EXECUTIVE SUMMARY

INTRODUCTION

The project applicant, Habata Boerdery (Pty) Ltd, proposes the construction of a new off-channel dam in order to increase water storage capacity on the farm for balancing and emergency storage purposes. It is proposed that the new dam is constructed on Portion 274 of Farm 42 Strathsomers Estate (~691ha in extent), Kirkwood, Sundays River Valley Municipality, hereinafter referred to as **Falcon Ridge**. The proposed dam will have a capacity to store 480 000 m³ of irrigation water from the Lower Sundays River Water Users Association canal system, with a maximum dam wall height of 23 meters and a surface area of 6.1 hectares. In addition, new pipelines will be required in order to convey the irrigation water from the LSRWUA canal to the proposed new dam, as well as between the new dam and existing dams on Falcon Ridge and the adjacent farm, Portion 20 of Farm 84 Landdrost Veeplaats (hereafter referred to as **Loftus**). The proposed new irrigation pipelines will vary between ø250mm and ø355mm and will have a throughput capacity in excess of 120 litres per second. The total area of vegetation that will be required to be cleared to accommodate the proposed dam and the associated irrigation water pipeline infrastructure is approximately 9.5 hectares.

The preferred layout, dimensions and location of the proposed dam has been informed by the outcome of the various specialist assessments forming part of this Scoping and EIA process as well as technical input and consultation with I&APs and affected / juristic organs of state and State Departments.

The town which is located the nearest to Falcon Ridge farm is Kirkwood, in the Sundays River Valley Municipality, approximately 4 km to the west of the farm. The site can be accessed off the gravel “Enon” road (DR02006) which extends between Kirkwood and Enon. The nearest boundary of the Addo Elephant National Park is located approximately 4 km north of Falcon Ridge.

A detailed project description is provided in Chapter Two of the EIA report.

In terms of the NEMA EIA Regulations, 2014 (as amended), published in GN R326, 327, 325 and 324, promulgated under Chapter Five of the National Environmental Management Act (Act 107 of 1998) (NEMAA), and published in Government Gazette 40772 on the 7 April 2017, the project requires full Scoping and EIA, prior to the commencement of any activities on the site due to, amongst others, activities listed in GN R325, namely:

“16. The development of a dam where the highest part of the dam wall, as measured from the outside toe of the wall to the highest part of the wall, is 5 metres or higher or where the highwater mark of the dam covers an area of 10 hectares or more.”

OVERVIEW OF THE EIA PROCESS AND PUBLIC PARTICIPATION

This Draft EIA has been preceded by a comprehensive Scoping Process with the Final Scoping Report (FSR), including the Plan of Study for EIA, being submitted to the Department of Economic Development, Environmental Affairs and Tourism (DEDEAT) on the 3 February 2021. On 19 March 2021 acceptance of the FSR and approval of the Plan of Study for EIA was received from the DEDEAT. This marked the end of the Scoping Phase of the EIA Process. The project then moved into the EIA Phase of the assessment.

The key issues identified during the Scoping Process, which have been the subject of separate specialist assessments during the EIA, are outlined below:

- Ecological (fauna and flora) site assessment including:
    - Potential project related impacts on natural vegetation and faunal habitat associated with the area under assessment.
    - An aquatic survey to identify and map wetlands and watercourses on the site, as well as assigning suitable buffers for aquatic resources identified on the site.
    - Determine the impact of the proposed dam on the catchment.
    - Assess the requirement for an Ecological Water Requirements (EWR) study due to dam development.
    - Provide comment on the potential impact of the proposed development on Aquatic and Terrestrial CBAs, as identified in the ECBCP and the SRVM Biodiversity Sector Plan.
    - Recommendations regarding surface water runoff management
- The undertaking of a Phase 1 Palaeontological and a Desktop Archaeological Impact Assessment to identify heritage resources, materials and artefacts that occur within the area under assessment and recommendations regarding the conservation thereof.
- The undertaking of a Traffic Impact Assessment to determine the impact of the additional trip generation and the suitability of the proposed access point to ensure safe access and egress from the site.
- Geotechnical investigation to determine the suitability of the soil and rock conditions within the proposed dam footprint area to be utilised as construction material.

