DRAFT IMPACT ASSESSMENT REPORT

OORKANT - CULTIVATION OF VINEYARDS ACROSS SMALL WATERCOURSES, ON KAKAMAS NORTH SETTLEMENT NO. 341, NORTHERN CAPE PROVINCE

DAER&LR Reference Number: NC/EIA/05/ZFM/KAI! /KAK3/2022

August 2022

DOCUMENT NAME:

OORKANT - CULTIVATION OF VINEYARDS ACROSS SMALL WATERCOURSES, ON KAKAMAS NORTH SETTLEMENT NO. 341, NORTHERN CAPE PROVINCE

PROJECT NUMBER:	DATE:	REPORT STATUS:
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See Executive Summary.

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Revision Status

Rev No.	Issue Date	Author	Technical Review	Report Review
0	August 2022	Elanie Kühn	H. Badenhorst	H. Badenhorst

Disclaimer

The opinions expressed in this report have been based on the information supplied to GBE by the Applicant. GBE has exercised all due care in reviewing the supplied information, with conclusions from the review being reliant on the accuracy and completeness of the supplied data.

GBE does not accept responsibility for any errors or omissions in the supplied information and does not accept any consequential liability arising from commercial decisions or actions resulting from them.

Professional environmental opinions presented in this report apply to the site conditions and features as they existed at the time of GBE's investigations, and those reasonably foreseeable. These opinions do not necessarily apply to conditions and features that may arise after the date of this report, about which GBE had no prior knowledge nor had the opportunity to evaluate.

POPIA

Regulation 42 of the Environmental Impact Assessment Regulations, 2014, as amended (EIA Regulations) provides for the opening and maintenance of a register of interested and affected parties (I&APs), by the proponent or applicant, which must contain personal information (names, contact details and addresses). It is therefore the duty of the proponent or applicant to collect the information that must be contained in the register.

Regulation 42 further requires that these registers must be submitted to the Competent Authority (CA). There is no legal requirement in the EIA Regulations that such registers must be included in the reports that are published for public consultation purposes or be made publicly available as part of the EIA process. Since the information in the registers is personal/private information, it should not be included in or attached to reports and be made available in the public domain. CAs, applicants and environmental assessment practitioners (EAPs) should take note that, if this information was previously included in reports and shared in the public domain, this now requires reconsideration in accordance with the POPIA. The Department realises that EAPs may have included some personal information in these reports when they receive and compile them. Likewise, this information may reach CAs who also now need to be sensitive about the management of this information.

Section 11(1)(a) of POPIA provides further that personal information may only be processed if the data subject consents to the processing.

The requirements of Section 18.1 of POPIA requires that if personal information is collected, the responsible party must take reasonably practicable steps to ensure that the data subject is aware of, amongst other things, the information being collected, the name and address of the responsible party (in this case the EAP and applicant), the purpose for which the information is collected, whether or not the supply of the information by the data subject is voluntary or mandatory, the consequence of the failure to provide the required information, further information such as the recipient of the

information, as well as the existence of the right to object to the processing of the personal information.

EAPs should obtain express consent from commenting parties to include their names with their comments in the reports. It is therefore recommended that the EAP, when requesting comment, should also request the persons who may comment to provide consent that their names may be included with their comments in the reports. Commenting parties should also be informed that they may opt to not have their names shared, as well as an indication of the consequences of such an option being exercised, in which case only the comments will be included. This will ensure that the requirements of Section 11(1)(a) of POPIA, which provides that personal information may only be processed if the data subject consents to the processing, is given effect to. Even when consent is obtained it is recommended that only the minimum details (the names) should be included in reports and the inclusion of unnecessary and excessive information should be avoided.

Contact Information

Please contact the undermentioned should you require further information.

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List of Abbreviations

B-BBEE	Broad-based Black Economic Empowerment
CA	Competent Authority
CBA	Critical Biodiversity Area
CR	Critically Endangered
DAER&LR	Department of Agriculture, Environmental Affairs, Rural Development & Land Reform
DWS	Department of Water and Sanitation
EAP	Environmental Assessment Practitioner
ELU	Existing Lawful Use
EIA	Environmental Impact Assessment
EIAR	Environmental Impact Assessment Report
EIR	Environmental Impact Reporting process
EMPr	Environmental Management Programme Report
ESA	Ecological Support Area
FEPA	Freshwater Ecosystem Priority Area
FSL	Full Supply Level
GBE	GroenbergEnviro (Pty) Ltd
GN	Government Notice
HIA	Heritage Impact Assessment
I&AP	Interested and Affected Party
NEMA	National Environmental Management Act, Act 107 of 1998
NEM:BA	National Environmental Management: Biodiversity Act
NHRA	National Heritage Resources Act
NWA	National Water Act
PIA	Palaeontological Impact Assessment
(Pty) Ltd	Proprietary Limited
SA	South Africa
SAHRA	South African Heritage Resources Agency
SR	Scoping Report
uPVC	Unplasticized Polyvinyl Chloride

VegMap	Vegetation Map
WMA	Water Management Area
WUA	Water User's Association
WULA	Water Use Licence Application

Executive Summary

1.1 Locality

The proposed development on Kakamas North Settlement No. 341 is situated approximately 3 kilometres north of the small town of Augrabies, in the Northern Cape, within the Kai! Garib Municipal area. Access to the property is achieved via an existing gravel road that links with the N14.

The location of the proposed development is shown in **Figure 1**.

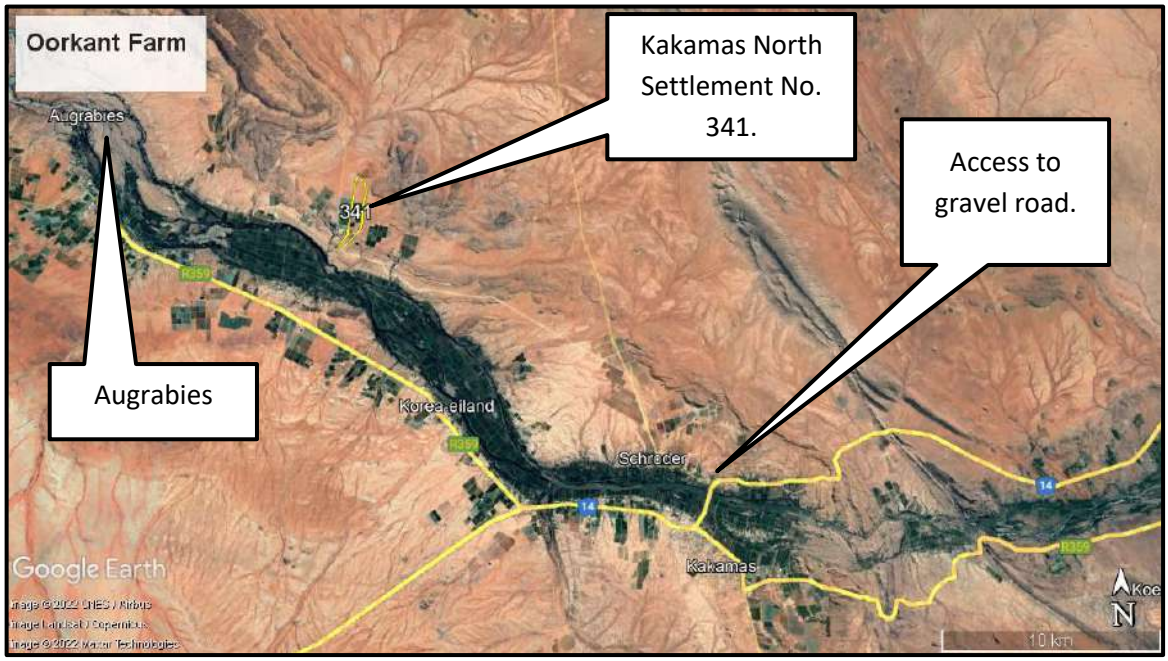

Figure 1: Locality

1.1.1 SG 21 Digit Codes

Property number	Property size	SG Digit code
Kakamas North Settlement No. 341	147.24ha	C02800050000034100000

1.2 Proposed Development:

During the period from 1976 to 2016 various developments have taken place on the property, of which most consisted of agricultural nature. All the previous development on the farm then triggered a S24G Application that was undertaken in 2017. An Environmental Authorisation (S24G03/03/2017) for this was then issued in October 2018.

In 2019 the applicant then cleared a 2ha area of land on the property, for raisin drying purposes. This activity also triggered a S24G process, at the time the applicant was not aware that this would trigger and activity. The application to rectify this was started and was lodged with Department of Agriculture, Environmental Affairs, Rural Development & Land Reform (DAER&LR); an Environmental Authorisation for the raisin drying activity was issued on 30

November 2021 with the following Ref: (S24G03/04/2021), see **Appendix B3, on page 95**. This does not form part of this application being applied for.

The application is for the proposed development of 30ha for agricultural use and the re-location of an existing raisin drying area. The development consists of the following (see **Figure 2** and **Figure 3**):

1. The proposal is to further develop the property by establishing an additional 30ha (turquoise area) (**Figure 3**) of vineyards to fully utilise the property. Note a small un-named watercourse will also be impacted by the development.
2. The relocation of an existing raisin drying area, approximately 2ha in size.

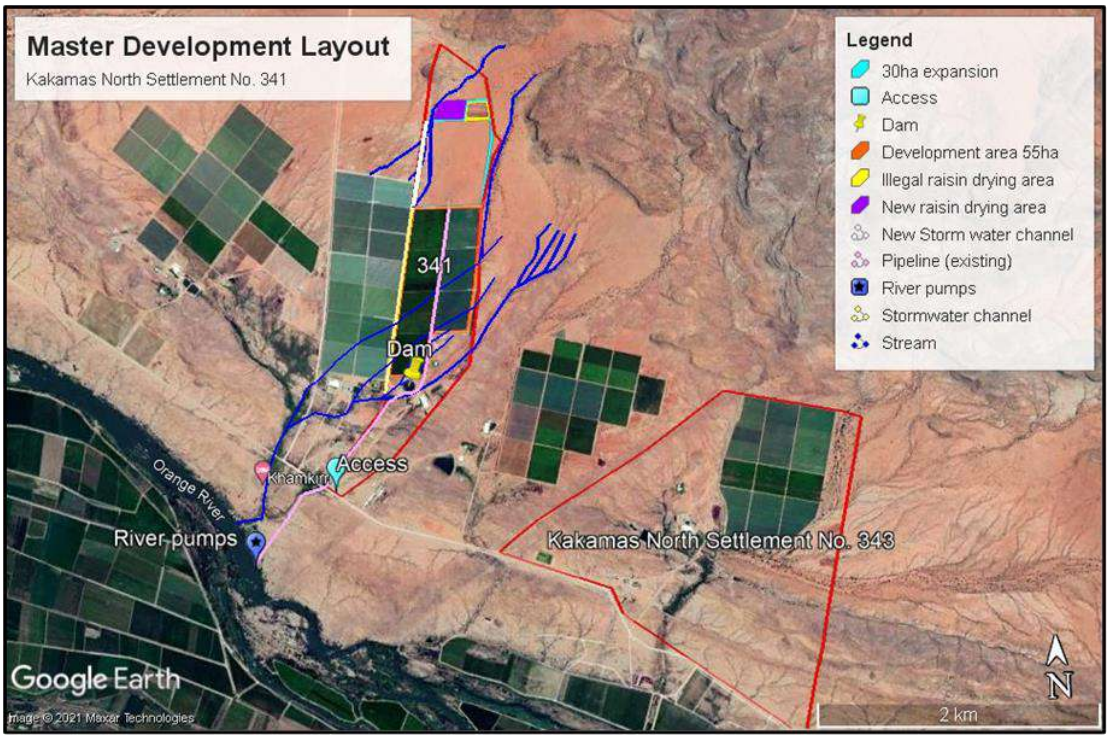

Figure 2: Development Layout

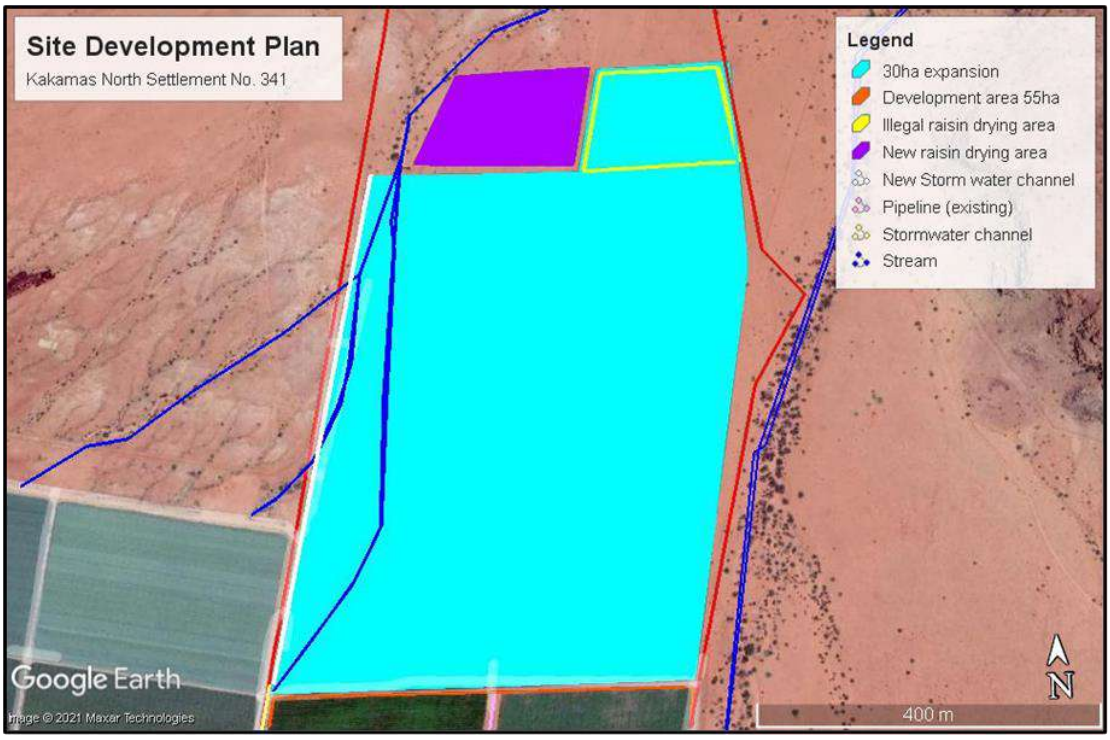

Figure 3: Site Development Plan

1.3 Alternatives Summary

The development location alternatives were developed using best practice principles as well as input from the engineers and specialists.

During the Scoping Phase it was determined that only two alternatives would be considered further during the EIA process: Alternative L1 (preferred alternative), and the No-Go Alternative.

Preferred Layout Alternative

(a) Alternative L1: Preferred Location Details

This location/design alternative includes the following, as shown in **Figure 4**:

- The proposal is to further develop the property by establishing an additional 30ha (turquoise area) of vineyards to fully utilise the property. Note a small un-named watercourse will also be impacted by the development.
- The relocation of an existing raisin drying area, approximately 2ha in size.

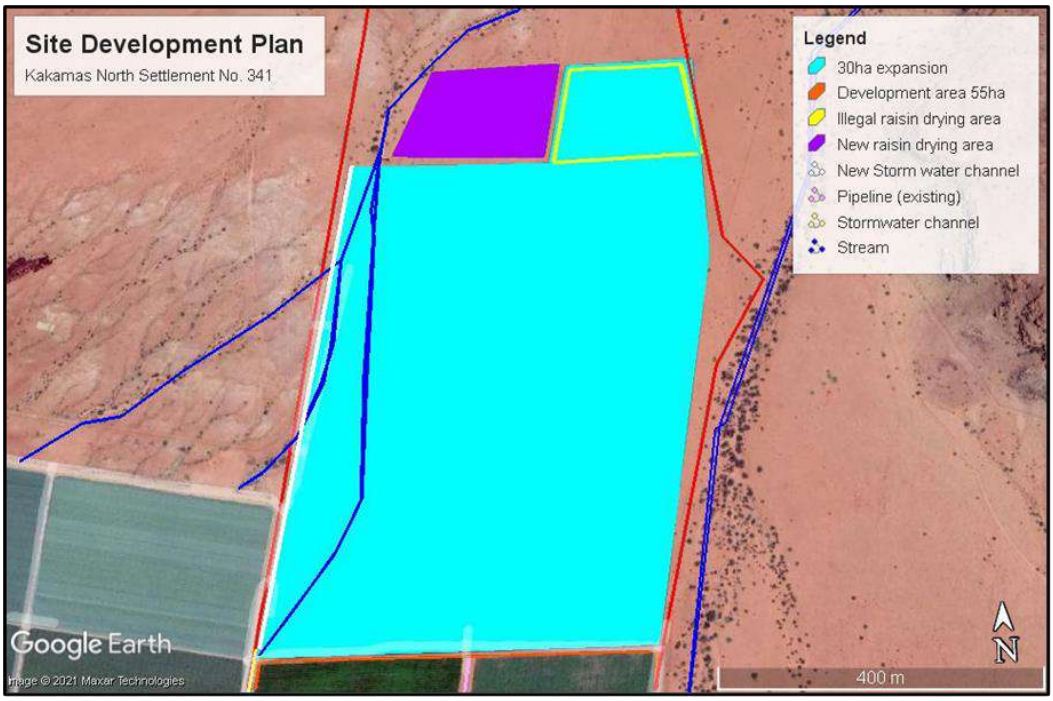

Figure 4: Location Alternative L1 (preferred alternative)

Alternative L1, was considered preferred for the following reasons:

- The design measures, such as utilising land that is not in a natural state, the distance from the watercourse and the economic viability of the project.
- The new vineyards will be located on partially transformed land, as such, it will have a medium to low impact on vegetation.
- From an ecological perspective, this alternative is the best option as the new vineyards will be located between the main watercourses and will only affect the smaller drainage areas.
- This alternative will also contribute socially to the upliftment of the existing workers, due to securing existing permanent job opportunities and providing some new temporary employment opportunities.

Therefore, considering the mitigation measures and minor sensitivities, this alternative has overall been chosen as the preferred option for the proposed activity.

1.4 Public Participation

Public participation included the following:

Official Public Participation Process

1.4.1 Official Scoping Phase

(a) Advertisement and Notice Board

- An advertisement was placed in the Gemsbok Koerant during the official process.
- A notice board was displayed at the entrance of the Farm during the official process.

(b) Information and Reporting

A notice was distributed to I&APs and neighbours for the 30-day commenting period, from 15 June 2022 until 16 July 2022. The notice also informed all I&APs of the availability of the Official Draft Scoping Report which can be obtained from the EAP. The actual comments received on the Scoping Report, as part of the public participation, are included in the final Scoping Report. A digital copy of the report was made available on the GBE website.

The report was sent to the following authorities: DAER& LR, Department of Water and Sanitation: Upington, Department of Forestry and Fisheries, Nature Conservation, SAHRA, Kai!Garib Municipality and Department of Agriculture and Land Reform.

The public participation process for the official Scoping Phase will comply with the requirements of the Protection of Personal Information Act, 2013 (Act No. 14 of 2013) (POPIA) and the guidance document by the Department of Forestry, Fisheries and the Environment relating to registers of interested and affected parties and the inclusion of comments in reports.

(c) I&AP Database

The I&APs database was developed from registered and listed I&APs. The database was updated to include new I&APs that have submitted comments for the official Scoping Report.

1.4.1 Draft EIA Report

(a) Information and Reporting for the Formal Process

A notice will be distributed by email to all registered I&APs and neighbours for the 30-day commenting period, from **Wednesday, 31 August 2022 until Monday, 03 October 2022**. The notice also informed all I&APs of the availability of the draft EIA Report which could be obtained from the website: www.groenbergenviro.co.za or from the EAP.

Comments received on the draft EIAR will be included in the final EIAR. A digital copy of the dEIAR was made available on the website www.groenbergenviro.co.za.

(b) I&AP Database

The I&AP database was developed from registered and listed I&APs. The database was updated following the Scoping Phase with new I&APs registered in the Scoping phase. Any new I&APs registering in the EIA phase will be added to the database for submission to DAER&LR in the final EIAR.

1.5 Summary of Findings and Mitigation Measures

1.5.1 Archaeology

An Archaeological Impact Assessment was conducted by Johnathan Kaplan. The following findings was taken from the Archaeological Impact Assessment Report, find the report included in **Appendix C3, on page 149.**

1. Introduction

ACRM was instructed by GroenbergEnviro to conduct an Archaeological Impact Assessment (AIA) for an illegal agricultural development, and a proposed new vineyard development on the farm Oorkant, Kakamas North Settlement 341, near Augrabies, Kai! Garib Municipality in

the Northern Cape. The illegal development, established in 2018 without environmental authorisation, comprises raisin drying racks that cover a footprint area of about 5ha. The AIA for this component of the study forms part of a Section 24G Application process. The proposed new vineyard development will cover a footprint area of about 25ha. Water for the new vineyards will be supplied from a pump station located on the banks of the Gariep River/Orange. Existing pipelines and farm roads will be used, and no new access roads will need to be constructed.

2. Legal requirements

In terms of Section 38 (1) (c) (iii) of the National Heritage Resources Act 1999 (Act 25 of 1999), a Heritage Impact Assessment (HIA) of the proposed project is required if the footprint area of the development is more than 5000m² in extent.

1. Aim of the AIA

The overall purpose of the AIA is to assess the sensitivity of archaeological resources in the affected areas, to determine the potential impacts on such resources, and to avoid and/or minimize such impacts by means of management and/or mitigation measures. The significance of archaeological resources was assessed in terms of their content and context. Attributes considered in determining significance include artefact and/or ecofact types, rarity of finds, exceptional items, organic preservation, potential for future research, density of finds and the context in which archaeological traces occur.

2. Limitations

There were no limitations associated with the field study. Access to the site was easy and archaeological visibility was very good.

3. Findings

A field assessment of the proposed 25ha footprint area, and the existing illegal agricultural development took place on 15th July 2020, in which the following observations were made: ➢ A few isolated Middle Stone Age (MSA) and Later Stone Age (LSA) stone tools, including a small cobble hammerstone, and a small piece of indigenous clay pottery were recorded in the footprint area of the proposed new vineyard development.

➢ Marginal scatters of MSA and LSA implements were recorded on patches of quartz gravels alongside the drainage channel in the western portion of the site, but these occur outside the area of the proposed vineyard development. ➢ No tools were found in the footprint area of the illegal raisin drying project.

5.1 Grading

The small number and isolated context in which they were found means that the archaeological resources have been graded as having low (Grade 3C) significance.

6. Built environment/historical structures

In terms of the built environment, no old buildings, historical structures or features, or any old equipment was found in the proposed footprint area.

7. Graves

No graves or typical grave features such as stone cairns were encountered during the study.

8. Impact statement

The results of the study indicate that the proposed development of new vineyards, and the illegal raisin drying project on the Farm Oorkant Kakamas North Settlement 341 will not have an impact of great significance on archaeological resources.

9. Conclusion

The receiving environment is not a sensitive or threatened archaeological landscape. The impact significance of the proposed vineyard development, and the existing illegal agricultural development on archaeological heritage is assessed as LOW.

10. Recommendations

1. No mitigation of archaeological resources is required.

2. No archaeological monitoring is required.

3. Regarding the illegal raisin drying operation established in 2018, (subject of the Section 24G Process), no archaeological mitigation is required.

1.5.2 Palaeontology

A paleontological Statement was conducted by Dr John Almond. The following findings was taken from the Paleontological Statement, find the report included in **Appendix C4, on page 168.**

"In view of the negligible palaeontological sensitivity of the ancient Precambrian bedrocks as well as the low sensitivity of the geologically recent superficial sediments along the Orange River in the Augrabies – Kakamas North region, the proposed agricultural development – including new vineyards and raisin drying racks - is not considered to pose a significant threat to palaeontological heritage. Substantial, potentially fossiliferous older alluvial deposits of the Orange River are not mapped here. Pending any significant new fossil discoveries in the area, no further specialist studies or mitigation are considered necessary for this agricultural project. All South African fossil heritage is protected by the National Heritage Resources Act, 1999. Should substantial fossil remains - such as vertebrate bones and teeth, or petrified logs of fossil wood - be encountered at surface or exposed during construction, the ECO should safeguard these, preferably in situ. They should then alert the relevant provincial heritage management authority as soon as possible - i.e. SAHRA (Contact details: Dr Ragna Redelstorff, SAHRA, P.O. Box 4637, Cape Town 8000. Tel: 021 202 8651. Email: rredelstorff@sahra.org.za). This is to ensure that appropriate action (i.e. recording, sampling or collection of fossils, recording of relevant geological data) can be taken by a professional palaeontologist at the developer's expense. A tabulated Chance Fossil Finds Procedure is appended to this report. These mitigation recommendations should be incorporated into the Environmental Management Programme (EMPr) for this agricultural project. Please note that:

• All South African fossil heritage is protected by law (South African Heritage Resources Act, 1999) and fossils cannot be collected, damaged or disturbed without a permit from SAHRA or the relevant Provincial Heritage Resources Agency;

• The palaeontologist concerned with potential mitigation work will need a valid fossil collection permit from SAHRA and any material collected would have to be curated in an approved depository (e.g., museum or university collection);

• All palaeontological specialist work should conform to international best practice for palaeontological fieldwork and the study (e.g., data recording fossil collection and curation, final report) should adhere as far as possible to the minimum standards for Phase 2 palaeontological studies developed by SAHRA (2013)."

1.5.3 Vegetation

A Botanical Impact Assessment was conducted by Dr. Dave McDonald (refer to **Appendix C1, on page 109**). The following is taken from the Botanical Impact Assessment:

Direct Impacts:

The impacts of the development of agriculture in the study are considered for the loss of natural vegetation and habitat i.e., loss of Kalahari Karroid Shrubland.

1. Loss of vegetation and habitat in the 30-ha development area. The development area supports extremely sparse Kalahari Karroid Shrubland. In fact, so sparse that one is inclined to call this vegetation Bushmanland Arid Grassland. However, since the area is mapped as Kalahari Karroid Shrubland (SANBI, 2018) and not enough vegetation is present to determine otherwise, this classification is upheld here. The development of vineyards and the raisin drying racks would have Very Low Negative impact despite the area falling within a CBA1. No mitigation would be possible or necessary.

Indirect Impacts No indirect impacts of the proposed transformation of natural habitat in the study area at Oorkant were identified.

Cumulative Impacts:

Kalahari Karroid Shrubland is a fairly extensive vegetation type in the Northern Cape Province with relatively low botanical sensitivity over much of its range. Minimal vegetation type has been lost mainly because water is not available for irrigation of crops. Consequently, much of this ecosystem remains intact since it is used mainly as rangeland for animal production. Cumulative impacts are thus very low at a broad scale although at a local scale such as around Augrabies, cumulative impacts are somewhat higher due to intensive cultivation. Considering local and broad-scale impacts, cumulative impacts range from Low Negative to Very Low Negative depending on the condition of the vegetation. 12.

Mitigation:

There is no scope is available for mitigation measures to compensate for the loss of natural habitat in the study area. Wherever there is future cultivation, the vegetation and habitat would be lost.

Recommendations and conclusion:

The natural vegetation type found in the study area at Kakamas North Settlement No. 341 (Oorkant) near Augrabies as mapped by Mucina et al. 2005 and SANBI (2018) is Kalahari Karroid Shrubland. According to the National Biodiversity Assessment (Skowno et al. 2001) and the List of Threatened Terrestrial Ecosystems (Government Gazette, 2011), this vegetation type (ecosystem) is Least Threatened.

• The impact of the proposed agricultural development on the sparse Kalahari Karroid Shrubland would be Very Low Negative. No mitigation would be possible or required.

• No plant species of conservation concern or protected species were recorded within the development footprint, hence no permits would be necessary to remove such species.

• No constraints were identified from a botanical perspective that would prevent the agricultural development from proceeding.

• The proposed agricultural development is therefore acceptable and supported from a botanical viewpoint

1.5.4 Freshwater

A freshwater statement was conducted by Jeanne Theron from EverWater Consulting. The following findings was taken from the Freshwater Statement, find the report included in **Appendix C2, on page 141.**

"The property is located within Quaternary Catchment D81A which drains into the larger Orange River system. As mentioned, the proposed development will fall over 30ha of natural land, which will affect two unnamed drainage lines draining the hills to the north, transecting the property while flowing in a south-westerly, and then south direction before meeting the Orange River. The upstream sections of these ephemeral drainage lines are still in a natural unmodified state, while deteriorating to a critically modified state downstream of the proposed development, largely due to being channelled and diverted around the existing agricultural land.

Discussion and Conclusion:

Both the affected drainage channels are of ephemeral nature, with limited aquatic vegetation, and no other wet areas surrounding them. Taking that into consideration as well as the fact that the downstream section of these drainage lines is already in a critically modified state, the small loss of aquatic habitat and ecology that will occur at the proposed development area would be deemed to be of low impact both on the small watercourses as well as the larger Orange river freshwater system. The following recommendations would be made in order to try and mitigate any further negative impacts that might arise:

• The water quality impacts during the construction phase in particular should be addressed through a Construction Environmental Management Plan for the project and implemented by an on-site Environmental Officer;

• Contaminated runoff from the construction sites should be prevented from directly entering downstream water features;

- *Construction should preferably take place during the drier winter months when runoff from the surrounding area is low to non-existent;*

- *A buffer zone of 15m should be applied to the eastern most drainage line for all proposed development activities;*

- *As the area on which the development is to take place is classified as a terrestrial CBA, it is proposed that botanical input is obtained in the EIA process.*

Taking the findings as well as proposed recommendations into account, the project is deemed to have a general low to very low negative impact on the larger freshwater context."

1.5.5 Air and Noise Pollution

(a) Air Pollution

During the construction phase, and due to the nature of the project, a small amount of smoke (from machines) and dust could be generated. Some dust pollution may occur due to machinery movement for the construction of the agricultural areas.

Mitigation
In order to minimise the effect of dust pollution, construction should be avoided on excessively windy days. Sand piles should be covered and workers must wear the necessary safety clothing. Should watering be required, only non-potable water should be used where possible.

(b) Noise Pollution

During the construction phase, there may be minimal and sporadic incidents of noise pollution due to construction activities such as earthworks. Since the area is situated within an agricultural environment, the impact is expected to be minimal.

Mitigation
The applicant/contractor should make adequate provision to prevent or minimise the possible effects of noise pollution. Should the noise from the construction work be found to cause problems (which is not anticipated to be the case), work hours in these areas may be restricted to between 06:00 and 18:00, or as otherwise agreed between the parties involved. Strict measures should therefore be enforced, especially in terms of the contract specifications, to prevent any negative impacts in this regard.

1.5.6 Socio-Economic

(a) Impact on Employment and Skills Transfer

During construction
In addition to direct jobs, jobs will also be created indirectly (among suppliers), and induced jobs will be created through greater income circulation. Due to the nature of work that needs to be performed, employment opportunities exist for unskilled and semi-skilled workers. It is important to ensure that most of the employment opportunities created as part of the development are allocated to the local communities. This would result in individuals gaining more skills (learning various building skills) and would then be able to search for other job

opportunities relating to the same kind of building opportunities after the completion of the proposed development.

During operation

The greater development/Oorkant Farm will be able to remain consistent with the quality of its produce during the summer months. The employment opportunities created during the operation phase will be for unskilled and semi-skilled individuals. Additionally, indirect jobs will be created at various businesses providing goods and services to the proposed development activities.

Impact on Household Income

During construction

The proposed development would have a positive impact on household income levels. This increase in household income levels is due to the anticipated increase in unskilled to skilled employment opportunities (construction workers, site managers, engineers, builders, machine operators, etc) to be created as part of the construction phase of the development. Although temporary, this increase in household earnings would have a positive effect on nutrition, living conditions, access to better health care, access to more options regarding education, and improved ability to make economic choices.

During operation

The sustainable income generated through the operation of the proposed development will positively affect the nutrition, living conditions, access to better health care, access to more options regarding education, and improved ability to make economic choices.

The following is taken from the WULA report (refer to **Appendix D1, on page 174**):

"The primary goal of Capespan Farms is to provide synergies within Capespan's global fruit procurement and marketing footprint. All the farms are strategically positioned to enhance Capespan Group's service and product offering to all our third-party growers and our retail customers across the globe. At group level, Capespan enhances and adds to its significant third-party grower product basket through its own production in order to ensure a sustainable twelve-month supply of quality fresh produce. Capespan Farms owns and controls 14 production units (including Novo Packhouse) throughout Southern Africa, producing respectively grapes, citrus, pomelo and stone fruit. All the farms have industry accredited certifications including Global GAP, HACCP, Nurture (where necessary), Leaf and Field to Fork. Our employees' wellbeing is imperative for Capespan's continued sustainability and the employment relationship is regulated through comprehensive employment service agreements. Therefore, it's imperative that continuous engagement with our employees is fostered on a range of issues that affect them and we recognise that our employees can have the following expectations: an inspiring climate and safe, healthy and congenial working conditions, a clear understanding of their jobs and related performance standards required, to be rewarded at market-related remuneration, job satisfaction, recognition and opportunities for skills acquisition, career development and empowerment. Capespan manages these expectations through the Capespan Group's Code of Business Conduct and Ethics, the board-approved Employment Equity Policy and broad-based black economic empowerment (B-BBEE) targets. We conduct regular organisational culture surveys and compliance with relevant employment legislation and B-BBEE codes in the regions in which we operate. Employee

engagement also takes place through electronic newsletters, employee publications, intranet, employee feedback forums, performance management systems and climate surveys. The Capespan Foundation is funded by the Capespan group to drive its corporate social investment (CSI) mandate - to add value to the lives of communities in which Capespan operates - by implementing various Blue Hand social, health and educational development programmes. The Foundation raises additional funding for projects, where possible, through joint ventures, staff volunteering and strategic leveraging of funding and projects. The Blue Hand project goals include, but are not limited to:

• developing/empowering communities in which the company operates for sustainable growth of company business,

• making a positive, sustainable impact on communities through improving quality of life,

• building and improving relationships with existing/potential stakeholders by forming mutually beneficial partnerships,

• maintaining the company's image and CSI reputation - strategic positioning as a leading contributor to social development in the industry,

• enhancing loyalty and pride and attracting quality socially responsible staff,

• improving the company's brand identity in the communities,

• increasing visibility of customer goodwill towards communities. Preference will be given to black/coloured people for these positions, and more specific black/coloured women where possible. Existing employees with experience on the farm, plus the potential to be leaders, will in the first place be identified for new supervisory positions,

Efficient and beneficial use of the water in public interest

The new water use will have the following benefits: Enough water will directly secure existing and new job opportunities.,

• The change in water use is to legalise the water use for Schedule 1 and Industrial use will ensure job security,

• The continuation in production of export produce will continue to bring in more foreign capital to South Africa which is much needed to strengthen our economy and as such fully supported by Government.,

Socio economic impact of water use to be authorized:

In a rural area such as this with a high unemployment rate, any new employment positions have a huge impact on the immediate and extended families of such new workers. Add then also the impact of more people with proper housing, undergoing skills training and going to church, sport, etc. and children going to school, to understand the positive impact on this rural community. Even seasonal work opportunities have the advantage of extra income plus the opportunity to gain skills that can in future be used to gain permanent employment on the farm or elsewhere. Not only are the new employment opportunities important, but also the fact that:

• Existing jobs can be secured: Enough water will directly secure existing and new job opportunities.

• The continuation in production of export produce will continue to bring in more foreign capital to South Africa which is much needed to strengthen our economy and as such fully supported by Government. See Appendix H for the Section 27 Report."

1.5.7 Land Uses

The planned development is situated within a purely agricultural area with no other land uses within close proximity to the property. The proposed development will therefore have no impact on any surrounding land uses in the area.

1.5.8 Water Uses License

An application for a license in terms of the National Water Act, 1998 is currently underway. The water usage is summarised as follows:

Table 0-1: Water uses for the project

21.(a): taking of water	Applying for a licence for the "transfer" of water from the lawful "irrigation" allocation to "Industrial use" and Schedule 1. Applying to transfer of approximately 12.77ha (191 550 m^3/a) from Kakamas North Settlement No. 343 to Kakamas North Settlement No. 341.
21 (c) impeding or diverting flow of water in a watercourse	For the construction of agricultural areas across ephemeral watercourses/natural drainage areas.
21 (i) altering the bed, banks, course or characteristics of a watercourse	For the construction of agricultural areas across ephemeral watercourses/natural drainage areas.
21.(b): storing water	For the legalisation and registration of storage dams on the property.

The Water Use Licence Application was fully submitted via EWULAA's on 27 May 2021 to the Department of Water Affairs: Upington.

The draft WULA report is included in the report under **Appendix D1, on page 174**.

Mitigation

- Measures should be implemented to reduce water use within the proposed development, such as the use of tension meters to avoid over-irrigation of the soils.
- Environmental education programs for workers will ensure that they will be sensitive to the environment and report incidents such as leaking taps and broken irrigation systems etc.

1.5.9 Sewage Disposal

During the construction phase, chemical toilets will be provided for the workers.

Mitigation

The chemical toilets will be cleaned and emptied on a daily basis by the contractor. The contractor will be solely responsible for the proper use and maintenance thereof in conditions which are to the satisfaction of both the ECO and the applicant. All facilities must be positioned within walking distance from current construction area.

Other specifications to be adhered to are, amongst others, the following:

- All facilities provided at the construction site must comply with the requirements of the Local Municipality.
- No sewerage facility may be erected within a radius of 100m from a watercourse.
- The contractor must be held responsible for the cleaning of the sanitary facilities, to prevent potential health hazards for the duration of the contract.
- Sanitary facilities must be provided at a ratio of one (1) facility for every fifteen (15) persons.
- All sanitation facility locations must be identified, in terms of the specifications of the National Water Act no. 36 of 1998, in such a way that they do not cause water- or other pollution.

1.5.10 Solid Waste Disposal

The application area is located within the municipal area of the Kai! Garib Local Municipality. Some construction and domestic waste will be generated as part of the construction phase of this proposed development.

All facilities in use during the construction phase must be utilized and maintained in a manner that prevents pollution of any groundwater sources. No waste of any kind may be disposed of in the surrounding environment.

Mitigation:

A no-nonsense approach regarding littering on the property must exist and the neatness of the construction area, are all high priorities for the management.

Provision should be made for rubbish bins at the development area, to prevent workers from littering. These rubbish bins should be clearly marked and be visible.

1.5.11 Visual and Cultural Landscape

The property identified for the proposed development is a farm situated between other farms. As the development is an expansion of existing agricultural infrastructure, the proposed project will be in-line with the landscape context. The visual impact of the agricultural area is seen as being of low significance. No mitigation or management measures are suggested aside from best practice considerations (such as keeping the area free of unsightly materials, litter and the like).

Please note: the farm is zoned for agriculture.

1.6 Environmental Impact Statement and Comparative Assessment

Table 0-2: Legend for impact rating

Legend		
Significance Ratings (after mitigation)	**Negative Impacts**	**Positive Impacts**
Very low to none		
Low		
Medium		
High		

Table 0-3: Impacts per alternative

ASSESSMENT OF THE ALTERNATIVES		
EIA Assessment	**Preferred Alternative 1**	**No-Go Option**
Archaeological impact	An AIA was conducted, and the findings suggest that the receiving environment is not a sensitive or threatened archaeological landscape. The impact significance of the proposed vineyard development, and the existing illegal agricultural development on archaeological heritage is assessed as LOW.	No Impact
Paleontological	A Paleontological Impact Assessment (PIA) was conducted, and the findings suggest that the impact significance of the proposed development on important archaeological heritage will be **very low negative to none**.	No Impact
Botanical: Physical transformation natural vegetation	The impact of the proposed agricultural development on the sparse Kalahari Karroid Shrubland would be **Very Low Negative**. No mitigation would be possible or required. The proposed development is anticipated to have a **low negative** impact of significance on overall botanical impacts.	In the case of the 'No Go' Alternative, the proposed development would not happen. It would not have a positive nor negative impact on botanical sensitivities. Therefore, from a botanical perspective the impact would remain the same.
Freshwater Ecology: Installation of the new pump at the Breede River	Considering that the proposed activities will take place over an area already previously disturbed by agricultural activities, together with the short-term impacts associated with the construction/ installation of the infrastructure, the activities are anticipated to have a **low negative** impact significance.	No Impact
Impact on the air quality due to the construction phase	During the construction phase, and due to the nature of the project, a small amount of smoke (from machines) and dust could be generated. Some dust pollution may occur due to machinery movement for the construction of the agricultural area. In order to minimise the effect of dust pollution, construction should be avoided on excessively windy days. Sand piles should be covered, and workers must wear the necessary safety clothing. Should watering be required, only non-potable water should be used.	No Impact

	With the implementation of dust suppression, which was included as a mitigation measure, the impact severity will be reduced to very **low negative.**	
Noise impacts	During the construction phase, there may be minimal and sporadic incidents of noise pollution due to construction activities such as earthworks. Due to the fact that the area is situated within an agricultural environment, the impact is expected to be very **low negative**.	No Impact
Impact on employment and skills transfer during the construction phase	During construction, short-term employment opportunities in the local economies would have a **high positive** impact. An improved standard of living will also occur as an indirect impact.	The proposed site will remain in its current state and no jobs would be created during the construction phase. This is seen as a **high negative** impact.
Impact on employment and skills transfer during the operational phase	With the creation of the additional agricultural area, the applicant will be able to increase produce throughout the year. This will lead to an increase in production and quality and eventually allow the company to create more long-term positions. It is important to note that these employment opportunities will be sustainable, compared to the employment opportunities created during construction that will fade away once construction is completed. This is a **high positive** impact, as the employment opportunities created during the operation phase will be for unskilled, semi-skilled and skilled individuals. Additionally, indirect jobs will be created at various businesses providing goods and services for the proposed development activities. The improved living standards of the, directly and indirectly, affected households is a residual and indirect impact.	The proposed site will remain in its current state and no jobs will be created during the operational phase. The loss of long-term jobs is seen as a **high negative** impact.
Impact on household income (construction and operational)	Improvement in household income of people employed by the proposed development will result in a **medium positive** impact. An indirect result of the project is an improved standard of living.	The proposed site will remain in its current state and there will be no impact on household income.
Impact on Water availability	No impact on water, as existing water use is available for the new development area.	The proposed development will not have a new water use capacity, and therefore will have a **medium negative** impact if the new license is not issued.

Sewage disposal during the construction phase	During the **construction phase, chemical toilets will be provided** for the workers. These toilets will be emptied regularly by contractors. With the implementation of the mitigation measures, it is foreseen that this impact will be **very low negative**.	No Impact
Solid waste disposal	All facilities in use during the construction phase must be utilized and maintained in a manner that prevents pollution of any groundwater sources. No waste of any kind may be disposed of in the surrounding environment. With the implementation of the mitigation measures, it is foreseen that this impact will be **very low negative**.	No Impact
Visual and cultural landscape	The property identified for the proposed development is a farm situated between other farms. As the development is a new agricultural area on the farm, the proposed project will be in-line with the landscape context. The visual impact of the proposed development is seen as being of **very low significance**.	No Impact

1 Introduction

1.1 Scoping Report Acceptance and the subsequent process

This report serves as the draft Environmental Impact Assessment and will follow the assessments outlined in the plan of study for EIA.

The Scoping process was completed in June 2022 and acceptance of the Final Scoping Report was received from DAER&LR in a letter dated 26 July 2022 (**Appendix E1, page 245**).

The Final Scoping Report and the Plan of Study for the EIA indicated that the Preferred Alternative and the "No go" Alternative would be investigated during the EIA Phase. The Plan of Study for the EIA required that the following impact studies be undertaken in the EIA Phase. These studies have been undertaken and are included as Appendices:

- Archaeology/Palaeontology Assessment
- Botanical Impact Assessment
- Freshwater Compliance Statement

Apart from the EIA studies listed above the following report was completed:

- Environmental Management Programme (**Appendix D2, page 175**)
- Water Use Licence Application (**Appendix D1, page 174**)

1.2 Purpose of the Environmental Impact Assessment Report

According to Section 23 of the NEMA Regulations (Government Notice dated 11 June 2022), point 3, an Environmental Impact Report must contain all information set out in Appendix 3 and referenced below:

> *"An environmental impact assessment report must contain the information that is necessary for the competent authority to consider and come to a decision on the application, and must include"*

The report, therefore, summarises all available data for DAER&LR to make the final decision. Table 1-1 summarises the requirements of an EIAR and where the information is contained in the report.

This report has been compiled from all specialist and technical reports to capture all information in a format as required by the regulations as indicated below. The report has therefore been compiled using information, text, and figures taken from the various specialists and technical reports.

Please note this process was initiated under NEMA 2014 Regulations and therefore will be completed under these regulations, as amended by the EIA Regulations.

Table 1-1: EIAR information requirements and corresponding sections

Number (not corresponding to the numbering in the Regulations of 2017)	**Information required for an EIA Report:**	**Section in Report**
a)	details of- (i) the EAP who prepared the report; and (ii) the expertise of the EAP, including a curriculum vitae;	[see Section 1.4.1 & 11]
b)	the location of the development footprint on the approved site as contemplated in the accepted scoping report, including: (i) the 21 digit Surveyor General (SG) code of each cadastral land parcel; (ii) where available, the physical address and farm name; and (iii) where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;	[see Section 1.3]
c)	a plan which locates the proposed activity or activities applied for as well as the associated structures and infrastructure at an appropriate scale, or, if it is- (i) a linear activity, a description, and coordinates of the corridor in which the proposed activity or activities are to be undertaken; (ii) on land where the property has not been defined, the coordinates within which the activity is to be undertaken;	[see Section 3]
d)	a description of the scope of the proposed activity, including- (i) all listed and specified activities triggered and being applied for; and (ii) a description of the associated structures and infrastructure related to the development;	[see Section 3]
e)	a description of the policy and legislative context within which the development is located and an explanation of how the proposed development complies with and responds to the legislation and policy context;	[see Section 2]
f)	a motivation for the need and desirability for the proposed development, including the need and desirability of the activity in the context of the	[see Section 8]

	development footprint on the approved site as contemplated in the accepted scoping report;	
g)	a motivation for the most ideal location of the development footprint of the approved site;	[see Section 5]
h)	(i) details of the development footprint alternatives considered; [see Section 5] (ii) details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs; [see Section 7] (iii) a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them; [see Section 11] (iv) the environmental attributes associated with the development footprint alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; [see Section 4] (v) the impacts and risks identified including the nature, significance, consequence, extent, duration, and probability of the impacts, including the degree to which these impacts- (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated; [see Section 6 & 9] (vi) the methodology used in determining and ranking the nature, significance, consequences, extent, duration, and probability of potential environmental impacts and risks; [see Section 6] (vii) positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; [see Section 6& 9] (viii) the possible mitigation measures that could be applied and level of residual risk; [see Section 6]	[See Sections in left column]

	(ix) if no alternative development locations for the activity were investigated, the motivation for not considering such; and [see Section 5] (x) a concluding statement indicating the preferred alternative development location within the approved site; [see Section 5 and 10]	
h)	a full description of the process followed to reach the proposed development footprint within the approved site, including: (i) a full description of the process undertaken to identify, assess and rank the impacts the activity and associated structures and infrastructure will impose on the preferred location through the life of the activity, including- (i) a description of all environmental issues and risks that were identified during the environmental impact assessment process; and (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;	[see Section 3, 4, 5, 6 & 9]
j)	an assessment of each identified potentially significant impact and risk, including- (i) cumulative impacts; (ii) the nature, significance, and consequences of the impact and risk; (iii) the extent and duration of the impact and risk; (iv) the probability of the impact and risk occurring; (v) the degree to which the impact and risk can be reversed; (vi) the degree to which the impact and risk may cause irreplaceable loss of resources; and (vii) the degree to which the impact and risk can be mitigated;	[see Section 6 & 9]
k)	where applicable, a summary of the findings and recommendations of any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final assessment report;	[see Section 5, 6 & 9]
l)	an environmental impact statement which contains- (i) a summary of the key findings of the environmental impact assessment:	[see Section 9]

	(ii) a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred development footprint on the approved site as contemplated in the accepted scoping report indicating any areas that should be avoided, including buffers; and (iii) a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;	
m)	based on the assessment, and where applicable, recommendations from specialist reports, the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr as well as for inclusion as conditions of authorization;	[see Section 6 & 9]
n)	the final proposed alternatives which respond to the impact management measures, avoidance, and mitigation measures identified through the assessment;	[see Section 5]
o)	any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorization	[see Section 6 & 10]
p)	a description of any assumptions, uncertainties, and gaps in knowledge which relate to the assessment and mitigation measures proposed;	[see Section 6]
q)	a reasoned opinion as to whether the proposed activity should or should not be authorized, and if the opinion is that it should be authorized, any conditions that should be made in respect of that authorization;	[see Section 10]
r)	where the proposed activity does not include operational aspects, the period for which the environmental authorization is required and the date on which the activity will be concluded and the post-construction monitoring requirements finalized;	[not applicable]
s)	an undertaking under oath or affirmation by the EAP in relation to: (i) the correctness of the information provided in the reports; (ii) the inclusion of comments and inputs from stakeholders and I&APs;	[see Section 11]

	(iii) the inclusion of inputs and recommendations from the specialist reports where relevant; and (iv) any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties;	
t)	where applicable, details of any financial provisions for the rehabilitation, closure, and ongoing post-decommissioning management of negative environmental impacts;	[not applicable, possible fine structure included in the EMPr attached in Appendix D]
u)	an indication of any deviation from the approved scoping report, including the plan of study, including- (i) any deviation from the methodology used in determining the significance of potential environmental impacts and risks; and (ii) a motivation for the deviation;	[not applicable, no deviation, see Section 1.1]
v)	any specific information that may be required by the competent authority; and	[none additional]
w)	any other matters required in terms of Section 24(4)(a) and (b) of the Act.	[none additional]

1.2.1 Report Layout

Section 2 provides policies and legislative context. Section 3 of the report describes the scope of the proposed activities and Section 4 shows a description of the environment as well as information from the specialist studies. Section 5 lists the alternatives with identified issues in Section 6. Section 7 provides the public participation undertaken, while Section 8 provides the needs and desirability. Section 9 shows the environmental impact statement as well as impact ratings. The conclusions are shown in Section 10. The appendices are shown in Section 11.

The EIA process is shown in Section 2.1.2. The project is in the Environmental Impact Assessment Phase following the acceptance of the Final Scoping Report by DAER&LR dated 26 July 2022 (**Appendix E1, page 245**).

1.3 Property Location and Description

The proposed development on Kakamas North Settlement No. 341 is situated approximately 3 kilometres north of the small town of Augrabies, in the Northern Cape, within the Kai! Garib Municipal area. Access to the property is achieved via an existing gravel road that links with the N14.

The location of the proposed site is shown in **Figure 1-1**.

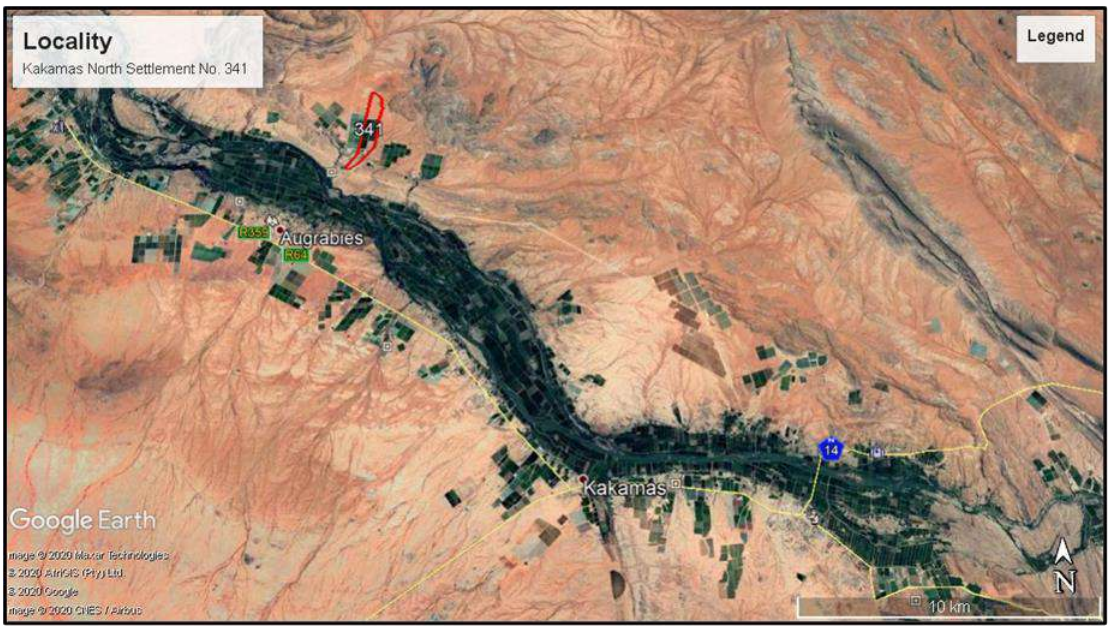

Figure 5-1: Locality

1.3.1 SG 21 Digit Codes

Property number	Property size	SG Digit code
Kakamas North Settlement No. 341	147.24ha	C02800050000034100000

1.4 EAP Experience

The requirements for an EIAR state that the details of the EAP and relevant experience must be provided.

1.4.1 Details of the EAP

Elanie Kühn

GroenbergEnviro (Pty) Ltd

P. O. Box 1058, Wellington, 7654

Cell: 082 746 5627

Email: elanie@groenbergenviro.co.za

Website: www.groenbergenviro.co.za

1.4.2 Relevant Experience

Elanie Kühn

Elanie Kühn

The consultant has 15 years' experience in Environmental Impact Assessments (EIA), environmental management, water use licenses, report writing and project management. She obtained a BSc degree in Zoology at The North-West University in Potchefstroom. Her focus in

GroenbergEnviro is primarily on Environmental Impact Assessments and Water Use License Applications.

CVs are attached in **Appendix G1, on page 249.**

1.4.3 Applicant Details

The applicant's details are as follows:

Valam Boerdery (Pty) Ltd

Contact person: Mr Bernie Denton

P. O. Box 21

Kakamas

8870

Tel: 054 431 0568

Email: bernie@csfarms.co.za

2 Policies and Legislative Context

2.1 Environmental Regulations and Acts

The information in this section is provided as background for I&APs that should wish to understand the requirements of the Regulations and relevant Acts.

