PLANT SPECIES COMPLIANCE STATEMENT

FOR THE

PROPOSED WATER TREATMENT WORKS ON ERF RE/557 AND ERF 672 HEIDELBERG

Enviro-EAP
Environmental Consultants

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Original Report Compiled September 2025
1st Revision Compiled February 2026

DECLARATION OF THE SPECIALIST

Note: Duplicate this section where there is more than one specialist.

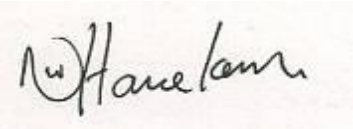
I **Nicolaas Willem Hanekom**, as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

- In terms of the general requirement to be independent:
  - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or

- In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;

- I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and

- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.



Nicolaas Hanekom
Pri.Sci.Nat (Ecology) 004415 **28 February 2026**
Signature of the Specialist: Date:

Enviro-EAP (Pty) Ltd
Name of company (if applicable):

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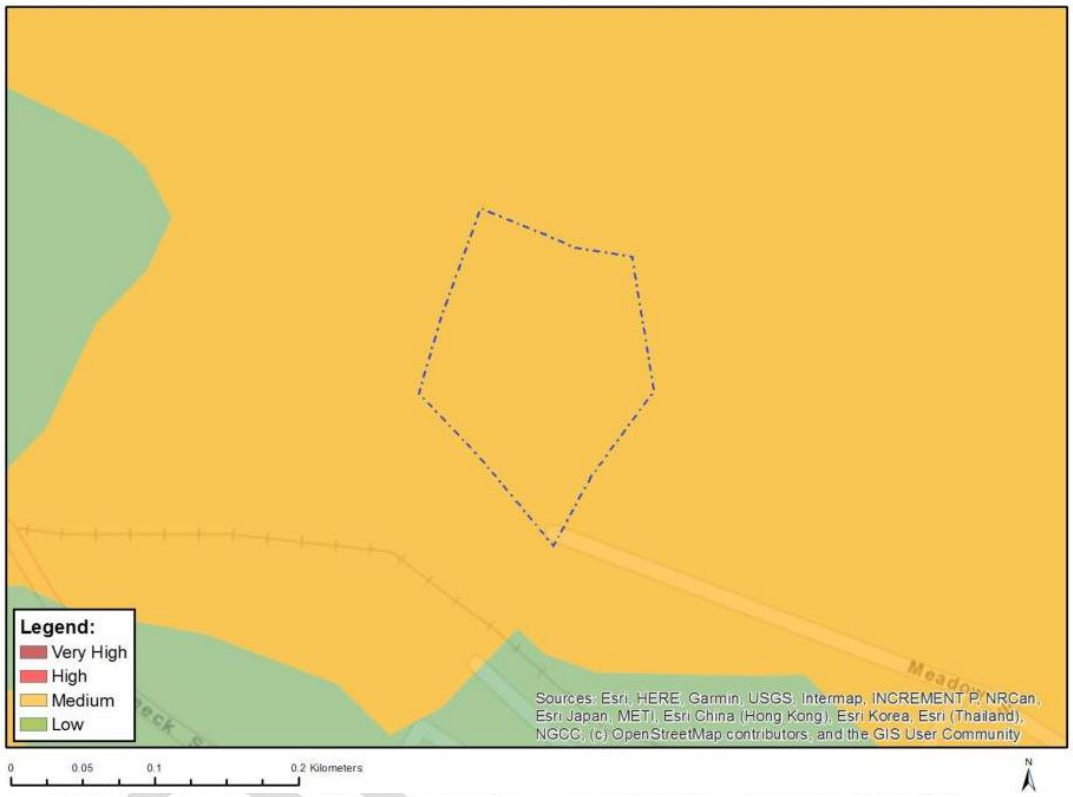
1. INTRODUCTION

The Department of Environmental Affairs screening report from the national web based environmental screening tool reported a medium sensitivity for Plant Species.

MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Sensitivity Features:

Sensitivity	Feature(s)
Medium	Aspalathus campestris
Medium	Aspalathus grobleri
Medium	Aspalathus millefolia
Medium	Aspalathus steudeliana
Medium	Aspalathus zeyheri
Medium	Otholobium bowieanum
Medium	Otholobium pungens
Medium	Lotononis viborgioides
Medium	Leucadendron coriaceum
Medium	Selago ramosissima
Medium	Hesperantha muirii
Medium	Freesia fergusoniae
Medium	Sensitive species 157

Medium	Sensitive species 700
Medium	Sensitive species 802
Medium	Sensitive species 499
Medium	Oxalis duriuscula
Medium	Hermannia lavandulifolia
Medium	Sensitive species 439
Medium	Sensitive species 1142
Medium	Sensitive species 339
Medium	Duvalia elegans
Medium	Cynanchum zeyheri
Medium	Sensitive species 96
Medium	Gnidia ericoides
Medium	Chrysocoma flava
Medium	Stoebe rugulosa
Medium	Relhania garnotii
Medium	Acmadenia macropetala
Medium	Sensitive species 692
Medium	Sensitive species 980
Medium	Phylica elimensis
Medium	Sensitive species 822
Medium	Drosanthemum lavisii
Medium	Drosanthemum micans
Medium	Drosanthemum striatum
Medium	Romulea jugicola
Medium	Sensitive species 521
Medium	Sensitive species 142
Medium	Elegia squamosa
Medium	Diosma passerinoides
Medium	Agathosma microcarpa

Figure 1: Projected Area of Influence (PAOI) map and Sensitivity Features relevant to Plant Species as per the environmental screen tool report. Sensitive species as listed in the table which are not named can be supplied upon request.

1.1. Background & Competency

Nicolaas Hanekom is a registered Professional Natural Scientist in the ecological science field with the South African Council for Natural Scientific Professions ("SACNASP"), (Ecology field) and a qualified registered Environmental Assessment Practitioner ("EAP") who holds a Masters Technologiae, Nature Conservation ("Vegetation Ecology and Biodiversity Assessment") degree from the Cape Peninsula University of Technology (Refer to Appendix A, CV). Nicolaas Hanekom is suitably qualified SACNASP registered specialist.

