



**BASIC ASSESSMENT REPORT**  
**AGRICULTURAL LOT 2371 KAKAMAS SOUTH**  
**SETTLEMENT,**  
**KAI !GARIP MUNICIPALITY**

PREPARED FOR:

FRUITS DU SUD (PTY) LTD

ECC DOCUMENT CONTROL: ECC-51-81-REP-08-B

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## TITLE AND APPROVAL PAGE

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## DEFINITIONS AND ABBREVIATIONS

BA	Basic Assessment
BAR	Basic Assessment Report
BID	Background Information Document
DEAT	Department of Environmental Affairs and Tourism
DENC	Northern Cape department of Environment & Nature Conservation
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECC	Environmental Compliance Consultancy
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
GA	General Authorisation
GNR	Government Notice Number
I&AP	Interested and Affected Party
NEMA	National Environmental Management Act (Act No 107 of 1998)
NEM:AQA	National Environmental Management Air Quality Act (Act No 39 of 2004)
NEM:BA	National Environmental Management Biodiversity Act (Act No 10 of 2004)
NEM:PAA	National Environmental Management Protected Areas Act (Act No 57 of 2003)
NHRA	National Heritage Resources Act (Act No 25 of 1999)
NWA	National Water Act (Act No. 36 of 1998)
PPE	Personnel Protective Equipment
PPP	Public Participation Process
SAHRA	South African Heritage Resource Agency
SMME	Small, Medium to Micro Enterprise
WUL	Water Use License
WULA	Water Use License application

# 1. INTRODUCTION

## 1.1. BACKGROUND

Fruits du Sud (Pty) Ltd a South African registered company, is a local and international supplier of dried fruit products. The company was established during 2002 and has been a procurer and producer of local produce in the Kai !Garib Municipality region of South Africa for more than 15 years. Fruits du Sud (the proponent) intends to develop approximately 12 hectares of agricultural land (circa 20.4ha) for the production of table grapes and raisins (the proposed project), and will supply to the local and international markets.

The proposed project site is located within the immediate vicinity of the town Kakamas in the Kai !Garib Municipality, see Figure 1. The site is situated between the N14 and Augrabies Weg towards Kakamas, approximately 5km from the Kakamas town. Further information on the proposed project is provided in Section 4.1.

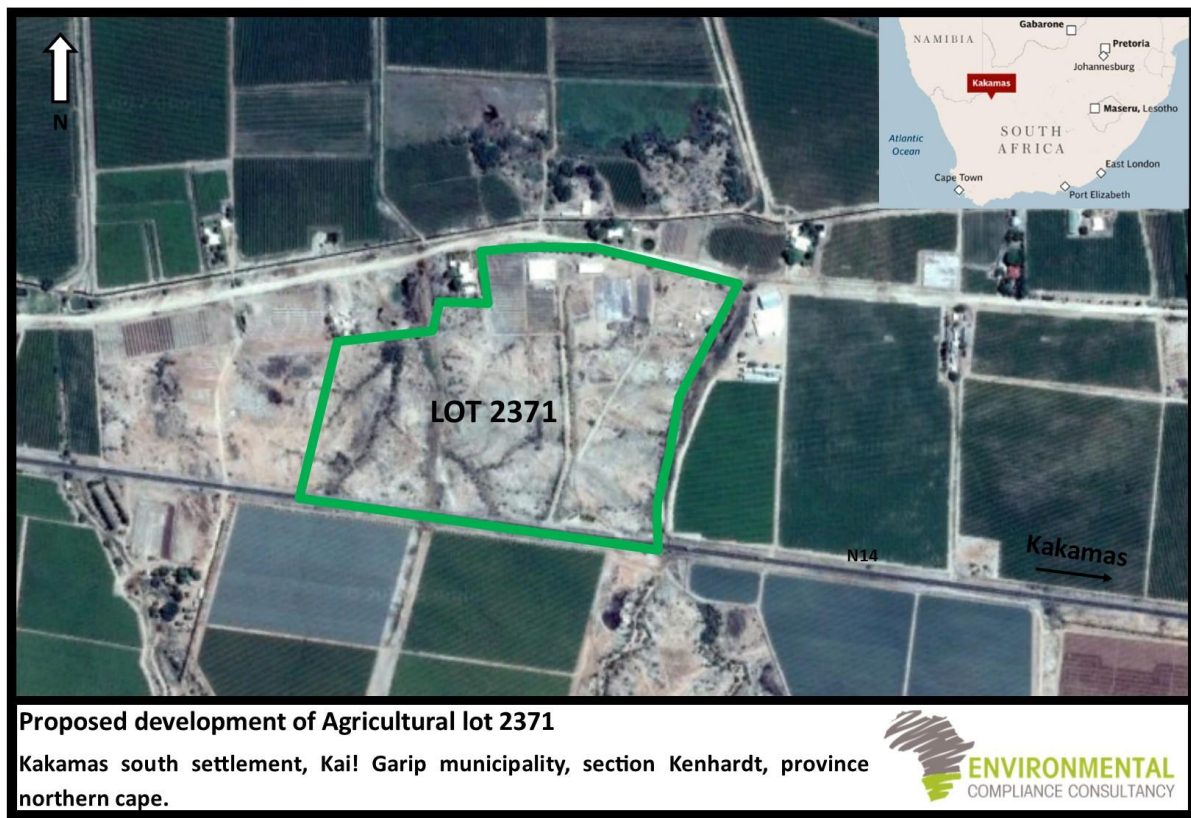


Figure 1 - Site geographical location

## 1.2. PURPOSE OF THIS REPORT

This report presents the Basic Assessment (BA) undertaken for the proposed project, which details the environmental issues and impacts associated for the proposed project, as well as the following objectives:

- Conduct a consultative process;
- Determine the policy and legislative context within which the proposed activity is undertaken and how the activity complies with and responds to the policy and legislative context;

- Describe the need and desirability of the proposed alternatives; and
- Undertake an impact and risk assessment process inclusive of cumulative impacts.

This report shall be submitted to the Northern Cape Department of Environment and Nature Conservation (DENC) for review as part of the application for environmental authorisation for the proposed project.

### 1.3. BASIC ASSESSMENT REGULATORY REQUIREMENTS

The proposed project triggers the following listed activities under the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA), Listing Notice 1 of 2014 under Sections 24(2) and 24D of the NEMA:

**GN R327: Activity 19 (i):** The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from -

(i) Watercourse.

- The proposed project site has natural drainage lines; however, they do not have a defined shape due to erosion. During construction works, these lines will be slightly reshaped due to soil preparation prior to cultivation. It is unlikely that this Listed Activity will be triggered from the nature of the works on these water drainage lines; however, the Department of Environmental Affairs and Tourism (DEAT) requested it to be considered (as per minutes in Appendix E).

**GN R327: Activity 27 (i):** The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation.

- The proposed project will clear approximately 12 ha of land, which has indigenous vegetation.

The BA undertaken for the proposed project has followed the legislative process that is prescribed in the Environmental Impact Assessment (EIA) Regulations of 2014 (and associated amendments) under the NEMA. The BA Processes has been undertaken in accordance with Section 19 of the EIA Regulations.

### 1.4. ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

The Environmental Management Programme report (EMPr) compiled for this BA is in Appendix F. The EMPr is compiled in terms of Appendix 4 of the Government Notice Number (GNR) 982 of the EIA Regulations (2014) for the construction, operational and decommissioning phases.

The EMPr provides the actions for the management of identified environmental impacts originating from the project activity. The implementation of the programme provides guidelines to mitigate and/or eliminate negative environmental impacts and to enhance positive impacts. In addition, the programme provides guidelines for the roles and responsibilities of entities responsible for the implementation of the EMPr, to ensure environmental compliance and monitoring requirements are fulfilled.

The EMPr is a working document and will be reviewed and updated as and when required during the lifespan of the proposed project to include, for example, new roles or unforeseen and / or external impacts.

### 1.5. BASIC ASSESSMENT REPORT REVIEW OPPORTUNITY

#### 1.5.1. CONSULTATION ON THE DRAFT BAR

The Draft BAR and the Draft EMPr was made available to all Interested and Affected Parties (I&APs) and stakeholders for a 30-day review period, between the 4<sup>th</sup> April and 4<sup>th</sup> May 2018.



The only feedback was received from South African Heritage Resources Agency (SAHRA), which can be found in Appendix E. As a result of this feedback, a Letter of Recommendation for Exemption for the proposed project was prepared by a qualified palaeontologist; Dr John Almond. The letter can be found in Appendix H.

#### 1.5.2. FINAL CONSULTATION BAR

The final stage in the BA process entails the capturing of responses and comments from I&APs and to ensure that all issues and concerns have been considered and a response provided. This Final BAR and EMPr presents the final reports to be submitted to the DENC.

### 1.6. ENVIRONMENTAL CONSULTANCY

Environmental Compliance Consultancy (ECC), a Namibian consultancy registration number 2013/11401, has prepared this BAR on behalf of Fruits du Sud Pty Ltd. ECC operates exclusively in the environmental, social, health and safety fields for clients across Southern Africa in the public and private sector. ECC is independent to the proponent and has no vested or financial interest in the proposed project.

All compliance and regulatory requirements regarding this assessment document should be forwarded by email or post to the following address:

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### 1.7. SUB-CONSULTANTS

Prior to undertaking the environmental assessment, a desktop scoping exercise was undertaken to determine available data and information, and the potential environmental and social receptors that may be affected by the proposed project. Heritage and ecology were two areas that were identified as requiring specialist support.

ECC commissioned an ecologist and heritage specialist in order to comprehensively identify potentially positive and adverse environmental impacts associated with the proposed project. The specialist reports produced provide mitigation measures to reduce the potential negative impacts and to improve the positive ones. The following specialist studies were conducted, associated reports are available in Appendix D. A summary of findings are included in Section 5 of this Report.

- *Heritage Impact Assessment of Agricultural Lot 2371 Kakamas South Settlement, near Kakamas, Northern Cape.* Prepared by David Morris - McGregor Museum, Kimberley - October 2017.
- *Fruits du sud kakamas: Ecological opinion and protected and threatened species survey.* Prepared by Marianne Strohbach - Vegetation Research and Ecological Consulting - August 2017.

Through the consultation process, additional input from a palaeontologist was required; a Letter of Recommendation for Exemption for the proposed project was prepared and presented in Appendix H.

### 1.8. IMPACT ASSESSMENT METHODOLOGY

The impact assessment methodology applied to the BA has been developed by ECC which is based on the DEAT Impact Significance, Integrated Environmental Management, Information Series 5 (Department of Environmental Affairs and Tourism, 2002) and the International Finance Corporation Standards (IFC). The process of determining

impact significance includes the following tasks: impact identification, impact prediction and impact evaluation. The methodology can be found in Appendix G (iii).

## 1.9. REPORT STRUCTURE

This Final BAR is structured as per the contents set out in Table 1.

**Table 1 – BAR Chapters**

SECTION	TITLE	CONTENT
-	Acronyms	A list of acronyms used during the report
1	Introduction	This Chapter introduces the proposed project and the BA Process and purpose of the BAR.
2	Regulatory Requirements	This Chapter sets out the requirements of Appendix 1 of the 2014 NEMA EIA Regulations and where the information is located in this report
3	Description of the Receiving Environment	A high-level description of the receiving environment is provided to provide context to the assessment provided in Chapter 4.
4	Basic Assessment Report	The prescribed BAR form has been inserted into this report with the required information specified in <b>blue writing</b> .
5	Conclusion	Chapter providing a conclusion of the BAR

The following appendices are included to comply with Section F in the prescribed BAR template:

**Appendix A:** Site plan(s)

**Appendix B:** Photographs

**Appendix C:** Facility illustration(s) - Not Applicable – No construction activity of a facility to take place. Only the cultivation of agricultural land

**Appendix D:** Specialist reports

- (i) Ecological Opinion and Protected and Threatened Species Report
- (ii) Heritage Impact Assessment Report

**Appendix E:** Comments and responses report

**Appendix F:** Environmental Management Programme

**Appendix G:** Other information:

- (i) SAHRA Case number
- (ii) Environmental Assessment Practitioners CVs
- (iii) EIA Methodology

**Appendix H:** Letter of Recommendation for Exemption

## 2. REGULATORY REQUIREMENTS

A summary of where requirements of Appendix 1 of the 2014 NEMA EIA Regulations (GN R 982, as amended) are provided in this BAR is set out in Table 2.

**Table 2 – Summary of location of required information**

APPENDIX 1 OF THE REGULATIONS	REQUIREMENT	PROVIDED IN SECTION / APPENDIX
1) A BAR 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: (i) the Environmental Assessment Practitioner (EAP) who prepared the report; and (ii) the expertise of the EAP, including a curriculum vitae;	Yes	Section 1.6 and Appendix G (ii)
(b) the location of the activity, including i) the 21 digit Surveyor General code of each cadastral land parcel; ii) where available, the physical address and farm name; iii) where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;	Yes	Chapter 4: Section A
c) a plan which locates the proposed activity or activities applied for as well as 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; or (ii) on land where the property has not been defined, the coordinates within which the activity (iii) is to be undertaken;	Yes	Chapter 4: Section A
(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 activities to be undertaken including associated structures and infrastructure;	Yes	Chapter 4: Section A & Section D
e) a description of the policy and legislative context within which the development is proposed including- (i) an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to this activity and have been considered in the preparation of the report; and (ii) how the proposed activity complies with and responds to the legislation and policy context, plans, guidelines, tools frameworks, and instruments	Yes	Chapter 4: Section A
(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 location	Yes	Chapter 4: Section B
(g) a motivation for the preferred site, activity and technology alternative;	Yes	Chapter 4: Section B & Section D

APPENDIX 1 OF THE REGULATIONS	REQUIREMENT	PROVIDED IN SECTION / APPENDIX
<p>(h) a full description of the process followed to reach the proposed preferred alternative within the site, including:(i) details of all the 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 alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; (v) the impacts and risks identified for each alternative, 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 associated with the alternatives; (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) the outcome of the site selection matrix; (x) if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and (xi) a concluding statement indicating the preferred alternatives, including preferred location of the activity;</p>	Yes	Chapter 4: Section A, Section B, Section D, Section E & Appendices
<p>(i) a full description of the process undertaken to identify, assess and rank the impacts the activity 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;</p>	Yes	Chapter 4: Section D
<p>(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 avoided, managed or mitigated;</p>	Yes	Chapter 4: Section D and Appendices

APPENDIX 1 OF THE REGULATIONS	REQUIREMENT	PROVIDED IN SECTION / APPENDIX
(k) where applicable, a summary of the findings and impact management measures identified in 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 report;	Yes	Chapter 4: Section D and Appendices
(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 site 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;	Yes	Chapter 4: Section D
(m) based on the assessment, and where applicable, impact management measures from specialist reports, the recording of the proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr;	Yes	Chapter 4: Section D and Section E
(n) 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;	Yes	Chapter 4: Section D, Section E and Appendices
(o) a description of any assumptions, uncertainties, and gaps in knowledge which relate to the assessment and mitigation measures proposed;	Yes	Chapter 4: Section D, Section E and Appendices
(p) 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;	Yes	Chapter 4: Section E
(q) where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required, the date on which the activity will be concluded, and the post construction monitoring requirements finalised;	Yes	Chapter 4: Section D and Appendices
(r) 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 and affected parties; and	Yes	Chapter 4: Section E and Appendices
(s) where applicable, details of any financial provisions for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts;	No	NA
(t) any specific information that may be required by the competent authority; and	Yes	Chapter 4: Appendices
(u) any other matters required in terms of section 24(4)(a) and (b) of the Act.	No	NA

### 3. THE RECEIVING ENVIRONMENT

#### 3.1. INTRODUCTION

To provide context to the environmental assessment findings presented in Chapter 4 (specifically Section 4.5), a high-level description of the receiving environment is presented in this Chapter. Information is not repeated and should be read in conjunction with Section 4.2 of the BAR Chapter.

The last two decades has seen an increase in the production of table grapes and raisins along the lower Orange River (M. Pentz personal communication, January 23, 2018). Table grapes typically require a hot, dry climate with warm days and cool evenings with a relatively low humidity. The proposed project site is in an area that provides these favourable conditions just south of the Orange River (see **Figure 2**).



**Figure 2 – Local Environment**

The table grape growth season in the Kakamas region is long enough to allow both the fruit and the vegetative parts of the vine to ripen and mature. The lack of rain during the ripening period decreases the potential of grape and vine diseases. In return, this reduces the amount of fungicides needed to retain profitable yields. Figure 3 illustrates the environment of the area where soils along the riverbanks are fertile and there is an abundance of water from the Orange River.



Figure 3 - Lower Orange River vineyards

### 3.2. SITE ACCESS & CURRENT USE

The site is accessed from the N14 that runs parallel to the southern boundary of the site. The proposed development site has been used as a depot for local produce as well as a drying area during the production process of raisins. The property was consolidated in 2012 with the aim to develop site for the development of arable land to contribute to supply for the market demand for the production of dried fruits. Infrastructure exists on the site, including two storage buildings, concrete slabs and drying racks. The main buildings and infrastructure is located on the north of the site. A secondary access point can be obtained via the Augrabies Way, a gravel road running parallel to the northern boundary of the site.

The site is a currently uncultivated parcel of land within an intensively cultivated riverside or close-to-river tract along the south bank of the Orange River [Gariiep] west of the town of Kakamas.

### 3.3. CLIMATE

Kakamas is considered to have a desert climate. Kakamas normally receives approximately 62mm of rain per year, with most rainfall occurring during autumn. The climate is classified as BWh (hot desert climate) by the Köppen-Geiger system. As indicated in the data presented in Figure 4, the average annual temperature is for Kakamas is 20.2 °C and the average is 62 mm. The least amount of rainfall occurs in June, with an average of 3mm, with most of the precipitation falling in March, averaging 27mm (Climate-Data. Org, 2018).

	January	February	March	April	May	June	July	August	September	October	November	December
Avg. Temperature (°C)	27.3	26.4	24.4	21.1	16	13.1	12.2	14.5	17.3	20.9	23.5	26.3
Min. Temperature (°C)	18.9	18.3	16.7	12.8	7.8	4.6	3.7	5.4	8.1	11.6	14.3	17.2
Max. Temperature (°C)	35.7	34.5	32.2	29.5	24.3	21.7	20.8	23.6	26.5	30.3	32.8	35.4
Avg. Temperature (°F)	81.1	79.5	75.9	70.0	60.8	55.6	54.0	58.1	63.1	69.6	74.3	79.3
Min. Temperature (°F)	66.0	64.9	62.1	55.0	46.0	40.3	38.7	41.7	46.6	52.9	57.7	63.0
Max. Temperature (°F)	96.3	94.1	90.0	85.1	75.7	71.1	69.4	74.5	79.7	86.5	91.0	95.7
Precipitation / Rainfall (mm)	17	21	27	17	9	3	4	3	3	7	13	10

**Figure 4: Kakamas Climate - Source: climate-data.org**

### 3.4. GEOLOGY

Rocks in the region are generally highly deformed metamorphosed sedimentary and volcanic rocks intruded by granitoids. The region is further characterized by numerous geological faults and shear zones. The area forms part of the Namaqua Metamorphic Province and lies within the Kakamas Terrane of the Gordonia Sub-province (of the Namaqua Metamorphic Province) (Shunqekela, 2014).

### 3.5. VEGETATION

Kakamas is situated in the Nama-Karoo biome. The vegetation type covering the area is the Bushmanland Arid Grassland (Nkb 3), with Lower Gariep Broken Veld (Nkb1) and Kalahari Karrooid Shrubland (Nkb 5) in the wider surrounding the area, elements of such vegetation is possible within the study area. For further information on the surrounding area, see the Ecology Report – Appendix D.

Most of the area on the proposed project site has been affected by previous extensive groundworks, in particular camps 2 and 3. Although natural vegetation had re-established on the site, it still contained mostly pioneer species, which would indicate that these groundworks had occurred less than 10 years ago. Appendix B provides photos of the site illustrating the vegetation.

In areas that had not been affected by groundworks, the soils present appeared to have minimal development, were usually shallow and on weathering rock. Lime was present in part of the landscape, whilst low ridges with quartz, feldspar and schist, as well as gypsum-like soils were common.

Overall, three main vegetation units could be distinguished:

- Bushmanlan Arid Grassland;
- Riparian Vegetation; and
- Disturbed and/or transformed areas.

The ecology report in Appendix D provides further information on these vegetation units, along with areas of conservation concern.

### 3.6. HYDROLOGY & TERRAIN

The project site can be described as slightly undulating to dissected, draining in a northerly and easterly direction. Two small ephemeral drainage lines and several local runoff accumulation gullies are situated across and adjacent to the project site. These ephemeral drainage lines appear to result mainly from runoff from higher-lying vineyards as well as



the sealed road surface south of the study area. North of the study area, these drainage lines are again restricted to small drainage channels off the vineyards, allowing runoff to drain into the Orange River, approximately 0.5km to the north of the proposed project site, as illustrated on **Figure 2**.

Generally, the terrain away from the river tends to be rocky or has shallow sandy soils with relatively to extremely sparse vegetation.

### 3.7. CULTURAL HERITAGE AND PALAEOLOGICAL REMAINS

Where archaeological materials might occur on the surface they would be highly visible due to the poor vegetation. The site is set where erosion generally features more strongly than deposition of sediment, so that there would be few places where archaeological materials would be expected to occur much below the current surface. Most of the land that has been inspected is already disturbed, therefore it is unlikely that undiscovered remains will be found. The heritage study report provides further information which is contained in Appendix D.

On the site, a Rock Gong was identified. Rock gongs are rocks that ring when beaten, and by definition, have beating marks that reflect ancient use. The Rock Gong is one of the first to be found in this area of the Northern Cape. An application for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999) will therefore be required, which is discussed further in Section 4.2.6.

The proposed site and surrounding area is underlain by ancient Precambrian basement rocks belonging to the Namaqua-Natal Province. These basement bedrocks are approximately two to one billion years old and entirely unfossiliferous. They are mantled by Late Cenozoic sandy soils, surface gravels and possibly by calcretes. Potentially fossiliferous ancient fluvial gravels of the Orange River drainage system are unlikely to be represented here. Further information is presented in Appendix H.

### 3.8. ECONOMY

The economy of Kakamas is primarily based on the agricultural sector. Irrigation from the Orange River and supporting canal system has promoted agricultural development in the region. Farmers in the Kakamas area are prime exporters of table grapes to international markets. The region also exports peaches, dried fruit, raisins, oranges and dates.

## 4. BASIC ASSESSMENT REPORT

**Northern Cape Province  
DEPARTMENT OF  
ENVIRONMENT & NATURE  
CONSERVATION**



**Porofensi Ya Kapa Bokone  
LEFAPHA LA TIKOLOGO LE  
TSHOMARELO YA TLHAGO**

### BASIC ASSESSMENT REPORT

Project applicant:	FRUITS DU SUD PROPIERTY LIMITED		
Business reg. no./ID. no.:	2002/001634/07		
Contact person:	JOHANNES VAN NIEKERK		
Postal address:	PO BOX 15, KANONEILAND, SOUTH AFRICA		
Telephone:	054 491 1041	Cell:	082 550 3702
E-mail:	joahannes@fruitsdusud.com	Fax:	NA

Prepared by:

Environmental Assessment Practitioner/Firm:	ENVIRONMENTAL COMPLIANCE CONSULTANCY CC		
Business reg. no./ID. no.:	CC/2013/11404		
Contact person:	STEPHAN BEZUIDENHOUT		
Postal address:	PO BOX 1058, KAKAMAS, SOUTH AFRICA, 8870		
Telephone:	076 089 0613	Cell:	076 089 0613
E-mail:	info@eccenvironmental.com	Fax:	NA

(For official use only)

**File Reference Number:**

**Application Number:**

**Date Received:**


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**Basic Assessment Report in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2010.**

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Basic Assessment Report in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2010.

Kindly note that:

1. This basic assessment report is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2010 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. The report must be typed within the spaces provided in the form. The size of the spaces provided are not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
3. Where applicable tick the boxes that are applicable or black out the boxes that are not applicable in the report.
4. An incomplete report may be returned to the applicant for revision.
5. The use of “not applicable” in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
6. This report must be handed in at offices of the relevant competent authority as determined by each authority.
7. No faxed or e-mailed reports will be accepted.
8. The report must be compiled by an independent environmental assessment practitioner.
9. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
10. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.

#### 4.1. SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?

YES

If YES, please complete form for each specialist thus appointed:

Any specialist reports must be contained in Appendix D.

##### 4.1.1. ACTIVITY DESCRIPTION

Describe the activity, which is being applied for, in detail:

The activities for the proposed project trigger the NEMA as they fall under the following Listed Activities:

- GN R327: Activity 19 (i): The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from  
(i) a watercourse
- GN R327: Activity 27 (i): The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation.

##### PROPOSED PROJECT

The proposed project is to develop agricultural lot 2371 Kakamas south settlement, kai !garip municipality, section Kenhardt, province northern cape.

The Surveyor-General 21 digit site reference for the property is **C03600700002371000000**.

The project site is located within the immediate vicinity of Kakamas, a town in the Kai! Garib municipality. The site situated between the N14 and Augrabies weg towards Kakamas and approximately 5km from the town area. Kakamas is situated along the banks of the Orange River and serves as one of the agricultural hubs for the seasonal fruit farms meandering along the Lower Orange River agricultural region.

