FINAL ENVIRONMENTAL MANAGEMENT PROGRAMME

Proposed cultivation of 100 ha for the establishment of a vineyard and associated pipeline on Portion 10 & 11 of the Farm De Eelt no 26 near Prieska within the Siyathemba Local Municipality, Northern Cape Province

NCDENC Reference number:

NC/EIA/06/PIX/SIY/PRI1/2016

Prepared for: Metsimatala CSP Solar Energy (Pty) Ltd

Prepared by: Enviroworks

December 2016

Prepared by

enviro works

Today's Impact | Tomorrow's Legacy

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Part of the SHE GROUP

King's Landing Trading 507 (Pty) Ltd trading as Enviroworks | Registration: 2015/105273/07 | Operating since 2002

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ABBREVIATIONS

BA	Basic Assessment
CARA	Conservation of Agricultural Resources Act (Act 43 of 1983)
CEL	Cost Estimate Letter
CIA	Cumulative Impact Assessment
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
CPA	Communal Property Association
CRR	Comments and Responses Report
CSP	Concentrated Solar Power
DAFF	Department of Agriculture, Forestry and Fisheries
DEA	Department of Environmental Affairs
DENC	Department of Environment and Nature Conservation
DM	District Municipality
DMR	Department of Mineral Resources
DoE	Department of Energy
DSR	Draft Scoping Report
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EIR	Environmental Impact Report
EMPr	Environmental Management Programme
FSR	Final Scoping Report
Ha	Hectares
HTF	Heat Transfer Fluid
I & AP's	Interested and Affected Parties
IBA	Important Bird and Biodiversity Areas
IDP	Integrated Development Plan
IPP	Independent Power Producer
kV	Kilovolt
LED	Local Economic Development
LM	Local Municipality
LSA	Late Stone Age

MAP	Mean Annual Precipitation
MASL	Metres Above Sea Level
MLL	Minimum living level
MSA	Middle Stone Age
MVA	Megavolt ampere
MW	Megawatt
NCPSDF	Northern Cape Provincial Spatial Development Framework
NDP	National Development Plan
NEMA	National Environmental Management Act (Act 107 of 1998)
NEMBA	National Environmental Management: Biodiversity Act (Act 10 of 2004)
NEMWA	National Environmental Management: Waste Act (Act 59 of 2008)
NFA	National Forests Act (Act 84 of 1998)
NHRA	National Heritage Resources Act (Act 25 of 1999)
NIP	National Infrastructure Plan
NWA	National Water Act (Act 36 of 1998)
PFS	Pre-feasibility Study
PPP	Public Participation Process
PUC	Point of Utility Connection
PoSEIA	Plan of Study for Environmental Impact Assessment
SAHRA	South African Heritage Resources Agency
SDF	Spatial Development Framework
SIA	Social Impact Assessment
SIP	Strategic Integrated Project
ToR	Terms of Reference
UNFCCC	United Nations Framework Convention on Climate Change
VIA	Visual Impact Assessment
WRYCM	Water Resource Yield Computer Model
WULA	Water Use Licence Application

GLOSSARY OF TERMS

Alien species: A plant or animal species not native to an area and introduced from elsewhere: neither endemic nor indigenous.

Applicant: Any person who applies for an authorisation to undertake an activity or undertake an Environmental Process in terms of the Environmental Impact Assessment Regulations – National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) as contemplated in the scheduled activities listed in Government Notice (GN) No R. 543, 544 and 545.

Biodiversity: The variety of life in an area, including the number of different species, the genetic wealth within each species, and the natural areas where they are found.

Cumulative Impact: In relation to an activity, cumulative impact means the impact of an activity that in itself may not be significant, but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area.

Ecology: The study of the interrelationships between organisms and their environments.

Environment: All physical, chemical and biological factors and conditions that influence an object.

Environmental Impact Assessment: In relation to an application, to which Scoping must be applied, means the process of collecting, organising, analysing, interpreting and communicating information that is relevant to the consideration of the application.

Environmental Impact Report: In-depth assessment of impacts associated with a proposed development. This forms the second phase of an Environmental Impact Assessment and follows on from the Scoping Report.

Environmental Management Programme: A legally binding working document, which stipulates environmental and socio-economic mitigation measures that must be implemented by several responsible parties throughout the duration of the proposed project.

Heritage resources: This means any place or object of cultural significance.

Precipitation: Any form of water, such as rain, snow, sleet, or hail that falls to the earth's surface.

Red Data Listed species: All those South African species included in the categories of endangered, vulnerable or rare, as defined by the International Union for the Conservation of Nature and Natural Resources.

Riparian: The area of land adjacent to a stream or river that is influenced by stream induced or related processes.

Soil compaction: Increase in soil density through physical or chemical processes.

1 Introduction

The main objectives of the Environmental Management Programme (EMPr) are to describe the proposed management and mitigation measures associated with identified environmental impacts of the project. The EMPr also identifies the relevant individuals or entities responsible for implementation of the required management and mitigation measures as well as any potential timelines associated with such implementations.

This is necessary in order to ensure that potential environmental impacts identified are adequately managed and reduced to within acceptable levels during the construction and operational phases of the proposed vineyard development. This EMPr must form part of the contractual agreement between the applicant and all relevant contractors required to complete any work during the proposed project phases.

1.1 NEMA Regulation 23 Report Compliance

Regulation 23 of the National Environmental Management Act, 1998 (No 107 of 1998); Environmental Impact Assessment (EIA) Regulations of 2014 makes reference to its Appendix 4 which provides the content requirements for Environmental Management Programmes. The table below lists the relevant requirements and provides cross-references as to where the relevant information can be found in this report.

Table 1: Environmental Management Programme requirements in terms of Regulation 23 of the EIA Regulations of 2014.

Reg.	EIA Regulations 2014 - Appendix 4 – Content of Environmental Management programme (EMPr)	Location in this EMPr
(a)	A environmental management programme must comply with section 24N of the Act and include - details of -	
	(i) the EAP who prepared the EMPr; and	Section 2.1
	(ii) the expertise of that EAP to prepare an EMPr, including a Curriculum Vitae	Section 2.2
(b)	a detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;	Section 3
(c)	a map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that any areas that should be avoided, including buffers;	Appendix B

Reg.	EIA Regulations 2014 - Appendix 4 – Content of Environmental Management programme (EMPr)	Location in this EMPr
(d)	a description of the impact management objectives, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including-	Section 8
	(i) planning and design;	Section 8
	(ii) pre-construction activities;	Section 8
	(iii) construction activities;	Section 8
	(iv) rehabilitation of the environment after construction and where applicable post closure; and	Section 11
	(v) where relevant, operation activities;	Section 8
(e)	a description and identification of impact management outcomes required for the aspects contemplated in paragraph (d);	Section 8
(f)	a description of proposed impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraphs (d) and (e) will be achieved, and must, where applicable, include actions to -	Section 8
	(i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;	Section 8
	(ii) comply with any prescribed environmental management standards or practices;	Section 8
	(iii) comply with any applicable provisions of the Act regarding closure, where applicable; and	Section 8
	(iv) comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable;	Section 8
(g)	the method of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Section 6 Section 8
(h)	the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Section 8
(i)	an indication of the persons who will be responsible for the implementation of the impact management actions;	Section 4 Section 8

Reg.	EIA Regulations 2014 - Appendix 4 – Content of Environmental Management programme (EMPr)	Location in this EMPr
(j)	the time periods within which the impact management actions contemplated in paragraph (f) must be implemented;	Section 8
(k)	the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);	Section 6 Section 8
(l)	a program for reporting on compliance, taking into account the requirements as prescribed by the Regulations;	Section 6 Section 8
(m)	an environmental awareness plan describing the manner in which-	Section 7
	(i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and	Section 7
	(ii) risks must be dealt with in order to avoid pollution or the degradation of the environment; and	Section 7
(n)	any specific information that may be required by the competent authority.	NA

1.2 Report Layout

The table below summarises the content layout of this report.

Table 2: Summary of report content layout

Chapter	Chapter Heading	Content Summary
1	Introduction	Provides a brief background to the proposed project, and explains the compliance of this report with regards to Regulation 23 of the NEMA.
2	Environmental Assessment Practitioner	Provides details of the EAP who prepared this EMPr, and provides information on the expertise of the EAP.
3	Project Description and Listed Activities Covered by this EMPr	Provides a description of the project and its location as well as listed NEMA activities triggered by the proposed project.
4	Individuals/entities Responsible for Implementing this EMPr	Provides information on the individuals or entities that will be responsible for implementing the requirements of the EMPr, and explains requirements with regards to on-site communication, site instruction entries, method statements, and record keeping.
5	On-site communication and	The section describes the significant site

Chapter	Chapter Heading	Content Summary
	document control	communication and document control measures that will need to be implemented.
6	Monitoring, Performance Assessment and Reporting on EMPr compliance	Provides information on monitoring, performance assessment and reporting on EMPr Compliance, ECO site inspection reports, and photographs.
7	Environmental Awareness Plan	Provides information on environmental awareness and risk training, and basic rules of conduct. Also provides an environmental risk plan.
8	Impacts and Mitigation Measures	Provides the identified potential environmental impacts and required mitigation measures for the relevant project phases.
9	Emergency Response Plan	Provides information on the emergency response plan.
10	Complaints/incident Register	Stipulates the content requirements for incident registers.
11	Decommissioning Phase	Provides a discussion on the proses to be followed if the site is to be decommissioned at the end of its lifespan.
12	Conclusion	EMPr content conclusion.

2 Environmental Assessment Practitioner

This EMPr was prepared by Rikus Lamprecht from Enviroworks, the Environmental Assessment Practitioner (EAP) who is undertaking this EIA process. The sections below provide the details of the EAP and explains the EAP's expertise and experience to prepare this EMPr.

2.1 Details of the EAP

Enviroworks was appointed by Mahoebe Eiendomme (Pty) Ltd as the independent Environmental Assessment Practitioner (EAP) to conduct a full Scoping & EIA process for the proposed project.

Enviroworks was established in November 2002. Although the formal establishment of the company took place in 2002, it is backed by more than 70 years of collective professional service and experience in the environmental field. The qualifications, expertise and experience of our professional team form the backbone of the company's continued success.

The vision of Enviroworks is to provide excellent, cutting edge Environmental Management Solutions and Services, underpinned by a team of professional consultants together with our associated network of specialist partners and project managers. The company continuously engages existing and emerging legislation, guidelines and practices in order to ensure the execution of high quality and appropriate studies. Through an integration of skills and expertise, it is envisioned that Enviroworks will deliver exceptional, competitive services for task execution and to meet deliverables. Enviroworks through years of experience and industry presence assures the seamless execution and roll out of tasks to achieve projected results on time. Our past experience on vineyard cultivation projects further benefits our understanding of the required and associated processes and the impacts thereof.

Table 3: Details of the EAP

Company/entity name:	Rikus Lamprecht (on behalf of Enviroworks)
Physical address:	5 Walter Sisulu Street; Universitas; Bloemfontein; 9301
Postal address:	PO Box X 01; Suite 116; Brandhof; 9324
Contact person:	Rikus Lamprecht
Designation:	Senior Environmental Consultant
Contact number:	072 230 9598
E-mail address:	rikus@enviroworks.co.za

Qualifications:	M.Env.Sci Ecological Remediation and Sustainable Utilisation

2.2 Expertise of the EAP Representative

Rikus Lamprecht was employed by Enviroworks in 2016 as a Senior Environmental Consultant. Rikus was previously employed by Fraser Alexander Tailings from 2011 to 2015 as an Environmental Contracts Manager where he was responsible for the technical and operational management of all Fraser Alexander Tailings' mining environmental rehabilitation work. He was responsible for all facets of project management as well as implementation of rehabilitation and environmental strategies by planning activities, organizing physical, financial and human resources, delegating task responsibilities, leading people, controlling risks and providing technical support.

Rikus holds a B.Sc Botany and Zoology as well as an M.Env.Sci Ecological Remediation and Sustainable Utilisation degree. His environmental management knowledge and practical experience as well as his enthusiasm, disciplined goal-driven mind-set and high personal standards ensures high quality outputs during the implementation and completion of any environmental projects.

