DRAFT 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

Ashton cemetery expansion on Farm RE/71/158

REPORT TYPE CATEGORY	REPORT REFERENCE NUMBER	DATE OF REPORT
Pre-Application Basic Assessment Report (if applicable)[1]	-	-
Draft Basic Assessment Report[2]	-	July 2019
Final Basic Assessment Report[3] or, if applicable Revised Basic Assessment Report[4] (strikethrough what is not applicable)	-	

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:	-
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:	Langeberg Municipality		
Contact person:	Michelle Hucklesby		
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DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER ("EAP")

Name of the EAP organisation:	Eco Impact Legal Consulting (Pty) Ltd		
Person who compiled this Report:	Johmandie Pienaar		
EAP Reg. No.:	-		
Contact Person (if not author):	NA		
Postal address:	PO Box 45070		
Telephone:	(021) 671 1660	Postal Code:	7735
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E-mail:	admin@ecoimpact.co.za		
EAP Qualifications:	EAP for Eco Impact Legal Consulting since March 2009 Johmandie Pienaar (Giliomee) holds a Baccalaureus Technologiae Degree (Cum Laude) in Nature Conservation from the Cape Peninsula University of Technology and has also completed the following short courses at the Centre for Environmental Management: • Implementing Environmental Management Systems (ISO 14001)(2009); • Occupational Health and Safety Law for Managers (2010); • Implementing an OHS Management System based on OHSAS 18001 (2010) and; • Occupational Health and Safety Management System OHSAS 18001 Audit: A Lead Auditor Course Based on ISO 19011 and ISO 17021 (2011). Short course presented by Executive Coaching & Facilitation: • Conduct Outcome Based Assessments (May 2015).		

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.

Refer to Appendix K1: EAP CV

EXECUTIVE SUMMARY OF THE DRAFT BASIC ASSESSMENT REPORT:

Proposed Project and Site Description:

The project entails the expansion of the existing cemetery located on Erf RE/71/158 in Ashton.

The proposed expansion makes provision for:

- Approximately 10 000 grave sites.
- Parking area which includes a space for a bus to park.
- Entrance gate and diamond mesh boundary fencing – 1100m of 1.8m high.
- Internal gravel roads with a width of 3-5m.

- Appropriate landscaping including indigenous trees and other applicable indigenous vegetation for shade and screening where appropriate with cleared, unmade pathways in-between.
- Ablution facilities with a 200m long 160mm sewer pipeline and pump station; and 40m long 110mm water pipeline.
- Effluent detention pond to manage effluent overflow from the adjacent sewerage treatment works in order to prevent entrance to the site. The detention facility with an overflow to an existing stream will be constructed in the north eastern corner of the site.
- Subsoil – and cut off drains are to be constructed upstream and throughout the site to divert surface water and near surface water around the site and to eliminate the lateral groundwater movement through the site. These drains are to be of adequate depth to intercept near surface groundwater. Indigenous vegetation is also to be planted throughout the site to lower the water table which may occur from time to time. An stormwater detention pond for the management of stormwater from the cemetery site is to be constructed in the south western corner of the site.

The development will incorporate the existing access road of 15m wide and 146m long to the existing cemetery which will be paved.

Footprint:
The development footprint for the proposed development is estimated to be approximately ±6.7ha of the 70ha site as surveyed.

Site:
Noteworthy existing infrastructure adjacent to and on the site includes the 1.71ha Silo's cemetery and railway line to the south, the approximate 4.62ha waste water treatment plant to the east, and a small-scale cattle farm. A remnant portion of a natural drainage line now fed almost entirely by the sewage works and continuously overflowing cattle trough falls within the proposed layout area. This watercourse was found to fall within a Ecological Category F since its entire catchment has been diverted into stormwater canal and even the local catchment has been cut off by construction of elevated banks. Although the two water sources supply more water than would have naturally been available, resulting in the formation of artificial riparian and wetland habitat. Neither water source is sustainable however and the habitat will most likely be lost in future whether or not the development goes ahead. It is not possible to re-establish the historical flow from the catchment as the degree of catchment hardening would result in severe erosion within the watercourse and would not be sufficient to increase the PES beyond a category F. The remaining site vegetation is characterised as significantly transformed Breede Shale Renosterveld (Least Threatened)

