PRE-APPLICATION BASIC ASSESSMENT REPORT
IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998) AND ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS, 2014 (AS AMENDED)

October 2017

PROJECT TITLE

AT DARLING GREEN ESTATE ON FARM 4401, DARLING, MALMESBURY DISTRICT

REPORT TYPE CATEGORY	REPORT REFERENCE NUMBER	DATE OF REPORT
Pre-Application Basic Assessment Report (if applicable)[1]	**-16/3/3/6/7/1/F5/5/2097/18**	July 2018
Draft Basic Assessment Report[2]	**-16/3/3/6/7/1/F5/5/2097/18**	November 2018
Final Basic Assessment Report[3] or, if applicable Revised Basic Assessment Report[4] (strikethrough what is not applicable)	**-16/3/3/6/7/1/F5/5/2097/18**	March 2019

Notes:

1. In terms of Regulation 40(3) potential or registered interested and affected parties, including the Competent Authority, may be provided with an opportunity to comment on the Basic Assessment Report prior to submission of the application but must again be provided an opportunity to comment on such reports once an application has been submitted to the Competent Authority. The Basic Assessment Report released for comment prior to submission of the application is referred to as the "Pre-Application Basic Assessment Report". The Basic Assessment Report made available for comment after submission of the application is referred to as the "Draft Basic Assessment Report". The Basic Assessment Report together with all the comments received on the report which is submitted to the Competent Authority for decision-making is referred to as the "Final Basic Assessment Report".

2. In terms of Regulation 19(1)(b) if significant changes have been made or significant new information has been added to the Draft Basic Assessment Report , which changes or information was not contained in the Draft Basic Assessment Report consulted on during the initial public participation process, then a Final Basic Assessment Report will not be submitted, but rather a "Revised Basic Assessment Report", which must be subjected to another public participation process of at least 30 days, must be submitted to the Competent Authority together with all the comments received.

DEPARTMENTAL REFERENCE NUMBER(S)

Pre-application reference number:	**16/3/3/6/7/1/F5/5/2097/18**
File reference number (EIA):	
NEAS reference number (EIA):	
File reference number (Waste):	
NEAS reference number (Waste):	
File reference number (Air Quality):	
NEAS reference number (Air Quality):	
File reference number (Other):	
NEAS reference number (Other):	

CONTENT AND GENERAL REQUIREMENTS

Note that:

1. The content of the Department's Circular EADP 0028/2014 (dated 9 December 2014) on the "One Environmental Management System" and the Environmental Impact Assessment ("EIA") Regulations, 2014 (as amended), any subsequent Circulars, and guidelines must be taken into account when completing this Basic Assessment Report Form.
2. This Basic Assessment Report is the standard report format which, in terms of Regulation 16(3) of the EIA Regulations, 2014 (as amended) must be used in all instances when preparing a Basic Assessment Report for Basic Assessment applications for an environmental authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA")and the EIA Regulations, 2014 (as amended) and/or a waste management licence in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) ("NEM:WA"), and/or an atmospheric emission licence in terms of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) ("NEM:AQA") when the Western Cape Government: Environmental Affairs and Development Planning ("DEA&DP") is the Competent Authority/Licensing Authority.
3. This report form is current as of October 2017. It is the responsibility of the Applicant/ Environmental Assessment Practitioner ("EAP") to ascertain whether subsequent versions of the report form have been released by the Department. Visit the Department's website at **http://www.westerncape.gov.za/eadp** to check for the latest version of this checklist.
4. The required information 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 tables may be expanded where necessary.
5. The use of "not applicable" in the report must be done with circumspection. All applicable sections of this report form must be completed. Where "not applicable" is used, this may result in the refusal of the application.
6. While the different sections of the report form only provide space for provision of information related to one alternative, if more than one feasible and reasonable alternative is considered, the relevant section must be copied and completed for each alternative.
7. Unless protected by law, all information contained in, and attached to this report, will become public information on receipt by the competent authority. If information is not submitted with this report due to such information being protected by law, the applicant and/or EAP must declare such non-disclosure and provide the reasons for believing that the information is protected.
8. Unless otherwise indicated by the Department, one hard copy and one electronic copy of this report must be submitted to the Department at the postal address given below or by delivery thereof to the Registry Office of the Department. Reasonable access to copies of this report must be provided to the relevant Organs of State for consultation purposes, which may, if so indicated by the Department, include providing a printed copy to a specific Organ of State.
9. This Report must be submitted to the Department and the contact details for doing so are provided below.
10. Where this Department is also identified as the Licencing Authority to decide applications under NEM:WA or NEM:AQA, the submission of the Report must also be made as follows, for-
    - Waste management licence applications, this report must also (*i.e.,* another hard copy and electronic copy) be submitted for the attention of the Department's Waste Management Directorate (tel: 021-483-2756 and fax: 021-483-4425) at the same postal address as the Cape Town Office.
    - Atmospheric emissions licence applications, this report must also be (*i.e.*, another hard copy and electronic copy) submitted for the attention of the Licensing Authority or this Department's Air Quality Management Directorate (tel: 021 483 2798 and fax: 021 483 3254) at the same postal address as the Cape Town Office.

DEPARTMENTAL DETAILS

CAPE TOWN OFFICE		GEORGE REGIONAL OFFICE
REGION 1 **(City of Cape Town & West Coast District)**	**REGION 2** **(Cape Winelands District & Overberg District)**	**REGION 3** **(Central Karoo District & Eden District)**
Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 1) Private Bag X 9086 Cape Town, 8000 Registry Office 1st Floor Utilitas Building 1 Dorp Street, Cape Town Queries should be directed to the Directorate: Development Management (Region 1) at: Tel.: (021) 483-5829 Fax: (021) 483-4372	Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 2) Private Bag X 9086 Cape Town, 8000 Registry Office 1st Floor Utilitas Building 1 Dorp Street, Cape Town Queries should be directed to the Directorate: Development Management (Region 2) at: Tel.: (021) 483-5842 Fax: (021) 483-3633	Department of Environmental Affairs and Development Planning Attention: Directorate: Development Management (Region 3) Private Bag X 6509 George, 6530 Registry Office 4th Floor, York Park Building 93 York Street George Queries should be directed to the Directorate: Development Management (Region 3) at: Tel.: (044) 805-8600 Fax: (044) 805 8650

TABLE OF CONTENTS:

ACRONYMS USED IN THIS BASIC ASSESSMENT REPORT AND APPENDICES:

BAR	Basic Assessment Report
CBA	Critical Biodiversity Area
DEA	National Department of Environmental Affairs
DEA&DP	Western Cape Government: Environmental Affairs and Development Planning
DWS	National Department of Water and Sanitation
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
ESA	Ecological Support Area
HWC	Heritage Western Cape
I&APs	Interested and Affected Parties
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEM:AQA	National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)
NEM:ICMA	National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008)
NEM:WA	National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)
NHRA	National Heritage Resources Act, 1999 (Act No. 25 of 1999)
PPP	Public Participation Process

DETAILS OF THE APPLICANT

Applicant / Organisation / Organ of State:	AT Darling Green Estate (Pty) Ltd		
Contact person:	Mr. Klaus-Gustav Göbel		
Postal address:	22 B Church street, Durbanville		
Telephone:	021 970 4600	Postal Code:	7550
Cellular:	082 464 8700	Fax:	021 975 6780
E-mail:	kgg@diamant.za.com		

DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER ("EAP")

Name of the EAP organisation:	Eco Impact Legal Consulting (Pty) Ltd		
Person who compiled this Report:	Nicolaas Hanekom		
EAP Reg. No.:	-		
Contact Person (if not author):	NA		
Postal address:	PO Box 45070		
Telephone:	(021) 671 1660	Postal Code:	7735
Cellular:	072 240 3092	Fax:	(021) 671 9967
E-mail:	admin@ecoimpact.co.za		
EAP Qualifications:	M.Tech Nature Conservation. Cape Peninsula University of Technology. EMS ISO 14001. North West University Environmental Audit ISO 19011. North West University		

Please provide details of the lead EAP, including details on the expertise of the lead EAP responsible for the Basic Assessment process. Also attach his/her Curriculum Vitae to this BAR.

Mr Hanekom is a registered Professional Natural Scientist in the ecological science field with the South African Council for Natural Scientific Professions ("SACNASP") and a qualified EAP who holds a Masters Technologiae, Nature Conservation ("Vegetation Ecology and Biodiversity Assessment") degree from the Cape Peninsula University of Technology.

He further qualified in Environmental Management Systems ISO 14001:2004, at the Centre for Environmental Management, North-West University, as well as Environmental Management Systems ISO 14001:2004 Audit: Internal Auditors Course to ISO 19011:2003 level, from the Centre for Environmental Management, North-West University qualifying him to audit to ISO/SANS environmental compliance and EMS standards.

Mr Hanekom has been responsible for many environmental impact assessments and several EIA, waste license and atmospheric emission license applications as well as being involved in the implementation of several environmental management systems.

Refer to Appendix K: EAP CV

EXECUTIVE SUMMARY OF THE PRE-APPLICATION BASIC ASSESSMENT REPORT:

The construction of a Green Estate that will consists of:

- 119 (ranging between 1211m^2 and 11498m^2)
- 250 unit retirement village with roads, parking and clubhouse facilities
- Village post erven Crafters village (120 units)
- Food and craft market,
- Members braai area and swimming pool
- Stage and amphitheatre area
- Stormwater will be handled in pipes between 375mm and 600mm with a total length of approximately 4.2km. Stormwater will be collected in a set of three attenuation ponds with the overflow in the north eastern corner of the development using the existing stormwater culvert

underneath the railway line. Pond one has a retention of 750 m^3 and a size of 15mx50mx1m deep, pond two has a retention of 660 m^3 and a size of 15mx88mx0.5m deep, and pond three have a retention of 1080 m^3 and a size of 45mx20mx1m deep.

- Open space erf, and roads and services with an total development footprint of 66ha.

Ecology (Freshwater)

RECOMMENDATIONS
Mitigation Measures:
Establishment of a development setback and wetland buffer area and rehabilitation of the wetland
The primary mitigation measure to be taken, is the maintenance of a functional ecosystem as part of the open space proposal of the development. This includes an environmental management plan to prevent alien vegetation invasion, the clearing of existing alien vegetation. In other words, the development must not impact negatively on the current ecological status of the wetland.

Monitoring
Monitoring of the ecological state of the wetland can be encouraged as part of the suggested Environmental Management Plan at intervals (i) pre-development (contained in the specialist report) (ii) during development (water quality testing) and (iii) post-development.

CONCLUSIONS
The Apolisvlei wetland area on the site of the proposed Darling Country Club estate is in a good state, while the seepage area in the north-east corner is slightly more degraded by past agricultural activities at the site. The Apolisvlei wetland is considered to be very important from a conservation point of view, while the seepage area is not particularly important but provides some important functions. The important ecosystem services the Apolisvlei wetland renders to the surrounding ecology and hydrological regime is clearly stated in the assessment as well as in Helme's botanical basic report, where Red Data Book listed Critically Endangered species Cadiscus aquaticus was found and identified inside the wetland depression. In addition, an undescribed species of Cotula sp. was also found in both the botanical basic report and this current investigation. For reasons listed in the report, the area surrounding the Apolisvlei wetland should be carefully developed. The wetland post-development should be in at least the same state (rated currently as a B- Good), or better than it is currently. Aspects which are particularly important relate to maintaining the unique character of the Apolisvlei wetland area. This means that the water levels that maintain the wetland as well as water quality entering the wetland area should not be altered. The best way to achieve this is to:

- ensure that the development set back is sufficiently wide enough to mitigate any water quality impacts from storm water runoff and prevent terrestrial encroachment of the wetland area. This would imply the maintenance or establishment of a wetland vegetation buffer of at least 30m (Cyperus spp., Juncus spp. and other relevant wetland vegetation);
- develop a storm water management plan that aims to keep storm water runoff into the vlei area to a minimum;
- limit hardening of surfaces in the surrounding development area to encourage infiltration rather than increase surface water runoff;
- reduce trampling of the surrounding area through construction of boardwalks and/or pathways;
- manage invasive alien vegetation growth through an invasive alien vegetation removal programme that addresses the eradication of all alien invasive vegetation within the wetland and surrounding area including indigenous weedy shrub species (Galenia Africana)
- rehabilitate any areas surrounding the wetland area with suitable indigenous plants and keep erosion to a minimum;
- actively manage the water quality impacts relating to the construction activities (nutrient loading, sedimentation, increased turbidity via the clearing of aquatic sedge species). In particular prevent any increased sediment loads from being deposited in the wetland area during the construction phase; and
- No major changes in landscape slope near the wetland area should be undertaken.

The objective of the mitigation measures is to ensure that the Adonisvlei wetland area should not be altered from its unique character but merely enhanced, so as to serve both the existing ecological and social goods and services. The impacts of the development on the seep area however should be mitigated such that the goods and services that it is able to provide should be retained as far as possible, while adding to the aesthetic value of the development. It is however also considered not

critical that the smaller wetland area be maintained. The seep exists as a result of the raised water table during the winter months and for it to be developed would require infilling of the area and will result in a loss of the goods and services that it does provide in attenuating flows and improving water quality for the area north of the property. It is felt that this area could possibly be retained as part of the proposed development and still be of beneficial use. Mitigation measures would include a development setback to the golf course of 10m, removal of invasive alien vegetation and rehabilitating any areas impacted through the construction phase with indigenous wetland plants. Consideration should be given to the local community and the suggested community greenbelt area or a landowner stewardship project with CapeNature and relevant conservation authorities is further encouraged (from the Botanical Basic Assessment Report). The developing of the wetland as a source for attenuating is not encouraged as this wetland is deemed sensitive and unique.

Botanical

The vlei area should be the subject of a follow up spring botanical survey to assess the presence or absence of a number of potential rare plant species.
A freshwater ecologist should be asked to provide additional input on the extent of the seasonal wetland and its buffer area, and on management requirements for this area.
No bulk services or roads should be routed within the vlei/pan area or its buffer area.
Final layouts of the erven should be approved in writing by the botanist.
The No Go scenario is not likely to be positive for the site as the remaining vlei vegetation is likely to be continually degraded by agriculture and grazing.
If all the mitigation in section 7 are implemented, the overall impact of the development on the vegetation could be reduced to a level of Low positive (at best) or low negative (at worst, if certain mitigation measures are not carried out successfully).
The vlei area could become the subject of a Stewardship Program agreement with CapeNature, pending the results and recommendations of a spring botanical survey.

A in season site survey of the Apolis vlei area was conducted. The demarcation as per the original report and included in the SDP together with the buffer area is still sufficient to protect the vlei from the surrounding development provided that the mitigation and management measures included in the EMP is adhered to. The following in season species were recorded:
Zantedeschia aethiopica
Arctotheca calendula
Cotula turbinate
Cotula vulgaris
Senecio aquatica (Conservation Worthy Species known to occur and previously recorded but not recorded during this survey)
Lachenalia contaminate
Ornithogalum thyrsoides
Raphanus raphanistrum
Senecio littoreus
Sparaxis bulbifera
Wurmbea stricta

Heritage Impact Assessment

The property, as a whole, has contextual aesthetic significance. More specifically, it constitutes a landscape of local contextual importance contributing to a broader scenic setting within the Groene Kloof Valley, and is strategically situated alongside the main approach to Darling. It is characterised by an open, undeveloped topography generally sloping away from the entrance to the town and, therefore, visible from parts of the Malmesbury Road as well as the Darling approach road. Parts of the property have scientific significance, containing relatively rare botanical species in the vicinity of the wetland. The property contains no structures and, therefore, has no architectural significance. It has no known social, technological or spiritual significance.

Traffic Impact Assessment

The proposed development consists of a retirement village, single dwelling units and a multipurpose recreational facility. The transport impact analysis resulted in the following conclusions and recommendations.

Road Network

Existing (2019) and Background (2024) Traffic Conditions
All the intersections are and will continue to operate at acceptable Levels-of-Service, thus no mitigation measures are recommended.

Development Trips
It is expected that the development could generate approximately 360 peak hour trips.
Access
Two accesses are proposed off MR215. The primary access will be located at approximately 1 460 meters from Church Street. A secondary access is proposed at approximately 530m south east of the main access to function as an emergency access and during large events when required.
The following lane configurations are proposed at the main access intersection:

- Northern approach: A shared through and left-turn lane
- Southern approach: Separate through and right-turn lanes
- Development Access: Separate left-turn and right-turn lanes outbound and a single lane inbound.

2024 Total Traffic Including Proposed Development
No capacity constraints are expected on the surrounding road networks and the study intersections will continue operating at acceptable Levelsof-Service.
Public Transport
A minibus-taxi drop-off/loading should be considered within the development.
Non-Motorised Transport
Sidewalks should be provided along the internal road network of the development.
Parking
All parking should be located on the development property and according to the Swartland Muncipality Land Use Planning By-Law.

Conclusion
It is concluded that the expected development traffic will not have a significant impact on the external road network and will not require major road improvements.

SECTION A: PROJECT INFORMATION

1. ACTIVITY LOCATION

Location of all proposed sites:	On the eastern edge of Darling alongside the approach road from Malmesbury/Atlantis (north side).
Farm / Erf name(s) and number(s) (including Portions thereof) for each proposed site:	Erf 4401, Malmesbury
Property size(s) in m^2 for each proposed site:	661460.7 m^2
Development footprint size(s) in m^2:	661460.7 m^2
Surveyor General (SG) 21-digit code for each proposed site:	C04600020000440100000

2. PROJECT DESCRIPTION

(a) Is the project a new development? If "NO", explain:	YES	~~NO~~
NA		

(b) Provide a detailed description of the scope of the proposed development (project).

The construction of a Green Estate that will consists of:

- 119 (between 1211m2 and 11498m2)
- 250 unit retirement village with roads, parking and clubhouse facilities
- Village post erven Crafters village (120 units)
- Food and craft market,
- Members braai area and swimming pool
- Stage and amphitheatre area
- Stormwater will be handled in pipes between 375mm and 600mm with a total length of approximately 4.2km. Stormwater will be collected in a set of three attenuation ponds with the

overflow in the north eastern corner of the development using the existing stormwater culvert underneath the railway line. Pond one has a retention of 750 m^3 and a size of 15mx50mx1m deep, pond two has a retention of 660 m^3 and a size of 15mx88mx0.5m deep, and pond three have a retention of 1080 m^3 and a size of 45mx20mx1m deep.

- Open space erf, and roads and services with an total development footprint of 66ha.

Please note: This description must relate to the listed and specified activities in paragraph (d) below.

(c) Please indicate the following periods that are recommended for inclusion in the environmental authorisation:

(i)	the period within which commencement must occur,	Within 5 years of obtaining Environmental Authorisation
(ii)	the period for which the environmental authorisation should be granted and the date by which the activity must have been concluded, where the environmental authorisation does not include operational aspects;	Within 10 years of obtaining Environmental Authorisation
(iii)	the period that should be granted for the non-operational aspects of the environmental authorisation; and	Within 10 years of obtaining Environmental Authorisation
(iv)	the period that should be granted for the operational aspects of the environmental authorisation.	Ongoing maintenance of infrastructure and implementation of EMP until decommissioning.

Please note: The Department must specify the abovementioned periods, where applicable, in an environmental authorisation. In terms of the period within which commencement must occur, the period must not exceed 10 years and must not be extended beyond such 10 year period, unless the process to amend the environmental authorisation contemplated in regulation 32 is followed.

(d) List all the listed activities triggered and being applied for.

Please note: The onus is on the applicant to ensure that all the applicable listed activities are applied for and assessed as part of the EIA process. Please refer to paragraph (b) above.

EIA Regulations Listing Notices 1 and 3 of 2014 (as amended):

Activity No(s):	Provide the relevant **Basic Assessment Listed Activity(ies)** as set out in **Listing Notice 1** (GN No. R. 983)
9	The development of infrastructure exceeding 1 000 metres in length for the bulk transportation of water or storm water- (i) with an internal diameter of 0,36 metres or more; or (ii) with a peak throughput of 120 litres per second or more; excluding where- (a) such infrastructure is for bulk transportation of water or storm water or storm water drainage inside a road reserve or railway line reserve; or (b) where such development will occur within an urban area.
24	The development of a road- (i) for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Government Notice 545 of 2010; or (ii) with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres; but excluding a road- (a) which is identified and included in activity 27 in Listing Notice 2 of 2014; (b) where the entire road falls within an urban area; or (c) which is 1 kilometre or shorter.
28	Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development: (i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or

	(ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare; excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.
Activity No(s):	Provide the relevant **Basic Assessment Listed Activity(ies)** as set out in **Listing Notice 3** (GN No. R. 985)
NA	
Activity No(s):	Provide the relevant **Scoping and EIR Listed Activity(ies)** as set out in **Listing Notice 2** (GN No. R. 984)
NA	
Activity No(s):	Provide the relevant **Category A Waste Management Activity(ies)** as set out in **List of Waste Management Activities** (GN No. R. 921)
NA	
Activity No(s):	Provide the relevant **Category B Waste Management Activity(ies)** as set out in **List of Waste Management Activities** (GN No. R. 921)
NA	

Waste management activities in terms of the NEM: WA (GN No. 921):

Category A Listed Activity No(s):	Describe the relevant Category A waste management activity in writing as per GN No. 921	Describe the portion of the development that relates to the applicable listed activity as per the project description
NA		

Note: If any waste management activities are applicable, the **Listed Waste Management Activities Additional Information Annexure** must be completed and attached to this Basic Assessment Report as **Appendix I.**

Atmospheric emission activities in terms of the NEM: AQA (GN No. 893):

Listed Activity No(s):	Describe the relevant atmospheric emission activity in writing as per GN No. 893	Describe the portion of the development that relates to the applicable listed activity as per the project description.
NA		

(e) Provide details of all components (including associated structures and infrastructure) of the proposed development and attach diagrams (*e.g.,* architectural drawings or perspectives, engineering drawings, process flowcharts, *etc*.).

Buildings Provide brief description below:	~~YES~~	NO
Houses and sheds		
Infrastructure (*e.g.,* roads, power and water supply/ storage) Provide brief description below:	YES	~~NO~~
The construction of a Green Estate that will consists of: • 119 (between 1211m2 and 11498m2) • 250 unit retirement village with roads, parking and clubhouse facilities • Village post erven Crafters village (120 units) • Food and craft market, • Members braai area and swimming pool • Stage and amphitheatre area • Stormwater will be handled in pipes between 375mm and 600mm with a total length of approximately 4.2km. Stormwater will be collected in a set of three attenuation ponds with the overflow in the north eastern corner of the development using the existing stormwater culvert underneath the railway line. Pond one has a retention of 750 m^3 and a size of 15mx50mx1m deep, pond two has a retention of 660 m^3 and a size of 15mx88mx0.5m deep, and pond three have a retention of 1080 m^3 and a size of 45mx20mx1m deep. • Open space erf, and roads and services with an total development footprint of 66ha.		
Processing activities (*e.g.,* manufacturing, storage, distribution) Provide brief description below:	~~YES~~	NO
NA		
Storage facilities for raw materials and products (*e.g.,* volume and substances to be stored) Provide brief description below:	~~YES~~	NO
NA		
Storage and treatment facilities for effluent, wastewater or sewage: Provide brief description below:	~~YES~~	NO
NA		
Storage and treatment of solid waste Provide brief description below:	~~YES~~	NO
NA		

Facilities associated with the release of emissions or pollution. Provide brief description below:	~~YES~~	NO
NA		
Other activities (*e.g.,* water abstraction activities, crop planting activities) – Provide brief description below:	~~YES~~	NO
NA		

3. PHYSICAL SIZE OF THE PROPOSED DEVELOPMENT

(a) Property size(s): Indicate the size of all the properties (cadastral units) on which the development proposal is to be undertaken	64	ha
(b) Size of the facility: Indicate the size of the facility where the development proposal is to be undertaken	61.5	ha
(c) Development footprint: Indicate the area that will be physically altered as a result of undertaking any development proposal (*i.e.,* the physical size of the development together with all its associated structures and infrastructure)	59	ha
(d) Size of the activity: Indicate the physical size (footprint) of the development proposal	59	ha
(e) For linear development proposals: Indicate the length (L) and width (W) of the development proposal	(L) NA	km
	(W) NA	m
(f) For storage facilities: Indicate the volume of the storage facility	NA	m^3
(g) For sewage/effluent treatment facilities: Indicate the volume of the facility (Note: the maximum design capacity must be indicated	NA	m^3

4. SITE ACCESS

(a) Is there an existing access road?	YES	~~NO~~
(b) If no, what is the distance in (m) over which a new access road will be built?		m

(c) Describe the type of access road planned:

The proposed development will be directly access of the R 307 road at an access point approved by Department of Public works and roads. Access will be gained from MR215 at approximately 1 500 meters from the R315 and approximately 1 460 meters from Church Street. A priority stop control will be implemented at this location. From a capacity point of view one inbound lane and one outbound lane will be sufficient to accommodate the peak demand of the development.
The following lane configurations are proposed at the development access intersection:

- Northern approach: A shared through and left-turn lane
- Southern approach: Separate through and right-turn lanes
- Development Access: Separate left- and right-turn lanes outbound and a single inbound lane.

