

HERITAGE SCREENER

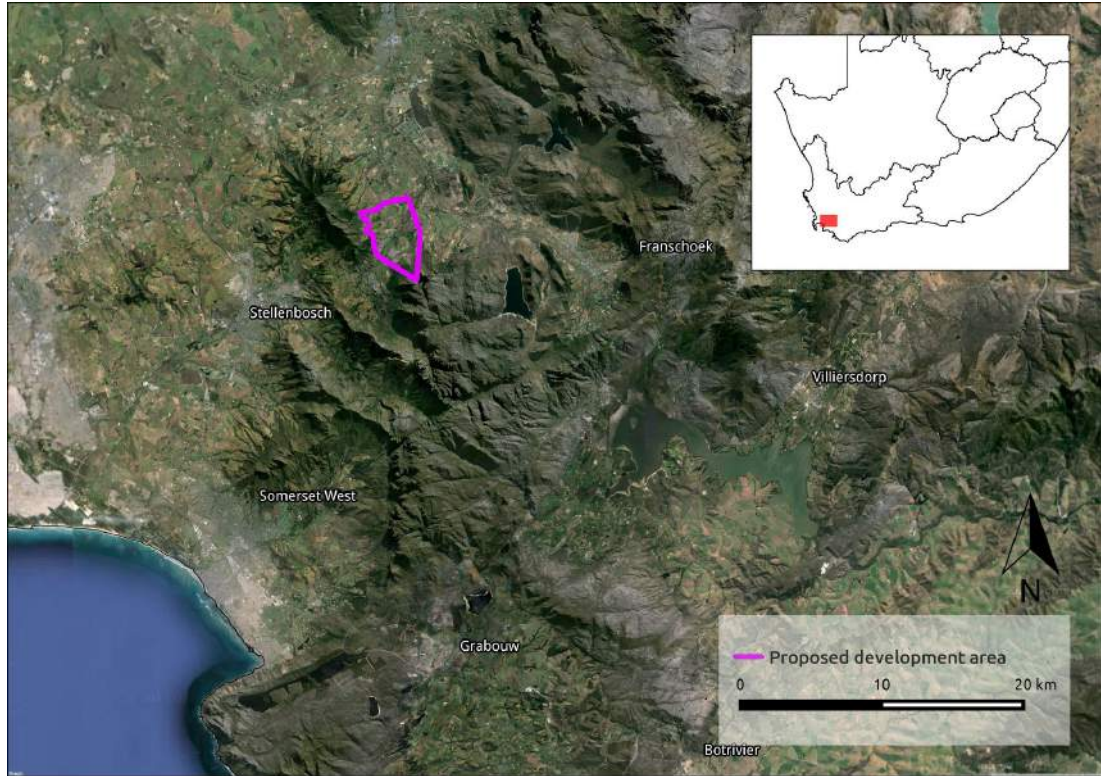
CTS Reference Number:	CTS16_001	
Client:	EOH Coastal & Environmental Services	
Date:	12 January 2016	
Title:	Boschendal Hydro-electric Facility and Dam Expansion	
Recommendation by CTS Heritage Specialists: (Type 2)	<p>(2) The heritage resources and the area proposed for development are only partially recorded - It is recommended that:</p> <ul style="list-style-type: none">- An Archaeological Impact Assessment be undertaken focussing on the proposed infrastructure- A Visual Impact Assessment be undertaken for the over ground session of the power line and for the hydroelectric pump building	

Figure 1a. Satellite image with proposed development area indicated in Western Cape.



1. Proposed Development Summary

Development of a hydro-electric scheme and dam expansion. The applicant intends to construct and manage a new 750MW (mini) hydro-electric scheme and expand the existing De Bordje dam.

2. Application References

Name of relevant heritage authority(s)	Heritage Western Cape (HWC) and South African Heritage Resources Agency (SAHRA)
Name of decision making authority(s)	Department of Environmental Affairs and Development Planning (DEADP)

3. Property Information

Farm Name and Number	Farms Boschendal No. 1674 and 1730
Local Municipality	Stellenbosch and Drakenstein Municipalities
District Municipality	Cape Winelands
Previous Magisterial District	Paarl / Stellenbosch
Province	Western Cape
Current Use	Agricultural, Conservation
Current Zoning	Agricultural
Total Extent	490ha

4. Nature of the Proposed Development

Surface area to be affected/destroyed	>1 ha, 3 km length
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Depth of excavation (m)	unknown
Height of development (m)	Double-story building height and 3m dam wall height
Expected years of operation before decommission	unknown

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	X
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

