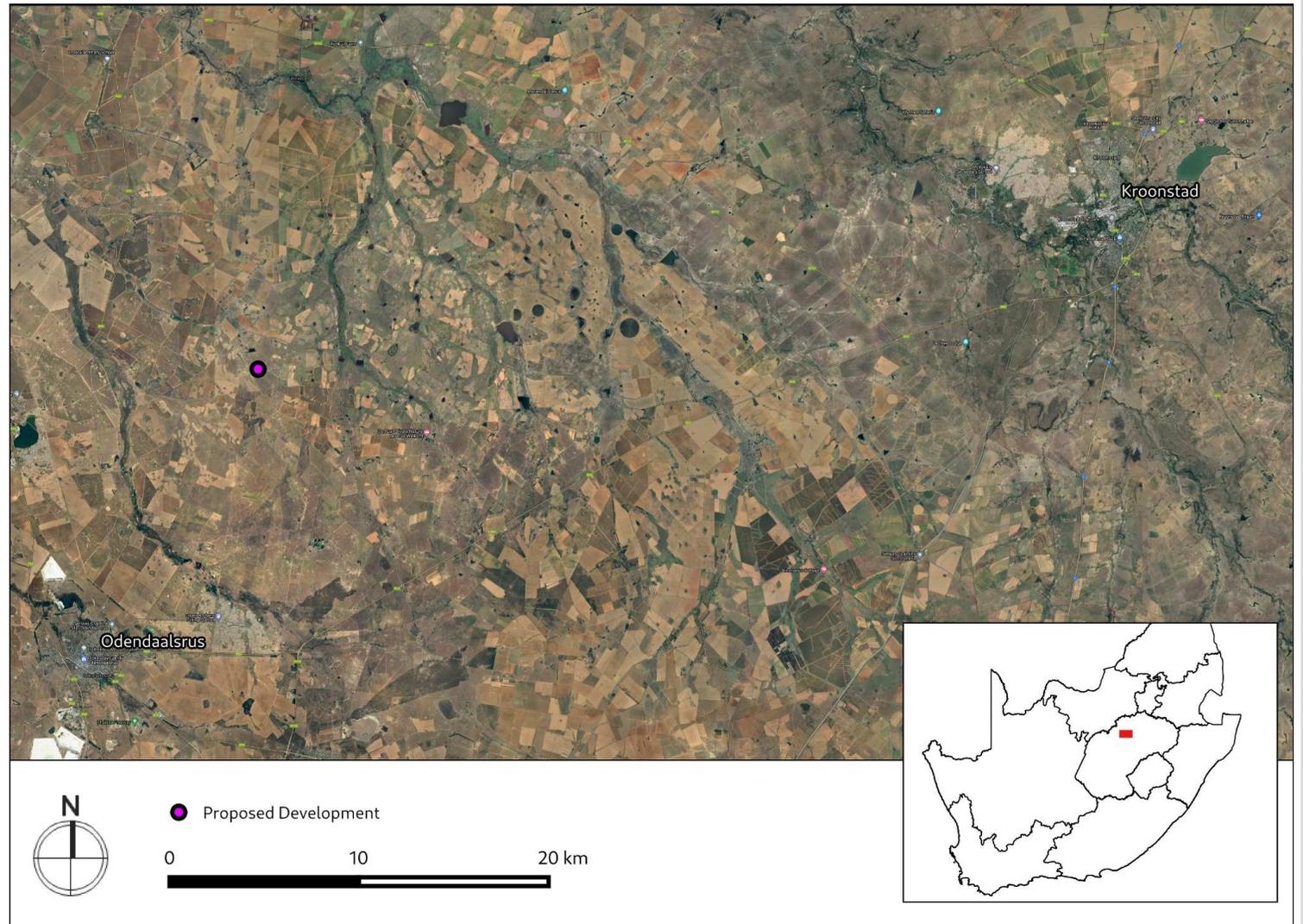




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# HERITAGE SCREENER

CTS Reference Number:	<b>CTS21_214</b>
SAHRIS Case No.	
Client:	<b>Savannah Environmental (Pty) Ltd</b>
Date:	<b>October 2021</b>
Title:	<b>Additional development area for the authorised Engie Grootspuit PV Facility, in the Mangaung Metropolitan Municipality, Free State Province</b>



**Figure 1a.** Satellite map indicating the location of the proposed development in the Free State

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## 1. Proposed Development Summary

ENGIE Grootspuit Solar Project (Pty) Ltd received authorisation for the proposed 75MW Grootspuit Solar Project on the farm Grootspuit 2520, Odendaalsrus RD, within the Matjhabeng Local Municipality of the Lejweleputswa District Municipality, Free State Province in July 2014. The authorisation includes an area of 180ha for the placement of project infrastructure. The applicant is proposing to expand this area by just less than 20ha within which project infrastructure will be placed.

## 2. Application References

Name of relevant heritage authority(s)	SAHRA
Name of decision making authority(s)	DFFE

## 3. Property Information

Latitude / Longitude	27°44'32.62"S 26°46'36.46"E
Erf number / Farm number	Farm Grootspuit 2520, Odendaalsrus RD
Local Municipality	Matjhabeng Local Municipality
District Municipality	Lejweleputswa District Municipality
Province	Free State
Current Use	Agriculture with approved PV facility
Current Zoning	Agriculture

## 4. Nature of the Proposed Development

Total Area	20ha
Depth of excavation (m)	2 to 3m
Height of development (m)	3 to 5m

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## 5. Category of Development

x	<b>Triggers: Section 38(8) of the National Heritage Resources Act</b>
	<b>Triggers: Section 38(1) of the National Heritage Resources Act</b>
	1. Construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier over 300m in length.
	2. Construction of a bridge or similar structure exceeding 50m in length.
	3. Any development or activity that will change the character of a site-
x	a) exceeding 5 000m <sup>2</sup> in extent
	b) involving three or more existing erven or subdivisions thereof
	c) involving three or more erven or divisions thereof which have been consolidated within the past five years
	4. Rezoning of a site exceeding 10 000m <sup>2</sup>
	5. Other (state):

