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HERITAGE SCREENER

CTS Reference Number:	CTS22_154
SAHRIS Ref	
Client:	Savannah
Date:	February 2023
Title:	THE EXTENSION OF VALIDITY TO THE EA - for the approved 20MW Alldays PV Facility near Alldays, Limpopo

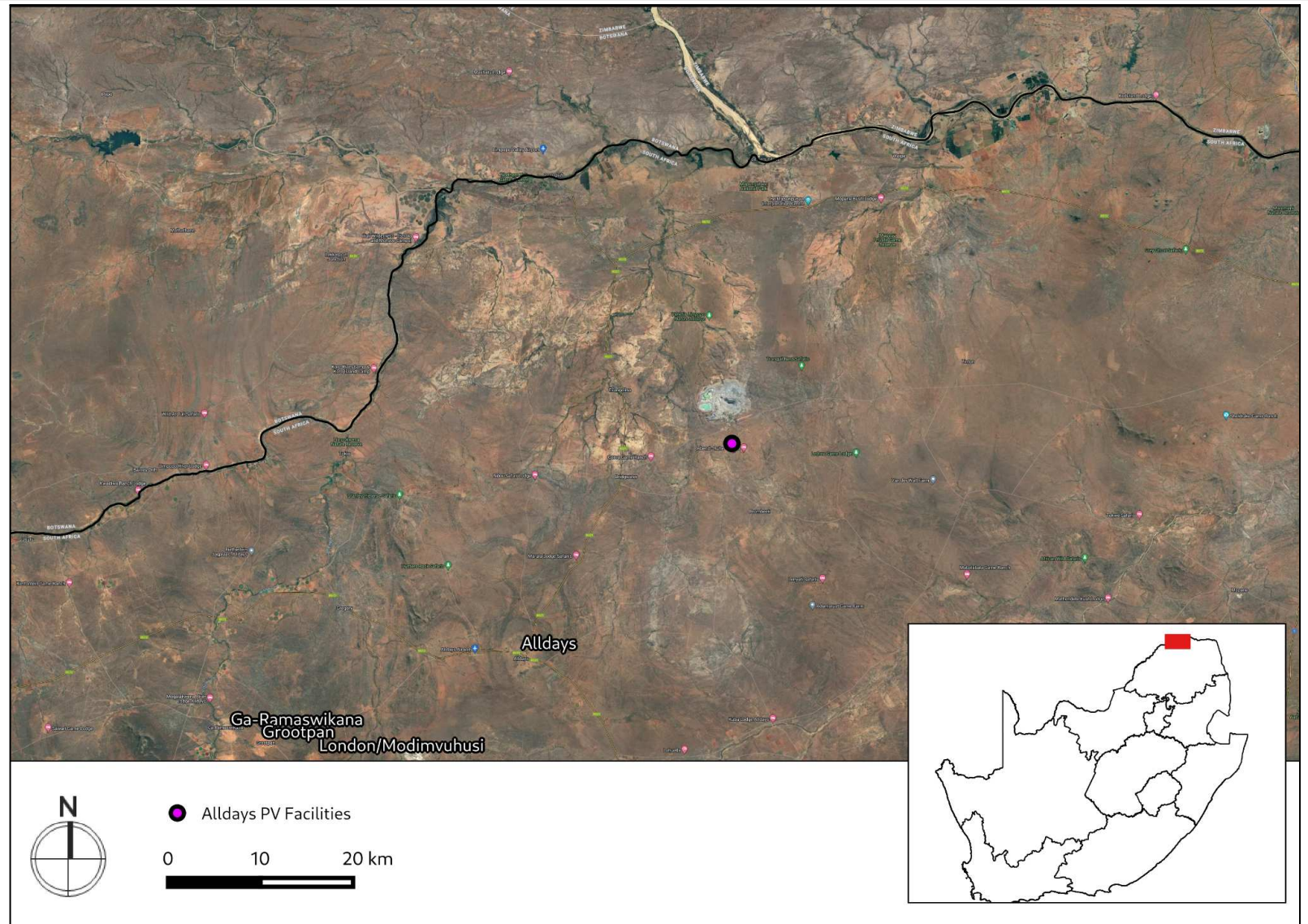


Figure 1a. Satellite map indicating the location of Alldays Photovoltaic Facilities in the Limpopo

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1. Assessment Summary

Environmental Authorisation for the proposed Alldays 20MW PV Facility and associated grid connection was granted in October 2012. The proposed development site is located on a 175 ha portion of the farm Gotha 103, near Alldays in the Limpopo Province. This farm is located directly south of the DeBeers Venetia Diamond mine. The project will entail the construction of up to 20 MW Photovoltaic Solar Array on approximately 70 ha with associated infrastructure such as access roads and distribution lines. The electricity generated at this site will be integrated into the national grid via the Venetia Sub-Station on the northern side of the Venetia/Musina Access Road.

2. Application References

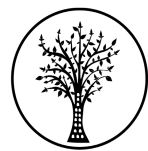
Name of relevant heritage authority(s)	SAHRA
Name of decision making authority(s)	DFFE

3. Property Information

Latitude / Longitude	22°28'29.05"S 29°19'29.96"E
Erf number / Farm number	Farm Gotha 103
Local Municipality	Mucina
District Municipality	Capricorn
Province	Limpopo
Current Use	Agriculture
Current Zoning	Agriculture

