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**SITE SENSITIVITY VERIFICATION
AND
AGRICULTURAL COMPLIANCE STATEMENT
FOR A PROPOSED PRIMARY HOUSE & 6 PODS DEVELOPMENT ON ERF 301,
EAST OF WILDERNESS, WESTERN CAPE**

**Report by
Johann Lanz**

23 June 2024

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EXECUTIVE SUMMARY

The overall conclusion of this assessment is that the proposed development is acceptable because it leads to no loss of future agricultural production potential.

This assessment confirms the low to medium agricultural sensitivity of the site based on its land capability and agricultural land use. However, the agricultural sensitivity and its verification is largely irrelevant in this case because the site's capability to practically deliver an agricultural product is not determined primarily by its climate, terrain, and soil capabilities.

Although there are climate, terrain, and soil constraints on the site's agricultural production potential, its potential to practically deliver agricultural produce is primarily constrained by other factors. These factors include the small size of the property, its location surrounded largely by residential, non-agricultural land uses, and the lack of any existing cropping infrastructure or inputs. For these reasons, the site is highly unlikely to ever be viably utilised for agricultural production and its potential is therefore assessed here as very low.

An agricultural impact is a change to the future agricultural production potential of land. This is primarily caused by the exclusion of agriculture from the footprint of the development. In this case, the site is considered to be below the threshold for needing to be conserved as agricultural production land because of the limitations that make it unsuitable as viable cropland. The development of this land for non-agricultural purposes will cause zero loss of future agricultural production potential in terms of national food security. The overall negative agricultural impact of the development (loss of future agricultural production potential) is assessed here as being of very low significance and as acceptable.

From an agricultural impact point of view, it is recommended that the proposed development be approved.

1 INTRODUCTION

Environmental and change of land use authorisation is being sought for a proposed primary dwelling & 6 pods on Erf 301, near Wilderness, Western Cape (see location in Figure 1). In terms of the National Environmental Management Act (Act No 107 of 1998 - NEMA), an application for environmental authorisation requires an agricultural assessment. In this case, based on the low to medium agricultural sensitivity of the assessed area (see Section 7), the level of agricultural assessment required by the protocol is an Agricultural Compliance Statement.



Figure 1. Locality map of the property boundary (blue outline) east of Wilderness.

The purpose of an agricultural assessment is to answer the question:

Will the proposed development cause a significant reduction in agricultural production potential, and most importantly, will it result in a loss of arable land?

As is shown in Section 9, this assessed development will not result in any loss of viable arable land and therefore poses zero threat to agricultural production potential.

2 PROJECT DESCRIPTION

The proposed development consists of a primary dwelling, 6 pods, and associated infrastructure, as shown in figure 3.

3 TERMS OF REFERENCE

The terms of reference for this study are to fulfill the requirements of the *Protocol for the specialist assessment and minimum report content requirements of environmental impacts on agricultural resources*, gazetted on 20 March 2020 in GN 320 (in terms of Sections 24(5)(A) and (H) and 44 of NEMA, 1998).

The terms of reference for an Agricultural Compliance Statement, as stipulated in the agricultural protocol, are listed below, and the section number of this report which fulfils each stipulation is given after it in brackets.

1. The Agricultural Compliance Statement must be prepared by a soil scientist or agricultural specialist registered with the South African Council for Natural Scientific Professions (SACNASP) (**Appendix 3**).
2. The compliance statement must:
 1. be applicable to the preferred site and proposed development footprint (**Figures 2 and 3**);
 2. confirm that the site is of “low” or “medium” sensitivity for agriculture (**Section 7**); and
 3. indicate whether or not the proposed development will have an unacceptable impact on the agricultural production capability of the site (**Section 12**).
3. The Agricultural Compliance Statement must contain, as a minimum, the following information:
 1. details and relevant experience as well as the SACNASP registration number of the soil scientist or agricultural specialist preparing the statement including a curriculum vitae (**Appendix 1**);
 2. a signed statement of independence by the specialist (**Appendix 2**);
 3. a map showing the proposed development footprint (including supporting infrastructure) with a 50 m buffered development envelope, overlaid on the agricultural sensitivity map generated by the screening tool (**Figure 2**);
 4. confirmation from the specialist that all reasonable measures have been taken through micro-siting to avoid or minimize fragmentation and disturbance of agricultural activities (**Section 11.1**);

