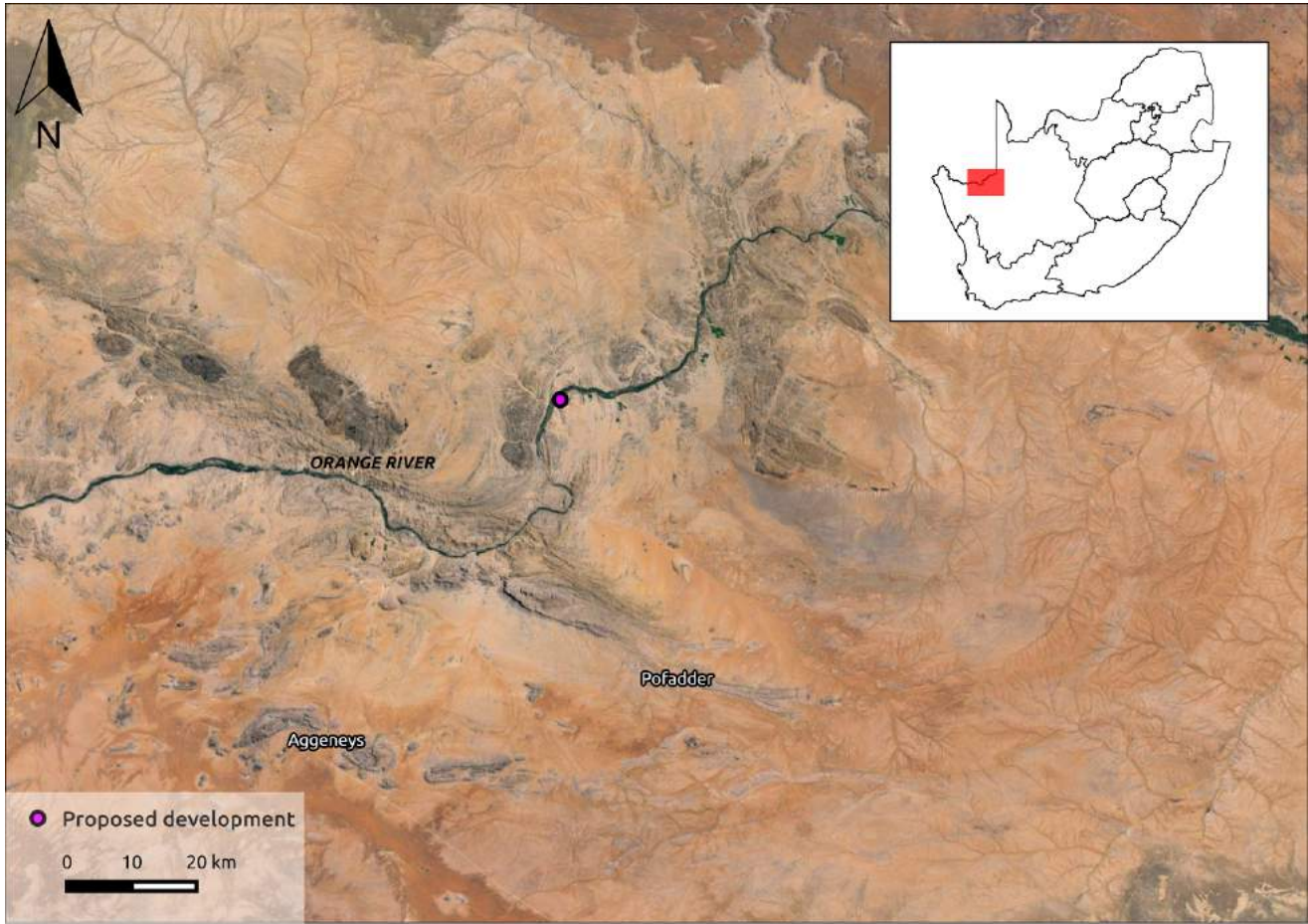




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HERITAGE SCREENER

CTS Reference Number:	CTS16_029
Client:	EnviroAfrica
Date:	06 June 2016
Title:	Desktop Assessment of Palaeontology for Bulk Water Supply System: Onseepkans
	
Figure 1a. Satellite image with proposed development area indicated in the Northern Cape province.	
Recommendation by CTS Heritage Specialists: (Type 1)	(1) The heritage resources in the area proposed for development are sufficiently recorded - No further palaeontological heritage work is recommended for the proposed development. <ul style="list-style-type: none">- a Palaeo Chance Find Procedure should be included in the Environmental Management Plan



1. Proposed Development Summary

The purpose of the project is to replace the existing and damaged earth canal with a centralised pump system. The system will provide water to the existing 370 ha registered water users along the canal, including 118 ha for emerging farmers.

