

CHAPTER TWO: PROJECT DESCRIPTION

2.1 INTRODUCTION

The applicant, San Miguel Fruits SA (Pty) Ltd, proposes to expand citrus production at their existing operations on Portion 2 of Farm 92, known as Sylvania, which measures ~243.82ha in extent. Sylvania is an existing working farm and the applicant proposes to transform a portion on the western section of the farm, which measures ~115 ha. A development footprint of ~65ha is proposed within the area that has been assessed (~115ha). Approximately 50ha of citrus is proposed to be established within the development footprint and ~15ha is proposed to be cleared for associated infrastructure (roads, irrigation, dam etc.). Irrigation of the proposed agricultural development requires the construction of a new dam with a capacity to store ~30 000m³ (~2.1ha footprint) of water, as well as the installation of irrigation pipelines of varying diameters. The existing buildings on the farm are proposed to be used for the storage of vehicles, pesticides and herbicides, as well as to provide administrative support to the development.

The farm portion under assessment falls within the Sundays River Valley Municipal area (SRVM) and the nearest town is Kirkwood, which is located ~9.3km northwest of the site (see Map 2.1). The closest boundary of the Addo Elephant National Park is located ~7.5km north of Sylvania.

As per the requirements of the NEMA EIA Regulations, 2014 (as amended), GN R326, Appendix 3, Section 3. (1) (b), (c) and (d), this chapter of the report provides the following information, where relevant:

3. (1) (b) *the location of the development footprint of the activity on the approved site as contemplated in the accepted scoping report, including-*
- (i) *the 21-digit Surveyor General code of each cadastral land parcel;*
 - (ii) *where available, the physical address and farm name;*
 - (iii) *where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;*
3. (1) (c) *a plan which locates the proposed activity or activities applied for as well as the associated structures and infrastructure at an appropriate scale, or, if it is-*
- (i) *a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or*
 - (ii) *on land where the property has not been defined, the coordinates within which the activity is to be undertaken;*
3. (1) (d) *a description of the scope of the proposed activity, including-*
- (i) *all listed and specified activities triggered¹;*
 - (ii) *a description of the activities to be undertaken, including associated structures and infrastructure;*

2.1.1 Proposed Project Location

Map 1.1 in Chapter One of this report, includes a locality map indicating the location of the area under assessment in relation to the nearest town and main roads. The cadastral information listed in Table 2.1 below is relevant to Portion 2 of Farm 92 Tregaron, known as Sylvania.

¹ Listed activities requiring Environmental Authorisation in terms of the NEMA EIA Regulations, 2014 (as amended) are contained in Chapter Four of this report.

Table 2.1: Project cadastral information.

SURVEYOR GENERAL 21 DIGIT CODE																			
C	0	7	6	0	0	0	0	0	0	0	0	0	0	9	2	0	0	0	2
PHYSICAL ADDRESS AND FARM NAME																			
• Portion 2 of Farm 92 Tregaron, Uitenhage Registration Division, known as Sylvania																			
SITE COORDINATES																			
Point Number	Latitude (S) (DDMMSS)						Longitude (E) (DDMMSS)												
1	33°	25'	29.15"	S	25°	32'	34.42"	E											
2	33°	25'	23.70"	S	25°	33'	58.25"	E											
3	33°	25'	30.25"	S	25°	33'	59.33"	E											
4	33°	25'	39.61"	S	25°	33'	47.89"	E											
5	33°	25'	46.24"	S	25°	33'	48.52"	E											
6	33°	25'	51.30"	S	25°	33'	52.54"	E											
7	33°	25'	54.40"	S	25°	33'	57.04"	E											
8	33°	25'	59.88"	S	25°	33'	50.10"	E											
9	33°	26'	5.84"	S	25°	33'	46.86"	E											
10	33°	26'	5.89"	S	25°	33'	41.79"	E											
11	33°	26'	9.35"	S	25°	33'	41.25"	E											
12	33°	26'	14.02"	S	25°	32'	54.62"	E											

