CTS HERITAGE

HERITAGE SCREENER

CTS Reference Number:	**CTS21_146**
SAHRIS Ref	**Case xxx**
Client:	**Savannah**
Date:	**May 2022**
Title:	**PROPOSED ZIONSHEUVEL SOLAR PV FACILITY NEAR PETRUSVILLE, DE AAR & PHILLIPSTOWN IN THE NORTHERN CAPE**

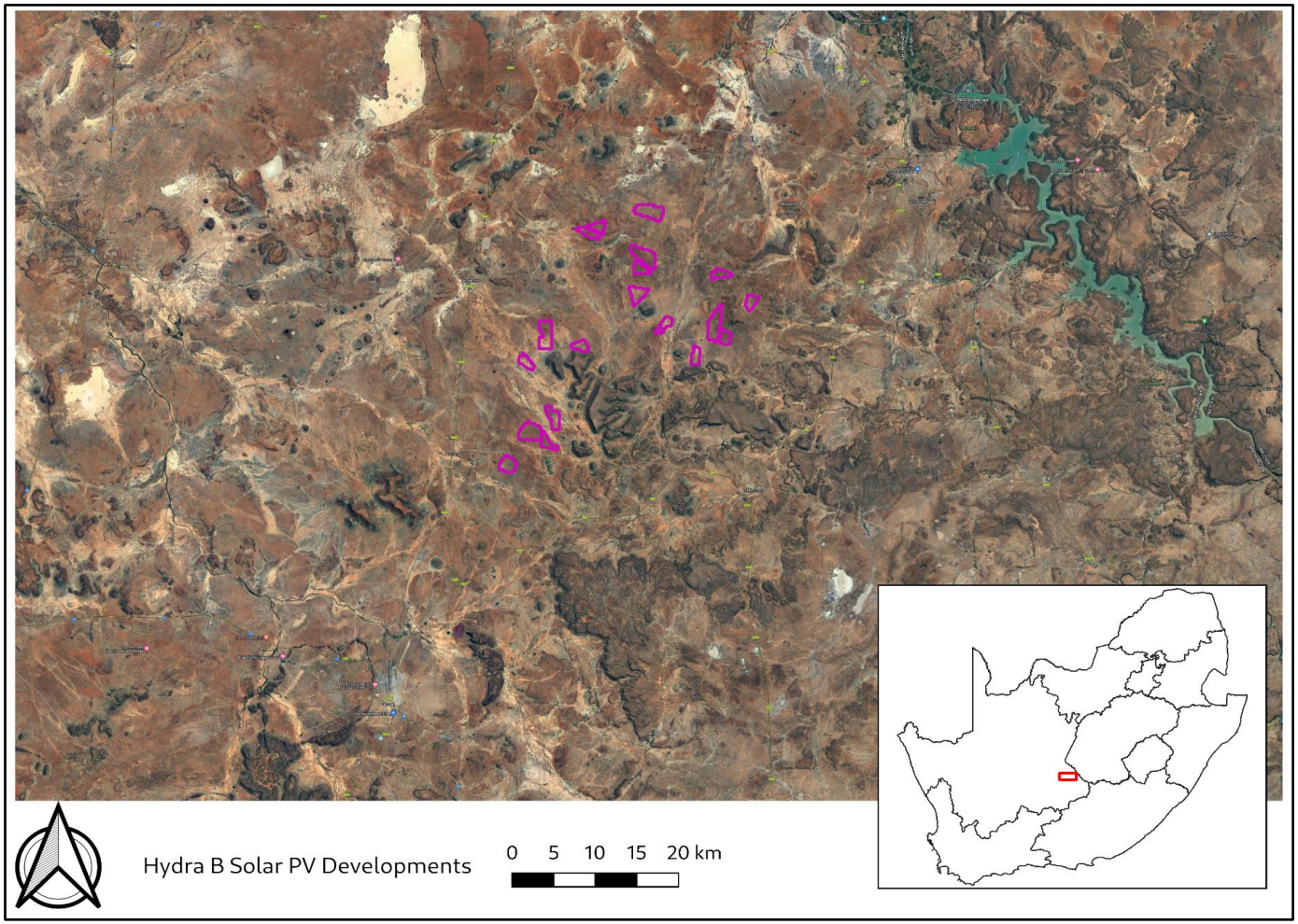

Figure 1a. Satellite map indicating the location of the proposed Hydra B PV development in the Northern Cape

Recommendation:	**RECOMMENDATION**

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	An HIA should be conducted consisting of a field-based archaeological impact assessment due to the likelihood of encountering engravings and possible graves or ruins. The area has very low palaeontological sensitivity as verified by the fieldwork carried out by Almond and Millstead. A desktop PIA should therefore be carried out as part of the HIA.

1. Proposed Development Summary

[illegible]

2. Application References

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

3. Property Information

Latitude / Longitude	-30.25059184, 24.42309544
Erf number / Farm number	[illegible]
Local Municipality	Renosterberg
District Municipality	Pixley ka Seme
Province	Northern Cape
Current Use	Agriculture (grazing)
Current Zoning	Agriculture

4. Nature of the Proposed Development

Total Surface Area	498ha
Depth of excavation (m)	~2m
Height of development (m)	<5m

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
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-
x	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

- Solar PV array comprising PV modules and mounting structures (monofacial or bifacial and a single axis tracking system)
- Inverters and transformers
- Cabling between the project components
- Battery Energy Storage System (BESS)
- On-site facility substation and power lines between the solar PV facility and the Eskom substation (to be confirmed and assessed through a separate process)
- Site offices, Security office, operations and control, and maintenance and storage laydown areas
- Access roads, internal distribution roads

