



CTS HERITAGE

HERITAGE SCREENER

CTS Reference Number:	CTS22_015
SAHRIS CaseID:	
Client:	Savannah
Date:	March 2022
Title:	Proposed development of the Highveld PV Cluster near Potchefstroom, North West Province

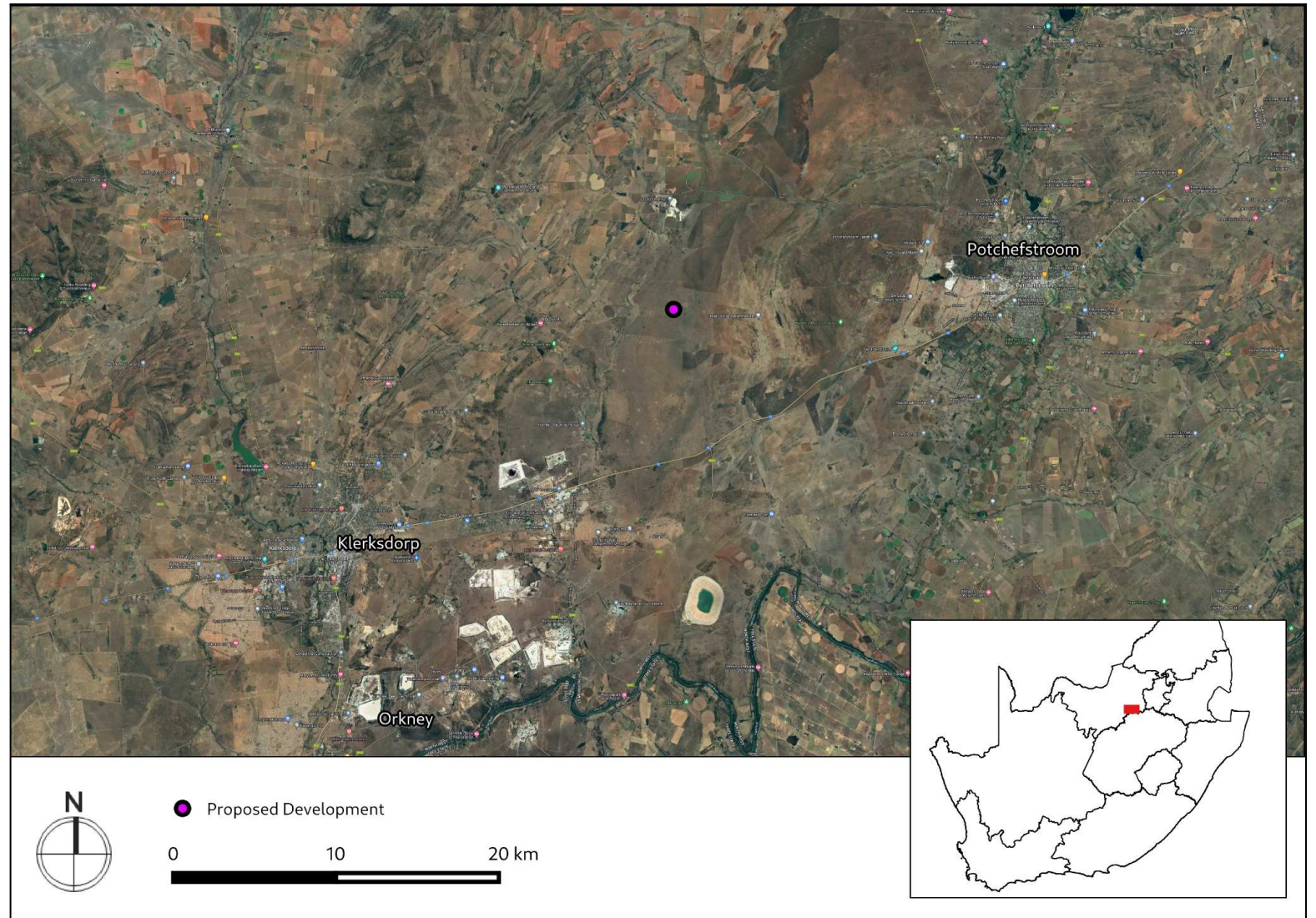


Figure 1a. Satellite map indicating the location of the proposed development in the North West Province.

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1. Proposed Development Summary

WKN Wind current (Pty) Ltd proposes the development of a solar PV facility comprising an up to 240MW Solar PV facilities, and Grid connection infrastructure, located approximately 15km north east of Stilfontein in the North West Province. The project area falls within the Matlosana Local Municipality within the Dr Kenneth Kaunda District Municipality.

The solar PV facilities will be developed on the following properties:

- Portion 56 of Farm Rietfontein 388
- Portion 79 of Farm Rietfontein 388
- Remainder of Portion 10 of Farm Rietfontein 388
- Portion 0 of farm Rietfontein 3

Access to the project site is ample with the presence of existing roads mainly consisting of national and regional roads. The N12 is located to the south of the project site and the R30 is located to the west of the project site.

A facility development area which will include the PV facility, BESS and grid connection solution will be identified taking into consideration the identified sensitivities. The infrastructure associated with this 240MW PV facility includes:

- PV modules and mounting structures
- Inverters and transformers
- Cabling between the project components, to be laid underground where practical.
- Battery Energy Storage System (BESS)
- Access roads, internal roads and fencing around the development area.
- Laydown area.
- Operation and Maintenance buildings including a gate and security building, control centre, offices, warehouse, and workshop areas for maintenance and storage.

A grid connection solution is required to connect the project/s to the Eskom grid (assumed within a 300m wide corridor approximately 20km in length) and will form part of a separate application for Environmental Authorization.

The development area will be larger than the area needed for the construction of a 240MW 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. 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 the PV facility and its associated infrastructure will be located will be fully assessed.