5. a substantiated statement from the soil scientist or agricultural specialist on the acceptability, or not, of the proposed development and a recommendation on the approval, or not of the proposed development (**Section 12**);
6. any conditions to which this statement is subjected (**Section 12**);
7. in the case of a linear activity, confirmation from the agricultural specialist or soil scientist, that in their opinion, based on the mitigation and remedial measures proposed, the land can be returned to the current state within two years of completion of the construction phase (**Section 11.2**);
8. where required, proposed impact management outcomes or any monitoring requirements for inclusion in the EMPr (**Section 10**); and
9. a description of the assumptions made and any uncertainties or gaps in knowledge or data (**Section 5**).

4 METHODOLOGY OF STUDY

The assessment was based on a verification of the lack of current agricultural land use on the site and the location of the site within a non-agricultural area. No other information is relevant to assessing the agricultural production potential of the site because the non-agricultural location is the limiting factor regardless of climate, soil, and terrain.

5 ASSUMPTIONS, UNCERTAINTIES OR GAPS IN KNOWLEDGE OR DATA

There are no specific assumptions, uncertainties or gaps in knowledge or data that affect the findings of this study.

6 APPLICABLE LEGISLATION AND PERMIT REQUIREMENTS

This section identifies all applicable legislation and permit requirements over and above what is required in terms of NEMA.

The project may require agricultural approval (or at least comment from Department of Agriculture) as part of the required approval in terms of applicable municipal land use legislation, as well as in terms of the Subdivision of Agricultural Land Act (Act 70 of 1970 - SALA), if the property is currently zoned for agriculture.

7 SITE SENSITIVITY VERIFICATION

A specialist agricultural assessment is required to include a verification of the agricultural sensitivity of the development site as per the sensitivity categories used by the web-based environmental screening tool of the Department of Forestry, Fisheries and the Environment (DFFE). Agricultural

sensitivity is an indication of the capability of the land for agricultural production, based only on its climate, terrain, and soil capabilities and its agricultural land use. The different categories of agricultural sensitivity indicate the priority by which land should be conserved as agricultural production land. However, the screening tool's agricultural sensitivity is often of very limited value for assessing agricultural impact. What is of importance to an agricultural assessment, rather than the site sensitivity verification, is its assessment of the cropping potential and its assessment of the impact significance, both of which are not necessarily correlated with sensitivity.

The screening tool classifies agricultural sensitivity according to two independent criteria, from two independent data sets, both of which may be indicators of the land's agricultural production potential but are limited in that the first is outdated and the second relies on fairly course modelled data. The two criteria are:

1. whether the land is classified as cropland or not on the field crop boundary data set (Crop Estimates Consortium, 2019), and
2. its land capability rating on the land capability data set (DAFF, 2017)

All classified cropland is, by definition, either high or very high sensitivity. Land capability is defined as the combination of soil, climate, and terrain suitability factors for supporting rain-fed agricultural production. It is rated by the Department of Agriculture's updated and refined, country-wide land capability mapping (DAFF, 2017). The higher land capability values (≥ 8 to 15) are likely to indicate suitability as arable land for crop production, while lower values (< 8) are likely to only be suitable as non-arable grazing land. The direct relationship between land capability rating, agricultural sensitivity, and rain-fed cropping suitability is shown in Table 1.

Table 1: Relationship between land capability, agricultural sensitivity, and rain-fed cropping suitability.

Land capability value	Agricultural sensitivity	Rain-fed cropping suitability
1 - 5	low	Unsuitable
6 - 8	medium	Unsuitable to marginally suitable
9 - 10	high	Suitable
11 - 15	very high	Suitable

The agricultural sensitivity of the site, as given by the screening tool, is shown in Figure 2. However, the screening tool sensitivity requires specialist verification because of the limitations of the data sets on which it is based.

