



CTS HERITAGE

HERITAGE SCREENER

CTS Reference Number:	CTS22_004
SAHRIS Reference:	18206
Client:	Savannah Environmental (Pty) Ltd
Date:	March 2022
Title:	PROPOSED BATTERY ENERGY STORAGE SYSTEM AND ASSOCIATED GRID INFRASTRUCTURE AT THE KARUSA WIND ENERGY FACILITY, NORTHERN CAPE

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

RECOMMENDATION
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.

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1. Proposed Development Summary

Enel Green Power South Africa (Pty) Ltd proposes the construction and operation of a Battery Energy Storage System (BESS) and associated grid infrastructure ~45km south of the town of Sutherland along the R354 and 47km north west of the town of Laingsburg along the R323 in the Northern Cape Province. The project will be located on Farm De Hoop 202 within the Karoo Hoogland Local Municipality which lies within the jurisdiction of the Namakwa District Municipality. The BESS will store and supply dispatchable energy as and when required by the off-taker. The proposed project will include the following infrastructure:

- A BESS with a capacity of up to 2 000 MWh, inside containers with a footprint of up to 6ha in extent and a maximum height of 3m. Both lithium-ion and Redox-flow technology are being considered for the project, depending on which is most feasible at the time of implementation.
- Access roads to the BESS (10m in width, approximately 70m long) branching off of the existing roads, and internal roads (up to 8m wide) to be located within the total BESS footprint area.
- 33kV MV cabling between the BESS and the MV/HV substation and up to 132kV HV cabling to the HV substation
- Fencing around the BESS for increased security measures.
- Up to 132kV overhead or underground power line to be connected to the existing Hidden Valley Substation.
- Temporary laydown area to be located within the BESS footprint.
- Firebreak to be located within the BESS footprint.
- A Substation with a maximum height of - HV bus-bar up to 10 m max and an HV Building up to 4 m max

The general purpose and utilisation of a BESS is to save and store electricity from the network, allowing for a timed release of electricity to the grid when the capacity is required. BESS systems therefore provide flexibility in the efficient operation of the electricity grid through decoupling of the energy supply and demand. The following is being considered within the Basic Assessment process for this project:

- Buffer around the BESS site of 200m
- Power line corridor (100m) with 50m either side of centre line
- Buffer around Hidden Valley Substation of 200m

2. Application References

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

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3. Property Information

Latitude / Longitude	32°49'9.80"S 20°38'1.59"E
Erf number / Farm number	Farm De Hoop 202
Local Municipality	Karoo Hoogland Local Municipality
District Municipality	Namakwa District Municipality
Previous Magisterial District	Sutherland
Province	Northern Cape
Current Use	Agriculture
Current Zoning	Agriculture

4. Nature of the Proposed Development

Total Length of OHL	Approximately 1.6km
Depth of excavation (m)	Up to 1,8m deep
Height of development (m)	Pylons for OHL (if required) will be up to 40m max, BESS up to 3m max, Substation up to 4m max

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-
	a) exceeding 5 000m ² in extent
	b) involving three or more existing erven or subdivisions thereof

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	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

NA

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

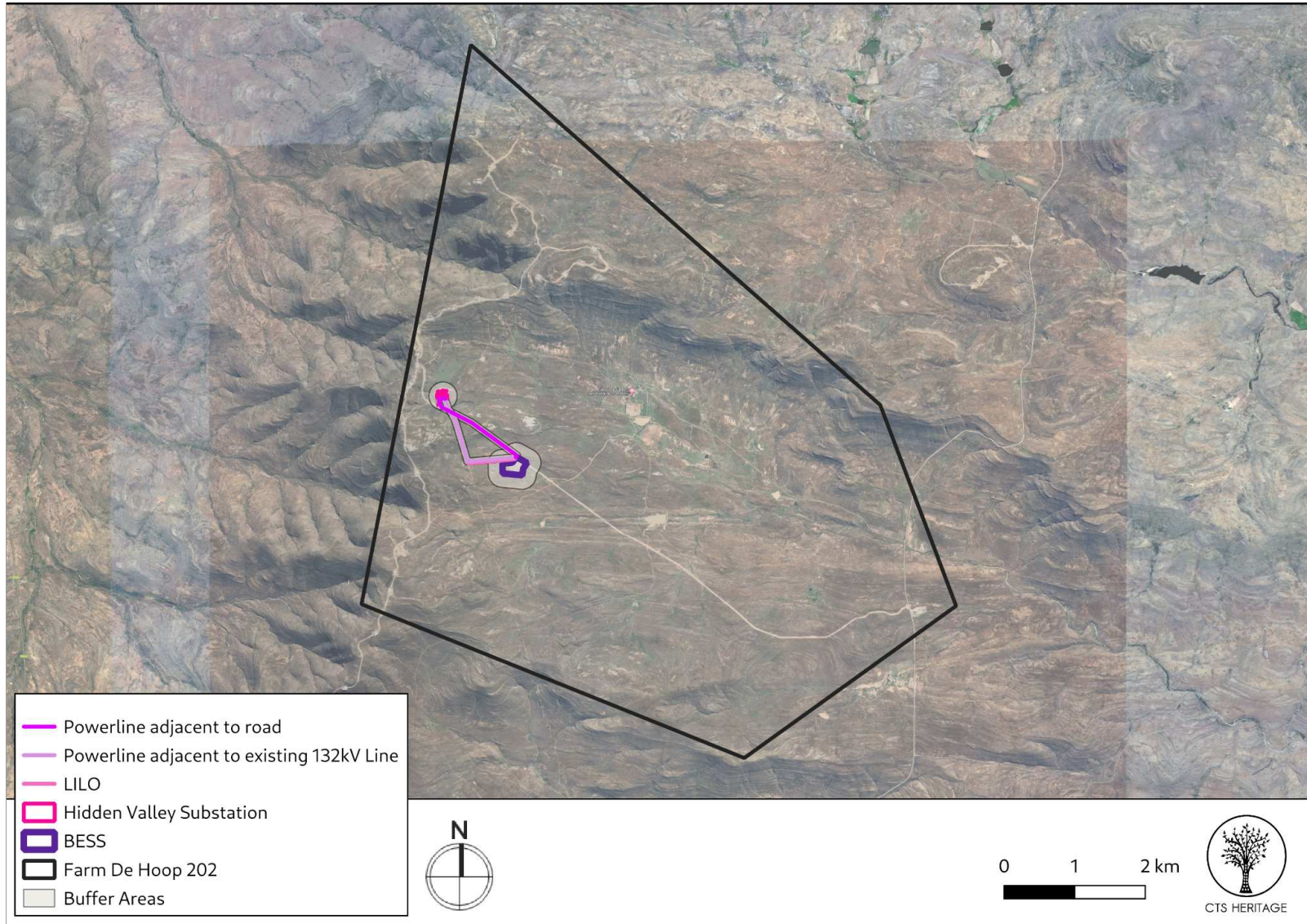


Figure 1b. Overview Map. Satellite image (2020) indicating the proposed development area

