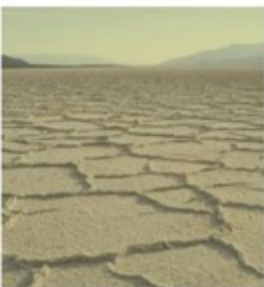


# Draft Basic Assessment Report Imvubu Berries: Upgrade of Existing Farm Dams and Construction of a New Dam

LEDET REF: 1138782

October 2020



## IMVUBU BERRIES : UPGRADE OF EXISTING FARM DAMS AND CONSTRUCTION OF A NEW DAM

ENVIRONMENTAL IMPACT ASSESSMENT  
DRAFT BASIC ASSESSMENT REPORT  
DATE OCTOBER 2020

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# LIMPOPO

## PROVINCIAL GOVERNMENT

REPUBLIC OF SOUTH AFRICA

### DEPARTMENT OF ECONOMIC DEVELOPMENT, ENVIRONMENT & TOURISM

#### BASIC ASSESSMENT REPORT – EIA REGULATIONS, 2014

Basic Assessment report in terms of the Environmental Impact Assessment Regulations, 2014, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

File Reference Number:	
	(For official use only)
NEAS Reference Number:	
Date Received:	
Due date for acknowledgement:	
Due date for acceptance:	
Due date for decision	

**Kindly note that:**

1. The report must be compiled by an independent Environmental Assessment Practitioner.
2. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
3. Where applicable **tick** the boxes that are applicable in the report.
4. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the Department of Economic Development, Environment and Tourism as the competent authority (Department) for assessing the application, it may result in the rejection of the application as provided for in the regulations.
5. An incomplete report may be returned to the applicant for revision.
6. Unless protected by law, all information in the report will become public information on receipt by the department. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
7. The Act means the National Environmental Management Act (No. 107 of 1998) as amended.
8. Regulations refer to Environmental Impact Assessment (EIA) Regulations of 2014.
9. The Department may require that for specified types of activities in defined situations only parts of this report need to be completed. No faxed or e-mailed reports will be accepted.
10. This application form must be handed in at the offices of the Department of Economic Development, Environment and Tourism:-

<b>Postal Address:</b> Central Administration Office Environmental Impact Management P. O. Box 55464 POLOKWANE 0700	<b>Physical Address:</b> Central Administration Office Environmental Affairs Building 20 Hans Van Rensburg Street / 19 Biccard Street POLOKWANE 0699
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Queries should be directed to the Central Administration Office: Environmental Impact Management:-  
For attention: Mr E. V. Maluleke; Mobile: 082 947 7755; Email: malulekeev@ledet.gov.za  
View the Department's website at <http://www.ledet.gov.za/> for the latest version of the documents.

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## GLOSSARY OF TERMS

Activity (Development) – an action either planned or existing that may result in environmental impacts through pollution or resource use.

Alien vegetation - Alien vegetation is defined as undesirable plant growth (usually of foreign origin) which includes, but is not limited to all declared category 1 and 2 listed invader species as set out in the 1983 Conservation of Agricultural Resources Act (CARA) regulations. Other vegetation deemed to be alien are those plant species that show the potential to occupy in number any area within the defined construction area and which are declared undesirable.

Alternative – a possible course of action, in place of another, of achieving the same desired goal of the proposed project. Alternatives can refer to any of the following but are not limited to: site alternatives, site layout alternatives, design or technology alternatives, process alternatives or a no-go alternative. All reasonable alternatives must be rigorously explored and objectively evaluated.

Applicant – the project proponent or developer responsible for submitting an environmental application to the relevant environmental authority for environmental authorisation.

Biodiversity – the diversity of animals, plants and other organisms found within and between ecosystems, habitats, and the ecological complexes.

Construction – means the building, erection or establishment of a facility, structure or infrastructure that is necessary for the undertaking of a listed or specified activity but excludes any modification, alteration or expansion of such a facility, structure or infrastructure and excluding the reconstruction of the same facility in the same location, with the same capacity and footprint.

Cumulative Impacts – impacts that result from the incremental impact of the proposed activity on a common resource when added to the impacts of other past, present or reasonably foreseeable future activities to produce a greater impact or different impacts.

Direct impacts – impacts that are caused directly by the activity and generally occur at the same time and at the same place of the activity. These impacts are usually associated with the construction, operation or maintenance of an activity and are generally quantifiable.

Ecosystem – a dynamic system of plant, animal (including humans) and micro-organism communities and their non-living physical environment interacting as a functional unit. The basic structural unit of the biosphere, ecosystems are characterised by interdependent interaction between the component species and their physical surroundings. Each ecosystem occupies a space in which macro-scale conditions and interactions are relatively homogenous.

Emmissions - The release or discharge of a substance into the environment which generally refers to the release of gases or particulates into the air.

Environment – In terms of the National Environmental Management Act (NEMA) (Act No 107 of 1998) (as amended), "Environment" means the surroundings within which humans exist and that are made up of:

- a) the land, water and atmosphere of the earth;
- b) micro-organisms, plants and animal life;
- c) any part or combination of (i) of (ii) and the interrelationships among and between them; and
- d) the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing.

Environmental Assessment – the generic term for all forms of environmental assessment for projects, plans, programmes or policies and includes methodologies or tools such as environmental impact assessments, strategic environmental assessments and risk assessments.

Environmental Authorisation (EA) – an authorisation issued by the competent authority in respect of a listed activity, or an activity which takes place within a sensitive environment.

Environmental Assessment Practitioner (EAP) – the individual responsible for planning, management and coordination of environmental impact assessments, strategic environmental assessments, environmental management programmes or any other appropriate environmental instrument introduced through the EIA Regulations.

Environmental Impact – a change to the environment (biophysical, social and/ or economic), whether adverse or beneficial, wholly or partially, resulting from an organisations, activities, products or services.

Environmental Impact Assessment (EIA) – the process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made.

Environmental Issue – a concern raised by a stakeholder, interested or affected parties about an existing or perceived environmental impact of an activity.

Environmental Management - ensuring that environmental concerns are included in all stages of development, so that development is sustainable and does not exceed the carrying capacity of the environment.

Environmental Management Programme - A detailed plan of action prepared to ensure that recommendations for enhancing or ensuring positive impacts and limiting or preventing negative environmental impacts are implemented during the life cycle of a project. The EMP focuses on the construction phase, operation (maintenance) phase and decommissioning phase of the proposed project.

Expansion - means the modification, extension, alteration or upgrading of a facility, structure or infrastructure at which an activity takes place in such a manner that the capacity of the facility or the footprint of the activity is increased.

Fatal Flaw – issue or conflict (real or perceived) that could result in developments being rejected or stopped.

General Waste – household water, construction rubble, garden waste and certain dry industrial and commercial waste which does not pose an immediate threat to man or the environment.

Hazardous Waste – waste that may cause ill health or increase mortality in humans, flora and fauna.

Incident - An undesired event which may result in a significant environmental Impact but can be managed through internal response.

Indirect impacts – indirect or induced changes that may occur as a result of the activity. These types of impacts include all of the potential impacts that do not manifest immediately when the activity is undertaken or which occur at a different place as a result of the activity.

Integrated Environmental Management – a philosophy that prescribes a code of practice for ensuring that environmental considerations are fully integrated into all stages of the development and decision-making process. The IEM philosophy (and principles) is interpreted as applying to the planning, assessment, implementation and management of any proposal (project, plan, programme or policy) or activity – at local, national and international level - that has a potentially significant effect on the environment. Implementation of this philosophy relies on the selection and application of appropriate tools for a particular proposal or activity. These may include



environmental assessment tools (such as strategic environmental assessment and risk assessment), environmental management tools (such as monitoring, auditing and reporting) and decision-making tools (such as multi-criteria decision support systems or advisory councils).

Mitigate – the implementation of practical measures designed to avoid, reduce or remedy adverse impacts or enhance beneficial impacts of an action.

No-Go Option – in this instance the proposed activity would not take place, and the resulting environmental effects from taking no action are compared with the effects of permitting the proposed activity to go forward.

Open Space – environmentally sensitive areas which are not suitable for development and consist of watercourses, buffers, floodplains, steep slopes, sensitive biodiversity and/or areas of cultural or heritage significance.

Registered Interested and Affected Party – an interested and affected party whose name is recorded in the register opened for that application in terms of regulation 42.

Rehabilitation – a measure aimed at reinstating an ecosystem to its original function and state (or as close as possible to its original function and state) following activities that have disrupted those functions.

Scoping – the process of determining the spatial and temporal boundaries (i.e. extent) and key issues to be addresses in an environmental assessment. The main purpose of scoping is to focus the environmental assessment on a manageable number of important questions. Scoping should also ensure that only significant issues and reasonable alternatives are examined.

Sensitive environment – any environment identified as being sensitive to the impacts of the development.

Significance – significance can be differentiated into impact magnitude and impact significance. Impact magnitude is the measurable change (i.e. magnitude, intensity, duration and likelihood). Impact significance is the value placed on the change by different affected parties (i.e. level of significance and acceptability). It is an anthropocentric concept, which makes use of value judgements and science-based criteria (i.e. biophysical, social and economic).

Stakeholder engagement – the process of engagement between stakeholders (the proponent, authorities and I&APs) during the planning, assessment, implementation and/or management of proposals or activities.

Sustainable Development – development which meets the needs of current generations without hindering future generations from meeting their own needs.

Watercourse – means:

- a) a river or spring;
- b) a natural channel or depression in which water flows regularly or intermittently;
- c) a wetland, lake or dam into which, or from which, water flows; and
- d) any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse as defined in the National Water Act, 1998 (Act No. 36 of 1998) and a reference to a watercourse includes, where relevant, its bed and banks.

Wetland – means land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil.

## ACRONYMS

CBA	Critical Biodiversity Areas
CBD	Central Business District
CMA	Catchment Management Agencies
CSIR	Council for Scientific and Industrial Research
DEA	Department of Environmental Affairs
DEFF	Department of Environment, Forestry and Fisheries
DMRE	Department of Mineral Resources and Energy
DSOE	Desired State of the Environment
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
ECF	Environmental Constraints Framework
EAP	Environmental Assessment Practitioner
ECA	Environment Conservation Act, 1989 (Act No. 73 of 1989)
EIA	Environmental Impact Assessment
EIS	Ecological Importance & Sensitivity
EMC	Environmental Management Class
EMPr	Environmental Management Programme
ESA	Ecological Support Area
EWR	Ecological Water Requirements
GIS	Geographic Information System
HGM	Hydrogeomorphic
IBA	Important Bird Area(s)
IDP	Integrated Development Plan
I&AP	Interested and/or affected parties
LEDET	Limpopo Department of Economic Development, Environment & Tourism
MAP	Mean Annual Precipitation
MASL	Meters above sea level
NBA	National Biodiversity Assessment
NEMA	National Environmental Management Act
NFEPA	National Freshwater Ecosystem Priority Areas
NHRA	National Heritage Resources Act
NPAES	National Protected Areas Expansion Strategy
NWA	National Water Act
PAES	Protected Areas Expansion Strategy
PES	Present Ecological State
PDA	Primary Drainage Area
PPP	Public participation process
QDA	Quaternary Drainage Area
REC	Recommended Ecological Category (or Class)
REMC	Recommended Ecological Management Category (or Class)
RVI	Riparian Vegetation Index
SAHRA	South African Heritage Resources Agency
SANBI	South African National Biodiversity Institute
SDF	Spatial Development Framework
SDI	Spatial Development Initiative
SEA	Strategic Environmental Assessment
SEMP	Strategic Environmental Management Plan
SWSA	Strategic Water areas of South Africa
WMA	Water Management Areas
WUL	Water Use Licence
WULA	Water Use Licence Application

## SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
If YES, please complete the form entitled "Details of specialist and declaration of interest" or appointment of a specialist for each specialist thus appointed:		

Any specialist reports must be contained in *Appendix D*.

### 1 ACTIVITY DESCRIPTION

#### 1 INTRODUCTION

Imvubu Berries (Pty) Ltd (the applicant) appointed Setala Environmental (Pty) Ltd as the independent environmental assessment practitioner (EAP) to undertake the Environmental Impact Assessment (EIA) for the proposed project. The project involves the upgrade of existing in-channel farm dams and the construction of a new off-channel farm dam for the existing lawful water use(s): Surface water abstraction and storage; and for the abstraction of groundwater at Elandsbosch 122-KR for domestic purposes. The scope of the project includes application for environmental authorisation and a water use licence for the use of water for irrigation purposes. The proposed project is situated on the properties of Imvubu Berries (Pty) Ltd within the Modimolle-Mookgopong Local Municipality, Limpopo Province.

##### *Environmental Authorisation*

Application for an authorisation for the above project is to be submitted to the Limpopo Department of Economic Development, Environment & Tourism (LEDET), in terms of the National Environmental Management, 1998 (Act 107 of 1998), and the 2014 NEMA Environmental Impact Assessment (EIA) Regulations (as amended on 7 April 2017) promulgated in Government Gazette 40772 and Government Notice (GN) R327, R326, R325 and R324.

Listed Activities for a Basic Assessment Process: Listing Notice 1 Activities 12, 13, 19, 27; Listing Notice 3 Activities 12, 14, 23. (Activities to be confirmed)

##### *Water Use Licence Application*

In addition to the Environmental application, an application for a Water Use Licence Application (WULA) in terms Section 40 and Regulations 267 (24 March 2017), "Regulations regarding the Procedural Requirements for Water Use Licence Applications & Appeals", of the of the National Water Act, 1998 (Act 36 of 1998) as amended (NWA), is being submitted to the Department of Water & Sanitation (DWS) for a Licence as required in terms of Section 22 of the NWA.

Water Uses: For the abstraction of water from boreholes (groundwater) for domestic purposes in terms of Section 21(a) Taking of water from a resource and the construction, upgrading and operation of dams in terms of Section 21(c) Impeding or diverting the flow of water in a watercourse and Section 21(i) altering the bed, banks, course or characteristics of a watercourse for the Existing Lawful Use(s) of water (authorised uses) in terms of Section 21(a) Taking of water from a resource and Section 21(b) Storing water, but not for additional volumes.

A request for consultation for the Pre-Application Water Use Enquiry have been submitted to the DWS with reference number provided: *Imvubu Berries (WU17465)*.

#### 2 APPROACH TO THE BASIC ASSESSMENT PROCESS

The approach followed by the consultants is based on the specifications for the Basic Assessment Report in terms of the Environmental Impact Assessment Regulations, 2014, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

The Limpopo Department of Economic Development, Environment and Tourism (LEDET) is the lead authority for this Environmental Impact Assessment (EIA) process and the development needs to be authorised by this Department in accordance with the National Environmental Management Act 107 of 1998 (NEMA) (as amended).

To ensure that all requirements and processes in terms of the Acts are followed the following tasks need to be conducted. The following has to be submitted to the LEDET:

- Application form for Authorisation
- Draft Basic Assessment Report
- Environmental Management Programme (EMPr)
- Final Basic Assessment Report

The environmental authority will review the Application and final Basic Assessment Report and the following decisions may be made:

- Grant authorisation of the activity
- Refuse the activity
- Request further information or investigations
- Refer the application to a scoping process where substantial additional investigations or assessments are required in order to make a decision.

### 3 PROJECT LOCALITY

The study site is situated on portions of the Farm Elandsbosch 122-KR, in the Modimolle-Mookgopong Local Municipality, Limpopo Province. The study site is approximately 45km northwest of the Town of Mookgopong (Naboomspruit) in the Waterberg Mountains. The study site consists mainly of the existing in-channel farm dams along a small tributary to the Lephalala River, earmarked for upgrade and the area of the proposed new off-channel farm dam.

The project is within the A50A Quaternary catchment (QDA) in the Lephalala River catchment in the Water Management Area (WMA): Limpopo. The proposed project is indicated in red on the Location Map below. (Refer to Appendix A for Site Location maps.)