Environmental Impact Assessment Experience

- Management of the Environmental Authorisation and EIA processes of the proposed Meerkat Hydropower Facility Project in the Orange River in the Northern Cape Province.
- Management of the Environmental Authorisation and EIA processes of the proposed N8 Realignment Project in the Free State Province.
- Conducting of Environmental Impact Assessment Report for the proposed cultivation of a 500 ha Vineyard for CarpeDiem in the Northern Cape
- Management of the 24G Environmental Authorisation and EIA processes of the Mooihoekdam Project in the Free State Province.
- Management of the Environmental Authorisation and EIA processes of the proposed Metsimatala CSP facility in the Northern Cape Province.
- Technical review of three Scoping Reports on behalf of the Northern Free State Mineral Resources Stakeholders Forum, Free State Agriculture and VKB Agriculture for three applications for exploration rights for hydrocarbon exploration in the Free State Province

Experience as an Environmental Control Officer

- Completed an environmental site audit as an Environmental Control Officer (ECO) for the upgrade and construction of bridges on the N14 highway between Upington and Kuruman, Northern Cape Province.
- Completed an environmental site audit as an Environmental Control Officer (ECO) for the Neotel Optic Fibre line development near Nelspruit, Mpumalanga Province.

Permits and licencing

- Conducting of Waste License and Air Emissions License applications for the 24G process of Clinvet International (Pty) Ltd, Free State Province.

Specialist report completion

- Completion of a specialist vegetation study and report for the proposed Olifantshoek Bulk Water Supply Project in the Northern Cape Province.
- Completion of a specialist vegetation study and report for the proposed N8 gravel quarries in the Free State Province.
- Completion of a specialist wetland study and report for the Lafarge Lichtenburg cement production facility and quarry in the North West Province.
- Completion of a specialist vegetation study and report for the proposed Nooitgedacht Retirement Estate development near Nelspruit in the Mpumalanga Province.
- Completion of a specialist vegetation study and report for the proposed Ventersburg Bulk Water Supply Project in the Free State Province.

See Appendix A for Curriculum Vitae.

2.3 Details of the Internal Reviewer

Elbi Bredenkamp started her career as a case officer and served as an environmental specialist with the Department of Minerals and Energy gaining extensive knowledge of mining impact and attributing management mechanisms.

From 1997 to 2002 Elbi further developed her knowledge in the environmental field as a case officer working for the Department of Tourism, Environment and Economic Affairs, Free State (DTEEA-FS). Here Elbi was responsible for reviewing environmental impact assessments and developing administrative processes & organizational structures within the department. Through ongoing dealings with

Environmental Legislation Elbi familiarized herself with the National Environment Management Act (Act 107 of 1998 “NEMA”) and NEMA EIA Regulations.

In 2002 Elbi established Enviroworks. As the Director of the company, Elbi gained extensive experience in the conducting of Environmental Impact Assessments, Risk Analysis, Auditing and Monitoring and Compiling of Environmental Management Plans for numerous projects. A familiarity with departmental mechanisms and functioning aided towards the success of these projects.

Designation: Company Director
Contact number: 082 562 4134
Email address: elbi@enviroworks.co.za

See Appendix A for Curriculum Vitae.

JOHAN BOTES

Senior Environmental Specialist and General Manager

Relevant Qualifications

Baccalaureus Artium Honores (B.A. Hons.) in Geography: University of the Free State (2013)

Baccalaureus Artium (B.A.) in Geography and Environmental Management University of the Free State (2012)

Professional Registration

IAIA	Registration Number: 4043
AIS	Registration Number: 1032

Work Experience

June 2014 – Present	Environmental Specialist at Enviroworks
Dec 2013 – May 2014	Environmental Control Officer at Savannah Environmental
Dec 2012 – March 2013	Environmental Consultant Intern at Enviroworks

Key Project Experience

Project Management Experience

- Conducting of Environmental Impact Assessment Report for the proposed 45MW Meerkat Hydro Power Facility in the Northern Cape.
- Conducting of Environmental Impact Assessment Report for the proposed 150MW PV Metsimatala Solar Power Project in the Northern Cape.
- Conducting of Basic Assessment processes for the proposed Optic fibre cable installation in and around the town of Lephalale on behalf of NEOTEL.
- Conducting of Basic Assessment processes for the proposed Optic fibre cable installation in and around the town of Thohoyandou on behalf of NEOTEL.
- Conducting of Basic Assessment processes for the proposed Optic fibre cable installation in and around the town of Groblersdal on behalf of NEOTEL.
- Conducting of Basic Assessment processes for the proposed upgrading and widening of Nathen Bridge in Blomfontein on behalf of the Mangaung Metropolitan Municipality.

- Conducting of Basic Assessment processes for the proposed construction of two new roads and the upgrading of one existing road in Botshabeo on behalf of the Mangaung Metropolitan Municipality.

Environmental Impact Assessment Experience

- Conducting of Environmental Impact Assessment Report for the proposed 180 hectare Cecilia Park Residential development in Bloemfontein on behalf of Mzansi Africa Civils Engineering.
- Conducting of Environmental Impact Assessment Report for the proposed construction of a steel galvanizing plant in Botshebelo, Free State Province on behalf of Bombenero Investments.
- Conducting of Environmental Impact Assessment Report for the proposed opening of 3 borrow pits and 1 gravel quarry around the Ladybrand area, Free State Province.

Basic Assessment Experience

- Conducting of Basic Assessment report for the proposed Fuel Zone Petroleum Depot in Welkom, Free State Province.
- Conducting of Section 24 G Rectification application for the already established residential development on the farm Proteahof 217, Delportshoop, Northern Cape.
- Conducting of Basic Assessment processes for the proposed opening of 9 borrow pits around the Ladybrand area, Free State Province.
- Conducting of Basic Assessment processes for the proposed Optic fibre cable installation between Prince Albert and Oudtshoorn on behalf of NEOTEL.
- Conducting of Basic Assessment report for the proposed Nooitgedach Retirement Village in White River, Mpumalanga.
- Conducting of Basic Assessment processes for the proposed construction of 19 signalling masts in the railway reserves of Cape Town and Stellenbosch on behalf of the Passenger Rail Association of South Africa (PRASA).
- Conducting of Basic Assessment processes for the proposed construction of 1 signalling mast in the railway reserve at St James Station, Cape Town on behalf of the Passenger Rail Association of South Africa (PRASA).
- Conducting of Basic Assessment processes for the proposed construction of 1 signalling mast in the railway reserve at Clovelly Station, Cape Town on behalf of the Passenger Rail Association of South Africa (PRASA).
- Conducting of Basic Assessment processes for the proposed upgrading and widening of Nathen Bridge in Bloemfontein on behalf of the Mangaung Metropolitan Municipality.

- Conducting of Basic Assessment processes for the proposed construction of two new roads and the upgrading of one existing road in Botshabeo on behalf of the Mangaung Metropolitan Municipality.

Experience as an Environmental Control Officer

- Environmental Control Officer (ECO) for the Mission Point Sand Mining facility near Sasolburg, Free State Province.
- Environmental Control Officer (ECO) for the Rooikraal Truck stop facility near Vrede, Free State Province.
- Environmental Control Officer (ECO) for the widening of bridge structures over the Orange River for BVi on behalf of SANRAL, near Hopetown, Northern Cape
- Environmental Control Officer (ECO) for the construction of a 2.7 km Bus route, Thaba Nchu, Free State Province.
- Environmental as an Environmental Control Officer (ECO) for the installation of optic fibre cables in and around the town of Nelspruit on behalf of NEOTEL.
- Environmental as an Environmental Control Officer (ECO) for the construction of the Khi Solar One Concentrated Solar Power facility near Upington.
- Environmental as an Environmental Control Officer (ECO) for the construction of a 132kV Substation in Bloemfontein for Dihlase Consulting Engineers.
- Environmental as an Environmental Control Officer (ECO) for the installation of optic fibre cables in and around the town of Thohoyandou on behalf of NEOTEL.
- Environmental as an Environmental Control Officer (ECO) for the installation of optic fibre cables in and around the town of Lephaale on behalf of NEOTEL.
- Environmental as an Environmental Control Officer (ECO) for the installation of optic fibre cables in and around the town of Grobersdal on behalf of NEOTEL.
- Environmental as an Environmental Control Officer (ECO) for the installation of optic fibre cables in and around the town of Kathu on behalf of NEOTEL.

Experience in Permits and Licencing

- Water Use Licence Application for the installation of carbon optic fibre cable within 32 metres of a watercourse on behalf of NEOTEL.
- Water Use Licence Application (General Authorisation) for the installation of carbon optic fibre cable within 500 metres of a wetland on behalf of NEOTEL.
- Waste Management Licence for the storage and reuse of hazardous waste water for the Bombenero Galvanizing Steel Facility in Botshabelo, Free State Province on behalf of Bombenero Investments.

Other Experience

- Annual Environmental Audit in Terms of Section 34 of Government Notice 982 for the Mission Point Mining near Sasolburg, Free State Province.
- Calculating Financial Provisions (Quantum Calculations) for the Mission Point Mining near Sasolburg, Free State Province.
- Compilation of construction and operational phase Waste Management Plan for the proposed Cecilia Park Residential Development, Bloemfontein, Free State Province.
- Conducting of Environmental Risk Assessment for the proposed establishment of a Diesel Depot in Welkom, Free State Province.
- Compiling Environmental Risk Assessment for the proposed optic fibre cable installation in and around the town of Groblersdal on behalf of NEOTEL.
- Compiling Environmental Risk Assessment for the proposed optic fibre cable installation in and around the town of Lephalale on behalf of NEOTEL.
- Compiling Environmental Risk Assessment for the proposed optic fibre cable installation in and around the town of Thohoyandou on behalf of NEOTEL.
- Compiling Environmental Risk Assessment for the proposed optic fibre cable installation in and around the town of Nelspruit on behalf of NEOTEL.
- Compiling Environmental Risk Assessment for the proposed optic fibre cable installation in and around the town of Kathu on behalf of NEOTEL.
- Compiling Environmental Risk Assessment for the proposed optic fibre cable installation in and around the town of Groblersdal on behalf of NEOTEL.
- Training of construction personnel and environmental advisory services for personnel of the Khi Solar One Concentrated Solar Power facility near Upington.
- GIS mapping and technical support for various projects, including the drawing of locality and sensitivity maps.
- Public participation processes and assistance to several projects.
- Compilation of Bitumen Waste Report for Penny Farthing Engineering, Venterstad, Eastern Cape.

Designation: Office Manager

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See Appendix A for Curriculum Vitae.

3 Project Description and Listed Activities Covered by this EMPr

3.1 Brief Project Description

Mahoebe Eiendomme (Pty) Ltd intends to cultivate an approximately 100 ha piece of land on the 147.91 ha project location for the establishment of a vineyard. The principal objective for the grapes produced will be for the local production and distribution of wine. It is anticipated that 45 tons/ha can be produced on the proposed project area which will amount to a total of 4500 tons of grapes per annum. Although the vineyard will be approximately 100 ha in size, the additional 47.91 hectares will allow for the establishment of internal access roads (wider than 8 m) around the vineyard and between vineyard blocks, a new settling dam (capacity will not exceed 15 000 m^3) and associated infrastructure. It will also allow for a degree of practical flexibility in the layout of the vineyard blocks inside the proposed project area as practical issues once the construction phase commences might necessitate slight alterations as the process progresses.

An existing extraction point with pumping system and pipeline is already established on the bank of the Orange River for the current irrigation operations of crops on Portion 11 of the Farm De Eelt no 26. The existing extraction point and pumping system will simply be slightly widened to accommodate the additional pumps necessary for the proposed vineyard irrigation requirements. A maximum 400 mm water transport pipeline (1.3 km long) will also be constructed to extract water from the existing water extraction point in the river and transport water to the new on-site settling dam to be used for irrigation purposes.

3.2 Project Location

The proposed project area is approximately 147.91 ha in surface size and is situated on Portion 10 of the Farm De Eelt No 26. The 100 ha vineyard with internal roads and new settling dam will be situated on Portion 10 of the Farm De Eelt No 26.

A proposed water transport pipeline will be constructed and will commence from the existing water extraction point in the Orange River which is situated on Portion 11 of the Farm De Eelt No 26. From here it will traverse this Portion 11 to where it enters the adjacently located Portion 10 and then reaches the new proposed settling dam to be constructed on Portion 10 (as stated above).

The relevant farm portions are approximately 15 km north-east of the town of Prieska in the Northern Cape Province. Portion 10 is owned by S & L Boerdery BK while Portion 11 is owned by Mr Henry Coetzee of Mahoebe Eiendomme (Pty) Ltd (the applicant). The owner of Portion 10 has provided his consent for the completion of the EIA process.

The properties fall inside the Siyathemba Local Municipality which, in turn, forms part of the greater Pixley Ka Seme District Municipality. Access to the proposed project area is obtained by way of the R 368 provincial road (which runs along the western boundary of the proposed project area on Portion 10 of the Farm De Eelt No 26) and a subsequent dirt farm road.

See locality map below.