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

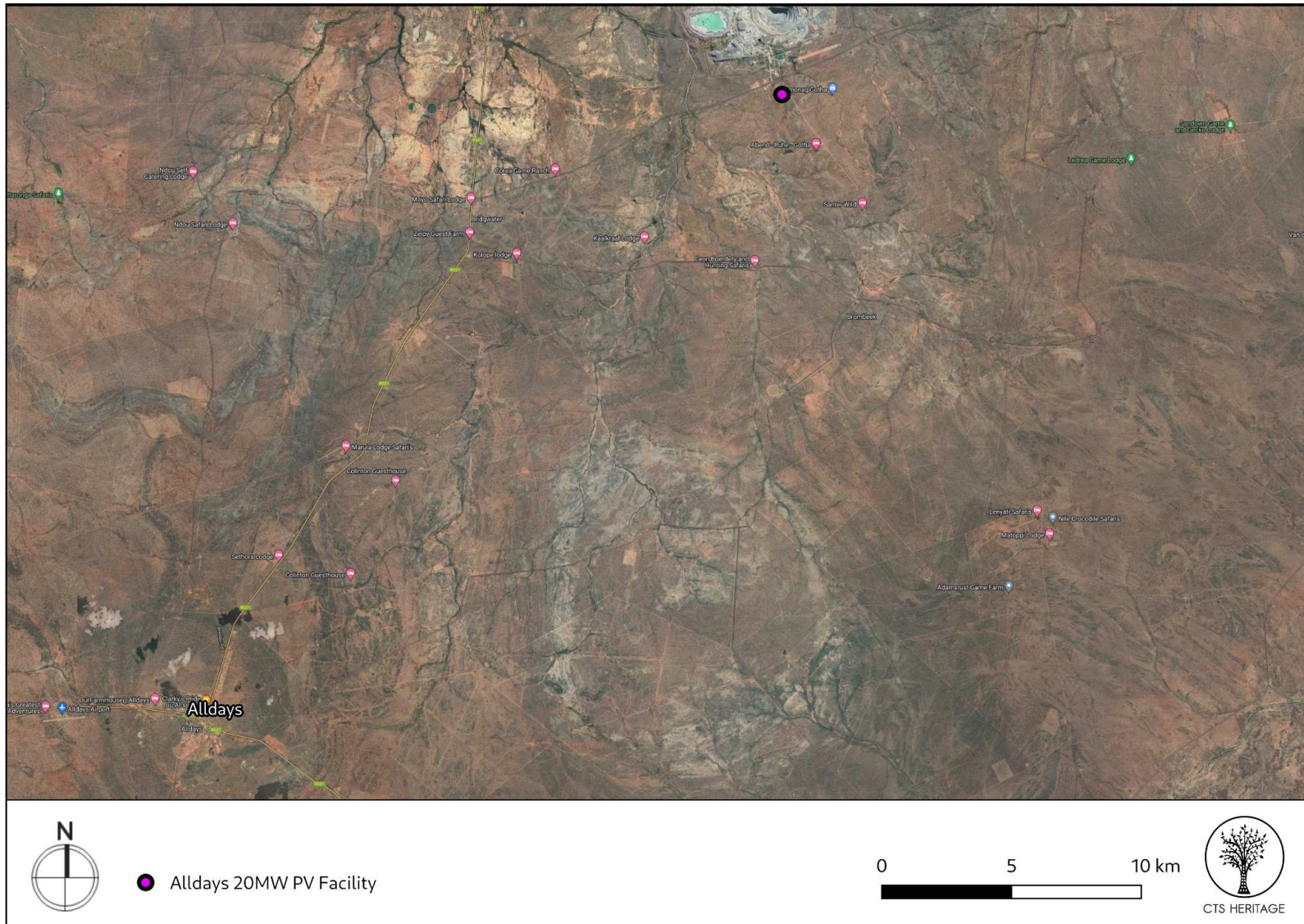
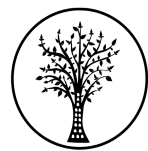
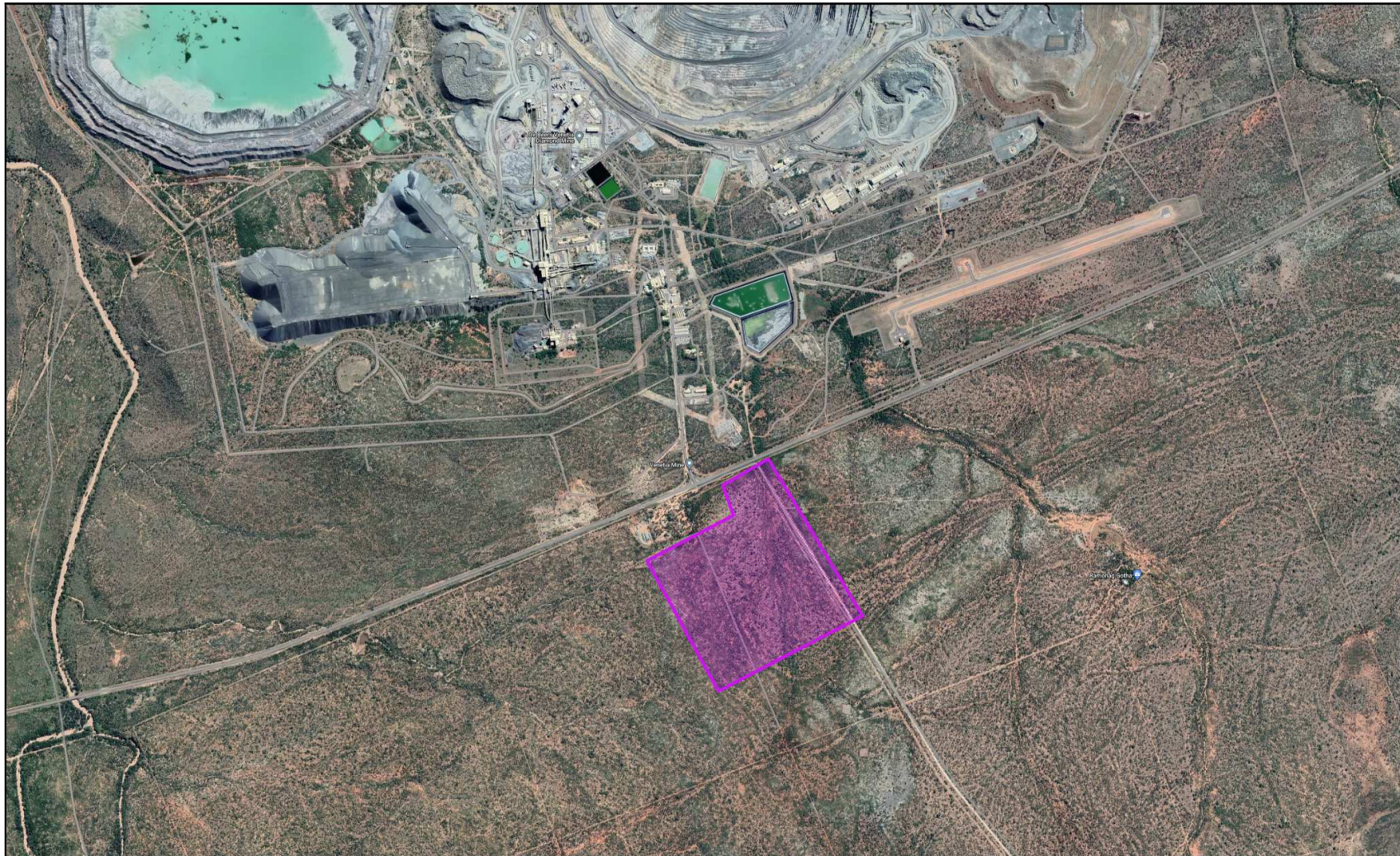


