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SITE SENSITIVITY VERIFICATION
AND
AGRICULTURAL COMPLIANCE STATEMENT
FOR THE PROPOSED CONSTRUCTION OF THE N7 VISSERSHOK WEIGHBRIDGE
ON FARMS 153 VISSERSHOK OUTSPAN, 25/141 MORNING STAR, AND RE/4/141 MORNING STAR
CITY OF CAPE TOWN

Report by
Johann Lanz

29 January 2025

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1 INTRODUCTION

Environmental and change of land use authorisation is being sought for the proposed construction of the N7 Vissershok weighbridge on Farms 153 Vissershok Outspan, 25/141 Morning Star, and RE/4/141 Morning Star, City of Cape Town (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 verified medium agricultural sensitivity of the site (see Section 7), the level of agricultural assessment required is an Agricultural Compliance Statement.

Johann Lanz was appointed as an independent agricultural specialist to conduct this agricultural assessment. The objective of an agricultural assessment is to assess whether the agricultural impact of the proposed development will be acceptable, and based on this, to make a recommendation on whether it should be approved.

Figure 1. *Locality map of the development (dark blue outline) along the N7.*

The purpose of the agricultural component in the environmental assessment process is to preserve agricultural production potential by ensuring that development does not unnecessarily exclude existing or potential agricultural production from land, or unnecessarily impact agricultural land to the extent that its production potential is reduced. The primary focus is on preservation of the

agricultural production potential of scarce, arable land. The focus of an agricultural assessment must therefore be to determine whether the proposed development will result in a significant loss of land that has economically viable future cropping potential? For more detail see Section 9. This project poses negligible threat to agricultural production potential because of the small extent of land loss and the site's lack of crop production potential.

2 PROJECT DESCRIPTION

The proposed development is a weighbridge on the edge of the N7 highway that will impinge onto the edge of agricultural land with a footprint of approximately 3 hectares beyond the road reserve.

3 TERMS OF REFERENCE

The terms of reference for this study is 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 1 to 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 10)**.
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 **(not applicable)**;
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 10)**;
6. any conditions to which this statement is subjected **(Section 10)**;
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 **(not applicable)**;
8. where required, proposed impact management outcomes or any monitoring requirements for inclusion in the EMPr **(Section 9)**; 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 current agricultural land use on the site and was informed by existing soil and agricultural potential data for the site. The following sources of existing data were used:

- Soil data was sourced from the land type data set, of the Department of Agriculture, Forestry and Fisheries (DAFF). This data set originates from the land type survey that was conducted from the 1970's until 2002. It is the most reliable and comprehensive national database of soil information in South Africa and although the data was collected some time ago, it is still entirely relevant as the soil characteristics included in the land type data do not change within time scales of hundreds of years.
- Land capability data was sourced from the 2017 National land capability evaluation raster data layer produced by the DAFF, Pretoria.
- The spatial demarcation of Protected Agricultural Areas was obtained from the National Department of Agriculture, Land Reform and Rural Development (DALRRD).
- Field crop boundaries were sourced from Crop Estimates Consortium, 2019. Field Crop Boundary data layer, 2019. Pretoria. Department of Agriculture, Forestry and Fisheries.
- Rainfall and evaporation data was sourced from the SA Atlas of Climatology and Agrohydrology (2009, R.E. Schulze) available on Cape Farm Mapper. Note that Cape Farm Mapper includes national coverage of climate, grazing and certain other data.
- Grazing capacity data was sourced from the 2018 DAFF long-term grazing capacity map for South Africa, available on Cape Farm Mapper.

- Current and historical satellite imagery of the site and surrounds was sourced from Google Earth.

This level of agricultural assessment is considered entirely adequate for an understanding of on-site agricultural production potential for the purposes of this assessment.

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

The project requires agricultural approval for rezoning in terms of the Subdivision of Agricultural Land Act (Act 70 of 1970) (SALA) because it is on agriculturally zoned land.