## Site Location

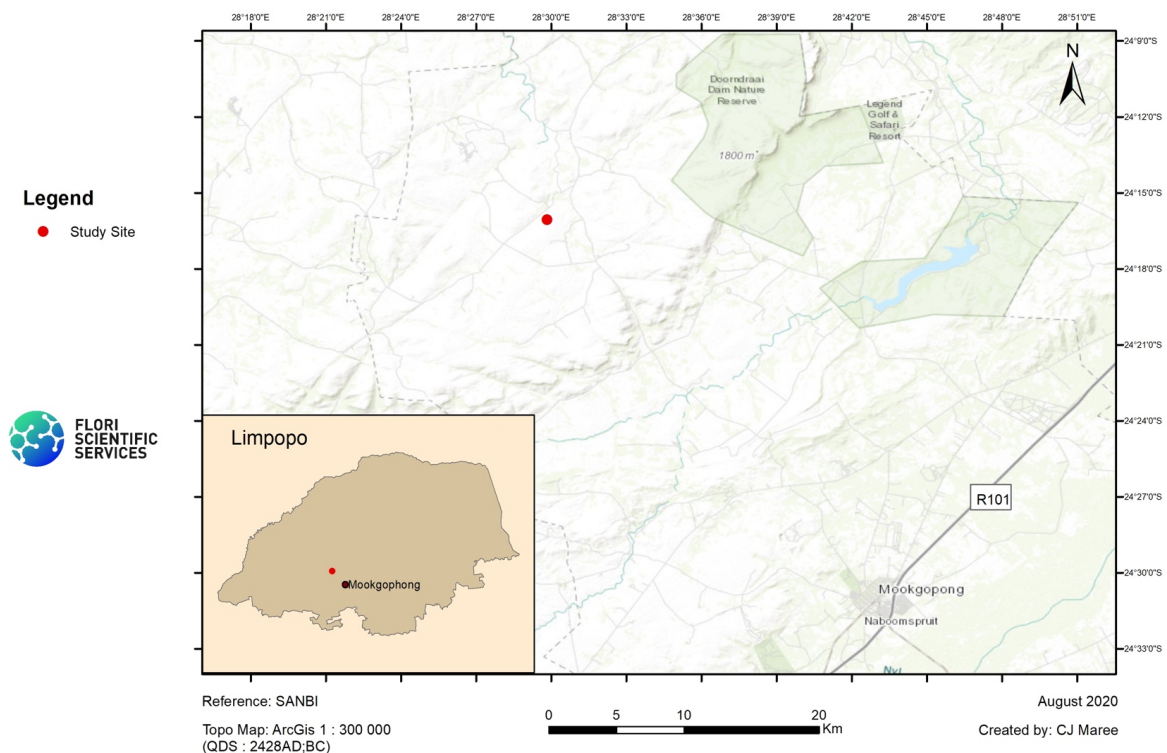


Figure 1: Site Location

The GPS coordinates of the main landmarks within the project area are as follows:

- Entrance to Farm: 24°15'46.66"S; 28°29'41.31"E.

- Quarter Degree Square (QDS): 2428AD; 2428BC.
- Quaternary Drainage Area (QDA): A50A.

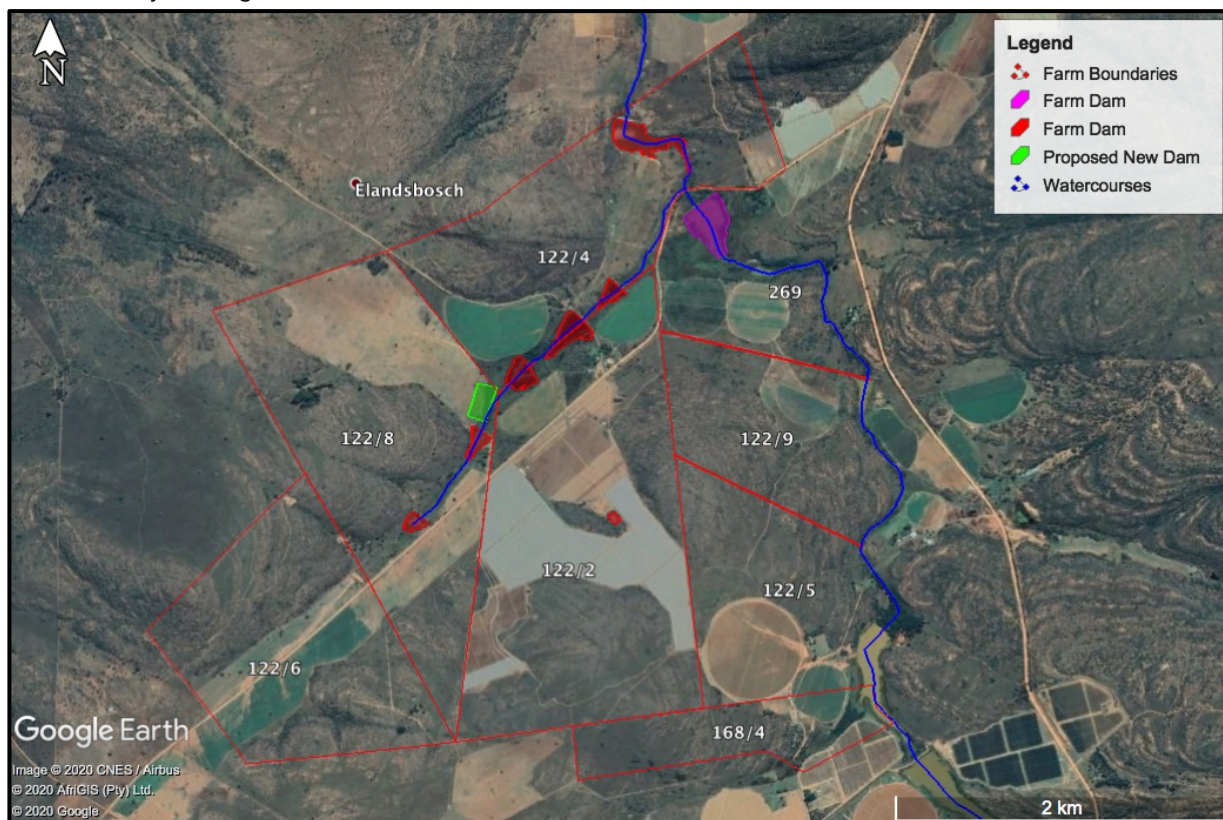


Figure 2: Study area location (google earth)

#### 4 PROPERTY DESCRIPTION

The project is on Elandsbosch 122-KR, Portions 4, & 8, in the Modimolle-Mookgophong Local Municipality (LIM368) in Limpopo Province. The project is within the A50A Quaternary catchment (QDA) in the Lephalala River catchment in the Water Management Area (WMA): Limpopo.

#### 5 PROJECT DESCRIPTION

The project involves the upgrade of existing in-channel farm dams and the construction of a new off-channel farm dam for the existing lawful water use(s): Surface water abstraction and storage; and for the abstraction of groundwater at Elandsbosch 122-KR for idomestic use.

Hereto some background on the proposed activities:

- There are several existing farm dams on Elandsbosch 122-KR. The existing structures will be addressed in the WULA in terms of the National Water Act, and will serve as background to the Environmental Impact Assessment (EIA) process, but do not require an environmental authorisation.
- The volume of surface water to be abstracted remains, as authorised by Department of Water and Sanitation as an Existing Lawful Use(s) (ELU) of water.
- The irrigation areas are mostly established on existing agricultural areas. The irrigation areas do not trigger a WULA or an EIA process because the irrigation is an existing activity. However, the volume of water irrigated, areas irrigated, etc., will form the background and basis of the project.
- Elandsbosch 122-KR Portions 2 & 4 was acquired with an ELU as follows:

Surface Water Abstraction	682 567 m <sup>3</sup> /year
Storage of Water	413 962 m <sup>3</sup>

- Elandsbosch 122-KR Portions 6 & 8 was recently acquired but without any ELU of water.
- It is being proposed that the ELU of water will be used on four portions of Elandsbosch owned by Imvubu Berries, but not increasing the ELU for surface abstraction, and the ELU for storage.
- Currently with the age of the dams, silting, old designs, etc. the full extent of the authorised storage of water is not being utilised.
- Current water storage utilised is estimated to be 296,876m<sup>3</sup> of the 413,962m<sup>3</sup> ELU of water.
- The new dam for storage (dam 8) will be constructed so that the combined storage volume will not exceed the total authorised volume for storage (413 962 m<sup>3</sup>).
- It is also proposed to apply for the abstraction of water from boreholes (groundwater) for domestic purposes.

The study site consists mainly of the existing in-channel farm dams along a small tributary to the Lephalala River, earmarked for upgrade and the area of the proposed new off-channel farm dam (Dam 8). The Dams are numbered and referenced as shown below in Figure 3. In-channel farm dams numbers 1,2,3,4,6 & 7 are all existing structures, with off-channel dam number 8 the new proposed dam. Dam number 5 is an off-channel storage, plastic lined, in-ground dam/reservoir, situated within the farming operation next to the shade net structures and near the main office.



Figure 3: Dam numbers (google earth)

## 6 ENVIRONMENTAL APPLICATION: COMPONENT DESCRIPTION

Some of the dams as shown above are already existing and do not form part of this environmental application. In the table below it is indicated what is included as part of this application. The scope of the environmental application is restricted to these proposed components of the project. The proposed components are highlighted in yellow.

The GPS coordinates of the dams are as follows:

Table 1: GPS points of dams and proposed new dam

Dams	GPS Points
Dam 1	28°29'27.11"E; 28°29'34.61"E
Dam 2	24°15'28.28"S; 28°29'46.37"E
Dam 3	24°15'20.91"S; 28°29'54.92"E
Dam 4	24°14'50.31"S; 28°30'0.55"E
Dam 5	24°16'5.22"S; 28°29'55.11"E
Dam 6	24°16'5.98"S; 28°29'12.28"E
Dam 7	24°15'50.70"S; 28°29'25.30"E
New dam 8	24°15'41.97"S; 28°29'27.11"E

Three earth dams are proposed of which Dam 6 and 7 will be new dams constructed in the stream and Dam 8 will be a reservoir dam constructed more than 35m out of the stream. At the positions of Dam 6 and 7 there are existing structures that will be disregarded and build as new dams.

Dam 6 will overflow into the stream that leads to Dam 7. The overflow from Dam 7 will be diverted to Dam 8 that is out of stream. Dam 8 will overflow back into the stream and into Dam 1 that is the main irrigation dam from where the water will be pumped to the various irrigation blocks on the farm.

All the dams will be constructed with an outlet pipe and valve at the stream level as well as an outlet chamber 100mm lower than the spillway level to divert the normal flow to the stream and to keep the spillway dry. This is to prevent erosion in the spillway.



Figure 4: Focus of Project (Dams 6, 7 & 8)

The following are the main characteristics of each dam:

**Dam 6**

Crest level of embankment	1480.30 m
Full supply level	1479.00 m

Lowest drawdown level	1475.50 m
Downstream level	1475.41 m
Wall height	4.89 m
Length of crest	128.5 m
Width of crest	3 m
Upstream slope	1:3
Downstream slope	1:2
Storage capacity	21 433 m <sup>3</sup>
Surface area at FSL	10 100 m <sup>2</sup>
Type of spillway	Controlled open channel on the left bank with an outlet chamber 0.1m lower than spillway.
Spillway width	18 m
Spillway return channel	Excavated channel in rock formation
Main outlet works	A 200mm dia uPVC pressure pipe under the embankment, cast in reinforced concrete and founded on firm formation.
Downstream control	200mm dia gate valve



Figure 5: Dam 6

**Dam 7**

Crest level of embankment	1466.70 m
Full supply level	1465.50 m
Lowest drawdown level	1462.00 m
Downstream level	1461.84 m
Wall height	4.86 m
Length of crest	148 m
Width of crest	3 m
Upstream slope	1:3
Downstream slope	1:2
Storage capacity	36 903 m <sup>3</sup>
Surface area at FSL	17 850 m <sup>2</sup>
Type of spillway	Controlled open channel on the left bank with an outlet chamber 0.1m lower than spillway.



Spillway width	24 m
Spillway return channel	Excavated channel
Main outlet works	A 200mm dia uPVC pressure pipe under the embankment, cast in reinforced concrete and founded on firm formation.
Downstream control	200mm dia gate valve

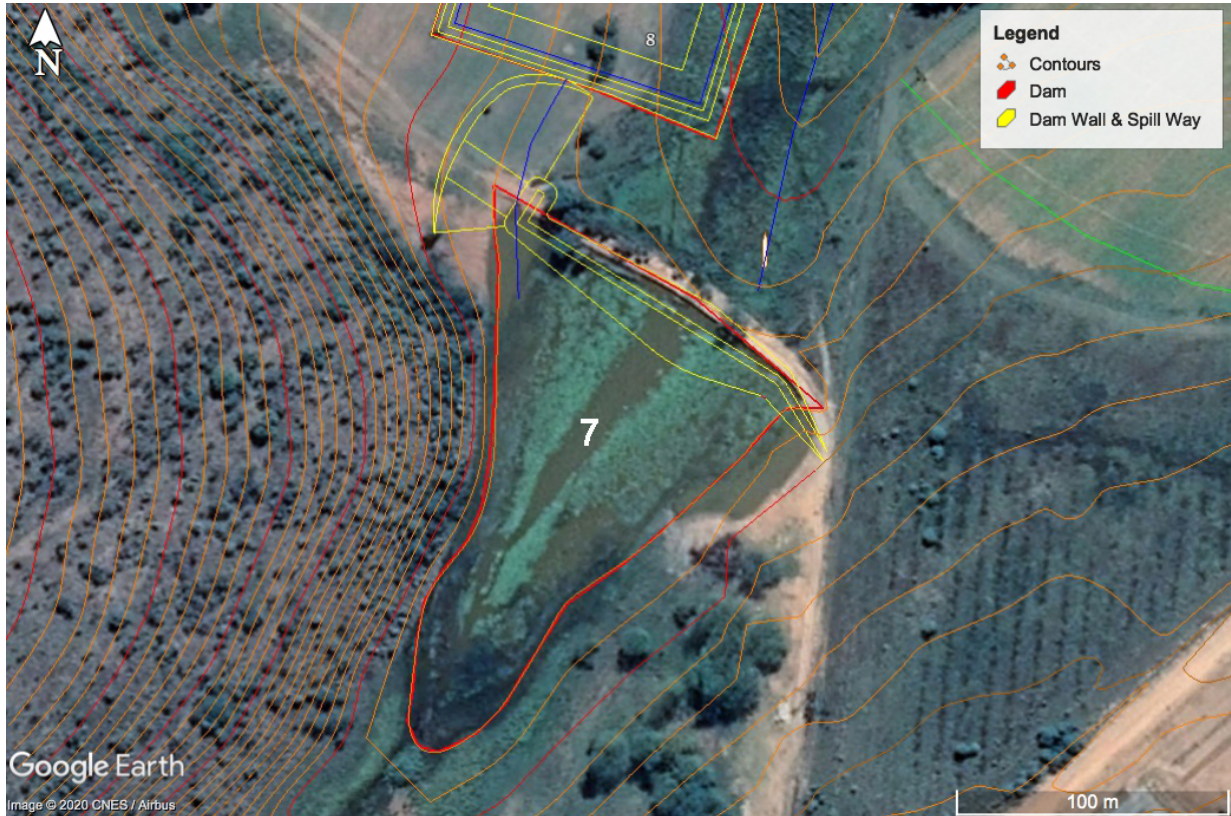


Figure 6: Dam 7

**Dam 8**

Crest level of embankment	1465.50 m
Full supply level	1465.00 m
Lowest drawdown level	1461.50 m
Downstream level	1461.45 m
Wall height	4.05 m
Length of crest	600 m
Width of crest	3 m
Upstream slope	1:3
Downstream slope	1:2
Storage capacity	58 750 m <sup>3</sup>
Surface area at FSL	20 000 m <sup>2</sup>
Type of spillway	Emergency overflow with 300mm outlet pipe at FSL.
Spillway return channel	Pipe into the stream
Main outlet works	A 200mm dia uPVC pressure pipe under the embankment, cast in reinforced concrete and founded on firm formation.
Downstream control	200mm dia gate valve

