



CTS HERITAGE

## HERITAGE SCREENER

CTS Reference Number:	<b>CTS21_154</b>
SAHRIS Ref:	
Client:	<b>Environamics</b>
Date:	<b>July 2021</b>
Title:	<b>Proposed development of the Grootpoort OHL near Luckhoff in the Free State</b>

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

Recommendation by CTS Heritage Specialists	<b>RECOMMENDATION:</b> <b>As it is not likely that the proposed development will impact significant heritage resources, it is recommended that no further heritage studies are required for this proposed development. A Chance Fossil Finds Procedure must be implemented during construction activities.</b>
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16 Edison Way, Century City, Cape Town, 7441

Tel: +27 (0)87 073 5739 Email: info@ctsheritage.com Web: www.ctsheritage.com



## 1. Proposed Development Summary

The activity entails the development of 132kV single-circuit power line to enable the connection of the authorised Grootpoort Photovoltaic Solar Power Plant (DFFE ref.: 14/12/16/3/3/2/835) to the national grid network. This will enable the evacuation of the generated solar electricity. A 200m wide and 8km long grid connection corridor is being assessed for the placement of the power line route. The power line is proposed to connect into the existing Canal Substation. A service road associated with the power line is also proposed to be developed.

The activity entails the development of a power line which will be single circuit and have a capacity of 132kV. The power line will connect to the existing Canal Substation and will enable the evacuation of the generated electricity from the authorised Grootpoort Photovoltaic Solar Power Plant. The project is proposed by Pele Green Energy (Pty) Ltd.

## 2. Application References

<b>Name of relevant heritage authority(s)</b>	SAHRA
<b>Name of decision making authority(s)</b>	DFFE

## 3. Property Information

<b>Latitude / Longitude</b>	29°52'44.47"S 24°41'21.70"E
<b>Erf number / Farm number</b>	Grootpoort 168 (Portion 1), Dundee 416 (RE, Portion 2 and 4), Excelsior 676, Lombardsdam 81 (RE), Naauwpoort 417 (Portion 5), Ou Rondefontein 146 (Portion 2 and 4), Rondefontein 99 (Portion 1), Fauresmith Rd 1251, Fauresmith Rd 1252.
<b>Local Municipality</b>	Letsemeng Local Municipality
<b>District Municipality</b>	Xhariep District Municipality
<b>Province</b>	Free State
<b>Current Use</b>	Light grazing of livestock



## 4. Nature of the Proposed Development

<b>Total Surface Area</b>	~8km in length x 200m corridor
<b>Depth of excavation (m)</b>	2 - 3.5m
<b>Height of development (m)</b>	30m max