7 SITE SENSITIVITY VERIFICATION

Agricultural sensitivity is a direct function of the capability of the land for agricultural production. The different categories of agricultural sensitivity indicate the priority by which land should be conserved as agricultural production land. The agricultural sensitivity of the site, as given by the web-based environmental screening tool, is shown in Figure 2. The screening tool classifies agricultural sensitivity according to only two independent criteria, both of which are indicators of the land's agricultural production potential:

1. whether the land is classified as cropland or not, and
2. its land capability rating

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, released in 2016. The higher land capability values (≥8 to 15) are likely to be suitable as arable land for crop production, while lower values (<8) are only likely to be suitable as non-arable grazing land. The direct relationship between land capability rating and agricultural sensitivity 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	
		Summer rainfall areas	Winter rainfall areas
1 - 5	Low	Unsuitable	Unsuitable
6	Medium		
7			Suitable
8 - 10	High	Suitable	
11 - 15	Very High		

Note: There is an error in the screening tool whereby a land capability of 8 is classified as medium sensitivity, but according to NEMA's agricultural protocol, should in fact be classified as high sensitivity. This assessment follows the agricultural protocol definition and classifies a value of 8 as high sensitivity.

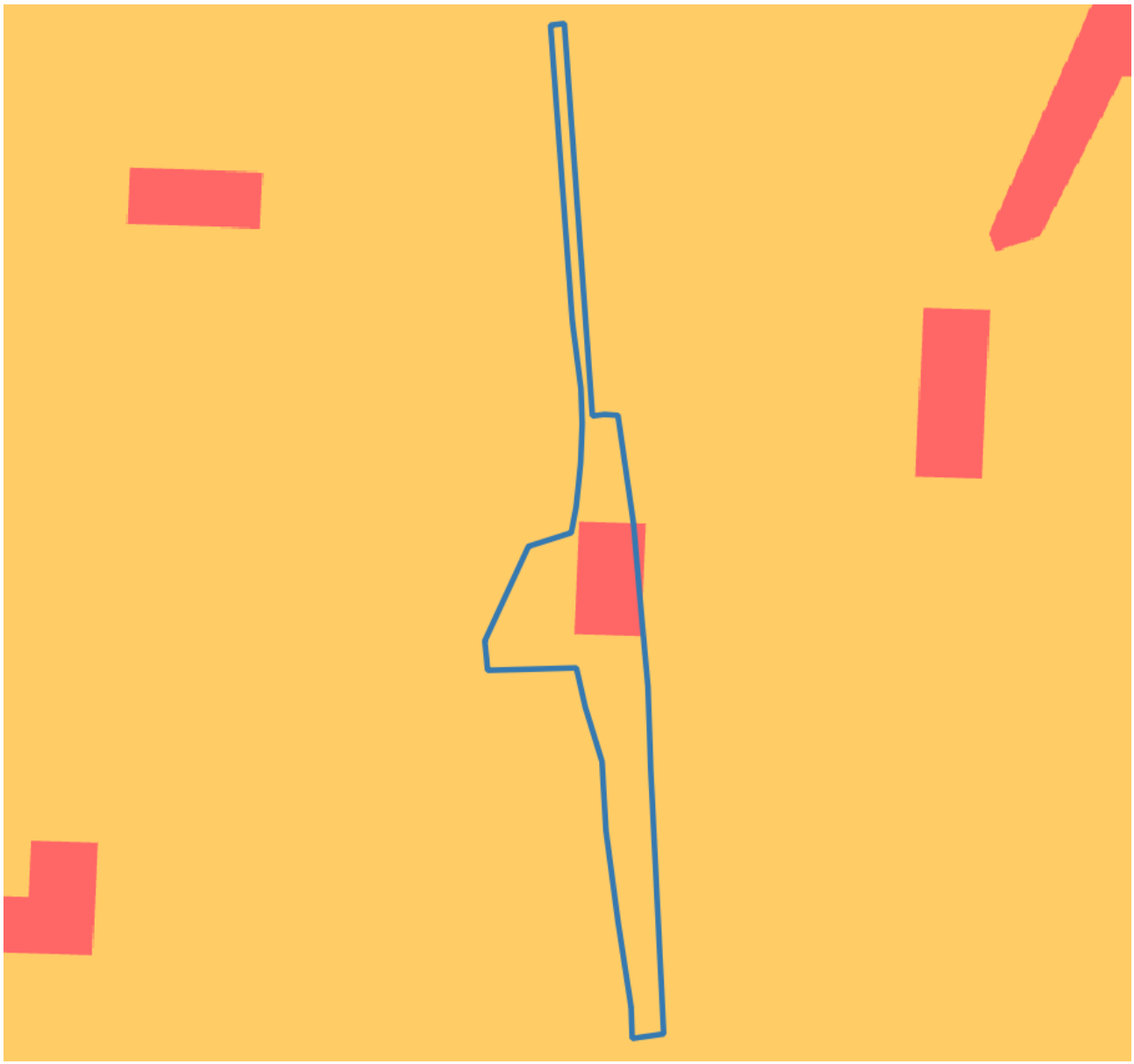

Figure 2. *The proposed development site (blue outline) overlaid on agricultural sensitivity, as given*