## 6. Additional Infrastructure Required for this Development

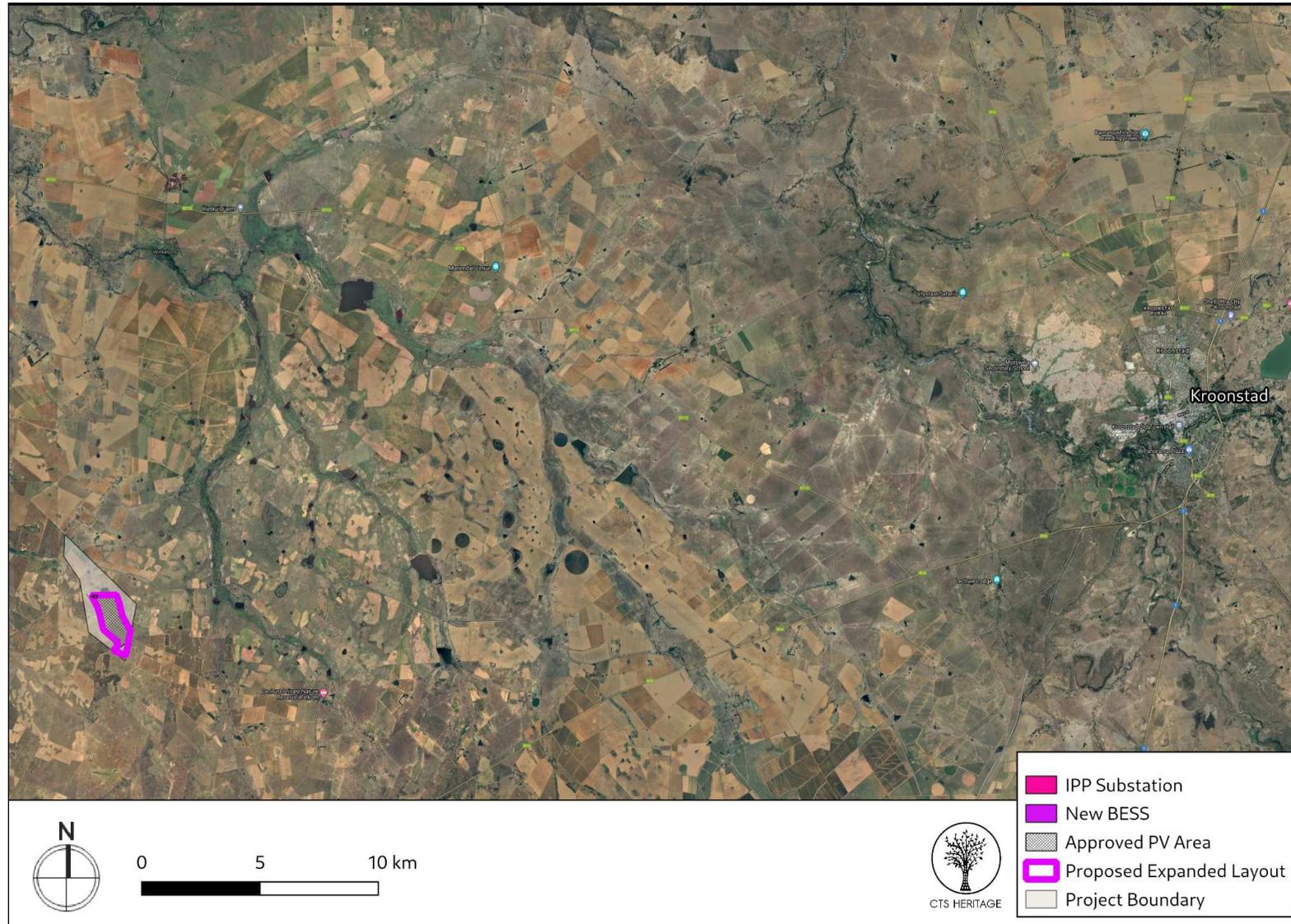
As per the project description.

