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HERITAGE SCREENER

CTS Reference Number:	**CTS16_048**
SAHRIS CaseID	**10127**
Client:	**Savannah Environmental**
Date:	**19 September 2016**
Title:	**Eskom Substation & Power line Olifantshoek , Northern Cape**

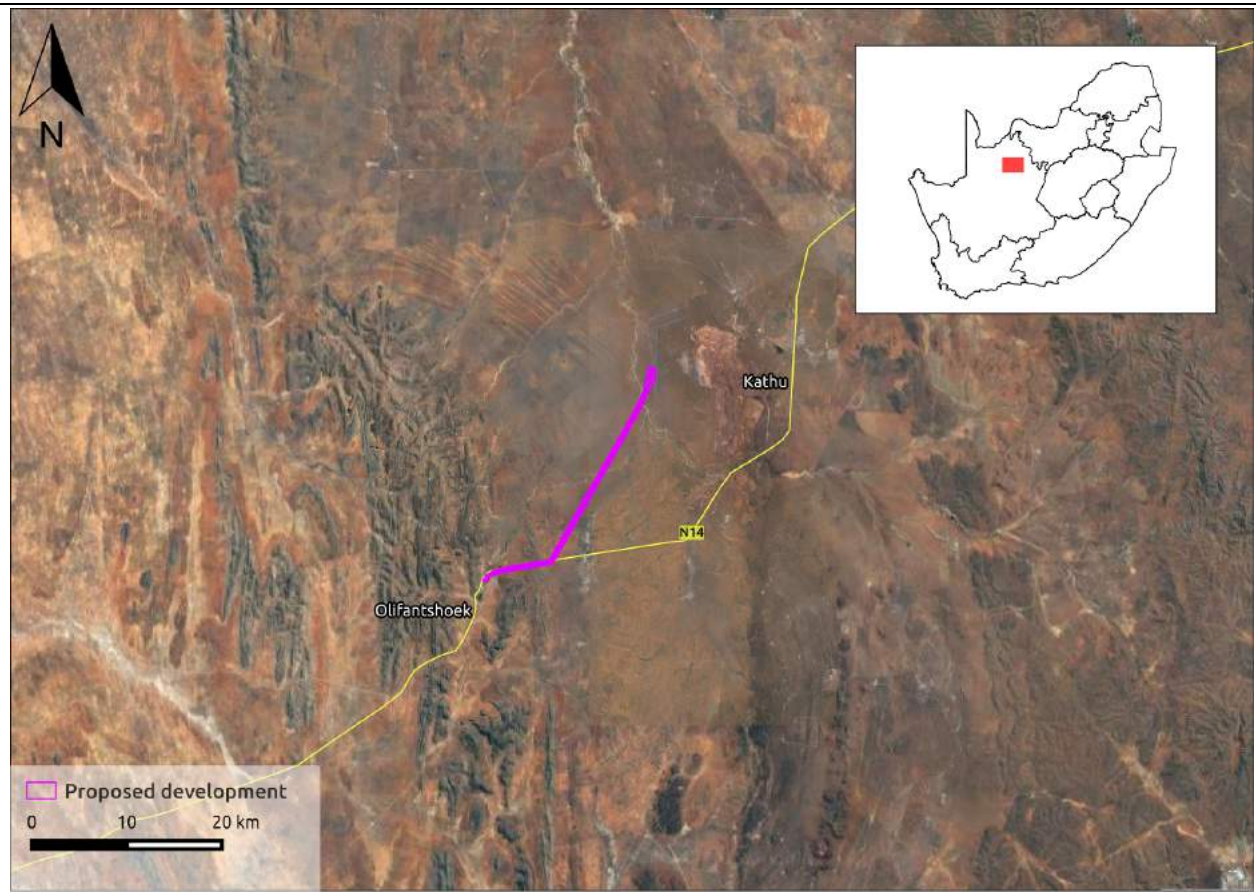

Figure 1a. Satellite Map indicating the location of the proposed development in the Northern Cape Province.

Recommendation by CTS Heritage Specialists: (**Type 1**)	**RECOMMENDATION: The heritage resources in the area proposed for development are sufficiently recorded - The disturbed nature of the development area suggests that heritage resources are unlikely to be impacted by this development. A HIA has already been undertaken in this specific region for a different power line. As such, it is recommended that** - No further heritage studies are required - If any heritage resources are discovered during the construction phase of the proposed development, the SAHRA APM unit should be contacted immediately

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1. Proposed Development Summary

Eskom is proposing to establish a substation and power line which will be used to increase customers Notified Maximum Demand (NMD) from 2.5MVA to 10 MVA as a provision for future developments within the Olifantshoek region. This project is referred to as the Olifantshoek Substation and power line. The Olifantshoek Substation and power line will be comprised of the following:

- A new 10MVA on-site substation (100m X 100m) to be constructed adjacent to the existing 22/11kV Olifantshoek substation
- A new overhead 132 kV power line approximately 31 km long to connect directly to the Emil switching station via the new on site substation. The majority of the new power line route will follow the existing Ferrum/Nieuwehoop 400kV and Ferrum/Lewensaar 132kV power lines. The corridor of the new power line will be 300 m with a servitude of 31 m wide.
- The decommissioning of the existing 22/11kV Olifantshoek Substation

2. Application References

Name of relevant heritage authority(s)	South African Heritage Resources Agency (SAHRA)
Name of decision making authority(s)	Department of Environmental Affairs (DEA)

3. Property Information

Latitude / Longitude	-27.8495764493 S ; 22.8562184256 E
Erf number / Farm number	Lanham 539, Fritz 540, Wright 538, Bredenkamp 567, Brooks 568, Beaumont 569, Murray II 570, Cox 571, Hartley 573, Neylan 766, Neylan 574
Local Municipality	Ward 3 & 4 of the Gamagara Local Municipality, and ward 6 of the Tatsebane Local Municipality
District Municipality	Kgalagadi, Siyanda
Previous Magisterial District	Postmasburg
Province	Northern Cape
Current Use	Rural, servitude
Current Zoning	NA
Total Extent	Approximately 31 km

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4. Nature of the Proposed Development

Surface area to be affected/destroyed	Substation footprint: 10 000m^2 (100 x 100m) Linear activities (including power line, access roads and all alternatives): 31km Servitude (m): 31km Corridor (m): 300m
Depth of excavation (m)	None anticipated
Height of development (m)	22-24m
Expected years of operation before decommission	NA

5. Category of Development

Triggers: Section 38(8) of the National Heritage Resources Act	**X**
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.	**X**
2. Construction of a bridge or similar structure exceeding 50m in length.	
3. Any development or activity that will change the character of a site-	
a) exceeding 5 000m^2 in extent	
b) involving three or more existing erven or subdivisions thereof	
c) involving three or more erven or divisions thereof which have been consolidated within the past five years	
4. Rezoning of a site exceeding 10 000m^2	
5. Other (state):	

6. Additional Infrastructure Required for this Development

- Monopile tower (22-24m high)
- Access roads (44 x 9m, with beam edge 35m wide)
- Voltage power lines (132kv)
- Single circuit
- Substation (71 x 49m)

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

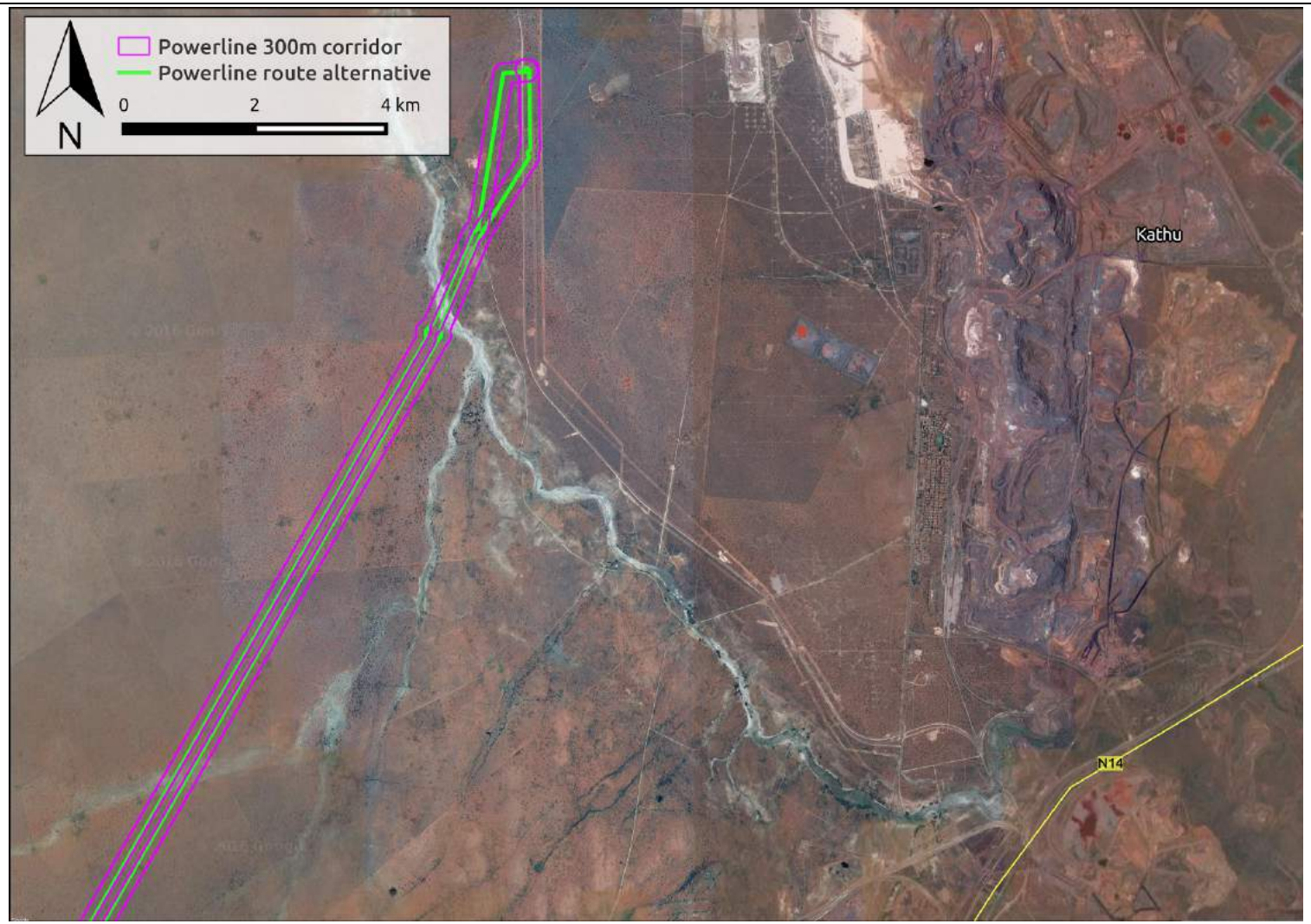

Figure 1b. Overview Map. Satellite image indicating the northern portion of the proposed powerline and route alternatives in relation to Kathu and the N14 highway (see Figure 1c for southern portion).

