CTS HERITAGE

HERITAGE SCREENER

CTS Reference Number:	**CTS18_198**
SAHRA Reference:	**13040**
Client:	**GNEC**
Date:	**11 October 2018**
Title:	**Proposed development of a sand mine borrow pit outside of Van Wyks Vlei**

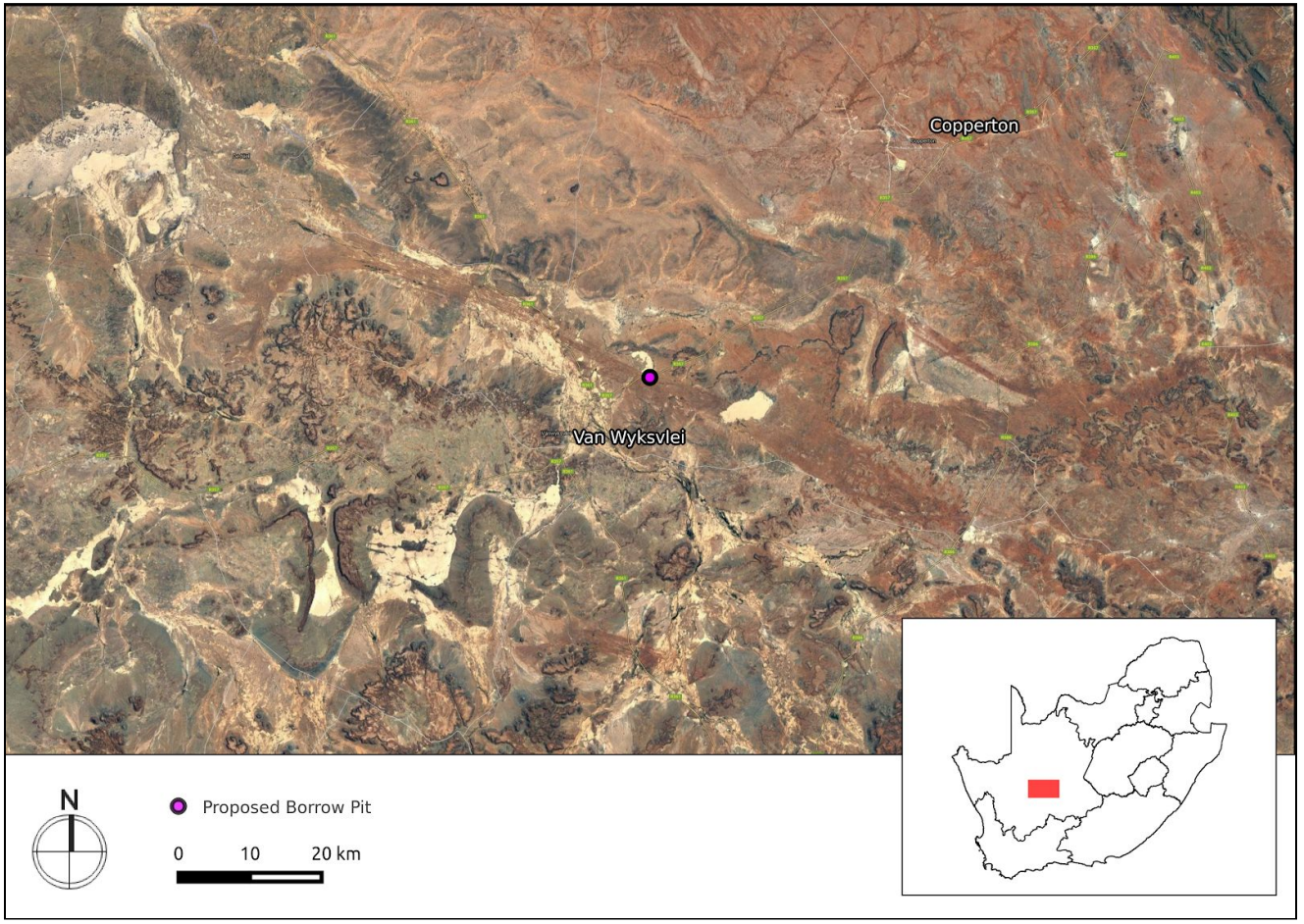

Figure 1a. Satellite map indicating the location of the proposed development in the Western Cape Province

Recommendation by CTS Heritage Specialists	**RECOMMENDATION:** **The heritage resources in the area proposed for development are sufficiently recorded** **Based on the available information, including the limited scale and nature of the proposed development, it is unlikely that any significant heritage resources will be impacted and as such it is recommended that no further heritage studies are required. However, it is recommended that a Fossil Finds Procedure be included in the EMP for the mine.**

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1. Proposed Development Summary

An Environmental Authorisation was obtained for the construction of a water pipeline between Carnarvon and Van Wyksvlei. The contractor however requires bedding material for the pipeline. Hence, application is made for a borrow pit on Farm Vredelus. The total estimated volume of material will amount to approximately 24 400 m³. The borrow pit will be a strategic borrow pit, with the mining of materials only to take place until completion of the construction of the water pipeline.

2. Application References

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

3. Property Information

Latitude / Longitude	30°15'44.41"S 21°56'47.21"E
Erf number / Farm number	Farm Vredelus, No. 7
Local Municipality	Kareeberg
District Municipality	Pixley ka Seme
Previous Magisterial District	Carnavon
Province	Northern Cape
Current Use	Agriculture - grazing
Current Zoning	Agriculture
Total Extent	2,051 ha

4. Nature of the Proposed Development

Total Surface Area	2,051 ha
Depth of excavation (m)	Proposed mineral extraction will be from a dune located on the property. The proposed mining operations will therefore not be conducted subsurface.
Height of development (m)	NA
Expected years of operation before decommission	The borrow pit will be a strategic borrow pit, with the mining of materials only to take place until completion of the construction of the water pipeline.

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
	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

.There are no infrastructure present in close proximity to the proposed borrow pit site. Proposed mining will be temporary and hence no formal structures will be constructed as a result of the mining activities. The site will be fully rehabilitated after the mining activities have been completed.