1.2 Scope and Objectives

The protocol provides the criteria for the reporting of requirements for the assessment and reporting of impacts on plant species for activities requiring environmental authorisation.

An applicant intending to undertake an activity identified in the Scope of this Protocol, on a site identified as being of "medium sensitivity" for plant species on the national web based environmental screening tool. According to the protocols, where Species of Conservation Concern ("SCC") are found on site or have been confirmed to be likely present, a Plant Species Specialist Assessment must be submitted in accordance with the requirements specified for "very high" and "high" sensitivity in this protocol. Similarly, where no SCC are found on site during the investigation or if the presence is confirmed to be unlikely, a Plant Species Compliance Statement must be submitted. Since there were no SCC found on site during the field survey, a Plant Species Compliance Statement was conducted.

1.3. Terms of Reference

Step 1: Site Sensitivity Verification Report
Prior to beginning the assessment, the current use of the land and the potential environmental sensitivity of the site as identified by the national web based environmental screening tool must be confirmed by undertaking an Initial Site Sensitivity Verification. The Initial Site Sensitivity Verification must be undertaken by an environmental assessment practitioner or a registered specialist with expertise in the relevant environmental theme being considered. The Initial Site Sensitivity Verification must be undertaken through the use of:
(a) a desk top analysis, using satellite imagery;
(b) a preliminary on-site inspection to;
(c) any other available and relevant information.

The outcome of the Initial Site Sensitivity Verification must be recorded in the form of a report that:
(a) confirms or disputes the current use of the land and the environmental sensitivity as identified by the screening tool, such as new developments or infrastructure, the change in vegetation cover or status etc.;
(b) contains a motivation and evidence (e.g. photographs) of either the verified or different use of the land and environmental sensitivity; and
(c) is submitted together with the relevant assessment report prepared in accordance with the requirements of the Environmental Impact Assessment Regulations.
The site sensitivity verification report was completed by the environmental assessment practitioner and was included in the Scoping and Environmental Impact Assessment reports.

The outcome of the site sensitivity verification report concerning plant sensitivity of proposed development site and surrounds can be summarised as below:

The Department of Environmental Affairs screening report from the national web based environmental screening tool reported a "Medium sensitivity for plant species theme". Figure 1 depicts the property on which activities area proposed which mainly falls within Medium Plant Species Sensitivity areas (refer to figure 1 below). During the site verification inspections, it was found that no Plant Species of Conservation Concern will be impacted upon hence a Plant Compliance Statement is provided.

Step 2: Terrestrial Plant Species Compliance Statement
This compliance statement reports on the findings of the terrestrial plant sensitivity verification and site survey that was conducted by Nicolaas Hanekom.

The compliance statement must:

- be applicable to the study area;
- confirm that the study area is of "low" sensitivity for terrestrial plant species; and
- indicate whether or not the proposed development will have any impact on SCC.

The terrestrial plant compliance statement, must contain, as a minimum, the following information:

- contact details and relevant experience as well as the SACNASP registration number of the specialist preparing the compliance statement including a curriculum vitae; **Refer to cover page, section 1.1. and Appendix A of this report**
- A signed statement of independence by the specialist; **Refer to page 2 of this report**
- A statement on the duration, date and season of the site inspection and the relevance of the season to the outcome of the assessment; **Refer to section 2.**
- a description of the methodology used to undertake the site survey and prepare the compliance statement, including equipment and modelling used where relevant; **Refer to section 3**
- where required, proposed impact management actions and outcomes or any monitoring requirements for inclusion in the EMPr; **Refer to Section 4**
- a description of the assumptions made as well as any uncertainties or gaps in knowledge or data; and **Refer to Section 5**
- the mean density of observations/ number of samples sites per unit area; **Refer to Section 6**
- any conditions to which the compliance statement is subjected. **Refer to Sections 4 and 7**

Step 3: Reporting
A signed copy of the compliance statement must be appended to the Basic Assessment Report or Environmental Impact Assessment Report.

The Plant Species Compliance Statement, must be prepared by a suitably qualified specialist

in the field of Botanical Science or Ecological Science, on the site being submitted as the preferred development site and must verify:

- That the site is of “low” sensitivity for plant species; and
- Whether or not the proposed development will have any impact on the biodiversity feature.

2. BASELINE PROFILE DESCRIPTION OF BIODIVERSITY AND ECOSYSTEMS, INCLUDING A STATEMENT ON THE DURATION, DATE AND SEASON OF THE SITE INSPECTION AND THE RELEVANCE OF THE SEASON TO THE OUTCOME OF THE ASSESSMENT

The site survey was conducted on 7 August 2025 for approximately 2 hours in the optimal season. The site was visited late afternoon. It was partly clouded with a light northwestern wind and 16^0C during the survey. During the site visit, the different biodiversity features, habitat, vegetation and landscape units present were identified and surveyed. Adjacent Eastern Ruens Renosterveld in good ecological condition was also surveyed to obtain a comparison of good quality habitat for comparison purposes. Walk-through-surveys were conducted of representative habitats and impact areas in search of Species of conservation concern or the species listed in the environmental screen tool report. None were recorded.

Project and site description – The Hessequa Municipality proposes to construct a Water Treatment Works (“WTW”) on the erven 672 and RE/557 just below the southern wall of the Bloekombos Dam at Heidelberg – Western Cape. Water will be pumped from the Bloekombos Dam and treated at the proposed Treatment Works from where it will be pumped along a new pipeline to be laid within the road reserve along Muir Street from where it will connect with existing bulk distribution system in Heidelberg. The proposed development site is accessed off Muir Street.