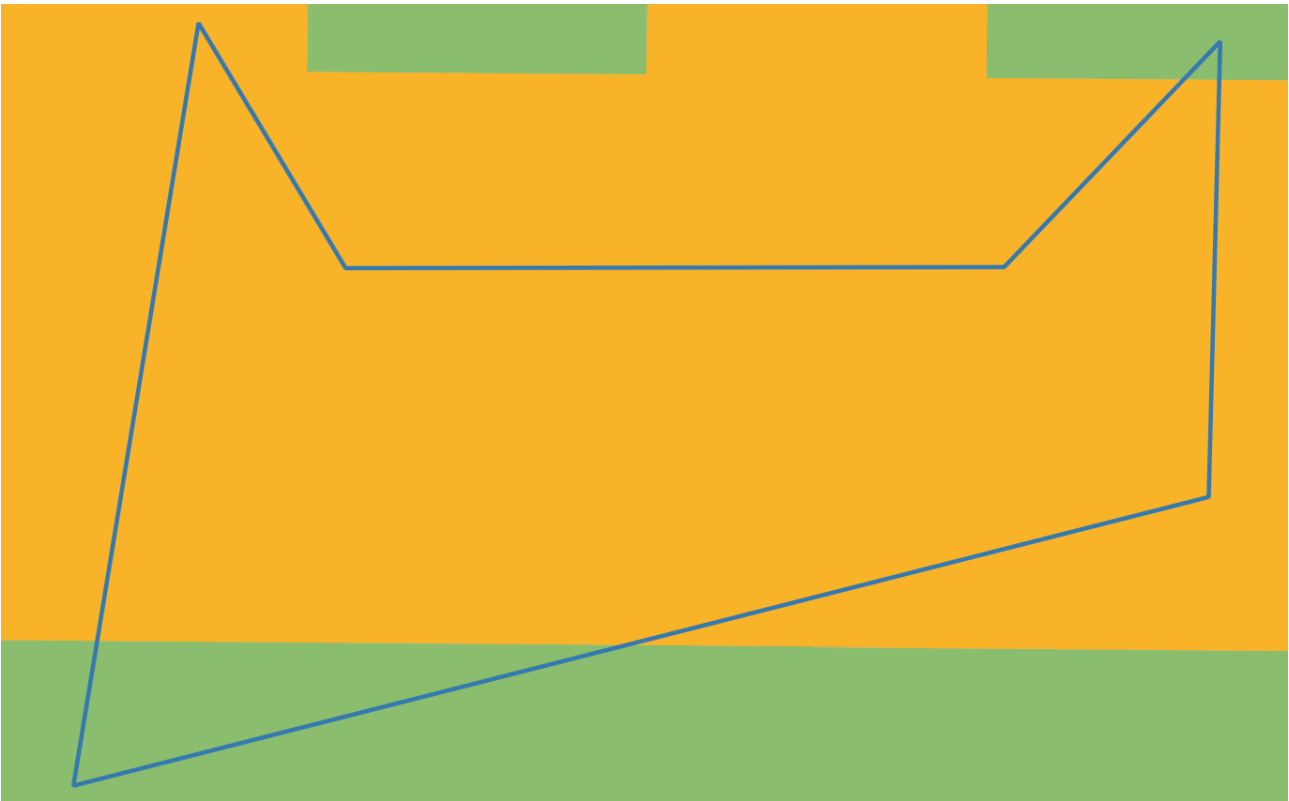


Figure 2. The assessed property (blue outline) overlaid on agricultural sensitivity, as given by the screening tool (green = low; yellow = medium; red = high; dark red = very high). The screening tool's low to medium sensitivity is confirmed by this assessment.

This assessment confirms the low to medium agricultural sensitivity of the site based on its land capability and agricultural land use. However, the agricultural sensitivity and its verification is largely irrelevant in this case because the site's capability to practically deliver an agricultural product is not determined primarily by its climate, terrain, and soil capabilities. The site is in an area that is not and would never be utilised for agricultural production and it therefore has zero agricultural production potential, regardless of what its climate, terrain, and soil capabilities might be.

8 BASELINE DESCRIPTION OF THE AGRO-ECOSYSTEM

The purpose of this section is firstly to present the baseline information that controls the agricultural production potential of the site and then to assess that potential. Agricultural production potential, and particularly cropping potential, is one of three factors that determines the significance of an agricultural impact, together with size of footprint and duration of impact (see Section 9).

All the important parameters that control the agricultural production potential of the site are given in Table 2. The land type soil data are given in Appendix 4. A satellite image map of the development site is given in Figure 3.