Figure 1b Overview Map. Satellite image (2022) indicating the proposed development area of 20MW Alldays PV Facilities



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 Alldays 20MW

0 0,5 1 km



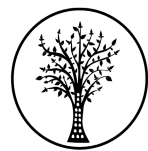
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Figure 1c Overview Map. Satellite image (2019) indicating the proposed development area of Alldays PV Facilities

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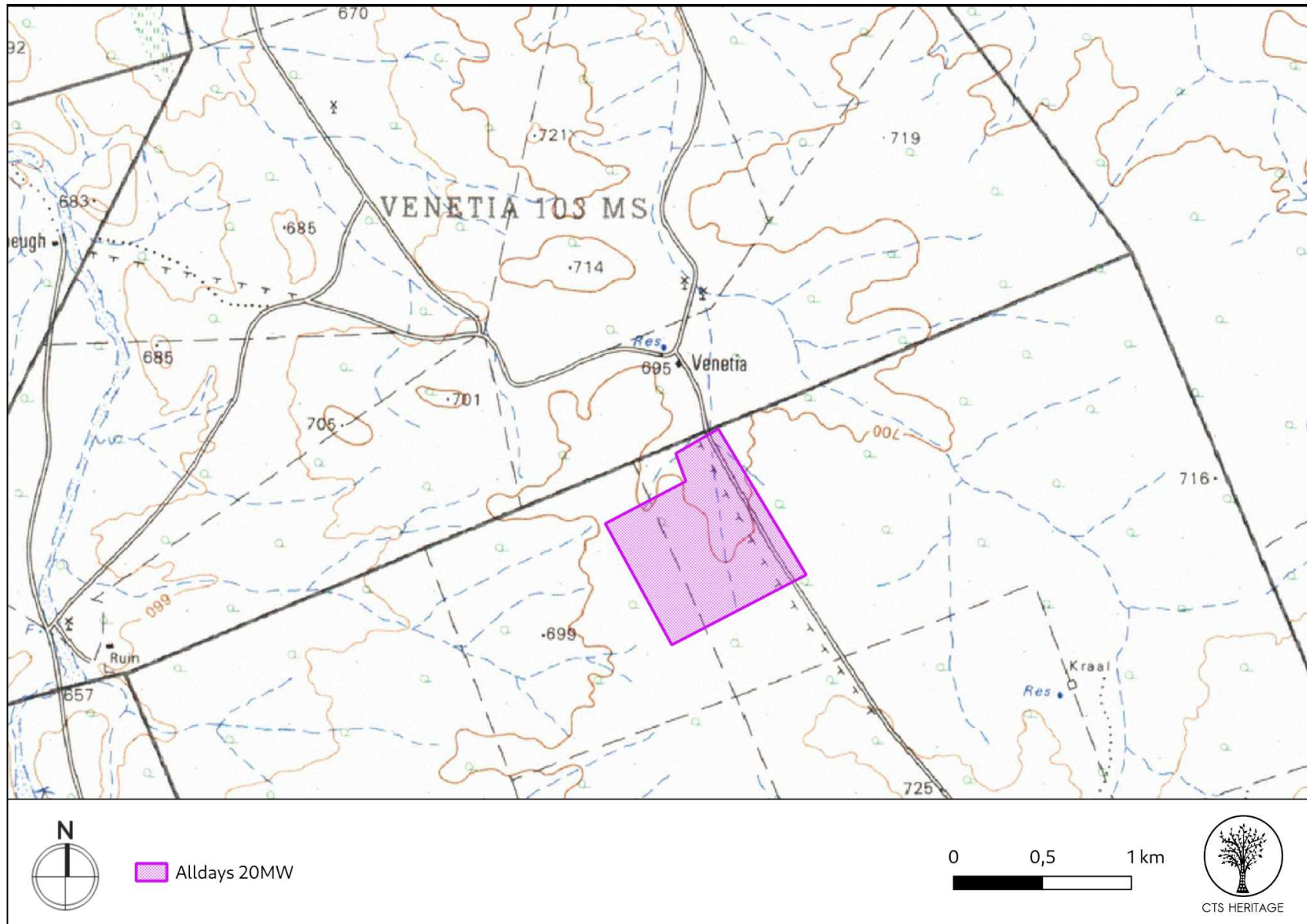


Figure 1d Overview Map. Extract from the 1:50 000 Topo map for the development area.

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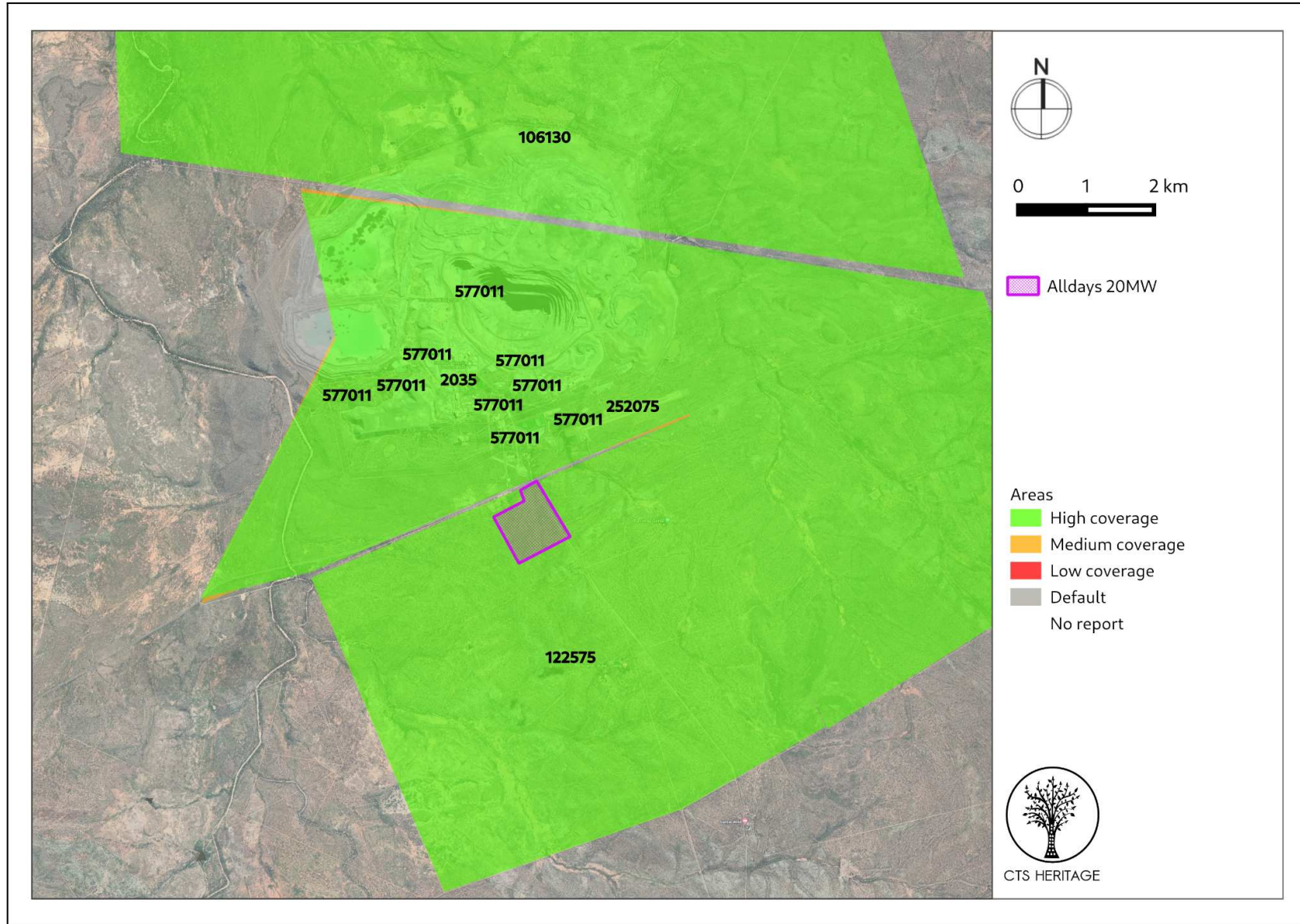