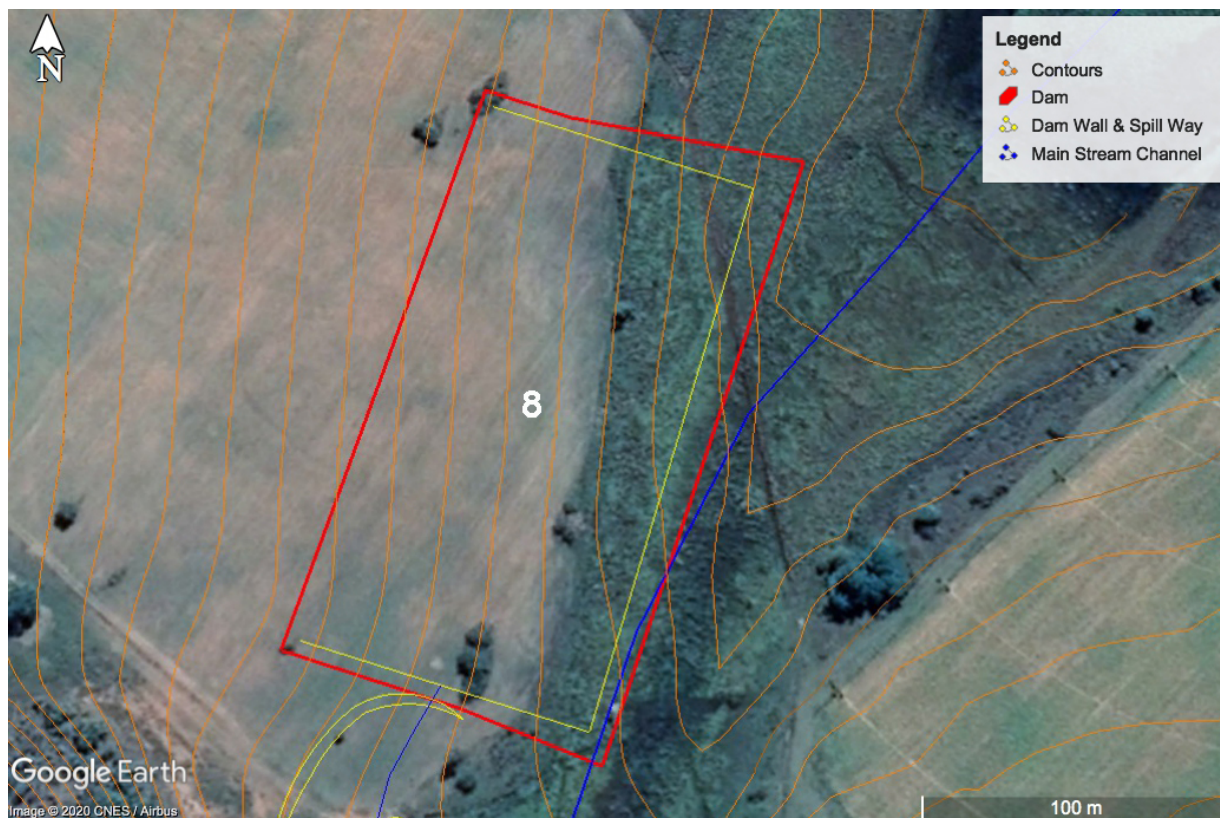


Figure 7: Dam 8

Refer to the Engineering design report attached in *Appendix D4* for the cross-sections and details as shown on the design drawings.

## 7 TOPOGRAPHY

The topography of the area is that of mountains, plateaus, shallow and deep valleys and undulating hills and plains, all within the greater Waterberg Mountain Range. The small stream (tributary of the Lephala River) along which the dams are situated is at an average height of approximately 1 462 m.a.s.l. The maximum elevation (at Dam 6 – upstream) down to the minimum elevation (at Dam 4 – downstream) is about 1 498 m.a.s.l and 1 422 m.a.s.l, respectively. The average downward gradient from upstream at Dam 6 until the confluence with the Lephala River varies between 1% to 10%.

## 8 LAND USES

The landcover or landuse of the study site is that of high-yield and high-density commercial agricultural farmlands. The production of blue berries under shade netting is a major landuse of the area. The dams are situated within a narrow open area of a small stream. Although there is not agricultural activity in the watercourse as such, the water is stored and used for irrigation purposes. Therefore, these areas form an integral part of the commercial agricultural landuse of the area. Urban density is very low with the areas being an important and active farming community.

## 9 NEED FOR THE PROJECT

Elandsbosch 122-KR Portions 6 & 8 was recently acquired but without any Existing Lawful Use(s) (ELU) of water. It is being proposed that the ELU of water will be used on four portions of Elandsbosch, but not increasing the ELU for surface abstraction, and the ELU for storage.

Currently with the age of the dams, silting, old designs, etc. the full extent of the authorised storage of water is not being utilised. The proposed activity will provide water security that will contribute to sustainable economic growth.

## 10 LEGAL REQUIREMENTS

The National Environmental Management Act (Act No. 107 of 1998) and the Environmental Impact Assessment Regulations, 2014, as amended

An application for environmental authorisation is submitted to the Limpopo Department of Economic Development, Environment and Tourism (LEDET). A Basic Assessment Process is being followed for this project. The Basic Assessment will conform to the National Environmental Management Act 107 of 1998 (as amended). The Basic Assessment will provide information about the upgrade of existing in-channel farm dams and the construction of a new off-channel farm dam, and its scope is restricted to these components.

**The listed activities for the proposed project are the following:**

Table 2: Listed Activities

Relevant notice	Act No	Description of each listed activity:
GNR 327	12	The development of— (i) <u>dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres</u> ; or (ii) infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs— (a) <u>within a watercourse</u> ; (b) in front of a development setback; or (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse. <u>Applicability:</u> Dam 6 and Dam 7 will be constructed within a watercourse, each with a footprint of bigger than 100 square metres. Footprint of dam 6 = 10 100m <sup>2</sup> and of dam 7 = 17 850m <sup>2</sup> .
GNR 327	13	The development of facilities or infrastructure for the <u>off-stream storage of water, including dams</u> and reservoirs, with a <u>combined capacity of 50 000 cubic metres or more</u> , unless such storage falls within the ambit of activity 16 in Listing Notice 2 of 2014. <u>Applicability:</u> Dam 8 will be an off-chanel storage dam with a capacity of 58 750 cubic metres.
GNR 327	19	The <u>infilling or depositing of any material of more than 10 cubic metres</u> into, or the <u>dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse</u> . <u>Applicability:</u> Dams 6 and 7 will be <u>constructed in a watercourse and more than 10 cubic metres of soil and rock will be excavated or infilled</u> . Site clearance and foundation preparation must take place as well as excavation in the embankment.
GNR 327	27	The <u>clearance of an area of 1 hectares or more</u> , but less than 20 hectares <u>of indigenous vegetation</u> , except 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. <u>Applicability:</u> The footprint area of dams 6, 7 and 8 will be cleared. The combined area for the 3 dams are 10 100m <sup>2</sup> + 17 850m <sup>2</sup> + 20 000m <sup>2</sup> = 47 950m <sup>2</sup> = <u>4.795 hectares of vegetation to be cleared</u> .
GNR 324	12	The <u>clearance of an area of 300 square metres or more of indigenous vegetation</u> except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. <u>Limpopo</u>

		<p>i) Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;</p> <p>ii) <u>Within critical biodiversity areas</u> identified in bioregional plans; or</p> <p>iii) On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning.</p> <p><u>Applicability:</u> According to the Limpopo Conservation Plan (LCP v2), the site is situated within <u>critical biodiversity areas</u> (CBA1 and CBA2), <u>and more than 300 square metres of indigenous vegetation will be cleared.</u></p>
GNR 324	14	<p>The development of—</p> <p>i) dams or weirs, where <u>the dam</u> or weir, including infrastructure and water surface area <u>exceeds 10 square metres</u>; or</p> <p>ii) infrastructure or structures with a physical footprint of 10 square metres or more; where such development occurs—</p> <p>a) <u>within a watercourse</u>;</p> <p>b) in front of a development setback; or</p> <p>c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse;</p> <p>excluding the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour.</p> <p><u>Limpopo</u></p> <p>i. <u>Outside urban areas:</u></p> <p>a) A protected area identified in terms of NEMPAA, excluding conservancies;</p> <p>b) National Protected Area Expansion Strategy Focus areas;</p> <p>c) World Heritage Sites;</p> <p>d) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority;</p> <p>e) Sites or areas identified in terms of an international convention;</p> <p>f) <u>Critical biodiversity areas</u> or ecosystem service areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</p> <p>g) Core areas in biosphere reserves; or</p> <p>h) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve; or</p> <p>ii. Inside urban areas:</p> <p>a) Areas zoned for use as public open space; or</p> <p>b) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority, zoned for a conservation purpose.</p> <p><u>Applicability:</u> <u>The site is in CBAs and the water surface area of the 3 dams exceeds 10 square metres. The combined area is 4.795 hectares.</u></p>
GNR 324	23	<p>The expansion of—</p> <p>i) dams or weirs where <u>the dam</u> or weir <u>is expanded by 10 square metres or more</u>; or</p> <p>ii) infrastructure or structures where the physical footprint is expanded by 10 square metres or more;</p> <p>where such expansion occurs—</p> <p>a) <u>within a watercourse</u>;</p> <p>b) in front of a development setback adopted in the prescribed manner; or</p> <p>c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse;</p> <p>excluding the expansion of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour.</p> <p><u>Limpopo</u></p> <p>i. <u>Outside urban areas:</u></p> <p>a) A protected area identified in terms of NEMPAA, excluding conservancies;</p> <p>b) National Protected Area Expansion Strategy Focus areas;</p> <p>c) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority;</p> <p>d) Sites or areas identified in terms of an international convention;</p>

	<p>e) <u>Critical biodiversity areas</u> as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</p> <p>f) Core areas in biosphere reserves; or</p> <p>g) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core area of a biosphere reserve; or</p> <p>ii. Inside urban areas:</p> <p>a) Areas zoned for use as public open space; or</p> <p>b) Areas designated for conservation use in Spatial Development Frameworks adopted by the competent authority or zoned for a conservation purpose.</p> <p><u>Applicability:</u>  <i>The site is in CBAs and the water surface areas of Dam 6 and Dam 7 will be <u>expanded by 10 square metres or more.</u></i></p>
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## 2 FEASIBLE AND REASONABLE ALTERNATIVES

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

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

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

Please note that this description should not be a verbatim repetition of the listed activity as contained in the relevant Government Notice, but should be a brief description of activities to be undertaken as per the project description.

### 1 ALTERNATIVES

The following alternatives have been identified and are described as follows:

Table 3: Alternatives

No.	Alternative type,	Description
1	Location Alternative	The applicant is the owner of this property, and it is not feasible to consider other sites in terms of location alternatives. Alternative locations are therefore currently not available and would involve the lease or purchase of land / other sites. The proposed development is compatible with the surrounding land uses of agriculture.
2	Layout Alternative	<p>The site is impacted by flood lines as indicated and endorsed by the relevant engineer. Various methods were used to calculate the flood hydrology for the catchment as this increases the accuracy of the final flood peak calculation. Due to the size of the catchment the results obtained from all the methods are deemed to be applicable for this study. The dams as shown on the plans will be able to withstand the 1:100-year storm occurrence.</p> <p><u>Layout (Preferred) dam 8:</u>                      Dam 6 and dam 7 are existing and no other location for these 2 dams could be considered. For the position of dam 8 other options were considered. The outlet level of dam 7, is overflowing via pvc pipe into dam 8. The level is of such a nature that the current position for the new dam 8 is prime and could not be moved due to the elevations.</p> <p><u>Alternative 1:</u>                      The alternative was to move dam 8 higher up to the north western side, but then a supply of electricity</p>

		was required to pump water from dam 7 to fill dam 8. This is not an optimal solution and requires additional infrastructure and resulting costs.
3	Alternative material to be used  Various options were considered for the project in terms of materials or methods to construct the dams	<p><u>Alternative (Preferred): Use of existing soils and materials on site.</u> This is the preferred option as it does not have the same potential levels or negative impacts as do the other options as mentioned below. Reusable topsoil will be collected and stockpiled at dedicated areas for the rehabilitation of the site. This will be after completion of the downstream slope of the embankment, parts of the spillway channel cutting as well as other disturbed areas outside the footprint of the works. All reusable material will either be used directly in fill or be stockpiled for later use in the embankment or other land fill zones as part of the works. Rocks will be stockpiled for use later in the spillway and on the up-stream side of the earth wall. Construction of the embankment entails a basic cut and fill operation with limited waste or spoil. Using the material on the site will create a positive impact.</p> <p><u>Alternative 1: Use of imported foreign materials and soils.</u> By "importing" additional soil or rock onto the property, and using this soil to raise areas there is the danger that seeds and plant material of alien invasive species are also introduced along with the materials that are imported onto the site. Therefore, this alternative was dismissed, due to the potential of higher negative impacts.</p>

## 2 NO-GO ALTERNATIVE

Taking all aspects into consideration including, ecological and aquatic sensitivities, the type of project and related activities, as well as mitigating measures, there are no fatal flaws.

- The study site is within the veldtype known as Waterberg Mountain Bushveld, which is not a threatened ecosystem.
- There are no aquatic RDL plants or RDL animal species present in the study area.
- The focus of the project, namely Dams 6, 7 & 8 are all situated in or next to the small stream and not on the Lephhalala River.
- The Lephhalala River is an NFEPA river, but not the small stream on which the project-focus dams are situated.

There are no obvious fatal flaws and it is the opinion of the project team that the project should be allowed to proceed. It is suggested that to maintain the status quo is not the best option for the micro environment. Currently with the age of the dams, silting, old designs, etc. the full extent of the authorised storage of water is not being utilised. The proposed project will provide water security to increase and sustain agricultural productivity. This will in turn contribute to sustainable economic growth.

The No-Go development alternative could therefore not be considered the responsible way to manage the site.

## 3 ACTIVITY POSITION

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The coordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the Hartebeeshoek 94 WGS84 spheroid in a national or local projection.

Table 4: GPS points of dams and proposed new dam

Dams	GPS Points
Dam 1	28°29'27.11"E; 28°29'34.61"E
Dam 2	24°15'28.28"S; 28°29'46.37"E
Dam 3	24°15'20.91"S; 28°29'54.92"E
Dam 4	24°14'50.31"S; 28°30'0.55"E
Dam 5	24°16'5.22"S; 28°29'55.11"E
Dam 6	24°16'5.98"S; 28°29'12.28"E
Dam 7	24°15'50.70"S; 28°29'25.30"E
New dam 8	24°15'41.97"S; 28°29'27.11"E

Dams 1 – 5 as shown above are already existing and do not form part of this environmental application. The scope of the environmental application is restricted to the proposed components highlighted in yellow, Dams 6, 7 and 8.