Summary of Specialist/s Conclusions and Recommendations:

Botanical Impact Assessment, April 2019, Eco Impact:

Concluding Remarks and Further Recommendations

The small sections (less than 10%/7ha) of the overall site which falls within the vegetation areas delineated as critically endangered Muscadel Riviere (northwestern corner) and endangered Breede Alluvium Renosterveld (southern border) does not show any characteristics of these vegetation types and no plant species of conservation concern were recorded within these areas. The Muschadel Riviere area has also been isolated by existing industrial developments and the railway line, similarly the Breede Alluvium Renosterveld area has been isolated by the railway line not allowing feasible ecological connectivity between the site and any adjacent natural habitats. Most of the site is mapped as Breede Shale Renosterveld (Least Threatened). Due to the limited indigenous terrestrial vegetation diversity; low ecological connectivity; previous and ongoing impacts i.e. livestock overgrazing and developments and current significantly degraded and transformed state of the ±70ha site the overall terrestrial botanical sensitivity of the site is rated as low.

The terrestrial vegetation remaining on the proposed development site is characterised as Breede Shale Renosterveld (Least Threatened). The overall state of indigenous vegetation on these areas is

significantly degraded, transformed and with limited diversity. No species of conservation concern were recorded on the site. The overall terrestrial botanical sensitivity of the site and surrounds is therefore rated as low.

The two layout alternatives as assessed overlaps and is mainly mapped as terrestrial ESA with a very small section of layout alternative 1 mapped as terrestrial CBA along the western border, however the proposed development site is surrounded by developments which will in future expand and isolate the site even further from feasible ecological connectivity therefore if the proposed mitigation measures are implemented the significance rating of potential impacts on terrestrial features of the site and surrounds is rated as **low negative.**

There are also areas on site and surrounding the wastewater treatment works identified as Aquatic Critical Biodiversity Areas, but freshwater features of the site has been assessed in a separate freshwater impact assessment.

If strict adherence is kept to the recommendations as set out in this report, as well as the Freshwater Ecology Assessment report and an EMP, the proposed development will not have a significant impact on any listed species or sensitive environments.

No significant breeding, roosting or habitat on the site will be impacted upon. Most species will move out of the area into similar adjacent habitats.

Recommended mitigation measures:

- The storm water runoff must be accommodated in designed and constructed storm water systems which must link into the downstream systems to prevent erosion.
- Existing access roads must be used.
- The project implementation process should be fully subject to regular and up to requisite standard Environmental Management Programme prescripts and conditions, inclusive of regular competent ECO supervision.
- Clearly demarcate proposed development area before site clearance commences and remain within demarcated development footprint area throughout construction and operational phases.
- Landscaping of the site must be done with indigenous trees and vegetation under the supervision of a qualified botanical specialist/or landscaper familiar with indigenous vegetation of the areas.

Eco Impact is of the opinion, and based on the survey and desk study done, that the cemetery expansion; if designed and implemented according to the recommendations will not impact significantly on the biodiversity, or adversely affect the ecological functioning of the area.

Proposed Extension of Cemetery On RE/71/158, Ashton, Report of Geotechnical Investigation, SKCMasakhizwe Engineers 2019:

8 Conclusions

8.1 Soil excavatability and workability
Excavations will be difficult by excavator due to the hardness of the underlying rock layers and the gravelly nature of the soils closer to the surface. A 20 tonne excavator (min.) is proposed. Once excavated, the soil will be suitable for use as backfilling of the graves, provided that large boulders and cobbles be removed prior to backfilling. Also see 3.1 of the report.

8.2 Grave stability
Suitable edge protection to the alluvium layers will be required after excavation to prevent the sides collapsing during the burial ceremony. Also see 3.2 of the report.

8.3 Site topography
The maximum natural slope of the site is approximately 2º. Water ponding on the site should not be problematic, as the slope is ideal for the use as cemetery. As seen in 3.4 of the report.