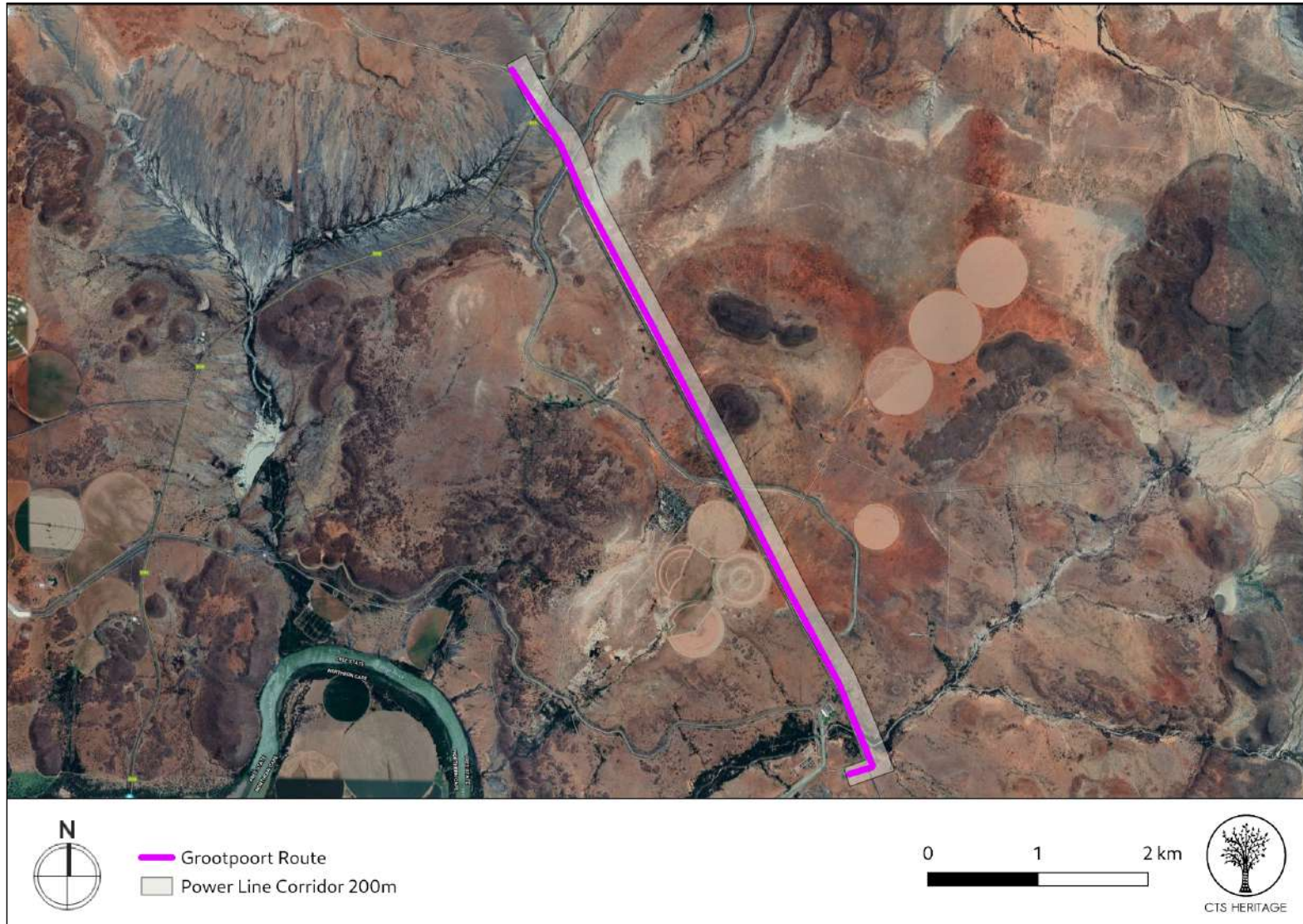
## 5. Category of Development

<b>x</b>	<b>Triggers: Section 38(8) of the National Heritage Resources Act</b>
	<b>Triggers: Section 38(1) of the National Heritage Resources Act</b>
<b>x</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-
	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):

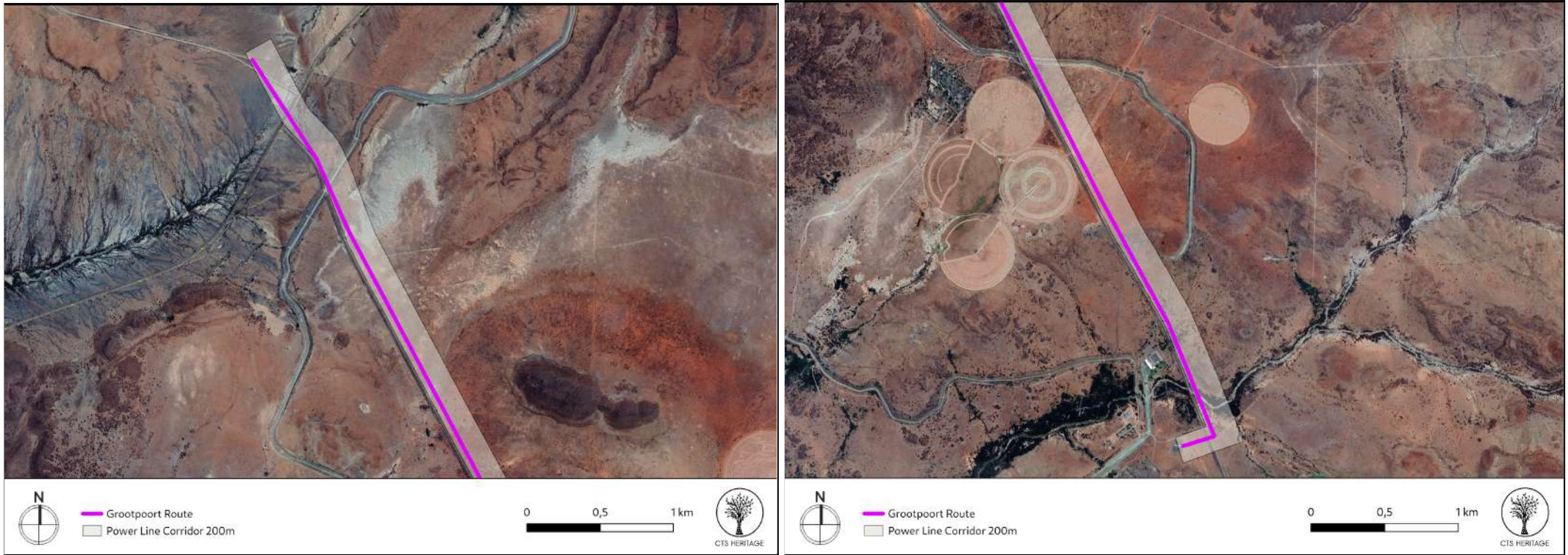
## 6. Additional Infrastructure Required for this Development