#### 4 PHYSICAL SIZE OF THE ACTIVITY

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

The physical size of the preferred and alternative activity/ (footprint):

Alternative:	Size of the activity:
Dam 6	10 100m <sup>2</sup>
Dam 7	17 850m <sup>2</sup>
Dam 8	20 000m <sup>2</sup>

The size of the alternative sites (within which the above footprints will occur):

Alternative:	Size of the site
Elandsbosch 122 Portion 4	200 hectares
Elandsbosch 122 Portion 8	240 hectares

#### 5 SITE ACCESS

Does ready access to the site exist?	YES X	NO
If NO, what is the distance over which a new access road will be built	N/A m	
Describe the type of access road planned:		
No new access to the site is planned. During construction all vehicle movement must be along existing roads. Therefore road alternatives are not being investigated for this project.		

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

#### 6 SITE OR ROUTE PLAN

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

The site or route plans must indicate the following:

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

**Refer to Appendix A**

## 7 SITE PHOTOGRAPHS

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

**Refer to Appendix B**

## 8 FACILITY ILLUSTRATION

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

**Refer to Appendix C.**

## 9 ACTIVITY MOTIVATION

### 1 SOCIO-ECONOMIC VALUE OF THE ACTIVITY

What is the expected capital value of the activity on completion?	not known	
What is the expected yearly income that will be generated by or as a result of the activity?	not known	
Will the activity contribute to service infrastructure?	YES	NO
Is the activity a public amenity?	YES	NO
How many new employment opportunities will be created in the development phase of the activity?	not known	
What is the expected value of the employment opportunities during the development phase?	not known	
What percentage of this will accrue to previously disadvantaged individuals?	0%	
How many permanent new employment opportunities will be created during the operational phase of the activity?	No direct employment opportunities	
What is the expected current value of the employment opportunities during the first 10 years?	R0	
What percentage of this will accrue to previously disadvantaged individuals?	0%	

### 2 NEED AND DESIRABILITY OF THE ACTIVITY

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

NEED:		
i.	Was the relevant municipality involved in the application?	YES NO
ii.	Does the proposed land use fall within the municipal Integrated Development Plan?	YES NO
iii.	If the answer to questions 1 and / or 2 was NO, please provide further motivation / explanation:	
	Note - there will not be a change in the land use of the properties.	

DESIRABILITY:		
i.	Does the proposed land use / development fit the surrounding area?	YES NO
ii.	Does the proposed land use / development conform to the relevant structure plans, Spatial development Framework, Land Use Management Scheme, and planning visions for the area?	YES NO
iii.	Will the benefits of the proposed land use / development outweigh the negative impacts of it?	YES NO
iv.	If the answer to any of the questions 1-3 was NO, please provide further motivation / explanation:	



v.	Will the proposed land use / development impact on the sense of place?	YES	NO
vi.	Will the proposed land use / development set a precedent?	YES	NO
vii.	Will any person’s rights be affected by the proposed land use / development?	YES	NO
viii.	Will the proposed land use / development compromise the “urban edge”?	YES	NO
ix.	If the answer to any of the question 5-8 was YES, please provide further motivation / explanation.		
	The proposed activity will contribute to sustainable economic growth. The application will therefore not compromise the integrity of the IDP of the Local Municipality.		

<b>BENEFITS:</b>			
i.	Will the land use / development have any benefits for society in general?	YES	NO
	<p>Explain:</p> <p>Imvubu Berries believes that economic performance is inseparable from social and environmental performance. They see themselves as not only guardians of the Earth but also of their workers, their families and the communities in which they farm. Their economic success enables them to continue in this role as Guardian.</p> <p>Due to the continuing investment from the holding company, OZblu, in their South African orchards, their blueberry volumes are expected to be up by 150% this year in South Africa, with a doubling expected yearly for the foreseeable future. Fortunately, global demand is keeping pace: at least 80% of their South African production is for export – more than half to the UK, but also to the EU, the whole of the Middle East and the Far East (Hong Kong, Singapore, Malaysia).</p> <p>With their growth comes the rewards of increased GDP and its associated benefits and further employment opportunities. Which links to the social pillar of sustainability.</p>		
ii.	Will the land use / development have any benefits for the local communities where it will be located?	YES	NO
	<p>Explain:</p> <p>The proposed activity will on a local level contribute to sustainable economic growth, and support the agricultural sector.</p> <p>The company has set out to provide uplifting, fair and equitable workplaces and have set policies to ensure this happens.</p> <p>By investing in non-traditional berry growing areas they are actively creating new employment opportunities. They are playing an active role in the upliftment of local communities through the empowerment of the individuals through these job opportunities and associated training.</p>		

## 10 APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

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

Title of legislation, policy or guideline:	Administering authority:	Promulgation Date:
National Environmental Management Act, 1998 (Act No. 107 of 1998 as amended).	National & Provincial	1998
National Water Act, 1998 (Act No. 36 of 1998)	National & Provincial	1998
National Heritage Resources Act (Act No 25 of 1999)	National & Provincial	1999
National Environmental Management: Biodiversity Act (Act 10 of 2004)	National & Provincial	2004
Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983) (as amended)	National & Provincial	1983
All relevant Provincial regulations and Municipal bylaws	Provincial & Local	

## 11 WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

### 1 SOLID WASTE MANAGEMENT

Will the activity produce solid construction waste during the construction/initiation phase?	YES	NO
If yes, what estimated quantity will be produced per month?	Minimal m <sup>3</sup>	
How will the construction solid waste be disposed of (describe)?		

<p>The disposal of any construction waste will be the responsibility of the applicant and should be done at least twice a week. A letter of agreement between the applicant and the Permit Holder of the waste disposal site shall be kept on site.</p> <p>Reusable topsoil will be collected and stockpiled at dedicated areas for the rehabilitation of the site after completion of the downstream slope of the embankment, parts of the spillway channel cutting as well as other disturbed areas outside the footprint of the works.</p> <p>All reusable material will either be used directly in fill or be stockpiled for later use in the embankment or other land fill zones as part of the works.</p> <p>Rocks will be stockpiled for use later in the spillway and on the up-stream side of the earth wall.</p> <p>Construction of the embankment entails a basic cut and fill operation with limited waste or spoil.</p> <p>Using the material on the site will create a positive impact.</p>		
Where will the construction solid waste be disposed of (describe)?		
<p>An integrated waste management approach must be implemented that is based on waste minimisation and must incorporate reduction, recycling, re-use and disposal where appropriate.</p> <p>Any solid waste that cannot be recycled shall be disposed of at an appropriate landfill site licensed in terms of section 20 (b) of the National Environment Management Waste Act, 2008 (Act No 59 of 2008).</p> <p>These above measures are included as requirements in the EMPr under the heading "Waste Management". Also refer to the other mitigation measures under the same heading.</p>		
Will the activity produce solid waste during its operational phase?	YES	NO
If yes, what estimated quantity will be produced per month?	0 m <sup>3</sup>	
How will the solid waste be disposed of (describe)?	N/A	
Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)?		
Appropriate Landfill sites in the Local Municipality - To be advised by the Local Municipality. A letter of agreement between the applicant and the Permit Holder of the waste disposal site to be kept on site.		
If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the department to determine whether it is necessary to change to an application for scoping and EIA.		
Can any part of the solid waste be classified as hazardous in terms of the relevant legislation?	YES	NO
If yes, inform the department and request a change to an application for scoping and EIA.		
Is the activity that is being applied for a solid waste handling or treatment facility?	YES	NO
If yes, then the applicant should consult with the Department to determine whether it is necessary to change to an application for scoping and EIA.		

2 LIQUID EFFLUENT

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?	YES	NO
If yes, what estimated quantity will be produced per month?	0 m <sup>3</sup>	
Will the activity produce any effluent that will be treated and/or disposed of on site?	Yes	NO
If yes, the applicant should consult with the Department to determine whether it is necessary to change to an application for scoping and EIA.		
Will the activity produce effluent that will be treated and/or disposed of at another facility?	YES	NO
If yes, provide the particulars of the facility: N/A		
Facility name:		
Contact person:		
Postal address:		
Postal code:		
Telephone:	Cell:	
E-mail:	Fax:	
Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:		

### 3 EMISSIONS INTO THE ATMOSPHERE

Will the activity release emissions into the atmosphere?	YES	NO
If yes, is it controlled by any legislation of any sphere of government?	YES	NO
If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.		
If no, describe the emissions in terms of type and concentration:		
Limited dust emissions are expected as result of the construction phase activities. Mitigating measures are proposed and included in the EMPr to limit impact.		

### 4 GENERATION OF NOISE

Will the activity generate noise?	YES	NO
If yes, is it controlled by any legislation of any sphere of government?	YES	NO
If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.		
If no, describe the noise in terms of type and level:		
Generation of noise is expected to occur during the construction phase, but it will be a low level of noise and will occur for a limited time only. Measures, as included in the EMPr, will be implemented to avoid or minimise generation of noise during construction.		

## 12 WATER USE

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

<input type="checkbox"/> municipal	<input type="checkbox"/> water board	<input type="checkbox"/> groundwater	<input type="checkbox"/> river, stream, dam or lake	<input type="checkbox"/> other	<input type="checkbox"/> the activity will not use water	
If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:						
There are three boreholes that will now be used for domestic water use (water for the staff quarters). The WULA will apply for a max of 5 m <sup>3</sup> /day. Average of 3.5 m <sup>3</sup> /day. Total per year 1278 m <sup>3</sup> /year. The co-ordinates for these boreholes are: BH1: 24°15'36.18"S; 28°29'52.44"E BH2: 24°15'42.73"S; 28°29'44.34"E BH3: 24°15'36.90"S 28°29'49.06"E					106 500 Litres	
Does the activity require a water use permit from the Department of Water Affairs? If yes, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this application if it has been submitted.					YES	NO
In addition to the Environmental application, an application for a Water Use Licence Application (WULA) in terms Section 40 and Regulations 267 (24 March 2017), "Regulations regarding the Procedural Requirements for Water Use Licence Applications & Appeals", of the of the National Water Act, 1998 (Act 36 of 1998) as amended (NWA), is being submitted to the Department of Water & Sanitation (DWS) for a Licence as required in terms of Section 22 of the NWA. <u>Water Uses:</u> For the abstraction of water from boreholes (groundwater) for domestic purposes n terms of Section 21(a) Taking of water from a resource and the construction, upgrading and operation of dams in terms of Section 21(c) Impeding or diverting the flow of water in a watercourse and Section 21(i) altering the bed, banks, course or characteristics of a watercourse for the Existing Lawful Use(s) of water (authorised uses) in terms of Section 21(a) Taking of water from a resource and Section 21(b) Storing water, but not for additional volumes. Proof of submission attached as <b>Appendix E5c</b> .						

## 13 ENERGY EFFICIENCY

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

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

N/A
-----

## SECTION B: SITE/AREA/PROPERTY DESCRIPTION

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

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

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

3 Has a specialist been consulted to assist with the completion of this section?	YES	NO
If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed: <b>Refer to Appendix H.</b>		
All specialist reports must be contained in <b>Appendix D.</b>		

Property description/physical address:	The project is on Elandsbosch KR-122 Portions 4 & 8 in the Modimolle-Mookgophong Local Municipality in Limpopo Province.	
	(Farm name, portion etc.) Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application.	
Current land-use zoning:	Agriculture	
	In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to , to this application.	
Is a change of land-use or a consent use application required?	YES	NO
Must a building plan be submitted to the local authority?	YES	NO
Locality map:	<p>An A3 locality map must be attached to the back of this document, as <b>Appendix A</b>. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.) The map must indicate the following:</p> <ul style="list-style-type: none"> <li>• an indication of the project site position as well as the positions of the alternative sites, if any;</li> <li>• road access from all major roads in the area;</li> <li>• road names or numbers of all major roads as well as the roads that provide access to the site(s);</li> <li>• all roads within a 1km radius of the site or alternative sites; and</li> <li>• a north arrow;</li> <li>• a legend; and</li> <li>• locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection)</li> </ul>	

## 1 GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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## 2 LOCATION IN LANDSCAPE

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

2.1 Ridgeline		2.6 Plain	
2.2 Plateau	X	2.7 Undulating plain / low hills	
2.3 Side slope of hill/mountain		2.8 Dune	
2.4 Closed valley		2.9 Seafront	
2.5 Open valley	X		

## 3 GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

	Alternative S1:		Comments
	YES	NO	
Shallow water table (less than 1.5m deep)	YES	NO	Y-Existing dams; N-New dam
Dolomite, sinkhole or doline areas	YES	NO	
Seasonally wet soils (often close to water bodies)	YES	NO	Y-Existing dams; N-New dam
Unstable rocky slopes or steep slopes with loose soil	YES	NO	
Dispersive soils (soils that dissolve in water)	YES	NO	
Soils with high clay content (clay fraction more than 40%)	YES	NO	Y-Existing dams & stream; N-New dam area
Any other unstable soil or geological feature	YES	NO	
An area sensitive to erosion	YES	NO	

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

## 4 GROUNDCOVER

Indicate the types of groundcover present on the site:

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

Natural veld - good condition <sup>E</sup>	Natural veld with scattered aliens <sup>E</sup>	Natural veld with heavy alien infestation <sup>E</sup>	Veld dominated by alien species <sup>E</sup>	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil

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

## 5 LAND USE CHARACTER OF SURROUNDING AREA

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

5.1 Natural area	X	5.22 School	
5.2 Low density residential	X	5.23 Tertiary education facility	
5.3 Medium density residential		5.24 Church	
5.4 High density residential		5.25 Old age home	
5.5 Medium industrial <sup>AN</sup>		5.26 Museum	
5.6 Office/consulting room		5.27 Historical building	
5.7 Military or police base/station/compound		5.28 Protected Area	
5.8 Spoil heap or slimes dam <sup>A</sup>		5.29 Sewage treatment plant <sup>A</sup>	
5.9 Light industrial		5.30 Train station or shunting yard <sup>N</sup>	
5.10 Heavy industrial <sup>AN</sup>		5.31 Railway line <sup>N</sup>	
5.11 Power station		5.32 Major road (4 lanes or more)	
5.12 Sport facilities		5.33 Airport <sup>N</sup>	
5.13 Golf course		5.34 Harbour	
5.14 Polo fields		5.35 Quarry, sand or borrow pit	
5.15 Filling station <sup>H</sup>		5.36 Hospital/medical centre	
5.16 Landfill or waste treatment site		5.37 River, stream or wetland	X
5.17 Plantation		5.38 Nature conservation area	
5.18 Agriculture	X	5.39 Mountain, koppie or ridge	X
5.19 Archaeological site		5.40 Graveyard	
5.20 Quarry, sand or borrow pit		5.41 River, stream or wetland	X
5.21 Dam or Reservoir	X	5.42 Other land uses (describe)	

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

N/A

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

If YES, specify and explain:	N/A
If NO, specify:	

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

If YES, specify and explain:	N/A
If NO, specify:	

## 6 CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or palaeontological sites, on or close (within 20m) to the site?	YES	NO
	Uncertain	

Archaetnos CC was requested to investigate the requirements of the National Heritage Resources Act, 1999. Refer to <i>Appendix D3</i> of the BAR. The report makes the following observations:		
<ul style="list-style-type: none"> <li>➤ The information shows that dams number 6 and 7 will be enlarged within their existing flood lines. Dam number 8 will be constructed inside of an existing agricultural field, thus entirely disturbed by agricultural activities.</li> <li>➤ It is therefore the opinion of the specialist that the project may be exempted from doing a Heritage Impact Assessment (HIA).</li> </ul>		
Will any building or structure older than 60 years be affected in any way?	YES	NO
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	YES	NO
If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made. <i>Proof of letter attached as Appendix D3. Submitted to SAHRIS.</i>		

## 7 SPECIALIST INPUT

Specialist input was obtained to investigate the impact of the various alternatives that could accomplish the purpose of the project. The specialist input is summarised as follows:

### 1 TERRESTRIAL ECOLOGICAL ASSESSMENT

A Terrestrial Ecological Assessment has been conducted by Flori Scientific Services cc. Refer to *Appendix D1* of the BAR. The report identified the following:

#### Vegetation

The study site is within the original extent of Waterberg Mountain Bushveld, which is within the Central Bushveld Biome of the Savanna Biome of South Africa. The veldtype is not a threatened ecosystem.