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2. Application References

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

3. Property Information

Latitude / Longitude	26°43'44.95"S 26°52'17.95"E
Erf number / Farm number	Portion 56 of Farm Rietfontein 388 Portion 79 of Farm Rietfontein 388 Remainder of Portion 10 of Farm Rietfontein 388 Portion 0 of farm Rietfontein 3
Local Municipality	Matlosana Local Municipality
District Municipality	Dr Kenneth Kaunda District Municipality
Province	North West
Current Use	Agricultural
Current Zoning	Agricultural

4. Nature of the Proposed Development

Total Surface Area of development	Approximately 1311ha
Depth of excavation (m)	TBA
Height of development (m)	TBA

5. Category of Development

X	Triggers: Section 38(8) of the National Heritage Resources Act
	Triggers: Section 38(1) of the National Heritage Resources Act



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x	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 ² 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 ²
	5. Other (state):

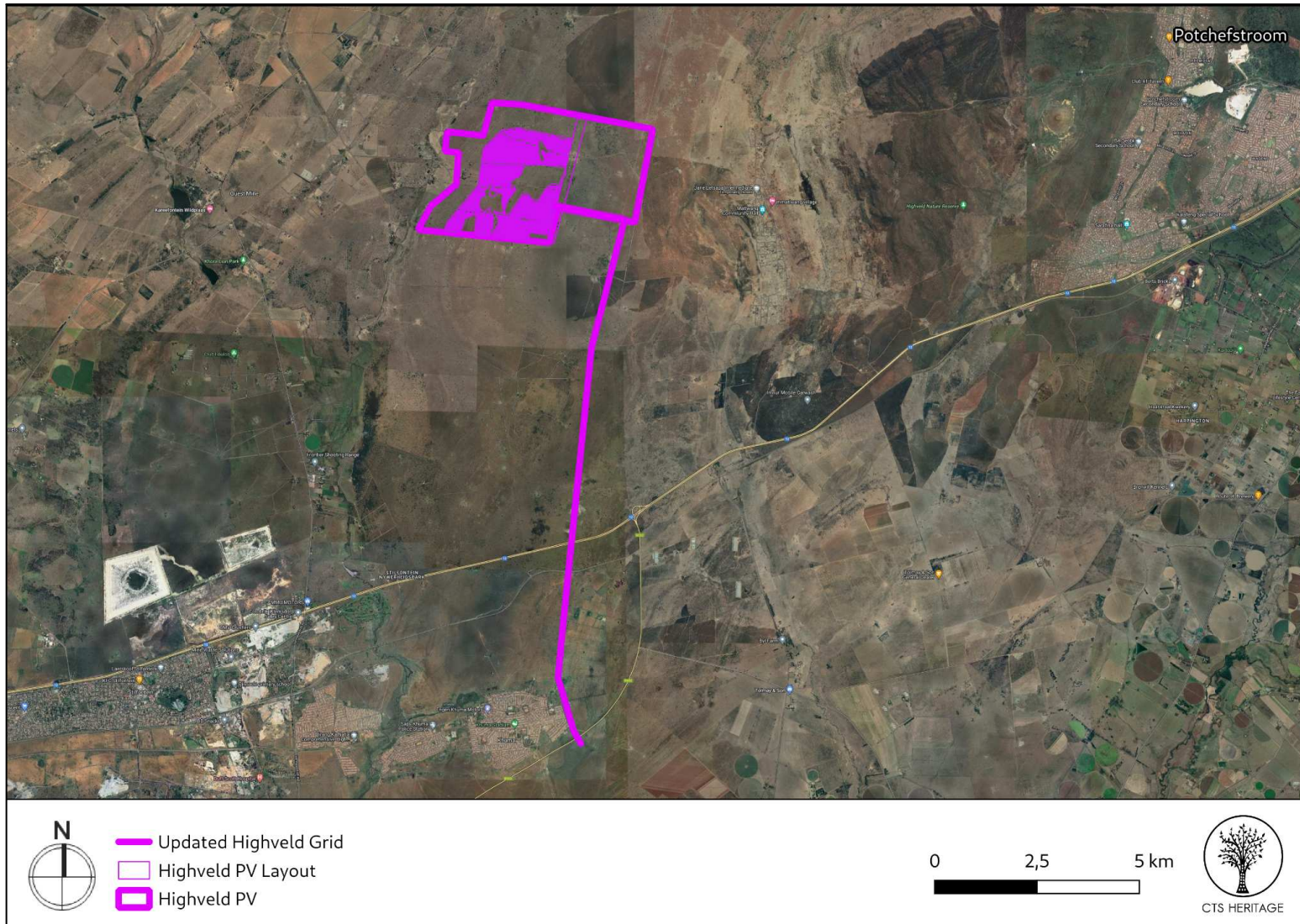
6. Additional Infrastructure Required for this Development