The expected footprint for the WTW infrastructure will be approximately 0.5ha and consist of the following:

- WTW package plant with maximum capacity of 3 000m³/day (3Ml/day) 120m² footprint.
- Surface abstraction by floating pumps from Bloekombos Dam on a variable demand basis along an 60m long x 200mm uPVC pipeline above ground where it goes over and along the dam wall and below ground from the foot of the dam wall to the WTW.
- 2 x Sludge settling ponds (27m x 12m x 1.8m deep with 518m³ capacity each) for backwash water collections and sludge settlement.
- 1 x Artificial reed bed pond (27x 12m x 1.8m deep with 518m³ capacity) with aal the backwash water from the two settling ponds passing through the reed bed and returned to the Bloekombos Dam via the canal.
- The proposed cut and fil construction of the three ponds will have 3m high support embankments with a total 1200m² footprint.
- A collector sump and pumps for return flow of supernatant from sludge dams back into

Bloekombos dam via the canal to optimise water use. Return flow water to be pumped along an underground 170mm x 110m long uPVC pipe to the canal inlet point at the Dam.

- A pump station and 200mm x 620m uPVC pipeline for final water distribution from the WTW into the bulk distribution system in Heidelberg via Muir Street.
- Vehicle parking and materials storage area 280m²
- Stormwater Pipeline to western non-perennial drainage line of 85m x 450mm concrete class 100D outlet headwall within non-perennial drainage line. Only the site rainwater runoff will be piped into the non-perennial drainage line.
- Widening and re-alignment of existing 3m wide access road from Muir Street by 1m (84m long x 4m wide), and three 4m access roads total distance 72m to sludge dams.
- A 3 phase 400/230V nominal supply at 50hz from nearest transformer with 55m long underground cable.

The area just below the Bloekombos Dam where development is proposed contains disturbed pioneer indigenous vegetation species originally part of Endangered - Eastern Ruens Shale Renosterveld. A small portion of the proposed development area, mostly falling within the proposed road widening and realignment section, is mapped as Terrestrial CBA. It is expected that the development will lead to the clearance of ±1 200m² indigenous vegetation. The Boekombos Dam is identified as partially artificial and partially natural NFEPA wetland, however the western non-perennial drainage line has not been mapped as a NFEPA wetland. Significant transformation of the original natural features of the site and surrounds, including the non-perennial drainage line has taken place historically as significant encroachment and dense stands of Eucalyptus trees is present within the immediate site and its surrounds most likely caused due to previous agricultural crop planting, plantation and dam construction and maintenance activities.

Figure 2: Locality Map of proposed Heidelberg WTW at Bloekombos Dam

Topographically the site has a low slope from north to south.