2. Application References

Name of relevant heritage authority(s)	South African Heritage Resources Agency (SAHRA)
Name of decision making authority(s)	Department of Environmental and Nature Conservation (DENC)

3. Property Information

Erf number / Farm number	Farm No. 88, Erf 730 and Farm No. 209, Onseepkans.
Local Municipality	Khai-Ma
District Municipality	Namakwa
Previous Magisterial District	Kenhardt
Province	Northern Cape Province
Current Use	Vacant
Current Zoning	Rural
Total Extent	Unknown

4. Nature of the Proposed Development

Surface area to be affected/destroyed	Dam: 3 ha Pipeline: 2200 m SPV Generator: 2 ha
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Depth of excavation (m)	Unknown
Height of development (m)	NA
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	X
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

- Pump and filter station
- Dam
- Main pipelines, to and from dam
- Solar Photo Voltaic (SPV) Generator
- Distribution Pipelines



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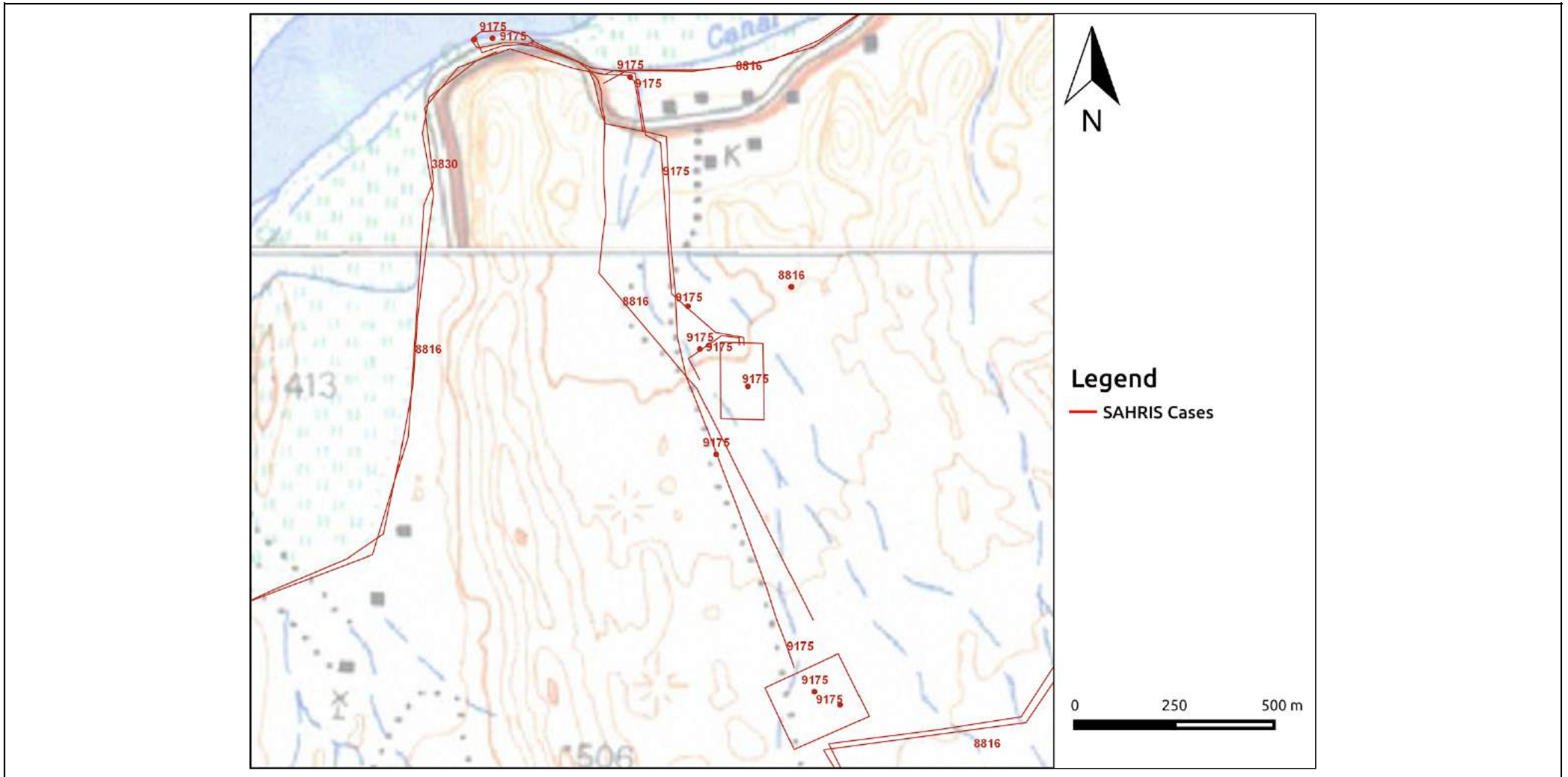