Map 2.1 below shows the boundaries of Sylvania, which forms part of this Scoping and Environmental Impact Assessment (Scoping and EIA) process and upon which the anticipated activities are proposed to take place. The preferred layout for the project (as indicated in Map 2.2 below) has been determined by the outcome of the assessment process, which included a consultation process, specialist assessments and technical input. The listed activities which potentially require Environmental Authorisation are included in Chapter Four of this report. The proposed specialist studies, scope and methodology for the assessment process is outlined in Chapter Four of this report and the assessment of alternatives is outlined in Chapter Five. Chapter Six to Ten of this report includes the findings of the various specialist assessments undertaken for the EIA Phase of the assessment.



Map 2.1: A plan indicating the coordinates of the boundary of Portion 2 of Farm 92 Tregaron, known as Sylvania, upon which the agricultural expansion is proposed to take place.

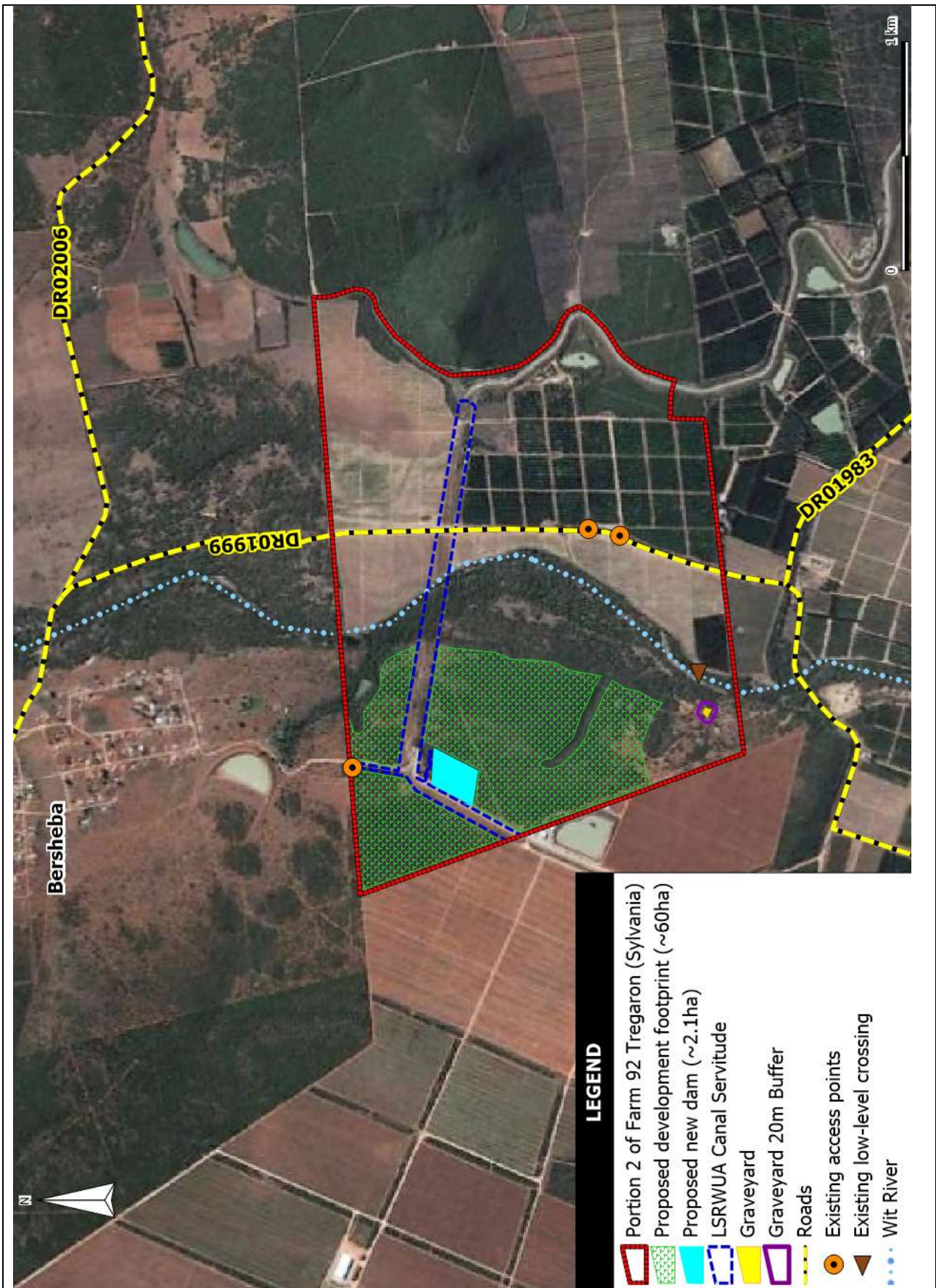
2.2 PROPOSED PROJECT SCOPE AND ACTIVITIES