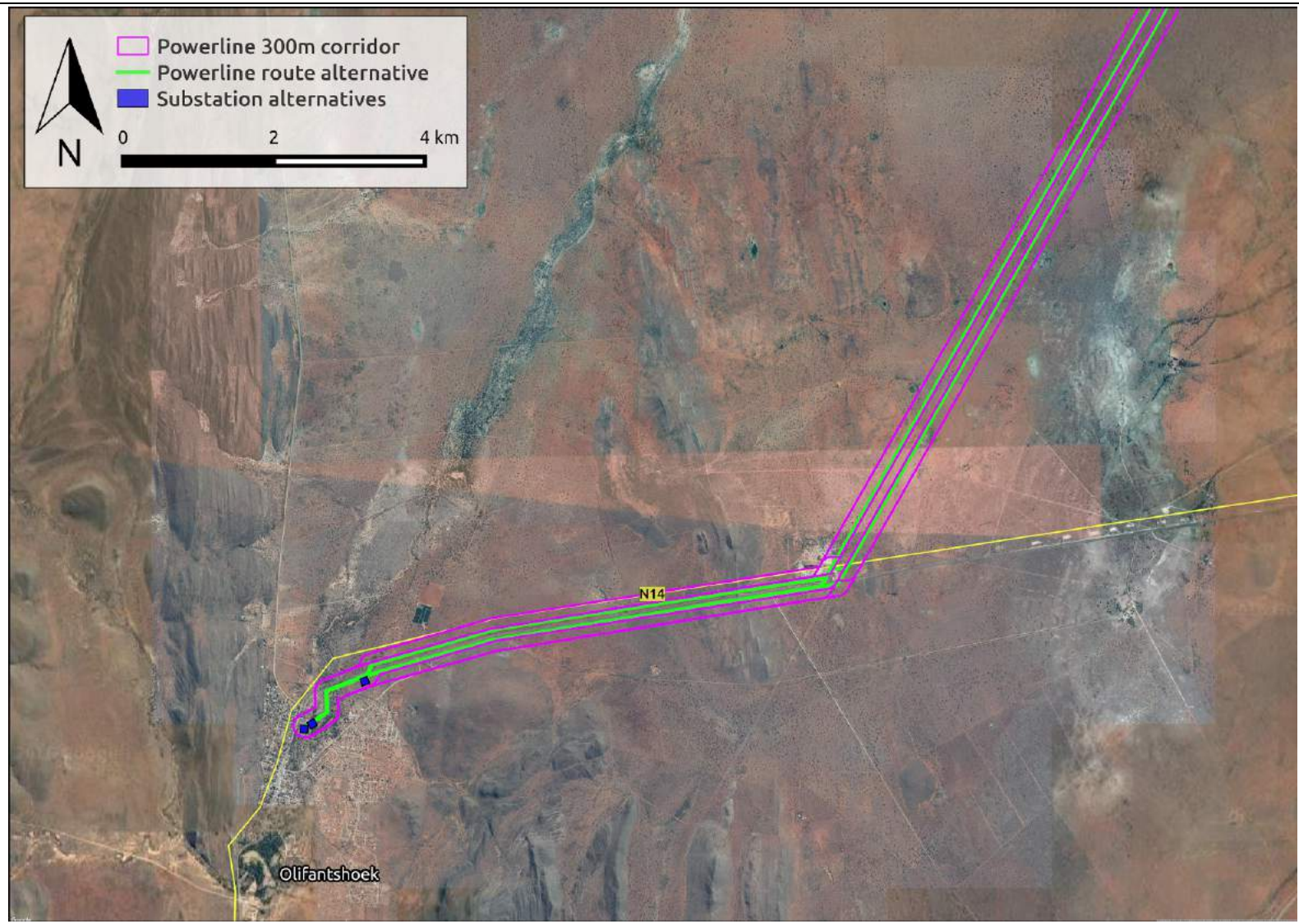

Figure 1c. Overview Map. Satellite image indicating the southern portion of the proposed powerline, route alternatives and substation alternatives in relation to Olifantshoek and the N14 highway (see Figure 1d for substation alternatives).

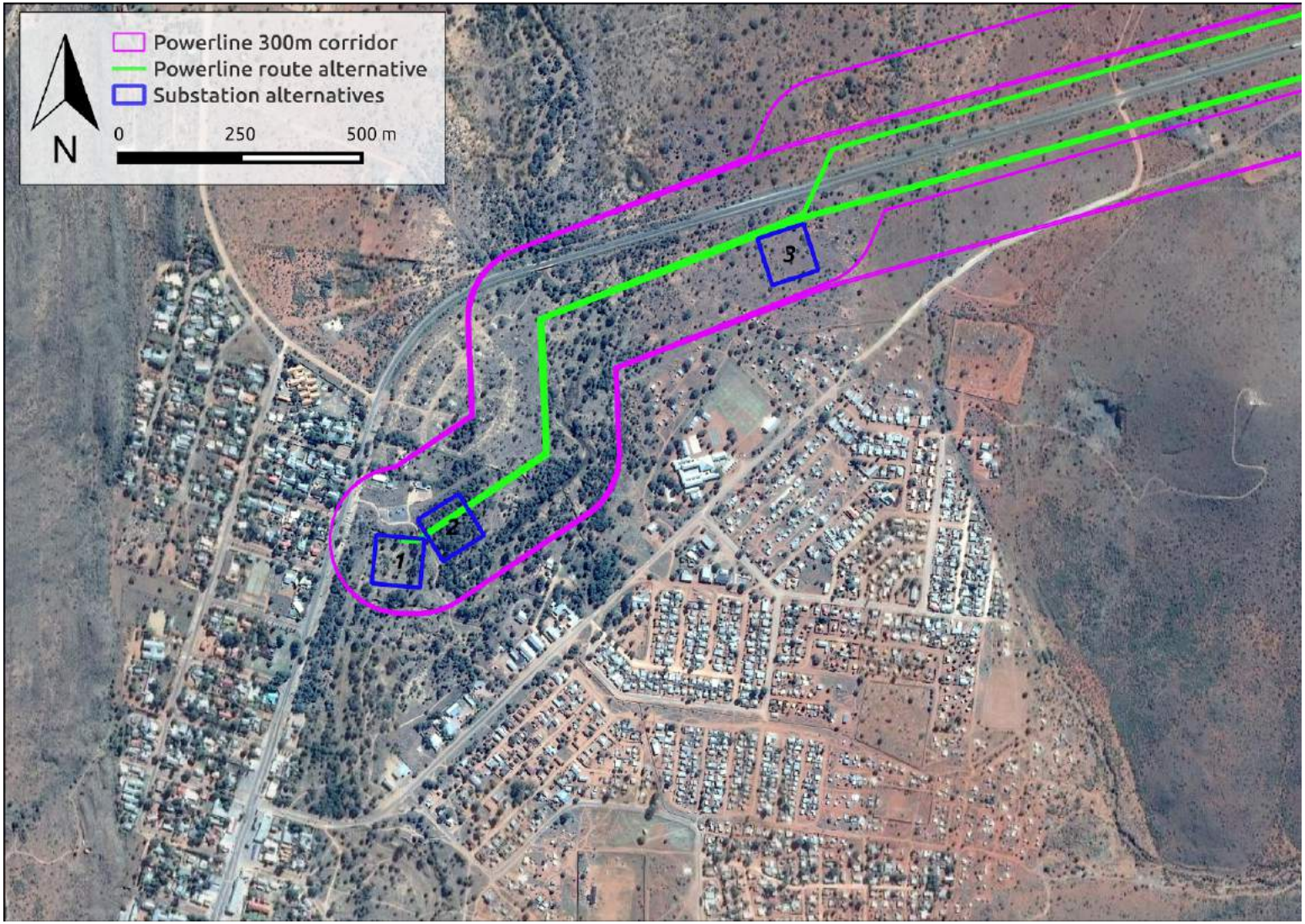

Figure 1d. Overview Map. Satellite image indicating the substation alternatives (1, 2 and 3) at close range, adjacent to the town of Olifantshoek.

Figure 1e. Google satellite image, indicating the substation alternatives 1 in blue and 2 in orange (left panel) adjacent to an existing substation, and substation alternative 3 in yellow (right panel) in proximity to the town of Olifantshoek.

Figure 1f. Google Street View Image, indicating the rough positions of substation alternatives 1 and 2 in relation to the existing substations and disturbed area of the town of Olifantshoek. These are the preferred options for the substation position from a heritage perspective.

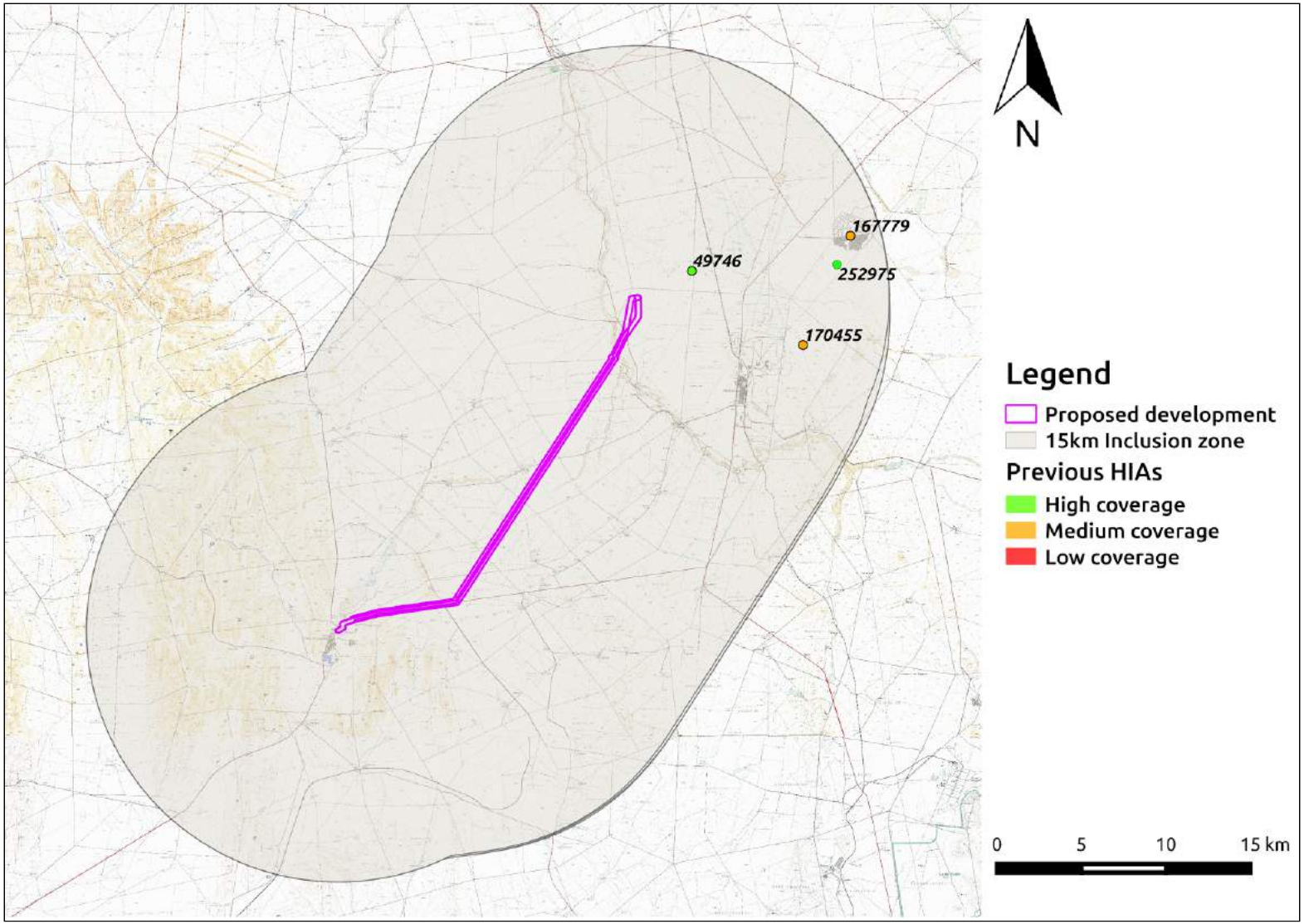

Figure 2a. HIA surveys map. Previous Heritage Impact Assessments (point surveys only) surrounding the proposed development area, with SAHRIS NIDS indicated (please see Appendix 2 for full reference list). See Figures 2b and 2c for linear and area HIAs.

