

**Appendix D3a: Updated Archaeological Assessment/Addendum  
(2017 revision)**



# Agency for Cultural Resource Management

Specialists in Archaeological Studies and Heritage Resource Management

15 April, 2017

Att: Mr Bernard de Wit  
EnviroAfrica  
PO Box 5367  
Somerset West  
7135

Dear Mr De Wit,

## **HERITAGE IMPACT ASSESSMENT, ROMA ENERGY SOLAR ENERGY FARM ON FARM DE DUINEN NO 258, VAN RHYSNDROP: CONFIRMATION OF ARCHAEOLOGICAL FINDINGS**

An Archaeological Impact Assessment (AIA) for the construction of the proposed 10MW Roma Energy Solar Energy Farm (SEF) on Farm De Duinen No. 258 in Vanrhynsdorp was undertaken by ACRM in 2012<sup>1</sup> (Figures 1 & 2).

The AIA formed part of a wider Heritage Impact Assessment (HIA) for the proposed development which included a Visual Impact Assessment (VIA) and Palaeontological Impact Assessment (PIA).

The report was submitted as part of a Basic Environmental Assessment process undertaken by independent environmental consultants EnviroAfrica cc.

114 archaeological occurrences were documented on the proposed development site. The majority of the remains were assigned to the Middle Stone Age (MSA), but Later Stone Age (LSA) tools were also encountered, including two Early Stone Age (ESA) flakes. More than 80% of the implements are in quartzite and silcrete, but a few lithics in indurated shale, quartz, chalcedony and ironstone were also noted. Most of the tools comprised single, dispersed and isolated occurrences on calcareous red sands, but implements were also clustered on patches of quartz gravels on higher elevations overlooking the floodplain of the Droerivier. No graves or grave markers were found.

Heritage Western Cape (HWC), the delegated Provincial Heritage Authority, reviewed the HIA and issued a Final Comment, indicating that it has 'no objections to the proposed development'<sup>2</sup>.

The proposed development was approved by the Department of Environment Affairs, but did not proceed, and Environmental Authorization lapsed in 2015, necessitating a new Basic Assessment process.

ACRM was subsequently appointed to review the proposal and notes the following:

➤ The footprint for the new ± 7MW SEF is not significantly different from the footprint area assessed during the 2012 study, and the layout of the modules now covers a much smaller area (Figures 3 & 4).

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<sup>1</sup> Kaplan, J. Heritage Impact Assessment, proposed Roma Energy Solar Energy Farm on Farm No. 258, Van Rhynsdorp, Western Cape. Report prepared for EnviroAfrica. ACRM, Cape Town

<sup>2</sup> HWC Case No. 120419JL11 letter dated 20 June, 2012



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ACRM therefore confirms the findings of the 2012 study, and has no objections to the new development proceeding.

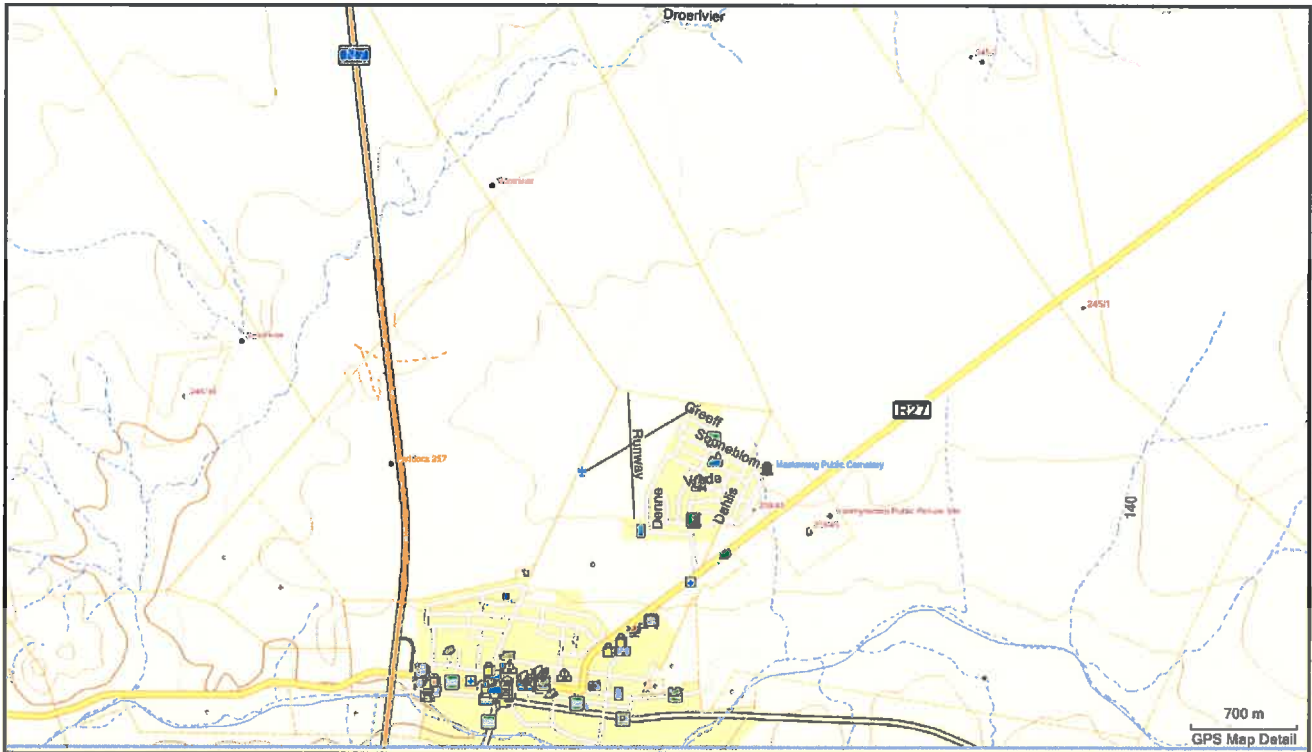


Figure 1. Locality Map



Figure 2. 2012 layout plan for the Roma Energy Vanrhynsdorp 10MW Solar Energy Farm (blue polygon)