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

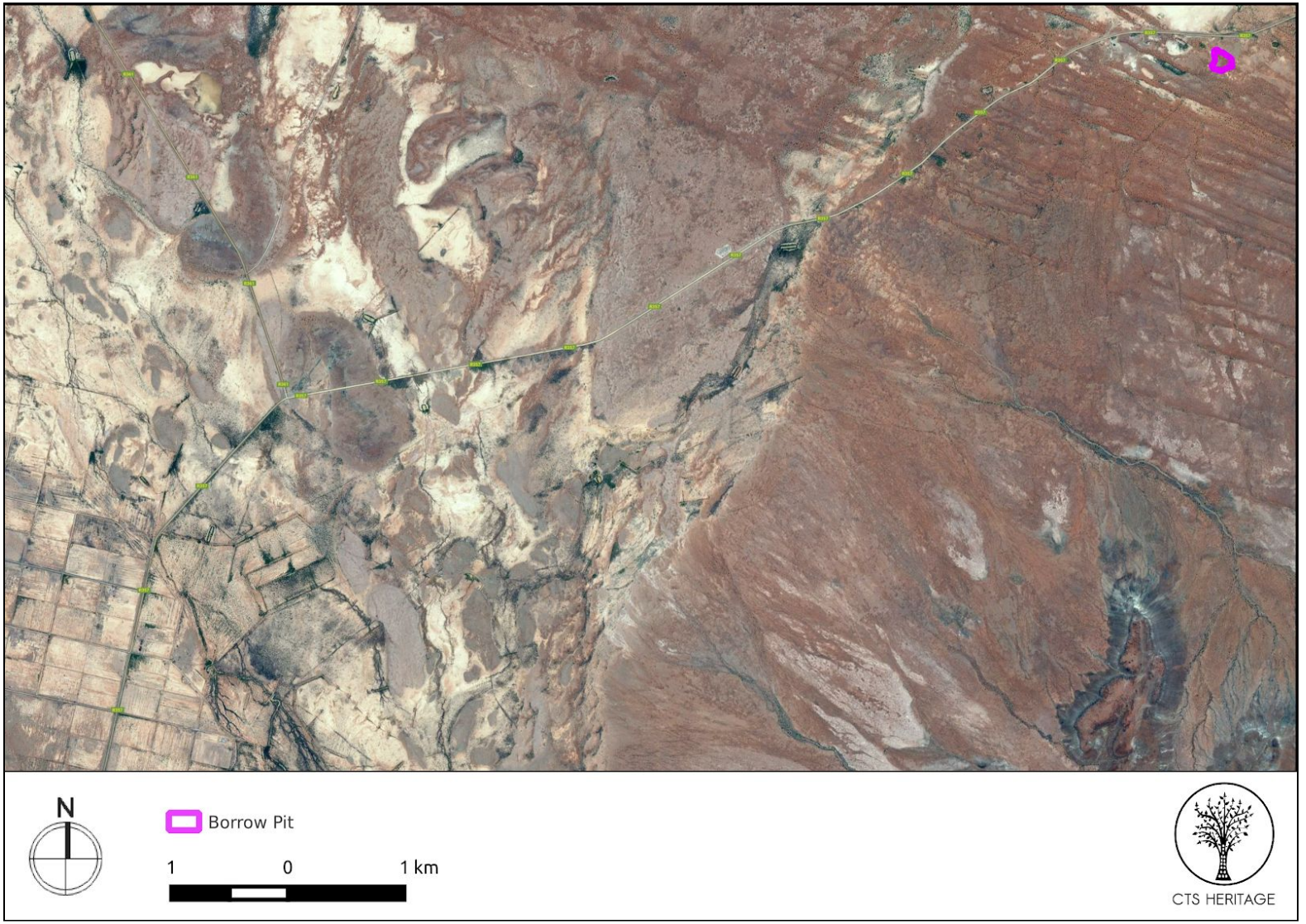

Figure 1b. Overview Map. Satellite image (2017) indicating the proposed development area at closer range with the edge of Van Wyks Vlei to the west.

Figure 1c. Overview Map. Satellite image (2017) indicating the proposed development area at closer range.

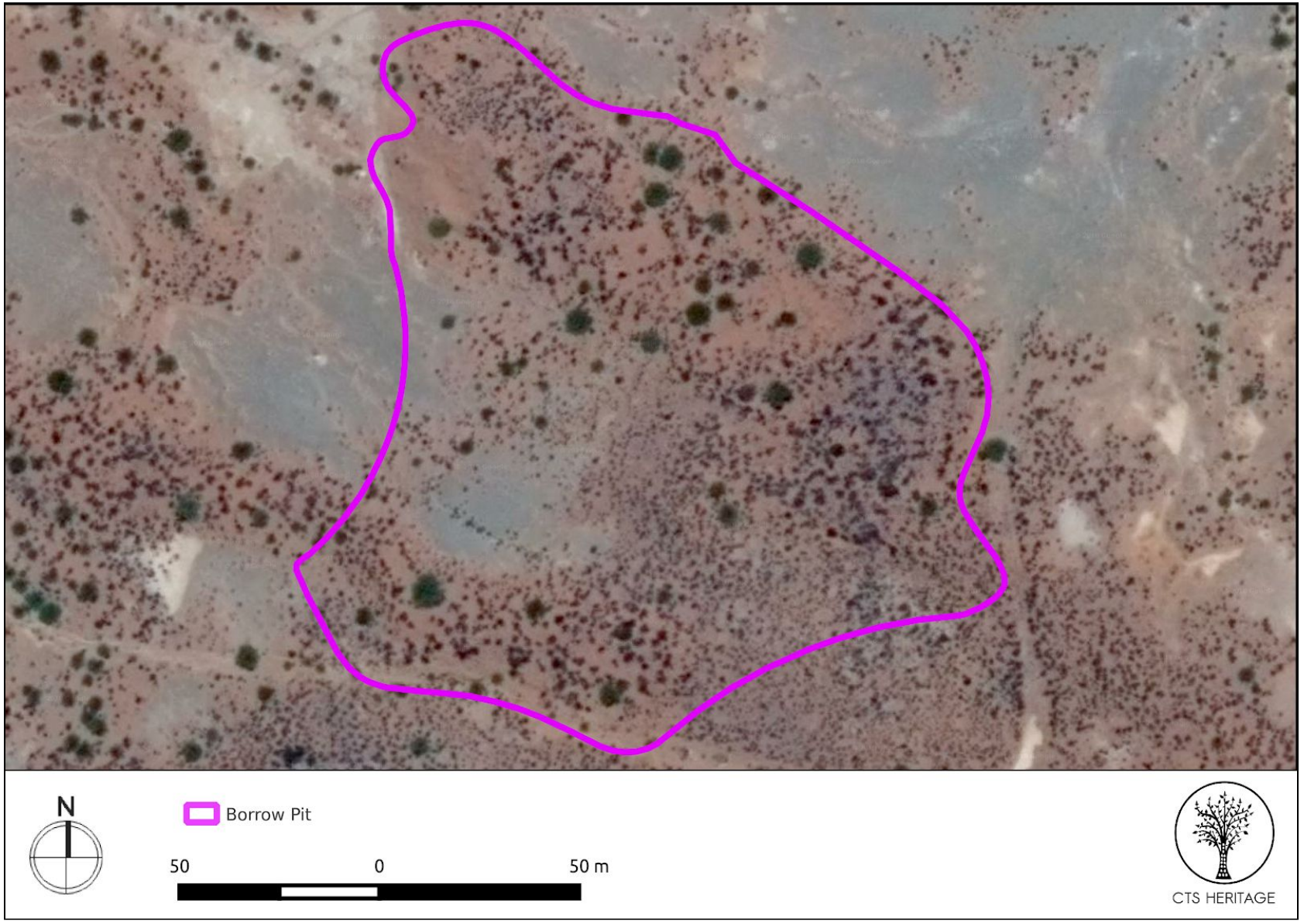

Figure 1d. Overview Map. Satellite image (2017) indicating the proposed development area at closer range.