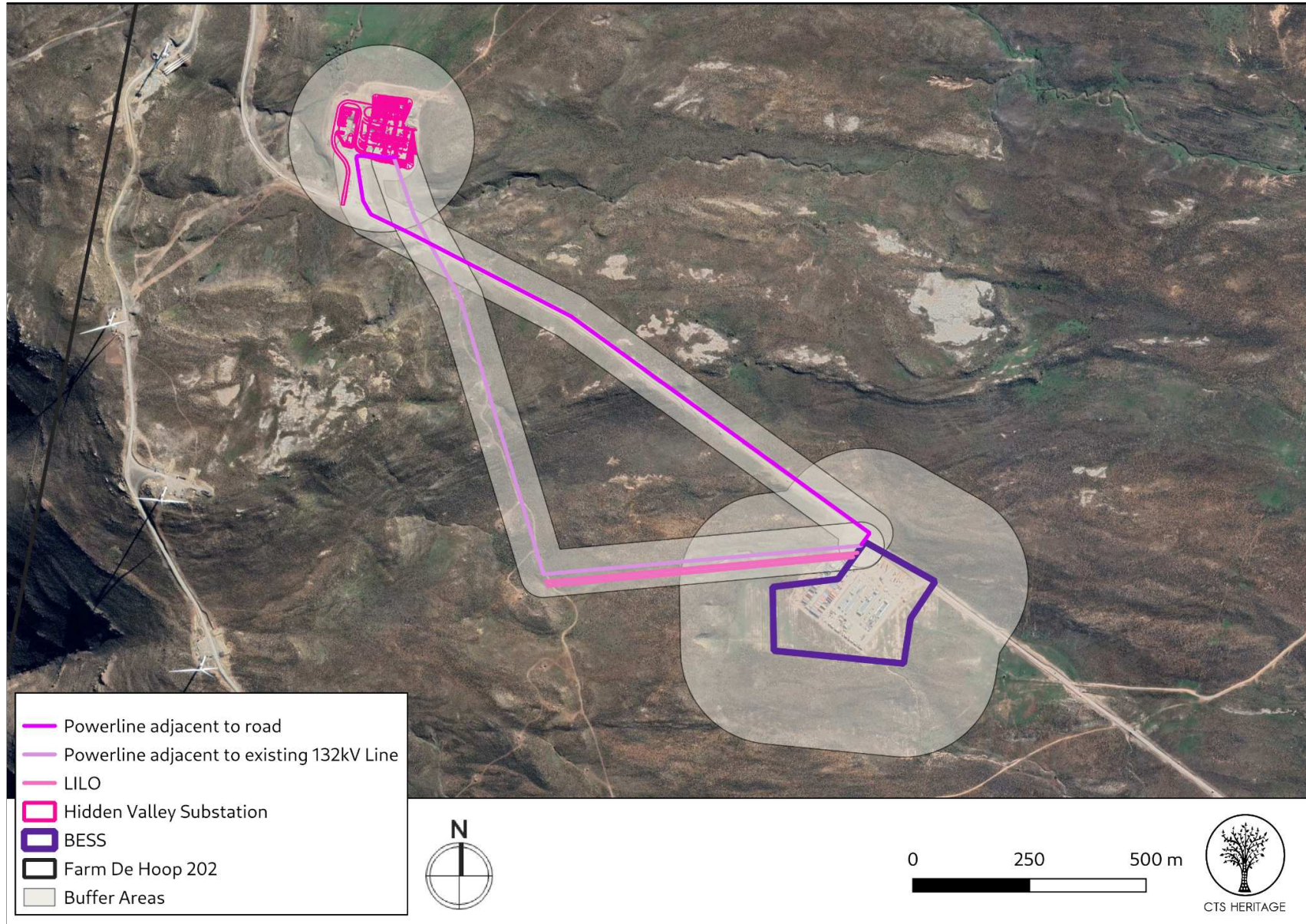
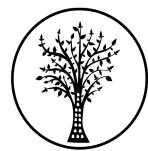


Figure 1c. Overview Map. Satellite image (2020) indicating the proposed development area