2.1.1 EIA Regulations used for this Report

REGULATIONS IN TERMS OF CHAPTER 4 OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998

Environmental Impact Assessment Regulations, 2014 as amended by the Regulations dated 11 June 2021.

The Minister of Environmental Affairs and Tourism has in terms of Section 21 and 22 read with Appendix 2 of the National Environmental Management Act, 1998 (Act No. 107 of 1998), Environmental Impact Assessment Regulations, 2014 (as amended by the Regulations dated 11 June 2021) made the regulations set out in the schedule hereto.

The following is an extract from this legislation and explains the EIA Process. The Content of the EIAR is included in Table 1-1 above, which is in terms of Appendix 3 of these EIA Regulations.

The numbering below refers to the section of the EIA Regulations.

Submission and consideration of Environmental Impact Assessment Report and Environmental Management Programme

23.(1) The applicant must within 106 days of the acceptance of the scoping report submit to the competent authority—

(a) an environmental impact assessment report inclusive of any specialist reports, and an EMPr, which must have been subjected to a public participation process of at least 30 days and which reflects the incorporation of comments received, including any comments of the competent authority; or

(b) a notification in writing that the reports, and an EMPr, will be submitted within 156 days of receipt of the application by the competent authority, as significant changes have been made or significant new information has been added to the environmental impact assessment report or EMPr, which changes or information was not contained in the reports consulted on during the initial public participation process contemplated in subregulation (1)(a), and that the revised environmental impact assessment report or EMPr will be subjected to another public participation process of at least 30 days.

(2) In the event where subregulation (1)(b) applies, the environmental impact assessment report inclusive of specialist reports, and EMPr, which reflects the incorporation of comments received, including any comments of the competent authority, must be submitted to the competent authority within 156 days of the acceptance of the scoping report by the competent authority.

(3) An environmental impact assessment report must contain all information set out in Appendix 3 to these Regulations or comply with a protocol or minimum information

requirements relevant to the application as identified and gazetted by the Minister in a government notice and, where the application is for an environmental authorisation for prospecting, exploration, extraction of a mineral or petroleum resource, including primary processing or activities directly related thereto, the environmental impact assessment report must contain attachments that address the requirements as determined in the regulations, pertaining to the financial provision for the rehabilitation, closure and post closure of prospecting, exploration, mining or production operations, made in terms of the Act.

(4) An EMPr must contain all information set out in Appendix 4 to these Regulations or must be a generic EMPr relevant to the application as identified and gazetted by the Minister in a government notice and, where the application for an environmental authorisation is for prospecting, exploration, or extraction of a mineral or petroleum resource, including primary processing or activities directly related thereto, the EMPr must contain attachments that address the requirements as determined in the regulations, pertaining to the financial provision for the rehabilitation, closure and post closure of prospecting, exploration, mining or production operations, made in terms of the Act.

(5) A specialist report must contain all information set out in Appendix 6 to these Regulations or comply with a protocol or minimum information requirements relevant to the application as identified and gazetted by the Minister in a government notice.

Appendix 3:

Environmental Impact Assessment Process

1. (1) The environmental impact assessment process must be undertaken in line with the approved plan of study for environmental impact assessment.

(2) The environmental impacts, mitigation and closure outcomes as well as the residual risks of the proposed activity must be set out in the environmental impact assessment report.

Objective of the environmental impact assessment process

2. The objective of the environmental impact assessment process is to, through a consultative process—

a) determine the policy and legislative context within which the activity is located and document how the proposed activity complies with and responds to the policy and legislative context;

b) describe the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the development footprint on the approved site as contemplated in the accepted scoping report;

c) identify the location of the development footprint within the approved site as contemplated in the accepted scoping report based on an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified development footprint alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects of the environment;

d) determine the—

i. nature, significance, consequence, extent, duration and probability of the impacts occurring to inform identified preferred alternatives; and

ii. degree to which these impacts—

(aa) can be reversed;

(bb) may cause irreplaceable loss of resources, and

(cc) can be avoided, managed or mitigated;

e) *identify the most ideal location for the activity within the development footprint of the approved site as contemplated in the accepted scoping report based on the lowest level of environmental sensitivity identified during the assessment;*
f) *identify, assess, and rank the impacts the activity will impose on the development footprint on the approved site as contemplated in the accepted scoping report through the life of the activity;*
g) *identify suitable measures to avoid, manage or mitigate identified impacts; and*
h) *identify residual risks that need to be managed and monitored.*

Scope of assessment and content of environmental impact assessment reports

3. *(1) An environmental impact assessment report must contain the information that is necessary for the competent authority to consider and come to a decision on the application, and must include—*
   a) *details of—*
      iii. *the EAP who prepared the report; and*
      iv. *the expertise of the EAP, including a curriculum vitae;*
   b) *the location of the development footprint of the activity on the approved site as contemplated in the accepted scoping report, including:*
      i. *the 21 digit Surveyor General code of each cadastral land parcel;*
      ii. *where available, the physical address and farm name; and*
      iii. *where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;*
   c) *a plan which locates the proposed activity or activities applied for as well as the associated structures and infrastructure at an appropriate scale, or, if it is—*
      i. *a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken;*
      ii. *on land where the property has not been defined, the coordinates within which the activity is to be undertaken;*
   d) *a description of the scope of the proposed activity, including—*
      i. *all listed and specified activities triggered and being applied for; and*
      ii. *a description of the associated structures and infrastructure related to the development;*
   e) *a description of the policy and legislative context within which the development is located and an explanation of how the proposed development complies with and responds to the legislation and policy context;*
   f) *a motivation for the need and desirability for the proposed development, including the need and desirability of the activity in the context of the preferred development footprint within the approved site as contemplated in the accepted scoping report;*
   g) *a motivation for the preferred development footprint within the approved site as contemplated in the accepted scoping report;*
   h) *a full description of the process followed to reach the proposed development footprint within the approved site as contemplated in the accepted scoping report, including:*
      i. *details of the development footprint alternatives considered;*
      ii. *details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs;*
      iii. *a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them;*

iv. the environmental attributes associated with the development footprint alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;

v. the impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts—

(aa) can be reversed;

(bb) may cause irreplaceable loss of resources; and

(cc) can be avoided, managed or mitigated;

vi. the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks;

vii. positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;

viii. the possible mitigation measures that could be applied and level of residual risk;

ix. if no alternative development footprints for the activity were investigated, the motivation for not considering such; and

x. a concluding statement indicating the location of the preferred alternative development footprint within the approved site as contemplated in the accepted scoping report;

i) a full description of the process undertaken to identify, assess and rank the impacts the activity and associated structures and infrastructure will impose on the preferred development footprint on the approved site as contemplated in the accepted scoping report through the life of the activity, including—

i. a description of all environmental issues and risks that were identified during the environmental impact assessment process; and

ii. an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;

j) an assessment of each identified potentially significant impact and risk, including—

i. cumulative impacts;

ii. the nature, significance and consequences of the impact and risk;

iii. the extent and duration of the impact and risk;

iv. the probability of the impact and risk occurring;

v. the degree to which the impact and risk can be reversed;

vi. the degree to which the impact and risk may cause irreplaceable loss of resources; and

vii. the degree to which the impact and risk can be mitigated;

k) where applicable, a summary of the findings and recommendations of any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final assessment report;

l) an environmental impact statement which contains—

i. a summary of the key findings of the environmental impact assessment:

ii. a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred development footprint on the approved site as contemplated in the accepted scoping report indicating any areas that should be avoided, including buffers; and

iii. a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;

m) based on the assessment, and where applicable, recommendations from specialist reports, the recording of proposed impact management outcomes for the development for inclusion in the EMPr as well as for inclusion as conditions of authorisation;

n) the final proposed alternatives which respond to the impact management measures, avoidance, and mitigation measures identified through the assessment;

o) any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation;

p) a description of any assumptions, uncertainties and gaps in knowledge which relate to the assessment and mitigation measures proposed;

q) a reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;

r) where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required and the date on which the activity will be concluded and the post construction monitoring requirements finalised;

s) an undertaking under oath or affirmation by the EAP in relation to—

i. the correctness of the information provided in the reports;

ii. the inclusion of comments and inputs from stakeholders and I&APs;

iii. the inclusion of inputs and recommendations from the specialist reports where relevant; and

iv. any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties;

t) where applicable, details of any financial provision for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts;

u) an indication of any deviation from the approved scoping report, including the plan of study, including–

i. any deviation from the methodology used in determining the significance of potential environmental impacts and risks; and

ii. a motivation for the deviation;

v) any specific information that may be required by the competent authority; and

w) any other matters required in terms of section 24(4)(a) and (b) of the Act.

(2) Where a government notice gazetted by the Minister provides for any protocol or minimum information requirement to be applied to an environmental impact assessment report the requirements as indicated in such notice will apply.

Terms of Reference for EIA studies

According to the NEMA 2014 Regulations as amended by the EIA Regulations of 2017 (dated 7 April 2017) in GN 326, the Specialist Reports need to be prepared in terms of Appendix 6 of these Regulations, as included below:

Appendix 6: Specialist reports

1. (1) A specialist report prepared in terms of these Regulations must contain—

a) details of—

i. the specialist who prepared the report; and

ii. the expertise of that specialist to compile a specialist report including a curriculum vitae;

b) a declaration that the specialist is independent in a form as may be specified by the competent authority;

c) an indication of the scope of, and the purpose for which, the report was prepared;
(cA) an indication of the quality and age of base data used for the specialist report;
(cB) a description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change;

d) the duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment;

e) a description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used;

f) details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure, inclusive of a site plan identifying site alternatives;

g) an identification of any areas to be avoided, including buffers;

h) a map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers;

i) a description of any assumptions made and any uncertainties or gaps in knowledge;

j) a description of the findings and potential implications of such findings on the impact of the proposed activity or activities;

k) any mitigation measures for inclusion in the EMPr;

l) any conditions for inclusion in the environmental authorisation;

m) any monitoring requirements for inclusion in the EMPr or environmental authorisation;

n) a reasoned opinion—

i. whether the proposed activity, activities or portions thereof should be authorised;
(iA) regarding the acceptability of the proposed activity or activities; and

ii. if the opinion is that the proposed activity, activities or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan;

o) a description of any consultation process that was undertaken during the course of preparing the specialist report;

p) a summary and copies of any comments received during any consultation process and where applicable all responses thereto; and

q) any other information requested by the competent authority.

(2) Where a government notice gazetted by the Minister provides for any protocol or minimum information requirement to be applied to a specialist report, the requirements as indicated in such notice will apply."

2.1.2 Environmental Process

The environmental process is shown graphically in Figure 2-1 with the current process as "Consultation EIAR and EMPr".

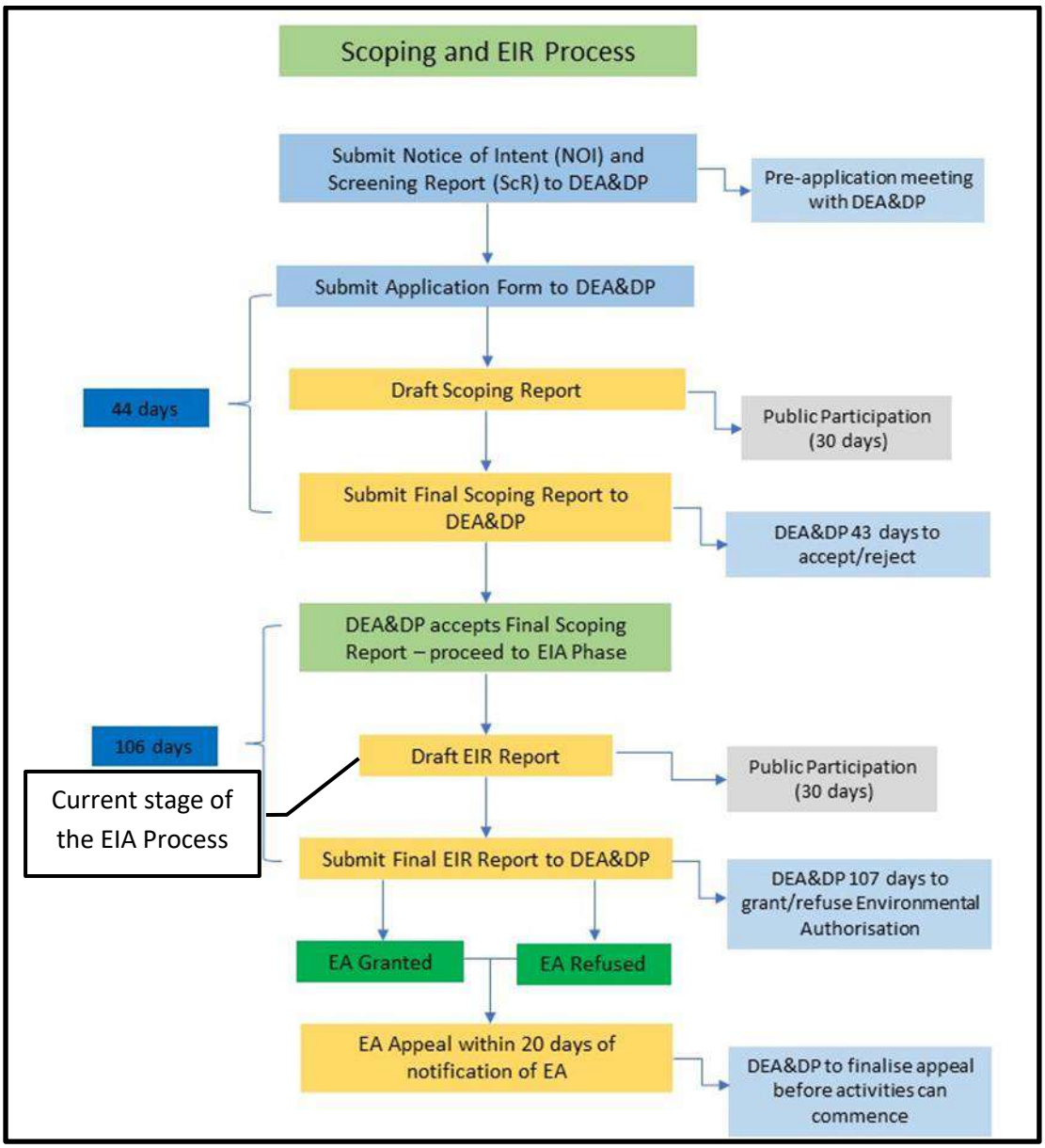

Figure 2-1: Environmental application procedure

2.1.3 NEMA

The purpose of NEMA (Chapter 1) is outlined below:

Purpose of Regulations

2. The purpose of these Regulations is to regulate the procedure and criteria as contemplated in Chapter 5 of the Act relating to the preparation, evaluation, submission, processing and consideration of, and decision on, applications for environmental authorisations for the commencement of activities, subjected to environmental impact assessment, in order to avoid or mitigate detrimental impacts on the environment, and to optimise positive environmental impacts, and for matters pertaining thereto.

2.2 Other Applicable Legislation

2.2.1 National Water Act, 1998

The purpose of the National Water Act is to provide a framework for the equitable allocation and sustainable management of water resources. Both surface and groundwater sources are redefined by the Act as national resources which cannot be owned by any individual, and rights to which are not automatically coupled to land rights, but for which prospective users must apply for authorisation and register as users. The National Water Act also provides for measures to prevent, control and remedy the pollution of surface and groundwater sources.

"Regulations regarding the Procedural Requirements for Water Use Licence Applications and Appeals" (in GN No. R267 dated 24 March 2017) were recently promulgated in terms of the National Water Act (1998) in GG No. 40713.

An application for the authorisation of water uses in terms of Sections 40 and 41 of the National Water Act, 1998, for the taking and storing of water from the Orange River which is made by Valam Boerdery (Pty) Ltd.

The following is taken from the Water Use License Application (WULA) report (**Appendix D1, on page 174)**:

"Application for a Licence in terms of the National Water Act, 1998 (NWA) is made by the developer, Valam Boerdery (Pty) Ltd, for the following, also outlined in Table 2-1:

- *Section 21(c) and (i) of the National Water Act to divert and cross the watercourse as part of the establishment of vineyards. The establishment of the vineyards on Kakamas South Settlement will take place across small sections of the unnamed drainage system that is located on site. The drainage system is classified as an ephemeral course, as it will only flow sporadically after rain. These watercourses are not considered to be seasonal rivers which will regularly contain water in a seasonal pattern.*
- *Section 21 (a) to transfer approximately 1 ha of water for Industrial and Schedule 1 use. From this volume, approximately 11 900 m³ should be allocated for Schedule 1 use and approximately 3 100 m³ will be allocated for Industrial use.*
- *Section 21 (a) for transfer of approximately 12.77ha (191 550 m³/a) from Kakamas North Settlement No. 343 to Kakamas North Settlement No. 341.*
- *Section 21 (b) for the legalisation of an existing dam with a capacity of 18 024 m³, with a water surface area of 6672 m².*

The application is summarised for the following water usages:

Table 2-1: Water use activities

(a) transfer of water	*Applying for a licence for the "transfer" of water from the lawful "irrigation" allocation to "Industrial use" and Schedule 1.* *Applying to transfer of approximately 12.77ha (191 550 m³/a) from Kakamas North Settlement No. 343 to Kakamas North*

	Settlement No. 341.
(c) impeding or diverting flow of water in a watercourse	*For the construction of agricultural areas across ephemeral watercourses/natural drainage areas.*
(i) altering the bed, banks, course or characteristics of a watercourse	*For the construction of agricultural areas across ephemeral watercourses/natural drainage areas.*
(b) storing of water	*For the construction and registration of storage dams on the property. Oorkant has an existing lawful use of 39 ha for irrigation from the Orange River allocated to Kakamas North Settlement No. 341.*

The said property also recently received a Water Use License for additional 22.59 ha of water rights from the Orange River. 9 In total Oorkant has existing rights for 61.59 ha (923 850 m³/a) of water rights from the Orange River. The applicant, Valam Boerdery (Pty) Ltd, transferred 338 850 m³/a (22.59ha) of water from another property to Kakamas North Settlement No. 341 to rectify the water shortage on the property. The transfer to ensured that the property and new developments comply with the National Water Act (1998). The summary of the transfer that took place is shown in Table 2-2 below.

Table 2-2: Proposed transfer and new water allocation.

Property	*Current Water Allocation*	*Transfer*	*Irrigate tempo*	*Water Allocation (ha)*	*Water Allocation (m³/a)*
Remainder of Farm Afstof No 421. (Donor)	*77.6ha*	*22.59ha*	*15 000m³/ha*	*55.01ha*	*825 150m³/a*
Kakamas North Settlement No. 341. (Receiving)	*39ha*	*22.59 (- 1ha for Industrial and Schedule 1 use)*	*15 000m³/ha*	*60.59ha*	*908 850m³/a*
Kakamas North Settlement No. 341. (Receiving)	*0ha*	*1 ha*	*15 000 m³/a*	*1ha*	*15 000 m³/a*
Kakamas North Settlement	*71 ha*	*12.77ha*	*15 000m³/ha*	*58.23ha*	*873 450m³/a*

No. 343. (Donor)					
Kakamas North Settlement No. 341. (Receiving)	*60.59ha*	*12.77ha*	*15 000m³/ha*	*73.36ha*	*1 100 400 m³/a*
TOTAL for Oorkant (341)				*73.36ha*	*1 100 400 m³/a*

An application for an additional 30ha of vineyards is currently underway. Therefore, this application is also for section 21 (a) for transfer of approximately 12.77ha (191 550 m³/a) from Kakamas North Settlement No. 343 to Kakamas North Settlement No. 341. The new water allocation for Kakamas North Settlement No. 343 will be 1 100 400 m³/a. Oorkant Farm uses water from the irrigation allocation for drinking purposes and garden irrigation. 10 A license application (WULA) will be required for 21(a) to transfer water from "irrigation" to the sector "Schedule 1". Water used in pack stores are used for commercial purposes and must, therefore, be licenced as "industrial". The total volume of water used annually amounts to approximately 1 ha of water. Therefore, the application is to transfer approximately 15 000 m³/a of water for "Industrial" and "Schedule 1" use. From this, approximately 11 900 m³ should be allocated for "Schedule 1" use and approximately 3 100 m³ will be allocated for "Industrial" use. The drainage channel system is located in a sub-catchment that is unnamed: D81A-03245. The unnamed sub-catchment is not really a river, but more fits the description of a mostly dry drainage lines. The sub-catchment is about 28 km long. The ephemeral drainages systems spring would ultimately have flowed into the Orange River. This is no longer the case, as all these watercourses are cut off from the Orange River by agricultural developments. The drainage lines for most of the year are dry and sandy and flow for short periods after relatively heavy rains.

This application is therefore recommended for the approval of Sections 21 (a), (c), (i) and (b) as outlined in this study"

2.2.2 Heritage Resources Act, 1999

The National Heritage Resources Act (NHRA) No. 25 of 1999 protects a variety of heritage resources as follows:

- Section 34: structures older than 60 years;
- Section 35: paleontological, prehistoric and historical material (including ruins) more than 100 years old;
- Section 36: graves and human remains older than 60 years and located outside of a formal cemetery administered by a local authority; and
- Section 37: public monuments and memorials.

Following Section 2, the definitions applicable to the above protections are as follows:

- Structures: "*any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith*";
- Paleontological material: "*any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace*";
- Archaeological material: a) "*material remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years, including artefacts, human and hominid remains, and artificial features and structures*"*; b) "rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years, including any area within 10m of such representation"; c) "wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the Republic, as defined respectively in sections 3, 4 and 6 of the Maritime Zones Act, 1994 (Act No. 15 of 1994), and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation"; and d) "features, structures, and artefacts associated with military history which are older than 75 years and the sites on which they are found*";
- Grave: "*means a place of interment and includes the contents, headstone or another marker of such a place and any other structure on or associated with such place*"; and
- Public monuments and memorials: "*all monuments and memorials a) "erected on land belonging to any branch of central, provincial or local government, or on land belonging to any organisation funded by or established in terms of the legislation of such a branch of government"; or b) "which were paid for by public subscription, government funds, or a public-spirited or military organisation, and are on land belonging to any private individual.*"

While landscapes with cultural significance do not have a dedicated Section in the NHRA, they are protected under the definition of the National Estate (Section 3). Section 3(2)(c) and (d) list "*historical settlements and townscapes*" and "*landscapes and natural features of cultural significance*" as part of the National Estate. Furthermore, Section 3(3) describes the reasons a place or object may have cultural heritage value.

Section 38 (2a) states that if there is reason to believe that heritage resources will be affected then an impact assessment report must be submitted.

For the proposed development the following is applicable:

1. Legal requirements

In terms of Section 38 (1) (c) (iii) of the National Heritage Resources Act 1999 (Act 25 of 1999), a Heritage Impact Assessment (HIA) of the proposed project is required if the footprint area of the proposed development is more than 5000m² in extent. For this development the footprint area is for 30ha of agricultural development, this triggers an application be lodged on the SAHRA website, SAHRIS, to apply for an assessment of the Archaeology and Palaeontology on site.

An Archaeological Impact Assessment (AIA) was conducted by Jonathan Kaplan from ACRM (refer to **Appendix C3, page 149**). The following was taken from the AIA:

2. Introduction

ACRM was instructed by GroenbergEnviro to conduct an Archaeological Impact Assessment (AIA) for an illegal agricultural development, and a proposed new vineyard development on the farm Oorkant, Kakamas North Settlement 341, near Augrabies, Kai! Garib Municipality in the Northern Cape. The illegal development, established in 2018 without environmental authorisation, comprises raisin drying racks that cover a footprint area of about 5ha. The AIA for this component of the study forms part of a Section 24G Application process. The proposed new vineyard development will cover a footprint area of about 25ha. Water for the new vineyards will be supplied from a pump station located on the banks of the Gariep River/Orange. Existing pipelines and farm roads will be used, and no new access roads will need to be constructed.

2. Legal requirements

In terms of Section 38 (1) (c) (iii) of the National Heritage Resources Act 1999 (Act 25 of 1999), a Heritage Impact Assessment (HIA) of the proposed project is required if the footprint area of the development is more than 5000m² in extent.

4. Aim of the AIA

The overall purpose of the AIA is to assess the sensitivity of archaeological resources in the affected areas, to determine the potential impacts on such resources, and to avoid and/or minimize such impacts by means of management and/or mitigation measures. The significance of archaeological resources was assessed in terms of their content and context. Attributes considered in determining significance include artefact and/or ecofact types, rarity of finds, exceptional items, organic preservation, potential for future research, density of finds and the context in which archaeological traces occur.

5. Limitations

There were no limitations associated with the field study. Access to the site was easy and archaeological visibility was very good.

6. Findings

A field assessment of the proposed 25ha footprint area, and the existing illegal agricultural development took place on 15th July 2020, in which the following observations were made: ➢ A few isolated Middle Stone Age (MSA) and Later Stone Age (LSA) stone tools, including a small cobble hammerstone, and a small piece of indigenous clay pottery were recorded in the footprint area of the proposed new vineyard development.

➢ Marginal scatters of MSA and LSA implements were recorded on patches of quartz gravels alongside the drainage channel in the western portion of the site, but these occur outside the area of the proposed vineyard development. ➢ No tools were found in the footprint area of the illegal raisin drying project.

5.1 Grading

The small number and isolated context in which they were found means that the archaeological resources have been graded as having low (Grade 3C) significance.

6. Built environment/historical structures

In terms of the built environment, no old buildings, historical structures or features, or any old equipment was found in the proposed footprint area.

7. Graves

No graves or typical grave features such as stone cairns were encountered during the study.

8. Impact statement

The results of the study indicate that the proposed development of new vineyards, and the illegal raisin drying project on the Farm Oorkant Kakamas North Settlement 341 will not have an impact of great significance on archaeological resources.

9. Conclusion

The receiving environment is not a sensitive or threatened archaeological landscape. The impact significance of the proposed vineyard development, and the existing illegal agricultural development on archaeological heritage is assessed as LOW.

10. Recommendations

1. No mitigation of archaeological resources is required.

2. No archaeological monitoring is required.

3. Regarding the illegal raisin drying operation established in 2018, (subject of the Section 24G Process), no archaeological mitigation is required.

A Palaeontology Statement was conducted by Dr. John Almond from Natura Viva cc (refer to **Appendix C4, page 168**). The following was taken from the Statement:

"In view of the negligible palaeontological sensitivity of the ancient Precambrian bedrocks as well as the low sensitivity of the geologically recent superficial sediments along the Orange River in the Augrabies – Kakamas North region, the proposed agricultural development – including new vineyards and raisin drying racks - is not considered to pose a significant threat to palaeontological heritage. Substantial, potentially fossiliferous older alluvial deposits of the Orange River are not mapped here. Pending any significant new fossil discoveries in the area, no further specialist studies or mitigation are considered necessary for this agricultural project. All South African fossil heritage is protected by the National Heritage Resources Act, 1999. Should substantial fossil remains - such as vertebrate bones and teeth, or petrified logs of fossil wood - be encountered at surface or exposed during construction, the ECO should safeguard these, preferably in situ. They should then alert the relevant provincial heritage management authority as soon as possible - i.e. SAHRA (Contact details: Dr Ragna Redelstorff, SAHRA, P.O. Box 4637, Cape Town 8000. Tel: 021 202 8651. Email: rredelstorff@sahra.org.za). This is to ensure that appropriate action (i.e. recording, sampling or collection of fossils, recording of relevant geological data) can be taken by a professional palaeontologist at the developer's expense. A tabulated Chance Fossil Finds Procedure is appended to this report. These mitigation

recommendations should be incorporated into the Environmental Management Programme (EMPr) for this agricultural project. Please note that:

• All South African fossil heritage is protected by law (South African Heritage Resources Act, 1999) and fossils cannot be collected, damaged or disturbed without a permit from SAHRA or the relevant Provincial Heritage Resources Agency;

• The palaeontologist concerned with potential mitigation work will need a valid fossil collection permit from SAHRA and any material collected would have to be curated in an approved depository (e.g., museum or university collection);

• All palaeontological specialist work should conform to international best practice for palaeontological fieldwork and the study (e.g., data recording fossil collection and curation, final report) should adhere as far as possible to the minimum standards for Phase 2 palaeontological studies developed by SAHRA (2013)."

2.2.3 Other Policies, Plans or Guidelines

Other policies, municipal plans or guideline documents that are relevant to the project:

- Guidelines published in terms of NEMA EIA Regulations
- Conservation of Agricultural Resources Act (Act 43 of 1983)
- Heritage Resources Act (Act 25 of 1999)
- National Water Act (Act 36 of 1998)
- National Forests Act (Act no 84 of 1998)
- Northern Cape Nature Conservation Act, 2009 (Act No. 9 of 2009) and Regulations (2011)
- Guideline for Environmental Management Plans (March 2013)
- Guideline on Public Participation (March 2013)
- Guideline on Alternatives (March 2013)
- Guideline on Need and Desirability (March 2013)

3 Scope of the Proposed Activity

3.1 Project Description

During the period from 1976 to 2016 various developments have taken place on the property, of which most consisted of agricultural nature. All the previous development on the farm then triggered a S24G Application that was undertaken in 2017. An Environmental Authorisation (S24G03/03/2017) for this was then issued in October 2018.

In 2019 the applicant then cleared a 2ha area of land on the property, for raisin drying purposes. This activity also triggered a S24G process, at the time the applicant was not aware that this would trigger and activity. The application to rectify this was started and was lodged with Department of Agriculture, Environmental Affairs, Rural Development & Land Reform (DAER&LR); an Environmental Authorisation for the raisin drying activity was issued on 30 November 2021 with the following Ref: (S24G03/04/2021), see **Appendix B3, on page 95**. This does not form part of this application being applied for.

The application is for the proposed development of 30ha for agricultural use and the re-location of an existing raisin drying area. The development consists of the following (see **Figure 3-1** and **Figure 3-2**):

1. The proposal is to further develop the property by establishing an additional 30ha (turquoise area) (**Figure 3-2**) of vineyards to fully utilise the site. Note a small un-named watercourse will also be impacted by the development.
2. The relocation of an existing raisin drying area, approximately 2ha in size.

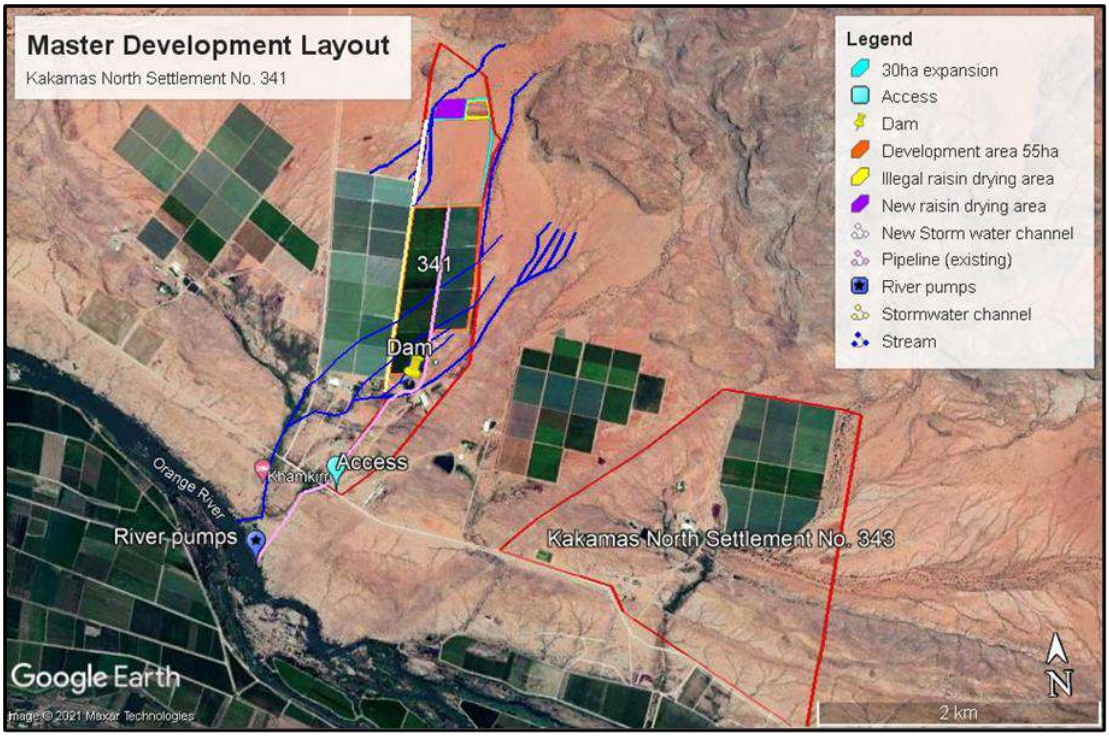

Figure 2-1: Development Layout

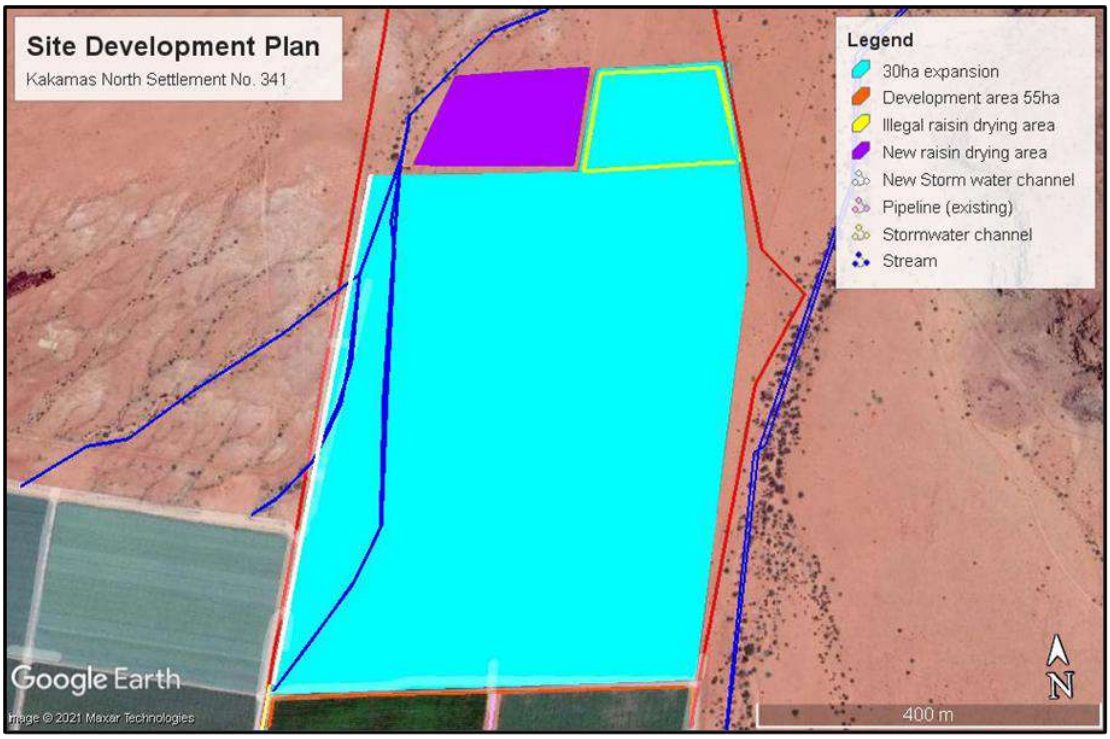

Figure 3-2: Site Development Plan

3.2 Statutory Requirements

According to National Environmental Management Act, 1998 (Act No. 107 of 1998), Environmental Impact Assessment Regulations, dated December 2014, as amended by GN 324, GN 3325, GN 326, and GN 327 dated 7 April 2017.

The highlighted sections are the applicable listed activities in terms of the amended EIA Regulations dated 7 April 2017.

Table 3-1: Listed Activities

Activity No(s):	**Provide the relevant Basic Assessment Activity(ies) as set out in Listing Notice 1**	**Describe the portion of the proposed development to which the applicable listed activity relates.**
GN 517: Listing Notice 1: Activity 12:	The development of— (i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres: or (ii) infrastructure or structures with a physical footprint of 100 square metres or more. where such development occurs— a) within a watercourse. b) in front of a development setback; or c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse excluding— aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour. bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies. cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies. dd) where such development occurs within an urban area. ee) where such development occurs within existing roads, road reserves or railway line	**For the construction of agricultural areas and associated infrastructure within 32m of a watercourse.**

	reserves; or *(a)* the development of temporary infrastructure or structures where such infrastructure or structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared.	
GN 517: Listing Notice 1: Activity 19:	The **infilling or depositing of any material of more than 10 cubic metres** into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles, or rock of **more than 10 cubic metres from a watercourse.** but excluding where such infilling, depositing, dredging, excavation, removal or moving— a) will occur behind a development setback. b) is for maintenance purposes undertaken in accordance with a maintenance management plan. c) falls within the ambit of activity 21 in this Notice, in which case that activity applies. d) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or *(aa)*where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies.	**For the infilling of ephemeral watercourse/drainage areas for agricultural development within 32m of a watercourse.**
Activity No(s):	**Provide the relevant Basic Assessment Activity(ies) as set out in Listing Notice 3**	
GN 517: Listing Notice 3: Activity 12	**The clearance of an area of 300 square metres or more of indigenous vegetation** except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. **Northern Cape** (i) Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004. (ii) Within **critical biodiversity areas identified in bioregional plans**.	**The proposed development lies within a CBA1, therefore this activity is triggered for the removal of 300 square meters or more, of vegetation within a CBA.**

	(iii) Within the littoral active zone or 100 metres inland from high water mark of the sea or an estuary, whichever distance is the greater, excluding where such removal will occur behind the development setback line on erven in urban areas: or (i) On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning.	
GN 517: Listing Notice 3: Activity 14	The development of— (i) dams or weirs, where the dam or weir, including infrastructure and water surface area exceeds 10 square metres: or (ii) **infrastructure or structures with a physical footprint of 10 square metres or more**. where such development occurs— **a) within a watercourse.** b) in front of a development setback; or c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse. Excluding the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour. **Northern Cape** (i) In an estuary. (ii) **Outside urban areas:** aa) A protected area identified in terms of NEMPAA, excluding conservancies. bb) National Protected Area Expansion Strategy Focus areas. cc) World Heritage Sites. dd) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority. ee) Sites or areas identified in terms of an international convention. ff) **Critical biodiversity areas or ecosystem service** areas as identified in systematic	**The proposed development lies within a CBA1, therefore this activity is triggered for the removal of 10 square meters or more, of vegetation within a CBA, as well as within 10km of the Augrabies National Park.**

	biodiversity plans adopted by the competent authority or in bioregional plans. gg) Core areas in biosphere reserves. hh) **Areas within 10 kilometres from national parks** or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve. ii) Area's seawards of the development setback line or within 1 kilometre from the high-water mark of the sea if no such development setback line is determined; or iii) Inside urban areas: aa) Areas zoned for use as public open space. bb) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority, zoned for a conservation purpose; or Area's seawards of the development setback line.	
Activity No(s):	**Provide the relevant Scoping and EIR Activity(ies) as set out in Listing Notice 2**	
GN 517: Listing Notice 2: Activity 15	**The clearance of an area of 20 hectares or more of indigenous vegetation**, excluding where such clearance of indigenous vegetation is required for— (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.	**For the clearance of 30 hectares of indigenous vegetation for the cultivation of vineyards, and the clearance of 2ha for the new raisin drying area.**

Note:

- Only those activities listed above shall be considered for authorisation. The onus is on the Applicant to ensure that all applicable listed activities are included in the application. Environmental Authorisation must be obtained prior to commencement with each applicable listed activity. If a specific listed activity is not included in an Environmental Authorisation, a new application for Environmental Authorisation will have to be submitted.
- The Minister responsible for mineral resources is the Competent Authority to deal with all applications where the listed or specified activity is directly related to-
  (a) prospecting or exploration of a mineral or petroleum resource; or
  (b) extraction and primary processing of a mineral or petroleum resource.

4 Description of the Environment

4.1 Location in Landscape

The proposed development is situated approximately 30 kilometres outside of the small town of Augrabies in the Northern Cape, in the Kai! Garib Municipal area. Access to the property is via a gravel road linking with the N14. The property lies north of the Orange River. Small ephemeral watercourses cross the property. The property is currently zoned Agriculture Zone I and is located within a summer rainfall region. See **Figure 4-1**.

Figure 4-1: Location in the landscape

The area where the proposed development is located consists of indigenous vegetation and a portion of transformed land.

The application area is situated on land with a generally flat slope. The area where the proposed development will take place has, however, a relatively even surface.

4.2 Vegetation

A portion of the proposed development will be located on an area containing indigenous vegetation. As previously mentioned, a portion of the proposed development area will fall within transformed land, in the form of a raisin drying area. The remainder of the proposed development area contains vegetation, namely, Kalahari Karroid Shrubland. This vegetation is a fairly extensive vegetation type in the Northern Cape Province with relatively low botanical sensitivity over much of its range. Consequently, much of this ecosystem remains intact since it is used mainly as rangeland for animal production. Cumulative impacts are thus very low at a broad scale although at a local scale such as around Augrabies, cumulative impacts are somewhat higher due to intensive cultivation. Considering local and broad-scale impacts, cumulative impacts range from Low Negative to Very Low Negative depending on the condition of the vegetation.

A Botanical Impact Assessment was conducted by Dr. Dave McDonald (refer to **Appendix C1, page 109**). The following is taken from the Botanical Impact Assessment:

"The Oorkant study area falls in a tongue of Kalahari Karroid Shrubland sandwiched between Lower Gariep Broken Veld and Bushmanland Arid Grassland. Kalahari Karroid Shrubland within the Bushmanland Bioregion is not at risk of being negatively impacted and has a Least Threatened conservation status (Government Gazette, 2011).

Shallow, often sandy, seasonal drainage lines that form a dendritic pattern in the landscape are found in the western part of the study site. The drainage lines are usually narrow, seldom exceeding 4 m in width. Owing to the seasonal concentration of moisture, the drainage lines support tall shrubs and low trees as well as a greater concentration of grasses than found on the 'open plains.

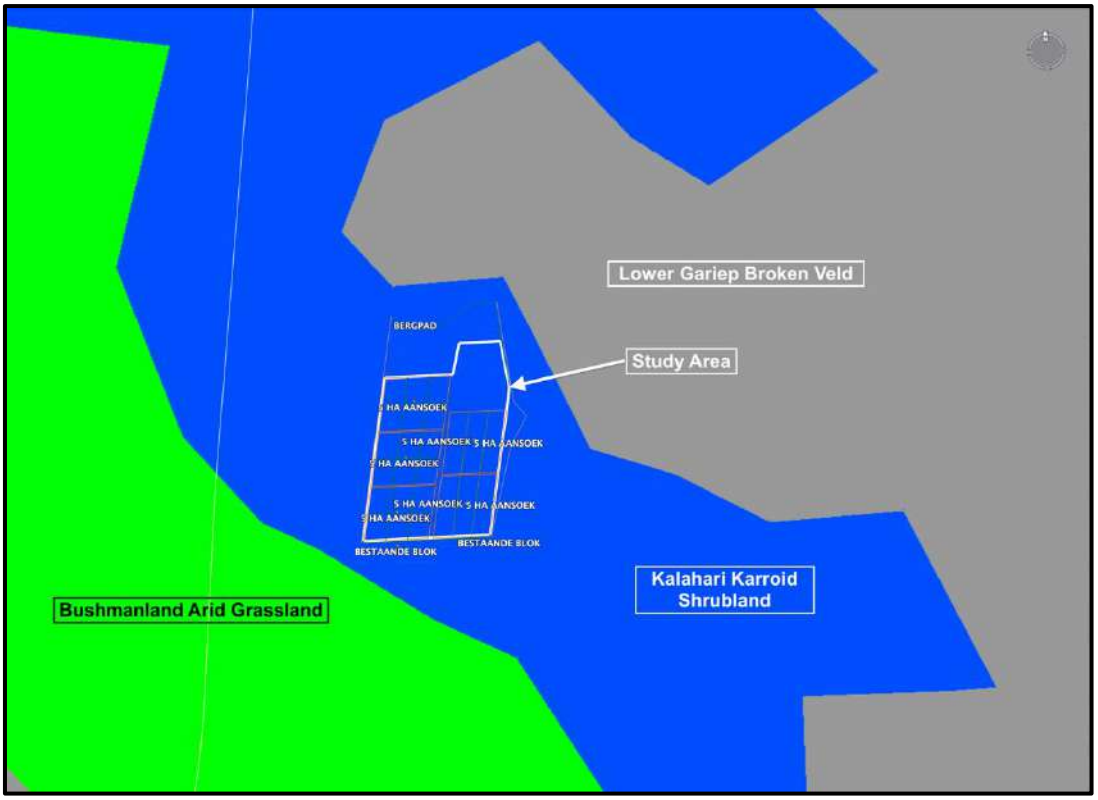

Figure 4-2: Portion of the national vegetation map (SANBI, 2012) indicating that the study area (white boundary) falls within Kalahari Karroid Shrubland. The closest other major vegetation types are Lower Gariep Broken Veld on the koppies and Bushmanland Arid Grassland towards the Orange River

The Nama Karoo Biome covers an extensive area from the north-west through the central part of South Africa, to the south and southeast of the country. It is an arid zone and is subdivided into three bioregions, the Upper Karoo Bioregion, Lower Karoo Bioregion and Bushmanland Bioregion. The Oorkant study area on the opposite side of the Orange River to Augrabies is located in the Bushmanland Bioregion at a north-central location within this bioregion (Rutherford & Westfall, 1994; Rutherford et al. 2006; Mucina et al. 2006 in Mucina & Rutherford, 2006).

The Oorkant study area falls in a tongue of Kalahari Karroid Shrubland sandwiched between Lower Gariep Broken Veld and Bushmanland Arid Grassland. Kalahari Karroid Shrubland within the Bushmanland Bioregion is not at risk of being negatively impacted and has a Least Threatened conservation status (Government Gazette, 2011).

Currently, the entire property is located within a Critical Biodiversity Area as shown in ***Figure 4-3*** *below. Note, however, that the existing development areas are not highlighted but are already outlined as transformed. The pink area is where the development will take place and is deemed as a CBA1. "*

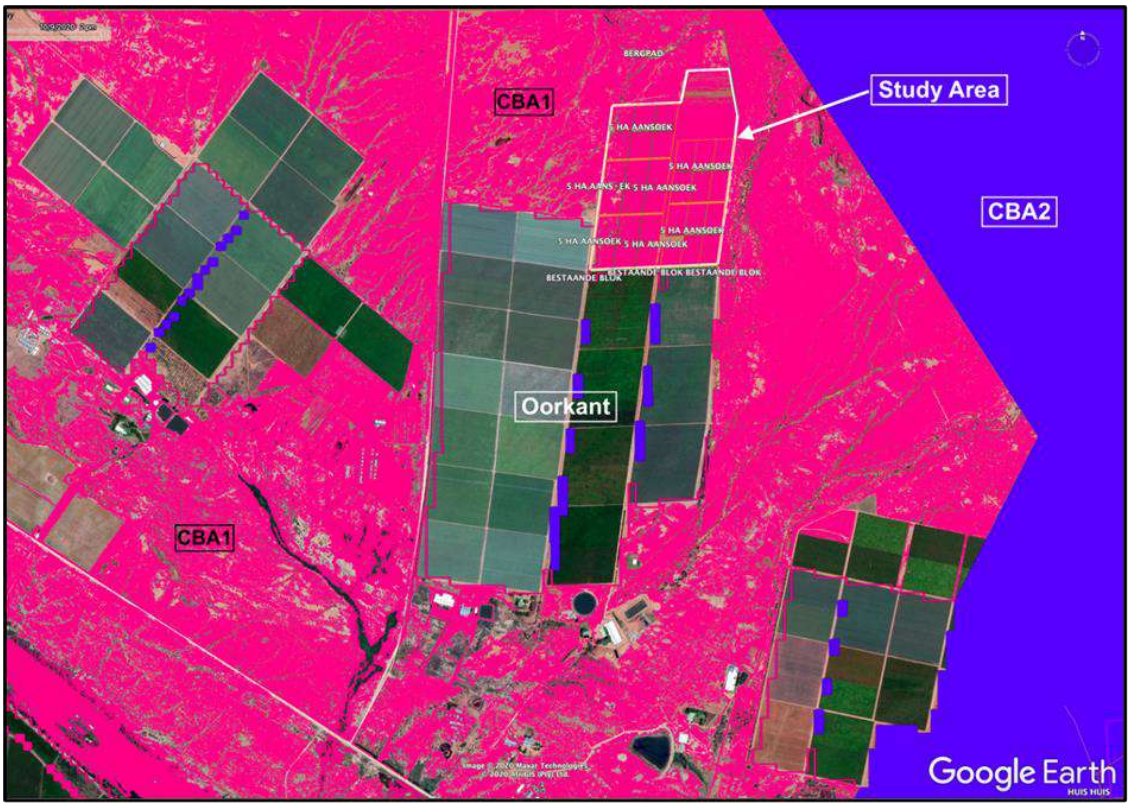

Figure 4-3: Critical Biodiversity Area

4.3 Freshwater

The property is located within Quaternary Catchment D81A which drains into the larger Orange River system. As mentioned, the proposed development will cover approximately 30ha of natural land, which will affect two un-named watercourses draining the hills to the north, transecting the property while flowing in a south-westerly, and then south direction before meeting the Orange River. The upstream sections of these ephemeral watercourse are still in a natural unmodified state, while deteriorating to a critically modified state downstream of the proposed development, largely due to being channelled and diverted around existing agricultural land.

The following is taken from the Freshwater Compliance Statement (refer to **Appendix C2, on page 141**):

"Conservation Value

*The 2016 Northern Cape Biodiversity Spatial Plan Map and the National Freshwater Ecosystem Priority Areas Map provides information regarding the conservation value and ecological importance of the freshwater features studied. 2016 Northern Cape Biodiversity Spatial Plan (WCBSP) From the 2016 Northern Cape Biodiversity Spatial Plan (***Figure 4-4***) it is clear that most of the farm including the area affected by the activity is classified as Critical Biodiversity Area 1 (moderate priority), where areas in a natural condition are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure. These areas should be maintained in a natural or near-natural state, with no further loss of natural habitat. Degraded areas should be rehabilitated and only low-impact, biodiversity-sensitive land uses are appropriate.*

Figure 4-4: Critical Biodiversity Area - SANBI

NFEPA map

*FEPAs are strategic spatial priorities for conserving freshwater ecosystems and supporting sustainable use of water resources. From the NFEPA map (***Figure 4-5***), the larger catchment in which the drainage lines fall, does not lie within a FEPA and are also not marked as FEPA wetlands. The section of the Orange River, at the confluence with these drainage lines, is marked as Nama Karoo Bushmanland_Floodplain wetland (FEPA rank 5). River FEPAs achieve biodiversity targets for river ecosystems and threatened/near-threatened fish species and were identified in rivers that are currently in a good condition. Their FEPA status indicates that they should remain in a good condition in order to contribute to national biodiversity goals and support sustainable use of water resources."*

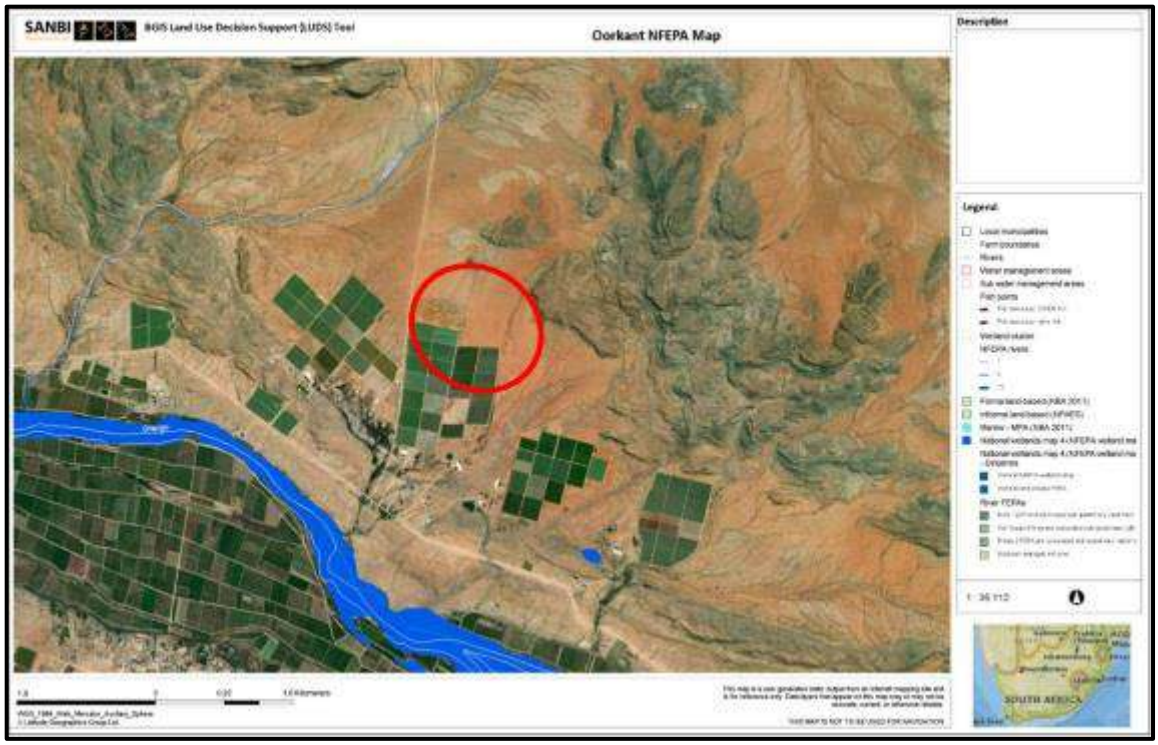

Figure 4-5: NFEPA Map

Discussion and Conclusion

Both the affected drainage channels are of ephemeral nature, with limited aquatic vegetation, and no other wet areas surrounding them. Taking that into consideration as well as the fact that the downstream section of these drainage lines is already in a critically modified state, the small loss of aquatic habitat and ecology that will occur at the proposed development area would be deemed to be of low impact both on the small watercourses as well as the larger Orange river freshwater system. The following recommendations would be made in order to try and mitigate any further negative impacts that might arise:

- *The water quality impacts during the construction phase in particular should be addressed through a Construction Environmental Management Plan for the project and implemented by an on-site Environmental Officer;*

- *Contaminated runoff from the construction sites should be prevented from directly entering downstream water features;*

- *Construction should preferably take place during the drier winter months when runoff from the surrounding area is low to non-existent;*

- *A buffer zone of 15m should be applied to the eastern most drainage line for all proposed development activities;*

- *As the area on which the development is to take place is classified as a terrestrial CBA, it is proposed that botanical input is obtained in the EIA process.*

Taking the findings as well as proposed recommendations into account, the project is deemed to have a general low to very low negative impact on the larger freshwater context."