The primary objective of EIA Phase of the assessment is to present to I&APs and affected/ Juristic Organs of State and State Departments an overview of the predicted impacts, proposed mitigation measures (both positive and

negative), closure outcomes, residual impacts of the activity and management actions required to avoid or mitigate the negative impacts; or enhance the positive impacts of the project. This report is being released for a 31-day I&AP review period to enable the authorities and I&APs to provide input and comment before the report is finalised and submitted to the DEDEAT for their decision-making. The comment period for the Draft EIA Report extends from the **31 May 2021 to the 1 July 2021**. A copy of the Draft EIA Report and EMPr can be downloaded from the website www.publicprocess.co.za.

For further details on the EIA Process and Public Participation see Chapter Four of the EIA Report.

ECOLOGICAL IMPACTS AND RECOMMENDED MITIGATION

Vegetation, Biodiversity Patterns and Processes

The following table provides a summary of the key direct and indirect impacts associated with the development. Only impacts that are rated as having a potential *Medium to High or Very High* negative impact are listed below:

Development phase	Impact type	Impact	Rating	
			Without mitigation	With mitigation
Construction:	**Direct:**	Loss of vegetation	Medium (-)	Dam: Medium (-) Pipeline: Low (-)
		Loss of CBA and ESA	Medium (-)	Low (-)
		Loss of flora and fauna species of special concern	Medium (-)	Low (-)
		Fragmentation of natural habitat	Medium (-)	Low (-)
		Loss of faunal habitat	Medium (-)	Low (-)
		Impacts on declared Open Space Area	Medium (-)	Low (-)
Operational:	**Direct:**	Fragmentation of natural habitat	Medium (-)	Low (-)
		Loss of faunal habitat	Medium (-)	Low (-)
		Impacts on declared Open Space Area	Medium (-)	Low (-)

The following recommendations are made with regards to the mitigation and management of impacts on vegetation:

- Clearing of vegetation should be limited to the required footprint.
- Control and management of alien invasive plants, such as *Opuntia ficus-indica* and *O. aurantiaca* and other weed species that may proliferate after clearing along the pipeline route.
- Optimise the use of existing cutlines, roads and transformed areas as far as possible.
- Use flora relocation as a tool to rehabilitate degraded areas.
- Licence application to the Department of Forestry (of Department of Agriculture, Forestry & Fisheries) for the removal of *Sideroxylon inerme* trees.
- Permits from DEDEAT for the relocation of PNCO protected species to be obtained before commencement.
- A flora and fauna search and rescue to be implemented before clearing commences with follow up during clearing into dense thicket areas.
- Rehabilitation of disturbed areas with these species, especially cutlines.
- A fauna relocation before commencement must ensure that any less mobile faunal species can be moved to a safe area.
- Prepare a rehabilitation plan for the reinstatement of an unfenced corridor after construction of the dam so as to improve connectivity between the intact vegetation to the east and west of the proposed dam.

Fauna

It is anticipated that the vegetation on the site, as identified by the vegetation specialist, would provide habitat to several small to medium mammal, reptilian and amphibian species. The site is likely also frequented by a variety of avifaunal species.

The site falls within the general distribution range of a few faunal species. Since the project footprint is surrounded by extensive outlying areas of natural habitat, any disturbance or displacement associated with increased activity or habitat destruction as a direct result of the activity is unlikely to pose a significant negative impact to faunal species of conservation concern.

No Endangered or Critically Endangered fauna species were confirmed to be present but are known to be present in proximity to the site. The mammal and bird species are unlikely to be significantly affected as they are generally mobile, and the site is surrounded by large areas of intact vegetation that would provide suitable alternative habitat. The Passerines, *Campethera notata* (Knysna Woodpecker), are known to occur in thicket habitat and it is possible that they do frequent the site from time to time. Should they be present, they may experience temporary displacement during construction, but suitable habitat is plentiful in the surrounding landscape. The large birds *Circus maurus*

(Black Harrier) and Circus *ranivorus* (African Marsh Harrier) may occasionally utilise the site and wider area on a sporadic basis as part of their range but are unlikely to be affected significantly because of the transformation of land, as adequate similar habitat is found in the surrounding area.