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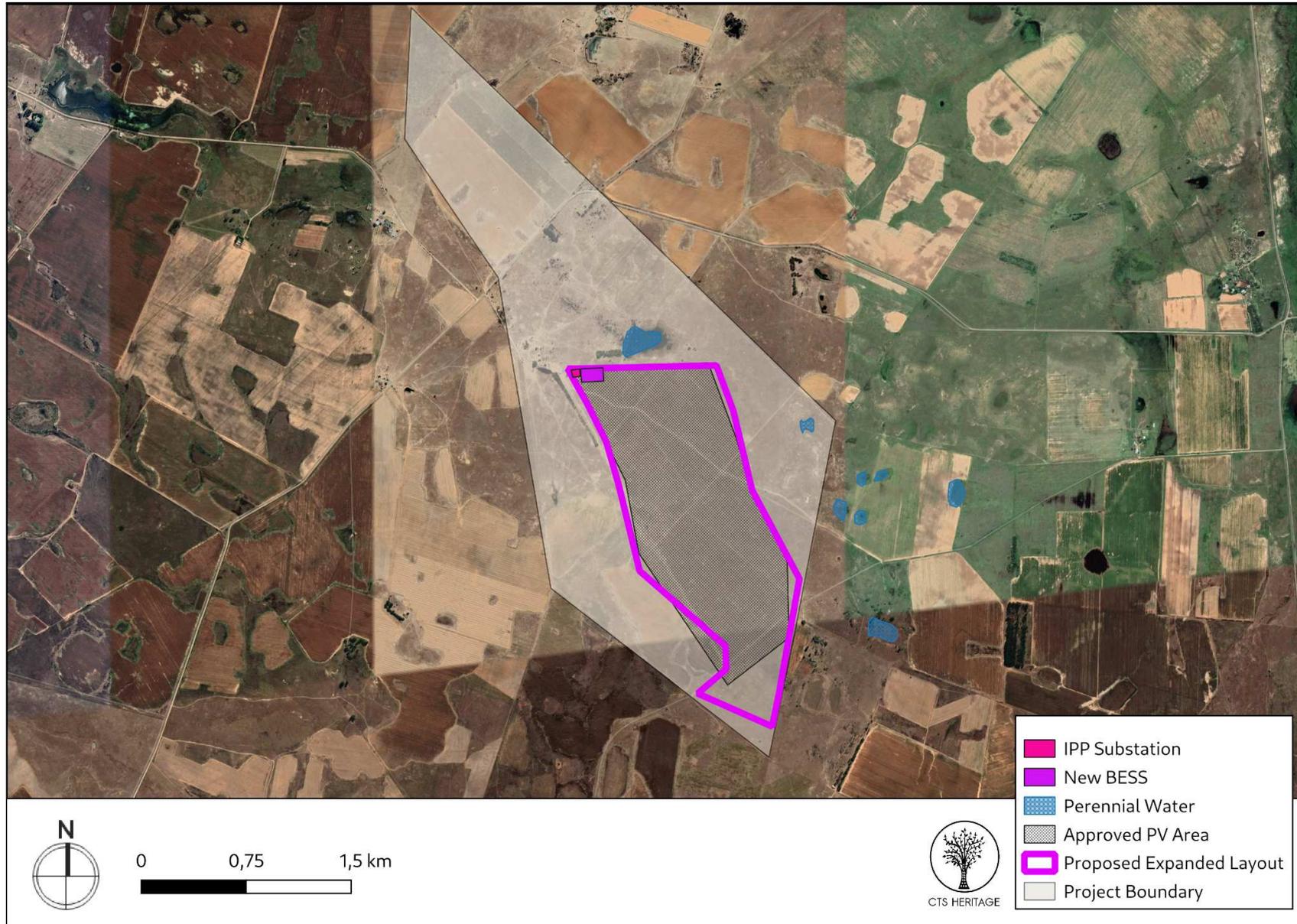
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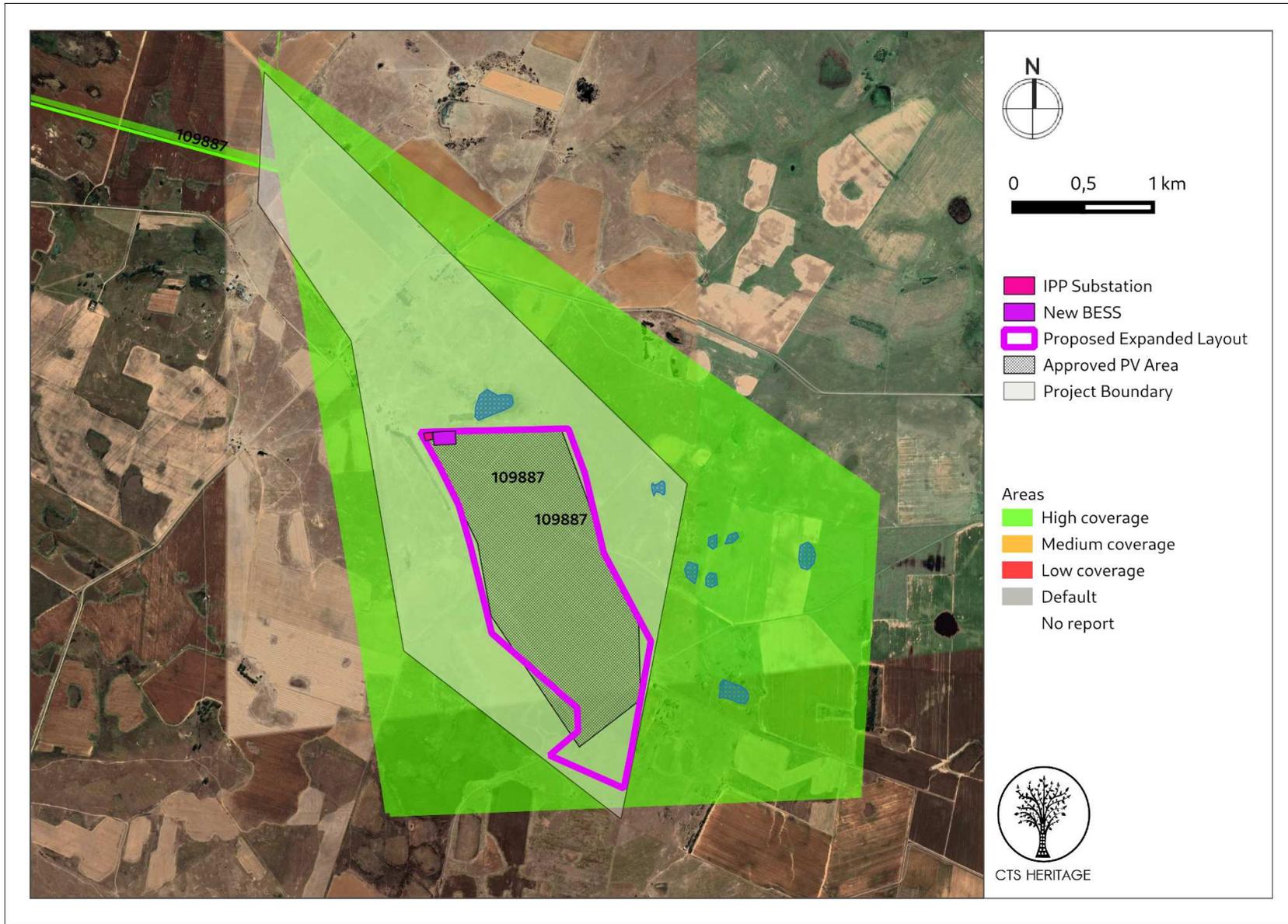
## 7. Mapping (please see Appendix 3 and 4 for a full description of our methodology and map legends)