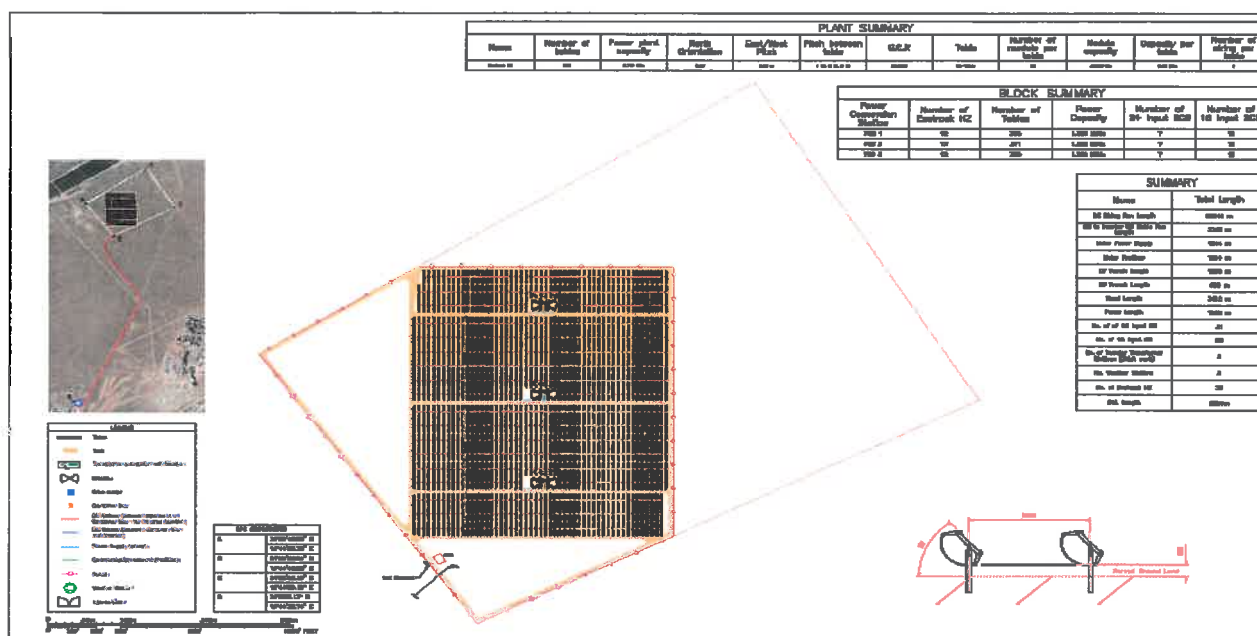


Figure 2. 2017 layout plan for the proposed Roma Energy Vanrhynsdorp 7MW Solar Energy Farm.

### Cumulative impacts on archaeological heritage

According to the Department of Environmental Affairs (DEA) Renewable Energy EIA Application Database for renewable projects (new builds)<sup>3</sup>, there are at least 6 approved renewable energy (RE) (i.e. wind & solar) projects planned within a 30km radius of Vanrhynsdorp. However, despite the presence of these RE sites in the region, it will not have a significant impact on archaeological resources on the proposed Roma Energy Vanrhynsdorp PV facility.

Yours sincerely

*[Handwritten signature]*

Jonathan Kaplan

**Appendix D3a: Original Archaeological Assessment (2012)**

**HERITAGE IMPACT ASSESSMENT  
THE PROPOSED ROMA ENERGY SOLAR FARM ON  
PORTION OF THE FARM DE DUINEN NO. 258  
NEAR VANRHYNSDORP  
WESTERN CAPE PROVINCE**

**Assessment conducted under Section 38 (3) of the National Heritage  
Resource Act (No. 25 of 1999)**

Prepared for:

**ENVIROAFRICA**

Att: Mr Bernard de Wit

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Heidelberg

7135

E-mail: [Bernard@enviroafrica.co.za](mailto:Bernard@enviroafrica.co.za)

On behalf of:

**ROMA ENERGY VANRHYNSDORP (PTY) LTD**

By



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**MAY  
2012**

### Executive summary

The Agency for Cultural Resource Management was requested by EnviroAfrica to conduct a Heritage Impact Assessment (HIA) for a proposed 10 Mega Watt (MW), solar energy farm on Portion of the Farm De Duinen No. 258, near Vanrhynsdorp in the Western Cape.

The HIA forms part of the Basic Assessment Process that is being conducted by environmental consultants, EnviroAfrica cc.

The site for the proposed solar energy farm (SEF) is located just to the south of the Droerivier, and about 2 kms north of the town of Vanrhynsdorp. The proposed activity entails the construction of blocks of photovoltaic solar panels covering a footprint area of about 20 ha. The PV panels will be mounted on pedestals drilled and set into the ground. Associated infrastructure includes single track internal access roads, underground cables, a switching station, maintenance shed and a temporary construction camp. The electricity that will be generated from the project will be fed directly into the national grid at the nearby Eskom Vanrhynsdorp substation that is situated about 1.5 kms south west of the proposed site. The proposed development will make use of an existing Eskom servitude.

A Notification of Intent to Develop (NID) was completed by EnviroAfrica and submitted to Heritage Western Cape (HWC) for comment. In a letter dated 23 May 2012 (Case No. 124019JL11) HWC requested that a HIA, consisting of an archaeology and visual impact study must be done.

With regard to the specialist archaeology study, 114 archaeological occurrences (numbering nearly 130 stone implements) were counted and documented on the proposed site for the Vanrhynsdorp solar energy farm. All of the remains have been mapped in-situ using a hand held GPS device. The majority of archaeological remains are assigned to the Middle Stone Age (MSA), but a relatively large number of Later Stone Age implements were also encountered. MSA lithics typically comprise larger, thicker, chunky and triangular shaped flakes with convergent dorsal scars. Only one round core and one flaked chunk/minimal core was found. Only two Early Stone Age flake tools were found in the proposed footprint area. Only one convex scraper was found, but a relatively large number of miscellaneous retouched, partially retouched and utilized flakes were logged. More than 80% of the implements are in quartzite and silcrete, but a few lithics in indurated shale, quartz, chalcedony and ironstone were also noted.

Most of the tools comprise single, isolated occurrences that are spread very thinly and unevenly over the surrounding, undulating landscape, but there does appear to be a clustering of implements on hard patches of washed quartz gravels (mixed quartz and rolled pebbles) on higher elevations overlooking the floodplain of the Droerivier. The lower portions of the site are underlain by loose, red and slightly calcareous sands, where archaeological finds are very, dispersed and ephemeral.

One piece of weathered ostrich eggshell and one small piece of refined earthenware were found.

## Heritage Impact Assessment, proposed Solar Energy Farm in Vanrhynsdorp

As archaeological sites are concerned the occurrences are lacking in context and no organic remains such as bone, pottery or larger numbers of ostrich eggshell was found.

Overall, the relatively small numbers and isolated and dispersed context in which they were found means that the remains on the proposed site have been rated as having low archaeological (Grade 3C) significance.

The results of the study indicate that the proposed development will not have an impact of great significance on the archaeological heritage. It is maintained that most of the archaeological heritage has been captured during the specialist study.

Indications are that in terms of archaeological study the proposed activity (i. e. the construction of a solar energy farm) is viable and no fatal flaws have been identified.

The Visual Impact Assessment (VIA) for the proposed Vanrhynsdorp SEF was done by Sarien Lategan of Geostatics. It is important to note that while the VIA does address the visual impacts associated with the proposed development, a site visit has yet to be undertaken by the specialist. A field study was done for the original proposed site (closer to the town), but due to botanical constraints, a site closer to the Droerivier has now been identified, which is more acceptable. Site 1 has therefore been screened out. The VIA report thus includes a full assessment of Site 1, as well as a desk top review of Site 2 alongside the river, including the anticipated visual impacts. Importantly, the desk top review considers worst case scenarios such as height of the tracking units.

