

EXECUTIVE SUMMARY

PROPOSED PERMANENT DIVERSION OF A STREAM, EXPANSION OF AN OFF-STREAM DAM, CULTIVATION AREAS AND A CONNECTING PIPELINE ON FARM VERGELEGEN (RE/767), EILANDIA, ROBERTSON

DEA&DP Reference Number: 16/3/3/2/B1/14/1067/21

NOTE: All changes to the Draft Environmental Impact Assessment Report to compile this final version is shown in orange text.

PROJECT DESCRIPTION

The landowner and Applicant (Imdawo-Ekühle (Pty) Ltd) is proposing expansion of cultivation areas, the permanent diversion of a stream, expansion of an off-stream dam and expansion of a pipeline on Farm Vergelegen (RE/767), in order to increase the economic viability of the farm.

The farming commercial fruit farming unit 'Vergelegen' comprise of two farms, namely Remainder 767, which is the subject of this application, and the adjacent Farm 823 (see **Error! Reference source not found.**). Operations on RE/767 currently comprise of cultivation areas (approximately 24 ha), 3 small dams and associated agricultural structures and infrastructure such as gravel farm roads, pipelines, workers cottages etc. Additional cultivation areas, two small dams, a farmstead and water abstraction infrastructure from the Breede River is located on Farm 823. While the two farms operate as one, this application is limited to Remainder 767 ("the property" / "the farm").

The farm is located along the Breede River in the Eilandia area within the Langeberg municipal area. The farm takes access off Eilandia Road, via access servitude through several other farms. Eilandia Road is a gravel road leads off the R60 which runs between Worcester and Robertson.

Farm Number	Remainder 767 (RE/767)
Size	250.59 ha
Zoning	Agriculture
Current use	Agriculture and vacant land
SG21 Digit code	C08500000000076700000
Central Co-ordinates	33° 47' 21.35" S 19° 41' 33.67" E
SG Region	Worcester
Municipal Area	Langeberg Municipality

The proposed expansion of agricultural components is detailed below.

Expansion of cultivation areas

Cultivation of virgin soil on a portion of vacant land on the farm. The 250 ha property currently only supports approximately 24 ha of cultivated land with the remainder being undeveloped / natural areas. Approximately 130 ha is unsuitable for cultivation as it comprises mountainous land on the north-western slopes of the Rooiberg Mountain. An opportunity was initially identified for additional cultivation in a ~47.2

ha portion that demonstrated good agricultural potential, however subject to specialist inputs, the viable area for such expansion was reduced to 40.9 ha. Two areas respectively measuring 14.6 ha and 25.9 ha have been identified for cultivation.

The cultivation areas will have adequate sub-soil drainage to cater for sub-surface flows. A lined trapezoidal shaped cut-off drain (channel) with a 500 mm base width and 1:1.5 side slopes and a depth of 250 mm will be installed along the southeastern boundary of the southern cultivation area to assist with drainage in this portion and prevent erosion. A 160 mm PVC pipeline will connect the cut-off channel around the downstream toe of the dam with a stilling basin at the downstream river section to dissipate the flow on the steep right flank slope.

The area is particularly productive for export quality fruit. The new cultivations will therefore be to produce fruit (such as table grapes and citrus varieties). The new crops will be partially irrigated with water from an existing entitlement from the Breede River, but application is also being made for additional water abstraction rights.

Permanent Diversion of a Stream and Expansion of an off-stream dam

The dam expansion will entail:

- a) Permanent diversion of a stream via a 160 mm PVC diversion pipeline to allow flow around the footprint of the enlarged dam. This pipeline will drain into the stilling basin at the spillway of the dam. The stream diversion will effectively render the existing 3 400 m³ dam as an off-stream dam.
- b) Expansion of the existing 3 400 m³ dam with a wall height of approximately 3m. The proposed expansion will enlarge the dam to 350 000 m³ with a wall height of 17.6 m and a surface area of 5.3 ha at full-service level. While the expansion will span across a drainage line (engulfing the footprint of the existing dam), it will not contain any flow from this drainage line, and hence, the enlarged dam will constitute an off-stream dam. The dam will be unlined.

Given that water is not available continually from the Breede River, the enlarged dam is required to store the bulk of the water from the existing water entitlement as well as the additional water (for which application is being made).