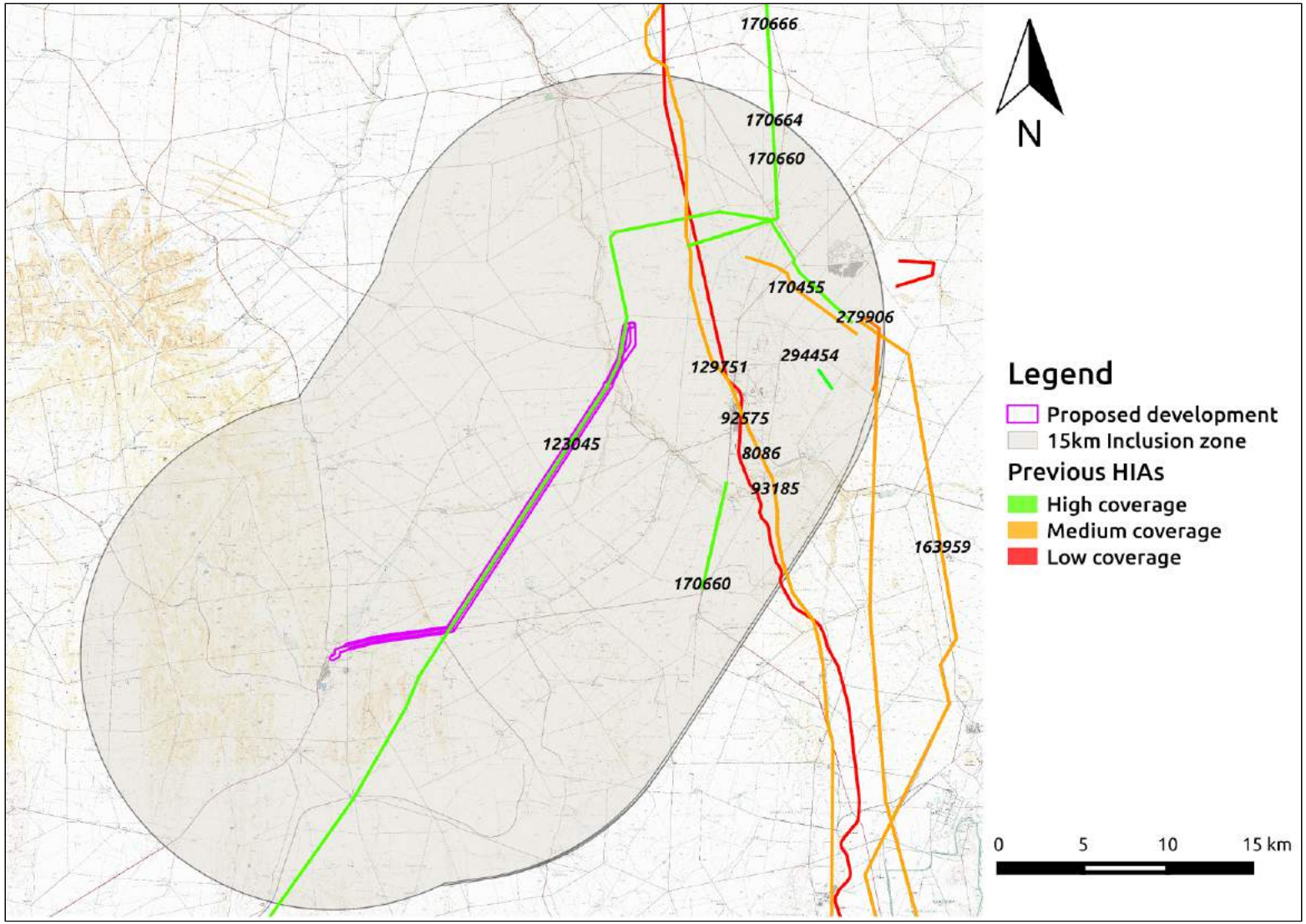

Figure 2b. HIA surveys map. Previous Heritage Impact Assessments (linear surveys only) surrounding the proposed development area with SAHRIS NIDS indicated (please see Appendix 2 for full reference list).

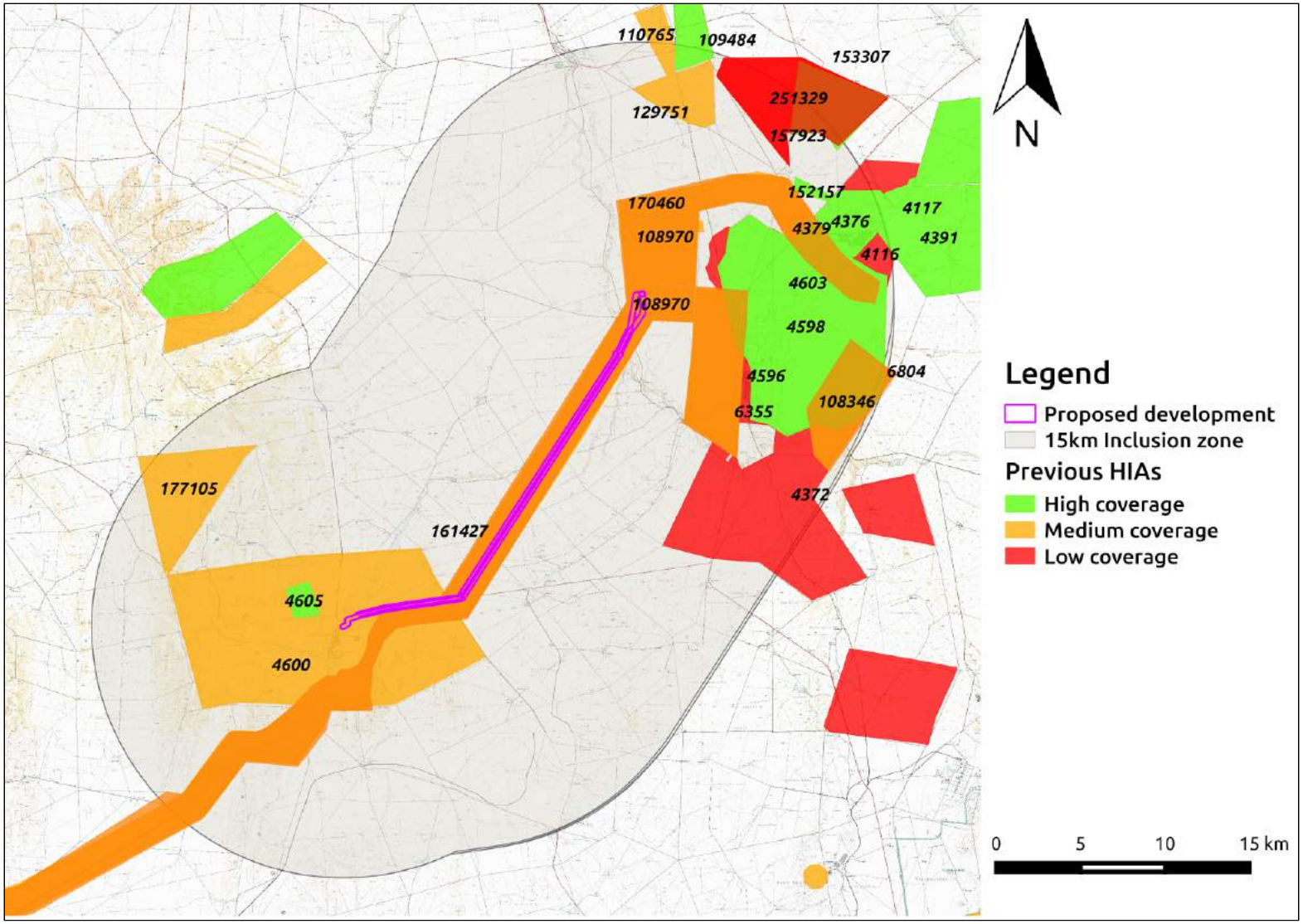

Figure 2c. HIA surveys map. Previous Heritage Impact Assessments (area surveys only) surrounding the proposed development area with selected SAHRIS NIDS indicated (please see Appendix 2 for full reference list).

