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Department:
Environment & Nature Conservation
NORTHERN CAPE PROVINCE
REPUBLIC OF SOUTH AFRICA

Private Bag X6102, Kimberley, 8300, Metlife Towers, T-Floor, Tel: 053 807 7300, Fax: 053 807 7328

Project applicant:	TURKSVY FOTO'S KUNSTE EN RAME CC		
Business reg. no. /ID. no.:			
Contact person:			
Postal address:			
Telephone:		Cell:	
E-mail:		Fax:	

Prepared by:

Environmental Assessment Practitioner/Firm:	EnviroAfrica CC		
Business reg. no. /ID. no.:	CK 97 46008/23		
Contact person:	Clinton Geyser/Bernard de Witt		
Postal address:	P.O. Box. 5367, Helderberg, 7135		
Telephone:	021 851 1616	Cell:	
E-mail:	Clinton@enviroafrica.co.za	Fax:	086 512 0154

	(For official use only)
File Reference Number:	
Application Number:	
Date Received:	

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.

Kindly note that:

- This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2014 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
- This report format is current as of **08 December 2014**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
- 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.
- Where applicable **tick** the boxes that are applicable in the report.
- An incomplete report may be returned to the applicant for revision.
- The use of “not applicable” in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
- This report must be handed in at offices of the relevant competent authority as determined by each authority.
- No faxed or e-mailed reports will be accepted.
- The signature of the EAP on the report must be an original signature.
- The report must be compiled by an independent environmental assessment practitioner.
- Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
- A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
- Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
If YES, please complete the form entitled "Details of specialist and declaration of interest" for the specialist appointed and attach in Appendix I.		

PROPOSED DEVELOPMENT OF AN IRRIGATION DAM AND AGRICULTURAL DEVELOPMENT ON ERF 1074, OLYVENHOUTS DRIFT SETTLEMENT, UPINGTON, DAWID KRUIPER MUNICIPALITY, Z.F. MGCAWU DISTRICT MUNICIPALITY, NORTHERN CAPE.

- **ACTIVITY DESCRIPTION**

- a) **Describe the project associated with the listed activities applied for**

<p>The proposed development is located on Erf 1074, and includes the following components:</p> <ul style="list-style-type: none">- The construction of a new irrigation dam, with a development area of 1.2ha be constructed. The dam will be lined and will have a volume of approximately 48 000m³.- The development of approximately 18.6ha for agriculture (vineyards). <p>The entire development, including all associated infrastructure will be approximately 19.8ha in extent.</p> <p>Water will be abstracted from the Orange River irrigation canal and piped to the irrigation dam via an existing pipeline. The water forms part of the allocation to Erf 754.</p> <p>The site is located south-east of Upington, adjacent to the N10.</p> <p>Site Coordinates: Proposed dam: 28° 27' 46.27"S, 21°16' 58.16"E Agricultural area 1: 28° 27' 54.60"S, 21° 17' 07.74"E Agricultural area 2: 28° 27' 43.06"S, 21° 17' 12.19"E</p>

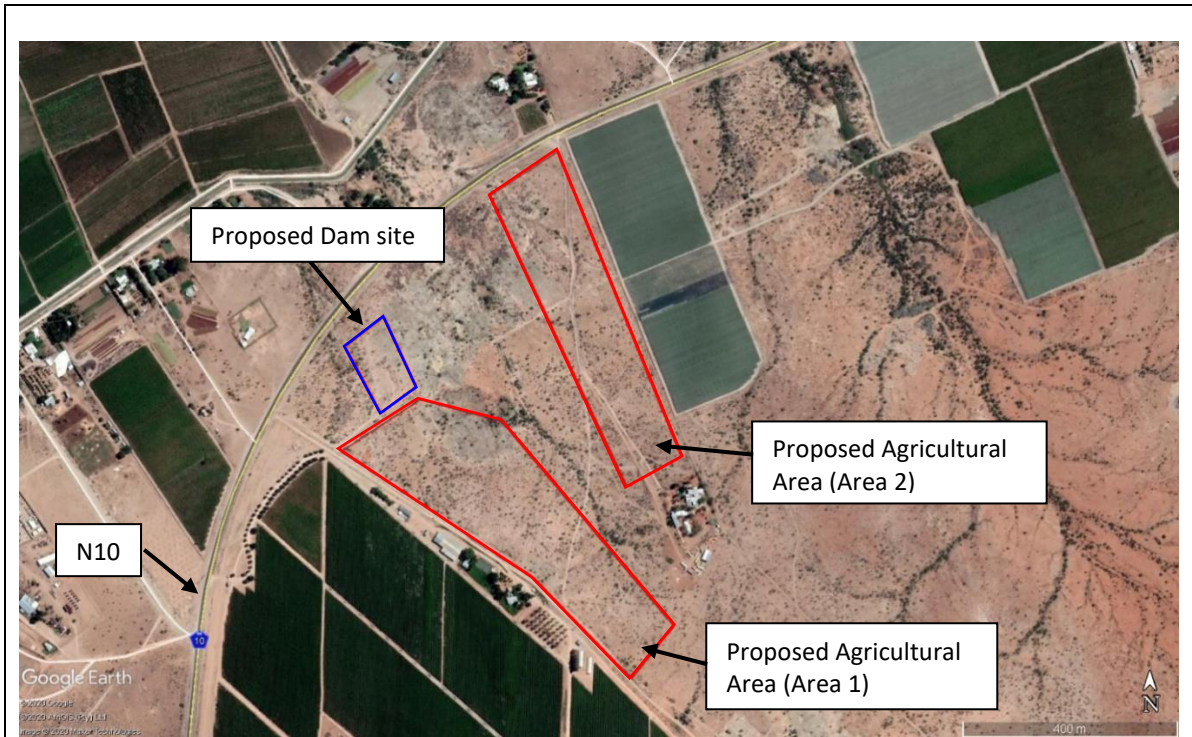


Figure 1: Google Earth Aerial view of the site.

b) Provide a detailed description of the listed activities associated with the project as applied for

Listed activity as described in GN 324, 325 and 327	Description of project activity
Listing Notice 1 (GN327)	
<p><u>GN 327 (Item 12):</u> The development of;</p> <p>(i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres;</p> <p>(ii) infrastructure or structures with a physical footprint of 100 square metres or more;</p> <p>where such development occurs;</p> <p>(a) within a watercourse;</p> <p>(b) in front of a development setback; or</p> <p>(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse;.</p>	<p>The proposed development includes the development of a dam and infrastructure which will exceed 100sqm, and is located less than 32m from a watercourse.</p>

<p><u>GN 327 (Item 19):</u> The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a <u>watercourse</u>;</p> <ul style="list-style-type: none"> (a) will occur behind a development setback; (b) is for maintenance purposes undertaken in accordance with a maintenance management plan; or (c) falls within the ambit of activity 21 in this Notice, in which case that activity applies. 	<p>The proposed agricultural development area is located adjacent to an existing watercourse (ephemeral stream). The watercourse may be infilled and/or excavated during construction.</p>
<p><u>GN 327 (Item 27):</u> The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for;</p> <ul style="list-style-type: none"> (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan. 	<p>The proposed dam and agricultural development, included associated infrastructure, is expected to be approximately 19.8ha.</p>
<p>Listing Notice 3 (GN324)</p>	
<p><u>GN 324 (Item 12):</u> The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.</p>	<p>More than 300m² of vegetation will need to be cleared to construct the dam and agricultural development. The site is located within a CBA.</p>
<p><u>GN 324 (Item 14):</u> The development of;</p> <ul style="list-style-type: none"> (i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 10 square metres; (ii) infrastructure or structures with a physical footprint of 10 square metres or more; <p>where such development occurs;</p> <ul style="list-style-type: none"> (a) within a watercourse; (b) in front of a development setback; or (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; <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>The proposed development includes the development of infrastructure which will exceed 10sqm, and is located less than 32m from a watercourse.</p>

• **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 as required by Appendix 1 (3)(h), Regulation 2014. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity (NOT PROJECT) could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed.