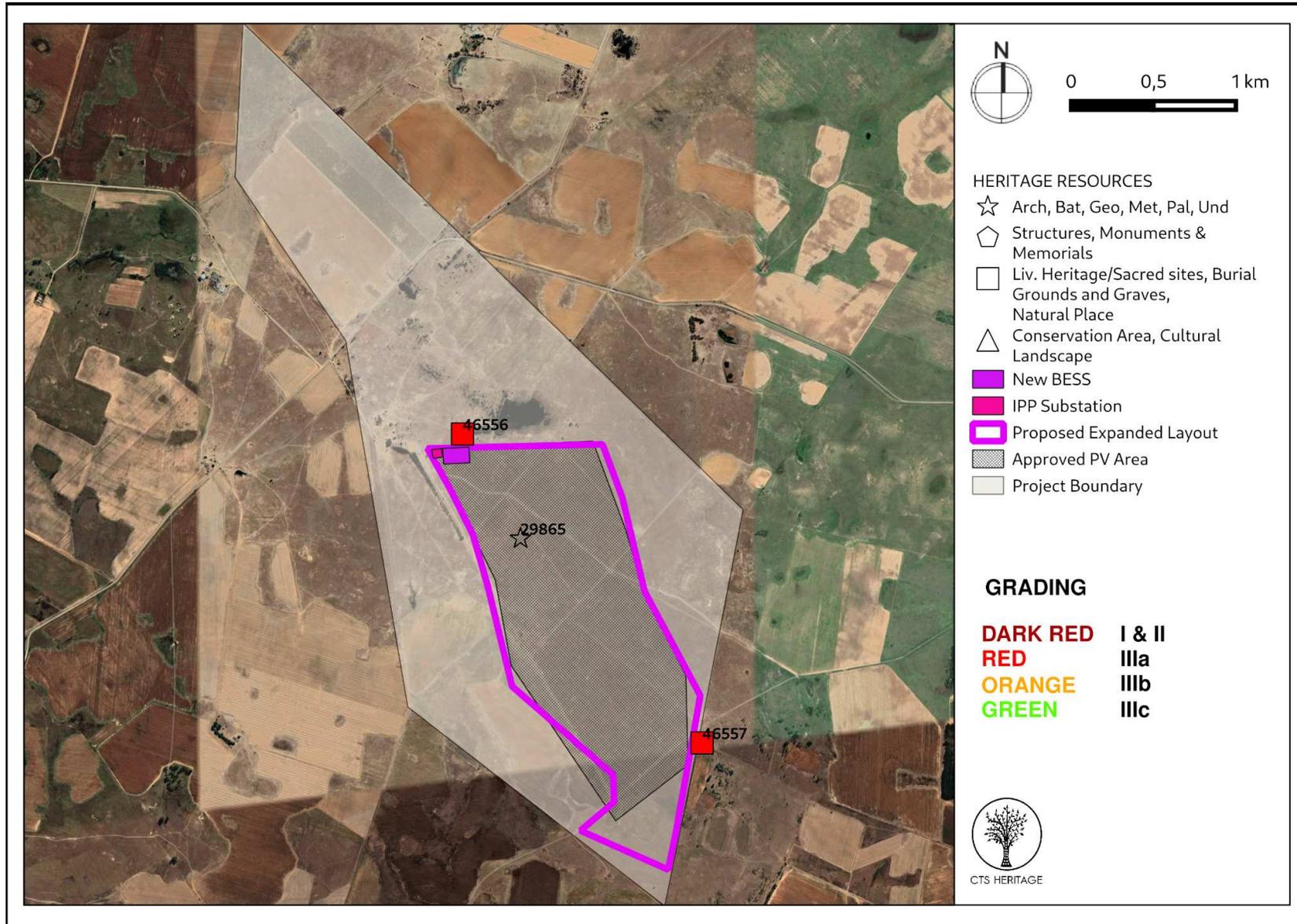
**Figure 1b. Overview Map.** Satellite image (2020) indicating the approved Grootspuit PV layout



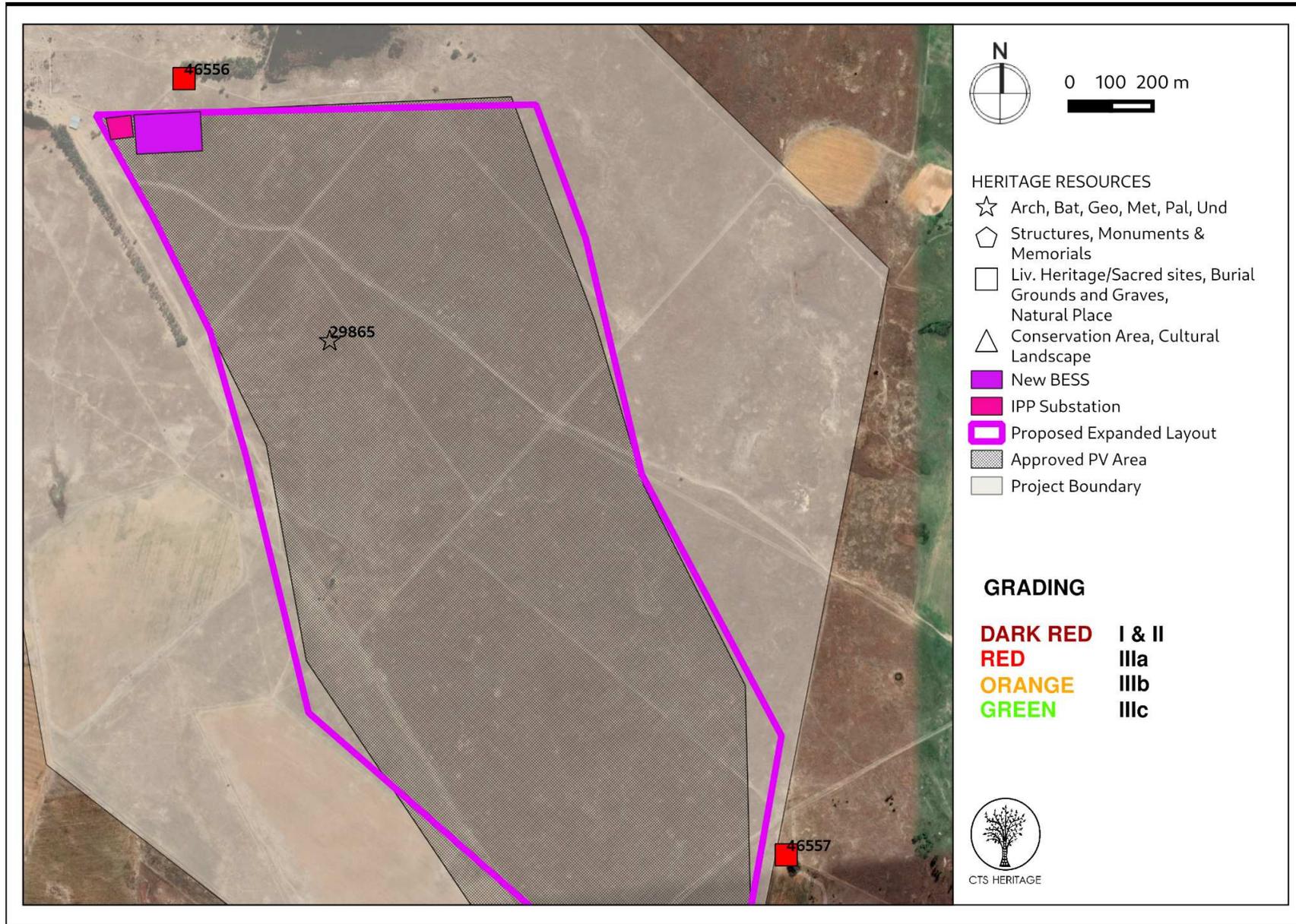
**Figure 1c. Overview Map.** Satellite image (2020) indicating the proposed development area



**Figure 2. Previous HIAs Map.** Previous Heritage Impact Assessments covering the proposed development area with SAHRIS NIDS indicated. Please see Appendix 2 for a full reference list.