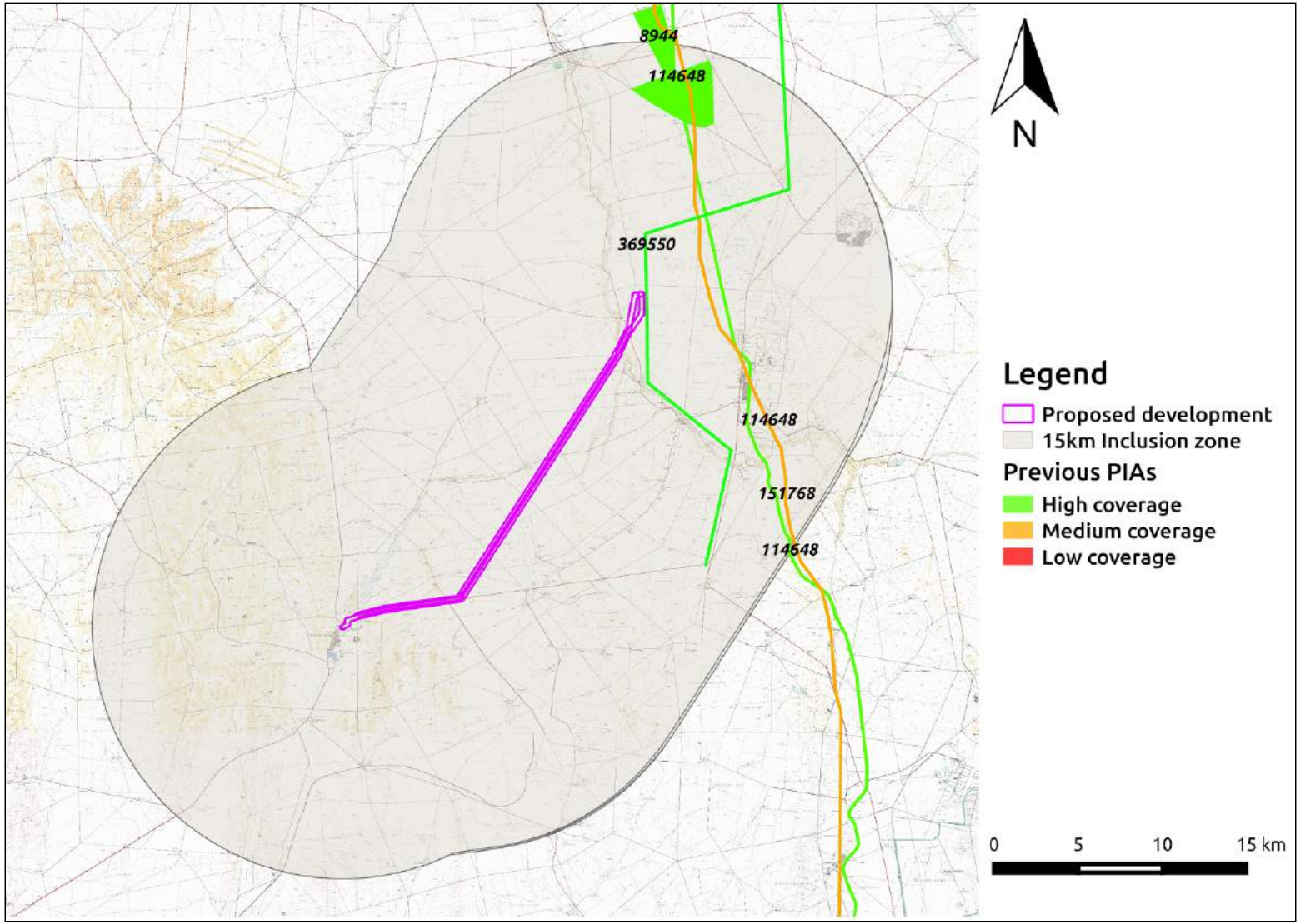

Figure 2d. PIA surveys map. Previous Palaeontological Impact Assessments (all surveys) surrounding the proposed development area with SAHRIS NIDS indicated (please see Appendix 2 for full reference list).

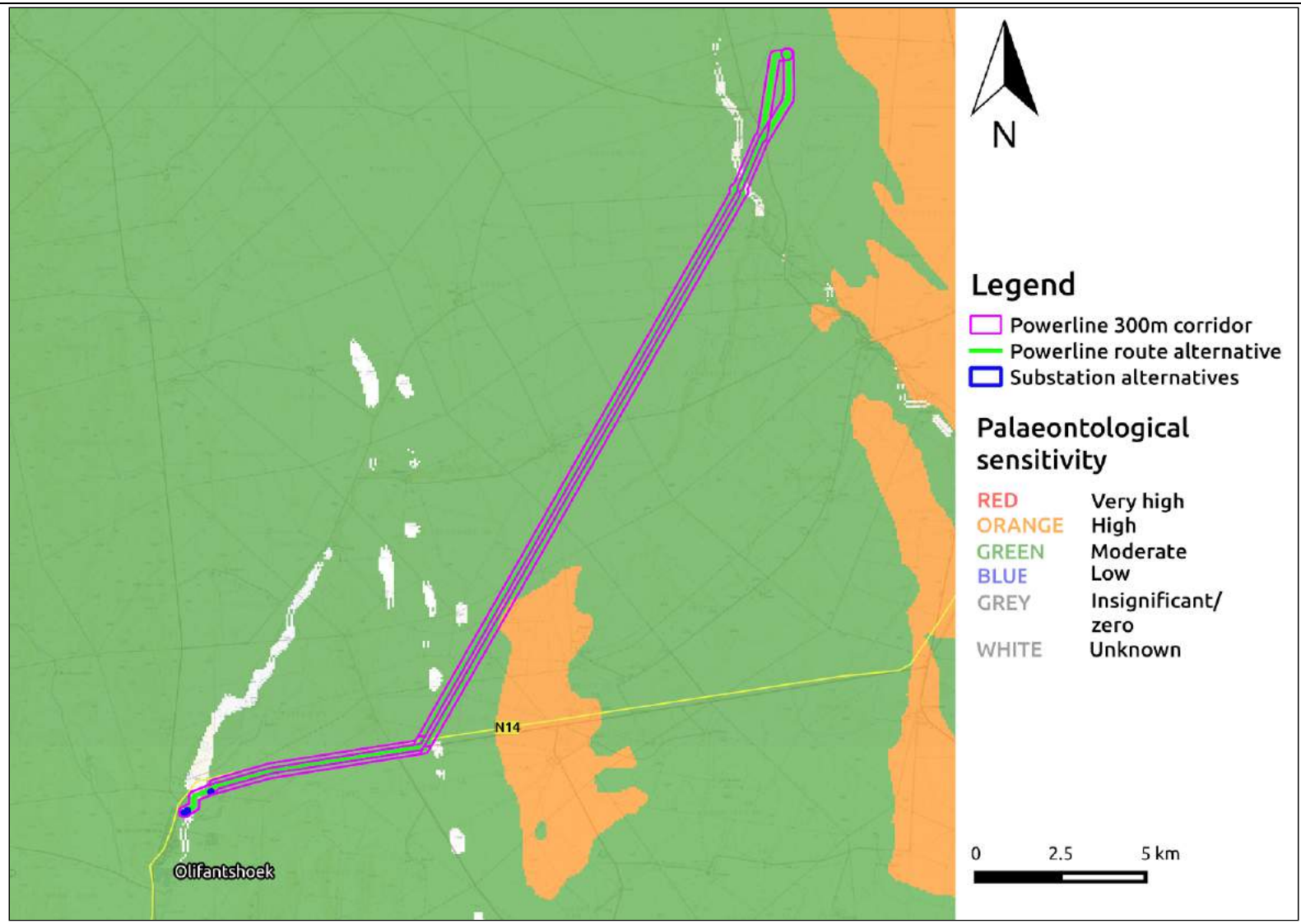

Figure 3a. Palaeo-Map. Palaeosensitivity of the study area, indicating the underlying moderate (green), high (orange) and unknown (white) palaeontologically sensitive areas.. See Appendix 3 for full guide to the legend.

Figure 3b. Palaeo Map. Close up of areas with high (left panel) palaeosensitivity, and unknown (middle & right panels) palaeosensitivity.

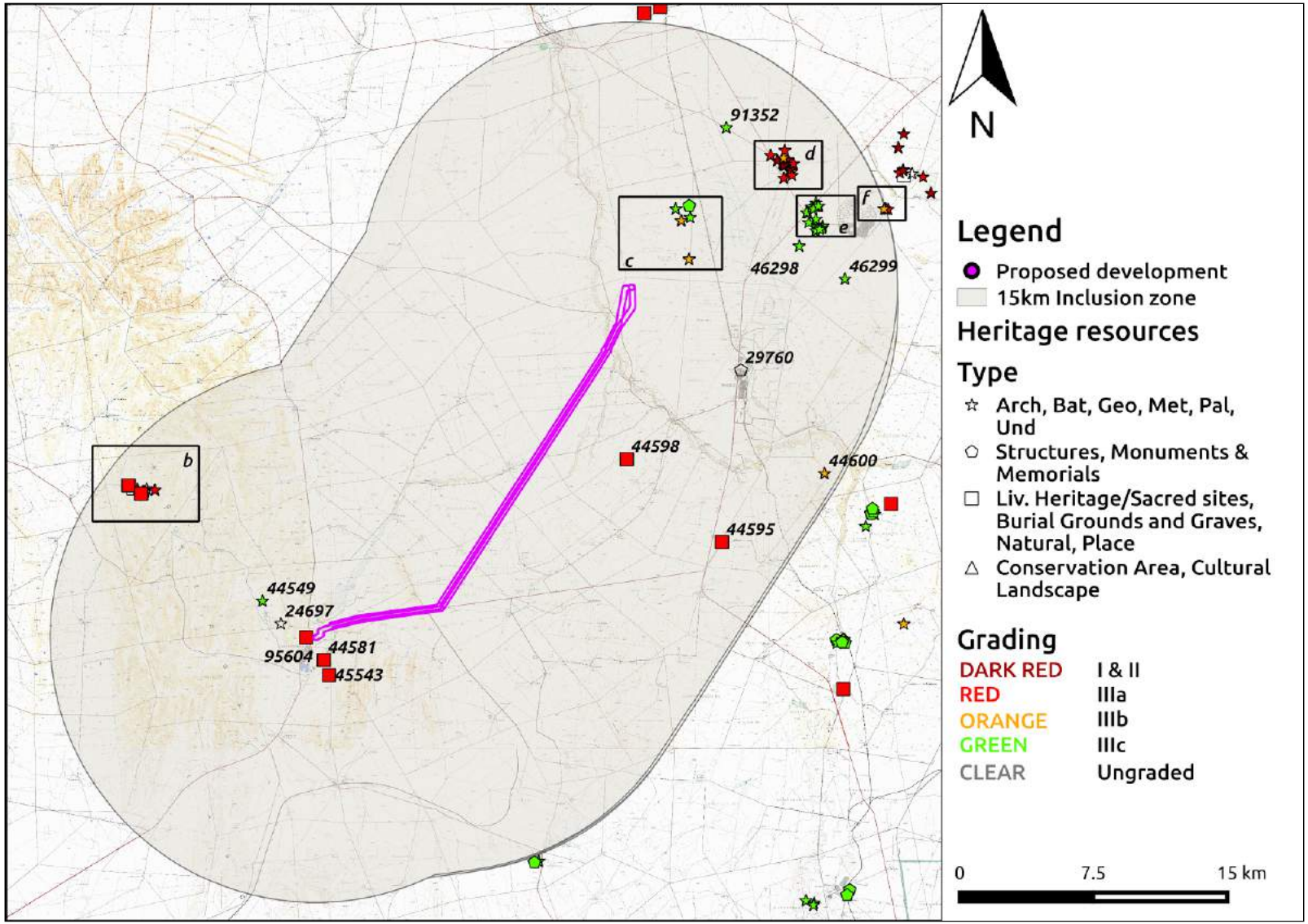

Figure 4a. Heritage Resources Map. Heritage resources previously identified in and near the study area, with SAHRIS Site IDs indicated (see Figures 4b - 4f for insets). See Appendix 4 for full description of heritage resource types.