Table 4: Information of the farm portions associated with the proposed project

Farm Name and Number	SG 21 Digit Code	Land owner
Portion 10 of Farm De Eelt No 26	C06000000000002600010	S & L Boerdery BK
Portion 11 of Farm De Eelt No 26	C06000000000002600011	Mahoebe Eiendomme (Pty) Ltd

The four corner coordinate points for the corners of the proposed project area are as follows:

- North-western corner 29°34'28.36"S 22°50'10.05"E
- North-eastern corner 29°34'15.94"S 22°50'40.92"E
- South-eastern corner 29°35'11.41"S 22°50'59.94"E
- South-western corner 29°35'20.41"S 22°50'36.14"E

The starting, bend and end points of the proposed water transport pipeline is as follows:

- Start point 29°33'56.19"S 22°51'14.91"E
- Bend point 29°34'10.70"S 22°51'03.53"E
- End point 29°34'29.34"S 22°50'46.13"E

The centre point of the proposed water settling dam is as follows:

- Centre point 29°34'30.10"S 22°50'45.12"E

Table 5: Details of relevant land owner of Portion 10

Company/entity name:	S & L Boerdery BK
Postal address:	PO Box 122, Prieska 8940
Contact person:	Schalk Theron
Designation:	Owner
Contact number:	082 802 2211

E-mail address:	tschalk@xsinet.co.za

Table 6: Details of relevant land owner of Portion 11

Company/entity name:	Mahoebe Eiendomme (Pty) Ltd
Postal address:	PO Box 410, Prieska 8940
Contact person:	Johannes Hendrik Coetzee
Designation:	Owner
Contact number:	072 403 8717
E-mail address:	mahoebe2@gmail.com

Management objectives

- Construction activities of the vineyard, access roads, water settling dam as well as associated environmental impacts must be adequately managed and restricted as far as practicably possible to the proposed footprint area for which environmental authorisation is obtained.
- Construction activities of the pipeline as well as associated environmental impacts must be adequately managed and restricted as far as practicably possible to the proposed footprint area for which environmental authorisation is obtained.
- If any proposed deviation or expansion of the footprint area during the construction phase is required, an environmental authorisation amendment request must first be submitted to the competent authority and approved.
- Areas surrounding the footprint need to be adequately managed in order to avoid unnecessary additional impacts.
- All mitigation measures as recommended by the various specialists must be implemented during the construction and operational phases.

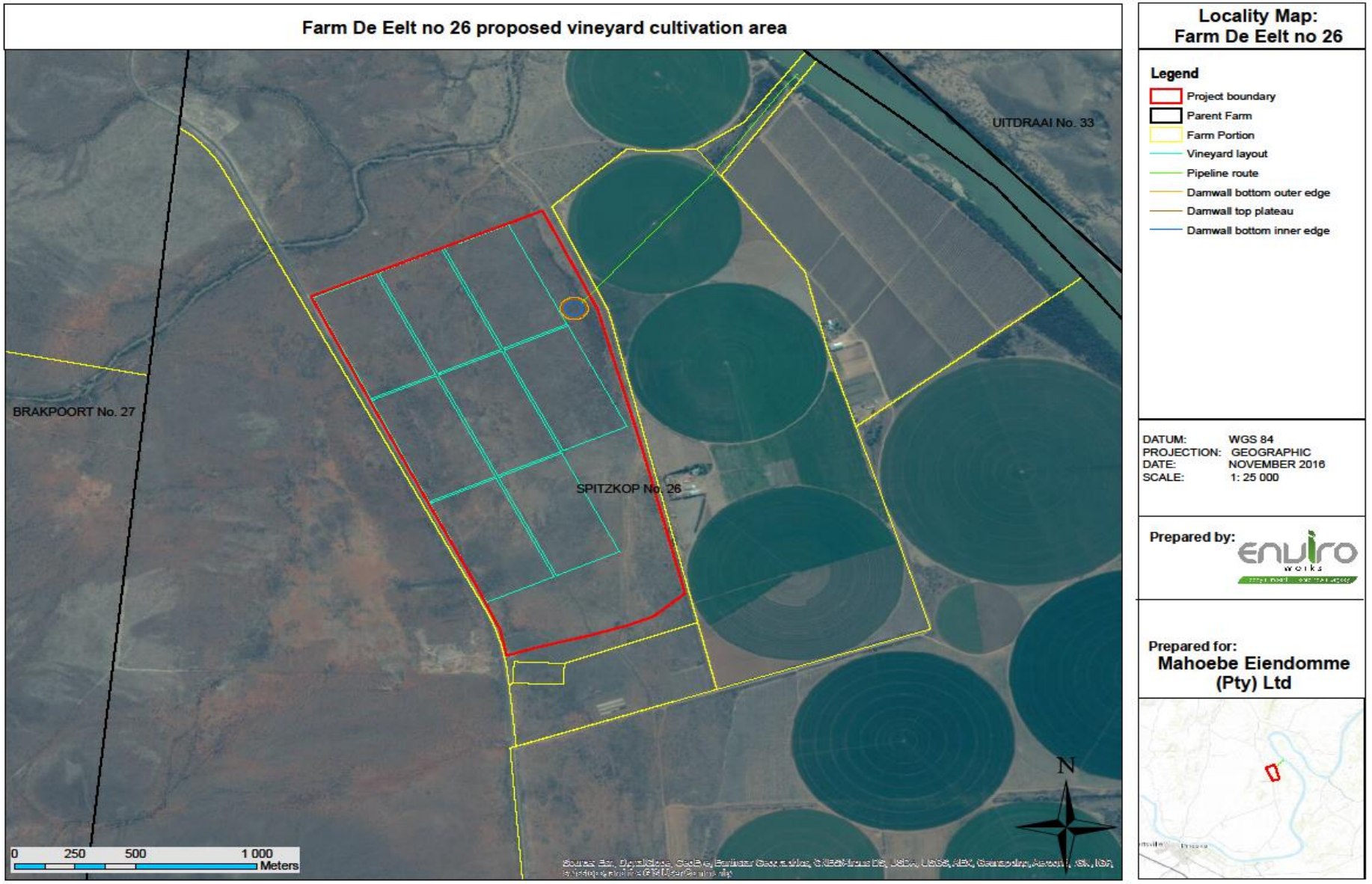

Figure 1: Locality map illustrating the location of the proposed CSP facility development

3.3 Project Phases

Three phases:

- Construction Phase (includes planning, design, pre-construction and construction activities). The project will entail three major construction aspects namely:
    - Construction of an on-site water settling dam on Portion 10 of the Farm De Eelt No 26.
    - Installation of additional pumps and construction of a pipeline from the water extraction point in the Orange River on Portion 11 of the Farm De Eelt No 26 which will traverse Portion 11 and enter the adjacently located Portion 10 where it reaches the settling dam situated on Portion 10
    - Cultivation of a 100 ha vineyard and associated access road network on Portion 10 of the Farm De Eelt No 26.
    - It is envisaged that the vineyard preparation and planting/development phase will take approximately 12 months to complete.
- Operational Phase
    - The vineyard operational phase (grape production) and harvesting will continue for an undisclosed period of time (multiple years).
- Decommissioning Phase
    - If the operational phase is ever concluded in the future, the area will be suitable rehabilitated in order to return the project area to a self-sustainable ecological state.

3.4 NEMA Listed Activities Triggered by the Proposed Project

The development activities in the National Environmental Management Act (Act 107 of 1998): Environmental Impact Assessment Regulations, 2014 (Government Notices R983, R984 and R985 in Government Gazette No. 38282 of 04 December 2014) which are triggered by the proposed project are listed in the table below:

Table 7: Environmental Impact Assessment Regulations, 2014 listed activities triggered by the proposed project

Regulation	Activity	Description of trigger activity in proposed project
GN. R. 983 Listing Notice 1	**Activity 9** The development of infrastructure exceeding 1000 metres in length for the bulk transportation of water or storm water-	A maximum 400 mm pipeline of approximately 1.3 km in length will be constructed to transport water from the

Regulation	Activity	Description of trigger activity in proposed project
	(i) with an internal diameter of 0,36 metres or more;	extraction point in the Orange River and deposit it into the proposed settling dam on site.
GN. R. 983 Listing Notice 1	**Activity 19** 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	The installation of the required additional pumping and piping infrastructure for the proposed project at the water extraction point in the Orange River could potentially require the clearance and removal/relocation of more than 5 m² of material from the bank of the river.
GN. R. 983 Listing Notice 1	**Activity 24** The development of- (ii) a road with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres;	Associated access roads will be established around the proposed vineyard and between the vineyard blocks which will be wider than 8 m. These roads will all fall inside the proposed approximately 147.91 ha project footprint.
GN. R. 984 Listing Notice 2	**Activity 13** The physical alteration of virgin soil to agriculture, or afforestation for the purposes of commercial tree, timber or wood production of 100 hectares or more.	Cultivation and establishment of a vineyard on approximately 100 ha of natural vegetation. The total size of the farm portion to be impacted by the vineyard, roads and associated infrastructure of the proposed project is

Regulation	Activity	Description of trigger activity in proposed project
		approximately 147.91 ha.
GN. R. 984 Listing Notice 2	**Activity 15** The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for - (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.	Cultivation and establishment of a vineyard on approximately 100 ha of natural vegetation. The total size of the farm portion to be impacted by the vineyard, roads and associated infrastructure of the proposed project is approximately 147.91 ha.
GN. R. 985 Listing Notice 3	**Activity 4** The development of a road wider than 4 metres with a reserve less than 13,5 metres. (a) In Free State, Limpopo, Mpumalanga and Northern Cape provinces: (ii) Outside urban areas, in: (ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans	The site falls inside a Critical Biodiversity Area and associated access roads will be established around the proposed vineyard and between the vineyard blocks which will be wider than 8 m. These roads will all fall inside the proposed approximately 147.91 ha project footprint.
GN. R. 985 Listing Notice 3	**Activity 12** The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in	The site falls inside a Critical Biodiversity Area and cultivation and establishment of a vineyard on approximately 100 ha will occur.

Regulation	Activity	Description of trigger activity in proposed project
	accordance with the maintenance management plan. (d) In Northern Cape: (ii) Within critical biodiversity areas identified in bioregional plans	The total size of the farm portion to be impacted by the vineyard, roads and associated infrastructure of the proposed project is approximately 147.91 ha.
GN. R. 985 Listing Notice 3	**Activity 14** The development of – (xii) infrastructure or structures with a physical footprint of 10 square metres or more; (a) In Northern Cape (ff) Critical biodiversity areas or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional Plans Where such development occurs- (a) Within a water course	The site falls inside a Critical Biodiversity Area and the additional pumping and piping infrastructure required to be installed for the proposed project at the water extraction point in the Orange River will exceed 10 m² in size.

4 Individuals/entities responsible for implementing this EMPr

The 'Responsibility' columns in the impact and mitigation tables provided below indicate the project team member(s) which are responsible for implementation and management of the identified mitigation measures. These team members include the following:

- Applicant: Mr Henry Coetzee of Mahoebe Eiendomme (Pty) Ltd)
- Applicant project manager: Mr Hannes Coetzee of Mahoebe Eiendomme (Pty) Ltd)
- Construction contractor manager: Still to be appointed prior to construction commencement
- Environmental Control Officer (ECO): Still to be appointed prior to construction commencement

The section below lists additional measures, which should be implemented by the relevant team members.

During the **construction phase**, the **Applicant and Applicant project manager**; will:

- Appoint a suitably qualified, skilled and experienced Environmental Officer (ECO) to conduct monthly site visits during the construction phase.
- Be responsible to have the Environmental Authorisation (EA) and EMPr available on site at all times.
- Ensure and enforce compliance with all conditions, requirements and mitigation measures stipulated in the Environmental Authorisation (EA) and EMPr. All applicant employees and construction contractor employees must fully comply at all times.
- Ensure that all mitigation measures for which they are responsible, are adequately implemented as described in this EMPr.
- Have the authority to stop the construction contractor's work and issue fines in the event of environmental non-compliance with Environmental Authorisation (EA) and EMPr conditions.
- Ensure that all documentation/filing in terms of environmental information is adequately maintained/updated and readily available on site.
- Ensure adequate environmental awareness training of all relevant employees on the relevant Environmental Authorisation (EA) and EMPr conditions.
- Provide the ECO with 'Method Statements' for all significant work/tasks to be performed on site. This will indicate the systematic procedures that will be applied for work/tasks in order to meet the requirements of any aspect of the EMPr.
- Receive inspection/compliance reports from the ECO and adequately report to the applicant on a continual basis.
- Support the ECO in his/her roles and responsibilities.
- Ensure that all findings/issues/problems identified during ECO environmental inspections, are addressed and rectified as soon as reasonably possible.