- Diversion and gauging weirs with offtake structure to facilitate diversion of water from the river.
- Pipeline of approximately 450 mm diameter and 3 km long (of which 2.8 km will be underground) with offtake to discharge water into the existing De Bordje Dam.
- Hydro-electrical power generation chamber (building) located at the end of the pipeline.
- Outlet works to convey water from the power chamber to discharge into the existing Normandi Dam.
- A high voltage (HV) power line to evacuate the power from the power station to the grid.
- Transformer and mini substation.
- Dam wall increase to a total height < 5 m to achieve a capacity increase from the current size of 213 154 m³ to 300 000 m³

7. Mapping

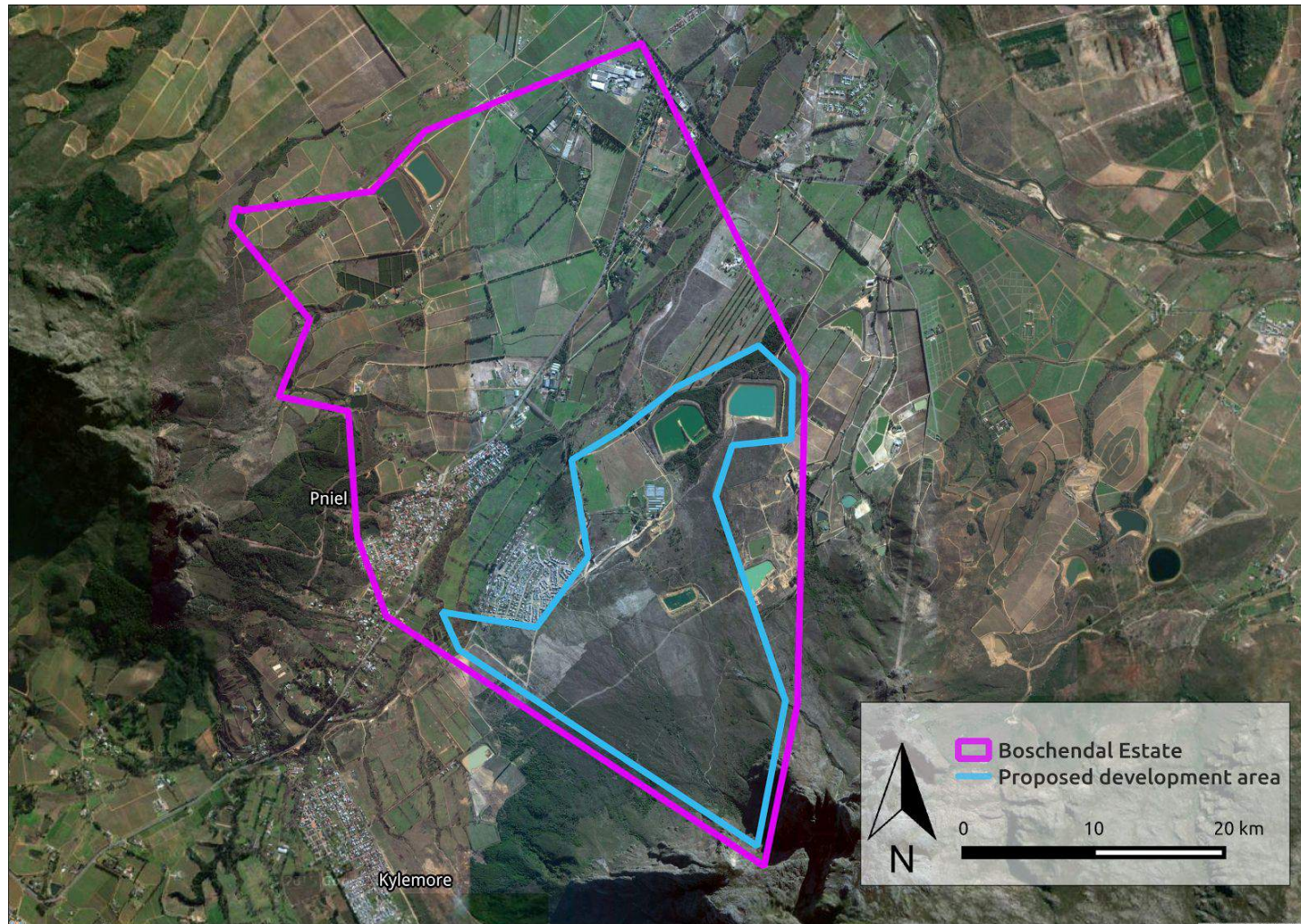


Figure 1b. Overview Map. Satellite image with proposed development area indicated.