Grid connection and substations as well as the service road that will be associated with the power line

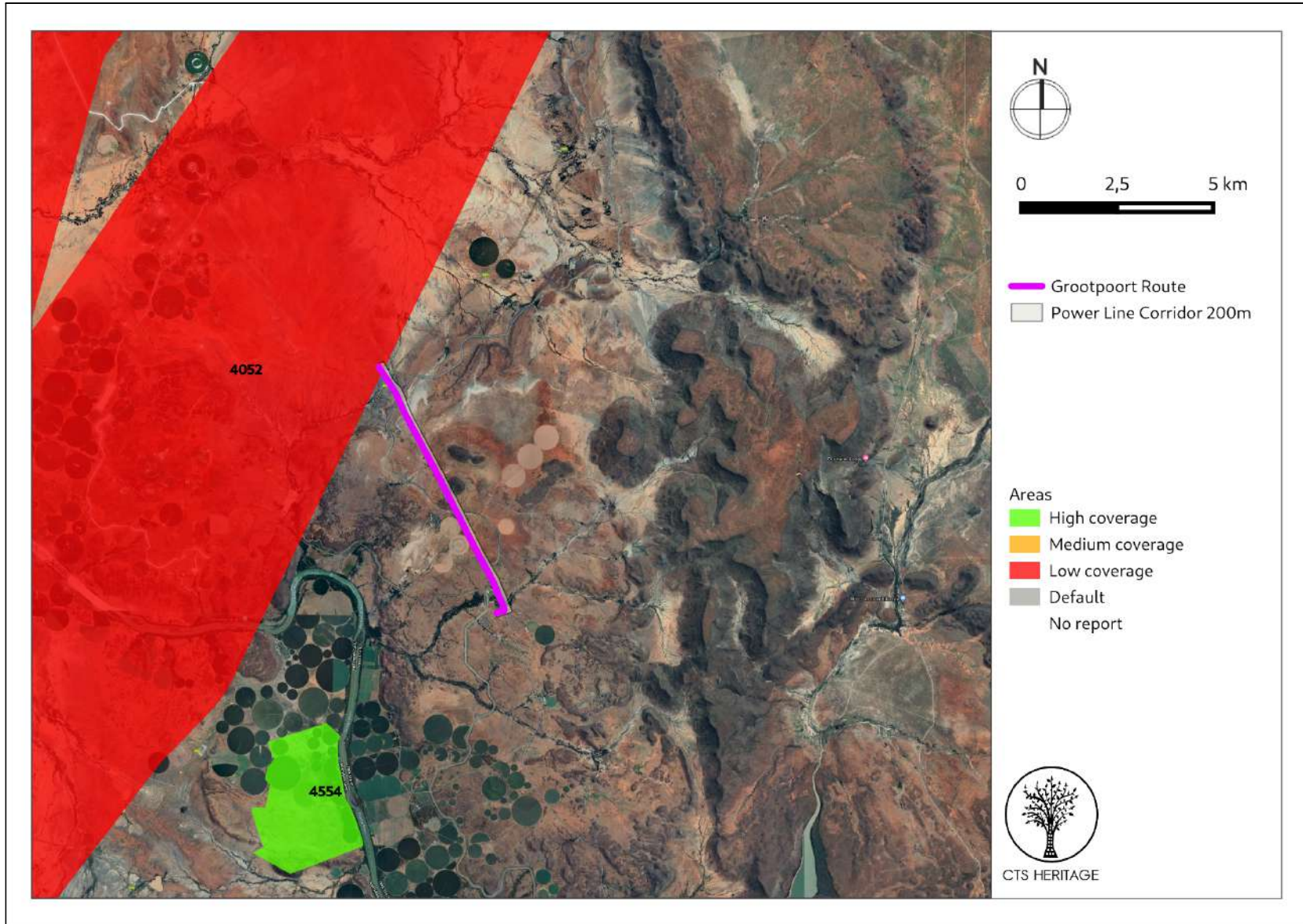
## 7. Mapping (please see Appendix 3 and 4 for a full description of our methodology and map legends)