No amphibian species of conservation concern are likely to be affected as no wetland and watercourses will be directly affected by the clearing of vegetation other than perhaps localised access roads and installation of pipeline.

It is anticipated that most of the faunal species remaining on the farm will in all likelihood move off to undisturbed portions of the site as soon as site preparation commences.

Aquatic Features (artificial and natural)
There are a number of non-perennial tributaries of the Brakkloof River and Sundays River falling within and surrounding the development footprint. The pipeline will traverse the Brakkloof River and its non-perennial tributaries as well as a non-perennial tributary of the Sundays River. The proposed new dam will fall within the head of a non-perennial tributary of the Brakkloof River. The Brakkloof River and the non-perennial tributary of the Sundays River would likely have historically drained into the Sundays River. However, these have been altered to drain into surrounding furrows and irrigation canals associated with the surrounding farming practices.

The majority of the pipeline route and dam fall within already transformed areas. The watercourses falling within the development footprint are non-perennial streams within the upper catchment and without any well-developed active channels or riparian areas. Since the dam is situated at the head of a minor non-perennial watercourse, it will effectively function as a storage reservoir and will not significantly alter downstream flows. The perennial river into which the drainage lines ultimately flow is also considered to be highly transformed, hence the impact will be negligible. The proposed dam falls within a small upper catchment area of the non-perennial river system catchment area and is unlikely to have any significant negative impacts on downstream river or wetland systems and water users.

The following table provides a summary of the key direct and indirect impacts associated with the development. Only impacts that are rated as having a potential *Medium to High or Very High* negative impact are listed below:

Development phase	**Impact type**	**Impact**	**Rating**	
			Without mitigation	**With mitigation**
Construction:	**Direct:**	Changes to the hydrological regime of rivers and streams in and around Falcon Ridge Farm.	Medium (-)	Low (-)
		Loss of riparian vegetation and continuity of streams across Falcon Ridge Farm	Medium (-)	Low (-)

- Clearing and levelling should remain outside the 32m buffer around streams and drainage lines for all work, other than the construction of the dam itself and the pipeline crossings of the Brakkloof river
- Adhere to the proposed pipeline crossing design which will allow minmal changes in stream flow
- Construction must be conducted during the dry season
- The pipeline crossing must run perpendicular to the riparain / watercourse area to reduce the area of impact
- Soils should be stockpiled in heaps not exceeding 2m in height and should be placed upslope (east or westward) of the pipeline trench.
- A stormwater management plan to be developed for efficent movement of stormwater into drainage lines
- Maintain remaining network of drainage lines so as to maintain migration corridors.
- Stockpile cleared natural vegetation during construction and use this to revegetate pipeline routes
- Erosion controls to be put in place
- No dumping in watercourses or within the 32m buffer
- Proper mitigation and management of domestic and construction waste on site
- Best practice should be used to manage sedimentation impacts on watersources on site

It is recommended that the following are included as conditions in the Environmental Authorisation:
- Blanket clearing of vegetation must be limited to the required footprints. No clearing outside of the footprints to take place. Any site camps and laydown areas requiring clearing must be located within already disturbed areas and away from watercourses.
- Before site clearing commences, the development area must be surveyed for plant and faunal SSC by a suitably qualified specialist. Plant and faunal species of special concern must be relocated to the remaining patches of intact vegetation on-site or other suitable refuge areas off-site. Permits must be obtained from the relevant authorities for the removal or transfer of protected flora and faunal species.
- No fauna encountered on site to be intentionally harmed.
- Exotic plants present on the site, which are listed in CARA (Conservation of Agricultural Resources Act 43 of 1983) or the NEMBA Alien Invasive Species List should be progressively removed from the site. In addition,