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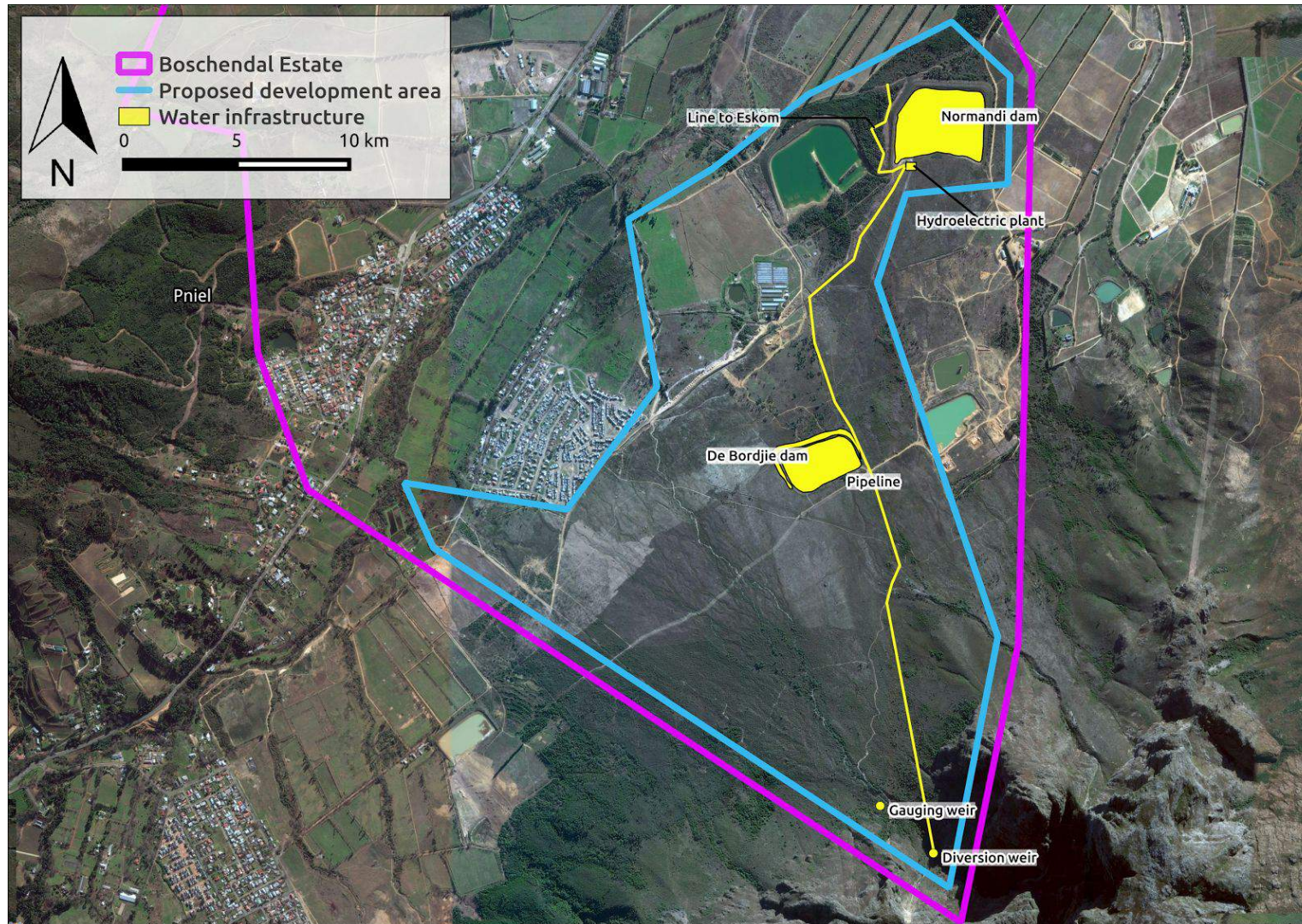
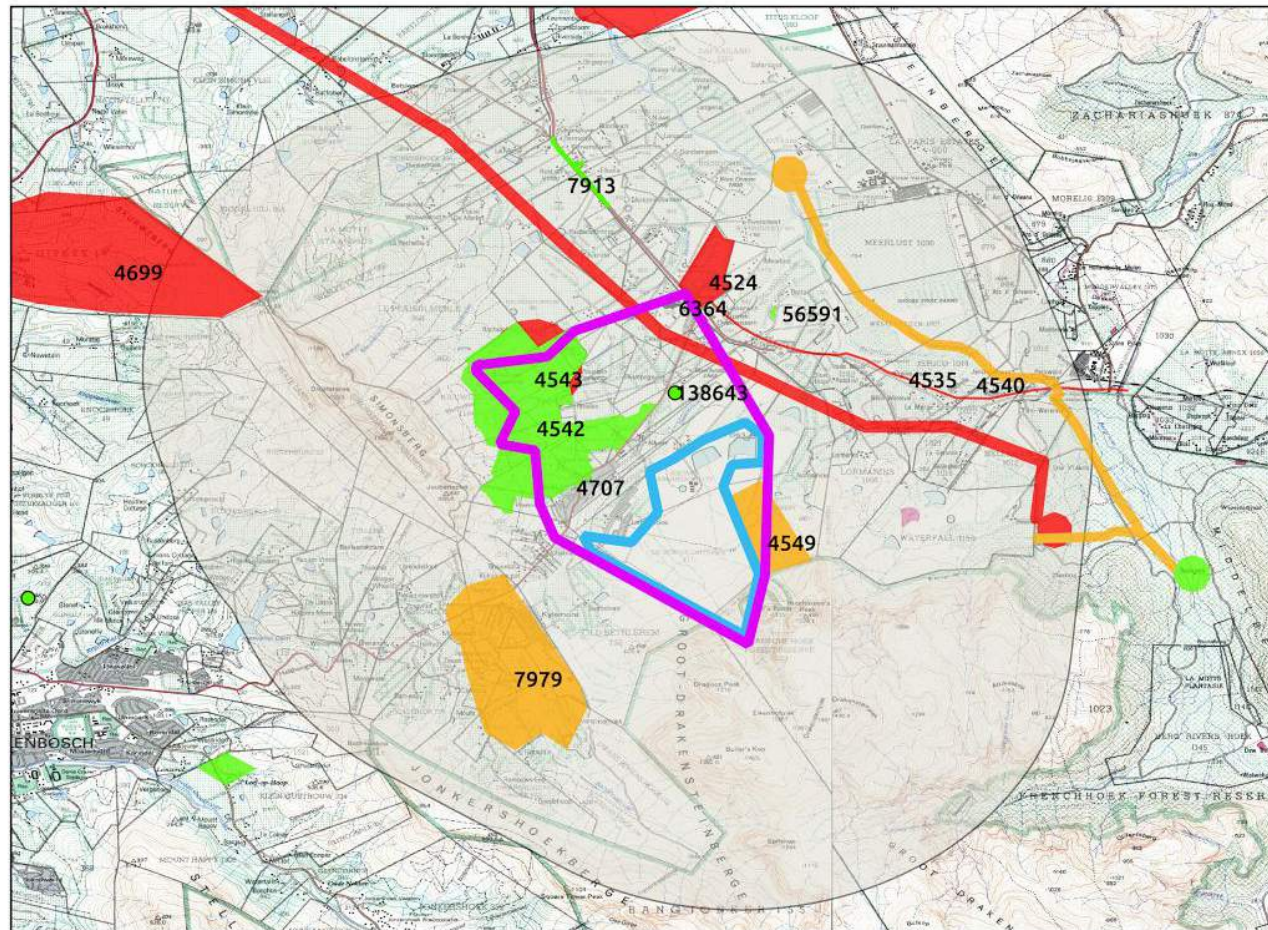