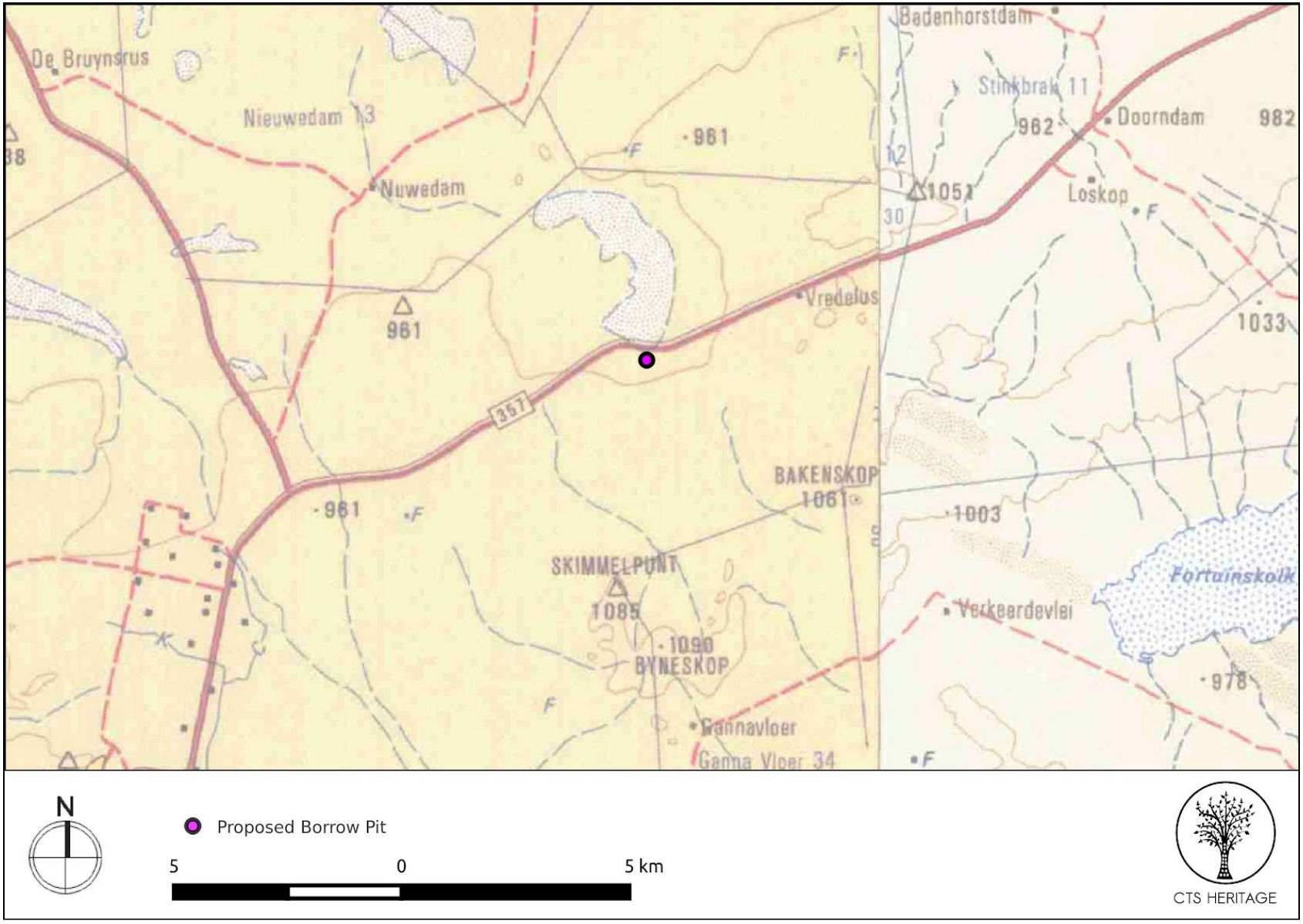

Figure 1. Overview Map. 1:250 000 Topographic map indicating the location and geographical context of the proposed development area.

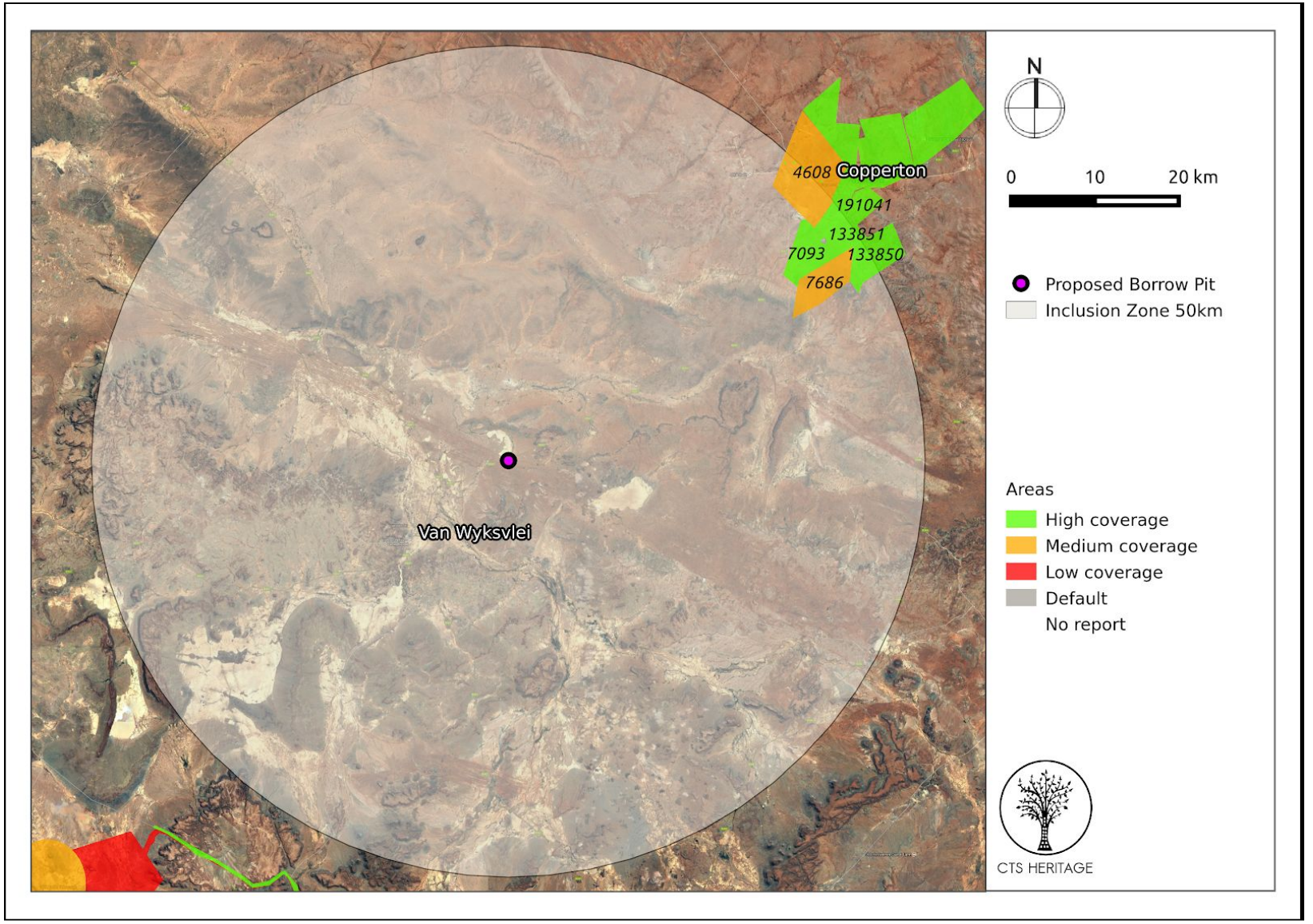

Figure 2. Previous HIAs Map. Previous Heritage Impact Assessments surrounding the proposed development area within 5km, with SAHRIS NIDS indicated. Please see Appendix 2 for full reference list.