There is no pristine Waterberg Mountain Bushveld within the footprint of the focus areas of the existing dams, including the area of proposed new, off-channel dam. The proposed new dam is predominantly within cleared and cultivated farmlands. The mountain slopes, north and west of the existing dams, are fairly pristine mountain bushveld areas. Fortunately these areas are not within the footprint of any proposed dam upgrades or developments and will not be impacted at all by the project.

The table below, shows the hierarchy of the vegetation classification of the study area.

Category Description	Classification
Biome	Savanna (Bushveld)
Bioregion	Central Bushveld
Vegetation Types	Waterberg Mountain Bushveld

#### Watercourses in the study area

There are two distinctive watercourses in the study area, namely the Lephala River and a small, unnamed tributary. Most of the dams are situated along the small tributary (stream), with one dam (Dam 4) the furthest downstream and along the Lephala River, just downstream of the confluence of the stream and river.

#### Sensitivity analyses

The ecological sensitivity of the study area is determined by combining the sensitivity analyses of both the floral and faunal components. The highest calculated sensitivity unit of the two categories is taken to represent the sensitivity of that ecological unit, whether it is floristic or faunal in nature.



Ecological sensitivity analysis

Ecological community	Floristic sensitivity	Faunal sensitivity	Ecological sensitivity
Bushveld	Medium	Medium	Medium
Farmlands	Low	Medium/Low	Medium/Low
Watercourses	Medium / High	Medium / High	Medium / High

High: 80% – 100%; Medium/high: 60% – 80%; Medium: 40% – 60%; Medium/low: 20% – 40%; Low: 0% – 20%

Some of the bushveld on the fringes of the study area of the dams is in good condition. However, the fact that the bushveld does not have many RDL floral species and is not a threatened ecosystem reduces the overall sensitivity in terms of potential development. Farmlands are basically transformed areas and therefore in terms of ecological sensitivity their rating is usually very low. There will be some movement of faunal species into and through farmlands and even occasionally priority bird species foraging in them, depending on crops that are grown. Therefore the sensitivity is 'Medium/Low'. The actual ecological sensitivity of the watercourses in the area of the study site has an actual ecological sensitivity of 'Medium/High'. There is a lack of high levels of floral diversity and lack of Red Data Listed (RDL) species. Notwithstanding, watercourses are, by default, viewed as sensitive 'High' and must be approached as such. The sensitivity map for the study area is shown below.

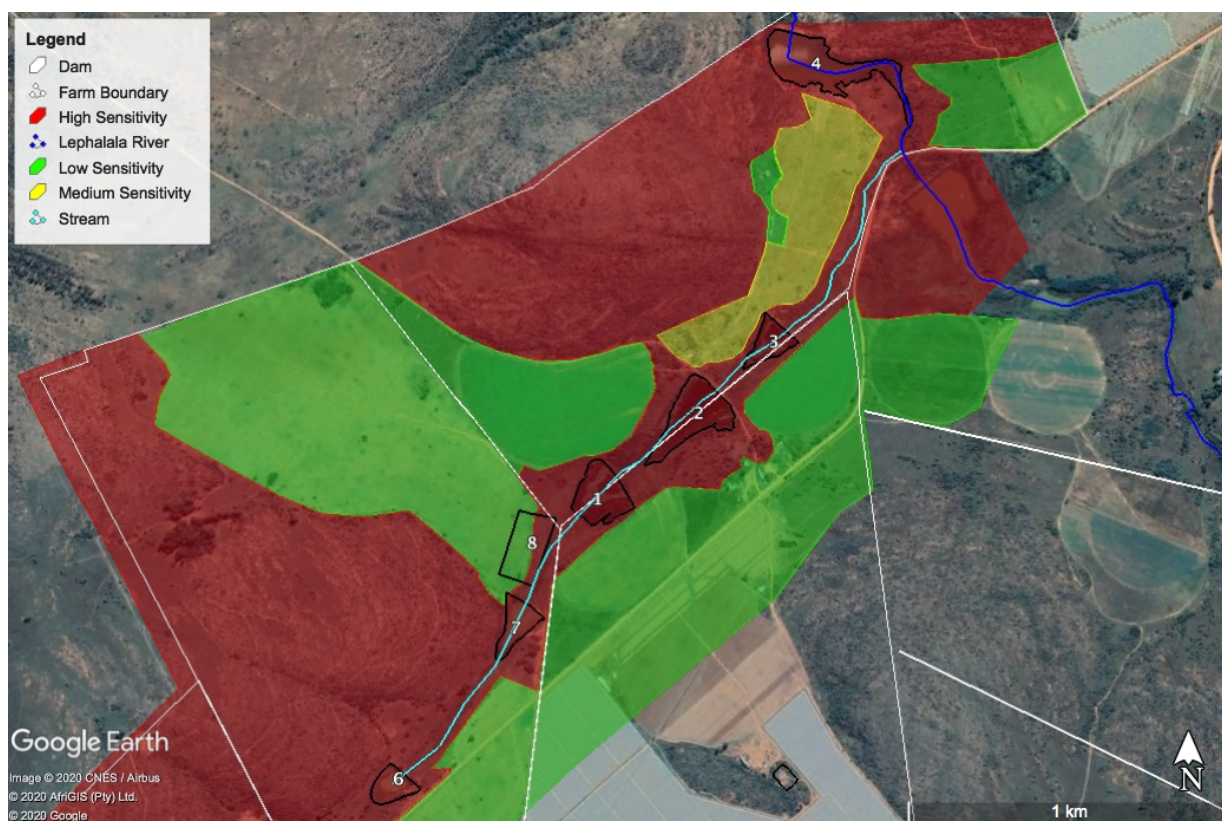


Figure 8: Sensitivity map

Sensitive areas identified during field investigations

All relevant datasets, DEA screening desktop assessment and field investigations were taken into account in determining the sensitivity mapping of the study site.

Low sensitivity areas are transformed farmlands, all of which are still actively cultivated and managed. Some low sensitivity areas on the edges of the medium sensitivity area are existing dwellings and other farm structures. All gravel roads and farm roads are low sensitivity areas.

The medium sensitivity area is an area that has had impacts from farming activities. Presently the area appears fallow. It is rated as medium sensitivity because it is within a designated Critical Biodiversity Area (CBA) and Ecological Support Area (ESA).

High sensitivity areas are all watercourses (including farm dams); associated wetland areas within the valley bottom in which the stream flows; nearby rocky hills and bushveld. Although the bushveld (Waterberg Mountain Bushveld) is not a threatened ecosystem, the area is within parts of CBAs and ESAs and within the greater Waterberg Mountain range which is ecological important for the Limpopo Province. The high sensitivity rating is not related to any RDL plant or animal species at all. There are no RDL species present and the vegetation is actually not sensitive.

Priority areas

Priority areas include formal and informal protected areas (PA) (nature reserves); important bird areas (IBAs); RAMSAR sites; National fresh water ecosystem priority areas (NFEPA) and National protected areas expansion strategy (NPAES) areas. There are no protected areas within a 5km radius of the study site. The IBA in which the study site is situated is the Waterberg System. Refer to *Appendix A6* for a map of the Priority areas.

Limpopo Conservation Plan (LCP v2)

According to the Limpopo Conservation Plan (v2) the study area is not within a protected area. It is also important to highlight that the study site is within a threatened ecosystem (Marikana Thornveld), with a status of vulnerable (VU). Refer to *Appendix A5* for a map of the Critical biodiversity areas (CBAs).

Fatal flaws

There are no obvious fatal flaws and the project may proceed from an ecological perspective.

Mitigating measures

Mitigating measures have been recommended and need to be implemented to validate the findings and sensitivity demarcations of the report. These measures are included in the Impact Assessment and the EMPr.

## 2 AQUATIC ECOLOGICAL ASSESSMENT

An Aquatic Ecological Assessment has been conducted by Flori Scientific Services cc. Refer to *Appendix D2* of the BAR. The report identified the following:

Watercourses in the Study Area

There are two distinctive watercourses in the study area, namely the Lephalala River and a small, unnamed tributary. Most of the dams are situated along the small tributary (stream), with one dam (Dam 4) the furthest downstream and along the Lephalala River, just downstream of the confluence of the stream and river. Most of the length of the stream has associated wetlands within the valley bottom in which the stream flows. These wetlands are more prominent than would naturally have occurred because water impounded by the dams creates pushback and greater volumes of standing water.

Drainage Areas

Below is a summary of the catchment area in which the study site is situated:

Level	Category
Primary Drainage Area (PDA)	A
Quaternary Drainage Area (QDA)	A50A
Water Management Area (WMA) – Previous / Old	Limpopo
Water Management Area (WMA) – New (as of Sept. 2016)	Limpopo (WMA 1)
Sub-Water Management Area	Lephalala
Catchment Management Agency (CMA)	Limpopo (CMA 1)
Wetland Vegetation Ecoregion	Central Bushveld (Group 1)
Fish FEPA	No
Fish FSA	No
Fish Corridor	No
Fish Migratory	No
Priority Quaternary Catchment	No
SWSA	No

The study area is within the Limpopo Water Management Area (WMA 1) and under the jurisdiction of the Limpopo Catchment Management Area (CMA 1). The study area is situated within the Primary Drainage Area (PDA) of A and the Quaternary Drainage Area (QDA) of A50A.

The study site is not situated within a priority quaternary drainage catchment, in terms of guidelines and legislation from both the Department of Water & Sanitation (DWS) and the Limpopo Conservation Plan (v2).

The main watercourse in the study site, and on which the dams of the project focus are situated, is a small unnamed, semi-perennial stream, with a small catchment area. The stream is not important in terms of fish corridors or fish breeding and habitat. This also supports the finding that the dams do not need any fish ladders, as there are no fish migrating or breeding upstream or moving significantly in and out of the stream from out of the larger, perennial Lephhalala River, which is a Fish FSA system.

The Ecological Importance and Sensitivity (EIS) values of the watercourses were determined. The main watercourse in the area is the important Lephhalala River, which has an EIS rating of High (Category B). The river is borderline Category A and is an important perennial river in the Limpopo Province. The small stream in the study area is not an important watercourse and does not contribute greatly to the larger rivers in the region. It is rated as having an ecological importance and sensitivity of Low (Category D). On its own (i.e. in its original state it would have had little to no significance in flood storage, energy dissipation and as a migratory route and breeding site for waterbirds. However, the dams have increased the value of the water system for migratory birds and breeding / nesting sites. The diversity of habitats and populations of unique species is still low.

#### Potential Fatal Flaws

There are no obvious 'fatal flaws' and the project may proceed. However, recommended mitigating measures must be implemented to make the findings relevant. The in-stream dams are existing and the proposed new dam is off-stream. More water will be impounded but the upgrade of the existing dams and the construction of the new dam will not have major negative impacts on the present PES, EIS or existing integrity and functioning of the ecosystem as a whole. A Water Use Licence Application (WULA) process will be required for the project.

#### Existing Impacts

In terms of the natural ecology of the area, the primary existing negative impacts on the study area are ploughed and cultivated (transformed) farmlands; manmade farm dams; low levels of urbanisation (mainly farm dwellings); and other related infrastructure such as roads, power lines, etc.

In-channel farm dams have a negative impact on the ecology of a watercourse in that they typically prevent the natural flow of the watercourse, often leading to drastic changes downstream of the dam. However, in some cases, if well managed and a continual flow is maintained, dams can stabilise and become an important water feature and ecosystem of the area.

The study site is within an active and important commercial farming district of the Limpopo Province. It is also within the very important biodiversity Waterberg region. Imvubu Berries is a well-managed operation with a good regard and care for the natural environment. Large areas of the property are natural, untouched bushveld with active wildlife.

#### Potential Impacts

The potential negative impacts of the proposed project are primarily the loss of natural bushveld due to the construction of a new farm dam; the loss of downstream aquatic ecosystems and river integrity due to impounding and impeding of natural waterflow; the erosion of stream banks and denuded surfaces; and the siltation of watercourses.

The upgrade of existing farm dams is a positive impact arising from the project. The dams are many years old and have become integral parts of the aquatic ecosystem of the area, and provide good bodies of open surface water and ideal habitat for the nesting and breeding of waterbirds; as well as a year-round source of water for wild animals in the region, especially where many watercourses run dry during the winter months. The good management of these dams leads to the conservation of flora and fauna along their fringes as well, in areas that might otherwise have been cultivated (transformed completely).

### Sensitivity

The sensitivities of the different areas in terms of the water environment are determined by taking all aspects discussed in the report into consideration. The sensitivity is shown in three categories of Low, Medium and High. All watercourses are, by default, considered sensitive, despite their levels of disturbance, pollution, degradation, etc. The sensitivity maps were compiled looking at both the terrestrial ecology and aquatic ecology of the study site and the surrounding areas.

Low sensitivity areas are transformed farmlands, all of which are still actively cultivated and managed. Some low sensitivity areas on the edges of the medium sensitivity area are existing dwellings and other farm structures. All gravel roads and farm roads are low sensitivity areas.

The medium sensitivity area is an area that has had impacts from farming activities. Presently the area appears fallow. It is rated as medium sensitivity because it is within a designated CBA and ESA area.

High sensitivity areas are all watercourses (including farm dams); associated wetland areas within the valley bottom in which the stream flows; nearby rocky hills and bushveld. Although the bushveld (Waterberg Mountain Bushveld) is not a threatened ecosystem, the area is within parts of CBAs and ESAs and within the greater Waterberg Mountain range which is ecological important for the Limpopo Province. The high sensitivity rating is not related to and RDL plant or animal species at all. There are no RDL species present and the vegetation is actually not sensitive.

### Mitigating measures

Mitigating measures have been recommended and need to be implemented to validate the findings and sensitivity demarcations of the report. These measures are included in the Impact Assessment and the EMPr.

## 3 HERITAGE IMPACT ASSESSMENT

Archaeos CC was requested to investigate the requirements of the National Heritage Resources Act, 1999. Refer to *Appendix D3* of the BAR.

### The report makes the following observations:

- The information shows that dams number 6 and 7 will be enlarged within their existing flood lines. Dam number 8 will be constructed inside of an existing agricultural field, thus entirely disturbed by agricultural activities.
- It therefore the opinion of the specialist that the project may be exempted from doing a Heritage Impact Assessment (HIA).

### The following is applicable:

- The proposed development is within areas already entirely disturbed.
- This disturbance is either existing dams or agricultural fields.
- Very little natural vegetation remains.
- Due to the mentioned factors, the chances therefore of finding any heritage related features are indeed extremely slim. It is therefore believed that an additional Heritage Impact Assessment (HIA) is not needed for this project and any of the alternatives can be used.

### Recommendations/Mitigation

Should construction work begin for this project:

- It should be noted that the subterranean presence of archaeological and/or historical sites, features or artefacts is always a distinct possibility. Care should therefore be taken when development commences that if any of these are discovered, work on site immediate cease and a qualified archaeologist be called in to investigate the occurrence.

## SECTION C PUBLIC PARTICIPATION

Setala Environmental has taken cognisance of the requirements for public participation in terms of the 2014 EIA Regulations, as amended, and has ensured that the public participation principles are upheld. A successful Public Participation Programme (PPP) is one that is inclusive, actively engages the public and provides ample opportunity for the public to participate in the process. This document provides an overview of the PPP undertaken as part of the BA process for the proposed project.

The purpose of the PPP is to ensure that the issues, inputs and concerns of Interested and Affected Parties (I&APs) are taken into account during the decision-making process. This requires the identification of I&APs (including authorities and the public), communication of the process and findings to these I&APs and the facilitation of their input and comment on the process and environmental impacts, including issues and alternatives that are to be investigated. The steps taken during the execution of the PPP undertaken for this project are detailed in the section that follows. Refer to Comments and Response Report attached as *Appendix E6*.