TBA

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





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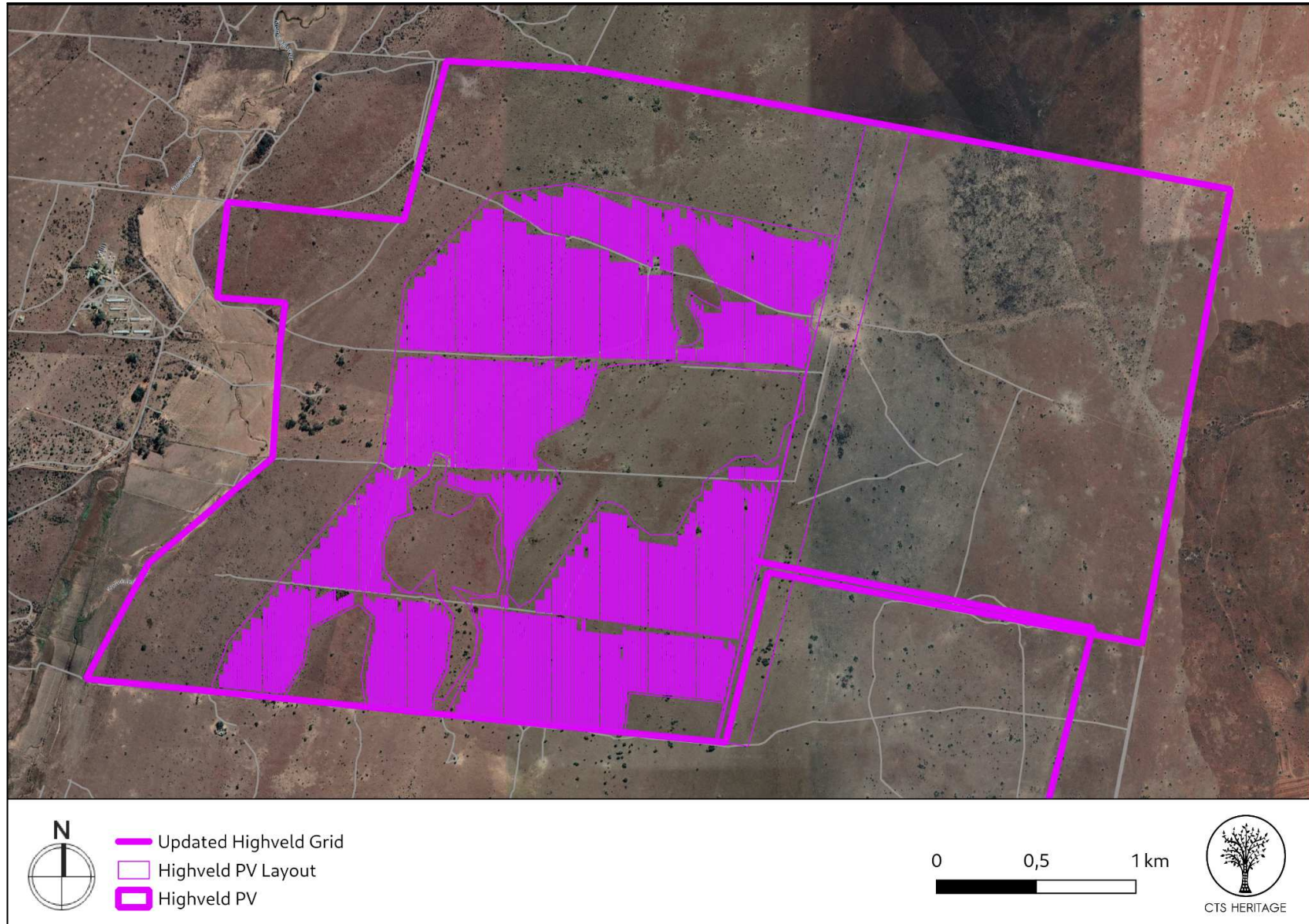
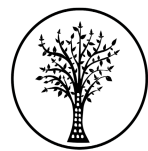


Figure 1c. Overview Map. Satellite image (2022) indicating the proposed development at closer range.

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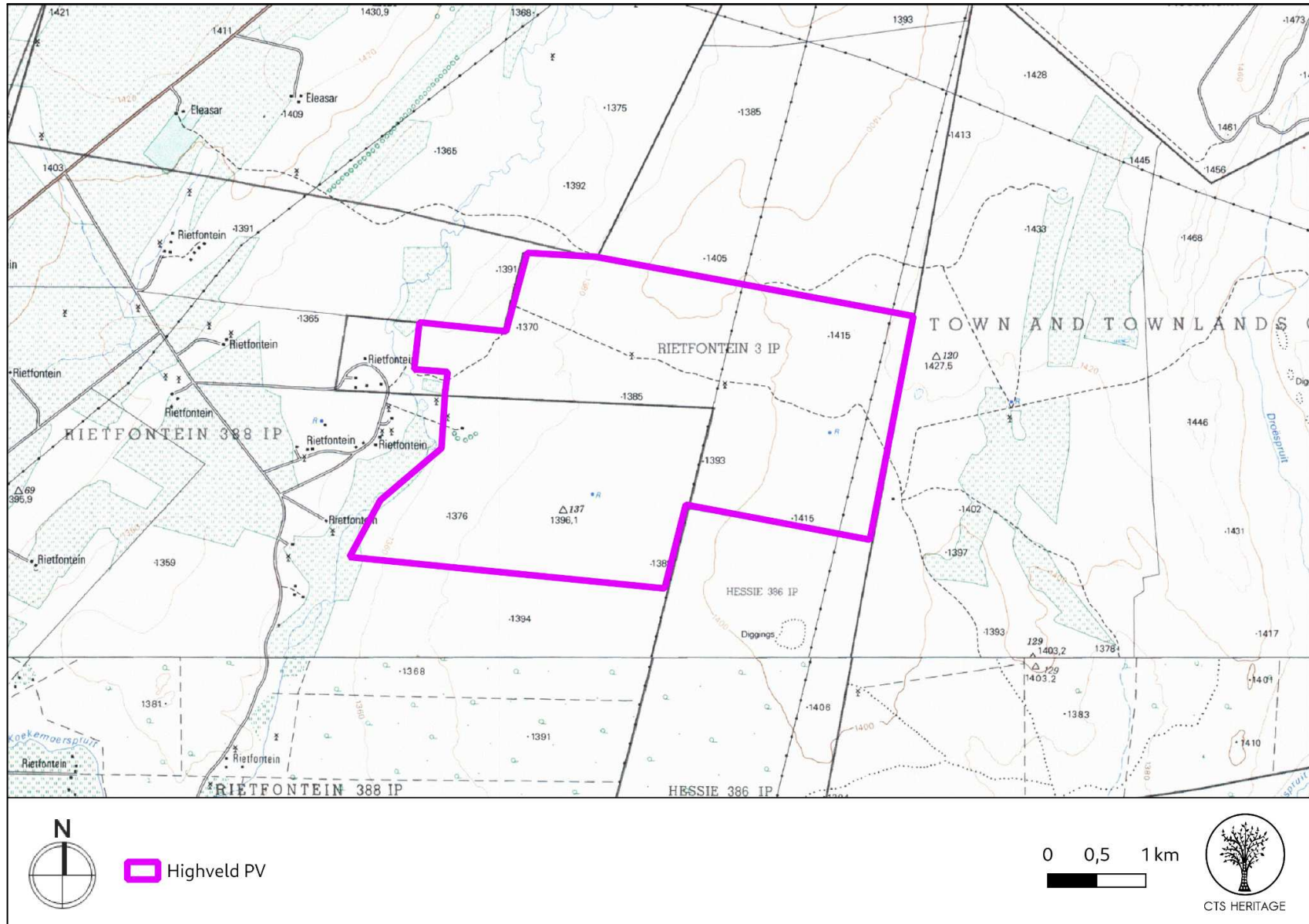