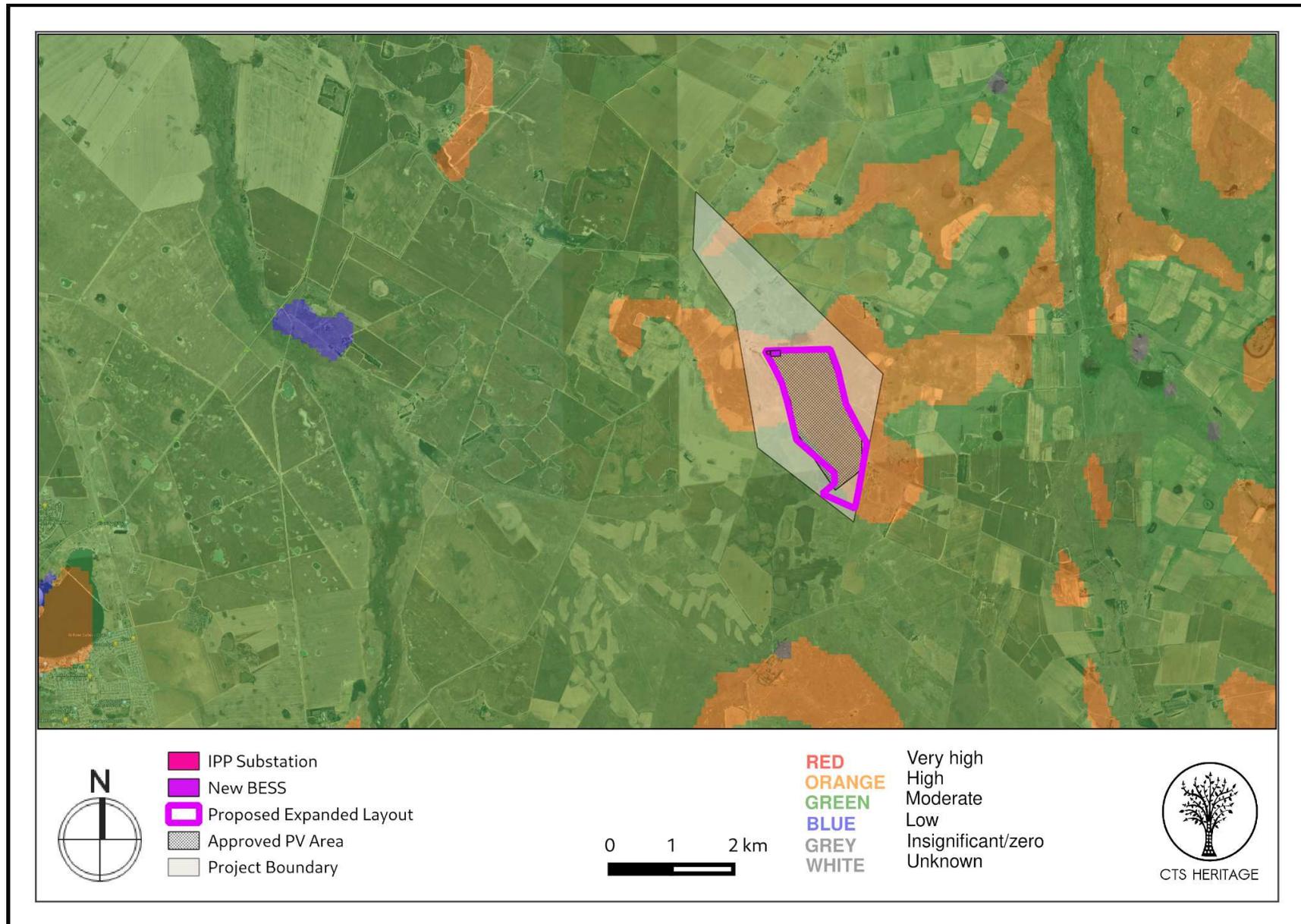
**Figure 3. Heritage Resources Map.** Heritage Resources previously identified within the study area, with SAHRIS Site IDs indicated in the insets below. Please See Appendix 4 for a full description of heritage resource types.



**Figure 3a. Heritage Resources Map Inset A**



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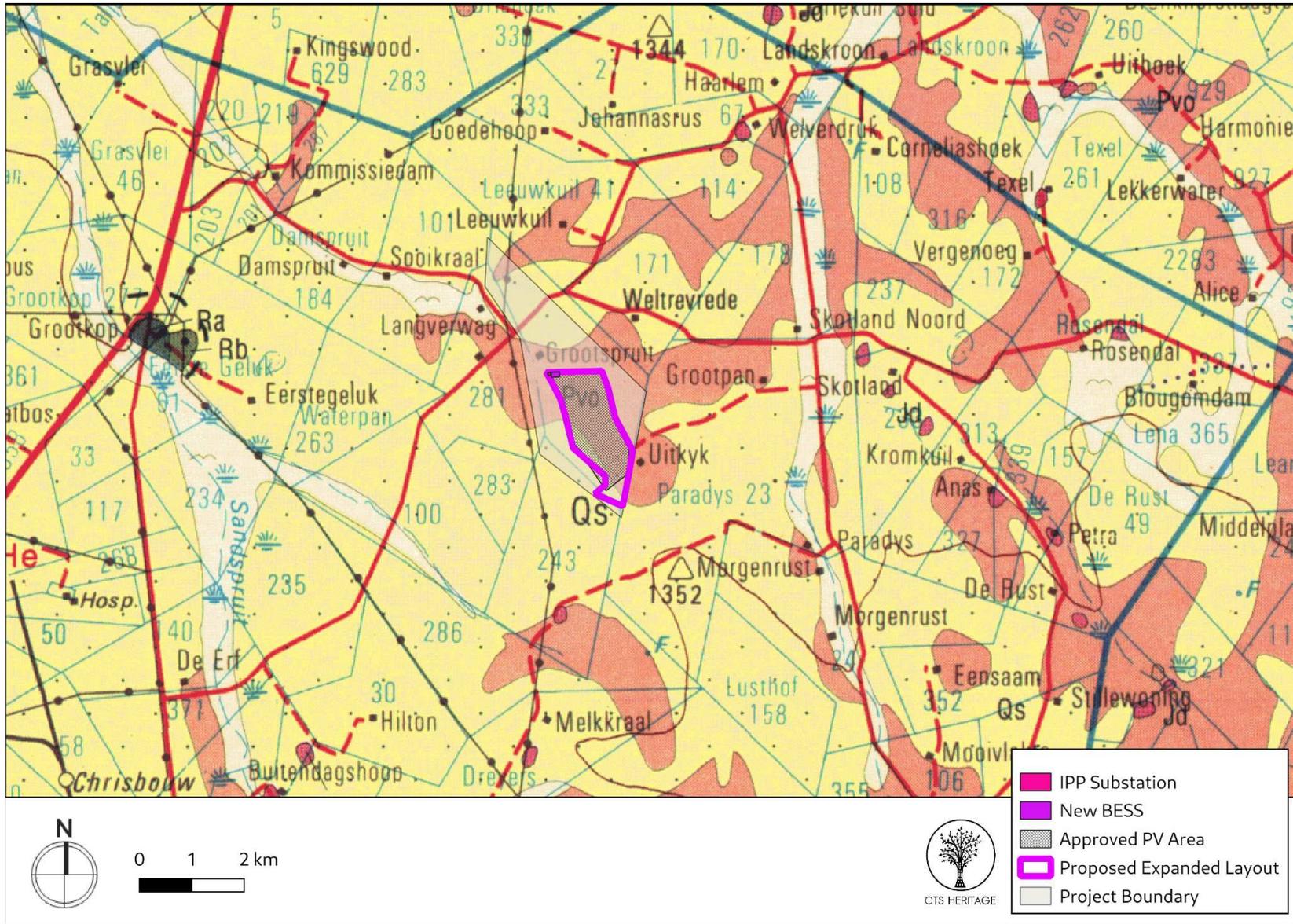