With regard to the VIA, the primary potential visual receptor is the N7 which is located to the west of Site 2. According to Lategan, it is envisaged that the intrusion level of the solar modules on road users will be of low-medium significance, depending on the size of the modules. Neither module will have a significant impact on obstruction levels, and the overall conclusion is that the visual impact of Site 2 is 'within acceptable levels'. According to Lategan, any units within the height scale of 8m is expected to be within acceptable levels. Smaller tracking units or smaller panels will obviously have a lesser visual impact.

With regard to the archaeological heritage, the following recommendations are made:

### Archaeology

1. No further archaeological mitigation is required.

With regard to the visual impact assessment:

1. It is recommended that should the assessment of Site 2 be confirmed by an on-site visit, the development should be allowed to proceed.



**DECLARATION OF INDEPENDENCE**

I, **Jonathan Kaplan**, as the appointed independent specialist hereby declare that I:

- act/ed as the independent specialist in the compilation of the above report;
- regard the information contained in this report as it relates to my specialist input/study to be true and correct, and
- do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- have and will not have any vested interest in the proposed activity proceeding;
- have disclosed to the EAP any material information that has or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management act;
- have provided the EAP with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not; and
- am aware that a false declaration is an offence in terms of regulation 71 of GN No. R. 543, 2010.

Signature of the specialist

A handwritten signature in black ink, appearing to be 'J. Kaplan', written over a horizontal line.

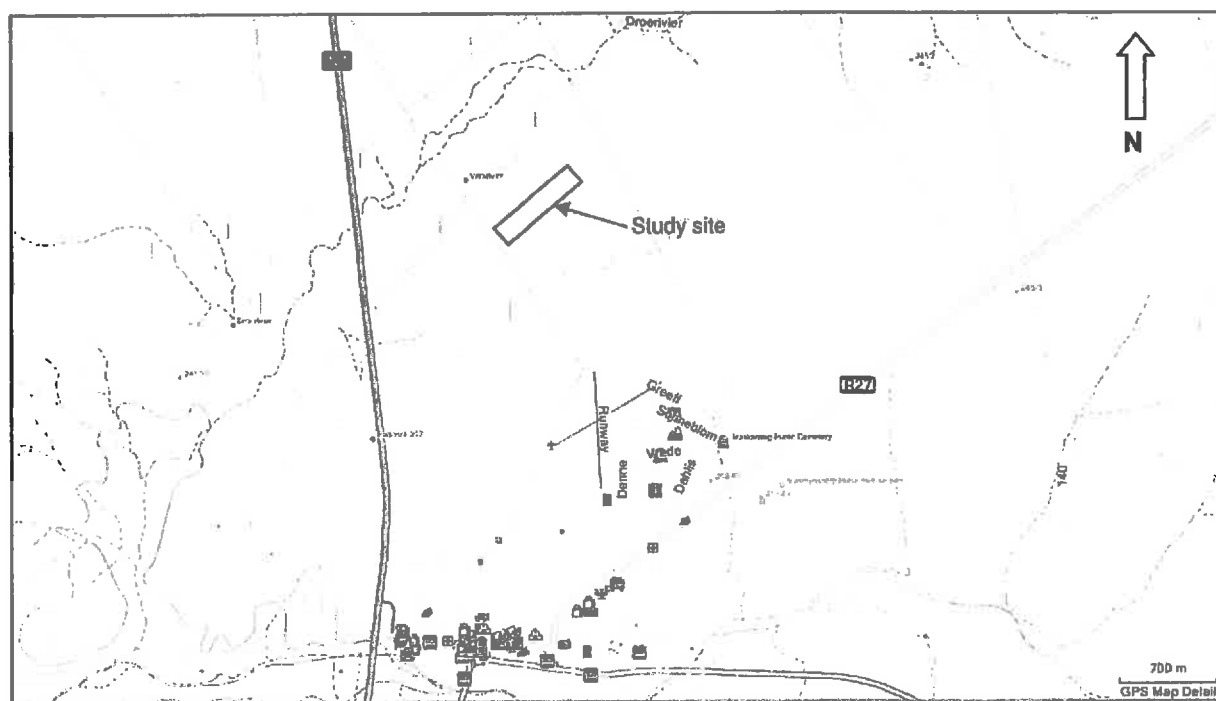
Date: 24 May, 2012

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The HIA forms part of the Basic Assessment Process that is being conducted by EnviroAfrica.

**A Notification of Intent to Develop (NID) was completed by EnviroAfrica and submitted to Heritage Western Cape (HWC) for comment. In a letter dated 23 May 2012 (Case No. 124019JL11) HWC requested that a HIA, consisting of an archaeology and visual impact study must be done.**



**Figure 1. Locality map indicating the location site for the proposed Roma Energy Vanrhynsdorp Solar Energy Farm**



Figure 2. Plan of the proposed Vanrhynsdorp SEF. The layout of the solar panels is in the blue hatched lines.

## 2. HERITAGE LEGISLATION

The National Heritage Resources Act (Act No. 25 of 1999) makes provision for a compulsory Heritage Impact Assessment (HIA) when an area exceeding 5000 m<sup>2</sup> is being developed. This is to determine if the area contains heritage sites and to take the necessary steps to ensure that they are not damaged or destroyed during development.

The NHRA provides protection for the following categories of heritage resources:

- Landscapes, cultural or natural (Section 3 (3))
- Buildings or structures older than 60 years (Section 34);
- Archaeological sites, palaeontological material and meteorites (Section 35);
- Burial grounds and graves (Section 36);
- Public monuments and memorials (Section 37);
- Living heritage (defined in the Act as including cultural tradition, oral history, performance, ritual, popular memory, skills and techniques, indigenous knowledge systems and the holistic approach to nature, society and social relationships) (Section 2 (d) (xxi)).

### 3. DESCRIPTION OF THE RECEIVING ENVIRONMENT

The site for the proposed solar energy farm is located just to the south of the Droerivier, and about 2 kms north of the town of Vanrhynsdorp (Figures 3 & 4). The actual proposed site is located directly adjacent to a block of vineyards. The original proposed site (since screened out due to botanical constraints) was situated on flat sandy terrain on the higher slopes above the river, closer to the northern boundary of the farm. According to Ms Anna Wiese, the owner of the farm, De Dulne has been vacant since 1988, with some grapes (raisons) currently been grown along the floodplain of the river adjacent the proposed footprint area. Prior to that, sheep were grazed on the property, while some Lucerne was also cultivated. Much of the natural veld has returned due to sensitive veld management. The proposed site for the SEF is slightly undulating and covered in natural veld. It slopes north toward the river. The higher, flatter elevations in the northwest are covered in large, hard patches of quartz gravels (typical of the Knersvlakte region), while the lower lying areas and stream channels are underlying by soft loose, red calcareous sands. There are no eroded or deflated areas on the proposed site (Figures 5-8). There is a dusty soccer field in the south western corner of the proposed site, an informal dumping site alongside the gravel road and a small concrete dam in the north western corner. Apart from the river, there are no significant landscape features on the proposed site. Surrounding land use is agriculture (vineyards immediately to the north alongside the Droerivier and vast tracts of vacant land (marginal grazing). The PPC gypsum mine is located directly north of the river.