Portion 2 of Farm 92 Tregaron, known as Sylvania, measures ~243.82ha in extent. Based on the outcome of the various specialist assessments it is proposed that an area of ~65ha is cleared, as follows:

- Citrus orchards: ~50ha
- Associated infrastructure (~15ha) including:
 - Internal unpaved service roads (widths varying between 4m and 10m) within the orchards;
 - Upgrading of an existing low-level crossing over the Wit River and associated approach roads;
 - Upgrading of an existing access road;
 - Windbreaks (if required);
 - Irrigation pipelines of varying capacities (varying between 60mm to 355mm) and lengths (up to 200m).
- Construction of a new dam with a capacity to store ~30 000m³ (~2.1ha footprint) of water, with a maximum wall height of 5m.

Access to the farm is gained from two existing access points on the farm, along the gravel DR01999 road. During the wet season, when it is not possible to cross the Wit River via the existing low-level crossing, access will be gained from DR02006 via the municipal road network through Bersheba.

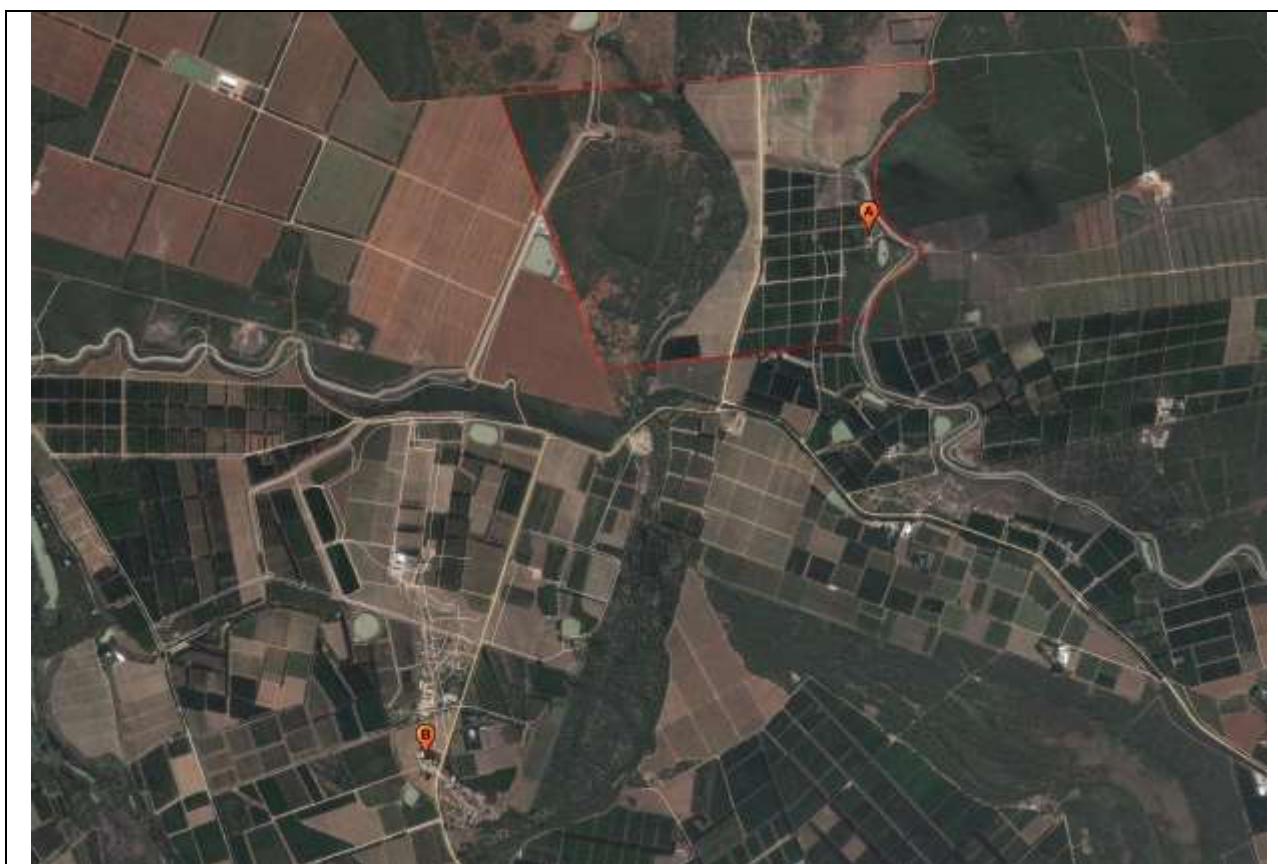
Map 2.2 below indicates the preferred development footprint, associated structures and infrastructure on Sylvania.