Figure 1c. Overview Map. Satellite image with proposed development area indicated, along with associated infrastructure.



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Legend

- Boschendal Estate
- Proposed development area
- Inclusion zone

Points surveys

- High coverage
- Medium coverage
- Low coverage

Line surveys

- High coverage
- Medium coverage
- Low coverage

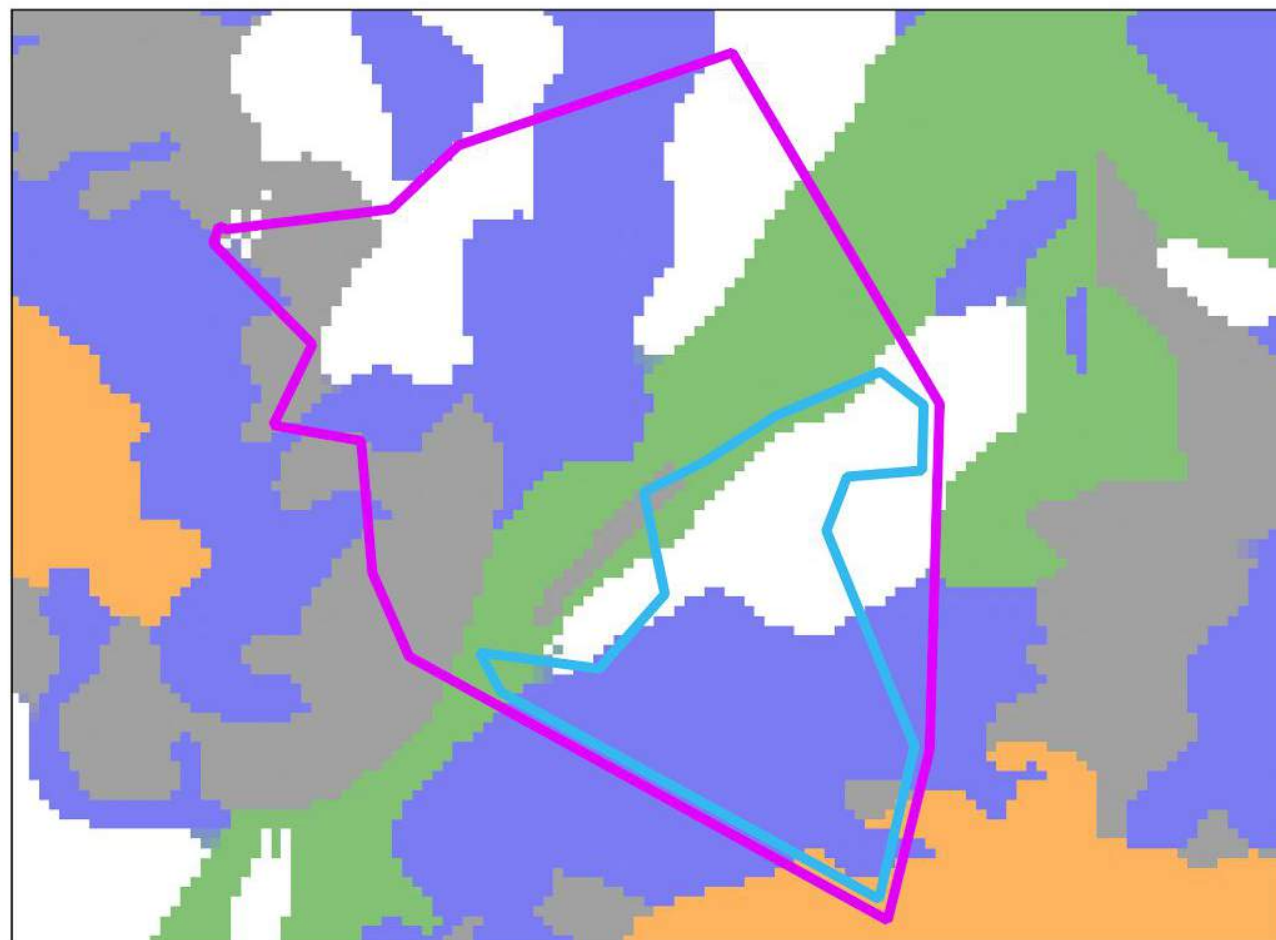
Area surveys

- High coverage
- Medium coverage
- Low coverage



0 3 6 km

Figure 2. HIAs Map. Previous Heritage Impact Assessments done in and near the proposed development.



Legend

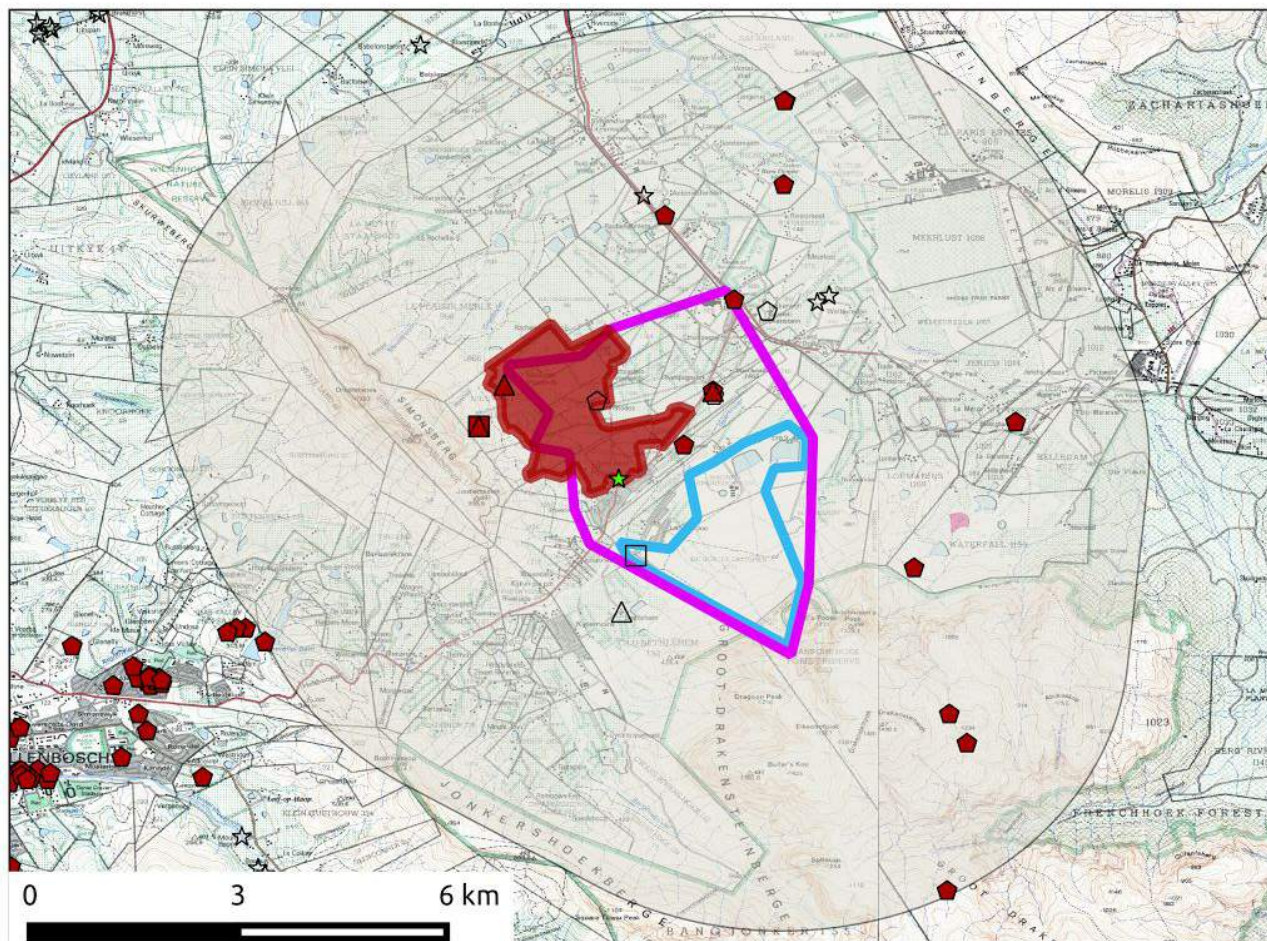
- Boschendal Estate
- Proposed development area

