

FIELD NOTES

Phase 1 Archaeological Impact Assessment

Site ID: **Proposed San Solar Development on Wincanton Farm 472 near Kathu**

Phase 1 survey conducted				
CRM Archaeologist	Jan Engelbrecht		Date/s	2022-04-20 – 2022-04-23
Additional surveyors	None			
Type of survey	Pedestrian/Vehicular		Transects	Where accessible
Technical equipment	GPS	Garmin Etrex 10 and Locus Maps	Camera	Canon Ixus

PROJECT PARTICULARS

Technical information

Project description	
Project name	The proposed development of a PV Solar Facility with infrastructure, by San Solar as part of the Sishen solar facility near Kathu in the Northern Cape Province.
Description	<p>San Solar Energy Facility (Pty) Ltd proposes the development of the San Solar PV facility, a photovoltaic (PV) solar energy facility and associated infrastructure, on a site located approximately 16km north west of Kathu in the Northern Cape Province. The solar PV facility will be developed on the Remaining extent of the Farm Wincanton 472 and comprise several arrays of PV panels and associated infrastructure with a contracted capacity of up to 100MW. The study area falls within the Gamagara Local Municipality 1 within the John Taolo Gaetsewe District Municipality. The site is located east of Deben and is accessible via the R380 provincial route which branches off the N14 National Road, approximately 3km south of Kathu. A facility development area², which will include the PV facility, BESS and a 132kV facility substation to be connected via a Loop-in-Loop out (LILO) connection to the Umtu 132kV overhead power line will be identified within the study area considered in the Scoping phase. The infrastructure associated with this 100MW PV facility includes:</p> <ul style="list-style-type: none"> » PV modules and mounting structures » Inverters and transformers » Cabling between the panels, to be laid underground where practical. » Battery Energy Storage System (BESS) » Site and internal access roads (up to 8m wide) » Laydown area. » Operation and Maintenance buildings including a gate and security building, control centre, offices, warehouse, and workshop areas for maintenance and storage. » Grid connection solution including a 132kV facility substation to be connected via a Loop-in-Loop out (LILO) connection to the Umtu 132kV overhead power line (located ~5km east of the site). <p>The development area will be larger than the area needed for the construction of a</p>

	100MW PV facility and will provide the opportunity for the optimal placement of the infrastructure, ensuring avoidance of major identified environmental sensitivities by the development footprint ³ . To avoid areas of potential sensitivity and to ensure that potential detrimental environmental impacts are minimised as far as possible, the development footprint within which the infrastructure of San Solar PV facility and its associated infrastructure will be located will be fully assessed during the EIA Phase. Three (3) solar facilities have been constructed in the broader area. These include the Sishen Solar PV and Kathu Solar PV facilities located immediately west of the farm Remaining extent of the Farm Wincanton 472. The Kathu Solar facility is a CSP facility located to the east of the study area. (Lavine, J.2022. <i>HIA Heritage Screener Summary Ref CTS 21_208</i> . CTS Heritage: Cape Town)
Developer	
San Solar Energy Facility (Pty) Ltd	
Contact information	Cel: 084 852 9500
Development type	Solar/Industrial
Landowner	
San Solar Energy Facility (Pty) Ltd	
Contact information	Contact Person: Shabeer Cell: 084 852 9500
Consultants	
Environmental	Savannah Environmental
Heritage and archaeological	UBIQUE Heritage Consultants and CTS Heritage
Paleontological	Unknown
Property details	
Province	Northern Cape
District municipality	John Taolo Gaetsewe
Local municipality	Gamagara
Topo-cadastral map	1:50 000
Farm name	Remaining extent of the Farm Wincanton 472
Closest town	Kathu and Deben
GPS Co-ordinates	27°34'47.09"S 22°56'54.25"E
Property size	1000 ha
Development footprint size	Approximately 400ha
Land use	
Previous	Agriculture
Current	Agricultural
Rezoning required	No
Sub-division of land	No
Development criteria in terms of Section 38(1) NHRA	
	Yes/No
Construction of a road, wall, power line, pipeline, canal or other linear forms of development or barrier exceeding 300m in length.	Yes
Construction of bridge or similar structure exceeding 50m in length.	No
Construction exceeding 5000m ² .	Yes
Development involving three or more existing erven or subdivisions.	No
Development involving three or more erven or divisions that have been consolidated within the past five years.	No
Rezoning of site exceeding 10 000m ² .	No
Any other development category, public open space, squares, parks, recreation grounds.	No