Figure 2. Previous HIAs Map. Previous Heritage Impact Assessments surrounding the proposed development area within 50km, with SAHRIS NIDS indicated. Please see Appendix 2 for a full reference list.

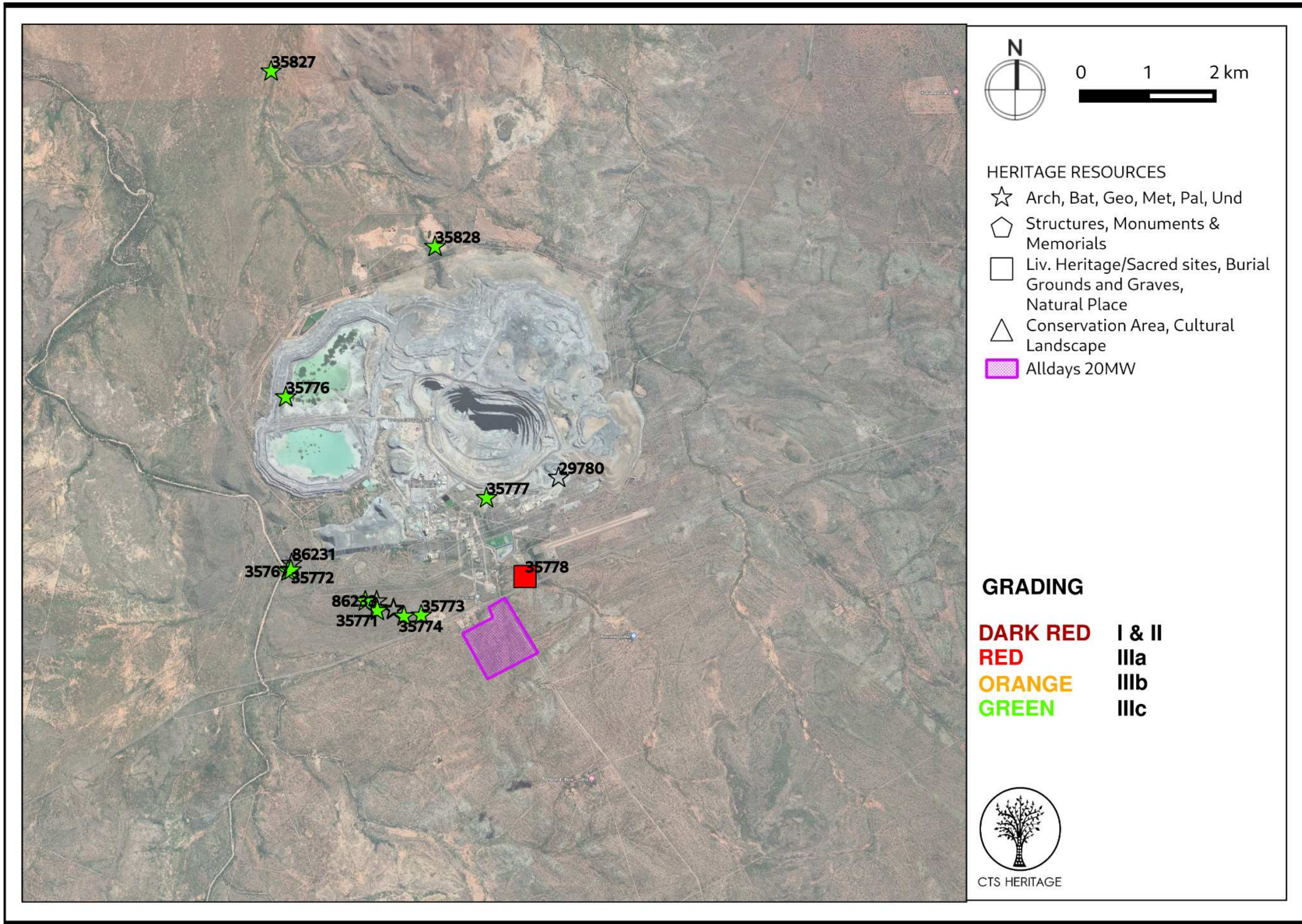
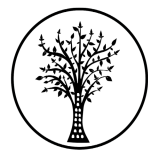
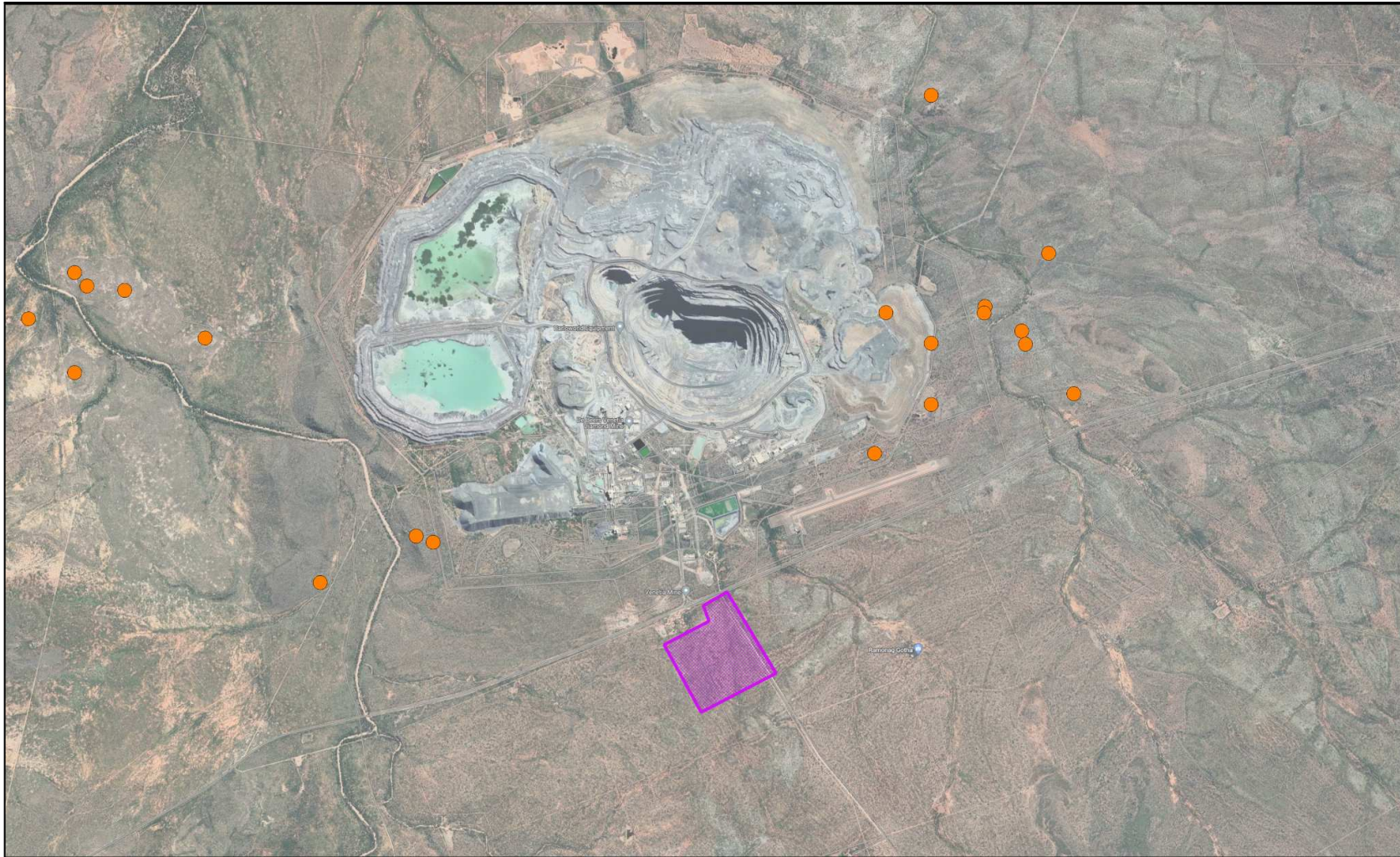