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

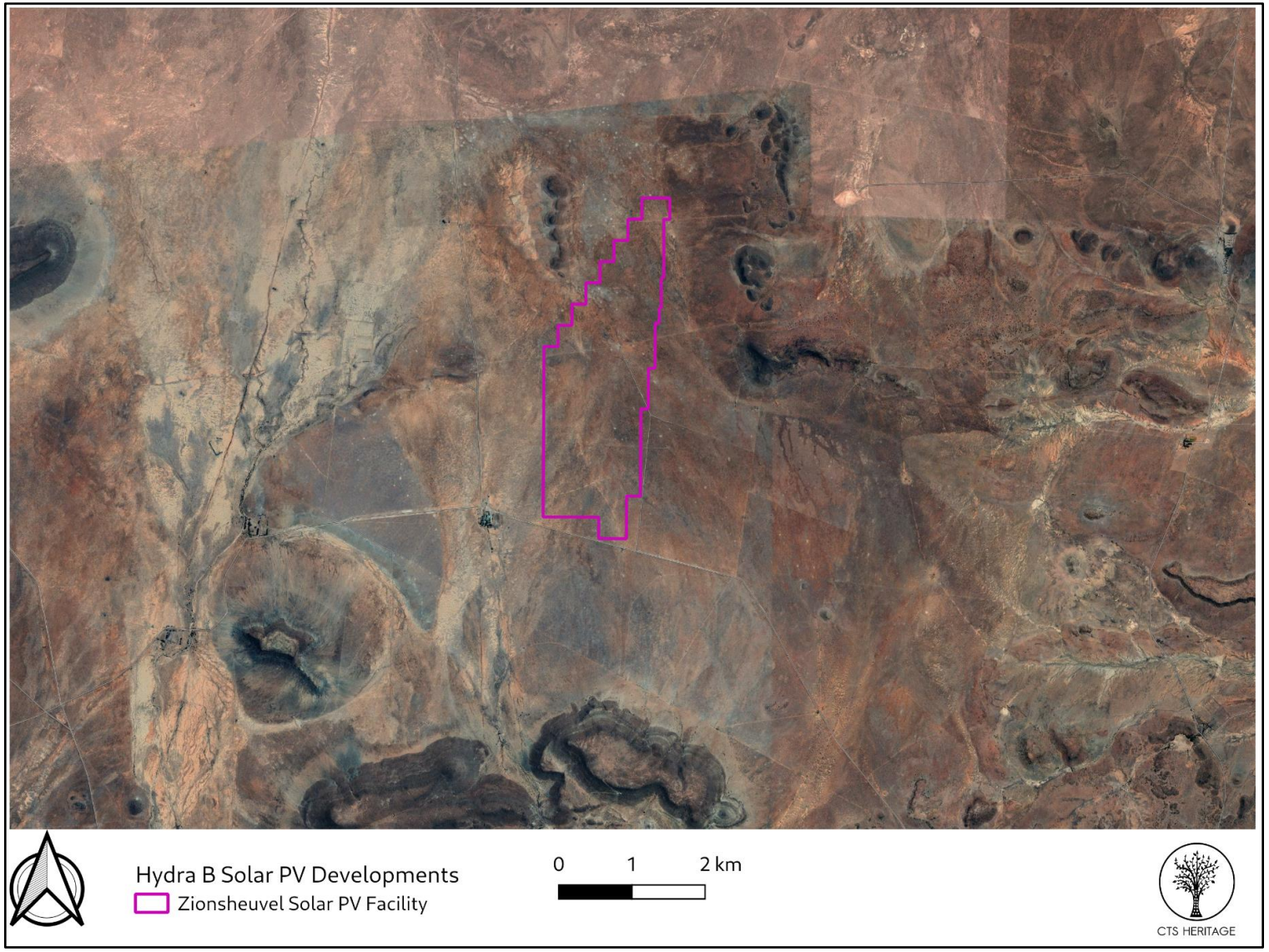

Figure 1b Overview Map. Satellite image (2019) indicating the proposed development area

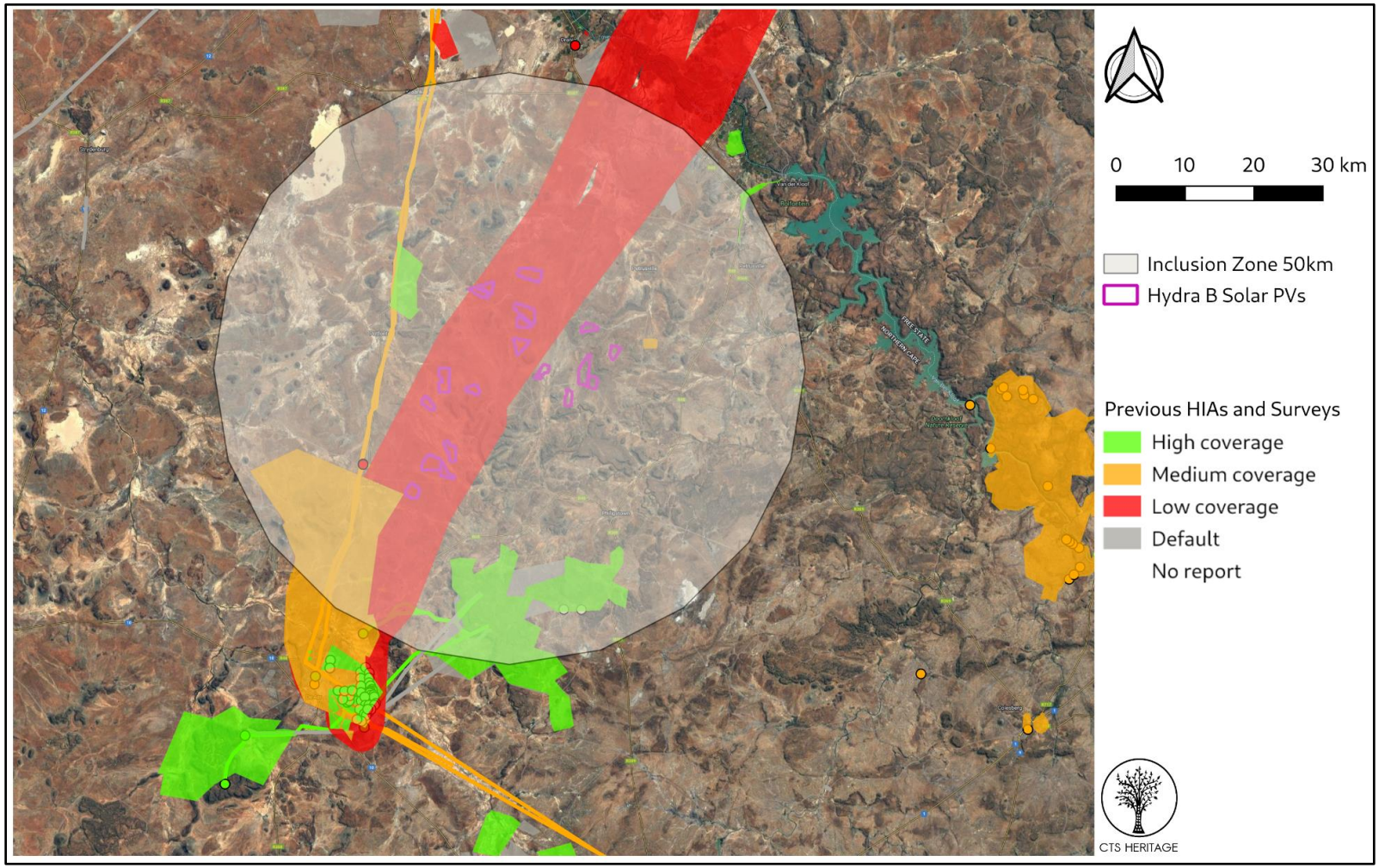

Figure 2. Previous HIAs Map. Previous Heritage Impact Assessments surrounding the proposed development area within 50km, with SAHRIS NIDS indicated. Please see Appendix 2 for a full reference list.