Figure 5 shows the layout of Lot 2371 and provides a reference to the location of Kakamas within South Africa.

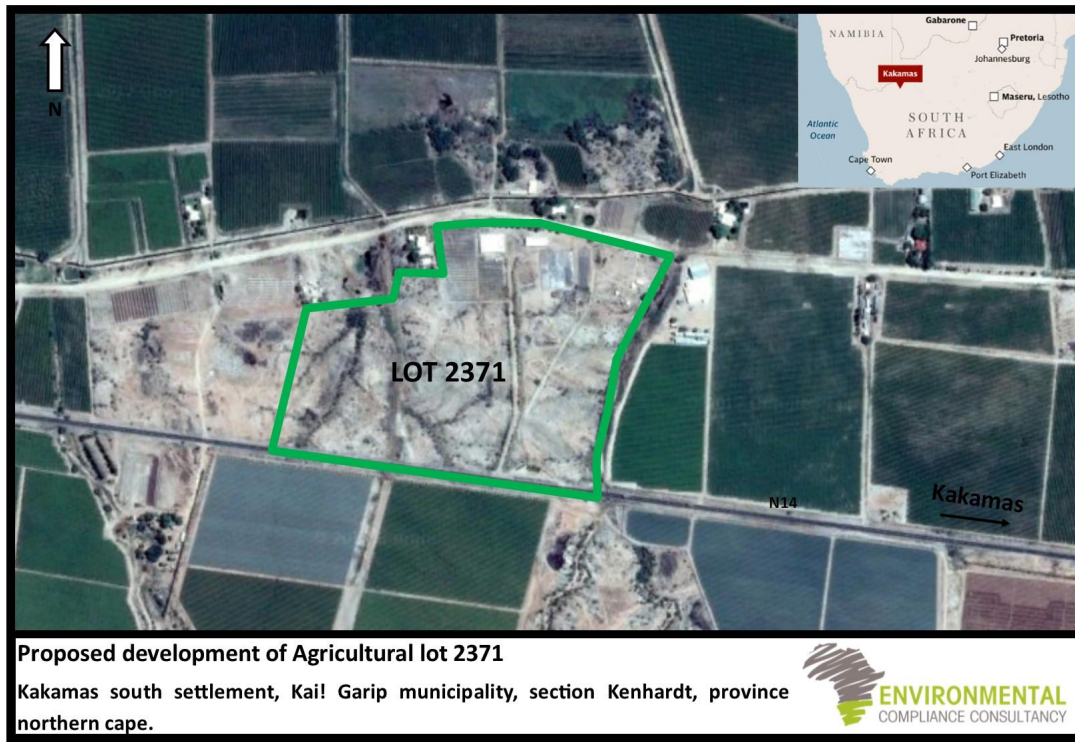


Figure 5 - Agricultural lot 2371 study area

Fruits du Sud (Pty) Ltd intends to develop the agricultural land for the production of Table Grapes. Lot 2371 comprises of four properties that were consolidated in 2012, the consolidated property covers a total area of 20.3868 Ha, Appendix A includes the consolidated map from the title deed.

**Existing site and infrastructure**

Currently the property serves as a raisin depository and drying area for producers in the area that supply to Fruits Du Sud.

Figure 5 below indicates the existing site infrastructure, which include:

- Two storage buildings to house and store raisin bins awaiting transport to the Fruits du Sud packaging facility, located between Kakamas and Upington;
- Concrete slabs for the drying of raisins; and
- Drying racks for the drying of raisins.



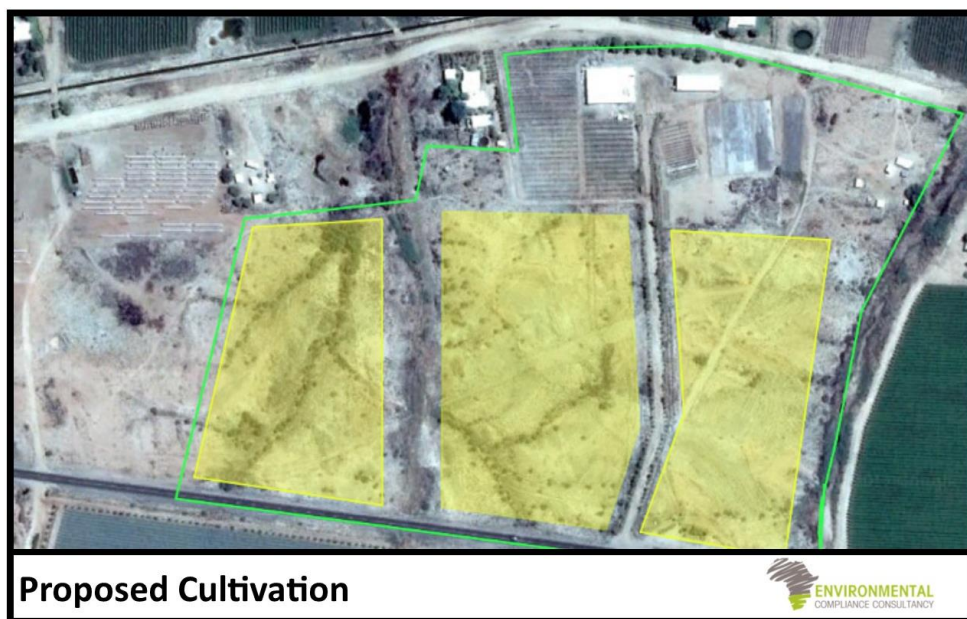
Figure 6 - Site Infrastructure

**Proposed Development**

The overall aim of the project is to develop the uncultivated land and increase the production capacity of Fruits du Sud, cultivating 12Ha of table grapes. The construction period is approximately three months.

No new drying platforms, buildings, access roads or fences will be constructed as the necessary infrastructure is in place. The property is mainly uncultivated and the only activity will be that of the agricultural development of the uncultivated soil, which includes planting and growing of table grapes and associated irrigation wells and plant supports. The preparation of the soil involves tilling and ploughing to loosen the topsoil and remove the current vegetation.

Figure 6 indicates the proposed areas for the development taking into consideration environmental receptors (see Section 4.5.1). The areas comprise of previously disturbed as well as virgin soils and includes two natural drainage lines cross the section.



**Figure 7 - Proposed Cultivation****ALTERNATIVES**

The key activity involves the development of the uncultivated land. The proposed cultivation areas needs to be sloped and shaped to prepare the soil for vine propagation and to allow drainage towards the natural drainage lines to limit potential of erosion and manage soil moisture during production. As seen in Figure 6, three areas or development blocks with a total area of 12 Ha was identified by the proponent.

Whilst undertaking the environmental assessment two feasible and reasonable alternatives for the site layout were identified, thereby mitigating (designing out) potential effects the project would have on the environment. These alternatives focused on the natural drainage lines, indigenes and protect species conservation and the preservation of the site heritage.

The two alternative site layouts reduced the site, however avoided impacts on a heritage object of notable significance (site maps are available in appendix A):

- Alternative A: 11.32Ha, heritage object would be undisturbed and remain in its original place.
- Alternative B: 11.36Ha, heritage object would be moved to a designated conservation area within the site boundary.

Option A is the preferred option and will be taken forward for development. An assessment of these alternatives is included in Section 4.5.

**4.1.2. FEASIBLE AND REASONABLE ALTERNATIVES**

*“alternatives”*, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

- (a) the property on which or location where it is proposed to undertake the activity;
- (b) the type of activity to be undertaken;
- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;
- (e) the operational aspects of the activity; and
- (f) the option of not implementing the activity.

Describe alternatives that are considered in this application. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. The determination of whether site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

Paragraphs 3 – 13 below should be completed for each alternative.

The EIA process (findings presented in this BAR) aids the design and development process through incorporating design changes early on into the project, thus designing out potential environmental impacts and optimising the design. The process allows for provision of alternatives to be considered based on the identified potential impacts.

The two alternatives identified for this project takes into consideration the identified impacts for the cultivation of arable land. The two alternatives are the same with the only difference regarding the mitigation actions for an identified heritage object.

#### 4.1.3. ACTIVITY POSITION

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

List alternative sites if applicable.

Alternative:	Latitude (S):		Longitude (E):	
Alternative S1 <sup>1</sup> (preferred or only site alternative)	°28 <sup>0</sup>	45'31.6"	°20 <sup>0</sup>	34'09.8"
Alternative S2 (if any)	°28 <sup>0</sup>	45'31.6"	°20 <sup>0</sup>	34'09.8"
Alternative S3 (if any)				

In the case of linear activities:

Alternative:	Latitude (S):		Longitude (E):	
Alternative S1 (preferred or only route alternative)				
Starting point of the activity				
Middle point of the activity				
End point of the activity				
Alternative S2 (if any)				
Starting point of the activity				
Middle point of the activity				
End point of the activity				
Alternative S3 (if any)				
Starting point of the activity				
Middle point of the activity				
End point of the activity				

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

<sup>1</sup> "Alternative S.." refer to site alternatives.  
FINAL BAR



#### 4.1.4. PHYSICAL SIZE OF THE ACTIVITY

Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative:

Size of the activity:

Alternative A1<sup>2</sup> (preferred activity alternative)

113,200 m<sup>2</sup>

Alternative A2 (if any)

113,600m<sup>2</sup>

Alternative A3 (if any)

NA

or, for linear activities:

Alternative:

Length of the activity:

Alternative A1 (preferred activity alternative)

NA – Not a linear activity

Alternative A2 (if any)

NA – Not a linear activity

Alternative A3 (if any)

NA – Not a linear activity

Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

Alternative:

Size of the site/servitude:

Alternative A1 (preferred activity alternative)

203,868 m<sup>2</sup>

Alternative A2 (if any)

NA

Alternative A3 (if any)

NA

#### 4.1.5. SITE ACCESS

Does ready access to the site exist?

YES

If NO, what is the distance over which a new access road will be built

NA

Describe the type of access road planned:

[REDACTED]

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

#### 4.1.6. SITE OR ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document. – See Appendix A

<sup>2</sup> “Alternative A..” refer to activity, process, technology or other alternatives.

The site or route plans must indicate the following:

- 1 the scale of the plan which must be at least a scale of 1:500;
- 2 the property boundaries and numbers of all the properties within 50 metres of the site;
- 3 the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
- 4 the exact position of each element of the application as well as any other structures on the site;
- 5 the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;
- 6 all trees and shrubs taller than 1.8 metres;
- 7 walls and fencing including details of the height and construction material;
- 8 servitudes indicating the purpose of the servitude;
- 9 sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):
  - rivers;
  - the 1:100 year flood line (where available or where it is required by DWA);
  - ridges;
  - cultural and historical features;
  - areas with indigenous vegetation (even if it is degraded or invested with alien species);
- 9 for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
- 10 the positions from where photographs of the site were taken.

#### 4.1.7. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this form. It must be supplemented with additional photographs of relevant features on the site, if applicable. – See Appendix B

#### 4.1.8. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity. – See Appendix C

#### 4.1.9. ACTIVITY MOTIVATION

##### 4.1.9.1. SOCIO-ECONOMIC VALUE OF THE ACTIVITY

What is the expected capital value of the activity on completion?

R4,000,000

What is the expected yearly income that will be generated by or as a result of the activity?

R-385,000 y1

R1,058,750 y2

R1,815,000 y3

R2,901,252 y4

Will the activity contribute to service infrastructure?	YES	
Is the activity a public amenity?	YES	
How many new employment opportunities will be created in the development phase of the activity?	20	
What is the expected value of the employment opportunities during the development phase?	R388,125	
What percentage of this will accrue to previously disadvantaged individuals?	100%	
How many permanent new employment opportunities will be created during the operational phase of the activity?	22	
What is the expected current value of the employment opportunities during the first 10 years?	R880,000	
What percentage of this will accrue to previously disadvantaged individuals?	100%	

#### 4.1.10. NEED AND DESIRABILITY OF THE ACTIVITY

Motivate and explain the need and desirability of the activity (including demand for the activity):

Fruits du Sud is an international and local supplier of high quality dried fruit products. The aim of the intended agricultural development is to increase the raisin production capacity of Fruits Du Sud to supply to local and international markets.

The site is currently underutilised. Through developing additional agricultural uses on the site, the area is utilised more effectively, resulting in both social and economical benefits.

Indicate any benefits that the activity will have for society in general:

Fruits du Sud implements Good Agricultural Practices and standards, like Global GAP, to ensure food safety and quality from the vine to the final packaged products. Global GAP ensures that workers comply with SHE regulations, good hygiene practices, and affective and use of agricultural remedies. In addition, it ensures that workers are not exploited by substandard wages or exposed to poor working environments.

Through demonstrating compliance with good practice, personnel are educated and trained to international standards.

Indicate any benefits that the activity will have for the local communities where the activity will be located:

There is a high demand for dried fruits from the region. The increased supply of raisins has a direct effect on the local economy. Secondary industries in the agricultural sector such as suppliers of packaging materials, transportation and agricultural remedy suppliers will benefit from the development.

The activity will create employment during its development phase. Once complete it will provide 22 direct permanent jobs and additional downstream jobs including secondary industries or services providers, transport, packaging, equipment maintenance, fruit storage. Kakamas is an agricultural hub within the region, increased development in the agricultural sector will promote overall economic growth. Additionally; the majority of the produce packed by Fruits Du Sud is grown by local farmers, Fruits Du Sud assists local farmers in implementing Global GAP standards. Employees and suppliers are trained to comply with these standards.

4.1.11. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

Title of legislation, policy or guideline:

Administering authority:    Date:

Constitution of South Africa (Act 108 of 1996)	National Government	1996
National Environmental Management Act (Act 107 of 1998)	DENC	1998
National Environmental Management: Waste Act (Act 59 of 2008)	DENC	2008
National Water Act (Act 36 of 1998)	DWA	1998
National Heritage Resources Act (Act 25 of 1999)	SAHRA	1999
National Environmental Management: Biodiversity Act (Act 10 of 2004)	DENC	2004
Environmental Impact Assessment Regulations, 2014	DENC	2014

4.1.12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

4.1.12.1. SOLID WASTE MANAGEMENT

Will the activity produce solid construction waste during the construction/initiation phase?

	YES
--	-----

If yes, what estimated quantity will be produced per month?

36m<sup>3</sup>

How will the construction solid waste be disposed of (describe)?

Minimal waste will be created by the construction of the project. Potential waste includes dropper offcuts, wire, water pipes, wood, spoiled plant products and general inert waste associated with vineyard construction.

Where will the construction solid waste be disposed of (describe)?

Waste will be reused on the site, and wherever possible recycled. Should solid waste require disposal it will be disposed of at the registered site for Kakamas.

Will the activity produce solid waste during its operational phase?

	YES
--	-----

If yes, what estimated quantity will be produced per month?

6m<sup>3</sup>

How will the solid waste be disposed of (describe)?

Minimal waste will be produced during operations; it will be limited to spoiled vine/plant/food waste, dropper offcuts, water pipes, and general inert waste associated with vineyard operations.

Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)?

Waste will be reused on the site and wherever possible recycled on site. Should solid waste require disposal it will be disposed of at the registered site for Kakamas.

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation? 

	NO
--	----

If yes, inform the competent authority and request a change to an application for scoping and EIA.

Is the activity that is being applied for a solid waste handling or treatment facility? 

	NO
--	----

If yes, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

#### 4.1.12.2. LIQUID EFFLUENTS

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system? 

	NO
--	----

If yes, what estimated quantity will be produced per month?

	0 m <sup>3</sup>
--	------------------

Will the activity produce any effluent that will be treated and/or disposed of on site? 

	NO
--	----

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

Will the activity produce effluent that will be treated and/or disposed of at another facility? 

	NO
--	----

If yes, provide the particulars of the facility:

Facility name:			
Contact person:			
Postal address:			
Postal code:			
Telephone:		Cell:	
E-mail:		Fax:	

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

#### 4.1.13. EMISSIONS INTO THE ATMOSPHERE

Will the activity release emissions into the atmosphere? 

	NO
--	----

If yes, is it controlled by any legislation of any sphere of government? 

	NO
--	----

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If no, describe the emissions in terms of type and concentration:

#### 4.1.14. GENERATION OF NOISE

Will the activity generate noise?

	NO
--	----

If yes, is it controlled by any legislation of any sphere of government?

	NO
--	----

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If no, describe the noise in terms of type and level:

#### 4.1.15. WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es)

	Water board				
--	-------------	--	--	--	--

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate

the volume that will be extracted per month:

6000m3
--------

Does the activity require a water use permit from the Department of Water Affairs?

	NO
--	----

If yes, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this application if it has been submitted.

#### 4.1.16. ENERGY EFFICIENCY

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:

Drip irrigation will be used to irrigate the vineyards.

Drip irrigation is well known to be one of the most effective methods in crop cultivation to apply and maintain moisture levels in soil. The reduction in water consumption due to effective irrigation methods reduces the amount electricity used to operate pumps.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

NA – Agricultural Development

## 4.2. SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section C and indicate the area, which is covered by each copy No. on the Site Plan.

Section C Copy No. (e.g.   
A):

Paragraphs 1 - 6 below must be completed for each alternative.

Has a specialist been consulted to assist with the completion of this section?

If YES, please complete form XX for each specialist thus appointed:

All specialist reports must be contained in [Appendix D](#).

### 4.2.1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
------	-------------	-------------	-------------	--------------	-------------	------------------

Alternative S2 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
------	-------------	-------------	-------------	--------------	-------------	------------------

Alternative S3 (if any):

--	--	--	--	--	--	--

### 4.2.2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site:

2.1 Ridgeline

2.2 Plateau

2.3 Side slope of hill/mountain

2.4 Closed valley

2.5 Open valley

2.6 Plain

2.7 [Undulating plain / low hills](#)

2.8 Dune

2.9 Seafront

#### 4.2.3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on any of the following (tick the appropriate boxes)?

	Alternative S1:	Alternative S2 (if any):	Alternative S3 (if any):
Shallow water table (less than 1.5m deep)	<input type="checkbox"/> NO	<input type="checkbox"/> NO	<input type="checkbox"/>
Dolomite, sinkhole or doline areas	<input type="checkbox"/> NO	<input type="checkbox"/> NO	<input type="checkbox"/>
Seasonally wet soils (often close to water bodies)	<input type="checkbox"/> NO	<input type="checkbox"/> NO	<input type="checkbox"/>
Unstable rocky slopes or steep slopes with loose soil	<input type="checkbox"/> NO	<input type="checkbox"/> NO	<input type="checkbox"/>
Dispersive soils (soils that dissolve in water)	<input type="checkbox"/> NO	<input type="checkbox"/> NO	<input type="checkbox"/>
Soils with high clay content (clay fraction more than 40%)	<input type="checkbox"/> NO	<input type="checkbox"/> NO	<input type="checkbox"/>
Any other unstable soil or geological feature	<input type="checkbox"/> NO	<input type="checkbox"/> NO	<input type="checkbox"/>
An area sensitive to erosion	<input type="checkbox"/> NO	<input type="checkbox"/> NO	<input type="checkbox"/>

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. (Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted).

#### 4.2.4. GROUNDCOVER

Indicate the types of groundcover present on the site:

- 4.1 [Natural veld – good condition E](#)
- 4.2 [Natural veld – scattered aliens E](#)
- 4.3 Natural veld with heavy alien infestation E
- 4.4 Veld dominated by alien species E
- 4.5 Gardens
- 4.6 Sport field
- 4.7 [Cultivated land](#)
- 4.8 Paved surface



4.9 Building or other structure

4.10 Bare soil

The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition <sup>E</sup>	Natural veld with scattered aliens <sup>E</sup>			
	Cultivated land			Bare soil

Note: Maps are provided in Appendix A

If any of the boxes marked with an “E” is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn’t have the necessary expertise.

Note: Specialist reports are provided in Appendix D

4.2.5. LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that does currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

- Natural area
- Low density residential
- Medium density residential
- High density residential
- Informal residential<sup>A</sup>
- Retail commercial & warehousing
- Light industrial
- Medium industrial<sup>AN</sup>
- Heavy industrial<sup>AN</sup>
- Power station
- Office/consulting room
- Military or police base/station/compound
- Spoil heap or slimes dam<sup>A</sup>
- Quarry, sand or borrow pit
- Dam or reservoir
- Hospital/medical centre
- School
- Tertiary education facility
- Church
- Old age home
- Sewage treatment plant<sup>A</sup>
- Train station or shunting yard<sup>N</sup>
- Railway line<sup>N</sup>
- Major road (4 lanes or more)<sup>N</sup>
- Airport<sup>N</sup>
- Harbour
- Sport facilities
- Golf course
- Polo fields
- Filling station<sup>H</sup>
- Landfill or waste treatment site
- Plantation
- Agriculture
- River, stream or wetland
- Nature conservation area
- Mountain, koppie or ridge
- Museum
- Historical building
- Protected Area
- Graveyard
- Archaeological site
- Other land uses (describe)

1 Natural area	22 Train station or shunting yard <b>N</b>
2 <b>Low density residential</b>	23 Railway line <b>N</b>
3 Medium density residential	24 Major road (4 lanes or more) <b>N</b>
4 High density residential	25 Airport <b>N</b>
5 Informal residential <b>A</b>	26 Harbour
6 Retail commercial & warehousing	27 Sport facilities
7 Light industrial	28 Golf course
8 Medium industrial <b>AN</b>	29 Polo fields
9 Heavy industrial <b>AN</b>	30 Filling station <b>H</b>
10 Power station	31 Landfill or waste treatment site
11 Office/consulting room	32 Plantation
12 Military or police base/station/compound	33 <b>Agriculture</b>
13 Spoil heap or slimes dam <b>A</b>	34 <b>River, stream or wetland</b>
14 Quarry, sand or borrow pit	35 Nature conservation area
15 Dam or reservoir	36 Mountain, koppie or ridge
16 Hospital/medical centre	37 Museum
17 School	38 Historical building
18 Tertiary education facility	39 Protected Area
19 Church	40 Graveyard
20 Old age home	41 <b>Archaeological site</b>
21 Sewage treatment plant <b>A</b>	42 Other land uses (describe)

If any of the boxes marked with an "N" are ticked, how this impact will / be impacted upon by the proposed activity.

If YES, specify and explain:	<b>NA – None of the selected boxes contained an "N"</b>
------------------------------	---

If any of the boxes marked with an "An" are ticked, how will this impact / be impacted upon by the proposed activity.

If YES, specify and explain:	<b>NA – None of the selected boxes contained an "AN"</b>
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If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity.

If YES, specify and explain:	<b>NA – None of the selected boxes contained an "H"</b>
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#### 4.2.6. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including

YES	NO
-----	----

Archaeological or paleontological sites, on or close (within 20m) to the site?

YES	
-----	--

If YES, explain:

<p>A Rock gong (lithophone) was identified on site.</p> <p>Rock gongs are rocks that ring when beaten, and by definition, have beating marks that reflect ancient use. Often it is found that recent generations have noticed the effect and old beating marks bare signs of recent use.</p>
--

If uncertain, conduct a specialist investigation by a recognised specialist in the field to establish whether there is such a feature(s) present on or close to the site.

Briefly explain the findings of the specialist:

<p>The specialist report is available in Appendix D</p> <p>The concluding paragraph of this report states the following:</p> <p><i>Precolonial/Stone Age material noted at Lot 2371 was found to be generally of low significance, where present at all. Part of the property was already disturbed.</i></p> <p><i>Criteria used here for impact significance assessment for archaeological traces rate the impacts as not worthy of further mitigation. More significantly, however, a rock gong was found, being the first one ever found in this part of the Northern Cape. Recommendation is made that it be preserved if possible by avoiding destruction of the rocky outcrop on which it occurs.</i></p> <p>The preservation of the rock gong has been incorporated in the alternatives:</p> <p>Alternative A: The rock gong remains in its original location and is not disturbed.</p> <p>Alternative B: The rock gong is moved to the designated conservation area.</p> <p>Option A is the preferred option and will be taken forward for development.</p>
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Will any building or structure older than 60 years be affected in any way?

	NO
--	----

Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

YES	
-----	--

If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made.

The specialist report has been sent to SAHRA and is currently under review. In addition, the BAR will be sent to the Competent Authority for review. Proof of the submission is available in Appendix G.

## 4.3. SECTION C: PUBLIC PARTICIPATION

### 4.3.1. ADVERTISEMENT

The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by:

- (a) Fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the competent authority) at a place conspicuous to the public at the boundary or on the fence of:
  - (i) The site where the activity to which the application relates is or is to be undertaken; and
  - (ii) Any alternative site mentioned in the application;
- (b) Giving written notice to:
  - (i) The owner or person in control of that land if the applicant is not the owner or person in control of the land;
  - (ii) The occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  - (iii) Owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  - (iv) The municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
  - (v) The municipality which has jurisdiction in the area;
  - (vi) Any organ of state having jurisdiction in respect of any aspect of the activity; and
  - (vii) Any other party as required by the competent authority;
- (c) Placing an advertisement in—
  - (i) One local newspaper; or
  - (ii) Any official Gazette that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;
- (d) Placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or local municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official Gazette referred to in sub regulation 54(c)(ii); and
- (e) Using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desiring of but unable to participate in the process due to—
  - (i) Illiteracy;
  - (ii) Disability; or
  - (iii) Any other disadvantage.