8.4 Site drainage
Surface water drainage must be observed to prevent ponding of water, but we do not foresee this to be required as the slope is in the ideal range. Surface water originating upstream of the site must be diverted around the site using maintained drains (see drawing W1920-03-TP) of new cut-off drains to be constructed. These daubs must be deep enough to penetrate the weathered rock layers to prevent near surface water from flowing through the site. Internal roads must be utilised to channel stormwater to suitable discharge points. These discharge points must be protected against scouring and erosion by providing stone masonry or other suitable erosion control measures. Also refer to 3.5 of the report.

8.5 Soil permeability and basal buffer area.
Occasional water logging of the near surface alluvium layers will be greatly reduced with the implementation of the proposed-on site storm water drains as well as the perimeter drains diverting surface water around the site. Both these measures will reduce the possibility of groundwater pollution. Also see 3.6 and 3.7 of the report.

8.6 Position in respect of domestic water sources and drainage features
Potable water is supplied to the town of Ashton via Municipal pipelines. The nearest registered borehole to the proposed site is unknown but is assumed to be further away than the min distance of 150m (for permeability of 1 x 10^{-7} cm/s). The closest drainage feature to the proposed site is the non-perennial stream (Sarahs River) approximately 280m south-west of the site. The river is further than the minimum recommended safe distance of 150m (for permeability of 1 x 10^{-7} cm/s), and as this stream is not flowing throughout the year, it is not perceived as problematic. Also refer to 3.8 of the report.

9 Recommendations

The following mitigation measures must be applied in order to reduce the risk of groundwater pollution:

9.1 Adequate surface drainage features must be installed on site to prevent ponding of water. These must include adequately aligned internal roads to allow free drainage off the burial areas onto the roads, as well as free drainage along the roads to suitable discharge points on the boundary of the proposed site.

9.2 Cut-off drains must be installed upstream of the site, and on site as proposed (on the locality plan), to divert surface and near surface water around the proposed site to eliminate lateral groundwater movement through the site. These drains must be of sufficient depth to penetrate the weathered rock layers to intercept near surface water.

9.3 Indigenous vegetation must be planted to lower water table that may occur from time to time.

Freshwater Assessment: Silo's Cemetery (Remaining Extent Erf 71 of 158), Ashton, Western Cape, December 2018, EnviroSwift

Conclusion and Recommendations

Five watercourses were identified and delineated including a recently excavated artificial drainage channel (A), a formal stormwater canal system (B), a remnant portion of a natural drainage line (C), now fed almost entirely by a sewage works and continuously overflowing cattle trough, a remnant portion of natural drainage line (D) that has been cut off from its catchment, partially infilled and no longer function as a drainage line, and one artificial wetland area (E) that is, in the opinion of the specialist, entirely unnatural.

Watercourse D was found to no longer function as a watercourse and cannot in the opinion of the specialist be reinstated given the scale of the changes in the catchment and watercourse and is therefore, in the opinion of the specialist, no longer a watercourse. According to aerial imagery, the watercourse appeared during 2013 and is in the opinion of the specialist, likely the result of a burst pipe. Only watercourses A, B and C were assessed further.

Watercourses B and C were therefore evaluated by best practice methods to determine current (predevelopment) Present Ecological State (PES). Watercourse C fell within the IHIA Category F, while watercourse B was found to fall within a category E.

The degree of transformation of the two watercourses and their catchments was such that neither can practically achieve a higher category than the present state and were therefore assigned an REC equal to their current PES. Application of the best practice method for determination of an appropriate minimum buffer found that a buffer of 15m would be appropriate for watercourses A, B, and C.

The potential impacts of the two proposed layouts was then assessed on the watercourses B and C. B was found to be too far from the proposed layouts to be impacted, while C falls within both layouts. The preferred layout includes Watercourse C within the proposed parkland, while the preferred layout proposes infilling and installation of graves over Watercourse C. This watercourse has however been cut off historically from its catchment in its entirety and would not exist if not for augmentation from the WWTW and an overflowing cattle trough. The overflowing cattle trough, presently fed by a hose from a municipal water main, falls within the proposed site for both layouts and will be shut down as part of the development. The WWTW augmentation will also cease after the sewage works is upgraded. Once the two artificial water sources no longer supply the watercourse, it will cease to exists. The riparian and wetland vegetation will most likely die off rapidly, and this area will become entirely terrestrial in nature.