- Set aside a budget for maintenance.
- Maintain and manage all facilities and infrastructure in good working order to effectively fulfil its intended purpose and to prevent negative environmental impacts.
- Not construct or modify any additional buildings or infrastructure contrary to the approved Environmental Authorisation (EA), without performing an environmental impact assessment where listed activities of the 2014 NEMA EIA Regulations are triggered.
- An Environmental Authorisation (EA) amendment request must first be submitted to the competent authority and approved if any proposed deviation from the Environmental Authorisation (EA) during the construction or operational phase is required.
- May/must, in the event of there being a serious threat to or impact on the environment, address the situation adequately prior to continuation.
- To immediately remedy any aspects that contribute to negative environmental impacts.

During the **construction phase**, the **Construction contractor manager** will:

- Manage and oversee the construction phase and soil preparation processes of the project from a civils perspective in order to ensure legal compliance.
- Ensure and enforce compliance with all conditions, requirements and mitigation measures stipulated in the Environmental Authorisation (EA) and EMPr. All construction contractor employees must fully comply at all times.
- Ensure that all mitigation measures for which they are responsible, are adequately implemented as described in this EMPr.
- Ensure that all documentation/filing in terms of environmental information is adequately maintained/updated and readily available on site.
- Ensure adequate environmental awareness training of all relevant employees on the relevant Environmental Authorisation (EA) and EMPr conditions.
- Provide the ECO with 'Method Statements' for all significant work/tasks to be performed on site. This will indicate the systematic procedures that will be applied for work/tasks in order to meet the requirements of any aspect of the EMPr.
- Ensure that all findings/issues/problems identified during ECO environmental inspections, are addressed and rectified as soon as reasonably possible.

During the **construction phase**, the **Environmental Control Officer (ECO)** will:

- Will act in an objective manner in his/her roles and responsibilities with regards to the project.
- Conduct a handover of the Environmental Authorisation (EA) and EMPr with the applicant, applicant project manager and construction contractor manager and ensure they are made aware of the content, requirements and conditions. Ensure that the all roles and responsibilities are understood by all relevant parties.
- Conduct environmental monitoring and auditing activities on a monthly basis to ensure compliance with the Environmental Authorisation (EA) and EMPr.
- Complete an ECO checklist and report after each site inspection and incorporate and distribute this to the applicant and project team within 5 days.
- Provide feedback on auditing activities in the form of site meetings and site inspection reports to the applicant and applicant project manager.
- Work collectively with applicant project manager and construction contractor manager on site to achieve desired environmental objectives, but not be influenced in opinion and must report to the applicant and applicant project manager only.
- May/must, in the event of there being a serious threat to or impact on the environment, correspond with the applicant project manager and construction contractor manager to stop works and address situation adequately prior to continuation.
- Conduct a final environmental audit of the project on completion of the construction phase for submission to the competent authority to review.

During the **operational phase** the **applicant and applicant project manager** will be responsible to prevent negative environmental impacts, and as such will be responsible to:

- Ensure and enforce compliance with all conditions, requirements and mitigation measures stipulated in the Environmental Authorisation (EA) and EMPr. All applicant employees must fully comply at all times.
- Ensure that all mitigation measures for which they are responsible, are adequately implemented as described in this EMPr.
- Ensure adequate environmental awareness training of all relevant employees on the relevant Environmental Authorisation (EA) and EMPr conditions.
- Set aside a budget for maintenance.
- Maintain and manage all facilities and infrastructure in good working order to effectively fulfil its intended purpose and to prevent negative environmental impacts.

- Not construct or modify any additional buildings or infrastructure contrary to the approved Environmental Authorisation (EA), without performing an environmental impact assessment where listed activities of the 2014 NEMA EIA Regulations are triggered.
- An Environmental Authorisation (EA) amendment request must first be submitted to the competent authority and approved if any proposed deviation from the Environmental Authorisation (EA) during the construction or operational phase is required.
- May/must, in the event of there being a serious threat to or impact on the environment, address the situation adequately prior to continuation.
- To immediately remedy any aspects that contribute to negative environmental impacts.

5 On-site communication and document control

The following sections describe the significant site communication and document control measures that will need to be implemented.

5.1 Site Instruction entries

A Site Instruction book should be present on site and used for the recording of general site instructions during the construction phase. Site instructions provided must indicate the potential environmental impacts of an activity to be performed and the required mitigation measures in order to prevent and manage the risk. The Site Instruction book should also be used for the issuing of **stop work orders** for the purposes of immediately halting any particular activities of the construction contractor in the event of any identified significant environmental risk.

5.2 Method Statements

Method statements from the construction contractor will be required for all construction activities which could have significant environmental impacts on the area. These method statements must be provided and approved by the applicant project manager and ECO prior to commencement of such construction activities.

The Method statements must indicate the potential environmental impacts of an activity to be performed and the required mitigation measures in order to prevent and manage the risk. This is an interactive 'live document' which allows for modifications to be negotiated between the construction contractor manager and ECO, as processes progress.

A method statement systematically describes the scope of an intended work activity to be performed. It provides a step-by-step description of the activity and the environmental risks involved with each step as well as the measures in place to prevent and mitigate these risks. This is required in order for the ECO and applicant project manager to understand the construction contractor intended activities. It will also enable the ECO and applicant project manager to assist in determining adequate mitigation measures for the identified impacts, which would minimise environmental impact during these tasks.

The format of all method statements developed by the construction contractor manager must include the following:

- **What** - a brief description of the work/activity to be undertaken and the reason/end objective of the activity to be performed.

- **How -** a detailed step-by-step description of the activity to be undertaken including the machines, methods and materials. The potential environmental impacts and adequate management/mitigation measures associated with each step.
- **Where -** a description of the area where the activity will be performed.
- **When -** the anticipated starting and completion date of the activity to be performed.

All method statements will form part of the EMPr documentation and are subject to all requirements contained within the EMPr main document.

The construction contractor manager must submit the method statements to the applicant project manager and ECO prior to the commencement of any significant construction activity. Work may not commence until the method statement and environmental impact management/mitigation measures have been approved by the applicant project manager and ECO.

5.3 Documentation control and record keeping

All relevant records related to the implementation of the Environmental Authorisation (EA) and EMPr must be adequately managed and kept together in an environmental filing system on site where it is safe and can be readily accessed if necessary. These records should be kept for two years and should at any time be available for inspection by any relevant authorities.

The main categories of records to be kept on site include the following:

- The Environmental Authorisation (EA) and EMPr and all documentation related to the EA and EMPr acceptance
- Site instruction book
- Method statements
- Weekly Environmental Checklists
- Monthly ECO Environmental Audit Reports
- Environmental Site meetings
- Environmental Incident register
- Non-compliance register
- Corrective Action records
- Contractor Environmental Agreements
- Photographic Record
- Complaints Register

- Claims for Damages
- Interaction with affected parties register
- Final ECO Environmental Audit Report

6 Monitoring, performance assessment and Reporting on EMPr Compliance

Several monitoring actions are proposed which would be undertaken by various project role players.
For detail on these actions, 'Responsible Person/Party', and 'Monitoring Frequency' associated with the identified mitigation measures, refer to the 'Monitoring' column in the impact assessment tables below.

6.1 Performance Assessment and Reporting on EMPr Compliance

An independent suitably qualified skilled and experienced Environmental Control Officer (ECO) should be appointed by the applicant to oversee the commencement, duration and conclusion of the construction phase. The ECO will be responsible for inspecting implementation of mitigation measures and compliance as described in the Environmental Authorisation (EA) and EMPr.

The ECO should have relevant proven experience as an ECO, or be supported by a qualified ECO. He/she may not be someone appointed by the construction contractor or other party involved with this project, other than the applicant.

The following applies, amongst others, to the ECO's role:

- Will act in an objective manner in his/her roles and responsibilities with regards to the project.
- Conduct a handover of the Environmental Authorisation (EA) and EMPr with the applicant, applicant project manager and construction contractor manager and ensure they are made aware of the content, requirements and conditions. Ensure that the all roles and responsibilities are understood by all relevant parties.
- The ECO should undertake **monthly site inspections** during the **construction phase** to ensure Environmental Authorisation (EA) and EMPr compliance or stop any potentially significant non-compliance.
- The ECO must **report on site visits and compliance audits** to the applicant and applicant project manager and Environmental ECO Audit Reports must be sent to the applicant.
- The ECO should present an **environmental site induction/awareness training session** to all employees prior to commencement of work on site.
- After completion of the construction phase, a Final Environmental ECO Audit should be undertaken by the ECO, before commencement of the operational phase, in order to determine and inform the competent authority on compliance with the Environmental Authorisation (EA) and EMPr requirements. The audit report must be submitted to the competent authority.

- The ECO has the authority to stop work if in his/her opinion that there is a serious threat to or impact on the environment, caused directly from the construction operations and address situation adequately prior to continuation. This authority is to be limited to emergency situations where consultation with the applicant or applicant project manager is not immediately available. In all such work stoppage situations the ECO is to inform the applicant and applicant project manager of the reasons for the stoppage as soon as possible.

Upon failure by the construction contractor or the employees to show adequate consideration to the environmental aspects of this contract, the ECO may recommend to the applicant to have the construction contractor or the employees removed from site or work suspended until the matter is remedied. No extension of time will be considered in the case of such suspensions and all costs will be borne by the construction contractor.

6.1.1 ECO Site Inspection Reports

The ECO site inspection reports (environmental checklists) will report on the compliance of the construction phase with the conditions and mitigation measures contained in the Environmental Authorisation (EA) and EMPr. The report should be submitted to the applicant, within five (5) days of the ECO site inspection, and should also be made available to the construction contractor manager. Copies of the inspection reports should be kept on file on site.

The contractor's meeting minutes must reflect environmental queries, agreed actions and dates of eventual compliance. These minutes form part of the official environmental record.

6.1.2 Photographs

It is recommended that continual photographs be taken of the site prior to, continually during and immediately after construction as a visual reference. These photographs should be stored along with other records related to this EMPr. If captured in digital format, hard copies, in colour, must be kept with all other records relevant to the implementation of this EMPr.

6.1.3 Conclusion

The main role of the ECO on site is therefore to assist in ensuring the project is managed and operated in an environmentally responsible and sustainable manner in in accordance with the Environmental Authorisation (EA) and EMPr requirements.

7 Environmental Awareness Plan

7.1 Environmental Awareness and Risk Training

Prior to work commencing, the applicant project manager, applicant employees, construction contractor employees and other individuals relevant to the project are to be adequately trained on their obligations towards sufficient environmental management/controls and mitigations with regards to the Environmental Authorisation (EA) and EMPr conditions. Continual update discussions surrounding environmental risk management and mitigation on site during the construction phase must also occur. Daily environmental aspects related to the specific task assigned for a day must be conducted in the form of toolbox talks on a daily basis prior to the commencement of any work. This is required in order to include and inform all employment levels of the legal obligations towards site specific environmental management on site as per the Environmental Authorisation (EA) and EMPr requirements.

All new employees must attend an initial environmental awareness/induction presentation prior to commencing with their new work and must then fall into the continual awareness updating structures.

7.1.1 Basic employee rules of conduct

The following list represents the basic Do's and Don'ts towards environmental awareness and conduct on site, which all participants in this project must consider whilst carrying out their tasks. These are not exhaustive and serve as a quick reference aid.

DO:

- Clear your work areas of litter and any significant rubble/waste at the end of each day – use the waste bins provided and prevent litter from being blown away and undesirably distributed into the surrounding natural areas.
- Waste to be continually removed to a landfill site as and when required.
- Dispose of cigarettes and matches carefully, so to prevent veld fires (arson and littering is an offence).
- Ensure a working fire extinguisher is immediately at hand if any work which poses a potential fire hazard is conducted.
- Report all hydrocarbon spills (fuel or oils) immediately and stop the source of the spill from continuing. Implement immediate adequate clean-up procedures.
- Confine work and storage of equipment to within the immediate work area.
- Use all safety equipment and comply with all safety procedures.
- Prevent excessive dust and noise.

- Conduct all daily project activities in an environmentally responsible and sustainable manner as far as practicably possible.

DO NOT:

- Do not litter or allow littering by others on site – immediately report dirty or full waste containers or blocked toilets for rectification.
- No burning or burial of waste on site.
- No open fires allowed on site.
- Do not enter any fenced off or demarcated areas.
- Do not allow hydrocarbon spills (fuel and oils) into any natural areas, storm water channels, drainage lines or drains or watercourses.
- Do not act in an environmentally irresponsible manner on site.

8 Impacts and Mitigation Measures

A number of potential environmental impacts that may arise during the project have been identified. These are outlined below, and guidelines and mitigation measures are provided.