4.4 Topography, Geology and Soils

The development will require the construction of agricultural areas and a raisin drying area.

The following is taken from the Botanical Impact Assessment (refer to **Appendix C1, on page 109**):

"The terrain studied is on the northeast side of the Orange River on the open sandy plain below the more elevated rocky koppies. The sandy plain slopes towards the river with a shallow gradient. The elevation of the highest point is approximately 500 m above mean seal level. The landscape is generally flat but is dissected by drainage lines over part of the site (Figure 4). Soils generally consist of red sandy topsoil of the Cenozoic Kalahari Group with the basement geology consists of metamorphic gneisses and pegmatites of the Riemvasmaak rocks of the Kakamas Terrane, Namaqualand-Natal Province (Cornell et al. 2006)."

4.5 Heritage, Archaeology, and Palaeontology

4.5.1 Archaeology

An Archaeological Impact Assessment was conducted by Johnathan Kaplan. The following findings was taken from the Archaeological Impact Assessment Report, find the report included in **Appendix C3, on page 149.**

"Introduction

ACRM was instructed by GroenbergEnviro to conduct an Archaeological Impact Assessment (AIA) for an illegal agricultural development, and a proposed new vineyard development on the farm Oorkant, Kakamas North Settlement 341, near Augrabies, Kai! Garib Municipality in the Northern Cape. The illegal development, established in 2018 without environmental authorisation, comprises raisin drying racks that cover a footprint area of about 5ha. The AIA for this component of the study forms part of a Section 24G Application process. The proposed new vineyard development will cover a footprint area of about 25ha. Water for the new vineyards will be supplied from a pump station located on the banks of the Gariep River/Orange. Existing pipelines and farm roads will be used, and no new access roads will need to be constructed.

Legal requirements

In terms of Section 38 (1) (c) (iii) of the National Heritage Resources Act 1999 (Act 25 of 1999), a Heritage Impact Assessment (HIA) of the proposed project is required if the footprint area of the development is more than 5000m² in extent.

Aim of the AIA

The overall purpose of the AIA is to assess the sensitivity of archaeological resources in the affected areas, to determine the potential impacts on such resources, and to avoid and/or minimize such impacts by means of management and/or mitigation measures. The significance of archaeological resources was assessed in terms of their content and context. Attributes considered in determining significance include artefact and/or ecofact types, rarity of finds,

exceptional items, organic preservation, potential for future research, density of finds and the context in which archaeological traces occur.

Limitations

There were no limitations associated with the field study. Access to the site was easy and archaeological visibility was very good.

Findings

A field assessment of the proposed 25ha footprint area, and the existing illegal agricultural development took place on 15th July 2020, in which the following observations were made: ➢ A few isolated Middle Stone Age (MSA) and Later Stone Age (LSA) stone tools, including a small cobble hammerstone, and a small piece of indigenous clay pottery were recorded in the footprint area of the proposed new vineyard development.

➢ Marginal scatters of MSA and LSA implements were recorded on patches of quartz gravels alongside the drainage channel in the western portion of the site, but these occur outside the area of the proposed vineyard development. ➢ No tools were found in the footprint area of the illegal raisin drying project.

Grading

The small number and isolated context in which they were found means that the archaeological resources have been graded as having low (Grade 3C) significance.

Built environment/historical structures

In terms of the built environment, no old buildings, historical structures or features, or any old equipment was found in the proposed footprint area.

Graves

No graves or typical grave features such as stone cairns were encountered during the study.

Impact statement

The results of the study indicate that the proposed development of new vineyards, and the illegal raisin drying project on the Farm Oorkant Kakamas North Settlement 341 will not have an impact of great significance on archaeological resources.

Conclusion

The receiving environment is not a sensitive or threatened archaeological landscape. The impact significance of the proposed vineyard development, and the existing illegal agricultural development on archaeological heritage is assessed as LOW.

Recommendations

1. No mitigation of archaeological resources is required.

2. No archaeological monitoring is required.

3. Regarding the illegal raisin drying operation established in 2018, (subject of the Section 24G Process), no archaeological mitigation is required.

4.5.2 Palaeontology

A paleontological Statement was conducted by Dr John Almond. The following findings was taken from the Paleontological Statement, find the report included in **Appendix C4, on page 168.**

"In view of the negligible palaeontological sensitivity of the ancient Precambrian bedrocks as well as the low sensitivity of the geologically recent superficial sediments along the Orange River in the Augrabies – Kakamas North region, the proposed agricultural development – including new vineyards and raisin drying racks - is not considered to pose a significant threat to palaeontological heritage. Substantial, potentially fossiliferous older alluvial deposits of the Orange River are not mapped here. Pending any significant new fossil discoveries in the area, no further specialist studies or mitigation are considered necessary for this agricultural project. All South African fossil heritage is protected by the National Heritage Resources Act, 1999. Should substantial fossil remain - such as vertebrate bones and teeth, or petrified logs of fossil wood - be encountered at surface or exposed during construction, the ECO should safeguard these, preferably in situ. They should then alert the relevant provincial heritage management authority as soon as possible - i.e., SAHRA (Contact details: Dr Ragna Redelstorff, SAHRA, P.O. Box 4637, Cape Town 8000. Tel: 021 202 8651. Email: rredelstorff@sahra.org.za). This is to ensure that appropriate action (i.e., recording, sampling or collection of fossils, recording of relevant geological data) can be taken by a professional palaeontologist at the developer's expense. A tabulated Chance Fossil Finds Procedure is appended to this report. These mitigation recommendations should be incorporated into the Environmental Management Programme (EMPr) for this agricultural project. Please note that:

• All South African fossil heritage is protected by law (South African Heritage Resources Act, 1999) and fossils cannot be collected, damaged or disturbed without a permit from SAHRA or the relevant Provincial Heritage Resources Agency.

• The palaeontologist concerned with potential mitigation work will need a valid fossil collection permit from SAHRA and any material collected would have to be curated in an approved depository (e.g., museum or university collection);

• All palaeontological specialist work should conform to international best practice for palaeontological fieldwork and the study (e.g., data recording fossil collection and curation, final report) should adhere as far as possible to the minimum standards for Phase 2 palaeontological studies developed by SAHRA (2013)."

4.6 Socio-Economic Environment

During construction

In addition to direct jobs, jobs will also be created indirectly (among suppliers), and induced jobs will be created through greater income circulation. Due to the nature of work that needs to be performed, employment opportunities exist for unskilled and semi-skilled workers. It is important to ensure that most of the employment opportunities created as part of the development are allocated to the local communities. This would result in individuals gaining more skills (learning various building skills) and would then be able to search for other job

opportunities relating to the same kind of building opportunities after the completion of the proposed development.

During operation

The greater development/Oorkant Farm will be able to remain consistent with the quality of its produce during the summer months. The employment opportunities created during the operation phase will be for unskilled and semi-skilled individuals. Additionally, indirect jobs will be created at various businesses providing goods and services to the proposed development activities.

(a) Impact on Household Income

During construction

The proposed development would have a positive impact on household income levels. This increase in household income levels is due to the anticipated increase in unskilled to skilled employment opportunities (construction workers, site managers, engineers, builders, machine operators, etc) to be created as part of the construction phase of the development. Although temporary, this increase in household earnings would have a positive effect on nutrition, living conditions, access to better health care, access to more options regarding education, and improved ability to make economic choices.

During operation

The sustainable income generated through the operation of the proposed development will positively affect the nutrition, living conditions, access to better health care, access to more options regarding education, and improved ability to make economic choices.

The following is taken from the WULA report (refer to **Appendix D1, page 174**):

"The primary goal of Capespan Farms is to provide synergies within Capespan's global fruit procurement and marketing footprint. All the farms are strategically positioned to enhance Capespan Group's service and product offering to all our third-party growers and our retail customers across the globe. At group level, Capespan enhances and adds to its significant third-party grower product basket through its own production in order to ensure a sustainable twelve-month supply of quality fresh produce. Capespan Farms owns and controls 14 production units (including Novo Packhouse) throughout Southern Africa, producing respectively grapes, citrus, pomelo and stone fruit. All the farms have industry accredited certifications including Global GAP, HACCP, Nurture (where necessary), Leaf and Field to Fork. Our employees' wellbeing is imperative for Capespan's continued sustainability and the employment relationship is regulated through comprehensive employment service agreements. Therefore, it's imperative that continuous engagement with our employees is fostered on a range of issues that affect them and we recognise that our employees can have the following expectations: an inspiring climate and safe, healthy and congenial working conditions, a clear understanding of their jobs and related performance standards required, to be rewarded at market-related remuneration, job satisfaction, recognition and opportunities for skills acquisition, career development and empowerment. Capespan manages these expectations through the Capespan Group's Code of Business Conduct and Ethics, the board-approved Employment Equity Policy and broad-based black economic empowerment (B-BBEE) targets. We conduct regular organisational culture surveys and compliance with relevant

employment legislation and B-BBEE codes in the regions in which we operate. Employee engagement also takes place through electronic newsletters, employee publications, intranet, employee feedback forums, performance management systems and climate surveys. The Capespan Foundation is funded by the Capespan group to drive its corporate social investment (CSI) mandate - to add value to the lives of communities in which Capespan operates - by implementing various Blue Hand social, health and educational development programmes. The Foundation raises additional funding for projects, where possible, through joint ventures, staff volunteering and strategic leveraging of funding and projects. The Blue Hand project goals include, but are not limited to:

• developing/empowering communities in which the company operates for sustainable growth of company business,

• making a positive, sustainable impact on communities through improving quality of life,

• building and improving relationships with existing/potential stakeholders by forming mutually beneficial partnerships,

• maintaining the company's image and CSI reputation - strategic positioning as a leading contributor to social development in the industry,

• enhancing loyalty and pride and attracting quality socially responsible staff,

• improving the company's brand identity in the communities,

• increasing visibility of customer goodwill towards communities. Preference will be given to black/coloured people for these positions, and more specific black/coloured women where possible. Existing employees with experience on the farm, plus the potential to be leaders, will in the first place be identified for new supervisory positions,

Efficient and beneficial use of the water in public interest

The new water use will have the following benefits: Enough water will directly secure existing and new job opportunities.,

• The change in water use is to legalise the water use for Schedule 1 and Industrial use will ensure job security,

• The continuation in production of export produce will continue to bring in more foreign capital to South Africa which is much needed to strengthen our economy and as such fully supported by Government.,

Socio economic impact of water use to be authorized:

In a rural area such as this with a high unemployment rate, any new employment positions have a huge impact on the immediate and extended families of such new workers. Add then also the impact of more people with proper housing, undergoing skills training and going to church, sport, etc. and children going to school, to understand the positive impact on this rural community. Even seasonal work opportunities have the advantage of extra income plus the opportunity to gain skills that can in future be used to gain permanent employment on the farm or elsewhere. Not only are the new employment opportunities important, but also the fact that:

• *Existing jobs can be secured: Enough water will directly secure existing and new job opportunities.*

• *The continuation in production of export produce will continue to bring in more foreign capital to South Africa which is much needed to strengthen our economy and as such fully supported by Government. See Appendix H for the Section 27 Report."*

4.7 Water Use License Application

An application for a license in terms of the National Water Act, 1998 is currently underway. The water usage is summarised as follows:

Table 4-1: Water uses for the project

21.(a): taking of water	Applying for a licence for the "transfer" of water from the lawful "irrigation" allocation to "Industrial use" and Schedule 1. Applying to transfer of approximately 12.77ha (191 550 m^3/a) from Kakamas North Settlement No. 343 to Kakamas North Settlement No. 341.
21 (c) impeding or diverting flow of water in a watercourse	For the construction of agricultural areas across ephemeral watercourses/natural drainage areas.
21 (i) altering the bed, banks, course or characteristics of a watercourse	For the construction of agricultural areas across ephemeral watercourses/natural drainage areas.
21.(b): storing water	For the legalisation and registration of storage dams on the property.

The Water Use Licence Application was fully submitted via EWULAA's on 27 May 2021 to the Department of Water Affairs: Upington. The draft WULA report is included in the report under **Appendix D1, on page 174**.

4.8 Alternative Energy and Optimisation

The proposed development of the areas will effect the following measures to reduce energy and water usage:

- Use water sparingly and the latest irrigation technology and scheduling methods are always implemented.
- Best practices to reduce water consumption and electricity consumption.

5 Alternatives

5.1 Alternative Development

The development location alternatives were developed using best practice principles as well as input from the specialists. All of the options considered were situated on the applicant's property.

During the Scoping Phase it was determined that only two alternatives would be considered further during the EIA process; Alternative L1 (preferred alternative), and the No-Go Alternative. For A3 Layouts see **Appendix F on page 248**.

5.1.1 Location Alternative

(a) Alternative L1: Preferred Location Details

The following location alternatives were considered for the development:

Alternative L1 (Preferred)

This location/design alternative includes the following, as shown in **Figure 5-1**:

- The proposal is to further develop the property by establishing an additional 30ha (turquoise area) of vineyards to fully utilise the property. Note a small un-named watercourse will also be impacted by the development.
- The relocation of an existing raisin drying area, approximately 2ha in size.

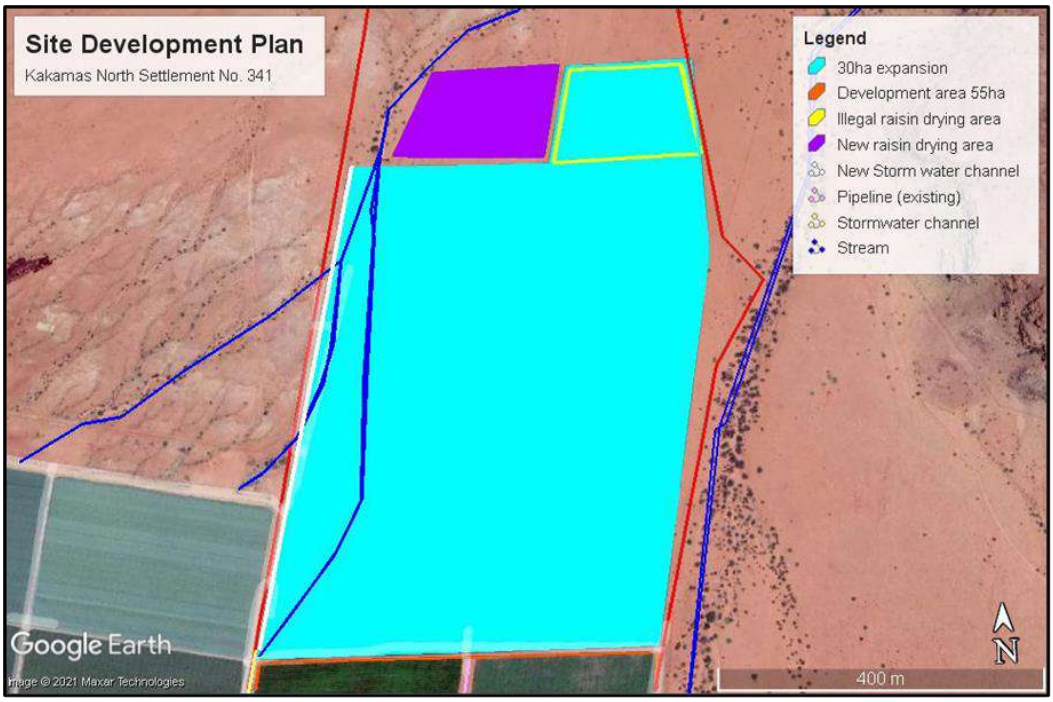

Figure 5-1: Location Alternative L1 (preferred alternative)

Alternative L1, was considered preferred for the following reasons:

- The design measures, such as utilising land that is not in a natural state, the distance from the watercourse and the economic viability of the project.

- The new vineyards will be located on partially transformed land, as such, it will have a medium to low impact on vegetation.
- From an ecological perspective, this alternative is the best option as the new vineyards will be located between the main watercourses and will only affect the smaller drainage areas.
- This alternative will also contribute socially to the upliftment of the existing workers, due to securing existing permanent job opportunities and providing some new temporary employment opportunities.

Therefore, considering the mitigation measures and minor sensitivities, this alternative has overall been chosen as the preferred option for the proposed activity.

(b) No-Go Alternative

During this alternative, no development will occur, and the existing situation would continue. The applicant will not be able to add additional cultivation areas.

This alternative has been considered but is not a viable alternative for the following reasons:

- Having water available to irrigate the additional 30ha is a benefit for the property, otherwise this water use will be lost.
- The applicant will find it hard to gain a financial benefit for the cultivation area and financial sustainability for the property, which in turn could lead to no additional temporary and permanent job opportunities.
- Better management / efficiency of the available water resources will most likely not be achieved.
- Financial positive impact, for expanding the farm to its fullest agricultural potential will not take place.

Therefore, this alternative is not seen as preferred. The construction of the agricultural activities will contribute to the agricultural potential of the property and if this does not take place, the utilisation of the farm to its full potential cannot take place. No additional social upliftment and economic contribution can take place.

5.2 Alternatives Overall Conclusion

In conclusion, taking into consideration that the No-Go Alternative is not supported from a socio-economic point of view, and the fact that Alternative L1 took into consideration inputs from the public participation, Alternative L1 is seen as preferred.

6 Summary of Findings and Mitigation Measures

6.1 Heritage

An online application was submitted to SAHRA on the SAHRIS website during the public participation period for 30-days. It outlined palaeontology and archaeology as issues of significance.

Section 38 (2a) states that if there is reason to believe that heritage resources will be affected then an impact assessment report must be submitted.

For the proposed development the following is applicable:

1. Legal requirements

In terms of Section 38 (1) (c) (iii) of the National Heritage Resources Act 1999 (Act 25 of 1999), a Heritage Impact Assessment (HIA) of the proposed project is required if the footprint area of the proposed development is more than 5000m² in extent. For this development the footprint area is for 30ha of agricultural development, this triggers an application be lodged on the SAHRA website, SAHRIS, to apply for an assessment of the Archaeology and Palaeontology on site.

An Archaeological Impact Assessment (AIA) was conducted by Jonathan Kaplan from ACRM (refer to **Appendix C3, page 149**). The following was taken from the AIA with regards to recommendations and conclusions:

Conclusion

The receiving environment is not a sensitive or threatened archaeological landscape. The impact significance of the proposed vineyard development, and the existing illegal agricultural development on archaeological heritage is assessed as LOW.

Recommendations

1. No mitigation of archaeological resources is required.

2. No archaeological monitoring is required.

3. Regarding the illegal raisin drying operation established in 2018, (subject of the Section 24G Process), no archaeological mitigation is required.

A Palaeontology Statement was conducted by Dr. John Almond from Natura Viva cc (refer to **Appendix C4, page 168**). The following was taken from the Statement:

"In view of the negligible palaeontological sensitivity of the ancient Precambrian bedrocks as well as the low sensitivity of the geologically recent superficial sediments along the Orange River in the Augrabies – Kakamas North region, the proposed agricultural development – including new vineyards and raisin drying racks - is not considered to pose a significant threat to palaeontological heritage. Substantial, potentially fossiliferous older alluvial deposits of the Orange River are not mapped here. Pending any significant new fossil discoveries in the area, no further specialist studies or mitigation are considered necessary for this agricultural project. All South African fossil heritage is protected by the National Heritage Resources Act, 1999.

Should substantial fossil remains - such as vertebrate bones and teeth, or petrified logs of fossil wood - be encountered at surface or exposed during construction, the ECO should safeguard these, preferably in situ. They should then alert the relevant provincial heritage management authority as soon as possible - i.e. SAHRA (Contact details: Dr Ragna Redelstorff, SAHRA, P.O. Box 4637, Cape Town 8000. Tel: 021 202 8651. Email: rredelstorff@sahra.org.za). This is to ensure that appropriate action (i.e. recording, sampling or collection of fossils, recording of relevant geological data) can be taken by a professional palaeontologist at the developer's expense. A tabulated Chance Fossil Finds Procedure is appended to this report. These mitigation recommendations should be incorporated into the Environmental Management Programme (EMPr) for this agricultural project. Please note that:

• All South African fossil heritage is protected by law (South African Heritage Resources Act, 1999) and fossils cannot be collected, damaged or disturbed without a permit from SAHRA or the relevant Provincial Heritage Resources Agency;

• The palaeontologist concerned with potential mitigation work will need a valid fossil collection permit from SAHRA and any material collected would have to be curated in an approved depository (e.g., museum or university collection);

• All palaeontological specialist work should conform to international best practice for palaeontological fieldwork and the study (e.g., data recording fossil collection and curation, final report) should adhere as far as possible to the minimum standards for Phase 2 palaeontological studies developed by SAHRA (2013)."

6.2 Vegetation

A Botanical Impact Assessment was conducted by Dr. Dave McDonald (refer **to Appendix C1, page 109**). The following is taken from the Botanical Impact Assessment:

"Mitigation:

There is no scope is available for mitigation measures to compensate for the loss of natural habitat in the study area. Wherever there is future cultivation, the vegetation and habitat would be lost.

Recommendations and conclusion:

The natural vegetation type found in the study area at Kakamas North Settlement No. 341 (Oorkant) near Augrabies as mapped by Mucina et al. 2005 and SANBI (2018) is Kalahari Karroid Shrubland. According to the National Biodiversity Assessment (Skowno et al. 2001) and the List of Threatened Terrestrial Ecosystems (Government Gazette, 2011), this vegetation type (ecosystem) is Least Threatened.

• The impact of the proposed agricultural development on the sparse Kalahari Karroid Shrubland would be Very Low Negative. No mitigation would be possible or required.

• No plant species of conservation concern or protected species were recorded within the development footprint, hence no permits would be necessary to remove such species.

• No constraints were identified from a botanical perspective that would prevent the agricultural development from proceeding.

• *The proposed agricultural development is therefore acceptable and supported from a botanical viewpoint"*

6.2.1 No-Go Alternative

In the case of the 'No Go' Alternative the proposed development would not happen. The proposed development area would remain much as it is unless the agricultural regime should change or the land-use. Overall, the 'No Go' Alternative would likely result in a very low negative impact due to its impact on job creation and economic stability for the property.

6.3 Air and Noise Pollution

6.3.1 Air Pollution

During the construction phase, and due to the nature of the project, a small amount of smoke (from machines) and dust could be generated. Some dust pollution may occur due to machinery movement for the construction of agricultural areas.

Mitigation
In order to minimise the effect of dust pollution, construction should be avoided on excessively windy days. Sand piles should be covered, and workers must wear the necessary safety clothing. Should watering be required, only non-potable water should be used where possible.

6.3.2 Noise Pollution

During the construction phase, there may be minimal and sporadic incidents of noise pollution due to construction activities such as earthworks. Since the area is situated within an agricultural environment, the impact is expected to be minimal.

Mitigation
The applicant/contractor should make adequate provision to prevent or minimise the possible effects of noise pollution. Should the noise from the construction work be found to cause problems (which is not anticipated to be the case), work hours in these areas may be restricted to between 06:00 and 20:00, or as otherwise agreed between the parties involved. Strict measures should therefore be enforced, especially in terms of the contract specifications, to prevent any negative impacts in this regard.

6.4 Socio-Economic

6.4.1 Impact on Employment and Skills Transfer

During construction
In addition to direct jobs, jobs will also be created indirectly (among suppliers), and induced jobs will be created through greater income circulation. Due to the nature of work that needs to be performed, employment opportunities exist for unskilled and semi-skilled workers. It is important to ensure that most of the employment opportunities created as part of the development are allocated to the local communities. This would result in individuals gaining more skills (learning various building skills) and would then be able to search for other job

opportunities relating to the same kind of building opportunities after the completion of the proposed development.

During operation

The farm will be able to remain consistent with the quality of its produce during the summer months. The available water will also increase the amount of fruit which will in turn increase the need for packers and harvesters. The proposed development will allow for an additional two-to-four-month extension for up to 100 seasonal contract workers. About 10 new job opportunities will also become available. The employment opportunities created during the operation phase will be for unskilled and semi-skilled individuals. Additionally, indirect jobs will be created at various businesses providing goods and services to the proposed development activities.

Impact on Household Income

During construction

The proposed development would have a positive impact on household income levels. This increase in household income levels is due to the anticipated increase in unskilled to skilled employment opportunities (construction workers, site managers, engineers, builders, machine operators, etc) to be created as part of the construction phase of the development. Although temporary, this increase in household earnings would have a positive effect on nutrition, living conditions, access to better health care, access to more options regarding education, and improved ability to make economic choices.

During operation

The sustainable income generated because of the operation of the proposed development will positively affect the nutrition, living conditions, access to better health care, access to more options regarding education, and improved ability to make economic choices.

The following is taken from the WULA report (refer to **Appendix D1, page 174**):

"The primary goal of Capespan Farms is to provide synergies within Capespan's global fruit procurement and marketing footprint. All the farms are strategically positioned to enhance Capespan Group's service and product offering to all our third-party growers and our retail customers across the globe. At group level, Capespan enhances and adds to its significant third-party grower product basket through its own production in order to ensure a sustainable twelve-month supply of quality fresh produce. Capespan Farms owns and controls 14 production units (including Novo Packhouse) throughout Southern Africa, producing respectively grapes, citrus, pomelo and stone fruit. All the farms have industry accredited certifications including Global GAP, HACCP, Nurture (where necessary), Leaf and Field to Fork. Our employees' wellbeing is imperative for Capespan's continued sustainability and the employment relationship is regulated through comprehensive employment service agreements. Therefore, it's imperative that continuous engagement with our employees is fostered on a range of issues that affect them and we recognise that our employees can have the following expectations: an inspiring climate and safe, healthy and congenial working conditions, a clear understanding of their jobs and related performance standards required, to be rewarded at market-related remuneration, job satisfaction, recognition and opportunities for skills acquisition, career development and empowerment. Capespan manages these expectations through the Capespan Group's Code of Business Conduct and Ethics, the board-

approved Employment Equity Policy and broad-based black economic empowerment (B-BBEE) targets. We conduct regular organisational culture surveys and compliance with relevant employment legislation and B-BBEE codes in the regions in which we operate. Employee engagement also takes place through electronic newsletters, employee publications, intranet, employee feedback forums, performance management systems and climate surveys. The Capespan Foundation is funded by the Capespan group to drive its corporate social investment (CSI) mandate - to add value to the lives of communities in which Capespan operates - by implementing various Blue Hand social, health and educational development programmes. The Foundation raises additional funding for projects, where possible, through joint ventures, staff volunteering and strategic leveraging of funding and projects. The Blue Hand project goals include, but are not limited to:

• developing/empowering communities in which the company operates for sustainable growth of company business,

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• building and improving relationships with existing/potential stakeholders by forming mutually beneficial partnerships,

• maintaining the company's image and CSI reputation - strategic positioning as a leading contributor to social development in the industry,

• enhancing loyalty and pride and attracting quality socially responsible staff,

• improving the company's brand identity in the communities,

• increasing visibility of customer goodwill towards communities. Preference will be given to black/coloured people for these positions, and more specific black/coloured women where possible. Existing employees with experience on the farm, plus the potential to be leaders, will in the first place be identified for new supervisory positions,

Efficient and beneficial use of the water in public interest

The new water use will have the following benefits: Enough water will directly secure existing and new job opportunities.,

• The change in water use is to legalise the water use for Schedule 1 and Industrial use will ensure job security,

• The continuation in production of export produce will continue to bring in more foreign capital to South Africa which is much needed to strengthen our economy and as such fully supported by Government.,

Socio economic impact of water use to be authorized:

In a rural area such as this with a high unemployment rate, any new employment positions have a huge impact on the immediate and extended families of such new workers. Add then also the impact of more people with proper housing, undergoing skills training and going to church, sport, etc. and children going to school, to understand the positive impact on this rural community. Even seasonal work opportunities have the advantage of extra income plus the

opportunity to gain skills that can in future be used to gain permanent employment on the farm or elsewhere. Not only are the new employment opportunities important, but also the fact that:

• Existing jobs can be secured: Enough water will directly secure existing and new job opportunities.

• The continuation in production of export produce will continue to bring in more foreign capital to South Africa which is much needed to strengthen our economy and as such fully supported by Government. See Appendix H for the Section 27 Report."

6.5 Land Uses

The planned development is situated within a purely agricultural area with no other land uses within close proximity. The proposed development will therefore have no impact on any surrounding land uses in the area.

6.6 Water Uses License

An application for a license in terms of the National Water Act, 1998 was submitted on the e- WULAAS portal. The water usage is summarised as follows:

The following is taken from the Water Use License Application (WULA) report (refer to Error! Reference source not found.**, page 174)**:

"Application for a Licence in terms of the National Water Act, 1998 (NWA) is made by the developer, Valam Boerdery (Pty) Ltd, for the following, also outlined in Table 6-1:

- *Section 21(c) and (i) of the National Water Act to divert and cross the watercourse as part of the establishment of vineyards. The establishment of the vineyards on Kakamas South Settlement will take place across small sections of the unnamed drainage system that is located on site. The drainage system is classified as an ephemeral course, as it will only flow sporadically after rain. These watercourses are not considered to be seasonal rivers which will regularly contain water in a seasonal pattern.*
- *Section 21 (a) to transfer approximately 1 ha of water for Industrial and Schedule 1 use. From this volume, approximately 11 900 m³ should be allocated for Schedule 1 use and approximately 3 100 m³ will be allocated for Industrial use.*
- *Section 21 (a) for transfer of approximately 12.77ha (191 550 m³/a) from Kakamas North Settlement No. 343 to Kakamas North Settlement No. 341.*
- *Section 21 (b) for the legalisation of an existing dam with a capacity of 18 024 m³, with a water surface area of 6672 m².*

The application is summarised for the following water usages:

Table 6-1: Water uses for the project

(a) transfer of water	*Applying for a licence for the "transfer" of water from the lawful "irrigation" allocation to "Industrial use" and Schedule 1.* *Applying to transfer of approximately*

	12.77ha (191 550 m³/a) from Kakamas North Settlement No. 343 to Kakamas North Settlement No. 341.
(c) impeding or diverting flow of water in a watercourse	*For the construction of agricultural areas across ephemeral watercourses/natural drainage areas.*
(i) altering the bed, banks, course or characteristics of a watercourse	*For the construction of agricultural areas across ephemeral watercourses/natural drainage areas.*
(b) storing of water	*For the construction and registration of storage dams on the property. Oorkant has an existing lawful use of 39 ha for irrigation from the Orange River allocated to Kakamas North Settlement No. 341.*

The said property also recently received a Water Use License for additional 22.59 ha of water rights from the Orange River. 9 In total Oorkant has existing rights for 61.59 ha (923 850 m³/a) of water rights from the Orange River. The applicant, Valam Boerdery (Pty) Ltd, transferred 338 850 m³/a (22.59ha) of water from another property to Kakamas North Settlement No. 341 to rectify the water shortage on the property. The transfer to ensured that the property and new developments comply with the National Water Act (1998). The summary of the transfer that took place is shown in Table 6-2 below.

Table 6-2: Water uses for the project

Property	*Current Water Allocation*	*Transfer*	*Irrigate tempo*	*Water Allocation (ha)*	*Water Allocation (m³/a)*
Remainder of Farm Afstof No 421. (Donor)	*77.6ha*	*22.59ha*	*15 000m³/ha*	*55.01ha*	*825 150m³/a*
Kakamas North Settlement No. 341. (Receiving)	*39ha*	*22.59 (- 1ha for Industrial and Schedule 1 use)*	*15 000m³/ha*	*60.59ha*	*908 850m³/a*
Kakamas North Settlement No. 341. (Receiving)	*0ha*	*1 ha*	*15 000 m³/a*	*1ha*	*15 000 m³/a*

Kakamas North Settlement No. 343. (Donor)	*71 ha*	*12.77ha*	*15 000m³/ha*	*58.23ha*	*873 450m³/a*
Kakamas North Settlement No. 341. (Receiving)	*60.59ha*	*12.77ha*	*15 000m³/ha*	*73.36ha*	*1 100 400 m³/a*
TOTAL for Oorkant (341)				*73.36ha*	*1 100 400 m³/a*

An application for an additional 30ha of vineyards is currently underway. Therefore, this application is also for section 21 (a) for transfer of approximately 12.77ha (191 550 m³/a) from Kakamas North Settlement No. 343 to Kakamas North Settlement No. 341. The new water allocation for Kakamas North Settlement No. 343 will be 1 100 400 m³/a. Oorkant Farm uses water from the irrigation allocation for drinking purposes and garden irrigation. 10 A license application (WULA) will be required for 21(a) to transfer water from "irrigation" to the sector "Schedule 1". Water used in pack stores are used for commercial purposes and must, therefore, be licenced as "industrial". The total volume of water used annually amounts to approximately 1 ha of water. Therefore, the application is to transfer approximately 15 000 m³/a of water for "Industrial" and "Schedule 1" use. From this, approximately 11 900 m³ should be allocated for "Schedule 1" use and approximately 3 100 m³ will be allocated for "Industrial" use. The drainage channel system is located in a sub-catchment that is unnamed: D81A-03245. The unnamed sub-catchment is not really a river, but more fits the description of a mostly dry drainage lines. The sub-catchment is about 28 km long. The ephemeral drainages systems spring would ultimately have flowed into the Orange River. This is no longer the case, as all these watercourses are cut off from the Orange River by agricultural developments. The drainage lines for most of the year are dry and sandy and flow for short periods after relatively heavy rains.

This application is therefore recommended for the approval of Sections 21 (a), (c), (i) and (b) as outlined in this study"

Mitigation

- Measures should be implemented to reduce water use within the proposed development, such as the use of tension meters to avoid over-irrigation of the soils.
- Environmental education programs for workers will ensure that they will be sensitive to the environment and report incidents such as leaking taps and broken irrigation systems etc.

6.7 Sewage Disposal

During the construction phase, chemical toilets will be provided for the workers.

Mitigation
These toilets will be emptied regularly by contractors. The applicant/contractor will be solely responsible for the proper use and maintenance thereof in conditions that are to the satisfaction of both the contractor and the applicant. All facilities must be positioned within walking distance from wherever employees or labourers are at work.

Other specifications to be adhered to are, amongst others, the following:

- All facilities provided at the site must comply with the requirements of the local municipality.
- No sewerage facility may be erected within a radius of 100m from a water source.
- The applicant/contractor must be held responsible for the cleaning of the sanitary facilities to prevent health hazards for the duration of the contract.
- Sanitary facilities must be provided at a ratio of one (1) facility for every fifteen (15) persons.
- All sanitation facilities must be sited, in terms of the specifications of the National Water Act no. 36 of 1998, in such a way that they do not cause water or other pollution.

6.8 Freshwater Features

A Compliance Statement was conducted by Jeanne Snyman of Ever Water Freshwater Consulting Services (refer to **Appendix C2, page 141**). The following is taken from the Compliance Statement:

"Discussion and Conclusion:

Both the affected drainage channels are of ephemeral nature, with limited aquatic vegetation, and no other wet areas surrounding them. Taking that into consideration as well as the fact that the downstream section of these drainage lines is already in a critically modified state, the small loss of aquatic habitat and ecology that will occur at the proposed development area would be deemed to be of low impact both on the small watercourses as well as the larger Orange river freshwater system. The following recommendations would be made in order to try and mitigate any further negative impacts that might arise:

- *The water quality impacts during the construction phase in particular should be addressed through a Construction Environmental Management Plan for the project and implemented by an on-site Environmental Officer;*

- *Contaminated runoff from the construction sites should be prevented from directly entering downstream water features;*

- *Construction should preferably take place during the drier winter months when runoff from the surrounding area is low to non-existent;*

- *A buffer zone of 15m should be applied to the eastern most drainage line for all proposed development activities;*

- *As the area on which the development is to take place is classified as a terrestrial CBA, it is proposed that botanical input is obtained in the EIA process.*

Taking the findings as well as proposed recommendations into account, the project is deemed to have a general low to very low negative impact on the larger freshwater context."

6.9 Solid Waste Disposal

The application area is located within the municipal area of the Kai! Garib Local Municipality. Some construction and domestic waste will be generated as part of the construction phase of this proposed development.

All facilities in use during the construction phase must be utilized and maintained in a manner that prevents pollution of any groundwater sources. No waste of any kind may be disposed of in the surrounding environment.

Mitigation

A no-nonsense approach with regard to littering on the farm currently exists and the neatness of the workplace as well as of the residential areas is a high priority for the management.

Sufficient provision should be made for rubbish bins on the farm to prevent workers from littering. These rubbish bins should be visible and clearly marked.

6.10 Visual and Cultural Landscape

The property identified for the proposed development is a farm situated between other farms. As the expansion of the agricultural activities that will take place on the farm, the proposed project will be in-line with the landscape context. The visual impact of the agricultural areas is seen as being of low significance. No mitigation or management measures are suggested aside from best practice considerations (such as keeping the area free of unsightly materials, litter and the like).

Please note: the farm is zoned for agriculture.

7 Public Participation

Public participation included the following:

Official Public Participation Process

7.1 Official Scoping Phase

(a) Advertisement and Notice Board

- An advertisement was placed in the Gemsbok during the official process.
- A notice board was displayed at the entrance of the Farm during the official process.

(b) Information and Reporting

A notice was distributed to I&APs and neighbours for the 30-day commenting period, from 116 June 2022 until 15 July 2022. The notice also informed all I&APs of the availability of the Official Draft Scoping Report which can be obtained from the EAP. The actual comments received on the Scoping Report, as part of the public participation, are included in the final Scoping Report. A digital copy of the report was made available from the following link: https://tinyurl.com/ymdaw6cs.

The report was sent to the following authorities: DAER&LR, DWS, Department of Forestry and Fisheries, SAHRA, Kai!Garib Municipality and Nature Conservation.

The public participation process for the official Scoping Phase will comply with the requirements of the Protection of Personal Information Act, 2013 (Act No. 14 of 2013) (POPIA) and the guidance document by the Department of Forestry, Fisheries and the Environment relating to registers of interested and affected parties and the inclusion of comments in reports.

(c) I&AP Database

The I&APs database was developed from registered and listed I&APs. The database was updated to include new I&APs that have submitted comments for the official Scoping Report.

7.2 Draft EIA Report

(a) Information and Reporting for the Formal Process

A notice will be distributed by email to all registered I&APs and neighbours for the 30-day commenting period, from **Wednesday, 31 August 2022 until Monday, 03 October 2022**. The notice also informed all I&APs of the availability of the draft EIA Report which could be obtained from the GBE website or from the EAP.

Comments received on the draft EIAR will be included in the final EIAR. A digital copy of the dEIAR was made available on the website www.groenbergenviro.co.za.

(b) I&AP Database

The I&AP database was developed from registered and listed I&APs. The database was updated following the Scoping Phase with new I&APs registered in the Scoping phase. Any new I&APs registering in the EIA phase will be added to the database for submission to DAER&LR in the final EIAR.

8 Need and Desirability

As stated in the NEMA 2014 s amended in June 2021.Guidelines on Needs and Desirability,

"….the need for and desirability of a proposed activity must specifically and explicitly be addressed throughout the EIA process (screening", "scoping", and assessment) when dealing with individual impacts and specifically in the overall impact summary by taking into account the answers to inter alia the following questions..."

It is therefore assumed that for the EIA Phase, the Need and Desirability have been adequately addressed within the table below, which includes all the questions outlined in the Guidelines.

Table 8-1: Questions and answers pertaining to Need and Desirability of the Proposed Development

Question	Answer
1. How will this development (and its separate elements/aspects) impact on the ecological integrity of the area? 1.1. How were the following ecological integrity considerations taken into account: 1.1.1. Threatened Ecosystems,	The proposed development will not significantly impact the ecological integrity of the area. Only a portion of the proposed development area is transformed. 1.1.1 & 1.1.2 The following is taken from the Botanical Assessment Report (refer to **Appendix C1**): "*The development area supports extremely sparse Kalahari Karroid Shrubland. In fact, so sparse that one is inclined to call this vegetation Bushmanland Arid Grassland. However, since*

	the area is mapped as Kalahari Karroid Shrubland (SANBI, 2018) and not enough vegetation is present to determine otherwise, this classification is upheld here. The development of vineyards and the raisin drying racks would have Very Low Negative impact despite the area falling within a CBA1. No mitigation would be possible or necessary."
1.1.2. Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure,	
1.1.3. Critical Biodiversity Area "("CBA's") and Ecological Support Area" ("EA's"),	1.1.3 As stated above the site falls within a CBA1, however, the stated above in 1.1.1 and 1.1.2 the vegetation is very sparse and the impact is considered very low.
1.1.4. Conservation targets.	1.1.4 see above.
1.1.5. Ecological drivers of the ecosystem,	1.1.5 The following is taken from the Botanical Assessment Report (refer to **Appendix C1, on page 109**): "*The development area supports extremely sparse Kalahari Karroid Shrubland. In fact, so sparse that one is inclined to call this vegetation Bushmanland Arid Grassland. However, since the area is mapped as Kalahari Karroid Shrubland (SANBI, 2018) and not enough vegetation is present to determine otherwise, this classification is upheld here. The development of vineyards and the raisin drying racks would have Very Low Negative impact despite the area falling within a CBA1. No mitigation would be possible or necessary."*
1.1.6. Environmental Management Framework,	1.1.6 The proposed area will not impact the EMF.
1.1.7. Spatial Development Framework, and	1.1.7 The activity will be of social and economic benefit but will not significantly impact the SDF.
1.1.8. Global and international	1.1.8 The project does not affect any international responsibility. The activity will not

responsibilities relating to the environment (e.g., RAMSAR sites, Climate Change, etc.).	impact on climate change.
1.2. How will this development disturb or enhance ecosystems and/or result in the loss or protection of biological diversity? What measures were explored to firstly avoid these negative impacts, and where these negative impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?	The proposed development area was chosen due to a portion of it being already disturbed and having fewer biological sensitivities on it. As such, the proposed development area has been identified as having low sensitivity and being ideal for agricultural development. Caution will be taken to not indirectly impact the ecosystem or biological diversity.
1.3. How will this development pollute and/or degrade the biophysical environment? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?	1.3 This development will not pollute or degrade the biophysical environment. Care will be taken during construction to prevent any pollution or degradation through the EMPr.
1.4. What waste will be generated by this development? What measures were explored to firstly avoid waste and where waste could not be avoided altogether, what measures were explored to minimise, reuse, and/or recycle the waste? What measures have been explored to safely treat and/or dispose of unavoidable waste?	1.4 It is an agricultural activity, and no construction waste will be generated. General/domestic waste would possibly be generated by workers during the construction phase which will be taken to the local landfill. No waste will be generated during the operational phase.
1.5. How will this development disturb or enhance landscapes and/or sites that constitute the nation's cultural heritage? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored	1.5 The following is taken from the Heritage Impact Assessment (refer to **Appendix C3, on page 149**): *"Conclusion* *The receiving environment is not a sensitive or threatened archaeological landscape. The impact significance of the proposed vineyard development, and the existing illegal agricultural development on archaeological*

to enhance positive impacts?	*heritage is assessed as LOW.* *Recommendations* *1. No mitigation of archaeological resources is required.* *2. No archaeological monitoring is required.* *3. Regarding the illegal raisin drying operation established in 2018, (subject of the Section 24G Process), no archaeological mitigation is required."*
1.6. How will this development use and/or impact on non-renewable natural resources? What measures were explored to ensure responsible and equitable use of the resources? How have the consequences of the depletion of the non-renewable natural resources been considered? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?	1.6 The only non-renewable natural resource to be used is water. This resource will be used for irrigational purposes and therefore contributes to the economy. It is therefore not a negative impact, as it will be used sparingly/water wise to its full potential. A WULA has been submitted on the e-wulaas portal. The draft WULA Report is included in the draft EIAR (refer to **Appendix D1, on page 174**).
1.7. How will this development use and/or impact on renewable natural resources and the ecosystem of which they are part? Will the use of the resources and/or impact on the ecosystem jeopardise the integrity of the resource and/or system taking into account carrying capacity restrictions, limits of acceptable change, and thresholds? What measures were explored to firstly avoid the use of resources, or if avoidance is not possible, to minimise the use of resources? What measures were taken to ensure responsible and equitable use of the resources? What measures were explored to enhance	The proposed development will indirectly contribute to renewable resources which are the agricultural cultivation of crops. Therefore, this development will have a positive impact on the resource and will not negatively impact or jeopardise the integrity of the existing resources. The proposed development will make use of an existing resource (water) however; it will reduce the resource dependency by making use of water wise technology. It is also a great use of the resource as it will provide a new resource (food) and contribute to the economy as well as food security.

positive impacts?	
1.7.1. Does the proposed development exacerbate the increased dependency on increased use of resources to maintain economic growth or does it reduce resource dependency (i.e., de-materialised growth)? (Note: sustainability requires that settlements reduce their ecological footprint by using less material and energy demands and reduce the amount of waste they generate, without compromising their quest to improve their quality of life)	1.7.1 The proposed development is that of a raising drying area and new agricultural development. Waste will be minimised by applying effective waste management techniques such as recycling and minimisation where possible during the construction phase. The development will however have positive spin-offs which lead to improvement of quality of life of locals.
1.7.2. Does the proposed use of natural resources constitute the best use thereof? Is the use justifiable when considering intra- and intergenerational equity, and are there more important priorities for which the resources should be used (i.e. what are the opportunity costs of using these resources for the proposed development alternative?)	1.7.2 The development is situated on agricultural land for agricultural use. It will allow the continuation of farming and continue to provide jobs for current and future generations.
1.7.3. Do the proposed location, type, and scale of development promote a reduced dependency on resources?	1.7.3 N/A, development is a raising drying area and agricultural development on agricultural land.
1.8. How were a risk-averse and cautious approach applied in terms of ecological impacts:	1.8 A portion of the development area is transformed. As such the site is considered low sensitive.
1.8.1. What are the limits of current knowledge (note: the gaps, uncertainties, and assumptions must be clearly stated)?	1.8.1 For this reason, the development area was considered acceptable for development.
1.8.2. What is the level of risk associated with the limits of current knowledge?	1.8.2 The following is taken from the Botanical Assessment Report (refer to **Appendix C1, on page 109**): "*The development area supports extremely sparse Kalahari Karroid Shrubland. In fact, so sparse that one is inclined to call this vegetation Bushmanland Arid Grassland. However, since the area is mapped as Kalahari Karroid Shrubland (SANBI, 2018) and not enough*

1.8.3. Based on the limits of knowledge and the level of risk, how and to what extent was a risk-averse and cautious approach applied to the development?	*vegetation is present to determine otherwise, this classification is upheld here. The development of vineyards and the raisin drying racks would have Very Low Negative impact despite the area falling within a CBA1. No mitigation would be possible or necessary."* 1.8.3 The following is taken from the Botanical Assessment Report (refer to **Appendix C1, on page 109**): *"Limitations and Assumptions* *The field-survey was undertaken on 16 July 2020. Approximately 4 hours were spent on site. The environment was extremely dry at the time of the survey so many of the herbaceous plants were not in good condition. This limited positive identification. However, apart from grasses, most herbaceous plant species do not make up a significant component of the composition of the plant communities at the study site. The indicator species are mainly shrubs or small trees that were also dehydrated but mores easily identified, even with the prevailing dry conditions.* *It is important to note that a species checklist for the site was NOT compiled due to the extremely dry conditions and that the survey was not conducted in the growing season. This is not regarded as a limitation to the study."*
1.9. How will the ecological impacts resulting from this development impact on people's environmental right in terms following: 1.9.1. Negative impacts: e.g., access to resources, opportunity costs, loss of amenity (e.g., open space), air and water quality impacts, nuisance (noise, odour, etc.), health impacts, visual impacts, etc. What measures were taken to firstly avoid negative impacts, but if avoidance is not possible, to minimise, manage and remedy negative impacts? 1.9.2. Positive impacts: e.g., improved	The proposed development will not impact the rights of other people. 1.9.1 The proposed development might have a small impact on air quality, construction dust may be generated. This will, however, be mitigated and is temporary. Visually there is little impact on surrounding landowners because the activity is similar to neighbouring developments. 1.9.2 Positive impacts are the socio-economic

access to resources, improved amenity, improved air or water quality, etc. What measures were taken to enhance?	creation of temporary job opportunities and job security, improvement in quality of life, improvement of the local economy.
1.10. Describe the linkages and dependencies between human well-being, livelihoods and ecosystem services applicable to the area in question and how the development's ecological impacts will result in socio-economic impacts (e.g., on livelihoods, loss of heritage site, opportunity costs, etc.)?	1.10 The proposed development will not negatively impact on livelihoods It might, however, provide job security of permanent workers. The development could also create new temporary employment.
1.11. Based on all of the above, how will this development positively or negatively impact on ecological integrity objectives/targets/considerations of the area?	1.11 The Impact significance of the proposed development on important archaeological heritage is low. The development will have a positive impact from a socio-economic perspective through job creation and contributions to the economy.
1.12. Considering the need to secure ecological integrity and a healthy biophysical environment, describe how the alternatives identified (in terms of all the different elements of the development and all the different impacts being proposed), resulted in the selection of the "best practicable environmental option" in terms of ecological considerations?	1.12 The preferred alternative has a low impact on vegetation, low impact on heritage/archaeological indicators and has a positive impact from a socio-economic perspective through job creation and contributions to the economy, best location, and best technology alternative. The preferred alternative was identified as the preferred as it is already on partially transformed land with low botanical impacts.
1.13. Describe the positive and negative cumulative ecological/biophysical impacts bearing in mind the size, scale, scope, and nature of the project in relation to its location and existing and other planned developments in the area?	1.13 The proposed development will be located on partially transformed land. The cumulative impact will be low negative from a botanical perspective.
2.1. What is the socio-economic context of the area, based on, amongst other considerations, the following considerations: 2.1.1. The IDP (and its sector plan'' vision, objectives, strategies, indicators and	2.1.1 The proposed development does not fall within an urban area, however, does fall within

targets) and any other strategic plans, frameworks of policies applicable to the area, 2.1.2. Spatial priorities and desired spatial patterns (e.g., need for integration of segregated communities, need to upgrade informal settlements, need for densification, etc.), 2.1.3. Spatial characteristics (e.g., existing land uses, planned land uses, cultural landscapes, etc.), and 2.1.4. Municipal Economic Development Strategy “"LED Strategy”").	the boundaries of the Kai! Garib Municipality. 2.1.2 The closest communities are that of Augrabies. People working on the development will be sourced locally. 2.1.3 The proposed development will contribute positively to the local economy and the securing of job opportunities in the region and the Northern Cape Province. 2.1.4 The planned development is situated within a purely agricultural area with no other land uses near. The proposed development will therefore have no impact on any surrounding land uses in the area.
2.2. Considering the socio-economic context, what will the socio-economic impacts be of the development (and its separate elements/aspects), and specifically also on the socio-economic objectives of the area? 2.2.1. Will the development complement the local socio-economic initiatives (such as local economic development (LED) initiatives), or skills development programs?	2.2 The following is taken from the WULA Report (refer to **Appendix D1, on page 174**): *“The primary goal of Capespan Farms is to provide synergies within Capespan's global fruit procurement and marketing footprint. All the farms are strategically positioned to enhance Capespan Group's service and product offering to all our third-party growers and our retail customers across the globe. At group level, Capespan enhances and adds to its significant third-party grower product basket through its own production in order to ensure a sustainable twelve-month supply of quality fresh produce. Capespan Farms owns and controls 14 production units (including Novo Packhouse) throughout Southern Africa, producing respectively grapes, citrus, pomelo and stone fruit. All the farms have industry accredited certifications including Global GAP, HACCP, Nurture (where necessary), Leaf and Field to Fork. Our employees’ wellbeing is imperative for Capespan's continued sustainability and the employment relationship is regulated through comprehensive employment service agreements. Therefore, it's imperative that*

	continuous engagement with our employees is fostered on a range of issues that affect them and we recognise that our employees can have the following expectations: an inspiring climate and safe, healthy and congenial working conditions, a clear understanding of their jobs and related performance standards required, to be rewarded at market-related remuneration, job satisfaction, recognition and opportunities for skills acquisition, career development and empowerment. Capespan manages these expectations through the Capespan Group's Code of Business Conduct and Ethics, the board-approved Employment Equity Policy and broad-based black economic empowerment (B-BBEE) targets. We conduct regular organisational culture surveys and compliance with relevant employment legislation and B-BBEE codes in the regions in which we operate. Employee engagement also takes place through electronic newsletters, employee publications, intranet, employee feedback forums, performance management systems and climate surveys. The Capespan Foundation is funded by the Capespan group to drive its corporate social investment (CSI) mandate - to add value to the lives of communities in which Capespan operates - by implementing various Blue Hand social, health and educational development programmes. The Foundation raises additional funding for projects, where possible, through joint ventures, staff volunteering and strategic leveraging of funding and projects. The Blue Hand project goals include, but are not limited to: *• developing/empowering communities in which the company operates for sustainable growth of company business,* *• making a positive, sustainable impact on communities through improving quality of life,* *• building and improving relationships with existing/potential stakeholders by forming mutually beneficial partnerships,* *• maintaining the company's image and CSI*

	reputation - strategic positioning as a leading contributor to social development in the industry, *• enhancing loyalty and pride and attracting quality socially responsible staff,* *• improving the company's brand identity in the communities,* *• increasing visibility of customer goodwill towards communities. Preference will be given to black/coloured people for these positions, and more specific black/coloured women where possible. Existing employees with experience on the farm, plus the potential to be leaders, will in the first place be identified for new supervisory positions,* *Efficient and beneficial use of the water in public interest* *The new water use will have the following benefits: Enough water will directly secure existing and new job opportunities.,* *• The change in water use is to legalise the water use for Schedule 1 and Industrial use will ensure job security,* *• The continuation in production of export produce will continue to bring in more foreign capital to South Africa which is much needed to strengthen our economy and as such fully supported by Government.,* *Socio economic impact of water use to be authorized:* *In a rural area such as this with a high unemployment rate, any new employment positions have a huge impact on the immediate and extended families of such new workers. Add then also the impact of more people with proper housing, undergoing skills training and going to church, sport, etc. and children going to school, to understand the positive impact on this rural community. Even seasonal work opportunities have the advantage of extra income plus the opportunity to gain skills that can in future be*

	used to gain permanent employment on the farm or elsewhere. Not only are the new employment opportunities important, but also the fact that: *• Existing jobs can be secured: Enough water will directly secure existing and new job opportunities.* *• The continuation in production of export produce will continue to bring in more foreign capital to South Africa which is much needed to strengthen our economy and as such fully supported by Government. See Appendix H for the Section 27 Report."*
2.3. How will this development address the specific physical, psychological, developmental, cultural, and social needs and interests of the relevant communities?	2.3 The proposed development will greatly and positively impact on skills development. In a rural area such as this with a high unemployment rate, any new employment positions have a huge impact on the immediate and extended families of such new workers. Add then also the impact of more people with proper housing, undergoing skills training and going to church, sport, etc. and children going to school, to understand the positive impact on this rural community. Even seasonal work opportunities have the advantage of extra income plus the opportunity to gain skills that can in future be used to gain permanent employment on the farm or elsewhere. Not only are the new employment opportunities important, but also the fact that: 1. Existing jobs can be secured: The development will directly secure existing jobs. 2. The increase in produce will bring more capital to the province which is much needed to strengthen our economy and as such fully supported by Government.
2.4. Will the development result in equitable (intra- and inter-generational) impact distribution, in the short- and long-term? Will the impact be socially	2.4 Yes, the development will result in equitable impact distribution. The impact will be sustainable in the long term.