[All of the above is provided in Appendix E](#)

#### 4.3.2. CONTENT OF ADVERTISEMENTS AND NOTICES

A notice board, advertisement or notices must:

- (a) Indicate the details of the application which is subjected to public participation; and
- (b) State:
  - (i) That the application has been submitted to the competent authority in terms of these Regulations, as the case may be;
  - (ii) Whether basic assessment or scoping procedures are being applied to the application, in the case of an application for environmental authorisation;
  - (iii) The nature and location of the activity to which the application relates;
  - (iv) Where further information on the application or activity can be obtained; and the manner in which and the person to whom representations in respect of the application may be made.

[All of the above is provided in Appendix E](#)

#### 4.3.3. PLACEMENT OF ADVERTISEMENTS AND NOTICES

Where the proposed activity may have impacts that extend beyond the municipal area where it is located, a notice must be placed in at least one provincial newspaper or national newspaper, indicating that an application will be submitted to the competent authority in terms of these regulations, the nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made, unless a notice has been placed in any Gazette that is published specifically for the purpose of providing notice to the public of applications made in terms of the EIA regulations.

Advertisements and notices must make provision for all alternatives.

[All of the above is provided in Appendix E](#)

#### 4.3.4. DETERMINATION OF APPROPRIATE MEASURES

The practitioner must ensure that the public participation is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate. Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

[The consultation undertaken for the proposed project is considered to be adequate and robust for the nature of the development.](#)

### 4.4. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments and respond to each comment of the public before the application is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to this application. The comments and response report must be attached under Appendix E.

[All of the above is provided in Appendix E](#)

#### 4.4.1. AUTHORITY PARTICIPATION

Authorities are key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input. The planning and the environmental sections of the local authority must be informed of the application at least 30 (thirty) calendar days before the submission of the application.

List of authorities informed:

DENC  
DOA  
Department of Water and Sanitation (DWS)  
KAI !GARIP MUNICIPALITY  
SAHRA

List of authorities from whom comments have been received:

DENC  
DWS

A meeting was held with the DENC and minutes of this meeting is provided in Appendix E.

#### 4.4.2. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for linear activities, or where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that sub regulation to the extent and in the manner as may be agreed to by the competent authority.

Any stakeholder that has a direct interest in the site or property, such as servitude holders and service providers, should be informed of the application at least 30 (thirty) calendar days before the submission of the application and be provided with the opportunity to comment.

Has any comment been received from stakeholders?

YES

If “YES”, briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

**Meeting with Mr Ordian Riba, DENC: Pre-application meeting**

The aim of the pre-application meeting was to determine if the proposed development would require a Basic Assessment. Mr Riba indicated that a Basic Assessment needs to be conducted based on the listed activities that were triggered.

**Telephonic calls and emails with Mr Shaun Cloete, Department of Water and Sanitation:**

Due to the presence of the natural drainage lines on the property the proponent will need to apply for a General Authorisation (GA) in terms of section 21(c) (Impeding or diverting the flow of water in a watercourse) and (i) (Altering the bed, banks, course or characteristics of a watercourse) of the National Water Act 36 of 1998 (NWA). Application for a GA forms part of the water use license application (WULA) process and thus the proponent needs to apply for a GA via this process.

All copies of correspondence are provided in Appendix E

#### 4.5. SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2010, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

Raised by interested and affected parties

List the main issues raised by interested and affected parties.

The issues/ comments that were raised by Interested and Affected Parties following the release of the Background Information Document and prior to the release of this Draft Basic Assessment Report can be seen in the comments and responses report with is attached as Appendix E.

Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached to this report):

The proponent needs to apply for a Water Use license (WUL)

The proponent is responsible for the application process to obtain a General Authorisation (GA) for listed activity: GN R327: Activity 19 (i): The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from

(a) watercourse

Impacts that may result from the planning and design, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE phases AS WELL AS PROPOSED MANAGEMENT OF identified IMPACTS AND PROPOSED mitigation measures

List the potential direct, indirect and cumulative property/activity/design/technology/operational alternative related impacts (as appropriate) that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed.

Alternative A is the preferred development option which has been assessed; the findings are summarised in the table below.

The impact assessment methodology used applied to the BA has been developed by ECC which is based on the DEAT Impact Significance, Integrated Environmental Management, Information Series 5 (Department of Environmental Affairs and Tourism, 2002) and the International Finance Corporation Standards (International Finance Corporation, 2017). The methodology can be found in Appendix G (iv).

The operations and decommissioning (restoration) phases of the proposed project are unlikely to cause impacts and will not have additional impacts other than those identified in the tables below.

**Table 3 – Design Development Phase Impacts**

ACTIVITY & IMPACT	SENSITIVITY & VALUE	NATURE OF IMPACT	MAGNITUDE OF CHANGE	SIGNIFICANCE RATING OF IMPACT PRE MITIGATION	PROPOSED MITIGATION	SIGNIFICANCE RATING OF IMPACT POST MITIGATION
Loss vegetation and faunal habitat due to minor earthworks (incl. protected and important species).	Low	Adverse Direct On-site Long-term	Minor	Low (Negative)	<p>Designate a conservation area for the rehabilitation and relocation of identified species</p> <p>Maintain the viability of the indigenous seed bank in excavated soil so that it can be used for subsequent re-vegetation of any disturbed areas.</p>	Low (Negative)
Change to natural drainage lines during minor earthworks (damage, alteration, pollution, disturbance)	Low	Adverse Direct On-site Long-term	Minor	Low (Negative)	<p>The drainage lines that flow through the site shall be protected from disturbance during construction. The design layout compensates for natural drainage lines and excludes them from the cultivation area. This will reduce potential erosion impacts as well as restrict the impact of water quality downstream.</p> <p>Ensure planned alternative compensates for the drainage lines and provides a buffer area of 5 meters from the drainage line.</p> <p>Ensure earthworks contractor is aware of designated development areas and restrict unnecessary access</p> <p>Boulders and large rocks removed from the excavated areas should be re-used to strengthen high risk/previous erosion damage.</p>	Low (Negative)
Disturbance of / loss of / change of setting of Heritage Resources from development activities.	Medium	Adverse Direct On-site Long-term Permanent	Major (if totally lost)	Major (Negative)	<p>Ensure identified "Rock Gong" and surrounding rocky outcrop is excluded from the development footprint</p>	Minor (Negative)



**Table 4 - Construction Phase Impacts**

ACTIVITY & IMPACT	SENSITIVITY & VALUE	NATURE OF IMPACT	MAGNITUDE OF CHANGE	SIGNIFICANCE RATING OF IMPACT PRE MITIGATION	PROPOSED MITIGATION	SIGNIFICANCE RATING OF IMPACT POST MITIGATION
Loss of vegetation (incl. several protected and threatened species) and faunal habitat due to minor earthworks.	Low	Adverse Direct On-site Long-term	Minor	Low (Negative)	<p>Restrict all clearing of vegetation and disturbance of habitat to the designated development blocks.</p> <p>Ensure development footprint is clearly demarcated and highlighted in the earthworks method statement.</p> <p>Maintain the viability of the indigenous seed bank in excavated soil so that it can be used for subsequent re-vegetation of any disturbed areas.</p> <p>Avoid unnecessary loss of indigenous species, all identified species needs to be relocated to the conservation area.</p>	Low (Negative)
Change to natural drainage lines during minor earthworks	Low	Adverse Direct On-site Long-term	Minor	Low (Negative)	<p>The drainage lines that flow through the site shall be protected from disturbance during construction. The design layout compensates for natural drainage lines and excludes them from the cultivation area. This will reduce potential erosion impacts as well as restrict the impact of water quality downstream.</p>	Low (Negative)
Ground and surface water contamination from hydrocarbons spills (from plant and equipment)	Low	Adverse Direct On-site Long-term	Minor	Low (Negative)	<p>Machinery and equipment need to be inspected regularly for any leaks. Any hydrocarbon spills need to be cleaned ASAP. Ensure drip trays and hydrocarbon absorbents are present onsite for any leaking equipment.</p> <p>All contaminated soil must be removed and placed into hazardous storage containers or bio-remediated where possible.</p> <p>Ensure vehicles and equipment are stored away from the</p>	Low (Negative)

ACTIVITY & IMPACT	SENSITIVITY & VALUE	NATURE OF IMPACT	MAGNITUDE OF CHANGE	SIGNIFICANCE RATING OF IMPACT PRE MITIGATION	PROPOSED MITIGATION	SIGNIFICANCE RATING OF IMPACT POST MITIGATION
					<p>drainage lines. On an impermeable surface if possible.</p> <p>Spilled products may under no circumstances must be disposed of in the canal, the drainage lines or deliberately ignited.</p> <p>Fuel and lubricants must at all times be stored in bunds</p>	
Dust emissions from earthworks may affect crop production of neighbouring farms.	Low	Adverse Direct On-site Short-term Temporary	Negligible	Low (Negative)	<p>Earthmoving equipment should only operate within the designated areas.</p> <p>Restrict earthmoving activities during high winds.</p>	Low (Negative)
Loss of / disturbance of fauna from habitat destruction (incl. several protected and threatened species) and land clearance	Medium	Adverse Direct On-site Long-term Permanent	Moderate	Moderate (Negative)	<p>Several protected and threatened plant species were observed within the study area, of which the most unique and sensitive can be relocated with relative ease. In addition, succulent species that will have to be cleared are suitable for use in stabilisation of runoff- or small ephemeral drainage lines.</p> <p>Inform earthmoving equipment operators of all prohibited activities to workers through training and notices. To reduce risks of fires and potential damage to the environment.</p> <p>Development activities are to take place during winter. To reduce risks of erosion and impacts to fauna and flora.</p>	Minor (Negative)
Noise emissions from plant and equipment disturbing amphibians, reptiles and small mammals species	Low	Adverse Direct On-site Short-term Temporary	Negligible	Low (Negative)	<p>Development activities are to take place during winter. To reduce risks of erosion and impacts to fauna and flora.</p> <p>Noise to be managed during earthworks. Activities should be limited to daylight hours.</p>	Low (Negative)

ACTIVITY & IMPACT	SENSITIVITY & VALUE	NATURE OF IMPACT	MAGNITUDE OF CHANGE	SIGNIFICANCE RATING OF IMPACT PRE MITIGATION	PROPOSED MITIGATION	SIGNIFICANCE RATING OF IMPACT POST MITIGATION
Increased noise levels from excavation and landscaping operations	Low	Adverse Direct On-site Short-term Temporary	Negligible	Low (Negative)	Area between residential property located within 100m of the site and the development area is to be landscaped.  All operations should be conducted during daytime only (i.e. 06:00 – 22:00, as defined in South African National Standards (SANS 10103).	Low (Negative)
Traffic and congestion impacts on N14 – increase journey times and stress of road users	Low	Adverse Direct Local Short-term Temporary	Negligible	Low (Negative)	Vehicles and equipment should not make use of the N14 national road - the alternative site entrance from Augrabies Weg shall be used.  Speed limits shall be set and major plant and equipment brought to site shall avoid sensitive hours (e.g. rush hour and school runs)	Low (Negative)
Disturbance of / loss of / change of setting of Heritage Resource from development activities (Rock Gong)	Medium	Adverse Direct On-site Long-term Permanent	Major	Major (Negative)	"Rock Gong" and surrounding rocky outcrop shall be excluded from the development footprint. And shall remain in situ.  The "Rock Gong" should be demarcated and fenced off from construction activities, and a buffer area  Provide training to the operators regarding the significance of the object	Minor (Negative)
Disturbance / loss of undiscovered heritage / palaeontology remains during minor earthworks	Low	Adverse Direct On-site Long-term Permanent	Minor	Low (Negative)	Unlikely to find remains, in the event that remains are found, cease works in the area and inform the site manager.  Record the location of the findings and inform the environmental office, who will then inform the relevant heritage authority. Contact: SAHRA Mr P Hein 021-4624502 or NC Heritage Resources Authority Mr Andrew Timothy 053-8312537/807470	Low (Negative)

ACTIVITY & IMPACT	SENSITIVITY & VALUE	NATURE OF IMPACT	MAGNITUDE OF CHANGE	SIGNIFICANCE RATING OF IMPACT PRE MITIGATION	PROPOSED MITIGATION	SIGNIFICANCE RATING OF IMPACT POST MITIGATION
Reduction in the regional water availability due to an increased abstraction from river and canal	Low	Adverse Direct On-site Long-term Permanent	Minor	Low (Negative)	Water conservation shall be applied as far as possible.  The irrigation and feed water system shall be inspected regularly for leaks	Low (Negative)
Socio-economic Impact: The development of the agricultural blocks will create employment opportunities	Low	Adverse Direct Local Short term Temporary	Minor	Low (Positive)	Use local contractors and labourers as far as possible  Ensure that materials are sourced from the local and regional economy as far as reasonably possible.	Minor (Positive)

The operations and decommissioning (restoration) phases of the proposed project are unlikely to cause impacts and will not have additional impacts other than those identified in the tables above.

#### 4.5.1. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

##### 4.5.1.1. ALTERNATIVE A (PREFERRED ALTERNATIVE)



The proposed agricultural development will have an insignificant impact on the environment. The key findings of the Impact Assessment are as follows.

The construction phase of the proposed project will result in the likely environmental impacts. The operations phase is unlikely to cause impacts.

- some loss of fauna and flora, and the relocation of protected species;
- an increase in water consumption;
- change to natural drainage;
- Slight increase traffic for short duration; and
- change to setting of heritage asset during the construction, operations and decommissioning of the project.

After mitigation, the potential impacts are considered to be low to minor.

The proposed development will also have positive impact in the local economy. Several businesses and individuals in the area is dependent and the economic impact of the agricultural sector. The proposed development further has the opportunity for skills development and economic opportunities for its employees during its operations.

Two specialist studies were carried out as part of the BA Process; an ecological and a heritage assessment. A summary of the findings of these studies are provided below. It is important to note that the impacts described below apply to the preferred alternative.

#### **Ecological Assessment:**

Several protected and threatened plant species were observed within the study area, of which the most unique and sensitive can be relocated with relative ease. In addition, succulent species that will have to be cleared for the proposed cultivation development would be suitable for use in stabilisation of runoff- or small ephemeral drainage lines.

Overall the proposed development will not have a significant impact on the ecosystem or affect the conservation status of any species, but some mitigation measures will have to be implemented to minimise the impact on some of the more vulnerable protected and threatened species.

Amphibian, reptile and small mammal species that were observed or may traverse the area will not be significantly impacted.

#### **Heritage Assessment:**

Precolonial/Stone Age material noted at Lot 2371 was found to be generally of low significance, where present at all. Part of the property was previously disturbed. Criteria used here for impact significance assessment for archaeological traces rate the impacts as not worthy of further mitigation.

A rock gong was identified, being the first one ever found in this part of the Northern Cape, it is considered an item of significance. Recommendation was made that it be preserved if possible by avoiding destruction of the rocky outcrop on which it occurs. The design and site layout has taken this into consideration.

#### **Assessment Conclusions**


In the opinion of the EAP, no significant adverse impacts have been identified that justifies the re-design or termination of the project. The proposed development benefits outweigh the negative environmental impacts based the findings of this BA. Holistically the project will make a positive contribution to the region and promote further development by strengthening the local economy and providing a livelihood for permanent employees.

An EMPr has been formulated for the proposed development. The EMPr provides the guidelines to avoid and manage potential negative impacts and promote the benefits. The EMPr is a living document and should develop with the project, it should be reviewed and updated regularly to provide clear and implementable measures for the sustainable operation of the farm.

**Provided that the specific mitigation measures are applied effectively through the implementation of the EMPr, it is proposed that the project receive environmental authorisation in terms of the EIA Regulations promulgated under the NEMA.**

#### 4.5.1.2. ALTERNATIVE B

**Alternative B**  
Proposed Agricultural Development  
Move rock gong and rock outcrop to the conservation area.  
Total area to be planted 11.36 Ha



Alternative A and B are the same, except for one difference: the Rock Gong that was identified onsite is relocated to the designated conservation area.

The findings of the assessment presented for Alternative Option A are the same for Alternative Option B apart from the effects on this heritage asset. The alternative proposal aims to preserve the historical significance of the Rock Gong through relocation.

By relocating the Rock Gong potential damage from farming equipment and/or vehicles during construction and the operational phase would be avoided. Relocation would be very costly and has the potential to damage the object, as well as loose the natural setting of the asset. This option was therefore not the preferred option and has not been taken forward.

#### 4.5.1.3. NO-GO ALTERNATIVE (COMPULSORY)

The no-go option is considered as no-development. If the development did not go ahead, the local economy would not benefit; the unutilised land would not be developed; and the company would not grow. The negative impacts for the no-development options could be greater than those felt if the development were to go ahead – the benefits of the project out weigh the negatives.

This alternative accepts that a conservative approach would ensure that the environment is not impacted.

Should the Competent Authority decline the application, the 'No-Go' alternative will be followed and the status quo of the site will remain.

#### 4.6. SECTION E. PRACTITIONER’S RECOMMENDATION

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?

YES	
YES	

Is an EMPr attached?

The EMPr must be attached as Appendix F.

If “NO”, indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment):

NA – EMPr attached is attached in Appendix F

If “YES”, please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application:

- Restrict all habitat loss and disturbances from cultivation activities to the proposed site layout.
- Avoid the killing or hunting of fauna.
- Flora species identified during the ecological study should be relocated to the conservation area. The conservation area and its preservation should be managed and monitored accordingly.
- Harvesting of indigenous flora for medicine, fire wood, building materials, and other purposes must be prohibited.
- Ensure that flammable materials are stored in a safe manner. Ensure control measures for any accidental fires.
- Erosion control measures must be implemented. The drainage lines need to be monitored to ensure erosion does not occur. A storm water and erosion management plan must be implemented on the farm to ensure natural and unnatural forms erosion causes are managed accordingly.
- During the operational phase irrigation infrastructure should be monitored to mitigate surface water runoff.
- The Rock Gong must be preserved in its original state. Train development and operational staff on its significance.
- The application of agricultural remedies should be monitored by the Farm Manager. Ensure to follow application guidelines as prescribed.
- The development activities should be monitored by a designated Environmental Officer to ensure the EMPr is followed.
- All mitigation measures listed in the BAR as well as the EMPr must be implemented and adhered to.



## 5. CONCLUSION

The Department is respectfully requested to evaluate this BAR as part of an application that has been logged in terms of section 24(1) of the NEMA, in respect of the activities in regulation R982 of 04 December 2014.

Taking into consideration the potential adverse impacts, mitigation measures and the potential beneficial impacts, ECC believes the benefits of the proposed project outweigh any potential negatives, and the proposed project will contribute to the sustainable development of the local area.

The implementation of the EMP and associated programme of environmental protection as an outcome of the impact assessment process would serve to minimise the impacts and risks associated with the proposed project to an environmental and socially acceptable standard. **An Environmental Authorisation could be issued, on condition that the management and mitigation measures in the EMP are adhered to.**

## 6. REFERENCES

Climate Kakamas: Temperature, Climograph, Climate table for Kakamas - Climate-Data.org, Accessed 2018

Pentz, M (2018). Personal interview with Senior Winemaker from Orange River cellars, January 2018

Shunqukela,T (2014). A study of the structural geology of an area between the Neusspruit shear zone and the Brakfontein shear zone near Kakamas, Northern Cape.

Strohbach, M (2017). Fruits du Sud kakamas: Ecological opinion and protected and threatened species survey

Department of Environmental Affairs and Tourism. (2002). *Impact Significance, Integrated Environmental Management, Information Series 5*,. Pretoria: DEAT.

International Finance Corporation. (2017). *A Guide to Biodiversity for the Private Sector. The Social and Environmental Impact Assessment Process*.

## APPENDICES

The following appendices are included to comply with Section F in the prescribed BAR template:

**Appendix A:** Site plan(s)

**Appendix B:** Photographs

**Appendix C:** Facility illustration(s) - Not Applicable – No construction activity of a facility to take place. Only the cultivation of agricultural land

**Appendix D:** Specialist reports:

- (i) Ecological Opinion and Protected and Threatened Species Report
- (ii) Heritage Impact Assessment Report

**Appendix E:** Comments and responses report

**Appendix F:** Environmental Management Programme (EMPr)

**Appendix G:** Other information:

- (iii) South African Heritage Resources Agency (SAHRA) Case number
- (iv) EAP's CVs
- (v) EIA Methodology

**Appendix H:** Letter of Recommendation for Exemption

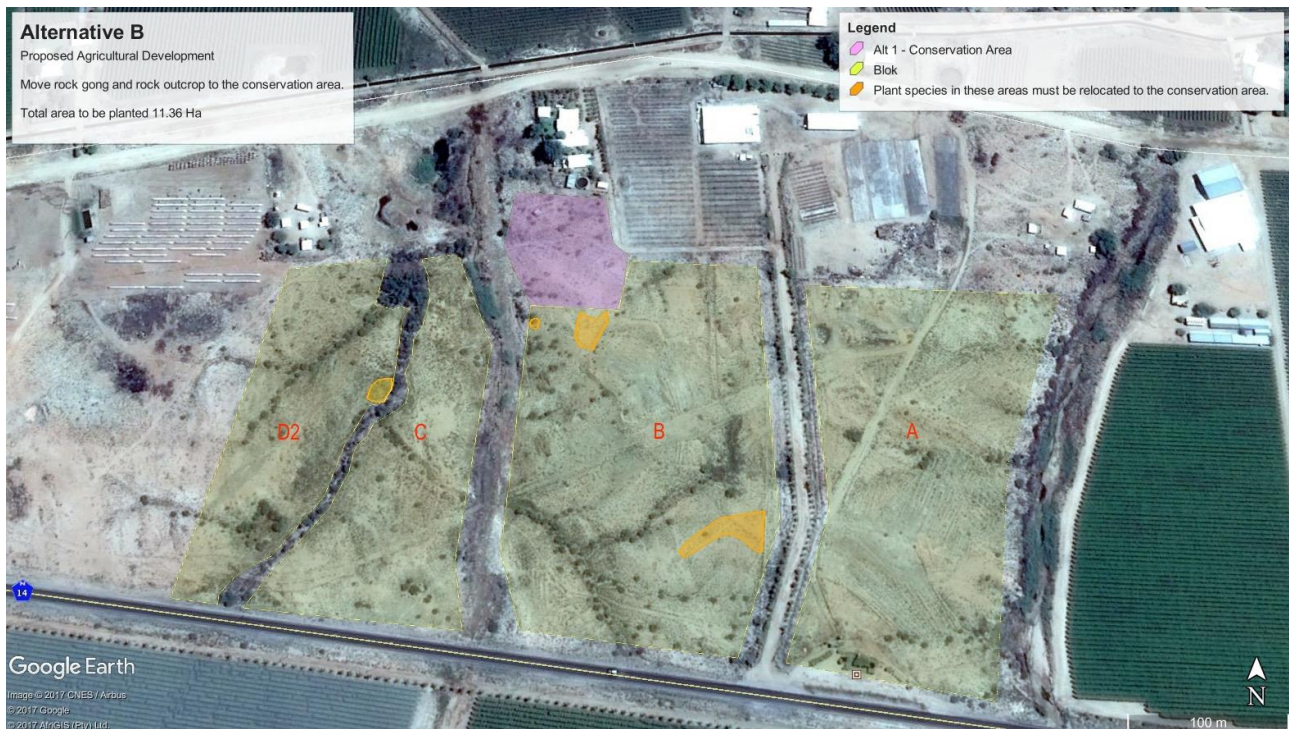
## APPENDIX A: SITE PLANS

### ALTERNATIVE A – THE PREFERRED OPTION

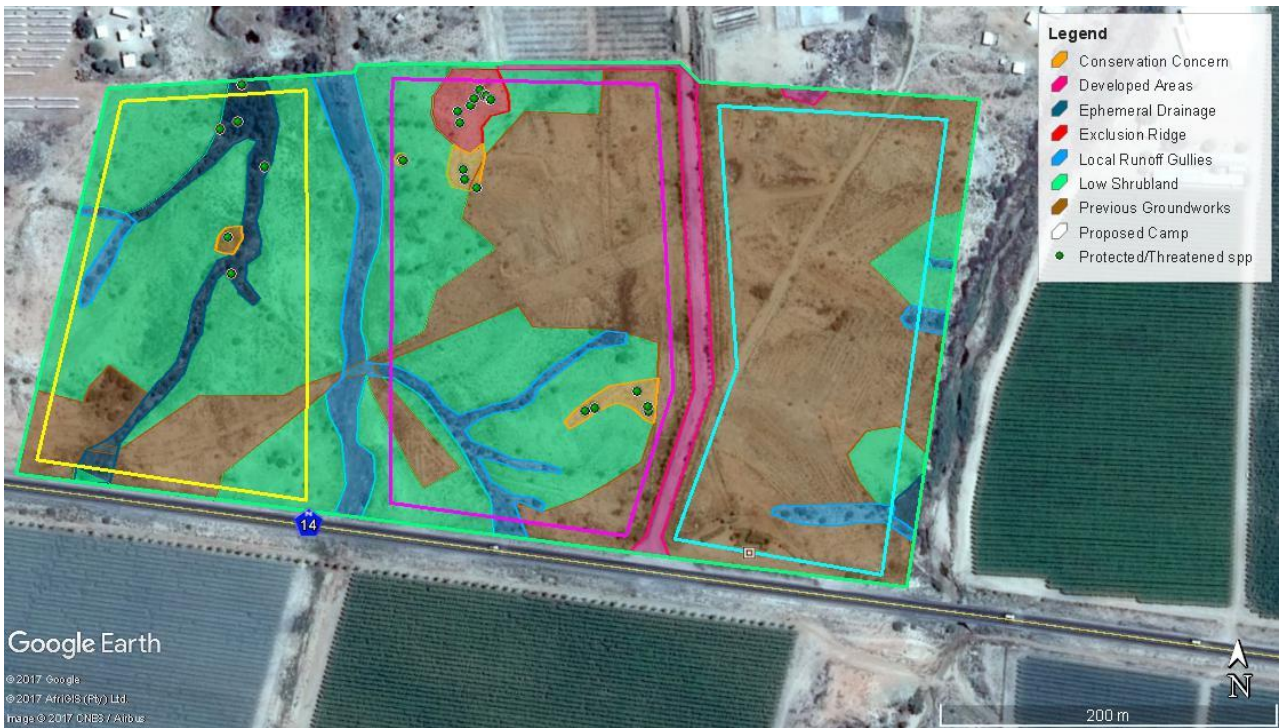


### ALTERNATIVE B

Alternative B – the same as Alternative A apart from the relocation of the Rock Gong.