by the screening tool (green = low; yellow = medium; red = high; dark red = very high). The high screening tool sensitivity is disputed by this assessment.

Because the land capability data is generated by GIS modelling and because it is applicable at a fairly small scale (1:50 000 to 1:100 000) it is not necessarily accurate for a specific site and therefore needs verification. Because crop boundaries change over time, they also need verification.

The screening tool rating of the agricultural sensitivity of the assessment area is predominantly medium but includes a small patch of high. None of the land is classified as cropland and agricultural sensitivity is therefore purely a function of classified land capability as per Table 1, above. This assessment verifies that the site is not within crop boundaries but disputes the classified land capability, based on the assessment of the cropping potential of the site in this report (see Section 8). This assessment therefore disputes the rating of the sensitivity by the screening tool and verifies the entire assessment area as being of medium agricultural sensitivity.

8 BASELINE DESCRIPTION OF THE AGRO-ECOSYSTEM

The purpose of this section of an agricultural impact assessment report is to present the baseline information that controls the agricultural production potential of the site so that an assessment of that potential can be made. Agricultural production potential is one of the three factors that determines the significance of the agricultural impact (see Section 9).

All important parameters that control the agricultural production potential of the site are given in Table 2. The land type soil data is 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. A Protected Agricultural Area is a demarcated area in which the climate, terrain, and soil are generally conducive for agricultural production and which, historically, has made important contributions to the production of the various crops that are grown across South Africa. Within Protected Agricultural Areas, 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	Temperate, dry summer, warm summer
	Mean Annual Rainfall (mm)	422
	Reference Crop Evaporation Annual Total (mm)	1130
	Climate capability classification (out of 9)	5 (moderate)
Terrain	Terrain type	Foot slopes onto coastal plain
	Slope gradients (%)	0 to 3
	Altitude (m)	70
	Terrain capability classification (out of 9)	6 (moderate-high)
Soil	Geology	SANDVELD GROUP: Quartzose sand, pelletal phosphorite, gravel, sandy silt, grey-black carbonaceous kaolinitic clay, peat, shelly limestone and sandstone, shelly sand and (aeolian) calcarenite, coquinite, light grey to reddish sandy soil, loamy
	Land type	Bb42
	Description of land type soils	Deep, very light textured (sandy) soils
	Dominant soil forms	Longlands, Kroonstad, Wasbank, Fernwood
	Soil capability classification (out of 9)	4 (low-moderate) to 6 (moderate-high)
Land use	Agricultural land use in the surrounding area	Mainly non-agricultural land use and grazing
	Agricultural land use on the site	None
	Land Cover classification on the site	Low shrubland
General	Long-term grazing capacity (hectares per Large Stock Unit)	25 (moderate-high)
	Land capability classification (out of 15)	7 (low-moderate) to 9 (moderate-high)
	Within Protected Agricultural Area	No

8.1 Assessment of the agricultural production potential

This assessment of the agricultural production potential of the site is based on an integration of the different parameters in Table 2 above.

The cropping potential of the site is limited particularly by soil conditions. The soils on site are predominantly limited by a very low water and nutrient holding capacity. The site is not viable for rain-fed crop production, or at best extremely marginal. The limited agricultural potential of the site limits its agricultural use to grazing only.

Figure 3. *Satellite image map of the development site.*

9 ASSESSMENT OF THE AGRICULTURAL IMPACT

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. Soil erosion and degradation may also contribute to loss of agricultural production potential. 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 agricultural impact possible, ignoring the length of time component, is

therefore a loss of a large area of high yielding cropland and the least significant impact is a loss of a small area 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 and the relative abundance of land 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 total footprint of land that will be permanently lost is approximately 3 hectares. The production potential of that land is limited to only being suitable as grazing land. The loss of 3 hectares of grazing land, of which there is no particular scarcity in the country, represents minimal loss of agricultural production potential in terms of national food security and for the affected farm. Due to the limited loss of agricultural production potential, the agricultural impact of the development is assessed here as being of very low significance.