and economically sustainable in the short- and long-term?	
2.5. In terms of location describe how the placement of the proposed development will:	
2.5.1. result in the creation of residential and employment opportunities in close proximity to or integrated with each other,	2.5.1 Workers not residing on the property will be provided with transport to and from the property.
2.5.2. reduce the need for transport of people and goods,	2.5.2, 2.5.3, 2.5.4 & 2.5.5 The development took into consideration favourable spatial factors as the property is located close to existing infrastructure.
2.5.3. result in access to public transport or enable non-motorised and pedestrian transport (e.g., will the development result in densification and the achievement of thresholds in terms of public transport),	
2.5.4. compliment other uses in the area,	
2.5.5. be in line with the planning for the area,	
2.5.6. for urban-related development, make use of underutilised land available with the urban edge,	2.5.6 Not an urban development.
2.5.7. optimise the use of existing resources and infrastructure,	2.5.7 existing water infrastructure and water resource will be utilised.
2.5.8. opportunity costs in terms of bulk infrastructure expansions in non-priority areas (e.g., not aligned with the bulk infrastructure planning for the settlement that reflects the spatial reconstruction priorities of the settlement),	2.5.8 No bulk infrastructure planning for the development.
2.5.9. discourage "urban sprawl" and contribute to compaction/densification,	2.5.9 See 2.5.6.
2.5.10. contribute to the correction of the historically distorted spatial patterns of settlements and to the optimum use of existing infrastructure in excess of current needs,	2.5.10 -2.5.15 The development will not negatively affect the sense of history or heritage/archaeological indicators.
2.5.11. encourage environmentally	

sustainable land development practices and processes, 2.5.12. Take into account special locational factors that might favour the specific location (e.g., the location of a strategic mineral resource, access to the port, access to rail, etc.), 2.5.13. the investment in the settlement or area in question will generate the highest socio-economic returns (i.e., an area with high economic potential), 2.5.14. impact on the sense of history, sense of place and heritage of the area and the socio-cultural and cultural-historic characteristics and sensitivities of the area, and 2.5.15. In terms of the nature, scale and location of the development promote or act as a catalyst to create a more integrated settlement?	
2.6. How were a risk-averse and cautious approach applied in terms of socio-economic impacts: 2.6.1. What are the limits of current knowledge (note: the gaps, uncertainties, and assumptions must be clearly stated)? 2.6.2. What is the level of risk (note: related to inequality, social fabric, livelihoods, vulnerable communities, critical resources, economic vulnerability and sustainability) associated with the limits of current knowledge? 2.6.3. Based on the limits of knowledge and the level of risk, how and to what extent was a risk-averse and cautious approach applied to the development?	2.6.1 – 2.6.3 The following is taken from the specialist reports: <u>Botanically (refer to **Appendix C1, page 109**):</u> Low impact *"LIMITATIONS AND ASSUMPTIONS* *The field-survey was undertaken on 16 July 2020. Approximately 4 hours were spent on site. The environment was extremely dry at the time of the survey so many of the herbaceous plants were not in good condition. This limited positive identification. However, apart from grasses, most herbaceous plant species do not make up a significant component of the composition of the plant communities at the study site. The indicator species are mainly shrubs or small trees that were also dehydrated but mores easily identified, even with the prevailing dry conditions.* *It is important to note that a species checklist for the site was NOT compiled due to the extremely dry conditions and that the survey was not*

	conducted in the growing season. This is not regarded as a limitation to the study." Cultural/Heritage/Archaeologically (refer to **Appendix C3, page 149**): Very low impact "*Constraints and limitations* *There were no limitations associated with the field study. Access to the site was easy and archaeological visibility was very good."* This development will improve the local economy and create new permanent and temporary jobs.
2.7. How will the socio-economic impacts resulting from this development impact on people's environmental right in terms following: 2.7.1. Negative impacts: e.g., health (e.g., HIV-Aids), safety, social ills, etc. What measures were taken to firstly avoid negative impacts, but if avoidance is not possible, to minimise, manage and remedy negative impacts? 2.7.2. Positive impacts. What measures were taken to enhance positive impacts?	2.7.1 – 2.7.2 The development will not impact on people's health. Local workforce will be sourced. The proposed development will greatly and positively impact on skills development. In a rural area such as this with a high unemployment rate, any new employment positions have a huge impact on the immediate and extended families of such new workers. Even seasonal work opportunities have the advantage of extra income plus the opportunity to gain skills that can in future be used to gain permanent employment on the farm or elsewhere.
2.8. Considering the linkages and dependencies between human well-being, livelihoods and ecosystem services, describe the linkages and dependencies applicable to the area in question and how the development's socio-economic impacts will result in ecological impacts (e.g., over utilisation of natural resources, etc.)?	2.8 The proposed development is for an agricultural area in an area not sensitive with ecological impacts and with a positive socio-economic impact on the local community.
2.9. What measures were taken to pursue the selection of the "best practicable environmental option" in terms of socio-economic considerations?	2.9 Location, existing infrastructure and environmental impacts were considered to determine the best option.
2.10. What measures were taken to pursue environmental justice so that adverse environmental impacts shall not	2.10 The project is for the development of an agricultural area and a raisin drying area, which will form part of an existing farming unit zoned

be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons (who are the beneficiaries and is the development located appropriately)? Considering the need for social equity and justice, do the alternatives identified, allow the "best practicable environmental option" to be selected, or is there a need for other alternatives to be considered?	for agricultural use. No discrimination will therefore take place.
2.11. What measures were taken to pursue equitable access to environmental resources, benefits, and services to meet basic human needs and ensure human well-being, and what special measures were taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination?	2.11 The proposed development will occur according to the specific needs of the proposed area and any contractors will have to make use of trained staff, local labour will be prioritised.
2.12. What measures were taken to ensure that the responsibility for the environmental health and safety consequences of the development has been addressed throughout the development's life cycle?	2.12 Where local communities are employed, it will be the responsibility of the applicant/contractor to ensure their safety and to provide the relevant training for the execution of their tasks.
2.13. What measures were taken to: 2.13.1. ensure the participation of all interested and affected parties, 2.13.2. provide all people with an opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, 2.13.3. ensure participation by vulnerable and disadvantaged persons, 2.13.4. promote community wellbeing and empowerment through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means,	2.13 Public participation will be done in accordance with the NEMA 2014 Regulations specifications (as amended). Skills development will be done for staff by the applicant. The farm has an extensive plan in place for empowerment of its workers and education.

2.13.5. ensure openness and transparency, and access to information in terms of the process, 2.13.6. ensure that the interests, needs and values of all interested and affected parties were taken into account, and that adequate recognition was given to all forms of knowledge, including traditional and ordinary knowledge, and 2.13.7. Ensure that the vital role of women and youth in environmental management and development were recognised and their full participation therein was promoted?	
2.14. Considering the interests, needs and values of all the interested and affected parties, describe how the development will allow for opportunities for all the segments of the community (e.g. a mixture of low-, middle-, and high-income housing opportunities) that is consistent with the priority needs of the local area (or that is proportional to the needs of an area)?	2.14 The proposed development will provide job opportunities for low and middle-income groups and will provide capital for high-income groups.
2.15. What measures have been taken to ensure that current and/or future workers will be informed of work that potentially might be harmful to human health or the environment or of dangers associated with the work, and what measures have been taken to ensure that the right of workers to refuse such work will be respected and protected?	2.15 Where local communities are employed, it will be the responsibility of the applicant to ensure their safety and to provide the relevant training for the execution of their tasks.
2.16. Describe how the development will impact on job creation in terms of, amongst other aspects: 2.16.1. the number of temporary versus permanent jobs that will be created,	The proposed development will greatly and positively impact on skills development. 2.16.1 With this development, there will be an increase in temporary jobs and security for permanent jobs. The following is taken from the WULA Report (refer to **Appendix D1,** page 174):

	Efficient and beneficial use of the water in public interest *The new water use will have the following benefits: Enough water will directly secure existing and new job opportunities.,* *• The change in water use is to legalise the water use for Schedule 1 and Industrial use will ensure job security,* *• The continuation in production of export produce will continue to bring in more foreign capital to South Africa which is much needed to strengthen our economy and as such fully supported by Government.,* *Socio economic impact of water use to be authorized:* *In a rural area such as this with a high unemployment rate, any new employment positions have a huge impact on the immediate and extended families of such new workers. Add then also the impact of more people with proper housing, undergoing skills training and going to church, sport, etc. and children going to school, to understand the positive impact on this rural community. Even seasonal work opportunities have the advantage of extra income plus the opportunity to gain skills that can in future be used to gain permanent employment on the farm or elsewhere. Not only are the new employment opportunities important, but also the fact that:* *• Existing jobs can be secured: Enough water will directly secure existing and new job opportunities.* *• The continuation in production of export produce will continue to bring in more foreign capital to South Africa which is much needed to strengthen our economy and as such fully supported by Government. See Appendix H for the Section 27 Report."*
2.16.2. whether the labour available in the area will be able to take up the job	2.16.2 Where employees do not have the skills they would be educated.

opportunities (i.e., do the required skills match the skills available in the area), 2.16.3. the distance from where labourers will have to travel, 2.16.4. the location of jobs opportunities versus the location of impacts (i.e. the equitable distribution of costs and benefits), and 2.16.5. The opportunity costs in terms of job creation (e.g., a mine might create 100 jobs, but the impact on 1000 agricultural jobs, etc.).	The following is taken from the WULA Report (refer to **Appendix D1, page 174**): See above in 12.16.1 2.16.3 Labourers would be transported to the farm and returned to town. 2.16.4 Locational impacts are low as a portion of the development area was already transformed and is located on the property as are the job opportunities 2.16.5 Opportunity cost translates positively, only new jobs will be created, no jobs will be impacted negatively.
2.17. What measures were taken to ensure: 2.17.1. that there were intergovernmental coordination and harmonisation of policies, legislation and actions relating to the environment, and 2.17.2. That actual or potential conflicts of interest between organs of state were resolved through conflict resolution procedures?	All policies and legislation were considered; all relevant governmental institutions applicable to the applications were requested to comment during the public participation process. To which the EAP responded to comments made.
2.18. What measures were taken to ensure that the environment will be held in public trust for the people, that the beneficial use of environmental resources will serve the public interest, and that the environment will be protected as the people's common heritage?	Various mitigation measures to be implemented as part of the issued EA.
2.19. Are the mitigation measures proposed realistic and what long-term environmental legacy and managed burden will be left?	The mitigation measures have been provided by specialists and are, therefore, realistic.
2.20. What measures were taken to ensure that the costs of remedying pollution, environmental degradation, and consequent adverse health effects and of preventing, controlling, or	The development will have an EMPr to ensure pollution, degradation etc. is minimised, managed and mitigated were required.

minimising further pollution, environmental damage, or adverse health effects will be paid for by those responsible for harming the environment?	
2.21. Considering the need to secure ecological integrity and a healthy, biophysical, environment, describe how the alternatives identified (in terms of all the different elements of the development and all the different impacts being proposed), resulted in the selection of the best practicable environmental option in terms of socio-economic considerations?	In a rural area such as this, with a high unemployment rate, any new employment positions have a huge impact on the immediate and extended families of such new employees. This positive impact is reinforced and compounded by the realization of more families in this rural community with proper housing, undergoing skills training and going to church, sport, etc. and children going to school. Even seasonal work opportunities have the advantage of extra income plus the opportunity to gain skills, which can be used to gain permanent employment on the farm or elsewhere in the future. Not only are the new employment opportunities important, but also the fact that: • The development will directly secure new job opportunities. • The development will bring more capital to the province which is much needed to strengthen the economy and as such fully supported by Government.
2.22. Describe the positive and negative cumulative socio-economic impacts bearing in mind the size, scale, scope, and nature of the project in relation to its location and other planned developments in the area?	A positive cumulative socio-economic impact in the form of job creation and contributing to economic development.

9 Environmental Impact Assessment

9.1 Summary of Findings

A summary of the impacts and mitigation measures has been compiled in Section 6, as referenced from the various specialist assessments, where applicable.

9.2 Maps of Environment

The maps inserted below show the environmentally sensitive areas as highlighted in the vegetation section of this dEIAR.

The following is taken from the Botanical Assessment Report (refer to **Appendix C1, page 109**):

"Critical Biodiversity Areas (CBAs) were delimited for the Namaqua District Municipality (NDM) by Desmet & Marsh (2008). The maps they compiled did not include the Augrabies area. However, more recently critical biodiversity areas and ecological support areas have been mapped for the whole of the Northern Cape Province including the Kai! Garib Municipality where the study area is located.

*The available CBA shapefiles (Enrico Oosthuysen pers. comm.) for the Northern Cape Province were overlaid on Google Earth ™. This permitted examination of the conservation status classification of the area around Augrabies including Oorkant. The Oorkant study area is located entirely in an area classified as CBA1 (***Figure 9-1***).*

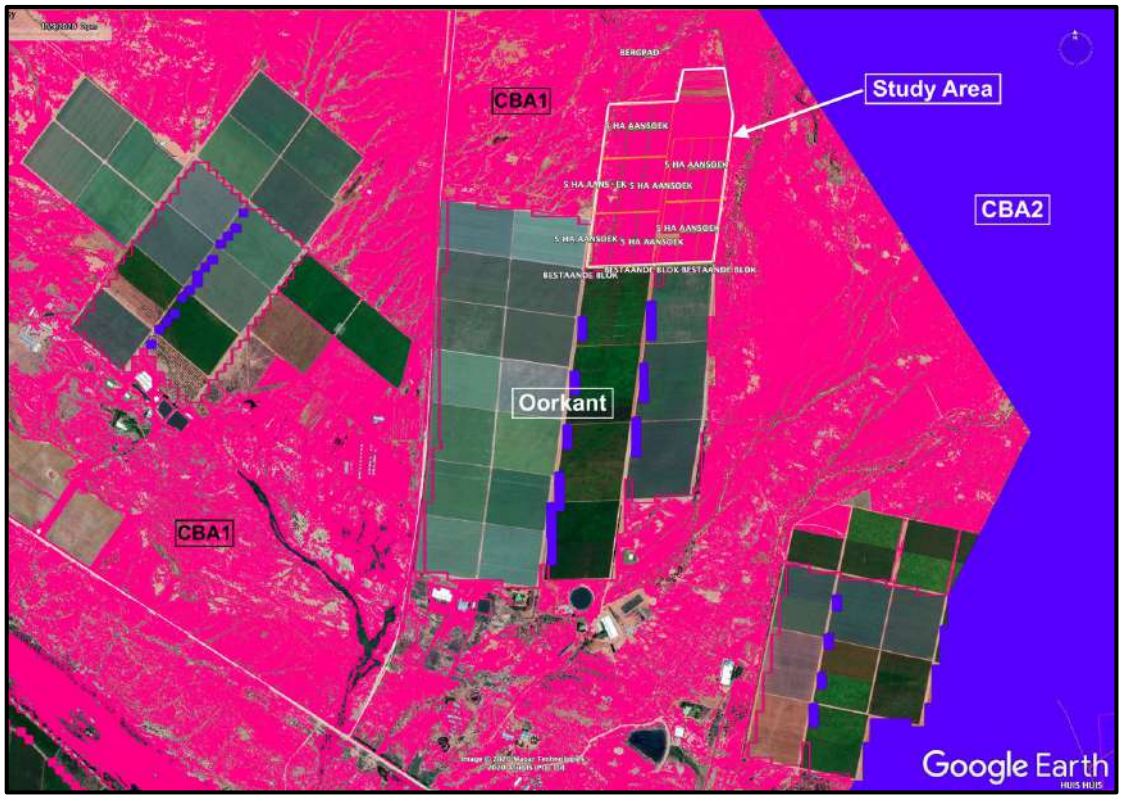


Figure 9-1: Portion of the Critical Biodiversity Areas map for the Northern Cape Province showing indicating that the Oorkant study area (white boundary) falls entirely within a CBA1 (pink shading).

The proposed agricultural development at Oorkant would result in the complete transformation of the land. The sparse vegetation that is present would be lost.

Assessed impacts

The assessment of the impacts is considered for development of 30 ha that would include vineyards and a raisin drying area. Only the development alternative and the 'No Go' alternative are considered.

Three types of impacts are assessed:

- *Direct impacts: Impacts occurring directly on the vegetation of the site as a result of the proposed agricultural development.*
- *Indirect impacts: Impacts that would not be as a direct result of the proposed activity, but that would occur away from the original source of impact.*
- *Cumulative impacts: Impacts caused by several similar projects.*

No Go' Alternative

The No Go alternative would be that the proposed agricultural development of 30 ha would not take place. The natural veld would remain as it is and there would be limited change over time but with some low-level impacts due to human activity. The result would be a Very Low Negative impact.

Direct Impacts

The impacts of the development of agriculture in the study are considered for the loss of natural vegetation and habitat i.e. loss of Kalahari Karroid Shrubland.

Loss of vegetation and habitat in the 30 ha development area.

The development area supports extremely sparse Kalahari Karroid Shrubland. In fact, so sparse that one is inclined to call this vegetation Bushmanland Arid Grassland. However, since the area is mapped as Kalahari Karroid Shrubland (SANBI, 2018) and not enough vegetation is present to determine otherwise, this classification is upheld here. The development of vineyards and the raisin drying racks would have Very Low Negative impact despite the area falling within a CBA1. No mitigation would be possible or necessary (Table 1).

Table 1. Impact and Significance – Loss of Kalahari Karroid Shrubland vegetation due to conversion 30ha at Oorkant to vineyards and raisin drying racks.

CRITERIA	*'NO GO' ALTERNATIVE*	*PREFERRED ALTERNATIVE*	
Nature of impact	*Loss of Kalahari Karroid Shrubland vegetation*		
	WITHOUT MITIGATION	*WITHOUT MITIGATION*	*WITH MITIGATION*
Extent	*Local*	*Local*	*Local*
Duration	*Long-term*	*Long-term*	*Long-term*
Intensity	*Very Low*	*Low*	*Very Low*

Probability of occurrence	*Likely*	*Probable*	*Probable*
Confidence	*High*	*High*	*High*
Significance	*Very Low negative*	*Very low negative*	*Very low negative*
Nature of Cumulative impact	*Loss of Kalahari Karroid Shrubland*		
Cumulative impact prior to mitigation	*Very Low Negative*	*Very Low negative*	
Degree to which impact can be reversed	*Not reversible*		
Degree to which impact may cause irreplaceable loss of resources	*Very Low*		
Degree to which impact can be mitigated	*Low*		
Proposed mitigation	*None proposed*		
Cumulative impact post mitigation	*Very Low negative*		
Significance after mitigation	*Very Low negative*		

Indirect Impacts

No indirect impacts of the proposed transformation of natural habitat in the study area at Oorkant were identified.

Cumulative Impacts

Kalahari Karroid Shrubland is a fairly extensive vegetation type in the Northern Cape Province with relatively low botanical sensitivity over much of its range. Minimal vegetation type has been lost mainly because water is not available for irrigation of crops. Consequently, much of this ecosystem remains intact since it is used mainly as rangeland for animal production. Cumulative impacts are thus very low at a broad scale although at a local scale such as around Augrabies, cumulative impacts are somewhat higher due to intensive cultivation. Considering local and broad-scale impacts, cumulative impacts range from Low Negative to Very Low Negative depending on the condition of the vegetation.

Mitigation

There is no scope is available for mitigation measures to compensate for the loss of natural habitat in the study area. Wherever there is future cultivation, the vegetation and habitat would be lost.

Conclusions and Recommendations

- *The natural vegetation type found in the study area at Kakamas North Settlement No. 341 (Oorkant) near Augrabies as mapped by Mucina et al. 2005 and SANBI (2018) is Kalahari Karroid Shrubland. According to the National Biodiversity Assessment (Skowno et al. 2001) and the List of Threatened Terrestrial Ecosystems (Government Gazette, 2011), this vegetation type (ecosystem) is Least Threatened.*
- *The impact of the proposed agricultural development on the sparse Kalahari Karroid Shrubland would be Very Low Negative. No mitigation would be possible or required.*
- *No plant species of conservation concern or protected species were recorded within the development footprint, hence no permits would be necessary to remove such species.*
- *No constraints were identified from a botanical perspective that would prevent the agricultural development from proceeding.*
- *The proposed agricultural development is therefore acceptable and supported from a botanical viewpoint. "*

9.3 Comparative Assessment

During the Scoping Phase it was determined that only two alternatives would be considered further during the EIA process: Alternative L1 (preferred alternative), and the No-Go Alternative. The following table provides an overall summary of impacts with mitigation measures included:

Table 9-1: Legend for impact rating

Legend		
Significance Ratings (after mitigation)	**Negative Impacts**	**Positive Impacts**
Very low to none		
Low		
Medium		
High		

Table 9-2: Impacts per alternative

ASSESSMENT OF THE ALTERNATIVES		
EIA Assessment	**Preferred Alternative 1**	**No-Go Option**
Archaeological impact	An AIA was conducted, and the findings suggest that the receiving environment is not a sensitive or threatened archaeological landscape. The impact significance of the proposed vineyard development, and the existing illegal agricultural development on archaeological heritage is assessed as LOW.	No Impact
Paleontological	A Paleontological Impact Assessment (PIA) was conducted, and the findings suggest that the impact significance of the proposed development on important archaeological heritage will be **very low negative to none**.	No Impact
Botanical: Physical transformation natural vegetation	The impact of the proposed agricultural development on the sparse Kalahari Karroid Shrubland would be **Very Low Negative**. No mitigation would be possible or required. The proposed development is anticipated to have a **low negative** impact of significance on overall botanical impacts.	In the case of the 'No Go' Alternative, the proposed development would not happen. It would not have a positive nor negative impact on botanical sensitivities. Therefore, from a botanical perspective the impact would remain the same.
Freshwater Ecology: Installation of the new pump at the Breede River	Considering that the proposed activities will take place over an area already previously disturbed by agricultural activities, together with the short-term impacts associated with the construction/ installation of the infrastructure, the activities are anticipated to have a **low negative** impact significance.	No Impact
Impact on the air quality due to the construction phase	During the construction phase, and due to the nature of the project, a small amount of smoke (from machines) and dust could be generated. Some dust pollution may occur due to machinery movement for the construction of the agricultural area. In order to minimise the effect of dust pollution, construction should be avoided on excessively windy days. Sand piles should be covered, and workers must wear the necessary safety clothing. Should watering be required, only non-potable water should be used.	No Impact

	With the implementation of dust suppression, which was included as a mitigation measure, the impact severity will be reduced to very **low negative.**	
Noise impacts	During the construction phase, there may be minimal and sporadic incidents of noise pollution due to construction activities such as earthworks. Due to the fact that the area is situated within an agricultural environment, the impact is expected to be very **low negative**.	No Impact
Impact on employment and skills transfer during the construction phase	During construction, short-term employment opportunities in the local economies would have a **high positive** impact. An improved standard of living will also occur as an indirect impact.	The proposed site will remain in its current state and no jobs would be created during the construction phase. This is seen as a **high negative** impact.
Impact on employment and skills transfer during the operational phase	With the creation of the additional agricultural area, the applicant will be able to increase produce throughout the year. This will lead to an increase in production and quality and eventually allow the company to create more long-term positions. It is important to note that these employment opportunities will be sustainable, compared to the employment opportunities created during construction that will fade away once construction is completed. This is a **high positive** impact, as the employment opportunities created during the operation phase will be for unskilled, semi-skilled and skilled individuals. Additionally, indirect jobs will be created at various businesses providing goods and services for the proposed development activities. The improved living standards of the, directly and indirectly, affected households is a residual and indirect impact.	The proposed site will remain in its current state and no jobs will be created during the operational phase. The loss of long-term jobs is seen as a **high negative** impact.
Impact on household income (construction and operational)	Improvement in household income of people employed by the proposed development will result in a **medium positive** impact. An indirect result of the project is an improved standard of living.	The proposed site will remain in its current state and there will be no impact on household income.
Impact on Water availability	No impact on water, as existing water use is available for the new development area.	The proposed development will not have a new water use capacity, and therefore will have a **medium negative** impact if the new license is not issued.

Sewage disposal during the construction phase	During the **construction phase, chemical toilets will be provided** for the workers. These toilets will be emptied regularly by contractors. With the implementation of the mitigation measures, it is foreseen that this impact will be **very low negative**.	No Impact
Solid waste disposal	All facilities in use during the construction phase must be utilized and maintained in a manner that prevents pollution of any groundwater sources. No waste of any kind may be disposed of in the surrounding environment. With the implementation of the mitigation measures, it is foreseen that this impact will be **very low negative**.	No Impact
Visual and cultural landscape	The property identified for the proposed development is a farm situated between other farms. As the development is a new agricultural area on the farm, the proposed project will be in-line with the landscape context. The visual impact of the proposed development is seen as being of **very low significance**.	No Impact

10 Conclusions

10.1 General

It is required by law that projects must meet the requirements of sustainable development. The concept is defined as follows "*the integration of social, economic and environmental factors into planning, implementation, and decision-making so as to ensure that development serves present and future generations*".

In achieving sustainable development, the focus, therefore, may not be restricted to environmental or nature conservation factors only. It should include economic and social realities. Social factors influence the livelihoods of people. They determine income, quality of life, social networks, and other means aimed at maintaining and improving the wellbeing of people. Economic factors deal with the affordability of processes, their potential to generate income over an extended period (into future generations) and to maintain the ability to support both the environmental and social needs of an area.

In short; if people are impoverished, there will be no environment to protect; if a project is not attractive economically, it will not be launched; but the environment is the essential basis for all development.

The alternatives as listed above were investigated in the EIA phase. The proposed development has been positioned and the layout designed according to the surrounding environmental sensitivities, future development plans and inputs from I&APs and relevant organs of state.

The proposed agricultural development and raisin drying area on the farm Oorkant will have an overall positive impact on Valam Boerdery (Pty) Ltd, its employees and the economy. A portion of the proposed development area was previously used for past activities and has been transformed. The proposed development will have a smaller impact on the vegetation as a section of the affected area is already completely transformed and the visible vegetation on the property is of very poor quality. The proposed development will also have a very low impact on the freshwater features, CBA or ESA and potential heritage impacts have been indicated to be of very low or negligible significance.

A summary of impacts is as follows (please see 9.3 Comparative Assessment for a more in-depth summary):

Description	**Preferred Alternative L1**	**No-Go Alternative**
Archaeological impact	Very Low Negative	No Impact
Paleontological	Very Low Negative	No Impact
Botanical: Physical transformation natural vegetation	Low Negative	No Impact.
Freshwater Ecology: Installation of the new pump at the Breede River	Low Negative	No Impact

Impact on the air quality due to the construction phase	Very Low Negative	No Impact
Noise impacts	Very Low Negative	No Impact
Impact on employment and skills transfer during the construction phase	High positive	High negative
Impact on employment and skills transfer during the operational phase	High positive	High negative
Impact on household income (construction and operational)	Medium positive	No Impact
Impact on Water availability	No impact on water, as existing water use is available for the new development area.	The proposed development will not have a new water use capacity, and therefore will have a medium negative impact.
Sewage disposal during the construction phase	Very low negative.	No Impact
Solid waste disposal	Very low negative.	No Impact
Visual and cultural landscape	Very low significance.	No Impact

Overall, it is clear that the preferred alternative meets the above integration factors and has positive advantages, and takes the NEMA principles into account, as outlined in Section 2 of NEMA.

Implementation of the project and protection of the environment must take place under the control of the EMP as specified in Appendix D.

11 Appendices

Appendix A: Public Participation

Appendix B: Licenses and Permits

Appendix C: Specialist Studies

Appendix D: Other Reports

Appendix E: Correspondence with DAER&LR

Appendix F: A3 Layouts

Appendix G: Other

11.1 Appendix A: Public Participation

11.1.1 Appendix A1: I&AP Database

In terms of the Protection of Personal Information Act, 2013 (Act No. 14 of 2013) (POPIA) and the requirements of the Environmental Impact Assessment Regulations, 2014, as Amended 2021, and related to the registers of interested and affected parties, the I&AP database, with personal information, will not be distributed in the public domain as part of this report.

Regulation 42 further requires that these registers must be submitted to the competent authority (CA), and this will be included as part of the report to the CA. Since the information in the registers is personal/private information, it will not be included in or attached to reports and be made available in the public domain.

	Representing	Surname	Initials	Tel	Fax	Email	Post Box	Town	Code
1	Kai Garib Municipality: Municipal Manager	Mac Kay	Mr.	054 431 6328	054 461 6401	mm@kaigarib.gov.za	Private Bag X6	Kakamas	8870
2	Kai Garib Municipality: Ward Councillor Ward 2	Ipinge	R	054 431 6328	054 461 6401	mm@kaigarib.gov.za	Private Bag X6	Kakamas	8870
3	Kai Garib Municipality: Ward Councillor	Klim	WD	054 431 6328	054 461 6401	mm@kaigarib.gov.za	Private Bag X6	Kakamas	8870
4	Department of Agriculture and Land Reform and Rural Development.	Toerien	N			nicotoerien@gmail.com	P. O. Box 52	Upington	8800
5	Department of Water Affairs	Sekwaila	K			Sekwailak@dws.gov.za	Private Bag X5912	Upington	8800
6	DAER&LR	Seshupo	O	053 631 0601		olebileseshupo@gmail.com	Private Bag X6102 SASKO Building	Kimberley	8300
7	Boegoeberg Water Users Association	CEO		054 841 0002	054 841 0000	info@boegoebergwater.co.za	P. O. Box 15	Groblershoop	8850
8	Kakamas Water Users Association	CEO		054 431 0725/6	054 431 0348	kakamaswgv@isat.co.za	Private Bag X4	Kakamas	8870
9	Nature Conservation	De la Fontaine	S	054 338 4800		sdelafontaine@gmail.com	Evelina De Bruin (former Provincial) Building, Corner of Rivier & Nelson Mandela Road	Upington	8800
10	Department of Forestry, Fisheries and Environment	Mans	J	060 973 1660		jmans@dffe.gov.za	Olien street 26, Louisvale Weg	Upington	8800
11	Rooipad Boerdery (Pty) Ltd	Nel	Hannes	082 494 9658		admin@rooipad.co.za			
12	Zwaardraai Landgoed CC	Koortzen	Eric	082 689 5224		zwaardraai@gmail.com			

13	Rooipad Boerdery (Pty) Ltd	Nel	Hannes	082 494 9658		admin@rooipad.co.za			
14	Harmonie Boerdery Trust	van Niekerk	Henco	076 843 2104		henkovn@nexusag.net	henkovn		
15	Omdraai Landgoed Trust	du Plessis	Willie	054 451 8003			Posbus 442	Kakamas	8870

11.2 Appendix A2: Advertisements

N/A

11.3 Appendix A3: Notice Boards

N/A

11.4 Appendix A4: Notices

11.4.1 Notice sent to I&APs and Authorities for dEIAR

Will be included in fEIAR.

11.4.2 Proof of Notices sent to I&APs and Authorities

Will be included in fEIAR

11.4.3 Notices sent to I&APs and Authorities for public meeting during dEIR phase

N/A

11.4.4 Proof of Notices sent to I&APs and Authorities for public meeting during dEIR phase

N/A

11.5 Appendix A5: Comments Received

Will be included in the fEIAR.

11.6 Appendix A6: Comments and Response Sheet

Date	Comments from	Comments received	Response from	Response received
COMMENTS RECEIVED ON dEIR				

11.6.1 Appendix B: Licenses and Permits

11.6.2 Appendix B1: WULA

Proof of the WULA that has been fully submitted on the e-WULAAS system.

11.6.3 Appendix B2: SAHRA Response to AIA and PIA

11.6.4 Appendix B3: Environmental Authorisation issued for the S24G in the property.

Northern Cape Province
DEPARTMENT OF
ENVIRONMENT & NATURE
CONSERVATION

Porofensi Ya Kapa Bokone
LEFAPHA LA BOJANALA,
TIKOLOGO LE
SHOMARELO

RECTIFICATION OF UNLAWFUL COMMENCEMENT OR CONTINUATION OF A LISTED ACTIVITY
in terms of Section 24G of the National Environmental Management Act, 1998 (Act No. 107 of 1998),as amended

Reference Number:	S24G03/04/2021
Last Amended:	
Holder of Authorisation:	Valam Boerderye (Pty) Ltd
Location of activity:	**ILLEGAL CULTIVATION OF VINEYARDS ACROSS SMALL STREAMS ON KAKAMAS SOUTH SETTLEMENT NO 341, NORTHERN CAPE.**

(03/04/2021) Page 1

DEFINITIONS

"Activity" means an activity identified in Government Notice No. 38282 R. 983 and of 2014 as a listed activity.
"Applicant" means a person who has submitted an application
"Application" means an application for an environmental authorization in terms of chapter 3 of these regulations
"Basic assessment" means a process contemplated in regulation 22
"Basic assessment report" means a report contemplated in regulation 23
"EAP" means an environmental assessment practitioner as defined in section 1 of the Act
"Environmental management plan" means an environmental management plan in relation to identified or specified activities envisaged in chapter 5 of the Act and described in regulation 34
"Interested and affected party" means an interested and affected party contemplated in section 24(4) (d) of the Act, and which in terms of that section includes
Any person, group of persons or organisation interested in or affected by an activity, and
Any organ of state that may have jurisdiction over any aspect of the activity
"Public participation process" means a process in which potential interested and affected parties are given an opportunity to comment on, or raise issues relevant to, specific matters
"The Act" means the National Environmental Management Act, 1998 (Act No. 107 of 1998)

DECISION

The Department is satisfied, on the basis of information available to it and subject to compliance with conditions of this environmental authorisation, that the applicant should be authorised to continue with the activity specified below.

Details regarding the basis on which the Department reached this decision are set out in Annexure 1.

ACTIVITIES AUTHORISED

By virtue of the powers conferred on it by Section 24G of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended the Department hereby authorises –

Valam Boerderye (Pty) Ltd with the following contact details:
PO Box 21
Kakamas
8874

Within the jurisdiction of Kai!Garib Local Municipality of the Dawid Kruiper District Municipality, hereafter referred to as"the property".

The granting of this environmental authorisation is subject to the conditions set out below.

Activity 27:

The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for—

(ii) the undertaking of a linear activity; or maintenance purposes undertaken in accordance with a maintenance management plan.

Listing Notice 2 R324

Activity 12:

The development-Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such

a list, within an area that has been identified as critically endangered in the

National Spatial Biodiversity

Assessment 2004;

ii. Within critical biodiversity areas identified in bioregional plans;

The site is located approximately on the portion 341 of farm Oorkant, on the Kakamas North Settlement in Augrabies Municipality Northern Cape.

CONDITIONS

Scope of authorisation:

1. Rectification of the activity is subject to the conditions contained in this authorisation, the conditions form part of the environmental authorisation and are binding on the holder of the authorisation.

2. The holder of the authorisation shall be responsible for ensuring compliance with the conditions by any person acting on his or her behalf, including but not limited to, an agent, sub-contractor, employee or person rendering a service to the holder of the authorisation.

3. The activities which are rectified may only be carried out at the property indicated above.

4. Any changes to, or deviations from the project description set out in this rectification authorisation must be approved, *in writing*, by the Department before such changes or deviations may be effected. In assessing whether to grant such approval or not, the Department may request such information as it deems necessary to evaluate the significance and impacts of such changes or deviations and it may be necessary for the holder of the authorisation to apply for further authorisation in terms of the regulations.

5. This rectification authorisation does not negate the holder of the authorisation's responsibility to comply with any other statutory requirements that may be applicable to the undertaking of the activity.

General conditions:

6. A copy of this rectification authorisation **must** be kept at the property where the activity will be undertaken. The authorisation **must** be produced to any authorised official of the Department who requests to see it and **must** be made available for inspection by any employee or

agent of the holder of the authorisation who works or undertakes work at the property.

7. Where any of the applicant's contact details change, including the name of the responsible person, the physical or postal address and/ or telephonic details, the applicant must notify the Department as soon as the new details become known to the applicant.

8. The holder of the authorisation **must** notify the Department, in writing and within 24(TWENTY FOUR) hours, if condition 17 of this authorisation cannot be or is not adhered to.

9. In all other cases, the holder of the authorisation **must** notify the Department, in writing, within seven (7) days if any condition of this authorisation is not adhered to. Any notification in terms of this condition must be accompanied by reasons for the non-compliance.

10. Non-compliance with a condition of this authorisation may result in criminal prosecution or other actions provided for in the National Environmental Management Act, 1998 and the regulations.

11. This rectification authorisation is subject to the approval by the relevant local authorities i.e. in terms of any relevant legislation administered by those local authorities.

12. The commenced without the necessary permits/licenses/approvals, where it is relevant, from or with the relevant regulatory authorities whether national, provincial or local (these include but are not limited to National Department of Forestry, Fisheries and the Environment , Department of Water and Sanitation,, Department of Transport, Roads & Public Works, South African Heritage Resources Agency, remains illegal.

13. The activity, including site preparation, may not commence before the thirty (30) day appeal period expires or until such time as the Department has considered any appeals that have been lodged.

    a. One week's written notice must be given to the Department before commencement with the activity.
    b. Such notice shall make clear reference to the site location details and the reference number given above.
    c. The said notice must also include proof of compliance with the following conditions described herein:
        i. Conditions: 11 18 & 25.

14. The applicable conditions of this authorization must form part of all contractors' and sub-contractors' conditions of contract. A performance-based requirement

with regard to environmental impact management must be included in all contracts related to any aspect of this authorization.

15. The applicant must carry out monthly environmental audits to establish compliance with the conditions of this authorization and contracts.

16. Records relating to the compliance/non-compliance with the conditions of the authorization and contracts must be kept in good order. Such records must be made available to the Department within 7 (seven) days of receipt of a written request by the Department for such records.

17. Any complaints regarding the said development must be brought to the attention of the Department within 24 hours after receiving the complaint. A complaints register must be kept up to date for inspection by the Department.

18. Officials in the employ of the Department shall be given access to the property as described above (see detailed description of the activity) for the purposes of assessing and/or monitoring compliance with the conditions contained in this Environmental Authorisation. Where the activity is located on a third party's property the applicant shall be responsible to arrange access for departmental officials.

19. This Department may add to, change and/or amend any of the conditions in this authorization if, in the opinion of the Department, the addition, change of amendment is environmentally justified.

20. In the event of any dispute concerning the significance of a particular impact, the opinion of this department in respect of its significance will prevail.

21. This Department and any national department, provincial department, local authorities or committees appointed in terms of the conditions of this application or any other public authority or organization shall not be held responsible for any damage of losses suffered by the applicant or his successor in title in any instance where construction or operation subsequent to construction be temporarily or permanently stopped for reasons of non-compliance by the applicant with the conditions of approval as set out in this document or any other subsequent document emanating from these conditions of approval.

22. The applicant shall be responsible for all costs necessary to comply with the above conditions unless otherwise specified.

23. The applicant must apply the principle of best practicable environmental option for all technologies used/ implemented during construction.

Specific conditions:

24. Recommendations made on the storm water management plan prepared by Elanie Kühn are to be adhered to.

Appeal of authorisation:

25. The holder of the authorisation must notify every registered interested and affected party, in writing and within 7 (SEVEN) calendar days, of receiving notice of the Department's decision to authorise the activity.

26. The notification referred to in 24 must –
- specify the date on which the authorisation was issued;
- inform the interested and affected party of the appeal procedure provided for in Chapter 8 of the regulations; and
- advise the interested and affected party that a copy of the authorisation and reasons for the decision will be furnished on request.

If the applicant should appeal against this record of decision, he/she must inform all interested and affected persons that such an appeal is being lodged with the MEC and if requested, the applicant/appellant must provide those persons with reasonable access to a full copy of the appeal within a reasonable time before expiry of the thirty day appeal period.

Management of activity:

27. An Environmental Management Plan (EMP) which fulfils the requirements of this authorisation must be compiled and submitted to the Department for approval before the commencement of the development. The EMP must-contain all the information specified in regulation 34 of the NEMA regulations;

28. All areas disturbed during the commissioning of the activity must be rehabilitated.

29. Best practice of waste avoidance, minimisation and disposal of waste at an appropriate facility must be implemented.

Monitoring:

30. The monitoring of the constructors' compliance with conditions of this Environmental Authorization is essential and **must** be done on a weekly basis. Any deviances from the conditions of this Environmental Authorization must be rectified immediately.

31. A copy of this Rectification Authorization and an EMP must always be available on site so as to monitor compliance with the conditions outlined in both the

documents (EA and EMP). Both copies of an EMP and EA must be used as on-site reference documents during all phases of this development.

Recording and Reporting to the Department:

32. Records relating to compliance or non-compliance with any condition of this authorization must be kept in good order. Such records must be made available to any Official from Compliance and Monitoring section of the Directorate: Environmental Management within seven (7) days of written request by the said Officer.

33. Should the developer be requested to submit an audit report, it will be his/her (developer) responsibility to appoint an independent auditor at his or her own expenses and submit an audit report within the time specified by this Department.

34. Any complaints regarding then said development must be brought to the attention of the Department within 24 hours after receiving the complaints register must be kept up to date for inspection by the Department.

35. Where any of the applicant's contact details change, including the name of the responsible person, the physical or postal address and/ or telephonic details , the applicant must notify the Department as soon as the new details become known to the applicant.

Commissioning of the activity:

36. Seven (7) days written notice must be given to the Department that the activity will commence. Commencement for the purposes of this condition includes site preparation. The notice must include a date on which it is anticipated that the activity will commence.

37. General waste must be collected in containers disposed of regularly at a permitted landfill site. Recyclable waste must be recovered for recycling purpose. NB: No temporary dumping of waste is allowed on site. Precautionary measures should be taken to prevent refuse from spreading from or on the site.

38. Should protected trees be destructed, relocated and /or disturbed, permit must be obtained from Department of Environmental, Forestry and Fisheries (DEFF) and Department of Agriculture, environmental affairs, rural development and land reform

39. Any complaint from the public during the construction and operation of this project must be attended to by the holder of this authorisation as soon as possible to the satisfaction of parties concerned.

40. The authorized activities, including site preparation shall not commence before the statutory 30 days of an appeal period has expired.

41. The safety of the participants must be ensured by having regular safety inspection and ensuring participants are equipped with necessary safety equipments.

42. Open fire is strictly prohibited on site.

43. All recommendations of the National Heritage Resources Act regarding protection of graves and archeological artifacts must be implemented.

44. Untreated sewage must not be discharged directly into the natural environment.

45. Spillage of petroleum products (fuel and lubricants) must be avoided. Temporary storage of petrochemical products and servicing of machinery and vehicles on site will be allowed except not at a site specifically designed for that purpose. In terms of accidental spillage, contaminated soil must be removed for bioremediation or disposed of at a recognized facility for the substance concerned. Disturbed land must be rehabilitated and seeded with vegetation seed naturally occurring on the site.

46. The development must comply with the Municipal by-laws

47. Chemical toilets must be available for workers on site during construction phase only, i.e. sewage waste must be disposed of at the Municipal sewage plant on a regular basis. No "long drop" toilets will be allowed. No open space or surrounding bush shall be used as toilet facility under any circumstances.

48. It is the holder of this authorization's responsibility to ensure that an ongoing management and monitoring of the impacts of the activity on the Environment throughout the life cycle of the activity is put into practice.

49. All the areas (e.g. stockpiling of material, machines, workshop, etc) in the construction site must be clearly defined.

50. The contractor must ensure that drip trays are always available to collect any fluid that may result from accidental spillage, overflow and/or servicing. All equipments that leak must be repaired immediately and/or removed from site when necessary.

51. It is the contractor's responsibility that all staff/employees are familiar with all the emergency procedures. The contractor must also ensure that emergency numbers are visible and available and always updated.

52. The contractors must use Ready-Mix concrete. Alternatively, concrete can be mixed on mixing trays only and not on exposed soil. Concrete must be mixed only in areas which have been specially demarcated for this purpose.

53. The contractor must take all the necessary precautionary measures to ensure that no fires are caused as a result of construction activities.

54. Old cement bags, mixing bags, platforms etc should be discarded in a wind and spill proof container. No cement bags closed or open should be left lying around the site. All visible remains of concrete should be physically removed as soon as possible, and disposed of at a suitable site.

55. All vehicles, equipment's and other assets belonging to the contractor must be removed from the property upon completion of the construction works.

56. Topsoil removed during excavations must be kept separate from other material.

57. Topsoil must be placed above other material during backfilling.

58. Precautionary principles must be followed as people's lives depend on the project.

59. The central waste collection point must be specific –where it will be situated to ensure that no soil or underground water contamination takes place the waste collection should be done at least on weekly basis.

Operation of the activity:

60. All forms of pollution must be prevented, or where it cannot, should be minimized or remedied.

61. General waste must be collected in drums and disposed of weekly at a permitted Municipal landfill site. Recyclable waste must be recovered for recycling purpose. **NB:** No temporary dumping of waste is allowed on site. Precautionary measure should be taken to prevent refuse from spreading from or on the site.

62. The sewage tanks must be large enough to contain the expected volume of sewage and must be built according to the approved regulations and must be inspected by a qualified official of the Municipality before use.

Site Closure and Decommissioning:

63. Should the activity ever cease or become redundant the applicant shall undertake the required actions as prescribed by legislation at the time and comply with all relevant legal requirements administered by any relevant and competent authority at the time.

64. Should the project be abandoned or decommissioned, a Closure Management Plan must be compiled and the holder of the Environmental Authorization must rehabilitate the site to the satisfaction of this Department.

65. No alien or invader plant species should be introduced on site during rehabilitation.

Non-compliance

66. In the event of non-compliance by employees and contractors during the construction, operation and decommissioning phases of the project, the applicant will be held liable.

67. The applicant shall be responsible for all the costs necessary to comply with the above conditions unless otherwise stated.

68. Provincial Government, Local Authority or committees appointed in terms of the application or any other public authority or organization shall not be held responsible for any damages or losses suffered by the developer or his/her successor in title in any instance where construction or operation subsequent to construction are to be temporarily or permanently stopped for reasons of non-compliance by the developer with conditions of approval as set out in the document or any other subsequent document emanating from this approval.

DURATION AND PERIOD OF VALIDITY

This activity(s) must commence from the date of issue within a period of three (3) years. If commencement of the activity does not occur within that period, the authorisation lapses and a new application for environmental authorisation must be made in order for the activity to be undertaken.

APPEAL

In terms of Chapter 7 of Environmental Impact Assessment Regulations, 2014, if the applicant or a person affected by this Decision wishes to appeal this decision, a notice of intention to appeal must be lodged within ten (20) days of being notified of the decision, and an appeal must **be lodged within thirty (30) days** after lapsing of 20 days contemplated in regulation 60 (1) of lodging of the notice to appeal to:

The Member of the Executive Council
Ministry of Agriculture, environmental affairs, rural development and land reform
Private Bag X6102
Kimberley
8300
Fax: (053) 832 1032

Appeals must comply with the provisions of Chapter 7 of Environmental Impact Assessment Regulations, 2014 Government Notice No. R. 9833 of 08 September 2014.

Mr. B. Fisher – Director
Environmental Management

Department OF ENVIRONMENT & NATURE CONSERVATION

DATE OF ENVIRONMENTAL AUTHORISATION: 30 November 2021

ANNEXURE 1: REASONS FOR DECISION

1. Background

The applicant, Valam Boerderye Pty Ltd applied for RECTIFICATION OF UNLAWFUL COMMENCEMENT OR CONTINUATION OF LISTED ACTIVITIES.

The activity already commenced with is situated on portion 341 on the southern part of Kakamas in Augrabies Northern Cape.

Activities No. 27, and 12 GN. R 398 hereafter referred to as "the property"

The applicant appointed Ms. Elanie Kühn to undertake a screening process.

a) The process followed is a section 24G
b) The Environmental Assessment Practitioner did submit 24G application form with the Environmental Assessment Report
c) Paid the fine of R125,500.00
d) Proof of Public Participation draft was submitted on the 19 February 2021 and the final report received by the Department on the 21th May 2021.

2. Information considered in making the decision

In reaching its decision, the Department took, *inter alia,* the following into consideration -

a) The information contained in the 24G application submitted and reviewed by Ms. Tshepisho Lekwene;

b) The comments received from interested and affected parties as submitted by Ms. Elanie Kühn;

c) The objectives and requirements of relevant legislation, policies and guidelines, including section 24F(2) of the National Environmental Management Act,1998(Act No.107 of 1998), Environmental Conservation Act, 1989(Act No.73 of 1989); and

d) The findings of the site visit undertaken by Ms. Samantha De Lafontie based in the Dawid Kruiper District, on the 18th February 2021.

3. Key factors considered in making the decision

All information presented to the Department was taken into account in the Department's consideration of the application. A summary of the issues which, in the Department's view, were of the most significance is set out below.

a) The application process.

b) The legal and procedural requirements have been complied with and the information required for the section 24G of NEMA, has come to satisfaction of this Department.

4. Findings

After consideration of the information and factors listed above, the Department made the following findings -

a) The surrounding area is already disturbed, and the development is illegal
b) The development will be situated on a relatively flat area.
c) The environmental impacts associated with the project can be reduced to acceptable levels if properly managed by both the applicant and contractor(s).

In view of the above, the Department is satisfied that, subject to compliance with the conditions contained in the environmental authorisation, the proposed activity will not conflict with the general objectives of integrated environmental management laid down in Chapter 5 of the National Environmental Management Act, 1998 and that any potentially detrimental environmental impacts resulting from the proposed activity can be mitigated to acceptable levels. The application is accordingly granted.

11.7 Appendix C: Specialist Studies

11.7.1 Appendix C1: Botanical Assessment

Botanical Assessment for S24G Application, Farm Oorkant, (Kakamas North Settlement No. 341), Augrabies, Kai !Garib Municipality, Northern Cape Province

bergwind
Botanical Surveys & Tours

Report by Dr David J. McDonald
Bergwind Botanical Surveys & Tours CC.
14A Thomson Road, Claremont, 7708
Tel: 021-671-4056
Fax: 086-517-3806

Report prepared for GroenbergEnviro (Pty) Ltd

December 2020

National Legislation and Regulations governing this report

This is a 'specialist report' and is compiled in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2014.

Appointment of Specialist

David J. McDonald of Bergwind Botanical Surveys & Tours CC was appointed by GroenbergEnviro on behalf of Capespan, to provide specialist botanical consulting services to inform the S24G application process for future agricultural development at Farm Oorkant (Kakamas North Settlement No. 341), Kai !Garib Municipality, Augrabies, Northern Cape Province. The consulting services comprise an assessment of potential impacts on the flora and vegetation in the designated study area due to the agricultural activities.

Details of Specialist

Dr David J. McDonald Pr. Sci. Nat.
Bergwind Botanical Surveys & Tours CC
14A Thomson Road
Claremont
7708
Telephone: 021-671-4056
Mobile: 082-876-4051
Fax: 086-517-3806
e-mail: dave@bergwind.co.za
Professional registration: South African Council for Natural Scientific Professions No. 400094/06

Expertise

Dr David J. McDonald:

- Qualifications: BSc. Hons. (Botany), MSc (Botany) and PhD (Botany)
- Botanical ecologist with over 40 years' experience in the field of Vegetation Science.
- Founded Bergwind Botanical Surveys & Tours CC in 2006
- Has conducted over 400 specialist botanical / ecological studies.
- Has published numerous scientific papers and attended numerous conferences both nationally and internationally (details available on request)

Independence

The views expressed in the document are the objective, independent views of Dr McDonald and the survey was carried out under the aegis of, Bergwind Botanical Surveys and Tours CC. Neither

Dr McDonald nor Bergwind Botanical Surveys and Tours CC have any business, personal, financial or other interest in the proposed development apart from fair remuneration for the work performed.

Conditions relating to this report

The content of this report is based on the author's best scientific and professional knowledge as well as available information. Bergwind Botanical Surveys & Tours CC, its staff and appointed associates, reserve the right to modify the report in any way deemed fit should new, relevant or previously unavailable or undisclosed information become known to the author from on-going research or further work in this field, or pertaining to this investigation

This report must not be altered or added to without the prior written consent of the author. This also refers to electronic copies of the report which are supplied for the purposes of inclusion as part of other reports, including main reports. Similarly, any recommendations, statements or conclusions drawn from or based on this report must make reference to this report. If these form part of a main report relating to this investigation or report, this report must be included in its entirety as an appendix or separate section to the main report.