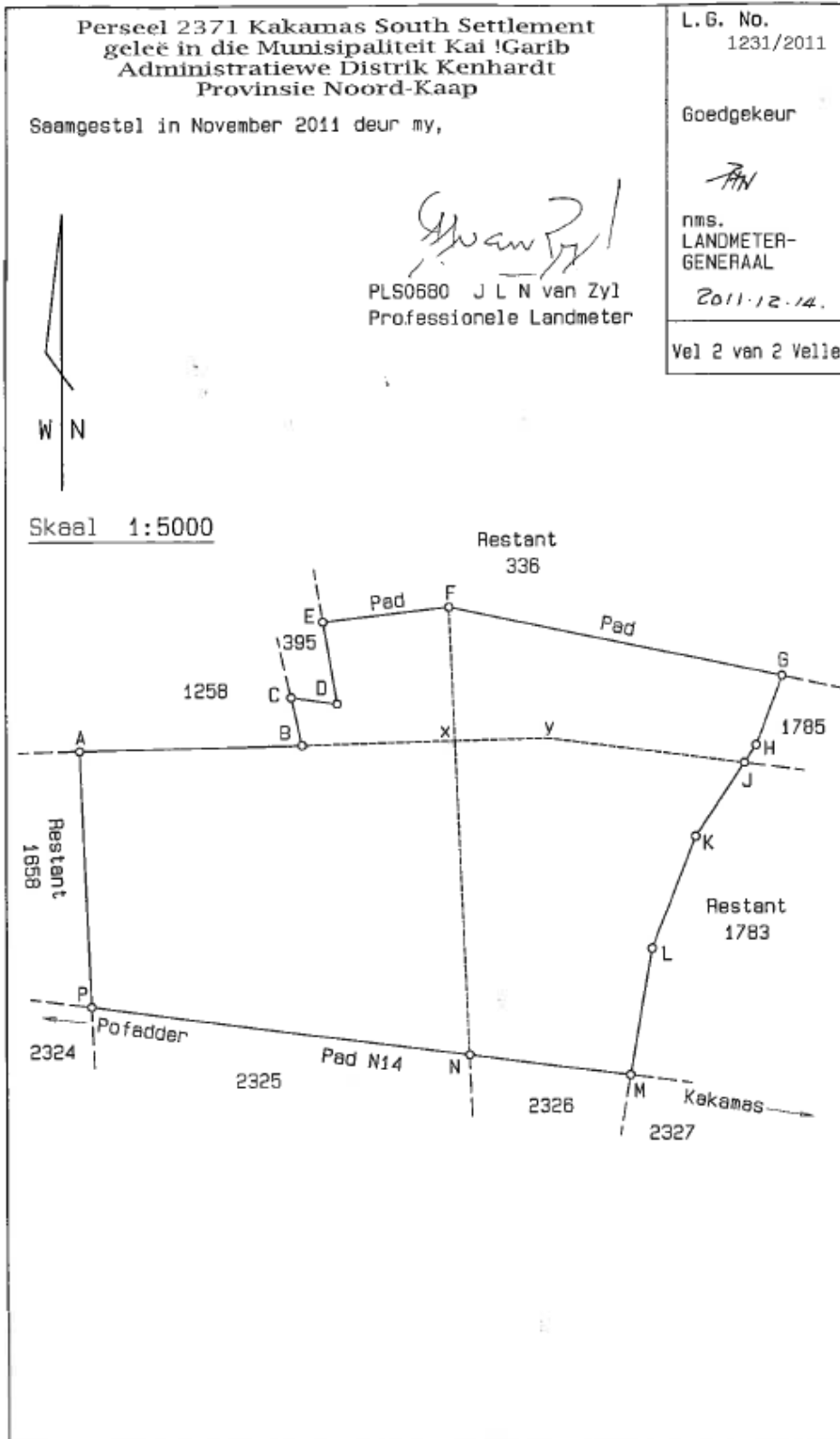
SITE BIODIVERSITY



EXISTING SITE INFRASTRUCTURE



CONSOLIDATED PROPERTY MAP – TITLE DEED



REGISTRASIE AFSKRIF

DIAGRAM VIR VERENIGOE TITEL

236

<p><b>KOMPONENTE</b></p>	<p>L.G. No. 1231/2011</p>
<p>1) Die figuur A x N P stel voor die Restant van Perseel 1659 Kakamas South Settlement Sien Kaart LG No. F4928/1987 Geheg aan Transportakte No. 6950/1990</p>	<p>Goedgekeur <i>JN</i></p>
<p>2) Die figuur E F x B C D stel voor Perseel 1637 Kakamas South Settlement Sien Kaart LG No. F10770/1984 Geheg aan Transportakte No. 4025/1986</p>	<p>nms. LANDMETER- GENERAAL 2011-12-14</p>
<p>3) Die figuur F G H J y x stel voor die Restant van Perseel 1245 Kakamas South Settlement Sien Kaart LG No. F766/1969 Geheg aan Transportakte No. 19327/1971</p>	<p>Vel 1 van 2 Velle</p>
<p>4) Die figuur x y J K L M N stel voor die Restant van Perseel 1660 Kakamas South Settlement Sien Kaart LG No. F4929/1987 Geheg aan Transportakte No. 25094/1990</p>	
<p style="text-align: center;">Die figuur A B C D E F G H J K L M N P stel voor 20,3868 hektaar grond, synde Perseel 2371 Kakamas South Settlement bestaan uit (1) tot (4) hierbo aangehaal geleë in die Munisipaliteit Kai !Garib Administratiewe Distrik Kenhardt Provinsie Noord-Kaap Saamgestel in November 2011 deur my,</p>	
<p style="text-align: right;"><i>J L N van Zyl</i> PLS0680 J L N van Zyl Professionele Landmeter</p>	
<p>Hierdie kaart is geheg aan No. ged. t.g.v. 16 MAY 2012 Registrateur van Aktes</p>	<p>Die oorspronklike kaart is soos hierbo aangehaal.</p>
<p>Lêer KNHD 28 M.S. Saamgestel Komp. GJ-8AAB (5578)</p>	

NEIGHBOURING PROPERTIES





## APPENDIX B: SITE PHOTOGRAPHS



## APPENDIX D: SPECIALIST REPORTS

### ECOLOGICAL STUDY OF AGRICULTURAL LOT 2371



*Prepared for:*



**August 2017**

*Prepared by:*



*Marianne Strohbach*

Vegetation Research and Ecological Consulting



[str.marianne@gmail.com](mailto:str.marianne@gmail.com)

---

HERITAGE IMPACT ASSESSMENT OF AGRICULTURAL LOT 2371

McGregor Museum  
**Department of Archaeology**



**Heritage Impact Assessment of  
Agricultural Lot 2371 Kakamas  
South Settlement, near Kakamas,  
Northern Cape.**

David Morris  
McGregor Museum, Kimberley  
October 2017

## **APPENDIX E: PUBLIC PARTICIPATION**

This Appendix contains the following:

- Public notices
- Written notices to stakeholders
- Advertisements in newspapers
- Minutes from meeting with DENC

## PUBLIC NOTICES

The site notice (60cm by 42cm as per NEMA requirements) was placed on the site boundary where the proposed project is to be located as well as the following locations in Kakamas:

- The Post Office
- The Kakamas Public Library
- Riado Supermarket

**NOTICE OF ENVIRONMENTAL BASIC ASSESSMENT AND  
PUBLIC PARTICIPATION PROCESS**

**PROPOSED AGRICULTURAL DEVELOPMENT OF LOT 2371 KAKAMAS SOUTH SETTLEMENT, KENHARDT DISTRICT,  
NORTHERN CAPE, SOUTH AFRICA**

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In terms of the National Environmental Management Act (Act 107 of 1998, as amended) (NEMA) and the 2014 NEMA EIA Regulations promulgated on 8 December 2014 and as amended on 7 April 2017 in Government Gazette 40772 and Government Notice (GN) R326, R327, R325 and R324, the BA Processes must be undertaken in accordance with Section 19 of the Regulations. The proposed BA Process triggers the following activities, GN R327: Activity 19 (i) & 27 (i)



**Applicant:** FRUITS DU SUD (PTY) LTD  
**Environmental Assessment Practitioner (EAP):** Environmental Compliance Consultancy cc (ECC)

**Project: PROPOSED AGRICULTURAL DEVELOPMENT OF LOT 2371 KAKAMAS SOUTH SETTLEMENT, KENHARDT DISTRICT,  
NORTHERN CAPE, SOUTH AFRICA**

---

**Proposed Activity:** Fruits du Sud intends to develop 12 hectares of agricultural land for the production of table grapes based on the existing water rights of the property.

**Location:** Kakamas South, Kenhardt District, Northern Cape, South Africa. See map below.


**Application for Basic Assessment:**

**Review and Comment Period:** The purpose of the comment period is to present the proposed project and to afford interested and affected parties (I&AP) an opportunity to comment on the project to ensure that all issues and concerns are captured and considered in the assessment. The review and comment period is effective from **23<sup>rd</sup> October 2017 – 17<sup>th</sup> November 2017**.

**Public Meeting:** Environmental Compliance Consultancy will hold a public meeting on **25 November 2017 at 09:00**. The meeting will take place at the site of the proposed development. Kindly register as an I&AP should you wish to attend the public meeting.

**Background information:** The Background information document is available via email request from the **Environmental Compliance Consultancy via email or fax**.

**Public Participation Process:** Environmental Compliance Consultancy is undertaking the required environmental assessment and public participation process. To obtain further information and register as an interested and affected party (I&AP) on the project database, please submit your name, contact information and interest in the project, in writing to Environmental Compliance Consultancy:



Environmental Compliance Consultancy  
PO Box 1058, Kakamas  
Tel: +27 76 089 0613  
E-mail: info@eccenvironmental.com  
Website: www.eccenvironmental.com

ECC-51-81-ADR7-Notice



## WRITTEN NOTICES TO STAKEHOLDER AND INTERESTED AND AFFECTED PARTIES

The following letter was issued to stakeholders and I&APS listed in the table below the image.



Document Control Number: ECC-51-81-LET-01-N  
01 November 2017

**DEAR STAKEHOLDER**

**RE. NOTICE OF BASIC ASSESSMENT & PUBLIC PARTICIPATION PROCES FOR THE PROPOSED AGRICULTURAL DEVELOPMENT ON LOT 2371 KAKAMAS SOUTH SETTLEMENT, KAI !GARIP MUNICIPALITY, SECTION KENHARDT, PROVINCE NORTHERN CAPE. FRUITS DU SUD (PTY) LTD INTENDS TO DEVELOP 12 HECTARES OF AGRICULTURAL LAND FOR THE PRODUCTION OF TABLE GRAPES.**

Environmental Compliance Consultancy [ECC] has been engaged by our client, Fruits de Sud (PTY) LTD to undertake a Basic Assessment (BA) and its process for the proposed agricultural development.

In terms of the National Environmental Management Act (Act 107 of 1998, as amended) (NEMA) and the 2014 NEMA EIA Regulations promulgated on 8 December 2014 and as amended on 7 April 2017 in Government Gazette 40772 and Government Notice (GN) R326, R327, R325 and R324, a BA and its process must be undertaken in accordance with Section 19 of the Regulations. The proposed project triggers the following listed activities, GN R327: Activity 19 (i) & 27 (i).

- Activity 19 (i): The infilling or depositing of any material of more than 5 cubic meters into, or dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic meters from a watercourse.

- Activity 27 (i): The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation.

All stakeholders for the project are encouraged to register as Interested and Affected Party (I&AP) via ECCs website or email. ECC requires registered I&APs to submit comments to ECC by 30<sup>th</sup> November 2017. A background information document (BID) is available upon request.

Yours sincerely,

Michael Moreland



**Environmental Compliance Consultancy**  
Email: michael@eccenvironmental.com

## MAILING LIST:

### Neighboring properties:

Lot 1785	Ebenaeser Boerdery Trust	PO Box 22 Kakamas 8870
Lot 1783	Ebenaeser Boerdery Trust	PO Box 22 Kakamas 8870
Lot 395	Norman & Sulia Shaw Eiendomme Trust	PO Box 743 Kakamas 8870
Lot 1658	Ebenaeser Boerdery Trust	PO Box 22 Kakamas 8870
Lot 1258	Ebenaeser Boerdery Trust	PO Box 22 Kakamas 8870
Lot 394	Norman & Sulia Shaw Eiendomme Trust	PO Box 743 Kakamas 8870
Lot 393	Dawid Wandrag Familie Trust	PO Box 310 Kakamas 8870
Lot 2218	Chargo Trust	PO Box 624 Kakamas 8870
Lot 2217	Ebenaeser Boerdery Trust	PO Box 22 Kakamas 8870

## STAKEHOLDERS:

Contact	Organisation	Designation	Email
Johannes Van Niekerk	Fruits du Sud	Proponent	johannes@fruitsdusud.com
Adri Van Niekerk	Owner Representative	Correspondent	adrivn@lantic.net
Mr J MacKay	Municipality	Planning & Development	mackayj@kaigarib.gov.za
Oridan Riba	DENC	Case Officer	ORiba@ncpg.gov.za
Shaun Cloete	DWS	Case Officer	CloeteS@dws.gov.za
Marina Jordaan	Kakamas water users association	Administrative Manager	marinakwgv@isat.co.za



NEWSPAPER ADVERTISEMENT

The following advert was placed in the local newspaper.

Newspaper: Die Gemsbok

Issue date: 27 October 2017

27 OKTOBER 2017
DIE GEMSBOK
BLADSY 19

## A message of encouragement for the matric class of 2017

**GEMSBOK-UPINGTON:** The Premier of the Northern Cape, Ms Sylvia Lucas, on behalf of the entire Provincial Administration wishes the matric class of 2017 well as they sit for their final examination.

This examination is the key that will unlock the doors to your future so therefore I wish you courage and strength. Go out, give your best and make us proud. We trust that your hard efforts would reap the desired rewards and remember that through perseverance success is attained.

You are our leaders of tomorrow and completing your school career is the first step towards realising your potential and contributing to a prosperous Province and country. Never stop your desire to learn and acquire skills because the more educated you are, the brighter the future of our country will be. Through education we

**Released by the Office of the Northern Cape Premier**



*The Premier of the Northern Cape, Ms Sylvia Lucas*

are able to triumph against the triple challenges of poverty, unemployment and inequality facing our country.

I am confident that the class of 2017 has what it takes to continue to improve on our pass rate. Work even harder throughout the examination process, despite challenges that may threaten your success. To all our parents and educators, please give our learners all the necessary support and make sure that they remain focused.

A word of gratitude also goes to the parents, educators and school governing bodies for their support and encouragement throughout the school career of our learners.

Well done on reaching this milestone. From here your future is in your hands.

## Coach Coba klets

Let's talk LOSS. - It's a word that we have all used, and abused. The reality of the impact varies in degrees of intensity depending on which area of our existence is obstructed and whether the severity has a ripple on daily living.

On Monday morning I lost my cell phone in the Kalahari Mall in Upington, in the Ladies toilet where I rushed in, phone against the head, and did what Mother Nature urged me to do. My phone was forgotten in the cubicle where I had absently left it. Question to myself: Was it loss or negligence? It's a rather brilliant dual simcard phone and obviously, it was not handed in at the Management Offices but applied in the reality of an opportunistic thief - fact remains I am fully to blame for the loss. And by the way, though, you have no right to take what you have not paid for or earned. For purposes of sensation I choose to say it was stolen because it just sounds better to dramatically claim that it was taken against my will than it does to admit that I was in a foggy-minded rush to get to an appointment. Shame on me!

Seems to me the next topic to talk through could be loss of memory (I am so sure that I forgot a very important Business tool, like a cell phone, in a public place. Well, question to self again is, is the decay of mental ability called loss of recollection or should it rather be referred to as neglect of memory. What am I doing in daily habits to improve my health and sustain efficiency? Just a question in passing. In interaction with our loved ones we also lose the opportunity to visit, interact, apologise, forgive and love. We take it for granted that the people we neglect with will simply be available when the new day dawns so we can procrastinate and do it tomorrow. What if tomorrow doesn't come for you or that person and you end up engulfed in the "what if" scenario?

We lose many things in life. Loved ones die before the were supposed to, according to our perfect planning and we are left alone. Could we not just comprehend that we can just release them to go ahead to wait for us in a better place until we join them in a more exquisite existence. Difficult!

How often have I deeply registered the pain of loss of opportunity? Recognising too late that it was a gap I did not take. A risk I was too scared to engage and then the perfect science of hindsight keeps reminding me of the fact that I did not dare bravely and I repeatedly keep wondering about what could have been. Sadly we keep clinging to the messes made and the things I should have done differently.

What is pitiful process because we then miss out on what is obviously beckoning to be explored but we stay stubbornly stuck in the place of yesterday, yesterday and what if?

My wish for you is that, as 2017 is speeding towards a close with only 9 weeks to tick off the calendar, you grab all special opportunities with both hands and step into the mindful place where you significantly impact in your community. Should any of the above resonate



with you, mail me. Phone me (071 60 36 951) in a safe environment of the structured Workshop we unpack TIME ABUSE, CHANGE OF PERFORMANCE and

### Desert Wolf Spur

in Kalahari Mall benodig  
**ERVARE KELLNERS & BESTUURERS**

E-pos u CV's na  
ronnie@browninggroup.co.za of handig  
in by Desert Wolf Spur

**Navrae: 054-3313701/0828183060**

**MAYFAIR UPINGTON**  **GEARBOX NATIONWIDE**

**WAG AANSOEK IN VIR 2018 VIR 'N MOTORWERKTUIGKUNDE IN DIE VOLGENDE AFDELINGS: Kommerisieel - Algemeen en Ligte Voertuie**

**Let asb op die vereistes alvorens u die aansoek indien:**

- Kandidaat moet onafhanklik kan werk / funksioneer.
- Kandidaat moet innoverend en doelgerig wees.
- Ongeveer 5 jaar ondervinding as werktuigkundige.
- CV moet geldige ver wysings bevat.

**CV's kan afgegee word by ons kantore te Soutpanstraat 9 of u kan dit e-pos na mikh@mfgb.co.za**

Indien u nie van ons hoor nie, kan u die aansoek as onsuksesvol beskou.

**NOTICE OF ENVIRONMENTAL BASIC ASSESSMENT (BA) AND PUBLIC PARTICIPATION PROCESS**

**PROPOSED AGRICULTURAL DEVELOPMENT OF LOT 2371 KAKAMAS SOUTH SETTLEMENT, KENHARDT DISTRICT, NORTHERN CAPE, SOUTH AFRICA**

In terms of the National Environmental Management Act (Act 107 of 1998, as amended) (NEMA) and the 2014 NEMA EIA Regulations promulgated on 8 December 2014 and as amended on 7 April 2017 in Government Gazette 40772 and Government Notice (GN) R326, R327, R325 and R324, the BA Processes must be undertaken in accordance with Section 19 of the Regulations. The proposed BA Process triggers the following activities, GN R327: Activity 19 (i) & 27 (i)

**APPLICANT:** FRUITS DU SUD (PTY) LTD  
**ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP):** ENVIRONMENTAL COMPLIANCE CONSULTANCY CC (ECC)

**PROJECT: PROPOSED AGRICULTURAL DEVELOPMENT OF LOT 2371 KAKAMAS SOUTH SETTLEMENT, KENHARDT DISTRICT, NORTHERN CAPE, SOUTH AFRICA**

**Proposed Activity:** Fruits du Sud (Pty) Ltd intends to develop 12 hectares of agricultural land for the production of table grapes based on the existing water rights of the property.  
**Location:** Kakamas South, Kenhardt District, Northern Cape, South Africa. See map below.




**Application for Basic Assessment:**

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**Background Information:** The Background Information Document (BID) is available upon request from Environmental Compliance Consultancy via email.

**Public Participation Process:** Environmental Compliance Consultancy is undertaking the required environmental assessment and public participation process. To obtain further information and register as an interested and affected party (I&AP) on the project database, please submit your name, contact information and interest in the project, in writing to Environmental Compliance Consultancy or register on our website:  
[www.eccenvironmental.com/projects/](http://www.eccenvironmental.com/projects/)

Environmental Compliance Consultancy  
PO Box 1058, Kakamas  
Tel: +27 76 089 0613  
E-mail: [info@eccenvironmental.com](mailto:info@eccenvironmental.com)  
Website: [www.eccenvironmental.com](http://www.eccenvironmental.com)

**UPINGTON/KEIMOS/KAKAMAS RESIDENSIELE EN PLAAS AGENT**

Die suksesvolle kandidaat moet:

- Ten volle rekenaar geletterd wees (Microsoft Office – Word, Excel, Outlook – Powerpoint)
- Besk oor integriteit en goeie menswaardigheid/verhouding
- Tweetalig wees
- Bereid wees om opleiding by te woon
- Gewillig wees om soms na ure te werk
- Moet aktief betrokke wees in die gemeenskap
- 'n Inwoner van die dorp wees, 30 jaar en/of ouer wees

Inkomste geskied op kommissie basis.

Epos 'n verkorte cv na:  
Email: [country@seeff.com](mailto:country@seeff.com)



**TYDELIKE POS**

**PAKSTOOR BESTUURERS (x2)**

**ADMINISTRATIEWE POS**

Te Langgewacht boerdery, Keimoes

Vorige ondervinding sal in jou guns tel.

Diens aanvaarding so spoedig moontlik.

Salaris onderhandelbaar

Epos cv na  
[carla@langgewacht.co.za](mailto:carla@langgewacht.co.za)

## COMMENTS AND RESPONSES REPORT

Comments received following the project announcement and prior release of this Draft Basic Assessment are consolidated in the table below.

ISSUES RAISED	COMMENTATOR	DATE	RESPONSE
<p>Mr Abraham saw the public notice at the Post office and inquired telephonically.</p> <p>He enquired about employment opportunities during the operations phase for tractor operators.</p>	Mr Abraham to the ECC	09-Nov-17	ECC indicated that a total of 22 individuals will be employed permanently during the operations phase. And these employment opportunities would require tractor operators.
<p>The proponent needs to apply for a Water Use license (WUL) - The proponent is responsible for the application process to obtain a General Authorisation (GA) for listed activity: GN R327: Activity 19 (i): The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from</p> <p>(a) Watercourse</p>	Stephan Bezuidenhout to Fruits du Sud	November 2017	The proponent will be responsible for the application process.

5/31/2018

Re: SAHRIS Case ID 11996

**Date:** 12/08/2017 [11:33:27 AM SAST]  
**From:** michael@eccenvironmental.com  
**To:** Natasha Higgitt <natasha.higgitt@gmail.com>  
**Cc:** stephan <stephan@eccenvironmental.com>  
**Subject:** Re: SAHRIS Case ID 11996

Dear Natasha

As discussed via telephone.

I'll review and update the BID.

Regards

Michael Moreland

Quoting Stephan Bezuidenhout <stephan@eccenvironmental.com>:

Dear Natasha,

Your email has been received, thank you.

I CC my colleague who is heading this project. He will be in contact with you to address the requested aspects.

Many thanks and kind regards,

--

Stephan Bezuidenhout

Environmental Practitioner and Consultant

Tel +264 812 62 7872|Windhoek|Namibia

Email stephan@eccenvironmental.com

[www.eccenvironmental.com](http://www.eccenvironmental.com)

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From: Natasha Higgitt <natasha.higgitt@gmail.com>  
Date: Thursday, 7 December 2017 at 10:46 AM  
To: <info@eccenvironmental.com>  
Subject: SAHRIS Case ID 11996

Good morning,

My apologies for sending this via my private email, however, when I tried to email this address this morning, the email bounced back as spam. Please see attached email. Additionally, please inform your email service provider to unmark emails from SAHRA as spam. My work email is nhiggitt@sahra.org.za.