Specialist assessments for environmental authorisation are required to assess 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. The conservation of agricultural land that is in proximity to urban areas is under inevitable pressure from various non-agricultural land uses including urban expansion. The cumulative impact of agricultural land loss close to urban centres is significant. However the agricultural priority should be to conserve future agricultural production, not simply agriculturally zoned land. As has been shown above, the site has limited current agricultural production and limited capacity for future agricultural production. Therefore it is a site to which non-agricultural land uses can be steered without a high loss of agricultural production potential. The cumulative agricultural impact of the proposed development is therefore assessed here as being of low significance and therefore as acceptable.

Specialist assessments for environmental authorisation are also required to assess the impact of the no-go alternative. 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.

This assessment is also required to comparatively assess different proposed alternative layouts. However, due to the low agricultural sensitivity of the site, and the effectively uniform agricultural

conditions across the site, there will be absolutely no material difference between the agricultural impacts of any of the proposed layout alternatives. All alternatives are considered acceptable.

No mitigation measures are required for the protection of agricultural production potential on the site because the site will be excluded from agricultural land use.

10 CONCLUSION: AGRICULTURAL COMPLIANCE STATEMENT

The site is classified as high agricultural sensitivity by the screening tool. This has been disputed by this assessment, because of the agricultural production potential and the site is verified by this assessment as being of medium agricultural sensitivity.

The cropping potential of the site is limited particularly by soil conditions. The soils on site are predominantly limited by a very low water and nutrient holding capacity. The site is not viable for rain-fed crop production, or at best extremely marginal. The limited agricultural potential of the site limits its agricultural use to grazing only.

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. 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).

In this case, the total footprint of land that will be permanently lost is approximately 3 hectares. The production potential of that land is limited to only being suitable as grazing land. The loss of 3 hectares of grazing land, of which there is no particular scarcity in the country, represents minimal loss of agricultural production potential in terms of national food security and for the affected farm.

Although the development will occupy land that is currently zoned for agriculture, it will lead to minimal loss of both current production and of future agricultural production potential. The agricultural impact of the proposed development is assessed 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.

11 REFERENCES

Department of Agriculture Forestry and Fisheries, 2018. Long-term grazing capacity map for South Africa developed in line with the provisions of Regulation 10 of the Conservation of Agricultural Resources Act, Act no 43 of 1983 (CARA), available on Cape Farm Mapper. Available at: https://gis.elsenburg.com/apps/cfm/

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

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

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

Schulze, R.E. 2009. SA Atlas of Climatology and Agrohydrology, 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*.

APPENDIX 2: DECLARATION OF 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

Name of Company: SoilZA (sole proprietor)

Date**:** 20 January 2025

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

20/01/2025

Date

SUID-AFRIKAANSE POLISIEDIENS
HOUT BAY
20 JAN 2025
COMMUNITY SERVICE

Signature of the Commissioner of Oaths

2025-01-20

Date

APPENDIX 3: SACNASP REGISTRATION CERTIFICATE

SACNASP

South African Council for Natural Scientific Professions

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**

Chairperson

Chief Executive Officer

To verify this certificate scan this code

APPENDIX 4: SOIL DATA

Table of land type soil data

Land type	Soil series (forms)	Depth (mm)	Clay % A horizon	Clay % B horizon	Depth limiting layer	% of land type
Bb42	Longlands	900 - 1200	0 - 6	2 - 6	sp	27.4
Bb42	Kroonstad	900 - 1200	0 - 6	25 - 35	gc	20.6
Bb42	Wasbank	900 - 1200	0 - 6		hp	19.6
Bb42	Fernwood	> 1200	0 - 6			18.8
Bb42	Clovelly	> 1200	0 - 6	0 - 6		4.4
Bb42	Constantia	900 - 1200	0 - 6	0 - 6	vp	3.1
Bb42	Pinedene	900 - 1200	0 - 6	0 - 6	gc	3.0
Bb42	Swartland	300 - 400	15 - 25	35 - 45	vp	1.8
Bb42	Avalon	900 - 1200	0 - 6	0 - 6	sp	1.3