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**LETTER OF RECOMMENDATION FOR THE EXEMPTION FROM A
FIRST PHASE ARCHAEOLOGICAL & HERITAGE
INVESTIGATION OF THE PROPOSED ESTABLISHMENT OF A
PHOTOVOLTAIC (SOLAR POWER) INSTALLATION ON THE
FARM WICKLOW 218, NEAR HOPETOWN,
NORTHERN CAPE**

EXECUTIVE SUMMARY

A PV Solar installation is planned at Wicklow 218, near Hopetown, in the Northern Cape. The farm is located near the N12 main road along the R388 turn-off to Douglas.

The proposed land lies adjacent to the Osborne Sub-Station and comprises a flat plain with a fairly level surface covered by Semi-arid Karoo Grassland vegetation. The area is traversed by several existing power lines.

No objects of historical significance were found during the present survey.

Archaeological material is found in the form of flakes and flaked cores made from chert, lydianite and quartz material. The stone flakes occur as a general scatter across the higher lying area and it is considered of minor significance in this case.

I recommend that the proposed new PV Solar plant project should be exempted from a full Phase I report.

I recommend that further planning and development of the PV solar plant may continue.

INTRODUCTION & DESCRIPTION

Scatec Solar (Pty) Ltd and Sustainable Development Projects, at Ballito, the applicant, aim to produce approximately 300MW power which is to be fed into the localized power grid via the Osborne substation. The land in question is free of built structures and has been used for the grazing of livestock.

Solar power as a “clean energy” source is promoted at local and international levels to meet energy demand and to reduce reliance upon carbon based fossil fuels. The Northern Cape is conducive to the establishment of solar farms on account of its generally high insulation, level topography and proximity to major power lines serving the region. Issues relating to archaeological resources require evaluation. The design and technical aspects of the proposal should be established to integrate the solar plant into the site and surrounds under consideration. This report will be presented for evaluation to the South African Heritage Resources Agency (SAHRA) in Cape Town for consideration and approval of the preservation of man-made objects.

Scope and Limitations

The Archaeological and Heritage Impact Assessment forms part of the Environmental Impact Assessment (EIA) undertaken by the CSIR on behalf of the applicant, who is planning to construct a Solar Energy Plant on about 150ha at the property.

The investigation provided the opportunity to examine the site proposed for the PV Solar installations. The area consists of a Semi-arid Karoo Grassland with shrubs and bushes. No limitations were experienced during site visit.

Methodology

Standard archaeological survey and recording methods were applied.

1. The proposed land was inspected on foot.
2. Coordinate points were taken by a hand-held GPS and the surroundings and features were recorded on camera.

INVESTIGATION

The site proposed for the PV Solar installation on the farm Wicklow 218, near Hopetown, was inspected on 13 March 2012. Jean Beater on behalf of Scatec

Solar Consultants gave directions to the site. At the farm we were directed by Ernst Norval, the farm manager.

Photo voltaic (PV) cells will be mounted on frames placed above ground level. Rows of panels will be placed about 10m apart to allow for access during operation and maintenance. It is anticipated that minor surface related earthworks may have to be undertaken to accommodate the structures. The planning of the plant will provide for an access road, electricity distribution sub-station, offices, store rooms and ablution facilities. The installation will further include security fencing and lighting. Provision will also be made for a vehicle parking area, a temporary construction camp and permanent staff accommodation.

CULTURAL AND HISTORICAL ASPECTS

Stone tools are likely to occur on these flat Karoo vegetation areas and along the foothills of mountains or against koppies and hills.

From previous Environmental Impact Assessments (EIA) and from personal experience in the Hopetown region, we are aware that Anglo-Boer War remnants could be found in the vicinity. Some of the most possible finds will include fired cartridge shells and metal food containers displaying heavily soldered seams. Anglo-Boer War remains occur at the concentration camp at Oranje River Station along the R369 road to Orania.

The area was examined for possible archaeological and historical material and to establish the potential impact on any cultural material that might be found. The Heritage Impact Assessment (HIA) is done in terms of the National Heritage Resources Act (NHRA), (25 of 1999) and under the Environmental Conservation Act, (73 of 1989).

The study aims to locate and evaluate the significance of cultural heritage sites, archaeological material, manmade structures older than 60 years, and sites associated with oral histories and graves that might be affected by the proposed developments. The study likewise aims to assess the potential impact on archaeological and historical material and to recommend specific mitigation measures to avoid the risk of any damage or destruction of the finds during the construction and operation of the proposed developments.