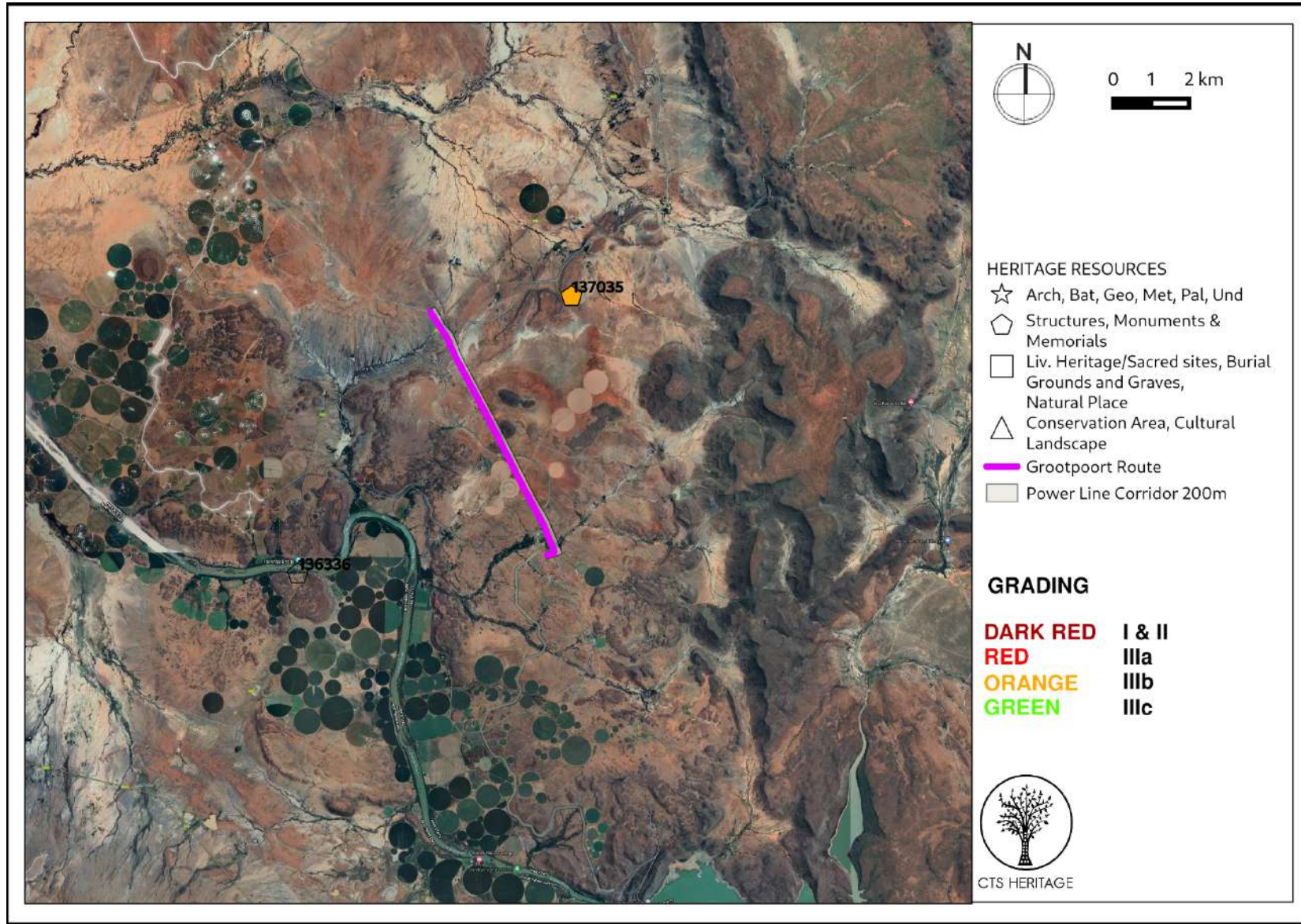
**Figure 1b. Overview Map.** Satellite image (2019) indicating the proposed development area at closer range.