The applicant, applicant project manager and construction contractor manager must familiarise themselves with these requirements as well as those of the Environmental Authorisation (EA) and EMPr.

8.1 Construction Phase

The potential environmental impacts associated with the construction phase of the proposed development.

8.1.1 Destruction/transformation of a Critical Biodiversity Area

Critical Biodiversity Areas are areas which play an important role in conservation and reaching certain required biodiversity targets for ecosystem types, species or ecological processes.

Cultivation processes will completely transform and destroy the natural vegetation and any faunal habitats present on the proposed project area. Although this entire area forms part of a Critical Biodiversity Area 1, this categorisation is only based on the endangered Upper Gariep Alluvial vegetation type (AZa 4). Ground truthing indicated that the area rather falls inside the adjacently located Northern Upper Karoo vegetation type instead of the Upper Gariep Alluvial vegetation type (NKu 3) and it is therefore rather only categorised as a Critical Biodiversity Area 2. The reason for the Critical Biodiversity Area 2 classification is mainly based on the areas being classified as areas where biodiversity targets can be successfully achieved.

The importance of that area in reaching the required conservation targets is not so significant due to the area being adjacent to already cultivated areas which separate the project area from the Orange River and therefore also impedes the local surface water catchment area reaching from the Orange River. The transformation of the Critical Biodiversity Area 2 through cultivation is therefore not considered a fatal flaw for the proposed project.

Mitigation measures to reduce potential impacts:

- The area only forms part of the CBA 2 and not a CBA 1 as per the discussion above. Due to the nature of the cultivation processes, no mitigation measures can be implemented which could result in acceptably reduced impacts on the area.
- Restrict all cultivation work to the proposed project footprint and prevent any unnecessary increase of the footprint size due to indiscriminate disturbance.

Although complete transformation of the natural vegetation type takes place during cultivation processes, this is mostly confined to within the vicinity of the Orange River. The relevant vegetation type is large and still well represented in the area. The cumulative impact of destruction through cultivation activities is therefore only regarded to be medium.

8.1.2 Destruction/damage to nationally protected tree species individuals

In accordance with the National Forests Act (Act 84 of 1998), no person may cut, disturb, damage or destroy any protected tree except if a permit is obtained for the desired process. Partaking in any such processes will therefore constitute a transgression of the law which can be criminally prosecuted

The nationally protected tree species *Boscia albitrunca* (Shepherd's tree/witgat) is present on the proposed project area. A total of 18 individuals were encountered during the site visit and their locations/coordinates have been noted. Cultivation processes could result in the potential removal of/damage to these identified individuals.

Mitigation measures to reduce potential impacts:

- A permit application must be submitted to the national and provincial departments for removal/destruction of the individuals in order to ensure that no restricted activity is unlawfully carried out on these individuals.
- It is however recommended that the project rather attempts to keep and protect some of the individual trees on site. The applicant will apply for a removal permit for approximately 7 individuals which will have to be removed due to operational requirements of the project. The remaining 11 individuals will be left in situ and conserved. This will however only be finalised during the EIA phase. A minimum 10 m buffer zone can be implemented around each individual in order to attempt to prevent any interaction with or damage to the above and below ground components of the trees during the cultivation processes. It can be a physical or hypothetical buffer.
- The applicant will also procure a significant number of *Boscia albitrunca* saplings which will be planted along the boundary fence of the vineyard as part of mitigation measures for the removal of other individuals.

The adequate conservation and relocation of relevant nationally and provincially protected species during the proposed project will ensure that the cumulative impact associated with agricultural developments in the area will be of low significance. The majority of the surrounding areas are still under natural veld conditions and very few protected tree species individuals are removed. Permits are required for the removal of any protected individuals and this process is well and closely managed/governed by the relevant

national and provincial departments. The cumulative impact of removal after implementation of mitigation measures is therefore regarded as low.

8.1.3 Destruction/damage to provincially protected species individuals

In accordance with the Northern Cape Nature Conservation Act (Act 9 of 2009), no person may without a permit pick (which includes the definition damage or destroy), import, export, transport, possess, cultivate or trade in a specimen of a protected plant. Partaking in any such processes will therefore constitute a transgression of the law which can be criminally prosecuted. Cultivation processes could result in the potential removal of/damage to such identified species individuals.

Mitigation measures to reduce potential impacts:

- A permit application must be submitted to the provincial department for the relocation of identified individuals. A suitable relocation environment must be identified and individuals must be adequately relocated with the assistance of a specialist.

As per the previous impact discussion, the majority of the surrounding areas are still under natural veld conditions and very few protected species individuals are removed. Permits are required for the removal of any protected individuals and this process is well and closely managed by the relevant provincial department. The cumulative impact of removal is therefore regarded as low.

8.1.4 Alien and invasive species establishment

The disturbance and transformation of the area by the cultivation processes will result in the increased establishment and potential spreading of undesired alien and invasive species.

Mitigation measures to reduce potential impacts:

- Continual monitoring and adequate active management (chemical or physical removal) of undesired alien and invasive species must take place during the construction phase in order to prevent significant establishment and spreading.

8.1.5 Impeding a water catchment

The proposed project area is directly adjacent to currently cultivated areas of significant size which separate the project area from the Orange River and therefore impedes the local surface water catchment area from reaching the Orange River. The cultivation of the proposed project area would therefore not add significant negative impact to the local surface water catchment feeding the Orange River as it is already isolated.

Mitigation measures to reduce potential impacts:

- Restrict all cultivation work to the proposed project footprint and prevent any unnecessary increase of the footprint size due to indiscriminate disturbance.

The majority of other cultivated areas are in close proximity to the Orange River for water and irrigation purposes. This results in a cumulative impediment of the local surface water catchment areas from higher laying areas downwards towards the river. The cumulative impact of the project on impeding of the surface water catchment is regarded as medium.

8.1.6 Dust generation and emissions

Increased vehicle and machine activity will result in a significant increase in dust emissions into the surrounding environment. This could have a negative impact on adjacent farmers and the road as excessive dust fallout could result in negative ecological effects on fauna and flora and/or potential health implications. If managed correctly the cumulative impact of vehicles on dust generation can be limited to low.

Mitigation measures to reduce potential impacts:

- Dust Management measures must be implemented specifically during the construction phase in order to manage and minimize undesired dust emissions.

There is not a significant amount of new cultivation developments taking place in the area and the cumulative impact of dust generation is therefore regarded as low.

8.1.7 Damage or destruction of archaeological and palaeontological heritage

A relatively low density of weathered stone tools was recorded as isolated surface occurrences, but no above-ground evidence was found of fossils, fossil exposures or in situ Stone Age archaeological sites. There are also no indications of rock art, prehistoric structures, graves or historically significant structures older than 60 years within the proposed development footprint. The area therefore poses no archaeological and palaeontological significance or value.

Mitigation measures to reduce potential impacts:

- Restrict all cultivation work to the proposed project footprint as this was the only area assessed during the site inspection.
- If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found during the proposed development, SAHRA APM Unit (Natasha Higgitt/John Gribble 021 462 5402) must be alerted. If

unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (Itumeleng Masiteng/Mimi Seetelo 012 320 8490), must be alerted immediately. A professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the findings. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required.

Due to the low archaeological and palaeontological significance/value of the area and the low potential of the majority of the surrounding area, the cumulative impact is regarded as low.

8.1.8 Job creation and capacity building (skills, experience and resources development)

The proposed project will result in the creation of a significant amount of employment opportunities during both the construction and operational phases. This will provide a financial advantage/benefit to members of the local community and is therefore seen as a positive localised socio-economic impact associated with the project

Mitigation measures to reduce potential impacts:

- Ensure that the principle of local employment is applied as far as possible during the project.

Small scale agricultural job creation in the area contributes to the alleviation of unemployment in the local municipal area and the cumulative positive impact is therefore regarded as medium positive.

8.2 Operational Phase

The potential environmental impacts associated with the operational phase of the proposed development.

8.2.1 Continued destruction/transformation of a Critical Biodiversity Area due to initial construction phase

The initial impact as per the construction phase will continue.

Mitigation measures to reduce potential impacts:

- Ensure no unnecessary expansion of the project footprint occurs.

The same medium cumulative impact as per the construction phase applies.

8.2.2 Continued destruction/damage to nationally protected tree species individuals

Activities during the operational phase could still cause harm to individuals of the protected tree species *Boscia albitrunca* (Shepherd's tree/witgat) which are intended to be preserved on site if their protection is not managed.

Mitigation measures to reduce potential impacts:

- Once the protected individuals identified for preservation have been adequately buffered, it is important that the buffer be sufficiently maintained on a continual basis to ensure its integrity and functionality. It can be a physical or hypothetical buffer.
- Complete a training and awareness intervention with the employees and any new/additional employees in order to inform them of the protected tree individuals as well as the reasoning behind the protection.

The same low cumulative impact as per the construction phase applies.

8.2.3 Continued destruction/damage to provincially protected species individuals

Once all identified provincially protected species individuals have been adequately relocated the project will not have an impact on them anymore.

Mitigation measures to reduce potential impacts:

- Ensure all identified provincially protected species individuals are suitably relocated with the assistance of a specialist prior to the commencement of any cultivation.

The same low cumulative impact as per the construction phase applies.

8.2.4 Continued impeding of a water catchment

The initial impact as per the construction phase will continue.

Mitigation measures to reduce potential impacts:

- Restrict all cultivation work to the proposed project footprint and prevent any unnecessary increase of the footprint size due to indiscriminate disturbance.

The same medium cumulative impact as per the construction phase applies.

8.2.5 Soil erosion

Although the topography of the area is relatively flat, the potential for loss of soil due to erosion is present due to the removal of natural vegetation and alteration of the landscape during the construction phase. This must be continually monitored and managed.

Mitigation measures to reduce potential impacts:

- Ensure adequate erosion control measures are implemented to reduce the risk of soil erosion during the operational phase.

The cumulative impact of this development is expected to be low due to the relatively flat topography of the larger area. This makes the larger area less prone to erosion.

8.2.6 Continued dust generation and emissions

The generation of dust will be considerably reduced once the vineyard has been established and continual irrigation commences. The generation of undesired dust will therefore be minimized.

Mitigation measures to reduce potential impacts:

- Continued Dust Management measures must be implemented in order to manage and minimize undesired dust emissions.

The same low cumulative impact as per the construction phase applies.

8.2.7 Continued damage or destruction of archaeological and palaeontological heritage

As per the construction phase the area poses no archaeological and palaeontological significance or value.

Mitigation measures to reduce potential impacts:

- Restrict all cultivation work to the proposed project footprint as this was the only area assessed during the site inspection.
- If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found during the proposed development, SAHRA APM Unit (Natasha Higgitt/John Gribble 021 462 5402) must be alerted. If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (Itumeleng Masiteng/Mimi Seetelo 012 320 8490), must be alerted immediately. A professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the findings. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required.

The same low cumulative impact as per the construction phase applies.

8.2.8 Continued job creation and capacity building (skills, experience and resources development)

Permanent job creation during the operational phase will be considerably lower than for the initial construction phase. It will however still provide a positive economic input/financial benefit into the local community and is therefore seen as a positive localised socio-economic impact associated with the project.

Mitigation measures to reduce potential impacts:

- Ensure that the principle of local employment is applied as far as possible during the project.

Small scale agricultural job creation in the area contributes to the alleviation of unemployment in the local municipal area and the cumulative positive impact is therefore regarded as medium positive.

8.3 Cumulative Impacts

There are various cultivated areas in the vicinity, specifically directly adjacent or in close proximity to the Orange River for water and irrigation purposes. The majority of the area is however still under natural veld conditions rendering the cumulative impacts of the project less significant. The identified impacts together with their cumulative effects have been discussed under heading 9.2.

The cumulative effects of most of the identified impacts are regarded as low - medium. The only impacts which could potentially cumulatively contribute to more significant combined effects are the transformation of the relevant vegetation type and CBA as well as the impeding of the local surface water catchment areas to the Orange River.

Although the area is classified as a CBA 1, the ground truthing indicated that it rather falls inside the adjacently located CBA 2. The CBA 2 is mainly based on the vegetation type present and this vegetation type is classified as least threatened. The cumulative impact of transformation of the vegetation type along with other cultivation developments in the area is therefore only regarded as medium also due to the vast size of the vegetation type.

The cumulative impact of impeding of the local surface water catchment areas to the Orange River along with other cultivation developments in the area is also regarded as having a medium level effect.

The cumulative impacts have been rated by the specialists and included in the descriptions and risk rating tables present under headings 9.2 and 9.3.

Terrestrial and Wetland Ecology

This project will not result in any significant cumulative impacts (low - medium) as the vegetation type is classified as least threatened and nationally and provincially protected species will be preserved and/or relocated as far as possible. The potential effects of dust and/or erosion will be managed in order to reduce the associated impacts.