Please note: The position of the proposed access road must be indicated on the site plan.

5. DESCRIPTION OF THE PROPERTY(IES) ON WHICH THE LISTED ACTIVITY(IES) ARE TO BE UNDERTAKEN AND THE LOCATION OF THE LISTED ACTIVITY(IES) ON THE PROPERTY

5.1 Provide a description of the property on which the listed activity(ies) is/are to be undertaken and the location of the listed activity(ies) on the property, as well as of all alternative properties and locations (duplicate section below as required).

Erf 4401, Malmesbury is located on the eastern edge of Darling alongside the approach road from Malmesbury/Atlantis (north side).				
Coordinates of all proposed sites:	Latitude (S)	33°	22‘	58.23“
	Longitude (E)	18°	23‘	43.62“

Note: For land where the property has not been defined, the coordinates of the area within which the development is proposed must be provided in an addendum to this report.

5.2 Provide a description of the area where the aquatic or ocean-based activity(ies) is/are to be undertaken and the location of the activity(ies) and alternative sites (if applicable).

NA

Coordinates of the boundary /perimeter of all proposed aquatic or ocean-based activities (sites) (if applicable):	**Latitude (S):** (deg.; min.; sec)			**Longitude (E):** (deg.; min.; sec)		
	°	'	"	°	'	"
	°	'	"	°	'	"

	°	'	"	°	'	"
	°	'	"	°	'	"

5.3 For a linear development proposal, please provide a description and coordinates of the corridor in which the proposed development will be undertaken (if applicable).

NA

For linear activities: (See Appendix J)	Latitude (S):			Longitude (E):		
• Starting point of the activity						
• Middle point of the activity						
• End point of the activity						

Note: For linear development proposals longer than 1000m, please provide an addendum with co-ordinates taken every 250m along the route. All important waypoints must be indicated and the GIS shape file provided digitally.

5.4 Provide a location map (see below) as **Appendix A** to this report that shows the location of the proposed development and associated structures and infrastructure on the property; as well as a detailed site development plan / site map (see below) as **Appendix B** to this report; and if applicable, all alternative properties and locations. The GIS shape files (.shp) for maps / site development plans must be included in the electronic copy of the report submitted to the competent authority.

Locality Map:	The scale of the locality map must be at least 1:50 000. For linear development proposals 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; • road names or numbers of all the major roads as well as the roads that provide access to the site(s) • a north arrow; • a legend; • a linear scale; • the prevailing wind direction (during November to April and during May to October); and • GPS co-ordinates (to 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). For an ocean-based or aquatic activity, the coordinates must be provided within which the activity is to be undertaken and a map at an appropriate scale clearly indicating the area within which the activity is to be undertaken. Coordinates must be provided in degrees, minutes and seconds using the Hartebeesthoek94; WGS84 co-ordinate system.

Site Plan:	Detailed site development plan(s) must be prepared for each alternative site or alternative activity. The site plans must contain or conform to the following:
	• The detailed site plan must preferably be at a scale of 1:500 or at an appropriate scale. The scale must be indicated on the plan, preferably together with a linear scale.
	• The property boundaries and numbers of all the properties within 50m of the site must be indicated on the site plan.
	• The current land use (not zoning) as well as the land use zoning of each of the adjoining properties must be indicated on the site plan.
	• The position of each element of the application as well as any other structures on the site must be indicated on the site plan.
	• Services, including electricity supply cables (indicate aboveground or underground), water supply pipelines, boreholes, sewage pipelines, storm water infrastructure and access roads that will form part of the development must be indicated on the site plan.
	• Servitudes and an indication of the purpose of each servitude must be indicated on the site plan.
	• Sensitive environmental elements within 100m of the site must be included on the site plan, including (but not limited to):
	  o Watercourses / Rivers / Wetlands - including the 32 meter set back line from the edge of the bank of a river/stream/wetland;
	  o Flood lines (*i.e.,* 1:100 year, 1:50 year and 1:10 year where applicable;
	  o Ridges;
	  o Cultural and historical features;
	  o Areas with indigenous vegetation (even if degraded or infested with alien species).
	• Whenever the slope of the site exceeds 1:10, a contour map of the site must be submitted.
	• North arrow

	A map/site plan must also be provided at an appropriate scale, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred and alternative sites indicating any areas that should be avoided, including buffer areas. The GIS shape file for the site development plan(s) must be submitted digitally.

6. SITE PHOTOGRAPHS

Colour photographs of the site and its surroundings (taken on the site and taken from outside the site) with a description of each photograph. The vantage points from which the photographs were taken must be indicated on the site plan, or locality plan as applicable. If available, please also provide a recent aerial photograph. Photographs must be attached as **Appendix C** to this report. The aerial photograph(s) should be supplemented with additional photographs of relevant features on the site. Date of photographs must be included. Please note that the above requirements must be duplicated for all alternative sites.

SECTION B: DESCRIPTION OF THE RECEIVING ENVIRONMENT

Site/Area Description

For linear development proposals (pipelines, *etc*.) as well as development proposals that cover very large sites, it may be necessary to complete copies of 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 that is covered by each copy on the Site Plan.

1. GRADIENT OF THE SITE

Indicate the general gradient of the sites (highlight the appropriate box).

Flat	~~Flatter than 1:10~~	~~1:10 – 1:4~~	~~Steeper than 1:4~~

2. LOCATION IN LANDSCAPE

(a) Indicate the landform(s) that best describes the site (highlight the appropriate box(es).

~~Ridgeline~~	~~Plateau~~	~~Side slope of hill / mountain~~	~~Closed valley~~	~~Open valley~~	Plain	Undulating plain/low hills/~~inland dunes~~	~~Dune~~	~~Sea-front~~

(b) Provide a description of the location in the landscape.

The property is located on the eastern edge of the town Darling next to the golf course and other residential development with a railway line on the northern boundary, town on western boundary, agricultural ploughed lands on the eastern boundary and the road on the southern boundary.

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

(a) Is the site(s) located on or near any of the following (highlight the appropriate boxes)?

Shallow water table (less than 1.5m deep)	YES	~~NO~~	~~UNSURE~~
Seasonally wet soils (often close to water bodies)	YES	~~NO~~	~~UNSURE~~
Unstable rocky slopes or steep slopes with loose soil	~~YES~~	NO	~~UNSURE~~
Dispersive soils (soils that dissolve in water)	~~YES~~	NO	~~UNSURE~~
Soils with high clay content	YES	~~NO~~	~~UNSURE~~
Any other unstable soil or geological feature	~~YES~~	NO	~~UNSURE~~
An area sensitive to erosion	~~YES~~	NO	~~UNSURE~~
An area adjacent to or above an aquifer.	~~YES~~	NO	~~UNSURE~~
An area within 100m of a source of surface water	YES	~~NO~~	~~UNSURE~~
An area within 500m of a wetland	YES	~~NO~~	~~UNSURE~~
An area within the 1:50 year flood zone	~~YES~~	NO	~~UNSURE~~
A water source subject to tidal influence	~~YES~~	NO	~~UNSURE~~

Take note that a seasonal pan is located on the property. This area is however excluded from the development area and the pan and its buffer areas will be zoned Private Open Space.

(b) If any of the answers to the above is "YES" or "UNSURE", specialist input may be requested by the Department. (Information in respect of the above will often be available at the planning sections of local authorities. The 1:50 000 scale Regional Geotechnical Maps prepared by Geological Survey may also be used).

(c) Indicate the type of geological formation underlying the site.

Granite	Shale	~~Sandstone~~	~~Quartzite~~	~~Dolomite~~	~~Dolorite~~	Other (describe)

Provide a description.

Based on the Geological Series Map, the area in the vicinity of the site is masked by soils of Namibian age which are underlain by soils and weathered rock of the Cape Granite Suite, with intrusions of the Darling Pluton (N-Cd).

The surface water penetrates into the top sand/gravel layers and accumulates on top of the clay layer. This water drains off the site before penetrating the underlying clay layers due to the relative high permeability of the clay layers.

Soil

Glenrosa and/or Mispah forms (other soils may occur), lime rare or absent in upland soils but generally present in low-lying soils.

Geology:

Mainly greywacke, shale, schist and phyllite of the Porterville and Moorreesburg Formations, Malmesbury Group, as well as conglomerate, grit and sandstone of the Magrug Formation, Klipheuwel Group; occasional alluvium.

Source: Soils and Geology ENPAT, CapeFarmMapper, 17 January 2018.

4. SURFACE WATER

(a) Indicate the surface water present on and or adjacent to the site and alternative sites (highlight the appropriate boxes)?

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 / Lagoon	~~YES~~	NO	~~UNSURE~~

(b) Provide a description.

A seepage area with a defined channel was also identified in the north-east corner of the property. This wetland largely results from an elevated water table during winter and is dominated by arum lilies. The wetland area only remains wet for a short period and is very dependent on the height of the water table. The drainage channel was probably man-made in an attempt to drain the water-logged land more quickly as there is little evidence of the wetland having a strong link with surface water runoff. The area is also not considered to be particularly important in terms of the flora and fauna that it supports.

The Apolisvlei wetland was found to be in a largely natural state B, that is largely natural with few modifications but with some loss of natural habitats, while the seepage area in the north-east corner of the property is moderately modified. The main impact on both the wetland areas on the property resulted, directly and indirectly, from the past land uses on this property as it was previously ploughed and farmed. The current land use of livestock grazing further impacts factors such as terrestrial encroachment, invasive plant encroachment and indigenous plant removal. Terrestrial encroachment of the outer edges of the wetlands as well as invasion by invasive plants were also found impacting from the surrounding area which results in some drying out of areas in the wetlands and vegetation transformation.

A in season site survey of the Apolis vlei area was conducted. The demarcation as per the original report and included in the SDP together with the buffer area is still sufficient to protect the vlei from the surrounding development provided that the mitigation and management measures included in the EMP is adhered to. The following in season species were recorded:

- *Zantedeschia aethiopica*
- *Arctotheca calendula*
- *Cotula turbinate*
- *Cotula vulgaris*
- *Senecio aquatica* (Conservation Worthy Species known to occur and previously recorded but not recorded during this survey)
- *Lachenalia contaminate*
- *Ornithogalum thyrsoides*
- *Raphanus raphanistrum*
- *Senecio littoreus*
- *Sparaxis bulbifera*
- *Wurmbea stricta*

5. THE SEAFRONT / SEA

(a) Is the site(s) located within any of the following areas? (highlight the appropriate boxes).
If the site or alternative site is closer than 100m to such an area, please provide the approximate distance in (m).

AREA	YES	NO	UNSURE	If "YES": Distance to nearest area (m)
An area within 100m of the high water mark of the sea	~~YES~~	NO	~~UNSURE~~	
An area within 100m of the high water mark of an estuary/lagoon	~~YES~~	NO	~~UNSURE~~	

An area within the littoral active zone	~~YES~~	NO	~~UNSURE~~	
An area in the coastal public property	~~YES~~	NO	~~UNSURE~~	
Major anthropogenic structures	~~YES~~	NO	~~UNSURE~~	
An area within a Coastal Protection Zone	~~YES~~	NO	~~UNSURE~~	
An area seaward of the coastal management line	~~YES~~	NO	~~UNSURE~~	
An area within the high risk zone (20 years)	~~YES~~	NO	~~UNSURE~~	
An area within the medium risk zone (50 years)	~~YES~~	NO	~~UNSURE~~	
An area within the low risk zone (100 years)	~~YES~~	NO	~~UNSURE~~	
An area below the 5m contour	~~YES~~	NO	~~UNSURE~~	
An area within 1km from the high water mark of the sea	~~YES~~	NO	~~UNSURE~~	
A rocky beach	~~YES~~	NO	~~UNSURE~~	
A sandy beach	~~YES~~	NO	~~UNSURE~~	

(b) If any of the answers to the above is "YES" or "UNSURE", specialist input may be requested by the Department. (The 1:50 000 scale Regional Geotechnical Maps prepared by Geological Survey may also be used).

6. BIODIVERSITY

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 development. 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, Tel.: (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) must be provided as an overlay map on the property/site plan as **Appendix D** to this report.

(a) Highlight the applicable biodiversity planning categories of all areas on preferred and alternative sites and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category. Also describe the prevailing level of protection of the Critical Biodiversity Area ("CBA") and Ecological Support Area ("ESA") (how many hectares / what percentages are formally protected).

Systematic Biodiversity Planning Category	CBA	ESA	~~Other Natural Area ("ONA")~~	No Natural Area Remaining ("NNR")
If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan and the conservation management objectives	The pan is classified as an aquatic CBA and its buffers as ESA. The rest of the property is ploughed and planted and used for agriculture with no natural vegetation remaining.			
Describe the site's CBA/ESA quantitative values (hectares/percentage) in relation to the prevailing level of protection of CBA and ESA (how many hectares / what percentages are formally protected locally and in the province)	**CBA: Wetland** **Definition** Areas in a natural condition that are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure. **Management Objective** Maintain in a natural or near-natural state, with no further loss of natural habitat. Degraded areas should be rehabilitated. Only low-impact, biodiversity-sensitive land uses are appropriate.			

(b) Highlight and describe the habitat condition on site.

Habitat Condition	**Percentage of habitat condition class (adding up to 100%) and area of each in square metre (m^2)**		**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	0.3%	20 000m^2	Pan identified as CBA
Near Natural (includes areas with low to moderate level of alien	0%	m^2	

invasive plants)			
Degraded (includes areas heavily invaded by alien plants)	0%	m²	
Transformed (includes cultivation, dams, urban, plantation, roads, *etc.*)	99.7%	64ha	

(c) Complete the table to indicate:
(i) the type of vegetation present on the site, including its ecosystem status; and
(ii) whether an aquatic ecosystem is present on/or adjacent to the site.

Terrestrial Ecosystems		**Description of Ecosystem, Vegetation Type, Original Extent, Threshold (ha, %), Ecosystem Status**
Ecosystem threat status as per the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)	Critically	**Swartland Granite Renosterveld** This is a critically endangered vegetation unit of which almost 80% has already been transformed due to prime quality of the land for agriculture (vineyards, olive orchards, pastures) and also by urban sprawl. Hence the conservation target of 26% remains unattainable. Only very small portions (0.5%) enjoy statutory protection in the Paarl Mountain Nature Reserve and Pella Research Site, and also (2%) in the Paardenberg, Tienie Versveld Flower Reserve near Darling and in the Duthie Nature Reserve in Stellenbosch.
	~~Endangered~~	
	~~Vulnerable~~	NA
	~~Least Threatened~~	NA

Aquatic Ecosystems						
Wetland (including rivers, depressions, channelled and unchanneled wetlands, flats, seeps pans, and artificial wetlands)			Estuary		Coastline	
YES	~~NO~~	~~UNSURE~~	~~YES~~	NO	~~YES~~	NO

(d) Provide a description of the vegetation type and/or aquatic ecosystem present on the site, including any important biodiversity features/information identified on the site (e.g. threatened species and special habitats). Clearly describe the biodiversity targets and management objectives in this regard.

The seepage area in the north eastern corner does no longer exist as the culvert under the railway line was cleared of a blockage. The Apolisvlei wetland was found to be in a largely natural state B, that is largely natural with few modifications but with some loss of natural habitats, while the seepage area in the north-east corner of the property is moderately modified. The main impact on the both wetland areas on the property resulted, directly and indirectly, from the past land uses on this property, as it was previously ploughed and farmed. The current land use of livestock grazing further impacts factors such as terrestrial encroachment, invasive plant encroachment and indigenous plant removal. Terrestrial encroachment of the outer edges of the wetlands as well as invasion by invasive plants were also found impacting from the surrounding area which results in some drying out of areas in the wetlands and vegetation transformation. The rest of the property is ploughed and planted with no natural vegetation remaining.

7. LAND USE OF THE SITE

Note: The Department may request specialist input/studies depending on the nature of the land use character of the area and potential impact(s) of the proposed development.

~~Untransformed area~~	~~Low density residential~~	~~Medium density residential~~	~~High density residential~~	~~Informal residential~~

~~Retail~~	~~Commercial & warehousing~~	~~Light industrial~~	~~Medium industrial~~	~~Heavy industrial~~
~~Power station~~	~~Office/consulting room~~	~~Military or police base/station/compound~~	~~Casino/entertainment complex~~	~~Tourism and Hospitality facility~~
~~Open cast mine~~	~~Underground mine~~	~~Spoil heap or slimes dam~~	~~Quarry, sand or borrow pit~~	~~Dam or reservoir~~
~~Hospital/medical centre~~	~~School~~	~~Tertiary education facility~~	~~Church~~	~~Old age home~~
~~Sewage treatment plant~~	~~Train station or shunting yard~~	~~Railway line~~	~~Major road (4 lanes and more)~~	~~Airport~~
~~Harbour~~	~~Sport facilities~~	~~Golf course~~	~~Polo fields~~	~~Filling station~~
~~Landfill or waste treatment site~~	~~Plantation~~	Agriculture	River, stream or wetland	~~Nature conservation area~~
~~Mountain, koppie or ridge~~	~~Museum~~	~~Historical building~~	~~Graveyard~~	~~Archaeological site~~
~~Other land uses (describe):~~				

(a) Provide a description.

The whole area is used for agriculture and ploughed and planted, except for the Apolis Wetland (Pan).

8. LAND USE CHARACTER OF THE SURROUNDING AREA

(a) Highlight the current land uses and/or prominent features that occur within +/- 500m radius of the site and neighbouring properties if these are located beyond 500m of the site.

Note: The Department may request specialist input/studies depending on the nature of the land use character of the area and potential impact(s) of the proposed development.

~~Untransformed area~~	Low density residential	Medium density residential	~~High density residential~~	~~Informal residential~~
~~Retail~~	~~Commercial & warehousing~~	Light industrial	~~Medium industrial~~	~~Heavy industrial~~
~~Power station~~	~~Office/ consulting room~~	~~Military or police base/ station/ compound~~	~~Casino/ entertainment complex~~	~~Tourism & Hospitality facility~~
~~Open cast mine~~	~~Underground mine~~	~~Spoil heap or slimes dam~~	~~Quarry, sand or borrow pit~~	~~Dam or reservoir~~
~~Hospital/ medical centre~~	~~School~~	~~Tertiary education facility~~	~~Church~~	~~Old age home~~
~~Sewage treatment plant~~	~~Train station or shunting yard~~	Railway line	~~Major road (4 lanes or more)~~	~~Airport~~
~~Harbour~~	~~Sport facilities~~	Golf course	~~Polo fields~~	~~Filling station~~
~~Landfill or waste treatment site~~	~~Plantation~~	Agriculture	River, stream or wetland	~~Nature conservation area~~
~~Mountain, koppie or ridge~~	~~Museum~~	~~Historical building~~	~~Graveyard~~	~~Archaeological site~~
Other land uses (describe):				

(b) Provide a description, ~~including~~ the distance and direction to the nearest residential area, industrial area, agri-industrial area.

The property is situated on the eastern edge of Darling.

9. SOCIO-ECONOMIC ASPECTS

a) Describe the existing social and economic characteristics of the community in the vicinity of the proposed site, in order to provide baseline information (for example, population characteristics/demographics, level of education, the level of employment and unemployment in the area, available work force, seasonal migration patterns, major economic activities in the local municipality, gender aspects that might be of relevance to this project, *etc.*).

Municipal Area:

The development is located east of the town of Darling and falls under the jurisdiction of the West

Coast District Municipality within the Swartland Local Municipality. The West Coast District Municipality covers an approximate area of 31.119 km^2. The Swartland Municipality covers a total area of approximately 3.700 km^2.

Population:
Swartland includes the towns of Malmesbury, Moorreesburg, Darling, Yzerfontein, Riebeek West, Riebeek Kasteel, Koringberg, Ruststasie, Ongegund, Riverlands, Chatsworth, Kalbaskraal and Abbotsdale as well as the rural areas adjacent to and between these towns. 78% of the people in the Swartland area are Afrikaans speaking and 12.34% are siXhosa speaking.

Socio-Economics:
The Swartland Municipality is committed to the social and economic development of the people in the area. Unemployment and a lack of skills development continue to be one of the biggest problems faced in the Swartland area. As reported in the Swartland Municipality Annual Report 2016/17, the average unemployment rate in the West Coast district is 14.5%.

Households receive fairly good municipal services and most of the households use electricity for heating, cooking and lighting. The provision of low cost housing continues to be a major challenge for the municipality. If housing backlogs are to be addressed meaningfully, the rate and quantity of housing developments must be increased.

Tourism Opportunities:
There is a great deal of tourism opportunities for the Swartland Municipality such as the growth of towns/ Service Centres where Malmesbury is focused as regional, Moorreesburg as agricultural and Darling as an agricultural and agri-tourism centre. The proposed development with its opportunities link perfectly to the agri-tourism identified in the Swartland Municipality's town growth strategy.

The department of basic Education will be responsible for facilitating the resourcing of the Basic Education Sector response, in order to achieve the objectives and outcomes of this Policy, in support of the country's NSP (2017-2022). The successful implementation of the HIV, STI, TB and unintended pregnancy response strategy will be the responsibility of those sections of the DBE impacted by HIV, STIs, TB or unintended pregnancy at national, provincial, district and institutional level, requiring them to mainstream these responses into their diverse portfolios. Strick healthcare and monitoring of all staff and residence in the retirement village will be conducted in order to prevent the spread of the prevalence of HIV/AIDS, sexually transmitted infections ("STI") and Tuberculosis ("TB"), as well as equity and gender related concerns. The proposed development will link with the Department of Basic Education to help with education material and initiatives.

10. HISTORICAL AND CULTURAL ASPECTS

(a) Please be advised that if section 38 of the NHRA is applicable to your proposed development, you are requested to furnish this Department with written comment from Heritage Western Cape as part of your public participation process. Heritage Western Cape must be given an opportunity, together with the rest of the I&APs, to comment on any Pre-application BAR, a Draft BAR, and Revised BAR.

Section 38 of the NHRA states the following:
"*38. (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as-*

(a) the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
(b) the construction of a bridge or similar structure exceeding 50m in length;
(c) any development or other activity which will change the character of a site-
(i) exceeding 5 000m^2 in extent; or
(ii) involving three or more existing erven or subdivisions thereof; or
(iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or
(iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
(d) the re-zoning of a site exceeding 10 000m^2 in extent; or
(e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority,

must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development".

(b) The impact on any national estate referred to in section 3(2), excluding the national estate contemplated in section 3(2)(i)(vi) and (vii), of the NHRA, must also be investigated, assessed and evaluated. Section 3(2) states the following: "*3(2) Without limiting the generality of subsection (1), the national estate may include—*
(a) places, buildings, structures and equipment of cultural significance;
(b) places to which oral traditions are attached or which are associated with living heritage;
(c) historical settlements and townscapes;
(d) landscapes and natural features of cultural significance;
(e) geological sites of scientific or cultural importance;
(f) archaeological and palaeontological sites;
(g) graves and burial grounds, including—
(i) ancestral graves;
(ii) royal graves and graves of traditional leaders;
(iii) graves of victims of conflict;
(iv) graves of individuals designated by the Minister by notice in the Gazette;
(v) historical graves and cemeteries; and
(vi) other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);
(h) sites of significance relating to the history of slavery in South Africa;
(i) movable objects, including—
(i) objects recovered from the soil or waters of South Africa, including archaeological and paleontological objects and material, meteorites and rare geological specimens;
(ii) objects to which oral traditions are attached or which are associated with living heritage;
(iii) ethnographic art and objects;
(iv) military objects;
(v) objects of decorative or fine art;
(vi) objects of scientific or technological interest; and
(vii) books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996)".