[https://41.185.64.45:2096/cpsess9662402491/horde/imp/view.php?view\\_token=aOldM5Em5iX37bDY9aW3yWb&actionID=print\\_attach&buid=2&id=1&mail...](https://41.185.64.45:2096/cpsess9662402491/horde/imp/view.php?view_token=aOldM5Em5iX37bDY9aW3yWb&actionID=print_attach&buid=2&id=1&mail...) 1/2

5/31/2018

RE: SAHRIS Case ID 11996

**Date:** 05/16/2018 [10:48:45 AM SAST]  
**From:** Natasha Higgitt <nhiggitt@sahra.org.za>  
**To:** Rachel Moore <rachel@eccenvironmental.com>  
**Cc:** 'natasha higgitt' <natasha.higgitt@gmail.com>, 'jessica' <jessica@eccenvironmental.com>, 'stephan' <stephan@eccenvironmental.com>, michael@eccenvironmental.com  
**Subject:** RE: SAHRIS Case ID 11996

Good morning,

Thank you for the update. You may upload the letter once completed. Please upload the Final BAR and any updated appendices for my review purposes. Please remember to change the status of the case to SUBMITTED once the documents have been uploaded.

Kind regards,

Natasha Higgitt  
Heritage Officer: Archaeology, Palaeontology and Meteorites Unit

South African Heritage Resources Agency  
- A nation united through heritage -

T: +27 21 462 4502 | F: +27 21 462 4509 | C: +27 82 507 0378  
E: nhiggitt@sahra.org.za | 111 Harrington Street | Cape Town

[www.sahra.org.za](http://www.sahra.org.za)

-----Original Message-----

From: Rachel Moore <rachel@eccenvironmental.com>  
Sent: Wednesday, May 16, 2018 9:51 AM  
To: Natasha Higgitt <nhiggitt@sahra.org.za>  
Cc: 'natasha higgitt' <natasha.higgitt@gmail.com>; 'jessica' <jessica@eccenvironmental.com>; 'stephan' <stephan@eccenvironmental.com>; michael@eccenvironmental.com  
Subject: RE: SAHRIS Case ID 11996

Dear Natasha,

Thank you for informing us of the website being back online.

We have commissioned a palaeontologist to draft a letter of exception. I am currently reviewing it and including recommendations into the BAR and EMPr. We will then be submitting the final BAR by then end of this week.

I attach the draft letter for your information and/or any feedback you would like to offer. Would you also like to see the final BAR?

Kind regards,

Rachel

--

Rachel Moore  
Environmental Consultant  
Tel +264 81 465 6971|Windhoek|Namibia  
Email [rachel@eccenvironmental.com](mailto:rachel@eccenvironmental.com)

[www.eccenvironmental.com](http://www.eccenvironmental.com)

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-----Original Message-----

From: Natasha Higgitt <nhiggitt@sahra.org.za>  
Sent: 16 May 2018 09:34  
To: Rachel Moore <rachel@eccenvironmental.com>  
Cc: 'natasha higgitt' <natasha.higgitt@gmail.com>; 'jessica' <jessica@eccenvironmental.com>; 'stephan' <stephan@eccenvironmental.com>; michael@eccenvironmental.com  
Subject: RE: SAHRIS Case ID 11996

Good morning,

[https://41.185.64.45:2096/cpsess9662402491/horde/imp/view.php?view\\_token=aOldM5Em5iX37bDY9aW3yWb&actionID=print\\_attach&buid=171&id=1&m...](https://41.185.64.45:2096/cpsess9662402491/horde/imp/view.php?view_token=aOldM5Em5iX37bDY9aW3yWb&actionID=print_attach&buid=171&id=1&m...) 1/5

5/31/2018

RE: SAHRIS Case ID 11996

Please note that the SAHRIS website is back up and running. We thank you for your patience. Please bear with us as we get through the backlog of cases.

Kind regards,

Natasha Higgitt  
Heritage Officer: Archaeology, Palaeontology and Meteorites Unit

South African Heritage Resources Agency  
- A nation united through heritage -

T: +27 21 462 4502 | F: +27 21 462 4509 | C: +27 82 507 0378  
E: nhiggitt@sahra.org.za | 111 Harrington Street | Cape Town

[www.sahra.org.za](http://www.sahra.org.za)

-----Original Message-----

From: Rachel Moore <rachel@eccenvironmental.com>  
Sent: Thursday, May 03, 2018 9:43 AM  
To: Natasha Higgitt <nhiggitt@sahra.org.za>  
Cc: 'natasha higgitt' <natasha.higgitt@gmail.com>; 'jessica' <jessica@eccenvironmental.com>; 'stephan' <stephan@eccenvironmental.com>; Phillip Hine <PHine@sahra.org.za>; michael@eccenvironmental.com; Ragna Redelstorff <RRedelstorff@sahra.org.za>  
Subject: RE: SAHRIS Case ID 11996

Dear Natasha,

Much appreciated. If you have further thoughts once the SAHRIS website is working again, please let us know.

Kind regards,

Rachel  
--  
Rachel Moore  
Environmental Consultant  
Tel +264 81 465 6971|Windhoek|Namibia  
Email rachel@eccenvironmental.com

[www.eccenvironmental.com](http://www.eccenvironmental.com)

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-----Original Message-----

From: Natasha Higgitt <nhiggitt@sahra.org.za>  
Sent: 03 May 2018 09:39  
To: Rachel Moore <rachel@eccenvironmental.com>  
Cc: natasha higgitt <natasha.higgitt@gmail.com>; jessica <jessica@eccenvironmental.com>; stephan <stephan@eccenvironmental.com>; Phillip Hine <phine@sahra.org.za>; michael@eccenvironmental.com; Ragna Redelstorff <rredelstorff@sahra.org.za>  
Subject: Re: SAHRIS Case ID 11996

Good morning,

Please note that the SAHRIS website is currently down, so I cannot review the case. I have however looked at the comment I sent last year December 2017. The comment did request a desktop Palaeontological Study, however as per the PIA Minimum Standards, a Letter of Recommendation for Exemption may be drafted by a qualified palaeontologist (please see attached documents) to motivate as you have detailed below.

Please feel free to contact me should you have any further questions.

Kind Regards,

Natasha Higgitt  
Heritage Officer: Archaeology, Palaeontology and Meteorites Unit

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[https://41.185.64.45:2096/cpsess9662402491/horde/imp/view.php?view\\_token=aOldM5Em5iX37bDY9aW3yWb&actionID=print\\_attach&buid=171&id=1&m...](https://41.185.64.45:2096/cpsess9662402491/horde/imp/view.php?view_token=aOldM5Em5iX37bDY9aW3yWb&actionID=print_attach&buid=171&id=1&m...) 2/5

5/31/2018

RE: SAHRIS Case ID 11996

T: +27 21 462 4502 | F: +27 21 462 4509 | C: +27 82 507 0378  
E: nhiggitt@sahra.org.za | 111 Harrington Street | Cape Town

www.sahra.org.za

Kind Regards,

Natasha Higgitt  
Heritage Officer: Archaeology, Palaeontology and Meteorites Unit

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----- Original Message -----

From: "Rachel Moore" <rachel@eccenvironmental.com>  
To: "Natasha Higgitt" <nhiggitt@sahra.org.za>  
Cc: "natasha higgitt" <natasha.higgitt@gmail.com>, "jessica" <jessica@eccenvironmental.com>, "stephan" <stephan@eccenvironmental.com>, "Phillip Hine" <phine@sahra.org.za>, michael@eccenvironmental.com  
Sent: Thursday, 3 May, 2018 8:21:33 AM  
Subject: RE: SAHRIS Case ID 11996

Good morning Natasha,

Apologies for the late response. ECC have reviewed the Palaeontological Sensitivity map on the SAHRIS website and we are finding it a little tricky to use. When we try to find the exact location of our site on the Sensitivity map, the geographic map sitings behind the sensitivity colours can only be seen very briefly when zooming in or out.

Is there by any chance a way to view both layers (the geographical map and the sensitivity mapping) to pin point the location? Do you have pdf version?

We ask for this, as when we attempt to identify the site area, we believe the majority of the site sits in the grey area (INSIGNIFICANT/ZERO SENSITIVITY WITH no palaeontological studies are required), with a small thin section along the northern boundary being in the green area (triggering a desk study). We have attached a snap short of the area and sensitivity map.

If this is the case, ECC will compose a letter as requested justifying why a desk top study is not required and the appropriate management arrangements that will be adopted on site in the event of a find. In addition, the area along the northern boundary is not the area to be used for cultivation and therefore sediments will not be disturbed (at depth); operations on the rest of the site will not impact sediments at depth; superficial sediments across the site are already much disturbed (hence very limited in situ archaeology was found); and the kanonkop feature that was investigated was virtually on bedrock. Would this be satisfactory and exempt us from further work?

Please could you also point us in the direction of the following documents on the SAHRA website:  
- SAHRA 2007 Minimum Standards: Archaeological and Palaeontological Component of Impact Assessments  
- SAHRA 2012 Minimum Standards: Palaeontological Component of Heritage Impact Assessments.

Thank you in anticipation,

Kind regards,

Rachel  
--  
Rachel Moore  
Environmental Consultant  
Tel +264 81 465 6971|Windhoek|Namibia  
Email rachel@eccenvironmental.com

www.eccenvironmental.com

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5/31/2018

RE: SAHRIS Case ID 11996

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-----Original Message-----

From: Natasha Higgitt <nhiggitt@sahra.org.za>  
Sent: 17 April 2018 15:39  
To: michael@eccenvironmental.com  
Cc: natasha higgitt <natasha.higgitt@gmail.com>; jessica <jessica@eccenvironmental.com>; stephan <stephan@eccenvironmental.com>; rachel <rachel@eccenvironmental.com>; Phillip Hine <phine@sahra.org.za>  
Subject: Re: SAHRIS Case ID 11996

Good afternoon,

As per the Palaeontological Sensitivity map on the SAHRIS website, the development is located on an area of moderate palaeontological sensitivity. The Orange River Gravels are known to contain significant fossils. As per the requirements of the PalaeoMap (<http://sahra.org.za/sahris/map/palaeo>), a desktop Palaeontological assessment is required to be completed. Should you feel a desktop assessment is not required, then a Letter of Recommendation for Exemption must be completed by a qualified palaeontologist and submitted as per the SAHRA 2007 Minimum Standards: Archaeological and Palaeontological Component of Impact Assessments and the SAHRA 2012 Minimum Standards: Palaeontological Component of Heritage Impact Assessments.

Kind Regards,

Natasha Higgitt  
Heritage Officer: Archaeology, Palaeontology and Meteorites Unit

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Kind Regards,

Natasha Higgitt  
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----- Original Message -----

From: michael@eccenvironmental.com  
To: nhiggitt@sahra.org.za  
Cc: "natasha higgitt" <natasha.higgitt@gmail.com>, "jessica" <jessica@eccenvironmental.com>, "stephan" <stephan@eccenvironmental.com>, "rachel" <rachel@eccenvironmental.com>  
Sent: Tuesday, 17 April, 2018 3:31:56 PM  
Subject: SAHRIS Case ID 11996

Good day Natasha

CASE ID 11996

During our telephone correspondence, yesterday (2018/04/16) you indicated that in addition to the Archaeology assessment, an additional paleontology assessment is required as part of the HIA for Agricultural Lot 2371 Kakamas South Settlement, near Kakamas, Northern Cape

We have reviewed the reports from our specialists and identified little or no indication that the site has the potential to reveal significant paleontological findings. This will delay our project and can

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5/31/2018

RE: SAHRIS Case ID 11996

potentially result in our client missing the planting window for 2018.

Can you please provide us with some clarity regarding the need for a paleontology assessment?

Thank you in advance

Warm Regards

Michael Moreland

074 567 7143/076 089 0613

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Kind Regards,

Natasha Higgitt  
Heritage Officer: Archaeology, Palaeontology and Meteorites Unit

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Kind Regards,

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Kind Regards,

Natasha Higgitt  
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MEETING MINUTES FROM THE PRE-APPLICATION MEETING WITH DENC



**PROPOSED DEVELOPMENT OF AGRICULTURAL PROJECT – LOT 2371 KAKAMAS**

**UNDERTAKING OF MEETING – DENC MEETING**

DOCUMENT REFERENCE: ECC-51-81-MOM-03-A

**PROJECT:** PROPOSED DEVELOPMENT OF AGRICULTURAL LOT 2371 KAKAMAS SOUTH SETTLEMENT

**VENUE:** Evelina de Bruin Building, Upington

**DATE:** 25<sup>th</sup> August 2017

**TIME:** 10:10 – 10:45

Pre-consultation meeting to discuss the background information of the proposed development.

**Attendees:**

Mr Ordain Riba - DENC  
Mr Michael Moreland - Environmental Compliance Consultancy

**Proceedings:**

ITEM	DESCRIPTION	PERSON
1	WELCOME AND INTRODUCTIONS	
2	ECC APPROACH BASED ON BID	Michael Moreland
	<p>Michael Moreland presented Mr Ordain Riba with an ecological study of the proposed development area. The study was discussed and critical areas identified on the site map</p> <p>Based on the study, the aim of ECC is not to pursue the full BA process.</p> <ul style="list-style-type: none"> <li>• There is little or no effect on the surrounding areas as they are all developed for agricultural purposes.</li> <li>• The majority of the property has been previously disturbed by agricultural activities, which is evident in the ecological report.</li> <li>• The ecological report indicated that there would be relatively low impact.</li> <li>• Fruits du Sud follows stringent fruit export standards such as Global GAP. These same standards will be followed to ensure sustainable crop production.</li> <li>• This would save the client time and money</li> </ul> <p>Michael Moreland indicated that he understands the drainage lines may be of concern. The agricultural developments surrounding the property have however restricted/alterd natural flow. Mr Moreland enquired if these drainage lines could still be considered natural watercourses?</p>	



<b>3</b>	<b>REVIEW OF THE BID DOCUMENT</b>	
	Main concern is the presence of drainage lines, and they will trigger listed activities. Please note new listed activities released in April 2017.	<b>Ordain Riba</b>
<b>4</b>	<b>LISTED ACTIVITIES</b>	
	Based on the BID – ECC should consider the following  <b>ACTIVITY 19:</b> The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from (i) a watercourse;  <b>ACTIVITY 27:</b> The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation.  <b>ACTIVITY 28:</b> Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture or afforestation on or after 01 April 1998 and where such development:	<b>Ordain Riba</b>
<b>4.1</b>	<b>ACTIVITY 28 – UNLIKELY</b>	
	The property has been used primarily for agricultural purposes for the drying and packing of dried fruit (raisins) as part of the raisin production process. Therefore triggering listed activity 28 is unlikely?	<b>Michael Moreland</b>
<b>5</b>	<b>BASIC ASSESSMENT DIALOG</b>	
	Based on these finding a Basic Assessment (BA) needs to be conducted. This will include a Heritage report.	<b>Ordain Riba</b>
	Ordain asked if the property have water rights? Ordain advised ECC to contact DWA for deviation regarding the drainage lines. DWA will be able to provide ECC with a GA.	<b>Ordain Riba</b>
	Mr Moreland advised that the property does have water rights that were consolidated. Mr Moreland will arrange a meeting with Shaun Cloete regarding a pre-consultation to discuss the application of a GA.	<b>Michael Moreland</b>
	Mr Ordain suggested that Ms Jacqueline Maans from the department of Agriculture should also be consulted regarding the proposed development.	<b>Ordain Riba</b>
	The only potential concern Ordain foresees is related to engaging the interested and affected parties (farmers) as this has been a challenge in the past.	<b>Ordain Riba</b>
<b>6</b>	<b>CONCLUSIONS AND THANKS</b>	

---

## PRE-APPLICATION APPLICATION CORRESPONDENCE WITH DWS

From: Cloete Shaun <CloeteS@dws.gov.za>  
Sent: 12 September 2017 01:55 PM  
To: michael@eccenvironmental.com  
Subject: RE: Pre-consultation - PROPOSED DEVELOPMENT OF AGRICULTURAL LOT 2371, Kakamas

**Good Day Michael**

**As discussed, the crossing of drainage lines should go through the Water Use Licence process. The existing water rights is a water use on its own and should not be confused with the section 21 (c&i) water use for crossing drainage lines.**

**I hope this is clear.**

**Shaun**

From: Cloete Shaun <CloeteS@dws.gov.za>  
Sent: 06 September 2017 10:38 AM  
To: michael@eccenvironmental.com  
Subject: RE: Pre-consultation - PROPOSED DEVELOPMENT OF AGRICULTURAL LOT 2371, Kakamas  
Attachments: DW755A WULA Form.doc.docx

**Good Day Micheal**

**As part of the WULA process please complete the attached form and return it to me with all other documents requested on the form then we can take it from there to arrange a meeting/ site visit.**

**Thank You.**

**Shaun**

From: michael@eccenvironmental.com [mailto:michael@eccenvironmental.com]  
Sent: 06 September 2017 10:29 AM  
To: Cloete Shaun  
Subject: Re: Pre-consultation - PROPOSED DEVELOPMENT OF AGRICULTURAL LOT 2371, Kakamas

**Good Morning Shaun**

**I tried to contact you this morning.**

**I would like to arrange a suitable date for a pre-consultation meeting. Please feel free to contact me via email for any further enquirers.**

**Regards**

**Michael Moreland**

**Quoting michael@eccenvironmental.com:**

- > Good day Shaun
- > As discussed please find attached the BID document.
- > Please feel free to contact me via email for any further enquirers.
- > Regards

## **APPENDIX F: ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT**



# Appendix F: Environmental Management Programme Report: Proposed Development of Agriculture Lot 2371 Kakamas South Settlement

May 2018

ECC DOCUMENT CONTROL: ECC-51-81-REP-08-B

## TITLE AND APPROVAL PAGE

<b>Project Name:</b>	Proposed development of agricultural lot 2371 Kakamas south settlement, Kai !Garip Municipality, section Kenhardt, Northern Cape  Environmental Management Programme
<b>Client Name:</b>	Fruits du Sud
<b>Ministry Reference:</b>	NA
<b>Status of Report:</b>	Final Submission
<b>Date of issue:</b>	31 <sup>th</sup> May 2018
<b>Review Period</b>	NA

### Environmental Compliance Consultancy Contact Details:

We welcome any enquiries regarding this document and its content please contact:

Stephan Bezuidenhout	Michael Moreland
Environmental Consultant & Practitioner	Environmental
Tel: +264 81 262 7872	Tel: +27 760 890 613
Email: <a href="mailto:stephan@eccenvironmental.com">stephan@eccenvironmental.com</a>	Email: <a href="mailto:michael@eccenvironmental.com">michael@eccenvironmental.com</a>
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## DEFINITIONS AND ABBREVIATIONS

BA	Basic Assessment
BAR	Basic Assessment Report
DEA	Department of Environmental Affairs
DENC	Northern Cape department of Environment & Nature Conservation
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
ECC	Environmental Compliance Consultancy
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
ERAP	Emergency Response Action Plan
NEMA	National Environmental Management Act (Act No 107 of 1998)
PPE	Personnel Protective Equipment
SAHRA	South African Heritage Resource Agency
WUL	Water Use License

## **1. INTRODUCTION**

### **1.1. PURPOSE OF THIS REPORT**

This Environmental Management Programme report (EMPr) has been prepared as part of the requirements of the Environmental Impact Assessment (EIA) Regulations (2014), promulgated under the National Environmental Management Act (NEMA) (Act 107 of 1998). The EMPr is to be submitted to the Northern Cape Department: Environment and Nature conservation (DENC) as part of the Application for Environmental Authorisation.

The Basic Assessment (BA) was conducted in order to assess the potential impacts the development might have on the environment. These impacts were assessed in detail and as far as possible, mitigation recommendations are presented within the EMPr in order to ensure informed decision making and improved sustainable development. These recommendations also include specific management measures applicable to individual natural resources and infrastructure activities as well as general management guidelines which apply to the proposed development.

### **1.2. PROJECT BACKGROUND**

The proponent intends to develop approximately 12 hectares of agricultural land for the production of table grapes. The project site is located within the immediate vicinity of the town Kakamas in the Kai !Garib Municipality, situated between the N14 and Augrabies Weg towards Kakamas and approximately 5km from the town area.

Fruits du Sud (Pty) Ltd a South African registered company, is a local and international supplier of dried fruit products. The company was established during 2002 and has been a procurer and producer of local produce in the Kai !Garib Municipality region of South Africa for more than 15 years.

The proposed site has been used as depot for local produce as well as a drying area during the production process of raisins. The property was consolidated in 2012 with the aim to develop site for the development of arable land to supply the market demand for the production of dried fruits.

The BAR should be referred to for further information.

### **1.3. ENVIRONMENTAL REGULATORY REQUIREMENTS**

This EMPr satisfies the requirements of NEMA EIA Regulations published in GNR 983, 984 and 985 on the 4 December 2014 Government Gazette Number 38282. These regulations regulate and prescribe the content of the EMPr and specify the type of supporting information that must accompany the submission of the report to the authorities.

The EMP is compiled as part of the BA process and is an annexure to the project report. The EMPr is based primarily on the finding and recommendations of the basic assessment process. The EMPr, is considered as a working document and must be reviewed and updated with additional information or actions during the lifetime of the project when needed.

### **1.4. AUTHORS OF THE EMPr**

Environmental Compliance Consultancy (ECC), a Namibian consultancy registration number Close Corporation 2013/11401, has prepared the EMPr as a requirement of the BAR. ECC operates exclusively in the environmental, social, health and safety fields for clients across Southern Africa in the public and private sector. ECC is independent to the proponent and has no vested or financial interested in the proposed project.



**Table 1 – Authors of the EMPr**

Name	Role
Mr Michael Moreland	Project Manager
Mr Stephanus Bezuidenhout	Project Leader
Ms Rachel Moore	Reviewer
Specialists	
Ms Marianne Strohbach	Ecologist
Mr David Morris	Heritage Specialist

### 1.5.SCOPE OF THIS EMPr

This EMPr considers the planning and design, construction, operational and decommissioning phases of a project into account. This EMPr follows an approach of identifying an over-arching goal and objectives, accompanied by management actions that are aimed at achieving these objectives. The management actions are presented in a table format in order to show the links between the goal and associated objectives, actions, responsibilities, monitoring requirements and targets. The management plans for the design, construction, operation and decommissioning phases consist of the following components:

- Managing potential positive or negative impact of the development that needs to be enhanced mitigated or eliminated.
- The objectives necessary in order to meet goals identified during the BA in relation to the findings of the specialist studies.
- The activities needed to achieve these objectives
- And the monitoring and implementation of these objectives

This EMPr is set out as follows:

**Chapter 1** – this Chapter, setting out an introduction to the proposed project and the purpose of this EMPr

**Chapter 2** – Presents the responsibilities of key roles

**Chapter 3** – Presents the action plan for the planning phase

**Chapter 4** – includes the management plan for the construction and operational phases

**Chapter 5** – is the conclusion

## 2. ROLES AND RESPONSIBILITIES

This Chapter sets out the responsibilities of the roles for the proposed project, including the:

- Project Developer;
- Environmental Control Officer;
- Operations Manager; and
- Construction/Development Manager.

### 2.1. PROJECT DEVELOPER

The Project Developer (Fruits du Sud) is the owner of the project and as such is responsible for ensuring the conditions of the Environmental Authorisation issues in terms of NEMA (should the project receive EA) are fully satisfied, as well as ensuring that any other necessary permits or licences are obtained and complied with. It is expected that the Project Developer will appoint the Environmental Control Officer (ECO) and an Operations Manager. The Project Developer will also be responsible for commissioning the compilation of a Restoration Plan when the production ceases.

### 2.2. ENVIRONMENTAL CONTROL OFFICER

The ECO will be responsible for overseeing the implementation of this EMPr through all phases of the project including the agricultural production of grapes, and the monitoring environmental impacts, record-keeping and updating of the EMPr as and when necessarily.

During the Construction (Development) Phase, the ECO will be responsible for the following:

- Meeting the Construction/Development manager as well as the Project Developer prior to the commencement of the ground works to identify and define site layout.
- Monitoring of site activities to ensure adherence to the specifications contained in the EMPr, using a monitoring checklist that is to be prepared by the ECO at the start of the development phase;
- Preparation of the monitoring report as needed; and conducting an environmental inspection

During Operations the ECO will be responsible for overseeing the implementation of the EMPr for the operation phase. Ensuring the necessary environmental monitoring takes place as specified in the EMPr. Update the EMPr and ensure that records are kept of all monitoring activities and results.

### 2.3. CONSTRUCTION MANAGER

The Construction Manager (the lead contractor) will be responsible for the following:

- Reshaping and landscaping of the development blocks.
- Overseeing compliance with the Health, Safety and Environmental Responsibilities specific to the project construction.
- Promoting job safety and environmental awareness by employees, contractors and sub-contractors and stress to all employees, contractors and sub-contractors the importance that the project proponent attaches to safety and the environment.
- Ensuring that each subcontractor employ an Environmental Officer (or have a designated Environmental Officer function) to monitor and report on the daily activities on-site during the construction period.

- 
- Ensuring that safe, environmentally acceptable working methods and practices are implemented and that sufficient plant and equipment is made available, is properly operated and maintained in order to facilitate proper access and enable any operation to be carried out safely.
  - Meeting on site with the ECO prior to the commencement of activities to confirm the construction procedure and designated activity zones.
  - Ensuring that all appointed contractors and sub-contractors are aware of this EMPr and their responsibilities in relation to the programme
  - Ensuring that all appointed contractors and sub-contractors repair, at their own cost, any environmental damage as a result of a contravention of the specifications contained in the EMPr, to the satisfaction of the ECO.
  - At the time of preparing this EMPr, the appointment of a lead contractor has not been made and will depend on the project proceeding to the construction phase.