LOCALITY

The proposed site is located on the Remainder of the farm Wicklow 218, near Hopetown, Northern Cape (Map 1). The farm is situated near the N12 main road

along the R388 turn-off to Douglas, and lies adjacent to the Osborne Sub-Station (Map 2).

The land comprises of a flat plain with calcrete scatters (Fig.13) and dolerite outcrops (Figs.19&20) on the surface. The vegetation is described as Semi-arid Karoo Grassland with shrubs and bushes (Figs.6,7,17,19). *Acacia* (sp.) trees occur in clusters or as individuals over the area (Figs.10,16,19). The land is traversed by several power lines (Fig.1).

Bare stone covered patches occur on the surface (Figs.4,19).

The following GPS coordinates (Cape scale) were taken (2924) (Map 3).

Osborne Sub-Station	29°31'08"S 024°03'43"E Altitude 1107m (Figs.1&2).
A	29°31'28"S 024°03'03"E Altitude 1121m (Figs.6&7).
B	29°31'39"S 024°03'13"E Altitude 1112m (Figs.9&10).
C	29°32'00"S 024°03'35"E Altitude 1106m (Figs.12&13).
D	29°31'04"S 024°04'00"E Altitude 1108m (Fig.16).
E	29°31'31"S 024°04'15"E Altitude 1001m (Figs.17&18).

RESULTS

FINDS

The expected Anglo-Boer War remains have not been found.

Archaeological material was found in the form of flakes and flaked cores made from water worn meta-quartzites from Tillite layers in the Ventersdorp Super group, Chert and Lydianite. Chunks of Ventersdorp Andesite lava occur on the surface (JC Looek, personal communication).

Scatters of stone flakes and flaked cores occur at the Osborne Sub-station (Fig.5), and also near Point A (Fig.8), Point B (Fig.11) and Point C (Figs.14&15).

The lithic material is very coarse and possibly not ideal for the manufacture of stone tools. Some of the flakes at the site are triangular with convergent flaking on the dorsal side. Most of the flakes display a small prepared platform.

No other cultural and historical material or graves were found during the investigation.

ASSESSMENT OF IMPACT

The nature of the proposed development is such that most of the damage to the stone tools can be avoided through the placing of the panels on vertical structures above ground level. This will also allow the exploitation of the land for sheep grazing.

It is anticipated that there will be a limited impact on the archaeological remains of the area.

RECOMMENDATIONS

I recommend that the planning of the proposed the PV Solar installation on the farm Wicklow 218, near Hopetown, should be exempted from a full Phase I investigation and report.

I also recommend that the planning of the developments may proceed.

MITIGATION

No mitigation measures will be needed in this area of development.

ACKNOWLEDGEMENTS

I thank Jean Beater for giving directions to the site. I also thank Johan Looek from Bloemfontein, for the identification of the lithic material.

SELECT BIBLIOGRAPHY:

BEAUMONT, P.B. & VOGEL, J.C. 1989. Patterns in the age and context of rock art in the Northern Cape. *South African Archaeological Bulletin* 44(150):73-81.

BEAUMONT, P.B., SMITH, A.B. & VOGEL, J.C. 1995. Before the Einiqua: the archaeology of the frontier zone. In Smith, A.B. (Ed.). *Einiqualand: Studies of the Orange River Frontier*. Cape Town: University of Cape Town Press.

DEACON, J. 1992. *Archaeology for Planners, Developers and Local Authorities*. Cape Town: National Monuments Council.

DREYER, J. 2007. Archaeological and cultural heritage assessment of the proposed diversion of the Divisional Road 3112 (R369) on the farm Pampoenpan 35/259, Douglas, Northern Cape. EIA Report for MDA Environmental Consultants, Bloemfontein.

DREYER, J. 2007. First phase archaeological and cultural heritage assessment of the proposed borrow pit sites and r385 road upgrading between Douglas & Campbell, Northern Cape. EIA Report for Spatial Solutions Incorporated International, Environmental Consultants, Bloemfontein.

DREYER, J. 2009. First phase archaeological and cultural heritage assessment of the mine prospecting area at Bo-Downs 600, Campbell, Northern Cape Province. EIA Report for Geo-Rock International, Environmental Consultants from Kimberley.

DREYER, J. 2010. First phase archaeological and heritage assessment of the mining developments at the farm Nuwejaarskraal 40, Prieska, Northern Cape. EIA Report for Herman van Heerden (Incorporated), Environmental Consultants Douglas, Northern Cape.