Is Section 38 of the NHRA applicable to the proposed development?	YES	~~NO~~	~~UNCERTAIN~~
If YES or UNCERTAIN, explain:	A Notice of Intent to Develop was submitted to the HWC and HWC agreed that no mitigation is required prior to the proposed development activities. Should any human remains be disturbed, exposed or uncovered during excavations and earthworks for the proposed project, all work must cease and immediately be reported to SAHRA or HWC.		
Will the development impact on any national estate referred to in Section 3(2) of the NHRA?	~~YES~~	NO	~~UNCERTAIN~~
If YES or UNCERTAIN, explain:	NA		
Will any building or structure older than 60 years be affected in any way?	~~YES~~	NO	~~UNCERTAIN~~
If YES or UNCERTAIN, explain:	NA		
Are there any signs of culturally or historically significant elements, as defined in section 2 of the NHRA, including Archaeological or paleontological sites, on or close (within 20m) to the site?	~~YES~~	NO	~~UNCERTAIN~~
If YES or UNCERTAIN, explain:	NA		

Note: If uncertain, the Department may request that specialist input be provided **and** Heritage Western Cape must provide comment on this aspect of the proposal. (Please note that a copy of the comments obtained from the Heritage Resources Authority must be appended to this report as Appendix E1).

11. APPLICABLE LEGISLATION, POLICIES, CIRCULARS AND/OR GUIDELINES

(a) Identify all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to the development proposal and associated listed activity(ies) being applied for and that have been considered in the preparation of the BAR.

LEGISLATION	ADMINISTERING AUTHORITY	TYPE Permit/ license/ authorisation/comment / relevant consideration (e.g. rezoning or consent use, building plan approval)	DATE (if already obtained):
National Environmental Management Act, 1998 (Act No. 107 of 1998) [NEMA] and relevant regulations	Western Cape Department of Environmental Affairs and Development Planning	Environmental Authorisation Application	N/A
National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) [NEMWA] and relevant regulations	Western Cape Department of Environmental Affairs and Development Planning	N/A	N/A
National Environmental Management: Biodiversity Act 10 of 2004 [NEMBA]	Western Cape Department of Environmental Affairs and Development Planning	N/A	N/A
National Environmental Management: Air Quality Act, 39 of 2004 [NEMAQA] and Relevant Regulations	Western Cape Department of Environmental Affairs and Development Planning	N/A	N/A
National Water Act, 1998 (Act No. 36 of 1998) [NWA] and relevant regulations	Department of Water Affairs	Water Use Authorization for infrastructure with 500m from the pan.	N/A
Conservation of Agricultural Resources Act, 43 of 1983 [CARA]	National Department of Agriculture, forestry and Fisheries Western Cape Department of Agriculture	N/A	N/A
National Health Act, 61of 2003 [NHA]		N/A	N/A
Constitution of the Republic of South Africa, 1996 [CRSA]		General application of individual rights of all on and adjacent to the site	N/A
Fencing Act, 31 of 1963 [FA]		N/A	N/A
National Building Regulations and Building Standards Act 103 of 1977 [NBRBSA] and relevant regulations		N/A	N/A
National Heritage Resources Act 25 of 1999 [NHRA]	Heritage Western Cape South African Heritage Resource Agency	NID and HIA	23 July 2008
National Veld and Forest Fire Act 101 of 1998 [NVFFA]		N/A	N/A
Fertilizers, Farm Feeds, Agricultural Remedies And Stock Remedies Act, 36 Of 1947 [FFFARSRA] and Relevant Regulations	National Department of Agriculture, forestry and Fisheries Western Cape Department of Agriculture	N/A	N/A
Section 42 of Spatial Planning and Land Use Management Act (16 of 2013) ("SPLUMA")	Swartland Bay Municipality	Rezoning application	N/A
Western Cape Land Use Planning Act, 2014 ("LUPA")	Swartland Bay Municipality	Rezoning application	N/A

POLICY/ GUIDELINES/BY-LAWS	ADMINISTERING AUTHORITY
Guideline on Public Participation	Western Cape Department of Environmental Affairs and Development Planning
Guidelines on Alternatives	Western Cape Department of Environmental Affairs and Development Planning
Guideline on Need and desirability	Western Cape Department of Environmental Affairs and Development Planning
Guideline for Environmental Management Plans (EMP's)	Western Cape Department of Environmental Affairs and Development Planning
Guideline of Specialist Reports	Western Cape Department of Environmental Affairs and Development Planning

(b) Describe how the proposed development **complies with and responds** to the legislation and policy context, plans, guidelines, spatial tools, municipal development planning frameworks and instruments.

LEGISLATION, POLICIES, PLANS, GUIDELINES, SPATIAL TOOLS, MUNICIPAL DEVELOPMENT PLANNING FRAMEWORKS, AND INSTRUMENTS	Describe how the proposed development complies with and responds to:
NEMA	Basic Assessment Process conducted to assess potential environmental impacts and apply for Environmental Authorisation
NEMWA	If applicable all waste management activities to be conducted during the proposed development to adhere to the NEMWA requirements
NEMBA	If applicable potential impacts on biodiversity features of the site and surrounds to be assessed and mitigation measures proposed during the basic assessment process.
NEMAQA	If applicable potential impacts on air quality on site and surrounds to be assessed and mitigation measures proposed during the basic assessment process.
NWA	If applicable potential impacts on ground- and surface water resources assessed during basic assessment process and if required a water use authorisation under section 21 will be applied for.
CARA	If applicable the landowner/applicant is reminded of his/her responsibility to manage and eradicated certain weed and alien plant vegetation on his/her property and requirements are incorporated into the EMP.
National Health Act	If applicable potential impacts on the health and wellbeing of human population on the site and surrounds are assessed and mitigation measure are proposed during the basic assessment process.
Constitution of the RSA	General application to individual rights of all on and adjacent to the sites.
Fencing Act	If applicable potential impacts and requirements concerning fencing of the site and surrounds to be assessed and mitigation measures proposed during the basic assessment process.
National Building Regulations and Building Standards Act	If applicable potential impacts and requirements concerning erection of building on the site and surrounds to be assessed and mitigation measures proposed during the basic assessment process.
NHRA	If applicable potential impacts on graves and burial sites and any structures older than 60 years are assessed and mitigation measures proposed during the basic assessment process.
NVFFA	If applicable any activities that could result in the start of veld fires are assessed and mitigated during the basic assessment process.
FFFARSRA	If applicable any potential impacts of activities associated with pest control, the use of agricultural remedies and with providing / manufacturing fertiliser are assessed and mitigated during the basic assessment process.
Guideline on Public Participation	The public participation guideline is used to determine the requirements in terms of implementing the public participation process during the basic assessment process to be conducted. The guideline was also used to determine the most effective communication strategies for public participation.
Guidelines on Alternatives	The guidelines for alternatives assessment was used to develop a methodology for alternatives assessment. This methodology was applied to determine and assess the most viable alternatives to the project. The assessment was undertaken against the baseline environment (i.e. the no-go option).
Guideline on Need and desirability	The guideline was taken into account to determine whether the project complied according to the concept of Best Practicable Environmental Option as well as environmental and social sustainability.
Guideline for EMP's	The guideline for EMP's was taken into account to determine the most effective minimize, mitigation and management measures to minimise or prevent the potential environmental impacts identified during the basic assessment process

Note: Copies of any comments, permit(s) or licences received from any other Organ of State must be attached to this report as **Appendix E**.

Section C: PUBLIC PARTICIPATION

The PPP must fulfil the requirements outlined in the NEMA, the EIA Regulations, 2014 (as amended) and if applicable, the NEM: WA and/or the NEM: AQA. This Department's Circular EADP 0028/2014 (dated 9 December 2014) on the "One Environmental Management System" and the EIA Regulations, any subsequent Circulars, and guidelines must also be taken into account.

1. Please highlight the appropriate box to indicate whether the specific requirement was undertaken or whether there was an exemption applied for.

In terms of Regulation 41 of the EIA Regulations, 2014 (as amended) -			
(a) fixing a notice board at a place conspicuous to and accessible by the public at the boundary, on the fence or along the corridor of -			
(i) the site where the activity to which the application relates, is or is to be undertaken; and	YES	~~EXEMPTION~~	
(ii) any alternative site	YES	~~EXEMPTION~~	~~N/A~~
(b) giving written notice, in any manner provided for in Section 47D of the NEMA, to –			
(i) the occupiers of the site and, if the applicant is not the owner or person in control of the site on which the activity is to be undertaken, the owner or person in control of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;	YES	~~EXEMPTION~~	~~N/A~~
(ii) owners, persons in control of, and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;	YES	~~EXEMPTION~~	
(iii) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;	YES	~~EXEMPTION~~	
(iv) the municipality (Local and District Municipality) which has jurisdiction in the area;	YES	~~EXEMPTION~~	
(v) any organ of state having jurisdiction in respect of any aspect of the activity; and	YES	~~EXEMPTION~~	
(vi) any other party as required by the Department;	YES	~~EXEMPTION~~	~~N/A~~
(c) placing an advertisement in -			
(i) one local newspaper; or	YES	~~EXEMPTION~~	
(ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;	~~YES~~	~~EXEMPTION~~	N/A
(d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or district municipality in which it is or will be undertaken	~~YES~~	~~EXEMPTION~~	N/A
(e) using reasonable alternative methods, as agreed to by the Department, in those instances where a person is desirous of but unable to participate in the process due to— (i) illiteracy; (ii) disability; or (iii) any other disadvantage.	YES	~~EXEMPTION~~	~~N/A~~
If you have indicated that "EXEMPTION" is applicable to any of the above, proof of the exemption decision must be appended to this report.			
Please note that for the NEM: WA and NEM: AQA, a notice must be placed in at least two newspapers circulating in the area where the activity applied for is proposed.			
If applicable, has/will an advertisement be placed in at least two newspapers?	~~YES~~	~~NO~~	
If "NO", then proof of the exemption decision must be appended to this report.			

2. Provide a list of all the State Departments and Organs of State that were consulted:

State Department / Organ of State	Date request was sent:	Date comment received:	Support / not in support
Cape Nature	13 July 2018	03 August 2018	No Objection. EMP Amendments required.
DEA&DP: Development Management	13 July 2018	15 August 2018	EMP and BAR Amendments required.
DEA&DP: Waste Management	13 July 2018	07 August 2018	No Objection. EMP Amendments required.
DEA&DP: Pollution and Chemicals Management	13 July 2018	14 August 2018	No Objection. EMP Amendments required.
Department of Water and Sanitation	13 July 2018	31 July 2018	No Objection. WUA registration required.

Heritage Western Cape	13 July 2018	None to date	None to date
West Coast District Municipality	13 July 2018	07 August 2018	No Objection.
Department of Agriculture, Western Cape (Provincial)	13 July 2018	None to date	None to date
Swartland Local Municipality	13 July 2018	31 July 2018	No Objection. Rezoning required
Western Cape Road Network Management	13 July 2018	30 July 2018	No Objection

3. Provide a summary of the issues raised by I&APs and an indication of the manner in which the issues were incorporated, or the reasons for not including them.
   (The detailed outcomes of this process, including copies of the supporting documents and inputs must be included in a Comments and Response Report to be attached to the BAR (see note below) as **Appendix F**).

Await comment

4. Provide a summary of any conditional aspects identified / highlighted by any Organs of State, which have jurisdiction in respect of any aspect of the relevant activity.

Await comment

Note:
Even if pre-application public participation is undertaken as allowed for by Regulation 40(3), it must be undertaken in accordance with the requirements set out in Regulations 3(3), 3(4), 3(8), 7(2), 7(5), 19, 40, 41, 42, 43 and 44.

If the "exemption" option is selected above and no proof of the exemption decision is attached to this BAR, the application will be refused.

A list of all the potential I&APs, including the Organs of State, notified and a list of all the registered I&APs must be submitted with the BAR. The list of registered I&APs must be opened, maintained and made available to any person requesting access to the register in writing.

The BAR must be submitted to the Department when being made available to I&APs, including the relevant Organs of State and State Departments which have jurisdiction with regard to any aspect of the activity, for a commenting period of at least 30 days. Unless agreement to the contrary has been reached between the Competent Authority and the EAP, the EAP will be responsible for the consultation with the relevant State Departments in terms of Section 24O and Regulation 7(2) – which consultation must happen simultaneously with the consultation with the I&APs and other Organs of State.

All the comments received from I&APs on the BAR must be recorded, responded to and included in the Comments and Responses Report included as **Appendix F** of the BAR. If necessary, any amendments made in response to comments received must be effected in the BAR itself. The Comments and Responses Report must also include a description of the PPP followed.

The minutes of any meetings held by the EAP with I&APs and other role players wherein the views of the participants are recorded, must also be submitted as part of the public participation information to be attached to the final BAR as **Appendix F.**

Proof of all the notices given as indicated, as well as notice to I&APs of the availability of the Pre-Application BAR (if applicable), Draft BAR, and Revised BAR (if applicable) must be submitted as part of the public participation information to be attached to the BAR as **Appendix F**. In terms of the required "proof" the following must be submitted to the Department:

- a site map showing where the site notice was displayed, a dated photographs showing the notice displayed on site and a copy of the text displayed on the notice;
- in terms of the written notices given, a copy of the written notice sent, as well as:
  - if registered mail was sent, a list of the registered mail sent (showing the registered mail number, the name of the person the mail was sent to, the address of the person and the date the registered mail was sent);
  - if normal mail was sent, a list of the mail sent (showing the name of the person the mail was sent to, the address of the person, the date the mail was sent, and the signature of the post office worker or the post office stamp indicating that the letter was sent);
  - if a facsimile was sent, a copy of the facsimile report;
  - if an electronic mail was sent, a copy of the electronic mail sent; and
  - if a "mail drop" was done, a signed register of "mail drops" received (showing the name of the person the notice was handed to, the address of the person, the date, and the signature of the person); and
- a copy of the newspaper advertisement ("newspaper clipping") that was placed, indicating the name of the newspaper and date of publication (of such quality that the wording in the advertisement is legible).

SECTION D: NEED AND DESIRABILITY

Note: Before completing this section, first consult this Department's Circular EADP 0028/2014 (dated 9 December 2014) on the "One Environmental Management System" and the EIA Regulations, 2014 (as amended), any subsequent Circulars, and guidelines available on the Department's website: **http://www.westerncape.gov.za/eadp**). In this regard, it must be noted

that the *Guideline on Need and Desirability in terms of the Environmental Impact Assessment (EIA) Regulations, 2010* published by the national Department of Environmental Affairs on 20 October 2014 (GN No. 891 on Government Gazette No. 38108 refers) (available at: http://www.gov.za/sites/www.gov.za/files/38108_891.pdf) also applied to EIAs in terms of the EIA Regulations, 2014 (as amended).

1. Is the development permitted in terms of the property's existing land use rights?	~~YES~~	NO	Please explain
The property is included in the Darling urban edge and Swartland Municipality SDF, but rezoning is required.			
2. Will the development be in line with the following?			
(a) Provincial Spatial Development Framework ("**PSDF**").	YES	~~NO~~	Please explain
The property is included in the Darling urban edge and Swartland Municipality SDF, but rezoning is required.			
(b) Urban edge / edge of **built environment** for the area.	YES	~~NO~~	Please explain
The area is inside the approved urban edge of Darling.			
(c) Integrated Development Plan and Spatial Development Framework 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
The property is included in the Darling urban edge and Swartland Municipality SDF, but rezoning is required.			
(d) An Environmental Management Framework ("**EMF**") adopted by this 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~~
No EMF adopted for the area.			
(e) Any **other** Plans (*e.g.,* Integrated Waste Management Plan (for waste management activities), *etc.*)).	~~YES~~	NO	~~Please explain~~
NA			
3. Is the land use (associated with the project being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (in other words, is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?	YES	~~NO~~	Please explain
The property is included in the Darling urban edge and Swartland Municipality SDF, but rezoning is required. There is a great deal of tourism opportunities for the Swartland Municipality such as the growth of towns/ Service Centres where Malmesbury is focused as regional, Moorreesburg as agricultural and Darling as agricultural and agri-tourism centre. The proposed development with its opportunities, link perfectly to the agri-tourism identified in the Swartland Municipality's town growth strategy. The development proposed meets these requirements.			
4. Should development, or if applicable, expansion of the town/area concerned in terms of this land use (associated with the activity being applied for) occur on the proposed site at this point in time?	YES	~~NO~~	Please explain
The property is included in the Darling urban edge and Swartland Municipality SDF, but rezoning is required. There is a great deal of tourism opportunities for the Swartland Municipality such as the growth of towns/ Service Centres where Malmesbury is focused as regional, Moorreesburg as agricultural and Darling as agricultural and agri-tourism centre. The proposed development with its opportunities link perfectly to the agri-tourism identified in the Swartland Municipality's town growth strategy. The development proposed meets these requirements.			
5. Does the community/area need the project 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
The property is included in the Darling urban edge and Swartland Municipality SDF, but rezoning is required. There is a great deal of tourism opportunities for the Swartland Municipality such as the growth of towns/ Service Centres where Malmesbury is focused as regional, Moorreesburg as agricultural and Darling as agricultural and agri-tourism centre. The proposed development with its opportunities link perfectly to the agri-tourism identified in the Swartland Municipality's town growth strategy. The development proposed meets these requirements.			
6. Are the necessary **services** available together with adequate unallocated municipal capacity (at the time of application), or must additional capacity be created to cater for the project? (Confirmation by the relevant municipality in this regard must be attached to the BAR as **Appendix E**.)	YES	~~NO~~	Please explain
The proposed development will link to municipal services in Darling, west of the site.			
7. Is this project 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 BAR as **Appendix E**.)	YES	~~NO~~	Please explain

The property is included in the Darling urban edge and Swartland Municipality SDF, but rezoning is required.			
8. Is this project part of a **national programme** to address an issue of national concern or importance?	~~YES~~	NO	~~Please explain~~
9. Do location factors favour this land use (associated with the development proposal and associated listed activity(ies) applied for) at this place? (This relates to the contextualisation of the proposed land use on the proposed site within its broader context.)	YES	~~NO~~	Please explain
The property is included in the Darling urban edge and Swartland Municipality SDF, but rezoning is required. There is a great deal of tourism opportunities for the Swartland Municipality such as the growth of towns/ Service Centres where Malmesbury is focused as regional, Moorreesburg as agricultural and Darling as agricultural and agri-tourism centre. The proposed development with its opportunities link perfectly to the agri-tourism identified in the Swartland Municipality's town growth strategy. The development proposed meets these requirements.			
10. Will the development proposal or the land use associated with the development proposal applied for, impact on sensitive natural and cultural areas (built and rural/natural environment)?	YES	~~NO~~	Please explain
CBA Identified is excluded from the development area and will be protected with a Private Open Space zoning.			
11. Will the development impact on people's health and well-being (*e.g.,* in terms of noise, odours, visual character and 'sense of place', *etc.*)?	~~YES~~	NO	Please explain
The property is included in the Darling urban edge and Swartland Municipality SDF, but rezoning is required. There is a great deal of tourism opportunities for the Swartland Municipality such as the growth of towns/ Service Centres where Malmesbury is focused as regional, Moorreesburg as agricultural and Darling as agricultural and agri-tourism centre. The proposed development with its opportunities link perfectly to the agri-tourism identified in the Swartland Municipality's town growth strategy. The development proposed meets these requirements.			
12. Will the proposed development or the land use associated with the proposed development applied for, result in unacceptable opportunity costs?	~~YES~~	NO	~~Please explain~~
Development cost will be for the developer.			
13. What will the **cumulative impacts** (positive and negative) of the proposed land use associated with the development proposal and associated listed activity(ies) applied for, be?			
The expansion of the Darling town on the east will result in cumulative impacts associated with residential development in the area, such as vehicle traffic. The road infrastructure can however accommodate these impacts.			
14. Is the development the **best practicable environmental option** for this land/site?	YES	~~NO~~	Please explain
The property is included in the Darling urban edge and Swartland Municipality SDF, but rezoning is required. There is a great deal of tourism opportunities for the Swartland Municipality such as the growth of towns/ Service Centres where Malmesbury is focused as regional, Moorreesburg as agricultural and Darling as agricultural and agri-tourism centre. The proposed development with its opportunities link perfectly to the agri-tourism identified in the Swartland Municipality's town growth strategy. The development proposed meet these requirements.			
15. What will the benefits be to society in general and to the local communities?			Please explain
Development in Darling and surrounding areas, cover the needs for agri related residential uses and tourism linked to a retirement complex to accommodate retired people.			
16. Any **other** need and desirability considerations related to the proposed development?			Please explain
NA			
17. Describe how the **general objectives of Integrated Environmental Management** as set out in Section 23 of the NEMA have been taken into account:			
All decisions during the planning and assessment by all involved for the activity promote the integration of the principles of environmental management set out in section 2 to minimize and mitigate any significant effect on the environment. All these mitigations and management measures are included and written into the EMP.			
18 Describe how the **principles of environmental management** as set out in Section 2 of the NEMA have been taken into account:			
NATIONAL ENVIRONMENTAL MANAGEMENT PRINCIPLES **2. Principles** (1) The principles set out in this section apply throughout the Republic to the actions of all organs of state that may significantly affect the environment and			

(a) shall apply alongside all other appropriate and relevant considerations, including the State's responsibility to respect, protect, promote and fulfil the social and economic rights in Chapter 2 of the Constitution and in particular the basic needs of categories of persons disadvantaged by unfair discrimination;

(b) serve as the general framework within which environmental management and implementation plans must be formulated;

(c) serve as guidelines by reference to which any organ of state must exercise any function when taking any decision in terms of this Act or any statutory provision concerning the protection of the environment;

(d) serve as principles by reference to which a conciliator appointed under this Act must make recommendations; and

(e) guide the interpretation, administration and implementation of this Act, and any other law concerned with the protection or management of the environment.

(2) Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably.
The proposed environmental management requirements have been determined by assessing all potential impacts that the development may have on people and their needs and aims to prevent or if prevention is not possible to mitigate any potential negative impacts on the environment and people.

(3) Development must be socially, environmentally and economically sustainable.
The proposed development has been planned, designed and assessed in such as manner as to ensure that it is socially, environmentally and economically sustainable.

(4)

(a) Sustainable development requires the consideration of all relevant factors including the following:

(i) That the disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied;

(ii) that pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied;

(iii) that the disturbance of landscapes and sites that constitute the nation's cultural heritage is avoided, or where it cannot be altogether avoided, is minimised and remedied;

(iv) that waste is avoided, or where it cannot be altogether avoided, minimised and re-used or recycled where possible and otherwise disposed of in a responsible manner;

(v) that the use and exploitation of non-renewable natural resources is responsible and equitable, and takes into account the consequences of the depletion of the resource;

(vi) that the development, use and exploitation of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardised;

(vii) that a risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions; and

(viii) that negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.

The assessment conducted aimed to identify all potential negative impacts on the environment and on people's environmental rights (as listed above and more), and where such potential negative impacts as identified and assessed could not be altogether prevented/avoided mitigation measures were recommended and incorporated into the Environmental Management Programme to minimise the significance of the potential negative impacts as far as possible. The assessment also aimed to determine whether or not the proposed development will lead to the unacceptable exploitation of renewable and non-renewable resources and associated ecosystems.

(b) Environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option.
An integrated environmental assessment approach was followed acknowledging that all elements of the environment are linked and interrelated and realising that effects of decisions may have cumulative impacts on the environment and people and that the best practicable environmental option must therefore be selected.

(c) Environmental justice must be pursued so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons.
Environmental justice was pursued to prevent discrimination against any person, particularly vulnerable and disadvantage persons.

(d) Equitable access to environmental resources, benefits and services to meet basic human needs and ensure human well-being must be pursued and special measures may be taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination.
Equitable access to environmental resources, benefits and services to meet basic human needs and ensure human well-being was pursued and special measures implemented if required ensure access.

(e) Responsibility for the environmental health and safety consequences of a policy, programme, project, product, process, service or activity exists throughout its life cycle.
As per the recommended EMP requirements the Applicant (as per the EA stipulations) remains responsible for the environmental health and safety consequences of the proposed activity/ies throughout its life cycle.

(f) The participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured.
Adequate and appropriate opportunity for public participation was provided and proof thereof included in Appendix F as per the guidelines and regulations in decisions that may affect the environment.