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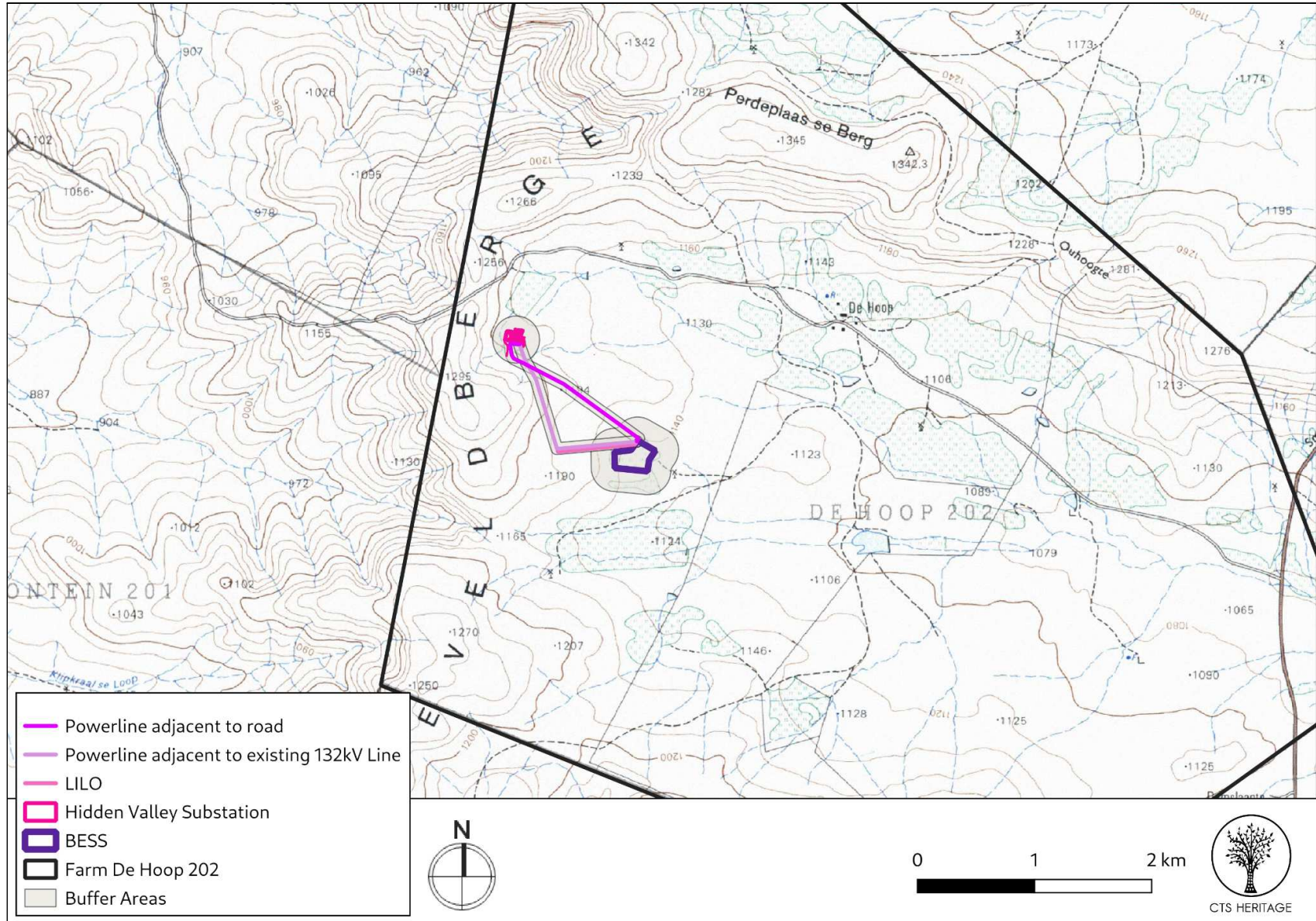


Figure 1d. Overview Map. Extract from 1:50 000 Topo

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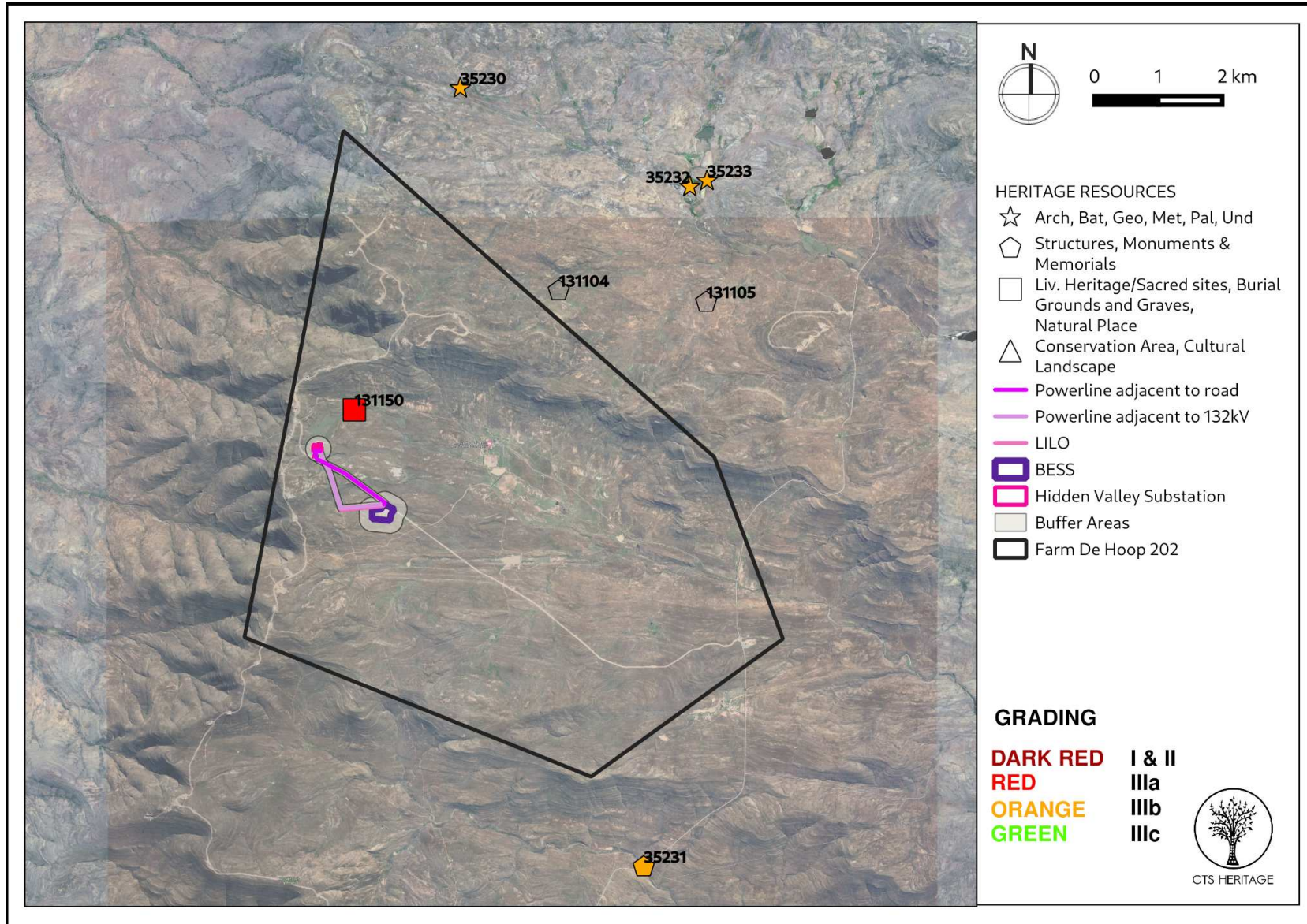


Figure 3. Heritage Resources Map. Heritage Resources previously identified within the study area, with SAHRIS Site IDs indicated in the insets below. Please See Appendix 4 for full description of heritage resource types.