Heritage

Due to the low archaeological and palaeontological significance/value of the area and the low potential of the majority of the surrounding area, the cumulative impact is regarded as low.

Socio-Economic description

The proposed project, along with other agricultural developments in the area, will cumulatively contribute to reduction in poverty and unemployment figures in the local community and municipal area by means of job creation and skills and experience development and transfer.

Conclusion

The potential cumulative impacts of this proposed vineyard development have been adequately assessed and no fatal flaws or unacceptable environmental impacts have been identified due to the cumulative effects in combination with other similar developments in the region which cannot be acceptably mitigated.

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8.4 Construction Phase Environmental Management Programme

The intention of providing an EMPr for the construction phase is to provide guidelines for management of processes, facilities and infrastructure to safeguard the environment against negative environmental impacts.

Table 8: Construction phase EMPr

CONSTRUCTION PHASE:PROPOSED CULTIVATION OF 100 HA ON PORTION 10 OF THE FARM DE EELT NO 26		**RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)**	**MONITORING (monitoring action, part responsible for monitoring and monitoring frequency)**	**COMPLIANCE (for use by ECO)**
GENERAL				
1. **Activity:** Permits and authorisations				
1.1	**Aspects:** Legislative compliance **Impact:** Non-compliance with South African environmental legislation. **Objective:** Ensure compliance with all triggered environmental legislation. **Target:** Commence site establishment and construction with all authorisations, permits and approvals received and available on site.	Applicant Applicant project manager	**Monitoring Action:** Obtain copies of all required documents and ensure they are filed and readily available on site; Adequate record keeping **Responsible party:** Applicant project manager ECO	
	Mitigation/Management Measures: a. The Developer is to have the following permits on commencement: • Environmental Authorisation • Ploughing certificate • Environmental Management Program (EMPr) • National and provincial permits for protected species			

CONSTRUCTION PHASE:PROPOSED CULTIVATION OF 100 HA ON PORTION 10 OF THE FARM DE EELT NO 26		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING (monitoring action, part responsible for monitoring and monitoring frequency)	COMPLIANCE (for use by ECO)
			Monitoring Frequency: Once off Keep on site	
2. **Activity:** Site Layout Planning and site establishment				
2.1	**Aspects:** Site Layout Plan **Impact:** Negative impact of inadequate planning, deviation from approved layout of infrastructure on the environment. Increase in environmental impact footprint. **Objective:** To ensure acceptable management and mitigation of environmental impacts on the project area footprint during construction by proper planning of layout of infrastructure placement. No unplanned/unmanaged increase in project footprint. **Target:** All areas falling outside the project footprint should remain unimpaired and vegetated and impacts should be minimised. No unplanned/unmanaged increase in project footprint. Minimal environmental impacts outside the footprint area. **Mitigation/Management Measures:** a. The final Site Layout Master Plan of the applicant must show the final positions and extent of all permanent and temporary site structures and infrastructure and laydown areas. This must be approved by all relevant parties in accordance with the Environmental Authorisation (EA) conditions prior to construction. b. The planning for layout and approval must be done in consultation with the ECO.	Applicant Applicant project manager Construction contractor manager ECO	**Monitoring Action:** Layout plan to be drawn up and approved on site by all relevant parties. Adequate and detailed final site layout plan must be available on site for inspections. Record Keeping. Continually compare construction progress with approved layout plan. **Responsible party:** Applicant Applicant project	

CONSTRUCTION PHASE:PROPOSED CULTIVATION OF 100 HA ON PORTION 10 OF THE FARM DE EELT NO 26		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING (monitoring action, part responsible for monitoring and monitoring frequency)	COMPLIANCE (for use by ECO)
			manager Construction contractor manager ECO **Monitoring Frequency:** Once off. Prior to commencement of any construction. Monthly comparison by ECO as construction continues.	
3. **Activity:** Construction Programme/Schedule				
3.1	**Aspects:** Project construction timeframe management **Impact:** Undesired extended time periods during construction which could prolong associated environmental impacts. **Objective:** To provide a clear indication of the order in which specific construction activities will occur as well as anticipated timeframes involved with all construction activities. **Target:** Ensure efficiency of construction processes and order of events in order to complete the construction phase in the most efficient possible manner to reduce environmental impact durations and subsequent significances. Coordinate the availability of any required specialists into the anticipated program in order to enable them to adequately fulfil their advisory duties.	Applicant Applicant project manager Construction contractor manager ECO	**Monitoring Action:** Construction Programme/Schedule to be drawn up and approved on site by all relevant parties. Construction progress to be monitored against the schedule and updated	
	<u>Mitigation/Management Measures:</u> a. Draw up and sign off a project schedule with all relevant parties and service providers to commit to a timeline during which time			

CONSTRUCTION PHASE:PROPOSED CULTIVATION OF 100 HA ON PORTION 10 OF THE FARM DE EELT NO 26	RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING (monitoring action, part responsible for monitoring and monitoring frequency)	COMPLIANCE (for use by ECO)
construction milestones will be completed; b. Communicate any deviation from this schedule with all parties, so as to provide parties with sufficient opportunity for alternative arrangements to be made; Continually update program accordingly c. Establish a risk register to identify and monitor potential factors which may result in setbacks/ delays on tasks within the project schedule; d. Hold management meetings with representatives of the construction contractor and other contributing parties to monitor and anticipate changes; e. Should circumstances/incidents arise which may pose a risk to the project schedule, the applicant project manager, construction contractor and ECO are to keep records of this and the latter communicate this in the ECO monthly report.		when relevant. Meetings to be held to discuss progress and ECO Audit to be conducted monthly. **Responsible Party:** Applicant Applicant project manager Construction contractor manager ECO **Monitoring Frequency:** Once off. Prior to commencement of any construction. Monthly comparison by ECO as construction continues.	

CONSTRUCTION PHASE:PROPOSED CULTIVATION OF 100 HA ON PORTION 10 OF THE FARM DE EELT NO 26	RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING (monitoring action, part responsible for monitoring and monitoring frequency)	COMPLIANCE (for use by ECO)
4. **Activity:** Communication with surrounding land-owners			
Aspects: Surrounding landowner communication **Impact:** Disturbance and nuisance to surrounding (unexpected by owners) **Objective:** Maintain a conflict-free relationship with surrounding landowners/users. **Target:** No complaints received from surrounding landowners/users during the construction phase. **Mitigation/Management Measures:** a. Surrounding landowners are to be made aware of the intended commencement of the construction phase a month in advance of the starting dates. b. All parties wishing to enter the construction area during construction must first liaise with the construction contractor manager for safety purposes. c. All property gates are to be kept closed when not in use (or kept in the open/closed state in which it was found); d. A public complaint register must be kept on site. Any complaint from surrounding land owners or liaison with regard to environmental aspects must be recorded in the complaints register and the ECO and applicant project manager must be informed in order to address the issue. e. Continual monthly communication with surrounding land owners.	Applicant project manager Construction contractor manager ECO	**Monitoring Action:** Ensure that all surrounding landowners were adequately informed of the intended commencement of the construction phase a month in advance of the starting dates. Ensure public complaints register is readily available and signed off by the applicant project manager and construction contractor on a monthly basis. Ensure that all complaint recorded are adequately addressed.	

CONSTRUCTION PHASE:PROPOSED CULTIVATION OF 100 HA ON PORTION 10 OF THE FARM DE EELT NO 26		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING (monitoring action, part responsible for monitoring and monitoring frequency)	COMPLIANCE (for use by ECO)
			Responsible Party: Applicant project manager Contractor project manger ECO **Monitoring Frequency:** Once off notification prior to commencement. Continual monthly monitoring by ECO.	
5. **Activity:** Site Establishment (demarcation)				
5.1	**Aspects:** Demarcation of the site **Impact:** Disturbance of natural vegetation and faunal habitat during demarcation of all project areas **Objective:** Ensure compliance with approved layout planning. Prevent unnecessary/unmanaged increase in project footprint or environmental impacts outside the project footprint. **Target:** All areas not forming part of the project footprint and not demarcated for construction should remain vegetated and impacts should be minimised as far as practicably possible.	Applicant project manager Construction contractor manager	**Monitoring Action:** ECO to take photographs and note environmental conditions of site before and during demarcation	

CONSTRUCTION PHASE:PROPOSED CULTIVATION OF 100 HA ON PORTION 10 OF THE FARM DE EELT NO 26		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING (monitoring action, part responsible for monitoring and monitoring frequency)	COMPLIANCE (for use by ECO)
	Mitigation/Management Measures: a. No natural areas outside the project footprint to be demarcated. b. Ensure the upkeep of demarcation boundaries throughout the period of construction until completed to ensure no increase in footprint impact. c. Construction areas must be adequately demarcated; this will prevent unmanaged increase of the footprint as well as assist with access control management. d. Ensure all required national and provincial permits are obtained for protected species prior to site establishment commencement e. The contractor may only clear vegetation within the project area. f. Cleared material to be adequately and safely disposed of. g. No open fires may occur at or outside of the construction site. h. Restrict construction activities to the boundaries of the development. i. Restrict movement of vehicles and personnel to the footprint of the construction site.	ECO	and include in ECO Audit Report. Ensure no unnecessary demarcation expansion outside the project footprint. **Responsible Party:** ECO **Monitoring Frequency:** Prior to establishment Monthly	
6. **Activity:** Earth-works (soil preparation)				
6.1	**Aspects:** Soil preparation (ripping, discing, fertilising, planting). **Impact:** Vegetation clearance, destruction of habitat and alteration of the terrain surface shaping and water flow by soil preparation activities **Objective:** Minimise vegetation clearance and restrict to the project footprint. Firstly remove and relocate all identified relevant protected species. Ensure adequate buffer around nationally protected tree individuals to be kept on site. **Target:** Maintain all environmental impacts of soil preparation activities to within the construction footprint area. No damage/destruction to provincially protected species which have been relocated and to buffered nationally protected tree species.	Applicant project manager Construction contractor manager ECO	**Monitoring Action:** ECO and applicant project manager to audit soil preparation footprint with layout plan.	

CONSTRUCTION PHASE:PROPOSED CULTIVATION OF 100 HA ON PORTION 10 OF THE FARM DE EELT NO 26		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING (monitoring action, part responsible for monitoring and monitoring frequency)	COMPLIANCE (for use by ECO)
	Mitigation/Management Measures: a. Soil preparation must be strictly conducted in accordance with the demarcated final layout. No earth works to take place outside the project boundaries. b. Cleared material to be adequately and safely disposed of. c. Firstly remove and relocate all identified relevant protected species. d. Implement and maintain adequate buffers around nationally protected tree individuals to be kept on site. e. All hazardous substances kept on site such as hydrocarbons (fuel and oils) must be stored in an adequate secondary containment system (trays or bunded areas) which is capable of storing at least 110% of the liquid capacity. If bunded areas are used, bund areas should be sealed on the inside to avoid seepages. f. Adequate measures must be put in place in order to prevent hydrocarbon spillages during refuelling process. Drip trays to be utilised. g. Vehicle services must as far as practicably possible not take place on site. If repair is required on site adequate measures must be put in place in order to prevent hydrocarbon spillages.		ECO to audit removal of protected species and buffering of nationally protected tree individuals to be kept on site. Complete monthly ECO audit report to discuss progress. **Responsible Party:** Applicant project manager ECO **Monitoring Frequency:** Monthly Continually during soil preparation processes.	
7. **Activity:** Site Infrastructure placement and construction				
7.1	**Aspects:** Construction of water settling dam and pumps and pipeline **Impact:** Vegetation clearance, destruction of habitat and alteration of the terrain surface shaping and water flow **Objective:** Minimise vegetation clearance and restrict to the infrastructure footprint. Firstly remove and relocate all identified relevant	Applicant project manager	**Monitoring Action:** ECO and applicant project	

CONSTRUCTION PHASE:PROPOSED CULTIVATION OF 100 HA ON PORTION 10 OF THE FARM DE EELT NO 26	RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING (monitoring action, part responsible for monitoring and monitoring frequency)	COMPLIANCE (for use by ECO)
protected species. Ensure adequate buffer around nationally protected tree individuals to be kept on site. **Target:** Maintain all environmental impacts of soil preparation activities to within the infrastructure footprint area. No damage/destruction to provincially protected species which have been relocated and to buffered nationally protected tree species.	Construction contractor manager ECO	manager to audit infrastructure construction footprint with layout plan. ECO to audit removal of protected species and buffering of nationally protected tree individuals to be kept on site. Complete monthly ECO audit report to discuss progress. **Responsible Party:** Applicant project manager ECO **Monitoring Frequency:** Monthly Continually during infrastructure	
Mitigation/Management Measures: a. Construct all required infrastructure (water settling dam and pipeline) in accordance with approved layout plan and footprints. b. Firstly remove and relocate all identified relevant protected species. c. Implement and maintain adequate buffers around nationally protected tree individuals to be kept on site. d. All hazardous substances kept on site such as hydrocarbons (fuel and oils) must be stored in an adequate secondary containment system (trays or bunded areas) which is capable of storing at least 110% of the liquid capacity. If bunded areas are used, bund areas should be sealed on the inside to avoid seepages. e. Adequate measures must be put in place in order to prevent hydrocarbon spillages during refuelling process. Drip trays to be utilised. f. Vehicle services must as far as practicably possible not take place on site. If repair is required on site adequate measures must be put in place in order to prevent hydrocarbon spillages.			