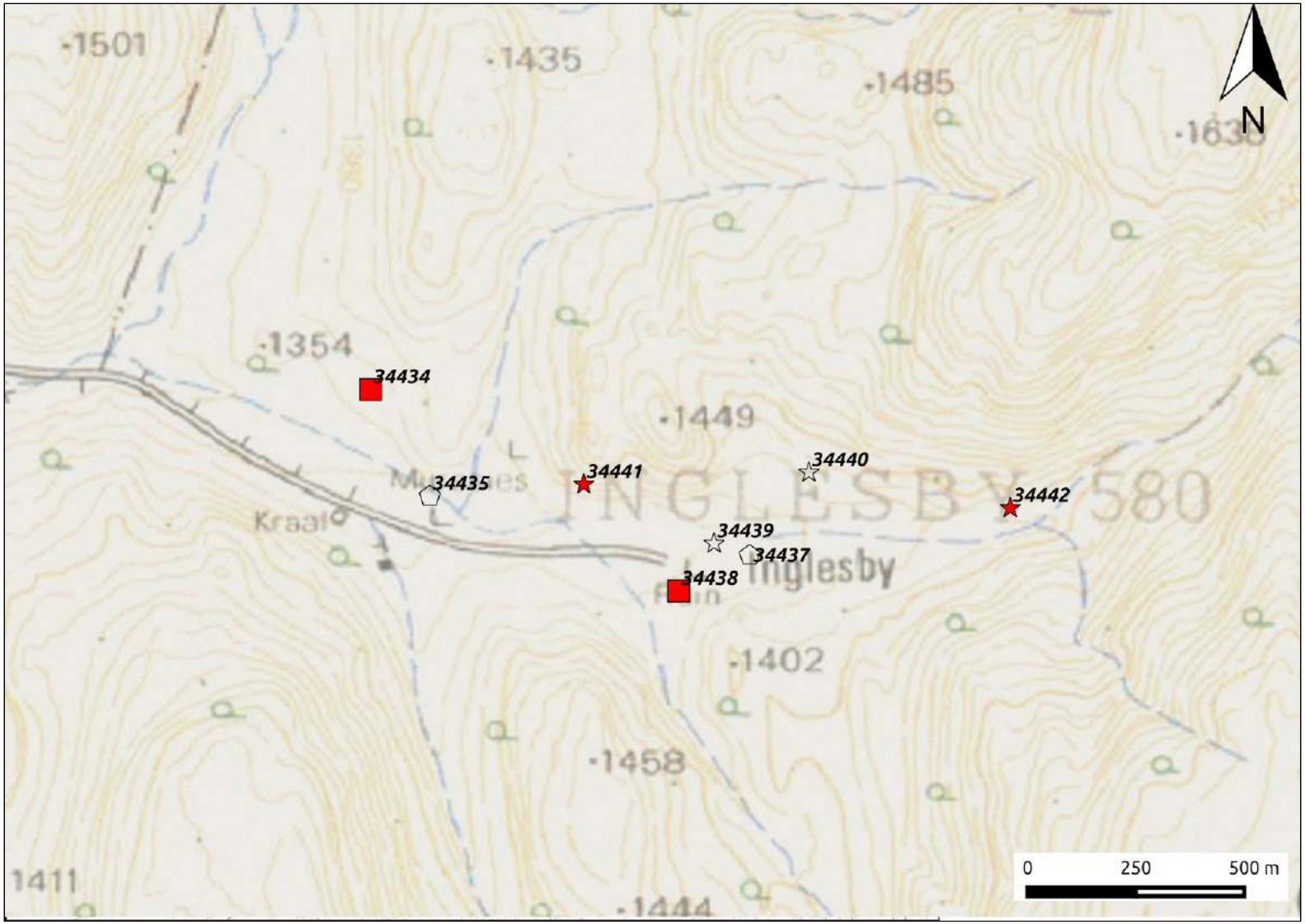

Figure 4b. Inset map.

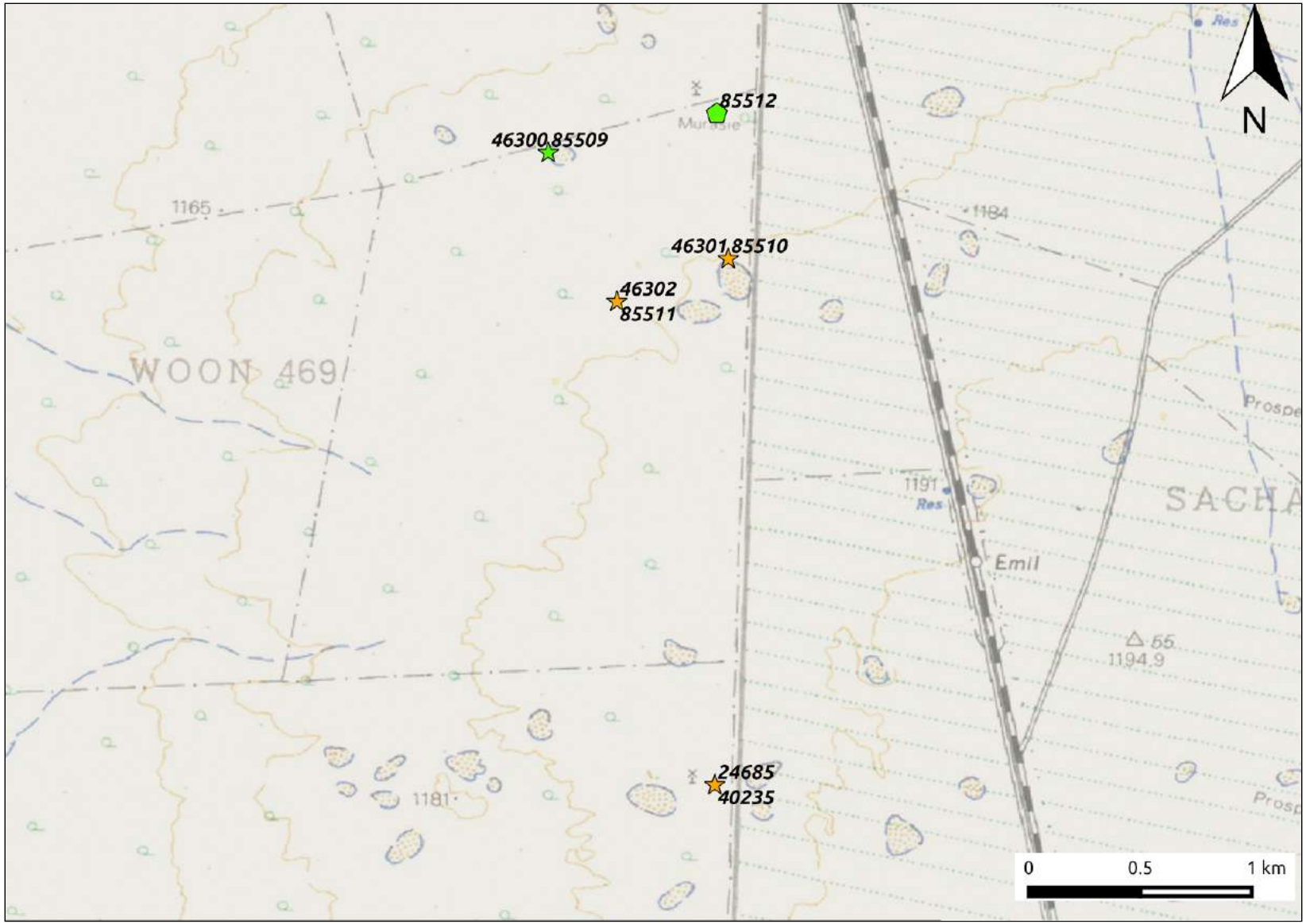

Figure 4c. Inset map.

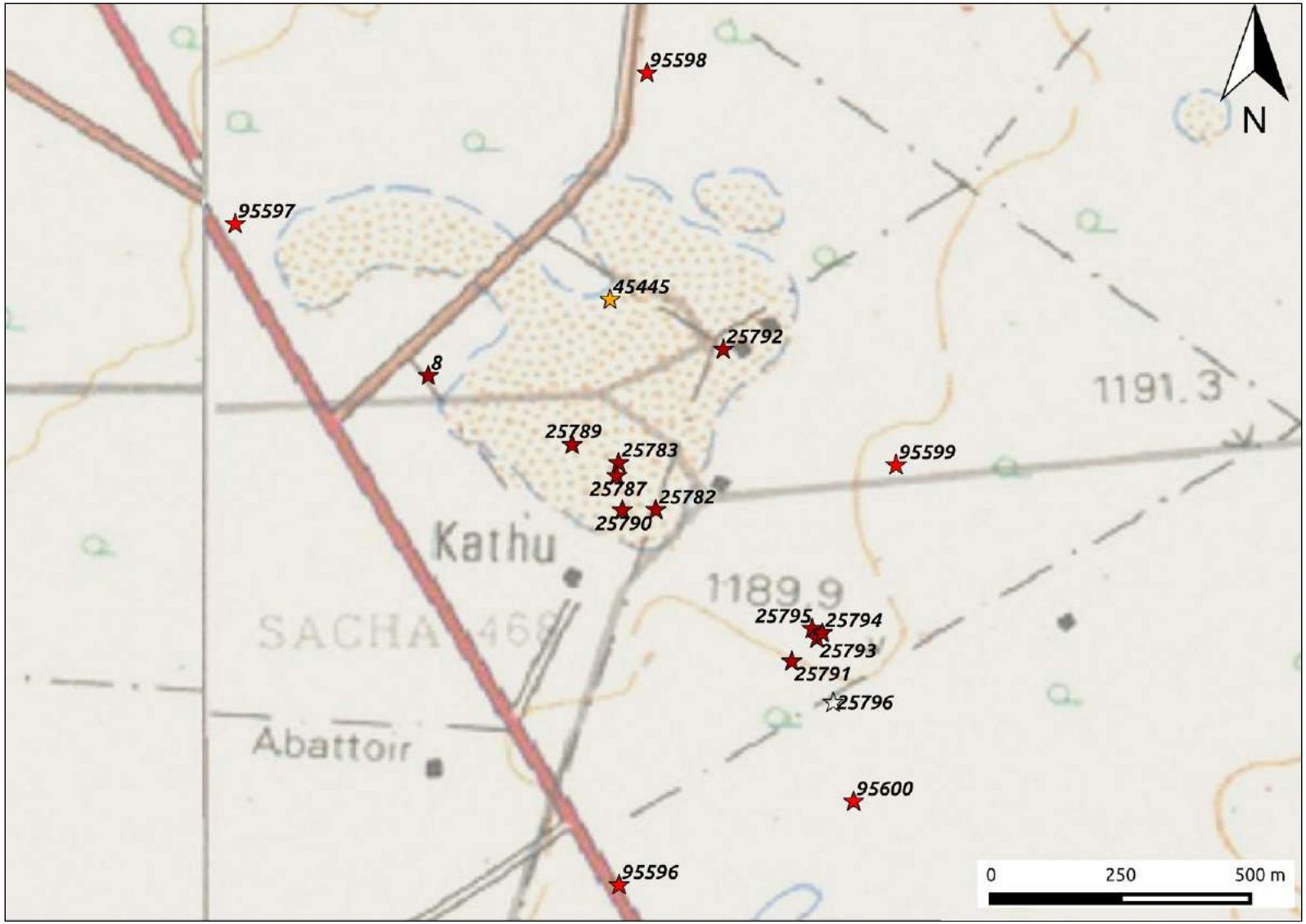

Figure 4d. Inset map.

