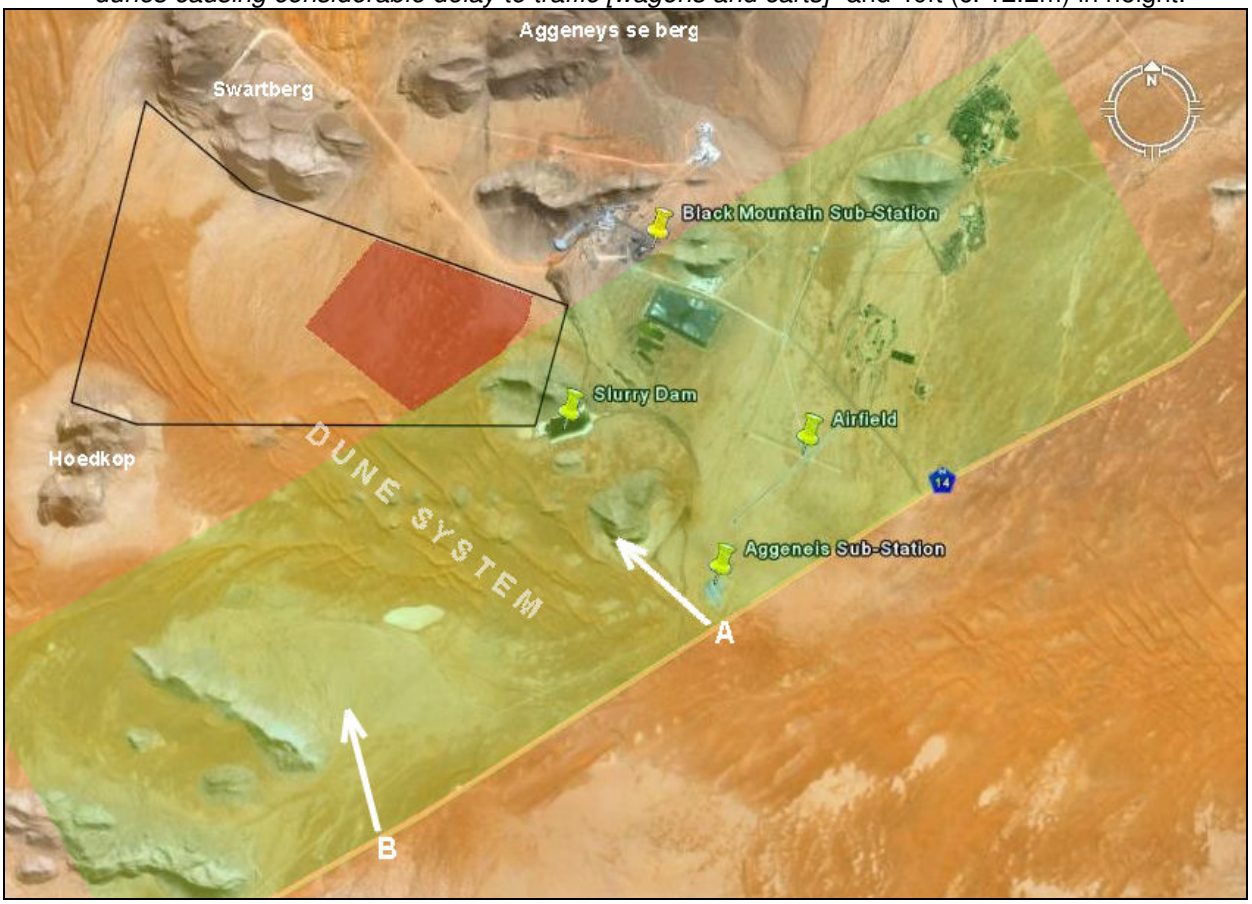
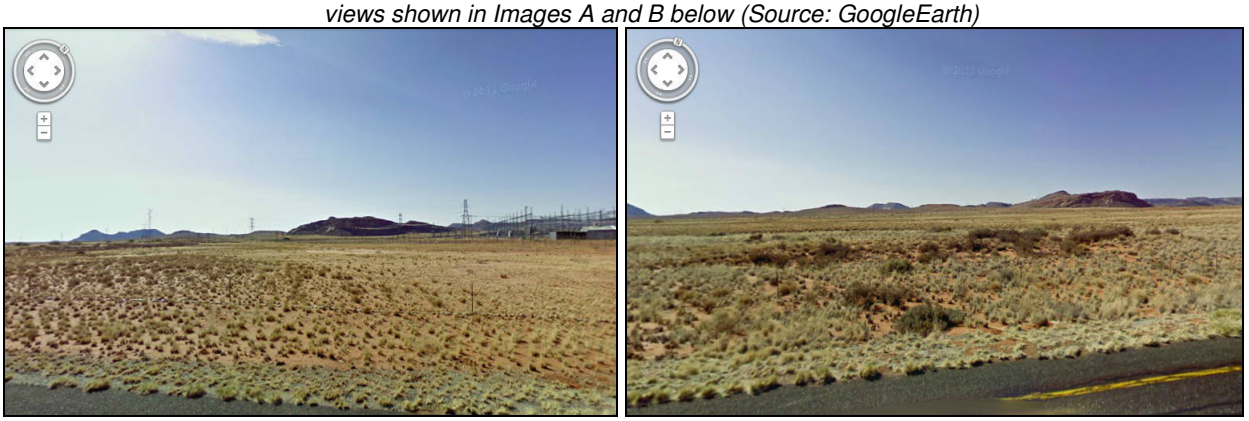