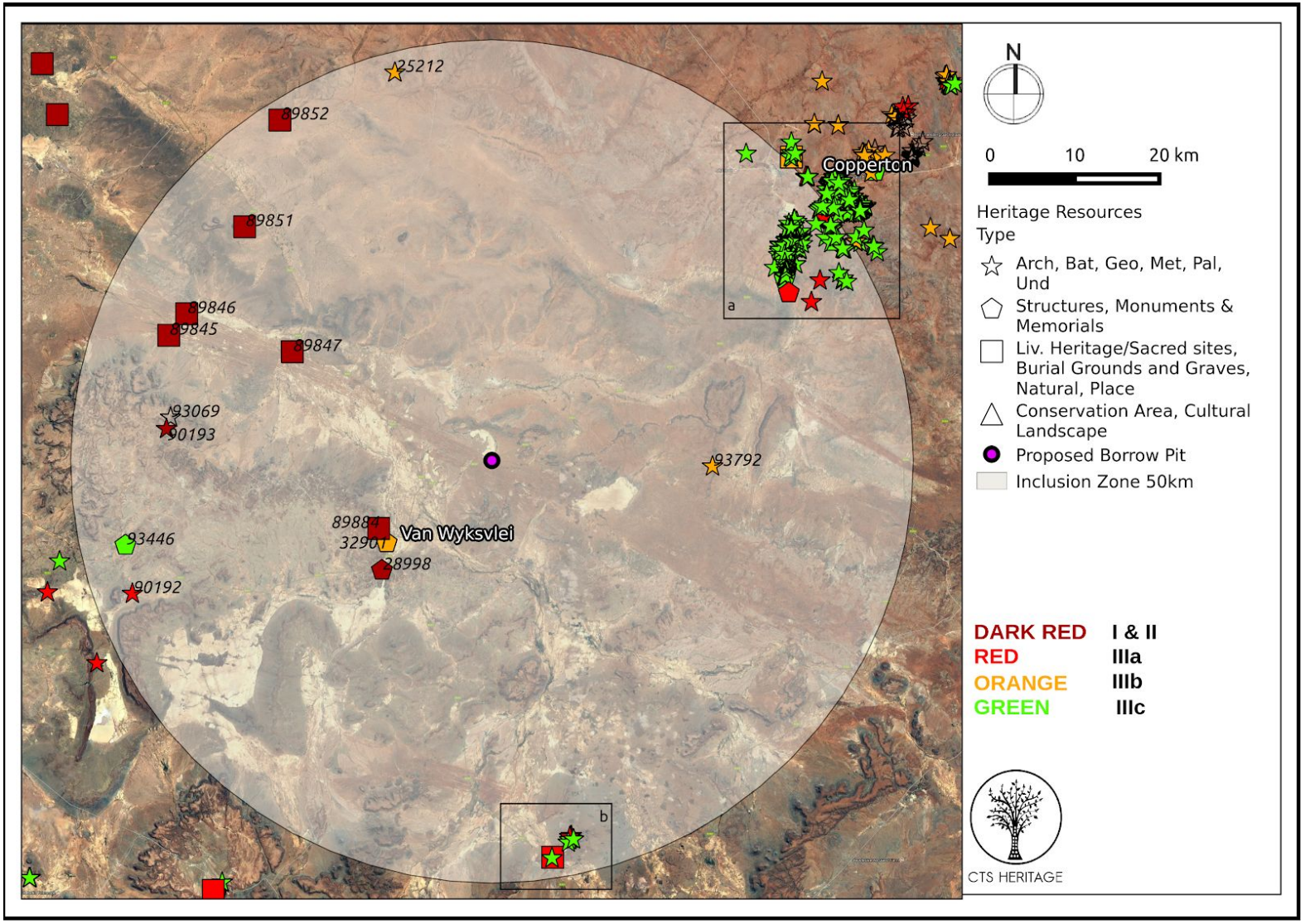

Figure 3. Heritage Resources Map. Heritage Resources previously identified in and near the study area, with SAHRIS Site IDs indicated (see Figure 3a for inset). Please See Appendix 4 for full description of heritage resource types.