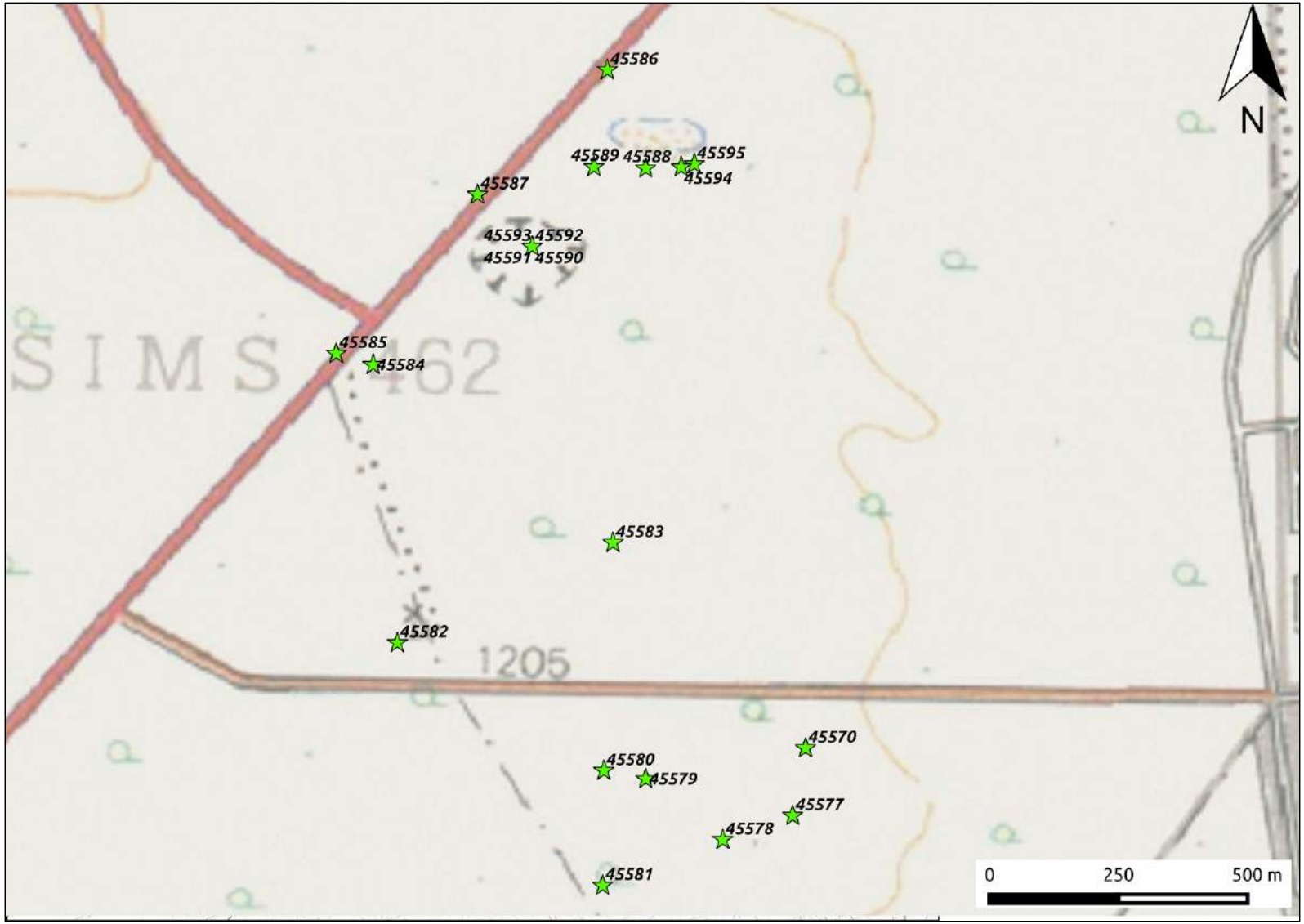

Figure 4e. Inset map.

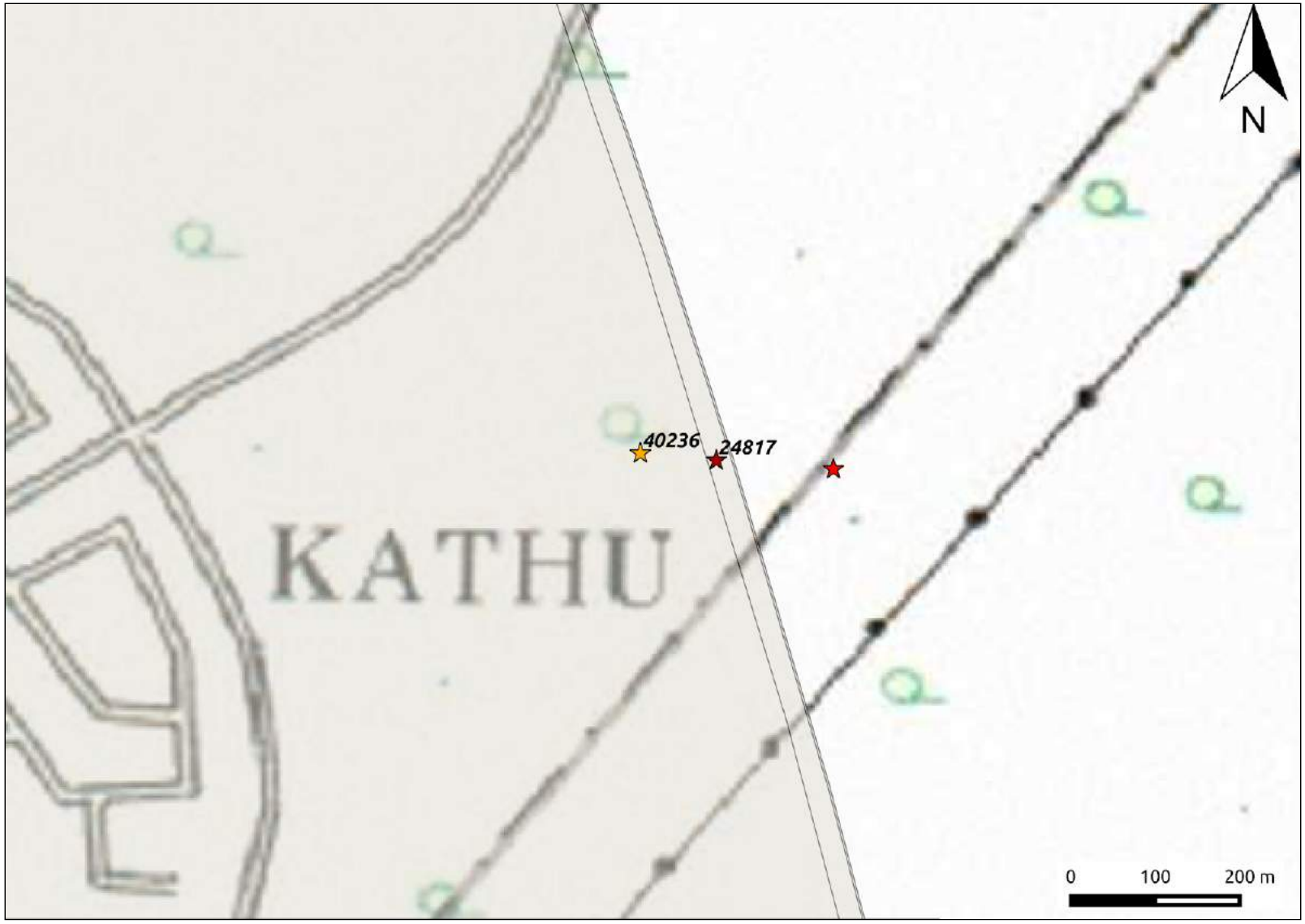

Figure 4f. Inset map.

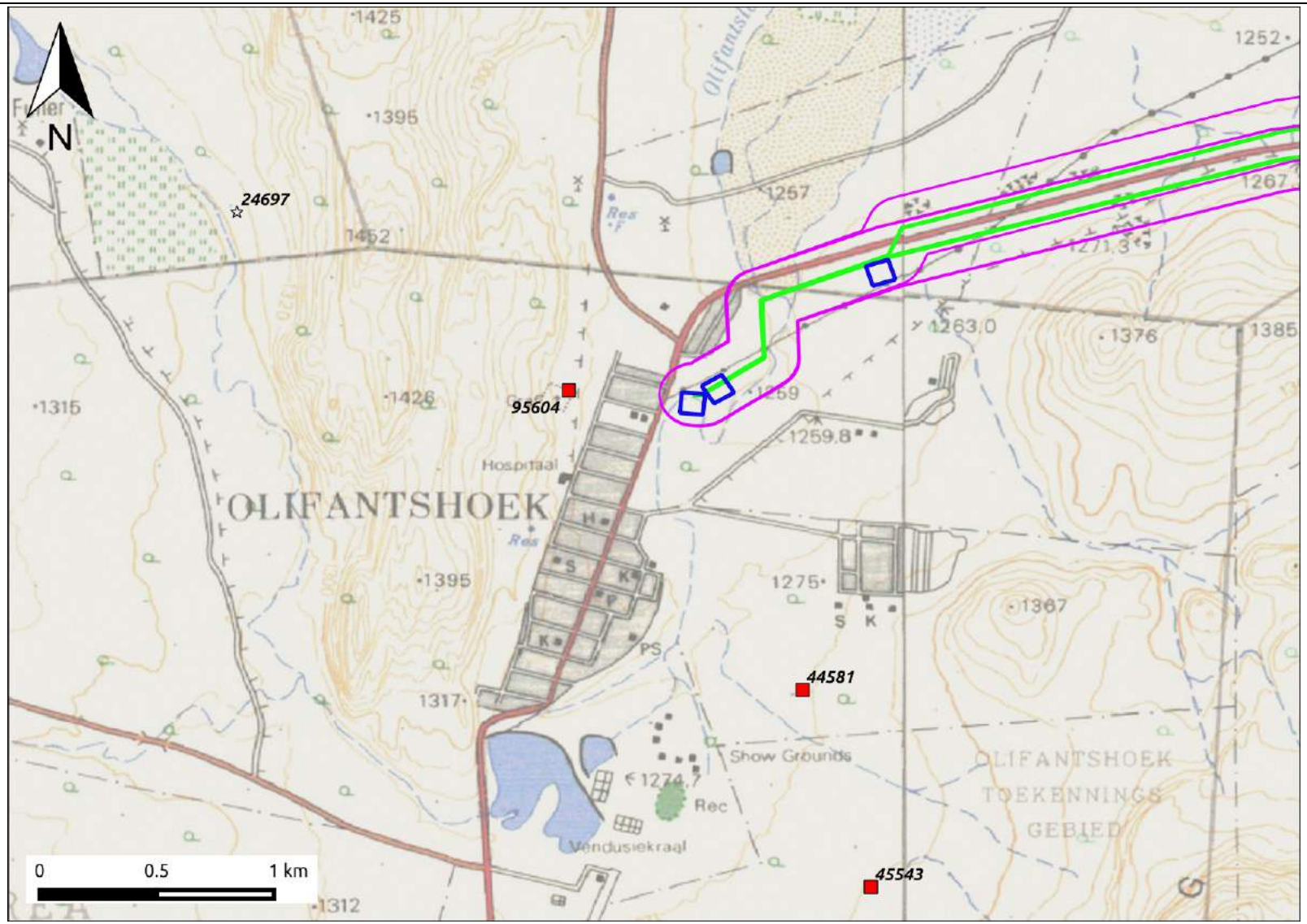

Figure 4g. Heritage Resources Map, indicating the distance of the proposed development from the Olifantshoek cemetery and surrounding heritage sites.

8. Heritage statement and character of the area

Savannah Environmental is managing the EIA process for a proposed Eskom substation and power line within the Olifantshoek region. This project entails the construction of a substation, an overhead power line, and the decommissioning of the existing Olifantshoek substation.