Figure 4: *Annotated aerial image illustrating 5km setback line from N14 and position of two long-distance views shown in Images A and B below (Source: GoogleEarth)*



Images A(left) & B(right): *Long-distances views from two points along the N14 as shown in Figure 4 are illustrated through these two images (Source: Google Maps)*

Even if there were a possibility for proposed development to be marginally visible from the N14, such views would clearly be within the context of existing buildings, infrastructure, works and landscape transformation associated with the Black Mountain Mine. Therefore, we are of

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the view that the proposal would not materially alter existing views from the N14 or any other known area or site considered to be of moderate to high local, provincial or national aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value cultural significance.

8.4 Archaeology

A copy of the Archaeological Impact Assessment (AIA), compiled by Prof. Andrew Smith, is attached as Annexure 7, the findings of which are summarised below[8]. Kindly refer to specialist's full report and recommendations.

There were no restrictions to the archaeological investigation and the entire study area was accessible on foot and open to inspection and assessment. Site visits were conducted on 21st and 23rd February 2012 and the footprint of the solar facility inspected for archaeological remains by walking, and a GPS track recorded any archaeological material.

The distinct lack of any concentration of cultural material across the property implies that this is not a rich archaeological environment, and would be similar to observations by Beaumont et al. (1995: 264), who state that in this dry environment: "Surveys of large areas...have failed to yield any signs of human occupation, except around the granite inselbergs extruding above the peneplain".

The access road through the Black Mountain Mine property already exists and is well used by heavy equipment, so would be adequate for servicing the solar facility. The direct Eskom power line track from the sub-station close to the N14 highway has no visible in situ archaeological material, and so could be widened, if this was the preferred access route to the solar facility. The area of the other power line route through the mine, has already been disturbed by the building of the slurry dam, and from the absence that was noted on the other power line track, no archaeological material would be anticipated.

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Waypoints of archaeological occurrences are as per table below and have been transposed onto Integrated heritage resource mapping attached as Annexure 6.

LABEL	LONGITUDE	LATITUDE	DESCRIPTION
122	18° 46' 39.1741" E	29° 15' 33.1631" S	MSA? quartzite flake
123	18° 46' 25.7085" E	29° 15' 29.0479" S	Quartzite flake
124	18° 45' 49.8928" E	29° 15' 21.1886" S	MSA flake on edge of small pan
125	18° 45' 49.0841" E	29° 15' 21.3282" S	Quartz small disc core/scraper
126	18° 45' 48.7993" E	29° 15' 21.1382" S	ESA quartz core/axe
127	18° 45' 24.0143" E	29° 15' 33.7660" S	Hammerstone
129	18° 45' 9.4338" E	29° 15' 48.4431" S	Hoodia in flower
130	18° 45' 6.2524" E	29° 16' 19.7860" S	Ostrich eggshell fragments + quartz core axe
131	18° 46' 5.1498" E	29° 15' 48.8788" S	Quartz flakes on deflation surface
132	18° 46' 5.6121" E	29° 15' 47.6157" S	Extent of above
151	18° 46' 32.5326" E	29° 17' 9.8476" S	Quartz axe introduced in road fill
152	18° 46' 26.2608" E	29° 17' 5.4680" S	Quartz flake in road fill
153	18° 46' 24.7580" E	29° 17' 4.6928" S	Quartz flake in road fill
154	18° 46' 23.6633" E	29° 17' 3.8135" S	Quartz tools on both sides of gate (road fill)

Source: Prof. Andrew B Smith

Based on results of the current study it is recommended that:

- It is recommended, from an archaeological perspective, that there would be no inhibitors to construction of the solar facility.

[8] *Smith, AB (2012). Archaeological Report - Proposed 75MW Solar Facility on Farm Zuurwater 62/6, Northern Cape Province. Unpublished report, Cape Town*

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8.5 Palaeontology

A copy of Recommendation for exemption from further palaeontological studies or mitigation, compiled by Dr. John Almond, is attached as Annexure 8, the findings of which are summarised below[9]. Kindly refer to specialist's full report and recommendations.
The above report indicates that the proposed development site is underlain by a range of unconsolidated superficial sediments of Late Caenozoic age including Quaternary to Recent sands and gravels of probable fluvial or sheet wash origin that are locally overlain, and perhaps also underlain, by unconsolidated aeolian (*i.e.* wind-blown) sands of the Quaternary Gordonia Formation (Kalahari Group).