Expansion of pipeline infrastructure

A connecting pipeline is required to transport water from the existing balancing dam to the proposed enlarged dam for storage purposes. The connecting pipeline will be laid underground within an existing roadway and will be 770 m in length with a diameter of 0.312 m. **Error! Reference source not found.** shows the route of this new portion of pipeline.

Associated agricultural infrastructure

The expansions will also require a network of additional internal farm roads (gravel roads or two track roads no wider than 4m) and will be located within the cultivation areas contemplated above. A network of irrigation pipelines of various diameters (80 – 120 mm) will also be required to feed water to the proposed cultivation areas. These will be located inside the footprints of the expanded cultivation area and on the dam wall. The roads and pipelines fall below the thresholds considered in the 2014 EIA Regulations, as amended, and as all the additional infrastructure will be located within footprints of the study area, are not detailed in the report. Water from the enlarged dam will flow under gravity to the existing pumphouse located adjacent to the existing balancing dam. No new pumphouse is therefore required.

No additional logistical / administrative structures and infrastructure is required as the applicant will use the existing facilities on Farm 823.

ALTERNATIVES

The no-go alternative would see the status quo of the farm maintained in terms of its current land uses. Given the agricultural zoning of the property, grazing by a limited number of livestock will however be allowed without the need for Environmental Authorisation.

This implies that the negative impacts associated with the development option (such as impact on aquatic and terrestrial biodiversity) will not take place, however, conversely, the positive impacts (predominantly socio-economic in nature) will also not be realized and the farming unit will not reach its agricultural potential and economic viability of the operations may be compromised.

The no-go alternative will serve as the baseline to comparatively assess the preferred alternative against the option of not proceeding with the proposed agricultural expansions.

Alternative 1 presents the Applicant's initial development intent, including:

- Cultivation of approximately 47.2 ha of virgin soil
- New 350 000 m³ dam
- An underground 0.312 m diameter, 770 m pipeline to connect an existing balancing dam to the proposed new dam

Alternative 1 is not considered reasonable or feasible, as it does not allow for the ecological integrity of the area to be maintained. As such, the specialists cumulative inputs resulted in Alternative 2(a).

Alternative 2(a) (PREFERRED): As a result of comments raised by CapeNature in the Scoping Phase, it was necessary for the botanist to reconsider recommendations in relation to the proposed layout. The preferred Alternative 2(a) presents a slight iteration of the previous preferred option (Alternative 2) and accounts for:

- The latest recommendations of the botanist, which included consideration of the (draft) elevated conservation priority status of Breede Sand Fynbos and practicalities of in-situ protection the conservation worthy *Euchaetis pungens* population;
- Revision to the catchment diversion infrastructure to address surplus flow and related erosion concerns; and
- Accurate delineation of potential cultivation boundaries.

Layout Alternative 2a (PREFERRED) therefore proposes:

- Cultivation of 40.5 ha of virgin soil (2 x areas respectively measuring 14.6 ha and 25.9 ha). These areas will have adequate sub-soil drainage to cater for sub-surface flows.
- The northern non-perennial drainage line will remain in place with a 20m buffer on either side. Activities in this watercourse and related buffer must be limited to maintenance of this freshwater resource.
- Exclusion of approximately 2.3 ha area with conservation worthy *Euchaetis pungens*. It includes a portion of the northern watercourse buffer as well as land immediately north and south of its buffer.
- The existing small dam within the larger cultivation area will be retained and used to store water as needed.
- Exclusion of the ~2 ha CBA area east of the existing small dam and retaining it as part of the large natural landscape corridor connecting the Langeberg Mountain with lowland areas towards the Breede River in the south, and beyond towards the Riversonderend Mountains.
- Smaller drainage channels associated with the central non-perennial drainage line will be infilled to allow for cultivation.
- A lined trapezoidal shaped cut-off drain (channel) with a 500 mm base width and 1:1 side slopes and a depth of 250 mm will be installed along the southeastern boundary of the southern cultivation area to assist with drainage in this portion and prevent erosion. A 160 mm PVC pipeline will connect the cut-off channel around the downstream toe of the dam with a stilling basin at the downstream river section to dissipate the flow on the steep right flank slope.
- Diversion of a portion of the southern non-perennial drainage line to prevent runoff from the catchment entering the new dam and ensure that 100% of the Ecological Water Requirement releases to the watercourses downstream of the dam. A 160 mm PVC pipeline with a capacity of approximately 40ℓ/s will be installed to divert runoff from the upstream catchment around the south of the dam basin to the spillway of the proposed dam.
- Expansion of an existing small dam to a 350 000 m³ off-stream dam with a maximum wall height of 17.6m.
- An underground 0.312 m diameter, 770 m pipeline to connect an existing balancing dam to the proposed new dam.