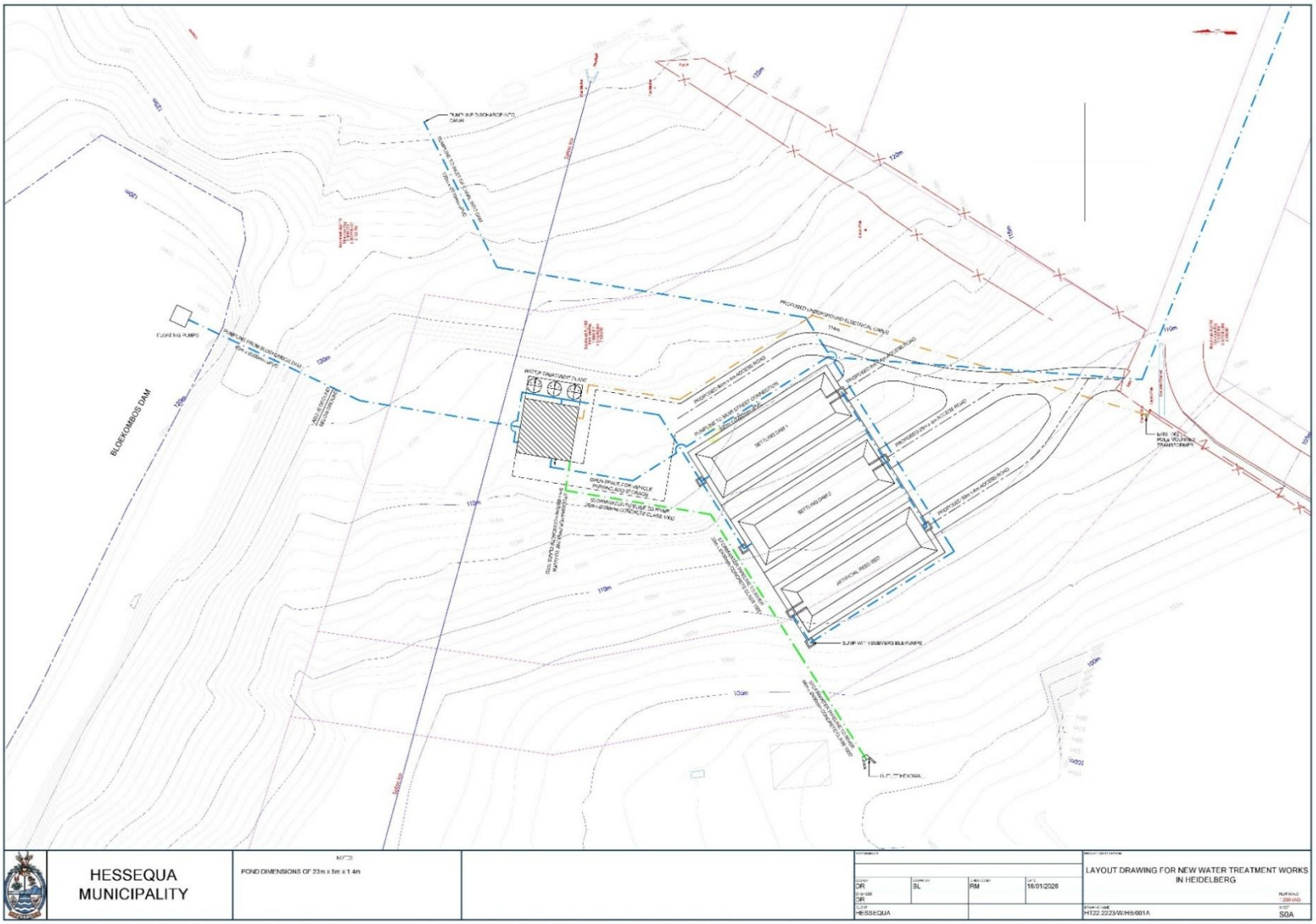


Figure 3: Proposed Heidelberg water treatment works layout plan

The National Vegetation Map of South Africa (2018) identifies the remnants of natural vegetation occurring within the area as Eastern Ruens Shale Renosterveld, endangered (EN). During the site visit, it was evident that these remaining remnants have been significant transformed due to existing roads, earth moved platforms and Eucalyptus tree plantation. No Species of Conservation Concern was recorded. The following plant species were recorded on site during the survey on the development footprint. *Searsia glauca, Aloe forex, Asparagus burchellii, Ledebouria revoluta, Felicia amoena, Helichrysum patulum, Hypochaeris radicata, Aspalathus laricifolia subsp. Canescens, Oxalis pes-caprae, Digitaria eriantha* and *Haemanthus sp.*

Disturbed pioneer indigenous vegetation present of which a few species observed are listed above were recorded on the impact site. The vegetation would not be considered as representative of Eastern Rûens Shale Renosterveld. The earliest historical Google Earth imagery (2003) indicates the presence of a gum stand and fallow lands on the footprint indicating that the disturbance and invasion of aliens is not recent, as does the name of Bloekombos Dam from which water is abstracted. Areas subjected to longer periods of disturbance have reduced remnants indigenous species (including propagules) and lower restoration potential.

Photograph 1: Proposed development area.

Photograph 2: Proposed development area.

Photograph 3: Proposed development area.

Photograph 4: Proposed development area.

Photograph 5: Proposed development area and access road

Photograph 6: Proposed pipeline connection route.

Photograph 7: Proposed pipeline connection route.

Photograph 8: View of a representative of vegetation structure of Eastern Ruens Shale Renosterveld that is located northeast of the development site. The representative and ecological vegetation structure between the development area (photographs above) and this area is clear and the degraded nature of the development area mapped as low sensitivity is clearly visible.

Sensivity Mapping and Assessment *(*Site Ecological Importance)[1]

Methodology used to determine Site Ecological Importance (SEI)

[1] South African National Biodiversity Institute (SANBI). 2020. *Species Environmental Assessment Guideline. Guidelines for the implementation of the Terrestrial Fauna and Terrestrial Flora Species Protocols for environmental impact assessments in South Africa.* South African National Biodiversity Institute, Pretoria. Version 3.1. 2022.

Where the site-specific assessment produces lower or higher SEI classification than the 'environmental sensitivity' output of the screening tool for that particular site, it is the responsibility of the specialist to provide a clear and defensible justification for the difference. SEI is considered to be a function of the biodiversity importance (BI) of the receptor (e.g. species of conservation concern, the vegetation/fauna community or habitat type present on the site and its resilience to impacts (receptor resilience [RR]) as follows:

$$SEI = BI + RR$$

BI in turn is a function of conservation importance (CI) and the functional integrity (FI) of the receptor as follows:

$$BI = CI + FI$$

Conservation importance (CI) is evaluated in accordance with recognised established internationally acceptable principles and criteria for the determination of biodiversity-related value, including the IUCN Red List of Species, Red List of Ecosystems and Key Biodiversity Areas (KBA; IUCN [2016]).

Conservation importance is defined here as:
"The importance of a site for supporting biodiversity features of conservation concern present, e.g. populations of IUCN threatened and Near Threatened species (CR, EN, VU and NT), Rare species, range-restricted species, globally significant populations of congregatory species, and areas of threatened ecosystem types, through predominantly natural processes.'

These criteria are defined as follows:
IUCN threatened and Near Threatened species (CR, EN, VU and NT) are defined as either the global or national assessments of the risk of extinction as evaluated by a dedicated panel of species specialists according to the criteria of the International Union for The Conservation of Nature (www.iucnredlist.org). Where the global and national assessments differ for the same taxon, the national evaluation of status should be used in calculating SEI unless the global assessment is both more recent and of a more threatened category. It is important to note that the specialist is required to have a firm understanding of the IUCN Red List Categories and Criteria (IUCN 2012) in order to appropriately apply these for the evaluation of SEI. This criterion can be assessed using confirmed occurrences of species or the suitability of the habitat to support these species.

Rare species are those included on South Africa's National Red List as Rare or Critically Rare or Extremely Rare. These are highly restricted species that are currently not declining. However, should any development impact on a population of these species they will immediately qualify under one of the IUCN categories of threat.

Range-restricted species – the presence of terrestrial flora, vertebrate and invertebrate fauna with a global population extent of occurrence (EOO) of 10 000 km^2 or less.

Globally significant populations of congregatory species – a roughly estimated proportion (%) of the global population of a fauna species that congregate for breeding/ feeding/hibernation/other reasons.

Significant areas of threatened vegetation types – this is a function of both the area (size) being considered in relation to the total extent of that vegetation type (i.e. proportion) and how threatened (CR, EN, VU) the vegetation types are.

Natural processes – natural unmanaged areas with low levels of ecological disturbance have largely intact natural processes such as pollination, seed dispersal and migration, and thus have greater intrinsic conservation importance than those that are modified through ecological disturbance.

While most of the features that will be included in the CI will be provided by the screening tool, it is important to note that CI is evaluated at a much finer spatial scale and based on fieldwork data collection and comprehensive desktop analyses performed by the specialist during the EA process. As a minimum requirement, CI needs to be determined for each identified habitat within the project footprint/PAOI, but best practice recommendation is that it should be determined for all habitats within the entire PAOI.

Fulfilling criteria to evaluate CI do not rely on a single specific threshold for each of the above defining characteristics but can act in combination or in isolation, providing a more robust evaluation of CI as per table below.