The site falls outside of an area that is classified as a Protected Agricultural Area (PAA) (DALRRD, 2020). A PAA is a demarcated area in which the climate, terrain, and soil are generally conducive for agricultural production and which, historically, or in a regional context, has made important contributions to the production of the various crops that are grown across South Africa. Within PAAs, the protection, particularly of arable land, is considered a priority for the protection of food security in South Africa, but the protection of land outside of these areas is generally not considered a food security priority.

Table 2: Parameters that control and/or describe the agricultural production potential of the site.

	Parameter	Value
Climate	Köppen-Geiger climate description (Beck <i>et al</i> , 2018)	Arid, steppe, hot
	Mean Annual Rainfall (mm) (Schulze, 2009)	856
	Reference Crop Evaporation Annual Total (mm) (Schulze, 2009)	888
	Climate capability classification (out of 9) (DAFF, 2017)	6 (moderate-high)
Terrain	Terrain type	Coastal hilly terrain
	Terrain morphological unit	Varied
	Slope gradients (%)	0 to 60
	Altitude (m)	85
	Terrain capability classification (out of 9) (DAFF, 2017)	3 (low) to 5 (moderate)
Soil	Geology (DAFF, 2002)	Fixed dunes and dune rock.
	Land type (DAFF, 2002)	Hb12
	Description of the soils	Predominantly deep, very light textured (sandy), light coloured, soils with hard carbonate occurring in places
	Dominant soil forms	Fernwood
	Soil capability classification (out of 9) (DAFF, 2017)	6 (moderate-high)
	Soil limitations	very low water and nutrient holding capacity
Land use	Agricultural land use in the surrounding area	None
	Agricultural land use on the site	None

	Parameter	Value
General	Long-term grazing capacity (ha/LSU) (DAFF, 2018)	25
	Land capability classification (out of 15) (DAFF, 2017)	6 (low-moderate) to 8 (moderate)
	Within Protected Agricultural Area (DALRRD, 2020)	No