The fossil record of the Kalahari Group as a whole is generally sparse and low in diversity; no fossils are recorded here in the recent Pofadder geology sheet explanation by Agenbacht (2007). The younger fluvial and alluvial sands and gravels within the proposed development area are unlikely to contain any substantial fossil or subfossil remains.

It is concluded that overall impact significance of the proposed Aggenys75 MW solar plant development on fossil heritage is considered to be VERY LOW because:

- Most of the study area is underlain by unfossiliferous metamorphic basement rocks (granite-gneisses *etc*) or mantled by superficial sediments of low palaeontological sensitivity;
- Extensive, deep excavations are unlikely to be involved in this sort of solar park project.

It is therefore recommended that exemption from further specialist palaeontological studies and mitigation be granted for this solar plant development.

8.6 Eco-tourism[10]

One of the goals of ecotourism is to offer tourists insight into the impact of human beings on the environment, and to foster a greater appreciation of our natural habitats and from an economic perspective, heritage resources may prove to be valuable resources when used in sustainable manner through eco-tourism. This may for example include investment in adaptive reuse of historic buildings so as to conserve and enhance the unique character and historic themes pertinent to this area. Heritage tourism can therefore serve as a driver for economic development, including infrastructure development and poverty alleviation through job creation. The broader region's rich archaeological, palaeontological, historical and natural heritage has the potential to provide unique tourism opportunities when developed and used in responsible and sustainable ways.

Existing eco-tourism related activities present in the broader region include e.g. walking trails, horseback riding, geological interpretive excursions, bird watching and river rafting. The Augrabies National Park – approximately 210km east of the proposed development site – is an important formal conservation area in the region. Given the isolated location of the site in relation to important tourism routes and formal conservation areas; as well as the relative low density of heritage resources considered of cultural significance noted as part of this assessment, we do not consider that the proposed development would offer significant heritage-related eco-tourism opportunities associated with the development site.

9. HERITAGE INFORMANTS AND INDICATORS

According to the requirements of Section 38(3) of the NHRA it is crucial that the land use planning and EIA processes be informed by and incorporate heritage informants and indicators (as done through the mapping and grading of relevant heritage resources in Section

[9] Almond, J (2012). *Recommended exemption from further palaeontological studies and mitigation (Desktop study) – Proposed 10MW Solar facility on farm Zuurwater 62/6, Namaqualand District, Northern Cape*. Unpublished report, Cape Town

[10] *Section included in accordance with requirements set by National Department of Environmental Affairs*

DRAFT VERSION Not for submission

8 of this report). It is the purpose of this Section to define heritage informants and indicators pertaining to the way in which heritage resources must be incorporated into the overall design of the proposed development and should therefore be read in conjunction with Annexure 6 (integrated mapping of all heritage resources and/ or occurrences noted).

9.1 Built environment issues

- Existing structures older than 60 years located directly southeast of the site (farmstead and two associated outbuildings) are considered to be of moderate – low cultural significance and is furthermore situated well outside the actual development footprint currently proposed. As such we are of the view that the proposal would not materially impact on these heritage resources.

9.2 Cultural landscape issues

- From a regional and natural landscape perspective, the proposed development site forms part of an isolated wilderness area well outside local tourism routes and areas (including the Orange River corridor). While the proposal would relate to a landscape modification, we do not consider that it would alter any natural or cultural landscape of cultural significance.

9.3 Visual-spatial issues

- Having regard to the above assessment, we do not consider that the proposed development would negatively impact on any heritage resource, or the spatial relationships and associations between such resources, identified as part of this process.

DRAFT VERSION
Not for submission

9.4 Archaeology

All recommendations contained in AIA, as summarised in Section 8.4 of this HIA report shall be adhered to.

9.5 Palaeontology

It is recommended that no further palaeontological studies or mitigation be undertaken in respect of the proposed development site. Should substantial fossil remains be exposed during construction, however, the ECO should safeguard these, preferably *in situ*, and alert SAHRA as soon as possible so that appropriate action (*e.g.* recording, sampling or collection) can be taken by a professional palaeontologist.

10. PUBLIC PARTICIPATION

Due to the fact that there are no known local heritage conservation bodies in the Aggeneys area (registered as such with the relevant provincial heritage resources authority in terms of Section 25 of the National Heritage Resources Act, 1999 (Act 25 of 1999)), the Public Participation Process (PPP) for this HIA will be coordinated with that of the EIA Process facilitated by *Cape Environmental Assessment Practitioners (Pty) Ltd* (Cape EAPrac) in terms of the National Environmental Management Act, 1998 (Act 107 of 1998), so as to solicit possible heritage-related comments with relation to the proposed development.

11. LIMITATIONS AND ASSUMPTIONS

- This report is limited to the assessment of the potential impact of the proposed Aggeneys/ Zuurwater 75MW Photovoltaic Solar Power Station on heritage resources found on/ within the proximity of the development site as defined in this Heritage Impact Assessment;

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- There is a limitation in terms of understanding the cumulative impacts of the project when taken in conjunction with other similar future development projects in the surrounding area;
- While every precaution was taken to accurately represent the location and extent of heritage resources with GIS software through the integrated heritage resource mapping (Annexure 6), this should be considered for illustrative purposes only – primarily due to the scale at which it is presented here.