**Figure 1c. Overview Map.** Satellite image (2019) indicating the proposed development area at closer range along the road to Vanderkloof Dam.



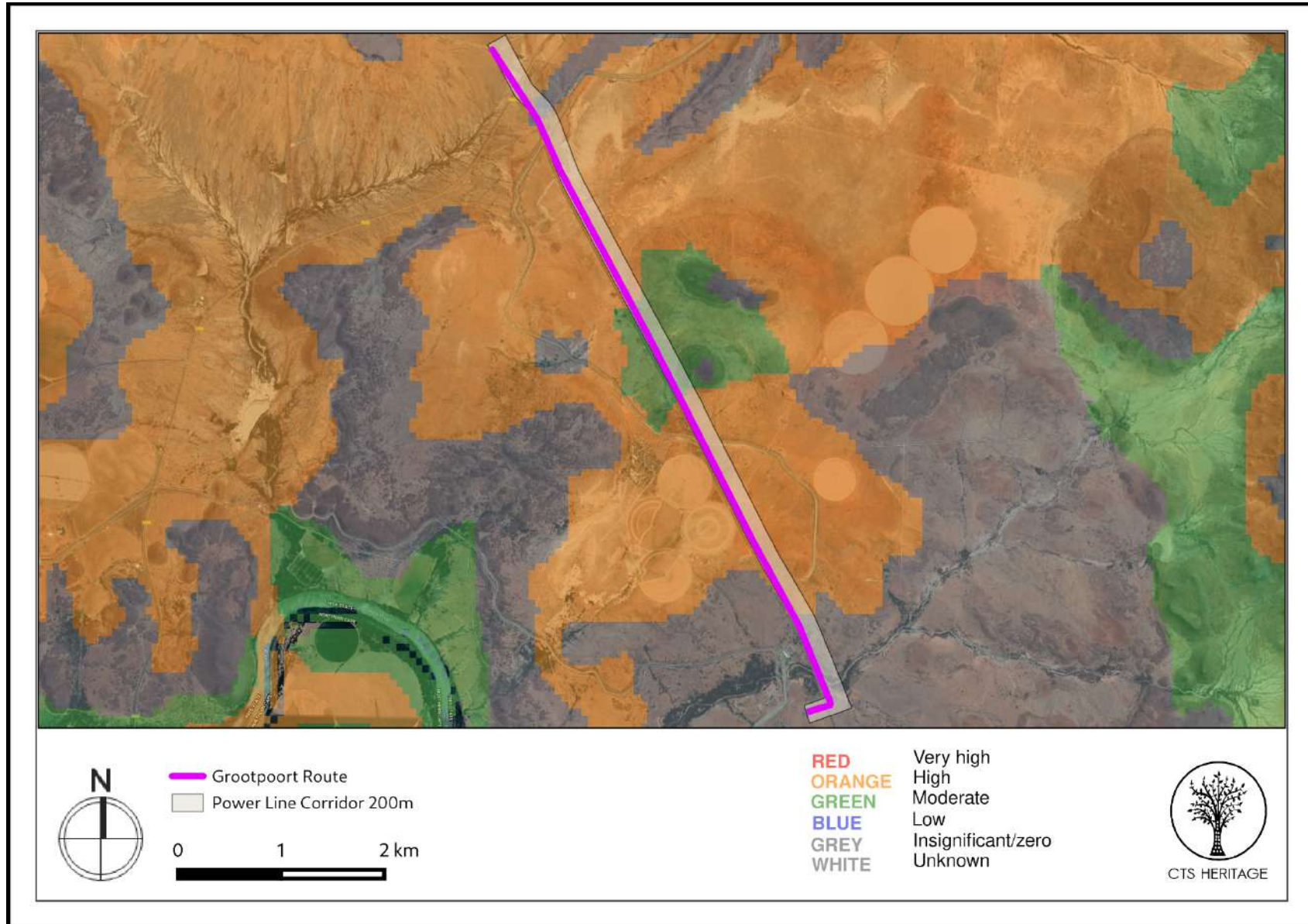
**Figure 2. Previous HIAs Map.** Previous Heritage Impact Assessments surrounding the proposed development area within 5km, with SAHRIS NIDS indicated. Please see Appendix 2 for a full reference list.