GENERAL ENVIRONMENT, INFRASTRUCTURE AND LANDSCAPE

Site description

Description of the general area affected by development
Type of environment
The environment is a typical savannah/Kalahari type environment with flat sandy plains, rocky outcrops at certain areas and sloping slightly towards the south of the development site.
Terrain description
The terrain and general region had two very good raining seasons the past two years. Almost the entire site is densely overgrown with thick/tall grass. Kameeldoring/Camel Thorn trees (<i>Acacia erioloba</i>) are scattered throughout the development site. Swarthaak/Blackthorn and Vaalbos trees are very densely present throughout the development site. Generally the site is rather flat with a slight slope towards the south. The development site is currently used for cattle farming/grazing. The entire terrain is divided into camps by fencing. There are cattle posts on at least 4 places on the site. An existing railway line runs from north to south along the western border of the development site. At least one natural, non-perennial pan/depression is present on the development site.
Geology
<p>The geology observed on the ground surface throughout the survey was as follows:</p> <ul style="list-style-type: none"> • Calcrete/Lime stone • Banded Ironstone Formation (BIF) • A few Dolomite outcrops • Crypto-chrySTALLine silicates (CCS) • Quartz (minimal) • Jaspis • Tormaline
Vegetation
<p>Dominant (Prime) vegetation:</p> <ul style="list-style-type: none"> • Black Thorn Acacia/Swarthaak (<i>Acacia mellifera</i>) • Campher Bush (<i>Tarchonanthus camphorates</i>) • Camelthorn/Kameeldoring (<i>Acacia erioloba</i>) • Tumble weed/Gifbol (<i>Ammocharis coranica</i>) • Feathertop chloris/Vingergras (<i>Chloris virgata</i>) • Bluestem/Vleivingergras (<i>Dichanthium annulatum</i>) • Tall Bushmangrass/Lanbeen Boesmangras (<i>Stipagrostis ciliate</i>) • Silky Bushmangrass/Blinkblaar Boesmangras (<i>Stipagrostis uniplumis</i>) • Branched needlegrass/Berggras (<i>Triraphis ramosissima</i>) • Pearly love grass/Reengras (<i>Eragrostis rotifer</i>) • Ringed lovegrass/Blougras (<i>Eragrostis annulata</i>)
Waterways/sources
There are three pans or wetland depression in close proximity to the development site, close to the eastern, north-eastern and northern boundaries of the site.. These water features are non-perennial and will hold or gather water for a period of time during abnormal high rainfalls. No riverine, rivers or dry waterways were observed on the development site.
Site boundaries
<p>North: Neighbouring farmland/agricultural land.</p> <p>South: Neighbouring farmland/agricultural land and existing Sishen mine towards the southwest. The R380 Secondary road also form a boundary, but the overhead line corridor section development site stretches beyond the R380 towards the south, linking up with an existing Eskom power line.</p> <p>East: Neighbouring farmland/agricultural land</p> <p>West: Transnet railway line and existing San Solar/Sishen Solar facility</p>