DREYER, J. 2010. Archaeological & heritage investigation of the proposed diamond prospecting & mining activities at Viletskuil 198, Koringdal, Kareelaagte, Bitterput & Paardekraal, Wonderput, De Voor, tevreden, Annex Springbokrug, Teleurgesteld, Strydenburg district, Northern Cape. EIA Report for Geo-Rock International, Environmental Consultants from Kimberley.

DREYER, J. 2011. First phase archaeological and heritage assessment of the mining developments at the farm Saxendrift 20, near Douglas, in the Hopetown district, Northern Cape. EIA Report for Eddie Faber, Douglas, northern Cape.

HUMPHREYS, A.J.B. 1986. *Searching for the past*. Cape Town: David Philip.

MORRIS, D. 1988. Engraved in place and time: a review of variability in the rock art of the Northern Cape and Karoo. *South African Archaeological Bulletin* 43(148):109-121.

MORRIS, D. 1990a. 'Etchings' and 'Intaglios' in the Upper Karoo: Part 1: The engravings at Springbok Oog. In Beaumont, P.B. & Morris, D. *Guide to archaeological sites in the Northern Cape*. Kimberley: McGregor Museum.

MORRIS, D. 1990b. 'Etchings' and 'Intaglios' in the Upper Karoo: Part 2: Engravings on Jagtpan and adjacent farms. In Beaumont, P.B. & Morris, D. *Guide to archaeological sites in the Northern Cape*. Kimberley: McGregor Museum.

PAKENHAM, T. 1997. *The Boer War*. Johannesburg: Jonathan Ball.

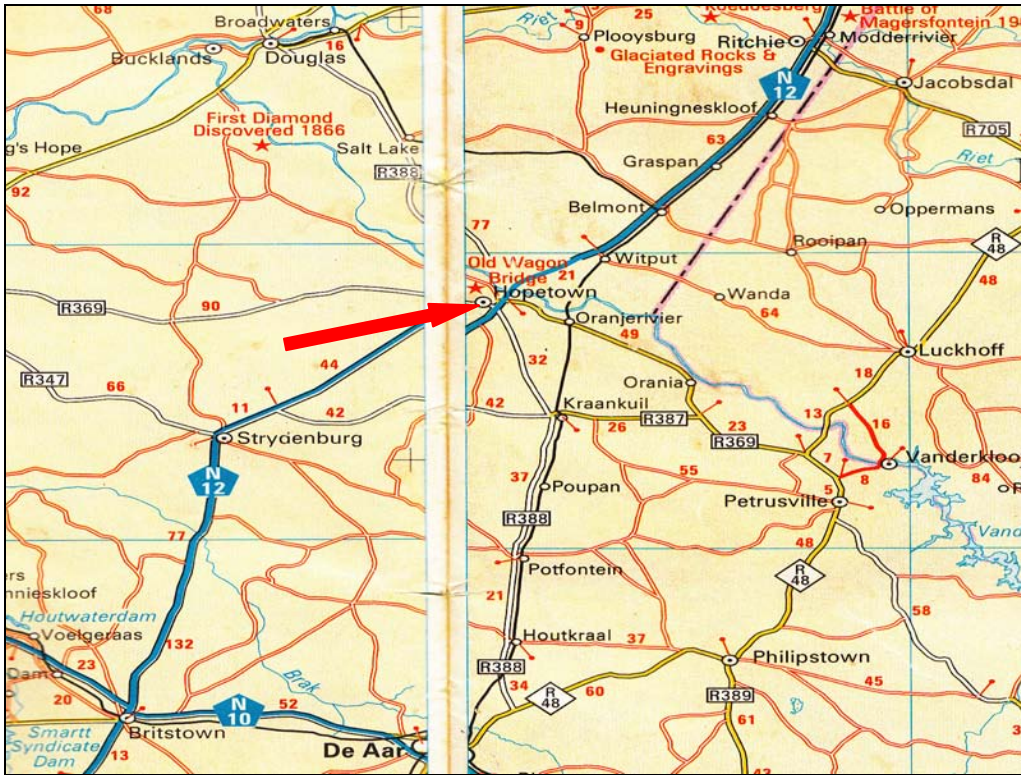
PISTORIUS, J.C.C. 1994. *Eskom Archaeological Site Identification Guide*. Johannesburg: Eskom.