Declaration of independence:

I David Jury McDonald, as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that I, in terms of the general requirement to be independent, other than fair remuneration for work performed in terms of this application:

(i) 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;

(ii) in terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;

(iii) 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

(iv) am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations, 2014 (as amended).

Signature of the specialist:

Bergwind Botanical Surveys & Tours CC

14 December 2020

CONTENTS

1. Introduction

Capespan at Augrabies in the Northern Cape Province wishes to develop a 'new' part of the Farm Oorkant (Kakamas North Settlement No. 341) for grape production. This botanical assessment investigates the type, condition and sensitivity of the vegetation on the part of the farm to proposed for agricultural development, to inform the S24G environmental process in terms of the NEMA Environmental Impact Assessment Regulations (2014), as amended.

The assessment takes careful note of the general requirements and recommendations of the Department of Environment and Nature Conservation (Northern Cape) and the Botanical Society of South Africa for proactive assessment of biodiversity of proposed development sites and follows published guidelines for evaluating potential impacts on the natural vegetation in an area earmarked for some form of development (Brownlie 2005) and the recently published protocols for specialists in the natural sciences (Government Gazette, 2020). **Particular note was taken of the Northern Cape Nature Conservation Act, 2009 (Act No. 9 of 2009) and Regulations (2011).**

2. Terms of Reference

- Conduct a site visit to determine the condition as well as botanical and ecological sensitivity of the study area at Oorkant;
- Provide a statement on the vegetation type, condition and ecological sensitivity of the land proposed for agricultural development. Highlight any special or protected plant species (species of conservation concern (SCC)) or sensitive habitats as well as the ecosystem status and conservation value of the vegetation communities, including whether the site comprises any critically endangered, endangered, or threatened ecosystem(s) listed in terms of section 52 of the NEMBA;
- Describe the direct, indirect and cumulative botanical impacts (both before and after mitigation) and an assessment of the significance of the impacts (on a nominal scale of neutral, very low, low, medium, and high) by evaluating: (a) magnitude, frequency of occurrence, extent, duration and probability of impacts, (b) the local, regional, national and international significance of predicted impacts, (c) the level of confidence in findings relating to potential impacts, (d) reversibility of potential impacts (i.e. the degree to which the impact can be reversed); and (e) the degree to which the impact may cause irreplaceable loss of resources;
- Give an indication of the degree to which the impacts can be mitigated, a description of the measures to mitigate any impacts, and an indication of whether or not the measures (if implemented) would change the significance of the impact.

Figure 1. The location of the study near Augrabies in the Northern Cape Province (cream-coloured area).

3. Limitations and Assumptions

The field-survey was undertaken on 16 July 2020. Approximately 4 hours were spent on site. The environment was extremely dry at the time of the survey so many of the herbaceous plants were not in good condition. This limited positive identification. However, apart from grasses, most herbaceous plant species do not make up a significant component of the composition of the plant communities at the study site. The indicator species are mainly shrubs or small trees that were also dehydrated but mores easily identified, even with the prevailing dry conditions.

It is important to note that a species checklist for the site was NOT compiled due to the extremely dry conditions and that the survey was not conducted in the growing season. This is not regarded as a limitation to the study.

4. Study Area

4.1 Locality

The study area is 30 ha of the farm Kakamas North Settlement No. 341, Augrabies (known as Oorkant so this name is applied in this report). It lies immediately north-east of the town of Augrabies in the Kai Garib Municipality, Northern Cape Province (Figures 2,3,4).

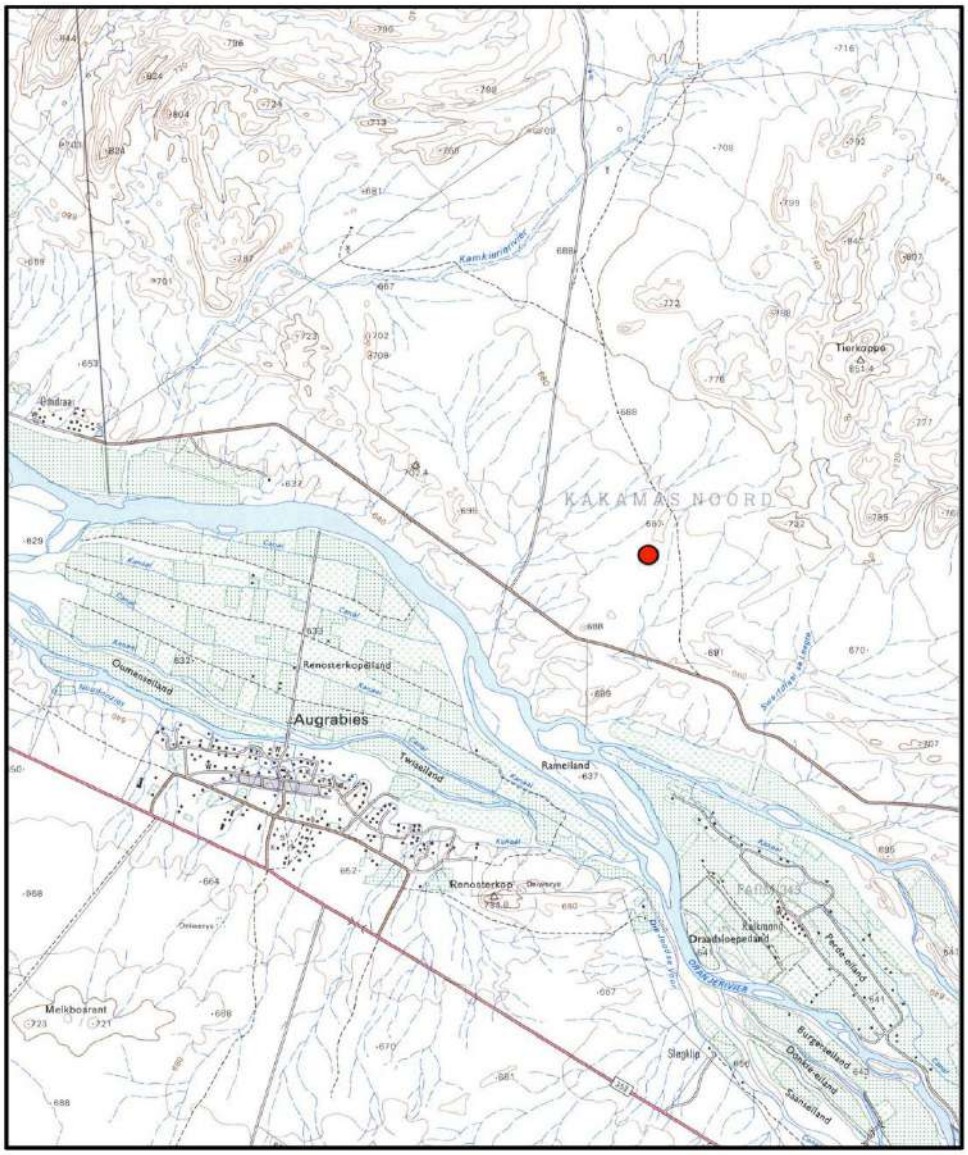


Figure 2. Part of the 1:50 000 topographical map 2820CB Augrabies (Source: National Geo-spatial Information). The red dot indicates the location of the study area north-east of Augrabies town.

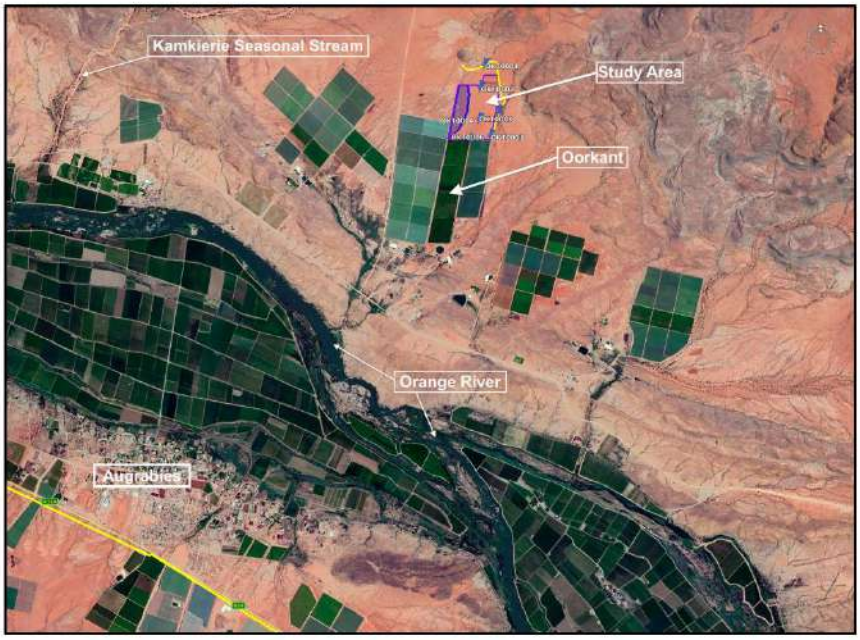


Figure 3. Aerial view of the study area at Oorkant in relation to other landmarks and the town of Augrabies.

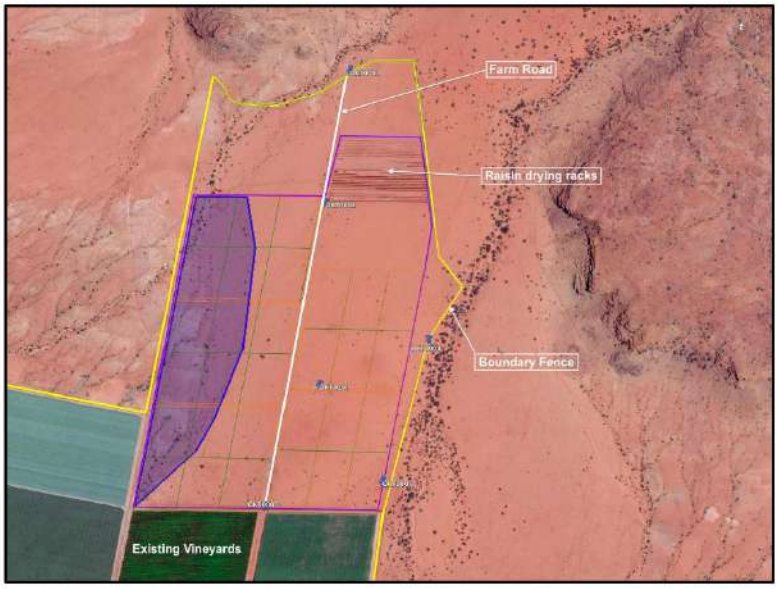


Figure 4. Magnified aerial view (Google Earth ™) of the study area (purple boundary) with sample waypoints OKT000#. The blue shaded area in the western part of the study area has numerous dendritic seasonal watercourses.

4.2 Topography, Geology and Soils

The terrain studied is on the northeast side of the Orange River on the open sandy plain below the more elevated rocky koppies. The sandy plain slopes towards the river with a shallow gradient. The elevation of the highest point is approximately 500 m above mean seal level. The landscape is generally flat but is dissected by drainage lines over part of the site (Figure 4). Soils generally consist of red sandy topsoil of the Cenozoic Kalahari Group with the basement geology consists of metamorphic gneisses and pegmatites of the Riemvasmaak rocks of the Kakamas Terrane, Namaqualand-Natal Province (Cornell *et al.* 2006).

4.3 Climate

Oorkant falls within the Nama-Karoo Biome and has an arid climate. Rainfall peaks in March (autumn) with 10 mm or more occurring in January, February, March, April and October (summer rainfall). Augrabies, the nearest town with measured rainfall and temperatures, has a mean annual rainfall of 251 mm, mean summer daytime temperature (October to March) of 35 °C and mean winter night temperature (April to September) of 5 °C (Figure 5).

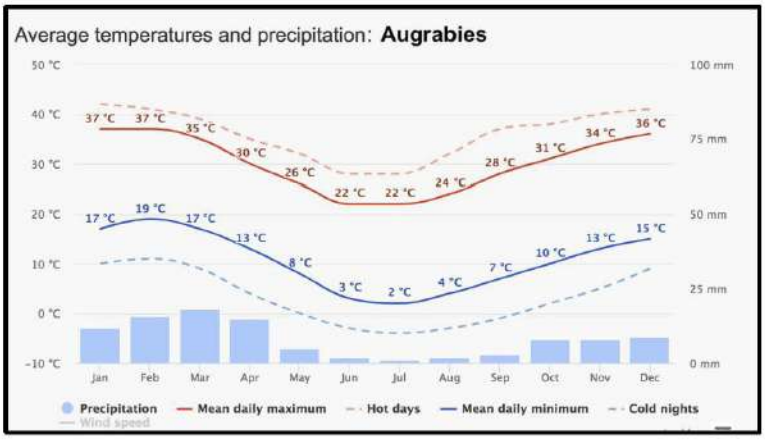


Figure 5. Average temperature and precipitation for Augrabies (Source: meteoblue)

A climate diagram for Kalahari Karroid Shrubland (Figure 6) from Mucina *et al.* (2006) shows that the mean annual precipitation, as a measure of aridity, is roughly 100 mm less than that occurring at Augrabies town.

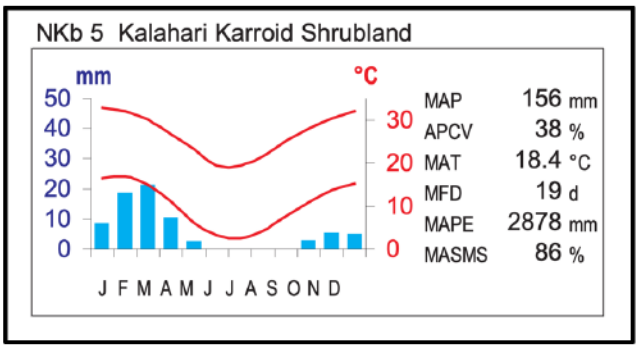


Figure 6. Climate diagram for Bushmanland Arid Grassland (10b) (from *Mucina et al.*, 2006) showing MAP – Mean Annual Precipitation; ACPV = Annual Precipitation Coefficient of Variance; MAT = Mean Annual Temperature; MFD = Mean Frost Days; MAPE = Mean Annual Potential Evaporation; MASMA = Mean Annual Soil Moisture Stress.

5. Evaluation Method

The study area was visited in fine weather on 16 July 2020. The survey was carried out on foot and a rapid-assessment, plot-less method was employed as is standard practice in similar surveys. A hand-held Garmin ® GPSMap 66s was used to record 'sample' waypoints. At the 'sample waypoints specific details of the surrounding vegetation and features of the habitat were recorded, and photographs taken to support the general observations made. Sampling was focused to obtain the best overall understanding of landscape and biodiversity conditions.

Satellite aerial photography from Google Earth ™ was also used for interpretation of the landscape and the preparation of maps.

6. The Vegetation

6.1 Broad context

The Nama Karoo Biome covers an extensive area from the north-west through the central part of South Africa to the south and southeast of the country. It is an arid zone and is subdivided into three bioregions, the Upper Karoo Bioregion, Lower Karoo Bioregion and Bushmanland Bioregion. The Oorkant study area on the opposite side of the Orange River to Augrabies is located in the Bushmanland Bioregion at a north-central location within this bioregion (Rutherford & Westfall, 1994; Rutherford *et al.* 2006; Mucina *et al.* 2006 in Mucina & Rutherford, 2006).

6.2 Vegetation of Oorkant

The Oorkant study area falls in a tongue of Kalahari Karroid Shrubland sandwiched between Lower Gariep Broken Veld and Bushmanland Arid Grassland. Kalahari Karroid Shrubland within the Bushmanland Bioregion is not at risk of being negatively impacted and has a **Least Threatened** conservation status (Government Gazette, 2011).

Shallow, often sandy, seasonal drainage lines that form a dendritic pattern in the landscape are found in the western part of the study site. The drainage lines are usually narrow, seldom exceeding 4 m in width. Owing to the seasonal concentration of moisture, the drainage lines support tall shrubs and low trees as well as a greater concentration of grasses than found on the 'open plains'.

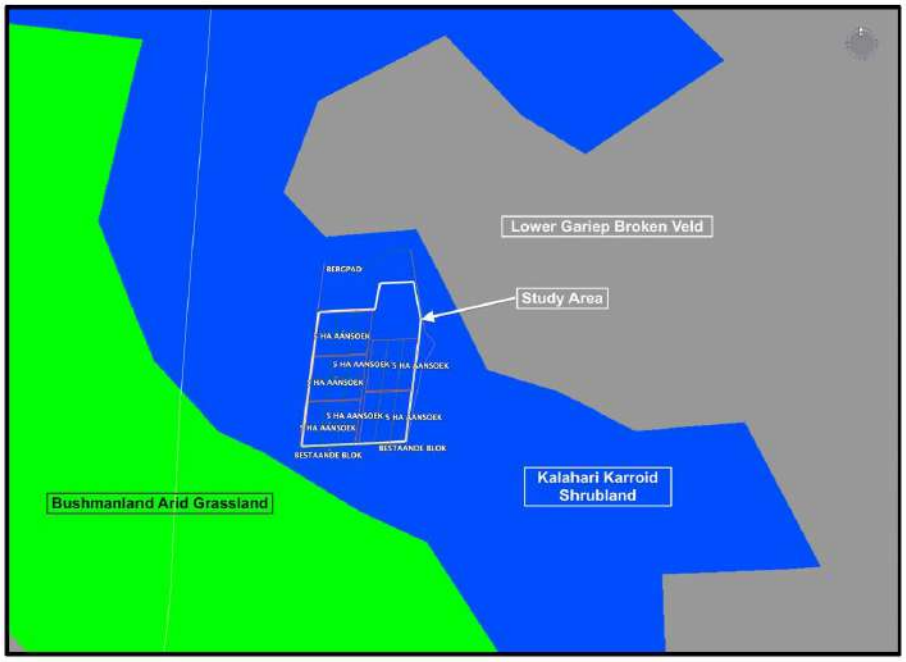


Figure 7. Portion of the national vegetation map (SANBI, 2012) indicating that the study area (white boundary) falls within Kalahari Karroid Shrubland. The closest other major vegetation types are Lower Gariep Broken Veld on the koppies and Bushmanland Arid Grassland towards the Orange River.

6.2.1 Results of the vegetation survey at Oorkant

The survey was conducted by walking from north to south across the site, covering as much variation as possible. A high level of confidence is placed on the recorded information within the constraints of the season and extremely dry conditions prevailing at the time of the field survey.

Oorkant lies close to the settlement of Riemvasmaak and this area has suffered a severe prolonged drought for a decade and longer. The study site clearly shows the result of this drought, with vegetation cover extremely low except in the drainage lines. The area has been grazed by livestock in the past and this has led to the minimal cover of vegetation. Further historical use of this land is not known to the author, but it is clearly in poor condition given the paucity of vegetation. The western part of the site with more prominent drainage lines was not visited but it was noted that the dominant species in the drainage lines is *Senegalia mellifera* subsp. *detinens* (swarthaak). The minimal vegetation that was present at the time of the survey, was recorded at six sample waypoints as follows (refer to Figure 4):

Waypoint OKT0001: S 28° 37' 27.62" E 20° 27' 51.45"

This waypoint was recorded on open, bare ground outside the northern boundary of the site. No seasonal watercourse runs through the eastern part of the site, i.e. east of the farm road. The main drainage is found in the western part of the site (see Figure 4). This system of drainage lines is dominated by small trees of *Senegalia mellifera* subsp. *detinens* (black thorn; swarthaak). A few specimens of *Boscia foetida* subsp. *foetida* occur outside the study area to the northwest (Figure 8).

Raisin drying racks (Figures 9 & 10) are located in the northeast corner of the site. Clearing of the area was unauthorized.

Figure 8. A typical specimen of *Boscia foetida* subsp. *foetida* near the boundary but outside the study area at the northwest side.

Figure 9. The completely barren area on the north side of the raising drying racks (white area in mid-ground).

Figure 10. The raisin drying racks that were erected without authorisation (prior to the site visit).

Waypoint OKT0002: S 28° 37' 36.20" E 20° 27' 49.68"

Waypoint OKT was located at the corner of the raisin drying area, at the 'top end' of the area proposed for cultivation of vineyards (Figures 4 & 11). The vegetation is very sparse due to the ongoing drought. Most of the shrubs were not identifiable and there was very little grass to be seen. Plant species that were recorded are *Aptosimum spinescens*, *Asparagus laricinus*, *Parkinsonia africana* (green-hair thorn) [This plant was dead], *Rhigozum trichotomum* (driedoring) and *Senegalia mellifera* subsp. *detinens* (swaarthaak).

Evidence of grazing by cattle was noted, but no livestock was present at the time of the survey and it appeared that there had not been cattle on the site for some time.

Figure 11. View from the corner of the raisin drying area looking southeast over the area proposed for vineyards.

Waypoint OKT0003: S 28° 22' 47.66" E 20° 15' 21.12"

This waypoint was recorded at the eastern boundary fence (Figure 12). The vegetation of the study area was compared with the area over the fence to the east side. The vegetation of the study area is much sparser (Figure 13) than that over the fence, suggesting that the study site has been cleared at some time in the past. However, there is no clear evidence from aerial photos or other sources that the study area was cleared.

Figure 12. The eastern boundary fence with relatively undisturbed Kalahari Karroid Shrubland on the neighbouring property.

Figure 13. Very sparse vegetation in the area proposed for the establishment to vineyards.

Waypoint OKT0004: S 28° 22' 47.66" E 20° 15' 21.12"

Waypoint OKT0004 was located on a quartz outcrop that was mostly buried by sand (Figure 14). A few more plant species were found at this location. They include *Aptosimum spinescens*, *Asparagus laricinus*, *Caroxylon tuberculatum*, cf. *Chaetobromus* sp. (dry and unidentifiable), *Euphorbia gregaria*, *Kleinia longiflora* and *Lycium bosciifolium*.

Figure 14. A quartz patch almost buried by red sand. The diversity of plants is marginally greater around the quartz patch than elsewhere.

Waypoint OKT0005: S 28° 37' 54.27" E 20° 57' 53.87"

This waypoint was located on a second quartz outcrop in the southeast corner of the study area (Figure 15). The species that were found here were the same as those found at waypoint OKT0004 with the addition of *Justicia australis* and the stem parasite *Tapinanthus oleifolius* (bird lime). The latter species commonly parasitizes *Senegalia mellifera* subsp. *detinens* and *Lycium* spp. (Figure 16).

Figure 15. A second quartz patch similar to that found at waypoint OKT0005.

Figure 16. The parasite *Tapinanthus oleifolius* parasitizing *Lycium bosciifolium*.

Waypoint OKT0006: S 28° 37' 55.87" E 20° 27' 45.25"

Waypoint OKT0006 was located at the upper end of the existing covered vineyards at the 'entrance' to the area proposed for vineyard expansion (Figure 17). Similar to the eastern part of the site, the vegetation in the western part was very sparse and had low sensitivity (Figure 18).

Figure 17. View northeastwards from the 'entrance gate' to the eastern boundary. This illustrates the very arid conditions and sparse vegetation in the study area.

Figure 18. View northwestwards from the 'entrance gate' to the northern boundary. Although this area has dendritic drainage lines, the long drought has caused the vegetation to be sparse, with scattered shrubs of *Lycium bosciifolium* and small trees of *Senegalia mellifera* subsp. *detinens* scattered throughout.

7. Critical Biodiversity Areas

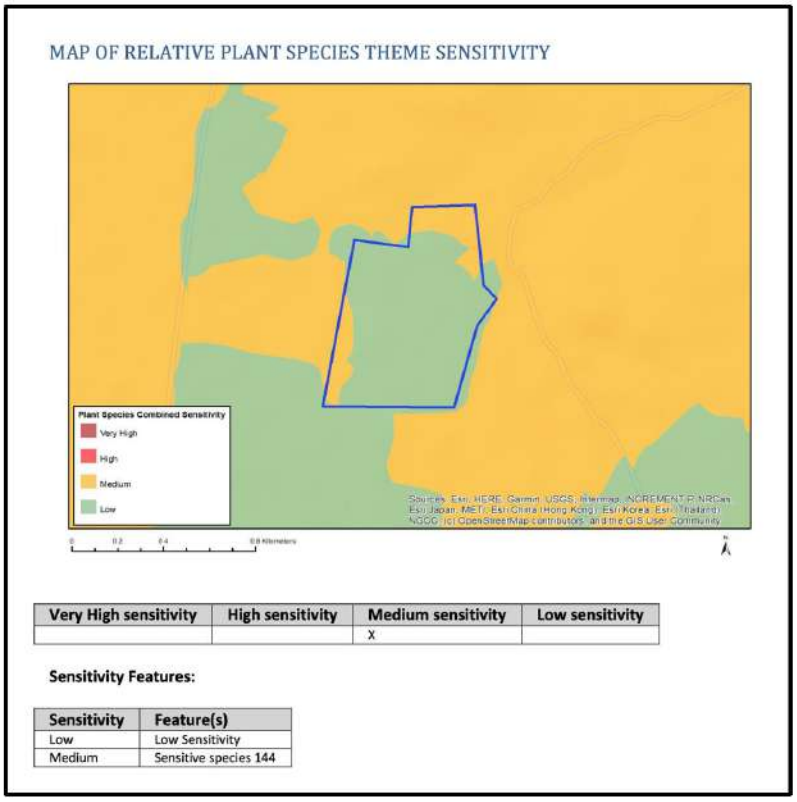
Critical Biodiversity Areas (CBAs) were delimited for the Namaqua District Municipality (NDM) by Desmet & Marsh (2008). The maps they compiled did not include the Augrabies area. However, more recently critical biodiversity areas and ecological support areas have been mapped for the whole of the Northern Cape Province including the Kai !Garib Municipality where the study area is located.

The available CBA shapefiles (Enrico Oosthuysen pers. comm.) for the Northern Cape Province were overlaid on Google Earth ™. This permitted examination of the conservation status classification of the area around Augrabies including Oorkant. The Oorkant study area is located entirely in an area classified as CBA1 (Figure 19).

Figure 19. Portion of the Critical Biodiversity Areas map for the Northern Cape Province showing indicating that the Oorkant study area (white boundary) falls entirely within a CBA1 (pink shading).

8. Application of the National Web-based Environmental Screening Tool

The National Web-based Screening Tool (Government Gazette, 2020; Enviro Insight, 2020) was applied to determine the sensitivity of the study area, bearing in mind that it has drawn on the Northern Cape Biodiversity Assessment maps (Enrico Oosthuizen pers. comm) for its data. Focus was placed on (1) the Plant Species Sensitivity Theme and (2) the Terrestrial Biodiversity Sensitivity Theme. The output for the Plant Species Theme Sensitivity (map) is given in Figure 20 below, together a list of sensitivity features (normally plant species) generated for the specified land parcel. No plant species are listed except for the anonymous 'Sensitive species 144'. The Plant Species Theme Sensitivity, according to the screening tool is **Medium**, although there is disparity between the map and the sensitivity table in Figure 20. The map indicates **Low Sensitivity** (with which I agree) but the table indicates **Medium Sensitivity**. This gives cause for doubt about the output of the screening tool!



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

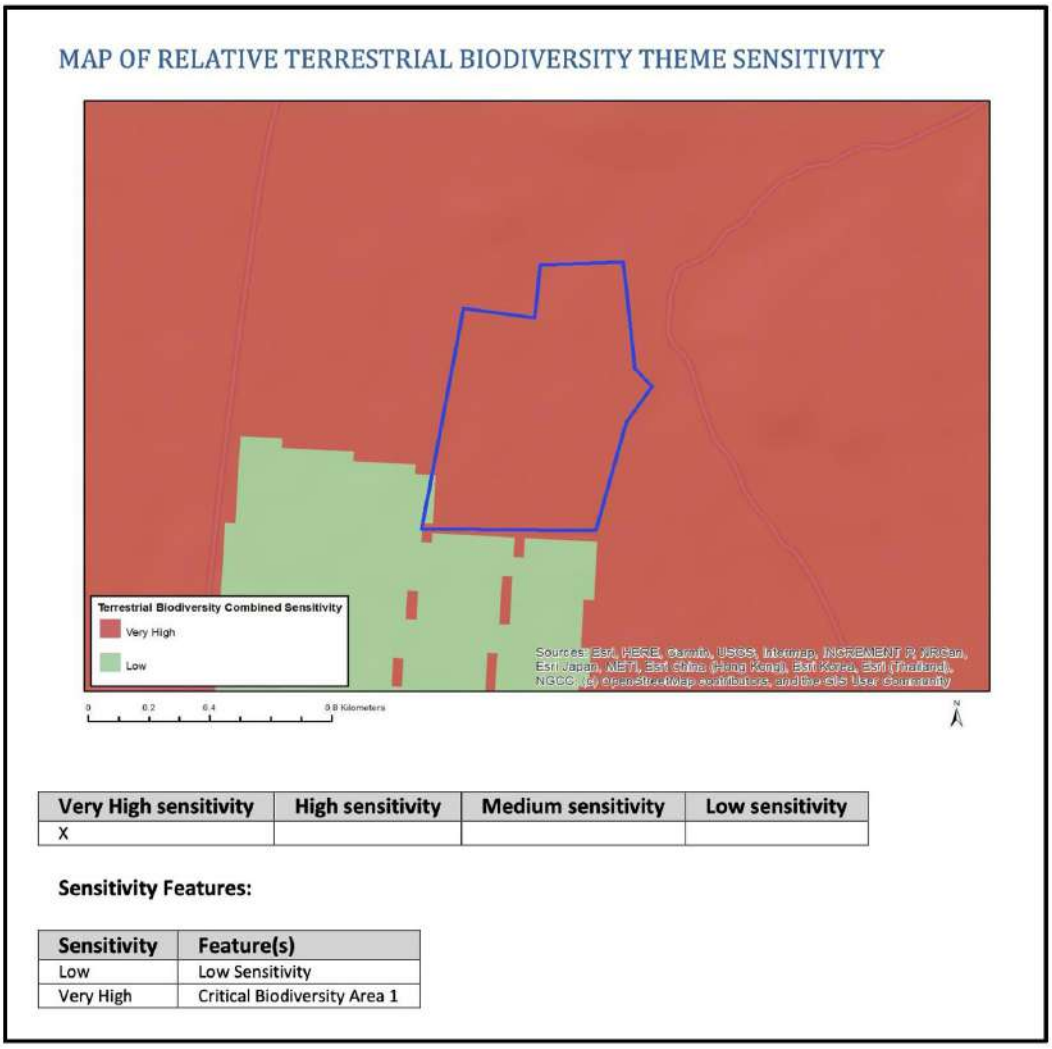
Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity
Medium	Sensitive species 144

Figure 20. Extract from report for the study area (blue outline) generated by the National Web-based Screening Tool for the Plant Species Theme Sensitivity.

The output for the Terrestrial Biodiversity Theme Sensitivity (map) is given in Figure 21 below with the sensitivity according to the screening tool being **Very High**, based on the presence of Critical Biodiversity

Areas (CBA1) in Figure 19. Observations from the ground-truthing of the study area do not support the classification of '**Very High**'. At best this area should be classified and mapped as having **Low** sensitivity.



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity
Very High	Critical Biodiversity Area 1

Figure 7. Extract from report for the study area (blue outline) generated by the National Web-based Screening Tool for the Terrestrial Biodiversity Theme Sensitivity.

In essence, the screening tool provides no more useful information than that obtained from the site visit and the available CBA map (Figure 19). The screening tool has in essence integrated the CBA map, hence the output of **Very High Sensitivity**. Consequently, a question mark can be placed on the validity of this assessment. **A more robust conclusion was reached without the application of the screening tool**!

9. Protected Plant Species

Boscia foetida subsp. *foetida* that is protected in terms of the Northern Cape Nature Conservation Act, 2009 (Act No. 9 of 2009) occurs only outside the study area and therefore would not be affected by the proposed agricultural expansion project. No other protected species or species of conservation concern (Red List: Near Threatened, Vulnerable and Endangered [Raimondo *et al.* 2009]) were found.

10. Alien invasive lant Species

No alien invasive plant species were found.

11. Impact Assessment

The proposed agricultural development at Oorkant would result in the complete transformation of the land. The sparse vegetation that is present would be lost.

11.1 Assessed impacts

The assessment of the impacts is considered for development of 30 ha that would include vineyards and a raisin drying area. Only the development alternative and the 'No Go' alternative are considered.

Three types of impacts are assessed:

- **Direct impacts:** Impacts occurring directly on the vegetation of the site as a result of the proposed agricultural development.
- **Indirect impacts:** Impacts that would not be as a direct result of the proposed activity, but that would occur away from the original source of impact.
- **Cumulative impacts**: Impacts caused by several similar projects.

11.2 'No Go' Alternative

The No Go alternative would be that the proposed agricultural development of 30 ha would not take place. The natural veld would remain as it is and there would be limited change over time but with some low-level impacts due to human activity. The result would be a **Very Low Negative** impact.

11.3 Direct Impacts

The impacts of the development of agriculture in the study are considered for the loss of natural vegetation and habitat i.e. loss of Kalahari Karroid Shrubland.

11.3.1. Loss of vegetation and habitat in the 30 ha development area.

The development area supports extremely sparse Kalahari Karroid Shrubland. In fact, so sparse that one is inclined to call this vegetation Bushmanland Arid Grassland. However, since the area is mapped as Kalahari Karroid Shrubland (SANBI, 2018) and not enough vegetation is present to determine otherwise, this classification is upheld here. The development of vineyards and the raisin drying racks would have **Very Low Negative** impact despite the area falling within a CBA1. No mitigation would be possible or necessary (Table 1).

Table 1. Impact and Significance – Loss of Kalahari Karroid Shrubland vegetation due to conversion 30ha at Oorkant to vineyards and raisin drying racks.

CRITERIA	'NO GO' ALTERNATIVE	PREFERRED ALTERNATIVE	
Nature of impact	Loss of Kalahari Karroid Shrubland vegetation		
	WITHOUT MITIGATION	**WITHOUT MITIGATION**	**WITH MITIGATION**
Extent	Local	Local	Local
Duration	Long-term	Long-term	Long-term
Intensity	Very Low	Low	Very Low
Probability of occurrence	Likely	Probable	Probable
Confidence	High	High	High
Significance	Very Low negative	Very low negative	Very low negative
Nature of Cumulative impact	Loss of Kalahari Karroid Shrubland		
Cumulative impact prior to mitigation	Very Low Negative	Very Low negative	
Degree to which impact can be reversed	Not reversible		
Degree to which impact may cause irreplaceable loss of resources	Very Low		
Degree to which impact can be mitigated	Low		
Proposed mitigation	None proposed		
Cumulative impact post mitigation	Very Low negative		
Significance after mitigation	Very Low negative		

11.4 Indirect Impacts

No indirect impacts of the proposed transformation of natural habitat in the study area at Oorkant were identified.

11.5 Cumulative Impacts

Kalahari Karroid Shrubland is a fairly extensive vegetation type in the Northern Cape Province with relatively low botanical sensitivity over much of its range. Minimal vegetation type has been lost mainly because water is not available for irrigation of crops. Consequently, much of this ecosystem remains intact since it is used mainly as rangeland for animal production. Cumulative impacts are thus very low at a broad scale although at a local scale such as around Augrabies, cumulative impacts are somewhat higher due to intensive cultivation. Considering local and broad-scale impacts, cumulative impacts range from **Low Negative** to **Very Low Negative** depending on the condition of the vegetation.

12. Mitigation

There is no scope is available for mitigation measures to compensate for the loss of natural habitat in the study area. Wherever there is future cultivation, the vegetation and habitat would be lost.

13. Conclusions and Recommendations

- The natural vegetation type found in the study area at Kakamas North Settlement No. 341 (Oorkant) near Augrabies as mapped by Mucina *et al*. 2005 and SANBI (2018) is Kalahari Karroid Shrubland. According to the National Biodiversity Assessment (Skowno *et al*. 2001) and the List of Threatened Terrestrial Ecosystems (Government Gazette, 2011), this vegetation type (ecosystem) is **Least Threatened**.
- The impact of the proposed agricultural development on the sparse Kalahari Karroid Shrubland would be **Very Low Negative**. No mitigation would be possible or required.
- No plant species of conservation concern or protected species were recorded within the development footprint, hence no permits would be necessary to remove such species.
- No constraints were identified from a botanical perspective that would prevent the agricultural development from proceeding.
- The proposed agricultural development is therefore acceptable and supported from a botanical viewpoint.

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Report submitted: 15 December 2020

Appendix 1: Impact Assessment Methodology

The assessment of impacts needs to include the determination of the following:

- The nature of the impact – see Table 1.1
- The magnitude (or severity) of the impact – see Table 1.2
- The likelihood of the impact occurring - see Table 1.2

The degree of confidence in the assessment must also be reflected.

- ***Table A.1 Impact assessment terminology***

Term	Definition
Impact nature	
Positive	An impact that is considered to represent an improvement on the baseline or introduces a positive change.
Negative	An impact that is considered to represent an adverse change from the baseline, or introduces a new undesirable factor.
Direct impact	Impacts that result from a direct interaction between a planned project activity and the receiving environment/receptors (e.g. between occupation of a site and the pre-existing habitats or between an effluent discharge and receiving water quality).
Indirect impact	Impacts that result from other activities that are encouraged to happen as a consequence of the Project (e.g. in-migration for employment placing a demand on resources).
Cumulative impact	Impacts that act together with other impacts (including those from concurrent or planned future third party activities) to affect the same resources and/or receptors as the Project.

Assessing significance

There is no statutory definition of '*significance*' and its determination is, therefore, somewhat subjective. However, it is generally accepted that significance is a function of the magnitude of the impact and the likelihood of the impact occurring. The criteria used to determine significance are summarized in *Table 1.2*

- ***Table A.2 Significance criteria***

Impact magnitude	
Extent	*On-site* – impacts that are limited to the boundaries of the rail reserve, yard or substation site. *Local* – impacts that affect an area in a radius of 20km around the development site. *Regional* – impacts that affect regionally important environmental resources or are experienced at a regional scale as determined by administrative boundaries, habitat type/ecosystem. *National* – impacts that affect nationally important environmental resources or affect an area that is nationally important/ or have macro-economic consequences.
Duration	*Temporary* – impacts are predicted to be of short duration and intermittent/occasional. *Short-term* – impacts that are predicted to last only for the duration of the construction period. *Long-term* – impacts that will continue for the life of the Project, but ceases when the Project stops operating. *Permanent* – impacts that cause a permanent change in the affected receptor or resource (e.g. removal or destruction of ecological habitat) that endures substantially beyond the Project lifetime.

Intensity	BIOPHYSICAL ENVIRONMENT: *Intensity can be considered in terms of the sensitivity of the biodiversity receptor (ie. habitats, species or communities).* **Negligible** – the impact on the environment is not detectable. **Low** – the impact affects the environment in such a way that natural functions and processes are not affected. **Medium** – where the affected environment is altered but natural functions and processes continue, albeit in a modified way. **High** – where natural functions or processes are altered to the extent that it will temporarily or permanently cease. ***Where appropriate, national and/or international standards are to be used as a measure of the impact.*** *Specialist studies should attempt to quantify the magnitude of impacts and outline the rationale used.* SOCIO-ECONOMIC ENVIRONMENT: *Intensity can be considered in terms of the ability of project affected people/communities to adapt to changes brought about by the Project.* **Negligible** – there is no perceptible change to people's livelihood **Low** - People/communities are able to adapt with relative ease and maintain pre-impact livelihoods. **Medium** - Able to adapt with some difficulty and maintain pre-impact livelihoods but only with a degree of support. **High** - Those affected will not be able to adapt to changes and continue to maintain-pre impact livelihoods.
Impact likelihood (Probability)	
Negligible	The impact does not occur.
Low	The impact may possibly occur.
Medium	Impact is likely to occur under most conditions.
High	Impact will definitely occur.

Once a rating is determined for magnitude and likelihood, the following matrix can be used to determine the impact significance.

- ***Table A.3 Example of significance rating matrix***

SIGNIFICANCE RATING					
	LIKELIHOOD	**Negligible**	**Low**	**Medium**	**High**
MAGNITUDE	**Negligible**	**Negligible**	**Negligible**	**Low**	**Low**
	Low	**Negligible**	**Negligible**	**Low**	**Low**
	Medium	**Negligible**	**Low**	**Medium**	**Medium**
	High	**Low**	**Medium**	**High**	**High**

In *Table A.4*, the various definitions for significance of an impact is given.

- ***Table A.4 Significance definitions***

Significance definitions	
Negligible significance	An impact of negligible significance (or an insignificant impact) is where a resource or receptor (including people) will not be affected in any way by a particular activity, or the predicted effect is deemed to be 'negligible' or 'imperceptible' or is indistinguishable from natural background variations.
Minor significance	An impact of minor significance is one where an effect will be experienced, but the impact magnitude is sufficiently small (with and without mitigation) and well within accepted standards, and/or the receptor is of low sensitivity/value.

Moderate significance	An impact of moderate significance is one within accepted limits and standards. The emphasis for moderate impacts is on demonstrating that the impact has been reduced to a level that is as low as reasonably practicable (ALARP). This does not necessarily mean that 'moderate' impacts have to be reduced to 'minor' impacts, but that moderate impacts are being managed effectively and efficiently.
Major significance	An impact of major significance is one where an accepted limit or standard may be exceeded, or large magnitude impacts occur to highly valued/sensitive resource/receptors. A goal of the EIA process is to get to a position where the Project does not have any major residual impacts, certainly not ones that would endure into the long term or extend over a large area. However, for some aspects there may be major residual impacts after all practicable mitigation options have been exhausted (i.e. ALARP has been applied) An example might be the visual impact of a development. It is then the function of regulators and stakeholders to weigh such negative factors against the positive factors such as employment, in coming to a decision on the Project.

Once the significance of the impact has been determined, it is important to qualify the **degree of confidence** in the assessment. Confidence in the prediction is associated with any uncertainties, for example, where information is insufficient to assess the impact. Degree of confidence can be expressed as low, medium or high.

Appendix 2: Curriculum Vitae

Dr David Jury McDonald Pr.Sci.Nat.

Name of Firm: Bergwind Botanical Surveys & Tours CC. (Independent consultant)

Work and Home Address: 14 A Thomson Road, Claremont, 7708

Tel: (021) 671-4056 **Mobile:** 082-8764051 **Fax:** 086-517-3806

E-mail: dave@bergwind.co.za

Website: www.bergwind.co.za

Profession: Botanist / Vegetation Ecologist / Consultant / Tour Guide

Date of Birth: 7 August 1956

Employment history:

- 19 years with National Botanical Institute (now SA National Biodiversity Institute) as researcher in vegetation ecology.
- Five years as Deputy Director / Director Botanical & Communication Programmes of the Botanical Society of South Africa
- Fifteen years as private independent Botanical Specialist consultant (Bergwind Botanical Surveys & Tours CC)

Nationality: South African (ID No. 560807 5018 080)
Languages: English (home language) – speak, read and write
Afrikaans – speak, read and write

Membership in Professional Societies:

- South Africa Association of Botanists
- International Association for Impact Assessment (SA)
- South African Council for Natural Scientific Professions (**Ecological Science, Registration No. 400094/06**)
- Field Guides Association of Southern Africa

Key Qualifications :

- Qualified with a M. Sc. (1983) in Botany and a PhD in Botany (Vegetation Ecology) (1995) at the University of Cape Town.
- Research in Cape fynbos ecosystems and more specifically mountain ecosystems.
- From 1995 to 2000 managed the Vegetation Map of South Africa Project (National Botanical Institute)
- Conducted botanical survey work for AfriDev Consultants for the Mohale and Katse Dam projects in Lesotho from 1995 to 2002. A large component of this work was the analysis of data collected by teams of botanists.
- **Director: Botanical & Communication Programmes** of the Botanical Society of South Africa (2000—2005), responsible for communications and publications; involved with conservation advocacy particularly with respect to impacts of development on centres of plant endemism.

- Further tasks involved the day-to-day management of a large non-profit environmental organisation.

- **Independent botanical consultant** (2005 – to present) over 400 projects have been completed related to environmental impact assessments in the Western, Southern and Northern Cape, Karoo and Lesotho. A list of reports (or selected reports for scrutiny) is available on request.

Higher Education

Degrees obtained
and major subjects passed:

B.Sc. (1977), University of Natal, Pietermaritzburg
Botany III
Entomology II (Third year course)

B.Sc. Hons. (1978) University of Natal, Pietermaritzburg
Botany (Ecology /Physiology)

M.Sc. - (Botany), University of Cape Town, 1983.
Thesis title: 'The vegetation of Swartboschkloof, Jonkershoek, Cape Province'.

PhD (Botany), University of Cape Town, 1995.
Thesis title: 'Phytogeography endemism and diversity of the fynbos of the southern Langeberg'.

Certificate of Tourism: Guiding (Culture: Local)
Level: 4 Code: TGC7 (Registered Tour Guide: WC 2969).

Employment Record:

January 2006 – present: Independent specialist botanical consultant and tour guide in own company:
Bergwind Botanical Surveys & Tours CC

August 2000 - 2005 : Deputy Director, later Director Botanical & Communication Programmes, Botanical Society of South Africa

January 1981 – July 2000 : Research Scientist (Vegetation Ecology) at National Botanical Institute

January 1979—Dec 1980 : National Military Service

Further information is available on my company website: www.bergwind.co.za

Appendix 3: Minimum Content Requirements for Terrestrial Biodiversity Specialist Reports as per Protocol for the Specialist Assessment of Environmental Impacts on Terrestrial Biodiversity (GN 320 of 20 March 2020)

Protocol ref	**Terrestrial Biodiversity Specialist Assessment Report Content**	**Section / Page**
3.1.1.	contact details of the specialist, their SACNASP registration number, their field of expertise and a curriculum vitae;	Page 2
3.1.2.	a signed statement of independence by the specialist;	Page 3
3.1.3.	a statement on the duration, date and season of the site inspection and the relevance of the season to the outcome of the assessment;	Page 6
3.1.4.	a description of the methodology used to undertake the site verification and impact assessment and site inspection, including equipment and modelling used, where relevant;	Page 11
3.1.5.	a description of the assumptions made and any uncertainties or gaps in knowledge or data as well as a statement of the timing and intensity of site inspection observations;	Page 6
3.1.6.	a location of the areas not suitable for development, which are to be avoided during construction and operation (where relevant);	N/A
3.1.7.	additional environmental impacts expected from the proposed development;	N/A
3.1.8.	any direct, indirect and cumulative impacts of the proposed development;	Page 21--23
3.1.9.	the degree to which impacts and risks can be mitigated;	Page 23
3.1.10.	the degree to which the impacts and risks can be reversed;	Page 22
3.1.11.	the degree to which the impacts and risks can cause loss of irreplaceable resources;	Page 22
3.1.12.	proposed impact management actions and impact management outcomes proposed by the specialist for inclusion in the Environmental Management Programme (EMPr);	N/A
3.1.13.	a motivation must be provided if there were development footprints identified as per paragraph 2.3.6 above that were identified as having a "low" terrestrial biodiversity sensitivity and that were not considered appropriate;	N/A
3.1.14.	a substantiated statement, based on the findings of the specialist assessment, regarding the acceptability, or not, of the proposed development, if it should receive approval or not; and	Page 23
3.1.15.	any conditions to which this statement is subjected.	N/A

11.8 Appendix C2: Freshwater Compliance Statement

everWater
Freshwater Consulting Services

15/08/2022

To attention: Ms Elanie Kühn

FRESHWATER OPINION FOR THE PROPOSED OORKANT DEVELOPMENT, ON KAKAMAS NORTH SETTLEMENT NO. 341, NORTHERN CAPE PROVINCE

Background:

The applicant intends to develop 30ha for agricultural use and the relocation of an existing raisin drying area. The development would consist of the following (see **Figure 2**):

1. The proposal is to further develop the property by establishing an additional 30ha (turquoise area) (**Figure 2**) of vineyards to fully utilise the site. Note a small unnamed tributary will also be impacted by the development.
2. The relocation of an existing raisin drying area, approximately 2ha in size.

The proposed development on Kakamas North Settlement No. 341 is situated approximately 3 kilometres north of the small town of Augrabies, in the Northern Cape, within the Kai! Garib Municipal area. Access to the site is achieved via an existing gravel road that links with the N14.

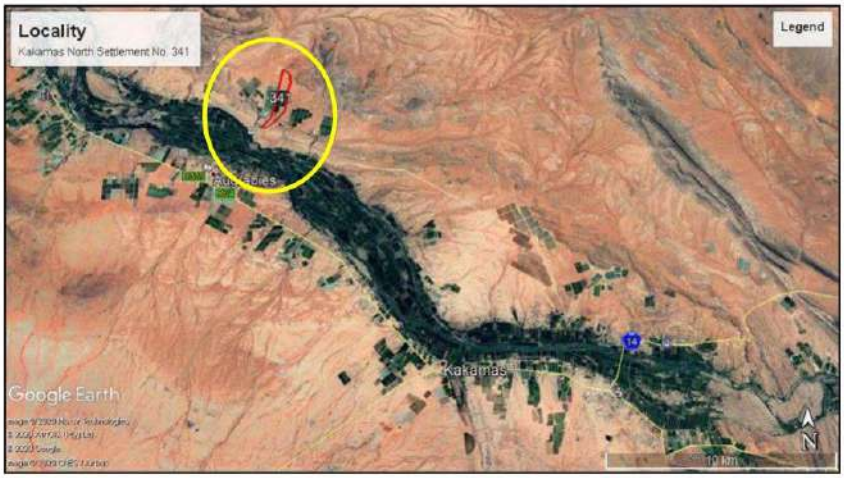


Figure 1: Satellite imagery showing the position of the property.

Freshwater Study:

A desktop study, together with information provided by Groenberg Enviro Pty Ltd, was conducted over the larger affected freshwater features located on and around the property in order to identify its current state as well as give an opinion on the impact that the activities might have on the larger freshwater ecology.

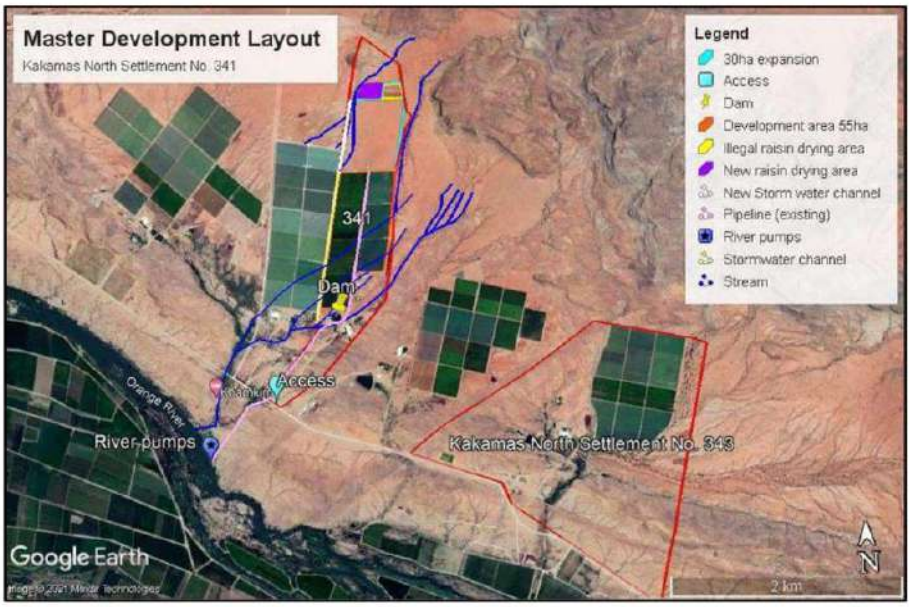


Figure 2: Layout map indicating the proposed agricultural development, together with the freshwater features (Blue lines).

Freshwater features:

The property is located within Quaternary Catchment D81A which drains into the larger Orange River system. As mentioned, the proposed development will fall over 30ha of natural land, which will affect two unnamed drainage lines draining the hills to the north, transecting the property while flowing in a south-westerly, and then south direction before meeting the Orange River. The upstream sections of these ephemeral drainage lines are still in a natural unmodified state, while deteriorating to a critically modified state downstream of the proposed development, largely due to being channeled and diverted around the existing agricultural land.

Figure 3: Photographs showing the proposed development area looking in a southern (top) and northern (bottom) direction.

Ecological State

When considering ecological state of the freshwater system, Google Earth's Timeline function was used as reference imagery (accessed August 2022) for historical land use as well as identification of any other wet areas that might occur on site. Google Earth imagery from March 2004 is the earliest clear available footage covering the area and was used together with a comparison from February

2019. These images were used to look at historical land use and whether the sites were extensively altered in the past or to detect large changes in the land use of the catchment.

When looking at the area it is clear that the land use surrounding the drainage lines have remained the same, with agricultural activities occurring over the lower sections of these drainage lines and its upstream sections being still largely natural. No other wetland areas were found around them.