(g) Decisions must take into account the interests, needs and values of all interested and affected parties, and this includes recognising all forms of knowledge, including traditional and ordinary knowledge.
All decision regarding the proposed activity/ies took into account the interests, needs and values of all potential interested and affected parties.

(h) Community wellbeing and empowerment must be promoted through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means.
Depending on the scope of the proposed activity community awareness campaigns will be conducted as and if required.

(i) The social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the

light of such consideration and assessment.
All potential negative and positive impacts associated with the proposed development are assessed and mitigated during the assessment process.

(j) The right of workers to refuse work that is harmful to human health or the environment and to be informed of dangers must be respected and protected.
As per standard EMP requirements all relevant health and safety legislation must be adhered to during the implementation of the proposed activities.

(k) Decisions must be taken in an open and transparent manner, and access to information must be provided in accordance with the law.
As per public participation process regulations all information relating to the proposed activities are public knowledge and available to the public for perusal and comments during the assessment process.

(l) There must be intergovernmental co-ordination and harmonisation of policies, legislation and actions relating to the environment.

(m) Actual or potential conflicts of interest between organs of state should be resolved through conflict resolution procedures.
Comments from all relevant organs of state are requested, recorded and addressed during assessment process.

(n) Global and international responsibilities relating to the environment must be discharged in the national interest.
Applied as and when relevant to the proposed activities.

(o) The environment is held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people's common heritage.
All potential impacts on environmental resources are assessed and mitigated to prevent unacceptable exploitation of renewable and non-renewable resources and associated ecosystems.

(p) The costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment.
As per standard EMP requirements the applicant, as per the EA issued, will remain financially responsible for remedying any negative environmental and health effects cause by or due to the proposed activities.

(q) The vital role of women and youth in environmental management and development must be recognised and their full participation therein must be promoted.
If applicable the role of women and youth in environmental management and development related to the proposed activities will be assessed and incorporated into EMP requirements during the assessment process.

(r) Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure.
All sensitive, vulnerable, highly dynamic or stressed ecosystems must be identified during the assessment process and the significance of any potential impacts on these systems must be determined and appropriate prevention, or if prevention is not possible mitigation measures must be incorporated into the EMP requirements.

SECTION E: DETAILS OF ALL THE ALTERNATIVES CONSIDERED

Note: Before completing this section, first consult this Department's Circular EADP 0028/2014 (dated 9 December 2014) on the "One Environmental Management System" and the EIA Regulations, 2014 (as amended), any subsequent Circulars, and guidelines available on the Department's website **http://www.westerncape.gov.za/eadp**.

The EIA Regulations, 2014 (as amended) defines "*alternatives*" as " *in relation to a proposed activity, means different means of fulfilling the general purpose and requirements of the activity, which may include alternatives to the—*
(a) property on which or location where the activity is proposed to be undertaken;
(b) type of activity to be undertaken;
(c) design or layout of the activity;
(d) technology to be used in the activity; or
(e) operational aspects of the activity;
(f) and includes the option of not implementing the activity;"

The NEMA (section 24(4)(a) and (b) of the NEMA, refers) prescribes that the procedures for the investigation, assessment and communication of the potential consequences or impacts of activities on the environment must, *inter alia*, with respect to every application for environmental authorisation –

- ensure that the general objectives of integrated environmental management laid down in the NEMA and the National Environmental Management Principles set out in the NEMA are taken into account; and
- include an investigation of the potential consequences or impacts of the alternatives to the activity on the environment and assessment of the significance of those potential consequences or impacts, including the option of not implementing the activity.

The general objective of integrated environmental management (section 23 of NEMA, refers) is, *inter alia*, to "*identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimising negative impacts, maximising benefits, and promoting compliance with the principles of environmental management*" set out in the NEMA.

The identification, evaluation, consideration and comparative assessment of alternatives directly relate to the management of impacts. Related to every identified impact, alternatives, modifications or changes to the activity must be identified, evaluated, considered and comparatively considered to:

- in terms of negative impacts, firstly avoid a negative impact altogether, or if avoidance is not possible alternatives to better mitigate, manage and remediate a negative impact and to compensate for/offset any impacts that remain after mitigation and remediation; and
- in terms of positive impacts, maximise impacts.

1. DETAILS OF THE IDENTIFIED AND CONSIDERED ALTERNATIVES AND INDICATE THOSE ALTERNATIVES THAT WERE FOUND TO BE FEASIBLE AND REASONABLE

Note: A full description of the investigation of alternatives must be provided and motivation if no reasonable or feasible alternatives exists.

(a) Property and **location/site** alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

No other location or site alternatives were assessed as no feasible or reasonable alternative exists. The property is included in the urban edge of Darling town and earmarked for development.

(b) **Activity** alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

No other activity alternatives were assessed as no feasible or reasonable alternative exists. The property is included in the urban edge of Darling town and earmarked for development.

(c) **Design or layout** alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

Two layout and design alternatives were considered and assessed. A previous application also included a golf estate development layout, but this alternative was not assessed. The preferred layout development densities were increased in the southern section of the property in order to increase the erven in the development. The northern section of the property development still provides for bigger Agri related erven, which was identified as a need in the marked study. The crafters village was included in the layout to promote the Agri- tourism identified for the town of Darling. The Apolis pan and its buffer areas was zoned Private Open Space to protect the wetland from the proposed development.

(d) **Technology** alternatives (*e.g.,* to reduce resource demand and increase resource use efficiency) to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

The only technological alternatives assessed and considered, were the use of electricity and water wise technologies and green tips considered during the construction and operational phases.

To minimise the degradation of the buildings:

- Cover the entrance areas where possible;
- Specify drip edging where possible;
- Provide adequate roof overhangs where possible; and
- Slope backfill to divert surface water away from the building where possible

Building Material:

- Consider energy efficient building materials where possible;
- Consider materials that are plentiful in supply; are locally produced and made from renewable resources where possible. This minimizes exhaustion of materials and transportation;
- Where possible, use material that have gone through less processing to be made;

Roofs and Overhangs:

- Consider pitched roofing where possible as it requires lesser water-proofing and has greater run-off ;
- Dormer windows, skylights or roof lights are encourage where possible;
- Suitable roof overhangs must be considered to allow the winter sun in and encourages the shade in summer where possible;

Floors:

- Durable and environmentally friendly flooring material is encourage

Electricity:

- Use of energy efficient equipment;
- Use of solar panels and geysers;
- Dimmers and motion sensors to reduce energy consumption;
- CFL's must be used to save energy cost where possible;
- Fluorescent lighting must be used in communal spaces where possible;
- Geysers must be installed vertically and covered with geyser blanket to save even more electricity where possible;

Water savings:

- Collection of rain water from the gutters to collect rain water must be implemented were possible;
- Showers installed must be fitted with low-flow shower heads. These must be balanced well with the balanced pressure of the geyser.
- Ensure that the maximum flow rate from a hand basin does not exceed 6 litres per minute;
- Indoor taps must be fitted with aerators to increase the efficiency by reducing the flow and amount of water used;
- The flush toilets must be fitted with dual or multi flush mechanisms to ensure that the amount of water required is controlled by the user;
- Indigenous or water wise plants must be planted to reduce water usage;
- Plants with similar water requirements must be grouped together.
- Large lawns must be avoided as they have high water requirements;
- Irrigation systems must be used to minimise water use and evaporation

(e) **Operational** alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

Operational alternatives were not assessed as they are not feasible or reasonable. The only operational activity applicable to the development relates to maintenance.

(f) The option of **not implementing** the activity (the '*No-Go*' Option):

The No-Go option will result in the site remaining as is

(g) **Other** alternatives to avoid negative impacts, mitigate unavoidable negative impacts and maximise positive impacts, or detailed motivation if no reasonable or feasible alternatives exist:

N/A

(h) Provide a **summary** of all alternatives investigated and the outcome of each investigation:

Location alternatives – No other location or site alternatives were assessed as no feasible or reasonable alternative exists. The property is included in the urban edge of Darling town and earmarked for development.

Activity alternatives - No other activity alternatives were assessed as no feasible or reasonable alternative exists. The property is included in the urban edge of Darling town and earmarked for development.

Layout alternatives – Two layout and design alternatives were considered and assessed. A previous application also included a golf estate development layout, but this alternative was not assessed. The preferred layout development densities were increased in the southern section of the property in order to increase the erven in the development. The northern section of the property development still provides for bigger Agri related erven, which was identified as a need in the marked study. The crafters village was included in the layout to promote the Agri- tourism identified for the town of Darling. The Apolis pan and its buffer areas was zoned Private Open Space to protect the wetland from the proposed development.

Technology alternatives - The only technological alternatives assessed and considered were the use of electricity and water wise technologies and green tips considered during the construction and operational phases.

To minimise the degradation of the buildings:
- Cover the entrance areas where possible;
- Specify drip edging where possible;
- Provide adequate roof overhangs where possible; and
- Slope backfill to divert surface water away from the building where possible

Building Material:
- Consider energy efficient building materials where possible;
- Consider materials that are plentiful in supply; are locally produced and made from renewable resources where possible. This minimizes exhaustion of materials and transportation;
- Where possible, use material that have gone through less processing to be made;

Roofs and Overhangs:
- Consider pitched roofing where possible as it requires lesser water-proofing and has greater run-off ;
- Dormer windows, skylights or roof lights are encourage where possible;
- Suitable roof overhangs must be considered to allow the winter sun in and encourages the shade in summer where possible;

Floors:
- Durable and environmentally friendly flooring material is encourage

Electricity:
- Use of energy efficient equipment;
- Use of solar panels and geysers;
- Dimmers and motion sensors to reduce energy consumption;

- CFL's must be used to save energy cost where possible;
- Fluorescent lighting must be used in communal spaces where possible;
- Geysers must be installed vertically and covered with geyser blanket to save even more electricity where possible;

Water savings:
- Collection of rain water from the gutters to collect rain water must be implemented were possible;
- Showers installed must be fitted with low-flow shower heads. These must be balanced well with the balanced pressure of the geyser.
- Ensure that the maximum flow rate from a hand basin does not exceed 6 litres per minute;
- Indoor taps must be fitted with aerators to increase the efficiency by reducing the flow and amount of water used;
- The flush toilets must be fitted with dual or multi flush mechanisms to ensure that the amount of water required is controlled by the user;
- Indigenous or water wise plants must be planted to reduce water usage;
- Plants with similar water requirements must be grouped together.
- Large lawns must be avoided as they have high water requirements;

Irrigation systems must be used to minimise water use and evaporation.

Operational alternatives – Operational alternatives were not assessed as they are not feasible or reasonable. The only operational activity applicable to the development relates to maintenance.

The No-Go Option - The No-Go option will result in the site remaining as is at present.

(i) Provide a detailed **motivation for not further considering** the alternatives that were found not feasible and reasonable, including a description and proof of the investigation of those alternatives:

Refer to points (a) – (f) above.

2. PREFERRED ALTERNATIVE

(a) Provide a **concluding statement** indicating the preferred alternative(s), including preferred location, site, activity and technology for the development.

The preferred layout development densities were increased in the southern section of the property in order to increase the erven in the development. The northern section of the property development still provides for bigger Agri related erven which was identified as a need in the marked study. The crafters village was included in the layout to promote the Agri- tourism identified for the town of Darling. The Apolis pan and its buffer areas was zoned Private Open Space to protect the wetland from the proposed development.

SECTION F: ENVIRONMENTAL ASPECTS ASSOCIATED WITH THE ALTERNATIVES

Note: The information in this section must be DUPLICATED for all the feasible and reasonable ALTERNATIVES.

1. DESCRIBE THE ENVIRONMENTAL ASPECTS ASSOCIATED WITH THE PROPOSED DEVELOPMENT AND ITS ALTERNATIVES, FOCUSING ON THE FOLLOWING:

(a) Geographical, geological and physical aspects:

The proposed action will not have a significant adverse cumulative effect on topography, slopes,

soils and groundwater resources, if operational and construction mitigation measures are implemented. The proposed development will not be a potential source of contamination to the underlying groundwater and will cause no significant degradation of the potable drinking water supply.

(b) Ecological aspects:

Will the proposed development and its alternatives have an impact on CBAs or ESAs? If yes, please explain: Also include a description of how the proposed development will influence the quantitative values (hectares/percentage) of the categories on the CBA/ESA map.	~~YES~~	NO
The CBA and buffer areas associated with the Apolis pan is excluded from the development footprint and will be protected with a Private Open Space zonation.		
Will the proposed development and its alternatives have an impact on terrestrial vegetation, or aquatic ecosystems (wetlands, estuaries or the coastline)? If yes, please explain:	~~YES~~	NO
The CBA and buffer areas associated with the Apolis pan is excluded from the development footprint and will be protected with a Private Open Space zonation.		
Will the proposed development and its alternatives have an impact on any populations of threatened plant or animal species, and/or on any habitat that may contain a unique signature of plant or animal species? If yes, please explain:	~~YES~~	NO
The area, other than the Apolis pan is ploughed and planted and used for agriculturalactivities.		
Describe the manner in which any other biological aspects will be impacted:		
Not applicable. The areas to be impacted upon by the facility are all disturbed areas.		
Will the proposed development also trigger section 63 of the NEM: ICMA?	~~YES~~	NO
If yes, describe the following: (i) the extent to which the applicant has in the past complied with similar authorisations; (ii) whether coastal public property, the coastal protection zone or coastal access land will be affected, and if so, the extent to which the proposed development proposal or listed activity is consistent with the purpose for establishing and protecting those areas; (iii) the estuarine management plans, coastal management programmes, coastal management lines and coastal management objectives applicable in the area; (iv) the likely socio-economic impact if the listed activity is authorised or is not authorised; (v) the likely impact of coastal environmental processes on the proposed development; (vi) whether the development proposal or listed activity— (a) is situated within coastal public property and is inconsistent with the objective of conserving and enhancing coastal public property for the benefit of current and future generations; (b) is situated within the coastal protection zone and is inconsistent with the purpose for which a coastal protection zone is established as set out in section 17 of NEM: ICMA; (c) is situated within coastal access land and is inconsistent with the purpose for which coastal access land is designated as set out in section 18 of NEM: ICMA; (d) is likely to cause irreversible or long-lasting adverse effects to any aspect of the coastal environment that cannot satisfactorily be mitigated; (e) is likely to be significantly damaged or prejudiced by dynamic coastal processes; (f) would substantially prejudice the achievement of any coastal management objective; or (g) would be contrary to the interests of the whole community; (vii) whether the very nature of the proposed activity or development requires it to be located within coastal public property, the coastal protection zone or coastal access land; (viii) whether the proposed development will provide important services to the public when using coastal public property, the coastal protection zone, coastal access land or a coastal protected area; and (ix) the objects of NEM: ICMA, where applicable.		
N/A		

(c) Social and Economic aspects:

What is the expected capital value of the project on completion?	Unknown	
What is the expected yearly income or contribution to the economy that will be generated by or as a result of the project?	Unknown	
Will the project contribute to service infrastructure?	YES	~~NO~~
Is the project a public amenity?	~~YES~~	NO
How many new employment opportunities will be created during the development phase?	± 100	
What is the expected value of the employment opportunities during the development phase?	± R 4.2m per year	
What percentage of this will accrue to previously disadvantaged individuals?	As much as possible	
How will this be ensured and monitored (please explain):		

Employment opportunities to be allocated, as according to municipal policy/guidelines which promote the employment and appointment of previously disadvantaged individuals.	
How many permanent new employment opportunities will be created during the operational phase of the project?	± 100
What is the expected current value of the employment opportunities during the first 10 years?	± R 42 m per year
What percentage of this will accrue to previously disadvantaged individuals?	90%
How will this be ensured and monitored (please explain):	
Employment opportunities to be allocated, as according to municipal policy/guidelines which promote the employment and appointment of previously disadvantaged individuals.	
Any other information related to the manner in which the socio-economic aspects will be impacted:	
-	

(d) Heritage and Cultural aspects:

A Notice of Intent to Develop was submitted to the HWC and HWC agreed that no mitigation is required prior to the proposed development activities. Should any human remains be disturbed, exposed or uncovered during excavations and earthworks for the proposed project, all work must cease and immediately be reported to SAHRA or HWC.

2. WASTE AND EMISSIONS

(a) Waste (including effluent) management

Will the development proposal produce waste (including rubble) during the development phase?	YES	~~NO~~
If yes, indicate the types of waste (actual type of waste, *e.g.* oil, and whether hazardous or not) and estimated quantity per type?	50m^3 – Inert 2m^3 – Contaminated soil 10m^3 – Construction waste	
Construction and operational waste will be generated. Construction waste will consist of construction waste and possible contaminated soil as result of leaking or re-fuelling of construction vehicles. Inert and access soil waste will be recycled where possible on site for the levelling of the road foundations. Contaminated soil, tar and other construction waste that cannot be reused will be disposed at a licensed waste disposal facility.		

Will the development proposal produce waste during its operational phase?	YES	~~NO~~
If yes, indicate the types of waste (actual type of waste, *e.g.* oil, and whether hazardous or not) and estimated quantity per type?	Domestic Waste - ± 10 m^3/month	
Operational waste (hazardous and general) will be waste generated during the operations. All waste will link to Swartland Municipal Waste Management services and the waste will be transported by Swartland municipality to highlands landfill site in Malmesbury together with other waste generated in Darling. Waste that cannot be reused must be disposed of at licensed waste management facilities. Refer to the EMP operational section for list of possible operational wastes to be generated and the management and disposal thereof.		

Will the development proposal require waste to be treated / disposed of on site?	YES	~~NO~~
If yes, indicate the types of waste (actual type of waste, *e.g.* oil, and whether hazardous or not) and estimated quantity per type per phase of the proposed development to be treated/disposed of?	Domestic Waste - ± 10 m^3/month	
No treatment. Operational waste (hazardous and general) will be waste generated during the operations. All waste will link to Swartland Municipal Waste Management services and the waste will be transported by Swartland municipality to highlands landfill site in Malmesbury together with other waste generated in Darling. Waste that cannot be reused must be disposed of at licensed waste management facilities. Refer to the EMP operational section for list of possible operational wastes to be generated and the management and		

disposal thereof.		
If no, where and how will the waste be treated / disposed of? Please explain. Indicate the types of waste (actual type of waste, *e.g.* oil, and whether hazardous or not) and estimated quantity per type per phase of the proposed development to be treated/disposed of?		
N/A		
Has the municipality or relevant authority confirmed that sufficient capacity exists for treating / disposing of the waste to be generated by the development proposal? If yes, provide written confirmation from the municipality or relevant authority.	~~YES~~	NO (Services confirmation still to be provided)
Will the development proposal produce waste that will be treated and/or disposed of at another facility other than into a municipal waste stream?	No	
If yes, has this facility confirmed that sufficient capacity exists for treating / disposing of the waste to be generated by the development proposal? Provide written confirmation from the facility.	~~YES~~	~~NO~~
Does the facility have an operating license? (If yes, please attach a copy of the licence.)	~~YES~~	NO
Facility name:		
Contact person:		
Cell:	Postal address:	
Telephone:	Postal code:	
Fax:	E-mail:	

Describe the measures that will be taken to reduce, reuse or recycle waste:
As per standard EMP waste management requirements to reduce, reuse or recycle waste must be promoted and implemented as far as feasibly and reasonable practical and financially possible.

(b) Emissions into the atmosphere

Will the development proposal produce emissions that will be released into the atmosphere?	~~YES~~	NO
If yes, does this require approval in terms of relevant legislation?	~~YES~~	~~NO~~
If yes, what is the approximate volume(s) of emissions released into the atmosphere?	N/A	
Describe the emissions in terms of type and concentration and how these will be avoided/managed/treated/mitigated:		
N/A		

3. WATER USE

(a) Indicate the source(s) of water for the development proposal by highlighting the appropriate box(es).

Municipal	~~Water board~~	~~Groundwater~~	~~River, Stream, Dam or Lake~~	~~Other~~	~~The project will not use water~~

Note: Provide proof of assurance of water supply (e.g. Letter of confirmation from the municipality / water user associations, yield of borehole)

(b) If water is to be extracted from a groundwater source, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:	N/A	m^3

(c) Does the development proposal require a water use permit / license from DWS?	YES	~~NO~~
If yes, please submit the necessary application to the DWS and attach proof thereof to this application as an Appendix.		
N/A		

(d) Describe the measures that will be taken to reduce water demand, and measures to reuse or recycle water:
N/A

4. POWER SUPPLY

(a) Describe the source of power *e.g.* municipality / Eskom / renewable energy source.

Eskom via municipal grid.

(b) If power supply is not available, where will power be sourced?

N/A

5. ENERGY EFFICIENCY

(a) Describe the design measures, if any, that have been taken to ensure that the development proposal will be energy efficient:

Energy efficient street lighting., solar to every home, energy efficient lighting inside homes

(b) Describe how alternative energy sources have been taken into account or been built into the design of the project, if any:

Solar power energy solution will be part of the development.

6. TRANSPORT, TRAFFIC AND ACCESS

Describe the impacts in terms of transport, traffic and access.

The proposed development will have direct access to the R 307 road at an access point approved by the department. The rest of the roads will all be internal roads developed by the developer for the development. The proposed development will be directly access of the R 307 road at an access point approved by Department of Public works and roads. Access will be gained from MR215 at approximately 1 500 meters from the R315 and approximately 1 460 meters from Church Street. A priority stop control will be implemented at this location. From a capacity point of view one inbound lane and one outbound lane will be sufficient to accommodate the peak demand of the development.

The following lane configurations are proposed at the development access intersection:

- Northern approach: A shared through and left-turn lane
- Southern approach: Separate through and right-turn lanes
- Development Access: Separate left- and right-turn lanes outbound and a single inbound lane.

7. NUISANCE FACTOR (NOISE, ODOUR, etc.)

Describe the potential nuisance factor or impacts in terms of noise and odours.

Noise

Additional noise due to construction activities and associate operational phase of the proposed development are expected to be produced, however construction noise will only be temporary and all possible mitigation measures will be implemented as per the requirements of the EMP to minimise noise production as far as possible. Noise levels produced during the construction and operational phases must not exceed the allowable maximum urban noise levels and must be regulated by the requirements of the EMP.

Odour

No odours are expected to be produced during the proposed construction and/or operational phases.

Note: Include impacts that the surrounding environment will have on the proposed development.

8. OTHER

Refer to Section G below for summary of potential positive and negative impacts as assessed.

SECTION G: IMPACT ASSESSMENT, IMPACT AVOIDANCE, MANAGEMENT, MITIGATION AND MONITORING MEASURES

1. METHODOLOGY USED IN DETERMINING AND RANKING ENVIRONMENTAL IMPACTS AND RISKS ASSOCIATED WITH THE ALTERNATIVES

(a) Describe the **methodology** used in determining and ranking the nature, significance consequences, extent, duration and probability of potential environmental impacts and risks associated with the proposed development and alternatives.

The assessment criteria were developed based on the Department of Environmental Affair's

Integrated Environmental Management Series guideline documents.