ROSENTHAL, E. (n.d.). *The River of Diamonds*. Cape Town: Howard Timmins.

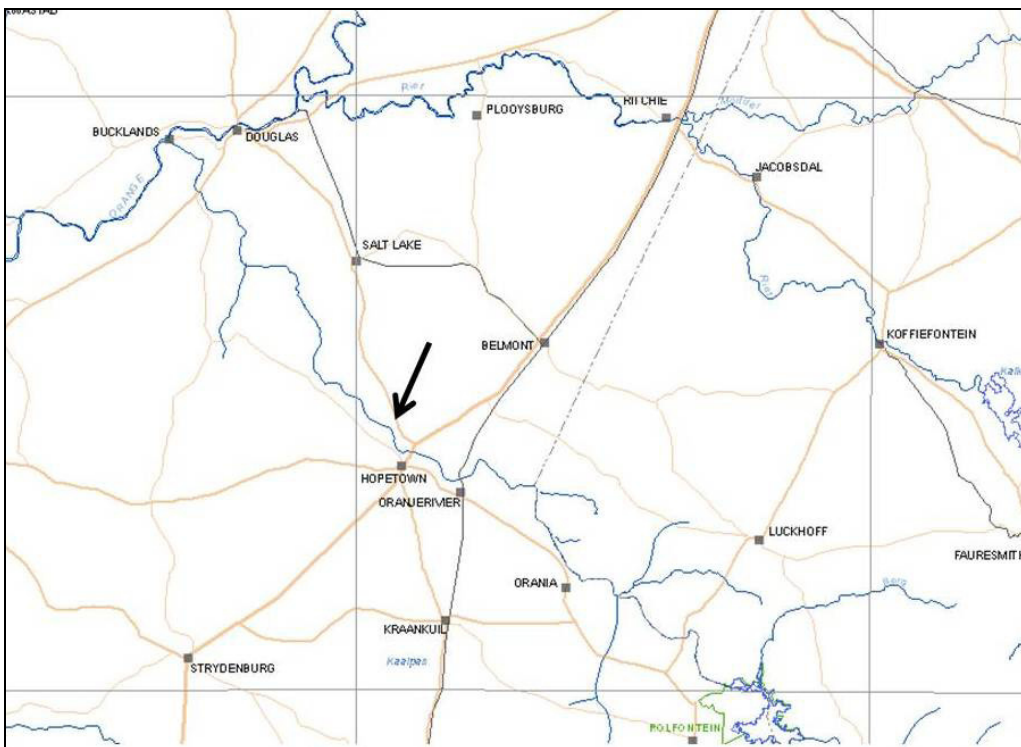
SMITH, A.B. (Ed.). 1995. *Einiqualand: Studies of the Orange River Frontier*. Cape Town: UCT Press.

SOHNGE, P.G. VISSER, D.J.L. AND VAN RIET LOWE, C. 1937. *The geology and archaeology of the Vaal River Basin*. Pretoria: Government Printer.