The determination of whether site or activity (including different processes, etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the, competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

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.

a) Site alternatives

Site alternatives are limited, as it needs to be close to the existing vineyards. The dam is also located within an already disturbed area (old quarry), and would therefore have a substantially smaller negative impact as opposed to an alternative site.

An alternative agricultural area (13.8ha) was initially considered, located approximately 2.4km south-east of Agricultural Area 1 on Erf 754 (see Figure 2 below). According to the Botanical Impact Assessment (Appendix D1, Figure 25), the alternative site has a moderate botanical sensitivity, while the preferred site has a low to very low botanical sensitivity

An alternative dam site was also originally proposed, located just east of the current preferred dam site (see Figure 3 below). Although on a disturbed section of Erf 1074, it was decided to locate the dam in an existing disused quarry. This would have less impact on the surrounding indigenous vegetation.

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)

Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

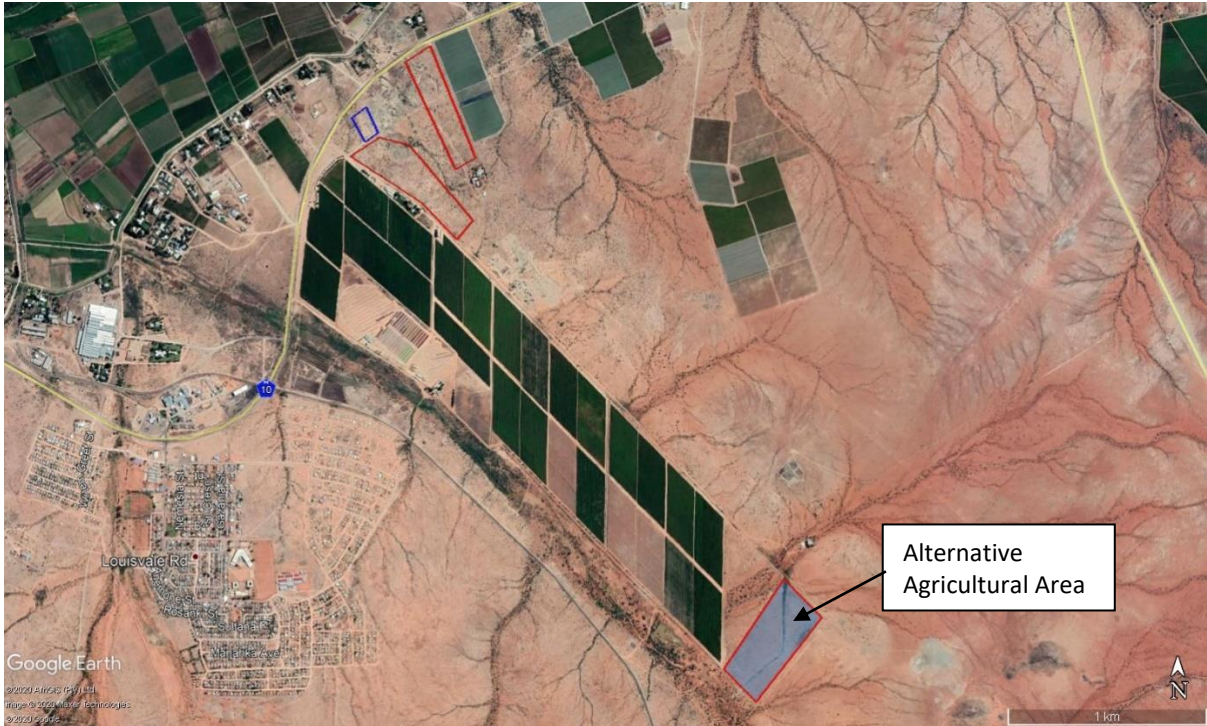


Figure 2: Google Earth Aerial view of the alternative agricultural site.

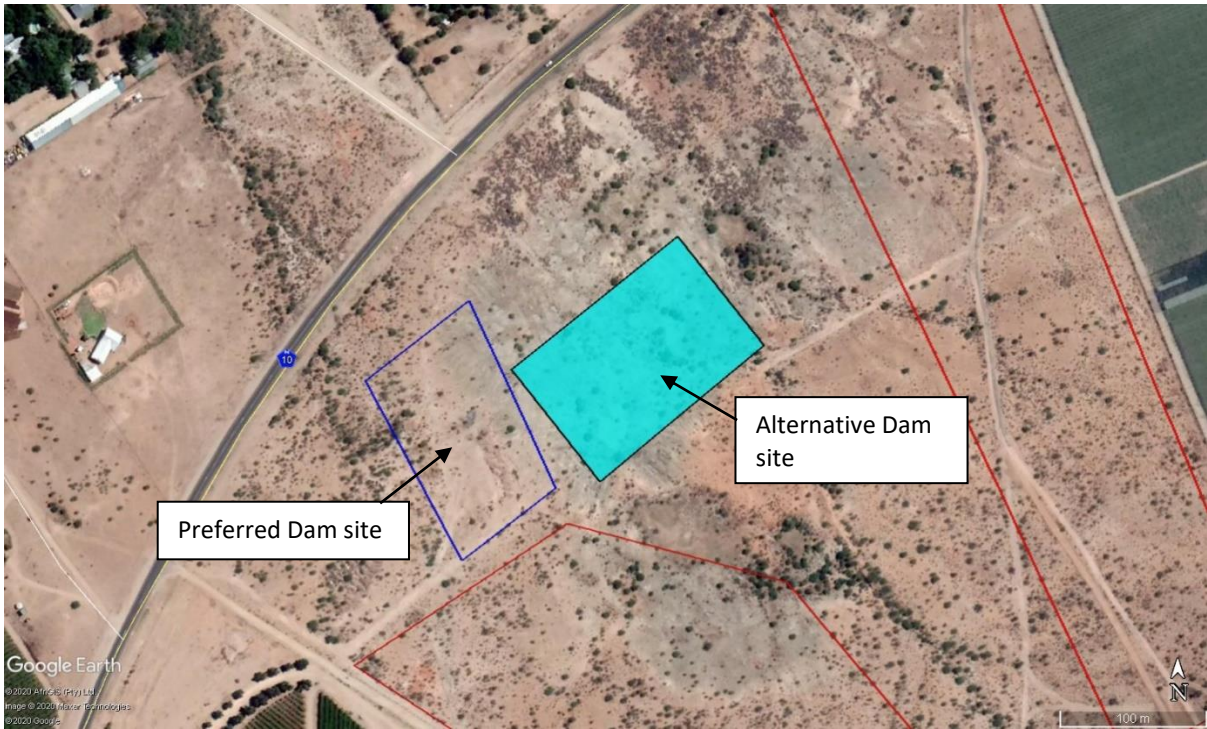


Figure 3: Google Earth Aerial view of the alternative dam site.

In the case of linear activities:

Alternative:	Latitude (S):	Longitude (E):
Alternative S1 (preferred)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		
Alternative S2 (if any)		
• Starting point of the activity		
• Middle/Additional point of the activity		
• End point of the activity		

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

In the case of an area being under application, please provide the co-ordinates of the corners of the site as indicated on the lay-out map provided in Appendix A of this form.

b) Lay-out alternatives

There are no feasible layout alternatives that were considered

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
There are no feasible alternative layouts considered that would mitigate any potential environmental impact		
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)

c) Technology alternatives

No technology alternatives were considered.

Alternative 1 (preferred alternative)
Alternative 2
Alternative 3

d) **Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)**

Alternative 1 (preferred alternative)		
Alternative 2		
Alternative 3		

e) **No-go alternative**

This would mean that no-development would take place and the proposed site will remain as is. No development of the dam or additional vineyards will take place.

Although this option would result in no significant potential negative environmental impacts, the positive environmental and socio-economic benefits from implementing the activity would not be achieved.

The no-go option would only have been recommended if it were found that the construction of the proposed development on this site or in this area might potentially cause substantial detrimental harm to the environment.