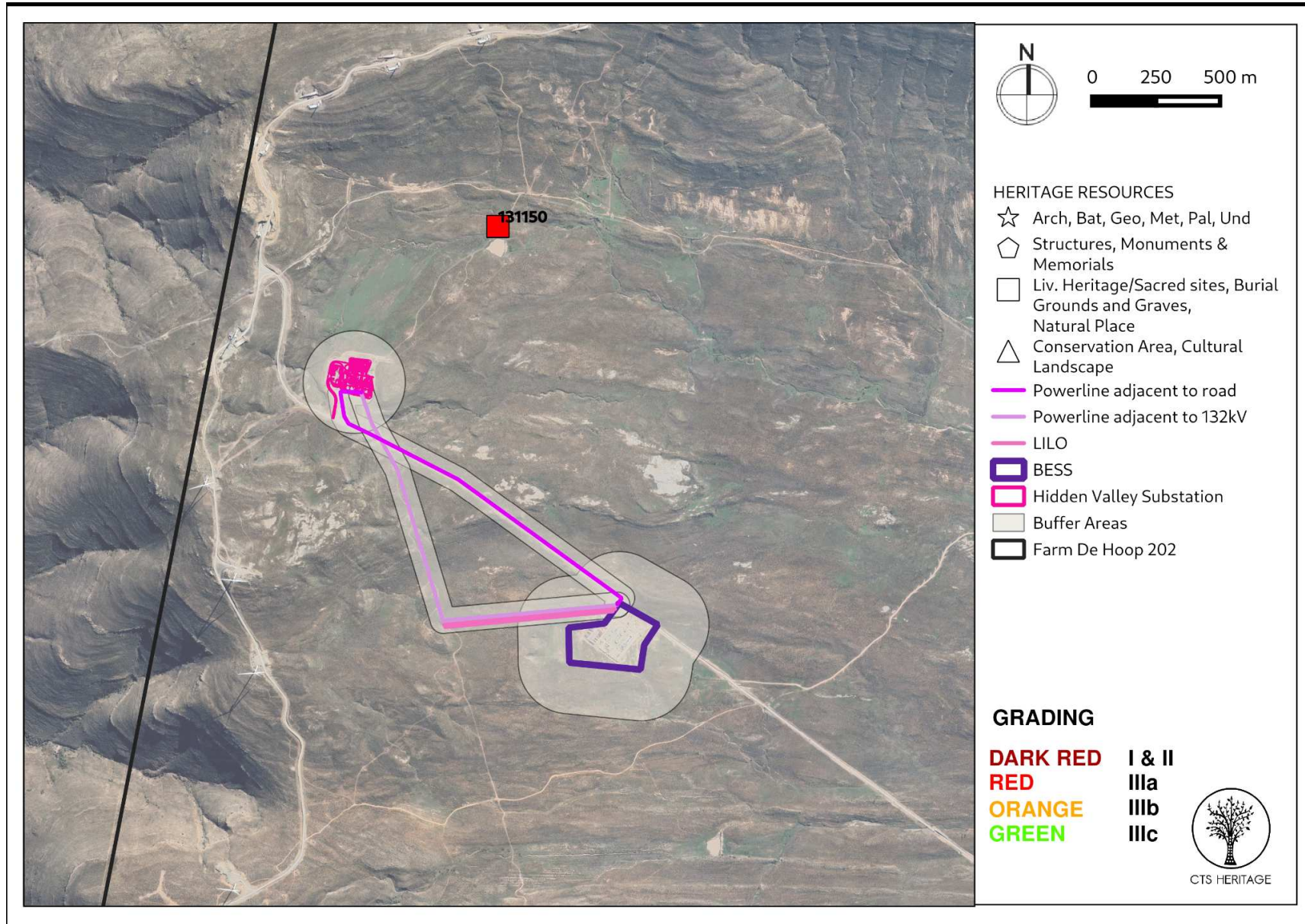
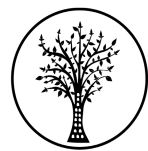


Figure 3a. Heritage Resources Map showing heritage resources near the proposed extension power line project.



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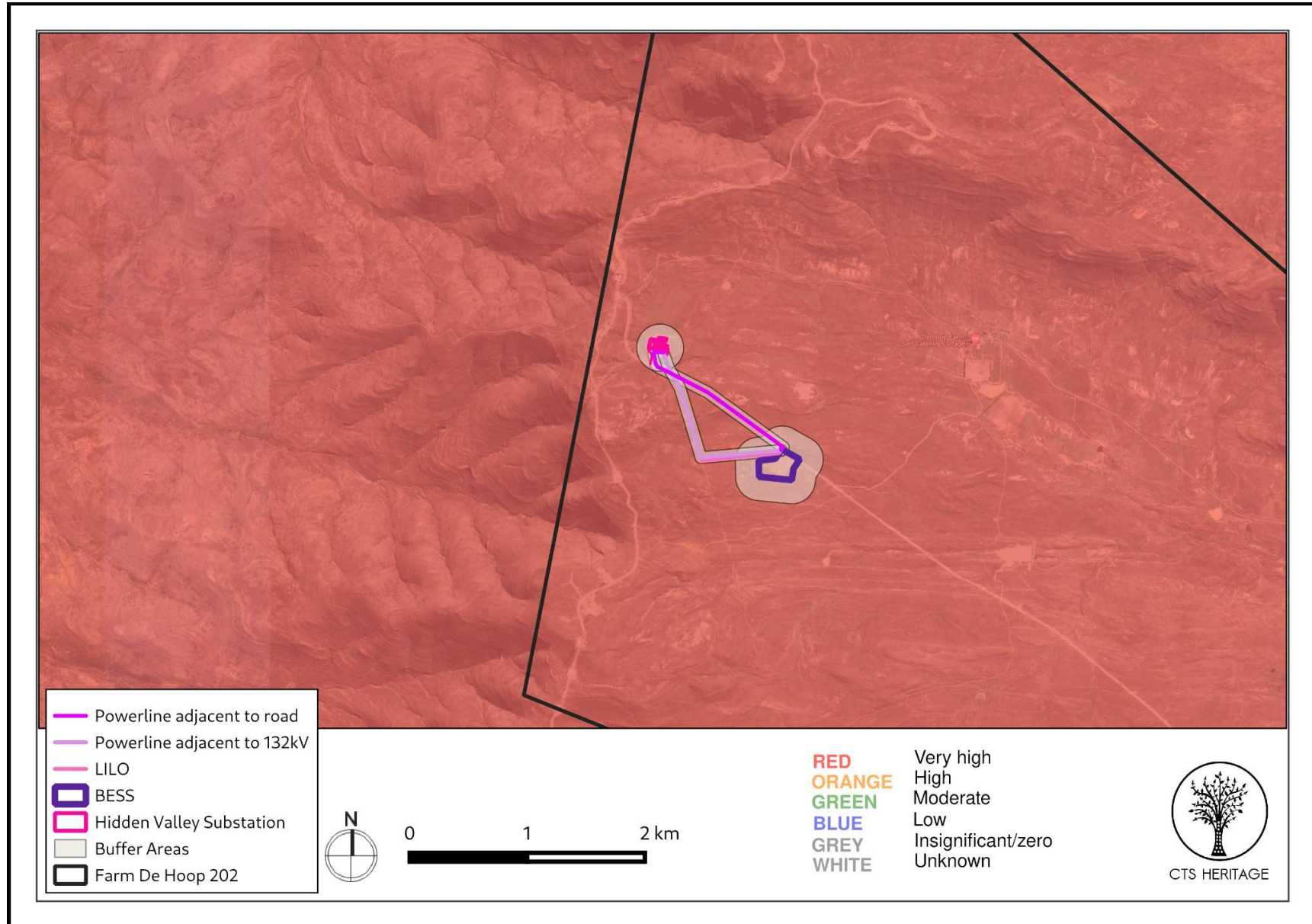