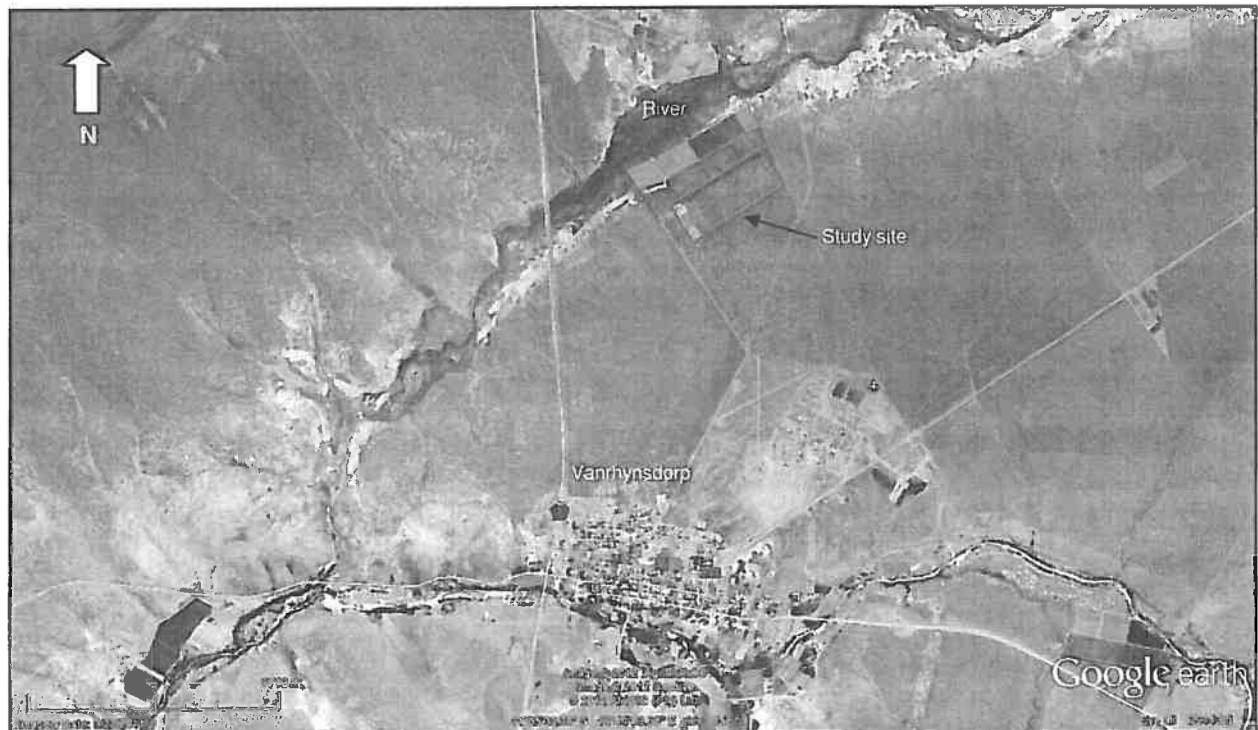


Figure 3. Google satellite photograph showing the proposed study site in relation to Vanrhynsdorp .

Heritage Impact Assessment, proposed Solar Energy Farm in Vanrhynsdorp



Figure 4. Google satellite photograph of the study site, including the approximate boundary of the footprint area