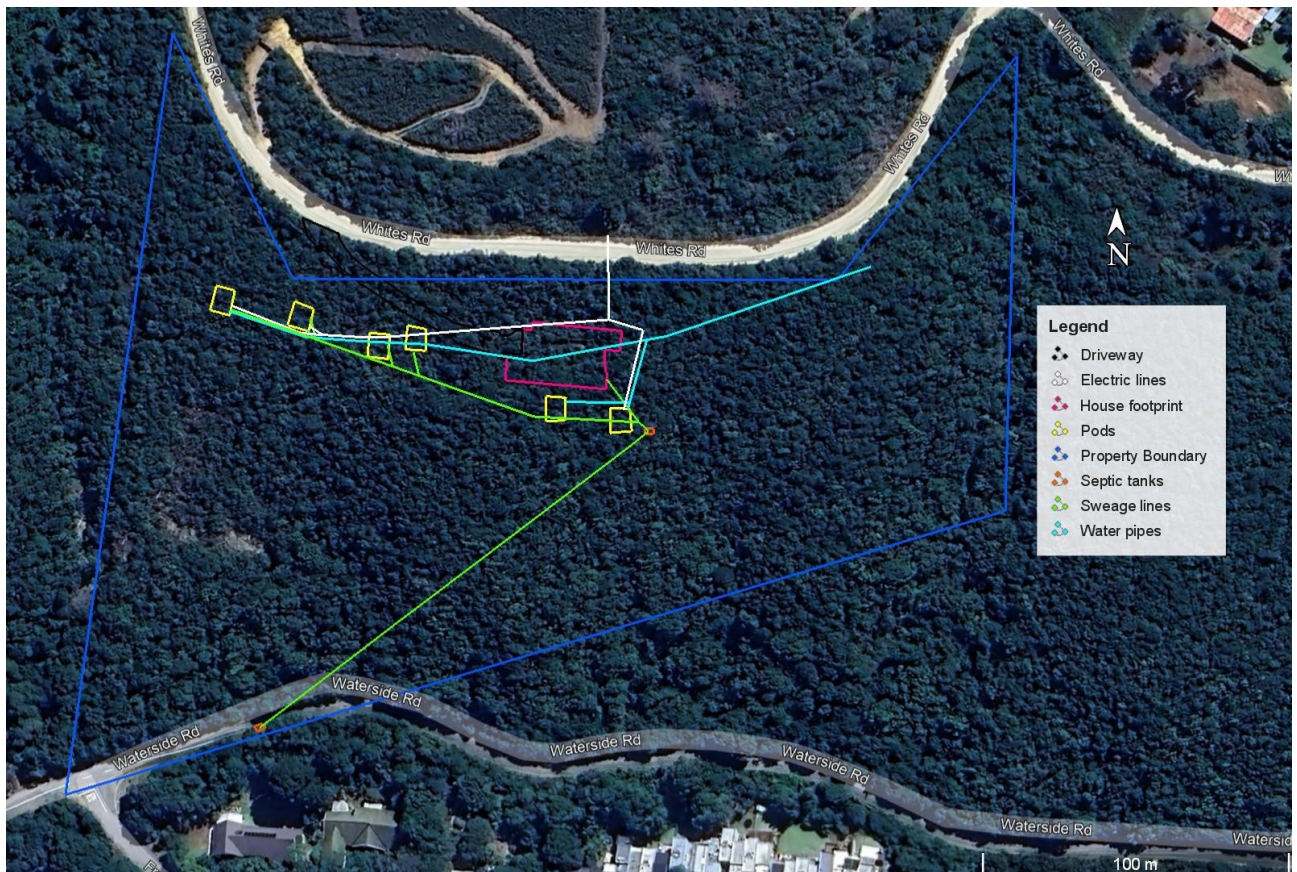


Figure 3. Satellite image map of the development.

8.1 Assessment of the agricultural production potential

Although there are climate, terrain (steep slopes), and soil (low water holding capacity) constraints on the site's agricultural production potential, its potential to practically deliver agricultural produce is primarily constrained by other factors. These factors include:

- the small size of the property (3.9 ha) prevents economies of scale,
- its location surrounded largely by residential, non-agricultural land uses and isolated from other farmland,

- the lack of any existing cropping infrastructure or inputs, which would therefore necessitate agricultural investment for crop production, with questionable security of return on that investment.

For these reasons, the site is highly unlikely to ever be viably utilised for agricultural production and its potential is therefore assessed here as very low.

9 ASSESSMENT OF THE AGRICULTURAL IMPACT

9.1 Impact identification and assessment

It should be noted that an Agricultural Compliance Statement is not required to formally rate agricultural impacts by way of impact assessment tables.

An agricultural impact is a change to the future agricultural production potential of land. In most developments, including the one being assessed here, this is primarily caused by the exclusion of agriculture from the footprint of the development. The significance of an agricultural impact is a direct function of the following three factors:

1. the size of the footprint of land from which agriculture will be excluded (or the footprint that will have its potential decreased)
2. the baseline production potential (particularly cropping potential) of that land
3. the length of time for which agriculture will be excluded (or for which potential will be decreased).

The most significant loss of agricultural land possible, for any development anywhere in the country, is of high yielding cropland, and the least significant possible, is of low carrying capacity grazing land.

Cropping potential is highlighted in factor 2, above, because the threshold, above which it is a priority to conserve land for agricultural production, is determined by the scarcity of arable crop production land in South Africa (approximately only 13% of the country's surface area) and the relative abundance of the rest of agricultural land across the country that is only good enough to be used for grazing. If land can support viable and sustainable crop production, then it is considered to be above the threshold and is a priority for being conserved as agricultural production land. If land is unable to support viable and sustainable crop production, then it is considered to be below the threshold and of much lower priority for being conserved.

In this case, the site is considered to be below the threshold for needing to be conserved as agricultural production land because of the limitations that make it unsuitable as viable cropland.

The development of this land for non-agricultural purposes will cause zero loss of future agricultural production potential in terms of national food security. The overall negative agricultural impact of the development (loss of future agricultural production potential) is assessed here as being of very low significance and as acceptable.

9.2 Cumulative impact assessment

Specialist assessments for environmental authorisation are required to include an assessment of cumulative impacts. The cumulative impact of a development is the impact that development will have when its impact is added to the incremental impacts of other past, present, or reasonably foreseeable future activities that will affect the same environment.