Palaeontological sensitivity

- | | |
|--------|--------------------|
| RED | Very high |
| ORANGE | High |
| GREEN | Moderate |
| BLUE | Low |
| GREY | Insignificant/zero |
| WHITE | Unknown |



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



Legend

- Boschendal Estate
- Proposed development area
- Inclusion zone
- Boschendal Founders Estate

Heritage resources

Type

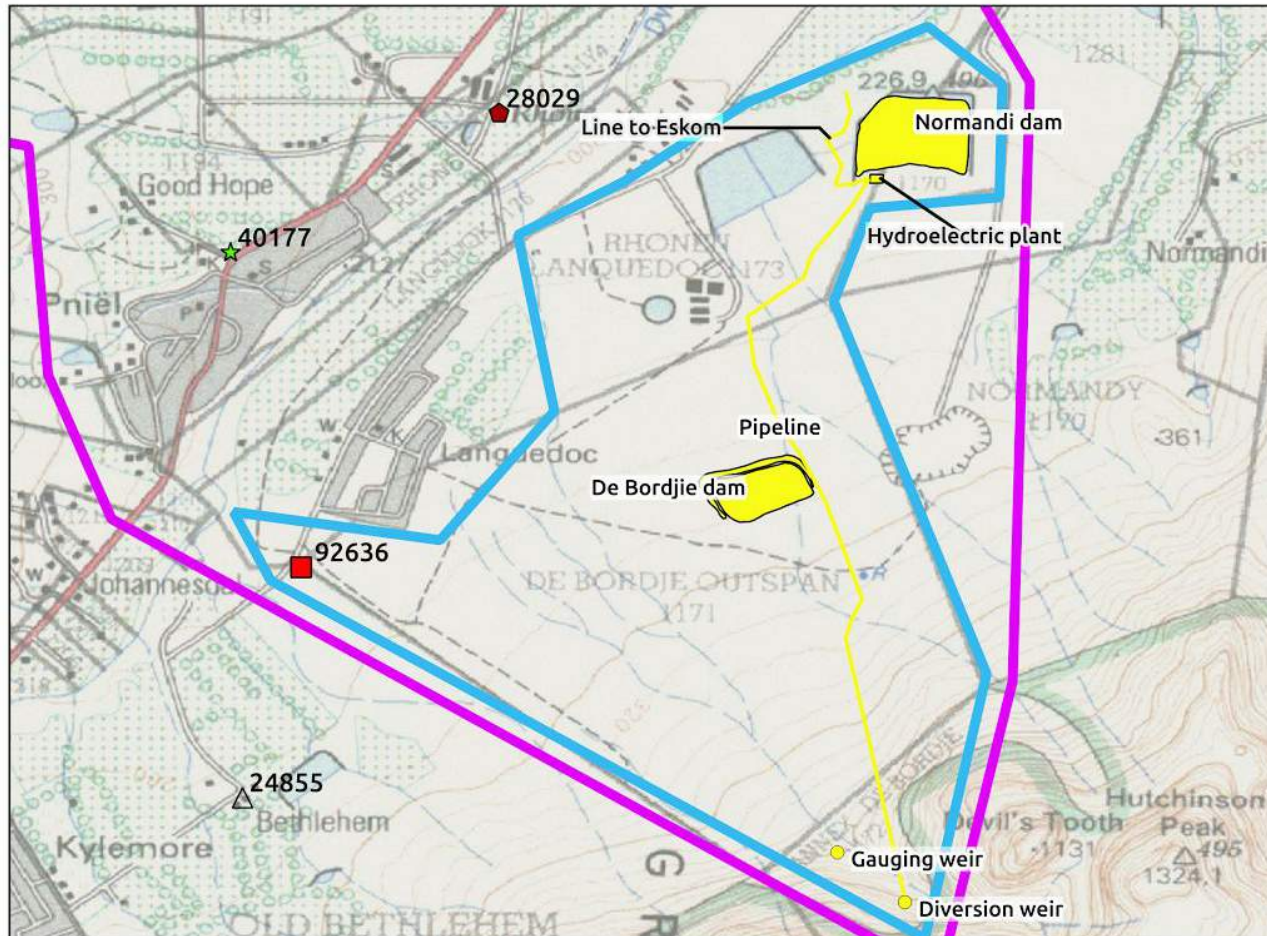
- ☆ Arch, Bat, Geo, Met, Pal, Und
- ⬡ Structures, Monuments & Memorials
- Liv. Heritage/Sacred sites, Burial Grounds and Graves, Natural, Place
- △ Conservation Area, Cultural Landscape