Figure 3. Heritage Resources Map. Heritage Resources previously identified in and near the study area, with SAHRIS Site IDs indicated. Please See Appendix 4 for full description of heritage resource types.



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-  Alldays 20MW
-  Iron Age Sites (Wits)



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Figure 3a. Heritage Resources Map. Heritage Resources previously identified by researchers at Wits

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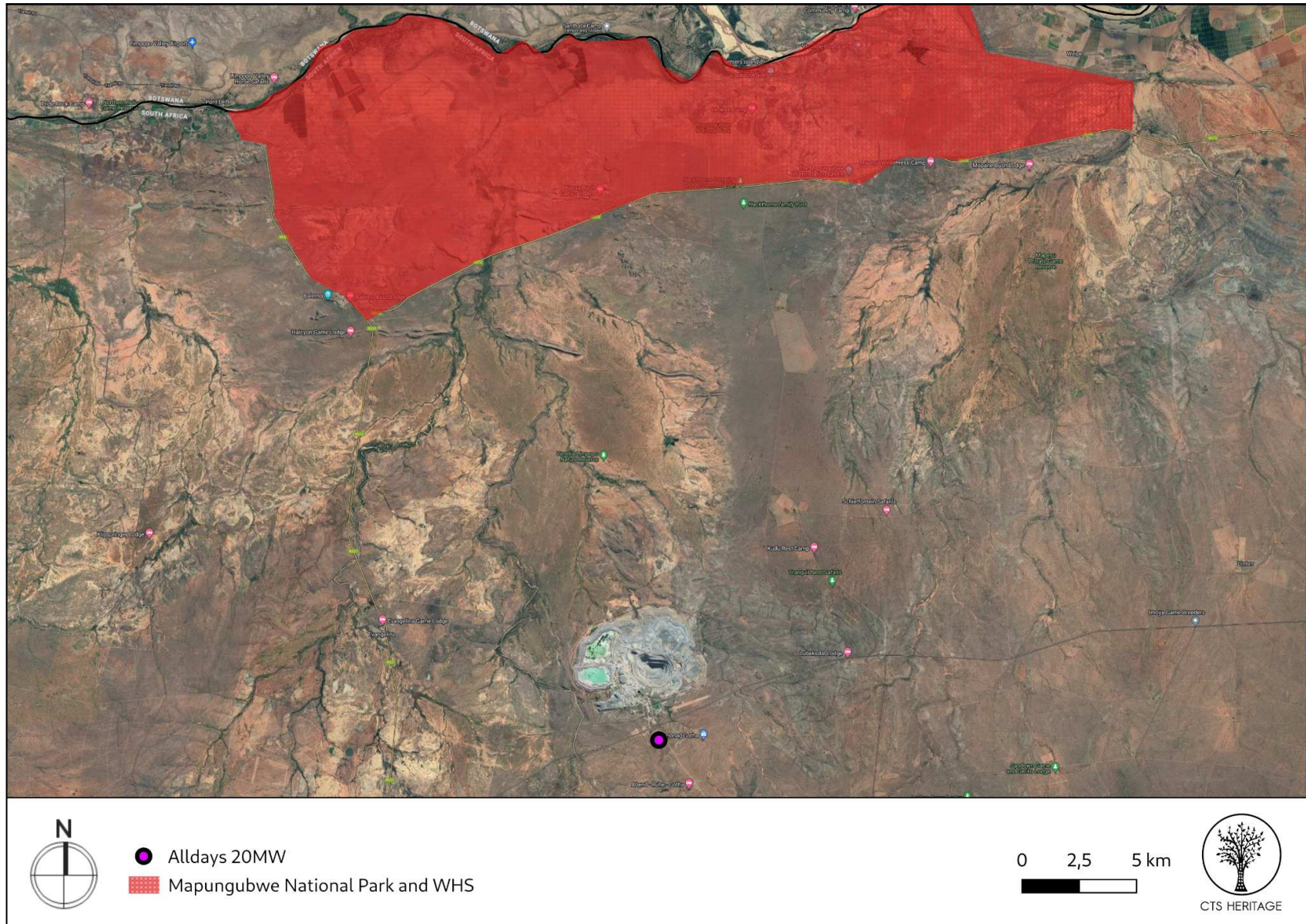
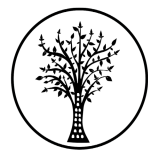