### 1 ADVERTISEMENT AND NOTICE

Site notice position	Notice displayed at entrance to Elandsbosch farm
Date placed	03/08/2020
Publication name	Beeld
Date published	06/08/2020
Publication name	The Post
Date published	07/08/2020

(Refer to *Appendix E1b*: Proof of site notice)

(Refer to *Appendix E1a*: Proof of newspaper notice)

### 2 PUBLIC NOTIFICATION

A consultation process was undertaken with the intent of informing key community stakeholders, comprising the Municipal structures and the local communities about the proposed development and the Basic Assessment process underway.

#### Identification of Interested and Affected Parties

The PPP for the project was initiated with the development of a comprehensive I&AP database. The list of I&APs was updated on a regular basis during the course of the project. Key stakeholders were identified at the beginning of the PPP, these included: Key stakeholders, commenting authorities and landowners/ land users. Refer to *Appendix E4a*: Register of Interested and Affected Parties for a complete list.

- Limpopo Department of Economic Development, Environment & Tourism (LEDET)
- Department of Water and Sanitation, Limpopo (WMA 1), A50A Quaternary Drainage Area (QDA)
- SA Heritage Resources Agency
- Department of Rural Development and Land Reform: Regional Land Claims Commissioner Limpopo
- National Department of Agriculture, Forestry and Fisheries Directorate: Land Use and Soil Management
- Department of Agriculture, Forestry and Fisheries, Forestry & Natural Resource management, Forestry Regulation & Oversight, Compliance & Enforcement Section
- Modimolle-Mookgophong Local Municipality
- Waterberg District Municipality
- Wildlife and Environmental Society of SA: Northern Areas Region
- Endangered Wildlife Trust
- Agri SA
- Agri Limpopo
- TAU SA Central Region & Northern region
- Road Agency Limpopo (RAL)

- South African National Roads Agency SOC Ltd
- Adjacent landowners

Background Information Document

- A comprehensive background information document (BID) was compiled with the main aim to identify issues, and potential impacts associated with this project. It included a description of the status quo of all relevant environmental components as well as the proceedings of the PPP and communication with registered Interested & Affected Parties (I&APs). BID attached as *Appendix E2a*.
- On 06/08/2020 the documentation was submitted for comment to all I&APs.
- The due date for comment was 14/09/2020. This allowed for a comment period of more than 30 days.
- Copies of the notification to I&APs are included as *Appendix E2b*.

Landowner notification

The landowners throughout a project area in general play an important roll in assisting with the identification of issues and project alternatives. The adjacent landowners/ land users were notified of the project. They are provided the chance to provide comment to the proposed project.

### 3 MEETINGS AND SITE VISITS

Public meeting/ Open day

- Notification of an information meeting/ open day was sent to all I&APs on 14 October 2020. The meeting was proposed for 19 October 2020 at the farm Elandsbosch.
- The purpose of this meeting is to furnish all interested parties with information regarding the extent of the project, the proposed alternatives, and the extent of the Environmental Impact Assessment Process.
- The information meeting to be conducted in the format of an open day with an invitation for attendance between 12h00 to 14h30. (The attendance register of this meeting will be provided as *Appendix E5a* in the final BAR).
- Copies of the invitations to the open day to be included as *Appendix E2c* in the final BAR.

### 4 DISTRIBUTION OF DRAFT BASIC ASSESSMENT REPORT FOR COMMENT

On 14 October 2020 notification of the availability of the Draft Basic Assessment Report (DBAR) was submitted to all I&APs. (Proof included in Appendix E2c of the final BAR).

The DBAR was available for comment on the Setala website using a given link. The comment period was for 30 days until 16 November 2020.

Copies of the DBAR were submitted to the following key stakeholders:

- Limpopo Department of Economic Development, Environment & Tourism (LEDET), Environmental Impact Management
- Department of Water and Sanitation, Limpopo (WMA 1), A50A Quaternary Drainage Area (QDA)
- SA Heritage Resources Agency
- Modimolle-Mookgophong Local Municipality, Social Services, Environmental

### 5 ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	Summary of response from EAP
No issues at this stage	Noted

### 6 COMMENTS AND RESPONSE REPORT

The Public Participation Programme allowed for informed and responsible decision-making by all interested and affected parties. The comments and response report is attached under *Appendix E6*.

## 7 AUTHORITY PARTICIPATION

### List of authorities from whom comments have been received:

- South African National Roads Agency SOC Ltd - deregistered

## 8 CONSULTATION WITH OTHER STAKEHOLDERS

### Other stakeholders from whom comments have been received:

- Henque (Pty) Ltd - Registered as I&AP
- Zelpy (Pty) Ltd - Registered as I&AP
- Proplum Orchards, Farm Kwaggahoek, Palala District - Registered as I&AP
- Patric Edwards, Portion 3 Elandsbosch 122 KR - Registered as I&AP

## 9 CONCLUSION OF PUBLIC PARTICIPATION PROGRAMME

In short, the study approach followed by the Consultants, entailed the following steps:

Activity	Description and Purpose
<b>Pre-Application</b>	
Preparation of a preliminary stakeholder database	A preliminary database has been compiled of authorities (local and provincial), Non-Governmental Organisations, land users and other key stakeholders (refer to <i>Appendix E4</i> ). This database of registered I&APs will be maintained and updated during the ongoing BA process.
Preparation and Distribution of a Background Information Document (BID)	On 06/08/2020 BIDs and registration forms were distributed via email to all I&APs on the database. See <i>Appendix E2b</i> for proof of written submissions. The BID provides an introduction to the Project and the BA process. See <i>Appendix E2a</i> for the BID and Registration form.
Advertisement of the Project and Erection of Site Notices	The Project was advertised on 06/08/2020 in the newspaper, Beeld and 07/08/2020 in The Post. See proof of notice in <i>Appendix E1a</i> . A Site notice has been placed on 03/08/2020 at the entrance to Imvubu Berries on the farm Elandsbosch 122 KR. See proof of placement in <i>Appendix E1b</i> .
Development of an Initial Comments and Response Report	All comments received during the initial consultation period were recorded in a Comments and Responses Report. See included in <i>Appendix E6</i> .
<b>BA Phase</b>	
Release of draft Basic Assessment Report for Public Comment	The draft BA Report was released for the required 30-day public comment period: 14/10/2020 to 16/11/2020. Notifications were sent to all stakeholders on the database and included details of the public open day. The report was submitted to all I&APs and electronic copies could be downloaded with a link from the Setala website. Proof attached as <i>Appendix E2c</i> in the Final BAR.
Development of a Comments and Response Report	All comments received were recorded into a Comments and Response Report. See attached as <i>Appendix E6</i> .
Public Open Day	The Public Open Day proposed for 19/10/2020. The Attendance Register to be included as <i>Appendix E5</i> in the Final BAR.
Submission of final Basic Assessment Report to Environmental Authority	Subsequently the final BAR to be submitted to LEDET. The final BAR to include all concerns raised to the DBAR, and the responses thereto.
<b>Environmental Decision</b>	
Notification of Environmental Decision	I&APs will be notified of the Environmental Decision and the statutory appeal period.

## SECTION D: IMPACT ASSESSMENT

The impacts that may result from the planning and design, construction, operational, decommissioning and closure phases as well as proposed management of identified impacts and proposed mitigation measures have been addressed in this Basic Assessment Report.

The assessment of impacts adheres to the minimum requirements in the EIA Regulations, 2014, as amended and took applicable official guidelines into account. The issues raised by interested and affected parties were also addressed in the assessment of impacts, as well as the impacts of not implementing the activity.

### 1 ISSUES AND RESPONSES

#### ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES AND SUMMARY OF RESPONSES FROM THE PRACTITIONER TO THESE ISSUES

*No issues raised at this stage*

### 2 IMPACTS

#### IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

The potential impacts of the proposed development were identified through a desktop study, a site visit, specialist studies and comments received during the public participation process. It is evident that the biggest impact of the project on the environment is expected to occur during the construction phase. It is expected that with the proposed mitigation of impacts and the implementation of the Environmental Management Programme, the expected negative impact could be mitigated to acceptable measures.

#### METHODOLOGY UTILISED IN THE RATING OF SIGNIFICANCE OF IMPACTS

The potential environmental impacts associated with the project will be evaluated according to its nature, extent, duration, intensity, probability and significance of the impacts, whereby:

- (a) Nature: A brief written statement of the environmental aspect being impacted upon by a particular action or activity.
- (b) Extent: The area over which the impact will be expressed. Typically, the severity and significance of an impact have different scales and as such bracketing ranges are often required. This is often useful during the detailed assessment phase of a project in terms of further defining the determined significance or intensity of an impact. For example, high at a local scale, but low at a regional scale.
- (c) Duration: Indicates what the lifetime of the impact will be.
- (d) Intensity: Describes whether an impact is destructive or benign.
- (e) Probability: Describes the likelihood of an impact actually occurring; and
- (f) Cumulative: In relation to an activity, 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.

Table 5: Criteria to be used for rating of impacts

Criteria	Description			
<b>Extent</b>	<b>National (4)</b> The whole of South Africa	<b>Regional (3)</b> Provincial and parts of neighbouring provinces	<b>Local (2)</b> Within a radius of 2 km of the construction site	<b>Site (1)</b> Within the construction site
<b>Duration</b>	<b>Permanent (4)</b> Mitigation either by man or natural process will not occur in such a way or in	<b>Long-term (3)</b> The impact will continue or last for the entire operational life of the development, but will be mitigated by direct human	<b>Medium-term (2)</b> The impact will last for the period of the construction phase, where after it will be	<b>Short-term (1)</b> The impact will either disappear with mitigation or will be mitigated through natural process



	such a time span that the impact can be considered transient	action or by natural processes thereafter. The only class of impact which will be non-transitory	entirely negated	in a span shorter than the construction phase
<b>Intensity</b>	<b>Very High (4)</b> Natural, cultural and social functions and processes are altered to extent that they permanently cease	<b>High (3)</b> Natural, cultural and social functions and processes are altered to extent that they temporarily cease	<b>Moderate (2)</b> Affected environment is altered, but natural, cultural and social functions and processes continue albeit in a modified way	<b>Low (1)</b> Impact affects the environment in such a way that natural, cultural and social functions and processes are not affected
<b>Probability of occurrence</b>	<b>Definite (4)</b> Impact will certainly occur	<b>Highly Probable (3)</b> Most likely that the impact will occur	<b>Possible (2)</b> The impact may occur	<b>Improbable (1)</b> Likelihood of the impact materialising is very low

Significance is determined through a synthesis of impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. The total number of points scored for each impact indicates the level of significance of the impact.

Table 6: Criteria for the rating of classified impacts

Low impact (4 - 6 points)	A low impact has no permanent impact of significance. Mitigation measures are feasible and are readily instituted as part of a standing design, construction or operating procedure.
Medium impact (7 - 9 points)	Mitigation is possible with additional design and construction inputs.
High impact (10 - 12 points)	The design of the site may be affected. Mitigation and possible remediation are needed during the construction and/or operational phases. The effects of the impact may affect the broader environment.
Very high impact (13 - 20 points)	Permanent and important impacts. The design of the site may be affected. Intensive remediation is needed during construction and/or operational phases. Any activity which results in a "very high impact" is likely to be a fatal flaw.
Status	Denotes the perceived effect of the impact on the affected area.
Positive (+)	Beneficial impact.
Negative (-)	Deleterious or adverse impact.
Neutral (/)	Impact is neither beneficial nor adverse.
It is important to note that the status of an impact is assigned based on the status quo – i.e. should the project not proceed. Therefore not all negative impacts are equally significant.	

## 1 PLANNING AND DESIGN PHASE

The potential impacts, significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the planning phase for the various alternatives of the proposed development.

ALTERNATIVE PROPOSAL				
DIRECT IMPACTS				
Potential Impacts	Significance Rating	Mitigation Measures	Significance rating of impacts after mitigation	Risk of the impact and mitigation not being implemented
<b>Impact on the Natural Habitat and Watercourse</b>  The development site (or parts thereof) could form part of important ecological corridors and such corridors could be destroyed if the functioning thereof is not being supported by the development proposal.	NEGATIVE MEDIUM	<ul style="list-style-type: none"> <li>Proposed buffer areas (no-go zones) along the small semi-perennial stream must be implemented and strictly controlled.</li> <li>These buffer areas exclude work areas and existing stream crossings, but are a guideline and reminder to limit movement in sensitive areas.</li> <li>An application for a Water Use Licence to be submitted for construction of any activities within the 1:100 year floodline.</li> <li>Ensure a proper Stormwater Management Plan is</li> </ul>	NEGATIVE LOW	LOW

<p><u>The development site</u> The Biodiversity Impact Assessment concluded that the ecological sensitivity of the watercourses in the area of the study site has an actual ecological sensitivity of 'Medium/High'. There is a lack of high levels of floral diversity and lack of RDL species. Notwithstanding, watercourses are, by default, viewed as sensitive 'High' and must be approached as such.</p>		<p>compiled and implemented.</p>		
<p><b>Impact of Stormwater</b>  Stormwater management and design solutions must be based on ecologically sound principles (water retention, detention, infiltration, quality, etc.) and not only with functional safety aspects in mind.</p>	<p>NEGATIVE MEDIUM</p>	<p>Ensure a proper Stormwater Management Plan is compiled and implemented.</p>	<p>NEGATIVE LOW</p>	<p>LOW</p>
INDIRECT IMPACTS				
<p>No indirect impacts were identified during the planning and design phase.</p>				
CUMULATIVE IMPACTS				
<p>No cumulative impacts were identified during the planning and design phase.</p>				

<b>ALTERNATIVE 1 Locality for dam 8 not as proposed</b>				
DIRECT IMPACTS				
<p>Potential Impacts</p>	<p>Significance Rating</p>	<p>Mitigation Measures</p>	<p>Significance rating of impacts after mitigation:</p>	<p>Risk of the impact and mitigation not being implemented</p>
	<p>NEGATIVE LOW</p>		<p>NEGATIVE LOW</p>	<p>LOW</p>
<p>Impacts as described under Proposal above are applicable to all Alternatives</p>				
INDIRECT IMPACTS				
<p>No indirect impacts were identified during the planning phase.</p>				

<b>NO GO ALTERNATIVE</b>				
DIRECT IMPACTS				
<p>Potential Impacts</p>	<p>Significance Rating</p>	<p>Mitigation Measures</p>	<p>Significance rating of impacts after mitigation:</p>	<p>Risk of the impact and mitigation not being</p>

				implemented
No direct impacts were identified during the planning and design phase.				
INDIRECT IMPACTS				
No indirect impacts were identified during the planning and design phase.				
CUMULATIVE IMPACTS				
No cumulative impacts were identified during the planning and design phase.				