Map 2.2: The preferred development footprint, associated structures and infrastructure on Portion 2 of Farm 92 Tregaron.

Water for the proposed development will be sourced from the LSRWUA canals via the proposed new dam. Drip irrigation will be utilised for the irrigation of citrus. Additional power supply will be required in order to pump the irrigation water into and out of the proposed new dam. This will take the form of a 150kVA line and will require the installation of a 22kV/400v transformer (200kVA). An Eskom representative has confirmed that there is sufficient capacity on the Nooitgedacht Skilpad 1 22kV line to provide the additional electrical infrastructure. Confirmation has been included in Appendix I.

The existing buildings on Sylvania are proposed to be used for the storage of vehicles, pesticides and herbicides, as well as to provide administrative support to the development. In addition, the administrative facilities at another farm (known as Mfuleni) owned by the applicant, located ~2km south of Sylvania, are also proposed to be utilised for the expanded agricultural development on Sylvania (see Map 2.3 below). Therefore, no additional services infrastructure is necessary to support the proposed agricultural expansion on the farm.



Map 2.3: Existing facilities to be utilised for the expanded agricultural development on Sylvania (marked as "A") and Mfuleni (marked as "B").

During spraying season, chemicals are purchased, delivered and utilised on a needs basis and thus, do not require storage in bulk on site. The existing storage facilities will be sufficient to accommodate the temporary storage of chemicals required for the proposed agricultural expansion.

Plastic crates and wooden pallets required during harvesting seasons are proposed to be hired from an independent contractor and transported via truck to delivery and collection areas within the orchards (see photo 2.1). Once a crate is full it is transported via tractor-trailer to the vehicle collection and delivery area at the existing workshop/ storage shed facilities where it is collected

and directly transported to a packhouse for sorting and packaging. The fruit is not stored in bulk on site and needs to be transported to the packhouses in as short a time as possible to prevent degradation of the product.

The now, empty plastic crates and wooden pallets are returned to the designated areas within the orchards, to be refilled with fruit for processing. At the end of the harvest season the crates and pallets that have been hired are returned. Thus, no additional storage areas are required for wooden pallets and plastic crates. The applicant utilises an independent Packhouse (managed by Sun Citrus) or its own packhouse (Ponder's End) for the processing and export of its product and transport companies are hired on a needs basis to transport fruit. Based on



Photo 2.1: Example of crates being packed within the orchards during harvest season.

market conditions, the fruit produced as a result of the proposed agricultural expansion will be sold as fresh fruit to local and international markets (export), as well as processed (juiced).