Figure 3b. Heritage Resources Map showing the Mapungubwe Cultural Landscape World Heritage Site

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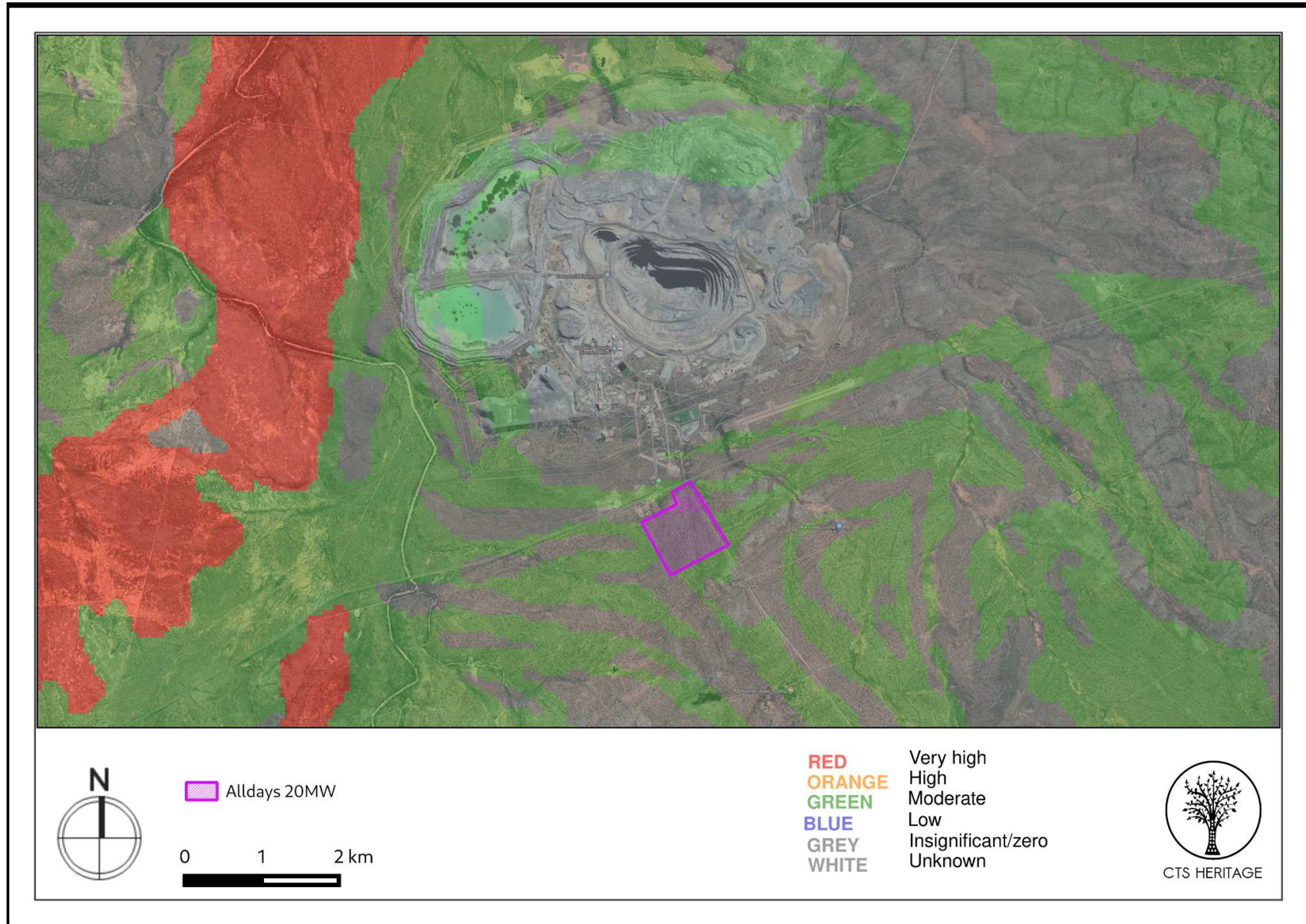


Figure 4a. Palaeosensitivity Map. Indicating low fossil sensitivity underlying the study area. Please See Appendix 3 for a full guide to the legend.