Figure 1d. Overview Map. 1:50 000 Topo Map for the development area

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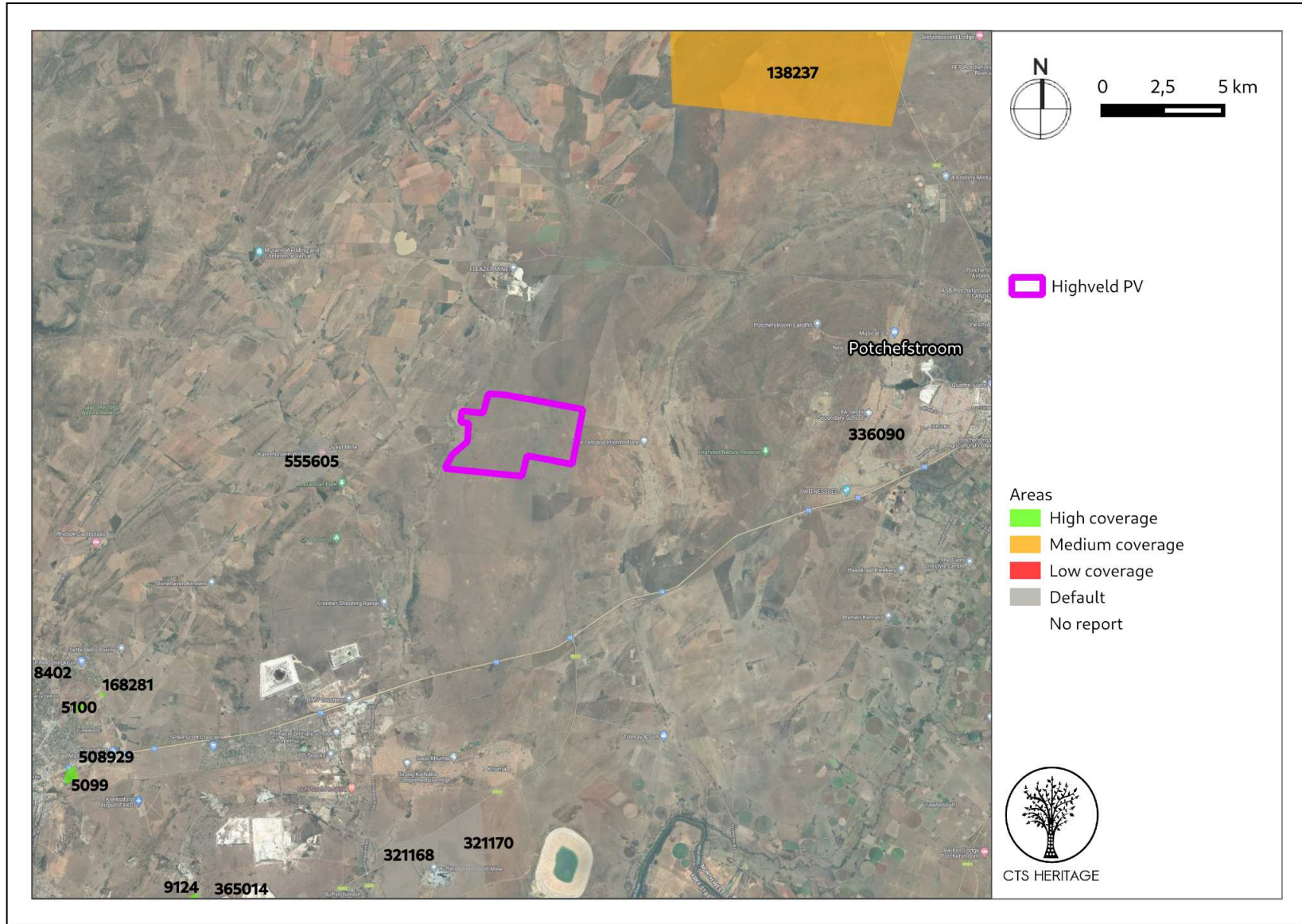


Figure 2a. Previous HIAs Map. Previous Heritage Impact Assessments surrounding the proposed development area, with SAHRIS NIDS indicated. Please see Appendix 2 for a full reference list.



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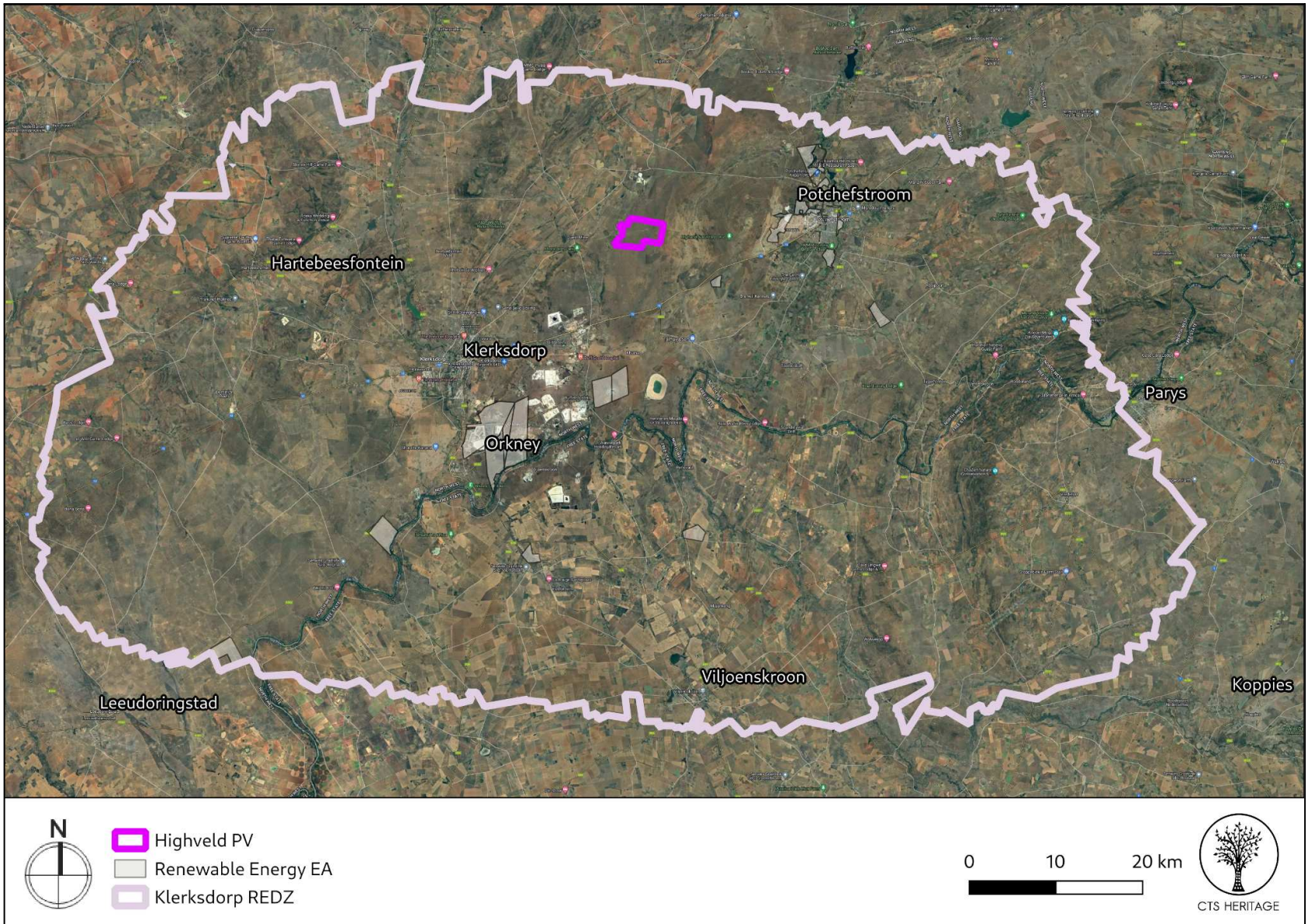