Figure 4a. Palaeosensitivity Map. Indicating fossil sensitivity underlying the study area. Please See Appendix 3 for a full guide to the legend.

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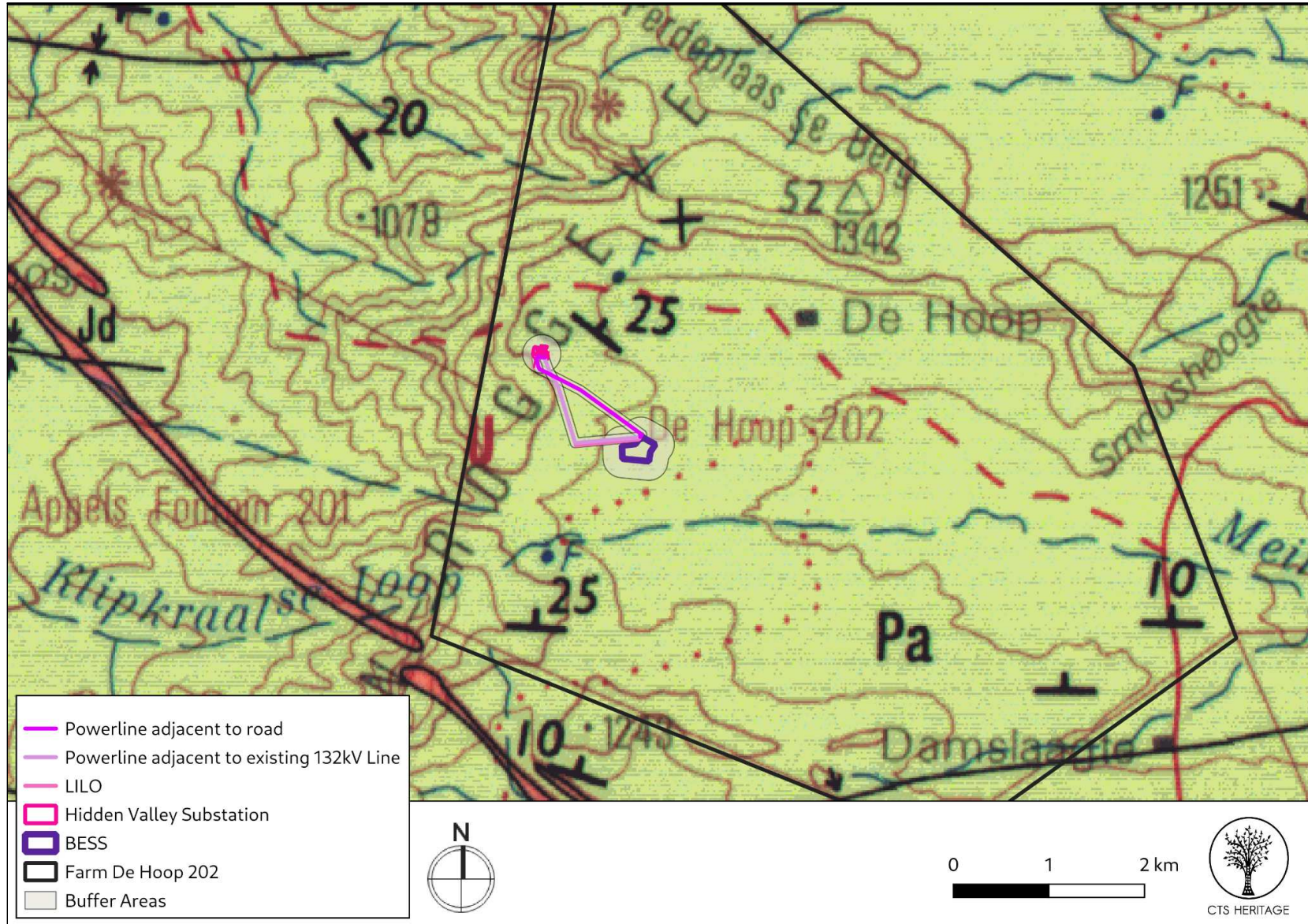


Figure 4b. Geology Map. Extract from the CGS 3220 Sutherland Map indicating that the development area is underlain by sediments of the Karoo Supergroup assigned to the Beaufort group, within the Abrahamskraal Formation of the Adelaide Subgroup (Pa).



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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8. Heritage Assessment

Background

The area proposed for development is located in the Southern Karoo. According to Van der Walt (2015) “Due to the geological nature of the Sutherland area, some early geologists, like E. J. Dunn and A. H. Green, suspected that coal could be found in the region. Two boreholes were dug in 1886 and 1887 respectively near the Kruidfontein Station at Sutherland, but nothing was found. Prospectors also dug for oil; three boreholes were constructed between 1939 and 1970. These endeavors were however equally unsuccessful. During the excavation for oil it was however discovered that uranium deposits were present in the area. These deposits were spread over a large area, but rewarding concentrations of uranium were in most cases only found in isolated patches.” The Palaeontological assessment conducted by Almond (2015) identified some such uranium deposits.