During harvesting season, portable toilets are placed within the orchards to provide sanitation facilities for workers. Existing offices and sanitation facilities will be utilised by office workers in order to accommodate the proposed development. The proposed development will thus not require any additional sanitation infrastructure associated with the processing and packaging of the citrus.

The proposed agricultural expansion on Sylvania can be divided into the following phases, which are outlined in more detail in the sections below:

- Preconstruction
- Construction
- Operational

At this stage of the assessment process decommissioning is not proposed and would be subject to the regulations applicable at the time.

2.2.1 Preconstruction

The fruit proposed to be produced on site is for international export. In order to meet the requirements of export stock, seed (the foundation block seed) is required to be booked and purchased from a certified agency, the Citrus Foundation. This is booked approximately two (2) years in advance in order to secure the seed, which includes a financial deposit.

The seed is provided to a certified nursery for a two-year grow-out period, during which the seeds are germinated, and the seedlings grown to sapling stage. Meticulous coordination is required between the Citrus Foundation for the purchase of the seed, the nursery for grow-out, and the citrus producer, in order to meet contractual obligations for harvesting and export of the crop. This is an on-going process, which is carefully timed and coordinated to allow the development of the site to take place seamlessly over the development timeframe proposed by San Miguel.

The preconstruction phase for securing the foundation block seed and growing of the saplings occurs in parallel to site preparation which is outlined below.

2.2.2 Construction

The project will entail the clearing of vegetation, levelling of the site, and the installation of the drip/micro irrigation system, prior to the planting of the saplings. Once the site is prepared, citrus orchards will be established (refer to the operational phase of the development). It is anticipated that vegetation clearing, landscaping, site preparation and planting will be done both by hand and with the aid of suitable earth moving equipment (excavators, bulldozers, TLBs). No workers' accommodation will be provided on site during the construction phase.

Site preparation will entail the following activities on site:

- Clearing of indigenous vegetation;
- Landscaping and levelling the site for citrus orchards;
- Establishment of internal unpaved service roads and laydown areas;
- Construction of a new irrigation dam;
- Installation of internal water reticulation and irrigation infrastructure; and
- Planting of orchards and windbreaks (if necessary).

Site preparation needs to be completed to coincide with the planting of the trees, which occurs annually in the last quarter of the year between September to December.

2.2.2.1 Vegetation Clearing and Landscaping

Based on the outcome of the assessment process, detailed specialist studies, technical input and consultation process, it is proposed that an area of ~65ha of indigenous vegetation be removed for the planting of ~50ha of citrus orchards. An additional area of ~15ha is proposed to be cleared for the construction of internal unpaved service roads (widths between 4m and 10m), windbreaks (if necessary), the installation of irrigation pipelines ((varying between 60mm to 355mm), the construction of a new balancing dam (~30 000m³/ ~2.1ha) with a maximum wall height of 5m, the upgrading of an existing access road, as well as the upgrading of an existing low-level crossing across the Wit River and associated approach roads. Vegetation clearing will commence with the aid of both mechanised plant/ earth-moving equipment and by hand.

The focus of the assessment process has been on areas that are currently not under cultivation. The preferred layout for the project has been informed by the various components of the assessment process, which included a consultation process, detailed specialist assessments and technical input. Chapter Five of this report outlines the assessment of alternatives and provides more detail on the methodology applied in order to identify the preferred development footprint.

2.2.2.2 Internal Roads and Access

Access to the farm is currently gained off the gravel DR01999. The DR01999 bisects the farm in a north-south direction and there are two existing access points from the road which provide access to the western and eastern sections of Sylvania. These existing access points (off the DR01999) and the existing unpaved internal service roads are proposed to be utilised in order to service the proposed agricultural expansion.

An existing low-level water crossing which crosses the Wit River, located within the farm will be utilised to



Photo 2.2: Example of internal service roads on an existing citrus farm in the Sundays River Valley.

provide access to the proposed agricultural area from the existing orchards located adjacent to the eastern bank of the river. The existing bridge and approach roads will be required to be upgraded in order to provide suitable access to vehicles associated with the agricultural activities. Currently, a trench has been dug between the existing orchards to the east and the watercourse and adjacent areas, to limit access from the area under assessment. In order to tie in the proposed development area with the existing orchards, it is proposed that the trench be back-filled at the point where the existing low-level water crossing and approach roads are located, and a suitable fence and gate be erected in order to still be able to control access to the existing orchards at this point.