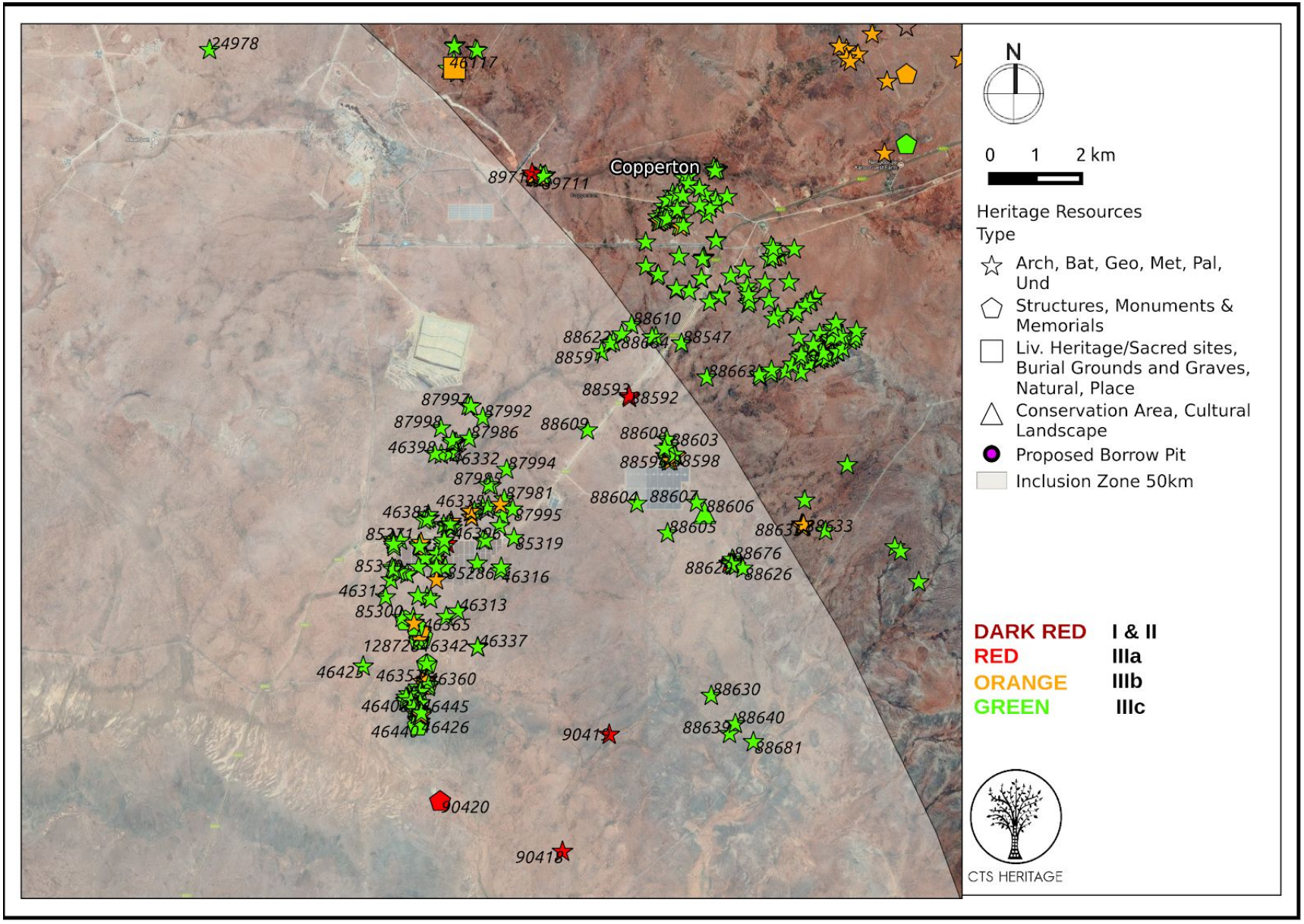

Figure 3a. Heritage Resources Map. Inset

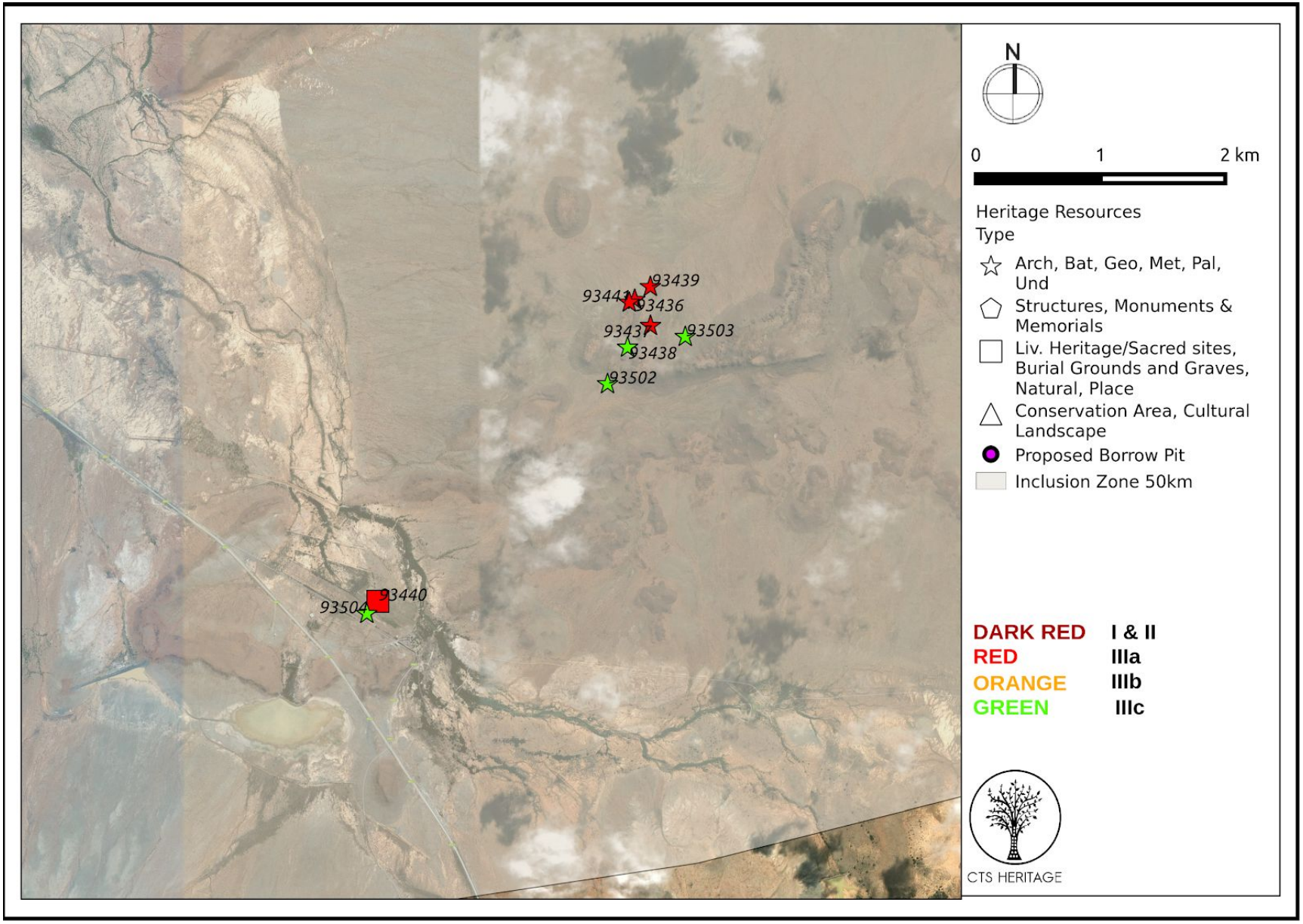

Figure 3b. Heritage Resources Map. Inset

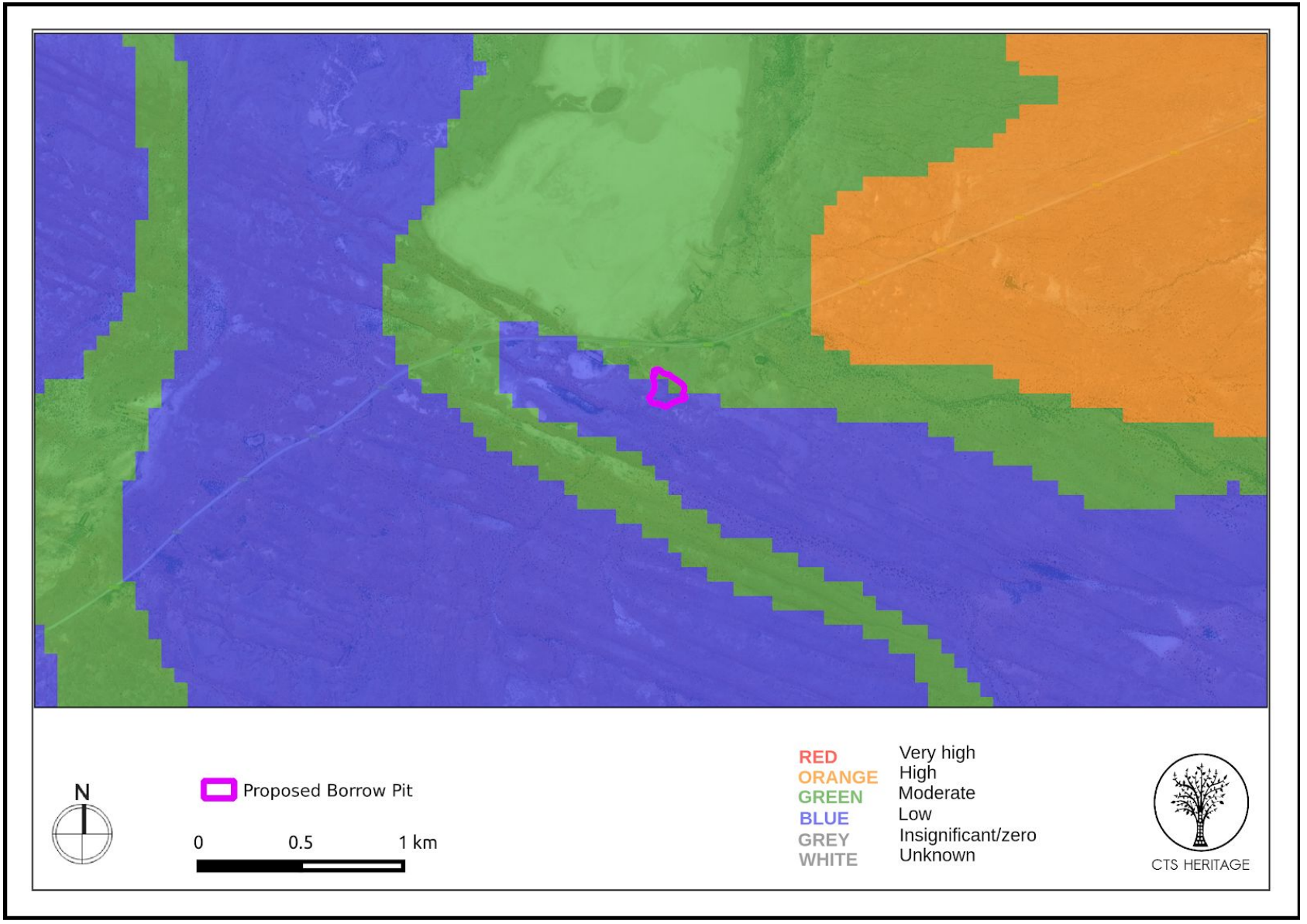

Figure 4. Palaeosensitivity Map. Indicating varied fossil sensitivity underlying the study area. Please See Appendix 3 for full guide to the legend.