12. RECOMMENDATIONS

Having regard to the above assessment, it is recommended:

12.1 That this report fulfils the requirements of a Phase One Integrated Heritage Impact Assessment (HIA);

12.2 That this report be subject to a Public Participation Process (PPP) as part of the existing EIA/ NEMA Process to solicit heritage-related comments to the proposed development;

12.3 That subsequent to the above PPP, the final site layout proposal be assessed in terms of its adherence to any heritage informants and indicators defined through this report or possible input during the PPP.

PERCEPTION Heritage Planning
2nd April 2012

DRAFT VERSION
Not for submission

SE DE KOCK
B-Tech(TRP) MIPI TRP(IRL) EIA Mgmt (IRL) MAPHP

ANNEXURE 1
(Power of Attorney)

POWER OF ATTORNEY

I, MATSO BRAMSILA, the undersigned being the Client, in my capacity as person holding power of attorney for _____, as Developer of a portion of the *property* ***ZUURWATER 62/6, DISTRICT AGGENEYS***, hereby nominate Stéfan de Kock of *PERCEPTION Heritage Planning*, with power of substitution, to be my agent in name, place and stead, (as set out in their quotation dated 7th February 2012) to sign on my behalf and submit to the appropriate authorities the following application, which mandate shall, without limiting the generality of the a foregoing, include:

a.) Heritage Impact Assessment (HIA) in relation to proposed solar development on 300 hectare portion of the said property as required in terms of Section 38(8) of the National Heritage Resources Act, 1999 (Act 25 of 1999).

I hereby accept the Terms of Agreement as set out in paragraphs 6, 7, 8 and 10 of the abovementioned quotation dated 7th February 2012.

Signed at JOHANNESBURG on 13/12/2012

Client/ Developer

Witness

Witness

ANNEXURE 2
(SAHRA Comments)

SOUTH AFRICAN HERITAGE RESOURCES AGENCY
111 HARRINGTON STREET, CAPE TOWN, 8000
PO BOX 4637, CAPE TOWN, 8000
TEL: (021) 462 4502 FAX: (021) 462 4509

DATE: 11 January 2012
ENQUIRIES: Dr Mariagrazia Galimberti
Archaeology, Palaeontology and Meteorites Unit
E-mail: mgalimberti@sahra.org.za
Web site: www.sahra.org.za

received
13 January 2012

OUR REF: 9/2/032/0001
DEA ref. number: 12/12/20/2602

Mrs Siân Holder
Cape Environmental Assessment Practitioners (Pty) Ltd
1st Floor Eagles View Building
5 Progress Street,
George
6530

Dear Mrs Holder,

REQUEST FOR A HERITAGE IMPACT ASSESSMENT: Proposed Aggeneys Solar Installation on Portion 6, a portion of portion 2, Zuurwater, Aggeneys, Northern Cape (Scoping and EIR process) (DEA ref: 12/12/20/2602)

Thank you for your indication that a solar installation is proposed on the abovementioned property.

In terms of the National Heritage Resources Act, no 25 of 1999, heritage resources, including archaeological or palaeontological sites over 100 years old, graves older than 60 years, structures older than 60 years are protected. They may not be disturbed without a permit from the relevant heritage resources authority. This means that before such sites are disturbed by development it is incumbent on the developer to ensure that a **Heritage Impact Assessment** is done. This must include the archaeological and palaeontological components (Phase 1) and any other applicable heritage components. Appropriate (Phase 2) mitigation, which involves recording, sampling and dating sites that are to be destroyed, must be done as required.

The Phase 1 Impact Assessment Reports will identify the archaeological sites and palaeontological resources and assess their significance. They should also make recommendations (as indicated in section 38) about the process to be followed. For example, there may need to be a mitigation phase (Phase 2) where the specialist will collect or excavate material and date the site. At the end of the process the heritage authority may give permission for destruction of the sites.

If the property is very small or disturbed and there is no significant site the specialists may choose to send a letter to the heritage authority to indicate that there is no necessity for any assessment.

Any other heritage resources that may be impacted such as built structures over 60 years old, sites of cultural significance associated with oral histories, burial grounds and graves, graves of victims of conflict, and cultural landscapes or viewscapes must also be assessed.