Scattered throughout the Karoo is evidence of historic and prehistoric occupation in the form of Early, Middle and Later Stone Age lithics and other material remains. The descendants of the historic and prehistoric occupants of the region are found in the indigenous Khoen and San, the Griqua as well as modern inhabitants of the area. Furthermore, by the end of the 17th Century, the Trekboer movement had begun to cross this landscape. According to Van Der Walt (2015), “The first Europeans to settle in the Northern Cape were missionaries, but there was a larger influx of white men into the province during the 1860s and 1870s when diamonds were discovered in Griqualand.” The discovery of diamonds in the Northern Cape eventually led to the Anglo-Boer War, which took place between 1899 and 1902 in South Africa.

Archaeology and Built Environment Heritage

The area proposed for development, including the existing Soetwater OHL which also connects to the Hidden Valley Substation, has been previously assessed for impacts to heritage resources (Case 218) including an Archaeological Field Assessment (Booth, 2012, SAHRIS ID 44935) and SAHRA's requested walk down of both the Soetwater and Karusa WEFs (Booth, 2015, SAHRIS ID 353706, 353709). Furthermore, the development of the approved and existing Soetwater OHL and Hidden Valley substation was subject to a specialist archaeological assessment (Booth, 2015 SAHRIS Case 8657 and 8658 Report ID 341109). In her assessment, Booth (2015) concluded that no archaeological or heritage resources were identified within the proposed powerline route for the Soetwater OHL and substation.

In a recent walkdown of the proposed Soetwater OHL (July 2020), a stone packed feature (possible burial) was identified within the proposed OHL corridor for Gunsfontein. This site is recorded on SAHRIS as Site 131150 and is described in detail by Booth (2020, SAHRIS NID 539589, Case ID 15452); “The stone packed feature cannot be confirmed as being a grave unless systematic excavations are conducted to establish whether the area contains a burial. This method of mitigation is however the least preferred. The stone packed feature may be established as being older than 30 years owing to the landowner and farm staff being unaware of its origin or existence, or older than the establishment of colonial settlements and farming activities within the area. However, the more recent-looking packing of the stones may not confirm that the feature is older than 100 years.” Booth (2020) makes the following recommendations regarding this site in reference to the Soetwater OHL, which have been endorsed and added to by SAHRA (September 2020):

- The stone packed feature should be fenced with an entry gate and clearly demarcated prior to the construction activities for the establishment of pylon No. 5. SAHRA's previous recommendations (26 May 2014) stipulate that the fence be placed 5 meters away from the perimeter of the graves and that no development is allowed within 30 meters of the fence line surrounding the graves. However, it is acceptable that the relocation of Pylon No. 5 be shifted 15 m south to allow for a 5 m buffer between the stone packed feature and the fence and therefore allow a 10 m buffer between the fence and tower, taking into consideration the limiting factors mentioned above.
- General fencing materials may be used, mesh fencing approximately 1.2 m in height, and treated wooden droppers as the corner posts, approximately 5 cm in width, or similar alternative materials.
- The environmental control officers (ECOs) must liaise with the archaeologist regarding the fencing materials being used for the erection of the fence, the planned area for the establishment of the fence, during the erection and completion of the fence, as well as during the construction of the tower.
- At this point it is not necessary for the archaeologist to be on-site during the construction of the fence and pylon if the ECO keeps in contact with the archaeologist, as in recommendation 3.

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This site was fenced off when observed during the walkdown for a report drafted in July 2021 by the construction team for the Soetwater WEF. We think it is highly unlikely to be a burial site and it is more than likely another historical beacon similar to one identified on a neighbouring farm. A walkdown conducted by CTS Heritage in 2021 that includes this area concluded that “Based on the walkdown assessment completed, the area proposed for development has an overall low archaeological sensitivity.”

Based on the information available, the area proposed for development has been previously thoroughly surveyed for archaeological heritage and has been found to have overall low archaeological sensitivity. It is recommended that no further assessment of impact to heritage resources is warranted.

Palaeontology

The area proposed for development is underlain by sediments that have very high palaeontological sensitivity according to the SAHRIS Fossil Sensitivity Map (Figure 4). The geology map of the area (Council of GeoScience Map 3220 Sutherland, Figure 5) indicates that the area is underlain by sediments of the Karoo Supergroup assigned to the Beaufort group, within the Abrahamskraal Formation of the Adelaide Subgroup. This was confirmed by Rossouw (2012, SAHRIS ID 44936) in the Desktop Palaeontological Impact Assessment conducted for the proposed Hidden Valley WEF which includes the area proposed for development.

Subsequently, Almond (2015, SAHRIS ID 353707) conducted a palaeontological field assessment for the Soetwater WEF which is also relevant here. Almond (2015) determined that scientifically important fossil remains (e.g. vertebrate bones and teeth, petrified wood) are very scarce within this area. According to Almonds 2016 assessment of the Soetwater OHL (SAHRIS ID 354172), the impact significance of the construction phase of the proposed electrical connection infrastructure - including switching station complex, 132 kV overhead power line, Soetwater Substation complex and ancillary developments - is assessed as LOW as far as palaeontological heritage is concerned. This conclusion is also applicable to this project. Therefore, based on the information available for the area proposed for development, it is very unlikely that the proposed development will negatively impact on significant palaeontological heritage resources however it is recommended that the attached Chance Fossil Finds Procedure be implemented during excavation activities.

Conclusion

Based on the existing heritage information available for the proposed development in addition to the fieldwork conducted by Booth (2012, 2015, 2020), CTS Heritage (2021) and Almond (2015, 2016), it is unlikely that the proposed development will negatively impact on significant heritage resources. There is no heritage objection to the proposed development and no preferred alternative from a heritage perspective. Furthermore, due to the number of Renewable Energy Facility projects in the immediate vicinity of this development that have already been granted Environmental Authorisation (EA, Figure 5), and due to the existing Soetwater OHL in the vicinity of the development, it is likely that this project will have low levels of cumulative impact significance for Heritage (archaeology, palaeontology and cultural landscape). That being said, due to the general heritage sensitivity of the broader context, it is recommended that:

- If concentrations of historical and pre-colonial archaeological heritage material and/or human remains (including graves and burials) are uncovered during construction, all work in the vicinity must cease immediately and be reported to the South African Heritage Resources Agency (SAHRA) so that systematic and professional investigation/excavation can be undertaken. Phase 2 mitigation in the form of test-pitting/sampling or systematic excavations and collections of the pre-colonial shell middens and associated artefacts will then be conducted to establish the contextual status of the sites and possibly remove the archaeological deposit before development activities continue.
- A person must be trained as a site monitor to report any archaeological sites found during the development. Construction managers/foremen and/or the Environmental Control Officer (ECO) should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites. The attached Chance Fossil Finds Procedure must be noted for inclusion into the EMPR to be adhered to in construction and excavation phases of development.