**Figure 4a. Palaeosensitivity Map.** Indicating fossil sensitivity underlying the study area. Please See Appendix 3 for a full guide to the legend.

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**Figure 4b. Geology Map.** Extract from the CGS 2726 Kroonstad Map indicating that the development area for the Graspan PV is underlain by Quaternary Sands (Qs), the Volksrust Formation of the Ecca Group (PVo) and Jurassic Dolerite (Jd)



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## 8. Heritage Assessment

### Background

On 10 July 2014, Environmental Authorisation (EA) was granted for the proposed construction of a commercial photovoltaic (PV) solar energy facility (known as the Grootspuit PV Facility) as well as all associated infrastructure on Farm Grootspuit 2520, Odendaalsrus RD, situated between Kroonstad to the north east and Odendaalsrus to the south west.

The EIA considered an area of 180ha for the PV arrays. The applicant is proposing to expand this area by just less than 20ha within which project infrastructure will be placed. The area proposed for the Grootspuit PV Facility was thoroughly assessed for impacts to heritage resources in a Heritage Impact Assessment conducted by Rossouw (2012, SAHRIS NID 109887) that also covered anticipated impacts to palaeontological heritage. This report is referred to below in order to determine the likely heritage sensitivity of the additional area required for the PV facility.

### Archaeology and Built Environment Heritage

Scattered throughout the Karoo is evidence of historic and prehistoric occupation in the form of Early, Middle and Later Stone Age lithics and other material remains. The descendants of the historic and prehistoric occupants of the region are found in the indigenous Khoen and San, as well as modern inhabitants of the area. In his field assessment, Rossouw (2012) noted that “The Stone Age archaeological footprint in the region is largely represented by the occurrence of open-site, Middle Stone Age (MSA) and Later Stone Age (LSA) assemblages that are mainly located near river drainages. Interestingly, a large number of MSA artifacts were found 2m below surface at the Allanridge railway siding in 1953. The material is stored at the National Museum in Bloemfontein. Unfortunately, the context of the assemblage is unknown. MSA as well as LSA artifacts, in association with mammal fossil remains, are also found in a series of erosional gullies along the Sand and Doring Rivers between Virginia and Theunisen. There are no records of rock engravings known from the area. The ruins of a large complex of Late Iron Age settlements (OXF 1, Maggs 1976) are found at Strydfontein between Hennenman and Ventersburg. However, it is noted that the affected area is situated outside the western periphery of distribution of Late Iron Age settlements below the Vals River in the Free State (Maggs 1976).”

In Rossouw’s assessment of the development area, he noted that “There is no evidence of *in situ* Stone Age or Iron Age archaeological material within the confines of the footprint. There are no indications of prehistoric structures or rock engravings within the footprint area. Historical buildings or structures older than 60 years are absent from the site. Two small graveyards were recorded during the survey, but they are located outside the development footprint. These sites are mapped relative to the proposed expansion in Figure 3 and 3a.

- **GRTS001 (Grade IIIA)** SAHRIS ID 46556  
A small, dilapidated cemetery located outside the confines of footprint.
- **GRTS002 (Grade IIIA)** SAHRIS ID 46556  
A small, dilapidated cemetery located outside the confines of footprint.
- **Grootspuit 252/0 (No Grading)** SAHRIS ID 29865  
No description is provided and it is expected that this is an accidental recording that does not reflect the presence of an archaeological site in this location.

As the farm cemeteries are clearly demarcated and are associated with existing farm werfs, and as the farm cemeteries are located outside of the proposed expanded development footprint, no impact to these sites is anticipated and no mitigation measures are recommended by Rossouw (2012) that need to be reiterated in this assessment.

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### **Palaeontology**

According to the SAHRIS Palaeosensitivity Map, the area proposed for the PV Facility is underlain by sediments of high and moderate palaeontological sensitivity (Figure 4a). According to the extract from the CGS 2726 Kroonstad Map, the development area is underlain by Quaternary Sand sediments, Jurassic Dolerite and sediments of the Volksrust Formation of the Ecca Group (Figure 4b). Rossouw's Heritage Impact Assessment (2012) included a palaeontological field assessment of the development area.

In the report, Rossouw (2012) notes that "Although there are no records of fossil occurrences from the Volksrust Formation in the vicinity of the study area, the formation is characterized by the presence of plant fossils, with six genera, representing the glossopterids, cordaitaleans and possibly other seed fern groups (Bamford 2003). A pelecypod bivalve have been described from the distal sediments of a prograding delta, at the Beaufort Group–Ecca Group boundary (Cairncross et al. 2005) and beetles (Coleoptera) have been recorded from the formation in Kwazulu-Natal (Ponomarenko & Mostovski 2005). Reptile fossils are absent from the formation. The alluvial deposits of the Vaal and a number of its ancient tributaries, including the Vet, Doring and Sand Rivers, are well known for their unique record of the Pliocene and the Pleistocene, and numerous Late Neogene fossil localities are known from the region. Pliocene, river-deposited fossil occurrences have been identified in terrace gravels along the Vet River (Tierfontein) and the Sand River (Virginia Railway Cutting). More recent exploratory surveys along the Doring, Sand and Vet Rivers indicate moderately fossiliferous overbank sediments and erosional gullies that frequently contain fossil remains of a variety of Quaternary-aged mammals. Ancient pan sites at Mahemspan near the Vaal River and Whites near Hennenman have equally produced abundant Quaternary-aged mammal fossil remains."