Yours sincerely

PP Mrs Colette Scheermeyer
SAHRA: Archaeology, Palaeontology and Meteorites Unit
For: CHIEF EXECUTIVE OFFICER

Copy: PHRA Northern Cape Office

ANNEXURE 3
(Photographs)

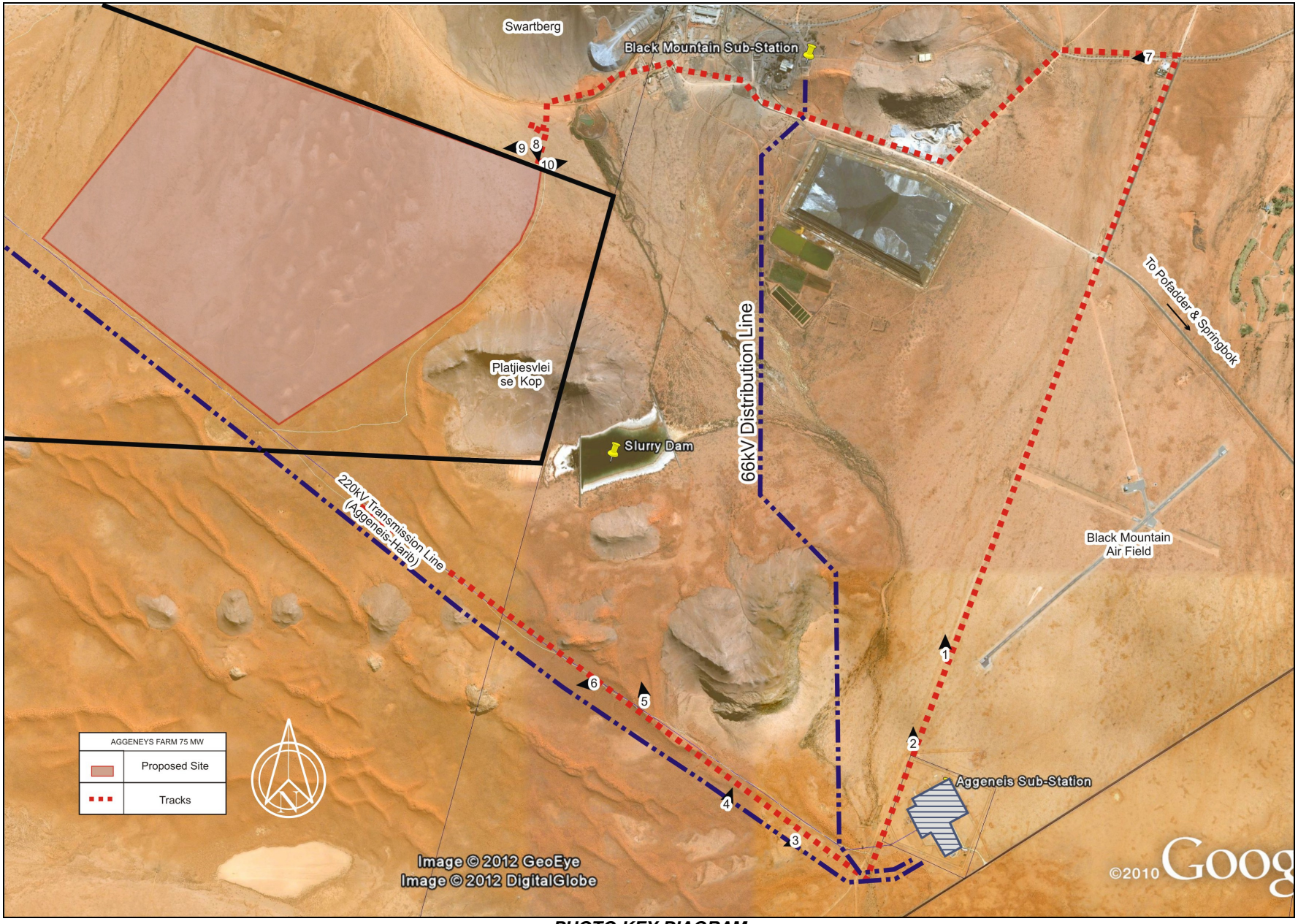


PHOTO KEY DIAGRAM

Photo 1: *Northern view towards Black- Mountain Mine.*

Photo 2: *Northern view looking at Black- Mountain Mine and the Swartberg.*

Photo 3: *Western view towards Hoedkop.*

Photo 4: *North- Eastern view.*

Photo 5: *Slurry dam and proposed site.*

Photo 6: *Western view showing inselbergs and surrounding context.*

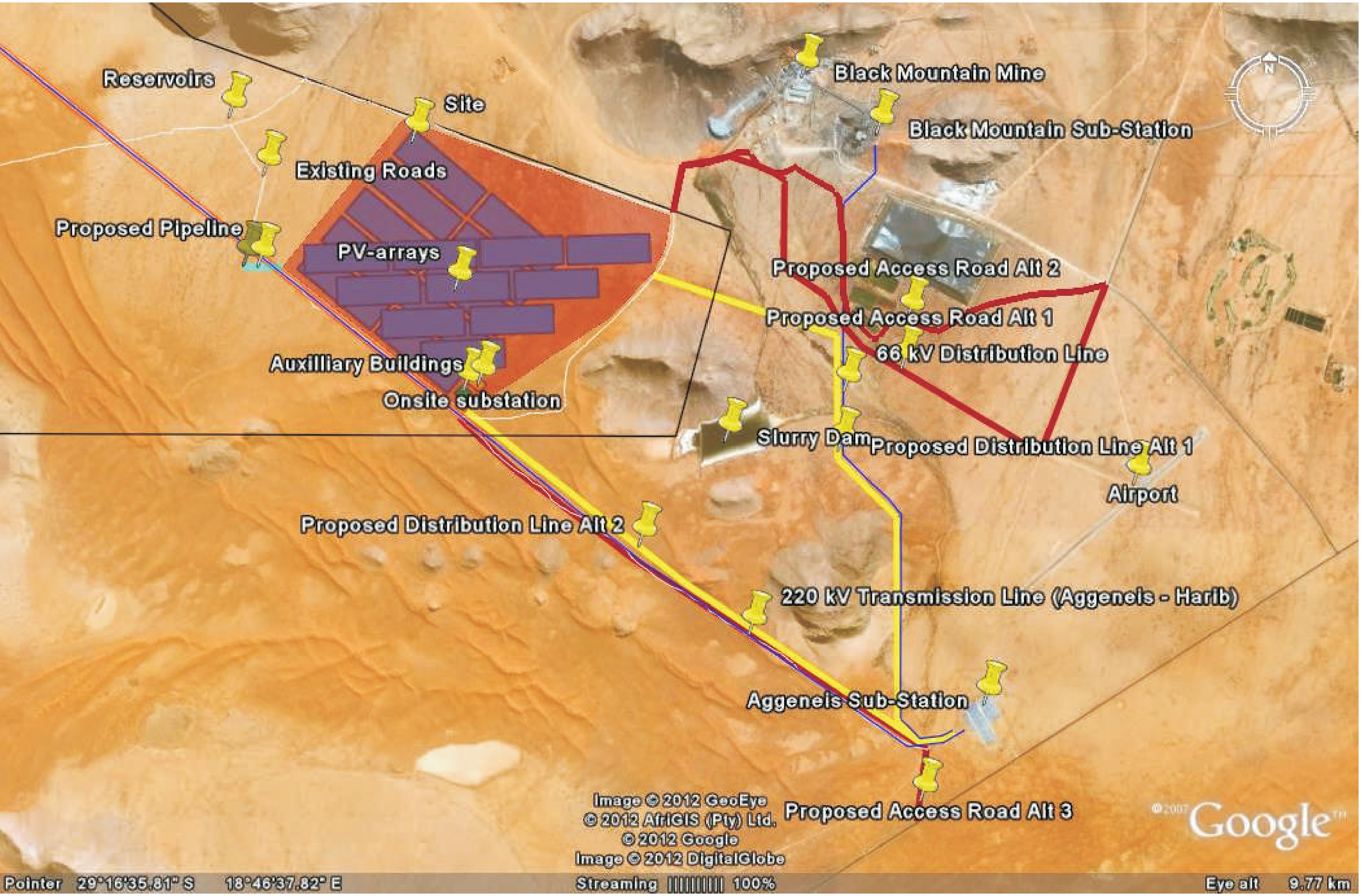
Photo 7: *Tarred road leading to Black Mountain Sub-Station.*

Photo 8: *Image taken on property boundary looking at proposed site and surrounding context.*

Photo 9: *Western view of proposed site.*

Photo 10: *Eastern view of Black Mountain Sub-Station and Black Mountain mine.*

ANNEXURE 4
(Conceptual site layout)


Reservoirs
Site
Existing Roads