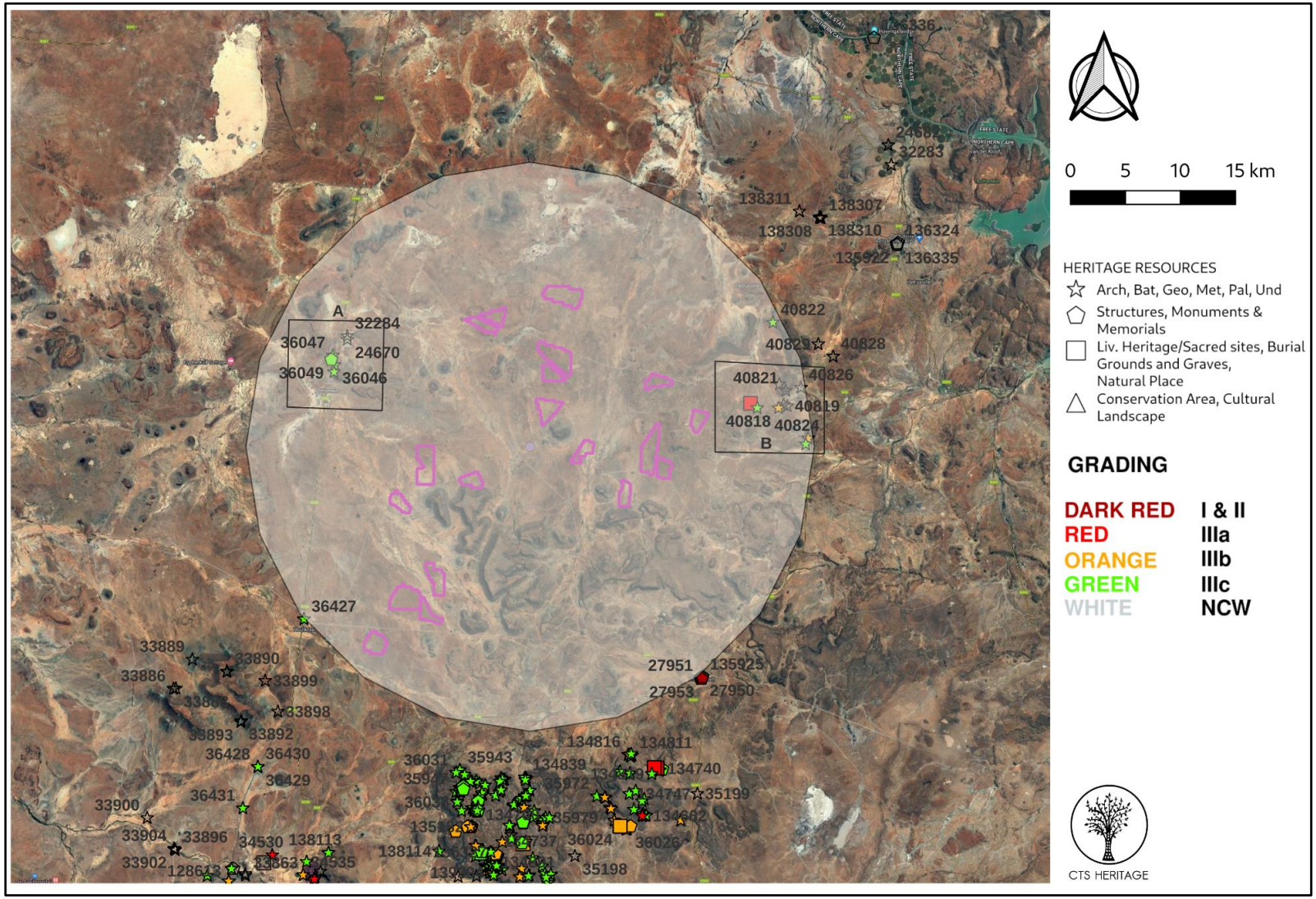

Figure 3. Heritage Resources Map. Heritage Resources previously identified in and near the study area, with SAHRIS Site IDs indicated within 30km. Please See Appendix 4 for full description of heritage resource types.