The scale of the development covers a large area (see Figure 1a and Section 4). The proposed power line route runs along an existing gravel road, and further south along the existing N14 highway, as well as an existing 400kV power line, ending on the outskirts of the town of Olifantshoek. The proposed development area is therefore already largely disturbed. The location of the pylon footprints supporting the 31km power line will be spaced at specific intervals and will not have a large impact. As can be seen in Figures 1d, 1e and 1f, the substation alternatives lie in close proximity to Olifantshoek town, in a previously disturbed context. Alternative 1 and 2 (Figure 1f) are the preferred options for the location of the new substation, as there is an existing substation adjacent to this area, it is closer to the town and is more disturbed. Alternative 3 is the less preferred location, being slightly further from the town on less disturbed land.

It is important to note that the northern portion of the development lies in close proximity (13km) to the Grade I Kathu Pan Archaeological site. This site is known for its rich collection of Early Stone Age artefacts, and several Archaeological Impact Assessments have recorded the area (see Figure 2a and Appendix 2). These archaeological resources occur in areas associated with the localised natural pan, and come specifically from sinkholes in the pan itself.

The entire footprint of the Olifantshoek Substation and Power Line project has previously undergone a Heritage Impact Assessment (HIA) (Gaigher 2014, NID 161427 and Beaumont 2007, NID 4600). Gaigher's assessment was conducted for the Solar-Ferrum 400kV Power Line (Case ID 5323). His report concluded that only ephemeral scatters of Stone Age artefacts of low significance were located in the vicinity of the power line, and he recorded no rock engravings or built environment sites - common site types to be found in this region. The only burial grounds site that Gaigher mentions is the Olifantshoek Cemetery, which lies roughly 500m to the west of the southern-most tip of the power line (see Figure 4g), but which will not be impacted. Beaumont's (2007) HIA located a burial ground (Site ID 44581) that he concluded to be from the early 1950's or late 1940's. He located some ephemeral stone age artefacts of low significance which he did not record, but found no archaeological or palaeontological sites of value.

According to the SAHRA Palaeosensitivity map, the area is underlain by formations of moderate, high and unknown palaeontological significance. However Almond and Pether (2009) describe these specific formations as having a low sensitivity for fossils: both the Hartley and the Lucknow Formations have a low fossil sensitivity, and the sensitivity of the Volwater Formation is unknown. The Gordonia Formation of the Kalahari Group consists of aeolian sands and fossils (bones, teeth, petrified wood, palynomorphs) mainly associated with ancient pans, lakes and river systems, however in a Palaeontological Impact Assessment by Almond (2012), it is stated that "*while a wide spectrum of vertebrate remains, invertebrates, trace fossils, plant fossils and microfossils have been recorded from these Kalahari Group sediments, in general they are of low palaeontological sensitivity and of considerable lateral extent so impacts on fossil heritage here are likely to be of low significance*". Considering these factors, and the fact that no deep excavation is anticipated to occur, it is unlikely that palaeontologically sensitive sediments will be impacted by the proposed development.

Due to the previously disturbed nature of the proposed development area, as well as the extensive HIA coverage for the area from previous assessments, it is unlikely that the proposed 132kV power line and substation will impact on significant heritage resources. As such, it is recommended that no further heritage studies are required. Should any heritage resources be discovered during the construction phase of the Olifantshoek Substation and Power Line, work must cease and the SAHRA APM unit should be contacted immediately.

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RECOMMENDATION: The heritage resources in the area proposed for development are sufficiently recorded - The disturbed nature of the development area suggests that heritage resources are unlikely to be impacted by this development. A HIA has already been undertaken in this specific region for a different power line. As such, it is recommended that

- No further heritage studies are required
- If any heritage resources are discovered during the construction phase of the proposed development, the SAHRA APM unit should be contacted immediately

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APPENDIX 1

List of heritage resources within 15km inclusion zone

Site ID	Site no	Full Site Name	Site Type	Grading	Declaration
25782	Kathu Pan 1	Kathu Pan 1, Kathu, Northern Cape	Deposit	Grade I	NA
25795	Kathu Pan 10	Kathu Pan 10, Kathu, Northern Cape	Deposit	Grade I	NA
25783	Kathu Pan 2	Kathu Pan 2, Kathu, Northern Cape	Archaeological	Grade I	NA
25787	Kathu Pan 3	Kathu Pan 3, Kathu, Northern Cape	Deposit	Grade I	NA
25789	Kathu Pan 4	Kathu Pan 4, Kathu, Northern Cape	Archaeological	Grade I	NA
25790	Kathu Pan 5	Kathu Pan, Kathu, Northern Cape	Deposit	Grade I	NA
25791	Kathu Pan 6	Kathu Pan 6, Kathu, Northern Cape	Deposit	Grade I	NA
25792	Kathu Pan 7	Kathu Pan 7, Kathu, Northern Cape	Deposit	Grade I	NA
25793	Kathu Pan 8	Kathu Pan 8, Kathu, Northern Cape	Deposit	Grade I	NA
25794	Kathu Pan 9	Kathu Pan 9, Kathu, Northern Cape	Deposit	Grade I	NA
8	Kathu Pan Sites	Kathu Pan Sites 1-11	Archaeological, Deposit	Grade I	NA
24817	Kathu Townlands	Kathu Townlands 1	Deposit	Grade I	NA
95604	OFHC	Olifantshoek Cemetery	Burial Grounds & Graves	Grade IIIa	NA
34441	ING007	Inglesby 7	Rock Art	Grade IIIa	NA
45543	UPING12	Upington 12	Burial Grounds & Graves	Grade IIIa	NA
34442	ING008	Inglesby 8	Rock Art	Grade IIIa	NA
34434	ING001	Ingleby 1	Burial Grounds & Graves	Grade IIIa	NA
34438	ING004	Ingleby 4	Burial Grounds & Graves	Grade IIIa	NA
44581	SKERP-DIEP 01	Skerpdraai-Diepkloof 01	Burial Grounds & Graves	Grade IIIa	NA
44598	POST-KATH04	Postmasburg to Kathu 04	Burial Grounds & Graves	Grade IIIa	NA
44595	POST-KATH01	Postmasburg to Kathu 01	Burial Grounds & Graves	Grade IIIa	NA
95596	Vaal-Gamagara 01	Vaal-Gamagara 01	Palaeontological	Grade IIIa	NA
95598	Vaal-Gamagara 03	Vaal-Gamagara 03	Palaeontological	Grade IIIa	NA
95599	Vaal-Gamagara 04	Vaal-Gamagara 04	Palaeontological	Grade IIIa	NA
95600	Vaal-Gamagara 05	Vaal-Gamagara 05	Palaeontological	Grade IIIa	NA
95597	Vaal-Gamagara 02	Vaal-Gamagara 02	Palaeontological	Grade IIIa	NA
46301	KAT-SIS10	Kathu-Sishen 10	Artefacts	Grade IIIb	NA
46302	KAT-SIS11	Kathu-Sishen 11	Artefacts	Grade IIIb	NA
46300	KAT-SIS09	Kathu-Sishen 09	Artefacts	Grade IIIb	NA
44600	POST-KATH06	Postmasburg to Kathu 06	Artefacts	Grade IIIb	NA
40235	GMGR02	Gamagara 02	Artefacts	Grade IIIb	NA

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40236	UKM001	Uitkoms, Kathu 001	Artefacts	Grade IIIb	NA
45445	DELP01	Delportshoop 01	Archaeological	Grade IIIb	NA
85512	HEFP004	HIGH ENERGY FUEL PLANT 004	Structures	Grade IIIc	NA
85511	HEFP003	HIGH ENERGY FUEL PLANT 003	Artefacts	Grade IIIc	NA
45570	SIMS01	Sims 462 - 01	Artefacts	Grade IIIc	NA
45577	SIMS02	Sims 462 - 02	Artefacts	Grade IIIc	NA
45579	SIMS04	Sims 462 - 04	Artefacts	Grade IIIc	NA
45580	SIMS05	Sims 462 - 05	Artefacts	Grade IIIc	NA
45581	SIMS06	Sims 462 - 06	Artefacts	Grade IIIc	NA
45582	SIMS07	Sims 462 - 07	Artefacts	Grade IIIc	NA
45583	SIMS08	Sims 462 - 08	Artefacts	Grade IIIc	NA
45584	SIMS09	Sims 462 - 09	Artefacts	Grade IIIc	NA
45585	SIMS10	Sims 462 - 10	Artefacts	Grade IIIc	NA
45578	SIMS03	Sims 462 - 03	Artefacts	Grade IIIc	NA
45586	SIMS11	Sims 462 - 11	Artefacts	Grade IIIc	NA
45587	SIMS12	Sims 462 - 12	Artefacts	Grade IIIc	NA
45588	SIMS13	Sims 462 - 13	Artefacts	Grade IIIc	NA
45589	SIMS14	Sims 462 - 14	Artefacts	Grade IIIc	NA
45590	SIMS15	Sims 462 - 15	Artefacts	Grade IIIc	NA
45591	SIMS16	Sims 462 - 16	Artefacts	Grade IIIc	NA
45592	SIMS17	Sims 462 - 17	Artefacts	Grade IIIc	NA
45595	SIMS20	Sims 462 - 20	Artefacts	Grade IIIc	NA
46298	KAT-SIS07	Kathu-Sishen 07	Artefacts	Grade IIIc	NA
45593	SIMS18	Sims 462 - 18	Artefacts	Grade IIIc	NA
46299	KAT-SIS08	Kathu-Sishen 08	Artefacts	Grade IIIc	NA
45594	SIMS19	Sims 462 - 19	Artefacts	Grade IIIc	NA
91352	DG001	Dingleton 001	Artefacts	Grade IIIc	NA
44549	FULL01	Fuller 01	Artefacts	Grade IIIc	NA
85509	HEFP001	HIGH ENERGY FUEL PLANT 001	Artefacts	Grade IIIc	NA
85510	HEFP002	HIGH ENERGY FUEL PLANT 002	Artefacts	Grade IIIc	NA
34435	ING002	Ingleby 2	Building	ungraded	NA
34437	ING003	Inglesby 3	Building	ungraded	NA
34440	ING006	Ingleby 6	Stone walling	ungraded	NA
29760	Dingleton Resettlement Project	Dingleton	Structures	ungraded	NA

25796	Kathu Pan 11	Kathu Pan 11, Kathu, Northern Cape	Deposit	ungraded	NA
24685	SA02 Woon 469	SA02 on Woon 469	Artefacts	ungraded	NA
24697	Site A, Farm Fuller 578, Olifantshoek	Site A, Farm Fuller 578, Olifantshoek	Archaeological	ungraded	NA
34439	ING005	Ingleby 5	Stone walling	ungraded	NA