The potential impact of leachate from graves on the Sarahsrivier and its floodplain wetlands downslope was also assessed. Given that the proposed sites for the two layouts do not produce runoff that enters the Sarahsrivier, that floodplain wetlands are usually supplied primarily by the river and not by groundwater or interflow, given that the railway line between the river and the proposed sites forms a substantial barrier to subsurface flow and given the phased installation of graves over several years, it is unlikely that much leachate will reach the Sarahsrivier over 400m away, if at all. The impact significance for this potential impact was therefore found to be Very Low (negative) regardless of the layout.

There is therefore no material difference between the two proposed layouts in terms of freshwater constraints and both layouts were found to be of Very Low (negative) impact for every impact assessed, with or without mitigation where mitigation has been provided. The provided mitigation measures will reduce impact however within the Very Low category, and it is therefore recommended that the proposed development be approved on condition that the proposed mitigation measures be implemented.

Summary of Need and Desirability

The existing cemeteries serving the Langeberg Municipal Area are nearing capacity and there is an urgent need for additional burial space within the Langeberg region. Due to the important role that cemeteries play in a community; it is imperative that cemeteries should be located within an acceptable distance to the community it serves. The identification of land for cemetery sites has been identified as SDF proposal 33. The Langeberg Municipality SDF also identified that the Robertson area specifically has a real shortage of cemetery space and that suitable new cemetery space areas must be created urgently. The Langeberg Municipality IDP also identified that there is a shortage of cemetery space in all towns under Strategic Objective 2. Therefore, the proposed cemetery expansion is in line with the objectives and needs identified within the local SDF and IDP. Also refer to the Identification of New Cemetery Sites, Langeberg Municipality Tender 09/2016 Phase 1 Report as attached under Appendix K.

Summary of Alternatives Assessed during Basic Assessment Phase:

Location alternatives – Five location alternatives were assessed for the proposed cemetery expansion.

Location alternative 1 - RE/546; Erf 671 and Erf 672 total size 2.7ha:

Development Constraints for Location Alternative 1:
This is an existing cemetery site which has reached full capacity and cannot expand. Cemetery

to be used for reburials and multi-internments.

Location alternative 2 - Erf 341: Erf 309 and Erf 342 total size 2.16ha:

Development Constraints for Location Alternative 2:

- This is an existing cemetery site of which at least 50% of the site has already been used. Does not take specialists recommendations into consideration i.e. southern watercourse ESA buffer area not incorporated into the layout.
- The site is located in between the foothills of a mountain and residential areas of Ashton therefore future expansion opportunities are limited.

Location alternative 3 - Erf 331 and Erf 1417 total size 1.5ha:

Development Constraints for Location Alternative 3:

- This cemetery has reached full capacity and cannot expand, because it is surrounded by residential and agricultural land. Cemetery to be used for reburials and multi-internments.

Location alternative 4 - Portion 17 of Farm 158 total size 18.49ha:

Development Constraints for Location Alternative 4:

- This property has been earmarked for future low income housing project and associated supporting land uses in the local SDF and IDP therefore cemetery expansion cannot be proposed on this site.

Location alternative 5 - Remaining extent of portion 71 of Farm 158 size 71.46ha:

Development Constraints for Location Alternative 5:

- Waste water treatment works, industrial erven and cattle farming on the property.
- Drainage lines/watercourses and potential wetlands on the property**.**
- Potential indigenous vegetation on the property.

Reasons why Location alternative 5 is preferred:

- *Extensive undeveloped area available for proposed and potential future cemetery development.*
- *Existing 1.3ha cemetery on site***.**
- *Mainly flat topography ideal for cemetery development*.

Activity alternatives- The expansion of cemetery area is the only reasonable and feasible activity alternatives assessed as determined by the need and desirability as identified in the local municipal investigations, which identified that the available space in existing cemetery areas within the Langeberg municipal areas are limited and additional suitable cemetery expansion areas must be identified and established.

Layout alternatives – Two layout alternatives have been assessed thus far.