## 2.4. OPERATIONS MANAGER

The Operations Manager (Farm Manager) will be responsible for the following:

- Planting and production of table grapes blocks.
- Required maintenance of the facilities.
- Overall compliance with the EMPr and Environmental Authorisation.
- Ensuring that the specified environmental monitoring programmes during operations are undertaken effectively and that the findings are analysed and applied.

### 3. IMPACTS & ACTIONS FOR THE PLANNING PHASE

The proposed project is currently progressing through the planning and design phase. As part of the BA process, further design changes and design optimisation may occur due to assessment findings and feedback from I&APs. This promotes the use of pre-emptive measures that serve to minimise the potential environmental impacts that may otherwise require mitigation at a later stage in the process. The potential impacts resulting from development of the preferred site during planning and design phase of the activity are provided in **Error! Reference source not found..**

## 4. MANAGEMENT PLANS

### 4.1. MANAGEMENT PLAN FOR DEVELOPMENT PHASE

The overall goal of the construction and development phase is to undertake all the relevant activities in a way that ensures proper management of environmental aspects and impacts; and to minimise disruptions to other land use activities in the area, traffic and agricultural activities that occur in the neighbouring areas. The potential impacts arising from the construction phase and mitigation requirements are provided in Table 5.

**Table 5 – EMP for the Development / Construction Phase**

IMPACT	OBJECTIVES	ACTIONS	MONITORING REQUIREMENTS		
			METHOD	FREQUENCY	RESPONSIBLE
<b>Alien vegetation management</b>					
Removal of alien invasive vegetation from the proposed project area.	Ensure the correct removal of alien invasive vegetation from the proposed development area and prevent the establishment and spread of alien invasive plants due to the development activities.	Ensure compliance with relevant Environmental Specifications for the control and removal of alien invasive plant species.	Monitor the removal of the alien invasive vegetation.	During the removal process	ECO
Prevent introduction of alien species to the project site	Ensure the potential introduction and spread of alien plants is prevented	All project or earth moving equipment must have an internal weed and seed inspection completed prior to equipment being used on site	Inspect vehicles as per inspection sheet ECC-36-70-FOR-09-A	As required	ECO
<b>Indigenous Vegetation Management</b>					
Loss of Planted Indigenous Species (incl. several protected and threatened species)	Ensure that the planted indigenous species are safely removed and relocated to onsite conservation area.	Identified species relocated where possible. These species must be relocated to a suitable nursery or relocated to an alternate location within the site.	Use ecological report as a guideline for the removal of identified species. Use a specialist if necessary to remove species.	Once-off prior to construction.	Contractor or Specialist
Loss of habitat through clearing	Minimise the disturbance footprint and potential pollution impacts.	Restrict all habitat loss and disturbances from development activities to within the proposed and agreed upon site layout.	Revise the planned layout to avoid all high sensitive areas as far as possible. Clearly demarcate the development area. Specimens that are situated in the development footprint. Identify and mark large trees both on the ground and digitally to facilitate the incorporation of as many large trees into the	During the development phase.	Contractor and ECO

IMPACT	OBJECTIVES	ACTIONS	MONITORING REQUIREMENTS		
			METHOD	FREQUENCY	RESPONSIBLE
			final project layout as possible. Wherever possible endeavour to conserve large trees in situ.		
<b>Construction Best Practice</b>					
Increased noise levels from excavation and landscaping operations	Keep noise levels to a minimum through best practise methods.	All operations should be conducted during daytime only (i.e. 06:00 – 22:00, as defined in South African National Standards (SANS 10103).	Landscaping activity times to be monitored and managed (as well as included in the tender contract).	Daily	Contractor and ECO
Construction site and change to views.	Maintain a safe and tidy construction site.	All operations should be conducted during daytime only (i.e. 06:00 – 22:00, as defined in South African National Standards (SANS 10103).	The Contractor should maintain good housekeeping on site to avoid litter and minimise waste. Ensure that rubble and litter are appropriately stored and regularly removed from site to a licenced waste disposal facility. Dust generation must be kept at a minimum.	Weekly or bi-weekly	Contractor and ECO
Dust Generation	Minimise dust as much as reasonable possible. Restrict excessive dust exposure to workers. Mitigate dust fallout to neighbouring farmers.	Operations during windy periods should be managed accordingly.	During windy periods, earthmoving activities should be managed accordingly.  All earthmoving equipment (e.g., bulldozers, trucks, and front-end loaders) should have cabs with air-conditioning (if available) to protect their operators.	Weekly or bi-weekly	Contractor and ECO

IMPACT	OBJECTIVES	ACTIONS	MONITORING REQUIREMENTS		
			METHOD	FREQUENCY	RESPONSIBLE
Spills and accidents: Potential spillage of hydrocarbons from machinery and fuel storage.	Reduce the spillage of hydrocarbons impact thereof on the environment.	Ensure that hydrocarbons are stored correctly. Within bunds and provide drip trays for any leaking machinery.	Monitor via site audits and record non-compliance and incidents (including near-miss incidents)	Monthly	EHS Manager and ECO
<b>Traffic Impacts</b>					
Increase local traffic on the N14 – increase risk of traffic jams, journey times and risks of increased stress and accidents	Prevent unnecessary impacts on the surrounding road network by supplying parking for construction vehicles on site.	Accommodate all excavation vehicles on site during the construction phase. Vehicles and equipment should not use make use of the N14 national road - the alternative site entrance from Augrabies Weg shall be used. Vehicle speed limits	Monitor that no construction vehicles park on the outlying roads. Record and report non-compliance.	Daily	Contractor and ECO
<b>Safety, Health and Environment</b>					
Atmospheric pollution due to fumes, smoke from fires.	Prevent unnecessary air pollution impacts as a result of the operational procedures.	Portable fire extinguishers and appropriate fire-fighting equipment should be provided. Avoid idling plant and equipment	Assurance of functionality of fire extinguishers via inspections and certification by an accredited fire service company. Ensure all personnel know where the fire fighting equipment is on site.	Monthly	Project Developer, ECO and Contractor
Onsite potential for collisions during or crushing from excavation equipment	Prevention of injuries, fatalities, and damage to equipment and vehicles	Workers should be made aware of risks involved with excavation activities. No H&S mechanical preventative measures should be altered or ignored when using equipment. Onsite speed restrictions	Monitor activities and record and report non-compliance by undertaking inspections.	Throughout the development phase.	Project Developer, ECO and Contractor



IMPACT	OBJECTIVES	ACTIONS	MONITORING REQUIREMENTS		
			METHOD	FREQUENCY	RESPONSIBLE
<b>Heritage Resources</b>					
Impact on Archaeology and Palaeontology	Prevent damage and destruction to artefacts and materials of heritage significance. Ensure the identified (rock gong) landmarks are not damaged or disturbed.	Demarcate rock gong and rock outcrop with a 2m buffer area. Carry out general monitoring of excavations for potential fossil heritage, artefacts and material of heritage importance. All work must cease immediately, if any human remains and/or other archaeological, paleontological and historical material are uncovered. Such material, if exposed, must be reported to the nearest museum, archaeologist/palaeontologist and to the SAHRA or SAP (South African Police Services), so that a systematic and professional investigation can be undertaken. Sufficient time should be allowed to remove/collect such material before construction re-commences. Should any substantial fossil remains (e.g. vertebrate bones and teeth, shells, calcretised burrows) be encountered during excavation, however, these should be reported to SAHRA for possible mitigation by a professional palaeontologist (Contact details: Dr Ragna Redelstorff, SAHRA, P.O. Box 4637, Cape Town 8000. Tel: 021 202 8651. Email: rredelstorff@sahra.org.za or Ms Natasha Higgitt. Tel: 021 462 4502. Email: nhiggitt@sahra.org.za). A tabulated Chance Fossil Finds protocol is below this table.	Monitor excavations and construction activities for archaeological and paleontological materials. Monitor excavations and construction activities for archaeological and paleontological materials and report the finds accordingly.	Daily during excavation work.	Contractor and ECO

IMPACT	OBJECTIVES	ACTIONS	MONITORING REQUIREMENTS		
			METHOD	FREQUENCY	RESPONSIBLE
<b>Water Conservation</b>					
Impact on the local water balance as a result of increased water usage.	Reduce water usage during development phase. Ensure development areas are as planned.	Ensure that regular audits of water systems are conducted to identify possible water leakages. Carry out environmental awareness training with a discussion on water usage and conservation.	Monitor via site audits and record non-compliance and incidents. Conduct training for all site personnel.	Once-off during construction and ensure that all new staff are inducted.	ECO and Contractor
<b>Spill Contingency, Management and Handling of Chemicals/Dangerous Goods</b>					
Potential spillage of hydrocarbons from machinery and fuel storage.	Reduce the spillage of hydrocarbons impact thereof on the environment.	Ensure that hydrocarbons are stored correctly. Within bunds and provide drip trays for any leaking machinery. Maintain spill kits on site throughout construction works and ensure all personnel know where they are kept	Monitor via site audits and record non-compliance and incidents (including near-miss incidents)	Monthly	ECO
<b>Waste Management</b>					
Pollution of the surrounding environment as a result of the handling, temporary storage and disposal of solid waste (general and hazardous).	Reduce soil and groundwater contamination as a result of incorrect storage, handling and disposal of general and hazardous waste. Ensure that environmental issues are taken into consideration in the planning for site establishment.	General waste and hazardous waste should be stored temporarily on site in suitable (and correctly labelled) waste collection bins and skips (or similar). Waste collection bins and skips should be covered with suitable material, where appropriate. Should the on-site storage of general waste and hazardous waste exceed 100m <sup>3</sup> and 80m <sup>3</sup> respectively, then the National Norms and Standards for the Storage of Waste (published on 29 November 2013 under Government Notice 926) must be adhered to. Ensure that general waste and hazardous waste are removed from the site on a regular basis and disposed of at an appropriate, licenced waste disposal facility by an approved waste management Contractor. Waste disposal slips or waybills should be kept on file for auditing purposes as proof of disposal. Segregation of hazardous waste from general waste to be in place.	Inspection of the temporary wastestorage area. Monitor via site audits and record non-compliance and incidents. EHS Manager to monitor and audit disposal slips. On-site inspection of wastesegregation.	Weekly	ECO and Contractor

IMPACT	OBJECTIVES	ACTIONS	MONITORING REQUIREMENTS		
			METHOD	FREQUENCY	RESPONSIBLE
<b>Socio-Economic Management</b>					
Employment creation and skills development opportunities during the construction phase.	Maximise local employment and local business opportunities to promote and improve the local economy.	<p>Enhance the use of local labour and local skills as far as reasonably possible. Where the required skills do not occur locally, and where appropriate and applicable, ensure that relevant local individuals are trained.</p> <p>Ensure that an equitable percentage allocation is provided for local labour employment as well as specify the use of Small, Medium to Micro Enterprise (SMME's) training specifications in the Contractors contract.</p> <p>Ensure that goods and services are sourced from the local and regional economy as far as reasonably possible.</p>	Maximise local employment for unskilled labour and provincial/ national skilled labour.	During the development phase.	Contractor and ECO
<b>Environmental Awareness and Site Camp Establishment</b>					
Inappropriate behaviour of civil contractors and sub-contractors during the construction phase.	Prevent unnecessary impacts on the surrounding environment by ensuring that contractors are aware of the requirements of the EMPr.	Establish camp rules and educate workers of the camp rules	Ensure staff training of the site rules through inductions. Monitor compliance and record non compliance and incidents.	Continually	Contractor

**Table 6 – CHANCE FOSSIL FINDS PROCEDURE**

FRUITS DU SUD AGRICULTURAL DEVELOPMENT ON PLOT 2371, KAKAMAS SOUTH SETTLEMENT		
<b>Province &amp; region:</b>	<b>NORTHERN CAPE, !Kai Garib Municipality</b>	
<b>Responsible Heritage Resources Authority</b>	SAHRA (Contact details: Dr Ragna Redelstorff, SAHRA, P.O. Box 4637, Cape Town 8000. Tel: 021 202 8651. Email: rredelstorff@sahra.org.za or Ms Natasha Higgitt. Tel: 021 462 4502. Email: nhiggitt@sahra.org.za)	
<b>Rock unit(s)</b>	Late Caenozoic alluvium including sands and gravels	
<b>Potential fossils</b>	Vertebrate bones, teeth and horn cores, mollusc and crustacean remains or plant material such as subfossil wood	
<b>ECO protocol</b>	1. Once alerted to fossil occurrence(s): alert site foreman, stop work in area immediately ( <i>N.B.</i> safety first!), safeguard site with security tape / fence / sand bags if necessary.	
	2. Record key data while fossil remains are still <i>in situ</i> : <ul style="list-style-type: none"> <li>• Accurate geographic location – describe and mark on site map / 1: 50 000 map / satellite image / aerial photo</li> <li>• Context – describe position of fossils within stratigraphy (rock layering), depth below surface</li> <li>• Photograph fossil(s) <i>in situ</i> with scale, from different angles, including images showing context (<i>e.g.</i> rock layering)</li> </ul>	
	3. If feasible to leave fossils <i>in situ</i> : <ul style="list-style-type: none"> <li>• Alert Heritage Resources Authority and project palaeontologist (if any) who will advise on any necessary mitigation</li> <li>• Ensure fossil site remains safeguarded until clearance is given by the Heritage Resources Authority for work to resume</li> </ul>	3. If <i>not</i> feasible to leave fossils <i>in situ</i> (emergency procedure only): <ul style="list-style-type: none"> <li>• <i>Carefully</i> remove fossils, as far as possible still enclosed within the original sedimentary matrix (<i>e.g.</i> entire block of fossiliferous rock)</li> <li>• Photograph fossils against a plain, level background, with scale</li> <li>• Carefully wrap fossils in several layers of newspaper / tissue paper / plastic bags</li> <li>• Safeguard fossils together with locality and collection data (including collector and date) in a box in a safe place for examination by a palaeontologist</li> <li>• Alert Heritage Resources Authority and project palaeontologist (if any) who will advise on any necessary mitigation</li> </ul>
	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	
<b>Specialist palaeontologist</b>	Record, describe and judiciously sample fossil remains together with relevant contextual data (stratigraphy / sedimentology / taphonomy). Ensure that fossils are curated in an approved repository ( <i>e.g.</i> 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.	

**WEED AND SEED CLEARANCE CERTIFICATE  
ECC-36-70-FOR-09-A**

**SECTION 1 – PROJECT MANAGER TO COMPLETE (AT LEAST 2 DAYS PRIOR TO EQUIPMENT ARRIVING)**

**Project Manager or responsible person bringing equipment to site:**

Name:		Department:	
Site:		Equipment Arrival Date:	

**Details of the owner of the equipment:**

Equipment owner:		Company Name:	
Equipment type:		Equipment ID:	
Date Equipment was washed:		Inspected By:	
Where was the equipment last used:			

**SECTION 2 - ENVIRONMENTAL CONTROL OFFICER TO COMPLETE PRIOR TO ANY GROUND WORKS COMMENCING**

Inspection area	Requirements	Compliance		
		Yes	No	NA
Body works	Free of all soil and vegetation?			
Bumpers	Hollow sections and attachment points free of dirt			
Tyres	Free of all soil and vegetation			
Dual Wheels	Free of all soil and vegetation			
Canopy	Free of all soil and vegetation			
Radiator	Free of all soil and vegetation – specifically look for seed heads			
Interior	Free of soil and vegetation – specifically look for seed heads in upholstery and under mats			
Storage compartments	Free of all soil and vegetation			
Jack and tool kit	Check tool roll and spare wheel are clean			
Racks and bull bars	Free of all soil and vegetation			
Ropes/ Straps/ Cages	Free of all soil and vegetation? Carefully check Velcro and tensioning devices			
Tracks	Carefully check tracks are clean of soil and vegetation			

**Figure - Weed and Seed**



## EMP SUPPORT FORMS AND TOOLS

 WEED AND SEED CLEARANCE CERTIFICATE  
 ECC-36-70-FOR-09-A

?

Actions required:	Accountability	Complete By:	Completed?

On inspection of the aforementioned equipment it has been found to be in a clean and weed seed free state, and has been approved for use on the \_\_\_\_\_ project.

Please ensure a copy of this certificate remains with the equipment for the operator while completing the site works.

**SECTION 3 – BOTH PARTIES TO COMPLETE**

Approval / Sign Off		Signature	Date
<b>Environmental Officer:</b> _____	I certify that the equipment meets the company standards		
<b>Project Manager:</b> _____	I understand the condition applicable to this certificate and will ensure the equipment will arrive on site in the state in which it was inspected		
<b>Operator/Company Rep:</b> _____	I certify that the equipment has been cleaned prior to being sent to site. The equipment will arrive on site as it was inspected or will arrive on site in a state that will meet the expectations of this permit.		

**Records office use only:**
*(Please Tick)*
*(Please Tick)*

<b>Actions forward to project manager:</b>		<b>Copies of certificates forwarded to project manager:</b>	
<b>Certificate filed:</b>		<b>Signature</b>	

?

## 4.2. MANAGEMENT PLAN FOR OPERATIONAL PHASE

The objective for managing the operational phase of the agricultural development project is to ensure that the daily operations do not have unforeseen impacts on the environment; to ensure that all the potential impacts are monitored and that the necessary corrective action are undertaken in a timeous manner. The potential impacts resulting from development of the potential sites during the operational phase of the activity are provided below.

**Table 7 – EMP for the Operational Phase**

IMPACT	OBJECTIVES	ACTIONS	MONITORING REQUIREMENTS		
			METHOD	FREQUENCY	RESPONSIBLE
<b>Alien vegetation management</b>					
Potential re-establishment of alien plants on site.	Ensure the correct removal of alien invasive vegetation from the proposed project area and prevent the establishment and spread of alien invasive plants.	Ensure compliance with relevant Environmental Specifications for the control and removal of alien invasive plant species.	Monitor the removal of the alien invasive vegetation.	During the removal process	Operations Manager
<b>Indigenous Vegetation Management</b>					
Loss of Planted and relocated Indigenous Species	Minimise the disturbance footprint and potential pollution impacts.	Restrict all habitat loss and disturbances from operations activities. Ensure the preservation of the conservation area.	Train employees on the importance of local biodiversity. Restrict the removal or collection of fauna. Restrict activities that can potentially impact the conservation area	Continuously	ECO
<b>Traffic Impacts</b>					
Increase of farming equipment and vehicles on the N14	Prevent unnecessary impacts on the surrounding road network.	Use Augrabies way as the primary transport route for farming equipment - restrict any impact on the national road.	Restrict access to N14 Inspect vehicles and farm equipment.	Continuously	Operations Manager

IMPACT	OBJECTIVES	ACTIONS	MONITORING REQUIREMENTS		
			METHOD	FREQUENCY	RESPONSIBLE
<b>Safety, Health and Environment</b>					
Potential for on-site collisions during the operation of agricultural equipment	Prevention of injuries, fatalities, and damage to equipment and vehicles during the operational phase.	Workers should be made aware of risks involved with operating equipment. No H&S mechanical preventative measures should be altered or ignored when using equipment.	Monitor activities and record and report non-compliance by undertaking inspections.	Throughout the development phase.	Operations Manager & ECO
Atmospheric pollution due to fumes, smoke from fires.	Prevent unnecessary air pollution impacts as a result of the operational procedures.	Portable fire extinguishers and appropriate fire-fighting equipment should be provided.	Assurance of functionality of fire extinguishers via inspections and certification by an accredited fire service company. Ensure all personnel know where the fire fighting equipment is on site.	Annually	Operations Manager & ECO
Potential impact on the health of operating personnel resulting in potential health injuries.	To ensure that there are no adverse effects on the health of operating personnel.	Operational personnel must wear the correct PPE (e.g. gloves, goggles, respirators etc.) as necessary during the operational phase.	Medical investigations or surveillance to be undertaken for the operating personnel applying agricultural remedies (Herbicide, Insecticide, Fungicide). Keep a register of the medical records for operational phase.	Operational personnel working with agricultural remedies need to be tested annually	Operations Manager & ECO
<b>Water Conservation</b>					
Impact on the local water balance as a result of increased water usage.	Aim to reduce water consumption during operational phase.	Ensure that regular inspections of water systems are conducted to identify possible water leakages.  Conduct environmental awareness training with a discussion on water usage and conservation. Ensure the best irrigation methods are applied where	Record water usage, conduct audits and record noncompliance and incidents.	Monthly	Operations Manager



IMPACT	OBJECTIVES	ACTIONS	MONITORING REQUIREMENTS		
			METHOD	FREQUENCY	RESPONSIBLE
		feasible			
<b>Heritage Resources</b>					
Impact on Archaeology and Palaeontology	Prevent damage and destruction to the "Rock Gong"	Train operational personnel on the importance of local heritage and preservation for future generations. Ensure a buffer zone around the rock outcrop is maintained.	Awareness training	Annually	Operations Manager
<b>Spill Contingency, Management and Handling of Chemicals/Dangerous Goods</b>					
Potential spillage of hydrocarbons and agricultural remedies leading to surface water and ground contamination	Reduce the spillage of hazardous materials and the impact thereof on the environment.	Ensure that hydrocarbons are stored correctly. Within bunds and provide drip trays for any leaking machinery.  Ensure agricultural remedies are stored and used correctly	Monitor via site audits and record non-compliance and incidents (including near-miss incidents)	Monthly	Operations Manager & ECO
<b>Storm Water Management</b>					
Increased storm water discharge into the surrounding environment (surface water runoff and sedimentation)	Reduce the impact of increased storm water discharge and sedimentation to the surrounding area.	Regular inspections of the drainage lines should be undertaken to ensure that it is kept clear of all debris and potential pollutants.	Undertake regular inspections of the storm water infrastructure (i.e. by implementing walk through inspections).	Weekly	Operations Manager & ECO
<b>Waste Management</b>					
Pollution of the surrounding environment as a result of the handling, temporary storage and disposal of solid waste (general and hazardous).	Reduce soil and groundwater contamination as a result of incorrect storage, handling and disposal of general and hazardous waste. Ensure that environmental issues are taken into consideration in the planning for site establishment.	General waste and hazardous waste should be stored temporarily on site in suitable (and correctly labelled) waste collection bins and skips (or similar). Waste collection bins and skips should be covered with suitable material, where appropriate.	Inspection of the temporary waste storage area. Monitor via site audits and record non-compliance and incidents. SHE Manager to monitor and audit disposal slips. On-site inspection of waste segregation.	Weekly	Operations Manager & ECO

IMPACT	OBJECTIVES	ACTIONS	MONITORING REQUIREMENTS		
			METHOD	FREQUENCY	RESPONSIBLE
		<p>Should the on-site storage of general waste and hazardous waste exceed 100m<sup>3</sup> and 80 m<sup>3</sup> respectively, then the National Norms and Standards for the Storage of Waste (published on 29 November 2013 under Government Notice 926) must be adhered to.</p> <p>Ensure that general waste and hazardous waste are removed from the site on a regular basis and disposed of at an appropriate, licenced waste disposal facility by an approved waste management Contractor. Waste disposal slips or waybills should be kept on file for auditing purposes as proof of disposal. Segregation of hazardous waste from general waste to be in place.</p>			

IMPACT	OBJECTIVES	ACTIONS	MONITORING REQUIREMENTS		
			METHOD	FREQUENCY	RESPONSIBLE
<b>Socio-Economic Management</b>					
Employment creation and skills development opportunities	Maximise local employment and local business opportunities to promote and improve the local economy.	Enhance the use of local labour and local skills as far as reasonably possible. Where the required skills do not occur locally, and where appropriate and applicable, ensure that relevant local individuals are trained. Ensure that an equitable percentage allocation is provided for local labour employment as well as specify the use of SMME's training specifications in the Contractors contract. Ensure that goods and services are sourced from the local and regional economy as far as reasonably possible.	Maximise local employment for unskilled labour and provincial/national skilled labour.	During the operational phase.	Operations Manage
<b>Environmental Awareness and Site management</b>					
Inappropriate behaviour of staff during the operational phase.	Prevent unnecessary impacts on the surrounding environment by ensuring that staff are aware of the requirements of the EMP.	Establish camp rules and educate workers of the camp rules.	Ensure staff training of the site rules through inductions.  Monitor compliance and record non-compliance and incidents.	Continually	Operations Manage

#### 4.3. MANAGEMENT PLAN FOR THE DECOMMISSIONING PHASE & SITE REHABILITATION

The site will be restored back to its original condition once the operational phase is completed. This in essence will involve activities similar to those assessed for the development phase, therefore a separate assessment will not be undertaken and the EMP for the development phase shall be applied.

A conservation area has been allocated onsite for the relocation and rehabilitation of identified indigenous plant species. It is recommended that the operations manager take into account the appropriate land use requirements at the time of decommissioning. It is also important to note that in a period of 25-30 years, land uses in the area may change significantly, given the growing population and the proximity of the property to the town of Kakamas. Consultation with the local authority is encouraged as the rehabilitation should meet the requirements set out by the local authorities and be in accordance with any relevant legislation.