Grading

- | | |
|---|----------|
| DARK RED | I & II |
| RED | IIIa |
| ORANGE | IIIb |
| GREEN | IIIc |
| CLEAR | Ungraded |



Figure 4a. Heritage Resources Map. Heritage resources previously identified in and near the study area, indicating the Grade II Boschendal Founders Estate (see Appendix 1 for description of sites).



Legend

- Boschendal Estate
- Proposed development area
- Water infrastructure

Heritage resources

Type

- ☆ Arch, Bat, Geo, Met, Pal, Und
- ⬡ Structures, Monuments & Memorials
- Liv. Heritage/Sacred sites, Burial Grounds and Graves, Natural, Place
- △ Conservation Area, Cultural Landscape

Grading

- | | |
|-----------------|----------|
| DARK RED | I & II |
| RED | IIIa |
| ORANGE | IIIb |
| GREEN | IIIc |
| CLEAR | Ungraded |



0 0.5 1 km

Figure 4b. Heritage Resources Map. Heritage resources previously identified in and near the study area, indicating the Grade IIIa grave site within the proposed development area, but up to 1.5 km away.



8. Heritage statement and character of the area

The proposed development for the Boschendal Estate is located on Farm Boschendal 1674 and 1730. The estate is included within the Cape Winelands Cultural Landscape (CWCL) which is a Grade I site of national heritage significance. Portions 2, 5, 8 and 9 of Farm 1674 have also been declared a National Heritage Site (NHS) - Boschendal Founders Estate - in February 2009 as a testimony of the long history of interaction between the natural landscape, the human activities (specifically remembering slave labour) and biodiversity. The proposed development will not impact on the NHS.

According to the statement of significance included in the Gazette notice (no. 31864, 13 February 2009) the significance of the CWCL derives from its *rich history associated with living heritage and a distinctive cultural and natural environment with unique planned landscapes boasting an architectural and aesthetic form unique to South Africa*.

Two Heritage Impact Assessments have already been undertaken for the Founders Estate in 2005. One was the historical Archaeological Impact Assessment undertaken by ACO Associates and the second one was a baseline archaeological assessment undertaken by Kaplan for the proposed development of Boschendal lands. Kaplan identified a grave site (site 92636 on Fig. 4b) which is located just outside the village of Lanquedoc, about 1.5km from the proposed water infrastructure. The proposed development is expected to have no impact on this site. No further sites have been identified thus far in the area earmarked for the development. **It is recommended that an Archaeological Impact Assessment be undertaken focussing on the proposed infrastructure.**

Since the project is proposed within the Grade I CWCL, it is recommended that a **Visual Impact Assessment** of the impact of the over ground power line and of the hydroelectric plant building on the receiving environment be undertaken.