Figure 2a. SAHRIS Cases Map. Previous cases associated with the development area, with SAHRIS CaseIDs indicated. None of these cases contains a palaeontological assessment.



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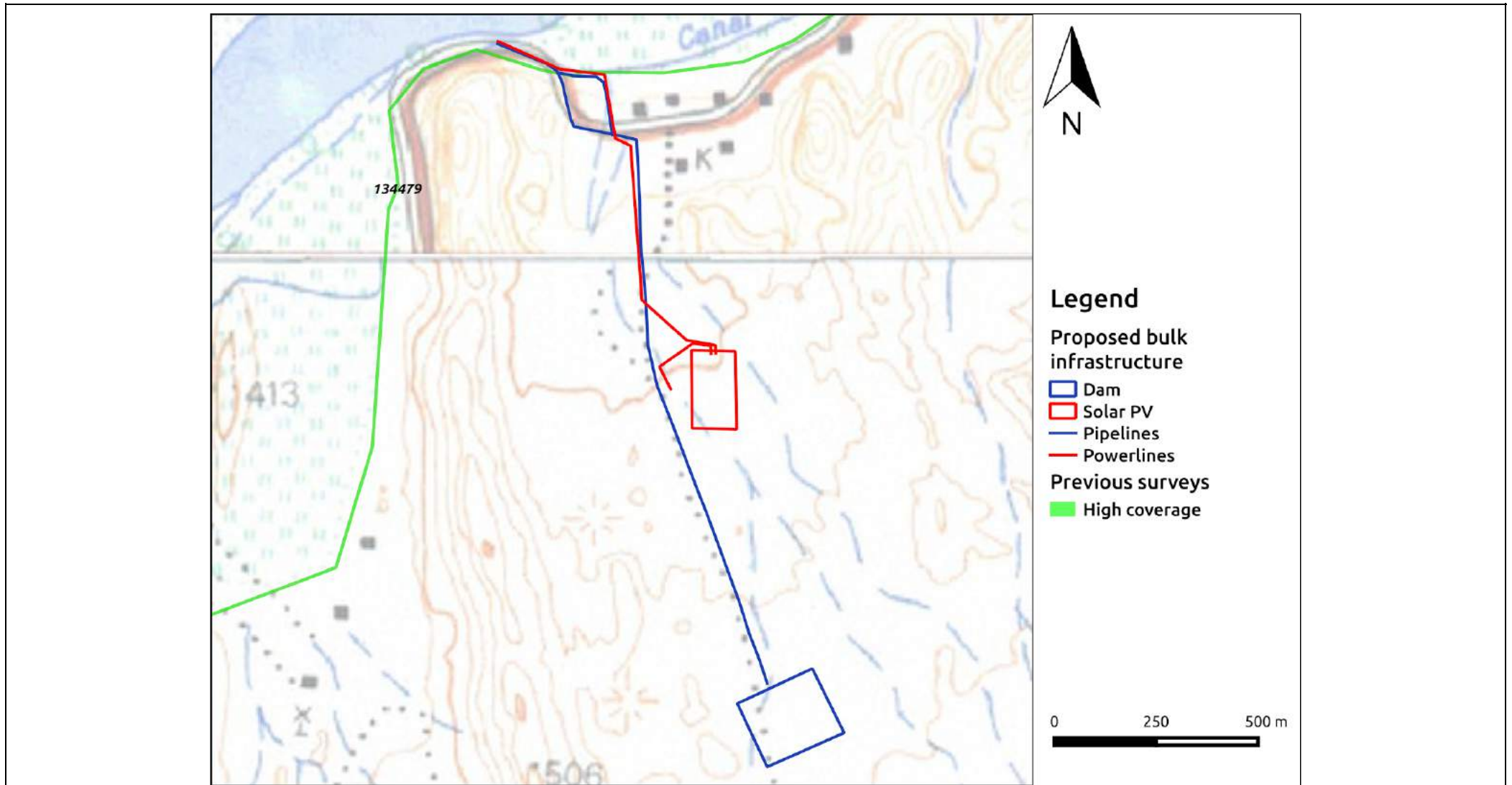