Figure 4a. Geology of the area proposed for development.CGS 1:1 000 000 geology shapefile

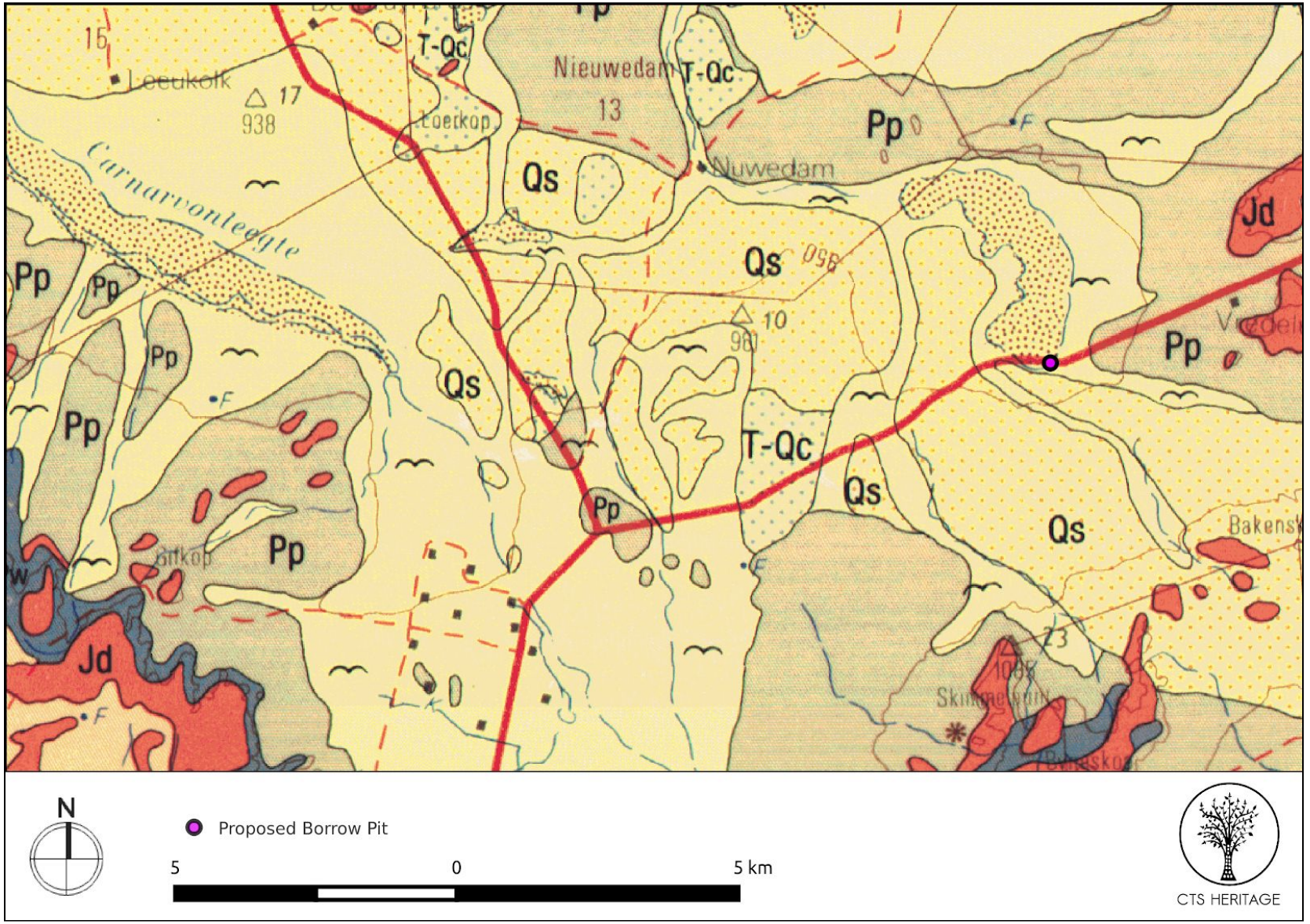

Figure 4b. Geology of the area proposed for development.Extract from CGS 3020 Sakrivier Tile indicating that the area proposed for the borrow pit is underlain by Quarternary Sands of the Gordonia Formation (Kalahari Group)

8. Heritage statement and character of the area

An Environmental Authorisation was obtained for the construction of a water pipeline between Carnarvon and Van Wyksvlei. The contractor however requires bedding material for the pipeline. Hence, application is made for a borrow pit on Farm Vredelus. The total estimated volume of material will amount to approximately 24 400 m³. The borrow pit will be a strategic borrow pit, with the mining of materials only to take place until completion of the construction of the water pipeline.

The various cultural heritage layers encountered within this area start with occasional large Early Stone Age tools such as hand axes which date from at least 2 million years ago. Middle Stone Age sites dating between 300 000 and 30 000 years ago are usually found in deflated palaeosurface contexts or in relatively stratified deposits around the many pans characteristic of the area. Later Stone Age sites from the last 30 000 years are more common and stone tools made by San hunter-gatherers and Khoekhoen herders have been found relatively *in situ* on the Kalahari sands or in close association with the many rock engraving sites made at dolerite outcrops. The study area is perhaps most infamous for the terminal period of the Later Stone Age when the colonial frontier was expanding across the region. The region between Kenhardt, Brandvlei and Vanwyksvlei was home to the group of /Xam. Vanwyksvlei and its surroundings are significant for their association with the recordings of Bleek and Lloyd of the the language, folktales and spiritual beliefs of a number of /Xam brought to prison in Cape Town. Bleek and Lloyd's work links many beliefs to known features in the landscape, providing a window of understanding into the blending of folklore and geography by the /Xam such as Breekkiri (Site ID 89846), Olifantvlei (Site ID 89845), De Naauwte (Site ID 89847), Sondagspan (Site ID 89852) and Van Wyksvlei (Site ID 89884).

Numerous archaeological and palaeontological impact assessments have been completed in the vicinity of Copperton, located approximately 50km from the proposed sand mine site (Figure 2). According to Orton and Webley (2013 SAHRIS NID 133850), “Archaeological resources were found to be widespread across the study area, although certain landscape features obviously attracted settlement with the result that these areas had higher densities of finds. These latter areas include the margins of pans and hills with much gravel that presumably was used as a stone material source for manufacturing artefacts.” In addition to the pans and hills, other features of significance from this landscape include rock engravings and stone circles. According to Orton and Webley (2013 SAHRIS NID 133850), “one of the farmers pointed out an engraving site along the road between Copperton and Vanwyksvlei. At this site scraped engravings of eland and ostrich as well as very recent (historical) incised (perhaps better termed scratched) engravings including horses with riders, one chariot and some writing were found. This site is known to researchers”. Rock engravings are often made on dolerite boulders and as such, it is likely that this engraving site is located in close proximity to the dolerite outcroppings located approximately 5km to the north east of the development area (dolerite marked in red in Figure 4b). Based on what is known about the archaeology of this area, it is likely that the proposed sand mine will impact on archaeological heritage resources in the form of surface scatters of stone tools, however it is unlikely that these resources will be of any particular significance given the very small footprint of the proposed sand mine.

The area proposed for the sand mine is underlain by aeolian sands of Gordonia Formation (Kalahari Group) and Quaternary to recent alluvium, pan sediments of low palaeontological sensitivity according to the SAHRIS Palaeosensitivity Map (Figure 4, 4a and 4b). According to Almond (2014 SAHRIS NID), “The fossil record of the Kalahari Group is generally sparse and low in diversity. The Gordonia Formation dune sands were mainly active during cold, drier intervals of the Pleistocene Epoch that were inimical to most forms of life, apart from hardy, desert-adapted species. Porous dune sands are not generally conducive to fossil preservation. However, mummification of soft tissues may play a role here… (and) may lead to the rapid calcretisation of organic structures such as burrows and root casts. Occasional terrestrial fossil remains that might be expected within this unit include calcretized rhizoliths (root casts) and termitaria, ostrich egg shells and shells of land snails... These Kalahari fossils (or subfossils) can be expected to occur sporadically but widely, and the overall palaeontological sensitivity of the Gordonia Formation is therefore considered to be low… Mammalian bones, teeth and horn cores (also tortoise remains, and fish, amphibian or even crocodiles in wetter depositional settings such as pans) may be expected occasionally within Kalahari Group sediments and calcretes, notably those associated with ancient, PlioPleistocene alluvial gravels.” In addition, according to Almond (2013, SAHRIS NID), “The Gordonia dune sands are considered to range in age from the Late Pliocene/Early Pleistocene, dated in part from enclosed Middle to Late Stone Age stone tools.” The overall sensitivity of this formation for impacts to palaeontology is low and as such, it is unlikely that significant palaeontological heritage will be impacted by the proposed sand mine. However, it is recommended that a Fossil Finds Procedure be included in the EMP for the mine.