regular follow-up clearing should be conducted for the duration of the project lifetime to ensure that the intact vegetation on the farm is kept free of these plants.
- Develop a rehabilitation plan for the reinstatement of an unfenced corridor (40m wide) to improve connectivity between the intact vegetation to the east and west of the proposed dam. Indigenous vegetation collected during clearing (Spekboom, *Aloe* and other succulent species) as well as relocated protected species to be utilised. The rehabilitation plan must be required to be submitted to DEDEAT for their approval prior to commencement of construction.
- Application is required to be made to DWS for a Water Use Licence in terms of Section 21 (c) and (i) – impacts on beds and banks – due to pipelines crossing the Brakkloof stream. Confirmation is required from DWS if a Section 21(b) application for storage is also required.

For further information on the Ecological Impact Assessment and the Aquatic Impact Assessment see Chapters Six and Seven, respectively of the EIA Report.

HERITAGE IMPACTS AND RECOMMENDATIONS

Given the small (partially disturbed) footprint of the new dam and associated pipelines, the weathered nature of the underlying Mesozoic bedrocks, as well as the low palaeontological sensitivity of the overlying superficial sediments, the palaeontological heritage impact significance of this agricultural project is assessed as LOW (negative) without mitigation. There are no objections on palaeontological heritage grounds to authorisation of the development. No further palaeontological heritage studies or specialist mitigation are required for the proposed development, *pending* the potential discovery or exposure of any substantial fossil remains (*e.g.* vertebrate bones and teeth, large blocks of petrified wood, fossil plant-rich horizons) during the construction phase.

It is predicted that it is possible that a few Middle Stone Age stone tools in secondary context, similar to those observed during other surveys in the area may be exposed during the proposed construction of the proposed dam. The development will take place near the Sunday's River and there is a possibility that freshwater shell midden material may be exposed (see conditions below). In general, the area for the proposed development appears to be of low cultural sensitivity and it is unlikely that any archaeological remains of any significance will be found *in situ* or exposed during the development.

The following actions are recommended:
- The ECO responsible for these developments should be alerted to the possibility of important fossil remains and concentrations of archaeological materials and/ or human remains being found either on the surface or exposed by fresh excavations during construction.
- All clearing activities and other construction activities must be monitored. The manager/ foreman should be informed before clearing/ construction starts on the possible types of heritage sites and cultural material they may encounter (see Appendix One and Two of the Construction EMPr) and the procedures to follow when they find sites. Alternatively, it is suggested that the ECO must be trained to monitor the clearing of the vegetation and all other construction activities.
- Should such heritage resources be discovered during construction, all work must cease in the immediate area and these should be safeguarded (preferably *in situ*). The ECO should alert the Eastern Cape Provincial Heritage Resources Authority. This is so that so that a systematic and professional investigation can be undertaken. The specialist involved would require a collection permit from ECPHRA. Fossil material must be curated in an approved repository (e.g. museum or university collection) and all fieldwork and reports should meet the minimum standards for heritage impact studies developed by SAHRA (2013).
- Sufficient time should be allowed to investigate and to remove/ collect such material.
- Recommendations will follow from the investigation.

For further information on the Heritage Impact Assessment see Chapters Nine (Archeology) and Ten (Palaeontology) of the EIA Report.

TRAFFIC IMPACTS AND RECOMMENDATIONS

The following conclusions can be drawn from the traffic specialist study:
- Access to the proposed construction site will be provided form DR02006 at the existing access points
- A total of up to 15 additional deliveries per day over a maximum period of 28 days will make use of DR02006, and will have minimal impact on the operational capacity of the adjacent road network
- Impacts on the adjacent road network will be limited to vehicles delivering commercial construction material not readily available on site.