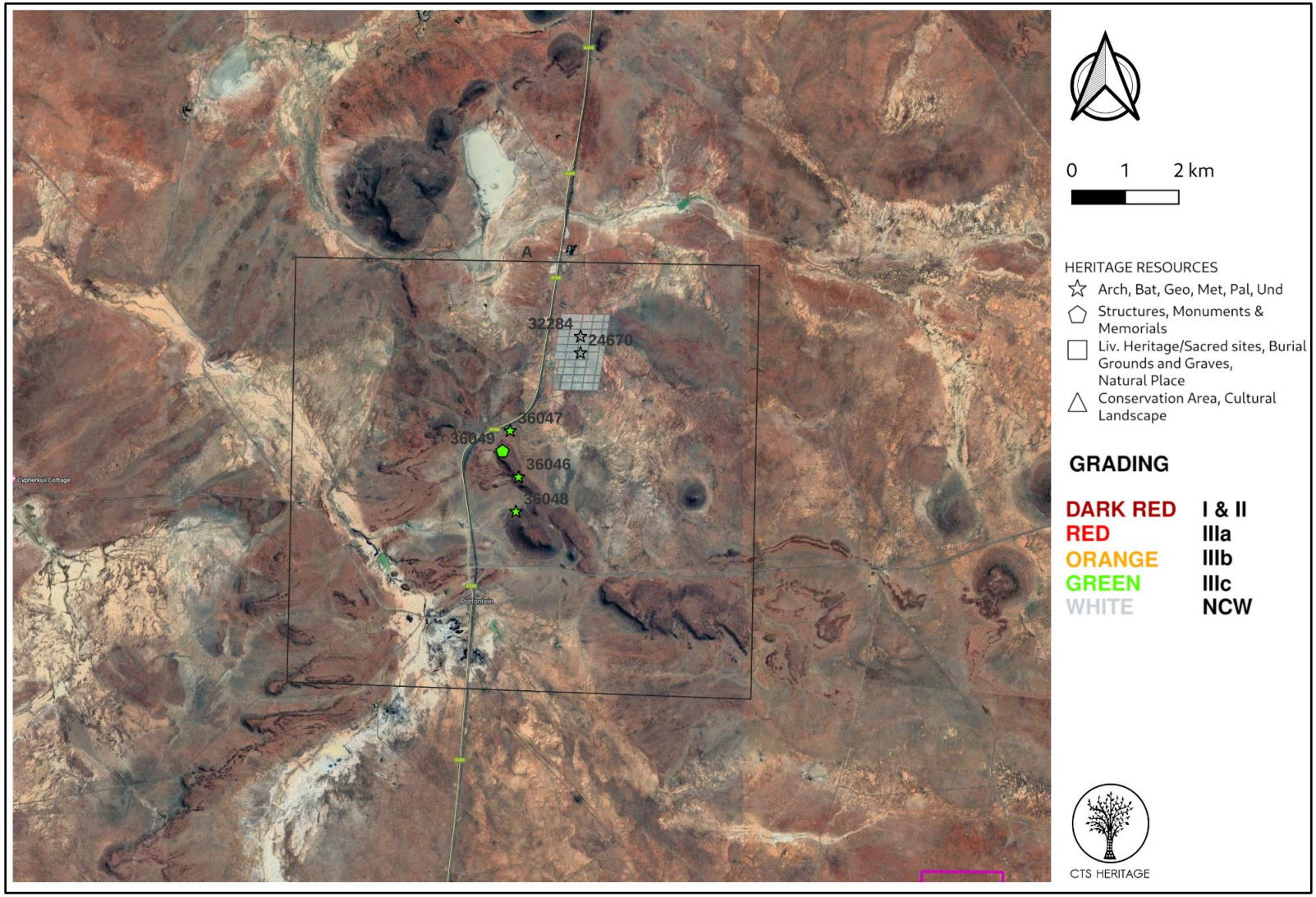

Figure 3a. Heritage Resources Map. Inset A.

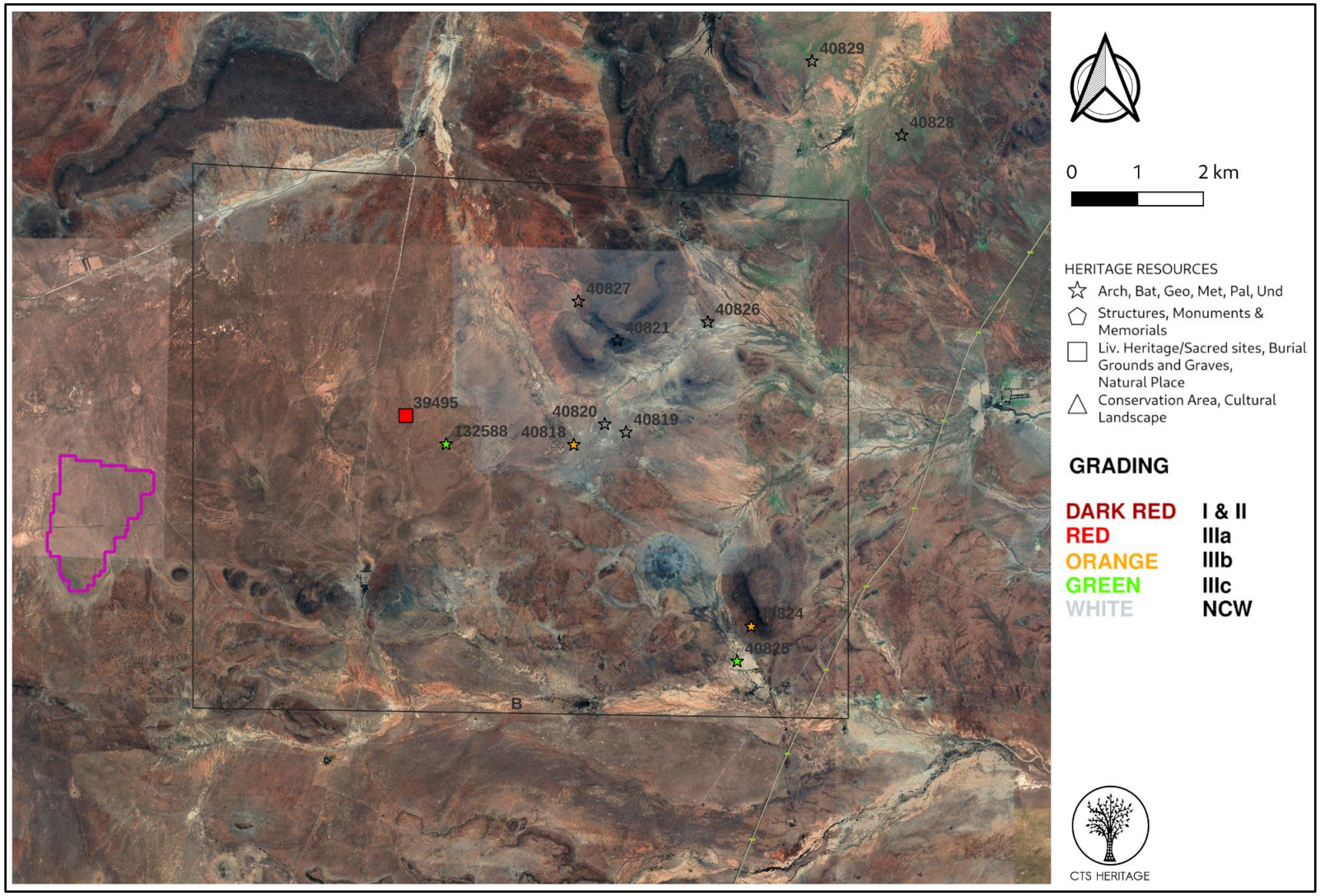

Figure 3b. Heritage Resources Map. Inset B.