Figure 2b. REDZ. Position of proposed development within the Klerksdorp REDZ and other authorised REFs

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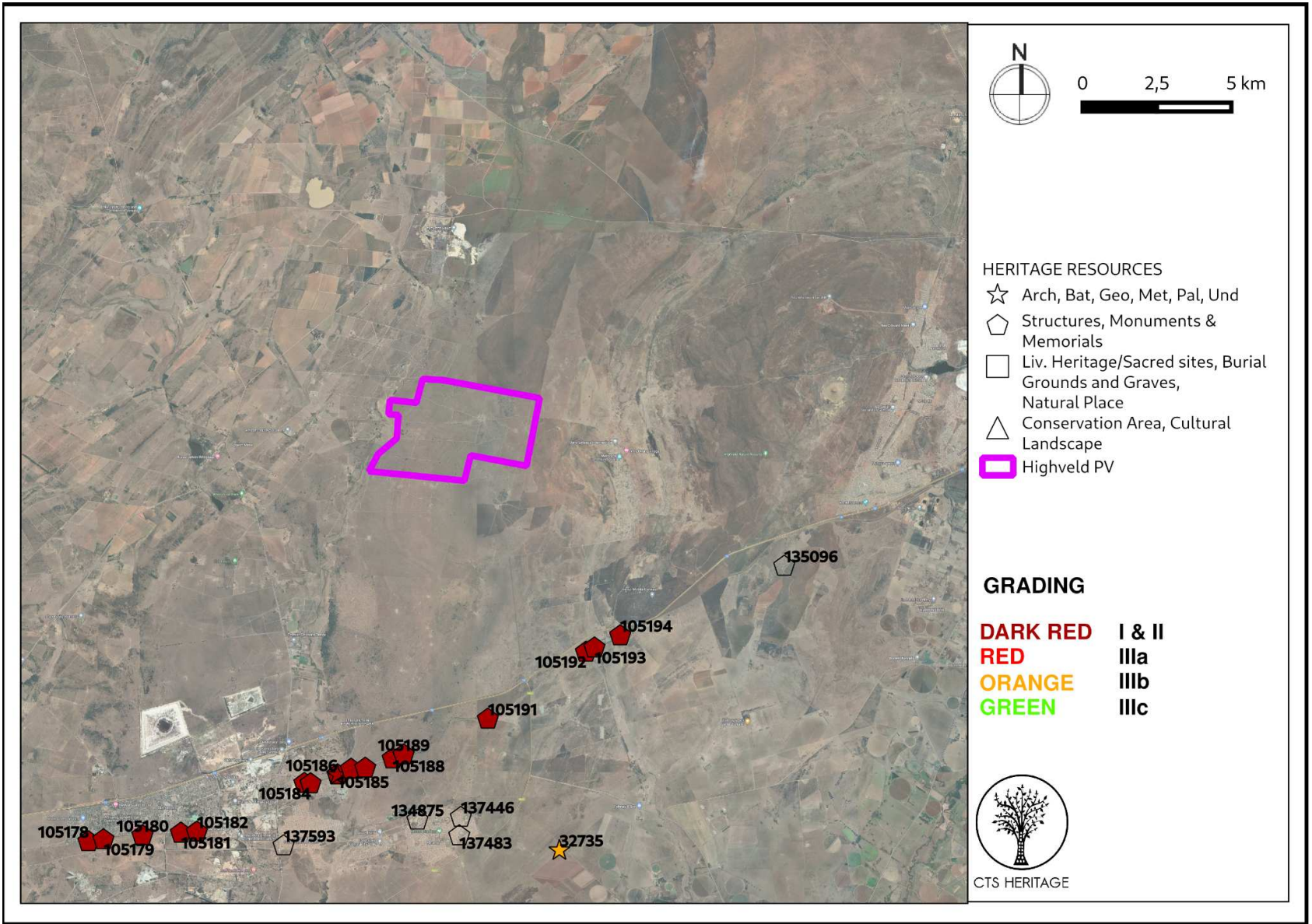


Figure 3a. Heritage Resources Map. Heritage Resources previously identified in and near the study area, with SAHRIS Site IDs indicated. Please See Appendix 4 for a full description of heritage resource types.