CONSTRUCTION PHASE:PROPOSED CULTIVATION OF 100 HA ON PORTION 10 OF THE FARM DE EELT NO 26		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING (monitoring action, part responsible for monitoring and monitoring frequency)	COMPLIANCE (for use by ECO)
			construction processes.	
8. **Activity:** Construction site operations				
8.1	**Aspects:** Existing Services and Infrastructure **Impact:** Damage to existing services and infrastructure **Objective:** No damages to existing services and infrastructure **Target:** No damages to existing services and infrastructure **Mitigation/Management Measures:** a. Take cognisance of the position of existing services and infrastructure (e.g. electrical pumping, roads, pipelines, power lines and telephone services) that may potentially get damaged due to construction activities. b. Ensure that existing services are not damaged or disrupted. c. In the event that infrastructure is damaged or services interrupted during construction, the applicant project manager and ECO must be informed immediately. The party responsible for the damages will be held financially liable for repairs and losses incurred.	Applicant project manager Construction contractor manager	**Monitoring** ECO and applicant project manager to audit impacts on existing infrastructure. **Responsible Party:** Applicant project manager ECO **Monitoring Frequency:** Monthly Continually during construction processes.	
8.2	**Aspects:** Erosion Control **Impact:** Loss of topsoil and formation of gullies through wash away **Objective:** Manage and prevent any significant soil erosion **Target:** No signs of significant soil erosion and loss of topsoil should be evident on site.	Applicant project manager Construction	**Monitoring** ECO and applicant project manager to audit	

CONSTRUCTION PHASE:PROPOSED CULTIVATION OF 100 HA ON PORTION 10 OF THE FARM DE EELT NO 26		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING (monitoring action, part responsible for monitoring and monitoring frequency)	COMPLIANCE (for use by ECO)
	Mitigation/Management Measures: a. Ensure adequate erosion control measures are implemented to reduce the risk of soil erosion once vegetation clearance has taken place. b. Prevent unnecessary clearance and disturbance outside the project footprint. Stabilize that area as quickly as possible, control drainage through the area, and trap sediment onsite. c. Apply erosion control measures before the rainy season begins preferably immediately following construction.	contractor manager	potential erosion during the construction phase. **Responsible Party:** Applicant project manager ECO **Monitoring Frequency:** Monthly Continually during construction processes.	
8.3	**Aspects:** Cleared materials **Impact:** Inadequate disposal of cleared materials. **Objective:** Optimise the disposal and reuse of cleared materials. **Target:** All cleared materials should be adequately disposed of or reused.	Applicant project manager Construction contractor manager	**Monitoring** ECO and applicant project manager to audit adequate storage and disposal of cleared materials. **Responsible Party:** Applicant project manager	
	Mitigation/Management Measures: a. Storage and disposal of cleared materials should be adequately handled in order not to increase the proposed project footprint and environmental impacts into surrounding areas. Areas must be designated for storage and removal. b. If no adequate on-site disposal or reuse opportunities exist, cleared materials must be disposed of at the nearest registered solid waste disposal facility.			

CONSTRUCTION PHASE:PROPOSED CULTIVATION OF 100 HA ON PORTION 10 OF THE FARM DE EELT NO 26		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING (monitoring action, part responsible for monitoring and monitoring frequency)	COMPLIANCE (for use by ECO)
			ECO **Monitoring Frequency:** Monthly Continually during construction processes.	
8.4	**Aspects:** Solid Waste Handling **Impact:** Pollution and site contamination by solid waste **Objective:** Minimise the generation of solid waste. Dispose of solid waste in the appropriate manner to a landfill site. **Target:** No record of pollution or site contamination by solid waste. **Mitigation/Management Measures:** a. Adequate waste containers to be provided on site. b. Keep the footprint area litter free and tidy. c. All domestic waste is to be removed from site as and when required and disposed of at a registered solid waste landfill site. d. Care should be taken to ensure that no waste is lost off disposal vehicles on route to the landfill. If needed, a tarpaulin can be utilised. e. Do not dump waste of any nature, or any foreign material in any drainage lines. f. The burning or burial of solid waste on site is prohibited. g. It is envisage that no significant hazardous waste will be generated on site during the construction or operational phases of the project. If any significant hazardous waste is however generated a suitable, registered waste contactor will be contracted to adequately remove and dispose of it.	Applicant project manager Construction contractor manager ECO	**Monitoring Action:** ECO to audit and report on waste management and removal on a monthly basis. **Responsible Party:** ECO **Monitoring Frequency:** Monthly	

CONSTRUCTION PHASE:PROPOSED CULTIVATION OF 100 HA ON PORTION 10 OF THE FARM DE EELT NO 26		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING (monitoring action, part responsible for monitoring and monitoring frequency)	COMPLIANCE (for use by ECO)
8.5	**Aspects:** Sewage waste **Impact:** Pollution and site contamination by sewage. **Objective:** Provide facilities for appropriate management collection and disposal of sewage. Sewage containment sizes and removal frequencies should be appropriate in order to prevent any potential chances of overflow and environmental contamination. **Target:** No record of pollution or site contamination by sewage. **Mitigation/Management Measures:** a. Sufficient portable chemical toilets will be supplied on site for the manual labourers during the construction phase. These toilets will be cleaned and waste removed by an appropriate contractor on a regular basis as and when required. b. Sufficient portable chemical toilets will also be supplied on site for the manual labourers during the short annual harvesting periods. These toilets will be cleaned and waste removed by an appropriate contractor on a regular basis as and when required. c. Do not locate a site toilet within the 1:100 year floodline, or within a distance of 100 m of any drainage lines; d. Toilets are to be maintained and cleaned regularly to ensure functionality and an adequate level of hygiene. This will assist with disease prevention. e. Removal of sewage from sight should be conducted on an adequate and frequent basis by an accredited contractor. f. Only toilet paper is to be flushed down the chemical toilets. Personnel are to be informed on sanitary implementation as part of the environmental awareness.	Applicant project manager Construction contractor manager ECO	**Monitoring Action:** ECO to audit and report on sewage management and removal on a monthly basis. Proof of removal to be provided **Responsible Party:** ECO **Monitoring Frequency:** Monthly	
8.6	**Aspects:** Dust Generation **Impact:** Dust emissions and nuisance from construction operations **Objective:** To avoid excessive dust generation during and after construction activities. **Target:** Minimise the incidence of dust generation and no public complaints of dust generation. **Mitigation/Management Measures:** a. Dust Management measures must be implemented specifically during the construction phase in order to manage and minimize undesired dust emissions. Leaving of vegetation material on the surface after ripping actions will assist with reduction in dust	Applicant project manager Construction contractor manager	**Monitoring Action:** ECO to audit and report on dust generation management and implementation of mitigation measures if	

CONSTRUCTION PHASE:PROPOSED CULTIVATION OF 100 HA ON PORTION 10 OF THE FARM DE EELT NO 26		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING (monitoring action, part responsible for monitoring and monitoring frequency)	COMPLIANCE (for use by ECO)
	emissions. b. Ensure all vehicles remain on designated roads. c. Dust masks are to be supplied to workers if required. d. Access roads are to be kept clean. e. The minimum amount of vegetation should be removed during construction, and should be conserved for use as organic matter in the soil and dust generation surface cover. f. Implement a public complaints register in order to be made aware of any potential dust impacts on surrounding areas.		necessary. A public complaints register to be present on site and checked during each monthly ECO inspection. **Responsible Party:** ECO **Monitoring Frequency:** Monthly	
8.7	**Aspects:** Noise Generation **Impact:** Noise nuisance from site operations **Objective:** To avoid excessive noise generation from site operations. **Target:** Minimise the incidence of noise generation and no public complaints of noise generation.. **Mitigation/Management Measures:** a. Should multiple activities result in the excessive generation of noise, it should be strived to coordinate the incidence of these at the same time. b. Fit machinery with silencers in necessary to prevent excessive noise generation. c. All stationary noisy equipment such as compressors and pumps should be contained behind acoustic covers, screens or sheds where necessary. d. The regular inspection and maintenance of equipment must be undertaken to ensure that all components function optimally; e. Vehicles are to abide by speed restrictions on access roads and limit trip generation so as to minimise disturbance to surrounding	Applicant project manager Construction contractor manager	**Monitoring Action:** ECO to audit and report on noise generation management and implementation of mitigation measures if necessary. A public complaints register to be present on site and checked during each monthly ECO inspection.	

CONSTRUCTION PHASE:PROPOSED CULTIVATION OF 100 HA ON PORTION 10 OF THE FARM DE EELT NO 26		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING (monitoring action, part responsible for monitoring and monitoring frequency)	COMPLIANCE (for use by ECO)
	land users. f. Implement a public complaints register in order to be made aware of any potential noise impacts on surrounding areas.		**Responsible Party:** ECO **Monitoring Frequency:** Monthly	
8.8	**Aspects:** Fire Prevention **Impact:** Uncontrollable fire damage to areas **Objective:** Prevent the outbreak of fires emanating during construction activities. **Target:** No incidences of uncontrollable fires must take place on site.			
	Mitigation/Management Measures: a. No open fires allowed on the project footprint. b. The potential risk of veld fires is heightened by windy conditions in the area, specifically during the dry, windy winter months. c. Assume acceptable precautions to guarantee that fires are not started as a result of works on site. The construction contractor will be held responsible for any damage to structures or property on or neighbouring the site as a result of any fire caused by employees. d. Construction contractor manager should ensure that construction related activities that pose a potential fire risk are properly managed and confined to areas where the risk of fires has been reduced. In this regard special care should be taken during the high risk dry, windy winter months. e. The construction contractor should have a trained fire-fighting construction staff member and take cognisance of the Veld and Forest Fire Act, Act No. 101, 1998; f. As per the conditions of the Code of Conduct, in the advent of a fire being caused by construction workers and or construction activities, the appointed contractors must compensate farmers for any damage caused to their farms. The contractor should also compensate the fire-fighting costs borne by farmers and local authorities.	Applicant project manager Construction contractor manager	**Monitoring Action:** ECO to audit and report on fire prevention measures if necessary. Check incident register for any recordings of accidental fires. **Responsible Party:** ECO **Monitoring Frequency:** Monthly	

CONSTRUCTION PHASE:PROPOSED CULTIVATION OF 100 HA ON PORTION 10 OF THE FARM DE EELT NO 26		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING (monitoring action, part responsible for monitoring and monitoring frequency)	COMPLIANCE (for use by ECO)
	g. Equip vehicles and site structures with fire extinguishers. Rubber beaters should also be stored on site; h. Storage of fuel or chemicals under trees is not permitted. Fuel storage areas must be clear of any significant burning fuel. i. Gas and liquid fuel is not to be stored in the same place. j. Cigarettes and matches to be adequately disposed of. k. Material Safety Data Sheets (MSDS) of all flammable products to be readily available.			
8.9	**Aspects:** Local communities **Impact:** Local job creation **Objective:** Create new jobs and provide a manner of income to local communities. **Target:** Implement the principle of local employment as far as possible.	Applicant Applicant project manager	**Monitoring Action:** ECO to inspect implementation of local	

CONSTRUCTION PHASE:PROPOSED CULTIVATION OF 100 HA ON PORTION 10 OF THE FARM DE EELT NO 26		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING (monitoring action, part responsible for monitoring and monitoring frequency)	COMPLIANCE (for use by ECO)
	Mitigation/Management Measures: a. Implement the principle of local employment as far as possible in order to provide job opportunities and a manner of income to the local communities.	Construction contractor manager	employment principle. **Responsible Party:** ECO **Monitoring Frequency:** Prior to the commencement of the construction phase.	
8.10	**Aspects:**Heritage resources conservation **Impact:** Damage/destruction to any significant heritage (archaeologically and/or paleontologically) items or areas found on site. **Objective:** No significant damage to any significant heritage items found on site **Target:** No significant damage. **Mitigation/Management Measures:** a. Restrict all cultivation work to the proposed project footprint as this was the only area assessed during the site inspection. b. If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone	Applicant project manager Construction contractor manager ECO	**Monitoring Action:** ECO and applicant project manager to ensure that construction contractor manager is aware of and enforces the mitigation conditions.	