Comments from Almond (2018) for this proposed sand mine:

According to the 1: 250 000 geology sheet 3020 Sakrivier the project area is underlain by aeolian sands of the Kalahari Group (Gordonia Formation) that build arrays of WNW to ESE linear sand dunes in this area. This accords with the project description as a sand mine.

Satellite images show that the project area lies towards the south end of a small pan and encloses both orange-brown Kalahari sands as well as pale grey areas that might reflect surface exposure of Prince Albert Formation (Ecca Group) bedrocks or perhaps a different vegetation type (bossieveld / grass). Mapped exposures of Prince Albert mudrocks in the region are usually a darker grey hue on satellite images.

Early Permian basinal mudrocks of the Prince Albert Formation (Lower Ecca Group) have yielded low diversity marine invertebrates (bivalves, nautiloids, brachiopods), palaeoniscoid fish, sharks, fish coprolites, protozoans (foraminiferans, radiolarians), petrified wood, palynomorphs (spores, acritarchs), a variety of non-marine trace fossils (especially arthropods, fish, also various “worm” burrows), possible stromatolites, and oolites (Siebrits 1989, Almond 2008, Almond & Pether 2008). However, it is unlikely that the proposed sand mine will have a significant impact on any fossils preserved within the Prince Albert Formation bedrocks, which are in any case likely to be weathered and possibly calcretised near surface here.

REFERENCES

ALMOND, J.E. 2008. Fossil record of the Loeriesfontein sheet area (1: 250 000 geological sheet 3018). Unpublished report for the Council for Geoscience, Pretoria, 32 pp.

ALMOND, J.E. 2010. Proposed construction of a gravel airstrip 35 km west of Vanwyksvlei-Springbok-Oog, Northern Cape Province.Recommended exemption from palaeontological impact study, 2 pp. Natura Viva cc, Cape Town.

ALMOND, J.E. 2017. Proposed luxury resort at Springbokoog near Vanwyksvlei, Kareeberg Local Municipality, Northern Cape. Palaeontological assessment: recommended exemption from further palaeontological studies, 6 pp.

SIEBRITS, L.B. 1989. Die geologie van die gebied Sakrivier. Explanation of 1: 250 000 geology sheet 3020, 19 pp. Council for Geoscience, Pretoria.

RECOMMENDATION:

The heritage resources in the area proposed for development are sufficiently recorded.

Based on the available information, including the limited scale and nature of the proposed development, it is unlikely that significant heritage resources will be impacted and as such it is recommended that no further heritage studies are required. However, it is recommended that a Fossil Finds Procedure be included in the EMP for the mine.

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APPENDIX 1

List of Grade I, II, IIIA and IIIB heritage resources within the 50km Inclusion Zone

Site ID	Site no	Full Site Name	Site Type	Grading
89851	9/2/048/0014	Strandberg	Place, Rock Art	Grade I
90193	SBO	Springbokoog	Rock Art	Grade I
28998	9/2/019/0010	Van Wyksvlei Dam, Van Wyksvlei	Building	Grade II
89846	Breekkiri	Breekkiri (place marked on Bleek map)	Place, Artefacts	Grade II
89845	Olifantvlei	Olifantvlei (place marked on Bleek map)	Place	Grade II
89847	De Naauwte	De Naauwte (place marked on Bleek map)	Place	Grade II
89852	Sondagspan	Sondagspan (place marked on Bleek map)	Place	Grade II
89884	Van Wyksvlei	Van Wyksvlei (place mentioned in Bleek and Lloyd manuscripts)	Place	Grade II
32089	KGP2014/006	KGP2014/006	Archaeological, Artefacts	Grade IIIa
88592	HOEK002	Hoekplaas 146/ 002	Artefacts	Grade IIIa
88593	HOEK003	Hoekplaas 146/ 003	Artefacts	Grade IIIa
88669	HOEK046	Hoekplaas 146/ 046	Artefacts	Grade IIIa
88675	HOEK047	Hoekplaas 146/ 047	Archaeological	Grade IIIa
46426	KLGP047	Klipgats_Pan 047	Artefacts	Grade IIIa
32847	VGSTR4	Modderpan	Artefacts	Grade IIIa
90192	GTK 001	Groot Kolk 001	Rock Art	Grade IIIa
93437	HER-SKA003	Garst Kolk rock engraving 01	Rock Art	Grade IIIa
93439	HER-SKA004	Garst Kolk rock engraving 02	Rock Art	Grade IIIa
93436	HER-SKA005	Garst Kolk rock engraving 03	Rock Art	Grade IIIa
93441	HER-SKA006	Garst Kolk rock engraving 04	Rock Art	Grade IIIa
93440	HER-SKA001	Garst Kolk Farmstead	Burial Grounds & Graves, Deposit, Building	Grade IIIa

90418	MIER001	Mierdam Farm 001	Artefacts	Grade IIIa
90419	MIER002	Mierdam Farm 002	Artefacts	Grade IIIa
90420	MIER003	Mierdam Farm 003	Building	Grade IIIa
32901	9/2/019/10	Van Wyksvlei Dam	Structures	Grade IIIb
93792	HER-SKA084	Artefact Scatter	Artefacts	Grade IIIb
32097	KGP2014/008	KGP2014/008	Archaeological, Artefacts	Grade IIIb
32098	KGP2014/009	KGP2014/009	Archaeological, Artefacts	Grade IIIb
39957	Vogelstruisbult Red Sand Quarry	Vogelstruisbult Red Sand Quarry	Archaeological, Artefacts	Grade IIIb
87031	KLGP067	Klipgats_Pan 067	Stone walling, Artefacts	Grade IIIb
88632	HOEK032	Hoekplaas 146/ 032	Artefacts	Grade IIIb
88631	HOEK031	Hoekplaas 146/ 031	Artefacts	Grade IIIb
88633	HOEK033	Hoekplaas 146/ 033	Artefacts	Grade IIIb
88634	HOEK034	Hoekplaas 146/ 034	Artefacts	Grade IIIb
89710	COP001	Copperton 001	Artefacts	Grade IIIb
89712	COP003	Copperton 003	Artefacts	Grade IIIb
89713	COP004	Copperton 004	Artefacts	Grade IIIb
89714	COP005	Copperton 005	Artefacts	Grade IIIb
89715	COP006	Copperton 006	Artefacts	Grade IIIb
87980	KLGP069	KLIPGATS 069	Artefacts	Grade IIIb
32101	KGP2014/016	KGP2014/016	Archaeological, Artefacts	Grade IIIb
87993	KLGP082	KLIPGATS 082	Artefacts	Grade IIIb
46318	KGP2011/021	KGP2011/021	Stone walling	Grade IIIb
32087	KGP2014/004	KGP2014/004	Archaeological, Artefacts	Grade IIIb
32100	KGP2014/013	KGP2014/013	Archaeological, Artefacts	Grade IIIb

25212	Stomp Oor 109	Farm Stomp Oor 109, Prieska	Palaeontological	Grade IIIb
46332	KLGP001	Klipgats_Pan 001	Artefacts	Grade IIIb
46333	KLGP002	Klipgats_Pan 002	Artefacts	Grade IIIb
46334	KLGP003	Klipgats_Pan 003	Artefacts	Grade IIIb
88598	HOEK008	Hoekplaas 146/ 008	Artefacts	Grade IIIb
88600	HOEK010	Hoekplaas 146/ 010	Artefacts	Grade IIIb
88601	HOEK011	Hoekplaas 146/ 011	Artefacts	Grade IIIb
46347	KLGP010	Klipgats_Pan 010	Artefacts	Grade IIIb
46357	KLGP011	Klipgats_Pan 011	Artefacts	Grade IIIb
46360	KLGP014	Klipgats_Pan 014	Structures	Grade IIIb
46365	KLGP019	Klipgats_Pan 019	Artefacts	Grade IIIb
46366	KLGP020	Klipgats_Pan 020	Structures	Grade IIIb
46408	KLGP040	Klipgats_Pan 040	Artefacts	Grade IIIb
46427	KLGP048	Klipgats_Pan 048	Artefacts	Grade IIIb
46443	KLGP052	Klipgats_Pan 052	Artefacts	Grade IIIb
46461	KLGP063	Klipgats_Pan 063	Artefacts	Grade IIIb
46465	PRIES001	Prieska 001	Artefacts	Grade IIIb
46466	PRIES002	Prieska 002	Artefacts	Grade IIIb
46469	PRIES005	Prieska 005	Building	Grade IIIb
88628	HOEK028	Hoekplaas 146/ 028	Artefacts	Grade IIIb
89711	COP002	Copperton 002	Artefacts	Grade IIIb