AFFECTED ENVIRONMENT

The investigation of the baseline environmental conditions was informed by a botanist, freshwater ecologist, faunal specialist, heritage practitioner, agricultural soil professionals as well as an engineer.

The farm is zoned for agriculture and supports approximately 24 ha of existing cultivation areas. The remainder of the farm is vacant and constitutes approximately 47 ha of viable agricultural land (subject to this assessment) and mountainous areas on the north-western slopes of Rooiberg Mountain) which are unsuitable for agriculture. The proposed land use is consistent with that of its surrounds.

The majority of the proposed cultivation area has High and Medium High soil potential, suitable to establish permanent crops.

A geotechnical site investigation indicated that there are no significant fault zones mapped in the vicinity of the dam site and recommended that a geophysical investigation of potential fracture zones be undertaken.

Three watercourses were identified in the cultivation area. In the proposed cultivation area, shallow erosion gulleys draining in a westerly direction and areas of sediment deposit converge as two non-perennial drainage lines. For the purposes of the Freshwater Impact Assessment, these are referred to as the 'northern' and 'central' drainage lines. The central drainage line arises suddenly and then disappear again as flow becomes unconfined. This drainage line becomes less confined until its alignment is no-longer discernible in the central part of the proposed cultivation site. The northern drainage line enters the site from the adjacent property to the north as a relatively wide channel and then exits the proposed site as a more confined channel created by rock deposits on its banks before discharging into the Breede River some 800 m from the proposed site. Some alien invasive *Acacia cyclops* (rooikrans) have established along the northern drainage, however both the northern and central drainage lines are lacking in instream or riparian habitat.

The proposed expanded dam footprint straddles another ephemeral drainage line (the 'southern' drainage line). This watercourse is confined to a moderately incised, meandering valley in the undulated and rocky topography. The southern drainage line also exhibits no instream or riparian habitat.

The Present Ecological State for the northern and southern drainage lines were determined as largely natural with limited modifications (B) while the central drainage line is moderately modified (C). All three drainage lines showed Marginal / low Ecological Importance and Sensitivity, meaning that they are not ecologically important or sensitive at any scale.

In respect of potential wetland areas, the specialist concluded that due to the artificial (man-made) nature of the dam, this is more accurately defined as an impacted or altered drainage line (i.e. not a wetland).

The dam within the footprint of the enlarged dam was confirmed as an off-stream dam with no association to the drainage line. It is entirely artificial and not considered a watercourse.

From a hydrological perspective, the proposed dam and proposed cultivation area lie within small catchments. It was confirmed that major stormwater drainage problems are not experienced given the low annual rainfall (MAP of 293 mm), however sheet erosion is evident just east of a small dam in the eastern part of the site has occurred. This is consistent with gulleys noted by the freshwater ecologist.

The vegetation in the proposed cultivation footprint comprises Breede Sand Fynbos (a Vulnerable ecosystem – elevated to Critically Endangered in the new draft List) while vegetation in the proposed dam expansion footprint supports consists of Robertson Karoo (a Least Threatened ecosystem). The presence of the Breede Shale Renosterveld in the development footprint areas (as suggested in the SA Vegetation Map) have however been refuted by the botanist.

The proposed connecting pipeline will be located within an existing farm track with no vegetation cover. Despite evidence of intensive grazing (sheep and cattle) to areas east of a fence that cuts through the site, the botanist reported that the habitat remains in good condition. *Euchaetis pungens* (Rutaceae), a Vulnerable species, is the only plant species of conservation concern recorded in approximately 0.8 ha of the development footprint, immediately south of a prominent (northern) drainage line bisecting the cultivation area.