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- Should substantial fossil remains such as vertebrate bones and teeth, plant-rich fossil lenses, fossil wood or dense fossil burrow assemblages be exposed during construction, the responsible ECO/EO/Environmental Representative should safeguard these, preferably in situ, and alert SAHRA, i.e. The South African Heritage Resources Authority, as soon as possible (Contact details: Mr P. Hine P.O. Box 4637, Cape Town 8000. Tel: 021 462 4502. Email: phine@sahra.org.za) so that appropriate action can be taken by a professional palaeontologist, at the Proponent's expense. Mitigation would normally involve the scientific recording and judicious sampling or collection of fossil material as well as associated geological data (e.g. stratigraphy, sedimentology, taphonomy) by a suitably qualified palaeontologist.

RECOMMENDATION

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.

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Table 2: Impact Assessment Table

NATURE: Significant archaeological, built environment and palaeontological heritage resources may be impacted by the construction phase of the proposed development			
		Archaeology	Palaeontology
MAGNITUDE	L (1)	One archaeological site was identified in proximity to the proposed development, however this site is located outside of the development area and as such, the likelihood of impact is low.	L (1) Almond (2016) conducted a desktop palaeontological assessment for the proposed development area and concluded that “the impact significance of the construction phase of the proposed electrical connection infrastructure... is assessed as LOW as far as palaeontological heritage is concerned”
DURATION	H (5)	Where manifest, the impact will be permanent.	H (5) Where manifest, the impact will be permanent.
EXTENT	L (1)	Localised within the site boundary	L (1) Localised within the site boundary.
PROBABILITY	L (1)	Probability is low	L (1) It is possible that fossils Abrahamskraal formation would be impacted
SIGNIFICANCE	L	$(1+5+1) \times 1 = 7$	L $(1+5+1) \times 1 = 7$
STATUS		Neutral	Neutral
REVERSIBILITY	L	Any impacts to heritage resources that do occur are irreversible	L Any impacts to heritage resources that do occur are irreversible
IRREPLACEABLE LOSS OF RESOURCES?	L	Possible	L Possible
CAN IMPACTS BE MITIGATED		Yes	Yes
MITIGATION:			
<ul style="list-style-type: none"> A person must be trained as a site monitor to report any archaeological sites found during the development. Construction managers/foremen and/or the Environmental Control Officer (ECO) should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites. The attached Chance Fossil Finds Procedure must be noted for inclusion into the EMPR to be adhered to in construction and excavation phases of development. Any substantial fossil remains (e.g. vertebrate bones and teeth, shells) encountered during excavation should be reported to SAHRA for possible mitigation by a professional palaeontologist (Contact details: SAHRA, 111 Harrington Street, Cape Town. PO Box 4637, Cape Town 8000, South Africa. Phone: +27 (0)21 462 4502. Fax: +27 (0)21 462 4509. Web: www.sahra.org.za). 			
RESIDUAL RISK:			
<ul style="list-style-type: none"> If concentrations of historical and pre-colonial archaeological heritage material and/or human remains (including graves and burials) are uncovered during construction, all work must cease immediately and be reported to the South African Heritage Resources Agency (SAHRA) so that systematic and professional investigation/excavation can be undertaken. Phase 2 mitigation in the form of test-pitting/sampling or systematic excavations and collections of the pre-colonial shell middens and associated artefacts will then be conducted to establish the contextual status of the sites and possibly remove the archaeological deposit before development activities continue Should substantial fossil remains such as vertebrate bones and teeth, plant-rich fossil lenses, fossil wood or dense fossil burrow assemblages be exposed during construction, the responsible ECO/EO/Environmental Representative should safeguard these, preferably in situ, and alert SAHRA, i.e. The South African Heritage Resources Authority, as soon as possible (Contact details: Mr P. Hine P.O. Box 4637, Cape Town 8000. Tel: 021 462 4502. Email: cscheermeyer@sahra.org.za) so that appropriate action can be taken by a professional palaeontologist, at the Proponent’s expense. Mitigation would normally involve the scientific recording and judicious sampling or collection of fossil material as well as associated geological data (e.g. stratigraphy, sedimentology, taphonomy) by a suitably qualified palaeontologist. 			

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APPENDIX 1

List of heritage resources within the development area

Site ID	Site no	Full Site Name	Site Type	Grading
35174	ROG019	Roggeveld 019	Stone walling	Grade IIIc
35175	ROG020	Roggeveld 020	Stone walling	Grade IIIc
35230	HDV005	Hidden Valley 05	Stone walling	Grade IIIb
35231	HDV006	Hidden Valley 06	Building	Grade IIIb
35232	HDV007	Hidden Valley 07	Stone walling	Grade IIIb
35233	HDV008	Hidden Valley 08	Stone walling	Grade IIIb
137236	KWF-024	KAREEBOSCH WIND FARM	Stone walling	
137237	KWF-025	KAREEBOSCH WIND FARM	Stone walling	
131079	KDB105	Kudusberg	Burial Grounds & Graves	Grade IIIa
131082	KDB108	Kudusberg	Burial Grounds & Graves	Grade IIIa
131104	KDB129	Kudusberg	Structures	Grade IV
131105	KDB130	Kudusberg	Structures	Grade IV
131150	DHP001	De Hoop 001	Burial Grounds & Graves	Grade IIIa