Figure 2b. Heritage Reports Map. Previous Heritage Impact Assessments done in the proposed development area, with SAHRIS NID indicated. This report does not contain a palaeontological assessment.



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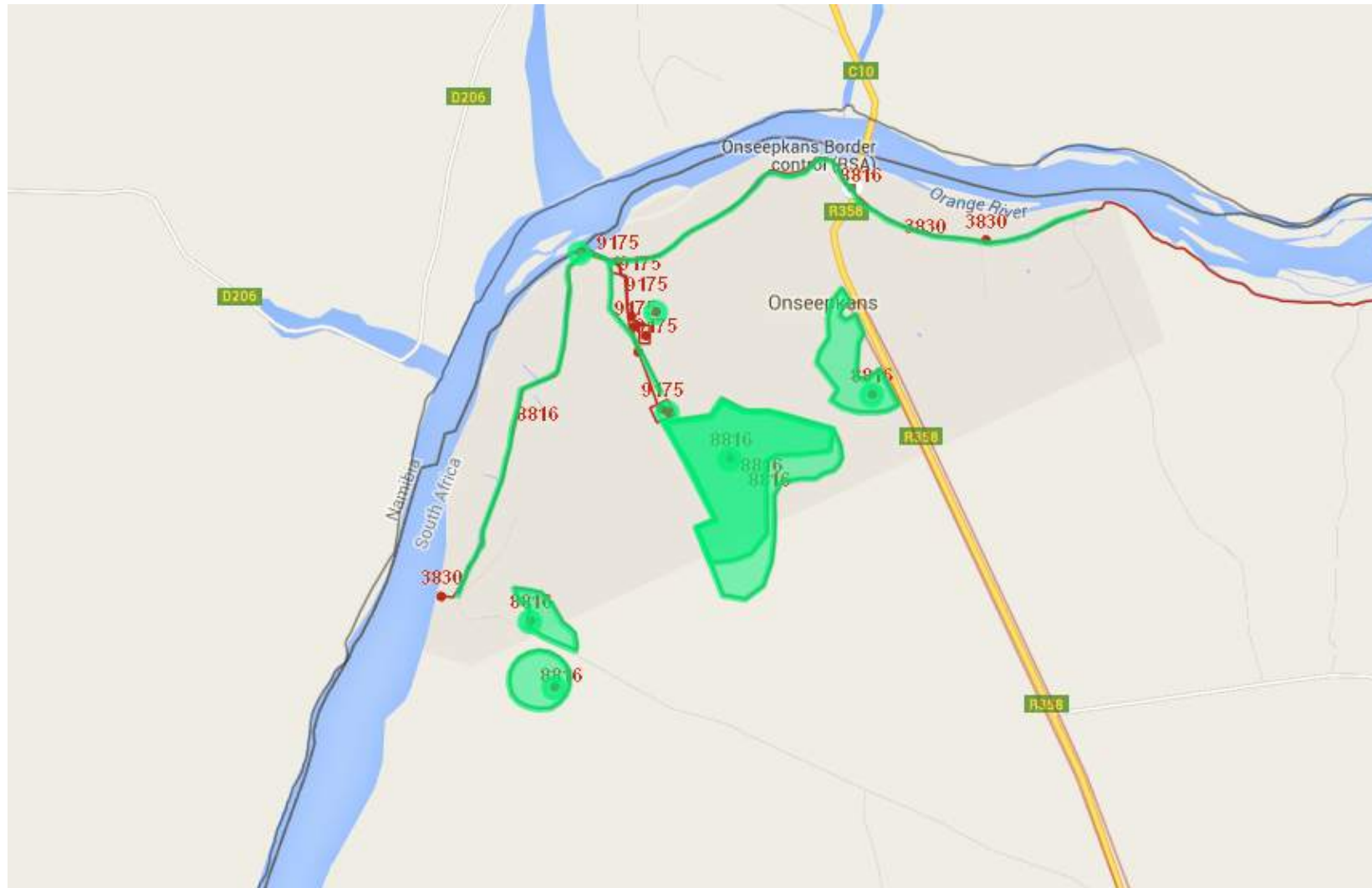