Due to its negligible agricultural impact, the assessed development will not contribute to the cumulative agricultural impact. The cumulative agricultural impact of the proposed development is therefore assessed here as being of very low significance and therefore as acceptable. The development will not have an unacceptable negative impact on the agricultural production capability of the area, and it is therefore recommended, from a cumulative agricultural impact perspective, that the development be approved.

9.3 Assessment of alternatives

Specialist assessments for environmental authorisation are required to include a comparative assessment of alternatives, including the no-go alternative. The exact nature and layout of the different infrastructure within the development site boundary have absolutely no bearing on the significance of agricultural impacts, because agriculture will be completely excluded from within the boundary, regardless of layout. Any alternative layouts within the boundary will have equal agricultural impact and are assessed as equally acceptable.

The no-go alternative considers impacts that will occur to the agricultural environment in the absence of the proposed development. There are no agricultural impacts of the no-go alternative, but this is not significantly different from the very low impact of the development, and so from an agricultural impact perspective, there is no preferred alternative between the no-go and the development.

10 MITIGATION

10.1 Mitigation measures

The most important and effective mitigation of agricultural impacts for any development is avoidance of viable croplands. This development has already applied this mitigation by selecting a

site on which there are not viable croplands. No mitigation measures are required for the protection of agricultural production potential on the site because the site is not and will not be utilised as agricultural production land.

11 ADDITIONAL ASPECTS REQUIRED IN AN AGRICULTURAL ASSESSMENT

11.1 Micro-siting

The agricultural protocol requires confirmation that all reasonable measures have been taken through micro-siting to minimize fragmentation and disturbance of agricultural activities. Because the entire property will be non-agricultural, micro-siting will make no material difference to agricultural impacts and disturbance.

11.2 Confirmation of linear activity exclusion

If linear infrastructure has been given exclusion from complying with certain requirements of the agricultural protocol because of its linear nature, the protocol requires confirmation that the land impacted by that linear infrastructure can be returned to the current state within two years of completion of the construction phase. No such exclusion applies to this project.

12 CONCLUSION: AGRICULTURAL COMPLIANCE STATEMENT

The overall conclusion of this assessment is that the proposed development is acceptable because it leads to no loss of future agricultural production potential.

This assessment confirms the low to medium agricultural sensitivity of the site based on its land capability and agricultural land use. However, the agricultural sensitivity and its verification is largely irrelevant in this case because the site's capability to practically deliver an agricultural product is not determined primarily by its climate, terrain, and soil capabilities.

Although there are climate, terrain, and soil constraints on the site's agricultural production potential, its potential to practically deliver agricultural produce is primarily constrained by other factors. These factors include the small size of the property, its location surrounded largely by residential, non-agricultural land uses, and the lack of any existing cropping infrastructure or inputs. For these reasons, the site is highly unlikely to ever be viably utilised for agricultural production and its potential is therefore assessed here as very low.

An agricultural impact is a change to the future agricultural production potential of land. This is primarily caused by the exclusion of agriculture from the footprint of the development. In this case, the site is considered to be below the threshold for needing to be conserved as agricultural

production land because of the limitations that make it unsuitable as viable cropland. The development of this land for non-agricultural purposes will cause zero loss of future agricultural production potential in terms of national food security. The overall negative agricultural impact of the development (loss of future agricultural production potential) is assessed here as being of very low significance and as acceptable.

From an agricultural impact point of view, it is recommended that the proposed development be approved. The conclusion of this assessment on the acceptability of the proposed development and the recommendation for its approval is not subject to any conditions.

13 REFERENCES

Beck, H.E., N.E. Zimmermann, T.R. McVicar, N. Vergopolan, A. Berg, E.F. Wood. 2018. Present and future Köppen-Geiger climate classification maps at 1-km resolution, Nature Scientific Data. Available at: <https://gis.elsenburg.com/apps/cfm/>.

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Department of Agriculture, Forestry and Fisheries (DAFF). 2017. National land capability evaluation raster data layer, 2017. Pretoria.

Department of Agriculture, Forestry and Fisheries (DAFF). 2002. National land type inventories data set. Pretoria.

Department of Agriculture, Land Reform and Rural Development (DALRRD). 2020. Protected agricultural areas – Spatial data layer. 2020. Pretoria.