Conservation importance	**Fulfilling criteria**
Very high	Confirmed or highly likely occurrence of CR, EN, VU or Extremely Rare or Critically Rare species that have a global EOO of < 10 km^2. Any area of natural habitat of a CR ecosystem type or large area (> 0.1% of the total ecosystem type extent) of natural habitat of EN ecosystem type. Globally significant populations of congregatory species (> 10% of global population).
High	Confirmed or highly likely occurrence of CR, EN, VU species that have a global EOO of > 10 km^2. IUCN threatened species (CR, EN, VU) must be listed under any criterion other than A, if listed as threatened only under Criterion A, include if there are less than 10 locations or < 10 000 mature individuals remaining.

	Small area (> 0.01% but < 0.1% of the total ecosystem type extent) of natural habitat of EN ecosystem type or large area (> 0.1%) of natural habitat of VU ecosystem type. Presence of Rare species. Globally significant populations of congregatory species (> 1% but < 10% of global population).
Medium	Confirmed or highly likely occurrence of populations of NT species, threatened species (CR, EN, VU) listed under Criterion A only and which have more than 10 locations or more than 10 000 mature individuals. Any area of natural habitat of threatened ecosystem type with status of VU. Presence of range-restricted species. > 50% of receptor contains natural habitat with potential to support SCC.
Low	No confirmed or highly likely populations of SCC. No confirmed or highly likely populations of range-restricted species. < 50% of receptor contains natural habitat with limited potential to support SCC.
Very low	No confirmed and highly unlikely populations of SCC. No confirmed and highly unlikely populations of range-restricted species. No natural habitat remaining.

Furthermore, while CI is most likely to be assessed based on data collected during the fieldwork survey, it can also be an assessment of the suitability of the receptor to support populations conforming to the fulfilling criteria. As can be seen from the worked example below, each of these evaluations of the fulfilling criteria demand necessary justification.

Functional integrity (FI) of the receptor (e.g. the vegetation/fauna community or habitat type) is defined here as the receptors' current ability to maintain the structure and functions that define it, compared to its known or predicted state under ideal conditions. Simply stated, FI is:
'A measure of the ecological condition of the impact receptor as determined by its remaining intact and functional area, its connectivity to other natural areas and the degree of current persistent ecological impacts.'

These criteria can be defined as:

- Connectivity to other natural areas – connectivity, which can also be measured conversely as the degree of habitat fragmentation, refers to how connected habitat patches are to each other, which has a significant influence on numerous ecological process, such as migration and dispersal opportunities of biota and therefore genetic exchange between populations.

Connectivity to other similar habitats becomes more important as the remaining intact and functional area of a habitat decreases, mainly because population sizes decrease and are therefore at greater risk from ecological perturbations and inbreeding effects. The degree of connectivity between habitat patches varies greatly with the dispersal ability of the taxon or taxon group (e.g. fossorial reptiles) in question.

- Degree of current persistent negative ecological impacts – persistent negative impacts such as uncontrolled spread of alien and invasive flora effectively decreases both the remaining intact area and ecosystem functioning of a particular habitat.
- Remaining intact and functional area – the proportion of the receptor that supports natural habitat with intact ecological processes – small areas are less likely to withstand ecological degradation compared to large areas, and the latter are therefore better able to maintain structure and function allowing for intact ecological processes.

$$SEI = BI + RR$$

BI in turn is a function of conservation importance (CI) and the functional integrity (FI) of the receptor as follows:

Biodiversity Importance of the proposed Development Site:

Recalling that biodiversity importance (BI) is a function of conservation importance (CI) and the functional integrity (FI) of a receptor, BI can be derived from a simple matrix of CI and FI as per table below.

Biodiversity importance		Conservation importance				
		Very high	High	Medium	Low	Very low
Functional integrity	Very high	Very high	Very high	High	Medium	Low
	High	Very high	High	Medium	Medium	Low
	Medium	High	Medium	Medium	Low	Very low
	Low	Medium	Medium	Low	Low	Very low
	Very low	Medium	Low	Very low	Very low	Very low

Disturbed and previously levelled area-

CI = **very low**. Reason be that no natural habitat remaining.

FI= **very low**. Reason be that no natural habitat remaining.

$$BI = CI + FI$$

Therefore, using table above, the BI was assessed to be **very low** (CI **very low** = and FI = **very low**)

Area covered by Eucalypts tree plantation-
CI = **low**. Reason be that the vegetation was impacted by the Eucalyptus tree plantation and consist mainly of pioneer plants. < 5% of receptor contains natural habitat with limited potential to support SCC.

FI= **low**. Reason be that the vegetation structure is compromised and consist of mostly pioneer plants.

$$BI = CI + FI$$

Therefore, using table above, the BI was assessed to be **low** (CI **low** = and FI = **low**)

Receptor Resilience (RR) of the proposed Development Site

Receptor resilience (RR) is defined here as:
'The intrinsic capacity of the receptor to resist major damage from disturbance and/or to recover to its original state with limited or no human intervention.'

The fulfilling criteria to evaluate RR are based on the estimated recovery time required to restore an appreciable portion of functionality to the receptor (refer to table below) and will require justification by the specialist. The specialist needs to bear in mind that resilience will often be linked to a particular disturbance or impact, or even time of year, and needs to be described in relation to these factors. Receptor resilience needs to be evaluated by the specialist and justification for each evaluation must be provided in the report.

Resilience	Fulfilling criteria
Very high	Habitat that can recover rapidly (~ less than 5 years) to restore > 75% of the original species composition and functionality of the receptor functionality, or species that have a very high likelihood of remaining at a site even when a disturbance or impact is occurring, or species that have a very high likelihood of returning to a site once the disturbance or impact has been removed.