Site access	GPS Co-ordinates
The development site was entered from the southeast through a prior arranged farm gate. Keys were obtained from the San Solar offices. Site access to certain parts of the site were blocked due to locked gates. San Solar could not assist with keys for locked gates to obtain access to these areas of the site.	27° 35' 18.12"S 22° 57' 03.30"E
Disturbances	
Natural erosion	
Very limited natural erosion. Some places along the roads have been eroded away slightly due to heavy rains. No abnormal major natural erosion was detected or observed on the development site. Slight overgrazing detected around cattle posts, but nothing significant.	
Human-made	
<ul style="list-style-type: none"> Two main two-track roads lends accessibility to the site The presense of a burrow pit/quarry along the western boundary of the development site. Approximately 2ha in size and 5-10m deep (Waypoint 007) 	
Notes	
The development site is very well conserved by previous owners and is quite pristine. Vegetation cover was a constraint during the survey and movement on the site, both by vehicle and/or pedestrian was difficult.	

Environmental recording

Way point	Photo number	Description	Location
Site-specific points of interest/ natural significance			
001	N/A	Point of access	27° 35' 18.12" S 22° 57' 03.30" E
N/A	01 – 17	Contextual images of the eastern section of the development site. Taken towards various directions.	N/A
003	25-28	Non-perranial pan or wetland depression.	27° 34' 03.1 S 22° 57' 05.9" E
007	42-47	Existing burrow pit/quarry previously constructed. Disturbed area.	26° 41' 55.77 S 20° 06' 41.35" E
N/A	48-54	Contextual images of the southern section of the development footprint taken towards various directions.	N/A
N/A	57-58	Contextual images of the grid connection corridor taken from the R380 Secondary road towards the south.	N/A
009	59-60	Existing Eskom powerline (overhead) running from east to west. This will be the grid connection link-up power line from the proposed solar development.	27° 36' 08.7" S 22° 56' 34.9" E
N/A	61-65	Contextual images of development site: northwestern section and west sentral towards southwestern section.	N/A

HERITAGE RESOURCES RECORDING

Stone Age Resources Identified

Point ID & Site #	Photo #	Description	Period	Location	Field rating/ Significance/ Recommended Mitigation
004	29-31	Type lithic/s	MSA/ Early LSA	27° 34' 04.6" S 22° 57' 04.9" E	Field Rating Iii B Medium significance Resource must be retained where possible where not possible it must be fully investigated and/or mitigated.
		Raw material			
		N in m².			
		Context			
		Additional			
005	32-36	Type lithic/s	MSA/ Early LSA	27° 34' 02.3" S 22° 57' 08.9" E	Field Rating Iii B Medium significance Resource must be retained where possible where not possible it must be fully investigated and/or mitigated.
		Raw material			
		N in m².			
		Context			
		Additional			
006	37-41	Type lithic/s	MSA/ Early LSA	27° 34' 06.3" S 22° 57' 06.1" E	Field Rating Iii B Medium significance Resource must be retained where possible where not possible it must be fully investigated
		Raw material			
		N in m².			
		Context			
		Additional			
		Additional			

						and/or mitigated.
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HERITAGE RESOURCES RECORDING

Historical Period Resources Identified

Way Point ID & Site #	Photo #	Description	Period	Location	Field rating/ Significance/ Recommended Mitigation
Way-Point 002	18-24	Type of feature	Modern ca 1950s-1970s	27° 34' 39.10" S 22° 56' 20.40" E	Field Rating III C Low significance. Building outside the development site. No Mitigation Required
		Material			
		N in m².			
		Context			
		Additional			
		Old building ruin			
		N/A			
		N/A			
		In context with farming infrastructure and an abandoned railway siding on the eastern side of the railway line bordering the old farm settlement.			
		Building material mostly vernacular with some modern additions. Karoo cottage style architecture. Building material seems like dolomite blocks.			