It was found that the eastern portion of the property is included in a natural landscape corridor connecting the Langeberg Mountain with lowland areas towards the Breede River in the south, and beyond towards the Riversonderend Mountains. Such corridors are important for habitat connectivity and movement of fauna in the landscape. The CBA area in the (~2 ha) east of the small dam forms part of the northwestern edge of this corridor. Initially, the proposed cultivation area included the ~2 ha CBA area. In the scoping phase, the botanist determined that the location of this small overlap at the edge of the expansive corridor “will not result in any obstruction of natural connectivity or compromise the functioning of this corridor in the broader area” (Krige, 2021). Subsequent to comment from CapeNature, the botanist reconsidered the cultivation layout, and proposed the exclusion of this CBA area from the proposed cultivation footprint. Hence, the proposed dam and the entire cultivation footprint now falls outside this this corridor.

From a faunal perspective, it is unlikely that vertebrate species of conservation concern would naturally occur on the proposed project footprint given the available habitat. “Although it cannot be ruled out with high confidence that the Endangered Worcester russet butterfly (*A. lutescens*) could occur on the site, it was not recorded by the specialist after an active search during its known spring flight period. It has historically been recorded in a sandy area along a higher-lying North-facing slope of the Rooiberg, approximately 3 km east of the proposed development site. The proposed development site is, however, flatter and more exposed than the known Rooiberg site and not expected to provide as suitable a habitat compared to this known site” (Costandius, 2021).

The landscape, cultural heritage aspects, palaeontology and archaeology screening exercise concluded that it is unlikely that significant resources will be impacted and as such, no further studies were recommended in terms of Section 38 of the NHRA. These findings and recommendations were collated into a Notice of Intent to Develop and submitted to Heritage Western Cape. In response, HWC confirmed no further studies are required in this regard.

While the landscapes of cultural importance were considered by the heritage specialists, the following is noteworthy in relation to general visual aspects:

- The agriculturally related developments proposed is aligned with the agricultural zoning of the farm.
- The proposed agricultural expansions are congruent with the agricultural developments of the surrounding farmsteads along Eilandia Road. The proposals will therefore be substantially similar to the agricultural nature of activities in the surrounds and will not detract from the visual experience currently enjoyed in this area.
- The site is also not visible from public roads / areas frequented by the general public.

From a socio-economic perspective, the farm already contributes to employment, the economy, government revenue and household income. Skills development and corporate social investment offered to employees have also been detailed in the report. It was found that agriculture is an important contributor to the economy in the municipal area.

LEGISLATIVE REQUIREMENTS

A summary of the required approvals is tabled below.

LEGISLATION	ADMINISTERING AUTHORITY	AUTHORISATION TYPE	PROGRESS
NEMA	DEA&DP: Land Use Management	EA	In progress
NWA	Department of Water & Sanitation	WULA	In progress

CARA	Department of Agriculture	Ploughing permit	Yet to be submitted
NHRA	Heritage Western Cape	Comment	Received 1 June 2021
Langeberg: Municipal Planning By-law	Langeberg Municipality	Building Plan approval for netting to cover crops	Yet to be submitted

SUMMARY OF THE IMPACT ASSESSMENT

The following impacts were identified and rated for significance:

ENVIRONMENTAL ASPECT AND RELATED IMPACT	ALTERNATIVE 1		ALTERNATIVE (PREFERRED) 2a		Opinion on adequacy of mitigation and residual impact in the preferred alternative
	Without Mitigation	With Mitigation	Without Mitigation	With Mitigation	
DESIGN / CONSTRUCTION PHASE IMPACTS					
Botanical Impact: Loss of vegetation type, species and associated ecological processes	Medium to High (-)	Medium (-)	Medium (-)	Medium-Low (-)	Deemed sufficient by specialist in this field of study
Freshwater: Alteration of flow regime	Low (-)	Very Low (-)	Low (-)	Very Low (-)	Deemed sufficient by specialist in this field of study
Freshwater: Increased erosion and sedimentation	Low (-)	Very Low (-)	Low (-)	Very Low (-)	Deemed sufficient by specialist in this field of study
Freshwater: Water quality impairment	Low (-)	Very Low (-)	Low (-)	Very Low (-)	Deemed sufficient by specialist in this field of study
Freshwater: Loss of biota	Very Low (-)	Very Low (-)	Very Low (-)	Very Low (-)	Deemed sufficient by specialist in this field of study
Faunal impact: mortality, injury, habitat loss	Medium (-)	Low to Medium (-)	Low to Medium (-)	Low (-)	Deemed sufficient by specialist in this field of study
Socio-economic impact	High (+)	High (+)	High (+)	High (+)	Positive impact, mitigation sufficient to enhance positive effect
Air quality: dust generation	Low (-)	Very Low (-)	Low (-)	Very Low (-)	Mitigation sufficient to prevent impacts on health and nuisance as a result of dust. It is also in the interest of the applicant to reduce dust generation given the impact on cultivations.
OPERATIONAL PHASE IMPACTS					
Botanical impacts – disturbances to adjacent natural areas and bordering watercourse and buffer areas	Medium (-)	Medium to Low (-)	Medium to Low (-)	Low (-)	Deemed sufficient by specialist in this field of study
Freshwater: Alteration of flow regime	Low (-)	Low (-)	Low (-)	Low (-)	Deemed sufficient by specialist in this field of study
Freshwater: Increased erosion and sedimentation	Low (-)	Very Low (-)	Low (-)	Very Low (-)	Deemed sufficient by specialist in this field of study
Freshwater: Water quality impairment	Low (-)	Low (-)	Low (-)	Low (-)	Deemed sufficient by specialist in this field of study
Faunal impact: mortality, injury, habitat loss	Low (-)	Low (-)	Low (-)	Low (-)	Deemed sufficient by specialist in this field of study
Faunal impact: new habitat created at dam	Low (+)	Low (+)	Low (+)	Low (+)	Positive impact, no further mitigation necessary
Socio-economic impact	High (+)	High (+)	High (+)	High (+)	Positive impact, mitigation acceptable

Use of natural resources: Water	Medium (-)	Low (-)	Medium (-)	Low (-)	The contribution of the facility would be immeasurably small and with successful implementation of mitigation impact should be acceptable, assuming that the water use authorities support the application.
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NEED AND DESIRABILITY

In summary, the following points are noteworthy:

- Only a small proportion of the farm are currently cultivated, limiting the economic value that can be derived from the agricultural potential of the farm. The proposed cultivation expansion will increase the cultivation on farm by 170% which will have a significant impact on the income generation capacity on the property. This will serve to improve the financial viability of the farming unit through economies of scale.
- The proposed dam is essential to the proposed cultivation as the current water storage capacity on the property is inadequate to accommodate additional irrigation.
- The market demand for export fruit is growing.
- Approximately 150 direct seasonal job opportunities will be generated. The introduction of new crop varieties will distribute the preparation, harvesting and packing times over a larger proportion of the year, meaning that seasonal workers will be employed for longer periods of time. This will translate to increased job security for existing workers and new workers.
- The property is already zoned for agriculture, and partially used for this purpose, albeit on a small scale. It is located next to Farm 823 (the other property in the farming unit), where the necessary administrative and commercial infrastructure (offices, packhouse, storage facilities, workers accommodation etc.) are housed which will support the proposed expansion of cultivation and a dam on RE/767.
- Furthermore, the proposed activities are consistent with surrounding the land use (in the immediate and greater area) and the proposal will therefore not impact on other land uses in the surrounds. This also eliminates social impacts such as noise, visual impacts etc.
- Currently, the farm is not utilizing the bulk of its agricultural potential. Soil suitability has been established on the area earmarked for cultivation. The proposed agricultural expansions therefore present appropriate utilization of arable land that is already set out for agriculture in terms of its zoning.
- The preferred Alternatives already took account of biophysical constraints as identified by respected specialists.
- There are no heritage, cultural, landscape, archaeological or palaeontological constraints to the proposal.
- The project will contribute to skills development, the national and local economy, government revenue and provide employment opportunities, as detailed.
- The Applicant is in the process of applying for an Integrated Water Use License to allow for additional water abstraction and storage as well as the encroachment into watercourses. The development can only proceed if the water rights are granted. This application process is currently underway.
- The significance of impacts is deemed acceptable in the agricultural context of the area and mitigation measures are proposed in this regard.
- The project is aligned with the Provincial and Local Spatial Development Frameworks in that it proposes the utilization of arable land set out for agriculture and aims to secure the agricultural economy with the prudent use of agricultural resources, whilst minimizing impacts on the ecology.
- The proposal will not compromise the underlying biodiversity objectives and ecological functioning of the mapped aquatic ESAs and will not result in any obstruction of natural connectivity or compromise the functioning of the CBA corridor.
- The proposal is aligned with the principles of Environmental Management as well as the general objectives of Integrated Environmental Management as set out in Sections 2 and 23 of the NEMA.