## 5. EMPr CONCLUSION

This EMPr:

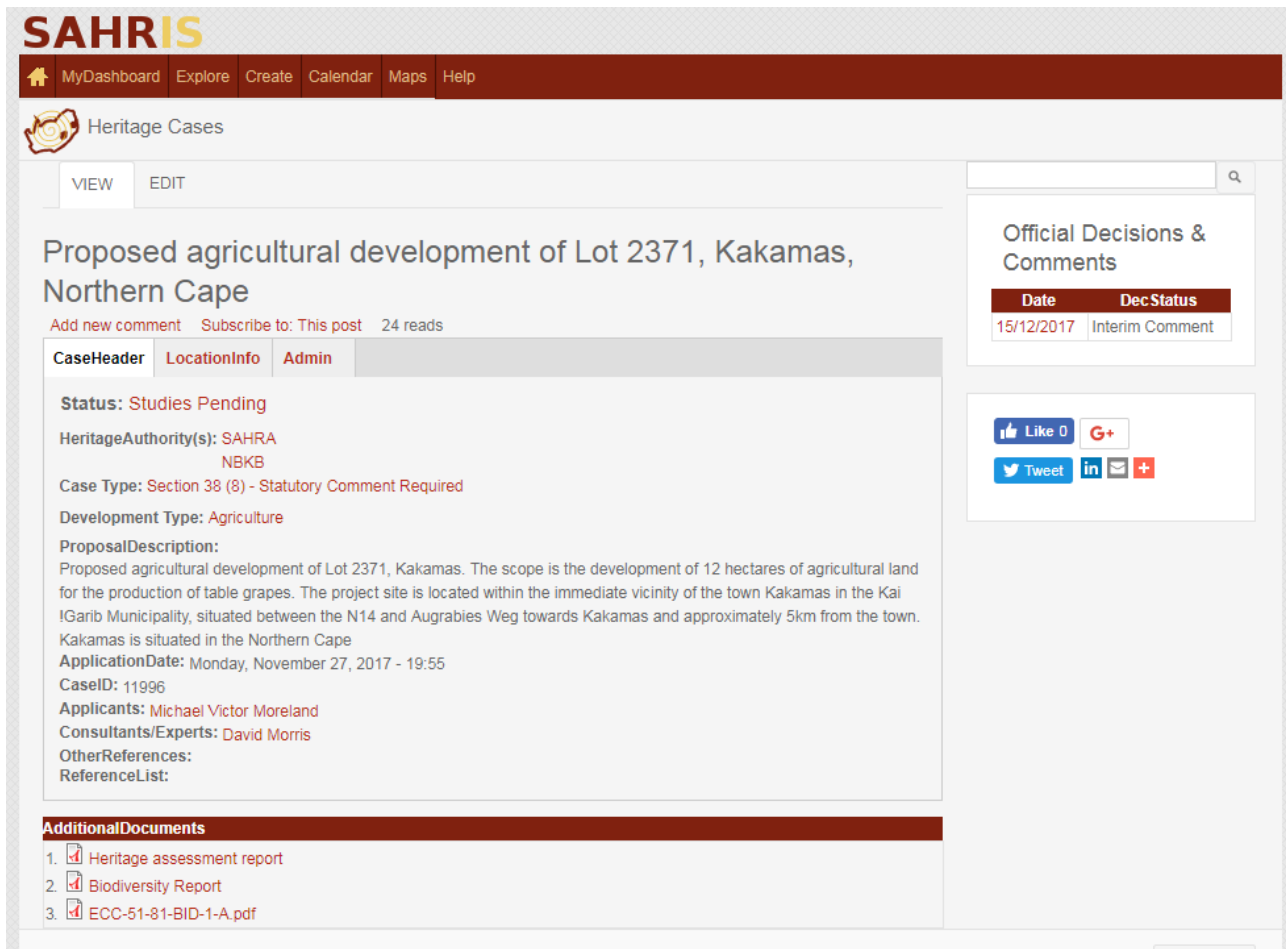
- A. Has been prepared pursuant to a contract with the proponent;
- B. Has been prepared on the basis of information provided to ECC up to March 2018;
- C. Is for the sole use of the proponent, for the sole purpose of an EMP;
- D. Must not be used (1) by any person other than the proponent or (2) for a purpose other than an EMP; and
- E. Must not be copied without the prior written permission of ECC.

ECC has prepared this EMP on the basis of information provided by the proponent, specialist reports and the BAR.

## APPENDIX G: OTHER DOCUMENTS

### APPENDIX G (I): SAHRA CASE ID 11996

The BAR will be made available to the case officer for review



**SAHRIS**

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Heritage Cases

VIEW EDIT

### Proposed agricultural development of Lot 2371, Kakamas, Northern Cape

Add new comment Subscribe to: This post 24 reads

**CaseHeader** LocationInfo Admin

**Status:** Studies Pending

**HeritageAuthority(s):** SAHRA  
NBKB

**Case Type:** Section 38 (8) - Statutory Comment Required

**Development Type:** Agriculture

**ProposalDescription:**  
Proposed agricultural development of Lot 2371, Kakamas. The scope is the development of 12 hectares of agricultural land for the production of table grapes. The project site is located within the immediate vicinity of the town Kakamas in the Kai !Garib Municipality, situated between the N14 and Augrabies Weg towards Kakamas and approximately 5km from the town. Kakamas is situated in the Northern Cape

**ApplicationDate:** Monday, November 27, 2017 - 19:55

**CaseID:** 11996

**Applicants:** Michael Victor Moreland

**Consultants/Experts:** David Morris

**OtherReferences:**  
ReferenceList:

**AdditionalDocuments**

- Heritage assessment report
- Biodiversity Report
- ECC-51-81-BID-1-A.pdf

**Official Decisions & Comments**

Date	Dec Status
15/12/2017	Interim Comment

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APPENDIX G (II): EAP's CVs



**ENVIRONMENTAL**  
COMPLIANCE CONSULTANCY

# Stephan Bezuidenhout

**ENVIRONMENTAL CONSULTANT & PRACTITIONER**

---



Hello! :)

ABOUT ME

**Name**  
Jacobus Stephan Bezuidenhout  
- But you can call me Stephan -

**Born**  
11 April 1989

**Phone**  
+264 81 262 7872

**Email**  
stephan@eccenvironmental.com

**Website**  
www.eccenvironmental.com

Contact me!

How to reach me!

+264 81 262 7872 

Stephan.bezuidenhout 

+264812627872 

Stephan   
Bezuidenhout



## Education & Qualifications

University of Pretoria  
South Africa  
2012

University of Stellenbosch  
South Africa  
2008

Additional Qualifications:

- EcoNomics Sustainable Design Training Programme – Worley Parsons Int.
- Snake Bite and Snake Handling
- Level 1 & 2 First Aid
- Industrial Environmental Compliance

*"Some ecological side-effects of chemical and physical bush clearing in a southern African rangeland ecosystem" in the South African*



## Experience & Work History

Current

- **Managing Director**
- Environmental Compliance Consultancy
- Providing professional consulting services to clients in Namibia with particular focus on approvals, ECCs, reporting and compliance.
- - ECC Approvals
- - Mine Closure Plans
- - Rehabilitation
- - Pipeline projects
- - Cultural Change programmes

Feb 2015 – Current

- **ENVIRONMENTAL CONSULTANT & PRACTITIONER**
- - Forest Manager for Jumbo Charcoal Namibia
- - Integrating Forest Stewardship Council (FSC) standards into the group scheme and implementing the standard on the ground.
- - Development of a Namibian based standard for Forest Stewardship Council (FSC)
- - Part of the team to draft a National Standard for Forest Stewardship Council (FSC) for Namibia
- - Gondwana Collection
- - Social Impact assessment for a lodge to be integrated into the local conservancy.



**Stephan Bezuidenhout**  
Managing Director  
+264 81 262 7872

## References

*Feel free to ask the boss :)*

### **SALOME BEESLAAR**

Environmental Practitioner  
Pr.Sci.Nat: 400385/14

### **ESCA COETZEE**

Environmental Scientist  
Sasol Technology

### **PHIL BARKER**

Pipeline Construction Superintendent  
Worley Parsons

*Or ask those who have worked for me?*

### **Michael Moreland**

Environmental Scientist  
CSP Solar Energy Projects

## Professional Associations

- South African Institute of Ecologists and Environmental Scientists (SAIE&ES)
- Environmental Assessment Practitioners Association of Namibia (EAPAN#172).
- Member of FSC Environmental Chamber
- Executive Committee Member of Namibian Chamber of Environment

## Fun Facts:

- Keen fisherman
- Passionate Hunter & Conservationist
- 21ft vessel certified skipper
- Summated Kilimanjaro
- Have survived scorpion stings and a snakebite!
- Did I mention I love camping?

## Words I live by:

'Do what makes you happy



## Experience & Work History

Feb 2015 - Current

### Continued....

- Namibian Chamber of Environment. Commissioned to write a National Standard for Mining good Practice for Namibia.
- Otjivero Municipality Environmental Impact assessment for the development of the down as per the Namibia Development Plan.
- Abengoa Solar SA Paulputs CSP (Pty) Ltd. 150 MW CSP Tower Environmental Assessment Practitioner during EIA Process Northern Cape Province, South Africa
- Abengoa Solar SA, Xina Solar One (200 MW) CSP Trough Environmental Control Officer during construction phase. Northern Cape Province, South Africa
- Abengoa Solar SA, Khi Solar One (50 MW) CSP Tower. Environmental Control Officer during commissioning and rehabilitation phases. Northern Cape Province, South Africa for Abengoa Solar
- Isondlo Project Support (IPS) (Pty) Ltd. Soil Remediation and commissioning report of NGALA Camp. Gauteng, South Africa
- Bereikisanang Empowerment Farm. Annual external Water Use Licence audit and 70 hectare agricultural development. Northern Cape, South Africa.
- Ebenezer Empowerment Farm. Annual External Water Use Licence Audit. Northern Cape, South Africa

Jan 2013 – Feb 2015

### Environmental Coordinator

ROMPCO PIPELINE – Worley Parsons  
Mozambique and South Africa

- Experience was gained in the oil & gas and construction industries. The pipeline length was 127km. Application and obtaining of environmental permits encompassed a large section of the role. The position also required the management of an on-site environmental team. It was required to meet with different governmental departments and build relationships with key individuals to allow swift communication and permit a platform for transparency. Ensured compliance with National, best neighboring as well as IFC legislation and standards. Review and submission of monthly reports and monthly audits was also a requirement of the position.





# Jessica Mooney

## Environment & Social Specialist



Hello! :)

### ABOUT ME

**Name**

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24 October 1984

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Jessica Mooney 



### Education & Qualifications

Federation University Australia  
2008-2008

#### Qualifications

Bachelor of Applied Science -Environmental Management

- Management Systems Leadership
- ICAM - Incident Cause Analysis Method
- Certificate II in Metalliferous Mining core safety and risk management
- Certificate III in Mine Emergency Response & Rescue
- Level 3 – HLTF402B Apply Advanced first Aid
- Emergency Rope Rescue
- Level 2 - 21593VIC First Aid level 2
- Bonded Asbestos Removal >10m2
- Leading and Managing People –



### Experience & Work History

Current

#### Environment and Social Specialist

Environmental Compliance Consultancy  
*Providing professional consulting services to clients in Namibia with particular focus on approvals, ECCs, reporting and compliance.*

- ECC Approvals
- Mine Closure Plans
- Rehabilitation
- Pipeline projects
- Cultural Change programmes
- IMS (ISO14001 and 18001)

Nov 2013 – Feb 2016

#### Group HSE Manager

Weatherly Mining Namibia  
*An exciting role covering the breadth of two operational underground mines (Oijhase and Matchless) and the construction of a new open pit mine (Tschudi) working for Weatherly Mining in Namibia, Africa.*

- Managed company's SHEQ portfolio
- Full scale construction of new greenfield mine into operational copper mine
- Reduced LTIFR by 90% from 23.1 to 2.4 in 22 months!
- Implemented integrated management system
- Approvals, ECC renewals and EMPs
- Established the first mining environmental forums in Namibia
- Implemented SAFE COPPER cultural change



**Jessica Mooney**  
Environment & Safety Specialist  
+264 81 653 1214

## References

*Feel free to ask the boss :)*

**MR CRAIG THOMAS**  
Managing Director  
Weatherly Mining

**MR COLIN BULLEN**  
Managing Director  
Imerys (client)

Group Manager Lihir Gold

**MR NICK CURREY**  
Director at Sustainable Mining Strategies

*Or ask those who have worked for me?*

**Ms Asteria Salmon**  
Worked as Control Room Operator  
WMN

**Mr. Hermanus Lamprecht**  
Paramedic Safety Officer

## Professional Associations

- Chamber of Mines Namibia
- Women on Boards
- The Chamber of Minerals and Energy of Western Australia Industry Member – Mining, Minerals and Resources

## Fun Facts:

- I can deadlift 135kg
- To keep fit I Olympic weight lift
- I run ultra Marathons & the longest run yet the fish river Canyon 65km
- I am one of 6 children - do you think that means 4 of us suffer middle child syndrome?

## Words I live by:

‘The journey will bring you  
happiest, not the  
destination’



## Experience & Work History

Feb 2013 – Feb 2014

### Environmental Consultant

Ensolve Pty Ltd - Australia

*In February 2013 an opportunity came about to launch my own business, Blue Wren Environmental Services.*

*During this time I have worked alongside Ensolve Pty Ltd to deliver several environmental projects including:*

- A mine closure project taking an operating mine site into the rehabilitation and closure phase. This project involved the full development of a mine closure plan, facilitation of the government approvals, stakeholder engagement and technical environmental studies to inform the mine closure plan
- Sustainability reporting in accordance with the Global Reporting Initiative
- Rehabilitation of historic exploration sites and obtaining associated government approvals for relinquishment of bonds.

Jan 2010 – Feb 2013

### Site Environmental Manager

Panoramic Resources – Australia

- Brought the site into full compliance with the Environmental Licence within 1 year.
- Managed projects relating to the expansions of the current mine tailings dams including obtaining approvals under the Mining Act 1978 and Environmental Protection Act 1986.
- Managed the environmental and community aspects of three operations; Savannah Nickel Mine, Copernicus Nickel Mine (currently in care and maintenance) and the operations at Wyndham Port
- Responsible for the environment, sustainability and social reporting portfolio
- Developed productive working relationships with local government environmental agencies and non-government agencies, which assisted with the approvals process.
- Developed strategies for the recruitment and retention of local Indigenous personnel

Jan 2007 – Jan 2010

### Environmental Systems Coordinator

Lihir Gold Limited – Australia

*Working on site to provide technical environmental and community advice to ensure all regulatory and licence obligations were met or exceeded*

- Regulatory Approvals (State and Federal Government)
- Environment and social aspects of the international cyanide management code
- Operational budgeting and bond management for mine closure



# Rachel Moore

## ENVIRONMENTAL CONSULTANT & PRACTITIONER



Hello! :)

### ABOUT ME

**Name**  
Rachel Elizabeth Moore

**Born**  
04 September 1981

**Phone**  
+264 81 465 6971

**Email**  
Rachel@eccenvironmental.com

**Website**  
www.eccenvironmental.com

Contact me!

### How to reach me!

+264 81 465 6971 

+264 81 465 6971 

Rachel Moore 



### Education & Qualifications

**Manchester Metropolitan University, UK** 2006  
Masters' of Science in Environmental Management and Sustainable Development

**2004** Bachelors' of Science in Environmental Studies

**Additional Qualifications:** Chartered Environmental of the Institute of Environmental Management and Assessment

### Experience & Work History



#### Environmental Consultant & Practitioner

#### Current

**Environmental Compliance Consultancy (ECC)**

*Providing professional consulting services to clients in Namibia with particular focus on approvals, ECCs, reporting and compliance.*

- Production of Environmental Impact Assessment (EIA) Reports, Environmental Scoping Reports and Environmental Management Plans (EMPs) that accompany an Environmental Clearance Certificate (ECC).
- Various projects across Namibia and South Africa, including water utilities and electricity transmission sector, marine developments and agriculture projects.
- Environmental Best Practice Guide for the Mining and Mineral Industry in Namibia.
- Regulatory Risk and Compliance Management Report for a Seismic Acquisition Project for petroleum exploration off the coast of Namibia.
- Undertook an EIA and produced the associated Scoping Report and EMP for the construction and operation of a bulk water supply pipeline and associated infrastructure.
- A team member of the Environmental and Social Impact Assessment (ESIA) and produced the associated ESIA Report and ESMP for the Walvis Bay Waterfront Development.



# Rachel Moore

## ENVIRONMENTAL CONSULTANT & PRACTITIONER

### References

*Feel free to ask the boss :)*

**MR JAMIE GLEAVE**  
Tehcnical Director, Jacobs

**DR. LOUISE WALKER**  
Radioactive Substances Activities  
Permitting Manager, NuGen

*Or ask those who have worked for me?*

**JOANNE JEFFREYS**  
Assistant Stakeholder Manager, Jacobs

### Professional Associations

- Chartered Environmental of the Institute of Environmental Management and Assessment

### Key Skills

- Experienced Coordinator
- Varied skill set
- Strong Project Manager

### Fun Facts:

- Keen scuba diver & dived all over the world including Truuk Lagoon.
- Handy with a shotgun!
- Keen photographer.
- Make a mean curry.

### Words I live by:

*'Regret the things you do and not the things you don't do'*



April 2017 -  
January 2018

### Experience & Work History

#### ENVIRONMENTAL CONSULTANT

Self-employed

- In January 2017, an opportunity came about to relocate to Namibia and provide environmental and sustainability advise to the Zambezi Queen Collection, part of the Mantis Collection. I provided leadership and guidance to the development of the Collection's environmental and social responsibilities; prepared and implemented a successful waste management strategy; drafted a preliminary environmental action and management plan; as well as the Collections' draft sustainability strategy.

In August I moved to Windhoek and provided environmental services to several consultancies, and during this time, I delivered the following projects:

- EIA and associated Scoping Report and EMP for the Water Infrastructure Upgrades and Construction of two new Pollution Control Dams at the Tsumeb Smelter Site;
- Environmental Screening Report and Environmental Management System report as part of an application for a grant to support Eco-System Base Climate Change Adaptation through Community Based Natural Resource Management in Namibia

April 2008 -  
April 2017

#### Principal Environmental Consultant

Jacobs Engineering

Having spent nine years at Jacobs, I accumulated a significant amount of experience in the coordination, management and delivery of a range of environmental assessments for various development projects across the UK.

For over three years I was the Lead EIA Project Coordinator for one of the largest major infrastructure projects in the UK; Horizon Nuclear Power, a new nuclear power station in Wales. During this time, I coordinated a team of over 100 environmental specialists, producing a range of specialist reports as part of the Development Consent Order. I undertook optioneering assessments; EIA screening and scoping exercises; produced various EIA reports and worked directly with engineers, designers and legal team. I also led and participated various stakeholder consultation events and produced associated reports.

In addition to this project, I also have experience in road, rail and electrical transmission projects; nuclear waste management, processing, and decommissioning, housing developments; large scale site preparation and excavation projects; and marine schemes. I have undertaken strategic environmental assessments and best available technique assessments, produced environmental safety case reports and various environmental management plans.

## APPENDIX G (III): ECC'S EIA METHODOLOGY

The evaluation and prediction of environmental and social impacts requires the assessment of the project characteristics against the baseline of environmental and social characteristics, and ensuring all potentially significant impacts are identified and assessed.

The significance of an impact was determined by taking into consideration the combination of the sensitivity and importance/value of environmental and social receptors that may be affected by the proposed project, the nature and characteristics of the impact, and the magnitude of potential change. The magnitude of change (the impact) is the identifiable changes to the existing environment which may be direct or indirect; temporary/short term, long term or permanent; and either beneficial or adverse. These are described as follows and thresholds provided in

Table 9 to Table 10.

- The **sensitivity and value of a receptor** is determined by identifying how sensitive and vulnerable a receptor is to change, and the importance of the receptor (internationally, nationally, regionally and locally).
- The **nature and characteristics of the impact** is determined through consideration of the frequency, duration, reversibility and probability and the impact occurring.
- The **magnitude of change** measures the scale or extent of the change from the baseline condition, irrespective of the value. The magnitude of change may alter over time, therefore temporal variation is considered (short- term, medium-term; long-term, reversible, irreversible or permanent)

**Table 8 - Sensitivity and Value of Receptor**

SENSITIVITY AND VALUE	DESCRIPTION
High	Of value, importance or rarity on an international and national scale, and with very limited potential for substitution; and/or very sensitive to change, or has little capacity to accommodate a change.
Medium	Of value, importance or rarity on a regional scale, and with limited potential for substitution; and/or moderate sensitivity to change, or moderate capacity to accommodate a change.
Low	Of value, importance or rarity on a local scale; and/or not particularly sensitive to change, or has considerable capacity to accommodate a change.

**Table 9 - Nature of Impact**

<b>NATURE</b>	<b>DESCRIPTION</b>
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	Impacts causing an impact through direct interaction between a planned project activity and the receiving environment/receptors.
Indirect	Impacts that result from other activities that are encouraged to happen as a result / consequence of the Project. Associated with the project and may occur at a later time or wider area
<b>Extent / Geographic Scale</b>	
On-site	Impacts that are limited to the boundaries of the proposed project site
Local	Impacts that occur in the local area of influence, including around the proposed site and within the wider community
Regional	Impacts that affect a receptor that is regionally important by virtue of scale, designation, quality or rarity.
National	Impacts that affect a receptor that is nationally important by virtue of scale, designation, quality or rarity.
International	Impacts that affect a receptor that is internationally important by virtue of scale, designation, quality or rarity.
<b>Duration</b>	
Short-term	Impacts that are likely to last for the duration of the activity causing the impact and are recoverable
Medium-term	Impacts that are likely to continue after the activity causing the impact and are recoverable
Long-term	Impacts that are likely to last far beyond the end of the activity causing the damage but are recoverable over time
<b>Reversibility</b>	
Permanent /Irreversible	Impacts which are not reversible and are permanent

Temporary Reversible /	Impacts are reversible and recoverable in the future
<b>Likelihood</b>	
Certain	The impact is likely to occur
Likely	The impact is likely to occur under most circumstances
Unlikely	The impact is unlikely to occur

**Table 10 - Magnitude of Change**

MAGNITUDE OF CHANGE	DESCRIPTION
Major	Loss of resource, and quality and integrity of resource; severe damage to key characteristics, features or elements; or  Large scale or major improvement of resources quality; extensive restoration or enhancement; major improvement of attribute quality.
Moderate	Loss of resource, but not adversely affecting its integrity; partial loss of/damage to key characteristics, features or elements; or  Benefit to, or addition of, key characteristics, features or elements; improvements of attribute quality.
Minor	Some measurable change in attributes, quality or vulnerability; minor loss of, or alteration to, one (or maybe more) key characteristic, feature or element; or  Minor benefit to, or addition of, one (or maybe more) key characteristic, feature or element; some beneficial effect on attribute quality or a reduced risk of a negative effect occurring.
Negligible	Very minor loss or detrimental alteration to one (or maybe more) characteristic, feature or element; or  Very minor benefit to, or positive addition of, one (or maybe more) characteristic, feature or element.

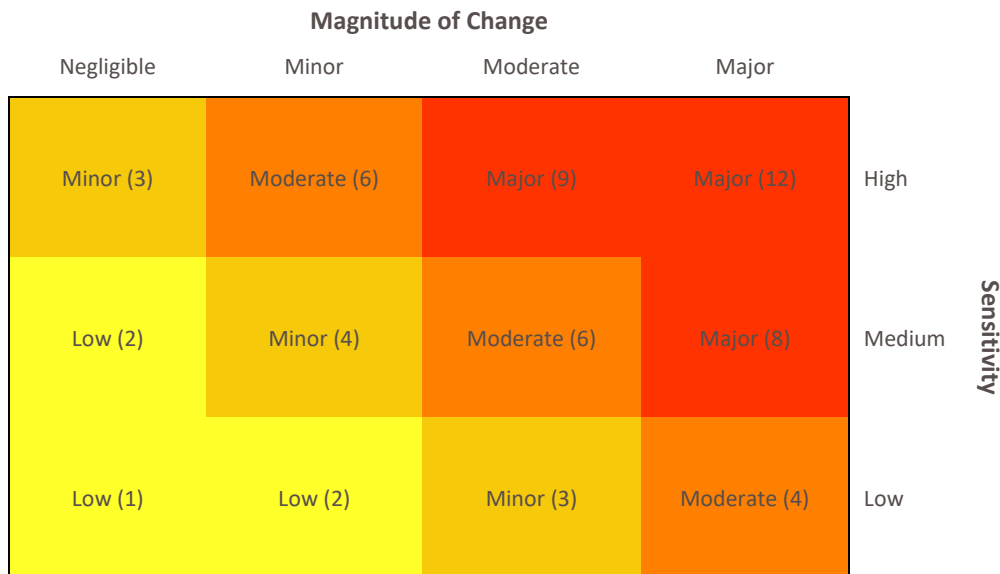
The level of certainty has also been applied to the assessment to demonstrate how certain the assessment conclusions are and where there is potential for misinterpretation or a requirement to identify further mitigation measures, thereby adopting a precautionary approach. Where there is a low degree of certainty, monitoring and management measures can be implemented to determine if the impacts are worse than predicted and support the identification of additional mitigation measures through the life time of the proposed project. Table 11 provides the levels of certainty applied to the assessment, as well as a description.