Layout Alternative 1 – 10ha development footprint option:

- 7ha grave area
- 3ha park area

Development Constraints for Layout Alternative 1:

- *Does not take planning restrictions of the waste water treatment works into consideration. I.e. the cemetery layout is located adjacent to the waste water treatment works and encompasses the northern, southern and western borders of the waste water treatment works and will prevent the waste water treatment works from being able to expand in the future.*
- *Degraded drainage line along the northern boundary within proposed park area.*

Layout Alternative 2 – 6.7ha development footprint option:

- ±10 000 graves

- parking areas
- internal and access roads
- ablution facilities
- services infrastructure
- park area

Development Constraints for Layout Alternative 2:
- *Degraded drainage line crossing the site.*

Reasons why Layout Alternative 2 is preferred:
- *It takes planning restrictions into consideration and allows for the adjacent waste water treatment works to be able to expand in the future as and if required.*

Technology alternatives– The proposed development will address, inter alia, water, energy and resource demand management and efficiency measures to ensure that all devices and fittings are energy and water efficient, including, but not limited to the following:
• All toilets will have interruptible flush mechanisms, or the cistern will be supplied with a fitted weight to interrupt the flow.
• Dual flush toilet cisterns.
• All taps will include an aerator to reduce the flow of water to 6 litres / minute.
• Shower heads if required will have restrictor or aerators to reduce water flow to 10 litres / minute.
• Energy saving light bulbs such as CFL's and LED's will be installed instead of incandescent bulbs.
• Outdoor lighting will be restricted to a minimum.
• Rainwater will be harvested from roofs and taken to the reservoir.
• Adequate thermal insulation will be provided in roofs.
• Provision for installation of future solar geysers will be made.

Operational alternatives – No operational alternatives were considered as the proposed activity is for expansion of a cemetery to be maintained by the municipality. Once operational, the only activities that will be undertaken are burials and matters relating to maintenance and upkeep of the cemetery and associated infrastructure.

The No-Development Option- The No-Development option will result in the local communities having to travel long distances to find available burial space in existing cemeteries elsewhere once the current cemeteries at Ashton have reached full capacity. Alternatively, some burials are taking place illegally (outside of formal cemeteries), which will increase once current local cemeteries reach full capacity if additional cemetery areas are not established.

Summary of Impact Assessment during Draft Basic Assessment Phase:

LAYOUT ALTERNATIVE 1

CONSTRUCTION PHASE- LAYOUT ALTERNATIVE 1

- Disturbance to subsurface geological layers (medium negative impact before mitigation and low negative impact with mitigation measures);
- Soil erosion (medium negative impact before mitigation and low negative impact with mitigation measures);
- Compaction of soil (medium negative impact before mitigation and low negative impact with mitigation measures);
- Increase in and accumulation of storm water runoff (high negative impact before mitigation and low negative impact with mitigation measures);
- Groundwater pollution (medium negative impact before mitigation and low negative impact with mitigation measures)
- Loss of drainage line (C)and associated riparian habitat as identified by the freshwater specialist (medium negative impact before mitigation and low negative impact with mitigation measures);

- Impact of proposed development aquatic NFEPAs and/or Critical Biodiversity Areas ("CBA') and Ecological Support Areas ("ESA") (high negative impact before mitigation and low negative impact with mitigation measures);
- Impact of proposed activities on terrestrial indigenous vegetation and associated fauna and avifauna habitat (high negative impact before mitigation and low negative impact with mitigation measures);
- Impact of proposed activities on terrestrial Critical Biodiversity and Ecological Support Areas (high negative impact before mitigation and low negative impact with mitigation measures);
- Introduction of alien and weed plant species (medium negative impact before mitigation and low negative impact with mitigation measures)
- Agricultural impacts (high negative impact before mitigation and low negative impact with mitigation measures)
- Increased temporary construction jobs (medium positive impact)
- Increased traffic due to the construction activities requiring various vehicles to come onto and leave the site. (medium negative impact before mitigation and low negative impact with mitigation measures)
- Impact of construction workers on local community safety and security (medium negative impact before mitigation and low negative impact with mitigation measures)
- Impact of litter or waste from the construction site on the surrounding communities (medium negative impact before mitigation and low negative impact with mitigation measures)
- Dust and emissions pollution arising from ground clearing and other construction activities (medium negative impact before mitigation and low negative impact with mitigation measures)
- The potential impact of the proposed development on archaeological, paleontological and heritage remains (high negative impact before mitigation and low negative impact with mitigation measures)
- Noise due to construction machinery (low negative impact before mitigation and low negative impact with mitigation measures)
- Visual impact of construction of proposed serviced erven (medium negative impact before mitigation and low negative impact with mitigation measures)