Rossouw's field assessment (2012) concluded that "Impact on Quaternary sediments (unconsolidated topsoils) within the footprint will be extensive, but impact on potential in situ Quaternary fossils... within the confines of the affected area is considered unlikely. The underlying sedimentary strata (Pvo) will be impacted by development if and when excavations into bedrock are required during the construction phase. Potential impact on fossil remains from the underlying sedimentary strata (Pvo) is considered to be low"

### **RECOMMENDATION**

**There is no objection to the proposed expansion for the Grootspuit PV Facilities on heritage grounds and no further assessment of impacts to heritage resources is recommended.**

**Due to the possibility of impact to palaeontological heritage through excavation activities associated with construction activities, it is recommended that the attached Chance Fossil Finds Procedure is implemented for the duration of the construction phase.**

**If concentrations of archaeological heritage material and human remains are uncovered during construction, all work must cease immediately and be reported to SAHRA so that systematic and professional investigation/ excavation can be undertaken.**

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**Table 2: Impact Assessment Table**

<b>NATURE:</b> Significant archaeological, built environment and palaeontological heritage resources may be impacted by the construction phase of the proposed expansion								
		<b>Archaeology, Built Environment and Cultural Landscape without Mitigation</b>		<b>Archaeology, Built Environment and Cultural Landscape with Mitigation</b>		<b>Palaeontology without Mitigation</b>		<b>Palaeontology with Mitigation</b>
<b>MAGNITUDE</b>	<b>L (1)</b>	No heritage resources were identified within the proposed expanded development footprint	<b>L (1)</b>	No heritage resources were identified within the proposed expanded development footprint	<b>H (8)</b>	The sediments underlying the proposed development have high palaeontological sensitivity.	<b>H (10)</b>	The sediments underlying the proposed development have high palaeontological sensitivity.
<b>DURATION</b>	<b>H (5)</b>	Where manifest, the impact will be permanent.	<b>H (5)</b>	Where manifest, the impact will be permanent.	<b>H (5)</b>	Where manifest, the impact will be permanent.	<b>H (5)</b>	Where manifest, the impact will be permanent.
<b>EXTENT</b>	<b>L (1)</b>	Localised within the site boundary	<b>L (1)</b>	Localised within the site boundary	<b>L (1)</b>	Localised within the site boundary.	<b>L (1)</b>	Localised within the site boundary.
<b>PROBABILITY</b>	<b>L (1)</b>	Probability is low	<b>L (1)</b>	Probability is low	<b>P (2)</b>	It is possible that fossils would be impacted	<b>I (1)</b>	It is improbable that fossils would be impacted
<b>SIGNIFICANCE</b>	<b>L</b>	(1+5+1)x1=7 (Low)	<b>L</b>	(1+5+1)x1=7 (Low)	<b>M</b>	(8+5+1)x2=28 (Low)	<b>L</b>	(10+5+1)x1=16 (Low)
<b>STATUS</b>		Neutral		Neutral		Negative		Neutral
<b>REVERSIBILITY</b>	<b>L</b>	Any impacts to heritage resources that do occur are irreversible	<b>L</b>	Any impacts to heritage resources that do occur are irreversible	<b>L</b>	Any impacts to heritage resources that do occur are irreversible	<b>L</b>	Any impacts to heritage resources that do occur are irreversible
<b>IRREPLACEABLE LOSS OF RESOURCES?</b>	<b>L</b>	Possible	<b>L</b>	Possible	<b>L</b>	Possible	<b>L</b>	Possible
<b>CAN IMPACTS BE MITIGATED</b>		NA				Yes		
<b>MITIGATION:</b>								
<ul style="list-style-type: none"> <li>The attached Chance Fossil Finds Procedure must be implemented for the duration of the construction phase</li> </ul>								
<b>RESIDUAL RISK:</b>								
<ul style="list-style-type: none"> <li>If concentrations of archaeological heritage material and human remains are uncovered during construction, all work must cease immediately and be reported to SAHRA so that systematic and professional investigation/ excavation can be undertaken.</li> </ul>								



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## APPENDIX 1

### Summary of Specialist Expertise

**Jenna Lavin**, an archaeologist with an MSc in Archaeology and Palaeoenvironments, and currently completing an MPhil in Conservation Management, heads up the heritage division of the organisation, and has a wealth of experience in the heritage management sector. Jenna's previous position as the Assistant Director for Policy, Research and Planning at Heritage Western Cape has provided her with an in-depth understanding of national and international heritage legislation. Her 8 years of experience at various heritage authorities in South Africa means that she has dealt extensively with permitting, policy formulation, compliance and heritage management at national and provincial level and has also been heavily involved in rolling out training on SAHRIS to the Provincial Heritage Resources Authorities and local authorities.

Jenna is on the Executive Committee of the Association of Professional Heritage Practitioners (APHP), and is also an active member of the International Committee on Monuments and Sites (ICOMOS) as well as the International Committee on Archaeological Heritage Management (ICAHM). In addition, Jenna has been a member of the Association of Southern African Professional Archaeologists (ASAPA) since 2009. Recently, Jenna has been responsible for conducting training in how to write Wikipedia articles for the Africa Centre's WikiAfrica project.

Since 2016, Jenna has drafted over 50 Heritage Impact Assessments throughout South Africa.

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## APPENDIX 2

### Reference List with relevant AIAs and PIAs

Heritage Impact Assessments				
Nid	Report Type	Author/s	Date	Title
109887	HIA Phase 1	Lloyd Rossouw	10/09/2012	Phase 1 Heritage Impact Assessment of a Proposed New Solar Facility at Grootspuit 252 near Allanridge, FS

### Known heritage resources located within the project area

Site id	Site No	Full Site Name	Site Type	Grading
46556	GRTS001	Grootspuit Solar 001	Burial Grounds & Graves	Grade IIIa
46557	GRTS002	Grootspuit Solar 002	Burial Grounds & Graves	Grade IIIa
29865	Grootspuit 252/0	Grootspuit 252/0, Odendaalsrus RD	Archaeological	NB. Suspected accidental recording - no actual archaeology recorded here