Figure 2c. Heritage Cases Map of CaseID 8816. Overlay in green of CaseID 8816 for the proposed agricultural development with a solar energy facility, a reservoir and pipeline for irrigation scheme, to introduce viable crops within the region, Onseepkans, Khai-Ma Local Municipality, Northern Cape.



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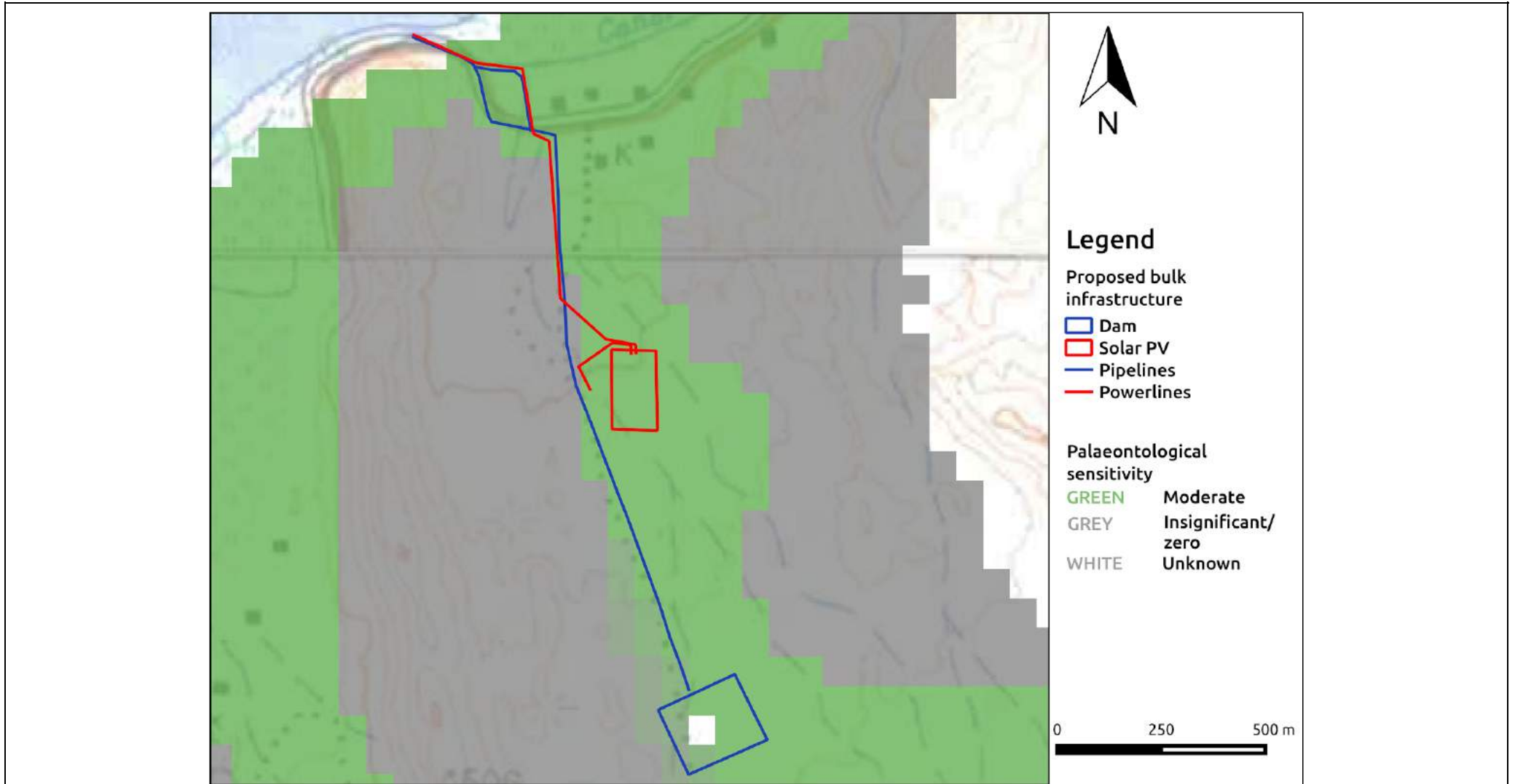