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

• **PHYSICAL SIZE OF THE ACTIVITY**

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

Alternative:	Size of the activity:
Alternative A1 (preferred activity alternative)	approximately 19.8ha
Alternative A2 (if any)	m ²
Alternative A3 (if any)	m ²

or, for linear activities:

Alternative:	Length of the activity:
Alternative A1 (preferred activity alternative)	m
Alternative A2 (if any)	m
Alternative A3 (if any)	m

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

Alternative:	Size of the site/servitude:
Alternative A1 (preferred activity alternative)	m ²
Alternative A2 (if any)	m ²
Alternative A3 (if any)	m ²

• **SITE ACCESS**

Does ready access to the site exist?	YES	NO
If NO, what is the distance over which a new access road will be built	N/A	

Describe the type of access road planned:

No new access roads will be required.

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.

• **LOCALITY MAP**

An A3 locality map must be attached to the back of this document, as Appendix A. 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:

- an accurate indication of the project site position as well as the positions of the alternative sites, if any;
- indication of all the alternatives identified;
- closest town(s);
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- 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 and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection).

• **LAYOUT/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:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and
- a north arrow.

- **SENSITIVITY MAP**

The layout/route plan as indicated above must be overlain with a sensitivity map that indicates all the sensitive areas associated with the site, including, but not limited to:

- watercourses;
- the 1:100 year flood line (where available or where it is required by DWS);
- ridges;
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or infested with alien species); and
- critical biodiversity areas.

The sensitivity map must also cover areas within 100m of the site and must be attached in Appendix A.

- **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 report. It must be supplemented with additional photographs of relevant features on the site, if applicable.

- **FACILITY ILLUSTRATION**

A detailed illustration of the activity must be provided at a scale of at least 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.

- **ACTIVITY MOTIVATION**

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

• Is the activity permitted in terms of the property's existing land use rights?	YES	NO	Please explain
The property is zoned Agricultural, and is adjacent to existing agricultural development (vineyards).			
• Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	YES	NO	Please explain
The proposed development is an agricultural development. The proposed development will also provide job opportunities for the community.			

(b) Urban edge / Edge of Built environment for the area	YES	NO	Please explain
The site is located outside the developed area of Upington.			
(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	YES	NO	Please explain
<p>According to the Dawid Kruiper Local Municipality SDF (2018), agricultural activities take up portions of land abutting the Orange River in the southern sections of the Municipality. The Agricultural sector is very important to the local economy and therefore represents an emerging strength for the Municipality, which creates further opportunities for expansion, as well as the development of linkages with other sectors of the economy, creating further opportunities for job creation. The protection of agriculture land and the link between conservation, sensitive and transition zones in the SDF are focussed on in each of the various SPC's (Spatial Planning Category).</p> <p>The site is located within an area identified as Category C (Agricultural Area)(see Appendix J1).</p> <p>According to the Dawid Kruiper Local Municipality SDF (2018), the agricultural and mining sectors are very important primary aspects of the existing economy of the DKLM area and both are to be found throughout the whole of the municipal area. The northern sections of the municipality houses mostly extensive agricultural activities, combined with mining activities (extractive industry) on the various Salt pans in the area. The area surrounding the Orange River houses numerous intensive agricultural practises, combined with residential uses surrounding the various settlements.</p> <p>The proposed development will also provide job opportunities for the community.</p>			
(d) Approved Structure Plan of the Municipality	YES	NO	Please explain
The site is located within an area identified as Category C (Agricultural Area)(see Appendix J1).			
(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)	YES	NO	Please explain
The site is located within Bushman Arid Grassland, which is identified as medium priority in the Siyanda District EMF Report (2008) priority vegetation types for conservation.			
(f) Any other Plans (e.g. Guide Plan)	YES	NO	Please explain

<ul style="list-style-type: none"> Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)? 	YES	NO	Please explain
<ul style="list-style-type: none"> Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.) 	YES	NO	Please explain
<p>According to the Applicant, the new dam is vital in planting an addition of 18ha of vineyards. The irrigation system is currently on maximum demand and unable to handle additional vineyards. This will bring the farming unit to a 100% operating capacity. The position of the dam will also generate an energy saving of between 25 and 30%. The construction and operation of the dam will generate new job opportunities for the local community.</p> <p>The proposed development will also provide job opportunities for the community, with approximately 17 job opportunities provided during the construction phase, and 19 during the operational phase of the project. More than 80% of these will be to previously disadvantaged individuals.</p>			
<ul style="list-style-type: none"> Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.) 	YES	NO	Please explain
<p>The proposed project will not require additional services. The water requirements are within the existing allocation.</p>			
<ul style="list-style-type: none"> Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.) 	YES	NO	Please explain
<p>N/A/ The project will not require infrastructure/services from the municipality</p>			
<ul style="list-style-type: none"> Is this project part of a national programme to address an issue of national concern or importance? 	YES	NO	Please explain
<p>Agriculture, and food security, is a national concern</p>			

<ul style="list-style-type: none"> • Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.) 	YES	NO	Please explain
<p>The proposed site is ideally situated, between existing vineyards and within close proximity to the Orange River canal.</p> <p>There are no significant negative environmental impacts that have been identified by the botanical or heritage specialists. The site is located on an area with low to very low botanical sensitivity.</p>			
<ul style="list-style-type: none"> • Is the development the best practicable environmental option for this land/site? 	YES	NO	Please explain
<p>The proposed development will result in the loss of indigenous vegetation over the site, however, the Bushman Arid Grassland is considered least threatened and the site slightly disturbed. However, the proposed site does fall within any CBA.</p> <p>it is also unlikely that any significant archaeological resources will be impacted, similarly, the palaeontological sensitivity is low/insignificant means that no impacts are likely to significant fossil heritage.</p> <p>The site is also in an agricultural area, with similar developments adjacent to and in close proximity to the site.</p>			
<ul style="list-style-type: none"> • Will the benefits of the proposed land use/development outweigh the negative impacts of it? 	YES	NO	Please explain
<p>The proposed development will result in the loss of indigenous vegetation over the site, however, the Bushman Arid Grassland is considered least threatened and the site slightly disturbed.</p>			
<ul style="list-style-type: none"> • Will the proposed land use/development set a precedent for similar activities in the area (local municipality)? 	YES	NO	Please explain
<p>Unknown, but agriculture is a major sector in the area.</p>			
<ul style="list-style-type: none"> • Will any person's rights be negatively affected by the proposed activity/ies? 	YES	NO	Please explain
<p>No person's rights are expected to be negatively affected by the proposed development. The activity is expected to have a general positive impact on the surrounding area.</p>			
<ul style="list-style-type: none"> • Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality? 	YES	NO	Please explain
<p>The development is located outside the built up/urban area of Upington/Louisvale, and is located between existing agricultural areas.</p>			
<ul style="list-style-type: none"> • Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)? 	YES	NO	Please explain
<p>N/A</p>			

<ul style="list-style-type: none"> • What will the benefits be to society in general and to the local communities? 	Please explain
<p>The project will provide job opportunities during the construction and the operational phase.</p> <p>This development has the potential to provide an economic injection in the local community, by means of creating employment opportunities.</p>	
<ul style="list-style-type: none"> • Any other need and desirability considerations related to the proposed activity? 	Please explain
N/A	
<ul style="list-style-type: none"> • How does the project fit into the National Development Plan for 2030? 	Please explain
N/A	
<ul style="list-style-type: none"> • Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account. 	
<p>The general objectives of Integrated Environmental Management have been taken into account through the following:</p> <ul style="list-style-type: none"> - The actual and potential impacts of the activity on the environment, socio-economic conditions and cultural heritage have been identified, predicted and evaluated, as well as the risks and consequences and alternatives and options for mitigation of activities, with a view to minimizing negative impact, maximizing benefits and promoting compliance with the principles of environmental management – <i>please refer to Section D below.</i> - The effects of the activity on the environment have been considered before actions taken in connection with them – <i>alternatives have been considered and investigated (please refer to Section A below).</i> - Adequate and appropriate opportunity for public participation was ensured through the public participation process – <i>please refer to Section C for the public participation information, including the list of identified Interested and Affected parties, as well as the methods for identifying and informing I&APs of the application and proposed activity.</i> - The environmental attributes have been considered in the management and decision-making of the activity – <i>an EMP has been included (Appendix G) with the proposed activity and must adhere to the requirements of all applicable state Authorities.</i> 	
<ul style="list-style-type: none"> • Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account. 	
<p>The principles of environmental management as set out in section 2 of NEMA have been taken into account. The principles pertinent to this activity include:</p> <ul style="list-style-type: none"> - People and their needs have been placed at the forefront while serving their physical, psychological, developmental, cultural and social interests – <i>the proposed activity will have a beneficial impact on people, as it will provide much needed additional housing opportunities.</i> - Development must be socially, environmentally and economically sustainable. Where disturbance of ecosystems, loss of biodiversity, pollution and degradation, and landscapes and sites that constitute the nation's cultural heritage cannot be avoided, are minimised and remedied. - Where waste cannot be avoided, it is minimised and remedied through the implementation and adherence of EMP. - The use of non-renewable natural resources is responsible and equitable – <i>no exploitation of non-renewable natural resources occurs with the proposed activity.</i> 	