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## APPENDIX 3 - Keys/Guides

### Key/Guide to Acronyms

<b>AIA</b>	Archaeological Impact Assessment
<b>DARD</b>	Department of Agriculture and Rural Development (KwaZulu-Natal)
<b>DEFF</b>	Department of Environmental, Forestry and Fisheries (National)
<b>DEADP</b>	Department of Environmental Affairs and Development Planning (Western Cape)
<b>DEDEAT</b>	Department of Economic Development, Environmental Affairs and Tourism (Eastern Cape)
<b>DEDECT</b>	Department of Economic Development, Environment, Conservation and Tourism (North West)
<b>DEDT</b>	Department of Economic Development and Tourism (Mpumalanga)
<b>DEDTEA</b>	Department of economic Development, Tourism and Environmental Affairs (Free State)
<b>DENC</b>	Department of Environment and Nature Conservation (Northern Cape)
<b>DMR</b>	Department of Mineral Resources (National)
<b>GDARD</b>	Gauteng Department of Agriculture and Rural Development (Gauteng)
<b>HIA</b>	Heritage Impact Assessment
<b>LEDET</b>	Department of Economic Development, Environment and Tourism (Limpopo)
<b>MPRDA</b>	Mineral and Petroleum Resources Development Act, no 28 of 2002
<b>NEMA</b>	National Environmental Management Act, no 107 of 1998
<b>NHRA</b>	National Heritage Resources Act, no 25 of 1999
<b>PIA</b>	Palaeontological Impact Assessment
<b>SAHRA</b>	South African Heritage Resources Agency
<b>SAHRIS</b>	South African Heritage Resources Information System
<b>VIA</b>	Visual Impact Assessment

### Full guide to Palaeosensitivity Map legend

	<b>RED:</b>	VERY HIGH - field assessment and protocol for finds is required
	<b>ORANGE/YELLOW:</b>	HIGH - desktop study is required and based on the outcome of the desktop study, a field assessment is likely
	<b>GREEN:</b>	MODERATE - desktop study is required
	<b>BLUE/PURPLE:</b>	LOW - no palaeontological studies are required however a protocol for chance finds is required
	<b>GREY:</b>	INSIGNIFICANT/ZERO - no palaeontological studies are required
	<b>WHITE/CLEAR:</b>	UNKNOWN - these areas will require a minimum of a desktop study.

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## APPENDIX 4 - Methodology

The Heritage Screener summarises the heritage impact assessments and studies previously undertaken within the area of the proposed development and its surroundings. Heritage resources identified in these reports are assessed by our team during the screening process.

The heritage resources will be described both in terms of **type**:

- Group 1: Archaeological, Underwater, Palaeontological and Geological sites, Meteorites, and Battlefields
- Group 2: Structures, Monuments and Memorials
- Group 3: Burial Grounds and Graves, Living Heritage, Sacred and Natural sites
- Group 4: Cultural Landscapes, Conservation Areas and Scenic routes

and **significance** (Grade I, II, IIIa, b or c, ungraded), as determined by the author of the original heritage impact assessment report or by formal grading and/or protection by the heritage authorities.

Sites identified and mapped during research projects will also be considered.

### DETERMINATION OF THE EXTENT OF THE INCLUSION ZONE TO BE TAKEN INTO CONSIDERATION

The extent of the inclusion zone to be considered for the Heritage Screener will be determined by CTS based on:

- the size of the development,
- the number and outcome of previous surveys existing in the area
- the potential cumulative impact of the application.

The inclusion zone will be considered as the region within a maximum distance of 50 km from the boundary of the proposed development.

### DETERMINATION OF THE PALAEOLOGICAL SENSITIVITY

The possible impact of the proposed development on palaeontological resources is gauged by:

- reviewing the fossil sensitivity maps available on the South African Heritage Resources Information System (SAHRIS)
- considering the nature of the proposed development
- when available, taking information provided by the applicant related to the geological background of the area into account

### DETERMINATION OF THE COVERAGE RATING ASCRIBED TO A REPORT POLYGON

Each report assessed for the compilation of the Heritage Screener is colour-coded according to the level of coverage accomplished. The extent of the surveyed coverage is labeled in three categories, namely low, medium and high. In most instances the extent of the map corresponds to the extent of the development for which the specific report was undertaken.

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**Low coverage** will be used for:

- desktop studies where no field assessment of the area was undertaken;
- reports where the sites are listed and described but no GPS coordinates were provided.
- older reports with GPS coordinates with low accuracy ratings;
- reports where the entire property was mapped, but only a small/limited area was surveyed.
- uploads on the National Inventory which are not properly mapped.

**Medium coverage** will be used for

- reports for which a field survey was undertaken but the area was not extensively covered. This may apply to instances where some impediments did not allow for full coverage such as thick vegetation, etc.
- reports for which the entire property was mapped, but only a specific area was surveyed thoroughly. This is differentiated from low ratings listed above when these surveys cover up to around 50% of the property.

**High coverage** will be used for

- reports where the area highlighted in the map was extensively surveyed as shown by the GPS track coordinates. This category will also apply to permit reports.

## RECOMMENDATION GUIDE

The Heritage Screener includes a set of recommendations to the applicant based on whether an impact on heritage resources is anticipated. One of three possible recommendations is formulated:

**(1) The heritage resources in the area proposed for development are sufficiently recorded** - The surveys undertaken in the area adequately captured the heritage resources. There are no known sites which require mitigation or management plans. No further heritage work is recommended for the proposed development.

This recommendation is made when:

- enough work has been undertaken in the area
- it is the professional opinion of CTS that the area has already been assessed adequately from a heritage perspective for the type of development proposed

**(2) The heritage resources and the area proposed for development are only partially recorded** - The surveys undertaken in the area have not adequately captured the heritage resources and/or there are sites which require mitigation or management plans. Further specific heritage work is recommended for the proposed development.

This recommendation is made in instances in which there are already some studies undertaken in the area and/or in the adjacent area for the proposed development. Further studies in a limited HIA may include:

- improvement on some components of the heritage assessments already undertaken, for instance with a renewed field survey and/or with a specific specialist for the type of heritage resources expected in the area
- compilation of a report for a component of a heritage impact assessment not already undertaken in the area

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- undertaking mitigation measures requested in previous assessments/records of decision.

**(3) The heritage resources within the area proposed for the development have not been adequately surveyed yet - Few or no surveys have been undertaken in the area proposed for development. A full Heritage Impact Assessment with a detailed field component is recommended for the proposed development.**

**Note:**

The responsibility for generating a response detailing the requirements for the development lies with the heritage authority. However, since the methodology utilised for the compilation of the Heritage Screeners is thorough and consistent, contradictory outcomes to the recommendations made by CTS should rarely occur. Should a discrepancy arise, CTS will immediately take up the matter with the heritage authority to clarify the dispute.

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