Figure 3. Palaeo Map. Palaeosensitivity of the study area. See Appendix 3 for full guide to the legend.



8. Heritage statement and character of the area

EnviroAfrica CC is conducting the Basic Assessment process for a proposed Bulk Water Supply system at Onseepkrans along the Orange River in the Northern Cape. An Archaeological Impact Assessment by Ubique Heritage Consultants has been completed and submitted to SAHRA and the archaeological recommendations were endorsed on 16 March 2016. However, SAHRA required that a desktop assessment of the palaeontological sensitivity be carried out or that an exemption letter be obtained from further palaeontological work for this project.

Previous Palaeontological Impact Assessments (PIAs), SAHRIS cases, the SAHRIS Palaeosensitivity Map and the Northern Cape Palaeotechnical Report by John Almond and John Pether (2009) were consulted for this Palaeontological Heritage Screener to determine whether the project should proceed without further palaeontological studies. All of the proposed infrastructure will take place on alluvium and sandy soil in a narrow drainage valley bounded by **Cobooop granite/gneiss which has no fossil sensitivity**. The alluvium has been rated as having moderate (green) sensitivity according to the SAHRIS palaeosensitivity map as rare but important finds have been made of arid-adapted fossil biotas including land snails, ostrich eggs and plant root casts along with pockets of lake sediments containing molluscs, diatoms and freshwater stromatolites (Almond & Pether 2009). The generally moderate to low sensitivity of this immediate area was confirmed by SAHRA in January 2016 (See Figure 2c) for CaseID 8816 when they decided that *"The project is situated in an area of low palaeontological sensitivity and no assessment of palaeontological resources is required"*.

For this particular development almost none of the proposed infrastructure will have a significant effect on fossils. The pipeline will be built in an already disturbed servitude of a gravel road and the overhead electrical infrastructure for the solar pv plant will not have an impact on fossils. The solar panels themselves are also not expected to have much impact as minimal excavations are required for their installation. The proposed reservoir is the only area where a chance fossil find may be made during excavation works. Given the small area (< 3ha) for the proposed reservoir **a Palaeo Chance Find Procedure will suffice in the Environmental Management Plan. No further palaeontological studies are recommended.**



APPENDIX 1 - Reference List

Previous Heritage Impact Assessments within the Development Area

SAHRIS NID	REPORT TYPE	AUTHOR	DATE	REPORT TITLE
4490	AIA	Cobus Dreyer	27/03/2008	First Phase Archaeological and Cultural Heritage Assessment of the Proposed Upgrading of the R358 Road and Borrow Pit Sites Between Pofadder & Onseepkans, Northern Cape
134479	AIA	Jonathan Kaplan	1/8/2013	Archaeological Impact Assessment Proposed Repair And Upgrade Of The Onseepkans Water Supply And Flood Protection Infrastructure Northern Cape Province
ADDITIONAL REFERENCES				
SAHRIS Palaeotechnical Report		John Almond & John Pether	01/03/2009	Palaeontological Heritage of the Northern Cape



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APPENDIX 2 - 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 3 - 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.

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.**