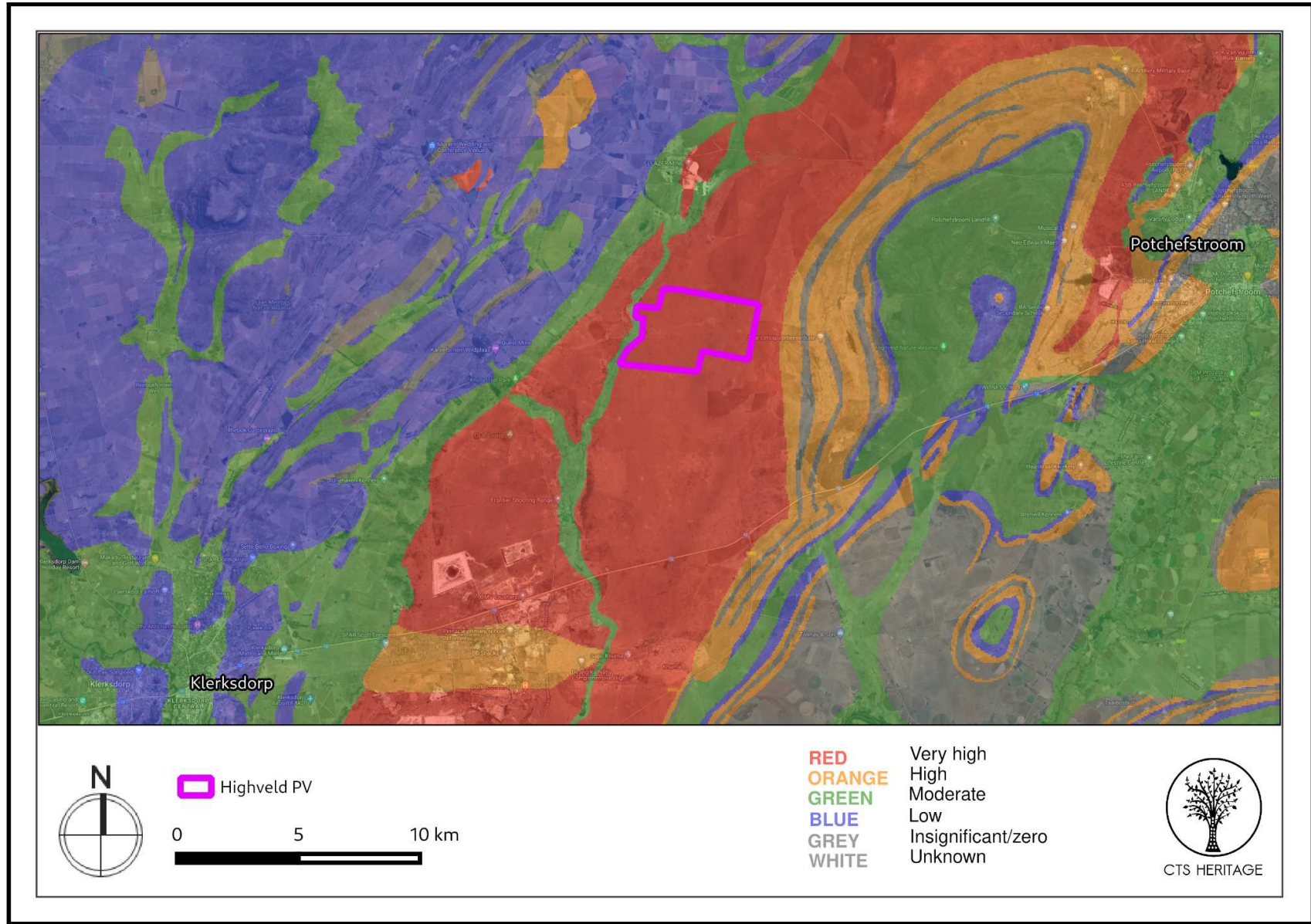


Figure 4. Palaeosensitivity Map. Indicating Low to Very High fossil sensitivity underlying the study area. Please See Appendix 3 for a full guide to the legend.