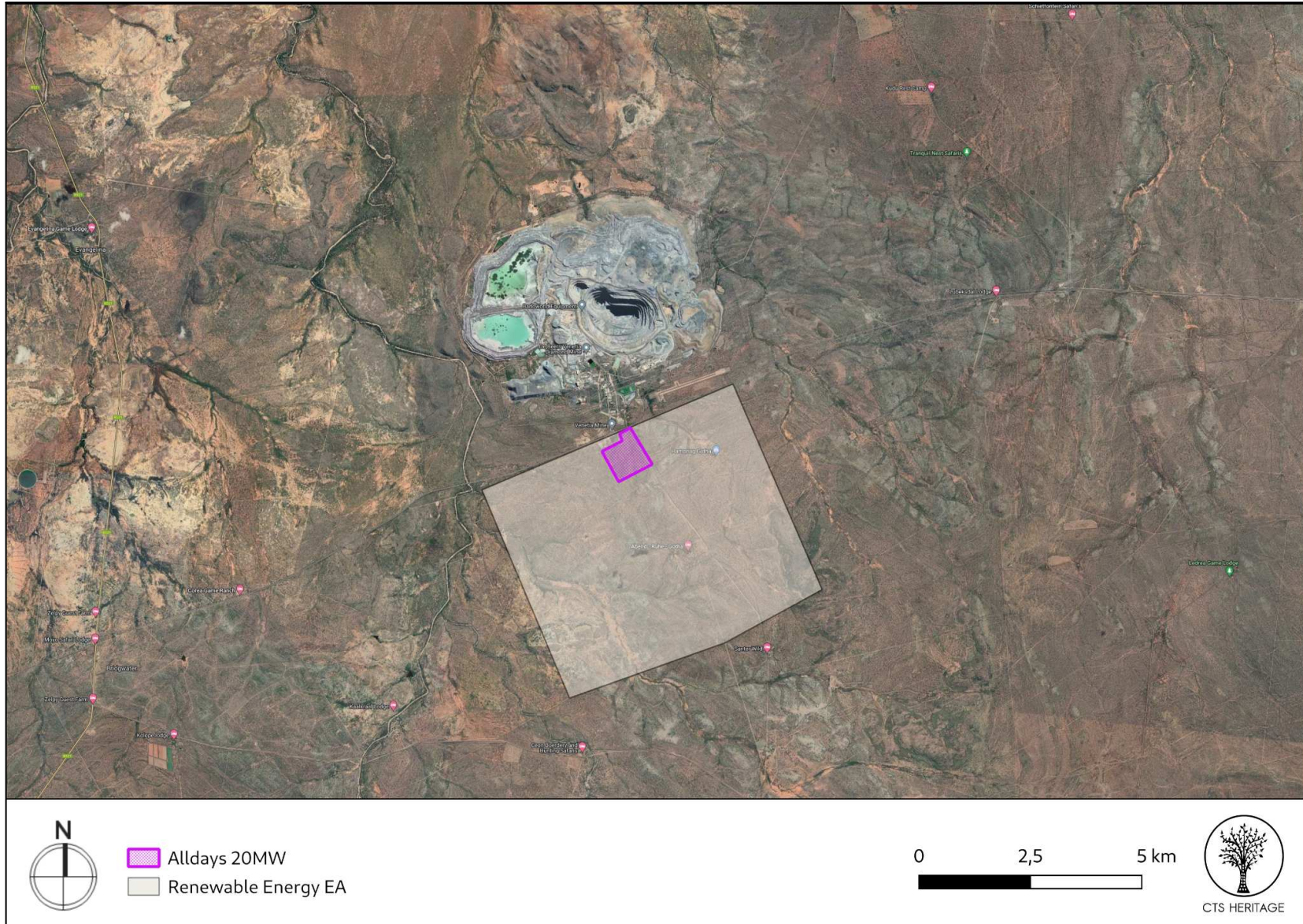


Figure 5. Cumulative Impact Map. Indicating other Renewable Energy Facilities that have been granted Environmental Authorisation (EA). Each project will have associated OHL infrastructure.



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5. Heritage Assessment

Background

The original Environmental Authorisation for the Alldays PV Facility and grid connection was granted in 2012. The area proposed for the PV Facility is located immediately south of the Venetia Diamond Mine which was established in 1992, and diamond-bearing gravels have been known from this area since 1903. The area proposed for the 20MW Alldays PV Facility and grid connection was assessed for impacts to heritage resources by Gaigher (2012) and the immediate vicinity was assessed in a separate HIA by Gaigher (2013, SAHRIS Case ID 540). This desktop assessment refers extensively to this work.

Cultural Landscape and Built Environment Heritage

The area proposed for the Alldays PV Facility and associated grid connection is located approximately 20km south of the Mapungubwe Cultural Landscape World Heritage Site and as noted by Gaigher (2013), this is the most prominent Cultural Landscape feature in proximity to the proposed development area. The area proposed for development is located approximately 3km outside of the recognised buffer area for the World Heritage Site, and is separated from the Mapungubwe Cultural Landscape World Heritage Site by the Venetia Diamond Mine. A detailed history of the Mapungubwe Cultural Landscape World Heritage Site is provided in Gaigher (2013) and is not repeated here except to note that “Since the 1990s, Wits archaeologists have worked in the Mapungubwe landscape investigating Stone Age, Rock Art and Iron Age sites. They concentrated on the last 2000 years. The systematic survey of the National Park and buffer zone, including Little Muck, Schroda and Venetia, has now recorded some 1000 Iron Age sites. Using this data, various graduate students have investigated ethnic stratification (Calabrese PhD 2005), glass beads and international trade (Wood MA 2005), the ethno-archaeology (Murimbika PhD 2006) and archaeology (Schoeman PhD 2006) of rainmaking, the relationship of settlements to the landscape (du Piesanie MSc 2008), faunal remains (Fatherley MSc 2009), agricultural production (Chandler Honours 2009) and spherulites in cattle dung. Current research includes settlements during the Khami Period (du Piesanie PhD) and herding strategies.” Gaigher (2013) further notes that “documented sites were clustered along riverbeds or other sources of water or around elevated areas.” Ultimately, as the proposed development is located more than 20km from the WHS, Gaigher (2013) concludes that limited impacts to the cultural landscape are anticipated, although it is not clear what these impacts are.

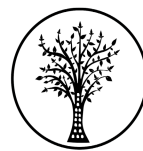
Archaeology

Few archaeological and heritage impact assessments have been conducted in the area, with most work done here pertaining to the Mapungubwe Cultural Landscape World Heritage Site. Gaigher (2013) notes that “The Stone Age sites of this area fit within the later Earlier Stone Age and the Middle Stone Age periods” and while Stone Age archaeology is known in this area, far more prevalent are sites associated with the Iron Age occupation of the area. Gaigher (2013) explains that “The Early Iron Age is the best

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represented in this area with several Late Iron Age to be found as well. The Mapungubwe and K2 sites are the best known of the Early Iron Age sites. Sites that are culturally related to K2 and Mapungubwe have been observed on Hamilton 41 MS, Samaria 28 MS and Den Staat 27 MS. Another site related to Mapungubwe was excavated by Van Ewyk (1987) on Skutwater to the east of Greefswald. Small Iron Age sites postdating Mapungubwe and K2 have been recorded on Greefswald, including some stonewalled sites on hilltops.” Figures 3 and 3a reflect the known archaeological heritage resources in proximity to the area proposed for development and it is clear that the development area forms part of the broader Iron Age cultural landscape associated with Mapungubwe. However, no archaeological resources were identified within the area proposed for development by Gaigher (2013).

Gaigher (2013) recommends that “a heritage specialist is contracted to monitor the construction phase of this project to ensure that no sites of heritage significance are damaged. This is necessary due to the high heritage significance of the Mapungubwe Cultural Landscape. In an effort to properly manage the development within the parameters of the MWHS Management framework, it is recommended that the developer appoint a panel of heritage experts to oversee the planning process and to determine acceptable actions. Although the area will have some short term impacts no long-term or compounded impacts are anticipated and it is envisaged that the proposed development will in the long run have more positive than negative impacts.”