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APPENDIX 2

Reference List

Heritage Impact Assessments				
Nid	**Report Type**	**Author/s**	**Date**	**Title**
4608	AIA	Karen Van Ryneveld	12/06/2006	Phase 1 Archaeological Impact Assessment: Vogelstruis Bult 104, Prieska District, Northern Cape, South Africa
7093	AIA	Jayson Orton	10/01/2012	Heritage Impact Assessment for a Proposed Photovoltaic Energy Plant on the Farm Klipgats Pan Near Copperton, Northern Cape
7686	AIA	Johnny Van Schalkwyk	14/12/2011	Heritage impact assessment for the PROPOSED ESTABLISHMENT OF A WIND FARMS BY MAINSTREAM RENEWABLE POWER IN THE PRIESKA REGION, NORTHERN CAPE PROVINCE
8952	PIA	John E Almond	16/02/2012	Almond, J. February 2012. Palaeontological Specialist Assesssment: combined Desktop and Field-based Assessment - Proposed Photovoltaic Energy Plant on the Farm Klipgats Pan (Portion 4 of Farm 117) Near Copperton, Northern Cape
110646	PIA	John E Almond	01/02/2012	PALAEONTOLOGICAL SPECIALIST ASSESSMENT: DESKTOP STUDY Proposed photovoltaic energy plant on Farm Hoekplaas (Remainder of Farm 146) near Copperton, Northern Cape Province
133850	HIA	Jayson Orton, Lita Webley	09/10/2013	HERITAGE IMPACT ASSESSMENT FOR MULTIPLE PROPOSED SOLAR ENERGY FACILITIES ON FARM HOEKPLAAS 146
133851	PIA	John E Almond	01/07/2013	PALAEONTOLOGICAL SPECIALIST ASSESSMENT: COMBINED DESKTOP & FIELD ASSESSMENT STUDY
159150	AIA	Jayson Orton	21/02/2014	FINAL ARCHAEOLOGICAL 'WALK THROUGH' FOR THE APPROVED PV FACILITY ON THE REMAINDER OF PORTION 4 OF KLIPGATS PAN 117, PRIESKA MAGISTERIAL DISTRICT, NORTHERN CAPE
162341	HIA	Jayson Orton	15/04/2014	ARCHAEOLOGICAL MITIGATION OF LATER STONE AGE SITES ON THE REMAINDER OF PORTION 4 OF KLIPGATS PAN 117, PRIESKA MAGISTERIAL DISTRICT, NORTHERN CAPE
174490	HIA	Lita Webley	20/08/2014	Scoping Assessment: Proposed Construction of Humansrus PV Energy Facility 1 (previously named RE Capital 13 Solar Development) on the Remainder of the Farm Humansrus 147 near Copperton, Northern Cape
174500	HIA	Lita Webley	20/08/2014	Scoping Assessment: Proposed Construction of Humansrus Solar PV Energy Facility 2 (previously named RE Capital 14 Solar Development) on the Remainder of the Farm Humansrus 147 near Copperton, Northern Cape
190976	HIA	Stefan de Kock	30/11/2014	Integrated Heritage Impact Assessment in terms of Section 38(8) of the National Heritage Resources Act, 1999 (ACT 25 of 1999): Proposed Development of Humansrus Solar PV Energy Facility 1 (previously named RE Capital 13 Solar Development)

				on a portion of
190977	AIA	Lita Webley	30/11/2014	Archaeological Impact Assessment: Proposed Construction of Humansrus Solar PV Energy Facility 1 (previously named RE Capital 13 Solar Development) on the Remainder of the Farm Humansrus 147 near Copperton, Northern Cape (Assessment conducted under Sectio
190989	PIA	John E Almond	30/11/2014	Recommended Exemption from further Palaeontological Studies: Proposed Construction of Humansrus Solar PV Facility 1 (previously named RE Capital 13 Solar Development) on the Remainder of Farm 147, Humansrus near Copperton, Siyathemba Municipality, Northe
191039	HIA	Stefan de Kock	30/11/2014	Integrated Heritage Impact in terms of Section 38(8) of the National Heritage Resources Act, 1999 (ACT 25 of 1999): Proposed Development of Humansrus Solar PV Energy Facility 2 (previously named RE Capital 14 Solar Development) on a portion of the Farm H
191040	AIA	Lita Webley	30/11/2014	Archaeological Impact Assessment: Proposed Construction of Humansrus Solar PV Energy Facility 2 (previously named RE Capital 14 Solar Development) on the Remainder of the Farm Humansrus 147 near Copperton, Northern Cape (Assessment conducted under Sectio
191041	PIA	John E Almond	30/11/2014	Recommended Exemption from further Palaeontological Studies: Proposed Construction of Humansrus Solar PV Energy Facility 2 (previously named RE Capital 14 Solar Development) on the Remainder of Farm 147, Humansrus near Copperton, Siyathemba Municipality,
191751	AIA	Jayson Orton	02/02/2015	HERITAGE IMPACT ASSESSMENT FOR FOUR PROPOSED BORROW PITS ON REMAINDER OF FARM VOGELSTRUISBULT 104/1, PRIESKA MAGISTERIAL DISTRICT, NORTHERN CAPE
191764	PIA	John E Almond	20/01/2015	RECOMMENDED EXEMPTION FROM FURTHER PALAEONTOLOGICAL STUDIES: PROPOSED DEVELOPMENT OF TWO QUARRIES AND TWO BORROW PITS ON PORTION 1 OF FARM VOGELSTRUISBULT 104 NEAR COPPERTON, SIYATHEMBA MUNICIPALITY, NORTHERN CAPE
256495	PIA	John E Almond	16/07/2013	Palaeontological Specialist Assessment: Combined Desktop & Field Assessment Study - Proposed PV2 to PV11 photovoltaic energy plants on the Farm Hoekplaas near Copperton, Northern Cape.
256500	AIA	Jayson Orton	09/07/2013	Heritage Impact Assessment for Multiple Proposed Solar Energy Facilities on Farm Hoekplaas 146, Copperton, Northern Cape.
256501	AIA	Jayson Orton	09/07/2013	Heritage Impact Assessment for Multiple Proposed Solar Energy Facilities on Farm Hoekplaas 146, Copperton, Northern Cape.
256550	PIA	John E Almond	19/06/2013	Palaeontological Specialist Assessment: Combined Desktop and Field Assessment Study - Proposed PV2 to PV7 photovoltaic energy plants on Farm Klipgats Pan (Portion 4 of Farm 117) near Copperton, Northern Cape.
256553	AIA	Jayson Orton	15/07/2013	Heritage Impact Assessment for Multiple Proposed Solar Energy Facilities on the Remainder of Farm Klipgats Pan 117, Copperton, Northern Cape

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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.

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.

The compilation of the Heritage Screener will not include any field assessment. The Heritage Screener will be submitted to the applicant within 24 hours from receipt of full payment. **If the 24-hour deadline is not met by CTS, the applicant will be refunded in full.**