Schulze, R.E. 2009. South African Atlas of Agrohydrology and Climatology, available on Cape Farm Mapper. Available at: <https://gis.elsenburg.com/apps/cfm/>

Soil Classification Working Group. 1991. Soil classification: a taxonomic system for South Africa. Soil and Irrigation Research Institute, Department of Agricultural Development, Pretoria.

APPENDIX 1: SPECIALIST CURRICULUM VITAE

Johann Lanz Curriculum Vitae

Education

M.Sc. (Environmental Geochemistry)	University of Cape Town	1996 - 1997
B.Sc. Agriculture (Soil Science, Chemistry)	University of Stellenbosch	1992 - 1995
BA (English, Environmental & Geographical Science)	University of Cape Town	1989 - 1991
Matric Exemption	Wynberg Boy's High School	1983

Professional work experience

I have been registered as a Professional Natural Scientist (Pri.Sci.Nat.) in the field of soil science since 2012 (registration number 400268/12) and am a member of the Soil Science Society of South Africa.

Soil & Agricultural Consulting Self employed 2002 - present

Within the past 5 years of running my soil and agricultural consulting business, I have completed more than 170 agricultural assessments (EIAs, SEAs, EMPRs) in all 9 provinces for renewable energy, mining, electrical grid infrastructure, urban, and agricultural developments. I was the appointed agricultural specialist for the nation-wide SEAs for wind and solar PV developments, electrical grid infrastructure, and gas pipelines. My regular clients include: Zutari; CSIR; SiVEST; SLR; WSP; Arcus; SRK; Environamics; Royal Haskoning DHV; ABO; Enertrag; WKN-Windcurrent; JG Afrika; Mainstream; Redcap; G7; Mulilo; and Tiptrans. Recent agricultural clients for soil resource evaluations and mapping include Cederberg Wines; Western Cape Department of Agriculture; Vogelfontein Citrus; De Grendel Estate; Zewenwacht Wine Estate; and Goedgedacht Olives. In 2018 I completed a ground-breaking case study that measured the agricultural impact of existing wind farms in the Eastern Cape.

Soil Science Consultant Agricultural Consultors International (Tinie du Preez) 1998 - 2001

Responsible for providing all aspects of a soil science technical consulting service directly to clients in the wine, fruit and environmental industries all over South Africa, and in Chile, South America.

Contracting Soil Scientist De Beers Namaqualand Mines July 1997 - Jan 1998

Completed a contract to advise soil rehabilitation and re-vegetation of mined areas.

Publications

- Lanz, J. 2012. Soil health: sustaining Stellenbosch's roots. In: M Swilling, B Sebitosi & R Loots (eds). *Sustainable Stellenbosch: opening dialogues*. Stellenbosch: SunMedia.
- Lanz, J. 2010. Soil health indicators: physical and chemical. *South African Fruit Journal*, April / May 2010 issue.
- Lanz, J. 2009. Soil health constraints. *South African Fruit Journal*, August / September 2009 issue.
- Lanz, J. 2009. Soil carbon research. *AgriProbe*, Department of Agriculture.
- Lanz, J. 2005. Special Report: Soils and wine quality. *Wineland Magazine*.

I am a reviewing scientist for the *South African Journal of Plant and Soil*.



forestry, fisheries & the environment

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APPENDIX 2: SPECIALIST DECLARATION FORM AUGUST 2023

Specialist Declaration form for assessments undertaken for application for authorisation in terms of the National Environmental Management Act, Act No. 107 of 1998, as amended and the Environmental Impact Assessment (EIA) Regulations, 2014, as amended (the Regulations)

REPORT TITLE: PROPOSED PRIMARY HOUSE & 6 PODS DEVELOPMENT ON ERF 301, NEAR WILDERNESS, WESTERN CAPE

Kindly note the following:

1. This form must always be used for assessment that are in support of applications that must be subjected to Basic Assessment or Scoping & Environmental Impact Reporting, where this Department is the Competent Authority.
2. This form is current as of August 2023. It is the responsibility of the Applicant / Environmental Assessment Practitioner (EAP) to ascertain whether subsequent versions of the form have been published or produced by the Competent Authority. The latest available Departmental templates are available at <https://www.dffe.gov.za/documents/forms>.
3. An electronic copy of the signed declaration form must be appended to all Draft and Final Reports submitted to the department for consideration.
4. The specialist must be aware of and comply with '*the Procedures for the assessment and minimum criteria for reporting on identified environmental themes in terms of sections 24(5)(a) and (h) and 44 of the act, when applying for environmental authorisation - GN 320/2020*', where applicable.