Iron Age Resources Identified

Point ID & Site #	Photo #	Period	Location	Field rating/ Significance/ Recommended Mitigation
None	None	None	None	None

Graves Identified

Point ID & Site #	Photo #	Period	Location	Field rating/ Significance/ Recommended Mitigation
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No graves located or identified

HERITAGE RESOURCES RECORDING

Intangible Heritage Resources/ Cultural Landscape Identified

Point ID & Site #	Photo #	Description	Period	Location	Field rating/ Significance/ Recommended Mitigation
008	55-56	Nature	Road crosses	27° 35' 23.6" S 22° 56' 37.2" E	Field Rating Iii B Medium significance Resource must be retained where possible where not possible it must be fully investigated and/or mitigated.
		Cultural evidence	Memorials to those who died in road accidents on the R380 on the eastern edge of the grid connection corridor		
		Access	Open. Within the servitude of the R380 Secondary road		
		Affected community	Families of deceased and possibly local community		
		Additional	None		

IDENTIFIED HERITAGE RESOURCES DISCUSSION

Specialist comments

Stone Age finds
Stone age artefacts located and recorded are in context with a wetland area. It was located on the edge of a non-perranial pan or wetland calcrete depression or a hollow in the ground appeared with the passing of time. The MSA /LSA material found at the various locations, suggests a possible temporary settlement of Stone Age people beside a possibly more perranial body of water.
Iron Age/ Agri-pastoralist Early Farming communities finds
No Iron Age heritage was located or recorded on the development site.
Historical finds
An old house ruin with vernacular bulding style was located and recorded as part of the regional archaeology. This building is not located on the development site, but it should be noted that this structure is older than 60 years and is to be considered if any further developments are intended which might affect this ruin.
Identified graves
No graves were identified on the development footprint. It is imperative that it should e brought under the cleint's attention, that the vegetation growth was very dense. The grass and brush covered not less than 90% of the ground's surface and only about 10% of the surface of the ground was visible to the naked eye. Trees, such as Campher bush and Black thorn acacia were very dominant throughout the entire ste and in conjunction with the grass cover, certain heritage could be hidden from the naked eye.

Intangible Heritage/ Cultural Landscape
A number of memorial crosses were located and recorded within the servitude of the R380 Secondary road. The crosses are located on the eastern edge of the grid connection corridor. The client should take note of these crosses which might be very significant to the local community and the families of the deceased in memoriam.
Other
None

IDENTIFIED HERITAGE RESOURCES MITIGATION

Specialist recommendations

Stone Age finds
We recommend the following mitigation: The identified wetland should be a no-go zone with a conservation bufferzone around the wetland of not less than 200m. This feature is archaeologically sensitive.
Iron Age/ Agri-pastoralist Early Farming communities finds
No mitigation. Project can proceed.
Historical finds
No mitigation, but developers should take cognisance of the sensitivity of the old ruin for possible future developments. Project can proceed.
Identified graves
No graves identified, located or recorded. Take note of above specialist comments on graves.
Intangible Heritage/ Cultural Landscape
We recommend the following mitigation: A 20m conservation bufferzone should be implemented around the crosses until such time it is removed by either the family or road authorities.
Other
Due to the dense vegetation, we recommend that an additional Heritage survey should be done after ground clearance, to ensure an accurate heritage survey and recording.

ADDITIONAL NOTES AND RESOURCES

Attached Field Data

Filename	File type	Description
AIA SAN SOLAR FIELD DATA	Folder	Tracks, waypoints and Images of survey and AIA.

Additional Notes

Please take note that this survey was not a "one-day" survey. The entire development site is 1000ha and the development footprint consist of approximately 400ha. This is at least a 4 day survey, especially under the difficult conditions as experienced during the survey period.



Declaration of independence:

I, Jan Engelbrecht, hereby confirm my independence as a heritage specialist and declare that:

- I am suitably qualified and accredited to act as an independent specialist in this application;
- I do not have any vested interests (either business, financial, personal or other) in the proposed development project other than remuneration for the heritage assessment and heritage management services performed;
- The work was conducted objectively and ethically, in accordance with a professional code of conduct and within the framework of South African heritage legislation.


Signed:
JAC. Engelbrecht
Heritage Consultants

Date: 2022-04-26
UBIQUE