Since the infrastructure are proposed on alluvium, **no further palaeontological studies are recommended.**



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APPENDIX 1 - Site List

Site ID	Site no	Full Site Name	Site Type	Grading
27955	9/2/069/0166	Victor Verster prison "Madiba House", farm Watervleit	Building	Grade I
28040	9/2/069/0041	Boschendal Founders Estate, Dwarsrivier Valley	Cultural Landscape, Ruin > 100 years, Building	Grade I
28068	9/2/069/0003	Bien Donne, Groot Drakenstein, Paarl District	Building	Grade II
28060	9/2/069/0018/001	Het Sticht, Simondium, Paarl District	Building	Grade II
28037	9/2/069/0046	Bellingham Homestead, Groot Drakenstein, Paarl District	Building	Grade II
28029	9/2/069/0059	Rhone, Groot Drakenstein, Paarl District	Building	Grade II
27966	9/2/069/0137	Watergat, Simondium, Paarl District	Building	Grade II
27606	9/2/084/0022/001	Klein Gustrouw, Jonkershoek, Stellenbosch District	Building	Grade II
27607	9/2/084/0022/002	Leef op Hoop, Jonkershoek, Stellenbosch District	Building	Grade II
27605	9/2/084/0025	Old Nectar, Farm Glenconnor, Jonkershoek, Stellenbosch District	Building	Grade II
27488	9/2/084/0162	Trout Hatchery, Jonkershoek, Stellenbosch District	Building	Grade II
40177	HELS01	Helshoogte 01	Artefacts	Grade IIIc
28035	9/2/069/0041	Boschendal, Groot Drakenstein, Paarl District	Building	ungraded
31725	Nieuwedorp Founders' Estates	Nieuwedorp, Farm No 1674/10	Building	ungraded
34115	SOM3	Solms Delta 3	Ruin > 100 years	ungraded
34114	SOM2	Solms Delta 2	Ruin > 100 years	ungraded
24855	Old Bethlehem Farm	Old Bethlehem Farm	Conservation Area, Cultural Landscape	ungraded
85123	Allee Bleue	Farm 1475 and 1475/3	Building	ungraded
19864	SIMMR191-1	Simondium Main Road 191 - 1	Artefacts	ungraded

APPENDIX 2 - Reference List

Nid	Author/s	Date	Report Type	Title
138643	Sarah Winter	4/11/2013	HIA	Draft Heritage Impact Assessment: Proposed Expansion and Upgrade of Hospitality and Tourism Development, Boschendal Farm, Portion 10, Farm Nr. 16734, Dwars River Valley, Stellenbosch
7913	Jayson Orton	10/6/2009	AIA	Heritage Statement for a Proposed Pipeline Along Main Road 191 (R45) in Simondium, Paarl Magisterial District, Western Cape
4524	Timothy Hart	28/11/2000	AIA	Meerlust Bosbou - Archaeological Assessment
4535	Jonathan Kaplan	1/4/1992	AIA	An Archaeological Impact Assessment of the Proposed Upgrading of the R45, Franschoek
4540	Jonathan Kaplan	1/3/2003	AIA	Phase 1 Archaeological Impact Assessment Berg Water Project Supplement Scheme
4542	Timothy Hart	1/7/2003	AIA	Historical Archaeological Assessment of the Founders Estate, Boschendal
4543	Jonathan Kaplan	1/7/2005	AIA	Archaeological Assessment of Proposed Development of Boschendal Lands Dwars River Valley
4549	Jonathan Kaplan	1/11/2005	AIA	Phase 1 Archaeological Impact Assessment Portion 7 of the Farm Normandy 1170 Paarl
4699	Hilary Deacon	1/1/1999	AIA	CRM report on Uitkyk Farm, Stellenbosch
4707	Jonathan Kaplan	22/9/2006	AIA	Archaeological Investigation Rehabilitation of Main Road (MR 172) Between Helshoogte and Boschendal Stellenbosch District Western Province
6364	Jonathan Kaplan	1/5/2004	AIA	Archaeological Scoping Proposed Bulk Water Supply Infrastructure Planning for the City of Cape Town
7979	Jonathan Kaplan	1/8/1998	AIA	Archaeological Study: Proposed Stellenbosch Health Hydro
56591	Katie Smuts	26/3/2012	AIA	Report on Research Excavation of the Stables Building at Solms Delta Farm, Groot Drakenstein, Western Cape
NA	ACO & Katie Smuts	unknown	Research Survey	Hm/cape Winelands/drakenstein/franschoek/farm 1460 Portion 35 & Remainder Of Portion 4/solms Delta

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)
DEDEA	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.

SAHRA GRADING SYSTEM

Grade I - National Heritage Resource: may not be impacted

Grade II - Provincial Heritage Resource: may not be impacted

Grade IIIa - High local significance: should be protected and retained

Grade IIIb - Medium local significance: may only be impacted after mitigation has taken place

Grade IIIc - Low local significance: requires basic recording before destruction

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.**