Criteria	Description		
Nature	a description of what causes the effect, what will be affected, and how it will be affected.		
	Type	**Score**	**Description**
Extent (E)	None (No)	1	Footprint
	Site (S)	2	On site or within 100 m of the site
	Local (L)	3	Within a 20 km radius of the centre of the site
	Regional (R)	4	Beyond a 20 km radius of the site
	National (Na)	5	Crossing provincial boundaries or on a national / land wide scale
Duration (D)	Short term (S)	1	0 – 1 years
	Short to medium (S-M)	2	2 – 5 years
	Medium term (M)	3	5 – 15 years
	Long term (L)	4	> 15 years
	Permanent(P)	5	Will not cease
Magnitude (M)	Small (S)	0	will have no effect on the environment
	Minor (Mi)	2	will not result in an impact on processes
	Low (L)	4	will cause a slight impact on processes
	Moderate (Mo)	6	processes continuing but in a modified way
	High (H)	8	processes are altered to the extent that they temporarily cease
	Very high (VH)	10	results in complete destruction of patterns and permanent cessation of processes.
Probability (P) the likelihood of the impact actually occurring. Probability is estimated on a scale, and a score assigned	Very improbable (VP)	1	probably will not happen
	Improbable (I)	2	some possibility, but low likelihood
	Probable (P)	3	distinct possibility
	Highly probable (HP)	4	most likely
	Definite (D)	5	impact will occur regardless of any prevention measures
Significance (S)	Determined through a synthesis of the characteristics described above: **S = (E+D+M) x P** Significance can be assessed as low, medium or high		
Low: < 30 points:	The impact would not have a direct influence on the decision to develop in the area		
Medium: 30 – 60 points:	The impact could influence the decision to develop in the area unless it is effectively mitigated		
High: > 60 points:	The impact must have an influence on the decision process to develop in the area		
No significance	When no impact will occur or the impact will not affect the environment		
Status	Positive (+)		Negative (-)
The degree to which the impact can be reversed	Completely reversible (R)	90-100%	The impact can be mostly to completely reversed with the implementation of the correct mitigation and rehabilitation measures.
	Partly reversible (PR)	6-89%	The impact can be partly reversed providing that mitigation measures as stipulated in the EMP are implemented and rehabilitation measures are undertaken
	Irreversible (IR)	0-5%	The impact cannot be reversed, regardless of the mitigation or rehabilitation measures taking place
The degree to which the impact may cause irreplaceable loss of resources	Resource will not be lost (R)	1	The resource will not be lost or destroyed provided that mitigation and rehabilitation measures as stipulated in the EMP are implemented
	Resource may be partly destroyed (PR)	2	Partial loss or destruction of the resources will occur even though all management and mitigation measures as stipulated in the EMP are implemented
	Resource cannot be replaced (IR)	3	The resource cannot be replaced no matter which management or mitigation measures are implemented.
The degree to which the impact can be mitigated	Completely mitigatable (CM)	1	The impact can be completely mitigated providing that all management and mitigation measures as stipulated in the EMP are implemented
	Partly mitigatable (PM)	2	The impact cannot be completely mitigated even though all management and mitigation measures as stipulated in the EMP are implemented. Implementation of these measures will provide a measure of mitigatibility
	Un-mitigatable (UM)	3	The impact cannot be mitigated no matter which management or mitigation measures are implemented.

(b) Please describe any gaps in knowledge.

EAP is only knowledgeable with regards to the potential environmental and ecosystems aspects. Limited knowledge with regard to the potential services impacts at this stage as enginering services report and municipal services confirmation are still to be provided.

(c) Please describe the underlying assumptions.

In undertaking the investigation and compiling this report, the following have been assumed:

- The information provided by the client, specialists and engineers, is accurate and unbiased;
- The scope of this investigation is to assess the direct and cumulative environmental impacts associated with the development; and
- Should the proposed project be authorised, the applicant will incorporate the recommendations and mitigation measures outlined in this BAR, the EMP and the EA into the detailed design and construction contract specifications and operational management system for the proposed project.

(d) Please describe the uncertainties.

None at this stage.

(e) Describe adequacy of the assessment methods used.

Based on the EAP's assessment, information was provided to address the concerns and assess the impacts of the proposed development on the environment. Information as provided by the applicant, specialist, engineers and as collected by the EAP during site surveys etc. have been used to inform the current development proposal and impact assessment.

2. IDENTIFICATION, ASSESSMENT AND RANKING OF IMPACTS TO REACH THE PROPOSED ALTERNATIVES INCLUDING THE PREFERRED ALTERNATIVE WITHIN THE SITE

Note: In this section the focus is on the identified issues, impacts and risks that influenced the identification of the alternatives. This includes how aspects of the receiving environment have influenced the selection.

(a) List the identified impacts and risks for each alternative.

Alternative 1:	**Construction phase:** • Disturbance to subsurface geological layers (**Medium impact before mitigation and low impact with mitigation measures**); • Soil erosion and dust - (**Low impact before mitigation and low impact with mitigation measures**); • Impact of construction activities on surface and underground water pollution - (**High impact before mitigation and low impact with mitigation measures**); • Impact on drainage line / groundwater resources - (**High impact before mitigation and low impact with mitigation measures**); • Impact on surrounding and municipal planning policies and guidelines - (**Medium impact before mitigation and low impact with mitigation measures**); • Impact on the indigenous terrestrial flora and habitat present in the area. Impact on the naturally occurring fauna present in the area - (**Low impact before mitigation and low impact with mitigation measures**); • Increased jobs - (**No impact before mitigation and positive impact with mitigation measures**); • Increased traffic due to the construction activities requiring various vehicles to come onto and leave the site - (**Low impact before mitigation and low impact with mitigation measures**); • The potential impact of the proposed development on archaeological, paleontological and heritage remains - (**Low impact before mitigation and low impact with mitigation measures**); • Noise due to construction machinery - (**Low impact before mitigation and low impact with mitigation measures**); • Visual impact of infrastructure and services establishment - (**Low impact before mitigation and low impact with mitigation measures**). **Operational phase:** • Disturbance to subsurface geological layers - (**Medium impact before mitigation and low impact with mitigation measures**); • Soil erosion and dust - (**Medium impact before mitigation and low impact with mitigation measures**); • Impact of operation activities on surface and underground water pollution -

	(**High impact before mitigation and low impact with mitigation measures**); • Impact on the indigenous terrestrial flora and habitat present in the area. Impact on the naturally occurring fauna present in the area - (**Low impact before mitigation and low impact with mitigation measures**); **<u>Decommissioning phase:</u>** • Similar to impacts associated with construction phase.
Alternative 2:	**<u>Construction phase:</u>** • Disturbance to subsurface geological layers (**Medium impact before mitigation and low impact with mitigation measures**); • Soil erosion and dust - (**Low impact before mitigation and low impact with mitigation measures**); • Impact of construction activities on surface and underground water pollution - (**High impact before mitigation and low impact with mitigation measures**); • Impact on drainage line / groundwater resources - (**High impact before mitigation and low impact with mitigation measures**); • Impact on surrounding and municipal planning policies and guidelines - (**Medium impact before mitigation and low impact with mitigation measures**); • Impact on the indigenous terrestrial flora and habitat present in the area. Impact on the naturally occurring fauna present in the area - (**Low impact before mitigation and low impact with mitigation measures**); • Increased jobs - (**No impact before mitigation and positive impact with mitigation measures**); • Increased traffic due to the construction activities requiring various vehicles to come onto and leave the site - (**Low impact before mitigation and low impact with mitigation measures**); • The potential impact of the proposed development on archaeological, paleontological and heritage remains - (**Low impact before mitigation and low impact with mitigation measures**); • Noise due to construction machinery - (**Low impact before mitigation and low impact with mitigation measures**); • Visual impact of infrastructure and services establishment - (**Low impact before mitigation and low impact with mitigation measures**). **<u>Operational phase:</u>** • Disturbance to subsurface geological layers - (**Medium impact before mitigation and low impact with mitigation measures**); • Soil erosion and dust - (**Medium impact before mitigation and low impact with mitigation measures**); • Impact of operation activities on surface and underground water pollution - (**High impact before mitigation and low impact with mitigation measures**); • Impact on the indigenous terrestrial flora and habitat present in the area. Impact on the naturally occurring fauna present in the area - (**Low impact before mitigation and low impact with mitigation measures**); **<u>Decommissioning phase:</u>** • Similar to impacts associated with construction phase.

No-go Alternative:	The No-Go option will result in the site remaining as is at present. • Disturbance to subsurface geological layers (**None. Area used for agricultural purposes and ploughed and planted.**); • Soil erosion and dust - (**Low Impact. No EMP in place. Area used for agricultural purposes and ploughed and planted. Current land use can lead to dust generation and erosion**); • Impact on drainage line / groundwater resources - (**High impact Medium Impact. No EMP in place. Area used for agricultural purposes and ploughed and planted. Current land use can impacts on the Apolis vlei and groundwater as a result of fertilizer leaching, herbicide use and possible fuel spills**); • Impact on surrounding and municipal planning policies and guidelines - (**Area included in urban area edge of Darling. Will not be developed and continue as Agricultural Land Uses**); • Impact on the indigenous terrestrial flora and habitat present in the area. Impact on the naturally occurring fauna present in the area - (**Low impact Ploughed agricultural land**); • Increased jobs - (**Impact high. Development will create more job opportunities than the current agricultural land use**); • Increased traffic due to the construction activities requiring various vehicles to come onto and leave the site - (**None – No development**); • The potential impact of the proposed development on archaeological, paleontological and heritage remains - (**None – no development**); • Noise due to construction machinery - (**None – no development**); • Visual impact of infrastructure and services establishment - (**None -no development**

(b) Describe the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts can be reversed; may cause irreplaceable loss of resources; and can be avoided, managed or mitigated.

The following table serves as a guide for summarising each alternative. The table should be repeated for each alternative to ensure a comparative assessment. (The EAP has to select the relevant impacts identified in blue in the table below for each alternative and repeat the table for each impact and risk).

Alternative 1 : Preferred Layout	**Geographical and Physical Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Construction activities can affect the underlying geological layers on site to some extent.**
Nature of impact:	**Disturbance to subsurface geological layers**
Extent and duration of impact:	**Extent 1 (footprint) & Duration 2 (two to five years)**
Consequence of impact or risk:	**Construction and excavation activities can affect the underlying geological layers on site to some extent.**
Probability of occurrence:	**2 (Improbable: some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**Low**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Disturbance to surrounding subsurface geological layers**
Cumulative impact prior to mitigation:	**It is not anticipated that the impact will be high as the affected substrata is deep and the integrity of the underlying ground structures will not be sacrificed.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Demarcation and work within demarcated areas only.**
Residual impacts:	**It is not anticipated that the impact will be high as the affected substrata is deep and the integrity of the underlying ground structures will not be sacrificed.**
Cumulative impact post mitigation:	**It is not anticipated that the impact will be high as the affected substrata is deep and the integrity of the underlying ground structures will not be sacrificed.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**

OPERATIONAL PHASE	
Potential impact and risk:	**Maintenance activities can affect the underlying geological layers on site to some extent.**
Nature of impact:	**Disturbance to subsurface geological layers**
Extent and duration of impact:	**Extent 1 (footprint) & Duration 2 (two to five years)**
Consequence of impact or risk:	**Construction and excavation activities can affect the underlying geological layers on site to some extent.**
Probability of occurrence:	**2 (Improbable: some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**Low**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Disturbance to surrounding subsurface geological layers**
Cumulative impact prior to mitigation:	**It is not anticipated that the impact will be high as the affected substrata is deep and the integrity of the underlying ground structures will not be sacrificed.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Demarcation and work within demarcated areas only.**
Residual impacts:	**It is not anticipated that the impact will be high as the affected substrata is deep and the integrity of the underlying ground structures will not be sacrificed.**
Cumulative impact post mitigation:	**It is not anticipated that the impact will be high as the affected substrata is deep and the integrity of the underlying ground structures will not be sacrificed.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	
Nature of impact:	**Disturbance to subsurface geological layers**
Extent and duration of impact:	**Extent 1 (footprint) & Duration 2 (two to five years)**
Consequence of impact or risk:	**Construction and excavation activities can affect the underlying geological layers on site to some extent.**
Probability of occurrence:	**2 (Improbable: some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**Low**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Disturbance to surrounding subsurface geological layers**
Cumulative impact prior to mitigation:	**It is not anticipated that the impact will be high as the affected substrata is deep and the integrity of the underlying ground structures will not be sacrificed.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Demarcation and work within demarcated areas only.**
Residual impacts:	**It is not anticipated that the impact will be high as the affected substrata is deep and the integrity of the underlying ground structures will not be sacrificed.**
Cumulative impact post mitigation:	**It is not anticipated that the impact will be high as the affected substrata is deep and the integrity of the underlying ground structures will not be sacrificed.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**

Alternative 2 : Alternative Layout	**Geographical and Physical Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Construction activities can affect the underlying geological layers on site to some extent.**
Nature of impact:	**Disturbance to subsurface geological layers**
Extent and duration of impact:	**Extent 1 (footprint) & Duration 2 (two to five years)**
Consequence of impact or risk:	**Construction and excavation activities can affect the underlying geological layers on site to some extent.**

Probability of occurrence:	**2 (Improbable: some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**Low**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Disturbance to surrounding subsurface geological layers**
Cumulative impact prior to mitigation:	**It is not anticipated that the impact will be high as the affected substrata is deep and the integrity of the underlying ground structures will not be sacrificed.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Demarcation and work within demarcated areas only.**
Residual impacts:	**It is not anticipated that the impact will be high as the affected substrata is deep and the integrity of the underlying ground structures will not be sacrificed.**
Cumulative impact post mitigation:	**It is not anticipated that the impact will be high as the affected substrata is deep and the integrity of the underlying ground structures will not be sacrificed.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**
OPERATIONAL PHASE	
Potential impact and risk:	**Maintenance activities can affect the underlying geological layers on site to some extent.**
Nature of impact:	**Disturbance to subsurface geological layers**
Extent and duration of impact:	**Extent 1 (footprint) & Duration 2 (two to five years)**
Consequence of impact or risk:	**Construction and excavation activities can affect the underlying geological layers on site to some extent.**
Probability of occurrence:	**2 (Improbable: some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**Low**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Disturbance to surrounding subsurface geological layers**
Cumulative impact prior to mitigation:	**It is not anticipated that the impact will be high as the affected substrata is deep and the integrity of the underlying ground structures will not be sacrificed.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Demarcation and work within demarcated areas only.**
Residual impacts:	**It is not anticipated that the impact will be high as the affected substrata is deep and the integrity of the underlying ground structures will not be sacrificed.**
Cumulative impact post mitigation:	**It is not anticipated that the impact will be high as the affected substrata is deep and the integrity of the underlying ground structures will not be sacrificed.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	
Nature of impact:	**Disturbance to subsurface geological layers**
Extent and duration of impact:	**Extent 1 (footprint) & Duration 2 (two to five years)**
Consequence of impact or risk:	**Construction and excavation activities can affect the underlying geological layers on site to some extent.**
Probability of occurrence:	**2 (Improbable: some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**Low**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Disturbance to surrounding subsurface geological layers**
Cumulative impact prior to mitigation:	**It is not anticipated that the impact will be high as the affected substrata is deep and the integrity of the underlying ground structures will not be sacrificed.**
Significance rating of impact prior to mitigation	**8 - Low**

(e.g. Low, Medium, Medium-High, High, or Very-High)	
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Demarcation and work within demarcated areas only.**
Residual impacts:	**It is not anticipated that the impact will be high as the affected substrata is deep and the integrity of the underlying ground structures will not be sacrificed.**
Cumulative impact post mitigation:	**It is not anticipated that the impact will be high as the affected substrata is deep and the integrity of the underlying ground structures will not be sacrificed.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**

No Go Option	**Geographical and Physical Impacts**
No Go Option	
Potential impact and risk:	**Activities can affect the underlying geological layers on site to some extent.**
Nature of impact:	**Disturbance to subsurface geological layers**
Extent and duration of impact:	**Extent 1 (footprint) & Duration 2 (two to five years)**
Consequence of impact or risk:	**Activities can affect the underlying geological layers on site to some extent.**
Probability of occurrence:	**2 (Improbable: some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**Low**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Disturbance to surrounding subsurface geological layers**
Cumulative impact prior to mitigation:	**It is not anticipated that the impact will be high as the affected substrata is deep and the integrity of the underlying ground structures will not be sacrificed.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**None -continue as per current land use**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**None**
Residual impacts:	**None**
Cumulative impact post mitigation:	**None**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**None**

Alternative 1 : Preferred Layout	**Geographical and Physical Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Soil erosion and dust**
Nature of impact:	**Construction activities will cause a disturbance to the soil and the vegetation cover on the site. This disturbance, unless carefully managed, could spread as a result.** **Soil erosion can occur due to wind (wind erosion cause dust pollution); and due to overland storm water flow should rains fall during construction. Due to the sloping nature of the terrain, it is unlikely that a shallow perched water table will develop on site. Residual soils are also expected to have a very low permeability and due to low infiltration rates and the sloping terrain, water will tend to runoff from surface in a downslope direction.** **Soil erosion can occur due to wind (wind erosion causes dust pollution).**
Extent and duration of impact:	**Extent 1 (footprint) & Duration 5 (permanent)**
Consequence of impact or risk:	**Construction and excavation activities can result in erosion and dust.**
Probability of occurrence:	**2 (Improbable: some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**Low**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Disturbance to surface area can result in erosion and dust generation**

Cumulative impact prior to mitigation:	**Exposing soil may lead to erosion and dust generation if not mitigated.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**16 - Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Control access to roads and other areas to avoid disturbance of areas outside the development footprint.** **Undertake dust suppression as needed.** **Personnel should be restricted to the camp site and immediate construction areas only.** **Undertake storm water management measures as required, with special attention to storm water management that may be required upslope.** **Rehabilitate or stabilise eroded areas immediately to prevent increase in erosion.**
Residual impacts:	**It is not anticipated that the impact will be high if the mitigation measures are adhered to.**
Cumulative impact post mitigation:	**It is not anticipated that the impact will be high if the mitigation measures are adhered to.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**
OPERATIONAL PHASE	
Potential impact and risk:	**Soil erosion and dust**
Nature of impact:	**Operational activities will cause a disturbance to the soil and the vegetation cover on the site. This disturbance, unless carefully managed, could spread as a result.** **Soil erosion can occur due to wind (wind erosion cause dust pollution); and due to overland storm water flow should rains fall during construction. Due to the sloping nature of the terrain, it is unlikely that a shallow perched water table will develop on site. Residual soils are also expected to have a very low permeability and due to low infiltration rates and the sloping terrain, water will tend to runoff from surface in a downslope direction.** **Soil erosion can occur due to wind (wind erosion causes dust pollution).**
Extent and duration of impact:	**Extent 1 (footprint) & Duration 5 (permanent)**
Consequence of impact or risk:	**Construction and excavation activities can result in erosion and dust.**
Probability of occurrence:	**2 (Improbable: some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**Low**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Disturbance to surface area can result in erosion and dust generation**
Cumulative impact prior to mitigation:	**Exposing soil may lead to erosion and dust generation if not mitigated.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Control access to roads and other areas to avoid disturbance of areas outside the development footprint.** **Undertake dust suppression as needed.** **Personnel should be restricted to the camp site and immediate areas only.** **Undertake storm water management measures as required, with special attention to storm water management that may be required upslope.** **Rehabilitate or stabilise eroded areas immediately to prevent increase in erosion.**
Residual impacts:	**It is not anticipated that the impact will be high if the mitigation measures are adhered to.**
Cumulative impact post mitigation:	**It is not anticipated that the impact will be high if the mitigation measures are adhered to.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**

DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Soil erosion and dust**
Nature of impact:	**Construction activities will cause a disturbance to the soil and the vegetation cover on the site. This disturbance, unless carefully managed, could spread as a result.** **Soil erosion can occur due to wind (wind erosion cause dust pollution); and due to overland storm water flow should rains fall during construction. Due to the sloping nature of the terrain, it is unlikely that a shallow perched water table will develop on site. Residual soils are also expected to have a very low permeability and due to low infiltration rates and the sloping terrain, water will tend to runoff from surface in a downslope direction.** **Soil erosion can occur due to wind (wind erosion causes dust pollution).**
Extent and duration of impact:	**Extent 1 (footprint) & Duration 5 (permanent)**
Consequence of impact or risk:	**Construction and excavation activities can result in erosion and dust.**
Probability of occurrence:	**2 (Improbable: some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**Low**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Disturbance to surface area can result in erosion and dust generation**
Cumulative impact prior to mitigation:	**Exposing soil may lead to erosion and dust generation if not mitigated.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**16 - Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Control access to roads and other areas to avoid disturbance of areas outside the development footprint.** **Undertake dust suppression as needed.** **Personnel should be restricted to the camp site and immediate construction areas only.** **Undertake storm water management measures as required, with special attention to storm water management that may be required upslope.** **Rehabilitate or stabilise eroded areas immediately to prevent increase in erosion.**
Residual impacts:	**It is not anticipated that the impact will be high if the mitigation measures are adhered to.**
Cumulative impact post mitigation:	**It is not anticipated that the impact will be high if the mitigation measures are adhered to.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**

Alternative 2 : Alternative Layout	**Geographical and Physical Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Soil erosion and dust**
Nature of impact:	**Construction activities will cause a disturbance to the soil and the vegetation cover on the site. This disturbance, unless carefully managed, could spread as a result.** **Soil erosion can occur due to wind (wind erosion cause dust pollution); and due to overland storm water flow should rains fall during construction. Due to the sloping nature of the terrain, it is unlikely that a shallow perched water table will develop on site. Residual soils are also expected to have a very low permeability and due to low infiltration rates and the sloping terrain, water will tend to runoff from surface in a downslope direction.** **Soil erosion can occur due to wind (wind erosion causes dust pollution).**
Extent and duration of impact:	**Extent 1 (footprint) & Duration 5 (permanent)**
Consequence of impact or risk:	**Construction and excavation activities can result in erosion and dust.**
Probability of occurrence:	**2 (Improbable: some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**Low**

Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Disturbance to surface area can result in erosion and dust generation**
Cumulative impact prior to mitigation:	**Exposing soil may lead to erosion and dust generation if not mitigated.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**16 - Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Control access to roads and other areas to avoid disturbance of areas outside the development footprint.** **Undertake dust suppression as needed.** **Personnel should be restricted to the camp site and immediate construction areas only.** **Undertake storm water management measures as required, with special attention to storm water management that may be required upslope.** **Rehabilitate or stabilise eroded areas immediately to prevent increase in erosion.**
Residual impacts:	**It is not anticipated that the impact will be high if the mitigation measures are adhered to.**
Cumulative impact post mitigation:	**It is not anticipated that the impact will be high if the mitigation measures are adhered to.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**
OPERATIONAL PHASE	
Potential impact and risk:	**Soil erosion and dust**
Nature of impact:	**Operational activities will cause a disturbance to the soil and the vegetation cover on the site. This disturbance, unless carefully managed, could spread as a result.** **Soil erosion can occur due to wind (wind erosion cause dust pollution); and due to overland storm water flow should rains fall during construction. Due to the sloping nature of the terrain, it is unlikely that a shallow perched water table will develop on site. Residual soils are also expected to have a very low permeability and due to low infiltration rates and the sloping terrain, water will tend to runoff from surface in a downslope direction.** **Soil erosion can occur due to wind (wind erosion causes dust pollution).**
Extent and duration of impact:	**Extent 1 (footprint) & Duration 5 (permanent)**
Consequence of impact or risk:	**Construction and excavation activities can result in erosion and dust.**
Probability of occurrence:	**2 (Improbable: some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**Low**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Disturbance to surface area can result in erosion and dust generation**
Cumulative impact prior to mitigation:	**Exposing soil may lead to erosion and dust generation if not mitigated.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Control access to roads and other areas to avoid disturbance of areas outside the development footprint.** **Undertake dust suppression as needed.** **Personnel should be restricted to the camp site and immediate areas only.** **Undertake storm water management measures as required, with special attention to storm water management that may be required upslope.** **Rehabilitate or stabilise eroded areas immediately to prevent increase in erosion.**
Residual impacts:	**It is not anticipated that the impact will be high if the mitigation measures are adhered to.**
Cumulative impact post mitigation:	**It is not anticipated that the impact will be high if the mitigation measures are adhered to.**

Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Soil erosion and dust**
Nature of impact:	**Construction activities will cause a disturbance to the soil and the vegetation cover on the site. This disturbance, unless carefully managed, could spread as a result.** **Soil erosion can occur due to wind (wind erosion cause dust pollution); and due to overland storm water flow should rains fall during construction. Due to the sloping nature of the terrain, it is unlikely that a shallow perched water table will develop on site. Residual soils are also expected to have a very low permeability and due to low infiltration rates and the sloping terrain, water will tend to runoff from surface in a downslope direction.** **Soil erosion can occur due to wind (wind erosion causes dust pollution).**
Extent and duration of impact:	**Extent 1 (footprint) & Duration 5 (permanent)**
Consequence of impact or risk:	**Construction and excavation activities can result in erosion and dust.**
Probability of occurrence:	**2 (Improbable: some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**Low**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Disturbance to surface area can result in erosion and dust generation**
Cumulative impact prior to mitigation:	**Exposing soil may lead to erosion and dust generation if not mitigated.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**16 - Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Control access to roads and other areas to avoid disturbance of areas outside the development footprint.** **Undertake dust suppression as needed.** **Personnel should be restricted to the camp site and immediate construction areas only.** **Undertake storm water management measures as required, with special attention to storm water management that may be required upslope.** **Rehabilitate or stabilise eroded areas immediately to prevent increase in erosion.**
Residual impacts:	**It is not anticipated that the impact will be high if the mitigation measures are adhered to.**
Cumulative impact post mitigation:	**It is not anticipated that the impact will be high if the mitigation measures are adhered to.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**