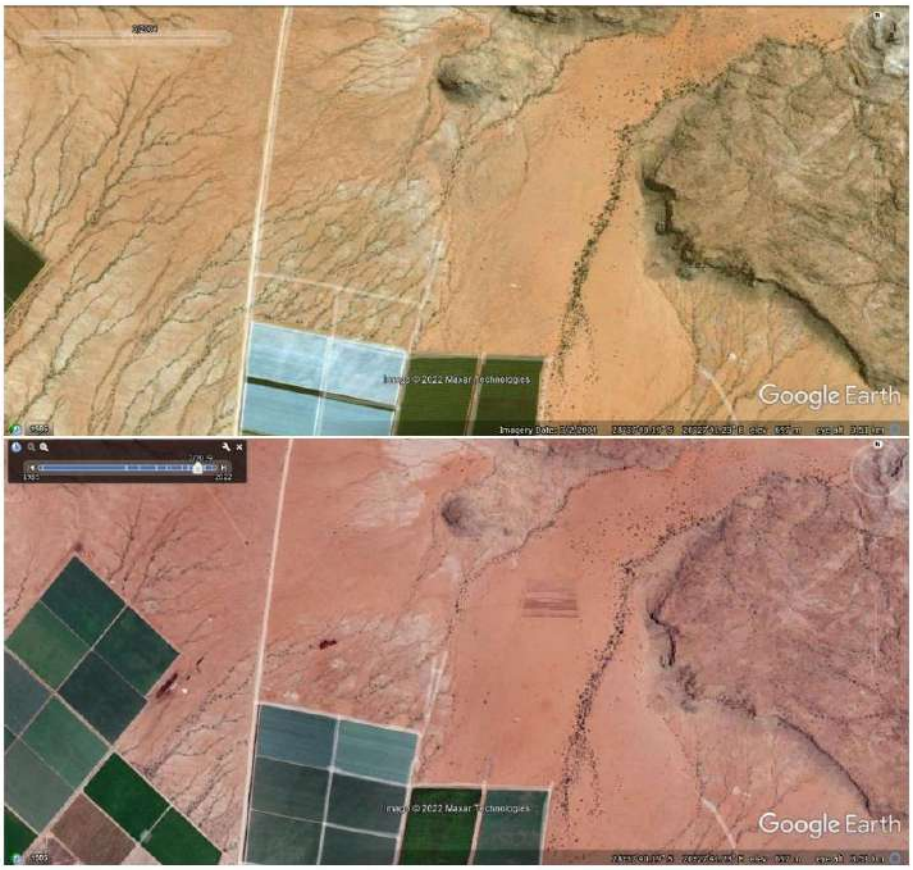


Figure 4: 2004 (top) and 2019 (bottom) satellite imagery from the study area.

Conservation Value

The 2016 Northern Cape Biodiversity Spatial Plan Map and the National Freshwater Ecosystem Priority Areas Map provides information regarding the conservation value and ecological importance of the freshwater features studied.

2016 Northern Cape Biodiversity Spatial Plan (WCBSP)

From the 2016 Northern Cape Biodiversity Spatial Plan (Figure 5) it is clear that most of the farm including the area affected by the activity is classified as Critical Biodiversity Area 1 (moderate priority), where areas in a natural condition are required to meet biodiversity targets, for species,

ecosystems or ecological processes and infrastructure. These areas should be maintained in a natural or near-natural state, with no further loss of natural habitat. Degraded areas should be rehabilitated and only low-impact, biodiversity-sensitive land uses are appropriate.

Figure 5: The 2016 Northern Cape Biodiversity Spatial Plan (SANBI GIS, 2022)

NFEPA map

FEPAs are strategic spatial priorities for conserving freshwater ecosystems and supporting sustainable use of water resources. From the NFEPA map (Figure 6), the larger catchment in which the drainage lines fall, does not lie within a FEPA and are also not marked as FEPA wetlands. The section of the Orange River, at the confluence with these drainage lines, is marked as Nama Karoo Bushmanland_Floodplain wetland (FEPA rank 5). River FEPAs achieve biodiversity targets for river ecosystems and threatened/near-threatened fish species and were identified in rivers that are currently in a good condition. Their FEPA status indicates that they should remain in a good condition in order to contribute to national biodiversity goals and support sustainable use of water resources.

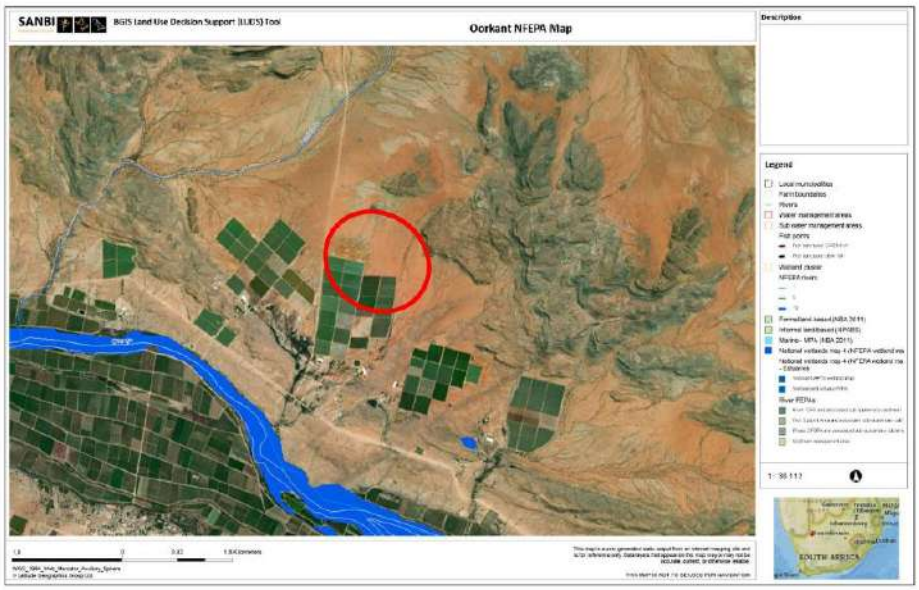


Figure 6: NFEPA map for the area (SANBI GIS, 2022)

Discussion and Conclusion:

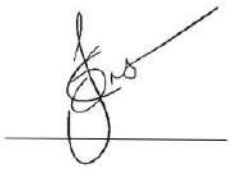
Both the affected drainage channels are of ephemeral nature, with limited aquatic vegetation, and no other wet areas surrounding them. Taking that into consideration as well as the fact that the downstream section of these drainage lines is already in a critically modified state, the small loss of aquatic habitat and ecology that will occur at the proposed development area would be deemed to be of low impact both on the small streams as well as the larger Orange river freshwater system.

The following recommendations would be made in order to try and mitigate any further negative impacts that might arise:

- The water quality impacts during the construction phase in particular should be addressed through a Construction Environmental Management Plan for the project and implemented by an on-site Environmental Officer;
- Contaminated runoff from the construction sites should be prevented from directly entering downstream water features;
- Construction should preferably take place during the drier winter months when runoff from the surrounding area is low to non-existent;
- A buffer zone of 15m should be applied to the eastern most drainage line for all proposed development activities;
- As the area on which the development is to take place is classified as a terrestrial CBA, it is proposed that botanical input is obtained in the EIA process.

Taking the findings as well as proposed recommendations into account, the project is deemed to have a general low to very low negative impact on the larger freshwater context.

Yours sincerely,



Jeanne Snyman

SACNASP Reg. No: 400091/17

References:

Driver, Nel, Snaddon, Murray, Roux, Hill. (2011). Implementation Manual for Freshwater Ecosystem Priority Areas. Draft Report for the Water Research Commission.

Department of Water and Sanitation (DWS). 2014. A Desktop Assessment of the Present Ecological State, Ecological Importance and Ecological Sensitivity per Sub Quaternary Reaches for Secondary Catchments in South Africa. Compiled by RQIS-RDM: https://www.dwa.gov.za/iwqs/rhp/eco/peseismodel.aspx

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National Water Act 36 of 1998. Section 21(c) and (i).

River Health Programme (2004). State-of-Rivers Report: Berg River System. Department of Water Affairs and Forestry. Pretoria. ISBN No: 0-620-32075-3

SANBI Biodiversity GIS. http://bgis.sanbi.org

WRC. (2011). Atlas for Freshwater Ecosystem Priority Areas – Maps to support sustainable development of water resources (WRC Report No. TT 500/11

11.9 Appendix C3: Archeological Impact Assessment

ARCHAEOLOGICAL IMPACT ASSESSMENT

Illegal agricultural development and proposed new vineyard development on the Farm Oorkant, Kakamas North Settlement No 341, near Augrabies, Kai! Garib Municipality, Northern Cape

Assessment conducted under Section 38 (3) of the National Heritage Resource Act (No. 25 of 1999)

Prepared for:

GROENBERGENVIRO Pty Ltd
PO Box 1058, Wellington, 7654
E-mail: Elaniem@iafrica.com

Applicant:

CAPESPAN FARMS Pty Ltd

By

ACRM
5 Stuart Road, Rondebosch, 7700
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E-mail: acrm@wcaccess.co.za

AUGUST 2020

Executive summary

1. Introduction

ACRM was instructed by GroenbergEnviro to conduct an Archaeological Impact Assessment (AIA) for an illegal agricultural development, and a proposed new vineyard development on the farm Oorkant, Kakamas North Settlement 341, near Augrabies, Kai! Garib Municipality in the Northern Cape.

The illegal development, established in 2018 without environmental authorisation, comprises raisin drying racks that cover a footprint area of about 5ha. The AIA for this component of the study forms part of a Section 24G Application process.

The proposed new vineyard development will cover a footprint area of about 25ha. Water for the new vineyards will be supplied from a pump station located on the banks of the Gariep River/Orange. Existing pipelines and farm roads will be used, and no new access roads will need to be constructed.

2. Legal requirements

In terms of Section 38 (1) (c) (iii) of the National Heritage Resources Act 1999 (Act 25 of 1999), a Heritage Impact Assessment (HIA) of the proposed project is required if the footprint area of the development is more than 5000m² in extent.

3. Aim of the AIA

The overall purpose of the AIA is to assess the sensitivity of archaeological resources in the affected areas, to determine the potential impacts on such resources, and to avoid and/or minimize such impacts by means of management and/or mitigation measures.

The significance of archaeological resources was assessed in terms of their content and context. Attributes considered in determining significance include artefact and/or ecofact types, rarity of finds, exceptional items, organic preservation, potential for future research, density of finds and the context in which archaeological traces occur.

4. Limitations

There were no limitations associated with the field study. Access to the site was easy and archaeological visibility was very good.

5. Findings

A field assessment of the proposed 25ha footprint area, and the existing illegal agricultural development took place on 15th July 2020, in which the following observations were made:

- A few isolated Middle Stone Age (MSA) and Later Stone Age (LSA) stone tools, including a small cobble hammerstone, and a small piece of indigenous clay pottery were recorded in the footprint area of the proposed new vineyard development.

➢ Marginal scatters of MSA and LSA implements were recorded on patches of quartz gravels alongside the drainage channel in the western portion of the site, but these occur outside the area of the proposed vineyard development.

➢ No tools were found in the footprint area of the illegal raisin drying project.

5.1 Grading

The small number and isolated context in which they were found means that the archaeological resources have been graded as having *low* (Grade 3C) significance.

6. Built environment/historical structures

In terms of the built environment, no old buildings, historical structures or features, or any old equipment was found in the proposed footprint area.

7. Graves

No graves or typical grave features such as stone cairns were encountered during the study.

8. Impact statement

The results of the study indicate that the proposed development of new vineyards, and the illegal raisin drying project on the Farm Oorkant Kakamas North Settlement 341 will not have an impact of great significance on archaeological resources.

9. Conclusion

The receiving environment is not a sensitive or threatened archaeological landscape.

The impact significance of the proposed vineyard development, and the existing illegal agricultural development on archaeological heritage is assessed as LOW.

10. Recommendations

1. No mitigation of archaeological resources is required.

2. No archaeological monitoring is required.

3. Regarding the illegal raisin drying operation established in 2018, (subject of the Section 24G Process), no archaeological mitigation is required.

Table of Contents

1. INTRODUCTION

ACRM was instructed by GroenbergEnviro on behalf of CapeSpan Farms (Pty) Ltd to conduct an Archaeological Impact Assessment (AIA) for an illegal agricultural development, and a proposed new vineyard development on the farm Oorkant, Kakamas North Settlement No. 341, near Augrabies, Kai! Garib Municipality in the Northern Cape (Figures 1 & 2).

The proposed vineyard development will cover a footprint area of about 25ha. Water for the new vineyard development will be supplied from a pump station located on the banks of the Orange/Gariep River. Water for new vineyards will also be supplied via existing pipelines. Existing farm roads will be used, and no new access roads will need to be constructed.

The illegal development, established in 2018 without environmental authorisation, comprises raisin drying racks that cover a footprint area of about 5ha. The AIA for this component of the study forms part of a Section 24G Application process which is designed to legally correct an unauthorised development.

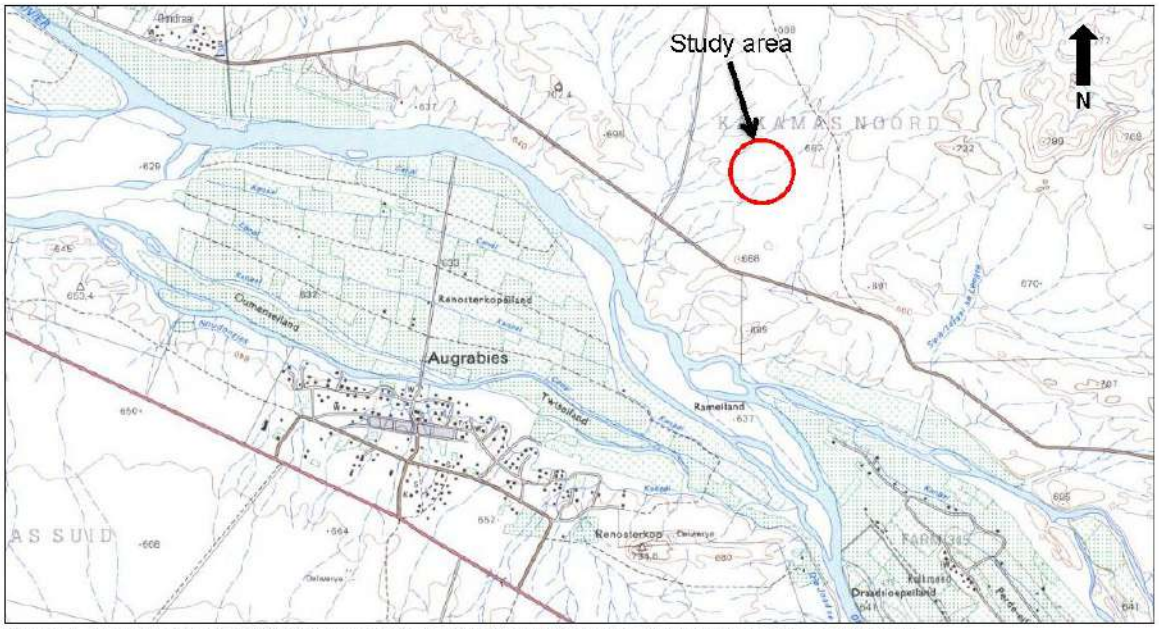

Figure 1. Locality Map (2820CB Augrabies). Red polygon illustrates the location of the study area

Figure 2.Google satellite map illustrating the location of the proposed development site (blue pin) in relation to the town of Augrabies.

2. HERITAGE LEGISLATION

The National Heritage Resources Act (Act No. 25 of 1999) makes provision for a compulsory Heritage Impact Assessment (HIA) when an area exceeding 5000 m² is being developed. This is to determine if the area contains heritage sites and to take the necessary steps to ensure that they are not damaged or destroyed during development.

The NHRA provides protection for the following categories of heritage resources:

- Landscapes, cultural or natural (Section 3 (3))
- Buildings or structures older than 60 years (Section 34);
- Archaeological sites, palaeontological material and meteorites (Section 35);
- Burial grounds and graves (Section 36);
- Public monuments and memorials (Section 37);
- Living heritage (defined in the Act as including cultural tradition, oral history, performance, ritual, popular memory, skills and techniques, indigenous knowledge systems and the holistic approach to nature, society and social relationships) (Section 2 (d) (xxi)).

3. TERMS OF REFERENCE

The terms of reference for the archaeological study were to:

- Determine whether there are likely to be any important archaeological resources that may potentially be impacted by the proposed new vineyard development;

- Indicate any constraints that would need to be considered in considering the development proposal

- Identify potentially sensitive archaeological areas

- Determine whether any important heritage resources may have been impacted by the illegal raisin drying development (the Section 24G Application Process), and

- Recommend mitigation action.

4. THE STUDY SITE

Oorkant/Kakamas North Settlement 341 is located about 4.5kms north east of Augrabies (across the Orange/Gariep River), and about 25kms north west of Kakamas on the gravel road to Riemvasmaak, with the turnoff to the farm on the righthand side of the road.

The proposed development site comprises mostly level lands that slope gently to the south, on a substrate of shallow red sands (Figure 3). There is barely any surface stone covering the large area. One or two outcroppings of quartz, and patches of gravelly sands occur in places. A few sporadic trees and bushes also occur, but mostly alongside a dry drainage channels in the western portion of the farm (Figures 4-8). Some diggings and a few soil test pits were also noted in this area. A 20m wide gravel road cuts through the middle of the site, with a network of two-track gravel roads cutting across the remainder of the property. There are no significant landscape features on the proposed development site. Hard dorbank surfaces of gravel, and outcroppings of quartz occur along the western boundary, alongside the drainage channel, but these areas are not suitable for vineyard production (Dawid Dege pers. Comm).

The illegal raisin drying project which was established in 2018 is, located in the north eastern portion of the site (Figure 9).

Apart from targets set up for target shooting practice, the proposed 25ha site is undeveloped. Surrounding land use is agriculture (vineyards/table grapes), game farming (on the adjacent farm Tierkop), and recreation (mountain biking).

Figure 3. Google aerial map of the footprint area for the proposed new vineyard development (yellow polygon) and indicating the illegal raisin development in the north eastern corner of the site.

Figure 4. Panoramic view of the site facing south east with Tierkop in the distance.

Figure 5. View of the proposed site facing south.

Figure 6. View of the proposed site facing south east, with Tierkop to the left of the plate

Figure 7. View of the proposed development site facing south west

Figure 8. View of the proposed development site facing north west

Figure 9. Illegal raisin development in the north eastern corner of the site. View facing south west

5. STUDY APPROACH

5.1 Method of survey

The overall purpose of the HIA is to assess the sensitivity of archaeological resources in the affected area, to determine the potential impacts on such resources and to avoid and/or minimize such impacts by means of management and/or mitigation measures.

The significance of archaeological resources was assessed in terms of their content and, context. Attributes considered in determining significance include artefact and/or ecofact types, rarity of finds, exceptional items, organic preservation, potential for future research, density of finds and the context in which archaeological traces occur.

Survey track paths were captured and the position of identified archaeological occurrences was fixed by a handheld GPS unit set on the map datum WGS 84.

A desktop study was carried out to assess the heritage context surrounding the proposed development site. The literature survey included unpublished commercial reports sourced primarily from the South African Heritage Resources Information System (SAHRIS).

5.2 Constraints and limitations

There were no constraints or limitations associated with the study. Access to the site was easy and archaeological visibility was very good.

5.3 Identification of potential risks

The results of the study indicate that there are no archaeological risks associated with a proposed new vineyard development on the Farm Oorkant, Kakamas North Settlement 341, near Augrabies.

5.4 Results of the desk top study

One of the earliest archaeological survey undertaken in the area was by Morris and Beaumont (1991) who undertook a combined impact assessment, and mitigation of sites on Renosterkop Peak, known historically to pre-colonial local Namneiqua pastoralists as !Nawabdanas. Several, low-density scatters of Middle Stone Age (MSA) and Later Stone Age (LSA) material were identified on and around the hill, which is also the site of the historic Renosterkop Tin Mine (circa 1940). Archaeological investigation of a Ceramic LSA surface scatter (Renosterkop 1) and a small LSA rock shelter (Renosterkop 2) were undertaken by Morris and Beaumont (1991), who showed that the two sites likely pre-date the late 18th Century. Morris and Beaumont (1991) were also able to show, based on extensive historical research, a rapidly changing cultural and linguistic landscape from as early as the mid 1700's, up until the violent Northern Border (frontier) War of 1869/9.

Morris and Beaumont (1991) also note that many indigenous skeletons, most dating to the 18th and 19th Centuries were exhumed from the area, along the banks of the Orange River near Augrabies in the late 1930s. A pre-colonial grave was also recorded at the

base of the Renosterkop Hill, during an HIA for a proposed new vineyard development on the farm (Kaplan 2016).

Large numbers of LSA, MSA and some older Early Stone Age (ESA) implements were also recorded on the flatlands on the farm Renosterkop during an AIA for a proposed new vineyard development (Kaplan 2016), while limited numbers of tools were recorded on the farm Renosterkop extension, south of the R359 (Kaplan 2017). Large numbers of MSA tools were also recorded on the Farm Orange Hills near the entrance to Augrabies (Kaplan 2018).

Kaplan (2020) recently recorded small numbers of mostly isolated LSA and a few MSA tools on the farm Tierkop during a survey for a proposed new vineyard development. Tierkop is situated directly adjacent Oorkant.

Orton (2012) also recorded low density scatters of LSA, MSA and ESA tools during a survey for a proposed solar energy farm near the Augrabies Falls National Park about 12kms from Renosterkop. Orton (2012) also describes a Stone Age sequence in the Augrabies Falls area where much of the information has been generated by excavations of open scatters containing stone tools, pottery and ostrich eggshell, as well as excavations of several small shelters near the falls, and the town of Augrabies (Morris & Beaumont 1991).

Small numbers of MSA tools were documented by Van Schalkwyk (2013) during a HIA for a township development near Augrabies, while Pelser (2012) recorded small numbers of LSA as well as ESA implements during an AIA for a solar energy farm near the National Park. Kaplan (2018) also documented relatively large numbers of LSA and MSA lithics, including activity areas, on the farm Orange Falls, just outside the urban edge of the town. Several other impact assessment reports were not available on the SAHRIS website at the time of writing (e.g. Van Schalkwyk 2011, & Beaumont 2008).

Morris (2014) notes that there are substantial herder encampments along the floodplain of the Orange River, but these tend to be short duration visits by small groups of hunter-gatherers. Most of these camps have, however, been destroyed by intensive farming alongside the river, and would no longer be archaeologically visible in the landscape.

6. FINDINGS

A field assessment of the proposed new vineyard development and the existing illegal raisin drying project, was undertaken on 15th July 2020 (Figure 10).

A spreadsheet of waypoints and a description of archaeological finds are presented in Table 1.

A very, small number of tools were recorded in the 25ha footprint area of the proposed new vineyard development. Notable finds include a small fragment of unburnished grit tempered pottery (Point 621) and a small pebble hammerstone (Point 818).

Dispersed (i. e. low density) scatters of tools, mostly flakes, chunks and cores, in banded ironstone and quartz were recorded on patches of quartz gravels alongside the drainage

channel and the western boundary of the study site. No formal tools were found and the remains most likely represent discarded flakes and flake debris.

A collection of tools recorded during the study, and the context in which they were found are illustrated in Figures 11-7.

6.1 Grading of archaeological resources

Overall, the small, number and isolated context in which they were found means that the archaeological remains have been graded as having *low* (Grade 3C) significance.

Figure 10. Trackpaths in blue and waypoints of archaeological finds

Point/ Site	Farm name	Lat/long	Description of finds	Grading	Mitigation
	Oorkant 341		BI = Banded ironstone	NCW = not conservation worthy	
423		S28° 37.819' E20° 27.814'	MSA quartzite flake		
522		S28° 37.888' E20° 27.823'	Broken BI flake	NCW	None required
621		S28° 37.889' E20° 27.848'	Small grit tempered pot sherd	NCW	None required
720		S28° 37.919' E20° 27.670'	Quartz flake/blade	NCW	None required
821		S28° 37.920' E20° 27.657'	BI chunk	NCW	None required
921		S28° 37.801' E20° 27.822'	BI MSA flake	NCW	None required

020		S28° 37.672' E20° 27.919'	BI retouched flake	NCW	None required
2119		S28° 37.644' E20° 27.656'	Thin scatter of a few BI, & quartz flakes & chunks	NCW	None required
220		S28° 37.581' E20° 27.687'	Dispersed scatter of BI & quartz flakes, chunks & round core	NCW	None required
320		S28° 37.587' E20° 27.796'	BI utilized flake	NCW	None required
419		S28° 37.502' E20° 27.704'	Thin scatter of a few BI & quartz flakes & chunks	NCW	None required
519		S28° 37.452' E20° 27.896'	BI chunk		
618		S28° 37.475' E20° 27.738'	BI chunk and flake	NCW	None required
719		S28° 37.475' E20° 27.738'	BI utilized/retouched flake	NCW	None required
818		S28° 37.469' E20° 27.812'	Pebble hammerstone	NCW	None required
918		S28° 37.458' E20° 27.848'	BI chunk		
019		S28° 37.767' E20° 27.624'	Very thin scatter of a few BI & quartz flakes & chunks	NCW	None required
119		S28° 37.705' E20° 27.644'	BI flake	NCW	None required
217		S28° 37.744' E20° 27.656'	A few BI quartz flakes & chunks	NCW	None required
317		S28° 37.831' E20° 27.625'	A few BI & quartz flakes & chunks		
417		S28° 37.817' E20° 27.625'	Thin scatter of a few BI & quartz flakes & chunks	NCW	None required
515		S28° 37.907' E20° 27.598'	MSA quartzite flake	NCW	None required

Table 1. Spreadsheet of waypoints and description of archaeological finds

Figure 11. Point 2119. View facing south east

Figure 12. Site 220. View facing north east

Figure 13. Site 217. View facing south west

Figure 14. Collection of tools. Ruler scale is in cm

Figure 15. collection of tools. Ruler scale is in cm


Figure 16. Collection of tools. Ruler scale is in cm


Figure 17. Collection of tools. Ruler scale is in cm

6.2 Illegal raisin drying development (S24G Process)

No archaeological remains were found during an assessment of the illegal raisin drying development situated in the north eastern portion of the site. Given the results of the larger study it is unlikely that important archaeological resources would have been impacted by the project.

6.3 Built environment

No old buildings, structures, features or old equipment were recorded in the study area..

6.4 Graves

No graves or typical grave features, or grave cairns were encountered during the study.

7. ASSESSMENT OF IMPACTS

In the case of the proposed (new) vineyard development on the Farm Oorkant Kakamas Noord Settlement No. 341, it is expected that impacts on archaeological heritage resources, will be *LOW* (Table 2).

Potential impacts on archaeological heritage	
Extent of impact:	Site specific
Duration of impact;	Permanent
Intensity	Low
Probability of occurrence:	Probable
Significance without mitigation	Low
Significance with mitigation	Negative
Confidence:	High

Table 2. Assessment of archaeological impacts.

8. CONCLUSION

The impact significance of the proposed new vineyard development on archaeological heritage is assessed as LOW and therefore, there are no objections to the authorization of the project.

9. RECOMMENDATIONS

Regarding a proposed new vineyard development on the Farm Oorkant, Kakamas North Settlement 341 near Augrabies, the following recommendations are made:

1. No mitigation of archaeological resources is required prior to proposed new development activities commencing.

2. No archaeological monitoring is required.

3. Regarding the illegal raisin drying development established in 2018, (subject of the Section 24G Process), no further archaeological mitigation is required.

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11.9.1 Appendix C4: Paleontological Impact Statement

PALAEONTOLOGICAL ASSESSMENT: RECOMMENDED EXEMPTION FROM FURTHER PALAEONTOLOGICAL STUDIES

Rectification of agricultural developments on the Farm Oorkant, Kakamas North Settlement No 341, near Augrabies, Kai! Garib Municipality, Northern Cape

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***Natura Viva* cc,**
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August 2020

Executive summary

The agricultural developments comprise new vineyards (25 ha) and unauthorised raisin drying racks on the Farm Oorkant, Kakamas North Settlement 341, situated *c.* 4 km NE of Augrabies in the Kai! Garib Municipality of the Northern Cape Province. The development footprint is underlain by (1) ancient Precambrian igneous and metamorphic bedrocks that do not contain fossils as well as (2) sparsely fossiliferous or unfossiliferous superficial sediments (alluvium, aeolian sands, surface gravels) of probable Quaternary to Recent age. Ancient alluvial terraces (potentially fossiliferous "High Level Gravels") are not mapped in the study area. In view of the small, highly disturbed development footprint and the generally low palaeontological sensitivity of the study region, no further specialist studies or mitigation are considered necessary for this project, as far as fossil heritage is concerned. However, should significant fossil remains (*e.g.* vertebrate bones and teeth) be encountered during construction, the responsible ECO should inform SAHRA at the earliest opportunity to consider possible mitigation measures. A tabulated Chance Fossil Finds Procedure is appended to this report.

1. Project description

Capespan Farms Pty Ltd has proposed a new vineyard development with a footprint of about 25 ha on the farm Oorkant, Kakamas North Settlement 341, situated on the northern side of the Orange River (Gariep) some 4 km NE of Augrabies, Kai! Garib Municipality in the Northern Cape Province. Water for the new vineyards will be supplied from a pump station located on the banks of the Gariep River / Orange. Existing pipelines and farm roads will be used, and no new access roads will need to be constructed. In addition the present report also covers an unauthorised agricultural development comprising raisin drying racks with a footprint area of about 5ha. The PIA for this component of the study forms part of a Section 24G Application process.

The Section 24G Rectification process for this agricultural development is being co-ordinated by Groenbergenviro (Pty) Ltd (Contact details: Ms Elanie Kühn. GroenbergEnviro (Pty) Ltd, PO Box 1058 Wellington 7654. Cell: 0765840822. E-mail: Elaniem@iafrica.com). The present report contributes to the heritage component of the process under the aegis of Mr Jonathan Kaplan of ACRM (5 Stuart Road, Rondebosch, 7700. Ph/Fax: 021 685 7589. Cell: 082 321 0172. E-mail: acrm@wcaccess.co.za).

Figure 1. Google earth© satellite image showing the study site for agricultural developments (yellow polygons) on the farm Oorkant, Kakamas North Settlement 341, situated on the northern side of the Orange River (Gariep) *c.* 4 km NE of Augrabies, Northern Cape. The site is already highly disturbed.

2. Geological and palaeontological context

The agricultural project study area on the Farm Oorkant comprises gently sloping arid terrain between *c.* 690 and 710 m amsl. which stretches between 3 and 4 km north of the present banks of the Gariep up to the edge of a range of low basement *koppies* (Fig. 1). The area is largely mantled by orange-hued aeolian and alluvial sands and sparse gravels (vein quartz, gneiss *etc*) with no extensive areas of bedrock exposure. A shallow, dendritic, ephemeral stream drainage line feeding into the Gariep runs just east of the area which is already extensively disturbed by previous agricultural activities. Kaplan (2020) reports shallow reddish sands with sporadic quartz exposures and patches of gravelly sands or hard *dorbank* gravel surfaces locally.

The geological context of the study area is shown on the 1: 250 000 geology sheet 2820 Upington (Fig. 2; Council for Geoscience, Pretoria) (Moen 2007). The underlying bedrocks are ancient Precambrian granite-gneisses assigned to the **Riemvasmaak Gneiss** of the **Namaqua-Natal Province** that are some 1.5 billion years old and entirely unfossiliferous (Cornell *et al.* 2006, Almond & Pether 2008).

The study area lies only shortly (< 4 km) north and ~ 50 to 70 m above the present course of the River Orange, so ancient (Tertiary - Quaternary), consolidated alluvial gravels of the Orange River system – which are known to be highly fossiliferous elsewhere along the Orange (*e.g.* Partridge *et al.* 2006) – might be present here. However, neither "High Level Gravels" nor the commonly associated diamond prospecting symbols are mapped on the Farm 355 Tierkop region on the 1: 250 000 geological sheet (Fig. 2). Superficial sediments away from the main drainage courses largely comprise surface gravels (mainly alluvial, sheetwash and deflation deposits) and reddish-

hued aeolian and locally-derived sands (*cf* Kaplan 2020). The red sands may in part be assigned to the upper part of the **Kalahari Group** (**Gordonia Formation**) of late Caenozoic (Neogene / Quaternary) age and the remaining alluvial sediments are probably of a similar, geological youthful age. Although fossil remains are occasionally encountered in these younger fluvial and terrestrial units – for example reworked mammalian bones and teeth, freshwater molluscs, calcretised root casts, termitaria, ostrich egg shells, land snail shells (Almond 2008, Almond & Pether 2008 and refs. therein) - they are sparsely distributed and occur over a very wide area, so the chances of serious impacts on unique fossil heritage resources here are only slight.

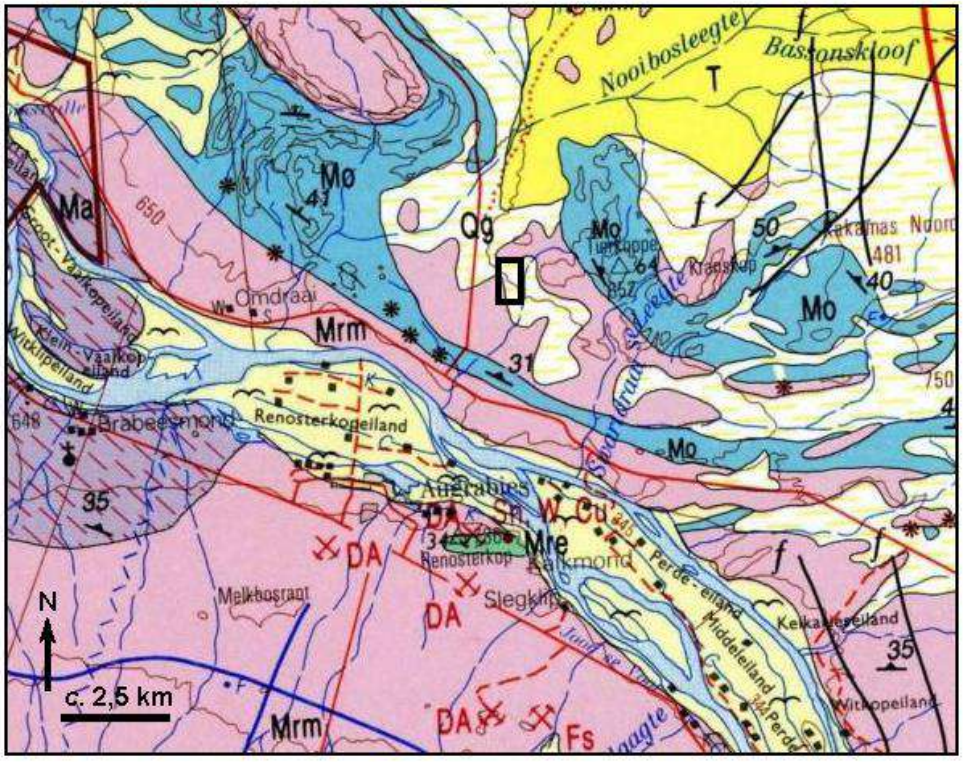

Figure 2. Extract from 1: 250 000 sheet 2820 Upington (Council for Geoscience, Pretoria) showing the geology of the agricultural project study area (black polygon) on the Farm Oorkant, Kakamas North Settlement 341, situated on the northern side of the Orange River (Gariep) *c*. 4 km NE of Augrabies, Northern Cape. Bedrocks beneath the study area comprise Riemvasmaak Gneiss (Mrm, pink) that forms part of the Precambrian (Proterozoic) Namaqua-Natal Metamorphic Province. Parts of the project area are mantled by orange-hued aeolian sands of the Gordonia Formation (Kalahari Group) of Quaternary to Recent age (Qg, pale yellow with short, darker yellow lines). Older alluvial gravels ("High Level Gravels") are not mapped in this area. Prospecting for alluvial diamonds (red DA symbols) occurs south of the Orange at Augrabies but is not mapped to the north of the river in this region.

3. Conclusions & recommendations

In view of the negligible palaeontological sensitivity of the ancient Precambrian bedrocks as well as the low sensitivity of the geologically recent superficial sediments along the Orange River in the Augrabies – Kakamas North region, the proposed agricultural development – including new vineyards and raisin drying racks - is not considered to pose a significant threat to palaeontological

heritage. Substantial, potentially-fossiliferous older alluvial deposits of the Orange River are not mapped here.

Pending any significant new fossil discoveries in the area, no further specialist studies or mitigation are considered necessary for this agricultural project.

All South African fossil heritage is protected by the National Heritage Resources Act, 1999. Should substantial fossil remains - such as vertebrate bones and teeth, or petrified logs of fossil wood - be encountered at surface or exposed during construction, the ECO should safeguard these, preferably *in situ*. They should then alert the relevant provincial heritage management authority as soon as possible - *i.e.* SAHRA (Contact details: Dr Ragna Redelstorff, SAHRA, P.O. Box 4637, Cape Town 8000. Tel: 021 202 8651. Email: rredelstorff@sahra.org.za). This is to ensure that appropriate action (*i.e.* recording, sampling or collection of fossils, recording of relevant geological data) can be taken by a professional palaeontologist at the developer's expense. A tabulated Chance Fossil Finds Procedure is appended to this report.

These mitigation recommendations should be incorporated into the Environmental Management Programme (EMPr) for this agricultural project. Please note that:

- All South African fossil heritage is protected by law (South African Heritage Resources Act, 1999) and fossils cannot be collected, damaged or disturbed without a permit from SAHRA or the relevant Provincial Heritage Resources Agency;

- The palaeontologist concerned with potential mitigation work will need a valid fossil collection permit from SAHRA and any material collected would have to be curated in an approved depository (*e.g.* museum or university collection);

- All palaeontological specialist work should conform to international best practice for palaeontological fieldwork and the study (*e.g.* data recording fossil collection and curation, final report) should adhere as far as possible to the minimum standards for Phase 2 palaeontological studies developed by SAHRA (2013).

4. Key references

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5. Qualifications & experience of the author

Dr John Almond has an Honours Degree in Natural Sciences (Zoology) as well as a PhD in Palaeontology from the University of Cambridge, UK. He has been awarded post-doctoral research fellowships at Cambridge University and in Germany, and has carried out palaeontological research in Europe, North America, the Middle East as well as North and South Africa. For eight years he was a scientific officer (palaeontologist) for the Geological Survey / Council for Geoscience in the RSA. His current palaeontological research focuses on fossil record of the Precambrian - Cambrian boundary and the Cape Supergroup of South Africa. He has recently written palaeontological reviews for several 1: 250 000 geological maps published by the Council for Geoscience and has contributed educational material on fossils and evolution for new school textbooks in the RSA.

Since 2002 Dr Almond has also carried out palaeontological impact assessments for developments and conservation areas in the Western, Eastern and Northern Cape, Limpopo, Mpumalanga, Northwest, Free State and KwaZulu-Natal under the aegis of his Cape Town-based company *Natura Viva* cc. He was a long-standing member of the Archaeology, Palaeontology and Meteorites Committee for Heritage Western Cape (HWC) and an advisor on palaeontological conservation and management issues for the Palaeontological Society of South Africa (PSSA), HWC and SAHRA. He is currently compiling technical reports on the provincial palaeontological heritage of Western, Northern and Eastern Cape for SAHRA and HWC. Dr Almond is an accredited member of PSSA and APHP (Association of Professional Heritage Assessment Practitioners – Western Cape).

Declaration of Independence

I, John E. Almond, declare that I am an independent consultant and have no business, financial, personal or other interest in the proposed project, application or appeal in respect of which I was appointed other than fair remuneration for work performed in connection with the activity, application or appeal. There are no circumstances that compromise the objectivity of my performing such work.

John E. Almond

Dr John E. Almond
Palaeontologist (*Natura Viva* cc)

CHANCE FOSSIL FINDS PROCEDURE: Agricultural developments on Farm Oorkant, Kakamas North Settlement No 341, near Augrabies		
Province & region:	**NORTHERN CAPE, Kai! Garib Municipality**	
Responsible Heritage Resources Authority	SAHRA (Contact details: P.O. Box 4637, Cape Town 8000. Tel. 021 462 4502)	
Rock unit(s)	Late Caenozoic alluvium, aeolian sands	
Potential fossils	Mammalian bones and teeth, freshwater molluscs, calcretised root casts, termitaria, ostrich egg shells, land snail shells	
ECO protocol	1 Once alerted to fossil occurrence(s) alert site foreman, stop work in area immediately (*N.B* safety first!), safeguard site with security tape / fence / sand bags if necessary	
	2. Record key data while fossil remains are still *in situ*: Accurate geographic location – describe and mark on site map / 1. 50 000 map / satellite image / aerial photo Context – describe position of fossils within stratigraphy (rock layering). depth below surface Photograph fossil(s) *in situ* with scale, from different angles including images showing context (e.g. rock layering)	
	3. If feasible to leave fossils *in situ*: Alert Heritage Resources Authority and project palaeontologist (if any) who will advise on any necessary mitigation Ensure fossil site remains safeguarded until clearance is given by the Heritage Resources Authority for work to resume	3. If *not* feasible to leave fossils *in situ* (emergency procedure only). *Carefully* remove fossils, as far as possible still enclosed within the original sedimentary matrix (*e.g.* entire block of fossiliferous rock) Photograph fossils against a plain, level background, with scale Carefully wrap fossils in several layers of newspaper / tissue paper / plastic bags Safeguard fossils together with locality and collection data (including collector and date) in a box in a safe place for examination by a palaeontologist Alert Heritage Resources Authority and project palaeontologist (if any) who will advise on any necessary mitigation
	4 If required by Heritage Resources Authority, ensure that a suitably-qualified specialist palaeontologist is appointed as soon as possible by the developer.	
	5. Implement any further mitigation measures proposed by the palaeontologist and Heritage Resources Authority	
Specialist palaeontologist	Record, describe and judiciously sample fossil remains together with relevant contextual data (stratigraphy / sedimentology / taphonomy). Ensure that fossils are curated in an approved repository (e.g. museum / university / Council for Geoscience collection) together with full collection data. Submit Palaeontological Mitigation report to Heritage Resources Authority. Adhere to best international practice for palaeontological fieldwork and Heritage Resources Authority minimum standards	

11.10 Appendix D: Other Reports

11.10.1 Appendix D1: WULA

11.10.2 Appendix D2: EMPr

DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME

OORKANT – EXPANSION OF AN AGRICULTURAL AREA AND DEVELOPMENT OF A RAISIN DRYING AREA ON KAKAMAS NORTH SETTLEMENT NO. 341, AUGRABIES.

DENC Ref: NC/EIA/05/ZFM/KAI! /KAK3/2022

August 2022

DOCUMENT NAME:

Oorkant – Expansion of an agricultural area and a new raisin drying area on Kakamas North Settlement No. 341, Augrabies, Northern Cape Province.

PROJECT NUMBER:	**DATE:**	**REPORT STATUS:**
N/A	August 2022	DRAFT EMPr

CARRIED OUT BY:

GroenbergEnviro (Pty) Ltd

COMMISSIONED BY:

Valam Boerdery (Pty) Ltd

CLIENT CONTACT DETAILS:

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P. O. Box 21

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Tel: 054 431 0568

AUTHOR(S):

Elanie Kühn

SYNOPSIS:

See Below

PREPARED BY:

GroenbergEnviro (Pty) Ltd

QUALITY CONTROL

Revision	Date	Author	Technical Review	Report Review
00	Feb 2021	E. Kühn	E. Kühn	
01	Aug 2022	E. Kühn	E. Kühn	
02				

1. CONTACT INFORMATION

Please contact the undermentioned should you require further information.

GroenbergEnviro (Pty) Ltd	
Address:	Wellington Klein Opperhorst Wellington 7654 PO Box 1058 Wellington, 7654 Fax: +27 86 476 7139
Website	www.groenbergenviro.co.za
Contact Person 	Elanie Kühn The consultant has 14 years' experience in project management and report writing. She has worked for two other environmental assessment companies prior to the present. She completed her BSc degree and gained an Honours Degree in Environmental Management from the Northwest University in Potchefstroom. She has been working with Pieter Badenhorst for the last nine years. Focusing primarily on Environmental Impact Assessments and Water Use License Applications.
Contact number	+27 82 746 5627
Cell number	+27 82 746 5627
Fax Number	+27 86 476 7139
Email	elanie@groenbergenviro.co.za

Disclaimer

The opinions expressed in this report have been based on the information supplied to GBE by the Applicant. GBE has exercised all due care in reviewing the supplied information, with conclusions from the review being reliant on the accuracy and completeness of the supplied data.

GBE does not accept responsibility for any errors or omissions in the supplied information and does not accept any consequential liability arising from commercial decisions or actions resulting from them.

Professional environmental opinions presented in this report apply to the site conditions and features as they existed at the time of GBE's investigations, and those reasonably foreseeable. These opinions do not necessarily apply to conditions and features that may arise after the date of this report, about which GBE had no prior knowledge nor had the opportunity to evaluate.

POPIA

Regulation 42 of the Environmental Impact Assessment Regulations, 2014, as amended (EIA Regulations) provides for the opening and maintenance of a register of interested and affected parties (I&APs), by the proponent or applicant, which must contain personal information (names, contact details and addresses). It is therefore the duty of the proponent or applicant to collect the information that must be contained in the register.

Regulation 42 further requires that these registers must be submitted to the Competent Authority (CA). There is no legal requirement in the EIA Regulations that such registers must be included in the reports that are published for public consultation purposes or be made publicly available as part of the EIA process. Since the information in the registers is personal/private information, it should not be included in or attached to reports and be made available in the public domain. CAs, applicants and environmental assessment practitioners (EAPs) should take note that, if this information was previously included in reports and shared in the public domain, this now requires reconsideration in accordance with the POPIA. The Department realises that EAPs may have included some personal information in these reports when they receive and compile them. Likewise, this information may reach CAs who also now need to be sensitive about the management of this information.

Section 11(1)(a) of POPIA provides further that personal information may only be processed if the data subject consents to the processing.

The requirements of section 18.1 of POPIA requires that if personal information is collected, the responsible party must take reasonably practicable steps to ensure that the data subject is aware of, amongst other things, the information being collected, the name and address of the responsible party (in this case the EAP and applicant), the purpose for which the information is collected, whether or not the supply of the information by the data subject is voluntary or mandatory, the consequence of the failure to provide the required information, further information such as the recipient of the information, as well as the existence of the right to object to the processing of the personal information.

EAPs should obtain express consent from commenting parties to include their names with their comments in the reports. It is therefore recommended that the EAP, when requesting comment, should also request the persons who may comment to provide consent that their names may be included with their comments in the reports. Commenting parties should also be informed that they

may opt to not have their names shared, as well as an indication of the consequences of such an option being exercised, in which case only the comments will be included. This will ensure that the requirements of section 11(1)(a) of POPIA, which provides that personal information may only be processed if the data subject consents to the processing, is given effect to. Even when consent is obtained it is recommended that only the minimum details (the names) should be included in reports and the inclusion of unnecessary and excessive information should be avoided.

List of Figures

2. List of Abbreviations

AQA	Air Quality Act
BSc	Bachelor of Science (Latin Baccalaureus Scientiae)
CBA	Critical Biodiversity Area
dBA	A-weighted decibels
DEA&DP	Department of Environmental Affairs and Development Planning
DWS	Department of Water and Sanitation
EA	Environmental authorisation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
ECO	Environmental Control Officer as per the environmental authorisation
EMPr	Environmental Management Programme
EMS	Environmental Method Statement
EO	Environmental officer as appointed by the client or contractor
FEPA	Freshwater Ecosystem Priority Area
GN	Government Notice
HIA	Heritage Impact Assessment
HWC	Heritage Western Cape
I&AP	Interested and affected party
IAIASa	International Association for Impact Assessment South Africa
IEM	Integrated Environmental Management
NEMA	National Environmental Management Act
NEM:AQA	National Environmental Management: Air Quality Act
NEM:BA	National Environmental Management: Biodiversity Act

NEMWA	National Environmental Management: Waste Act
NHRA	National Heritage Resources Act
NWA	National Water Act
RE/Engineer	Resident Engineer Overseeing the Construction Activity
RP	Responsible person
SABS	South African Bureau of Standards
SANBI	South African National Biodiversity Institute
SDP	Site Development Plan

3. Definitions

For the purposes of this specification the following definitions shall apply:

Alien species - Plants and animals that do not arrive naturally in an area – they are brought in by humans. Alien plants often force indigenous species out of the area. *Rooikrans* is a good example of alien species in the Cape.

Alternative – A possible course of action in place of another that would meet the same purpose and need defined by the development proposal. Alternatives considered in the Environmental Impact Assessment (EIA) process can include location and/or routing alternatives, layout alternatives, process and/or design alternatives, scheduling alternatives or input alternatives.

Aspect – Element of an organisation's activities, products or services that can interact with the environment.

Auditing – A systematic, documented, periodic and objective evaluation of how well the environmental management programme is performing to help safeguard the environment by facilitating the management control that would include meeting regulatory requirements. Results of the audit help the organisation to improve its environmental policies and management systems.

Biodiversity – The rich variety of plants and animals that live in their own environment. Fynbos is a good example of rich biodiversity in the Cape.

Built environment – Physical surroundings created by human activity, e.g. buildings, houses, roads, bridges and harbours.

Conservation – Protecting, using and saving resources wisely, especially the biodiversity found in an area.

Construction site, working area or site – Any area within the boundaries of the property(ies) where construction is taking place.

Contamination – Polluting or making something impure.

Corrective (or remedial) action – Response required to address an environmental problem that is in conflict with the requirements of the Environmental Management Programme Report (EMPr). The need for corrective action will be determined through monitoring, audits or management review.

Degradation – The lowering of the quality of the environment through human activities, e.g. river degradation, soil degradation.

Ecology – The scientific study of the relationship between living things (animals, plants and humans) and their environment.

Ecosystem – The relationship and interaction between plants, animals and the non-living environment.

Environment – Our surroundings, including living and non-living elements, e.g. land, soil, plants, animals, air, water and humans. The environment also refers to our social and economic surroundings and our effect on our surroundings.

Environmental Impact Assessment (EIA) – An Environmental Impact Assessment (EIA) refers to the process of identifying, predicting and assessing the potential positive and negative social, economic and biophysical impacts of a proposed development. The EIA includes an evaluation of alternatives, recommendations for appropriate management actions to minimised or avoid negative impacts and to enhance positive impacts, as well as proposed monitoring measures.

Environmental Management System (EMS) – Environmental Management Systems (EMS) provide guidance on how to manage the environmental impacts of activities, products and services. They detail the organisational structure, responsibilities, practices, procedures, processes and resources for environmental management. The International Standards Organisation. (ISO) ISO14001 EMS standard has been developed by the International Standards Organisation.

Environmental policy – Statement of intent and principles in relation to overall environmental performance, providing a framework for the setting of objectives and targets.

Fynbos – Low-growing and evergreen vegetation found only in the south Western Cape. Fynbos is known for its rich biodiversity.

Habitat – The physical environment that is home to plants and animals in an area. It is where they live, feed and reproduce.

Hazardous waste – Waste, even in small amounts, that can cause damage to plants, animals, their habitat and the well-being of human beings, e.g. waste from factories, detergents, pesticides, hydrocarbons, etc.

Impact – A description of the potential effect or consequence of an aspect of the development on a specified component of the biophysical, social or economic environment, within a defined time and space.

Indigenous species – Plants and animals that are found naturally in an area.

Infrastructure – The network of facilities and services that are needed for economic activities, e.g. roads, electricity, water, sewerage.

Integrated – Mixing or combining all useful information and factors into a joint or unified whole.

Integrated Environmental Management (IEM) – Managing the environment by including environmental factors in all stages of development. This includes thinking about physical, social, cultural and economic factors and consulting with all the people affected by the proposed developments.

Land use – The use of land for human activities, e.g. residential, commercial, industrial use.

Mitigation – Measures designed to avoid, reduce or remedy adverse impacts

Natural environment – Our physical surroundings, including plants and animals, when they are unspoiled by human activities.

No-Go area – Any area where no access is allowed.

Over utilisation – Over-using resources. This affects their future use and the environment.

Policy – A set of aims, guidelines and procedures to help make decisions and manage an organisation or structure. Policies are based on people's values and goals. See also Integrated Environment Management.

Process – A number of planned steps or stages.

Proponent and/or Developer – Entity who applies for environmental approval and is ultimately accountable for compliance to conditions stipulated in the Environmental Authorisation (EA) and requirements of the EMPr.

Recycling – Collecting, cleaning and re-using materials.

Refuse – refers to all solid waste, including construction debris (cement bags, wrapping materials), waste and surplus food, food packaging, organic waste etc.

Resources – Parts of our natural environment that we use and protect, e.g. land, forests, water, wildlife, and minerals.

Scoping Report – A report presenting the findings of the scoping phase of the EIA. This report is primarily aimed at reaching closure on the issues and alternatives to be addressed in the EIA. See also Integrated Environmental Management.

Stakeholders - A subgroup of the public whose interests may be positively or negatively affected by a proposal or activity and/or who are concerned with a proposal or activity and its consequences. The term includes the proponent, relevant authorities and all interested and affected parties.

Stormwater management – Strategies implemented to control the surface flow of stormwater, such that erosion, sedimentation and pollution of surface and ground water resources in the immediate and surrounding environments, are mitigated. This is specifically important during the construction and decommissioning phases of a project.

Sustainability – Being able to meet the needs of present and future resources.

Sustainable development – Development that is planned to meet the needs of present and future generations, e.g., the need for basic environmental, social and economic services. Sustainable development includes using and maintaining resources responsibly.

Waste Management – Classification, recycling, treatment and disposal of waste generated during the activities on site.

Wetlands – An area of land with water mostly at or near the surface, resulting in a waterlogged habitat containing characteristic vegetation species and soil types, e.g., vleis and swamps.

Zoning – The control of land use by only allowing specific type development in fixed areas or zones.

Requirements as stated in GN 982 Environmental Impact Assessment Regulations, 2014, Appendix 4 and corresponding section:

Requirement	Section
1. (1) An EMPr must comply with section 24N of the Act and include -	
(a) details of (i) the EAP who prepared the EMPr; and (ii) the expertise of that EAP to prepare an EMPr, including a curriculum vitae;	EAP Details, page v of the document
(b) a detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;	Introduction, page **Error! Bookmark not defined.**
(c) a map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers;	**Appendix F** page 61
d) a description of the impact management objectives, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including- (i) planning and design; (ii) pre-construction activities; (iii) construction activities; (iv) rehabilitation of the environment after construction and where applicable post-closure; and (v) where relevant, operation activities;	Aim and Objectives of the EMPr, page 14 Non-Operational Management Programme – Pre-Construction and Construction, page 25 Proposed Impact Management Actions for Operational Phase, page 45
e) a description and identification of impact management outcomes required for the aspects contemplated in paragraph (d);	Proposed Impact Management Actions for Non-Operational Phase, page 26 Proposed Impact Management Actions for Operational Phase, page 45.