Proposed Pipeline
PV-arrays
Auxilliary Buildings
Onsite substation
Black Mountain Mine
Black Mountain Sub-Station
Proposed Access Road Alt 2
Proposed Access Road Alt 1
66 kV Distribution Line
Slurry Dam
Proposed Distribution Line Alt 1
Airport
Proposed Distribution Line Alt 2
220 kV Transmission Line (Aggeneis - Harib)
Aggeneis Sub-Station
Proposed Access Road Alt 3
Image © 2012 GeoEye
© 2012 AfriGIS (Pty) Ltd.
© 2012 Google
Image © 2012 DigitalGlobe
Google
Pointer 29°16'35.81" S 18°46'37.82" E
Streaming 100%
Eye alt 9.77 km

ANNEXURE 5
(SG Diagram 268/1895)

SIDES		ANGLES	
ab	2606.27	a	79°26'40"
bc	1936.76	b	86 17 20
cd	3310.34	c	186 55 30
de	828.65	d	107 05 20
ef	2656.59	e	147 41 00
fg	3765.68	f	87 17 30
ga	1353.31	g	205 16 40

The Farm
AGGENEYS No. 56
NAMAQUALAND

The annexed Diagram, lettered a b c d e f g rerpesents 24043 Morgen 205 Square Roods of Land, situated in the Division of Namaqualand Fieldcornetcy of Pella being the farm Aggeneys.