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APPENDIX 2

Reference List with relevant AIAs and PIAs

Heritage Impact Assessments				
Nid	Report Type	Author/s	Date	Title
152531	HIA Phase 1	Timothy Hart, Lita Webley	20/12/2013	Heritage Impact Assessment Report for the Phase 1 Roggeveld Wind Farm
183350	HIA Phase 1	Natalie Kendrick	27/10/2014	Heritage Impact Assessment for the Karreebosch Wind Farm (Phase 2 Roggeveld Wind Farm)
337370	PIA Phase 1	Duncan Miller	01/03/2011	Palaeontological Impact Assessment Proposed Roggeveld Wind Energy Facility
341015	AIA Phase 1	Celeste Booth	01/10/2015	A Phase 1 Archaeological Impact Assessment for the Proposed Eskom Karusa Switching Station, Ancillaries and a 132kV Double Circuit Overhead Power Line, Near Sutherland, Karoo Hoogland Local Municipality, Namakwa District Municipality, Northern Cape Province
341109	AIA Phase 1	Celeste Booth	03/08/2015	A Phase 1 Archaeological Impact Assessment for the Proposed Soetwater Substation, 132kV Overhead Powerline and Ancillaries Soetwater Wind Energy Facility, Near Sutherland, Karoo Hoogland Local Municipality, Namakwa District Municipality, Northern Cape Province.
353706	Archaeological Specialist Reports	Celeste Booth	12/10/2015	An Archaeological Walk-Through For The Proposed Soetwater Wind Energy Facility Situated On The Farms: The Remainder Of And Portion 1, 2 And 4 Of Farm Orange Fontein 203 And Annex Orange Fontein 185, Farm Leeuwe Hoek 183 And Farm Zwanepoelshoek 184, Near Sutherland, Karoo Hoogland Local Municipality, Namakwa District Municipality, Northern Cape Province.
353707	Palaeontological Specialist Reports	John E Almond	12/10/2015	Palaeontological Heritage Assessment: Combined Desktop & Field-Based Study: Authorised Soetwater Wind Farm Near Sutherland, Northern Cape Province
353708	Palaeontological Specialist Reports	John E Almond	12/10/2015	PALAEONTOLOGICAL HERITAGE ASSESSMENT: COMBINED DESKTOP & FIELD-BASED STUDY: AUTHORISED KARUSA WIND FARM NEAR SUTHERLAND, NAMAQUA DISTRICT MUNICIPALITY, NORTHERN CAPE PROVINCE
353709	Archaeological Specialist Reports	Celeste Booth	12/10/2015	An Archaeological Walk-Through For The Proposed Karusa Wind Energy Facility Situated On The Farms: De Hoop 202, Standvastigheid 210, Portion 1 Of The Farm Rheeboeke Fontein 209, Portion 2 Of The Farm

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				Rheebokke Fontein 209, Portion 3 Of The Farm Rheebokke Fontein 209 And The Remainder Of The Farm Rheebokke Fontein 209, Near Sutherland, Karoo Hoogland Local Municipality, Namakwa District Municipality, Northern Cape Province.
354172	Palaeontological Specialist Reports	John E Almond	08/01/2016	Recommended Exemption from further Palaeontological studies: Proposed Construction of the Eskom Soetwater Switching Station Complex, 132kV Double Circuit Overhead Power Line, Soetwater Facility Substation Complex and Ancillary Developments near Sutherland, NC Province
354173	Palaeontological Specialist Reports	John E Almond	08/01/2016	Recommended Exemption from further Palaeontological studies: Proposed Construction of the Eskom Karusa Switching Station Complex, 132kV Double Circuit Overhead Power Line, Karusa Facility Substation Complex and Ancillary Developments near Sutherland, NC Province
367743	Archaeological Specialist Reports	Jaco van der Walt	18/07/2016	Archaeological impact assessment report for the proposed Gunstfontein 132 kV power line, switching station and ancillaries for the proposed Gunstfontein wind energy facility near Sutherland, Northern Cape
367755	Palaeontological Specialist Reports		08/06/2016	Recommended Exemption from further Palaeontological Studies: Proposed construction of the Gunstfontein switching station, 132kv overhead power line (single or double circuit) and ancillary infrastructure for the Gunstfontein wind farm near Sutherland, Northern Cape province
44934	AIA Desktop	Celeste Booth	01/08/2011	An archaeological desktop study for the proposed establishment of the Hidden Valley wind energy facility and associated infrastructure on a site south of Sutherland, Northern Cape Province
44935	AIA Phase 1	Celeste Booth	01/02/2012	A Phase 1 AIA for the proposed Hidden Valley Wind Energy Facility, near Sutherland, Northern Cape Province
44935	AIA Phase 1	Celeste Booth	01/02/2012	A Phase 1 AIA for the proposed Hidden Valley Wind Energy Facility, near Sutherland, Northern Cape Province
44936	PIA Desktop	Lloyd Rossouw	01/03/2012	Palaeontological desktop assessment of the proposed Hidden Valley Wind Energy Facility near Sutherland, Northern Cape Province
44936	PIA Desktop	Lloyd Rossouw	01/03/2012	Palaeontological desktop assessment of the proposed Hidden Valley Wind Energy Facility near Sutherland, Northern Cape Province
53187	HIA Phase 1	Timothy Hart, L Webley	01/03/2011	HERITAGE IMPACT ASSESSMENT PROPOSED WIND ENERGY FACILITY

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186695	HIA Phase 1	McEdward Murimbika	01/08/2014	Proposed Gamma-Kappa 2nd 765kV Eskom Transmission Powerline and Substations Upgrade Development in Western Cape PHASE 1 HERITAGE IMPACT ASSESSMENT STUDY REPORT
186697	AIA Desktop	Foreman Bandama, Shadreck Chirikure	01/08/2014	An Archaeological Scoping and Assessment report for the proposed Gamma (Victoria West, Northern Cape) - Kappa (Ceres â€“ Western Cape) 765Kv (2) Eskom power transmission line
186698	PIA Desktop	JF Durand	09/06/2013	GAMMA-KAPPA 765kV Transmission Line, Western Cape Province SCOPING REPORT PALAEOLOGY
186703	Visual Impact Assessment		01/01/2014	THE PROPOSED GAMMA KAPPA 2ND 765KV TRANSMISSION POWERLINE AND SUBSTATIONS UPGRADE, NORTHERN AND WESTERN CAPE (NEAS REFERENCE DEA/EIA/0001267/2012 DEA REFERENCE14/12/16/3/3/2/353) VISUAL IMPACT ASSESSMENT

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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

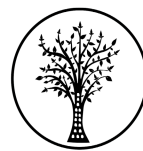
Full guide to Palaeosensitivity Map legend

	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

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

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Low coverage will be used for:

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

Medium coverage will be used for

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

High coverage will be used for

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

RECOMMENDATION GUIDE

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

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

This recommendation is made when:

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

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

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

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

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

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

Note:

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

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 50 Heritage Impact Assessments throughout South Africa.

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