1. SPECIALIST INFORMATION

Title of Specialist Assessment	Agricultural Assessment
Specialist Company Name	SoilZA – sole proprietor
Specialist Name	Johann Lanz
Specialist Identity Number	6607045174089
Specialist Qualifications:	M.Sc. (Environmental Geochemistry)
Professional affiliation/registration:	Registered Professional Natural Scientist (Pr.Sci.Nat.) Reg. no. 400268/12 Member of the Soil Science Society of South Africa
Physical address:	1a Wolfe Street, Wynberg, Cape Town, 7800
Postal address:	1a Wolfe Street, Wynberg, Cape Town, 7800
Telephone	Not applicable
Cell phone	+27 82 927 9018
E-mail	johann@soilza.co.za

2. DECLARATION BY THE SPECIALIST

I, **Johann Lanz** declare that –

- I act as the independent specialist in this application;
- I am aware of the procedures and requirements for the assessment and minimum criteria for reporting on identified environmental themes in terms of sections 24(5)(a) and (h) and 44 of the National Environmental Management Act (NEMA), 1998, as amended, when applying for environmental authorisation which were promulgated in Government Notice No. 320 of 20 March 2020 (i.e. “the Protocols”) and in Government Notice No. 1150 of 30 October 2020.
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing –
 - any decision to be taken with respect to the application by the competent authority; and;
 - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of Regulation 48 and is punishable in terms of section 24F of the NEMA Act.



Signature of the Specialist

SoilZA (sole proprietor)

Name of Company:

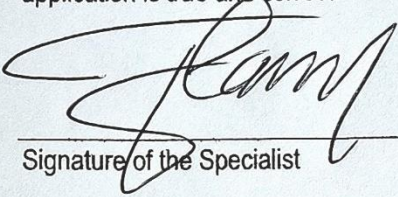
19 May 2024

Date

SPECIALIST DECLARATION FORM – AUGUST 2023

3. UNDERTAKING UNDER OATH/ AFFIRMATION

I, **Johann Lanz**, swear under oath that all the information submitted or to be submitted for the purposes of this application is true and correct.



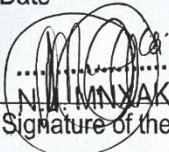
Signature of the Specialist

SoilZA – sole proprietor

Name of Company

19 May 2024

Date



...7206717-9
N. MNVAKWE

Signature of the Commissioner of Oaths

2024 - 05 - 19

Date





herewith certifies that

Johan Lanz

Registration Number: 400268/12

is a registered scientist

in terms of section 20(3) of the Natural Scientific Professions Act, 2003
(Act 27 of 2003)

in the following field(s) of practice (Schedule 1 of the Act)

Soil Science (Professional Natural Scientist)

Effective 15 August 2012

Expires 31 March 2025



A handwritten signature in black ink, appearing to read 'S. van der ...', positioned above a horizontal line.

Chairperson

A handwritten signature in black ink, appearing to read 'N. ...', positioned above a horizontal line.

Chief Executive Officer



APPENDIX 4: LAND TYPE DATA

Table 4: Land type soil data

Land type	Soil series (forms)	Depth (mm)	Clay % A horizon	Clay % B horizon	Depth limiting layer	% of land type
Hb12	Fw	> 1200	2 - 6			56,7
Hb12	Ms	50 - 200	2 - 6		ka	10,7
Hb12	Vf	> 1200	2 - 6	10 - 30		6,7
Hb12	We	400 - 500	2 - 6	2 - 6	sp	5,0
Hb12	Lt	> 1200	2 - 6	4 - 8		4,6
Hb12	Cv	> 1200	2 - 6	2 - 6		4,2
Hb12	Du	> 1200	2 - 6			3,8
Hb12	Sp	> 1200	2 - 6	3 - 8		3,3
Hb12	Hu	> 1200	2 - 6	2 - 6		3,0
Hb12	Ct	> 1200	2 - 6	2 - 6		2,1