During wet seasons or periods when the internal roads crossing the Wit River are impassable, access to the main road network (DR02006) will be gained via the existing gravel road situated alongside the LSRWUA Canal through Bersheba.

The suitability of the existing access points, as well as the impact that the additional trip generation may have on the public road network have been assessed by a traffic specialist (See Chapter Eight of this report).

Integral to the internal operations within the proposed orchards are a number of new internal unpaved service roads (See Photo 2.2). These internal unpaved service roads are anticipated to be upwards of 4m in width. It is anticipated the main internal roads will be provided with a gravel wearing course, while the vehicle tracks amongst the individual orchards will remain unpaved. All internal roads will be designed and constructed to accommodate stormwater runoff, e.g. avoid steep gradients, stormwater cut-off/ diversion berms, and judicious use of erosion protection measures.

2.2.2.3 Installation of Irrigation Infrastructure and Dam Construction

The proposed orchards will be irrigated with water from the LSRWUA supply system. Irrigation water is extracted from the canal, under agreement with the LSRWUA. Individual farmers are permitted to extract water from the canal only at certain allocated pumping/ release times according to a predetermined schedule. Between the allocated pumping/ release times, the holder of water entitlements does not have access to the canal water. Therefore, since water is not continually available from the canal, the orchards cannot be irrigated directly from the canal and irrigation water is required to be stored in farm dams (balancing dams). More detail regarding the applicant's water use entitlements is outlined below in the Operational Phase under section 2.2.3.2.

A portion of the LSRWUA canal is located within the area under assessment and therefore, the irrigation water required for the proposed agricultural expansion is proposed to be pumped from this portion of the canal into a proposed new dam via a pipe with an internal diameter of 355mm and ~200m in length. It is anticipated that the proposed dam will be required to have a capacity of 30 000m³ with a footprint of ~2.1ha and a maximum wall height of 5 metres (see figure 2.1 below). Water will be pumped from the dam into the orchards (approx. 70%), as well as flow under gravity (approx. 30%).