In his conclusion to the report completed for this 20MW facility, Gaigher (2012) notes that “The area under investigation falls outside of the perimeter of the Mapungubwe World Heritage Site and Cultural Landscape. The areas investigated showed no indications of occupational sites and the area is also not geographically suitable for occupation. Although only 20ha is proposed for the development, a significant buffer zone around this area was investigated (70 ha) to ensure that movements in the actual placement of the site would not affect any area of heritage significance.” No mitigation measures are recommended in this report.

Palaeontology

According to the SAHRIS Palaeosensitivity Map (Figure 4), the area proposed for development is underlain by sediments of zero and moderate palaeontological sensitivity. According to the PIA completed for the Alldays PV facility in 2013 by Durand, “the study site is situated in an area dominated by migmatite, gneiss and 7 ultrametamorphic rocks of the Limpopo Metamorphic Belt and sediments of the Tuli Block of the Karoo Supergroup (Figure 2). The Eccca Group is characterized by shale, mudstone, sandstone and seams of coal (Johnson, et al., 2006). In the Tuli Basin, the Eccca Group is represented by the Mikambeni and the Madzaringwe formations. The near horizontal layering of the geological strata and erosion of the adjacent and underlying rock strata results in a gently undulating landscape covered to a great extent by sandy soil. Exposures of the underlying geology are therefore exceptionally scarce in the Limpopo Province.” Durand (2013) goes on to note that “The study site is mostly covered in sandy soils and fossil localities are very scarce in this region. The plant fossil site on the grounds of the adjacent Venetia Mine yielded only very fragmentary fossils. This site, approximately 2km

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north of the study site, was however on the surface in a shallow gully and was exposed to the elements which would have contributed to its deteriorated state.” Based on his assessment, Durand (2013) recommends that a palaeontologist should visit the site periodically to salvage representative and scientifically important fossils if necessary but he notes no objection to the proposed development.

Statement on environmental processes impacting on archaeological and palaeontological heritage

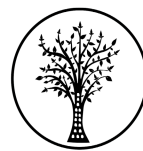
Archaeological and palaeontological heritage resources reflect the environments of the deeper past and are unlikely to change significantly in as short a geological time span as 10 years. Some changes to heritage resources may result from processes of erosion and deflation but, in this particular ecological setting, would likely represent heavily disturbed contexts and consequently would be of limited scientific/heritage value.

Validity Extension

In light of the above, there is no heritage objection to granting the extension to the validity to develop the Alldays PV Facility and grid connection based on the current site conditions on condition that the recommendations made in the original HIA completed for this project (Gaigher, 2013 and Durand, 2013) are adhered to.

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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
86231	Venetia 103 TVT1	Venetia 103 TVT1	Archaeological	
86233	Venetia 103 TVT3/1	Venetia 103 TVT3.1	Archaeological	
29780	BCP-001	Border Cattle Post	Settlement	
86234	Venetia 103 TVT3/2	Venetia 103 TVT3/2	Archaeological	
35767	VENE01	Venetia Mine 01	Settlement	Grade IIIc
35771	VENE05	Venetia Mine 05	Settlement	Grade IIIc
35772	VENE02	Venetia Mine 02	Settlement	Grade IIIc
35773	VENE03	Venetia Mine 03	Settlement	Grade IIIc
35774	VENE04	Venetia Mine 04	Settlement	Grade IIIc
35775	VENE06	Venetia Mine 06	Settlement	Grade IIIc
35776	VENE07	Venetia Mine 07	Settlement	Grade IIIc
35777	VENE08	Venetia Mine 08	Artefacts	Grade IIIc
35826	KRO-END02	Krone-Endora Diamond Mine 02	Structures	Grade IIIc
35827	KRO-END03	Krone-Endora Diamond Mine 03	Artefacts	Grade IIIc
35828	KRO-END05	Krone-Endora Diamond Mine 05	Artefacts	Grade IIIc
35830	KRO-END07	Krone-Endora Diamond Mine 07	Building	Grade IIIc

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35778	VENE09	Venetia Mine 09	Burial Grounds & Graves	Grade IIIa
86235	Venetia 103 TVT3/3	Venetia 103 TVT3/3	Archaeological	
86232	Elesger 98	Elesger 98	Archaeological	

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APPENDIX 2: Reference List

Heritage Impact Assessments				
Nid	Report Type	Author/s	Date	Title
105001	AIA Phase 1	Julius CC Pistorius	01/03/2011	A PHASE I ARCHAEOLOGICAL IMPACT ASSESSMENT (AIA) STUDY FOR DE BEERS CONSOLIDATED MINES (VENETIA MINE) IN THE LIMPOPO PROVINCE
106130	HIA Phase 1	Stephan Gaigher	14/05/2012	Heritage Impact Assessment - Proposed establishment of the Krone-Endora Diamond Mine on a Portion of the farm Krone as well as a Portion of the Farm Endora 66MS adjacent to Venetia Mine near Alldays, Limpopo Province.
122575	<i>Palaeontological Specialist Reports</i>	<i>JF Durand</i>		<i>PIA Scoping Report</i>
126186	HIA Phase 1	Stephan Gaigher	29/07/2013	<i>Revised HIA Report for the Proposed establishment of the Alldays (up to 100MW) Photovoltaic Solar Generation Plant on the Farm Gotha near Alldays in the Limpopo Province</i>
2035	AIA Phase 1	Stephan Gaigher	01/11/2009	<i>Heritage Impact Assessment for a prospecting application - Alldays Limpopo Province</i>
252075	Heritage Impact Assessment Specialist Reports		04/03/2015	Heritage Impact Assessment Report And Heritage Management Plan For The Venetia Underground Project And Consolidation Of Existing Operations For De Beers Consolidated Mines Limited -Venetia Mine
59022	<i>Archaeological Specialist Reports</i>	<i>Stephan Gaigher</i>	<i>29/04/2012</i>	<i>Proposed Venetia Photovoltaic (PV)/Concentrated Photovoltaic (CPV) Solar Energy facility on Gotha Farm, Phase 1 (up to 100MW), near Alldays in the Limpopo Province</i>

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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.

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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 PALAEOONTOLOGICAL 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

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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.

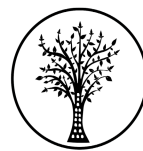
This recommendation is made in instances in which there are already some studies undertaken in the area and/or in the adjacent area for the proposed development. Further studies in a limited HIA may include:

- 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

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- 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 a member 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 100 Heritage Impact Assessments throughout South Africa.

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