## 2 CONSTRUCTION PHASE

ALTERNATIVE PROPOSAL				
DIRECT IMPACTS				
Potential Impacts	Significance Rating	Mitigation Measures	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
<p><b>Loss of natural bushveld / vegetation</b>                      This impact is associated with disturbance to and/or destruction of the flora component.                      During construction the activities could cause a negative impact where insensitive clearing for construction and access purposes, etc. is required. Insensitive clearing can cause the destruction of habitat. Not only does vegetation removal represent a loss of seed and organic matter, but it is also a loss of protection to plants and small animals.                      Insensitive vegetation clearance can also cause erosion.</p> <p><u>The development site</u></p> <ul style="list-style-type: none"> <li>No protected trees are within the study site. Therefore no protected trees will be lost or destroyed.</li> <li>Most of the project footprint is within disturbed areas.</li> <li>Some 'riparian' vegetation will be lost during construction of new Dam 8.</li> <li>No actual Waterberg Mountain Bushveld will be lost or transformed.</li> </ul>	<p>NEGATIVE MEDIUM</p>	<p>Detail mitigation measures are stipulated in the EMPr and include the following:</p> <ul style="list-style-type: none"> <li>Any priority species encountered must be identified and rescue prior to any excavation or construction activities.</li> <li>Vegetation removed during excavation activities may be used as compost and may be ploughed into farmlands as green manure or dry manure. This is preferable to burning of material. It is not recommended to try ship removed vegetation to an official dumpsite as the exercise in itself will create a bigger carbon footprint than even burning.</li> <li>Re-seeding of bare areas with local indigenous grasses to be part of the rehabilitation plan.</li> <li>No exotic species to be used for rehabilitation.</li> <li>Ensure a proper Stormwater Management Plan is compiled and implemented.</li> <li>The exact clearing areas must be identified and demarcated.</li> <li>Alien vegetation shall be managed and Category 1, 2 and 3 plants shall be controlled to the extent necessary to prevent or to contain the occurrence, establishment, growth, multiplication, propagation, regeneration and spreading of such plants.</li> </ul>	<p>NEGATIVE LOW</p>	<p>LOW</p>

<p>However, the veldtype is not a threatened ecosystem.</p>				
<p><b>Impacts on fauna</b></p> <ul style="list-style-type: none"> <li>Noise and vibration during construction</li> <li>Loss of habitat</li> </ul> <p><u>The Development site</u> The Red Data Sensitivity Index Score for the site is low/medium. No priority faunal species (which includes red data species) were encountered during field investigations.</p>	<p>NEGATIVE MEDIUM</p>	<p>Care must be taken not to interact directly with any wild life encountered.</p>	<p>NEGATIVE LOW</p>	<p>LOW</p>
<p><b>Impacts on avi-fauna</b></p> <p><u>The Development Site</u> Cape vulture (Gyps coprotheres), which is a priority bird species (Status: Endangered), was observed soaring high overhead during site investigations. Cape vultures are known to breed in the cliffs of the Waterberg Mountains. The study site is situated directly within the Important Bird Area (IBA) of the Waterberg System.</p>	<p>POSITIVE HIGH</p>	<p>The project will only have positive impacts on the avifauna of the region and it creates permanent bodies of open water, as well as grassy and thick-vegetative floodplains and edges, all, which are ideal habitats for various bird species. The project will have no negative impacts on avifauna. Any bird nests encountered in the grass or on the water must not be interfered with. If encountered must first be discussed with specialist.</p>	<p>POSITIVE HIGH</p>	<p>LOW</p>
<p><b>Pollution of Water Sources</b></p> <p>During construction, the risk of pollution of surface and groundwater can generally be related to diesel, oil spills that may result in a change in water quality with the associated negative impact on humans and the natural habitat. Surface/groundwater pollution during the construction phase is also associated with poor construction techniques.</p> <p>Diesel, oil and lubricant spills are the main concern in respect of water pollution during construction together with organic pollution caused by inadequately managed facilities at the work sites.</p> <p><u>The development site</u> The stream (watercourse) is regarded as having high conservation value.</p>	<p>NEGATIVE HIGH</p>	<p>Mitigation measures in the Environmental Management Programme include measures to ensure acceptable construction practices to minimise or avoid the risk of contamination of water sources. These include:</p> <p>Construction Site</p> <ul style="list-style-type: none"> <li>No temporary facilities or portable toilets to be setup within 50m of any watercourse.</li> <li>During and after construction, stormwater control measures should be implemented especially around stockpiled soil, excavated areas, trenches etc. so that export of soil into any watercourse is avoided.</li> </ul> <p>Diesel, hydraulic fluid and lubricants</p> <ul style="list-style-type: none"> <li>Minimise on-site storage of petroleum products;</li> <li>Ensure measures to contain spills readily available on site (spill kits).</li> <li>All petrochemical leaks and spills must be appropriately contained and disposed of at a licensed waste disposal site.</li> </ul> <p>Construction Vehicles</p> <ul style="list-style-type: none"> <li>All earth moving vehicles and equipment must be regularly maintained to ensure their integrity and reliability.</li> <li>Should any transfer of vehicle fuel take place on site, it is important to demarcate a specific area for this purpose. This area should be covered with an impermeable layer to prevent</li> </ul>	<p>NEGATIVE MEDIUM</p>	<p>LOW</p>

		<p>any penetration of fuel and oil spillage into the soil. The area could also be sloped towards an oil trap or sump to ease collection of spilled substances.</p> <ul style="list-style-type: none"> <li>• All construction vehicles should be serviced on a regular basis to minimise the risk of oil spillage on site.</li> <li>• Servicing of vehicles or equipment must take place off-site at appropriate workshop facilities.</li> <li>• When not in use, construction vehicles must be parked in an area provided with an impermeable layer to prevent leaks and spills from penetrating the substrate.</li> </ul> <p>Construction site domestic waste and sewage</p> <ul style="list-style-type: none"> <li>• Minimise on-site accommodation.</li> <li>• Deposit solid waste in containers and dispose at municipal waste disposal sites regularly.</li> <li>• Dispose of liquid waste (grey water) with sewerage.</li> <li>• Install appropriate ablution facilities.</li> <li>• Preferably utilise municipal systems or chemical toilets.</li> </ul> <p>Construction site inert waste (waste bags, wire, timber etc)</p> <ul style="list-style-type: none"> <li>• Ensure compliance with stringent daily clean up requirements on site.</li> <li>• Dispose at municipal waste disposal sites.</li> </ul> <p>Construction site hazardous waste</p> <ul style="list-style-type: none"> <li>• All hazardous substances must be stored on an impervious surface in a designated bunded area, able to contain 110% of the total volume of materials stored at any given time.</li> <li>• Material safety data sheets (MSDSs) are to be clearly displayed for all hazardous materials.</li> <li>• The integrity of the impervious surface and bunded area must be inspected regularly and any maintenance work conducted must be recorded in a maintenance report.</li> <li>• Employees should be provided with absorbent spill kits and disposal containers to handle spillages.</li> <li>• Train employees and contractors on the correct handling of spillages and precautionary measures that need to be implemented to minimise potential spillages.</li> <li>• Employees should record and report any spillages to the responsible person.</li> <li>• An Emergency Preparedness and Response Plan will be developed and implemented should and incident occur.</li> <li>• Access to storage areas on site must be restricted to authorised employees only.</li> <li>• Contractors will be held liable for any environmental damages caused by spillages.</li> </ul>		
<p><b>Topographical Impacts</b></p> <p>Alteration of topography due to stockpiling of soil, building material and debris and waste material on site.</p>	<p>NEGATIVE MEDIUM</p>	<ul style="list-style-type: none"> <li>• All stockpiles must be restricted to designated areas and are not to exceed a height of 2 metres.</li> <li>• Stockpiles created during the construction phase are not to remain during the operational phase.</li> <li>• The contractor must be limited to clearly</li> </ul>	<p>NEGATIVE LOW</p>	<p>LOW</p>

		defined access routes to ensure that sensitive and undisturbed areas are not disturbed.		
<b>Use of existing soils and materials on site</b>	POSITIVE HIGH	<p>Reusable topsoil will be collected and stockpiled at dedicated areas for the rehabilitation of the site after completion of the downstream slope of the embankment, parts of the spillway channel cutting as well as other disturbed areas outside the footprint of the works.</p> <p>All reusable material will either be used directly in fill or be stockpiled for later use in the embankment or other land fill zones as part of the works.</p> <p>Rocks will be stockpiled for use later in the spillway and on the up-stream side of the earth wall.</p> <p>Construction of the embankment entails a basic cut and fill operation with limited waste or spoil. Using the material on the site will create a positive impact.</p>	POSITIVE HIGH	LOW
<b>Impeding &amp; Impounding waterflow</b>  Initial construction phase will have the biggest disruption on the study site and aquatic ecology in particular, especially in terms of water flow, impeding and impounding and siltation	NEGATIVE HIGH	<ul style="list-style-type: none"> <li>Proposed new Dam 8 is an off-channel dam. Therefore, most of the dam will be able to be constructed without any initial impact on the main stream.</li> <li>At no stage of the construction phase may the flow of the stream, as presently is, be cut-off completely (totally impeded).</li> <li>The main channel of the stream may not be rerouted at any stage of the construction phase.</li> <li>At no stage may all the water flow be diverted. This includes when starting to fill the new dam, after construction. In other words, the stream must still flow downstream of the new Dam 8 and between in-channel Dam 7 and in-channel Dam 1, while the off-channel Dam 8 is being filled.</li> <li>Dam upgrades and new dam construction plans are such that there will always be a continual flow of water along the main watercourse. The dams must therefore have a permanent outlet for continual flow even under low water level conditions and the dams may not simply have a spill way. The spill way is only for flood conditions and protection of the dam during those times.</li> <li>Preferably the upgrade of the in-channel dams must be undertaken during the winter season when natural water flow is at its lowest. Hereby having less of a negative impact on impeding waterflow.</li> </ul>	NEGATIVE LOW	LOW
<b>Altering flow of a watercourse</b>  Initial construction phase will have the biggest disruption on the study site and aquatic ecology in particular, especially in terms of water flow, impeding and impounding and siltation.		<ul style="list-style-type: none"> <li>Proposed new Dam 8 is an off-channel dam. Therefore, most of the dam will be able to be constructed without any initial impact on the main stream.</li> <li>At no stage of the construction phase may the flow of the stream, as presently is, be cut-off completely (totally impeded).</li> <li>The main channel of the stream may not be rerouted at any stage of the construction phase.</li> <li>At no stage may all the water flow be diverted. This includes when starting to fill the new dam, after construction.</li> </ul>		

<p><b>Siltation and erosion</b></p> <p>Unnecessary clearing of vegetation can result in exposed soil prone to erosive conditions. Insufficient soil coverage after placing of topsoil, especially during construction where large surface areas are applicable, could also cause erosion. To cause the loss of soil by erosion is an offence under the law.</p> <p><u>The development site</u> The average downward gradient from upstream at Dam 6 until the confluence with the Lephhalala River varies between 1% to 10%.</p>	<p>NEGATIVE MEDIUM</p>	<p>A combination of erosion prevention principles is discussed in detail in the EMPr. All mitigating measures as per Items above have reference to siltation and erosion. Carefully monitoring of construction is essential to locate and mitigate any erosion observed speedily. Investigations must be conducted after every rain downpour. Any problems need to be rectified immediately to avoid problem escalating and siltation of downstream dams and stream occurring.</p> <p>Other factors which should be taken into account are the following:</p> <ul style="list-style-type: none"> <li>• Any temporary storage, lay-down areas or accommodation facilities to be setup in existing built-up areas or disturbed areas only.</li> <li>• Ensure small footprint during construction phase.</li> <li>• Proposed buffer areas (no-go zones) along the small semi-perennial stream must be implemented and strictly controlled.</li> <li>• These buffer areas exclude work areas and existing stream crossings, but are a guideline and reminder to limit movement in sensitive areas.</li> <li>• An Erosion Plan to be implemented and monitored during construction phase as the erosion potential is moderate. Need to reduce possible (although low potential) erosion and gully formation downstream. This also to further reduce low potential of siltation of small stream.</li> <li>• Unnecessary clearing of flora resulting in exposed soil prone to erosive conditions should be avoided.</li> <li>• Land disturbance must be minimized in order to prevent erosion and run-off - this includes leaving exposed soils open for a prolonged period of time. As soon as vegetation is cleared (including alien) the area must be re-vegetated if it is not to be developed on in future.</li> <li>• Large exposed areas during the construction phases should be limited. Where possible areas earmarked for construction during later phases should remain covered with vegetation coverage until the actual construction phase. This will prevent unnecessary erosion and siltation in these areas.</li> <li>• The total area of exposed soil must be reduced during the rainy season.</li> <li>• Specifications for topsoil storage and replacement to ensure sufficient soil coverage as soon as possible after construction must be implemented.</li> </ul>	<p>NEGATIVE LOW</p>	<p>LOW</p>
<p><b>Air Quality Impacts</b></p> <p>Dust and emissions during construction generated by debris handling and debris piles, truck transport, bulldozing, general</p>	<p>NEGATIVE MEDIUM</p>	<ul style="list-style-type: none"> <li>• Dust must be suppressed on the construction site and during the transportation of material during dry periods by the regular application of water. Water used for this purpose must be used in quantities that will not result in the generation of run-off.</li> <li>• Loads could be covered to avoid loss of</li> </ul>	<p>NEGATIVE LOW</p>	<p>LOW</p>

<p>construction.</p>		<p>material in transport, especially if material is transported off site.</p> <ul style="list-style-type: none"> <li>Dust and mud should be controlled at vehicle exit and entry points to prevent the dispersion of dust and mud beyond the site boundary.</li> <li>Facilities for the washing of vehicles should be provided at the entry and exit points.</li> <li>A speed limit of 40 km/hr should be set for all vehicles travelling over exposed areas.</li> <li>During the transfer of materials, drop heights should be minimised to control the dispersion of mater being transferred.</li> <li>The height of all stockpiles on site should be a maximum of 2m.</li> <li>Use of dust retardant road surfacing if required due to the exceedance of Air Quality Guidelines.</li> </ul>		
<p><b>Impacts associated with construction activities such as noise, and safety</b></p> <p>The negative impact of noise, generally associated with construction activities, are temporary, occurring mostly during the construction phase. In terms of safety, it should be noted that the project involves deep excavations and open trenches. Excavations and open trenches can act as a trap for snakes, small mammals and lizards.</p>	<p>NEGATIVE MEDIUM</p>	<p><u>Noise mitigation measures</u></p> <ul style="list-style-type: none"> <li>All construction activities should be undertaken according to daylight working hours between the hours of 07:00 – 17:00 on weekdays and 7:30 –13:00 on Saturdays.</li> <li>No construction activities may be undertaken on Sunday.</li> <li>Provide all equipment with standard silencers.</li> <li>Maintain silencer units in vehicles and equipment in good working order.</li> <li>All earth moving vehicles and equipment must be regularly maintained to ensure their integrity and reliability.</li> <li>Construction staff working in area where the 8-hour ambient noise levels exceed 60 dBA must have the appropriate Personal Protective Equipment (PPE).</li> <li>All operations should meet the noise standard requirements of the Occupational Health and Safety Act (Act No. 85 of 1993).</li> </ul> <p><u>Safety mitigation measures</u></p> <ul style="list-style-type: none"> <li>The area affected by construction must be fenced prior to any activities taking place.</li> <li>All excavated areas must be clearly marked and barrier tape must be placed around them for safety purposes.</li> <li>A Fire Management Plan has to be identified during the pre-construction phase and must be implemented throughout the construction and operation phases of the development</li> </ul>	<p>NEGATIVE MEDIUM</p>	<p>LOW</p>
<p><b>Traffic</b> (construction vehicles)</p> <p>The construction phase is likely to generate additional traffic in terms of construction vehicles and heavy vehicles.</p>	<p>NEGATIVE LOW</p>	<ul style="list-style-type: none"> <li>All access roads and farm roads used must be monitored and maintained.</li> <li>All vehicles entering the Site are to be roadworthy.</li> </ul>	<p>NEGATIVE LOW</p>	<p>LOW</p>
<p><b>Impact of Labourers</b></p>	<p>NEGATIVE LOW</p>	<p>If possible all labour should be sourced locally.</p>	<p>NEGATIVE LOW</p>	<p>LOW</p>
<p><b>Impact on Cultural Heritage Resources</b></p> <p>No heritage resources were identified during the site visits. There is however always a probability that</p>	<p>NEGATIVE LOW</p>	<ul style="list-style-type: none"> <li>The construction team should be inducted on the significance of archaeological resources that may be encountered during subsurface construction work before they work on the area in order to ensure appropriate treatment and course of action is afforded to any chance</li> </ul>	<p>NEGATIVE LOW</p>	<p>LOW</p>