**Table 11 – Level of certainty**

LEVEL OF CERTAINTY	DESCRIPTION
High	<p>Likely changes are well understood. Design/information/data used to determine impacts is very comprehensive.</p> <p>Interactions are well understood and documented.</p> <p>Predictions are modelled, and maps based on interpretations are supported by a large volume of data. Design/information/data has very comprehensive spatial coverage or resolution.</p>
Medium	<p>Likely changes are understood. Design/information/data used to determine impacts include a moderate level of detail.</p> <p>Interactions are understood with some documented evidence.</p> <p>Predictions are modelled but not yet validated and/or calibrated. Mapped outputs are supported by a moderate spatial coverage or resolution.</p>
Low	<p>Interactions are currently poorly understood and not documented.</p> <p>Predictions are not modelled, and the assessment is based on expert interpretation using little or no quantitative data.</p> <p>Design is not fully developed, or information has poor spatial coverage or resolution.</p>

The significance of impacts has been derived using professional judgment and applying the identified thresholds for receptor sensitivity and magnitude of change (as discussed above), and guided by the matrix presented in **Figure 8**. The matrix is applicable for impacts that are either positive or negative. The distinction and description of significance and whether the impact is positive or negative is provided in Table 12.

**Figure 8 – Guide to significance ratings**


Significance is not defined in the Namibian EIA Regulations, however the Draft Procedure and Guidance for EIA and EMP states that the significance of a predicted impact depends upon its context and intensity. Accordingly, definitions for each level of significance has been provided in Table 12. These definitions were used to check the conclusions of the assessment of receptor sensitivity, nature of impact and magnitude of impact was appropriate.

**Table 12 – Significance Description**

SIGNIFICANCE OF IMPACT	DESCRIPTION
<b>Major (negative)</b>	Impacts are considered to be key factors in the decision-making process that may have an impact of major significance, or large magnitude impacts occur to highly valued/sensitive resource/receptors.  Impacts are expected to be permanent and non-reversible on a national scale and/or have international significance or result in a legislative non-compliance.
<b>Moderate (negative)</b>	Impacts are considered within accepted limits and standards. Impacts are long term, but reversible and/or have regional significance. These are generally (but not exclusively) associated with sites and features of national importance and resources/features that are unique and which, if lost, cannot be replaced or relocated.
<b>Minor (negative)</b>	Impacts are considered to be important factors but are unlikely to be key decision-making factors. The impact 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. Impacts are considered to be short term, reversible and/or localized in extent.
<b>Low (negative)</b>	Impacts are considered to be local factors that are unlikely to be critical to decision-making.

<b>Low – Major (Beneficial)</b>	Impacts are considered to be beneficial to the environment and society:

To ensure the beneficial impacts are brought out in the assessment, green has been applied to ensure the different type of impact is clear. The description for each level of significance presented in Table 12 was also followed when determining the level of significance for a beneficial impact.

The significance of impacts has been derived using professional judgment and applying the identified thresholds for receptor sensitivity and magnitude of change, as well as the definition for significance. In most instances, moderate and major adverse impacts are considered as significant, however there may be some instances where impacts are lower than this, but are considered to be significant. The following thresholds were therefore used to double check the assessment of significance had been applied appropriately; a significant impact would meet at least one of the following criteria:

- It exceeds widely recognized levels of acceptable change;
- It threatens or enhances the viability or integrity of a receptor or receptor group of concern; and
- It is likely to be material to the ultimate decision about whether or not the environmental clearance certificate is granted.

## **APPENDIX H: LETTER OF RECOMMENDATION FOR EXEMPTION**

**RECOMMENDED EXEMPTION FROM FURTHER PALAEOLOGICAL STUDIES & MITIGATION:**

**PROPOSED FRUITS DU SUD AGRICULTURAL DEVELOPMENT ON PLOT 2371 KAKAMAS SOUTH SETTLEMENT, !KAI GARIB MUNICIPALITY, NORTHERN CAPE.**

**John E. Almond PhD (Cantab.)**  
**Natura Viva cc,**  
**PO Box 12410 Mill Street,**  
**Cape Town 8010, RSA**  
**naturaviva@universe.co.za**

**May 2018**

**EXECUTIVE SUMMARY**

The proposed small scale (11- 12 ha) table grape agricultural project area on Plot 2371, Kakamas South Settlement, !Kai Garib Municipality, Northern Cape, is underlain by ancient Precambrian basement rocks belonging to the **Namaqua-Natal Province**. These basement bedrocks are approximately two to one billion years old and entirely unfossiliferous. They are mantled by Late Caenozoic sandy soils, surface gravels and possibly by calcretes. Potentially fossiliferous ancient fluvial gravels of the Orange River drainage system are unlikely to be represented here.

The overall palaeontological impact significance of the proposed agricultural development is considered to be VERY LOW because (1) most of the study area is underlain by unfossiliferous metamorphic basement rocks (granite-gneisses *etc*) or mantled by superficial sediments of very low palaeontological sensitivity; (2) much of the area is already highly disturbed; (3) deep excavations are not envisaged, and (4) The development footprint is very small.

**It is therefore recommended that, pending the exposure of significant new fossils during development, exemption from further specialist palaeontological studies and mitigation be granted for this development.**

There are no objections on palaeontological heritage grounds to authorisation of the proposed agricultural development. Should any substantial fossil remains (*e.g.* vertebrate bones and teeth, shells, calcretised burrows) be encountered during excavation, however, these should be reported to SAHRA for possible mitigation by a professional palaeontologist (Contact details: Dr Ragna Redelstorff, SAHRA, P.O. Box 4637, Cape Town 8000. Tel: 021 202 8651. Email: rredelstorff@sahra.org.za or Ms Natasha Higgitt. Tel: 021 462 4502. Email: nhiggitt@sahra.org.za). A Chance Fossil Finds protocol is appended to this report.

These mitigation recommendations should be incorporated into the Environmental Management Programme (EMPr) for the proposed development.

**John E. Almond (2018)**

**1**

**Natura Viva cc**

## 1. OUTLINE OF DEVELOPMENT

The company Fruits du Sud is proposing to establish blocks of table grapes on a small plot of uncultivated land (c. 20.4 ha, of which only 11-12 ha will be cultivated) known as Agricultural Plot 2371. The study area is situated in the Kakamas South Settlement between the N14 trunk road and the south bank of the Orange River (Gariep), some 4.5 km WNW of Kakamas in the !Kai Garib Municipality, Northern Cape (Figs. 1 & 2).

Due to the possible presence of potentially fossiliferous terrace gravels close to the Orange River, the SAHRA Archaeology, Palaeontology and Meteorites (APM) Unit has requested a desktop Palaeontological Impact Assessment or Letter of Exemption for the proposed agricultural development (SAHRA e-mail of 3 May 2018, their Case ID: 11996).

The present palaeontological heritage comment has accordingly been commissioned as part of a Basic Assessment for this project by Environmental Compliance Consultancy (ECC) (Contact details: Rachel Moore. Tel +264 81 465 6971, Windhoek, Namibia. E-mail rachel@eccenvironmental.com).



**Figure 1: Google Earth© satellite image showing the approximate location (red polygon) of the agricultural project study area on Plot 2371, situated in the Kakamas South Settlement between the N14 trunk road and the south bank of the Orange River (Gariep), some 4.5 km WNW of Kakamas in the !Kai Garib Municipality, Northern Cape. Scale bar = 2 km. N towards the top of the image.**



**Figure 2. Detailed satellite image of the project study area on Plot 2371 showing the highly disturbed terrain here, traversed by shallow drainage lines as well as several tracks.**

### 1.1. Legislative Framework

The present palaeontological heritage assessment report contributes to the Heritage Impact Assessment for the proposed development and falls under the South African Heritage Resources Act (Act No. 25 of 1999). It will also inform the Environmental Management Programme (EMPr) for this project.

The various categories of heritage resources recognised as part of the National Estate in Section 3 of the National Heritage Resources Act include, among others:

- geological sites of scientific or cultural importance;
- palaeontological sites; and
- palaeontological objects and material, meteorites and rare geological specimens.

According to Section 35 of the National Heritage Resources Act, dealing with archaeology, palaeontology and meteorites:

- (1) The protection of archaeological and palaeontological sites and material and meteorites is the responsibility of a provincial heritage resources authority.
- (2) All archaeological objects, palaeontological material and meteorites are the property of the State.
- (3) Any person who discovers archaeological or palaeontological objects or material or a meteorite in the course of development or agricultural activity must immediately report the find to the responsible heritage resources authority, or to the nearest local authority offices or museum, which must immediately notify such heritage resources authority.
- (4) No person may, without a permit issued by the responsible heritage resources authority—
  - (a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
  - (b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;
  - (c) trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or

- (d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.
- (5) When the responsible heritage resources authority has reasonable cause to believe that any activity or development which will destroy, damage or alter any archaeological or palaeontological site is under way, and where no application for a permit has been submitted and no heritage resources management procedure in terms of section 38 has been followed, it may—
  - (a) serve on the owner or occupier of the site or on the person undertaking such development an order for the development to cease immediately for such period as is specified in the order;
  - (b) carry out an investigation for the purpose of obtaining information on whether or not an archaeological or palaeontological site exists and whether mitigation is necessary;
  - (c) if mitigation is deemed by the heritage resources authority to be necessary, assist the person on whom the order has been served under paragraph (a) to apply for a permit as required in subsection (4); and
  - (d) recover the costs of such investigation from the owner or occupier of the land on which it is believed an archaeological or palaeontological site is located or from the person proposing to undertake the development if no application for a permit is received within two weeks of the order being served.

Minimum standards for the palaeontological component of heritage impact assessment reports (PIAs) have been published by Heritage Western Cape, HWC (2016) and the South African Heritage Resources Agency, SAHRA (2013).

### 1.1. Study approach and methodology

Due to (1) the small footprint of the proposed development as well as (2) the inferred low palaeontological sensitivity of the study area based on previous desktop and field-based assessments by the author and others in the region (e.g. Almond 2011, 2017a, 2017b, 2017c), only a short desktop palaeontological impact assessment is considered necessary here.

In preparing a palaeontological desktop study the potentially fossiliferous rock units (groups, formations *etc.*) represented within the study area are determined from geological maps and satellite images. The known fossil heritage within each rock unit is inventoried from the published scientific literature, previous palaeontological impact studies in the same region, and the author's field experience (Consultation with professional colleagues as well as examination of institutional fossil collections may play a role here, or later following field assessment during the compilation of the final report). This data is then used to assess the palaeontological sensitivity of each rock unit to development (provisional tabulations of palaeontological sensitivity of all formations in the Northern Cape have already been compiled by Almond & Pether (2008); see also the palaeosensitivity maps provided on the SAHRIS website). The likely impacts of the proposed development on local fossil heritage are then determined on the basis of (1) the palaeontological sensitivity of the rock units concerned and (2) the nature and scale of the development itself, most significantly the extent of fresh bedrock excavation envisaged. When rock units of moderate to high palaeontological sensitivity are present within the development footprint, a Phase 1 field-based assessment study by a professional palaeontologist is usually warranted to identify any palaeontological hotspots and make specific recommendations for any mitigation or monitoring required before or during the construction phase of the development.



### 1.3. Limitations of this study

The accuracy and reliability of palaeontological specialist studies as components of heritage impact assessments are generally limited by the following constraints:

1. Inadequate database for fossil heritage for much of the RSA, given the large size of the country and the small number of professional palaeontologists carrying out fieldwork here. Most development study areas have never been surveyed by a palaeontologist.
2. Variable accuracy of geological maps which underpin these desktop studies. For large areas of terrain these maps are largely based on aerial photographs alone, without ground-truthing. The maps generally depict only significant ("mappable") bedrock units as well as major areas of superficial "drift" deposits (alluvium, colluvium) but for most regions give little or no idea of the level of bedrock outcrop, depth of superficial cover (soil *etc*), degree of bedrock weathering or levels of small-scale tectonic deformation, such as cleavage. All of these factors may have a major influence on the impact significance of a given development on fossil heritage and can only be reliably assessed in the field.
3. Inadequate sheet explanations for geological maps, with little or no attention paid to palaeontological issues in many cases, including poor locality information.
4. The extensive relevant palaeontological "grey literature" - in the form of unpublished university theses, impact studies and other reports (*e.g.* of commercial mining companies) - that is not readily available for desktop studies.
5. Absence of a comprehensive computerized database of fossil collections in major RSA institutions which can be consulted for impact studies. A Karoo fossil vertebrate database is now accessible for impact study work.

In the case of palaeontological desktop studies without supporting Phase 1 field assessments these limitations may variously lead to either:

- a) *underestimation* of the palaeontological significance of a given study area due to ignorance of significant recorded or unrecorded fossils preserved there, or
- b) *overestimation* of the palaeontological sensitivity of a study area, for example when originally rich fossil assemblages inferred from geological maps have in fact been destroyed by tectonism or weathering, or are buried beneath a thick mantle of unfossiliferous "drift" (soil, alluvium *etc*).

Since most areas of the RSA have not been studied palaeontologically, a palaeontological desktop study usually entails *inferring* the presence of buried fossil heritage within the study area from relevant fossil data collected from similar or the same rock units elsewhere, sometimes at localities far away. Where substantial exposures of bedrocks or potentially fossiliferous superficial sediments are present in the study area, the reliability of a palaeontological impact assessment may be significantly enhanced through field assessment by a professional palaeontologist.

In the case of the present study area near Kakamas in the Northern Cape, preservation of potentially fossiliferous bedrocks is favoured by the semi-arid climate and sparse vegetation. However, bedrock exposure is constrained by extensive superficial deposits, such as surface gravels and soils, and there has been little formal palaeontological fieldwork in this area. Confidence levels for this impact assessment are nevertheless rated as *medium to high*, given the probable absence of potentially fossiliferous sedimentary rocks – such as ancient alluvial deposits - in the region.

## 2. GEOLOGICAL BACKGROUND

The proposed agricultural project study area (c. 28° 45' 29" S, 20° 34' 15" E) is situated between the N14 trunk road and the Orange River (Gariiep) due south of Drifeiland, some 4.5 km WNW of Kakamas and 4.6 km southwest of the Orange River (Figs. 1 & 2). Based on satellite images as well as field photos in the heritage report by Morris (2017) the terrain here at c. 660 m amsl is fairly flat-lying, highly disturbed, arid and gravelly. The region is traversed by several tracks as well as vegetated shallow, dendritic stream systems that drain northwards into the Orange River. The present southern banks of the Gariiep lie 400 to 600 m to the north.

The geology of the study area near Kakamas is shown on the 1: 250 000 geology map 2820 Upington (Council for Geoscience, Pretoria; Fig. 3 herein). A comprehensive sheet explanation for this map has been published by Moen (2007). The study area along the N14 is underlain by ancient Precambrian basement rocks – notably high grade metamorphic rocks of **Kenhardt Migmatite (Mke)** with outcrops of the **Riemvasmaak granite-gneiss (Mrm)** shortly to the southeast. The rocks belong to the **Namaqua-Natal Province** of Mid Proterozoic (Mokolian) age (Cornell *et al.* 2006, Moen 2007). They are approximately two to one billion years old and entirely unfossiliferous (Almond & Pether 2008).

As suggested by field photographs (heritage report by Morris 2017) the Precambrian basement rocks within the study area are mantled with a spectrum of thin, coarse to fine-grained **superficial deposits** such as sandy to rocky soils, downwasted surface gravels (including boulders) and alluvium of intermittently flowing streams. These deposits are generally young (Quaternary to Recent), extensively disturbed and largely, if not entirely, unfossiliferous.

The study site is some 400 to 800 m away from the present course of the Orange River and elevated perhaps 10 m or more higher than this above mean sea level. According to Moen (2007) ancient river terrace gravels occur “all along the river” within 2 km of the present banks and at elevations of up to 45 m (rarely as high as 85 m) above the present flood plain. On the basis of satellite images and the field report of Morris (2017) it is considered unlikely that significant deposits of Late Tertiary **Orange River alluvial gravels** are present within the study area, and none are mapped here on the 1: 250 000 Upington geology sheet (Fig. 3).

## 3. PALAEOLOGICAL HERITAGE

The Precambrian metamorphic and igneous basement rocks of the Namaqua-Natal Metamorphic Province in the study area are entirely unfossiliferous (Almond & Pether 2008).

Alluvial gravels and finer-grained alluvial deposits of the Orange River of Miocene and younger age are locally highly fossiliferous (*e.g.* Hendy 1984, Schneider & Marias 2004, Partridge *et al.* 2006, Almond 2009 and extensive references therein). “High Level Gravel” terraces are situated at elevations of 20 to 45 m above present river level at numerous points along the river banks (Moen 2007). Fossil remains that might potentially be encountered during excavations through fine-grained and coarser alluvium along the River Orange as well as smaller tributary drainage courses include:

Bones and teeth of wide range of vertebrates, including mammals (*e.g.* teeth & bones of mastodont proboscideans, rhinos, bovids, horses, micromammals), reptiles (crocodiles, tortoises), ostrich egg shells, fish, freshwater and terrestrial molluscs (unionid bivalves, gastropods), crabs, trace fossils (*e.g.* termitaria, horizontal invertebrate burrows, stone artefacts), petrified wood, leaves, rhizoliths, diatom floras, peats and palynomorphs (Hendy 1984, Klein 1984, Partridge *et al.* 2006, Almond 2009, Almond & Pether 2008 and refs. therein).

As argued above, potentially fossiliferous older alluvial deposits are *not* mapped within the study area and are unlikely to be impacted by the proposed development.

The palaeontological sensitivity of the Plot 2371 near Kakamas study area is therefore assessed as VERY LOW.

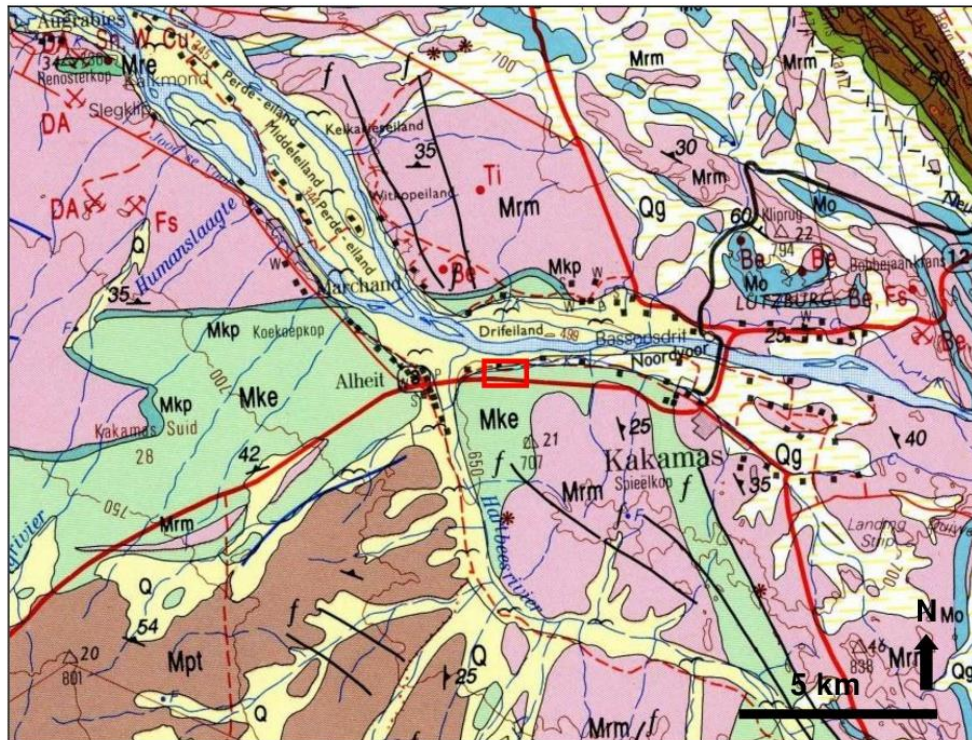


Figure 3. Extract from 1: 250 000 geological map 2820 Upington (Council for Geoscience, Pretoria) showing the *approximate* location of the proposed agricultural development on Plot 2371 at Kakamas South Settlement, c. 4.5 km WNW of Kakamas, Northern Cape Province (small red rectangle). The study area is underlain by unfossiliferous Precambrian (Middle Proterozoic / Mokolian) basement rocks of the Namaqua-Natal Metamorphic Province, in this case the Kenhardt Migmatite (Mke, pale green). Riemvasmaak granite-gneiss (Mrm, pink) crops out towards the southeast. Alluvial sediments (pale yellow with “flying bird” symbol) occur just to the north of Plot 2820 but are not mapped within the study area itself. In particular, potentially fossiliferous older river gravels are not recorded here.

#### 4. CONCLUSIONS & RECOMMENDATIONS

The overall palaeontological impact significance of the proposed small-scale agricultural development on Plot 2371 near Kakamas is considered to be VERY LOW because:

- Most of the study area is underlain by unfossiliferous metamorphic basement rocks (granite-gneisses *etc*) or mantled by superficial sediments of very low palaeontological sensitivity;
- Much of the area is already highly disturbed;

- Deep excavations are not envisaged;
- The development footprint is very small.

**It is therefore recommended that, pending the exposure of significant new fossils during development, exemption from further specialist palaeontological studies and mitigation be granted for this development.**

There are no objections on palaeontological heritage grounds to authorisation of the proposed agricultural development. Should any substantial fossil remains (*e.g.* vertebrate bones and teeth, shells, calcretised burrows) be encountered during excavation, however, these should be reported to SAHRA for possible mitigation by a professional palaeontologist (Contact details: Dr Ragna Redelstorff, SAHRA, P.O. Box 4637, Cape Town 8000. Tel: 021 202 8651. Email: rredelstorff@sahra.org.za or Ms Natasha Higgitt. Tel: 021 462 4502. Email: nhiggitt@sahra.org.za). A tabulated Chance Fossil Finds protocol is appended to this report.

These mitigation recommendations should be incorporated into the Environmental Management Programme (EMPr) for the proposed development.

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 (in this case Heritage Western Cape);
- The palaeontologist concerned with potential mitigation work will need a valid fossil collection permit from SAHRA (N. Cape) 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 HWC (2016) and SAHRA (2013).

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## 6. 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, Gauteng, KwaZulu-Natal, Mpumalanga, Northwest and Free State under the aegis of his Cape Town-based company *Natura Viva* cc. He has been a long-standing member of the Archaeology, Palaeontology and

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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 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.



**Dr John E. Almond**  
**Palaeontologist**  
**Natura Viva cc**

<b>CHANCE FOSSIL FINDS PROCEDURE: FRUITS DU SUD AGRICULTURAL DEVELOPMENT ON PLOT 2371, KAKAMAS SOUTH SETTLEMENT</b>		
<b>Province &amp; region:</b>	<b>NORTHERN CAPE, !Kai Garib Municipality</b>	
<b>Responsible Heritage Resources Authority</b>	SAHRA ( Contact details: Dr Ragna Redelstorff, SAHRA, P.O. Box 4637, Cape Town 8000. Tel: 021 202 8651. Email: rredelstorff@sahra.org.za or Ms Natasha Higgitt. Tel: 021 462 4502. Email: nhiggitt@sahra.org.za)	
<b>Rock unit(s)</b>	Late Caenozoic alluvium including sands and gravels	
<b>Potential fossils</b>	Vertebrate bones, teeth and horn cores, mollusc and crustacean remains or plant material such as subfossil wood	
<b>ECO protocol</b>	1. Once alerted to fossil occurrence(s): alert site foreman, stop work in area immediately ( <i>N.B.</i> safety first!), safeguard site with security tape / fence / sand bags if necessary.	
	2. Record key data while fossil remains are still <i>in situ</i> : <ul style="list-style-type: none"> <li>• Accurate geographic location – describe and mark on site map / 1: 50 000 map / satellite image / aerial photo</li> <li>• Context – describe position of fossils within stratigraphy (rock layering), depth below surface</li> <li>• Photograph fossil(s) <i>in situ</i> with scale, from different angles, including images showing context (<i>e.g.</i> rock layering)</li> </ul>	
	3. If feasible to leave fossils <i>in situ</i> : <ul style="list-style-type: none"> <li>• Alert Heritage Resources Authority and project palaeontologist (if any) who will advise on any necessary mitigation</li> <li>• Ensure fossil site remains safeguarded until clearance is given by the Heritage Resources Authority for work to resume</li> </ul>	3. If <i>not</i> feasible to leave fossils <i>in situ</i> (emergency procedure only): <ul style="list-style-type: none"> <li>• <i>Carefully</i> remove fossils, as far as possible still enclosed within the original sedimentary matrix (<i>e.g.</i> entire block of fossiliferous rock)</li> <li>• Photograph fossils against a plain, level background, with scale</li> <li>• Carefully wrap fossils in several layers of newspaper / tissue paper / plastic bags</li> <li>• Safeguard fossils together with locality and collection data (including collector and date) in a box in a safe place for examination by a palaeontologist</li> <li>• Alert Heritage Resources Authority and project palaeontologist (if any) who will advise on any necessary mitigation</li> </ul>
	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	
<b>Specialist palaeontologist</b>	Record, describe and judiciously sample fossil remains together with relevant contextual data (stratigraphy / sedimentology / taphonomy). Ensure that fossils are curated in an approved repository ( <i>e.g.</i> 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.	