(f) a description of proposed impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraphs (d) and (e) will be achieved, and must, where applicable, include actions to – (i)avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation; (ii) comply with any prescribed environmental management standards or practices; (iii) comply with any applicable provisions of the Act regarding the closure, where applicable; and (iv) comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable;	Proposed Impact Management Actions for Non-Operational Phase, page 26 Proposed Impact Management Actions for Operational Phase, page 45
(g) the method of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Proposed Impact Management Actions for Non-Operational Phase, page 26 Proposed Impact Management Actions for Operational Phase, page 45
(h) the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Proposed Impact Management Actions for Non-Operational Phase, page 26 Proposed Impact Management Actions for Operational Phase, page 45
(i) an indication of the persons who will be responsible for the implementation of the impact management actions;	**Error! Reference source not found.**, page 14 Compliance with Applicable Laws, page 15. Roles and Responsibilities on page 15.
(j) the time periods within which the impact management actions contemplated in paragraph (f) must be implemented;	Proposed Impact Management Actions for Non-Operational Phase, page 26 Proposed Impact Management Actions for Operational Phase, page 45 Monitoring & Auditing, page 20
(k) the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);	Proposed Impact Management Actions for Non-Operational Phase, page 26 Proposed Impact Management Actions for Operational Phase, page 45

	Monitoring & Auditing, page 20
(l)a programme for reporting on compliance, taking into account the requirements as prescribed by the Regulations;	Monitoring & Auditing, page 20
m) an environmental awareness plan describing the manner in which - (i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and (ii) risks must be dealt with in order to avoid pollution or the degradation of the environment; and	Environmental Awareness Training, page 30
(n) any specific information that may be required by the competent authority	Environmental Authorisation, page 47.

Details of EAP

Company of Environmental Assessment Practitioner (EAP):	GroenbergEnviro (Pty) Ltd	
EAP name:	Elanie Kühn	
Postal address:	P. O. Box 1058	
	Wellington	Postal code: 7654
Telephone:		Cell: 082 746 5627
E-mail:	elanie@groenbergenviro.co.za	Fax: 086 476 7139
EAP Qualifications:	Elanie Kühn - I have 14 years' experience in project management and report writing. I have a BSc degree and gained my Honours Degree in Environmental Management from the Northwest University in Potchefstroom. My focus in GroenbergEnviro is primarily on Environmental Impact Assessments and Water Use License Applications.	
EAP registrations/Associations:	Elanie Kühn – IAIAsa, EAPASA Pending	

4. Introduction

Locality:

The proposed development is situated approximately 30 kilometres outside of the small town of Augrabies in the Northern Cape, in the Kai! Garib Municipal area. Access to the site is via a gravel road linking with the N14.

The property's location is shown in Figure 1.

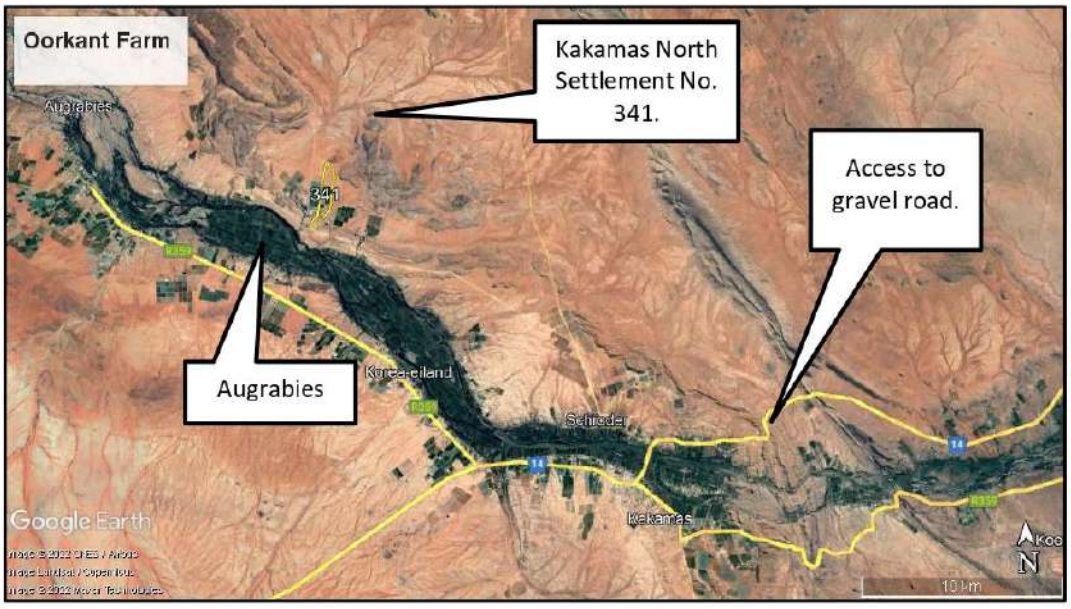


Figure 1: Omdraai locality and property boundaries

Project Description:

During the period from 1976 to 2016 various developments have taken place on the property, of which most consisted of agricultural development. All the previous developments on the farm then triggered a S24G Application that was undertaken in 2017. An Environmental Authorisation (S24G03/03/2017) for this was then issued in October 2018.

In 2019 the applicant then cleared a 2ha area of land on the property, for raisin drying purposes. This activity also triggered a S24G process, at the time the applicant was not aware that this activity had done so. This application has been started and is lodged with Department of Agriculture, Environmental Affairs, Rural Development & Land Reform (DAER&LR); an Environmental Authorisation was issued on 30 November 2021 with the following Ref: (S24G03/04/2021), see Appendix B3, on page **Error! Bookmark not defined.**. This does not form part of the application being applied for.

The application is for the proposed development of 30ha for agricultural use and the re-location of an existing raisin drying area. The development consists of the following (see **Figure 2 and Figure 3**):

1. The proposal is to further develop the property by establishing an additional 30ha (turquoise area) (**Figure 3**) of vineyards to fully utilise the site. Note a small unnamed tributary will also be impacted by the development.
2. The relocation of an existing raisin drying area, approximately 2ha in size.

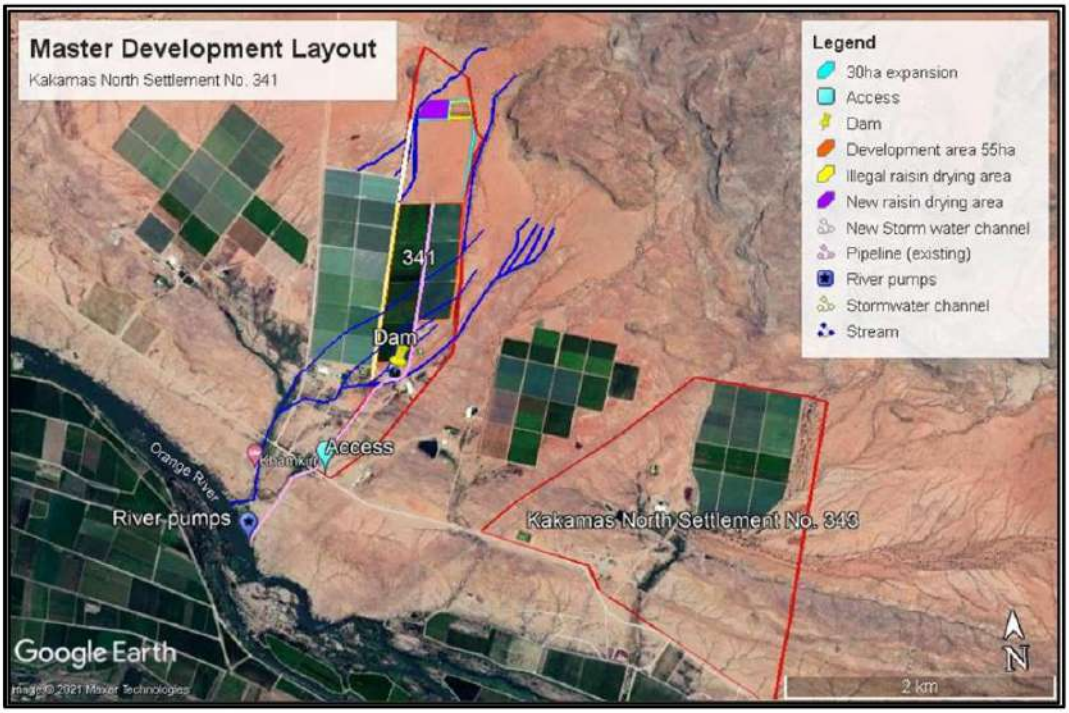


Figure 2: Development Layout

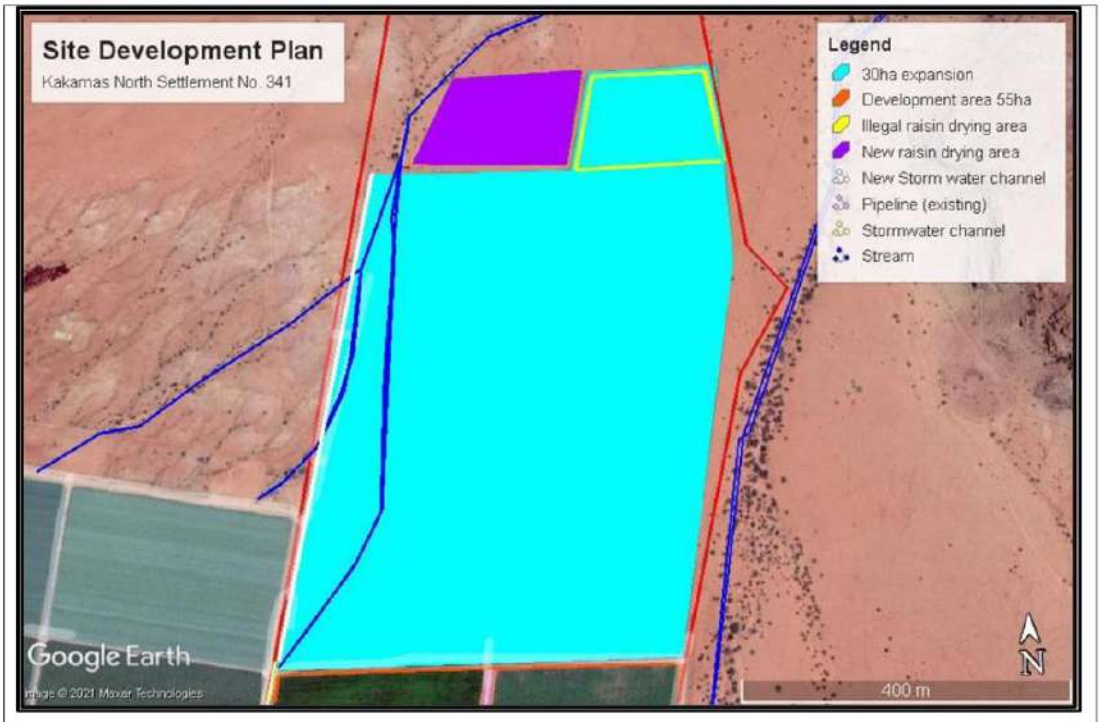


Figure 3: Site Development Plan

Roads:

Access is gained via a gravel road that gains access via the N14. The internal farm tracks are not surfaced and are compacted earth with no formal stormwater management control structures in place. The low rainfall characteristic of the area negates the need to provide for formal stormwater control.

Pipelines:

Water is required for the drip irrigation of the established vineyards and is supplied via pipelines from the booster pump station at the dam and then pumped to vineyards. The existing pipelines established come from the pump station at the Orange River **(See Figure 2– light pink lines)** and is pumped towards the existing dam, and from there distributed to the irrigation areas.

Water:

Application for a Licence in terms of the National Water Act, 1998 (NWA) is made by the developer, Valam Boerdery (Pty) Ltd, for the following, also outlined in Table 1 below:

- Section 21(c) and (i) of the National Water Act to divert and cross the streams as part of the establishment of vineyards. The establishment of the vineyards on Kakamas South Settlement No. 341 will take place across small sections of the unnamed drainage system that

is located on site. The drainage system is classified as an ephemeral course, as it will only flow sporadically after rain. These watercourses are not considered to be seasonal rivers which will regularly contain water in a seasonal pattern.

- Section 21 (a) to transfer approximately 1 ha of water for Industrial and Schedule 1 use. From this volume, approximately 11 900 m^3 should be allocated for Schedule 1 use and approximately 3 100 m^3 will be allocated for Industrial use.
- Section 21 (a) for transfer of approximately 12.77ha (191 550 m^3/a) from Kakamas North Settlement No. 343 to Kakamas North Settlement No. 341.
- Section 21 (b) for the legalisation of an existing dam with a capacity of 18 024 m^3, with a water surface area of 6672 m^2.

The application is summarised for the following water usages:

Table 1: Water use activities.

(a) transfer of water	Applying for a licence for the "transfer" of water from the lawful "irrigation" allocation to "Industrial use" and Schedule 1. Applying to transfer of approximately 12.77ha (191 550 m^3/a) from Kakamas North Settlement No. 343 to Kakamas North Settlement No. 341.
(c) impeding or diverting flow of water in a watercourse	For the construction of agricultural areas across ephemeral streams/natural drainage areas.
(i) altering the bed, banks, course or characteristics of a watercourse	For the construction of agricultural areas across ephemeral streams/natural drainage areas.
(b) storing of water	For the construction and registration of storage dams on the property.

Oorkant had an existing lawful use of 39 ha for irrigation from the Orange River allocated to Kakamas North Settlement No. 341. The said property recently received a Water Use License for additional 22.59 ha of water rights from the Orange River.

In total Oorkant has existing rights for 61.59 ha (923 850 m^3/a) of water rights from the Orange River.

An application for an additional 30ha of vineyards is currently underway. Therefore, this application is also for section 21 (a) for transfer of approximately 12.77ha (191 550 m^3/a) from Kakamas North Settlement No. 343 to Kakamas North Settlement No. 341. The new water allocation for Kakamas North Settlement No. 343 will be 1 100 400 m^3/a.

The transfer will ensure that the property and new developments comply with the National Water Act (1998). The summary of the transfer that took place is shown in Table 2 below.

Table 2: Proposed transfer and new water allocations.

Property	Current Water Allocation	Transfer	Irrigate tempo	Water Allocation ha	Water Allocation m^3/a
Remainder of Farm Afstof No 421. (Donor)	77.6ha	22.59ha	15 000m^3/ha	55.01ha	825 150m^3/a
Kakamas North Settlement No. 341. (Receiving)	39ha	22.59 (- 1ha for Industrial and Schedule 1 use)	15 000m^3/ha	60.59ha	908 850m^3/a
Kakamas North Settlement No. 341. (Receiving)	0ha	1ha	15 000m^3/ha	1ha	15 000 m^3/a
Kakamas North Settlement No. 343. (Donor)	71	12.77ha	15 000m^3/ha	58.23ha	873 450m^3/a
Kakamas North Settlement No. 341. (Receiving)	60.59ha	12.77ha	15 000m^3/ha	73.36ha	1 100 400 m^3/a
TOTAL for Oorkant (341)				73.36ha	1 100 400 m^3/a

Oorkant Farm uses water from the irrigation allocation for drinking purposes and garden irrigation.

A license application (WULA) will be required for 21(a) to transfer water from "irrigation" to the sector "Schedule 1". Water used in pack stores are used for commercial purposes and must, therefore, be licenced as "industrial".

The total volume of water used annually amounts to approximately 1 ha of water. Therefore, the application is to transfer approximately 15 000 m^3/a of water for "Industrial" and "Schedule 1" use.

From this, approximately 11 900 m³ should be allocated for "Schedule 1" use and approximately 3 100 m³ will be allocated for "Industrial" use, see above in Table 2.

The drainage channel system is in a sub-catchment that is unnamed: D81A-03245. The unnamed sub-catchment is not really a river, but more fits the description of a mostly dry drainage lines. The sub-catchment is about 28 km long. The ephemeral drainages systems would ultimately have flowed into the Orange River. This is no longer the case, as all these streams are cut off from the Orange River by agricultural developments. The drainage lines for most of the year are dry and sandy and flow for short periods after relatively heavy rains, see **Figure 4 (dark blue lines).**

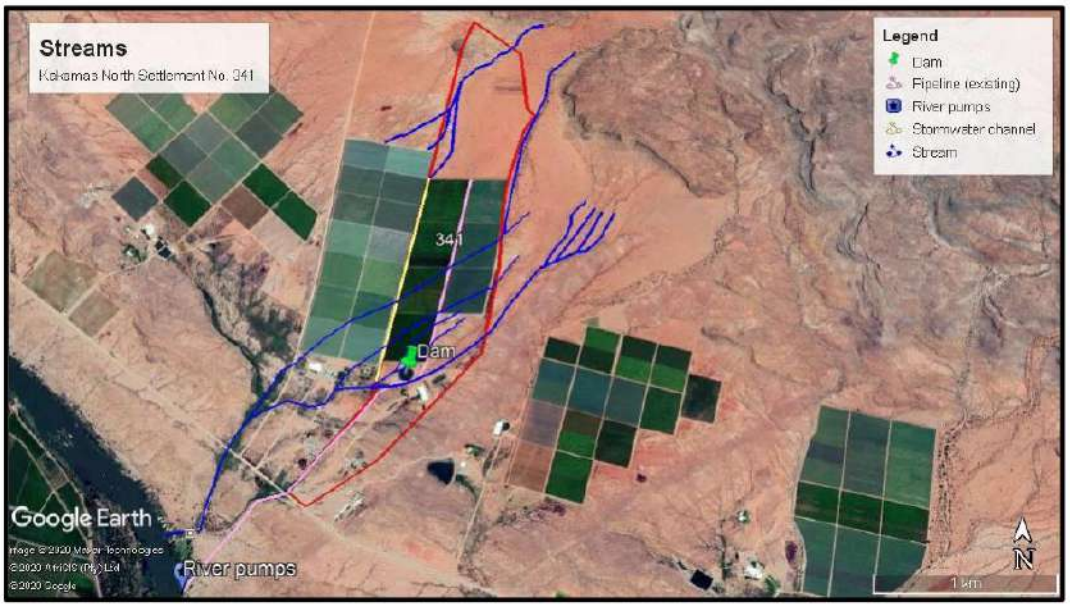


Figure 4: Streams in 1994 (blue lines)

This application is therefore recommended for the approval of Sections 21 (a), (c), (i) and (b) as outlined in the Water Use License Application.

Electricity:

There is existing electricity available for the development.

Overall, the EMPr will aim to:

1. Control the construction and operational activities in such a way that negative impacts on the physical environment, sensitive areas and surrounding residential areas are minimised or prevented.
2. Ensure that mitigation and rehabilitation measures are implemented where required.

Please note that this document does not replace any other regulations, laws and bylaws that the contractor must adhere to. It specifically does not replace the regulations of the Occupational Health and Safety Act of 1993 (Act No. 85 of 1993).

Funding for the implementation of the Construction EMPr is the financial responsibility of the developer.

The project environmental issues are shown in Chapter 2 with the aim and objectives shown in Chapter 3 and compliance with applicable laws included in Chapter 4. Chapter 5 details the roles and responsibilities, while Chapter 6 discusses the monitoring and auditing, with the different schedules for auditing and monitoring shown in Chapter 7. The pre-construction and construction EMPr are shown in Chapter 8 and impact management actions included in Chapter 9. The operational management actions are included in Chapter 10.

Appendix A is earmarked for the environmental authorisation which will be included upon receipt. The tracking table is included in **Appendix B**, and the schedule of fines shown in Appendix C. The method statement forms are shown in **Appendix D** and **Appendix E**. The superimposed project map is shown in **Appendix F.**

5. Environmental issues

No significant biophysical impacts are anticipated as the environment has been degraded due to agricultural activities in the surrounding area.

5.1 Vegetation

Vegetation types (The Botanical Assessment Included in the fEIR):

"The Oorkant study area falls in a tongue of Kalahari Karroid Shrubland sandwiched between Lower Gariep Broken Veld and Bushmanland Arid Grassland, ***see*** **Figure 5.** *Kalahari Karroid Shrubland within the Bushmanland Bioregion is not at risk of being negatively impacted and has a Least Threatened conservation status (Government Gazette, 2011).*

The development area supports extremely sparse Kalahari Karroid Shrubland. In fact, so sparse that one is inclined to call this vegetation Bushmanland Arid Grassland. However, since the area is mapped as Kalahari Karroid Shrubland (SANBI, 2018) and not enough vegetation is present to determine otherwise, this classification is upheld here. The development of vineyards and the raisin drying racks would have Very Low Negative impact despite the area falling within a CBA1. No mitigation would be possible or necessary.

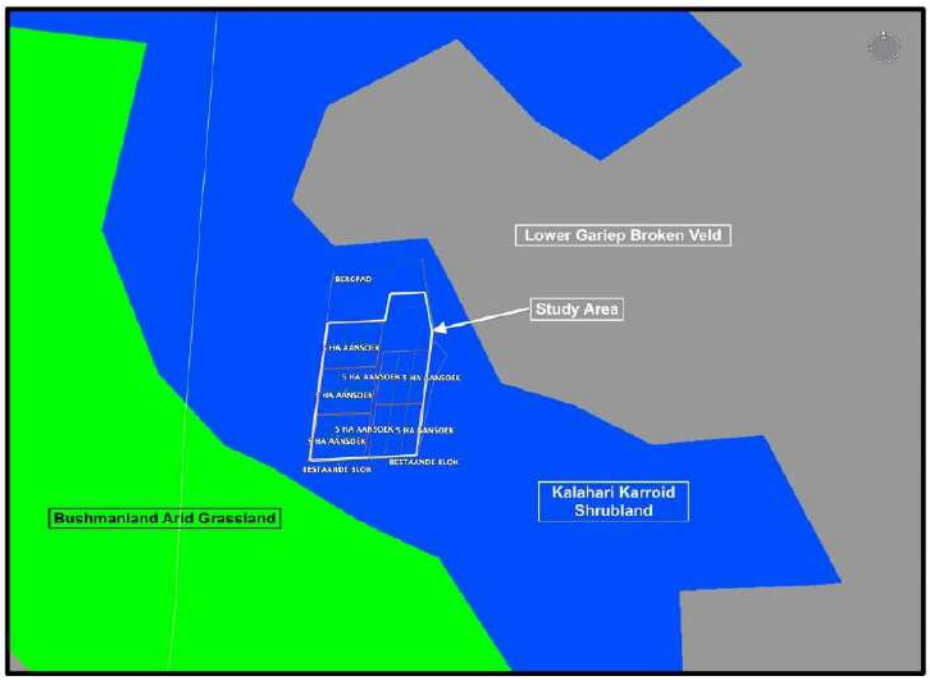


Figure 5: Portion of the national vegetation map (SANBI, 2012) indicating that the study area (white boundary) falls within Kalahari Karroid Shrubland. The closest other major vegetation types are Lower Gariep Broken Veld on the koppies and Bushmanland Arid Grassland towards the Orange River.

Critical Biodiversity Area:

"Critical Biodiversity Areas (CBAs) were delimited for the Namaqua District Municipality (NDM) by Desmet & Marsh (2008). The maps they compiled did not include the Augrabies area. However, more recently critical biodiversity areas and ecological support areas have been mapped for the whole of the Northern Cape Province including the Kai! Garib Municipality where the study area is located.

The available CBA shapefiles (Enrico Oosthuysen pers. comm.) for the Northern Cape Province were overlaid on Google Earth ™. This permitted examination of the conservation status classification of the area around Augrabies including Oorkant. The Oorkant study area is located entirely in an area classified as CBA1 (**Figure 6**)."

Figure 6: Critical Biodiversity Area.

Summary:

"The natural vegetation type found in the study area at Kakamas North Settlement No. 431 (Oorkant) near Augrabies as mapped by Mucina et al. 2005 and SANBI (2018) is Kalahari Karroid Shrubland. According to the National Biodiversity Assessment (Skowno et al. 2001) and the List of Threatened Terrestrial Ecosystems (Government Gazette, 2011), this vegetation type (ecosystem) is Least Threatened.

The impact of the proposed agricultural development on the sparse Kalahari Karroid Shrubland would be Very Low Negative. No mitigation would be possible or required.

No plant species of conservation concern or protected species were recorded within the development footprint; hence no permits would be necessary to remove such species.

No constraints were identified from a botanical perspective that would prevent the agricultural development from proceeding.

The proposed agricultural development is therefore acceptable and supported from a botanical viewpoint."

5.2 Aquatic habitat

AQUATIC FEATURES (AS PER FRESH WATER ECOLOGY REPORT)

"The property is located within Quaternary Catchment D81A which drains into the larger Orange River system. As mentioned, the proposed development will fall over 30ha of natural land, which will affect two unnamed drainage lines draining the hills to the north, transecting the property while flowing in a south-westerly, and then south direction before meeting the Orange River. The upstream sections of these ephemeral drainage lines are still in a natural unmodified state, while deteriorating to a critically modified state downstream of the proposed development, largely due to being channelled and diverted around the existing agricultural land.

"Conservation Value

*The 2016 Northern Cape Biodiversity Spatial Plan Map and the National Freshwater Ecosystem Priority Areas Map provides information regarding the conservation value and ecological importance of the freshwater features studied. 2016 Northern Cape Biodiversity Spatial Plan (WCBSP) From the 2016 Northern Cape Biodiversity Spatial Plan (*Figure **7**) *it is clear that most of the farm including the area affected by the activity is classified as Critical Biodiversity Area 1 (moderate priority), where areas in a natural condition are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure. These areas should be maintained in a natural or near-natural state, with no further loss of natural habitat. Degraded areas should be rehabilitated and only low-impact, biodiversity-sensitive land uses are appropriate.*

Figure 7: Critical Biodiversity Area – SANBI.

NFEPA map

FEPAs are strategic spatial priorities for conserving freshwater ecosystems and supporting sustainable use of water resources. From the NFEPA map **(Figure 8***), the larger catchment in which the drainage lines fall, does not lie within a FEPA and are also not marked as FEPA wetlands. The section of the Orange River, at the confluence with these drainage lines, is marked as Nama Karoo Bushmanland_Floodplain wetland (FEPA rank 5). River FEPAs achieve biodiversity targets for river ecosystems and threatened/near-threatened fish species and were identified in rivers that are currently in a good condition. Their FEPA status indicates that they should remain in a good condition in order to contribute to national biodiversity goals and support sustainable use of water resources."*

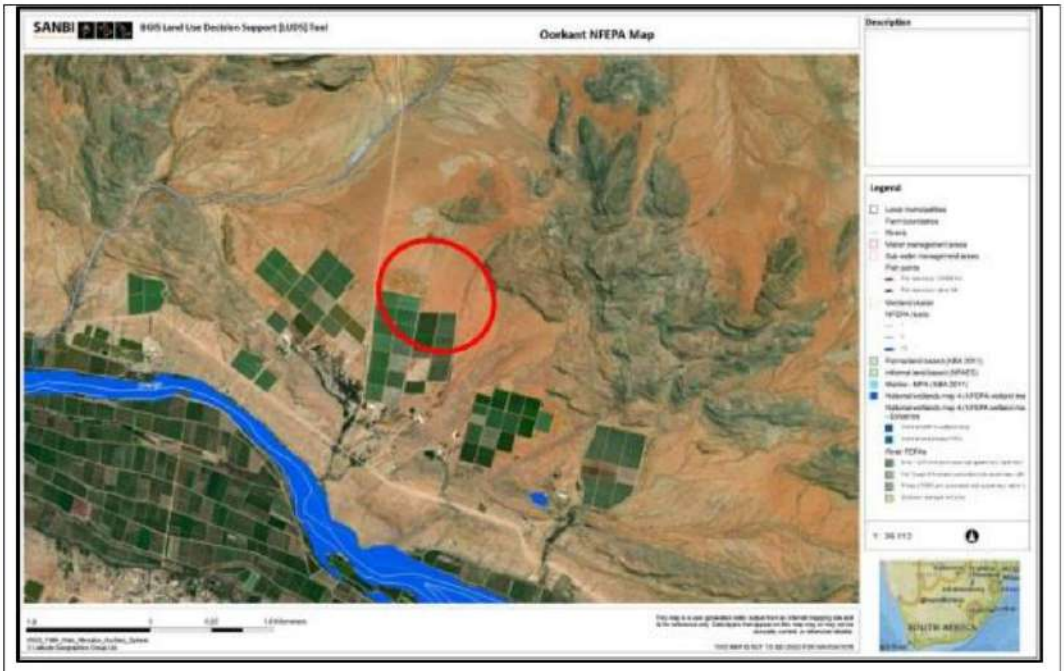


Figure 8: NFEPA Map.

Discussion and Conclusion

Both the affected drainage channels are of ephemeral nature, with limited aquatic vegetation, and no other wet areas surrounding them. Taking that into consideration as well as the fact that the downstream section of these drainage lines is already in a critically modified state, the small loss of aquatic habitat and ecology that will occur at the proposed development area would be deemed to be of low impact both on the small streams as well as the larger Orange river freshwater system. The following recommendations would be made in order to try and mitigate any further negative impacts that might arise:

- *The water quality impacts during the construction phase in particular should be addressed through a Construction Environmental Management Plan for the project and implemented by an on-site Environmental Officer;*
- *Contaminated runoff from the construction sites should be prevented from directly entering downstream water features;*
- *Construction should preferably take place during the drier winter months when runoff from the surrounding area is low to non-existent;*
- *A buffer zone of 15m should be applied to the eastern most drainage line for all proposed development activities;*
- *As the area on which the development is to take place is classified as a terrestrial CBA, it is proposed that botanical input is obtained in the EIA process.*

Taking the findings as well as proposed recommendations into account, the project is deemed to have a general low to very low negative impact on the larger freshwater context."

ARCHAEOLOGY AND PALAEONTOLOGY (AS PER THE ARCHAEOLOGY AND PALAEONTOLOGY ASSESSMENTS, INCLUDED IN FEIR)

The following summary from the Archaeological Assessment included in the fEIR:

"Conclusion:

The impact significance of the proposed new vineyard development on archaeological heritage is assessed as LOW and therefore, there are no objections to the authorization of the project.

Recommendations:

Regarding a proposed new vineyard development on the Farm Oorkant, Kakamas North Settlement No. 341 near Augrabies, the following recommendations are made:

1. No mitigation of archaeological resources is required prior to proposed new development activities commencing.

2. No archaeological monitoring is required.

3. Regarding the illegal raisin drying development established in 2018, (subject of the Section 24G Process), no further archaeological mitigation is required."

The following summary from the Palaeontological Assessment included in Appendix H6 of the fAR:

"In view of the negligible palaeontological sensitivity of the ancient Precambrian bedrocks as well as the low sensitivity of the geologically recent superficial sediments along the Orange River in the Augrabies – Kakamas North region, the proposed agricultural development – including new vineyards and raisin drying racks - is not considered to pose a significant threat to palaeontological heritage. Substantial, potentially fossiliferous older alluvial deposits of the Orange River are not mapped here.

Pending any significant new fossil discoveries in the area, no further specialist studies or mitigation are considered necessary for this agricultural project.

All South African fossil heritage is protected by the National Heritage Resources Act, 1999. Should substantial fossil remain - such as vertebrate bones and teeth, or petrified logs of fossil wood - be encountered at surface or exposed during construction, the ECO should safeguard these, preferably in situ. They should then alert the relevant provincial heritage management authority as soon as possible - i.e., SAHRA (Contact details: Dr Ragna Redelstorff, SAHRA, P.O. Box 4637, Cape Town 8000. Tel: 021 202 8651. Email: rredelstorff@sahra.org.za). This is to ensure that appropriate action (i.e., recording, sampling or collection of fossils, recording of relevant geological data) can be taken by a professional palaeontologist at the developer's expense. A tabulated Chance Fossil Finds Procedure is appended to this report.

These mitigation recommendations should be incorporated into the Environmental Management Programme (EMPr) for this agricultural project. Please note that:

- *All South African fossil heritage is protected by law (South African Heritage Resources Act, 1999) and fossils cannot be collected, damaged or disturbed without a permit from SAHRA or the relevant Provincial Heritage Resources Agency.*
- *The palaeontologist concerned with potential mitigation work will need a valid fossil collection permit from SAHRA and any material collected would have to be curated in an approved depository (e.g., museum or university collection).*
- *All palaeontological specialist work should conform to international best practice for palaeontological fieldwork and the study (e.g., data recording fossil collection and curation, final report) should adhere as far as possible to the minimum standards for Phase 2 palaeontological studies developed by SAHRA (2013)."*

The following recommendations as part of SAHRA final comments:

- *38(4)a – The SAHRA Archaeology, Palaeontology and Meteorites (APM) Unit has no objections to the proposed rectification application;*
- *38(4)b – The recommendations of the specialists are supported and must be adhered to. No further additional specific conditions are provided for the development;*
- *38(4)c(i) – If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found during the proposed development, SAHRA APM Unit (Natasha Higgitt/Phillip Hine 021 462 5402) must be alerted as per section 35(3) of the NHRA. Non-compliance with section of the NHRA is an offense in terms of section 51(1)e of the NHRA and item 5 of the Schedule;*
- *38(4)c(ii) – If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (Thingahangwi Tshivhase/Mimi Seetelo 012 320 8490), must be alerted immediately as per section 36(6) of the NHRA. Non-compliance with section of the NHRA is an offense in terms of section*
- *51(1)e of the NHRA and item 5 of the Schedule;*
- *38(4)d – See section 51(1) of the NHRA;*
- *38(4)e – The following conditions apply with regards to the appointment of specialists:*
    - *If heritage resources are uncovered during the course of the development, a professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the heritage resource. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA;*

6. Aim and Objectives of the EMPr

The aim of the EMPr is to:

- Identify those construction activities identified for the proposed project that may have a negative impact on the environment.
- Outline the mitigation measures that will need to be taken and the steps necessary for their implementation; and,

- Describe the reporting system to be undertaken during construction.

The objectives of the EMPr are to:

- Identify a range of mitigation measures which shall reduce and mitigate the potential adverse impacts to minimal or insignificant levels.
- Provide a pro-active and practical working mechanism to enable the measurement and monitoring of environmental performance on site; and,
- Ensure that the environmental specifications are identified, effective and contractually binding to enable compliance on site.

7. Compliance with Applicable Laws

The supreme law of the land is "The Constitution of the Republic of South Africa", which states: *"Every person shall have the right to an environment which is not detrimental to his or her health or well-being".*

Laws applicable to protection of the environment in terms of Environmental Management (and relating to construction activities) include but are not restricted to:

- National Environmental Management Act, No. 107 of 1998
- National Environmental Management: Air Quality Act (AQA), No. 39 of 2004
- National Environmental Management: Biodiversity Act, No. 10 of 2004
- National Environmental Management: Waste Act, No. 59 of 2008
- National Heritage Resources Act, No. 25 of 1999
- National Forests Act (NFA) (Act 84 of 1998)
- National Water Act, No 36 of 1998 and amendments
- National Veld and Forest Fire Act, No 101 of 1998
- Occupational Health and Safety Act, No 85 of 1993
- Soil Conservation Act, Act No 76 of 1969
- Sub-division of Agricultural Land Act Repeal Act 64 of 1998 (re: soil conservation) and all regulations framed there under and amendments there to.

Of particular importance is Section 28 (1) of the National Environmental Management Act (NEMA – Act 107 of 1998) which places an obligation on all individuals to take due care of the environment and to ensure remedial action is instituted to minimise and mitigate environmental impact.

The EMPr forms part of the Contract Documentation and is thus a legally binding document. In terms of this Act an individual responsible for environmental damage must pay costs both to environment and human health and the preventative measures to reduce or prevent additional pollution and/or environmental damage from occurring. This is referred to as the Polluter Pays Principle.

8. Roles and Responsibilities

The key role players during maintenance work are anticipated to be as follows:

- Applicant (Holder of the EA) – Valam Boerdery (Pty) Ltd
- Engineer / Responsible Person (RP), who will oversee the activities of the contractors on site.
- Environmental Control Officer (ECO).
- Contractors responsible for the maintenance and repair activities; and
- Any sub-contractors hired by the contractor.

The anticipated management structure (organogram) is presented in Figure 9 below and shows the proposed lines of communication for maintenance activities. The applicant retains overall responsibility for maintenance and the implementation of the EMPr.

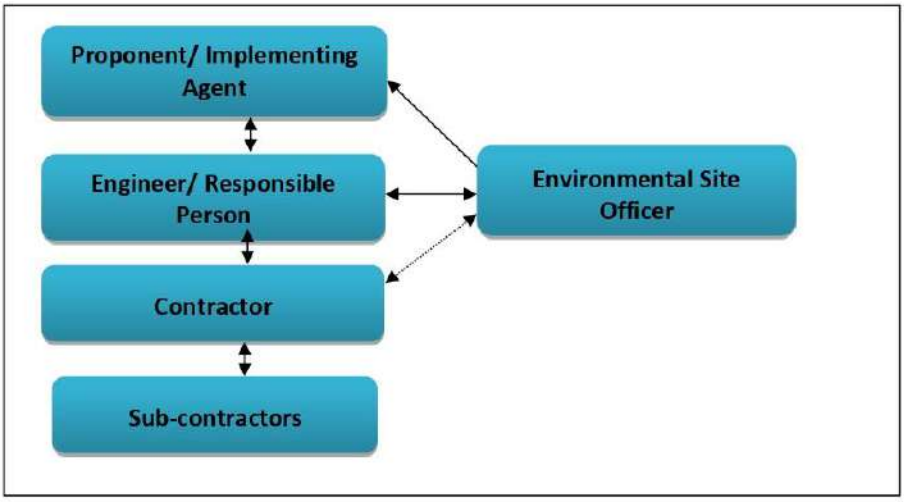


Figure 9: Reporting structure

Key roles and responsibilities with respect to the implementation of the EMPr is outlined below.

Applicant – Valam Boerdery (Pty) Ltd:

The applicant (through their Implementing Agent if applicable) has overall responsibility for management of maintenance activities. In terms of environmental management, the proponent will:

- Appoint suitably experienced Engineers, if required, who will be responsible for the overall management of activities on site.
- Identify any activities not covered by the scope of this EMPr, and determine the need for, and where required, obtain relevant authorisations.
- Ensure that the Engineers are aware of the requirements of the EMPr, implement the EMPr and monitor the Contractor's activities on site.
- Ensure that the Contractor is aware of and contractually bound to the provisions of this EMPr by including the relevant environmental management requirements in tender and contract documents, as appropriate.
- Appoint a suitably qualified and experienced ECO to oversee environmental management of the required works.
- Ensure that the Contractor remedies environmental problems timeously and to the satisfaction of the Engineer and authorities (when necessary); and
- Notify the authorities should problems not be remedied timeously.

Responsible Person:

The applicant will appoint suitably qualified Engineers (if necessary), who in turn will designate a responsible person (RP) to oversee activities of the Contractor. This role will be fulfilled either by the Resident Engineer or a suitably qualified representative of the applicant, if applicable. The RP shall:

- Ensure that the Contractor is duly informed of the EMPr and associated responsibilities and implications of this EMPr prior to commencement of construction and maintenance activities.
- Identify the need for, and request/provide Method Statements for future maintenance and repair works.
- Monitor the Contractor's activities regarding the requirements outlined in the EMPr.
- Report any environmental emergencies/concerns to the applicant immediately; and
- Ensure that non-compliance is remedied timeously and to the satisfaction of the relevant authorities.

Environmental Control Officer:

The ECO shall be a suitably qualified/experienced environmental professional or professional firm, appointed by the proponent, for the duration of repair or maintenance works. The ECO shall:

- Request Method Statements from the Contractor prior to the start of relevant activities, where required, and approve these (as appropriate) without causing undue delay.
- Monitor, review and verify compliance with the EMPr by the main Contractor, as well as any sub-contractors and specialist contractors.
- Undertake site inspections at least twice a month to determine compliance with the EMPr.
- Identify areas of non-compliance and recommend corrective actions (measures) to rectify them in consultation with the applicant, the RP and the Contractor, as required.
- Compile a checklist highlighting areas of non-compliance following each ECO inspection.
- Ensure follow-up and resolution of all non-compliances.
- Provide feedback for continual improvement in environmental performance.
- Respond to changes in project implementation or unanticipated activities which are not addressed in the EMP, and which could potentially have environmental impacts, and advise the applicant, the RP and Contractor as required; and
- Act as a point of contact for local residents and community members.

Contractor:

The Contractor will be required to appoint or designate a Contractor's Environmental Representative (CER) who will assume responsibility for the Contractor's environmental management requirements on site and be the point of contact between the Contractor, the ECO and the RP. The CER shall:

- Ensure that all activities on site are undertaken in accordance with the EMPr and /or an approved Method Statement which applicable.
- Monitor the Contractor's activities with regard to the requirements outlined in the EMPr.
- Ensure that all employees and Sub-contractors comply with the EMPr.
- Immediately notify the RP and ECO of any non-compliance with the EMPr, or any other issues of environmental concern; and
- Ensure that non-compliance is remedied timeously and to the satisfaction of the RP and ECO.

The Contractor has a duty to demonstrate respect and care for the environment. The Contractor will be responsible for the cost of rehabilitation of any environmental damage that may result from non-compliance with the EMPr, environmental regulations and relevant legislation.

Sub-contractors:

All Sub-contractors will be required to:

- Ensure that all employees are duly informed of the EMPr and associated responsibilities and implications of this EMPr prior to maintenance activities.
- Ensure that all activities on site are undertaken in accordance with the EMPr.
- Monitor employees' activities with regard to the requirements outlined in the EMPr.
- Immediately notify the RP and ECO of any non-compliance with the EMPr, or any other issues of environmental concern; and
- Ensure that non-compliance is remedied timeously and to the satisfaction of the RP and ECO.

The Sub-contractor has a duty to demonstrate respect and care for the environment. The Sub-contractor will be responsible for the cost of rehabilitation of any environmental damage that may result from non-compliance with the EMPr, environmental regulations and relevant legislation, resulting from their presence on site.

9. Monitoring & Auditing

9.1 ECO Monitoring

The holder of the E.A. must appoint a suitably experienced environmental control officer ("ECO"), for the duration of the construction and rehabilitation phases of implementation.

The ECO must-

- be appointed prior to commencement of any vegetation clearing or construction/maintenance activities commencing.
- ensure compliance with the EMPr and the conditions contained herein.
- keep record of all activities on site; problems identified; transgressions noted, and task schedule of tasks undertaken by the ECO.
- Remain employed until all rehabilitation measures, as required for implementation due to construction damage, are completed and the site is ready for operation.

An Environmental Control Officer (ECO) will implement and monitor environmental control of the development. The ECO duties will be as follows:

- **Ensure implementation and monitoring of the EMPr.**
- **Make changes to the EMPr as required.**

- **Please note this EMPr is just for the maintenance, or operational activities as the development has already taken place fully.**

A copy of the Environmental Authorisation, EMPr, any independent assessments of financial provision for rehabilitation and environmental liability, closure plans, audit reports and compliance monitoring reports must be kept at the site of the authorised activities.

Access to the site referred to in Section C must be granted, and the environmental reports mentioned above must be produced, to any authorised official representing the Competent Authority who requests to see it for the purposes of assessing and/or monitoring compliance with the conditions contained herein.

The ECO will maintain a file containing the following:

1) Copy of the EMPr.
2) Methodology statement(s) by the contractor(s) – ONLY FOR MAINTENANCE ACTIVITIES
3) Site establishment plan
4) Letter from contractor(s) indicating that he has familiarised himself with the contents of the EMPr.
5) Letter from contractor(s) on environmental awareness training
6) The applicant must ensure that complaints received by the farm are documented.
7) The contractor shall maintain a copy of the following documents on-site:
    - Operational Plan.
    - Emergency response and remedial action plan.
    - Environmental Management Programme (EMPr) and other documents related to the operation on file.
8) Tracking table (see Appendix B).
9) Method Statements (See Appendix E and F).

9.2 Auditing

The holder must, for the period during which the environmental authorisation and EMPr remain valid-

- ensure the compliance with the conditions of the environmental authorisation and the EMPr, is audited.
- An Audit report must be compiled within 6 months after completion of any maintenance construction activities/or as outlined in the Environmental Authorisation.
- During the operational phase, the holder must ensure that environmental audit(s) are performed and submitted as outlined in the Environmental Authorisation. During the operational phase the frequency of the auditing of compliance with the conditions of the

environmental authorisation and of compliance with the EMPr shall not exceed intervals of 5 years.

- the environmental audit report must be prepared and submitted to the Competent Authority, by an independent person with the relevant environmental auditing expertise.
- The Environmental Audit Report, must-
    a. provide verifiable findings, in a structured and systematic manner, on-
        i. the level of compliance with the conditions of the environmental authorisation and the EMPr and whether this is sufficient or not; and
        ii. The ability of the measures contained in the EMPr to sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the activity.
    b. identify and assess any new impacts and risks as a result of undertaking the activity.
    c. evaluate the effectiveness of the EMPr.
    d. identify shortcomings in the EMPr.
    e. identify the need for any changes to the avoidance, management and mitigation measures provided for in the EMPr.
    f. indicate the date on which the construction work was commenced with and completed or in the case where the development is incomplete, the progress of the development and rehabilitation.
    g. indicate the date on which the operational phase was commenced with and the progress of the rehabilitation.
    h. include a photographic record of the site applicable to the audit; and
    i. Be informed by the ECO reports (where applicable to the construction phase).

10. Environmental auditing and monitoring schedule.

Environmental auditing and monitoring schedule			
Non-operational phases			
	Frequency	**Record & duties to be fulfilled**	**Report**
ECO site visits	Once Monthly	• Ensure compliance with the EMPR and the conditions contained herein. • Keep record of all activities on site; problems identified; transgressions noted, and a task schedule of tasks undertaken by the ECO. • Remain employed until all rehabilitation measures, as required for implementation due to construction damage, are completed and the site is ready for operation.	Site visit report to holder of EA.
Auditing	Completion of project	Ensure the compliance with the conditions of the environmental authorisation and The EMPR	Submit the Environmental Audit Report(s) to the Competent Authority.
Final construction phase Environmental Audit Report	Within six (6) months of completion of construction.	Ensure the compliance with the conditions of the environmental authorisation and The EMPR	Submit these Environmental Audit Report(s) to the Competent Authority.
Operational phases			
Environmental audit(s)	The frequency of the auditing of compliance with the Conditions of the environmental	• The holder must ensure that environmental audit(s) are performed regularly. • The Report must comply with the conditions of the Environmental Authorisation.	• Submit these Environmental Audit Report(s) to the Competent Authority,

	authorisation and of compliance with the EMPR shall not exceed intervals of 5 years.		• The environmental audit report must be prepared and submitted to the Competent Authority, by an independent person with the relevant environmental auditing expertise.

11. Non-Operational Management Programme – Pre-Construction and Construction

Please note that the EMPr must be included in any tender documentation and all sub-contractors on the site must be made aware of this EMPr and they must at all times adhere to the procedures specified.

Only those sections applicable to the specific construction activity are relevant and to be implemented.

11.1 Specific Conditions as Stated in EA

To be included after issue of EA.

11.2 Contractual Obligations

- The contractor shall acknowledge receipt of copies of the EMPr and confirm in writing that he has familiarised himself with the contents thereof;
- The contractor shall comply with all environmental obligations imposed by the RE/ECO/EO.
- The contractor shall co-operate fully with the RE/ECO/EO and use his best endeavours to ensure that the objectives of the EMPr are fulfilled in the course of the contractor's execution of the works or the relevant part thereof.
- The contractor shall erect an information board containing background information for the construction activity and listing the relevant contact details for complaint.
- The contractor must ensure that all workers are given environmental awareness training on the requirements of the EMPr. This must form part of the contractor's contract agreement. The RE/ECO/EO must be informed in writing of implementation.
- The working hours will be from 7:00 am to 18:00 pm Monday to Saturday. No work will be allowed on Sundays or public holidays.
- Deliveries will only be allowed between 8:00 am and 17:00 pm.
- Preference must be given to local labour.
- Workers (except security guards) shall not be housed on-site.

11.3 Penalties

Penalties must be instituted for non-compliance. The penalty is over and above the cost of rectifying the problem and/or damage. Penalties vary on a sliding scale from R 500 to R 5 000 for non-serious to serious issues as determined by the RE/ECO/EO.

These penalties must be paid into a separate account to be administered by the developer. The RE/ECO/EO will decide how the penalties, if any, are to be spent. Refer to **Appendix C** for the Schedule of Fines.

12. Proposed Impact Management Actions for Non-Operational Phase

13. The environmental management and mitigation measures that must be implemented during all construction activities, as well as responsibilities and timelines for the implementation of these measures are presented in the table below. The monitoring there-of is discussed in Chapter 6.1 -

ECO Monitoring, page 20.

Highlighted Method Statement sections applicable for this application.

Activity	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
Method Statements	Method Statements must be compiled by the contractor(s) before any construction or activity shall commence. The statement must include a site establishment plan indicating all relevant areas. The ECO must approve the MS. Refer to **Appendix E**. The ECO must identify method statements that will be required as part of the project implementation. The list provided below is generic (to ensure any possible occurrence is covered), and only that which is applicable to the proposed development will be required, as per the recommendation of the ECO. **Access routes** • Upgrading and construction of access routes. • Rehabilitation of temporary access routes. • Location of proposed access routes. **Alien plant clearing** • Method of control to be used for the eradication or control of alien vegetation. **Blasting** • Details of all methods and logistics associated with blasting. **Bunding** • Method of bunding for the static plant. **Camp Establishment** • Layout and preparation of the construction camp. • Method of installing fences required for No Go areas, working areas and construction camp areas. • Preparation of the working area. **Cement /concrete batching** • Location, layout and preparation of cement/concrete batching facilities including the methods employed for the mixing of concrete including the management of run-off water	Holder of EA or representative	Before commencement of activities	Relevant Method Statements should be identified by the ECO and communicated with the contractor. To ensure that the contractor prepare the Method Statements in line with the EMPr and submit them to the ECO before construction commences.

Activity	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	from such areas. **Contaminated water** • The contaminated water management plan, including the containment of run-off and polluted water. **Demolition** • The proposed method(s) of demolition. **Drilling and jack hammering** • Method of drill coring with water or coolant lubricants. • Methods to prevent pollution during drilling operations. **Dust** • Dust control. Earthworks • Method for the control of erosion during bulk earthwork operations. • Method of undertaking earthworks, including hand excavation and spoil management. **Emergency** • Emergency construction method statements. **Environmental awareness course** • Logistics for the environmental awareness course for all the contractor's employees. • Logistics for the environmental awareness course for the contractor's management staff. **Erosion Control** • Method of erosion control, including erosion of spoil material. **Exposed aggregate finishes** • The method of control, treatment and disposal with respect to exposed aggregate finishes. **Fire, hazardous and poisonous substances** • Handling and storage of hazardous wastes. • Emergency spillage procedures and compounds to be used. • Emergency procedures for fire. • Use of herbicides, pesticides and other poisonous substances.			

Activity	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	• Methods for the disposal of hazardous building materials including asbestos, fibre claddings, refrigerants and coolants. **Fuels and fuel spills** • Methods of refuelling vehicles. • Details of methods for fuel spills and clean-up operations. • Refuelling of construction vehicles in high flow areas (or in the 1-in-50-year floodplain). • Method of refuelling dredger during dredging operations. • Piling, jacking and thrust boring • The method of piling operation (e.g. driven or bored) or in situ casting or pre-cast pile structures. **Rehabilitation** • Rehabilitation of disturbed areas and revegetation after construction is complete. • Rehabilitation of street or hardened surfaces after construction is complete. • Retaining walls and gabions. • Method for construction and installation of retaining walls/ gabion baskets. **Riverine corridors** • Method for all construction activities within the 1-in-50-year floodplain. **Rock breaking** • Details of chemical applications to be used for rock breaking. **Settlement ponds and sumps** • Layout and preparation of settlement ponds and sumps. **Solid waste management** • Solid waste control and removal of waste from the site. • Methods for the disposal of vegetation cuttings, building materials or rubble generated by construction. **Sources of materials** • Details of materials imported to the site (where applicable). • Sensitive environments • Proposed construction methods within any sensitive environments. These can include, but are not limited to, wetlands, dams and rivers. 2)			

Activity	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	Traffic • Traffic safety measure for entry exit onto/off public roads. • Traffic control when crossing roads or pedestrian routes with construction activities. **Vegetation clearing** • Method of vegetation clearing during site establishment. **Wash areas** • Location, layout, preparation and operation of all wash areas, including vehicle wash, workshop washing and paint washing and clearing.			
Environmental awareness training	• All the contractor's employees, sub-contractors' employees and any suppliers' employees that spend more than 1 day a week or four days in a month on site, must attend an Environmental Awareness Training course presented by the contractor – the first of which shall be held within one week of the commencement date. Subsequent courses shall be held as and when required. • The contractor shall supply the ECO with a monthly report indicating the number of employees that will be present on site during the following month and any changes in this number that may occur during the month. • The contractor shall submit a Method Statement detailing the logistics of the environmental awareness training course.	Holder of EA or representative	Within one week of the commencement date. Subsequent courses shall be held as and when required.	Limiting environmental degradation or pollution as a result of ignorance or accidents.
Demarcation and protection	• The development footprint must be kept to an absolute minimum. • The property must be fenced prior to the start of construction to determine the construction/work area. Proper access control must be implemented to ensure that only authorised people obtain access to the site. • No-Go areas must be clearly demarcated prior to commencing of demolition and/or earthworks/building operations. • The construction area must be demarcated by an appropriate method (drop lines, danger tape, fence, pegs etc) as agreed between the contractor and ECO. • The contractor must ensure that fencing and/or demarcations are maintained for the duration of the project. • No work outside of the property boundary will be allowed. • Special features shall be marked on a site layout plan prior to any works commencing on site. These areas shall be designated No Go areas. • Outcrops, rock faces, trees and natural vegetation or any other natural or special features inside and outside the site shall not be defaced, painted for benchmarks for the survey or any other purposes, or otherwise damaged in any way without the prior approval of the	Holder of EA or representative	Before construction commences and maintained throughout.	• Ensure there are no illegal entries. • Prevent entry into no-go areas and thereby environmental degradation. • Ensure there is no degradation of the natural environment. • Ensure no unauthorised vegetation cleared or disturbed. • Containment of footprint.