- The negative impacts on the environment and on people’s environmental rights have been anticipated and prevented, and where they cannot be prevented, are minimised and remedied - refer to Section F below.
- The interests, needs and values of all interested and affected parties have been taken into account in any decisions through the Public Participation Process – please refer to Section C for the public participation information.
- The social, economic and environmental impacts of the activity have been considered, assessed and evaluated, including the disadvantages and benefits – refer to Section B below.
- The effects of decisions on all aspects of the environment and all people in the environment have been taken into account, by pursuing what is considered the best practicable environmental option – the proposed activity is expected to have minimal/negligible environmental impacts, especially after mitigation measures as described under Section D and E and in the EMP are implemented.

• **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	Applicability to the project	Administering authority	Date
National Water Act	Water Use Licence	Department of Water and Sanitation	Not yet
Northern Cape Nature Conservation Act, Act 9 of 2009	NCNCA Protected plant species located on the site	Department of Environment and Nature Conservation (DENC)	Not yet

• **WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT**

a) **Solid waste management**

Will the activity produce solid construction waste during the construction/initiation phase? If YES, what estimated quantity will be produced per month? Unknown	YES	NO
	m ³	

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

The general solid waste generated during construction will be consolidated on site during construction and disposed of at the nearest approved municipal landfill site.

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

The general solid waste generated during construction will be consolidated on site during construction and disposed of at the nearest approved municipal landfill site.

Will the activity produce solid waste during its operational phase?	YES	NO
If YES, what estimated quantity will be produced per month?	m ³	
How will the solid waste be disposed of (describe)?		
No solid waste is expected to be generated during the operational phase.		
If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used.		
No solid waste is expected to be generated during the operational phase.		
Where will the solid waste be disposed of if it does not feed into a municipal waste stream (describe)?		
N/A		
<i>If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.</i>		

Can any part of the solid waste be classified as hazardous in terms of the NEM:WA?	YES	NO
If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.		

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 competent authority to determine whether it is necessary to change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.		

b) 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?	N/A	
Will the activity produce any effluent that will be treated and/or disposed of on site?	YES	NO
<i>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.</i>		

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:		
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:

N/A

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other than exhaust emissions and dust associated with construction phase activities?	YES	NO
If YES, is it controlled by any legislation of any sphere of government?	YES	NO
If YES, the applicant must 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:		

d) Waste permit

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA?	YES	NO
--	-----	----

If YES, please submit evidence that an application for a waste permit has been submitted to the competent authority

e) 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
Describe the noise in terms of type and level:		
The activity is not expected to produce significant noise that would be a nuisance to any nearby residents.		

• 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
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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:	N/A	
Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?	YES	NO

If YES, please provide proof that the application has been submitted to the Department of Water Affairs.

- **ENERGY EFFICIENCY**

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

The intention is for the irrigation system to be powered by solar power in the future, as part of the company's green energy initiative. If required, a separate NEMA Application will be conducted in future for the solar plant

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:

- 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 B and indicate the area, which is covered by each copy No. on the Site Plan.

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

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

<ul style="list-style-type: none"> 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 and attach it in Appendix I. All specialist reports must be contained in Appendix D.		

Property description/physical address:	Province	Northern Cape
	District Municipality	ZF Mgqawu District Municipality
	Local Municipality	Dawid Kruiper Local Municipality
	Ward Number(s)	
	Farm name and number	Erven 1074
	Portion number	
	SG Code	C03600130000107400000
Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application including the same information as indicated above.		
Current land-use zoning as per local municipality IDP/records:	Agricultural	
	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

- 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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Alternative S2 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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Alternative S3 (if any):

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

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

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

- GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE**

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

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

- **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 in good condition^E	Natural veld with scattered aliens ^E	Natural veld with heavy alien infestation^E	Veld dominated by alien species^E	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.

- **SURFACE WATER**

Indicate the surface water present on and or adjacent to the site and alternative sites?

Perennial River	YES	NO	UNSURE
Non-Perennial River	YES	NO	UNSURE
Permanent Wetland	YES	NO	UNSURE
Seasonal Wetland	YES	NO	UNSURE
Artificial Wetland	YES	NO	UNSURE
Estuarine / Lagoonal wetland	YES	NO	UNSURE

If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse.

Although not indicated on any desktop assessments, including the SANBI BGIS NFEPA overlay, there is a watercourse (ephemeral stream) running through to the property. According to the Freshwater Assessment (**Appendix D2**), there are faint drainage lines on the property, probably the remains of a small next door sub-catchment. The lower end of these drainage lines has been entirely obliterated by the vineyards on the banks of the Orange River.

It is therefore doubtful if the proposed dam is going to be finally installed, would have any more deleterious effects on the drainage lines and its riparian vegetation. Likewise, the new 17 hectares of vineyard on the next-door property is not about to cause more damage to an already obliterated drainage line.