High	Habitat that can recover relatively quickly (~ 5–10 years) to restore > 75% of the original species composition and functionality of the receptor functionality, or species that have a high likelihood of remaining at a site even when a disturbance or impact is occurring, or species that have a high likelihood of returning to a site once the disturbance or impact has been removed.
Medium	Will recover slowly (~ more than 10 years) to restore > 75% of the original species composition and functionality of the receptor functionality, or species that have a moderate likelihood of remaining at a site even when a disturbance or impact is occurring, or species that have a moderate likelihood of returning to a site once the disturbance or impact has been removed.
Low	Habitat that is unlikely to be able to recover fully after a relatively long period: > 15 years required to restore ~ less than 50% of the original species composition and functionality of the receptor functionality, or species that have a low likelihood of remaining at a site even when a disturbance or impact is occurring, or species that have a low likelihood of returning to a site once the disturbance or impact has been removed.
Very low	Habitat that is unable to recover from major impacts, or species that are unlikely to remain at a site even when a disturbance or impact is occurring, or species that are unlikely to return to a site once the disturbance or impact has been removed.

Disturbed and previously levelled area-
The RR = **very high.** Reason being that the transformed areas are ecosystems which are present as a result of high levels of historical disturbance and are therefore both highly resilient ecosystems.

Area covered by Eucalypts tree plantation-
The RR = **very high.** Reason being that the gum stand areas are ecosystems which are present as a result of high levels of historical disturbance and are therefore both highly resilient ecosystems.

Site Ecological Importance of the Proposed Development Site:

Finally, after the successful evaluation of both BI and RR as described above, it is possible to evaluate SEI from the final matrix below.

SEI should be described in the above manner for each impact receptor within the PAOI and clearly mapped in relation to the proposed development activities and infrastructure. Interpretation of SEI in the context of the proposed development activities as per table below must be provided by the specialist. It is very important to note that SEI is specific to the proposed

development activities and cannot be meaningfully compared between different proposed projects with different associated activities on the same spatial location. However, SEI for the same proposed development with multiple alternative layouts and/or locations may be compared within the same study.

Site ecological importance		Biodiversity importance				
		Very high	High	Medium	Low	Very low
Receptor resilience	Very low	Very high	Very high	High	Medium	Low
	Low	Very high	Very high	High	Medium	Very low
	Medium	Very high	High	Medium	Low	Very low
	High	High	Medium	Low	Very low	Very low
	Very high	Medium	Low	Very low	Very low	Very low

Guidelines for interpreting SEI in the context of the proposed development activities.

Site ecological importance	Interpretation in relation to proposed development activities
Very high	Avoidance mitigation – no destructive development activities should be considered. Offset mitigation not acceptable/not possible (i.e. last remaining populations of species, last remaining good condition patches of ecosystems/ unique species assemblages). Destructive impacts for species/ecosystems where persistence target remains.
High	Avoidance mitigation wherever possible. Minimisation mitigation – changes to project infrastructure design to limit the amount of habitat impacted; limited development activities of low impact acceptable. Offset mitigation may be required for high impact activities.
Medium	Minimisation and restoration mitigation – development activities of medium impact acceptable followed by appropriate restoration activities.
Low	Minimisation and restoration mitigation – development activities of medium to high impact acceptable followed by appropriate restoration activities.
Very low	Minimisation mitigation – development activities of medium to high impact acceptable and restoration activities may not be required.

Disturbed and previously levelled area-
SEI **(very low)** = BI (**very low)** + RR (**very high**)

Area covered by Eucalypts tree plantation-

SEI **(very low)** = BI (**low)** + RR (**very high**)

The proposed development area is therefore classified as a site with **very low Site Ecological Sensitivity** within the Projected Area of Influence.

Figure 4: Plant Sensitivity Map. Yellow – very low sensitivity transformed, previously levelled area with Eucalyptus trees infestations.

3. A DESCRIPTION OF THE METHODOLOGY USED TO UNDERTAKE THE SITE SURVEY AND PREPARE THE COMPLIANCE STATEMENT, INCLUDING EQUIPMENT AND MODELLING USED WHERE RELEVANT

A literature review and desktop analysis were undertaken prior to the field investigation, utilizing various sources including the South African National Biodiversity Institute ("SANBI") data and other relevant sources. Recent and historical aerial imagery of the site was reviewed in order to identify points for investigation during the field survey. Utilising the above information, a field investigation was undertaken whereby:

- Sites of geomorphological or topographic variance were identified and surveyed.
- Species were identified.

The assessments entailed both a literature review of the region, as well as on site evaluations, during which specific primary data will be collected and evaluated. In addition, the identification of key ecological features was undertaken allowing for the interpretation of the prevailing habitat form and associated processes.

All data collected in the field and during the literature review was evaluated and interpreted in order to provide an understanding of the nature of the prevailing environment at a landscape and habitat level. In addition, specific evaluation of data relating to habitat form and structure was undertaken, aiding in the identification of bio-physical anomalies within the prevailing environment. Such variance may be considered to be indicative of differing habitat forms, which under consideration, may be of higher order ecological value in relation of the prevailing environment.

The study area was surveyed on foot, and all indigenous species growing in the study area were noted. Particular attention was paid to potential plant species of Conservation Concern that could have been present. Various photographs were taken.

4. WHERE REQUIRED, PROPOSED IMPACT MANAGEMENT ACTIONS AND OUTCOMES OR ANY MONITORING REQUIREMENTS FOR INCLUSION IN THE EMPR

Developments within rural areas containing indigenous vegetation (albeit pioneer and significantly disturbed indigenous vegetation species) can have both direct and indirect impacts on plant species of the development sites and surrounds. Direct impacts are those that destroys indigenous plant species habitats. Indirect impacts are those that may overtime lead to degradation or transformation of surrounding indigenous plant species habitats such as erosion.

The proposed development activities can have the following potential impacts on indigenous plant species of the site and surrounds:

- Destruction/removal of indigenous vegetation due to clearance and erosion.
- Degradation of adjacent indigenous vegetation areas due to alien vegetation encroachment.