Activity	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	ECO. These features shall be demarcated as No Go areas and shall be fenced or similarly protected, as determined by the ECO.			
Aesthetics	The aesthetics measures indicated below must be implemented as required by the specific site and situated and as agreed with the ECO. • The contractor shall be required to visually screen the site. • Visual screening shall be aesthetically pleasing and shall be erected by the contractor prior to commencing any activities. • Visual screening shall be maintained by the contractor for the duration of the contract. • Visual screening must be of the following types: o Shade cloth; o Hessian; o Berms.	Holder of EA or representative	Before construction commences and maintained throughout.	• Ensuring that the construction site is aesthetically pleasing. • Ensuring reduced possible visual impact. • Limiting possibility of complaints from I&APs.
Camp	• The contractor's camp, offices, and storage facilities shall not be located within an environmentally sensitive area or the No-Go areas. The camp's position must be approved by ECO. • The camp must be fenced as agreed with the ECO unless it is situated inside an existing building on the property. • Water from the kitchens, showers, sinks, etc., shall be discharged in a manner approved by the ECO. • The contractor must ensure that all temporary structures, equipment, materials, and facilities used or created on-site during the construction phase are removed and appropriately disposed of. • No littering by the contractor's employees shall be tolerated under any circumstances, anywhere in the demarcated area for construction. **Site of the construction camp** • The choice of site for the contractor's camp requires the ECO's permission and must consider the location of local residents and/or ecologically sensitive areas, including flood zones and slip/unstable zones. A site plan must be submitted to the ECO and project manager for approval. • The size of the construction camp must be minimised (especially where natural vegetation or grassland has had to be cleared for its construction). • The contractor must attend to drainage of the campsite to avoid standing water and/or sheet erosion. • Suitable control measures over the contractor's yard, plant and material storage to	Holder of EA or representative	Before construction commences and maintained throughout.	• Ensuring that all construction infrastructure etc. is located within a demarcated camp, within which possible impacts on the environment can be mitigated. • Ensuring that the site is not located close to any environmentally sensitive areas. • Preventing water or soil pollution. • Ensuring that there does not occur any environmental pollution or littering. • Creating a neat workplace area.

Activity	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	mitigate any visual impact of the construction activity must be implemented. **Storage of materials (including hazardous materials) at site camp.** • The choice of location for storage areas must consider prevailing winds, distances to water bodies, general on-site topography and water erosion potential of the soil. • Storage areas must be designated, demarcated and fenced. • Storage areas must be secure to minimise the risk of crime. They must also be safe from access by unauthorised persons. • Fire prevention facilities must be present at all storage facilities. • Proper storage facilities for the storage of oils, paints, grease, fuels, chemicals and any hazardous materials used must be provided to prevent the migration of spillage into the ground and groundwater around the temporary storage area(s). These pollution prevention measures for storage must include a bund wall high enough to contain at least 150% of any stored volume, and this must be sited away from drainage lines with the approval of the ECO. • These storage facilities (including any tanks) must be on an impermeable surface that is protected from the ingress of stormwater from surrounding areas in order to ensure that accidental spillage does not pollute local soil or water resources. • Clear signage must be placed at all storage areas containing hazardous substances/materials. Staff dealing with these materials/substances must be aware of their potential impacts and follow the appropriate safety measures. • A waste disposal contractor must be employed to remove waste oil. These wastes must only be disposed of at licensed landfill sites designed to handle hazardous wastes. A disposal certificate must be obtained from the waste disposal contractor. • The contractor must ensure that its staff are made aware of the health risks associated with any hazardous substances used, have been provided with the appropriate protective clothing/equipment in case of spillages or accidents, and have received the necessary training. • All excess cement and concrete mixes are to be contained on the construction site prior to the disposal off-site. • Any spillage that may occur, shall be investigated and immediate action must be taken. This must also be reported to the ECO and DEA&DP, as well as local authorities if so required. **Drainage of the construction camp** • Run-off from the campsite must not discharge into neighbours' properties.			

Activity	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	End of construction • Once construction has been completed on site and all excess material has been removed, the storage area shall be rehabilitated. If the area was badly damaged, reseeding shall be done. • Such areas shall be rehabilitated to their natural state. Any spilled concrete shall be removed, and soil compacted during construction shall be ripped, levelled and re-vegetated.			
Sensitive environments and buffer area	Rocks and vegetation debris should not be dumped onto adjacent natural vegetation. Any animals encountered during the land clearing activities should be left unharmed and relocated to adjacent natural areas where appropriate (e.g., tortoises). Botanical Specialist recommendations: • *The impact of the proposed agricultural development on the sparse Kalahari Karroid Shrubland would be Very Low Negative. No mitigation would be possible or required.* • *No plant species of conservation concern or protected species were recorded within the development footprint, hence no permits would be necessary to remove such species.* • *No constraints were identified from a botanical perspective that would prevent the agricultural development from proceeding.* • *The proposed agricultural development is therefore acceptable and supported from a botanical viewpoint.* Freshwater Specialist recommendations: • *The water quality impacts during the construction phase in particular should be addressed through a Construction Environmental Management Plan for the project and implemented by an on-site Environmental Officer;* • *Contaminated runoff from the construction sites should be prevented from directly entering downstream water features;* • *Construction should preferably take place during the drier winter months when runoff from the surrounding area is low to non-existent;* • *A buffer zone of 15m should be applied to the eastern most drainage line for all proposed development activities;* • *As the area on which the development is to take place is classified as a terrestrial CBA, it is proposed that botanical input is obtained in the EIA process.*	Holder of EA or representative	Before construction commences and maintained throughout, if and when required.	• Preventing destruction, degradation or pollution of sensitive environments. • Limiting the impact on the indigenous fauna and flora other than outlined and approved.

Activity	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
Surface and groundwater pollution	• The contractor shall take all reasonable steps to prevent pollution of surface and groundwater as a result of their activities. Such pollution could result from release (accidental or otherwise) of chemicals, oils, fuels, paint, and sewage, water from excavations, construction water, water carrying soil particles or waste products. • On completion, stormwater catch pits must be closed with geotextile (bidim) or similar material to prevent sand or other contaminants from entering the system. • The contractor shall provide water and/or washing facilities at the construction camp for personnel. • In the event of any pollution entering any water body, the contractor shall inform the ECO immediately. • The contractor will be responsible for any clean-up costs involved, should pollution, erosion or sedimentation have taken place.	Holder of EA or representative	Continuously throughout the construction phase, if and when required.	• Preventing degradation or deterioration of ground and surface water due to construction activities. • Preventing siltation into the water resource.
Air pollution	**Air Pollution** During the construction phase, and due to the nature of the project, a small amount of smoke (from machines) and dust could be generated. Dust pollution may have an impact on operational workers. • In order to minimise the effect of dust pollution, the construction area must be kept wet as far as possible, and the workers must wear the necessary safety clothing. • The applicant is referred to Section 19 of the National Water Act No. 36 of 1998 with regard to the prevention of, and remedies for, the effects of pollution. In terms of this section of the Act, the person who owns, controls, occupies or uses the land in question is responsible for taking measures to prevent pollution of water resources and property.	Holder of EA or representative	Continuously throughout the construction phase, if and when required.	• Ensuring dust associated with construction activities are mitigated to limit air pollution. • Manage and prevent any degradation to the natural environment.
Noise control	• Working hours will be restricted to normal daily working hours. • The use of heavy vehicle machinery and construction activities associated with high-level noise will be limited to between 07:00 and 18:00 from Mondays to Saturdays, particularly to where residential areas or sensitive institutions are situated close to the site. • All noise and sounds generated by plant or machinery must adhere to South African Bureau of Standards (SABS) 0103 specifications for the maximum permissible noise levels for residential areas. • All plant and machinery to be fitted with adequate silencers. • No sound amplification equipment such as sirens, loud hailers or hooters shall be used on-site, after normal working hours, except in emergencies. • If work is to be undertaken outside of normal work hours, permission must be obtained from the local authority. Prior to commencing any such activity, the contractor is also to advise the potentially affected neighbouring residents. Dates, times and the nature of the	Holder of EA or representative	Continuously throughout the construction phase, if and when required.	• Ensuring adequate noise control so that there are no noise levels above the standard. • Mitigating possible noise in the receiving environment. • Ensuring that complaints from I&APs are limited.

Activity	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	work to be undertaken are to be provided. Notification may include letter-drops. • The acceptable noise level according to SANS 10103 Code of Practice is 45 dBA in the rural district during the day and 35 dBA at night. The applicant must comply/adhere to this requirement. • The contractor shall make adequate provisions to prevent or minimise the possible effects of air and noise pollution. Should the noise from the construction work be found to cause problems, work hours in these areas must be restricted between 07:00 and 18:00, or as otherwise agreed between the parties involved. Strict measures shall, therefore, be enforced, especially in terms of the contract specifications, to prevent any negative impacts in this regard.			
Pipe testing and cleaning	• Cleaning/flushing of pipelines shall not impair (downgrade) baseline water quality. • Materials used in the sterilisation of pipelines, viz. chlorine solutions shall be treated as hazardous substances and disposed of at an approved landfill site. • Litter traps shall be installed and maintained at the outflow of all pipelines.	Holder of EA or representative	Continuously throughout the construction phase, if and when required.	• Prevent pollution of water resources. • Ensuring no visible or measurable signs of pollution of the environment (soils, ground and surface water).
Erosion control and stormwater management, trenching	• The contractor must take all reasonable precautions to prevent soil erosion resulting from a diversion, restriction or increase in the flow of stormwater or water resulting from its operations and activities to the satisfaction of the ECO. Possible measures that can be considered include the following: o Brush cut packing o Mulch or chip cover o Straw stabilising (at the rate of one bale/m² and rotated into the top 100mm of the completed earthworks) o Watering o Planting / sodding o Hand seeding sowing o Hydroseeding o Soil binders and anti-erosion compounds o Mechanical cover or packing structures o Gabions & mattresses o Geofabric o Hessian cover o Armourflex o Log/pole fencing o Retaining walls • The contractor shall take reasonable measures to control the erosive effects of	Holder of EA or representative	Continuously throughout the construction phase, if and when required.	• Limiting erosion on site. • Ensuring possible erosion is controlled and mitigated. • Ensuring that stormwater is managed on site. • Ensuring no degradation of the natural environment occurs due to erosion. • Prevent disturbance/ damage of vegetation due to erosion.

Activity	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	stormwater run-off. • The contractor shall use silt screens to prevent overland flowing water from causing erosion. • Straw bales as filters that are placed across the flow of overland stormwater flows, shall be used as an erosion protection measure. • The ploughing-in of straw offers limited protection against stormwater run-off induced erosion and shall be used as an erosion protection measure. • The contractor shall be liable for any damage to downstream property caused by the diversion of overland stormwater flows. • At all times it must be considered that an open trench will guide stormwater like a river, and the overflow point must be protected against erosion and silt deposition. • It is the responsibility of the contractor working inside any trench at any specific time to ensure that their works are protected from damage which may be caused through run-off of rainwater inside the trench. The use of sandbags, mulch bags or any other appropriate methods of slowing down the flow of water within a trench is required. • Where water is directed out of a trench by the contractor, they are responsible for the prevention of erosion at the discharge point and of preventing the movement of any silt (which may be carried in such water or result from the erosion caused by such water) beyond the work area. • In the event of erosion damage or silt movement, the contractor is responsible for the clean-up required to reinstate the conditions to normal as determined by the ECO. • The area of open ground at any time should be limited to the minimum, in order to avoid excessive risk. • The area of open trench at any time should be limited to the minimum, in order to avoid excessive risk.			
Dust control	**DUST - generated by works** • Sand stockpiles are to be covered with hessian, shade cloth or DPC plastic. • Stockpiles are to be located in sheltered areas and the usable/cut face orientated away from the direction of the prevailing wind for that season. • Excavating, handling or transporting erodible materials in high wind or when dust plumes are visible, shall be avoided. • If high winds prevail, the engineer shall decide whether water dampening measures or cessation of activities is required, and if necessary, they shall have the authority to temporarily stop some of the works until wind conditions become more favourable. **Dust – generated by roads and vehicle movement**	Holder of EA or representative	Continuously throughout the construction phase, if and when required.	• Ensuring proper dust suppression. • Limiting air pollution potential during construction activities.

Activity	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	• Vehicle speeds shall not exceed 40 km/h along gravel roads or 20 km/h on unconsolidated or non-vegetated areas. Dust plumes created by vehicle movement are to be monitored. • If access roads are generating dust beyond acceptable levels, dust suppression measures must be initiated. These include, but are not limited to the following: o Reduction of travelling speeds along the road. o Restriction of vehicle or plant usage. o Application of chemical soil binders. o Application of a suitable sacrificial road surfacing. o If water is to be used for dust suppression, then only the critical areas shall be watered. The use of water carts or hand watering is preferable. Overhead sprayers shall not be permitted in windy conditions, as the evaporation loss is too high. Watering is to be supervised to prevent unnecessary water wastage, and run-off into potentially sensitive areas. Preferable watering times are early morning and late afternoon/evening. Water restrictions are to be observed if in place.			
Fire prevention and management	• No open fires or naked flames for heating or cooking shall be allowed on site. Stoves and other electrical equipment shall only be permitted in the contractor's camp and never be left unattended. o The contractor shall take all reasonable and active steps to avoid increasing the risk of fire through their activities on site. No fires shall be lit except at places approved by the ECO. o The contractor shall ensure that the basic firefighting equipment is to the satisfaction of the local officials (where applicable). o The contractor shall supply all living quarters, site offices, kitchen areas, workshop areas, materials, stores and any other areas identified by the ECO with tested and approved firefighting equipment. o Fire and "hot work" shall be restricted to a site approved by the ECO. o A braai facility shall be considered at the discretion of the ECO. The area shall be away from stores containing flammable materials. All events shall be under management supervision and a fire extinguisher shall be immediately available. "Low smoke" fuels shall be used. Smoke-free zoning regulations shall be considered. o Fires within national parks, nature reserves and natural areas are prohibited. o Cooking shall be restricted to bottled gas facilities under strict control and supervision. The sensitivity of the surrounding land uses, and the occurrence of natural indigenous vegetation must be considered when assessing the risk of fires. o The contractor shall take precautions when working with welding or grinding equipment near potential sources of combustion. Such precautions include having a	Holder of EA or representative	Continuously throughout the construction phase. If and when required.	• Prevent any open fires. • Ensuring that prevention measures are in place if any accidental fires do take place. • Ensuring that no fires are started by the contractors' workforce.

Activity	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	suitable, tested and approved fire extinguisher immediately at hand, as well as the use of welding curtains. ○ The contractor shall identify the authorities responsible for fighting fires in the area and shall liaise with them regarding procedures in the event that a fire starts. The contractor shall ensure that his staff are aware of the fire danger at all times, and of the procedure to be followed in the event of a fire. The contractor shall also ensure that all the necessary telephone numbers etc. are posted at conspicuous and relevant locations in the event of an emergency. The contractor shall advise the relevant authority of a fire as soon as one starts and shall not wait until he can no longer control it. ○ If and when a contractor is found responsible for the outbreak of a fire, he shall be liable for any associated costs.			
Water management	• The contractor shall provide water for drinking and construction purposes until such time as it is available from the local system. Water from the local system must be used carefully and sparingly, with the view of not wasting water. • Taps are to be attached to secure supports and leaking taps and hosepipes are to be repaired immediately. • Watering as dust suppression must be undertaken as a last resort. It is preferable that sand stockpiles be covered rather than watered. • Any abstraction from natural water sources such as a stream or groundwater will require a Method Statement for approval by the ECO. • An adequate supply of potable water that complies with bacteriological and chemical quality must be available at all times.	Holder of EA or representative	Continuously throughout the construction phase, if and when required.	• Ensure potable water is available to workers during the construction phase. • Management of water during construction activities. • Ensuring water is only used for dust suppression as a last resort.
Waste management	• A waste minimisation approach must be followed. This requires recycling wherever possible. All waste, therefore, to be suitably contained and removed regularly from the site in accordance with the municipal waste management procedures. Other examples shall include the use of rubble as fill, minimisation of waste concrete and the use of brush cuttings for mulching on rehabilitated areas. • The contractor shall be responsible for the establishment of a refuse control and removal system that prevents the spread of refuse within and beyond the construction sites. • The contractor shall ensure that all refuse is deposited in refuse bins. He shall supply the bins and arrange for them to be emptied on a weekly basis. Refuse bins shall be of such a design that the refuse cannot be blown out and that animals or birds are not attracted to the waste and spread it around. Refuse bins shall be watertight, wind-proof and scavenger-proof and shall be appropriately placed throughout the site. Refuse must also	Holder of EA or representative	Continuously throughout the construction phase. If and when required.	• Ensuring proper waste management and removal takes place. • Ensure that the site is kept free of litter and deposited in bins. • Ensuring that waste is stored in the correct manner on site before it is removed. • Ensuring legal waste removal takes place.

Activity	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	be protected from rain, which may cause pollutants to leach out. Refuse bins shall be placed at appropriate places throughout the site and shall be conspicuous (e.g. painted bright yellow). • Refuse shall be disposed of at an approved waste site (site and method to be agreed with the local authority). Refuse shall not be burnt or buried on or near the site. • The contractor shall provide labourers to clean up the contractor's camp and site on a weekly basis. • The contractor shall also clean the contractor's camp and site of all structures, equipment, residual litter and building materials at the end of the contract. • Any solid waste must be disposed of at a landfill licensed in terms of section 20 of the Environment Conservation Act, 1989 (Act No. 73 of 1989) or the National Environmental Management: Waste Act (Act No. 59 of 2008).			
Toilets	• The contractor shall be responsible for providing all sanitary arrangements for construction and supervisory staff on the site. A minimum of one chemical toilet shall be provided per 15 persons. Toilets provided by the contractor must be easily accessible and within a practical distance from the workers. Toilets shall be located within areas of low environmental importance. The toilets shall be of a neat construction and shall be provided with doors and locks and shall be secured to the ground to prevent them from blowing over. Toilets shall be placed outside areas susceptible to flooding. • The location for construction camps and toilets must be approved by the ECO. • The contractor shall keep the toilets in a clean, neat and hygienic condition. The contractor shall supply toilet paper at all toilets. • The contractor shall be responsible for the cleaning, maintenance, servicing and emptying of the toilets on a regular basis (by chemical contractor). No waste may be dumped in the bush or wetland. • The contractor shall ensure that the toilets are emptied before a builder's holiday or other public holidays, and the waste be stored and disposed of at an appropriate place off-site. • The contractor shall ensure that no spillage occurs when chemical toilets are cleaned and emptied. • The contractor shall supply a contingency plan for spills from toilets. • Performing ablutions in any other area are strictly prohibited.	Holder of EA or representative	Continuously throughout the construction phase if and when required.	• Ensuring that appropriate sewerage management takes place to reduce the possibility of an impact on soil and groundwater resources. • Ensuring that sufficient and clean ablution facilities are provided.
Fuel and chemical management	• Fuel may be stored on-site provided the following is strictly adhered to: • All necessary approvals with respect to fuel storage and dispensing shall be obtained from the appropriate authorities.	Holder of EA or representative	Continuously throughout the construction phase, if and when required.	• Ensuring the proper use/storage/handling and management of fuel on-site. • Ensuring minimal to no impact on the

Activity	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	• The ECO (or as applicable) must be informed and consulted in terms of the fire regulations. • The contractor shall ensure that all liquid fuels and oils are stored in tanks with lids that are kept firmly shut and under lock and key at all times. • The contractor shall stand any equipment that may leak and does not have to be transported regularly, on watertight drip trays to catch any pollutants. The drip trays shall be of a size large enough that the equipment can be placed inside it. Drip trays shall be cleaned regularly and shall not be allowed to overflow. • All hazardous material (e.g., oils, petrol or diesel) used on site must be disposed of at an approved hazardous waste facility or via the services of a licensed waste transportation company. All certificates of disposal and weighbridge slips (if applicable) have to be signed by all relevant officials and kept as records on the premises. • The contractor will be responsible for the cleaning up of any spill and associated costs. **Location** • The ECO shall be advised of the area that the contractor intends using for the storage of fuel. • The location of the fuel storage area will be determined by the ECO. • The tank shall be erected at least 3.5 meters away from buildings, boundaries and any other combustible or flammable materials. **Signs/good practice/safety precautions** • Symbolic safety signs depicting "No Smoking", "No Naked Lights" and "Danger" conforming to the requirement of SABS 1186 are to be prominently displayed in and around the fuel storage area. • No smoking shall be allowed in the vicinity of the stores. • The capacity of the tank shall be clearly displayed, and the product contained within the tank clearly identified using the emergency information system detailed in SABS 0232 part 1. • There shall be adequate firefighting equipment at the fuel storage and dispensing area or areas. • Fuel shall be kept under lock and key at all times. **Tanks** • The storage tank shall be on the premises only for as long as the contract lasts. • The storage tank shall be removed on completion of the works. • All such tanks are to be designed and constructed in accordance with a recognised code. • The rated capacity of tanks shall provide sufficient capacity to permit expansion of the			natural environment. • Limiting pollution potential due to spillages and mismanagement.

Activity	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	product contained therein by the rise in temperature during storage. **) Bunds/storage areas** • Tanks shall be situated in a bunded area, the volume of which shall be at least 150% of the volume of the largest tank. The floor of bund shall be smooth and impermeably constructed of concrete or plastic sheeting with impermeable joints with a layer of sand over to prevent perishing. The bund walls shall be of concrete or formed of well-packed earth with the impermeable lining extending to the crest. The floor of the bund shall be sloped towards an oil trap or sump to enable any spilled fuel and/or fuel-soaked water to be removed. • A bacterial hydrocarbon digestion agent that is effective in water approved by the ECO shall be installed in the sump. • The tanks and bunded areas shall be covered by a roofed structure to prevent the bunded area from filling with rainwater. This structure shall be constructed in such a way, and to the approval of the ECO, to ensure that it is wind resistant. • Any water that collects in the bund shall not be allowed to stand and shall be removed within one day and taken off-site to a disposal site approved by the ECO, and the bacterial hydrocarbon digestion agent shall be replenished. **l) Empty containers** • Only empty and externally clean tanks shall be stored on the bare ground. All empty and externally dirty tanks shall be sealed and stored on an area where the ground has been protected. **2) Filling/dispensing methods** • Any electrical or petrol-driven pump shall be equipped and positioned so as not to cause any danger of ignition of the product. • If fuel is dispensed from 200-litre drums, the proper dispensing equipment shall be used. The drum shall not be tipped in order to dispense fuel. The dispensing mechanism of the fuel storage tank shall be stored in a waterproof container when not in use. • Adequate precautions shall be provided to prevent spillage during the filling of a tank and the dispensing of its contents.			
Litter and oil traps	• Refuse screens and oil traps shall be installed at run-off concentration points from large parking facilities, wash bays, stormwater outlets, inlets to detention ponds, workshop forecourt drainage points, ablution and eating areas. These facilities shall be serviced and monitored at the discretion of the ECO.	Holder of EA or representative	Continuously throughout the construction phase, if and when required.	• Ensuring that water resources are not polluted by litter and oil. • Limiting pollution potential due to spillages and mismanagement.
Contaminated water	**3) General** • The ECO's approval will be required prior to the discharge of contaminated water to the	Holder of EA or representative	Continuously throughout the	• Managing the disposal of contaminated water.

Activity	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	municipal sewer system. • The contractor shall prevent discharge of any pollutants, such as cement, concrete, lime, chemicals and fuels into any water sources. • Water from kitchens, showers, laboratories, sinks, etc. shall be discharged into a conservancy tank for removal from the site. • Run-off from fuel depots/workshops/truck washing areas and concrete swills shall be directed into a conservancy tank and disposed of at a site approved by the ECO and local authority. • The contaminated water, contaminated run-off, or effluent released into a water body requires analysis in terms of the National Water Act. Contaminated water must not be released into the environment without authorisation from the relevant authority. **4) Washing areas** • Wash areas shall be placed and constructed in such a manner that it ensures that the surrounding areas, which include groundwater, are not polluted. • A Method Statement shall be required for all wash areas where hydrocarbons, hazardous materials and pollutants are expected to be used. This includes, but is not limited to, vehicle washing, workshop wash bays, paint wash and cleaning. • Wash areas for domestic use shall ensure that the disposal of contaminated "grey" water is sanctioned by the ECO.		construction phase if and when required.	• Mitigating and managing the storage of contaminated water until it can be disposed. • Preventing the contamination of water or to reduce the impact on the soil and groundwater resources.
Traffic, vehicles and access roads	• The movement of any vehicles and/or personnel outside of the designated working areas shall not be permitted without the written authorisation of the ECO. • If and when the contractor does not exercise sufficient control to restrict all work to the area within the marker boundaries, then these shall be replaced on the instruction of the ECO by fencing. The relevant additional costs shall be borne by the contractor. • Dust control measures such as dampening with water shall be implemented where necessary, as indicated by the ECO. • Access and haul roads shall be maintained by the contractor. • Maintenance includes adequate drainage and side drains, dust control and restriction of edge use. • All temporary access routes shall be rehabilitated at the end of the contract to the satisfaction of the ECO. • All public roads shall be kept clear of mud and sand. Mud and sand that has been deposited through construction activities shall be cleared regularly. • Any materials used for layer works shall be approved by the engineer/ECO prior to the activity commencing.	Holder of EA or representative	Continuously throughout the construction phase. If and when required.	• Ensuring proper vehicle movement on-site and surrounding areas. • Ensuring that no vehicles area allowed in no-go areas. • Management of potential damage to existing roads during construction. • Traffic management to ensure safety on roads. • Ensuring that erosion is limited and managed on site. • Pedestrian safety.

Activity	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	• Damage to the existing access roads as a result of construction activities shall be repaired to the satisfaction of the engineer/ECO/EO, using material similar to that originally used. The cost of the repairs shall be borne by the contractor. • Traffic safety measures shall be considered to the satisfaction of the engineer/ECO in determining entry/exit onto public roads. • All users of haul roads shall not exceed 45 km/h (cars)/ 15 km/h (trucks). Note that the standard specification places a site speed limit of 45 km/h for all vehicles. • Appropriate traffic warning signs shall be erected and maintained. • Attention shall be paid to minimising disruption of the flow of traffic and reducing the danger to other road users and pedestrians. • Method statements are required for the following: o Traffic safety measures with regard to entry and exit on public roads and the control of construction traffic. o The proposed route for new access roads, tracks, or haul roads, the proposed construction of new roads, the method of upgrading existing roads, and the proposed methods of rehabilitation on completion.			
Stockpiling of materials	• The contractor shall temporarily stockpile topsoil materials in such a way that the spread of materials is minimised, and thus the impact on the natural vegetation. The stockpiles must be placed within areas demarcated for this purpose. The ECO shall approve stockpile areas.	Holder of EA or representative	Continuously throughout the construction phase, if and when required.	• Ensuring the safe stockpiling of topsoil, so that it can be re-used at a later stage. • Limiting erosion and siltation potential due to run-off. • Maximise the re-use of material. • Reduce or minimise the impact on vegetation. • Minimise the impact area.
Topsoil stripping	• As topsoil is a valuable resource, it should be stripped from all construction areas before work commences. This topsoil should be stockpiled for use in rehabilitation and landscaping and must not be contaminated with other building materials. • The vegetation to be removed together with the top 20cm of topsoil is to be stockpiled for use during the rehabilitation phase. This topsoil is to be stockpiled in the designated topsoil stockpile areas, to be agreed by the ECO. • The relatively sensitive nature of most soils on the property means that earthmoving operations and topsoil stockpiling should be carried out with consideration of the nature of the soils, since rutting and compaction damage can occur.	Holder of EA or representative	Before construction commences.	• Ensuring that topsoil is stored correctly to be re-used during construction and landscaping. • Limiting erosion and siltation potential due to run-off. • Reduce or minimise the impact on vegetation. • Minimise the impact area.
Heritage remains	With regard to the proposed development, the following recommendations are made: • No mitigation is required prior to proposed development activities commencing.	Holder of EA or representative	Continuously throughout the	• To ensure the proper management of

Activity	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	• Should any unmarked human burials/remains or ostrich eggshell water flask caches be uncovered, or exposed during proposed activities, these must immediately be reported to the archaeologist (Jonathan Kaplan 0823210172), or the South African Heritage Resources Agency (Ms Natasha Higgitt 021 4624502). Burials, particularly, must not be removed or disturbed until inspected by a professional archaeologist. • All South African fossil heritage is protected by law (South African Heritage Resources Act, 1999) and fossils cannot be collected, damaged or disturbed without a permit from SAHRA or the relevant Provincial Heritage Resources Agency. • The palaeontologist concerned with potential mitigation work will need a valid fossil collection permit from SAHRA and any material collected would have to be curated in an approved depository (e.g., museum or university collection). • All palaeontological specialist work should conform to international best practice for palaeontological fieldwork and the study (e.g., data recording fossil collection and curation, final report) should adhere as far as possible to the minimum standards for Phase 2 palaeontological studies developed by SAHRA (2013).		construction phase, if and when required.	heritage remains.
Contingency planning	• In the event of a spill or leak of product into the ground and/or watercourses (e.g. that of hazardous substances used for the construction phase), such incidents must be reported (within 14 days) to all the relevant authorities including the Directorate: Pollution Management in accordance with Section 30(10) of the National Environmental Management Act No. 107 of 1998 (NEMA) and Section 20 (3) of the National Water Act No.36 of 1998 (NWA), that pertains to the control of emergency incidents and the remediation of the affected area. All necessary documentation must be completed and submitted within the prescribed timeframes. • Containment, clean-up, and remediation must commence immediately.	Holder of EA or representative	Continuously throughout the construction phase, if and when required.	• Ensuring that the contractor on site is prepared in the event of a spill or incident. • Management tools and emergency contacts should be available in the event of a spillage or incident.
Outdoor advertising	• All outdoor advertising associated with this activity, whether on or off the property concerned, must comply with the applicable local authority by-law for control of outdoor advertising or in the absence of local legislative controls, must comply with the South African Manual for Outdoor Advertising Control.	Holder of EA or representative	Continuously throughout the construction phase. If and when required.	• Ensure advertising complies with relevant local authority by-law for control of outdoor advertising or the South African Manual for Outdoor Advertising Control.
Energy efficiency & waste minimization measures	The following design measures will be considered for energy and water-saving measures: • Household waste to be separated and re-cycled (glass, paper, green/garden waste).	Holder of EA or representative	Continuously throughout the construction phase. If and when applicable and required.	• Ensuring that energy and water-saving mechanisms are implemented.

Activity	Proposed impact management action and procedures/mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
Construction site break down and closure: Removal of equipment and rehabilitation	• All structures comprising the construction camp are to be removed from the site. • The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. • All hardened surfaces within the construction camp area should be ripped, all imported materials removed, and the area shall be top soiled and rehabilitated.	Holder of EA or representative	Once construction concludes.	i) To ensure proper decommissioning of the camp site and rehabilitation of the site after the equipment is removed.
Construction site break down and closure: Associated infrastructure	• Surfaces are to be checked for waste products from activities such as concreting or asphalting and cleared in a manner approved by the ECO. • All surfaces hardened due to construction activities are to be ripped and imported material thereon removed. • All rubble is to be removed from the site to an approved disposal site as approved by the engineer. Burying of construction rubble on site is prohibited. • The site is to be cleared of all litter. • Fences, barriers and demarcations associated with the construction phase are to be removed from the site unless stipulated otherwise by the engineer. • All residual stockpiles must be removed to spoil or spread on site as directed by the ECO. • All leftover building materials must be returned to the depot or removed from the site. • The contractor must repair any damage that the construction works have caused to neighbouring properties, specifically, but not limited to, damage caused by poor stormwater management.	Holder of EA or representative	Once construction concludes.	i) To ensure proper decommissioning of the camp site and rehabilitation of the site after the associated infrastructure is removed.

14. Proposed Impact Management Actions for Operational Phase

Activity	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
General	• All applicable measures as indicated under the Construction EMPr must be implemented.	Holder of EA or representative.	Continuously throughout the operational phase. If and when applicable and required.	• Management of general aspects of the facility. • Ensuring that complaints from I&APs are limited.
Emergency Preparedness Plan	• The emergency preparedness plan must be ready for implementation, at all times, should an emergency situation arise.	Holder of EA or representative.	Continuously throughout the operational phase.	• To ensure preparedness for emergencies.
Alien Vegetation	• Effective measures should be implemented for the eradication and long-term control of alien vegetation within the site and immediate surrounding areas.	Holder of EA or representative.	Maintained throughout the project lifetime.	• No exotic plants used for rehabilitation. • Area successfully rehabilitated. • No alien plants visible. • Preventing destruction, degradation or pollution of sensitive environments.
Fauna	• No faunal species must be harmed by workers during any routine maintenance.	Holder of EA or representative.	Continuously throughout the operational phase. If and when applicable and required.	• No measurable or visible signs of harmed faunal species.
Botanical	• *The site must be checked regularly for the presence of alien invasive species during and immediately after construction.* • *Alien invasive species must be removed, preferably by mechanical means.* • *Prosopsis grandiflora must be cleared, and project activities must not contribute to further infestation.*	Holder of EA or representative.	Continuously throughout the operational phase. If and when applicable and required.	• No exotic plants used for rehabilitation. • Area successfully rehabilitated. • No alien plants visible. • Preventing destruction, degradation or pollution of sensitive environments.
Water Use Management	• No abstraction or any use of surface water or groundwater shall be done without prior authorisation from the Department of Water and Sanitation, unless it is a Schedule 1 Use or an Existing Lawful Use if water is taken from a water resource. • All the requirements of the National Water Act. 1998 (Act 36 of 1998) regarding water use and pollution management must be adhered to at all times. • No pollution of surface water or ground water resources shall occur due to activities on the property.	Holder of EA or representative.	Continuously throughout the operational phase. If and when applicable and required.	• Limiting environmental degradation or pollution as a result of ignorance or accidents. • Preventing destruction, degradation or pollution of sensitive environments.
Dust and Noise Management	• It is not expected that dust and exhaust emissions will be generated in large quantities during the operational phase of the proposed development and shall therefore not be a significant nuisance. • The Department of Environmental Affairs has gazetted dust regulations. The applicant must comply with the NEM: AQA National Dust Control Regulations (GN No. R. 827) of 01 November 2013.	Holder of EA or representative.	Continuously throughout the operational phase. If and when applicable and required.	• Ensuring proper dust suppression and control of noise generated. • Minimizing the potential dust and noise impacts during the operational phase. • Ensuring that complaints from I&APs are

Activity	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	• Noise generated from the operation of the facility must conform to the Western Cape Noise Control Regulations of 2013 (P.N. 200/2013). o These regulations prohibit a person from conducting any activity in such a way as to give rise to dust in such quantities and concentrations so that the dust, or dust fall, has a detrimental effect on the environment including health.			limited.

15. Appendix A: Environmental Authorisation

16. Appendix B: Tracking Table

Required	Received		Date	Comment
	Yes	No		
Methodology statement				
Site establishment plan				
Letter re contents of EMPr				
Letter re awareness training				

17. Appendix C: Schedule of Fines

SCHEDULE OF FINES FOR ENVIRONMENTAL DAMAGE OR EMPr TRANSGRESSIONS

(Based on City of Cape Town: Standard Environmental Specifications – Ver. 5 (03/2002))

Note: The maximum fine for any environmental damage will never be less than the cost of applicable environmental rehabilitation.

EMPr TRANSGRESSION OR RESULTANT ENVIRONMENTAL DAMAGE	MIN. FINE	MAX. FINE
Failure to comply with prescriptions regarding appointment of an ESO and monitoring of EMPr compliance.	R500	R2000
Failure to comply with prescriptions regarding environmental awareness training.	R500	R5000
Failure to comply with prescriptions regarding method statements.	R500	R5000
Failure to report environmental damage or EMPr transgressions to the ESO.	R500	R1000
Failure to carry out instructions of the ESO regarding the environment or the EMPr.	R500	R1000
Failure to comply with prescriptions posting of emergency numbers.	R500	R5000
Failure to comply with prescriptions regarding a complaint register.	R500	R1000
Failure to comply with prescriptions regarding information boards.	R500	R1000
Failure to comply with prescriptions regarding site demarcation and enforcement of 'no go' areas.	R500	R5000
Failure to comply with prescriptions regarding site clearing.	R500	R5000
Failure to comply with prescriptions for supervision for loading and off-loading of delivery vehicles.	R500	R1000
Failure to comply with prescriptions for securing of loads to ensure safe passage of delivery vehicles.	R500	R1000
Failure to comply with prescriptions for the storage of imported materials within a designated contractor's yard.	R500	R1000
Failure to comply with prescribed administration, storage or handling of hazardous substances.	R500	R1000
Failure to comply with prescriptions regarding equipment maintenance and storage.	R500	R1000
Failure to comply with fuel storage, refuelling, or clean-up prescriptions.	R500	R1000
Failure to comply with prescriptions regarding procedures for emergencies (spillages and fires).	R1000	R5000
Failure to comply with prescriptions regarding construction camp.	R500	R5000
Failure to comply with prescriptions for the use of ablution facilities.	R500	R1000
Failure to comply with prescriptions regarding water provision.	R500	R1000

For each subsequent similar offence committed by the same individual, the fine shall be doubled in value to a maximum value of R50,000.

18. Appendix D: Method Statement Proforma

METHOD STATEMENT PROFORMA

METHOD STATEMENT FOR THE:

This method statement is to be completed by the contractor (in consultation with the Resident Engineer and EO) at least 5 working days prior to the proposed commencement date of the said work and represents a binding agreement to the method statement by all site contractors and sub-contractors involved in the work for which the method statement is submitted.

DATE OF SUBMISSION:

LEAD CONTRACTOR:

OTHER CONTRACTORS AND/OR SUB-CONTRACTORS:

Describe in detail what work is to be undertaken?

Describe in detail where on the site the works are to be undertaken and the extent? Provide a sketch plan and grid block reference.

Lead supervisor/foreman name and contact details:

Number of personnel:

Construction activities:

Plant and machinery to be used:

Other:

What environmental impacts are anticipated and what precautions are proposed to prevent these impacts? (Refer to the relevant sections of the EMPr for guidance and provide general site camp layout).

Toilet facilities:

Litter:

Security:

Plant/machinery (operation, servicing, management, storage, refueling, etc.).

Emergencies and fire:

Hazardous materials (handling, management, storage):

Have all personnel involved been through an environmental induction course?

Petrochemical spill remediation and containment measures:

Other:

DECLARATION BY PARTIES

Contractor:

I understand the contents of the method statement and the scope of the works required of me. I further understand that the method statement may be amended on application to the above signatories and that the Environmental Officer will audit my compliance with the contents of this method statement.

Print Name Date

Signed

Environmental Officer (EO):

The work described in this method statement, if carried out according to the methodology described, is satisfactory mitigation to prevent avoidable environmental harm.

Print Name Date

Signed

Resident Engineer:

The work described in this method statement, if carried out according to the methodology described, is satisfactory mitigation to prevent avoidable environmental harm.

Print Name Date

Signed

19. Appendix E: Method Statement Control Sheet

METHOD STATEMENT CONTROL SHEET

(This control sheet is to be attached to all methods statements)

CONTRACT NO: _____

MS Number:

THIS SECTION TO BE COMPLETED BY THE CONTRACTOR/METHOD STATEMENT AUTHOR ONLY

TITLE:
DESCRIPTION:
SUBMITTED BY:

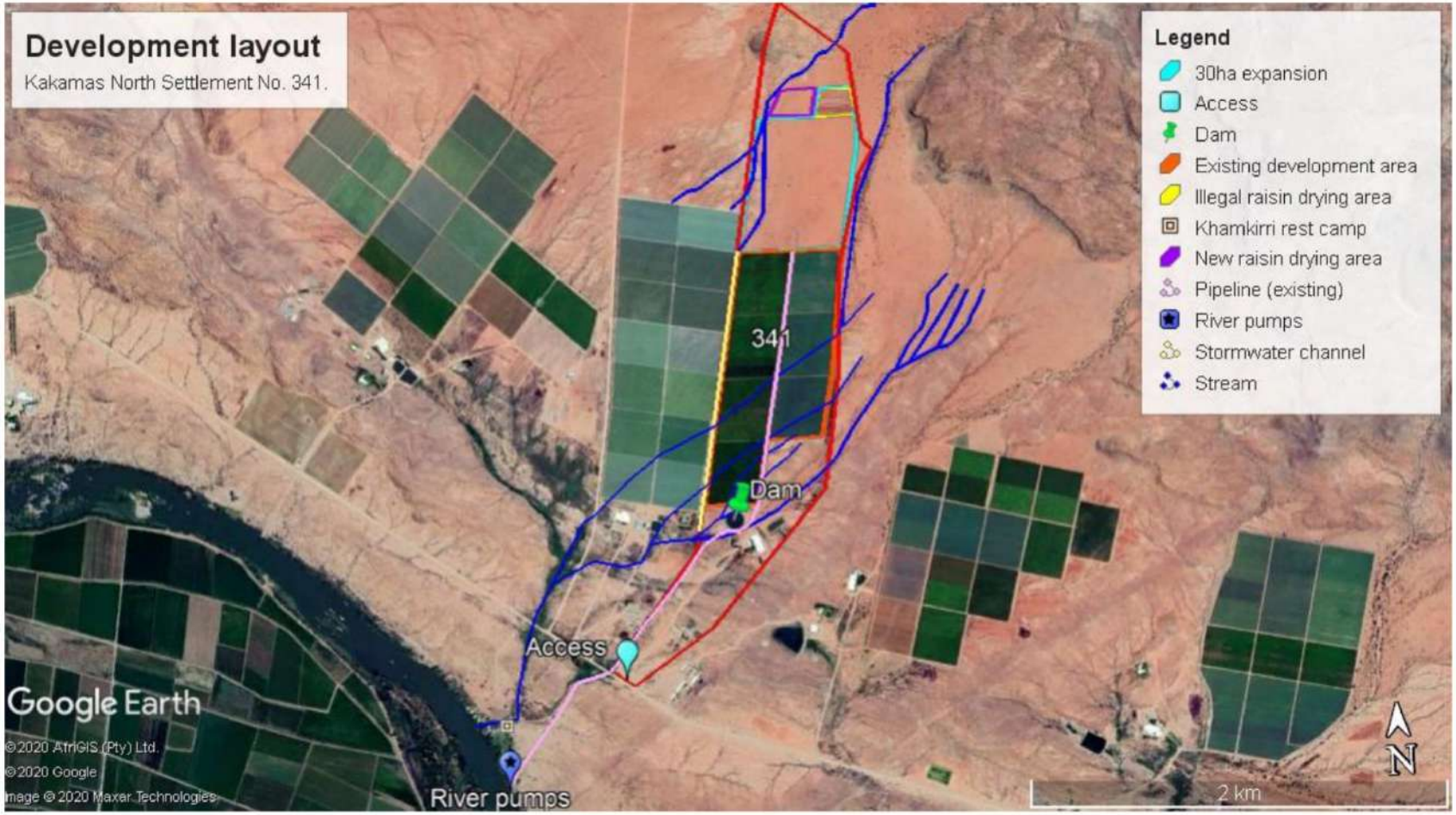
Date requested by: _____ Date submitted: _____

Date response required by: _____ Date work start: _____

REVIEW SCHEDULE		
Date	**Authority**	**Comments**

DISTRIBUTION AND AUTHORISATION			
	APPLICANT	**EO**	**CONTRACTOR**
Name			
Signature			
Date			

20. Appendix F: Project Map



21. Appendix G: EAP Curriculum Vitae

22. Appendix H: Fossil Find Protocol

Included if deemed necessary.

11.11 Appendix E: Correspondence with DAER&LR

11.11.1 Appendix E1: Approval of Scoping Report

agriculture, environmental affairs, rural development and land reform

Department:
agriculture, environmental affairs,
rural development and land reform
NORTHERN CAPE PROVINCE
REPUBLIC OF SOUTH AFRICA

Enquiries Dipatlisiso Imibuzo Navrae	: O Seshupo : : :	Date Letlha Umhla Datum	: 26 July 2022 : : :

Reference : NC/EIA/05/ZFM/KAII/KAK3/2022
Tshupelo :
Isalathiso :
Verwysing :

Elanie Kuhn
GroenbergEnviro
P O Box 1058
Wellington
7654

Email: elanie@groenbergenviro.co.za

Dear Ms Elanie Kuhn

APPLICATION FOR ENVIRONMENTAL AUTHORISATION: PROPOSED AGRICULTURAL DEVELOPMENT AND ASSOCIATED INFRASTRUCTURE ON KAKAMAS NORTH SETTLEMENT NO 341, AUGRABIES, KAI !GARIB LOCAL MUNICIPALITY, ZF MGCAWU DISTRICT, NORTHERN CAPE PROVINCE

The Final Scoping Report and Plan of study for public comment which was submitted by you in respect of the above mentioned application and received by the Department on the 1st of July 2022 has been accepted by the Department. You may accordingly proceed with undertaking of environmental impact assessment report in accordance with the tasks that are outlined in the plan of study for environmental impact assessment.

Please do not hesitate to contact the Department should you have any further queries.

Yours sincerely

O Seshupo
Environmental Officer

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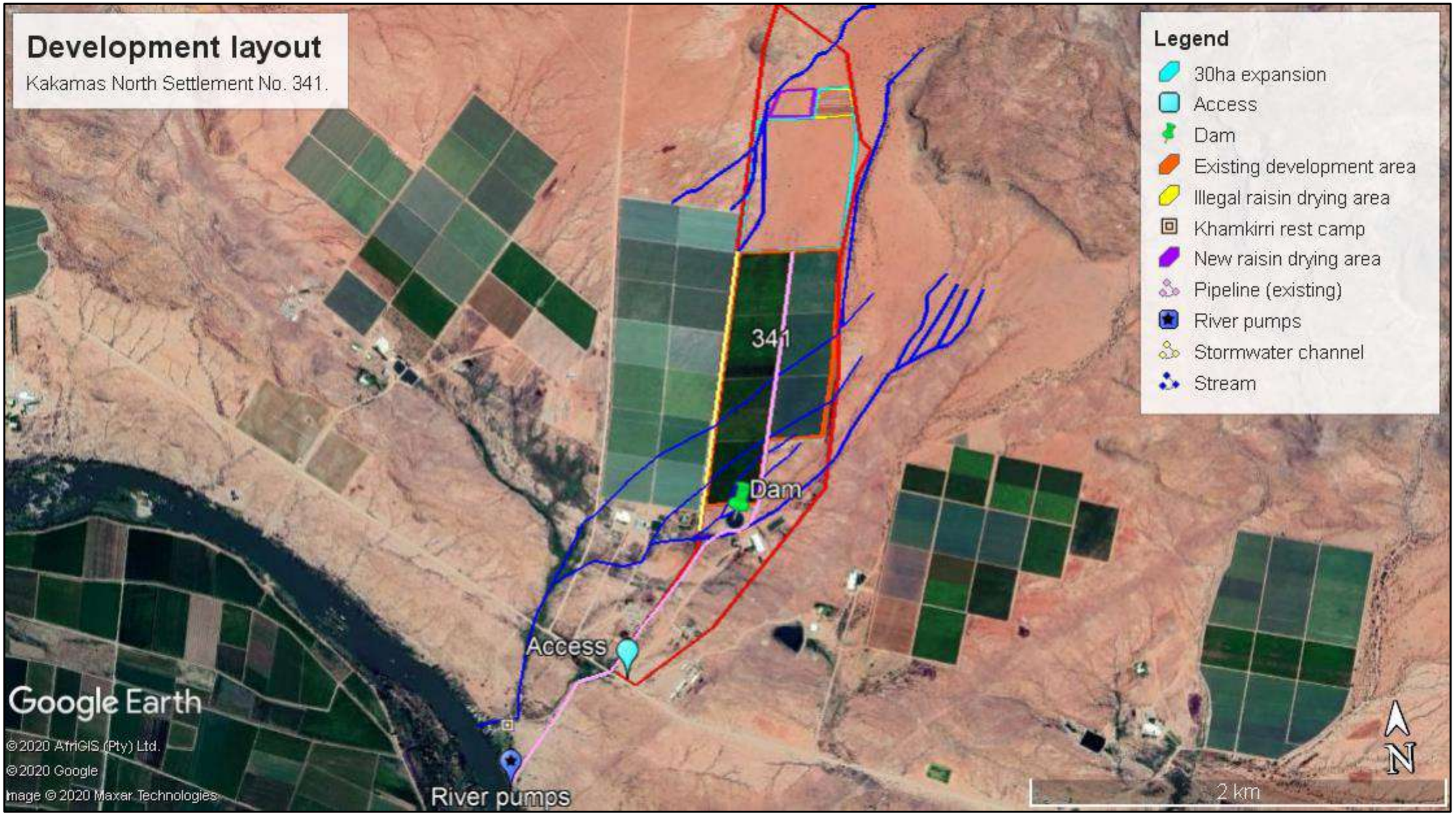
Date	Comments from	Comments received	Response from	Response received
COMMENTS RECEIVED ON CONSULTATION OFFICIALFINAL SR/ACCEPTANCE OF FINAL SR				

11.12 Appendix F: A3 Layouts



11.13 Appendix G: Other

11.13.1 Appendix G1: Curriculum Vitae

Elanie Kühn

Groenberg Enviro (Pty) Ltd
PO Box 1058
Wellington 7654

Phone: 021 8737228
Cell: 076 584 0822
Fax: 086 476 7139
E-mail: elaniem@iafrica.com

Nationality	South African		
Date of birth	20 February 1983		
Qualifications	B.Sc. Degree (Zoology & Physiology) B Sc. Hons. (Environmental Management)	North West University – Potchefstroom North West University – Potchefstroom	2004 2005
Special courses	None additional to the above.		
Professional membership	IAIA South Africa		
Career	**2010 - current** **2006 - 2009** **2005**	Groenberg Enviro (Pty) Ltd - Wellington Doug Jeffrey Environmental Consultants - Paarl DERA Environmental Consultancy – Klerksdorp (Part time while completing Hons.)	
Current position	Environmental Assessment Practitioner at Pieter Badenhorst Professional Services cc. As a private consultant now provide consultancy services in Environmental Management, Public Participation and Project Management.		
Professional experience	The consultant has 14 years' experience in project management and report writing. She has worked for two other environmental assessment companies prior to the present. She completed her BSc degree and gained an Honours Degree in Environmental Management from the North West University in Potchefstroom. She has been working with Pieter Badenhorst for the last nine years working on Environmental Impact Assessments and Water Use License Applications.		
Publications/ Contracts (A full list is available on request)	Projects and work experience range from: ● Project Management ● Basic Assessment Reports ● Scoping and Environmental Impact Assessment reports. ● Environmental Management Programmes –construction/operational/decommissioning. ● S24G Applications ● Waste License Applications ● Water Use License Applications ● Mining EMP's ● Mining Rights and Prospecting Rights applications ● Environmental Control Officer (ECO) ● Auditing Report		

11.13.2 Appendix G2: EAP Declaration

Declaration of the Environmental Assessment Practitioner ("EAP")

I Elanie Kühn, EAPASA Registration number 2019/885. as the appointed EAP hereby declare/affirm the correctness of the:

- Information provided in this BAR and any other documents/reports submitted in support of this BAR;
- The inclusion of comments and inputs from stakeholders and I&APs;
- The inclusion of inputs and recommendations from the specialist reports where relevant; and
- Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties, 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 activity or application and that there are no circumstances that may compromise my objectivity; or
    - am not independent, but another EAP that meets the general requirements set out in Regulation 13 of NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review EAP must be submitted);
- In terms of the remainder of the general requirements for an EAP, am fully aware of and meet all of the requirements and that failure to comply with any the requirements may result in disqualification;
- I have disclosed, to the Applicant, the specialist (if any), the Competent Authority and registered interested and affected parties, all material information that have or may have the potential to influence the decision of the Competent Authority or the objectivity of any report, plan or document prepared or to be prepared as part of this application;
- I have ensured that information containing all relevant facts in respect of the application was distributed or was made available to registered interested and affected parties and that participation will be facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments;
- I have ensured that the comments of all interested and affected parties were considered, recorded, responded to and submitted to the Competent Authority in respect of this application;
- I have ensured the inclusion of inputs and recommendations from the specialist reports in respect of the application, where relevant;
- I have kept a register of all interested and affected parties that participated in the public participation process; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the NEMA EIA Regulations;

18-08-2022

Signature of the EAP: Date:

GroenbergEnviro (Pty) Ltd
Name of company (if applicable):

11.13.3 Appendix G3: Application Declaration

I **Bernie Denton,** ID number : _____…in my personal capacity or duly authorised thereto hereby declare/affirm that all the information submitted or to be submitted as part of this application form is true and correct, and that:

- I am fully aware of my responsibilities in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA"), the Environmental Impact Assessment ("EIA") Regulations, and any relevant Specific Environmental Management Act and that failure to comply with these requirements may constitute an offence in terms of relevant environmental legislation;
- I am aware of my general duty of care in terms of Section 28 of the NEMA;
- I am aware that it is an offence in terms of Section 24F of the NEMA should I commence with a listed activity prior to obtaining an Environmental Authorisation;
- I appointed the Environmental Assessment Practitioner ("EAP") (if not exempted from this requirement) which:
  - meets all the requirements in terms of Regulation 13 of the NEMA EIA Regulations; or
  - meets all the requirements other than the requirement to be independent in terms of Regulation 13 of the NEMA EIA Regulations, but a review EAP has been appointed who does meet all the requirements of Regulation 13 of the NEMA EIA Regulations;
- I will provide the EAP and any specialist, where applicable, and the Competent Authority with access to all information at my disposal that is relevant to the application;
- I will be responsible for the costs incurred in complying with the NEMA EIA Regulations and other environmental legislation including but not limited to –
  - costs incurred for the appointment of the EAP or any legitimately person contracted by the EAP;
  - costs in respect of any fee prescribed by the Minister or MEC in respect of the NEMA EIA Regulations;
  - Legitimate costs in respect of specialist(s) reviews; and
  - the provision of security to ensure compliance with applicable management and mitigation measures;
- I am responsible for complying with conditions that may be attached to any decision(s) issued by the Competent Authority, hereby indemnify, the government of the Republic, the Competent Authority and all its officers, agents and employees, from any liability arising out of the content of any report, any procedure or any action for which I or the EAP is responsible in terms of the NEMA EIA Regulations and any Specific Environmental Management Act.

Note: If acting in a representative capacity, a certified copy of the resolution or power of attorney must be attached.

18-08-2022

Signature of the Applicant: Date:

Valam Boerdery (Pty) Ltd

Name of company (if applicable):