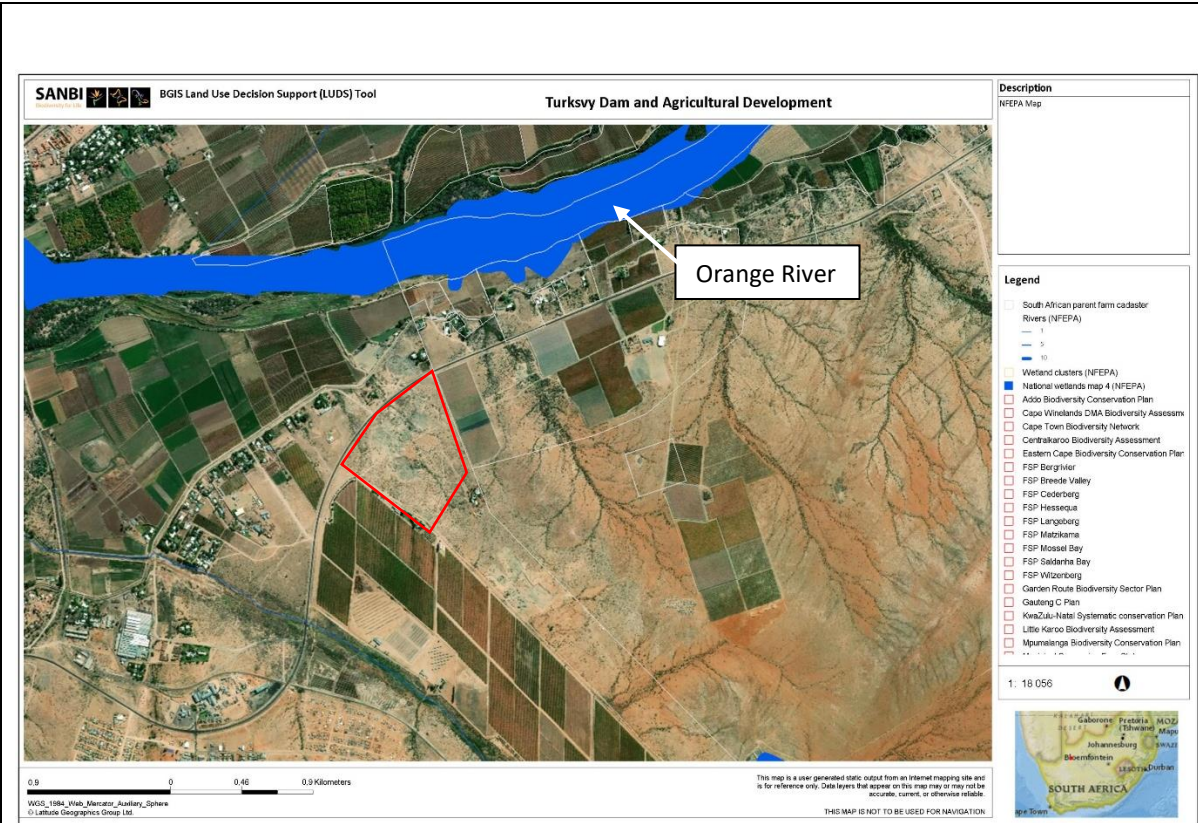


Figure 4: SANBI BGIS image of the site, showing the nearest watercourses to the site (red polygon) as indicated on the NFEPA overlay.

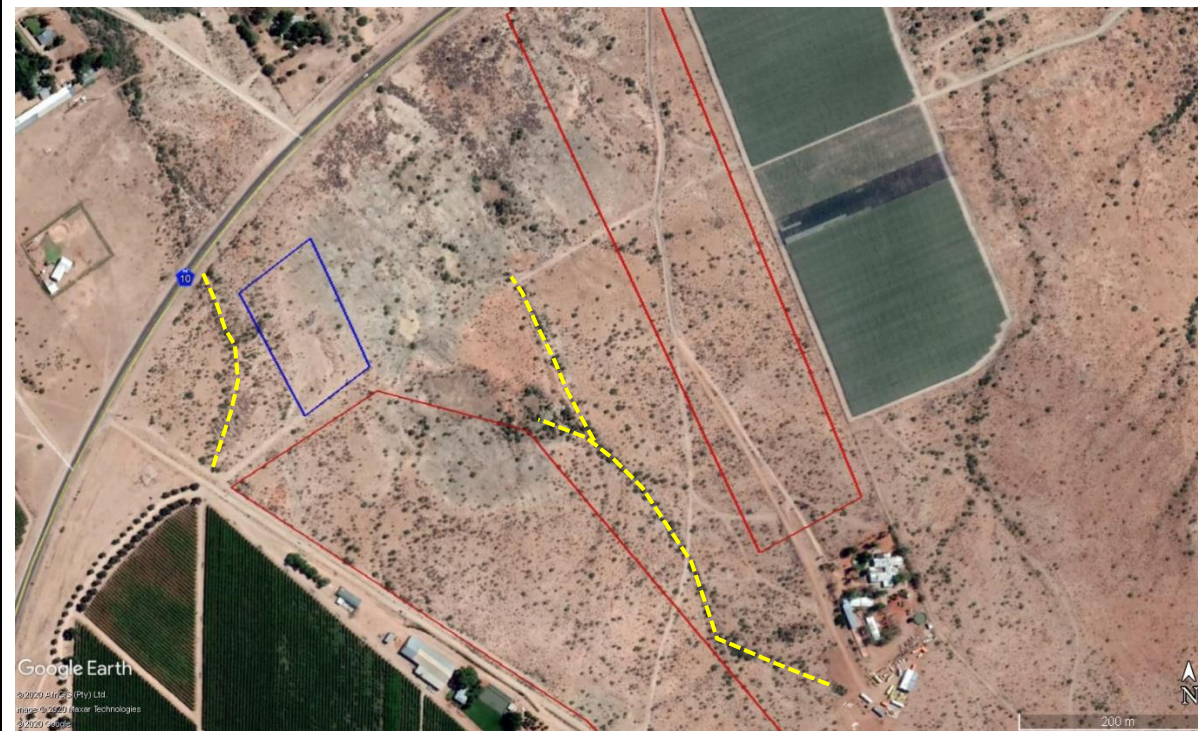


Figure 5: Google Earth image of the showing the ephemeral streams (yellow dashed lines) on the site.

• **LAND USE CHARACTER OF SURROUNDING AREA**

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

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

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

No impacts are expected.

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

No impacts are expected.

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

N/A

Does the proposed site (including any alternative sites) fall within any of the following:

Critical Biodiversity Area (as per provincial conservation plan)	YES	NO
Core area of a protected area?	YES	NO
Buffer area of a protected area?	YES	NO
Planned expansion area of an existing protected area?	YES	NO
Existing offset area associated with a previous Environmental Authorisation?	YES	NO
Buffer area of the SKA?	YES	NO

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A

• **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 paleontological sites, on or close (within 20m) to the site? If YES, explain:	YES	NO
	Uncertain	
<p>According to the Heritage Impact Assessment (Appendix D3), seventeen occurrences of lithic material were recorded across the surveyed area on or in close vicinity to the development footprints on Olyvenhouts Drift Erf 1074. The recorded lithic material consists of low- to medium-density background MSA scatters with cores, scrapers, a bladelet, untrimmed flakes, chips and knapping debris, made predominantly from BIF (Banded Ironstone Formation), with a few isolated pieces produced from CCS (Crypto-Crystalline Silicates) and dolomite pieces. The found lithic material shows various degrees of weathering and are without substantial archaeological context or matrix, and are therefore deemed of minor scientific importance, and not conservation worthy (NCW).</p> <p>Four occurrences of colonial period material were recorded on Olyvenhouts Drift Erf 1074. Fragments of hole-in-cap tins, square key-wind tins, and hand- and machine-soldered tins dating between the late-19th and early-20th century, as well as a Gargoyle MobilOil, can top dating between 1920-1940, were recorded. The material sample is small and without substantial archaeological context. The development impact on these resources is, therefore, inconsequential and these artefacts are deemed as not conservation worthy (NCW).</p> <p>There are 27 visible graves of various sizes situated in the middle of Development 1 and 2. The graves are demarcated with quartz and quartzite stones, and many of the graves have local fieldstone headstones.</p> <p>The impact of the development of the proposed vineyards on Development footprint 1 and 2 will have a negative impact on the identified heritage resources recorded on Olyvenhouts Drift Erf 1074. However, the cultural material is without any substantial archaeological context and deemed not conservation worthy. The negative impact is, therefore, negligible. The graves are of high significance, but the probability of impact on the graves are low, with the new proposed location of the irrigation dam. The probability of the development impacting on palaeontological heritage during the construction phase is regarded as minimal, and the significance of the impact occurring, low.</p>		

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

See findings above

The following recommendations have been made by the heritage specialist:

1. No significant heritage sites or features were identified within the surveyed sections of Olyvenhouts Drift Settlement Erf 754 (Alternative site). No further mitigation is required for the proposed development on this property. Therefore, from a heritage point of view, we recommend that the proposed agricultural development can continue.
2. The Middle Stone Age (MSA) and historical period cultural material identified on Olyvenhouts Drift Settlement Drift Erf 1074 is not conservation worthy, and no further mitigation is recommended with regards to these resources.

3. The graveyard site (ODS1074/001) is situated between development footprint 1 and 2 on Olyvenhouts Drift Settlement Drift Erf 1074 and should not be impacted by the development. The site is graded as IIIB and is of High Local Significance. It is therefore still recommended that the graves be fenced off with the inclusion of a 50m buffer/safety zone.
4. Due to the zero to low palaeontological significance of the area, no further palaeontological heritage studies, ground-truthing and/or specialist mitigation are required. It is considered that the development of the proposed development is deemed appropriate and feasible and will not lead to detrimental impacts on the palaeontological resources of the area as the igneous rocks underlying the site are not fossiliferous. It is therefore recommended that the project be exempt from a full Paleontological Impact Assessment.

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 provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.		
Please note that the site is larger than 5 000m ² and the character of the site will change. The project is therefore subject to Section 38(1) of the NHRA. The project has been registered with SAHRA through SAHRIS.		