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



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

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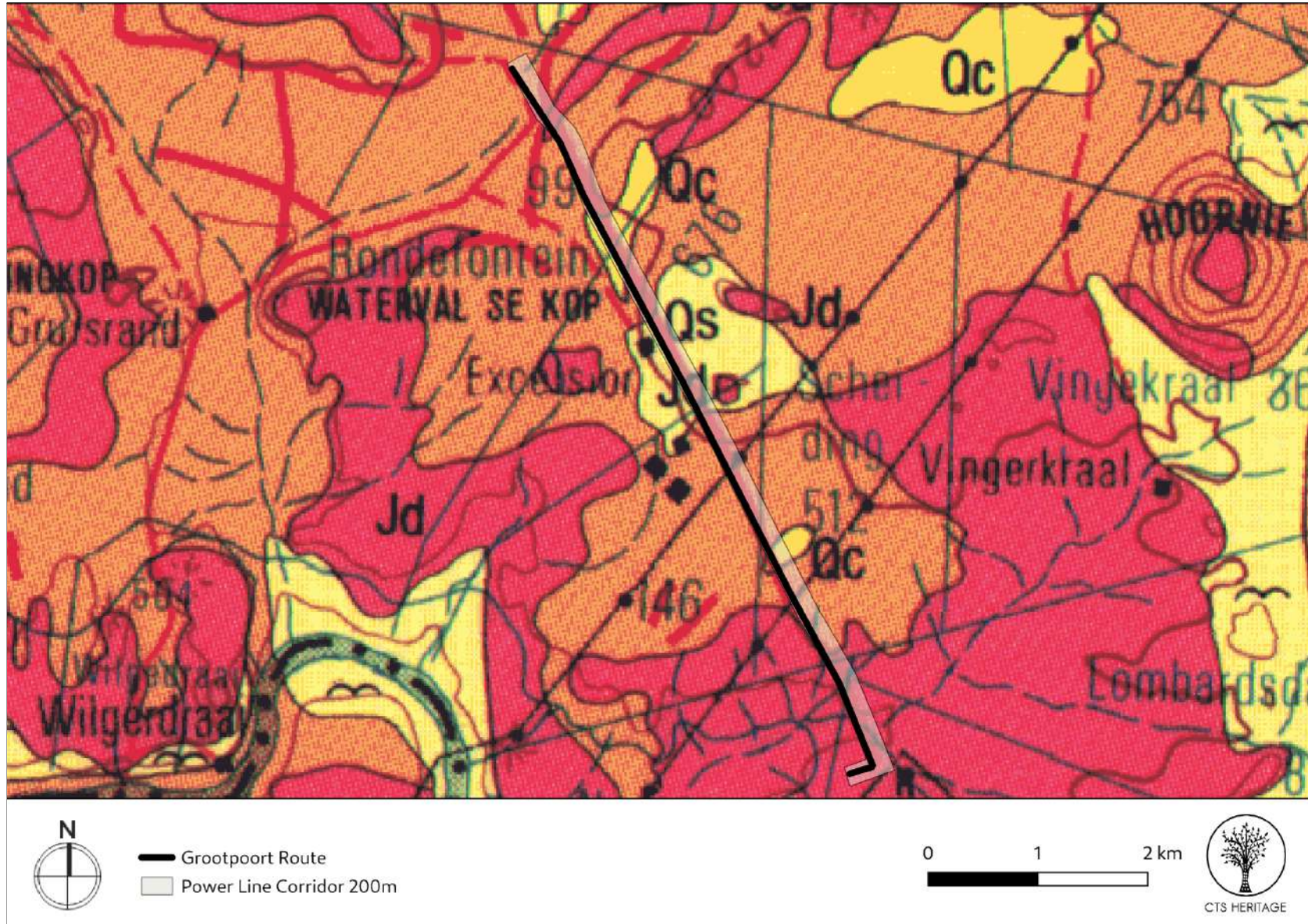
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**Figure 4b. Geology Map.** Extract from the Council for GeoScience Map 2924 for Koffiefontein indicating that the area proposed for development is underlain by Jd - Jurassic Dolerite, Qc - and Qs - Quaternary Sands

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**Figure 6. Google Street View.** Facing southeast along the road towards Vanderkloof Dam

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## 8. Heritage statement and character of the area

This application is for the proposed development of a power line that runs along the road reserve of the road from the R48 to the Vanderkloof Dam. The area proposed for the development of the OHL is located along an existing road that runs through land that has been extensively transformed through agricultural activities. The nearest town to the proposed development is the town of Vanderkloof which has been established on the banks of the dam. The Vanderkloof dam was constructed in 1977. Neither the town nor the dam are anticipated to be negatively impacted by the proposed development of the OHL.