The following impact management measures must be implemented and included in the EMPr, and should they be implemented the proposed development activities should not have any significant negative impacts on any indigenous plant species on the site or surrounds:

- Clearly demarcate the proposed development area of 0.5ha and treat all surrounding areas falling outside of the proposed 0.5ha development area as no-go area and undertake development activities only in identified and specifically demarcated areas as proposed. Refer to proposed figure 5 as included below.

- Demarcation method to be approved by an Environmental Control Officer (ECO) before site clearance activities commences.
- No disturbance should be allowed outside of the proposed 0.5ha development area. This includes no dumping of fill, no roads, soil or materials stockpiles and all forms of temporary disturbance.
- Implement erosion and storm water runoff management measures as according to EMP requirements to prevent (or if prevention is not possible limit) any erosion from occurring on the activity areas and surrounds.
- Should areas outside of the proposed development footprint area be disturbed this must be actively rehabilitated with indigenous vegetation.

Figure 5: Heidelberg Water Treatment Works proposed 0.5Ha construction footprint area. All areas falling outside of the proposed construction footprint area must be regarded as no-go/no-development area.

5. A DESCRIPTION OF THE ASSUMPTIONS MADE AND ANY UNCERTAINTIES OR GAPS IN KNOWLEDGE OR DATA

The site visit was carried out on 7 August 2025. The peak flowering time in this region is spring, which occurs from August to October. A fairly accurate idea of the priority conservation areas and plant species was gained, due to the use of a combined habitat and species-based

approach, and confidence in the accuracy of the findings is fairly high. The overall confidence in the completeness and accuracy of the findings at this point in time is considered to be good. A follow-up survey is not considered essential for decision-making.

6. THE MEAN DENSITY OF OBSERVATIONS/ NUMBER OF SAMPLES SITES PER UNIT AREA

Due to the size of the development impact area, surveys were concentrated on the impact areas and its surrounding areas and included a survey of the areas to the northeast.

7. ANY CONDITIONS TO WHICH THE COMPLIANCE STATEMENT IS SUBJECTED

The findings, results, observations, conclusions, and recommendations given in this report are based on the author's best scientific and professional knowledge as well as available information and knowledge of the area.

It was concluded that should the proposed mitigation measures as listed under point 4 above be implemented that the overall significance of the impacts on plant sensitivity of the site and surrounds will be of overall low negative significance. All of the mitigation and monitoring measures as listed under point 4 above must he included as part of the Environmental Management Programme conditions to be adhered to before, during and after the proposed prospecting activities.

This report may not be altered or added to without the prior written consent of the author. This restraint also refers to electronic copies of this report which are supplied as sub portion of other reports, including main reports. Similarly, any recommendations, statements, or conclusions drawn from or based on this report must specifically refer to this report. If such comments form part of a main report for this investigation, the report must be included in its entirety as an appendix or separate section to the main report.

8. REFERENCES

The revised list published in Government Gazette 47526 (Notice No.689) on 18 November 2022 in terms of the National Environmental Management: Biodiversity Act (NEMBA).

Driver A., Cowling R.M., & Maze K. 2003. Planning for living landscapes: perspectives and lessons from South Africa. Center for Applied Biodiversity Science at Conservation International, Washington DC; Botanical Society of South Africa, Cape Town.

IUCN Red List www.iucnredlist.org.

Helme N. & D. Raimondo. In prep. Contribution to the updated Red Data Book list of threatened

plants of South Africa.

Miller J.R. 2005. Biodiversity conservation and the extinction of experience. Trends in Ecology and Evolution. 20(8): 430-434.

Mucina, L. and M. Rutherford. *Eds.* 2018 update. Vegetation map of South Africa, Lesotho, and Swaziland. *Strelitzia 19*. South African National Biodiversity Institute, Pretoria.

APPENDIX A
SPECIALIST CV

CURRICULUM VITAE – NICOLAAS WILLEM HANEKOM

Profession: Environmental Scientist and Environmental Assessment Practitioner

Date of Birth: 01/02/1967

BIOGRAPHICAL SKETCH

Nicolaas Hanekom is a qualified Environmental Assessment Practitioner (”EAP”) who holds a Masters Technologiae, Nature Conservation (“Vegetation Ecology and Biodiversity Assessment”) degree from the Cape Peninsula University of Technology. Nicolaas is certified in terms of section 20(3)(a) of the Natural Scientific Professions Act, 2003 (Act 27 of 2003), as a Professional Natural Scientist Ecological Science (Pri.Sci.Nat); Aquatic Science & Conservation Science (Cand.Sci.Nat), Registration Number: 004415. He further qualified in Environmental Management Systems ISO 14001:2004, at the Centre for Environmental Management, North-West University, as well as Environmental Management Systems ISO 14001:2004 Audit: Internal Auditors Course to ISO 19011:2003 level, from the Centre for Environmental Management, North-West University qualifying him to execute audits to ISO/SANS environmental compliance and EMS standards.

He has also completed the suite of Greener Governance courses with certificates in;

- An Overview of Environmental Management at the Local Government Level, Centre for

Environmental Management, North-West University;
- Greener Governance for Local Authorities, Centre for Environmental Management, North-West University;
- Tools for Integrated Environmental Management and Governance, Centre for Environmental Management, North-West University.

He further attended and obtained a certificate on Integrated Protected Area Planning at the Centre for Environmental Development, University of Kwa Zulu Natal and a certificate in Project Management (Theory and Practical), through CS Holdings. Nicolaas has lectured in two subjects at the Cape Peninsula University of Technology. He has 26 years of environmental planning experience, working for Free State and Western Cape departments of environmental affairs, where he reviewed and commented on development (EIA) applications, in the West Coast Region.

He has, as practising EAP been responsible for many environmental impact assessments and EIA applications, waste license and atmospheric emission license applications.
He has also been involved in the implementation of several environmental management systems. He has engaged successfully with various clients as set out below.