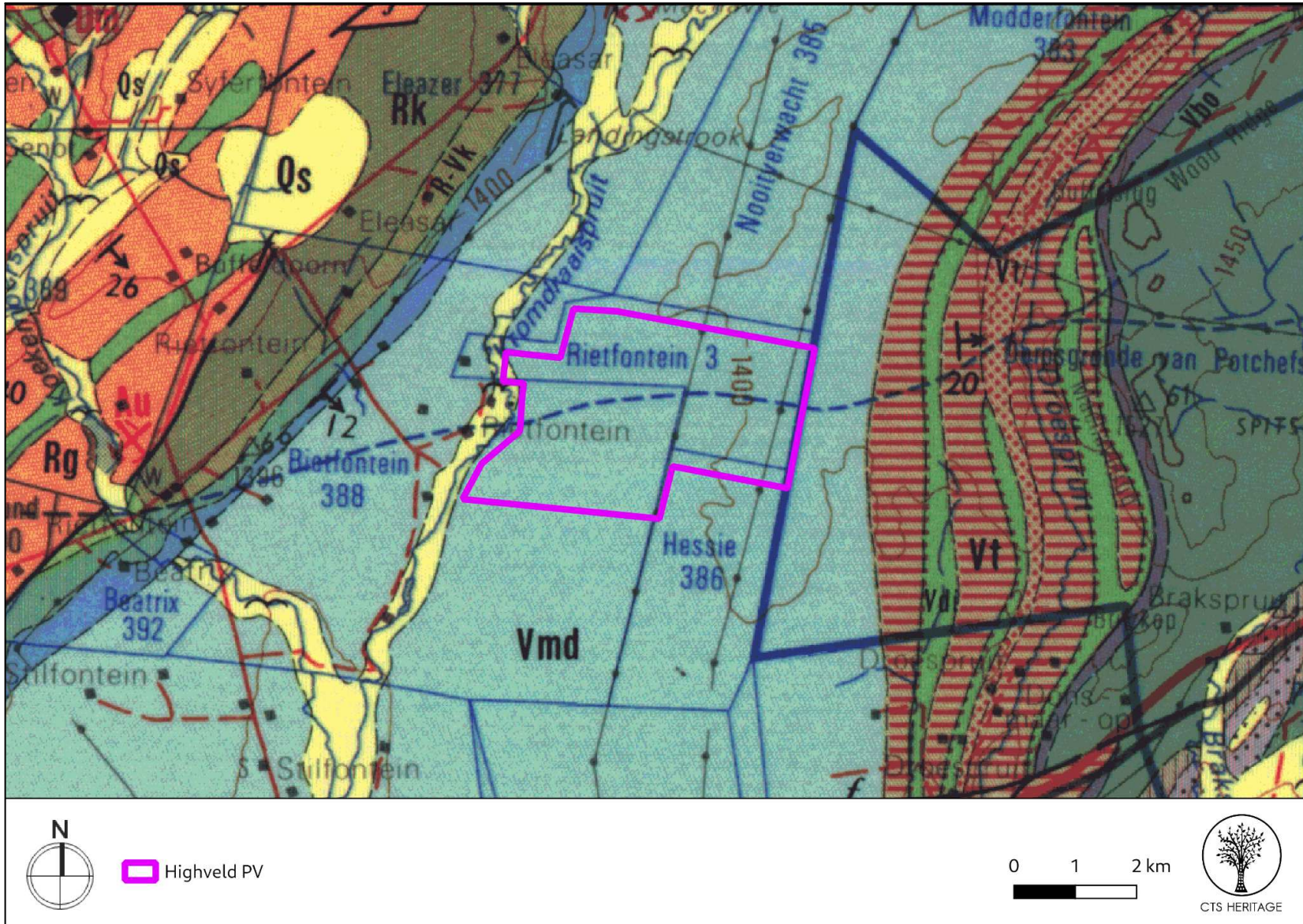


Figure 5. Geology Map. Extract from the CGS 2626 West Rand Geology Map indicating that the development area is underlain by Vmd - Malmani Formation of the Chuniespoort Group



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8. Heritage statement and character of the area

Background

This application is for the proposed development of a PV facility cluster located in between Potchefstroom and Klerksdorp. Potchefstroom, founded in 1838 by the Voortrekkers, is the second-oldest European settlement in the Transvaal. The oldest European settlement is Klerksdorp, about 40 km west. Some historians challenge this, because the first settlement was in the "upper regions of the Schoon Spruit" (believed to have been between Klerksdorp and Potchefstroom) in close proximity to this proposed development area. During the Second Boer War (1899-1902), heavy fighting occurred in the area, which also housed two large concentration camps, one for Whites (centred on modern day Klerksdorp High School) and a separate one for Africans (situated in the area that is today the Ellaton and Nesehof suburbs). The most famous of the battles around Klerksdorp, is that of the Battle of Ysterspruit ("Iron Stream"), in which the Boer general Koos de la Rey achieved a great victory. The battle is one of the most celebrated of the general's career, being the battle in which the Boer soldiers pioneered the art of firing from horseback. On April 11, 1902, Rooiwal, near Klerksdorp, saw the Battle of Rooiwal, the last major engagement of the war, where a Boer charge was beaten off by entrenched British troops. Evidence of this past may be present within the development area and as such, the documentation and assessment of impacts to these resources is recommended.

Archaeology

Archaeological sites spanning the Earlier, Middle and Later Stone Age have been found in the region despite the extensive agricultural transformation of the area. In Dreyer (2005) and Van der Walt's (2007) heritage impact assessments of Pretorius Kraal 53, various modern buildings were recorded that are located near the banks of the Vaal River that were deemed as not conservation worthy. Van der Walt identified some Middle to Later Stone Age artefacts scattered across the farm but did not map them. In Van Schalkwyk's (2021) impact assessment of the Siyanda Solar farm on Grootdraai 468 (which lies on the western border of Pretorius Kraal 53), visibility issues were a major problem, *"Due to the very dense vegetation cover that occur in the project area, natural as well as agricultural fields, it was impossible to obtain any ground visibility. The strategy was therefore to examine natural and man-made features that are usually associated with human habitation and activities such as clumps of trees and rock outcrops."* Two burial sites were recorded during this survey despite the lack of Stone Age sites with the help of a local informant who had been working on the property for a number of years.

According to Van Schalkwyk (2015), "No stratified sites dating to the Stone Age are known from the region. However, surface scatters of tools dating to the Early Stone Age are known to occur in the region of the Vaal River. Apart from that, rock engravings dating to the Late Stone Age are known from various sites in the larger region. One such site is Bosworth located some distance to the north of Klerksdorp. Here, there are nearly 600 engravings of animals as well as geometrical patterns." He goes on to note that "The occupation of the larger geographical area (including the study area) did not start much before the 1500s. By the 16th century things changed, with the climate becoming warmer and wetter, creating condition that allowed Late Iron Age (LIA) farmers to occupy areas previously unsuitable, for example the Witwatersrand and the treeless plains of the Free State. The earliest Iron Age settlers who moved into the North-West Province region were Sothospeaking groups such as the Hurutshe, Kwena, Fokeng, Kgatla and Rolong. Sections of the Rolong settled on a flat-topped mountain (Platberg) to the north of Klerksdorp. Here, they built stone walled settlements that were mainly concentrated along the northern plateau of the mountain." Due to the high levels of archaeological sensitivity of the broader area, it is recommended that potential impacts to archaeological heritage are assessed further.

Palaeontology

According to the SAHRIS Palaeosensitivity Map the development sites are underlain by sediments of very high fossil sensitivity (Figure 4). According to the extract from the Council of GeoScience Map 2626 West Rand, the area proposed for development is underlain by the Malmani Formation of the Chuniespoort Group. This is the same geological group that has resulted in the preservation of fossil remains at the Cradle of Humankind in its Transvaal Dolomite outcrop area. More broadly, the Chuniespoort Group is known for its preservation of Stromatolitic carbonates (limestones / dolomites), minor secondary cherts and mudrocks including carbonaceous shales. Based on the likelihood of impacting significant fossil heritage, it is recommended that the palaeontological sensitivity of the development area is assessed further.

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9. Scoping Assessment Impact Table

Impact

- Impact to archaeological resources
- Impact to palaeontological resources
- Impact to Cultural Landscape
- Cumulative Impact

Desktop Sensitivity Analysis of the Site

- Impact to significant archaeological resources such as Stone Age artefact scatters, burial grounds and graves, historical artefacts, historical structures and rock art engravings through destruction during the development phase is likely.
- Impacts to palaeontological resources are likely.
- Due to the nature of the development and its context, cumulative impact and negative impact to the cultural landscape is likely

Issue	Nature of Impact	Extent of Impact	No-Go Areas
Impact to significant heritage resources through destruction during the development phase.	Destruction of significant heritage resources	Local scale with broader impacts to scientific knowledge	None known at present

Gaps in knowledge & recommendations for further study

- It is likely that the proposed development will impact significant cultural landscape, archaeological and palaeontological heritage and as such, it is recommended that a heritage impact assessment be completed that assesses these impacts as per section 38(3) of the NHRA.