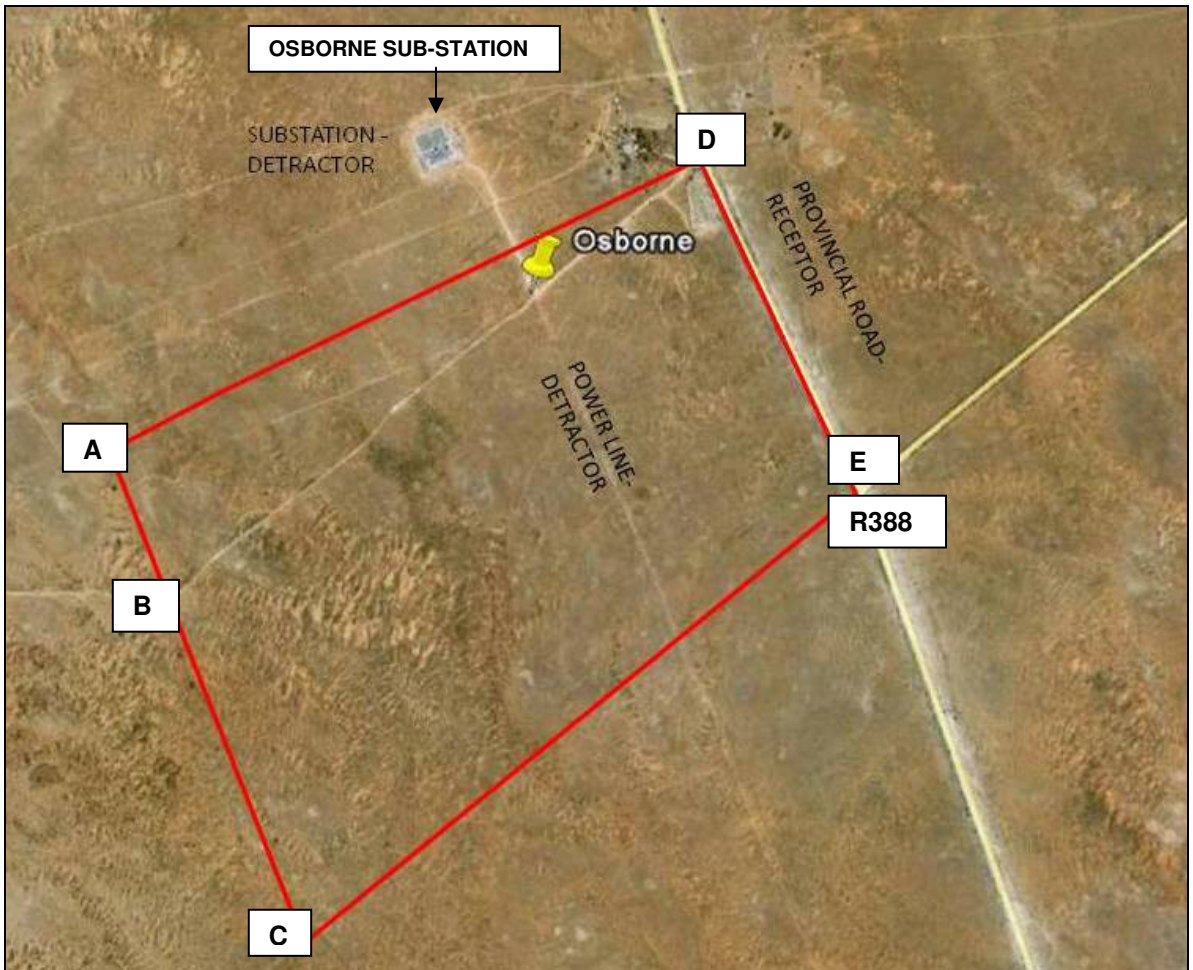
LIST OF ILLUSTRATIONS



Map 1 Locality of Hopetown in relation to the N12 main road and the R385 to Douglas.



Map 2 Placing of the proposed solar site at Wicklow 218, north of Hopetown (2924).



Map 3 Proposed land near Osborne Sub-Station, Wicklow 218, Hopetown (2924). GPS coordinate points indicated.



Fig.1 Osborne Sub-Station at Wicklow 218, Hopetown.



Fig.2 Osborne 132/22kV Sub-Station at Wicklow 218, Hopetown.



Fig.3 Area around the Osborne Sub-Station at Wicklow 218, Hopetown.



Fig.4 Bare stone covered patch at Osborne Sub-Station, Hopetown.



Fig.5 Flakes and flake cores at Osborne Sub-Station, Hopetown (Pocket knife = 84cm).



Fig.6 Point A at Wicklow 218, Hopetown.



Fig.7 Point A at Wicklow 218, Hopetown.



Fig.8 Stone flakes from Point A at Wicklow 218, Hopetown (Pocket knife = 84cm).



Fig.9 Point B at Wicklow 218, Hopetown.



Fig.10 Point B at Wicklow 218, Hopetown.



Fig.11 Stone flakes & flake cores from Point B, Wicklow 218, Hopetown (Pocket knife = 84cm).



Fig.12 Point C at Wicklow 218, Hopetown.



Fig.13 Calcrete at Point C, Wicklow 218, Hopetown.



Fig.14 Stone flakes & flake cores from Point C, Wicklow 218, Hopetown (Pocket knife = 84cm).



Fig.15 Stone flakes & flake cores from Point C, Wicklow 218, Hopetown (Pocket knife = 84cm).



Fig.16 Point D at Wicklow 218, Hopetown.



Fig.17 Point E at Wicklow 218, Hopetown.



Fig.18 Point E at Wicklow 218, Hopetown.



Fig.19 Scatters of Acacia trees at Wicklow 218, Hopetown.



Fig.19 Dolerite outcrops at Wicklow 218, Hopetown.



Fig.20 Dolerite outcrops at Wicklow 218, Hopetown.