The table below provides a summary of the key direct and indirect impacts associated with the development that have been identified by the traffic specialist. Only impacts that are rated as having a potential *Medium to High or Very High* negative impact are listed below:

Environmental impact	Development phase	Without mitigation	With mitigation
Traffic Safety Impact due to slow moving traffic	Construction	High (-)	Medium (-)
Generation of Dust	Construction	Medium (-)	Medium Positive (+)

In view of the findings of this study, it is recommended that:
- This TIA be approved by the Eastern Cape Department of Transport.
- DR02006 be maintained on a regular basis.
- Suitable construction warning signage (indicating temporary slow moving truck movements) be erected on the DR02006 on the approaches to the construction site prior to the commencement of construction activities.

For further information on the Traffic Impact Assessment see Chapter Eight of the EIA Report.

ASSESSMENT OF ALTERNATIVES
The following alternatives were identified for consideration in this assessment:
- No-Go alternative
- Property/ Location alternatives
- Layout alternatives (development footprints)

The No-Go option would entail not clearing approximately ~6.1ha of Sundays Thicket for the establishment of the dam and associated irrigation water reticulation infrastructure. However, this will include the continued encroachment of exotic and invasive vegetation, if not actively controlled.

Conversely the No-Go option would result in Habata Boerdery not being able to ensure supply of the irrigation water necessary to irrigate the 870ha of crops and orchards on the aforementioned farms, should the supply from the LSRWUA canal system be interrupted. While the No-Go option will have no significant negative biophysical environmental impacts, it will result in the loss of positive social and economic benefits which are associated with the Go option.

Falcon Ridge has been identified as the preferred property for establishment of the proposed dam due to amongst others, topography of the site, geotechnical conditions and pumping/electricity requirements. The preferred dam footprint and pipeline routes within the farm boundaries have been informed by the relevant specialist, as well as technical input and is discussed in detail in Chapter Five of the EIA Report.

OVERALL EVALUATION OF IMPACTS
The proposed agricultural development is in line with the Sustainable Development Goals adopted by South Africa in 2015 as well as the objectives of the National Development Plan (2030).

In addition, agriculture was highlighted in President Ramaphosa's State of the Nation Address in 2020 as one of the areas with the highest growth potential. Similarly, the 2019 South African SDG Country Report identified targets addressing SDG objectives in the food and beverage sector as having the most enabling conditions. Investments in this sector – particularly agriculture – are strongly linked with ending poverty, living dignified lives, and the ability to make the most of educational and economic opportunities. The following extracts from the South Africa SDG Investor Map (UNDP, 2020) have reference:
- *"The sector is also fairly resilient to economic shocks, has high potential for job creation and is important for export-led growth."*
- *"The sector has remained relatively protected during COVID-19, with limited job losses."*
- *"As a key link between people and planet, investments in agriculture can help achieve multiple SDGs. Although primary agriculture only constitutes 2.9% of GDP (2018), the broader value chain is estimated to contribute 12% to GDP. Furthermore, it is significant to the broader development agenda as a driver of employment (9% of the total workforce works in this sector) and future job creation."*

With regards to citrus as a subsector of labour-intensive agriculture, The NDP (2030; Page 222), states the following: *"There are about 60 000 hectares of citrus trees in South Africa. The employment requirement to produce citrus fruit is estimated at one worker per hectare, about 60 000 workers are employed on citrus farms. Direct downstream labour requirements for citrus are estimated at one labourer per 2 500 cartons packed: with about 100 million cartons packed per year, some 40 000 jobs are created in packing plants for a period of six months, or 20 000 full-time equivalents. In addition, there are labour requirements for transportation, warehousing, port handling, research and development, and processing. From 2000 to 2010, the citrus-farming area increased by 28 percent, from 47 000 to 60 000 hectares."*

Habata Boerdery plays a key role in the Sundays River Valley Municipality and Nelson Mandela Bay Municipality as an established producer of a variety of citrus (e.g. lemons, valencia's, navels, satsuma's and mandarins) as well as

fruit and vegetables for the local and global markets (e.g. watermelons, orange and green melons, cabbages, mealies and butternut). Habata Boerdery's farming operations involve various farms/ properties, totalling ~6113ha, in the SRVM, as well as the Nelson Mandela Bay Municipality (NMBM). The area proposed for the construction of the dam is located on Portion 274 of Farm 42 (Falcon Ridge) which measures ~691ha in extent, is zoned for Agriculture and is currently utilized as a working farm, with approximately 390ha (56.4%) of the farm having been transformed for agriculture.