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APPENDIX 1

List of heritage resources within close proximity to the development area from SAHRIS

Site ID	Site no	Full Site Name	Site Type	Grading
32735	Wilkoppies Historical Midden	Historical Midden located on Wilkoppies Agricultural Holdings, Klerksdorp, Northwest Province	Archaeological, Deposit, Artefacts	Grade IIIb
105183	NZASM_SWL_019	Box Culvert between Stilfontein and Koekemoerspruit Bridge	Transport infrastructure	Grade II
105184	NZASM_SWL_020	Arched culvert between Stilfontein and	Transport infrastructure	Grade II
105185	NZASM_SWL_021	Koekemoerspruit Bridge	Bridge	Grade II
105186	NZASM_SWL_022	Well at Koekemoerspruit	Artefacts	Grade II
105187	NZASM_SWL_023	Sq Culvert east of Koekemoer	Transport infrastructure	Grade II
105188	NZASM_SWL_024	Small Sq Culverts east of Koekemoer	Transport infrastructure	Grade II
105189	NZASM_SWL_025	Two pier box culvert east of Koekemoer	Transport infrastructure	Grade II
105190	NZASM_SWL_026	Arched culvert west of Machavie	Transport infrastructure	Grade II
105191	NZASM_SWL_027	Small Box Culvert west of Machavie	Transport infrastructure	Grade II
105192	NZASM_SWL_028	Small Box Culvert west of Machavie	Transport infrastructure	Grade II
105193	NZASM_SWL_029	Bridge west of New Machavie	Bridge	Grade II
105194	NZASM_SWL_030	Bridge east of New Machavie	Bridge	Grade II
135096	DC40/NAMM/0042	Machaviestad 1, Ikageng, Potchefstroom	Structures	
134875	DC40/NAMM/0008	Majova Memorial, Khuma, Klerksdorp	Monuments & Memorials	
137446	Garden Remembrance	Garden Remembrance	Monuments & Memorials	

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137483	Khuma Old Cemetery	Khuma Old Cemetery	Monuments & Memorials	
137593	Khuma pump station	Khuma pump station	Monuments & Memorials	

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Reference List from SAHRIS

NID	Author(s)	Date	Type	Title
138237	Anton Pelser		HIA Phase 1	Sun Valley Heritage Report
146257	Anton Pelser	14/11/2013	HIA Phase 1	Report on a Phase 1 HIA for the Proposed Wilkoppies Ext. 108 Township Development on Holdings 19, 20, 21, 22, 23 and 48, Wilkoppies Agricultural Holdings (Elandsheuvel 402IP) in Klerksdorp, North West Province
168281	Polke Birkholtz	25/06/2014	Heritage Impact Assessment Specialist Reports	Heritage Impact Assessment: Matlosana 132 kV Loop-in-Loop-Out Line and Substation: Proposed Eskom Line on Sections of Portions 36 and 60 of the farm Palmietfontein 403 IP, City of Matlosana Local Municipality, North West Province.
321166	Jaco van der Walt	17/06/2015	Archaeological Specialist Reports	Archaeological Scoping Report for the Proposed Buffels Solar 1 SEF, Klerksdorp, North West Province
321168	Barry Millstead	21/06/2015	PIA Desktop	Palaeontological Heritage Impact Assessment Report on the Site of a Proposed Solar Power Production Facility known as the Buffels Solar 1 PV Energy Facility to be located approximately 20 km north East of Orkney, NW Province
321169	Barry Millstead	21/06/2015	PIA Desktop	Palaeontological Heritage Impact Assessment Report on the Site of a Proposed Solar Power Production Facility known as the Buffels Solar 2 PV Energy Facility to be located approximately 20 km north East of Orkney, NW Province
321170		17/06/2015	Archaeological Specialist Reports	Archaeological Scoping Report for the Proposed Buffels Solar 2 SEF, Klerksdorp, North West Province
336090	Johnny Van Schalkwyk	01/05/2015	Heritage Impact Assessment	Cultural heritage assessment for the PROPOSED IKAGENG EXTENSION 13 ON PORTION 2 OF THE REMAINDER OF TOWN AND TOWNLANDS OF POTCHEFSTROOM 435IQ,

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			Specialist Reports	NORTH WEST PROVINCE
369846	Jaco van der Walt	31/08/2016		
371790	Jaco van der Walt	31/08/2016		
5099	Udo Kusel	04/12/2006	AIA Phase 1	Cultural Heritage Resources Impact Assessment of Goudkoppie Klerksdorp North West Province
5100	Udo Kusel	25/06/2007	HIA Phase 1	Cultural Heritage Resources Impact Assessment on Portion 376 (A Portion of Portion 360) of the Farm Elandsheuvel 402 IP Klerksdorp
5195	Udo Kusel	15/02/2008	HIA Phase 1	Cultural Heritage Resources Impact Assessment of Portion 46 of the Farm Elandsheuvel 436 IQ (Portions Adjacent and to the West of Loopspruit), Tlokwe Local Municipality, North West Province
8402	Udo Kusel	11/12/2007	HIA Phase 1	Cultural Heritage Resources Impact Assessment of Holding 109 Wilkoppies Portion 430 (A Portion of Portion 59) of the Farm Elandsheuvel 402 IP Klerksdorp, North West Province
8491	Udo Kusel	01/12/2007	HIA Phase 1	Cultural Heritage Resources Impact Assessment of Portion 2 of the Farm Elandsheuvel 436 IQ Tlokwe Local Municipality, North West Province

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APPENDIX 3 - Keys/Guides

Key/Guide to Acronyms

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

Full guide to Palaeosensitivity Map legend

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

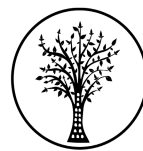
- reviewing the fossil sensitivity maps available on the South African Heritage Resources Information System (SAHRIS)
- considering the nature of the proposed development
- when available, taking information provided by the applicant related to the geological background of the area into account

DETERMINATION OF THE COVERAGE RATING ASCRIBED TO A REPORT POLYGON

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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.

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:

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- 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.

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