- **SOCIO-ECONOMIC CHARACTER**

- a) **Local Municipality**

Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

Level of unemployment:

According to the Dawid Kruiper Municipality IDP 2020-2021, the unemployment rate decreases significantly from 34% in 2001 to 22.1% in 2011. There was a huge decline in the youth unemployment rate too from 42.3% in 2001 to 29% in 2011 but the youth unemployment rate is still very high in comparison with the overall unemployment rate of the municipality. Although about 44.7% of the Dawid Kruiper population are between 14 and 35 years old, youths remains relatively marginalised.

Economic profile of local municipality:

According to the Dawid Kruiper Municipality IDP 2019-2020, agricultural activities take up portions of land abutting the Orange River in the Municipality. The Agricultural sector is important to the local economy and therefore represents an emerging strength for the Municipality, which creates further opportunities for expansion, as well as the development of linkages with other sectors of the economy, creating further opportunities for job creation.

Level of education:

According to the Dawid Kruiper Municipality IDP 2020-2021, an increase of 5.1% (20.9% in 2001 to 26% in 2011) of people living in Dawid Kruiper over the age of twenty years have completed the

12th grade while there was a significant decline of 6.5% (13.6 in 2001 to 7.1% in 2011) in people that had no schooling at all. Higher education increases from 20.9% in 2001 to 26% in 2011.

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R 2 500 000	
What is the expected yearly income that will be generated by or as a result of the activity?	R9 000 000	
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 and construction phase of the activity/ies?	17	
What is the expected value of the employment opportunities during the development and construction phase?	R1 000 000 during construction phase	
What percentage of this will accrue to previously disadvantaged individuals?	82%	
How many permanent new employment opportunities will be created during the operational phase of the activity?	19	
What is the expected current value of the employment opportunities during the first 10 years?	R935 000	
What percentage of this will accrue to previously disadvantaged individuals?	94%	

• **BIODIVERSITY**

Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the identification of the biodiversity occurring on site and the ecosystem status consult <http://bgis.sanbi.org> or BGIShelp@sanbi.org. Information is also available on compact disc (cd) from the Biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time and it is the applicant/ EAP's responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) and must be provided as an overlay map to the property/site plan as Appendix D to this report.

a) Indicate the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category)

Systematic Biodiversity Planning Category				If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan
Critical Biodiversity Area (CBA)	Ecological Support Area (ESA)	Other Natural Area (ONA)	No Natural Area Remaining (NNR)	The site is located within a CBA identified on SANBI BGIS (refer to Figure 4 below and section 4.3 of the Botanical Assessment (Appendix D1)).

According to the Botanical Assessment (**Appendix D1**), the Orange River is classified as a CBA 1 area, while the area where the proposed reservoir will be built falls in a CBA 2 area (Namakwa Biodiversity Sector Plan 2016). The proposed reservoir falls in a CBA 2 but is located in an old quarry (borrow pit) and the area is highly degraded. The remainder of the site around the proposed reservoir and part of the proposed agricultural development in the site falls in Ecological Support Areas (ESAs). Other Natural Areas (ONAs) have not been identified as a priority, but retain most of their natural character and perform a range of biodiversity and ecological infrastructure functions. Land use guidelines for Terrestrial Other Natural Areas (ONAs) are not required to meet biodiversity targets.

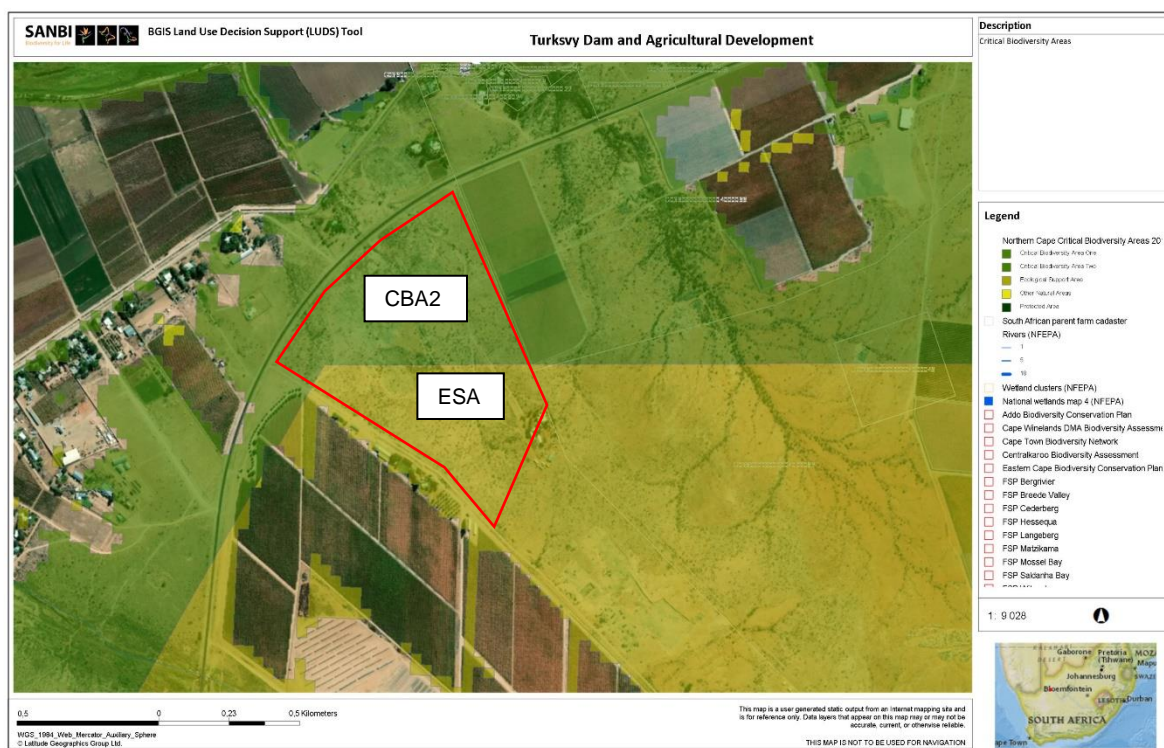


Figure 6: The Northern Cape Critical Biodiversity Areas Map indicating the location of the development (red)

b) Indicate and describe the habitat condition on site

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
Natural	%	
Near Natural (includes areas with low to moderate level of alien invasive plants)		
Degraded (includes areas heavily invaded by alien plants)	100%	The site has been degraded. The site of the proposed dam is an old borrow pit/quarry. According to the Botanical Impact Assessment (Appendix D1), this old

		borrow pit (or quarry) is rather degraded and invaded by alien plant species such as <i>Prosopis glandulosa</i> , <i>Atriplex inflata</i> and <i>Salsola kali</i> .
Transformed (includes cultivation, dams, urban, plantation, roads, etc)		

c) **Complete the table to indicate:**

- (i) the type of vegetation, including its ecosystem status, present on the site; and
- (ii) whether an aquatic ecosystem is present on site.

Terrestrial Ecosystems		Aquatic Ecosystems								
Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	Critical	Wetland (including rivers, depressions, channelled and unchannelled wetlands, flats, seeps pans, and artificial wetlands)	Estuary				Coastline			
	Endangered									
	Vulnerable									
	Least Threatened		YES	NO	UNSURE	YES	NO	YES	NO	

d) Please provide a description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site (e.g. threatened species and special habitats)

According to the Biodiversity Impact Assessment (**Appendix D1**), the site falls in the Bushmanland Arid Grassland. This vegetation type has a “least threatened” conservation status.