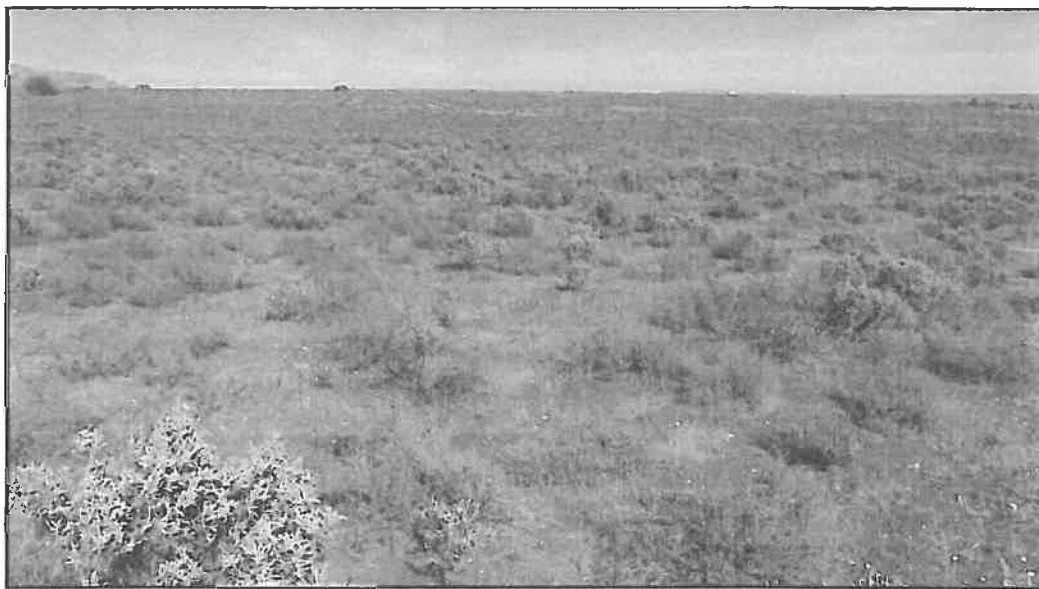


Figure 5. View of the proposed site facing west

Heritage Impact Assessment, proposed Solar Energy Farm in Vanrhynsdorp

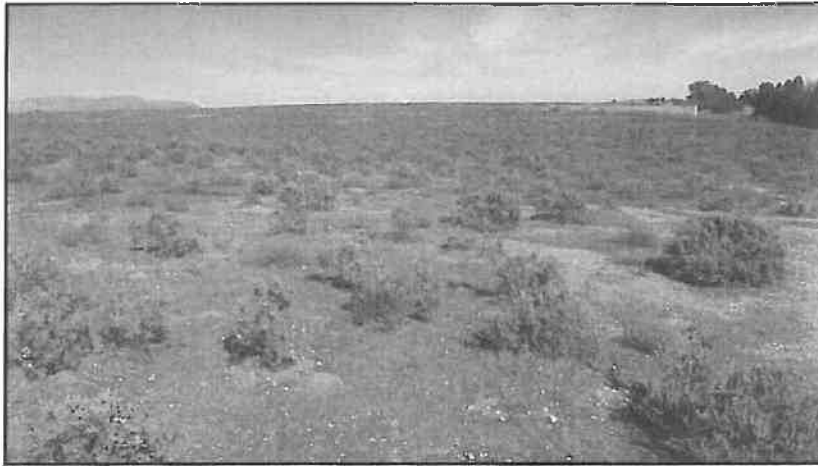


Figure 6. View of the proposed site facing west. Note the quartz sheet wash

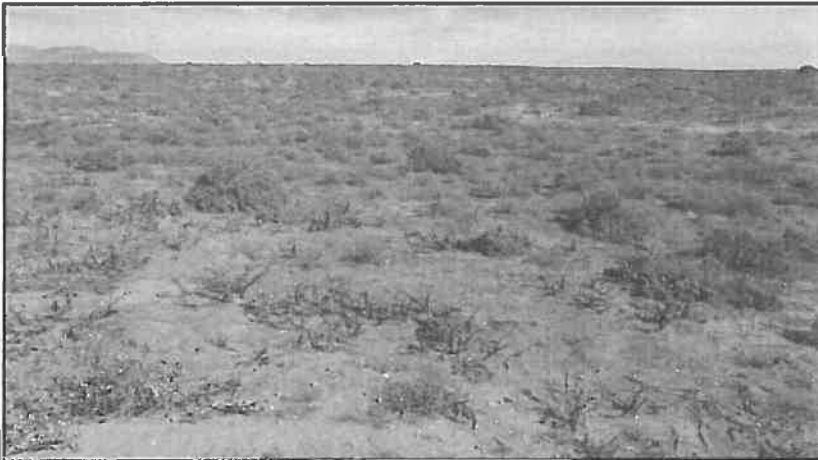


Figure 7. View of the proposed site facing west. Note the softer red sands

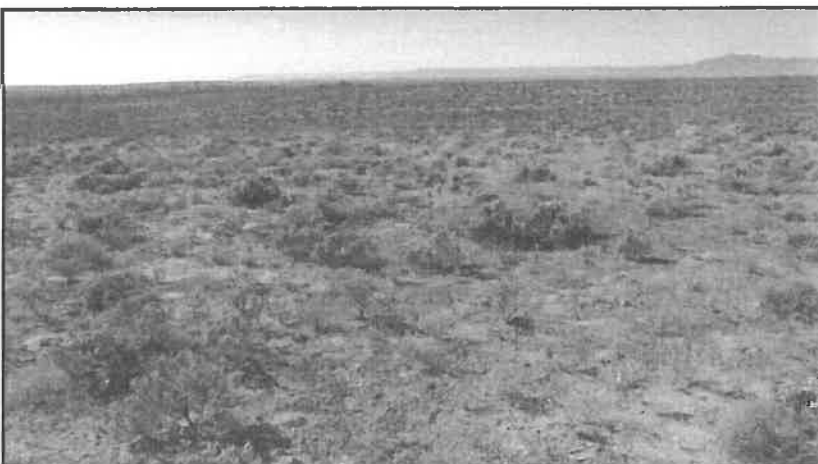


Figure 8. View of the site facing east.

#### **4. STUDY APPROACH**

##### **4.1 Method of survey**

A detailed foot survey of the proposed footprint area was undertaken by J. Kaplan of ACRM on the 9<sup>th</sup> May, 2012.

A track path of the survey was created (refer to Figure 14 in Appendix II).

All archaeological remains documented during the study have been mapped in-situ using a hand held Garmin Oregon 300 GPS device set on the map datum WGS 84.

A desk top study was also done.

##### **4.2 Constraints and limitations**

There were no constraints or limitations associated with the study. Archaeological visibility was very good over most of the proposed site. Some areas were covered in thicker vegetation but this did not hinder the study.

##### **4.3 Identification of potential risks**

Based on the results of the specialist study, there are no archaeological risks associated with the proposed development.

##### **4.4 Results of the archaeological desk top study**

North of Vanrhynsdorp, the landscape is dominated by the semi-arid flatlands of the Knersvlakte. Studies have shown that archaeological visibility is very high in this dry region of the south Western Cape Province, where many implements of mixed age are found on eroded surfaces (Orton 2011a). J. Orton (pers. comm.) has undertaken extensive fieldwork in the Knersvlakte, as part of his research for his PhD, and has mapped scatters of both Middle and Later Stone Age (MSA & LSA) material alongside the Sout and Varsche River. He and others have also excavated MSA, and LSA rock shelters with contact period deposits on the Varsche River (Orton et al 2011). His work has shown that MSA and LSA archaeological remains are strongly concentrated around the floodplains of the many drainage channels that occur in the surrounding landscape, and are usually revealed in eroding and deflated areas. Early Stone Age (ESA) occurrences on the other hand tend to be found among the (older) river gravel terraces further away. Mackay et al (2010) have documented an open air bifacial point manufacturing site, possibly dating to the Still Bay period of the MSA more than 70 000 years ago. Orton (2011b) also documented dispersed scatters of LSA, and some MSA implements mostly associated with dry pans and heuweltjies during a study for a proposed landfill site north of Vredendal. Large numbers of LSA implements were also documented on the flat mountain tops on the farm Zoutfontein about 1 km north of the Sout River by Kaplan (2010a) during scoping for a proposed wind energy farm north west of Vanrhynsdorp. Thin scatters of mostly isolated quartz, silcrete and quartzite tools were documented during a study east of the PPC gypsum mine in Vanrhynsdorp (Smith 2011). Orton (2012) very recently documented several hundred MSA and LSA lithics on the Farm Paddock 257, situated adjacent to and east of the N7, directly alongside De Duinen 258. According to Orton (2012) the remains were rated as having limited



importance due to their disturbed context. J. Kaplan (2010b) has also documented relatively large numbers of LSA and some MSA stone implements north of the Wiedou River about 5 kms south of Van Rhynsdorp. Well preserved Bushman paintings, and caves with archaeological deposits are also known from the Gifberg, about 15 kms south of the town.

## **5. FINDINGS**

### **5.1 Archaeology**

114 archaeological occurrences (numbering nearly 130 stone implements) were counted and documented on the proposed site for the Vanrhynsdorp solar energy farm. All of the remains have been mapped in-situ (refer to Figure 14 in Appendix II). A spreadsheet of waypoints and description of the archaeological finds is presented in Table 1 (refer to Appendix I).

The majority of the archaeological remains that have been documented during the study are assigned to the MSA, but a relatively large number of LSA lithics were also encountered. MSA tools typically comprise larger, thicker, chunky and triangular shaped flakes with convergent dorsal scars. A number of flakes are broken or snapped. Two MSA utilized & partially retouched silcrete blades (550 & 629) were also found. Only one round core (537) and one flaked chunk/minimal core (595) was found over the footprint area. Only two Early Stone Age bifaces (542 & 605) were encountered. One MRP/silcrete convex scraper (554) was found, but a relatively large number ( $n = 23$ ) of miscellaneous retouched, partially retouched and utilized flakes were noted. One miscellaneous LSA upper grindstone (376) was found. More than 80% of implements are in quartzite and silcrete (red, greys and pinks), but a few lithics in indurated shale, quartz, chalcedony and ironstone were also noted.

Most of the tools comprise single, isolated occurrences that are spread very thinly and unevenly over the surrounding, undulating landscape, but there does appear to be a clustering of implements on the sheet washed quartz gravels (mixed quartz and rolled pebbles) on the higher elevations overlooking the floodplain of the river in the south western portion of the site. The lower lying portions of the site are underlain by loose, red and slightly calcareous sands.

One piece of weathered ostrich eggshell (562) and one small piece of refined earthenware (580) were also logged.

A collection of tools is presented in Figures 9-14.

#### **5.1.1 Significance of the archaeological remains**

As archaeological sites are concerned the occurrences are lacking in context and no organic remains such as bone, pottery or larger numbers of ostrich eggshell was found.