Very few Heritage Impact Assessments have been completed in the area according to the South African Heritage Resources Information System (SAHRIS, Figure 2) and very few heritage resources are known from the vicinity of the development (Figure 3). According to Morris (2008), “The Northern Cape has a wealth of archaeological sites (Beaumont & Morris 1990; Morris & Beaumont 2004), with locales along and adjacent to the major river systems being of particular significance. Stone Age material found in the broader region spans the Earlier, Middle and Later Stone Ages through Pleistocene and Holocene times. Late Holocene material with pottery is known to occur on the river banks, while rock engravings are richly distributed in the region (Wilman 1933; Fock & Fock 1989; Morris 1988). A particularly notable rock engraving is known from the farm Kraai Bosch, while others occur on the hills near Petrusville.” In his assessment, Morris (2008) identified low significance Middle and Later Stone Age scatters of archaeological material. These finds correspond with the findings of Tusenius (2016) who noted that “Most of the archaeological remains recorded in the study area consist of a background scatter of weathered and patinated, typologically mixed Middle Stone Age (MSA)/ Later Stone Age (LSA) artefacts, with the former being more common. These artefacts occur dispersed within the surface gravels, rather than as discrete concentrations, and are in a secondary context in areas affected by sheet erosion. The fact that there appears to be no stratigraphic context and no organic remains are preserved would suggest that most of the proposed Kloofsig 1 development area is of low archaeological heritage sensitivity.” Based on the known archaeological sensitivity of the broader area as noted in these assessments, as well as the limited footprint anticipated along the existing road, it is unlikely that significant archaeological heritage will be impacted by the proposed development.

According to the SAHRIS Palaeosensitivity Map, the area proposed for development is underlain by sediments of low, moderate and high palaeontological sensitivity. According to the extract from the Council for GeoScience Map 2924 for Koffiefontein, the area is underlain by Jurassic Dolerite (zero paleontological sensitivity) and Quaternary Sands (moderate and high sensitivity). According to the Desktop Palaeontological Assessment completed by Bamford (2021) for this project, “The route of the Grootpoort overhead transmission line is alongside the road. The southern third is on non-fossiliferous Jurassic dolerite. The rest is on a mix of potentially fossiliferous (trace fossils) Tierberg Formation (Ecca Group, Karoo Supergroup), Jurassic dolerite and on the Quaternary aeolian sands and calcretes that are non-fossiliferous unless there are traps for fossils such as paleo-pans or palaeo-springs. No such feature is visible on the satellite imagery. Nonetheless, a Fossil Chance Find Protocol should be added to the EMP. Based on this information it is recommended that no palaeontological site visit is required unless fossils are found when excavations for pole foundations commence.”

### **RECOMMENDATION:**

**As it is not likely that the proposed development will impact significant heritage resources, it is recommended that no further heritage studies are required for this proposed development. A Chance Fossil Finds Procedure must be implemented during construction activities.**



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## APPENDIX 1

### List of heritage resources located in the vicinity of the development area

Site ID	Site no	Full Site Name	Site Type	Grading
137035	ZTF-011	Zoutpansfontein	Building	Grade IIIb
136336	DC7/NAMM/0023	Havenga Bridge Foundation Plaque, Havenga Bridge, Renosterberg Local Municipality	Monuments & Memorials	

## APPENDIX 2

### Reference List

Heritage Impact Assessments				
Nid	Report Type	Author/s	Date	Title
4052	HIA Phase 1	Albert van Jaarsveld	01/03/2006	Hydra-Perseus and Beta-Perseus 765 kV Transmission Power Lines Environmental Impact Assessment. Impact on Cultural Heritage Resources
4554	AIA Phase 1	David Morris	01/05/2008	Archaeological Impact Assessment, Portions of the Farms Kraaybosch and Dooren Kuilen, near Petrusville, Northern Cape
384450	Archaeology Specialist Report	Madelon Tusenius	24/10/2016	Archaeological Impact Assessment of the proposed Kloofsig 1 Solar PV Energy Facility on the remainder of the Farm Kalkpoort 18, Petrusville area, Resnosterberg Local Municipality, Northern Cape.

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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>DEA</b>	Department of Environmental Affairs (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



- 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.