According to the Biodiversity Assessment (**Appendix D1**), the proposed development footprint is located in two distinct plant communities:

- *Senegalia mellifera* - *Salsola tuberculata* Plains Shrubland
- *Prosopis glandulosa* - *Tamarix usneoides* Open Bushveld of the borrow pit

This plains shrubland is degraded in places and is dominated by the shrubs *Senegalia mellifera*, *Salsola tuberculata*, *Salsola aphylla* and the alien *Prosopis glandulosa*. The sandy soils are derived from gneiss. The community is differentiated by species groups 6 & 8. The most prominent dwarf shrubs include *Aloe claviiflora*, *Tetraena microcarpa*, *Kleinia longiflora*, *Plinthus karooicus*, *Justicia spartioides*, *Justicia australis* and *Rhigozum trichotomum*. The grass layer includes *Enneapogon desvauxii*, *Tragus berteronianus*, *Stipagrostis uniplumis*, *Stipagrostis ciliata* and *Oropetium capense*. The most prominent forbs are *Tetraena simplex*, *Tribulus cristatus*, *Limeum aethiopicum* and *Polygala seminuda*. The presence of the invasive alien *Cylindropuntia fulgida* is of concern.

This old borrow pit (or quarry) is rather degraded and invaded by alien plant species such as *Prosopis glandulosa*, *Atriplex inflata* and *Salsola kali*. The community is differentiated by species group 7. Tree and shrub species include *Tamarix usneoides*, *Senegalia mellifera*, *Boscia foetida* and *Salsola aphylla*. The dwarf shrubs include *Mesembryanthemum coriarium*, *Galenia papulosa*, *Salsola tuberculata*, *Kleinia longiflora*, *Justicia australis* and *Tetraena microcarpa*. The grass layer is poorly developed and includes *Stipagrostis uniplumis*, *Stipagrostis ciliata*, *Stipagrostis obtusa*, *Schmidtia kalahariensis*, *Tragus berteronianus*, *Eragrostis porosa* and *Eragrostis trichophora*. The forbs are represented by *Tetraena simplex*, *Trianthema parvifolium*, *Indigofera alternans*, *Tribulus cristatus* and *Limeum aethiopicum*.

Although not indicated on any desktop assessments, including the SANBI BGIS NFEPA overlay, there is a watercourse (a number of ephemeral streams) running through to the property. According to the Freshwater Assessment (**Appendix D2**), there are faint drainage lines on the property, probably the remains of a small nextdoor sub-catchment. The lower end of these drainage lines has been entirely obliterated by the vineyards on the banks of the Orange River.

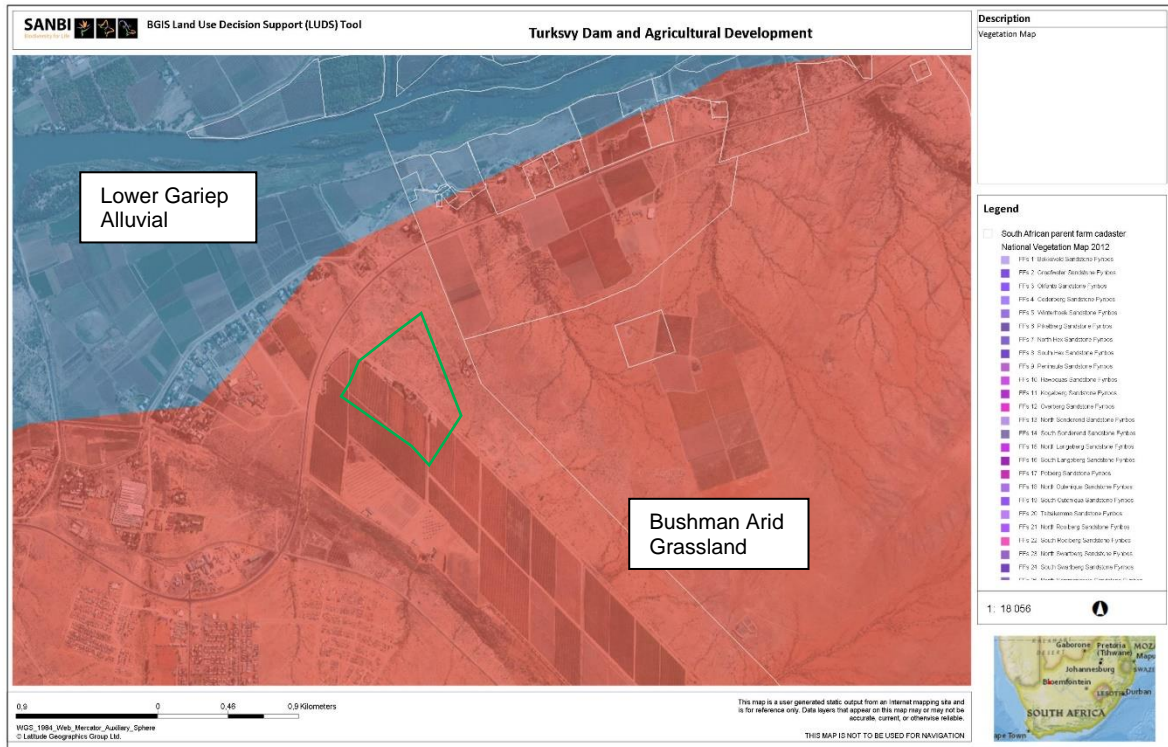


Figure 7: SANBI Vegetation Map indicating the location of the development (green). The site is located within Bushmanland Arid Grassland (Least Threatened).

SECTION C: PUBLIC PARTICIPATION

• ADVERTISEMENT AND NOTICE

Publication name	Die Gemsbok	
Date published	24 January 2020	
Site notice position	Latitude	Longitude
Date placed	See Appendix E1	

Include proof of the placement of the relevant advertisements and notices in Appendix E1.

• DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 41(2)(e) and 41(6) of GN 733.

Key stakeholders (other than organs of state) identified in terms of Regulation 41(2)(b) of GN 733

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)

Include proof that the key stakeholder received written notification of the proposed activities as Appendix E2. This proof may include any of the following:

- e-mail delivery reports;
- registered mail receipts;
- courier waybills;
- signed acknowledgements of receipt; and/or
- or any other proof as agreed upon by the competent authority.

• ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	Summary of response from EAP
Leaking of the dam will cause damage to adjacent vineyards/land	The dam will be lined. There will also be new vineyards between the dam and existing vineyards to the east of the dam (Dam is located approximately 430m west of the vineyard. The dam is also separated by the N10 from any land to the north.

- **COMMENTS AND RESPONSE REPORT**

The practitioner must record all comments received from I&APs and respond to each comment before the Draft BAR is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to the Final BAR as Appendix E3.

- **AUTHORITY PARTICIPATION**

Authorities and organs of state identified as key stakeholders:

Authority/Organ of State	Contact person (Title, Name and Surname)	Tel No	Fax No	e-mail	Postal address
Northern Cape Department: Agriculture, Land Reform and Rural Development	W. Mothibi (HOD)	(053) 838 9100		synthiafortune@ncpg.gov.za	
Dept Agriculture, Forestry, Fisheries	J. Mans	054 338 5909		JacolineMa@daff.gov.za	
Department of Water and Sanitation - Northern Cape	V. Ramugondo	053 836 7600		ramugondov@dws.gov.za	
Department of Water and Sanitation - Northern Cape	S. Shibambu	054 338 5819		shibambus@dws.gov.za	
Department of Roads and Public Works	K. Nogwili	053 839 2100		KNogwili@ncpg.gov.za	
South African Heritage Resources Agency	N. Higgitt	021 462 4502		nhiggitt@sahra.org.za	

Include proof that the Authorities and Organs of State received written notification of the proposed activities as appendix E4.

In the case of renewable energy projects, Eskom and the SKA Project Office must be included in the list of Organs of State.

- **CONSULTATION WITH OTHER STAKEHOLDERS**

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

Proof of any such agreement must be provided, where applicable. Application for any deviation from the regulations relating to the public participation process must be submitted prior to the commencement of the public participation process.

A list of registered I&APs must be included as appendix E5.

Copies of any correspondence and minutes of any meetings held must be included in Appendix E6.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014 and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

- ### 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

Provide a summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A(2) of this report.