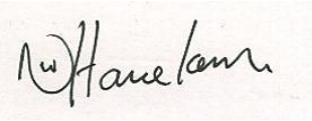
Areas of specialisation:	• Ecosystem (terrestrial and aquatic) monitoring and assessments • Design of monitoring programmes for ecosystems (terrestrial and aquatic) • Environmental Impact Assessments • River classification and environmental water requirements • Wetlands Delineation • River and Wetlands management • Water Use Authorization Applications • Water quality management • River Health Assessments
Countries of Work Experience:	South Africa (Northern Cape, Western Cape, Free State, Mpumalanga, Gauteng)
Employment Record	• Student at Bontebok National Park (1992) • Assistant Reserve Manager at Gariep Dam Nature Reserve, Free State (1993 - 1998) • Reserve Manager, Conservation Services Manager for Western Cape Nature Conservation Board (1998 - 2006) • External Lecturer at Cape Peninsula University of Technology (2003 - 2005) • Director: Environmental Management at Cape Lowlands Environmental Services (2006 – 2010)

	• Director, Environmental Management and lead Environmental Impact Assessment Practitioner at Eco Impact (Pty) Ltd (2010 – to August 2019) • Director, Environmental Management and lead Environmental Impact Assessment Practitioner at Enviro-EAP (Pty) Ltd (September 2019 – to date)
Professional membership, accreditations and courses	• South African Council for Natural Scientists Professions Pri.Sci.Nat (Ecological Science) • Riparian vegetation identification and health assessment. Internal Western Cape Nature Conservation short course presented by Dr C Boucher (Stellenbosch University) in 2000. • SASS5 Aquatic Biomonitoring Training Course. 2 to 5 September 2013. Ground Truth Water and Environmental Engineering consultancy in partnership with the Department of Water Affairs. • Workshop on "Section 21(c) and (i) Water Use Training: Understanding Watercourses and Managing Impacts to their Characteristics". 10 May 2017. Presented by Dr Wietsche Roets of the Department of Water and Sanitation (Sub-Directorate: Instream Water Use).
Summary of experience	1992: South African National Parks. Student at Bontebok National Park with management and monitoring actions related to the Breede River. 1993 -1998: Free State Nature Conservation. Ecological management and monitoring actions related to the Gariep Dam, Orange and Caledon Rivers. 1998 -2006: CapeNature. Ecological management and monitoring actions related to the Berg River Estuary, Verlorenvlei, Lamberts bay's Jackalsvlei, Wadrift Soutpanne, Oliphant's River mouth, Rocherpan Nature Reserve, etc. Review and assessment of EIA applications, inclusive of Freshwater ecology. Did some site visits with Department of Water Affairs and Forestry (Hester Lyons) to confirm the presence of aquatic ecological features during EIA water use registration applications. 2006 to date: Cape Lowland Environmental Services, Eco Impact Legal Consultant and Enviro-EAP. Ecological (Freshwater and aquatic) Specialist input, assessment, monitoring and reports.
Publications and assessment reports	Just to name a few. Was involved in many Ecological Assessments, monitoring and inputs in EIA applications. • Elandskloof Farm 475 Citrusdal Biodiversity Baseline Survey. August 2010. This Biodiversity Assessment Covering Terrestrial and Aquatic Aspects to Inform Decisions Regarding The Proposed Elandskloof Weir Flood Damage Project On Farm 475, In The Citrusdal Area. • Cape Solar Energy Electricity Generation Facility. Farm 187/3 & 187/13 Kenhardt. Biodiversity And Ecological Baseline Survey. January 2011. (Included Terrestrial and aquatic ecological assessments and water use authorization applications)

	• Prieska Photvoltaic Power Generation Project. Prieska Commonage Northern Cape. Biodiversity And Ecological Baseline Survey. July 2011. (Included Terrestrial and aquatic ecological assessments and water use authorization applications) • Witteklip Erf 123 Extension, Vredenburg. Biodiversity Baseline Survey. Updated - October 2012 (Included Terrestrial and aquatic ecological assessments and water use authorization applications) • Baseline Biodiversity Survey And Wetland Delineation for ECCA Holdings: Cape Bentonite Mine on Erf 1412 Near Heidelberg. Prepared for: Shangoni Management Services Pry (Ltd). October 2014. • Freshwater Impact Assessment Laingsburg Flood Damage Repairs & Storm Water Infrastructure. 18 February 2016. • Ecological Assessment for Swartland Municipality - Upgrades To Voortrekker/Bokomo Road And Voortrekker/Rozenburg Road Intersections and Upgrade to the Diep River Bridge, Malmesbury on A Portion Of Erf 327, Malmesbury (Road) Erf 1530, Diep River Bridge Crossing, and Erf 1528, Property South of Diep River where Road Widening and Turning Circle Will Be Constructed. March 2016. (Freshwater Ecology Inputs and Water Use Registration) • Freshwater Impact Assessment. McGregor Bridge, Robertson Bridge and Willem Nels River Maintenance Management Plan. 24 June 2016. (Freshwater Ecology assessment and input as well as Water Use Registration) • Water Use Authorization Application Risk Matrix. Orange Grove Trust Vegetation Clearing and Agricultural Development on Portion 4 of Farm Glen Heatlie No 316, Worcester. 12 June 2017. (Freshwater ecological inputs in EIA process and Water Use Registration). • Water Use Authorization Application Risk Matrix Prepared For: Witzenberg Municipality Sand Mine Farm 1 Prince Alfred Hamlet. 28 March 2017. (Freshwater ecological inputs in EIA process and Water Use Registration). • Proposed Hartmanshoop Agri Vegetation Clearing Project and Irrigation on Erf 686, Laingsburg. 12 August 2017. (Freshwater ecological inputs in Water Use Registration). • County Fair: Hocraft Abattoir And Rendering Facility Waste Water Treatment Works “CF Hocraft WWTW” Mosselbank River Second Quarter 2018 Biomonitoring Report. June 2018. (Done quarterly biomonitoring for the last three years).

CERTIFICATION

I, the undersigned, certify that to the best of my knowledge and belief, these data correctly describe my qualifications, my experience, and me.



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Registration number 004415