APPENDIX 2

Reference List

Impact Assessment References				
Nid	**Report Type**	**Author/s**	**Date**	**Title**
6804	AIA	Peter Beaumont	01/04/2000	Archaeological Impact Assessment: Archaeological Scoping Survey for the Purpose of an EMPR for the Sishen Iron Ore Mine
4596	AIA	Peter Beaumont	01/05/2004	Heritage EIA of Two Areas at Sishen Iron Ore Mine
4598	HIA	Peter Beaumont	15/10/2005	Heritage Impact Assessment for EMPR Amendment for Crusher at Sishen Iron Ore Mine
4372	AIA	David Morris	01/02/2005	Report on a Phase 1 Archaeological Assessment of Proposed Mining Areas of the Farms Bruce, King, Mokaning and Parson, Between Postmasburg and Kathu, Northern Cape
4597	AIA	Peter Beaumont	01/10/2005	Heritage Impact Assessment of an Area of the Sishen Iron Ore Mine that may be Covered by the Vliegveldt Waste Dump
4379	AIA	Peter Beaumont	31/05/2006	Phase 1 Heritage Impact Assessment Report on Portions A and B of the Farm Sims 462, Kgalagadi District, Northern Cape Province
4376	AIA	Peter Beaumont	30/04/2006	Phase 1 Heritage Impact Assessment Report on Erf 1439, Remainder of Erf 2974 and Remainder of Portion 1 of the Farm Uitkoms No 463, and Farms Kathu 465 and Sims 462 at and near Kathu in the Northern Cape Province
4378	AIA	Peter Beaumont	30/05/2006	Phase 1 Heritage Impact Assessment Report on Portion 5 of the Farm Uitkoms 463, Kgalagadi District, Northern Cape Province
4600	AIA	Peter Beaumont	24/05/2007	Phase 1 Heritage Impact Assessment Report on a 15 Ha Portion of the Allotment Area That Borders on the Skerpdraai and Diepkloof Townships at Olifantshoek, Gamagara Municipality, Northern Cape Province
4605	AIA	Peter Beaumont	03/04/2007	Phase 1 Heritage Impact Assessment Report on a Portion of the Farm Fuller 578 near Olifantshoek, Siyanda District Municipality, Northern Cape Province
4603	AIA	David Morris	01/09/2008	Archaeological and Heritage Phase 1 Impact Assessment for Proposed Upgrading of Sishen Mine Diesel Depot Storage Capacity at Kathu, Northern Cape
6639	AIA	Jonathan Kaplan	01/09/2008	Phase 1 Archaeological Impact Assessment: Proposed Housing Development, Erf 5168, Kathu, Northern Cape Province
4116	AIA	Peter Beaumont	06/02/2008	Phase 1 Heritage Impact Assessment Report on a Portion of the Remainder of the Farm Sekgame 461, Kathu, Gamagara Municipality, Northern Cape Province
4117	AIA	Peter Beaumont	07/02/2008	Phase 1 Heritage Impact Assessment Report on Portion 463/8 of the Farm Uitkoms 463, near Kathu, Kgalagadi

				Municipality, Northern Cape Province
6355	AIA	Cobus Dreyer	10/12/2008	First Phase Archaeological and Cultural Heritage Assessment of the Proposed Bourke Project, Ballast Site and Crushing Plant at Bruce Mine, Dingleton, near Kathu, Northern Cape
4391	AIA	Cobus Dreyer	11/08/2008	First Phase Archaeological and Cultural Heritage Assessment of the Proposed Residential Developments at a Portion of the Remainder of the Farm Bestwood 459 Rd, Kathu, Northern Cape
4387	AIA	Peter Beaumont	12/06/2008	Phase 1 Archaeological Impact Assessment Report on Portion 459/49 of the Farm Bestwood 459 at Kathu, Kgalagadi District Municipality, Northern Cape Province
108346	AIA	Christine Vivier	12/11/2009	PHase 1 Archaeological Impact Assessment Report On A Portion Of The Farm Lylyveld 545 Near Kathu, Kagalagadi District Municipality, Northern Cape Province.
159473	AIA	Johnny Van Schalkwyk	01/08/2010	Archaeological Impact Survey Report For The Proposed Development Of A Solar Power Plant On The Farm Bestwood 459, Kathu Region, Northern Cape Province
160089	AIA	Johnny Van Schalkwyk	01/08/2010	Archaeological Impact Survey Report For The Proposed Kalahari Solar Park Development On The Farm Kathu 465, Northern Cape Province
109082	HIA	Peter Beaumont	03/01/2010	Phase 1 Hia Report On A Portion Of The Farm Fuller 578 Near Olifantshoek, Siyanda District, Northern Cape (3 April 2007)
7038	AIA	David Morris	07/11/2010	Proposed Kathu-sishen Solar Energy Facilities. Specialist Input For The Environmental Impact Assessment Phase And Environmental Management Plan For The Proposed Kathu Sishen Solar Energy Facilities, Northern Cape
157923	HIA	R. C. De Jong	10/12/2010	Heritage Scoping Report for the Proposed Kalahari Solar Project on Portions of the Farm Kathu 465, Kuruman Registration Division, Gamagara Local Municipality, Northern Cape Province
153307	HIA	Robert de Jong	22/02/2011	Kalahari Solar Power Project Heritage Impact Assessment Report and Heritage Management Plan developed by Robert De Jong and Associates
108970	AIA	Nelius Kruger	01/09/2012	Archaeological Impact Assessment (AIA) Of Demarcated Surface Areas On The Farms Gamagara 541, Onverwacht 540 (fritz 540 Portion 1) And Nooitgedacht 469 (woon 469), Sishen Iron Ore Mine, Kgalagadi District Municipality, Northern Cape Province.
93163	HIA	Stephan Gaigher	09/05/2012	Heritage Impact Assessment Report Environmental Impact Assessment Phase: Proposed Establishment of the San Solar Energy Facility, Located North of Kathu on a Portion of Farm Wincanton 472, Northern Cape Province
109484	HIA	Stephan Gaigher	09/05/2012	Heritage Impact Assessment Report Environmental Impact Assessment Phase Proposed Establishment Of The San Solar Energy Facility Located South Of Kathu On A Portion Of The Farm Wincanton 472, Northern Cape Province.
152157	HIA	Johnny Van Schalkwyk	15/05/2012	Heritage Impact Assessment For The Proposed Estate Development On The Farm Kalahari Golf And Jag Landgoed 775, Kathu, Northern Cape Province
110652	HIA	Stephan Gaigher	01/02/2013	Heritage Impact Assessment Report Environmental Impact Assessment Phase Proposed Establishment Of The San Solar Energy Facility Located South Of Kathu On A Portion Of The Farm Wincanton 472, Northern Cape Province
110765	HIA	Stephan Gaigher	26/02/2013	Heritage Impact Assessment Report Environmental Impact Assessment Phase Proposed Establishment Of The San Solar Energy Facility Located North Of Kathu On A Portion Of The Farm Wincanton 472, Northern Cape Province
129751	HIA	Elize Becker	20/02/2013	Phase 1 Heritage Impact Assessment Hotazel To Kimberley And De Aar To Port Of Ngqura
174359	AIA	Neels Kruger	25/08/2014	Archaeological Impact Assessment (AIA) Of Demarcated Surface Portions On The Farms Sacha 468 And Woon 469 For The Proposed High Energy Fuel Plant And Railway Siding, Sishen Iron Ore Mine, John Taolo Gaetsewe District

				Municipality, Northern Cape Province (sep 2014)
167779	HIA	Jonathan Kaplan	30/06/2014	Heritage Impact Assessment Proposed Mixed Use Development In Kathu, Northern Cape Province
170460	AIA	Neels Kruger	31/01/2014	Archaeological Impact Assessment (AIA) Of Demarcated Surface Portions On The Farms Sacha 468 And Woon 469 For The Proposed High Energy Fuel Plant And Railway Siding, Sishen Iron Ore Mine, John Taolo Gaetsewe District Municipality, Northern Cape Province
170455	AIA	Neels Kruger	31/03/2014	Archaeological Impact Assessment (AIA) Of Demarcated Surface Portions On The Farms Sacha 468, Sims 462 And Sekgame 461 For The Proposed Stormwater Infrastructure (clean Water Cut-off Berm & Groundwater Dam) For The Sishen Mine, Kathu, Northern Cape Province, John Taolo Gaetsewe District Municipality, Northern Cape Province
252975	HIA	Marko Hutten, Polke Birkholtz	18/07/2014	Heritage Impact Assessment for the Proposed Kathu Supplier Park on parts of the Remainder and on Portion 9 of the Farm Sekgame 461 on the southern side of the town of Kathu in the Gamagara Local Municipality, Northern Cape.
252975	HIA	Marko Hutten, Polke Birkholtz	18/07/2014	Heritage Impact Assessment for the Proposed Kathu Supplier Park on parts of the Remainder and on Portion 9 of the Farm Sekgame 461 on the southern side of the town of Kathu in the Gamagara Local Municipality, Northern Cape.
279906	AIA	Neels Kruger	02/12/2014	Archaeological Impact Assessment (AIA) Of Demarcated Surface Portions On The Farm Sekgame 461 For The Proposed Sekgame Electricity Infrastructure Expansion Project, Sishen Mine, Northern Cape Province
177105	HIA	Cobus Dreyer	10/05/2014	First Phase Archaeological & Heritage Investigation Of The Proposed Mine Prospecting At The Remaining Extent Of The Farm Inglesby 580 Near Olifantshoek, Northern Cape Province
161427	HIA	Stephan Gaigher	15/04/2014	Proposed Establishment Of Several Electricity Distribution Lines Within The Northern Cape Province
294454	AIA	Neels Kruger	05/04/2015	Archaeological Impact Assessment (AIA) Of Areas Demarcated For The Proposed Lyleveld North Waste Rock Dump Expansion And Lyleveld South Haul Road Extension Project, Sishen Mine, Northern Cape Province
251329	AIA	Jayson Orton	20/02/2015	Heritage Impact Assessment for a Proposed 132 kV Power Line, Kuruman Magisterial District, Northern Cape
272118	AIA	Jayson Orton, Steven Walker	20/04/2015	Archaeological Survey for the Proposed Kalahari Solar Project, Kuruman Magisterial District, NC Province
273602	HIA	Polke Birkholtz	20/04/2015	Heritage Impact Assessment for the Proposed Establishment of a Grazing Project on a Portion of the Farm Marsh 467, Dingleton, Gamagara Local Municipality, Northern Cape.
8944	PIA	John Pether	17/01/2011	Brief Palaeontological Impact Assessment (desktop Study)
114648	PIA	John E Almond	01/09/2012	Palaeontological Specialist Assessment: Desktop Study Proposed 16 Mtpa Expansion Of Transnet's Existing Manganese Ore Export Railway Line & Associated Infrastructure Between Hotazel And The Port Of Ngqura, Northern & Eastern Cape.
151768	PIA	John Almond	01/11/2013	Palaeontological Specialist Assessment: Combined Desktop And Field-based Study: Proposed 16 Mtpa Expansion Of Transnet's Existing Manganese Ore Export Railway Line & Associated Infrastructure Between Hotazel And The Port Of Ngqura, Northern & Eastern Cape.
369550	PIA	Lloyd Rossouw	07/07/2015	Palaeontological Desktop Assessment of the proposed new 40478 Vaal-Gamagara water pipe line between Sishen and Black Rock Mine near Hotazel, NC Province.
Other Publications				
108755	Palaeotechnical Report	John Almond, John Pether	01/03/2009	Palaeontological heritage of the 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
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
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.

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

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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.**