Activity	Impact summary	Significance	Proposed mitigation
Alternative 1 (preferred alternative)			
	<p>Direct impacts:</p> <p>Potential impact on freshwater ecosystems:</p> <p>Loosening of soil during construction phase, washing of soil down the drainage line and into the Orange River during a storm event</p>	Low (with mitigation)	<ul style="list-style-type: none"> Construction only during the dry season, limit the foot print, vegetate disturbed areas.
	<p>Agricultural return flow because of over-irrigation can be a severe impact.</p>	Low (with mitigation)	<ul style="list-style-type: none"> When the new vineyard is developed, it should be done during the dry season. No more land should be disturbed than is really necessary and the foot print should not be any bigger than the design area of the vineyard. Earth moving machinery and farming implements should not be allowed outside of the designated area. The drainage line next to the new vineyard should be preserved, with an allowance for flow from the catchment right through to the main drainage line on the other side and adjacent to Turksvy Farm, similar to the already present drainage channels through the vineyards. Disturbed areas next to the new vineyard should be vegetated as soon as possible to prevent erosion and sediment transport. Over-irrigation should be prevented at all costs. State-of-the-art

			<p>instrumentation is available to measure soil moisture and to aid decisions regarding the correct volume of irrigated water. Apart from huge saving of costs, scientific measurement as standard operating procedures prevents agricultural return flow, the loss of fertiliser downstream and more prolific growth of reeds in the drainage line.</p>
	<p>Biodiversity impacts:</p> <p>Natural Vegetation:</p> <ul style="list-style-type: none"> • Transformation of natural habitat to vineyard. • Total loss of indigenous vegetation on the footprint of the development. • Increased dust levels during vineyard preparation. • Increased weedy and alien invasive plants. • Loss of faunal habitat. <p>Alien Vegetation</p> <ul style="list-style-type: none"> • As a result of the loss of indigenous vegetation and resulting disturbance, alien plant species might invade the area. 	<p>Moderate (without mitigation)</p>	<ul style="list-style-type: none"> • Development should be contained within the proposed footprint and unnecessary clearance or disturbance adjacent to the site should be avoided. • No-go areas, e.g. drainage lines should be avoided. • Two protected tree species were recorded on site. They are mainly restricted to the drainage line in the south (plant community 1). This habitat should be avoided and not be transformed. • Permits have to be obtained for the removal of any protected tree species. • Dust control measures should be implemented during vineyard preparation and reservoir construction. • Prevent soil erosion on and from the site. • Vehicles should remain on existing demarcated roads. • Stream crossings to be designed not to impede or disrupt the direction and flow of water. <ul style="list-style-type: none"> • Development should be restricted to the proposed site. • Use existing and dedicated access roads to limit disturbance of the natural vegetation. • Raise awareness regarding the negative impacts of alien invasive plant species. • Establish a monitoring program for the early detection and control of alien invasive plant species. • Indigenous trees and shrubs should be retained where possible. • No alien invasive plant species should be used in landscaping on or around the site.

	<p>Drainage Channels</p> <ul style="list-style-type: none"> • Loss of vegetation in smaller drainage channels. • Loss of protected tree species. • Loss of biodiversity and habitat for fauna. • Impeding and/or diversion of the natural flow of water. • Increase in weedy and alien invasive plant species. • Increase in soil erosion. 		<ul style="list-style-type: none"> • Alien invasive species should be eradicated on site. Monitor and control new declared weedy and alien invasive species. However, restrict the use of herbicides for the control of alien species. • No diversion of drainage channels should occur. • No impeding of water flow should occur. • Use existing and dedicated access roads to limit disturbance of the natural vegetation. • Monitor and control declared weedy and alien invasive species. • Measures to prevent soil erosion should be applied. • Minimise clearance of natural vegetation and disturbance to the areas surrounding the development. • Measures should be put in place to rehabilitate denuded and disturbed areas as soon as possible with indigenous vegetation.
	<p>The loss of palaeontological resources</p> <p>The Palaeontological Sensitivity of the Gordonia Formation of the Kalahari Group is low while the Palaeontological Sensitivity of the Bethesda Formation is insignificant.</p>	None	No mitigation required
	<p>The loss of archaeological resources</p> <p>A total of 17 occurrences of MSA lithic material was recorded outside the development footprint on Olyvenhouts Drift Erf 1074. The recorded lithic material consists of low- to medium-density background scatters made predominantly from BIF, CCS and dolomite.</p>	Low	No mitigation required.

	A total of 4 incidences of historical material without archaeological context was recorded outside the development footprint on Olyvenhouts Drift Erf 1074.	Low	No mitigation required.
	An informal graveyard with a minimum of 27 graves was recorded near the southern edge of the proposed irrigation dam development footprint on Olyvenhouts Drift Erf 1074.	Low	Sites should be included in the heritage register and may be mitigated
	Indirect impacts: Temporary jobs will be created in the construction industry during the construction phase.	Low - positive	No mitigation measures are required. Temporary jobs will be created during the construction phase
	Cumulative impacts: Biodiversity: Accumulative impact associated with the proposed activity.	Medium	
	Direct impacts:		
	Indirect impacts:		
	Cumulative impacts:		
Alternative 2			
	Direct impacts:		
	Indirect impacts:		
	Cumulative impacts:		
	Direct impacts:		
	Indirect impacts:		
	Cumulative impacts:		
Alternative 3			
	Direct impacts:		
	Indirect impacts:		

	Cumulative impacts:		
	Direct impacts:		
	Indirect impacts:		
	Cumulative impacts:		
No-go option			
	<p>Direct impacts:</p> <p>This would mean that no-development would take place and the proposed site will remain as is. No new holding dam and additional vineyards will be developed.</p> <p>Although this option would result in no potential negative environmental impacts, the socio-economic benefits from implementing the activity would not be achieved.</p> <p>The no-go option would only have been recommended if it were found that the construction of the proposed development on this site or in this area might potentially cause substantial detrimental harm to the environment.</p>	Insignificant	N/A
	Indirect impacts:		
	Cumulative impacts:		

A complete impact assessment in terms of Regulation 19(3) of GN 326 must be included as Appendix F.

- **ENVIRONMENTAL IMPACT STATEMENT**

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

Alternative A (preferred alternative)

The following is a summary of the potential impacts, and their ratings after mitigation, and probability of occurrence:

Construction phase.

Freshwater ecosystems – **Low, possible.**

Loss of vegetation - **Medium, likely.**

Potential impacts on heritage resources – **Low, Unlikely.**

Job creation – **Low (Positive), definite.**

Noise impact - **Low (negative), definite, during construction phase.**

Visual impact – **Low (negative), definite, during construction**

Operational Phase

Geographical and/or physical aspects - **No impact expected**

Freshwater ecosystems – **Low, Possible**

Potential impacts on archaeological heritage – **No impact expected**

Socio-economic (additional job opportunities) – **Low (Positive), Definite**

Nuisances –**Low, Possible**

Visual impact – **Low, Probable**

Decommissioning

The project as proposed does not require 'decommissioning' or 'closure', as such the potential impacts thereof is considered irrelevant.

Alternative B

Alternative C

No-go alternative (compulsory)

This would mean that no-development would take place and the proposed site will remain as is. No new holding dam and additional vineyards will be developed.

Although this option would result in no potential negative environmental impacts, the socio-economic benefits from implementing the activity would not be achieved.

The no-go option would only have been recommended if it were found that the construction of the proposed development on this site or in this area might potentially cause substantial detrimental harm to the environment.

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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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).

N/A

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

Compliance with the EMP and recommendations of the specialists and appointment of an ECO during the construction phase.		
Is an EMPr attached?	YES	NO

The EMPr must be attached as Appendix G.

The details of the EAP who compiled the BAR and the expertise of the EAP to perform the Basic Assessment process must be included as Appendix H.

If any specialist reports were used during the compilation of this BAR, please attach the declaration of interest for each specialist in Appendix I.

Any other information relevant to this application and not previously included must be attached in Appendix J.

NAME OF EAP

SIGNATURE OF EAP

DATE

SECTION F: APPENDIXES

The following appendixes must be attached:

Appendix A: Maps

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)

Appendix E: Public Participation

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise

Appendix I: Specialist's declaration of interest

Appendix J: Additional Information