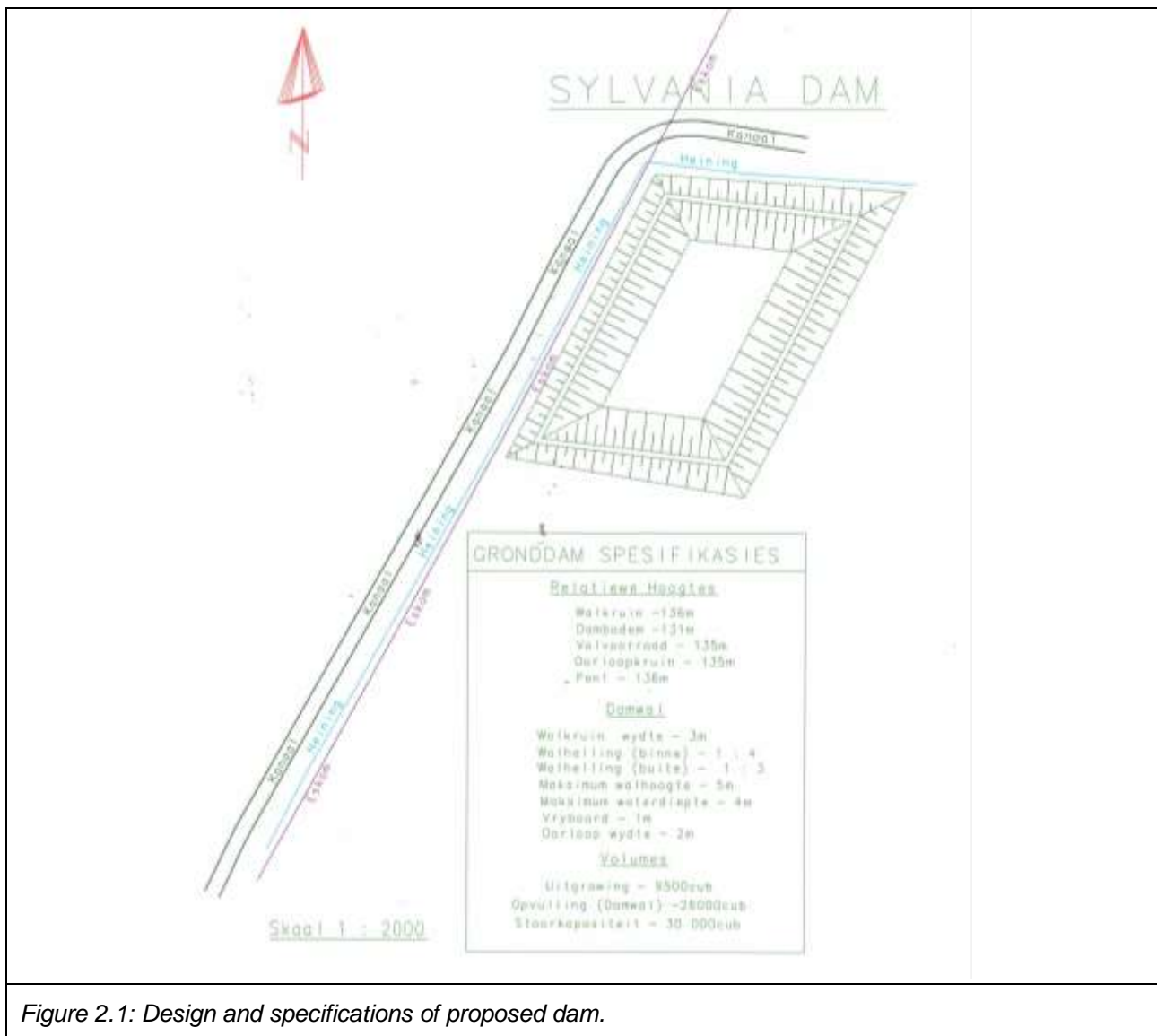


Figure 2.1: Design and specifications of proposed dam.

Irrigation water will be reticulated within the orchards via a network of underground pvc irrigation pipes and valves, with varying internal diameters (60mm to 160mm). The applicant proposes to utilise drip irrigation as the preferred method of water delivery to the trees within the orchards.

Additional power supply will be required in order to pump the irrigation water into and out of the proposed new dam. This will take the form of a 150kVA line and will require the installation of a 22kV/400v transformer (200kVA). An Eskom representative has confirmed that there is sufficient capacity on the Nooitgedacht Skilpad 1 22kV line to provide the additional electrical infrastructure. Confirmation has been included in Appendix I.

2.2.2.4 Windbreaks

The exotic *Cassuarina cunninghamiana* (Beefwood) is commonly used as a windbreak species in the Sundays River Valley. However, this tree is listed in Category 2 of CARA which requires that a permit be obtained prior to planting this species. There are also certain requirements/ conditions which need to be met in order to be able to plant Category 2 plants.

It is preferable that a tree species, which is not listed in terms of the CARA Regulations, is selected for planting as a windbreak. Hardly any information is available in the literature on indigenous species which would be potentially suitable as windbreaks. Indigenous Yellowwood trees

(*Podocarpus* sp.) have been utilised by some farmers in the SRVM as windbreaks, however, they are known to be hosts to false codling moth (citrus pest). In addition, most of the indigenous species which have potential as windbreaks (e.g. *Ekebergia capensis*, *Pittosporum viridifolium*, *Ptaeroxylon obliquum*) tend to grow in moister regions and will likely require additional irrigation water to establish and reach the required height (~20m).

The applicant has indicated, however, that they do not intend to make use of windbreaks for the proposed agricultural expansion on Sylvania.