No Go Option	**Geographical and Physical Impacts**
NO GO OPTION	
Potential impact and risk:	**Soil erosion and dust**
Nature of impact:	**Activities will cause a disturbance to the soil and the vegetation cover on the site. This disturbance, unless carefully managed, could spread as a result.** **Soil erosion can occur due to wind (wind erosion cause dust pollution); and due to overland storm water flow should rains fall during construction. Due to the sloping nature of the terrain, it is unlikely that a shallow perched water table will develop on site. Residual soils are also expected to have a very low permeability and due to low infiltration rates and the sloping terrain, water will tend to runoff from surface in a downslope direction.** **Soil erosion can occur due to wind (wind erosion causes dust pollution).**
Extent and duration of impact:	**Extent 1 (footprint) & Duration 5 (permanent)**
Consequence of impact or risk:	**Activities can result in erosion and dust.**
Probability of occurrence:	**2 (Improbable: some possibility, but low likelihood)**
Degree to which the impact may cause	**Low**

irreplaceable loss of resources:	
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Disturbance to surface area can result in erosion and dust generation**
Cumulative impact prior to mitigation:	**Exposing soil may lead to erosion and dust generation if not mitigated.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**16 - Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**None**
Residual impacts:	**None**
Cumulative impact post mitigation:	**None**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**

Alternative 1 : Preferred Layout	**Geographical and Physical Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Impact of construction activities on surface and underground water pollution**
Nature of impact:	**Diesel and oil spills affecting ground and surface water.**
Extent and duration of impact:	**Extent 3 (Within a 20 km radius of the centre of the site) & Duration 3 (5 – 15 years)**
Consequence of impact or risk:	**Possible pollution of surface and ground water.**
Probability of occurrence:	**4 (most likely)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Pollution of water resources**
Cumulative impact prior to mitigation:	**Diesel and oil spills affecting ground and surface water quality.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**64 - High**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Mitigation measures included in EMP, attached as Appendix H, shall be adhered to.**
Residual impacts:	**It is not anticipated that the impact will be high if the mitigation measures are adhered to.**
Cumulative impact post mitigation:	**Diesel and oil spills affecting ground and surface water quality.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**28 - Low**
OPERATIONAL PHASE	
Potential impact and risk:	**Impact of construction activities on surface and underground water pollution**
Nature of impact:	**Diesel and oil spills affecting ground and surface water.**
Extent and duration of impact:	**Extent 3 (Within a 20 km radius of the centre of the site) & Duration 3 (5 – 15 years)**
Consequence of impact or risk:	**Possible pollution of surface and ground water.**
Probability of occurrence:	**4 (most likely)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Pollution of water resources**
Cumulative impact prior to mitigation:	**Diesel and oil spills affecting ground and surface water quality.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**64 - High**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Mitigation measures included in EMP, attached as Appendix H, shall be adhered to.**
Residual impacts:	**It is not anticipated that the impact will be high if the mitigation measures are adhered to.**

Cumulative impact post mitigation:	**Diesel and oil spills affecting ground and surface water quality.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**28 - Low**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Impact of construction activities on surface and underground water pollution**
Nature of impact:	**Diesel and oil spills affecting ground and surface water.**
Extent and duration of impact:	**Extent 3 (Within a 20 km radius of the centre of the site) & Duration 3 (5 – 15 years)**
Consequence of impact or risk:	**Possible pollution of surface and ground water.**
Probability of occurrence:	**4 (most likely)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Pollution of water resources**
Cumulative impact prior to mitigation:	**Diesel and oil spills affecting ground and surface water quality.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**64 - High**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Mitigation measures included in EMP, attached as Appendix H, shall be adhered to.**
Residual impacts:	**It is not anticipated that the impact will be high if the mitigation measures are adhered to.**
Cumulative impact post mitigation:	**Diesel and oil spills affecting ground and surface water quality.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**28 - Low**

Alternative 2 : Alternative Layout	**Geographical and Physical Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Impact of construction activities on surface and underground water pollution**
Nature of impact:	**Diesel and oil spills affecting ground and surface water.**
Extent and duration of impact:	**Extent 3 (Within a 20 km radius of the centre of the site) & Duration 3 (5 – 15 years)**
Consequence of impact or risk:	**Possible pollution of surface and ground water.**
Probability of occurrence:	**4 (most likely)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Pollution of water resources**
Cumulative impact prior to mitigation:	**Diesel and oil spills affecting ground and surface water quality.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**64 - High**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Mitigation measures included in EMP, attached as Appendix H, shall be adhered to.**
Residual impacts:	**It is not anticipated that the impact will be high if the mitigation measures are adhered to.**
Cumulative impact post mitigation:	**Diesel and oil spills affecting ground and surface water quality.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**28 - Low**
OPERATIONAL PHASE	
Potential impact and risk:	**Impact of construction activities on surface and underground water pollution**
Nature of impact:	**Diesel and oil spills affecting ground and surface water.**
Extent and duration of impact:	**Extent 3 (Within a 20 km radius of the centre of the site) & Duration 3 (5 – 15 years)**
Consequence of impact or risk:	**Possible pollution of surface and ground water.**
Probability of occurrence:	**4 (most likely)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**

Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Pollution of water resources**
Cumulative impact prior to mitigation:	**Diesel and oil spills affecting ground and surface water quality.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**64 - High**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Mitigation measures included in EMP, attached as Appendix H, shall be adhered to.**
Residual impacts:	**It is not anticipated that the impact will be high if the mitigation measures are adhered to.**
Cumulative impact post mitigation:	**Diesel and oil spills affecting ground and surface water quality.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**28 - Low**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Impact of construction activities on surface and underground water pollution**
Nature of impact:	**Diesel and oil spills affecting ground and surface water.**
Extent and duration of impact:	**Extent 3 (Within a 20 km radius of the centre of the site) & Duration 3 (5 – 15 years)**
Consequence of impact or risk:	**Possible pollution of surface and ground water.**
Probability of occurrence:	**4 (most likely)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Pollution of water resources**
Cumulative impact prior to mitigation:	**Diesel and oil spills affecting ground and surface water quality.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**64 - High**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Mitigation measures included in EMP, attached as Appendix H, shall be adhered to.**
Residual impacts:	**It is not anticipated that the impact will be high if the mitigation measures are adhered to.**
Cumulative impact post mitigation:	**Diesel and oil spills affecting ground and surface water quality.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**28 - Low**

Alternative 1 : No Go Option	**Geographical and Physical Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Activities on surface and underground water pollution**
Nature of impact:	**Diesel and oil spills affecting ground and surface water.**
Extent and duration of impact:	**Extent 3 (Within a 20 km radius of the centre of the site) & Duration 3 (5 – 15 years)**
Consequence of impact or risk:	**Possible pollution of surface and ground water.**
Probability of occurrence:	**4 (most likely)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Pollution of water resources**
Cumulative impact prior to mitigation:	**Diesel and oil spills affecting ground and surface water quality.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**64 - High**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**None**
Residual impacts:	**None**
Cumulative impact post mitigation:	**Diesel and oil spills affecting ground and surface water quality.**
Significance rating of impact after mitigation	**64 - High**

(e.g. Low, Medium, Medium-High, High, or Very-High)	

Alternative 1 : Preferred Layout	**Geographical and Physical Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Impact on surrounding and municipal planning policies and guidelines.**
Nature of impact:	**The site is earmarked for development and included in Daring urban edge.**
Extent and duration of impact:	**Extent 1 (Footprint) & Duration 1 (0 – 1 years)**
Consequence of impact or risk:	**Possible impact on surrounding and municipal planning policies and guidelines.**
Probability of occurrence:	**2 (some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Impact on surrounding and municipal planning policies and guidelines.**
Cumulative impact prior to mitigation:	**Impact on surrounding and municipal planning policies and guidelines.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Rezoning application submitted.**
Residual impacts:	**Impact on surrounding and municipal planning policies and guidelines.**
Cumulative impact post mitigation:	**Possible impact on surrounding and municipal planning policies and guidelines.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**
OPERATIONAL PHASE	
Potential impact and risk:	**Impact on surrounding and municipal planning policies and guidelines.**
Nature of impact:	**The site is earmarked for development and included in Daring urban edge.**
Extent and duration of impact:	**Extent 1 (Footprint) & Duration 1 (0 – 1 years)**
Consequence of impact or risk:	**Possible impact on surrounding and municipal planning policies and guidelines.**
Probability of occurrence:	**2 (some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Impact on surrounding and municipal planning policies and guidelines.**
Cumulative impact prior to mitigation:	**Impact on surrounding and municipal planning policies and guidelines.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Rezoning application submitted.**
Residual impacts:	**Impact on surrounding and municipal planning policies and guidelines.**
Cumulative impact post mitigation:	**Possible impact on surrounding and municipal planning policies and guidelines.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Impact on surrounding and municipal planning policies and guidelines.**
Nature of impact:	**The site is earmarked for development and included in Daring urban edge.**
Extent and duration of impact:	**Extent 1 (Footprint) & Duration 1 (0 – 1 years)**
Consequence of impact or risk:	**Possible impact on surrounding and municipal planning policies and guidelines.**

Probability of occurrence:	**2 (some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Impact on surrounding and municipal planning policies and guidelines.**
Cumulative impact prior to mitigation:	**Impact on surrounding and municipal planning policies and guidelines.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Rezoning application submitted.**
Residual impacts:	**Impact on surrounding and municipal planning policies and guidelines.**
Cumulative impact post mitigation:	**Possible impact on surrounding and municipal planning policies and guidelines.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**

Alternative 2 : Alternative Layout	**Geographical and Physical Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Impact on surrounding and municipal planning policies and guidelines.**
Nature of impact:	**The site is earmarked for development and included in Daring urban edge.**
Extent and duration of impact:	**Extent 1 (Footprint) & Duration 1 (0 – 1 years)**
Consequence of impact or risk:	**Possible impact on surrounding and municipal planning policies and guidelines.**
Probability of occurrence:	**2 (some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Impact on surrounding and municipal planning policies and guidelines.**
Cumulative impact prior to mitigation:	**Impact on surrounding and municipal planning policies and guidelines.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Rezoning application submitted.**
Residual impacts:	**Impact on surrounding and municipal planning policies and guidelines.**
Cumulative impact post mitigation:	**Possible impact on surrounding and municipal planning policies and guidelines.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**
OPERATIONAL PHASE	
Potential impact and risk:	**Impact on surrounding and municipal planning policies and guidelines.**
Nature of impact:	**The site is earmarked for development and included in Daring urban edge.**
Extent and duration of impact:	**Extent 1 (Footprint) & Duration 1 (0 – 1 years)**
Consequence of impact or risk:	**Possible impact on surrounding and municipal planning policies and guidelines.**
Probability of occurrence:	**2 (some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Impact on surrounding and municipal planning policies and guidelines.**
Cumulative impact prior to mitigation:	**Impact on surrounding and municipal planning policies and guidelines.**
Significance rating of impact prior to mitigation	**8 - Low**

(e.g. Low, Medium, Medium-High, High, or Very-High)	
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Rezoning application submitted.**
Residual impacts:	**Impact on surrounding and municipal planning policies and guidelines.**
Cumulative impact post mitigation:	**Possible impact on surrounding and municipal planning policies and guidelines.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Impact on surrounding and municipal planning policies and guidelines.**
Nature of impact:	**The site is earmarked for development and included in Daring urban edge.**
Extent and duration of impact:	**Extent 1 (Footprint) & Duration 1 (0 – 1 years)**
Consequence of impact or risk:	**Possible impact on surrounding and municipal planning policies and guidelines.**
Probability of occurrence:	**2 (some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Impact on surrounding and municipal planning policies and guidelines.**
Cumulative impact prior to mitigation:	**Impact on surrounding and municipal planning policies and guidelines.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Rezoning application submitted.**
Residual impacts:	**Impact on surrounding and municipal planning policies and guidelines.**
Cumulative impact post mitigation:	**Possible impact on surrounding and municipal planning policies and guidelines.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**

No Go Option	**Geographical and Physical Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Impact on surrounding and municipal planning policies and guidelines.**
Nature of impact:	**The site is earmarked for development and included in Daring urban edge.**
Extent and duration of impact:	**Extent 1 (Footprint) & Duration 1 (0 – 1 years)**
Consequence of impact or risk:	**Possible impact on surrounding and municipal planning policies and guidelines.**
Probability of occurrence:	**2 (some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Impact on surrounding and municipal planning policies and guidelines.**
Cumulative impact prior to mitigation:	**Impact on surrounding and municipal planning policies and guidelines.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**None**
Residual impacts:	**None**
Cumulative impact post mitigation:	**Area included in urban area edge of Darling. Will not be developed and continue as Agricultural Land Uses**

Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**

Alternative 1 : Preferred Layout	**Biological Aspect Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Impact on the indigenous terrestrial flora and habitat present in the area. Impact on the naturally occurring fauna present in the area.**
Nature of impact:	**The whole area, except for Apolis pan is ploughed and degraded. Apolis Pan will be protected with a buffer and Private Open Space Zoning.**
Extent and duration of impact:	**Extent 2 (On site or within 100 m of the site) & Duration 1 (0 – 1 years)**
Consequence of impact or risk:	**Loss of significantly impacted upon indigenous vegetation and habitat.**
Probability of occurrence:	**4 (most likely)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Loss of significantly impacted upon indigenous vegetation and habitat.**
Cumulative impact prior to mitigation:	**Loss of significantly impacted upon indigenous vegetation and habitat.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**36 - Medium**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Work within site boundaries with no construction activities outside the boundary of the proposed development.** **During the construction phase of the project, the impact on the wetland areas should be kept to a minimum. An Environmental Management Plan should be drawn up that specifically addresses the minimization of activities within or in close proximity the wetland areas. This EMP should be implemented and monitored by an on-site Environmental Officer.** **After the construction phase, any impacted areas of the wetland should be rehabilitated. Maintenance of the greened areas adjacent to the wetland should be undertaken in such a manner so as to not impact on the wetland, i.e. use of grass cutting machines within the wetland area. The planting of invasive alien grasses and plants should be avoided in the greened areas. Follow-up work should be carried out after rehabilitation to ensure that no invasive alien plants establish themselves within the wetlands. A buffer strip of at least 30m should be maintained to protect the Apolisvlei wetland from the impacts of the development, while a buffer of 10m on either side of the channel within the area seepage should be maintained. Activities associated with the development should be kept to a minimum within this buffer area. Trampling by people in the wetland areas should be prevented by the construction of a boardwalk that allows access to the wetland without the impact of trampling.**
Residual impacts:	**Loss of significantly impacted upon indigenous vegetation and habitat.**
Cumulative impact post mitigation:	**Possible impact on indigenous vegetation and habitats.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**
OPERATIONAL PHASE	
Potential impact and risk:	**Impact on the indigenous terrestrial flora and habitat present in the area. Impact on the naturally occurring fauna present in the area.**
Nature of impact:	**The whole area, except for Apolis pan is ploughed and degraded. Apolis Pan will be protected with a buffer and Private Open Space Zoning.**
Extent and duration of impact:	**Extent 2 (On site or within 100 m of the site) & Duration 1 (0 – 1 years)**
Consequence of impact or risk:	**Loss of significantly impacted upon indigenous vegetation and habitat.**
Probability of occurrence:	**4 (most likely)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Loss of significantly impacted upon indigenous vegetation and habitat.**

Cumulative impact prior to mitigation:	**Loss of significantly impacted upon indigenous vegetation and habitat.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**36 - Medium**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**The vlei and pan area must remain as a seasonal wetland, and must not become a permanent waterbody.** **The rehabilitation of the buffer area and vlei must be undertaken by a suitably qualified restoration ecologist, with inputs from the botanist and freshwater ecologist.** **No alien invasive species may be used.** **The private and public open space must be planted with a selection of suitable, water wise and locally indigenous Renosterveld and Fynbos species approved by the botanist.** **Buffer areas (minimum of 30 m) should be maintained adjacent to Adonisvlei to reduce the impact of runoff from the developed site's activities on the wetland after the construction phase. The use of fertilizers particularly on the greened areas adjacent to the wetland should also be prevented as far as possible.** **The hydrological impacts on aquatic ecosystems, associated with proposed development result from a change of runoff characteristics due to an increased hardening of surfaces. It is recommended that the impact of storm water runoff on the wetland be mitigated as for the water quality impacts. That is through the creation of a wetland buffer area of at least 30m, and to mitigate the impact of increased hardening of surfaces, as far as possible permeable surfaces should be used for the construction of roads and pavements.**
Residual impacts:	**Loss of significantly impacted upon indigenous vegetation and habitat.**
Cumulative impact post mitigation:	**Possible impact on indigenous vegetation and habitats.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Impact on the indigenous terrestrial flora and habitat present in the area. Impact on the naturally occurring fauna present in the area.**
Nature of impact:	**The whole area, except for Apolis pan is ploughed and degraded. Apolis Pan will be protected with a buffer and Private Open Space Zoning.**
Extent and duration of impact:	**Extent 2 (On site or within 100 m of the site) & Duration 1 (0 – 1 years)**
Consequence of impact or risk:	**Loss of significantly impacted upon indigenous vegetation and habitat.**
Probability of occurrence:	**4 (most likely)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Loss of significantly impacted upon indigenous vegetation and habitat.**
Cumulative impact prior to mitigation:	**Loss of significantly impacted upon indigenous vegetation and habitat.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**36 - Medium**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Work within site boundaries with no construction activities outside the boundary of the proposed development.** **During the construction phase of the project, the impact on the wetland areas should be kept to a minimum. An Environmental Management Plan should be drawn up that specifically addresses the minimization of activities within or in close proximity the wetland areas. This EMP should be implemented and monitored by an on-site Environmental Officer.** **After the construction phase, any impacted areas of the wetland should be rehabilitated. Maintenance of the greened areas adjacent to the wetland should be undertaken in such a manner so as to not impact on the wetland, i.e. use of grass cutting machines within the wetland area. The planting of invasive alien grasses and plants should be avoided in the greened areas. Follow-up work should be carried**

	out after rehabilitation to ensure that no invasive alien plants establish themselves within the wetlands. A buffer strip of at least 30m should be maintained to protect the Apolisvlei wetland from the impacts of the development, while a buffer of 10m on either side of the channel within the area seepage should be maintained. Activities associated with the development should be kept to a minimum within this buffer area. Trampling by people in the wetland areas should be prevented by the construction of a boardwalk that allows access to the wetland without the impact of trampling.
Residual impacts:	**Loss of significantly impacted upon indigenous vegetation and habitat.**
Cumulative impact post mitigation:	**Possible impact on indigenous vegetation and habitats.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**

Alternative 2 : Alternative Layout	**Biological Aspect Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Impact on the indigenous terrestrial flora and habitat present in the area. Impact on the naturally occurring fauna present in the area.**
Nature of impact:	**The whole area, except for Apolis pan is ploughed and degraded. Apolis Pan will be protected with a buffer and Private Open Space Zoning.**
Extent and duration of impact:	**Extent 2 (On site or within 100 m of the site) & Duration 1 (0 – 1 years)**
Consequence of impact or risk:	**Loss of significantly impacted upon indigenous vegetation and habitat.**
Probability of occurrence:	**4 (most likely)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Loss of significantly impacted upon indigenous vegetation and habitat.**
Cumulative impact prior to mitigation:	**Loss of significantly impacted upon indigenous vegetation and habitat.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**36 - Medium**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Work within site boundaries with no construction activities outside the boundary of the proposed development.** **During the construction phase of the project, the impact on the wetland areas should be kept to a minimum. An Environmental Management Plan should be drawn up that specifically addresses the minimization of activities within or in close proximity the wetland areas. This EMP should be implemented and monitored by an on-site Environmental Officer.** **After the construction phase, any impacted areas of the wetland should be rehabilitated. Maintenance of the greened areas adjacent to the wetland should be undertaken in such a manner so as to not impact on the wetland, i.e. use of grass cutting machines within the wetland area. The planting of invasive alien grasses and plants should be avoided in the greened areas. Follow-up work should be carried out after rehabilitation to ensure that no invasive alien plants establish themselves within the wetlands. A buffer strip of at least 30m should be maintained to protect the Apolisvlei wetland from the impacts of the development, while a buffer of 10m on either side of the channel within the area seepage should be maintained. Activities associated with the development should be kept to a minimum within this buffer area. Trampling by people in the wetland areas should be prevented by the construction of a boardwalk that allows access to the wetland without the impact of trampling.**
Residual impacts:	**Loss of significantly impacted upon indigenous vegetation and habitat.**
Cumulative impact post mitigation:	**Possible impact on indigenous vegetation and habitats.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**
OPERATIONAL PHASE	
Potential impact and risk:	**Impact on the indigenous terrestrial flora and habitat present in the area. Impact on the naturally occurring fauna present in the area.**
Nature of impact:	**The whole area, except for Apolis pan is ploughed and degraded.**

	Apolis Pan will be protected with a buffer and Private Open Space Zoning.
Extent and duration of impact:	**Extent 2 (On site or within 100 m of the site) & Duration 1 (0 – 1 years)**
Consequence of impact or risk:	**Loss of significantly impacted upon indigenous vegetation and habitat.**
Probability of occurrence:	**4 (most likely)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Loss of significantly impacted upon indigenous vegetation and habitat.**
Cumulative impact prior to mitigation:	**Loss of significantly impacted upon indigenous vegetation and habitat.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**36 - Medium**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**The vlei and pan area must remain as a seasonal wetland, and must not become a permanent waterbody.** **The rehabilitation of the buffer area and vlei must be undertaken by a suitably qualified restoration ecologist, with inputs from the botanist and freshwater ecologist.** **No alien invasive species may be used.** **The private and public open space must be planted with a selection of suitable, water wise and locally indigenous Renosterveld and Fynbos species approved by the botanist.** **Buffer areas (minimum of 30 m) should be maintained adjacent to Adonisvlei to reduce the impact of runoff from the developed site's activities on the wetland after the construction phase. The use of fertilizers particularly on the greened areas adjacent to the wetland should also be prevented as far as possible.** **The hydrological impacts on aquatic ecosystems, associated with proposed development result from a change of runoff characteristics due to an increased hardening of surfaces. It is recommended that the impact of storm water runoff on the wetland be mitigated as for the water quality impacts. That is through the creation of a wetland buffer area of at least 30m, and to mitigate the impact of increased hardening of surfaces, as far as possible permeable surfaces should be used for the construction of roads and pavements.**
Residual impacts:	**Loss of significantly impacted upon indigenous vegetation and habitat.**
Cumulative impact post mitigation:	**Possible impact on indigenous vegetation and habitats.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Impact on the indigenous terrestrial flora and habitat present in the area. Impact on the naturally occurring fauna present in the area.**
Nature of impact:	**The whole area, except for Apolis pan is ploughed and degraded. Apolis Pan will be protected with a buffer and Private Open Space Zoning.**
Extent and duration of impact:	**Extent 2 (On site or within 100 m of the site) & Duration 1 (0 – 1 years)**
Consequence of impact or risk:	**Loss of significantly impacted upon indigenous vegetation and habitat.**
Probability of occurrence:	**4 (most likely)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Loss of significantly impacted upon indigenous vegetation and habitat.**
Cumulative impact prior to mitigation:	**Loss of significantly impacted upon indigenous vegetation and habitat.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**36 - Medium**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Work within site boundaries with no construction activities outside the boundary of the proposed development.**

	During the construction phase of the project, the impact on the wetland areas should be kept to a minimum. An Environmental Management Plan should be drawn up that specifically addresses the minimization of activities within or in close proximity the wetland areas. This EMP should be implemented and monitored by an on-site Environmental Officer. **After the construction phase, any impacted areas of the wetland should be rehabilitated. Maintenance of the greened areas adjacent to the wetland should be undertaken in such a manner so as to not impact on the wetland, i.e. use of grass cutting machines within the wetland area. The planting of invasive alien grasses and plants should be avoided in the greened areas. Follow-up work should be carried out after rehabilitation to ensure that no invasive alien plants establish themselves within the wetlands. A buffer strip of at least 30m should be maintained to protect the Apolisvlei wetland from the impacts of the development, while a buffer of 10m on either side of the channel within the area seepage should be maintained. Activities associated with the development should be kept to a minimum within this buffer area. Trampling by people in the wetland areas should be prevented by the construction of a boardwalk that allows access to the wetland without the impact of trampling.**
Residual impacts:	**Loss of significantly impacted upon indigenous vegetation and habitat.**
Cumulative impact post mitigation:	**Possible impact on indigenous vegetation and habitats.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 - Low**