During May 2017 a section of the main Lower Sundays River Water Users Association canal system, located on the project applicant's property, was destroyed in a landslide The canal provides water to the Nooitgedacht treatment works as well as to surrounding farms for irrigation purposes. Water is extracted from the canal, under agreement with the LSRWUA. The sustainability of the canal system in the SRVM is fundamental to the sustainability of the farming operations in the area. The collapse of this portion of the canal on Habata Boerdery's operations had a severe negative impact on their ability to irrigate their fields and to meet contracts with both local and international markets. The proposed dam construction is therefore envisioned to increase water storage capacity of the applicant's existing balancing dams which will also alleviate the potential impacts of another potential canal collapse, should such occur in the future.

The water from the proposed dam will be used to irrigate a variety of crops on the farms Falcon Ridge, Allandale and Loftus, valued at approximately R80 000 (gross) per hectare (2016 data, conservative estimate). A total of 870ha are under irrigation on the aforementioned farms, which equates to R69.6 Million.

The Final Integrated Development Plan for the SRVM (SRVM IDP 2016/ 2017), indicates that the current unemployment rate in the municipal area may be as high as 38.54%. The Agricultural sector provides room for growth in terms of employment opportunities, as it currently represents ~11% of the employment for the SRVM area (Final SRVM IDP 2015/ 2016). Additionally, the SRVM IDP (2015/ 2016; Page 36) states that: *"The municipality can boast its ecotourism and agricultural potential."* Finally, the following statement is given by the SRVM Spatial Development Framework (SRVM SDF 2013; Page 8): *"The agricultural sector is one of the key economic drivers of the Sundays River Valley Municipality*."

The anticipated capital investment of the proposed dam and associated pipeline infrastructure, upon completion of the construction phase, will be approximately R12 million. It is estimated that the construction phase of the development will create approximately 20 temporary employment opportunities at a value of R650 000 million over the duration of the construction phase. Local contractors will be employed and thus it is anticipated that labour will be sourced locally from communities in the SRVM and the Nelson Mandela Bay Municipality (NMBM).

During harvesting season approximately 2 persons are employed per hectare, at an average cost of R2 500 per month (seven months of the year). If the area under cultivation is unable to be irrigated due to a loss of supply (e.g., another canal collapse), this would result in the loss of employment and associated income at a cost of approximately R30.45 Million annually. As noted above, the crops are for the local market, as well as for export. The nearby communities associated with the town Kirkwood in the SRVM, as well as the greater NMBM area, represent an important labour force in close proximity to the proposed development. It is anticipated that the proposed development will result in a number of temporary employment opportunities for the local community, as well as job security for existing permanent employees.

The proposed new off-channel dam will require the clearance of approximately 8.5 hectares, including the associated water pipeline, in an area intact Sundays Valley Thicket. A portion of the dam will be constructed into existing cultivated field. Impacts on the Open Space corridor can be mitigated to a *Low negative* impact by the proposed rehabilitated corridor and the location of the dam to intersect with already cleared areas.

By applying the mitigatory measures proposed *Construction Phase* direct and indirect impacts of medium to high significance can be reduced to impacts of *medium to low negative or neutral impacts*. The key direct and indirect impacts associated with the *Operational Phase* of the development can, by applying the mitigatory measures proposed be reduced from negative impacts of high to medium significance to *impacts of medium to low significance*.

The Environmental Assessment process has not identified any negative impacts that should be considered "fatal flaws" from an environmental perspective, and thereby necessitate substantial re-design or termination of the project. Taking into consideration the findings of the EIA process, it is the opinion of the Environmental Assessment Practitioner that the project benefits outweigh the negative residual environmental impacts, provided that the specified mitigation measures are applied effectively, it is proposed that the project receive environmental authorization in terms of the EIA process.