Overall, the relatively small numbers and fairly isolated and dispersed context in which they were found means that the remains on the proposed site have been rated as having low archaeological (Grade 3C) significance.

Heritage Impact Assessment, proposed Solar Energy Farm in Vanrhynsdorp

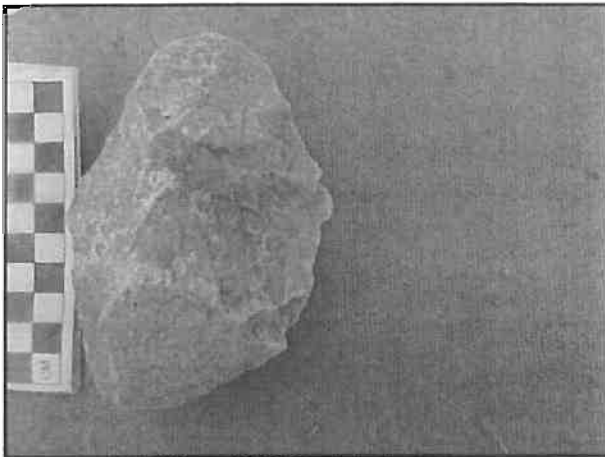


Figure 9. ESA biface (542) Scale is in cm



Figure 12. Collection of tools Scale is in cm



Figure 10. Collection of tools Scale is in cm

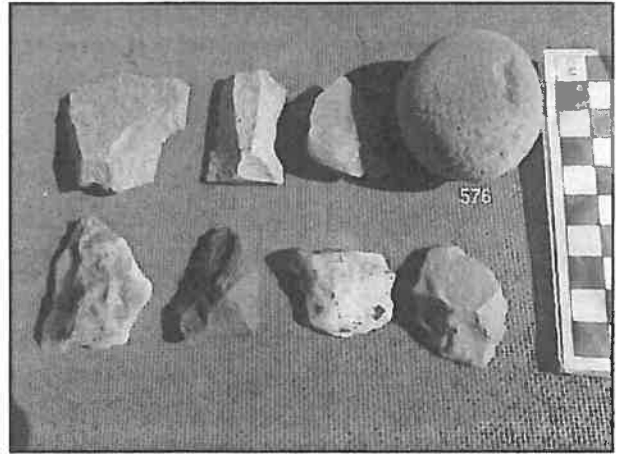


Figure 13. Collection of tools Scale is in cm

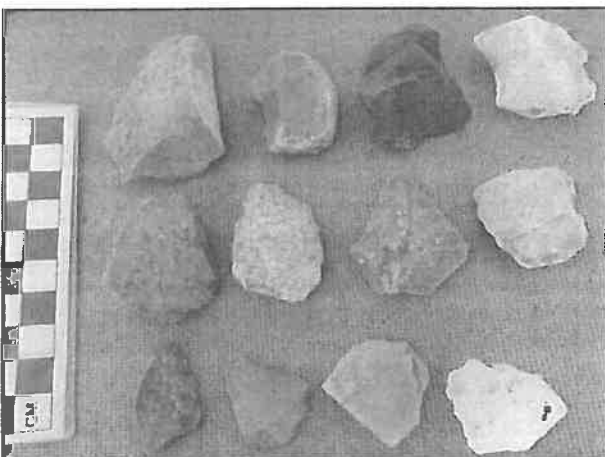


Figure 11. Collection of tools Scale is in cm

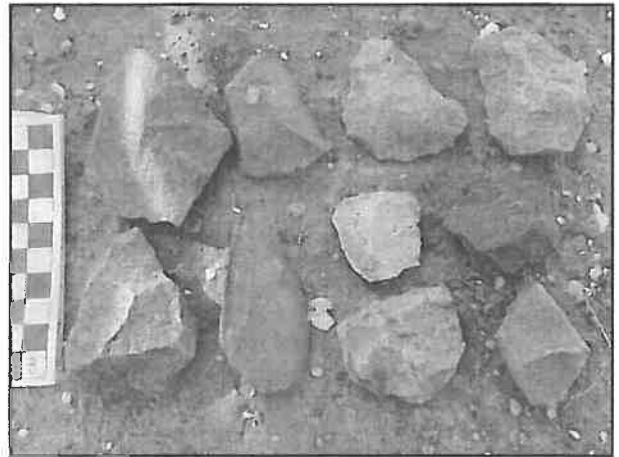


Figure 14. Collection of tools Scale is in cm

## 5.2 Visual Impact Study

The Visual Impact Assessment (VIA) for the proposed Vanrhynsdorp SEF was done by Sarien Lategan of Geostatics (refer to Appendix III). It is important to note that while the VIA does address the visual impacts associated with the proposed development, a site visit has yet to be undertaken by the specialist. A field study was done for the original proposed site – Site 1 (closer to the town), but due to botanical constraints, a site closer to the Droerivier has now been identified, which is more acceptable. Site 1 has therefore been screened out of the proposed development. The VIA report thus includes a full assessment of Site 1, as well as a desk top review of Site 2 alongside the Droerivier, including the anticipated visual impacts. Importantly, the desk top review considers worst case scenarios such as height of the tracking units.

With regard to the VIA, the primary potential visual receptor is the N7 which is located to the west of Site 2. According to Lategan (2012), it is envisaged that the intrusion level of the solar modules on N7 road users will be of low-medium significance, depending on the size of the modules. Neither module will have a significant impact on obstruction levels, and the overall conclusion is that the visual impact of Site 2 is 'within acceptable levels'. According to Lategan (2012), any units within the height scale of 8m is expected to be within acceptable levels. Smaller tracking units or smaller panels will obviously have a lesser visual impact.

## 6. IMPACT STATEMENT

The specialist archaeological study have shown that the proposed site for the Roma Energy Vanrhynsdorp Solar Energy Farm will not have an impact of great significance on the archaeological heritage.

Assuming that mitigation action is implemented, the visual impact of the proposed project is assessed as **low/medium visual impact**.

## 7. CONCLUSION

The specialist study has captured a good record of the archaeological record that is present on the proposed site,

Indications are that in terms of archaeological heritage, and the visual impact study, the proposed activity (i. e. the construction of a solar energy farm) is viable and no fatal flaws have been identified.

## **8. RECOMMENDATIONS**

With regard to the proposed development of a solar energy farm on Portion of the Farm De Duine No. 258 in Vanrhynsdorp, the following recommendations are made:

### **Archaeology**

1. No further archaeological mitigation is required.

### **Visual Impacts**

- 1 It is recommended that should the assessment of Site 2 be confirmed by an on-site visit (due to be done in June 2012) the development should be allowed to proceed.

## 9. REFERENCES

Kaplan, J. 2010a. Archaeological scoping study of a proposed wind energy facility on Zoutfontein and other properties near Juno Substation, Vredendal. Report prepared for DJ Environmental Consultants. ACRM

Kaplan, J. 2010b. Archaeological Impact Assessment proposed Maskam Lime Mine on a portion of the remainder of the farm Welverdiend 511 Van Rhynsdorp. Report prepared for Site Plan Consulting. ACRM

Lategan, S. 2012. Visual Assessment Vanrhynsdorp, Portion of Farm 258: Solar Energy Facility. Report prepared for EnviroAfrica. Geostratics. Cape Town

Mackay, A., Orton, J., Schwartz, S. & Steele, T. 2010. Soutfontein (SFT)-0001: preliminary report on an open air site rich in bifacial points, southern Namaqualand, South Africa. South African Archaeological Bulletin 65:84-95.