Alternative 1 : No Go Option	**Biological Aspect Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Impact on the indigenous terrestrial flora and habitat present in the area. Impact on the naturally occurring fauna present in the area.**
Nature of impact:	**The whole area, except for Apolis pan is ploughed and degraded. Apolis Pan.**
Extent and duration of impact:	**Extent 2 (On site or within 100 m of the site) & Duration 1 (0 – 1 years)**
Consequence of impact or risk:	**Loss of significantly impacted upon indigenous vegetation and habitat.**
Probability of occurrence:	**4 (most likely)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Loss of significantly impacted upon indigenous vegetation and habitat.**
Cumulative impact prior to mitigation:	**Loss of significantly impacted upon indigenous vegetation and habitat.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**64 - High**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**None**
Residual impacts:	**None**
Cumulative impact post mitigation:	**Possible impact on indigenous vegetation and habitats.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**64 - High**

Alternative 1 : Preferred Layout	**Socio-Economic Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Increased jobs**
Nature of impact:	**Temporary construction jobs will be created. The locals may not have sufficient skills to utilize the employment opportunities and "others (work force and job seekers)" may be employed from outside the community.**
Extent and duration of impact:	**Extent 2 (On site or within 100 m of the site) & Duration 1 (0 – 1 years)**
Consequence of impact or risk:	**Influx of contract workers due to lack of skills.** **Influx of job seekers due to jobs created.** **Littering.**
Probability of occurrence:	**4 (most likely)**

Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Loss of significantly impacted upon job opportunities.**
Cumulative impact prior to mitigation:	**Loss of significantly impacted upon job opportunities.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low (positive)**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Local contractors, employing or seeking to employ local (historically disadvantaged individuals (HDIs) from the region who are suitably qualified, should get preference.** **The municipality, local community and local community organizations should be informed of the project and potential job opportunities by the developer.**
Residual impacts:	**Loss of significantly impacted upon job opportunities.**
Cumulative impact post mitigation:	**Loss of significantly impacted upon job opportunities.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low (positive)**
OPERATIONAL PHASE	
Potential impact and risk:	**Increased jobs**
Nature of impact:	**Operational as a result of maintenance and cleaning jobs will be created. The locals may not have sufficient skills to utilize the employment opportunities and "others (work force and job seekers)" may be employed from outside the community.**
Extent and duration of impact:	**Extent 2 (On site or within 100 m of the site) & Duration 1 (0 – 1 years)**
Consequence of impact or risk:	**Influx of contract workers due to lack of skills.** **Influx of job seekers due to jobs created.** **Littering.**
Probability of occurrence:	**4 (most likely)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Loss of significantly impacted upon job opportunities.**
Cumulative impact prior to mitigation:	**Loss of significantly impacted upon job opportunities.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low (positive)**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Local contractors, employing or seeking to employ local (historically disadvantaged individuals (HDIs) from the region who are suitably qualified, should get preference.** **The municipality, local community and local community organizations should be informed of the project and potential job opportunities by the developer.**
Residual impacts:	**Loss of significantly impacted upon job opportunities.**
Cumulative impact post mitigation:	**Loss of significantly impacted upon job opportunities.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low (positive)**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Increased jobs**
Nature of impact:	**Temporary construction jobs will be created. The locals may not have sufficient skills to utilize the employment opportunities and "others (work force and job seekers)" may be employed from outside the community.**
Extent and duration of impact:	**Extent 2 (On site or within 100 m of the site) & Duration 1 (0 – 1 years)**
Consequence of impact or risk:	**Influx of contract workers due to lack of skills.** **Influx of job seekers due to jobs created.** **Littering.**
Probability of occurrence:	**4 (most likely)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Loss of significantly impacted upon job opportunities.**

Cumulative impact prior to mitigation:	**Loss of significantly impacted upon job opportunities.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low (positive)**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Local contractors, employing or seeking to employ local (historically disadvantaged individuals (HDIs) from the region who are suitably qualified, should get preference.** **The municipality, local community and local community organizations should be informed of the project and potential job opportunities by the developer.**
Residual impacts:	**Loss of significantly impacted upon job opportunities.**
Cumulative impact post mitigation:	**Loss of significantly impacted upon job opportunities.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low (positive)**

Alternative 2 : Alternative Layout	**Socio-Economic Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Increased jobs**
Nature of impact:	**Temporary construction jobs will be created. The locals may not have sufficient skills to utilize the employment opportunities and "others (work force and job seekers)" may be employed from outside the community.**
Extent and duration of impact:	**Extent 2 (On site or within 100 m of the site) & Duration 1 (0 – 1 years)**
Consequence of impact or risk:	**Influx of contract workers due to lack of skills.** **Influx of job seekers due to jobs created.** **Littering.**
Probability of occurrence:	**4 (most likely)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Loss of significantly impacted upon job opportunities.**
Cumulative impact prior to mitigation:	**Loss of significantly impacted upon job opportunities.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low (positive)**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Local contractors, employing or seeking to employ local (historically disadvantaged individuals (HDIs) from the region who are suitably qualified, should get preference.** **The municipality, local community and local community organizations should be informed of the project and potential job opportunities by the developer.**
Residual impacts:	**Loss of significantly impacted upon job opportunities.**
Cumulative impact post mitigation:	**Loss of significantly impacted upon job opportunities.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low (positive)**
OPERATIONAL PHASE	
Potential impact and risk:	**Increased jobs**
Nature of impact:	**Operational as a result of maintenance and cleaning jobs will be created. The locals may not have sufficient skills to utilize the employment opportunities and "others (work force and job seekers)" may be employed from outside the community.**
Extent and duration of impact:	**Extent 2 (On site or within 100 m of the site) & Duration 1 (0 – 1 years)**
Consequence of impact or risk:	**Influx of contract workers due to lack of skills.** **Influx of job seekers due to jobs created.** **Littering.**
Probability of occurrence:	**4 (most likely)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Loss of significantly impacted upon job opportunities.**
Cumulative impact prior to mitigation:	**Loss of significantly impacted upon job opportunities.**

Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low (positive)**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Local contractors, employing or seeking to employ local (historically disadvantaged individuals (HDIs) from the region who are suitably qualified, should get preference.** **The municipality, local community and local community organizations should be informed of the project and potential job opportunities by the developer.**
Residual impacts:	**Loss of significantly impacted upon job opportunities.**
Cumulative impact post mitigation:	**Loss of significantly impacted upon job opportunities.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low (positive)**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Increased jobs**
Nature of impact:	**Temporary construction jobs will be created. The locals may not have sufficient skills to utilize the employment opportunities and "others (work force and job seekers)" may be employed from outside the community.**
Extent and duration of impact:	**Extent 2 (On site or within 100 m of the site) & Duration 1 (0 – 1 years)**
Consequence of impact or risk:	**Influx of contract workers due to lack of skills.** **Influx of job seekers due to jobs created.** **Littering.**
Probability of occurrence:	**4 (most likely)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Loss of significantly impacted upon job opportunities.**
Cumulative impact prior to mitigation:	**Loss of significantly impacted upon job opportunities.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low (positive)**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Local contractors, employing or seeking to employ local (historically disadvantaged individuals (HDIs) from the region who are suitably qualified, should get preference.** **The municipality, local community and local community organizations should be informed of the project and potential job opportunities by the developer.**
Residual impacts:	**Loss of significantly impacted upon job opportunities.**
Cumulative impact post mitigation:	**Loss of significantly impacted upon job opportunities.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low (positive)**

No Go Option	**Socio-Economic Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Increased jobs**
Nature of impact:	**Current agricultural activities have limited job opportunities.**
Extent and duration of impact:	**Extent 2 (On site or within 100 m of the site) & Duration 1 (0 – 1 years)**
Consequence of impact or risk:	**None**
Probability of occurrence:	**4 (most likely)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**Loss of significantly impacted upon job opportunities.**
Cumulative impact prior to mitigation:	**Loss of significantly impacted upon job opportunities.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**64 - High**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**

Proposed mitigation:	**Development will create more job opportunities than the current agricultural land use**
Residual impacts:	**Loss of significantly impacted upon job opportunities.**
Cumulative impact post mitigation:	**Loss of significantly impacted upon job opportunities.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**64 - High**

Alternative 1 : Preferred Layout	**Socio-Economic Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Traffic Impacts**
Nature of impact:	**The construction machinery will only have a traffic impact on delivery to, and collection from the site and are therefore regarded as negligible.**
Extent and duration of impact:	**Extent 2 (On site or within 100 m of the site) & Duration 2 (2 – 5 years)**
Consequence of impact or risk:	**The construction machinery will only have a traffic impact on delivery to, and collection from the site and are therefore regarded as negligible.**
Probability of occurrence:	**2 (some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**The minor increase in traffic volumes at certain times of day will add to the existing traffic volumes. As the existing traffic volumes are relatively low, this cumulative impact is not significant.**
Cumulative impact prior to mitigation:	**The minor increase in traffic volumes at certain times of day will add to the existing traffic volumes. As the existing traffic volumes are relatively low, this cumulative impact is not significant.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**16 – Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Avoid peak traffic hours (07h00 – 08h00 and 17h00 – 18h00) as far as possible**
Residual impacts:	**The minor increase in traffic volumes at certain times of day will add to the existing traffic volumes. As the existing traffic volumes are relatively low, this cumulative impact is not significant.**
Cumulative impact post mitigation:	**The minor increase in traffic volumes at certain times of day will add to the existing traffic volumes. As the existing traffic volumes are relatively low, this cumulative impact is not significant.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low**
OPERATIONAL PHASE	
Potential impact and risk:	**Traffic Impacts**
Nature of impact:	**Increased traffic due to the use of road.**
Extent and duration of impact:	**Extent 2 (On site or within 100 m of the site) & Duration 5 (Will not cease)**
Consequence of impact or risk:	**The increase in traffic volumes at certain times of day will add to the existing traffic volumes. As the existing traffic volumes are relatively low, this cumulative impact is not significant.**
Probability of occurrence:	**2 (some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**Low**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**The increase in traffic volumes at certain times of day will add to the existing traffic volumes. As the existing traffic volumes are relatively low, this cumulative impact is not significant.**
Cumulative impact prior to mitigation:	**The increase in traffic volumes at certain times of day will add to the existing traffic volumes. As the existing traffic volumes are relatively low, this cumulative impact is not significant.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**None**
Residual impacts:	**The increase in traffic volumes at certain times of day will add to the**

	existing traffic volumes. As the existing traffic volumes are relatively low, this cumulative impact is not significant.
Cumulative impact post mitigation:	**The increase in traffic volumes at certain times of day will add to the existing traffic volumes. As the existing traffic volumes are relatively low, this cumulative impact is not significant.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Traffic Impacts**
Nature of impact:	**The construction machinery will only have a traffic impact on delivery to, and collection from the site and are therefore regarded as negligible.**
Extent and duration of impact:	**Extent 2 (On site or within 100 m of the site) & Duration 2 (2 – 5 years)**
Consequence of impact or risk:	**The construction machinery will only have a traffic impact on delivery to, and collection from the site and are therefore regarded as negligible.**
Probability of occurrence:	**2 (some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**The minor increase in traffic volumes at certain times of day will add to the existing traffic volumes. As the existing traffic volumes are relatively low, this cumulative impact is not significant.**
Cumulative impact prior to mitigation:	**The minor increase in traffic volumes at certain times of day will add to the existing traffic volumes. As the existing traffic volumes are relatively low, this cumulative impact is not significant.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**16 – Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Avoid peak traffic hours (07h00 – 08h00 and 17h00 – 18h00) as far as possible**
Residual impacts:	**The minor increase in traffic volumes at certain times of day will add to the existing traffic volumes. As the existing traffic volumes are relatively low, this cumulative impact is not significant.**
Cumulative impact post mitigation:	**The minor increase in traffic volumes at certain times of day will add to the existing traffic volumes. As the existing traffic volumes are relatively low, this cumulative impact is not significant.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low**

Alternative 2 : Alternative Layout	**Socio-Economic Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Traffic Impacts**
Nature of impact:	**The construction machinery will only have a traffic impact on delivery to, and collection from the site and are therefore regarded as negligible.**
Extent and duration of impact:	**Extent 2 (On site or within 100 m of the site) & Duration 2 (2 – 5 years)**
Consequence of impact or risk:	**The construction machinery will only have a traffic impact on delivery to, and collection from the site and are therefore regarded as negligible.**
Probability of occurrence:	**2 (some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**The minor increase in traffic volumes at certain times of day will add to the existing traffic volumes. As the existing traffic volumes are relatively low, this cumulative impact is not significant.**
Cumulative impact prior to mitigation:	**The minor increase in traffic volumes at certain times of day will add to the existing traffic volumes. As the existing traffic volumes are relatively low, this cumulative impact is not significant.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**16 – Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**

Proposed mitigation:	**Avoid peak traffic hours (07h00 – 08h00 and 17h00 – 18h00) as far as possible**
Residual impacts:	**The minor increase in traffic volumes at certain times of day will add to the existing traffic volumes. As the existing traffic volumes are relatively low, this cumulative impact is not significant.**
Cumulative impact post mitigation:	**The minor increase in traffic volumes at certain times of day will add to the existing traffic volumes. As the existing traffic volumes are relatively low, this cumulative impact is not significant.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low**
OPERATIONAL PHASE	
Potential impact and risk:	**Traffic Impacts**
Nature of impact:	**Increased traffic due to the use of road.**
Extent and duration of impact:	**Extent 2 (On site or within 100 m of the site) & Duration 5 (Will not cease)**
Consequence of impact or risk:	**The increase in traffic volumes at certain times of day will add to the existing traffic volumes. As the existing traffic volumes are relatively low, this cumulative impact is not significant.**
Probability of occurrence:	**2 (some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**Low**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**The increase in traffic volumes at certain times of day will add to the existing traffic volumes. As the existing traffic volumes are relatively low, this cumulative impact is not significant.**
Cumulative impact prior to mitigation:	**The increase in traffic volumes at certain times of day will add to the existing traffic volumes. As the existing traffic volumes are relatively low, this cumulative impact is not significant.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**None**
Residual impacts:	**The increase in traffic volumes at certain times of day will add to the existing traffic volumes. As the existing traffic volumes are relatively low, this cumulative impact is not significant.**
Cumulative impact post mitigation:	**The increase in traffic volumes at certain times of day will add to the existing traffic volumes. As the existing traffic volumes are relatively low, this cumulative impact is not significant.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Traffic Impacts**
Nature of impact:	**The construction machinery will only have a traffic impact on delivery to, and collection from the site and are therefore regarded as negligible.**
Extent and duration of impact:	**Extent 2 (On site or within 100 m of the site) & Duration 2 (2 – 5 years)**
Consequence of impact or risk:	**The construction machinery will only have a traffic impact on delivery to, and collection from the site and are therefore regarded as negligible.**
Probability of occurrence:	**2 (some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**The minor increase in traffic volumes at certain times of day will add to the existing traffic volumes. As the existing traffic volumes are relatively low, this cumulative impact is not significant.**
Cumulative impact prior to mitigation:	**The minor increase in traffic volumes at certain times of day will add to the existing traffic volumes. As the existing traffic volumes are relatively low, this cumulative impact is not significant.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**16 – Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Avoid peak traffic hours (07h00 – 08h00 and 17h00 – 18h00) as far as possible**

Residual impacts:	**The minor increase in traffic volumes at certain times of day will add to the existing traffic volumes. As the existing traffic volumes are relatively low, this cumulative impact is not significant.**
Cumulative impact post mitigation:	**The minor increase in traffic volumes at certain times of day will add to the existing traffic volumes. As the existing traffic volumes are relatively low, this cumulative impact is not significant.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low**

No Go Option	**Socio-Economic Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Traffic Impacts**
Nature of impact:	**None. No development**
Extent and duration of impact:	
Consequence of impact or risk:	
Probability of occurrence:	
Degree to which the impact may cause irreplaceable loss of resources:	
Degree to which the impact can be reversed:	
Indirect impacts:	
Cumulative impact prior to mitigation:	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	
Degree to which the impact can be avoided:	
Degree to which the impact can be managed:	
Degree to which the impact can be mitigated:	
Proposed mitigation:	
Residual impacts:	
Cumulative impact post mitigation:	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	

Alternative 1 : Preferred Layout	**Cultural-Historical Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**The potential impact of the proposed development on archaeological, paleontological and heritage remains.**
Nature of impact:	**The potential impact of the proposed development on archaeological, paleontological and heritage remains**
Extent and duration of impact:	**Extent 1 (Footprint) & Duration 5 (Will not cease)**
Consequence of impact or risk:	**The proposed development, related facilities and infrastructure will have no impact on the cultural-historical aspects.**
Probability of occurrence:	**2 (some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**The proposed development, related facilities and infrastructure will have no impact on the cultural-historical aspects.**
Cumulative impact prior to mitigation:	**Destruction of cultural-historical features at the site will contribute to the loss of such features in the general area due to other non-related activities. This can at all times be mitigated to prevent/ minimise the loss of such features.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**16 – Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Should any burials, fossils or other historical material be encountered during construction, work must cease immediately and HWC must be contacted.**
Residual impacts:	**Destruction of cultural-historical features at the site will contribute to the loss of such features in the general area due to other non-related activities. This can at all times be mitigated to prevent/ minimise the loss of such features.**
Cumulative impact post mitigation:	**Destruction of cultural-historical features at the site will contribute to the loss of such features in the general area due to other non-related**

	activities. This can at all times be mitigated to prevent/ minimise the loss of such features.
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low**
OPERATIONAL PHASE	
Potential impact and risk:	**The potential impact of the proposed development on archaeological, paleontological and heritage remains.**
Nature of impact:	**The potential impact of the proposed development on archaeological, paleontological and heritage remains**
Extent and duration of impact:	**Extent 1 (Footprint) & Duration 5 (Will not cease)**
Consequence of impact or risk:	**The proposed development, related facilities and infrastructure will have no impact on the cultural-historical aspects.**
Probability of occurrence:	**2 (some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**The proposed development, related facilities and infrastructure will have no impact on the cultural-historical aspects.**
Cumulative impact prior to mitigation:	**Destruction of cultural-historical features at the site will contribute to the loss of such features in the general area due to other non-related activities. This can at all times be mitigated to prevent/ minimise the loss of such features.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Should any burials, fossils or other historical material be encountered during construction, work must cease immediately and HWC must be contacted.**
Residual impacts:	**Destruction of cultural-historical features at the site will contribute to the loss of such features in the general area due to other non-related activities. This can at all times be mitigated to prevent/ minimise the loss of such features.**
Cumulative impact post mitigation:	**Destruction of cultural-historical features at the site will contribute to the loss of such features in the general area due to other non-related activities. This can at all times be mitigated to prevent/ minimise the loss of such features.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**The potential impact of the proposed development on archaeological, paleontological and heritage remains.**
Nature of impact:	**The potential impact of the proposed development on archaeological, paleontological and heritage remains**
Extent and duration of impact:	**Extent 1 (Footprint) & Duration 5 (Will not cease)**
Consequence of impact or risk:	**The proposed development, related facilities and infrastructure will have no impact on the cultural-historical aspects.**
Probability of occurrence:	**2 (some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**The proposed development, related facilities and infrastructure will have no impact on the cultural-historical aspects.**
Cumulative impact prior to mitigation:	**Destruction of cultural-historical features at the site will contribute to the loss of such features in the general area due to other non-related activities. This can at all times be mitigated to prevent/ minimise the loss of such features.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**16 – Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Should any burials, fossils or other historical material be encountered during construction, work must cease immediately and HWC must be contacted.**
Residual impacts:	**Destruction of cultural-historical features at the site will contribute to the loss of such features in the general area due to other non-related activities. This can at all times be mitigated to prevent/ minimise the**

	loss of such features.
Cumulative impact post mitigation:	**Destruction of cultural-historical features at the site will contribute to the loss of such features in the general area due to other non-related activities. This can at all times be mitigated to prevent/ minimise the loss of such features.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low**

Alternative 2 : Alternative Layout	**Cultural-Historical Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**The potential impact of the proposed development on archaeological, paleontological and heritage remains.**
Nature of impact:	**The potential impact of the proposed development on archaeological, paleontological and heritage remains**
Extent and duration of impact:	**Extent 1 (Footprint) & Duration 5 (Will not cease)**
Consequence of impact or risk:	**The proposed development, related facilities and infrastructure will have no impact on the cultural-historical aspects.**
Probability of occurrence:	**2 (some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**The proposed development, related facilities and infrastructure will have no impact on the cultural-historical aspects.**
Cumulative impact prior to mitigation:	**Destruction of cultural-historical features at the site will contribute to the loss of such features in the general area due to other non-related activities. This can at all times be mitigated to prevent/ minimise the loss of such features.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**16 – Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Should any burials, fossils or other historical material be encountered during construction, work must cease immediately and HWC must be contacted.**
Residual impacts:	**Destruction of cultural-historical features at the site will contribute to the loss of such features in the general area due to other non-related activities. This can at all times be mitigated to prevent/ minimise the loss of such features.**
Cumulative impact post mitigation:	**Destruction of cultural-historical features at the site will contribute to the loss of such features in the general area due to other non-related activities. This can at all times be mitigated to prevent/ minimise the loss of such features.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low**
OPERATIONAL PHASE	
Potential impact and risk:	**The potential impact of the proposed development on archaeological, paleontological and heritage remains.**
Nature of impact:	**The potential impact of the proposed development on archaeological, paleontological and heritage remains**
Extent and duration of impact:	**Extent 1 (Footprint) & Duration 5 (Will not cease)**
Consequence of impact or risk:	**The proposed development, related facilities and infrastructure will have no impact on the cultural-historical aspects.**
Probability of occurrence:	**2 (some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**The proposed development, related facilities and infrastructure will have no impact on the cultural-historical aspects.**
Cumulative impact prior to mitigation:	**Destruction of cultural-historical features at the site will contribute to the loss of such features in the general area due to other non-related activities. This can at all times be mitigated to prevent/ minimise the loss of such features.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**

Proposed mitigation:	**Should any burials, fossils or other historical material be encountered during construction, work must cease immediately and HWC must be contacted.**
Residual impacts:	**Destruction of cultural-historical features at the site will contribute to the loss of such features in the general area due to other non-related activities. This can at all times be mitigated to prevent/ minimise the loss of such features.**
Cumulative impact post mitigation:	**Destruction of cultural-historical features at the site will contribute to the loss of such features in the general area due to other non-related activities. This can at all times be mitigated to prevent/ minimise the loss of such features.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**The potential impact of the proposed development on archaeological, paleontological and heritage remains.**
Nature of impact:	**The potential impact of the proposed development on archaeological, paleontological and heritage remains**
Extent and duration of impact:	**Extent 1 (Footprint) & Duration 5 (Will not cease)**
Consequence of impact or risk:	**The proposed development, related facilities and infrastructure will have no impact on the cultural-historical aspects.**
Probability of occurrence:	**2 (some possibility, but low likelihood)**
Degree to which the impact may cause irreplaceable loss of resources:	**High**
Degree to which the impact can be reversed:	**High**
Indirect impacts:	**The proposed development, related facilities and infrastructure will have no impact on the cultural-historical aspects.**
Cumulative impact prior to mitigation:	**Destruction of cultural-historical features at the site will contribute to the loss of such features in the general area due to other non-related activities. This can at all times be mitigated to prevent/ minimise the loss of such features.**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**16 – Low**
Degree to which the impact can be avoided:	**High**
Degree to which the impact can be managed:	**High**
Degree to which the impact can be mitigated:	**High**
Proposed mitigation:	**Should any burials, fossils or other historical material be encountered during construction, work must cease immediately and HWC must be contacted.**
Residual impacts:	**Destruction of cultural-historical features at the site will contribute to the loss of such features in the general area due to other non-related activities. This can at all times be mitigated to prevent/ minimise the loss of such features.**
Cumulative impact post mitigation:	**Destruction of cultural-historical features at the site will contribute to the loss of such features in the general area due to other non-related activities. This can at all times be mitigated to prevent/ minimise the loss of such features.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**8 – Low**

No Go Option	**Cultural-Historical Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**None. No development**
Nature of impact:	
Extent and duration of impact:	
Consequence of impact or risk:	
Probability of occurrence:	
Degree to which the impact may cause irreplaceable loss of resources:	
Degree to which the impact can be reversed:	
Indirect impacts:	
Cumulative impact prior to mitigation:	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	
Degree to which the impact can be avoided:	
Degree to which the impact can be managed:	
Degree to which the impact can be mitigated:	