2.2.3 Operational

Once the site is suitably prepared, the area will be utilised for the establishment of citrus orchards. Equipment required for the new operations will be stored in the existing storage sheds and workshop areas on Sylvania and the nearby Mfuleni Farm. The following operational phase activities are associated with the project:

- The establishment of citrus orchards;
- Water for the development will be supplied from the LSRWUA canals which will be reticulated from the proposed new balancing dam; and
- It is anticipated that a number of additional seasonal and permanent employment opportunities will be created by the project.

2.2.3.1 Orchard Establishment

The preferred size, layout and configuration of the orchards have been determined based on the following:

- Soil suitability analysis by a recognised soil specialist;
- Irrigation infrastructure and efficiency requirements for drip irrigation;
- Technical requirements (runoff and stormwater management, accessibility, slope, existing infrastructure);
- Biophysical constraints (e.g. sensitive areas, species of special concern, maintenance of ecological corridors, buffers); and
- Heritage constraints.

2.2.3.2 Water Use Entitlements and Availability

Water for the proposed agricultural expansion will be provided by the LSRWUA supply system. Water entitlements from the LSRWUA provide for 900mm/ha/yr (9000m³/ha/yr). The drip/ micro irrigation water delivery system which will be used in the orchards will use ~600mm/ha/yr (6000m³/ha/yr). The applicant has divided their plantings into three (3) different zones within the Sundays River Valley, in terms of the allocation of water use entitlements. The current entitlements for the zone into which Portion 2 of Farm 92 Tregaron (Sylvania) falls, amount to 282.7ha of water, which translates to 2 544 300m³ per annum. Currently the existing operations within this zone require the utilisation of ~1 462 336m³ annually. Therefore, the applicant still has ~1 081 694m³ in reserve. This translates to 120.22ha of water use entitlements which is currently unutilised by the applicant and can therefore be used to irrigate the proposed agricultural expansion.

A copy of the water use entitlements allocated to the zone into which Portion 2 of Farm 92 Tregaron falls, as well as the applicant's water use account, indicating the amount of water that is in reserve, are contained in Appendix G.

2.3 CAPITAL INVESTMENT AND EMPLOYMENT GENERATION

The anticipated capital investment of the agricultural expansion, upon completion of the construction phase, will be ~R17 150 000. It is estimated that the construction phase of the development will create approximately six (6) new employment opportunities at a value of R403 200 (over a two-year period).

Upon completion of construction and during the operational phase of the development, it is estimated that four (4) new permanent employment opportunities will be created at a value of R153 600 annually, and 28 seasonal opportunities at an annual value of R470 400. Labour will be sourced locally from communities in the SRVM and Nelson Mandela Bay Municipality (NMBM).

In addition to the direct employment opportunities that are created as part of the farming operations, a number of indirect jobs will also be created by the proposed development particularly within the packaging and logistics industries, amongst others.

2.4 PROJECT SCHEDULE

The following table provides a preliminary overview of the proposed project schedule and an indication of the anticipated approvals process. Should Environmental Authorisation be positive, it is estimated that the project construction phase will take place over a period of 3 years (36 months).

Table 2.2: Proposed project schedule.

PHASES	ACTIVITY	TIMEFRAME
PRE-CONSTRUCTION PERIOD		
Detailed Planning and Design Phase	<ul style="list-style-type: none"> Prepare preferred layouts Relevant permit & licence applications Pre-construction Audit 	Completed within 12 months from date of Environmental Authorisation
CONSTRUCTION PERIOD		
PHASES	ACTIVITY	TIMEFRAME
1	<ul style="list-style-type: none"> Clearance of ~65ha of vegetation Construction of a new dam Installation of irrigation pipelines Establishment of orchards 	Completed within 24 months of Pre-Construction Period
OPERATIONAL PERIOD		
Farming Phase	<ul style="list-style-type: none"> Commence with farming activities (orchard operation and harvesting) 	Commence upon completion of vegetation clearing and orchard establishment (Construction Period)

2.5 CONCLUDING REMARKS

Alternatives and the assessment thereof, are outlined in Chapter Five of this report. The specialist studies forming part of the EIA phase of the assessment, which have informed the preferred development footprint within the site, are included in Chapter Six to Ten of this report.