Orton, J. 2012. Heritage Impact Assessment for solar energy facilities at Graafwater (Clanwilliam District) and Vanrhynsdorp (Vredendal District), Western Cape. Report prepared for Digby Wells & Associated (Pty) Ltd. ACO Associates cc St James.

Orton, J. 2011a. Heritage Impact Assessment for the proposed Vredendal Inca Solar Energy Facility, Vredendal Magisterial District, Western Cape. Report prepared for Savannah International (Pty) Ltd. ACO Associates cc St James.

Orton, J. 2011b. Environmental Impact Assessment Identification of a regional land fill site and permit application for the Northern West Coast District Municipality. Heritage. Report prepared for Anel Blignaut Environmental Consultants. Archaeology Contracts Office, Department of Archaeology, University of Cape Town.

Orton, J., Klein, R.G., Mackay, A., Schwartz, S., & Steele, T. 2011. Two Holocene rock shelter deposits from the Knersvlakte, southern Namaqualand, South Africa. Southern African Humanities 23:109-150

Smith, A. 2011. An Archaeological Impact Assessment Portion of Farm 251 Remainder, Vanrhynsdorp. Report prepared for Site Plan Consulting. Department of Archaeology, University of Cape Town

**Heritage Impact Assessment, proposed Solar Energy Farm in Vanrhynsdorp**

**Appendix I**

**Spreadsheet of waypoints and description of archaeological finds**

Heritage Impact Assessment, proposed Solar Energy Farm in Vanrhynsdorp

Site	Name of Farm	Lat/Long	Description of archaeological finds
	Portion of the Farm De Duinen No. 258		
532		No GPS reading taken	X 2 small silcrete flakes
533		S31 34.896 E18 44.396	MSA quartzite flake and chunk
534		S31 34.894 E18 44.402	Small indurated shale flake/chip
535		S31 34.893 E18 44.403	Quartzite flake
536		S31 34.888 E18 44.406	Utilized blade on fine grained quartzite
537		S31 34.885 E18 44.405	Quartzite core
538		S31 34.886 E18 44.389	Large MSA quartzite flake
539		S31 34.893 E18 44.396	Large chunk
540		S31 34.899 E18 44.395	Quartzite flake
541		S31 34.904 E18 44.382	Quartzite flake
542		S31 34.944 E18 44.512	ESA biface
543		S31 34.876 E18 44.606	MSA chunk
544		S31 34.868 E18 44.600	Cortex flake
545		S31 34.866 E18 44.608	Chunk
546		S31 34.857 E18 44.613	MSA quartzite flake
547		S31 34.861 E18 44.591	Small triangular shaped MSA flake
548		S31 34.859 E18 44.647	Miscellaneous retouched MSA silcrete flake, & partially retouched quartz flake
549		S31 34.848 E18 44.666	Indurated shale chunk (blank)
550		S31 34.845 E18 44.665	Broken silcrete MSA flake, and partially retouched and utilized silcrete MSA blade
551		S31 34.845 E18 44.685	Thin silcrete flake & indurated shale chunky flake
552		S31 34.816 E18 44.729	Quartzite chunks and flake
553		S31 34.816 E18 44.729	Broken silcrete MSA flake
554		S31 34.804 E18 44.739	Silcrete MRP/convex scraper
555		S31 34.821 E18 44.702	Snapped silcrete flake
556		S31 34.822 E18 44.701	Silcrete chunk and fine grained quartzite flake
557		S31 34.824 E18 44.698	Triangular shaped flake
558		S31 34.821 E18 44.685	Flake
559		S31 34.823 E18 44.681	Large silcrete flake/chunk
560		S31 34.874 E18 44.606	Large silcrete worked out flake
561		S31 34.900 E18 44.547	Small piece of OES (weathered)
562		S31 34.918 E18 44.504	Quartzite chunk
563		S31 34.908 E18 44.482	Quartz flake
564		S31 34.911 E18 44.475	MSA quartzite flake
565		S31 34.877 E18 44.484	Quartzite chunk
566		S31 34.879 E18 44.475	Triangular shaped flake
567		S31 34.882 E18 44.475	Large utilized quartzite flake
568		S31 34.878 E18 44.449	MSA flake
569		S31 34.882 E18 44.444	Cortex chunk
570		S31 34.831 E18 44.545	Fine grained quartzite blade
571		S31 34.828 E18 44.560	Small chunk
572		S31 34.825 E18 44.564	Red silcrete utilized flake
573		S31 34.841 E18 44.497	Snapped MSA quartzite flake
574		S31 34.895 E18 44.427	MSA flake
575		S31 34.874 E18 44.434	Broken/snapped silcrete ?MSA flake
576		S31 34.796 E18 44.536	Small misc. u/grindstone
577		S31 34.794 E18 44.530	Small chunk

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578		S31 34.790 E18 44.528	Silcrete chunk
579		S31 34.835 E18 44.458	Piece of <b>earthenware</b>
580		S31 34.836 E18 44.455	Weathered quartzite flake
581		S31 34.838 E18 44.468	Pebble flake
582		S31 34.868 E18 44.409	Ironstone flake
583		S31 34.760 E18 44.541	MSA silcrete flake
584		S31 34.761 E18 44.540	Quartzite flake
585		S31 34.763 E18 44.538	Chunk/flake
586		S31 34.765 E18 44.539	Pebble chunk
587		S31 34.764 E18 44.534	Thick misc. <b>retouched</b> silcrete flake
588		S31 34.762 E18 44.535	Quartzite chunk
589		S31 34.799 E18 44.457	Chunk
590		S31 34.721 E18 44.549	Chunk
591		S31 34.707 E18 44.572	Silcrete MSA flake
592		S31 34.666 E18 44.645	<b>Indurated shale retouched flake</b>
593		S31 34.652 E18 44.671	MSA silcrete flake
594		S31 34.651 E18 44.877	Chunk
595		S31 34.649 E18 44.682	Flaked chunk/minimal <b>core</b>
596		S31 34.584 E18 44.784	Red silcrete chunk
597		S31 34.602 E18 44.780	Flat quartzite flake
598		S31 34.639 E18 44.745	Chunk
599		S31 34.646 E18 44.725	MSA <b>side retouched</b> quartzite flake
600		S31 34.646 E18 44.720	X 2 small quartzite flakes
601		S31 34.669 E18 44.685	Large side struck quartzite flake
602		S31 34.711 E18 44.612	Silcrete chunk
603		S31 34.724 E18 44.616	Chunk
604		S31 34.667 E18 44.704	<b>Utilized</b> triangular shaped quartzite flake
605		S31 34.656 E18 44.719	Large <b>indurated shale</b> flake (?ESA)
606		S31 34.685 E18 44.712	Flat chunk
607		S31 34.708 E18 44.674	Thick quartzite flake
608		S31 34.711 E18 44.667	Chunk, and broken silcrete flake
609		S31 34.724 E18 44.646	Weathered <b>indurated shale</b> chunk
610		S31 34.752 E18 44.570	MSA quartzite flake
611		S31 34.731 E18 44.651	Quartz flake, ? <b>retouched</b>
612		S31 34.727 E18 44.656	Chunk
613		S31 34.696 E18 44.692	MSA quartzite flake
614		S31 34.688 E18 44.701	MSA quartzite flake
615		S31 34.655 E18 44.773	Chunk
616		S31 34.668 E18 44.768	<b>Utilized</b> silcrete flake ?LSA
617		S31 34.692 E18 44.729	X 2 small chunks
618		S31 34.739 E18 44.654	Chunky flake with <b>utilized edge</b>
619		S31 34.771 E18 44.607	X 2 chunks, and 1 small quartzite flake
620		S31 34.772 E18 44.611	Large quartzite flake
621		S31 34.747 E18 44.676	Nicked, broken silcrete flake
622		S31 34.762 E18 44.646	Silcrete chunk & silcrete MSA flake
623		S31 34.774 E18 44.613	Chunk
624		S31 34.775 E18 44.603	MSA <b>utilized</b> , snapped flake
625		S31 34.772 E18 44.640	Silcrete chunk
626		S31 34.753 E18 44.724	Large <b>utilized &amp; retouched</b> quartzite flake
627		S31 34.777 E18 44.639	Small flake
628		S31 34.775 E18 44.684	Broken/snapped quartzite MSA flake
629		S31 34.774 E18 44.688	Snapped silcrete <b>utilized</b> MSA blade
630		S31 34.752 E18 44.742	Large silcrete chunk