CONSTRUCTION PHASE:PROPOSED CULTIVATION OF 100 HA ON PORTION 10 OF THE FARM DE EELT NO 26		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING (monitoring action, part responsible for monitoring and monitoring frequency)	COMPLIANCE (for use by ECO)
	artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found during the proposed development, the ECO and SAHRA APM Unit (Natasha Higgitt/John Gribble 021 462 5402) must be alerted. If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (Itumeleng Masiteng/Mimi Seetelo 012 320 8490), must be alerted immediately. A professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the findings. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required.		**Responsible Party:** Applicant project manager ECO **Monitoring Frequency:** Monthly. Continually during the construction phase.	

8.5 Operational Phase Environmental Management Programme

The intention of providing an EMPr for the operational phase is to provide guidelines for management of processes, facilities and infrastructure to safeguard the environment against negative environmental impacts.

Table 9: Operational Construction phase EMPr

CONSTRUCTION PHASE:PROPOSED CULTIVATION OF 100 HA ON PORTION 10 OF THE FARM DE EELT NO 26		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING (monitoring action, part responsible for monitoring and monitoring frequency)	COMPLIANCE (for use by ECO)
1. **Activity:** Permits and authorisations				
	Aspects: Legislative compliance **Impact:** Non-compliance with South African environmental legislation. **Objective:** Ensure compliance with all triggered environmental legislation. **Target:** Commence operational processes with all authorisations, permits and approvals received and available on site.	Applicant Applicant project manager	**Monitoring Action:** Obtain copies of all required documents and ensure they are filed and readily available on site; Adequate record keeping **Responsible party:** Applicant project manager ECO **Monitoring Frequency:** Once off Keep on site	
	Mitigation/Management Measures: b. The Developer is to have the following permits on site: • Environmental Authorisation • Ploughing certificate • Environmental Management Program (EMPr) • National and provincial permits for protected species			

2. **Activity:** Operational site operations				
2.1	**Aspects:** Erosion Control **Impact:** Loss of topsoil and formation of gullies through wash away **Objective:** Manage and prevent any significant soil erosion **Target:** No signs of significant soil erosion and loss of topsoil should be evident on site. **Mitigation/Management Measures:** a. Ensure adequate erosion control measures are implemented and maintained to reduce the risk of soil erosion. **b.** Apply erosion control measures before the rainy season begins preferably immediately following construction. Ensure maintenance of implemented erosion management structures and measures.	Applicant project manager	**Monitoring** Applicant project manager manage potential erosion. **Responsible Party:** Applicant project manager **Monitoring Frequency:** Continually.	
2.2	**Aspects:** Solid Waste Handling during harvesting times **Impact:** Pollution and site contamination by solid waste **Objective:** Minimise the generation of solid waste. Dispose of solid waste in the appropriate manner to a landfill site. **Target:** No record of pollution or site contamination by solid waste. **Mitigation/Management Measures:** a. Adequate waste containers to be provided on site during harvesting time. b. Keep the footprint area litter free and tidy. c. All domestic waste is to be removed from site as and when required and disposed of at a registered solid waste landfill site. d. Care should be taken to ensure that no waste is lost off disposal vehicles on route to the landfill. If needed, a tarpaulin can be utilised. e. Do not dump waste of any nature, or any foreign material in any drainage lines. f. The burning or burial of solid waste on site is prohibited.	Applicant project manager	**Monitoring Action:** Applicant project manager to manage waste management and removal during harvesting times. **Responsible Party:** Applicant project manager **Monitoring Frequency:** During harvesting times	

2.3	**Aspects:** Sewage waste during harvesting times **Impact:** Pollution and site contamination by sewage. **Objective:** Provide facilities for appropriate management collection and disposal of sewage during harvesting times. Sewage containment sizes and removal frequencies should be appropriate in order to prevent any potential chances of overflow and environmental contamination. **Target:** No record of pollution or site contamination by sewage. **Mitigation/Management Measures:** a. Sufficient portable chemical toilets will be supplied on site for the manual labourers during the harvesting times. These toilets will be cleaned and waste removed by an appropriate contractor on a regular basis as and when required. b. Do not locate a site toilet within the 1:100 year floodline, or within a distance of 100 m of any drainage lines; c. Toilets are to be maintained and cleaned regularly to ensure functionality and an adequate level of hygiene. This will assist with disease prevention. d. Removal of sewage from sight should be conducted on an adequate and frequent basis by an accredited contractor. e. Only toilet paper is to be flushed down the chemical toilets. Personnel are to be informed on sanitary implementation as part of the environmental awareness.	Applicant project manager	**Monitoring Action:** Applicant project manager to manage sewage management and removal during harvesting times. **Responsible Party:** Applicant project manager **Monitoring Frequency:** During harvesting times	
2.4	**Aspects:** Fire Prevention during harvesting times **Impact:** Uncontrollable fire damage to areas **Objective:** Prevent the outbreak of fires emanating during harvesting times. **Target:** No incidences of uncontrollable fires must take place on site. **Mitigation/Management Measures:** a. No open fires allowed on the project footprint. b. The potential risk of veld fires is heightened by windy conditions in the area, specifically during the dry, windy winter months. c. Assume acceptable precautions to guarantee that fires are not started as a result of works on site. d. Equip vehicles and site structures with fire extinguishers. Rubber beaters should also be stored on site; e. Storage of fuel or chemicals under trees is not permitted. Fuel storage areas must be clear of any significant burning fuel. f. Gas and liquid fuel is not to be stored in the same place. g. Cigarettes and matches to be adequately disposed of.	Applicant project manager	**Monitoring Action:** Applicant project manager to monitor fire prevention measures if necessary. **Responsible Party:** Applicant project manager **Monitoring Frequency:** During harvesting times	

	h. Material Safety Data Sheets (MSDS) of all flammable products to be readily available.			
2.5	**Aspects:** Water Conservation **Impact:** Wasting water as a result of negligence or inadequate usage planning and management of irrigation (overuse) **Objective:** Promote and implement water use efficiency mechanisms through adequate planning and management of irrigation. **Target:** No unnecessary water wastage. Keep irrigation and water use within the allocated water volumes and as required for the operational processes. Reduce usage as far as possible. **Mitigation/Management Measures:** a. Implement adequate irrigation and water usage planning and management measures in accordance with site requirement and allocated water volumes in order to avoid unnecessary water usage (wastage). b. Prevent leakages in the irrigation system by means of frequent maintenance.	Applicant project manager	**Monitoring Action:** Applicant project manager to continually monitor water usage. **Responsible Party:** Applicant project manager **Monitoring Frequency:** Continual	
2.6	**Aspects:** Local communities during harvesting times **Impact:** Local job creation **Objective:** Create new jobs and provide a manner of income to local communities. **Target:** Implement the principle of local employment as far as possible.	Applicant Applicant project manager	**Monitoring Action:** Applicant project manager to ensure implementation of local employment principle. **Responsible Party:** Applicant Applicant project manager **Monitoring Frequency:** During harvesting times	

	Mitigation/Management Measures: a. Implement the principle of local employment as far as possible in order to provide job opportunities and a manner of income to the local communities.			

9 Emergency Response Plan

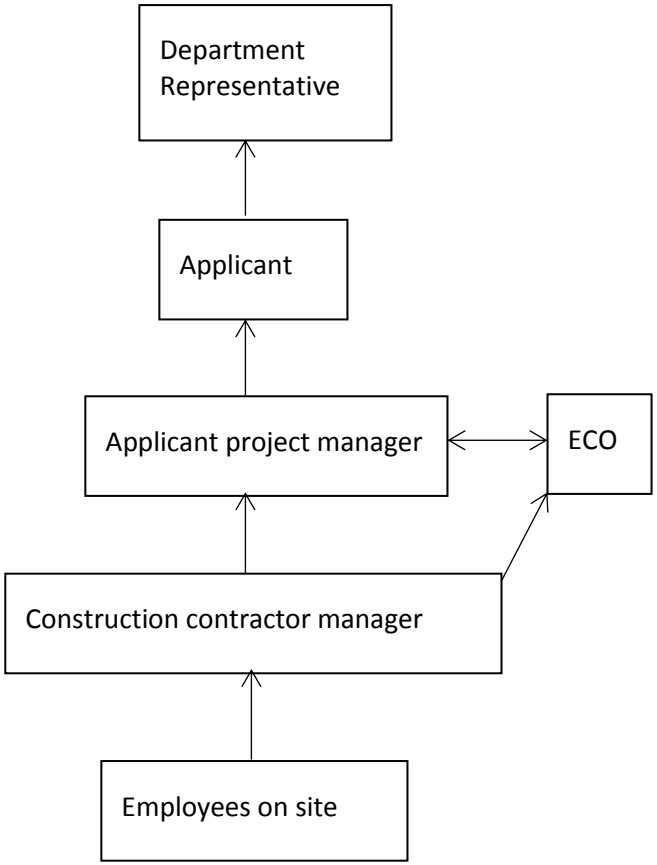
The following table is provided to assist the ECO and contractor manager with remedial work options and problem solving in the event of potential environmental emergencies occurring on site:

Table 10: Details of emergency response plan

Observation or Event	Action by Inspector or Observer	Action by Contractor manger
Spillage of hazardous substances	Immediately report to construction contractor manager, applicant project manager and ECO. Immediately put emergency response plan into action	Immediate action will be required by implementing the following steps: See responsibility organogram below. • Immediately stop work and isolate the contaminated area as soon and well as possible. • Isolate source of contamination in order to prevent increase in pollution footprint or severity. • Inform the relevant construction contractor manager, applicant project manager and ECO. • Construction contractor manager, applicant project manager and ECO to implement clean-up procedure • Dig down into the soil to determine the pollution penetration depth. • If less than 300 mm penetrated: o Turn the soil over to expose it to the air. o Apply Mono Ammonium Phosphate (MAP) at a rate of 58 gr/m² to the overturned soil. o Water enough to keep the soil moist. • If penetration is greater than 300 mm: o Remove the affected soil and spread in a layer not more than 300 mm thick. o Apply MAP at a rate of 50gr/m². o Water enough to keep the soil moist. • Repeat the above steps every 6 weeks or until the soil is clean. • Inform the relevant governmental department of the incident.
Fire outbreak	Immediately report to construction contractor manager who in turn must inform the applicant project manager and all relevant local emergency	Action will be required ASAP by following the next steps: Remove all potential burning fuel as far as possible and start extinguishing fire from the base of the sources. Inform all relevant local emergency authorities in order to provide assistance if necessary.

Observation or Event	Action by Inspector or Observer	Action by Contractor manger
	authorities. Immediately put emergency response plan into action.	

Responsibility and Reporting Organogram in the event of an emergency



10 Complaints/Incident Register

COMPLAINTS/INCIDENT REGISTER: PROPOSED CULTIVATION OF A 100 HA VINEYARD					
NAME OF PERSON REPORTING THE COMPLAINT/ INCIDENT	**DESCRIPTION OF COMPLAINT/ INCIDENT**	**DATE OF COMPLAINT/ INCIDENT**	**HOW WAS COMPLAINT/ INCIDENT ADDRESSED**	**DATE OF RECTIFICATION**	**SIGNATURE**

11 Decommissioning Phase

If the operational phase is ever concluded in the future, the area will be suitable rehabilitated in order to return the project area to a self-sustainable ecological state..

In the event of decommission, the footprint area needs to be suitably rehabilitated. It will entail infrastructure removal; site clean-up and environmental rehabilitation of the area to a suitably functional ecological state. The underlying aim of this phase is therefore to return the landscape to a suitable self-sustainable landscape.

Key aspects within this process include the:

- Removal of structures and infrastructure;
- Handling of inert waste and rubble;
- Final shaping of the terrain profile in line with the natural topography and water catchment and drainage
- Soil cultivation (ripping and scarifying of surfaces)
- Amelioration and grassing of adequate indigenous vegetation
- Adequate follow up amelioration and maintenance for a period as indicated by a specialist.

12 Conclusion

The management and subsequent monitoring measures and recommendations as indicated in this EMPr document need to be adequately implemented and continually enforced by the assigned responsible role-players. This will ensure the successful management and minimisation of environmental risks and potential impacts associated with the project. The development needs to be completed and operated in an environmentally sustainable and responsible manner in strict accordance with the Environmental Authorisation (EA) and EMPr requirements.