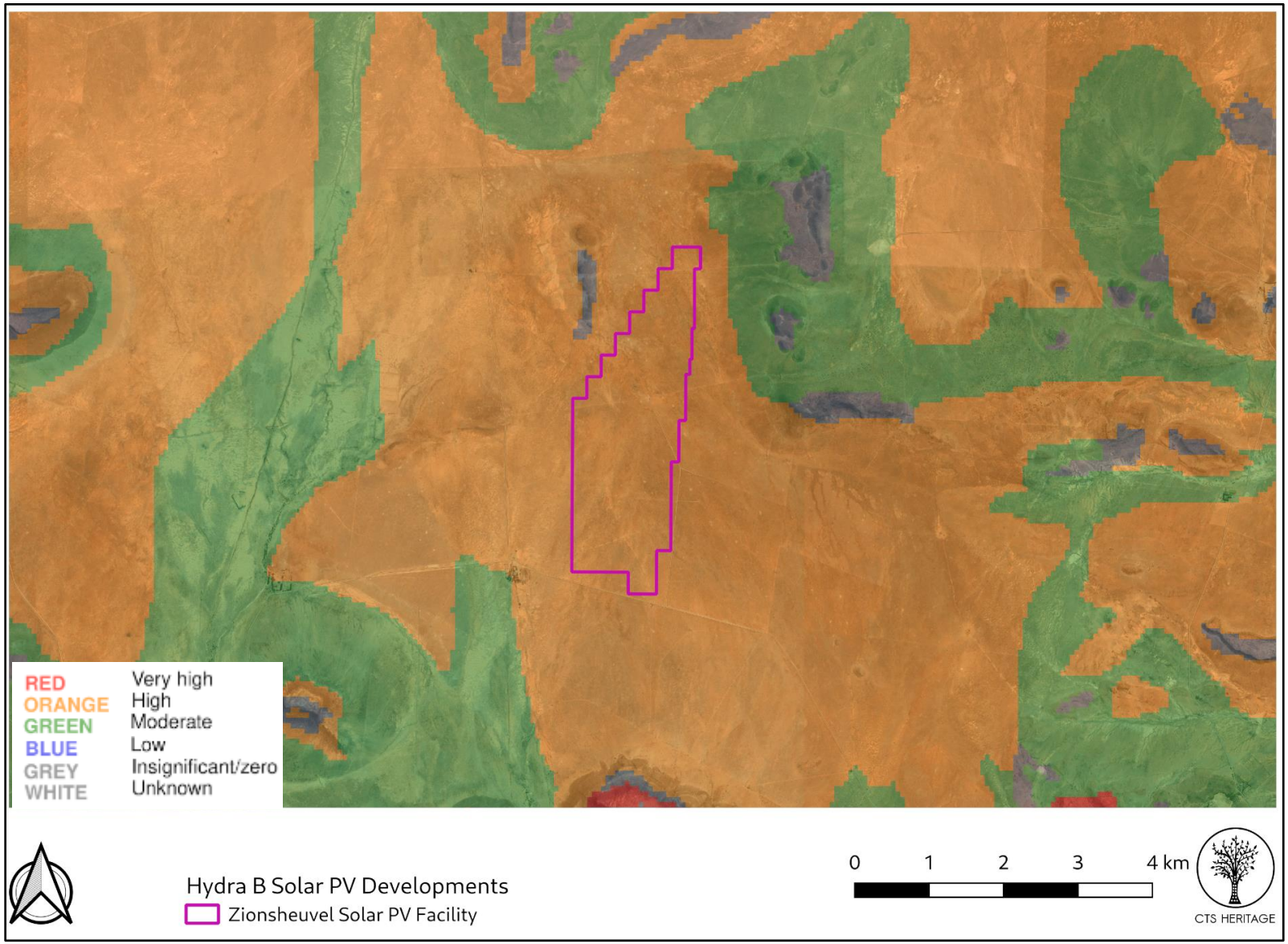

Figure 4a. Palaeosensitivity Map. Indicating varied fossil sensitivity underlying the study area. Please See Appendix 3 for a full guide to the legend.

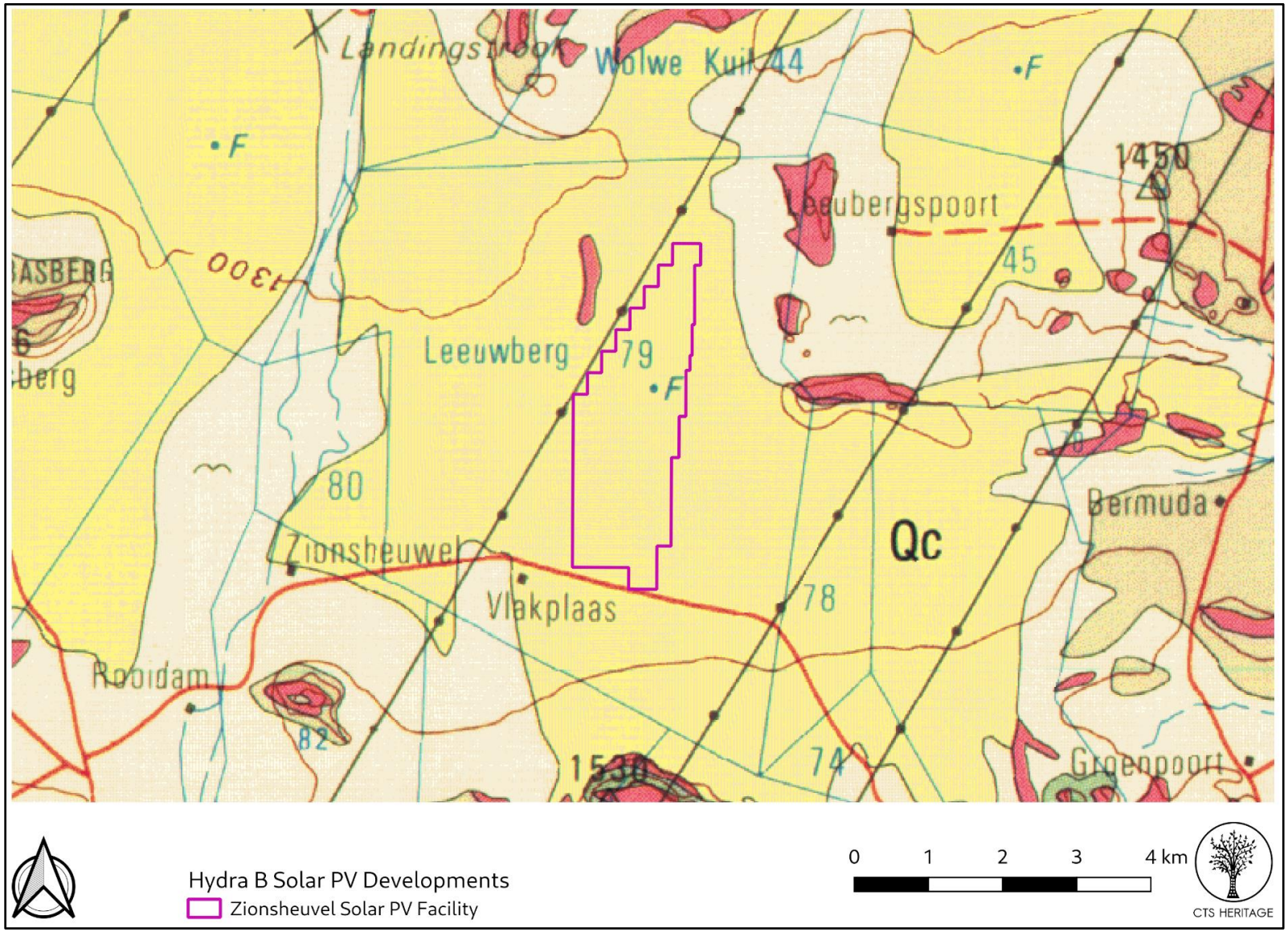

Figure 4b. Geology Map. Extract from the Council of GeoScience Geology Map tile 3024 for Colesberg indicating that the area proposed for development is underlain by Quaternary Sands.

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8. Heritage Assessment

Built Environment and historical context

De Aar was originally established on the Farm "De Aar." The name means "the artery," a reference to its underground water supply. The Cape Government Railways were founded in 1872, and the route that the government chose for the line to connect the Kimberley diamond fields to Cape Town on the coast, ran directly through De Aar. Because of its central location, the government also selected the location for a junction between this first railway line, and the other Cape railway networks further east, in 1881. In 1899 two brothers who ran a trading store and hotel at the junction, Isaac and Wulf Friedlander, purchased the farm of De Aar. Following the Anglo Boer War, the Friedlander brothers surveyed the land for the establishment of a town. The municipality was created a year later in 1900. Phillipstown lies at the south eastern end of the Hydra B study area while Petrusville lies to the north east.