<p>archaeological resources might be identified during excavations.</p>		<p>finds.</p> <ul style="list-style-type: none"> <li>• If archaeological materials are uncovered, work should cease immediately and the SAHRA be notified and activity should not resume until appropriate management provisions are in place.</li> <li>• If any evidence of archaeological sites or remains (e.g., remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments and charcoal/ash concentrations), fossils or other categories of heritage resources are found during the proposed activities, SAHRA must be alerted immediately, and a professional archaeologist or palaeontologist, depending on the nature of the finds, must be contacted 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 might be necessary.</li> </ul>		
<p><b>Waste Management</b></p> <p><u>Construction waste</u> The construction phase might create small quantities of waste to be accommodated by local legal landfill sites.</p>	<p>NEGATIVE MEDIUM</p>	<ul style="list-style-type: none"> <li>• Prevent unhygienic usage on site and pollution of the natural assets.</li> <li>• Develop a central waste temporary holding site to be used during construction. (Near the access entrance). This site should comply with the following:</li> <li>• Skips for the containment and disposal of waste that could cause soil and water pollution, i.e. lubricants, etc.;</li> <li>• Small lightweight waste items should be contained in skips with lids to prevent wind littering;</li> <li>• Soils and stones excavated out of the new proposed dam may be used in the immediate vicinity and farm as backfill, fixing of roads, filling of dongas, etc. The material may also be used in the upgrade of existing dams if suitable.</li> <li>• Excavated soils and rocks may not be simply dumped in any pristine bushveld, or within 50m of the edge of watercourses or dam.</li> </ul>	<p>NEGATIVE LOW</p>	<p>LOW</p>
<p><u>Sewage waste</u> Generation and disposal of sewage waste of temporary construction toilets.</p>	<p>NEGATIVE MEDIUM</p>	<ul style="list-style-type: none"> <li>• On-site chemical toilets to be provided for domestic purposes during construction phase.</li> <li>• The contractors will be responsible for the maintenance of the chemical toilets.</li> <li>• No temporary facilities or portable toilets to be setup within 50m of any watercourse.</li> <li>• Should any spills or incidents occur; the material will be cleaned up immediately and disposed off appropriately.</li> <li>• All incidents must be reported to the responsible site officer as soon as it occurs.</li> </ul>	<p>NEGATIVE LOW</p>	<p>LOW</p>
<p><b>Economic impacts</b></p> <p>Positive economic impacts are anticipated. The impact on employment would be positive, and although the impact is expected to be small; any contribution to more employment is an</p>	<p>POSITIVE HIGH</p>	<p>Employment opportunities will be generated.</p> <ul style="list-style-type: none"> <li>• All labour (skilled and unskilled) and contractors should be sourced locally where possible.</li> <li>• A labour and recruitment policy must be developed, displayed and implemented by the contractor.</li> <li>• Recruitment at the construction site will not be allowed.</li> <li>• Where possible, labour intensive practices (as</li> </ul>		

achievement in South Africa.		opposed to mechanised) should be practiced. • The principles of equality, BEE, gender equality and non-discrimination will be implemented.		
<b>INDIRECT IMPACTS</b>				
No indirect impacts were identified during the construction phase				
<b>CUMULATIVE IMPACTS</b>				
<b>Impact on surface water</b>	POSITIVE HIGH	The potential cumulative impacts of the proposed project are positive and not negative impacts. The upgrade of existing farm dams is a positive impact arising from the project. The dams are many years old and have become integral parts of the aquatic ecosystem of the area, and provide good bodies of open surface water and ideal habitat for the nesting and breeding of waterbirds; as well as a year-round source of water for wild animals in the region, especially where many watercourses run dry during the winter months. The good management of these dams leads to the conservation of flora and fauna along their fringes as well, in areas that might otherwise have been cultivated (transformed completely), thereby having a positive impact, not only on site but in the larger area.	POSITIVE HIGH	POSITIVE HIGH

<b>ALTERNATIVE 1</b>				
<b>DIRECT IMPACTS</b>				
Potential Impacts	Significance Rating	Mitigation Measures	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
Impacts as described under Proposal above are applicable to other Alternatives				
<b>Use of imported foreign materials and soils</b>	NEGATIVE HIGH	There is also the danger that seeds and plant material of alien invasive species are also introduced along with the materials that are imported onto the site.	NEGATIVE HIGH	HIGH
<b>Locality for dam 8 not as proposed</b>	NEGATIVE HIGH	Additional infrastructure required, i.e. electricity to pump water from dam 7 to dam 8 should the proposed location for dam 8 not be constructed.	NEGATIVE HIGH	NEGATIVE HIGH
<b>INDIRECT IMPACTS</b>				
<b>Locality for dam 8 not as proposed</b>	NEGATIVE HIGH	Additional costs will be incurred for electricity and new infrastructure, to pump water from dam 7 to dam 8	NEGATIVE HIGH	NEGATIVE HIGH

<b>NO GO ALTERNATIVE</b>				
<b>DIRECT IMPACTS</b>				
Potential Impacts	Significance Rating	Mitigation Measures	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
All the impacts outlined above will not apply to the No-Go alternative as the status quo will apply and the		No impact on the water courses therefore no mitigation measures required.		

environment will remain as it is currently. However, it is important to note that the benefits associated with the development will also not materialise, and it must be noted that the majority of the impacts identified for the development were mitigated to a negative low or positive impact once the measures for mitigation were applied, indicating that maintaining the status quo is to lose the opportunity of a beneficial development with negligible environmental impacts.				
<b>DIRECT IMPACTS</b>				
No indirect impacts were identified during the construction phase.				
<b>CUMULATIVE IMPACTS</b>				
No cumulative impacts were identified during the construction phase.				

### 3 OPERATIONAL PHASE

<b>ALTERNATIVE PROPOSAL</b>				
<b>DIRECT IMPACTS</b>				
Potential Impacts	Significance Rating	Mitigation Measures	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
<b>Alien Invasive Plants</b>  The removal of alien invasive plants will have a positive effect on the biodiversity of not only the site itself, but also its surrounds.	POSITIVE HIGH	<ul style="list-style-type: none"> <li>Removal of alien invasive species or other vegetation and follow-up procedures must be in accordance with the Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983).</li> <li>A few common alien plant species (weeds) are present in the study area. However, there are no areas of major weed infestation on site or within the dams and weeds are well managed and controlled as part of the farm management.</li> <li>There are some large alien tree species such as syringa (Melia azedarach) growing in the area of the dams and even along the dam walls. These will need to be removed.</li> <li>In terms of the dams and stream there are no significant infestation of aquatic or water-loving plants.</li> <li>The invasive alien Spanish reed (Arundo donax) is fortunately not present, but the invasive grey poplar (Populus x canescens) is present in the small stream and along the Lephalala River and will need to be managed and controlled.</li> </ul>	POSITIVE HIGH	LOW
<b>Impact on water resources</b>  The proposed activity could	NEGATIVE HIGH	In-channel farm dams have a negative impact on the ecology of a watercourse in that they typically prevent the natural flow of the	NEGATIVE LOW	LOW

have a negative impact on water resources.		watercourse, often leading to drastic changes downstream of the dam. However, if well managed and a continual flow is maintained, dams can stabilise and become an important water feature and ecosystem of the area. Stormwater Management are addressed in the Environmental Management Programme (EMPr). A WULA to be submitted to apply for activities in the flood line area.		
<b>INDIRECT IMPACTS</b>				
No indirect impacts were identified during the operational phase				
<b>CUMULATIVE IMPACTS</b>				
<b>Impact on the water course</b>	POSITIVE HIGH	The potential cumulative impacts of the proposed project are positive and not negative impacts. In-channel farm dams have a negative impact on the ecology of a watercourse in that they typically prevent the natural flow of the watercourse, often leading to drastic changes downstream of the dam. However, if well managed and a continual flow is maintained, dams can stabilise and become an important water feature and ecosystem of the area.	POSITIVE HIGH	POSITIVE HIGH

<b>ALTERNATIVE 1</b>				
<b>DIRECT IMPACTS</b>				
Potential Impacts	Significance Rating	Mitigation Measures	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
Impacts described under Alternative Proposal above are applicable to other Alternatives				
<b>DIRECT IMPACTS</b>				
Impacts described under Alternative Proposal above are applicable to Alternative 1.				
<b>CUMULATIVE IMPACTS</b>				
Impacts described under Alternative Proposal above are applicable to Alternative 1.				

<b>NO GO ALTERNATIVE</b>				
<b>DIRECT IMPACTS</b>				
Potential Impacts	Significance Rating	Mitigation Measures	Significance rating of impacts after mitigation	Risk of the impact and mitigation not being implemented
All the impacts outlined above will not apply to the No-Go alternative as the status quo will apply and the environment will remain as it is currently. However, it is important to note that the				

<p>benefits associated with the development will also not materialise, and it must be noted that the majority of the impacts identified for the development were mitigated to a negative low or positive impact once the measures for mitigation were applied, indicating that maintaining the status quo is to lose the opportunity of a beneficial development with negligible environmental impacts.</p>				
<p><b>DIRECT IMPACTS</b></p>				
<p>No indirect impacts were identified during the operational phase.</p>				
<p><b>CUMULATIVE IMPACTS</b></p>				
<p><b>Loss of economic growth</b></p> <p>The proposed activity will on a local level contribute to sustainable economic growth, and support the agricultural sector.</p> <p>The company has set out to provide uplifting, fair and equitable workplaces and have set policies to ensure this happens.</p> <p>By investing in non-traditional berry growing areas they are actively creating new employment opportunities. They are playing an active role in the upliftment of local communities through the empowerment of the individuals through these job opportunities and associated training.</p>				

#### 4 DECOMMISSIONING AND CLOSURE PHASE

Due to the permanent nature of this development proposal, decommissioning is highly unlikely and decommissioning therefore does not form part of this project proposal.

### 3 ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, an environmental impact statement will be completed. This will sum up the impact and its alternatives may have on the environment (after the management and mitigation of impacts have been taken into account - with specific reference to types of impact, duration of impacts, likelihood of potential impacts and the significance of impacts).

1 PLANNING & DESIGN PHASE (PROPOSAL)

Impact Description	Intensity	Extent	Duration	Probability it would occur	Significance rating After Mitigation
Impact on Natural Habitat and watercourses	1	2	3	3	Medium
Impact of stormwater	2	2	3	2	Medium

2 CONSTRUCTION PHASE (PROPOSAL)

Impact Description	Intensity	Extent	Duration	Probability it would occur	Significance rating After Mitigation
Impact on Natural Habitat	2	2	2	2	Medium
Impact on Water Resources	2	2	3	2	Medium
Impact on Avifauna	1	2	1	2	Low
Impact on Erosion	2	1	1	2	Low
Impact of Noise, Safety and Dust	2	2	1	1	Low
Traffic Impact	2	2	1	1	Low
Impact of Labourers	2	2	1	1	Low
Impact on Cultural Heritage Resources	1	1	1	1	Low
Waste Management	2	1	1	2	Low
Economic Impacts This will be a POSITIVE impact	3	2	2	3	High

3 OPERATIONAL PHASE (PROPOSAL)

Impact Description	Intensity	Extent	Duration	Probability it would occur	Significance rating After Mitigation
Impact on Natural Habitat	1	1	2	2	Low
Impact on Avifauna This will be a POSITIVE impact	2	2	3	3	High
Impact on Alien vegetation This will be a POSITIVE impact	2	2	3	3	High
Economic Impacts This will be a POSITIVE impact	3	2	2	3	High

4 NO-GO

All the impacts outlined above will not apply to the No-Go alternative as the status quo will apply and the environment will remain as it is currently. However, it is important to note that the benefits associated with the development will also not materialise, and it must be noted that the majority of the impacts identified for the development were mitigated to a negative low or positive impact once the measures for mitigation were applied, indicating that maintaining the status quo is to lose the opportunity of a beneficial development with negligible environmental impacts.

4 IMPACT SUMMARY OF THE PROPOSAL OR PREFERRED ALTERNATIVE

The significance of impacts of the proposal and alternative(s), and reasons for selecting the proposal or preferred alternative are as follows:

In terms of the natural ecology of the area, the primary existing negative impacts on the study area are ploughed and cultivated (transformed) farmlands; manmade farm dams; low levels of urbanisation (mainly farm dwellings); and other related infrastructure such as roads, power lines, etc.

In-channel farm dams have a negative impact on the ecology of a watercourse in that they typically prevent the natural flow of the watercourse, often leading to drastic changes downstream of the dam. However, in some cases, if well managed and a continual flow is maintained, dams can stabilise and become an important water feature and ecosystem of the area.

The study site is within an active and important commercial farming district of the Limpopo Province. It is also within the very important biodiversity Waterberg region. Imvubu Berries is a well-managed operation with a good regard and care for the natural environment. Large areas of the property are natural, untouched bushveld with active wildlife.

The potential negative impacts of the proposed project are primarily the loss of natural bushveld due to the construction of a new farm dam; the loss of downstream aquatic ecosystems and river integrity due to impounding and impeding of natural waterflow; the erosion of stream banks and denuded surfaces; and the siltation of watercourses.

The upgrade of existing farm dams is a positive impact arising from the project. The dams are many years old and have become integral parts of the aquatic ecosystem of the area, and provide good bodies of open surface water and ideal habitat for the nesting and breeding of waterbirds; as well as a year-round source of water for wild animals in the region, especially where many watercourses run dry during the winter months. The good management of these dams leads to the conservation of flora and fauna along their fringes as well, in areas that might otherwise have been cultivated (transformed completely).

Taking all aspects into consideration including, ecological sensitivities, red data listed species (RDL), protected trees, the type of project and related activities, as well as mitigating measures, there are no fatal flaws and the project may go ahead.

## SECTION E: RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?	YES	NO
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The majority of the negative environmental impacts will be experienced during the construction phase. The majority of these impacts will have a LOW significance. It is envisaged that these impacts can be easily mitigated and satisfactorily managed. The management of the impacts identified in the BAR for the construction and operational phases, are outlined in the technical specialist report recommendations and the EMPr.

It is the opinion of Setala Environmental that there are presently no environmental impacts emanating from the proposed activity that cannot be adequately managed. The management of the negative impacts will require the implementation of the necessary mitigatory measures detailed in the Environmental Management Programme (EMPr, refer to *Appendix F*) of this report.

Based on the assumption that the mitigation measures will be effectively implemented for the proposed project and its associated infrastructure and that no fatal flaws have been identified to date, it is the opinion of the EAP that this activity should be authorised to proceed to the final stages of decision making.

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

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

This EIA investigated a corridor along the semi-perennial stream on which the dams of the project focus are situated, to accommodate any deviation in the layout of the dams. The EIA will seek to authorise the total corridor. The wider area that was investigated will allow future potential amendments to the EA should it be necessary (at a later stage).

Should small changes be done to the dam layout after authorisation it will not be considered crucial and will not warrant a new application.

**The period for which the environmental authorisation is required, is five (5) years.**

Is an EMPr attached?	YES	NO
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The EMPr must be attached as *Appendix F*.



## SECTION G: DECLARATION BY THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

I, Ria (MM) Pretorius declare that I –

- (a) act as the independent environmental practitioner in this application;
- (b) do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2014;
- (c) do not have and will not have a vested interest in the proposed activity proceeding;
- (d) have no, and will not engage in, conflicting interests in the undertaking of the activity;
- (e) undertake to disclose, to the competent authority, any material information that has or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the Environmental Impact Assessment Regulations, 2006;
- (f) will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- (g) will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the Department in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the Department may be attached to the report without further amendment to the report;
- (h) will keep a register of all interested and affected parties that participated in a public participation process; and
- (i) will provide the Department with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not.



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**Signature of the Environmental Assessment Practitioner:**

**Setala Environmental (Pty) Ltd**

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**Name of company:**

**12/10/2020**

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**Date:**

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