Proposed mitigation:	
Residual impacts:	
Cumulative impact post mitigation:	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	

Alternative 1 : Preferred Layout	**Visual Impact**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Visual Impact on surrounding land uses**
Nature of impact:	**Visual intrusion of construction vehicles and activities on site locally, including lighting; disturbance to adjacent residential areas**
Extent and duration of impact:	**Local, short term**
Consequence of impact or risk:	**Negative impact on local residents of the proposed changes to the local visual and scenic resources**
Probability of occurrence:	**Definite**
Degree to which the impact may cause irreplaceable loss of resources:	**Moderate, visual and scenic resources would be negatively affected**
Degree to which the impact can be reversed:	**Low**
Indirect impacts:	**None, apart from the short- term increase in vehicle movements servicing the construction site**
Cumulative impact prior to mitigation:	**Low, none**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Low**
Degree to which the impact can be avoided:	**Low**
Degree to which the impact can be managed:	**Medium,**
Degree to which the impact can be mitigated:	**Medium**
Proposed mitigation:	**None**
Residual impacts:	**Change of local landscape character; some limited but permanent ground contamination could occur.**
Cumulative impact post mitigation:	**None**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Very Low**
OPERATIONAL PHASE	
Potential impact and risk:	**Visual Impact on surrounding land uses**
Nature of impact:	**Impact on local receptors of the change in site character from rural to a road corridor**
Extent and duration of impact:	**Local, long term**
Consequence of impact or risk:	**Negative impact on local residents of the proposed changes to the local visual and scenic resources**
Probability of occurrence:	**Highly Probable**
Degree to which the impact may cause irreplaceable loss of resources:	**Moderate in the long term, visual and scenic resources would be negatively affected**
Degree to which the impact can be reversed:	**Low, the development could be de-commissioned, and the site cleared but there could be ground contamination**
Indirect impacts:	**None**
Cumulative impact prior to mitigation:	**The development could be visually experienced as additive**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Medium**
Degree to which the impact can be avoided:	**Low**
Degree to which the impact can be managed:	**Medium**
Degree to which the impact can be mitigated:	**Medium**
Proposed mitigation:	**Provision of substantial tree and shrub planting.**
Residual impacts:	**Change of site and local landscape character; possible impacts on flora and fauna**
Cumulative impact post mitigation:	**The increase in traffic would not be reduced by mitigation measures, but the measures are critical for reasons of visual impact**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Moderate, due to street lighting for which only limited mitigation is feasible**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Visual Impact on surrounding land uses**
Nature of impact:	**Visual intrusion of construction vehicles and activities on site locally, including lighting; disturbance to adjacent residential areas**
Extent and duration of impact:	**Local, short term**
Consequence of impact or risk:	**Negative impact on local residents of the proposed changes to the**

	local visual and scenic resources
Probability of occurrence:	**Definite**
Degree to which the impact may cause irreplaceable loss of resources:	**Moderate, visual and scenic resources would be negatively affected**
Degree to which the impact can be reversed:	**Low**
Indirect impacts:	**None, apart from the short- term increase in vehicle movements servicing the construction site**
Cumulative impact prior to mitigation:	**Low, none**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Low**
Degree to which the impact can be avoided:	**Low**
Degree to which the impact can be managed:	**Medium,**
Degree to which the impact can be mitigated:	**Medium**
Proposed mitigation:	**None**
Residual impacts:	**Change of local landscape character; some limited but permanent ground contamination could occur.**
Cumulative impact post mitigation:	**None**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Very Low**

Alternative 2 : Alternative Layout	**Visual Impact**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**Visual Impact on surrounding land uses**
Nature of impact:	**Visual intrusion of construction vehicles and activities on site locally, including lighting; disturbance to adjacent residential areas**
Extent and duration of impact:	**Local, short term**
Consequence of impact or risk:	**Negative impact on local residents of the proposed changes to the local visual and scenic resources**
Probability of occurrence:	**Definite**
Degree to which the impact may cause irreplaceable loss of resources:	**Moderate, visual and scenic resources would be negatively affected**
Degree to which the impact can be reversed:	**Low**
Indirect impacts:	**None, apart from the short- term increase in vehicle movements servicing the construction site**
Cumulative impact prior to mitigation:	**Low, none**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Low**
Degree to which the impact can be avoided:	**Low**
Degree to which the impact can be managed:	**Medium,**
Degree to which the impact can be mitigated:	**Medium**
Proposed mitigation:	**None**
Residual impacts:	**Change of local landscape character; some limited but permanent ground contamination could occur.**
Cumulative impact post mitigation:	**None**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Very Low**
OPERATIONAL PHASE	
Potential impact and risk:	**Visual Impact on surrounding land uses**
Nature of impact:	**Impact on local receptors of the change in site character from rural to a road corridor**
Extent and duration of impact:	**Local, long term**
Consequence of impact or risk:	**Negative impact on local residents of the proposed changes to the local visual and scenic resources**
Probability of occurrence:	**Highly Probable**
Degree to which the impact may cause irreplaceable loss of resources:	**Moderate in the long term, visual and scenic resources would be negatively affected**
Degree to which the impact can be reversed:	**Low, the development could be de-commissioned, and the site cleared but there could be ground contamination**
Indirect impacts:	**None**
Cumulative impact prior to mitigation:	**The development could be visually experienced as additive**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Medium**
Degree to which the impact can be avoided:	**Low**
Degree to which the impact can be managed:	**Medium**

Degree to which the impact can be mitigated:	**Medium**
Proposed mitigation:	**Provision of substantial tree and shrub planting.**
Residual impacts:	**Change of site and local landscape character; possible impacts on flora and fauna**
Cumulative impact post mitigation:	**The increase in traffic would not be reduced by mitigation measures, but the measures are critical for reasons of visual impact**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Moderate, due to street lighting for which only limited mitigation is feasible**
DECOMMISSIONING AND CLOSURE PHASE	
Potential impact and risk:	**Visual Impact on surrounding land uses**
Nature of impact:	**Visual intrusion of construction vehicles and activities on site locally, including lighting; disturbance to adjacent residential areas**
Extent and duration of impact:	**Local, short term**
Consequence of impact or risk:	**Negative impact on local residents of the proposed changes to the local visual and scenic resources**
Probability of occurrence:	**Definite**
Degree to which the impact may cause irreplaceable loss of resources:	**Moderate, visual and scenic resources would be negatively affected**
Degree to which the impact can be reversed:	**Low**
Indirect impacts:	**None, apart from the short- term increase in vehicle movements servicing the construction site**
Cumulative impact prior to mitigation:	**Low, none**
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Low**
Degree to which the impact can be avoided:	**Low**
Degree to which the impact can be managed:	**Medium,**
Degree to which the impact can be mitigated:	**Medium**
Proposed mitigation:	**None**
Residual impacts:	**Change of local landscape character; some limited but permanent ground contamination could occur.**
Cumulative impact post mitigation:	**None**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Very Low**

No Go Option	**Visual Impact**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Potential impact and risk:	**None no development**
Nature of impact:	
Extent and duration of impact:	
Consequence of impact or risk:	
Probability of occurrence:	
Degree to which the impact may cause irreplaceable loss of resources:	
Degree to which the impact can be reversed:	
Indirect impacts:	
Cumulative impact prior to mitigation:	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	
Degree to which the impact can be avoided:	
Degree to which the impact can be managed:	
Degree to which the impact can be mitigated:	
Proposed mitigation:	
Residual impacts:	
Cumulative impact post mitigation:	
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	

Note: The EAP may decide to include this section as Appendix J to the BAR.

NA

(c) Provide a summary of the site selection matrix.

The property was the only alternative considered. Two layout alternatives were assessed against

the no go or no development option.

(d) Outcome of the site selection matrix.

Construction phase:

- Disturbance to subsurface geological layers (**Medium impact before mitigation and low impact with mitigation measures**);
- Soil erosion and dust - (**Low impact before mitigation and low impact with mitigation measures**);
- Impact of construction activities on surface and underground water pollution - (**High impact before mitigation and low impact with mitigation measures**);
- Impact on drainage line / groundwater resources - (**High impact before mitigation and low impact with mitigation measures**);
- Impact on surrounding and municipal planning policies and guidelines - (**Medium impact before mitigation and low impact with mitigation measures**);
- Impact on the indigenous terrestrial flora and habitat present in the area. Impact on the naturally occurring fauna present in the area - (**Low impact before mitigation and low impact with mitigation measures**);
- Increased jobs - (**No impact before mitigation and positive impact with mitigation measures**);
- Increased traffic due to the construction activities requiring various vehicles to come onto and leave the site - (**Low impact before mitigation and low impact with mitigation measures**);
- The potential impact of the proposed development on archaeological, paleontological and heritage remains - (**Low impact before mitigation and low impact with mitigation measures**);
- Noise due to construction machinery - (**Low impact before mitigation and low impact with mitigation measures**);
- Visual impact of infrastructure and services establishment - (**Low impact before mitigation and low impact with mitigation measures**).

Operational phase:

- Disturbance to subsurface geological layers - (**Medium impact before mitigation and low impact with mitigation measures**);
- Soil erosion and dust - (**Medium impact before mitigation and low impact with mitigation measures**);
- Impact of operation activities on surface and underground water pollution - (**High impact before mitigation and low impact with mitigation measures**);
- Impact on the indigenous terrestrial flora and habitat present in the area. Impact on the naturally occurring fauna present in the area - (**Low impact before mitigation and low impact with mitigation measures**);

Decommissioning phase:

- Similar to impacts associated with construction phase.

The No-Go option will result in the site remaining as is at present.

- Disturbance to subsurface geological layers (**None. Area used for agricultural purposes and ploughed and planted.**);
- Soil erosion and dust - (**Low Impact. No EMP in place. Area used for agricultural purposes and ploughed and planted. Current land use can lead to dust generation and erosion**);
- Impact on drainage line / groundwater resources - (**High impact Medium Impact. No EMP in place. Area used for agricultural purposes and ploughed and planted. Current land use can impacts on the Apolis vlei and groundwater as a result of fertilizer leaching, herbicide use and possible fuel spills**);
- Impact on surrounding and municipal planning policies and guidelines - (**Area included in urban area edge of Darling. Will not be developed and continue as Agricultural Land Uses**);
- Impact on the indigenous terrestrial flora and habitat present in the area. Impact on the naturally occurring fauna present in the area - (**Low impact Ploughed agricultural land**);
- Increased jobs - (**Impact high. Development will create more job opportunities than the current agricultural land use**);
- Increased traffic due to the construction activities requiring various vehicles to come onto and leave the site - (**None – No development**);
- The potential impact of the proposed development on archaeological, paleontological and heritage remains - (**None – no development**);
- Noise due to construction machinery - (**None – no development**);

- Visual impact of infrastructure and services establishment - (**None -no development**

3. SPECIALIST INPUTS/STUDIES, FINDINGS AND RECOMMENDATIONS

Note: Specialist inputs/studies must be attached to this report as **Appendix G** and must comply with the content requirements set out in Appendix 6 of the EIA Regulations, 2014 (as amended). Also take into account the Department's Circular EADP 0028/2014 (dated 9 December 2014) on the "*One Environmental Management System*" and the EIA Regulations, 2014, any subsequent Circulars, and guidelines available on the Department's website (**http://www.westerncape.gov.za/eadp**).

Provide a summary of the findings and impact management measures identified in any specialist report and an indication of how these findings and recommendations have been included in the BAR.

Based on the findings of the study, the following is recommended:

1. This verification concurs with the findings of the report compiled by Bluescience (2009), however, the seepage area as delineated therein was not identified. Although a wet season verification was not undertaken, it is opinion of SAS that the hydrological drivers of the seepage area have been permanently destroyed as there is no evidence that a wetland vegetation response has occurred over the last 10 years.
2. It is, however, recommended that this seepage area be field verified during the wet season since the proposed development layout plan does not make provision to retain this feature.
3. A 500m Zone of Regulation in accordance with General Notice 509 of 2016, as it relates to the National Water Act, 1998 (Act 36 of 1998) and a 32m Zone of Regulation in compliance with NEMA (which will simultaneously serve as a conservation buffer, as well as a no-go area during construction) are associated with the Apolisvlei wetland. The buffer area must be reinstated with floral species representative of the Swartland Fynbos Renosterveld vegetation type.
4. Based on the outcome of the DWS Risk Assessment, the risk significance of the proposed development and associated activities on the Apolisvlei Wetland is considered to be a 'Low' and 'Moderate' risk, assuming that the mitigation measures as presented in Table 1 are implemented. It is recommended that the DWS be consulted and this report presented to them to ensure that they agree with the opinion presented herein, and to obtain guidance as to the requirements of a Water Use Licence Application.

Botanical

The vlei area should be the subject of a follow up spring botanical survey to assess the presence or absence of a number of potential rare plant species.

A freshwater ecologist should be asked to provide additional input on the extent of the seasonal wetland and its buffer area, and on management requirements for this area.

No bulk services or roads should be routed within the vlei/pan area or its buffer area.

The No Go scenario is not likely to be positive for the site as the remaining vlei vegetation is likely to be continually degraded by agriculture and grazing.

If all the mitigation in section 7 is implemented the overall impact of the development on the vegetation could be reduced to a level of low positive (at best) or low negative (at worst), if certain mitigation is not carried out successfully.

The vlei area could become the subject of a Stewardship Program agreement with CapeNature, pending the results and recommendations of a spring botanical survey.

A in season site survey of the Apolis vlei area was conducted. The demarcation as per the original report and included in the SDP together with the buffer area is still sufficient to protect the vlei from the surrounding development provided that the mitigation and management measures included in the EMP is adhered to. The following in season species were recorded:

Zantedeschia aethiopica
Arctotheca calendula
Cotula turbinate
Cotula vulgaris
Senecio aquatica (Conservation Worthy Species known to occur and previously recorded but not recorded during this survey)
Lachenalia contaminate
Ornithogalum thyrsoides
Raphanus raphanistrum
Senecio littoreus
Sparaxis bulbifera

Wurmbea stricta

Heritage Impact Assessment

The property, as a whole has contextual aesthetic significance. More specifically, it constitutes a landscape of local contextual importance contributing to a broader scenic setting within the Groene Kloof Valley, and is strategically situated alongside the main approach to Darling. It is characterised by an open, undeveloped topography generally sloping away from the entrance to the town and, therefore, visible from parts of the Malmesbury Road as well as the Darling approach road. Parts of the property have scientific significance, containing relatively rare botanical species in the vicinity of the wetland. The property contains no structures and, therefore, has no architectural significance. It has no known social, technological or spiritual significance.

4. ENVIRONMENTAL IMPACT STATEMENT

Provide an environmental impact statement of the following:

(i) A summary of the key findings of the EIA.

Construction phase:

- Disturbance to subsurface geological layers (**Medium impact before mitigation and low impact with mitigation measures**);
- Soil erosion and dust - (**Low impact before mitigation and low impact with mitigation measures**);
- Impact of construction activities on surface and underground water pollution - (**High impact before mitigation and low impact with mitigation measures**);
- Impact on drainage line / groundwater resources - (**High impact before mitigation and low impact with mitigation measures**);
- Impact on surrounding and municipal planning policies and guidelines - (**Medium impact before mitigation and low impact with mitigation measures**);
- Impact on the indigenous terrestrial flora and habitat present in the area. Impact on the naturally occurring fauna present in the area - (**Low impact before mitigation and low impact with mitigation measures**);
- Increased jobs - (**No impact before mitigation and positive impact with mitigation measures**);
- Increased traffic due to the construction activities requiring various vehicles to come onto and leave the site - (**Low impact before mitigation and low impact with mitigation measures**);
- The potential impact of the proposed development on archaeological, paleontological and heritage remains - (**Low impact before mitigation and low impact with mitigation measures**);
- Noise due to construction machinery - (**Low impact before mitigation and low impact with mitigation measures**);
- Visual impact of infrastructure and services establishment - (**Low impact before mitigation and low impact with mitigation measures**).

Operational phase:

- Disturbance to subsurface geological layers - (**Medium impact before mitigation and low impact with mitigation measures**);
- Soil erosion and dust - (**Medium impact before mitigation and low impact with mitigation measures**);
- Impact of operation activities on surface and underground water pollution - (**High impact before mitigation and low impact with mitigation measures**);
- Impact on the indigenous terrestrial flora and habitat present in the area. Impact on the naturally occurring fauna present in the area - (**Low impact before mitigation and low impact with mitigation measures**);

Decommissioning phase:

- Similar to impacts associated with construction phase.

The No-Go option will result in the site remaining as is at present.

- Disturbance to subsurface geological layers (**None. Area used for agricultural purposes and ploughed and planted.**);
- Soil erosion and dust - (**Low Impact. No EMP in place. Area used for agricultural purposes and ploughed and planted. Current land use can lead to dust generation and erosion**);
- Impact on drainage line / groundwater resources - (**High impact Medium Impact. No EMP in place. Area used for agricultural purposes and ploughed and planted. Current land use can**

impacts on the Apolis vlei and groundwater as a result of fertilizer leaching, herbicide use and possible fuel spills);

- Impact on surrounding and municipal planning policies and guidelines - (**Area included in urban area edge of Darling. Will not be developed and continue as Agricultural Land Uses**);
- Impact on the indigenous terrestrial flora and habitat present in the area. Impact on the naturally occurring fauna present in the area - (**Low impact Ploughed agricultural land**);
- Increased jobs - (**Impact high. Development will create more job opportunities than the current agricultural land use**);
- Increased traffic due to the construction activities requiring various vehicles to come onto and leave the site - (**None – No development**);
- The potential impact of the proposed development on archaeological, paleontological and heritage remains - (**None – no development**);
- Noise due to construction machinery - (**None – no development**);

Visual impact of infrastructure and services establishment - (**None -no development**

(ii) Has a map of appropriate scale been provided, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers?	YES	~~NO~~
(iii) A summary of the positive and negative impacts that the proposed development and alternatives will cause in the environment and community.		

Refer to Section G: 2(a) above.

5. IMPACT MANAGEMENT, MITIGATION AND MONITORING MEASURES

(a) Based on the assessment, describe the impact management, mitigation and monitoring measures as well as the impact management objectives and impact management outcomes included in the EMPr. The EMPr must be attached to this report as Appendix H.

The key mitigation measures recommended should be impact avoidance. Where adverse impacts cannot reasonably be avoided, the activities should be managed through the effective implementation of the EMP with a strong emphasis on post-construction rehabilitation where required.

Refer to the Impact Assessment tables above, for list of mitigation measures as proposed for each potential impact assessed, as well as the EMP under Appendix H, in which all of the proposed mitigation measures have been incorporated.

(b) Describe any provisions for the adherence to requirements that are prescribed in a Specific Environmental Management Act relevant to the listed activity or specified activity in question.

None.

(c) Describe the ability of the applicant to implement the management, mitigation and monitoring measures.

The applicant is ultimately responsible for the implementation of the EA and EMP and the financial cost related thereto. In accordance with the requirements of the EA and EMP, the applicant must ensure that any person acting on their behalf complies with the conditions / specifications contained in this EA, EMP and any other relevant permits/licences/legislation etc. related to the activities. In addition, an Environmental Control Officer must be appointed to review, monitor and report on compliance with the relevant requirements. Thus, if the applicant intends to commence with the proposed and authorised activities, he/she must ensure that he/she is able to implement the required management, mitigation and monitoring measures throughout the lifespan of the project.

(d) Provide the details of any financial provisions for the management of negative environmental impacts, rehabilitation and closure of the proposed development.

Unknown at his stage.

(e) Describe any assumptions, uncertainties, and gaps in knowledge which relate to the impact management, mitigation and monitoring measures proposed.

EAP is only knowledgeable with regards to the potential environmental and ecosystems aspects.

Limited knowledge with regard to the potential negative impacts on municipal services capacity.

In undertaking the investigation and compiling this report, the following have been assumed:
•The information provided by the client, specialists and engineers is accurate and unbiased;
•The scope of this investigation is to assess the direct and cumulative environmental impacts associated with the development; and
•Should the proposed project be authorised, the applicant will incorporate the recommendations and mitigation measures outlined in this BAR, the EMP and the EA into the detailed design and construction contract specifications and operational management system for the proposed project.

SECTION H: RECOMMENDATIONS OF THE EAP AND SPECIALISTS

(a) In my view as the appointed EAP, the information contained in this BAR and the documentation attached hereto is sufficient to make a decision in respect of the listed activity(ies) applied for.	YES	~~NO~~

(b) If the documentation attached hereto is sufficient to make a decision, please indicate below whether, in your opinion, the listed activity(ies) should or should not be authorised:		
Listed activity(ies) should be authorised:	YES	~~NO~~
Provide reasons for your opinion		
All possible impacts on the environment have been assessed and can be mitigated and managed. The assessment did not lead to any fatal flaws, if the development is approved, provided that the facility is operated in terms of all relevant applicable legislation and the EMP management activities implemented.		
(c) Provide a description of any aspects that were conditional to the findings of the assessment by the EAP and Specialists which are to be included as conditions of authorisation.		
The vlei and pan area must remain as a seasonal wetland, and must not become a permanent waterbody. The rehabilitation of the buffer area and vlei must be undertaken by a suitably qualified restoration ecologist, with inputs from the botanist and freshwater ecologist. No alien invasive species may be used. Buffer areas (minimum of 30 m) should be maintained adjacent to Adonisvlei to reduce the impact of runoff from the developed site's activities on the wetland after the construction phase. The use of fertilizers particularly on the greened areas adjacent to the wetland should also be prevented as far as possible. The hydrological impacts on aquatic ecosystems, associated with proposed development result from a change of runoff characteristics due to an increased hardening of surfaces. It is recommended that the impact of storm water runoff on the wetland be mitigated as for the water quality impacts. That is through the creation of a wetland buffer area of at least 30m, and to mitigate the impact of increased hardening of surfaces, as far as possible permeable surfaces should be used for the construction of roads and pavements.		
(d) If you are of the opinion that the activity should be authorised, please provide any conditions, including mitigation measures that should in your view be considered for inclusion in an environmental authorisation.		
Recommended that the EA prescribe that: • Should any heritage artefacts be exposed during construction that all activities be stopped, and Heritage Western Cape contacted pre any further action being permitted. • The project implementation process should be subject to standard Environmental Management Programme prescripts and conditions under supervision of a competent and diligent ECO, during its construction and decommissioning phases.		
(e) Please indicate the recommended periods in terms of the following periods that should be specified in the environmental authorisation:		
i. the period within which commencement must occur;	Within 5 years of obtaining Environmental Authorisation	
ii. the period for which the environmental authorisation is granted and the date on which the development proposal will have been concluded, where the environmental authorisation does not include operational aspects;	Within 10 years of obtaining Environmental Authorisation	
iii. the period for which the portion of the environmental authorisation that deals with	Within 10 years of obtaining Environmental Authorisation	

	non-operational aspects is granted; and	
iv.	the period for which the portion of the environmental authorisation that deals with operational aspects is granted.	Ongoing maintenance of infrastructure and implementation of EMP until decommissioning.

SECTION I: APPENDICES

The following appendices must be attached to this report:

APPENDIX			**Confirm that Appendix is attached**
Appendix A:	**Locality map**		Y
Appendix B:	**Site development plan(s)**		Y
	A map of appropriate scale, which superimposes the proposed development and its associated structures and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffer areas;		Y
Appendix C:	**Photographs**		Y
Appendix D:	**Biodiversity overlay map**		Y
Appendix E:	**Permit(s) / license(s) from any other Organ of State, including service letters from the municipality.**		
	Appendix E1:	**Copy of comment from HWC.**	Y
Appendix F:	**Public participation information: including a copy of the register of I&APs, the comments and responses report, proof of notices, advertisements and any other public participation information as is required in Section C above.**		Y
Appendix G:	**Specialist Report(s)**		Y
Appendix H :	**EMPr**		Y
Appendix I:	**Additional information related to listed waste management activities (if applicable)**		NA
Appendix J:	**If applicable, description of the impact assessment process followed to reach the proposed preferred alternative within the site.**		NA
Appendix K:	**Any Other (if applicable).** **AppendixK1: EAP CV**		Y

SECTION J: DECLARATIONS

Original signed copies of the declarations to be provided with the Final Basic Assessment Report to be submitted to the Department of Environmental Affairs and Development Planning for a final decision.