This area was also a contested space during the South African War (also known as the Second Boer War/Anglo-Boer War) where various sorties through the area were carried out by Generals De Wet and Smuts. The British erected a number of blockhouses protecting the railway lines that were essential in maintaining territorial control and the Hopetown - De Aar line runs along the western end of the Hydra B project area. This line was also actively used to transport military equipment during the Border War (1966-1990) fought between South Africa and independence movements in Angola, Namibia, Botswana, Zambia, Zimbabwe and Mozambique.

Kruger (2012) documented historical period buildings dating to the 1930s and associated farm graveyards at Vetlaagte - a number of farm homestead complexes dot the area covered by the Hydra B project but all are situated sufficiently far away (at least 1km) from these homesteads that no heritage impacts are anticipated on these resources.

Archaeology

A number of impact assessments related to renewable energy (wind and solar) have been carried out in the De Aar area over the last 15 years. A cluster of solar energy projects surround the Hydra substation 10km south of De Aar. As part of the 2012 process for approval of the Vetlaagte Solar Energy Facility, Kruger conducted a detailed Heritage Impact Assessment of the area proposed for development. According to Kruger (2012), “During the survey, widespread Middle Stone Age (MSA) material, including characteristic formal MSA stone tools such as points, blades and scrapers were documented in the survey area along a north-south oriented drainage on the eastern periphery of the property. The lithic remains occur in three large scatters and, almost without exception, in low lying areas along non-perennial drainage lines and wetland areas where precipitation and groundwater have exposed the stone tools, originally deposited on a decomposed calcrete rock layer approximately 30cm sub surface. Preliminary examinations of some of the lithics indicated that a number of flakes displayed facetted platforms, characteristic of the MSA.”

The approved Castle Wind Energy Facility lies on the hills just to the south east of the Hydra B project area. The development area has been subject to a previous heritage impact assessment process (Van der Walt, 2014, SAHRIS ID 183142) and a palaeontology assessment (Milsteed, 2014, SAHRIS ID 183143). A number of San engravings can be found on the dolerite boulders spread throughout the area and a more recent historical set of engravings has been made since the establishment of diamond mining at Kimberley and the spread of stock farming in the area.

Palaeontology

According to the SAHRIS Palaeosensitivity Map (Figure 4a), the area proposed for development is underlain by sediments of high and very high paleontological sensitivity. According to the extract from the Council for GeoSciences Map 3024 for Colesburg, the development area is underlain by Jurassic Dolerite, the Tierberg Formation of the Ecca Group and the Adelaide Subgroup of the Beaufort Group.

As part of the Vetlaagte project in 2012, Almond completed a field-based palaeontological assessment. Almond (2012) found that “The potentially fossiliferous sediments of the Late Palaeozoic Karoo Supergroup (Ecca and Lower Beaufort Groups) that underlie the study area are almost entirely mantled in a thick layer of superficial deposits of probable Pleistocene to Recent age. These include

various soils, gravels and – at least in some areas - a well-developed calcrete hardpan. The upper Ecca Group bedrocks in the northern portion of the study area contain locally abundant fossil wood (of palaeontological interest for dating and palaeoenvironmental studies), as well as low diversity non-marine trace fossil assemblages typical of the Waterford Formation, rather than the Tierberg Formation as mapped. No vertebrate fossils and only scattered woody plant impressions of the Permian Glossopteris Flora were observed within the Lower Beaufort Group rocks that are very poorly exposed in the southern portion of the Vetlaagte study area. Trace fossils, silicified wood and rare vertebrate remains (therapsids, parareptiles) of the Middle Permian Pristerognathus Assemblage Zone have recently been recorded from this succession in the De Aar region (Almond 2010b). Extensive dolerite sills and dykes of the Early Jurassic Karoo Dolerite Suite intruding the Karoo Supergroup sediments are entirely unfossiliferous, as are rare intrusive kimberlite pipe rocks of Cretaceous age. The diverse superficial deposits within the three study areas (e.g. soils, gravels, alluvium, calcrete hardpans) are of low palaeontological sensitivity as a whole. Abundant fragments of reworked fossil wood material of Ecca provenance occur widely within subsurface and surface gravels overlying the Ecca Group outcrop area."

In Bamford's assessment completed for the area in 2021, she notes that "Based on experience, other reports and the lack of any significant previously recorded fossils from the area, it is unlikely that any fossils would be preserved in the Tierberg Formation or Adelaide Subgroup. Nonetheless, a Fossil Chance Find Protocol should be added to the EMPr."

RECOMMENDATION

An HIA should be conducted consisting of a field-based archaeological impact assessment due to the likelihood of encountering engravings and possible graves or ruins. The area has very low palaeontological sensitivity as verified by the fieldwork carried out by Almond and Millstead. A desktop PIA should therefore be carried out as part of the HIA.

9. Scoping Assessment Impact Table

Impact

- Impact to archaeological and built environment 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, remnants of Iron Age settlements, burial grounds and graves, historical artefacts, historical structures and rock art engravings through destruction during the development phase and disturbance during the operational phase is possible.
- Impacts to palaeontological resources are unlikely.
- There is the potential for the cumulative impact of proposed solar energy facilities to negatively impact the cultural landscape due to a change in the landscape character from rural and mining to semi-industrial, however, due to the density of mining activities in the area, the impact on the experience of the cultural landscape is not foreseen to be significant.

Issue	Nature of Impact	Extent of Impact	No-Go Areas
Impact to significant heritage resources through destruction during the development phase and disturbance during the operational 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

The heritage resources in the area proposed for development are not yet sufficiently recorded

Based on the available information, including the scale and nature of the proposed development, it is likely that significant heritage resources will be impacted by the proposed development and as such it is recommended that further heritage studies are required in terms of section 38 of the NHRA with specific focus on impacts to archaeological heritage.