With the available information at this point in the Scoping Phase, it is determined that the location is appropriate for the proposed land use. There is no unacceptable opportunity cost associated with the development that is evident at this point in time. Considering the information presented above, the proposed agricultural expansion is considered the best practicable environmental option on a site that is already zoned and partially used for this purpose.

PUBLIC PARTICIPATION PROCESS

The Scoping Phase included the public participation activities listed below. Full details are provided in this report.

- Identification of Key I&APs;
- Notification of the Environmental Process via media notices in two newspapers, a letter mail-out, letter drop and signboard on the site; and
- Public review of the draft Scoping Reports.
- Collating and responding to comments received.

The EIA phase included:

- Notification of acceptance of Scoping Report and public review of Draft EIAR.
- 30-day public review period where comment can be provided on the Draft EIAR.
- Collating and responding to comments received.
- Circulating the Final EIAR (for information purposes only).
- Notification of authority decision and rights of appeal.

CONCLUSION AND RECOMMENDATIONS:

The environmental process and reporting have described the proposed project, looking in detail at the site conditions, the need and desirability of the proposal and the environmental setting of the site. All information gathered was used to identify the potential environmental aspects and related impacts applicable to the proposed expansion of agricultural activities on the farming unit. These impacts were assessed to determine acceptability of the residual impacts, subsequent to the implementation of management and mitigation measures, so that a recommendation can be made to the competent authority whether to grant or refuse the proponent's application for EA.

The EIA phase was undertaken in accordance with the regulatory requirements stipulated in the 2014 EIA Regulations, as amended, as well as the plan of study for EIA (noting the one non-material deviation, as detailed in this EIAR).

Several specialists have provided inputs to inform the impact assessment and the determination of the preferred Alternative. These included:

- Botanical Impact Assessment
- Faunal Compliance Statement
- Freshwater Impact Assessment
- NID and Screener prepared by a heritage specialist (in respect of heritage, archaeology, cultural, palaeontological aspects).

In addition, the engineers provided technical inputs in respect of geotechnical conditions, a limited Stormwater Management Plan and a Dam Engineering Study. Soil experts provided the required information to demonstrate that the soils present on site is suitable for cultivation.

Following the assessment of impacts, and specifically, the botanist's reconsideration of the activity layout, the various specialists and the EAP have confidence that the negative impacts of the preferred alternative have been reduced to acceptable levels with the full implementation of mitigation as proposed. The impact assessment did not identify any fatal flaws associated with the activities. The level of impact suggests that the preferred alternative presents the responsible and sustainable expansion of agricultural infrastructure on this farming unit that will result in its financial viability. The botanical specialist indicated that a biodiversity offset is not required to compensate for the loss of terrestrial biodiversity.

A request was sent to DWS / BGCMA to indicate whether water is available and to obtain a letter of no objection to the application. This is included in the Final EIAR (Appendix F3).

No evidence or information gathered in the EIA processes suggested that authorisation would be inappropriate and as such, the EAP (supported by the specialists) is of the opinion that Environmental Authorisation should be granted, on the condition that:

- All monitoring actions and mitigation measures contained in the EIAR and specialist reports are implemented.
- The EMPr is implemented.
- The MMP is implemented.
- The Water Use License be obtained.
- All other permits / approvals for the facility be obtained.
- The Holder of the EA must enter the remainder of the property into a stewardship or other conservation agreement with CapeNature or one of their partners. Alternatively, a basic management plan must be compiled (in consultation with CapeNature) and implemented for the *E. pungens* conservation area. This plan must consider fencing, ecological burns (as required for this species) as well as edge effects associated with the use of herbicide and pesticides.