Bounded N by Rozynbosch
S by Game Reserve and Hartebeest Vlei
E by Aroams and Bloem Hoek
W by Zuurwater

by me,
(Sgd.) Garwood Alston
Government Surveyor

Decr. 1894

Copied from diagram relating to
Nam. Q. 10 - 29b
M77inney.
for Surveyor-General
Date: 06-12-1991

M 4228
M 4229

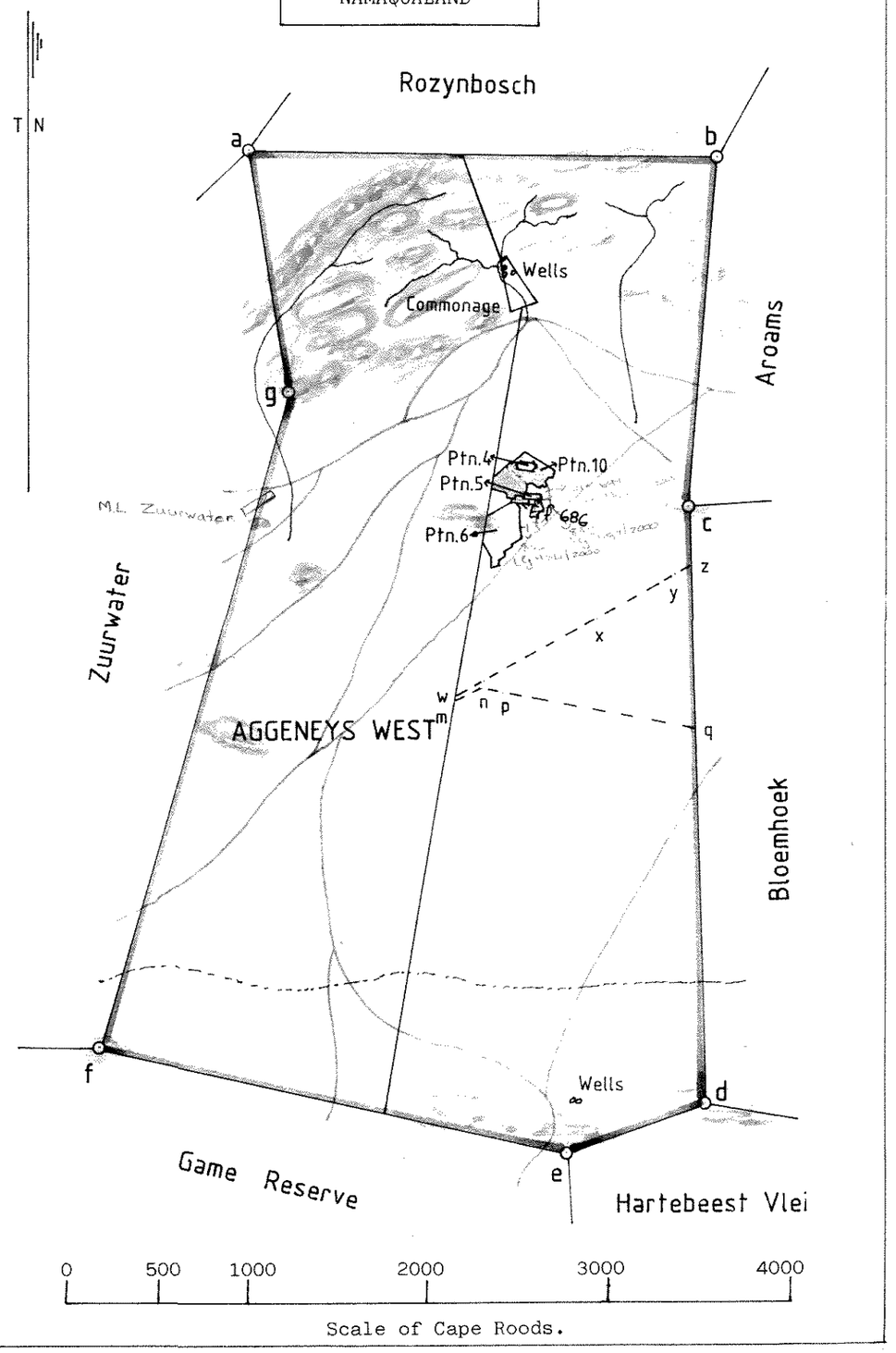
FOR ENDORSEMENTS SEE BACK OF DIAGRAM

CK

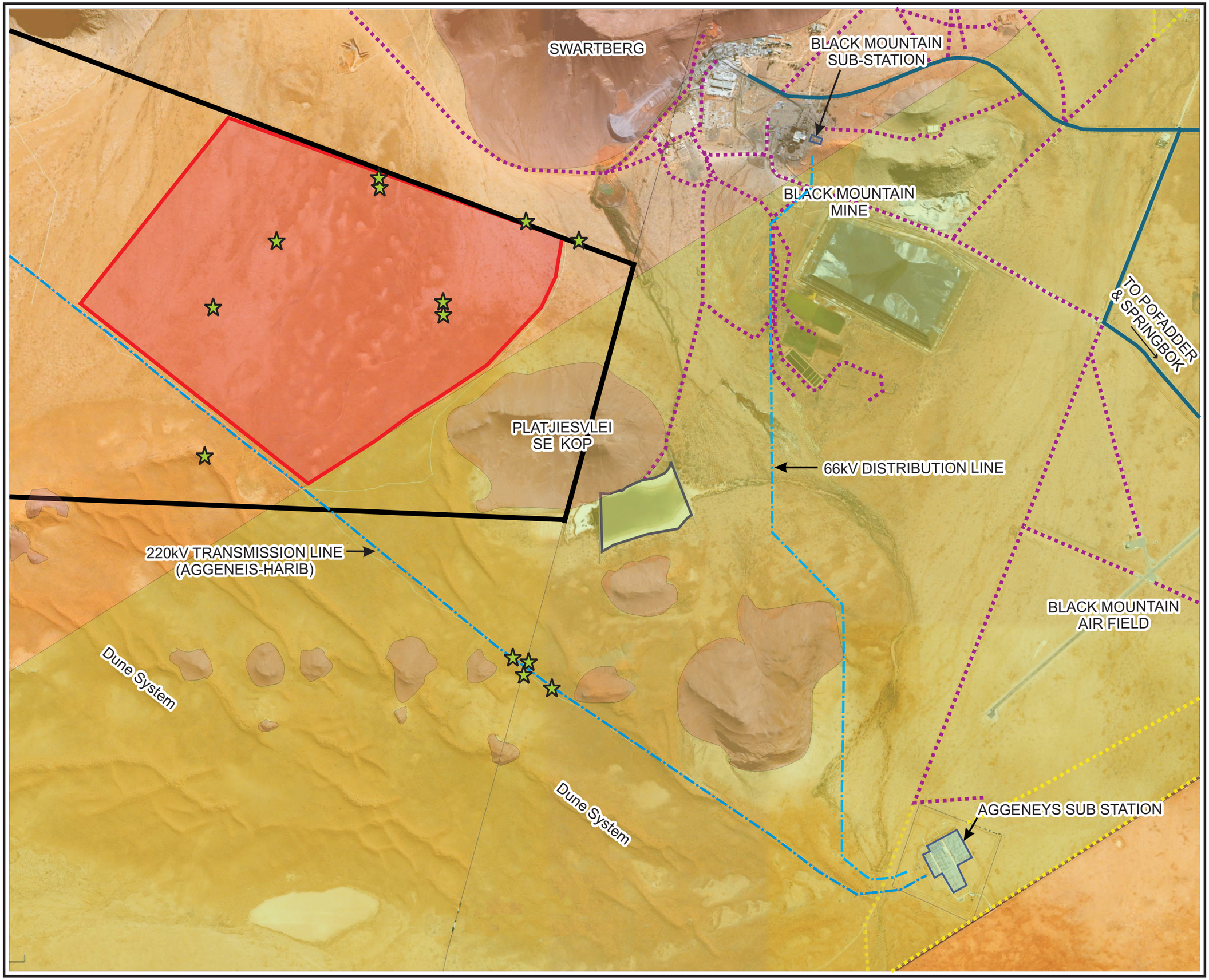
S.G. Dgm. No.268/1895

The numerical data of this diagram are sufficiently consistent
(Sgd.) J.J. Bosman
Examiner

The Farm
AGGENEYS No. 56
NAMAQUALAND



ANNEXURE 6
(Integrated heritage resource mapping)



Project

PROPOSED 75 MW SOLAR ENERGY INSTALLATION: PORTION 6 OF THE FARM ZUURWATER 62, AGGENEYS, NORTHERN CAPE

Plan

PHASE ONE HERITAGE IMPACT ASSESSMENT in terms of Section 38(8) of the NHRA (Act 25 of 1999)

Name

INTEGRATED HERITAGE RESOURCE MAPPING

Legend

- PROPERTY BOUNDARY
- PROPOSED SITE
- SKUITDRIFT SUB-STATION
- MAIN ROAD
- SECONDARY ROADS
- OVERHEAD POWER LINES
- STRUCTURES OLDER THAN 60 YEARS
- ARCHAEOLOGICAL OCCURRENCES
- INSELBERGS
- SLURRY DAM
- 5 km SETBACK FROM N 14

Notes

* Aerial photography, Google Earth

SCALE Not to scale

PERCEPTION
HERITAGE IMPACT ASSESSMENT
URBAN PLANNING
Mobile: 082 568 4719, Fax: 086 510 8357
Email: perceptionenvplg@gmail.com
P.O. Box 9995, George, 6530
Western Cape, South Africa

Plan No	Date	Annexure
A 75 MV Rev. 2	March 2012	6

ANNEXURE 7
(Archaeological Impact Assessment)

Please refer to Appendix D, Annexure D4 of Draft Scoping Report

ANNEXURE 8
(Palaeontological Impact Assessment - Exemption)

Please refer to Appendix D, Annexure D5 of Draft Scoping Report