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APPENDIX 1: List of heritage resources in proximity to the development area

Site ID	Site no	Full Site Name	Site Type	Grading
27950	9/2/071/0005	Magistrate's Court, Market Street, Philipstown	Building	Grade IIIb
27951	9/2/071/0007	Teich house complex, Sofia Street, Philipstown	Building	Grade IIIb
27953	9/2/071/0004	Reformed Church, Philipstown	Building	Grade II
40819	DeP 02	De Put 02	Palaeontological	Grade IIIb
40820	DeP 03	De Put 03	Palaeontological	Grade IIIb
40818	DeP 01	De Put 01	Palaeontological	Grade IIIb
40825	DeP 06	De Put 06	Palaeontological	Grade IIIc
39495	SWT 01	Swartwater 01	Burial Grounds & Graves	Grade IIIa
134665	DWEF005	De Aar WEF	Rock Art	Grade IIIa
134740	DWEF026	De Aar WEF	Building	Grade IIIb
134742	DWEF028	De Aar WEF	Artefacts	Grade IIIc
134744	DWEF029	De Aar WEF	Artefacts	Grade IIIb

134745	DWEF030	De Aar WEF	Artefacts	Grade IIIc
135925	DC7/NAMM/0016	Voortrekker Memorial, Market Square, Philipstown	Monuments & Memorials	
134799	DWEF042	De Aar WEF	Structures	Grade IIIc
134801	DWEF043	De Aar WEF	Palaeontological	Grade IIIc
134805	DWEF044	De Aar WEF	Artefacts	Grade IIIc
134807	DWEF045	De Aar WEF	Burial Grounds & Graves	Grade IIIa
134809	DWEF046	De Aar WEF	Burial Grounds & Graves	Grade IIIa
134810	DWEF047	De Aar WEF	Burial Grounds & Graves	Grade IIIa
134811	DWEF048	De Aar WEF	Artefacts	Grade IIIc
134813	DWEF049	De Aar WEF	Artefacts	Grade IIIc
134816	DWEF050	De Aar WEF	Artefacts	Grade IIIb
134817	DWEF051	De Aar WEF	Artefacts	Grade IIIb
134818	DWEF052	De Aar WEF	Artefacts	Grade IIIc

134819	DWEF053	De Aar WEF	Artefacts	Grade IIIc
132588	SWT 02	Swartwater 02	Artefacts	Grade IIIc

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APPENDIX 2: Reference List

Heritage Impact Assessments				
Nid	**Report Type**	**Author/s**	**Date**	**Title**
104574	Heritage Scoping	Wouter Fourie	10/10/2012	Heritage Scoping Report for the Proposed Wind Farm Facility for Renosterberg Wind Energy Company (RWEC) near Petrusville, Northern Cape Province
104576	Heritage Scoping	Wouter Fourie	10/10/2012	Heritage Scoping Report for the Proposed Solar PV Facility for Renosterberg Wind Energy Company (RWEC) near Petrusville, Northern Cape Province
104804	PIA Desktop	John E Almond	01/09/2012	Palaeontological specialist assessment: desktop study PROPOSED RENOSTERBERG SOLAR PV AND WIND ENERGY FACILITIES NEAR DE AAR, NORTHERN CAPE PROVINCE
109347	AIA Phase 1	David Morris	01/12/2012	ARCHAEOLOGY SPECIALIST INPUT ON THE PROPOSED ACCESS ROAD FOR THE VANDERLINDESKRAAL PHOTOVOLTAIC SITE SITUATED NEAR HANOVER, NORTHERN CAPE
109627	PIA Phase 1	Gideon Groenewald	24/01/2013	PALAEONTOLOGICAL FIELD INVESTIGATION PHASE 1 REPORT FOR THE PROPOSED ACCESS ROAD ON THE REMAINDER OF THE FARM VAN DER LINDES KRAAL NO. 79, HANOVER, NORTHERN CAPE
126242	HIA Phase 1	Anton van Vollenhoven	30/07/2013	A REPORT ON A CULTURAL HERITAGE IMPACT ASSESSMENT FOR THE PROPOSED SWARTWATER SOLAR PV POWER FACILITY, CLOSE TO PETRUSVILLE, NORTHERN CAPE PROVINCE
127514	Palaeontological Specialist Reports	Robert Gess	13/08/2013	Palaeontological Impact Assessment for Proposed establishment of the Swartwater Solar energy Facility, Eastern Cape
151280	Archaeological Specialist Reports	Jaco van der Walt	26/08/2013	Archeological Scoping Report for the Proposed Castle WEF near De Aar, Northern Cape Province
151284	PIA Desktop	John E Almond	31/08/2013	Palaeontological Heritage Assessment: Desktop Study
160512	Archaeological Monitoring	Lita Webley, Dave Halkett	17/03/2014	HERITAGE IMPACT ASSESSMENT: WALKDOWN OF FINAL LAYOUT OF THE LONGYUAN MULILO DE AAR 2 NORTH WIND ENERGY FACILITY, NORTHERN CAPE PROVINCE

163994		Wouter Fourie	03/08/2013	Proposed PV Facility: Heritage Impact Report
183142	Archaeological Specialist Reports	Jaco van der Walt	30/10/2014	Archaeological Impact Assessment Report for the Proposed Castle Wind Energy Facility, De Aar, Northern Cape
183143	Heritage Impact Assessment Specialist Reports	Barry Millsteed	24/11/2014	Full Palaeontological Heritage Impact Assessment Report on a Portion of a Proposed Wind Energy Generation Facility (The Castle Project); This Being on the Eastern Extent of the Farm Knapdaar 8 near De Aar, Northern Cape Province
339820	Heritage Impact Assessment Specialist Reports	Lita Webley, Jayson Orton	01/12/2011	Proposed De Aar Wind Energy Facility on the North and South Plateau, Northern Cape Province
339824	Heritage Impact Assessment Specialist Reports	Lita Webley, David Halkett	01/06/2015	Addendum: Proposed Wind Energy Facility situated on the Eastern plateau (South) near De Aar, Northern Cape Province.
384330	HIA Letter of Exemption	John Almond	01/10/2016	Proposed Kloofsig 1 Solar PV Energy Facility on the remainder of Farm Kalkpoort 18, Renosterberg Local Municipality near Petrusville, Northern Cape
384331	HIA Letter of Exemption	John Almond	01/10/2016	Proposed Kloofisg 2 Solar PV Energy Facility on the remainder of Farm Kalkpoort 18, Renosterberg Local Municipality near Petrusville, Northern Cape
384332	HIA Letter of Exemption	John Almond	01/10/2016	Proposed Kloofsig 3 Solar PV Energy Facility on the remainder of farm Kalkpoort 18, Resnosterberg Local Municipality near Petrusville, Northern Cape
384452	Palaeontological Specialist Reports	John E Almond	01/06/2015	Palaeontological Impact Assessment Screening of the proposed Kloofsig 1 Solar PV Energy Facility on the remainder of the Farm Kalkpoort 18, Petrusville area, REsnosterberg Local Municipality, Northern Cape.
384456	Archaeological Specialist Reports	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.
384469	Palaeontological Specialist Reports	John E Almond	01/06/2015	Palaeontological Impact Screening Assessment - Proposed Kloofsig Solar Pv Facility On The Remainder Of Farm Kalk Poort 18, Renosterberg Local Municipality Near Colesberg, Northern Cape