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631		S31 34.744 E18 44.778	Snapped silcrete <b>utilized</b> MSA flake
632		S31 34.778 E18 44.703	Small chunk
633		S31 34.811 E18 44.635	Large, chunky broken silcrete MSA flake
634		S31 34.824 E18 44.643	Large chunk
635		S31 34.822 E18 44.650	MSA quartzite flake
636		S31 34.803 E18 44.699	Quartzite flake
637		S31 34.778 E18 44.740	Broken flat silcrete flake
638		S31 34.777 E18 44.742	Chunk
639		S31 34.753 E18 44.774	Large quartzite <b>side retouched</b> flake
640		S31 34.706 E18 44.827	Chunky MSA quartzite flake
641		S31 34.722 E18 44.761	<b>Diggings</b>
642		S31 34.764 E18 44.757	MSA <b>utilized and partially retouched</b> triangular shaped silcrete flake
643		S31 34.771 E18 44.782	<b>Chalcedony</b> flake/blank
644		S31 34.778 E18 44.777	Chunk
645		S31 34.806 E18 44.729	Side struck indurated <b>shale</b> pointed flake
646		S31 34.807 E18 44.727	Large, wide MSA silcrete <b>utilized and partially retouched</b> flake
647		S31 34.820 E18 44.700	Chunk
648		S31 34.829 E18 44.657	Small broken silcrete flake

Table 1. Spreadsheet of waypoints and description of archaeological finds

Appendix II

Track paths and waypoints of archaeological finds

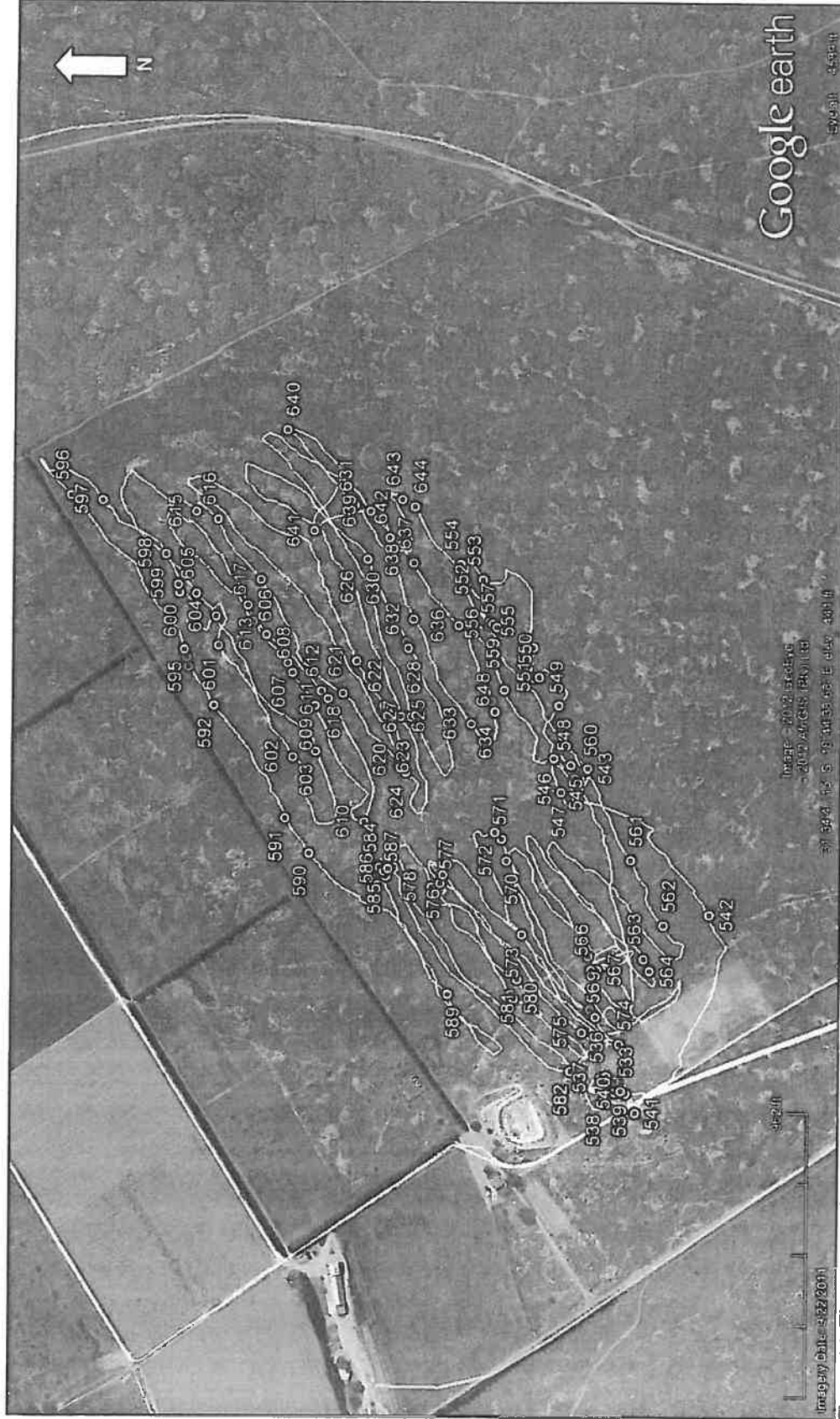


Figure 14. The proposed Roma Energy Vanrhynsdorp Solar Energy Farm: Track paths and waypoints of archaeological finds