384497	Archaeological Specialist Reports	Madelon Tusenius	24/10/2016	Archaeological Impact Assessment of the proposed Kloofsig 2 Solar PV Energy Facility on the remainder of the Farm Kalkpoort 18, Petrusville area, REsnosterberg Local Municipality, Northern Cape.
384552	Palaeontological Specialist Reports	John E Almond	01/06/2015	Palaeontological Impact Assessment: Basic Assessment Study & Proposed Exemption From Further Specialist Palaeontological Studies Proposed Kloofsig Solar PV Facility On The Remainder Of Farm Kalk Poort 18, Renosterberg Local Municipality Near Colesberg, Northern Cape
384554	Archaeological Specialist Reports	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.
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
4555	AIA Phase 1	Cobus Dreyer	10/06/2005	Archaeological and Historical Investigation of the Proposed Pipeline Installation at Philipstown, Northern Cape
4556	AIA Phase 1	Cobus Dreyer	29/05/2006	Archaeological and Cultural Heritage Investigation of the Proposed Eskom Hydra-Perseus & Beta-Perseus Transmission Line at the Farm Jackalskuil 21, Petrusville, Northern Cape
4558	AIA Phase 1	Cobus Dreyer	27/02/2008	First Phase Archaeological and Cultural Heritage Investigation of the Vanderkloof Dam - Petrusville Main Water Supply Scheme, Northern Cape
6970	AIA Phase 1	David Morris	02/09/2011	Paarde Valley. Ilanga Lethemba PV Solar Energy Facility. Specailist input for the environmental impact asssessment phase and environmental management programme for the proposed Ilanga Lethemba Solar Energy Facility, near De Aar, Northern Cape province
6971	AIA Desktop	Johnny Van Schalkwyk	30/04/2011	Heritage Impact Scoping report for the proposed establishment of the Ilanga Lethemba PV Solar Energy Facility, near De Aar, Northern Cape Province.
7020	AIA Phase 1	David Morris	03/09/2011	Archaeology specialist input on the site of the proposed Kalkbult Photovoltaic construction site north of De Aar, Northern Cape
8023	AIA Phase 1	David Morris	03/09/2011	Archaeology specialist input on the site of the proposed Taaiboschfontein Photovoltaic construction site

				between De Aar and Hanover, Northern Cape
8167	AIA Phase 1	David Morris	03/09/2011	Archaeology specialist input on the site of the proposed Vanderlindeskraal Photovoltaic construction site near Hanover, Northern Cape
8992	PIA Phase 1	John E Almond	29/01/2012	Palaeontological Specialist Study: Combined Desktop and Field -based Assessments. Two wind energy facilities on the Eastern Plateau near De Aar, Northern Cape Province proposed by Mulilo Renewable Eneergy (Pty) Ltd
116245	AIA Phase 1	David Morris	08/01/2013	ARCHAEOLOGY SPECIALIST INPUT ON THE SITE OF THE PROPOSED POTFONTEIN PHOTOVOLTAIC CONSTRUCTION SITE NORTH OF DE AAR, NORTHERN CAPE
118851	PIA Desktop	Gideon Groenewald	29/04/2013	PALAEONTOLOGICAL DESKTOP REPORT PROPOSED POTFONTEIN PHOTOVOLTAIC FACILITY Potfontein Photovoltaic Facility, Farm: Koens Draai 36, Emthanjeni Local Municipality, Pixley ka Seme District Municipality, Northern Cape Province of South Africa
356810	HIA Phase 1	Lita Webley	15/02/2016	Desktop Heritage Impact Assessment: Proposed mining of two borrow pits on the remainder of farm Enkeldebult 150, south of Phillipstown, Northern Cape
108972	PIA Desktop	Gideon Groenewald	18/12/2012	Palaeontological Desktop Assessment - Proposed construction of two 132kV transmission lines from the South & North Wind Energy Facilities on the Eastern Plateau (De Aar 2) near De Aar, Northern Cape
108995	HIA Phase 1	Wouter Fourie	10/01/2013	HIA - 132kV transmission lines from the South & North Wind Energy Facilities on the Eastern Plateau (De Aar 2)
108996	HIA Phase 1	Wouter Fourie	10/01/2013	HIA - Addendum - 132kV transmission lines from the South & North Wind Energy Facilities on the Eastern Plateau (De Aar 2)
114648	PIA Desktop	John E Almond	01/09/2012	Palaeontological specialist assessment: desktop study PROPOSED 16 MTPA EXPANSION OF TRANSNETâ€™S EXISTING MANGANESE ORE EXPORT RAILWAY LINE & ASSOCIATED INFRASTRUCTURE BETWEEN HOTAZEL AND THE PORT OF NGQURA, NORTHERN & EASTERN CAPE. Part 1: Hotazel to Kimberley, Northern Cape
114929	HIA Phase 1	Elize Becker	25/02/2013	Transnet Capital Projects Ngqura 16 Mtpa Manganese Rail Phase 1 Heritage Impact Assessment Rail

				Kimberley to De Aar
115026	PIA Phase 1	John E Almond	01/02/2013	Proposed 16 Mtpa expansion of Transnet's existing manganese ore export railway line and associated infrastructure between Hotazel and the Port of Ngqura, Northern and Eastern Cape. Part 3: Kimberley to De Aar, Northern Cape
121518	HIA Phase 1	Elize Becker	28/01/2013	Phase 1 Heritage Impact Assessment - Borrow Pit areas between Kimberley to De Aar
129751	HIA Phase 1	Elize Becker	20/02/2013	Phase 1 Heritage Impact Assessment Hotazel to Kimberley and De Aar to Port of Ngqura
151768	PIA Phase 1	John E Almond	01/11/2013	Palaeontological specialist assessment: combined desktop and field-based study: PROPOSED 16 MTPA EXPANSION OF TRANSNETâ€™S EXISTING MANGANESE ORE EXPORT RAILWAY LINE & ASSOCIATED INFRASTRUCTURE BETWEEN HOTAZEL AND THE PORT OF NGQURA, NORTHERN & EASTERN CAPE.
163451	Archaeological Specialist Reports	Wouter Fourie	27/03/2014	Proposed construction of a 132kV transmission line from the Longyuan Mulilo De Aar 2 North Wind Energy Facility on the Eastern Plateau (De Aar 2) near De Aar, Northern Cape
8086	AIA Phase 1	Johan Nel	14/11/2008	Final Report Heritage Resources Scoping Survey & Preliminary Assessment Transnet Freight Line EIA, Eastern Cape and Northern Cape
92575	HIA Phase 1	Elize Becker	10/10/2012	Phase 1 Heritage Impact Assessment Kimberley to De Aar
93185	HIA Phase 1	Elize Becker	01/11/2012	Phase 1 Heritage Impact Assessment Hotazel to Kimberley and De Aar to Port Ngqura

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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)
DEFF	Department of Environment, Forest and Fisheries (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.

CTS HERITAGE

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 PALAEONTOLOGICAL 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.

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.

APPENDIX 5 -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 70 Heritage Impact Assessments throughout South Africa.