OPERATIONAL PHASE- LAYOUT ALTERNATIVE 1

- Increase in storm water runoff due to hardening of surfaces which may lead to erosion of surrounding areas (medium negative impact before mitigation and low negative impact with mitigation measures);
- Groundwater pollution (medium negative impact before mitigation and low negative impact with mitigation measures);
- Spread of alien invasive vegetation associated with the soil disturbance caused by construction leading to habitat degradation (medium negative impact before mitigation and low negative impact with mitigation measures);
- Increase in cemetery space for the town of Ashton and surrounds (high positive significance);
- Increased traffic due to proposed cemetery expansion (medium negative impact before mitigation and low negative impact with mitigation measures)
- Noise due to cemetery expansion (low negative impact before mitigation and low negative impact with mitigation measures)
- Additional load on existing municipal services infrastructure such as electricity, water, sewage and waste handling (high negative impact before mitigation and medium negative impact with mitigation measures)
- Planning considerations in terms of potential future expansion of the municipal WWTW (high negative impact before and after mitigation measures)
- Visual impact of proposed cemetery development (medium negative impact before mitigation and low negative impact with mitigation measures)

DECOMMISSIONING AND CLOSURE PHASE- LAYOUT ALTERNATIVE 1

- The decommissioning of the developments is not anticipated in the near future. Impacts during this phase will however be similar to that of the construction phase. Mitigation and management measures will be related to the technology of the day and needs to be discussed at such time as decommissioning will occur. All structures must be removed and the area rehabilitated to the state as before construction had commenced (dependent upon the end land use agreement). Waste, where possible must be recycled. All concrete introduced must be removed off site to a licensed waste facility. Decommissioning of a cemetery with have high negative significance impact on cultural and historical aspects therefore is highly unlikely.

LAYOUT ALTERNATIVE 2

CONSTRUCTION PHASE- LAYOUT ALTERNATIVE 2

- Disturbance to subsurface geological layers (medium negative impact before mitigation and low negative impact with mitigation measures);
- Soil erosion (medium negative impact before mitigation and low negative impact with mitigation measures);
- Compaction of soil (medium negative impact before mitigation and low negative impact with mitigation measures);
- Increase in and accumulation of storm water runoff (high negative impact before mitigation and low negative impact with mitigation measures);
- Groundwater pollution (medium negative impact before mitigation and low negative impact with mitigation measures)
- Loss of drainage line (C)and associated riparian habitat as identified by the freshwater specialist (medium negative impact before mitigation and low negative impact with mitigation measures);
- Impact of proposed development aquatic NFEPAs and/or Critical Biodiversity Areas ("CBA') and Ecological Support Areas ("ESA") (high negative impact before mitigation and low negative impact with mitigation measures);
- Impact of proposed activities on terrestrial indigenous vegetation and associated fauna and avifauna habitat (high negative impact before mitigation and low negative impact with mitigation measures);
- Impact of proposed activities on terrestrial Critical Biodiversity and Ecological Support Areas (high negative impact before mitigation and low negative impact with mitigation measures);
- Introduction of alien and weed plant species (medium negative impact before mitigation and low negative impact with mitigation measures)
- Agricultural impacts (high negative impact before mitigation and low negative impact with mitigation measures)
- Increased temporary construction jobs (medium positive impact)
- Increased traffic due to the construction activities requiring various vehicles to come onto and leave the site. (medium negative impact before mitigation and low negative impact with mitigation measures)
- Impact of construction workers on local community safety and security (medium negative impact before mitigation and low negative impact with mitigation measures)
- Impact of litter or waste from the construction site on the surrounding communities (medium negative impact before mitigation and low negative impact with mitigation measures)
- Dust and emissions pollution arising from ground clearing and other construction activities (medium negative impact before mitigation and low negative impact with mitigation measures)

- The potential impact of the proposed development on archaeological, paleontological and heritage remains (high negative impact before mitigation and low negative impact with mitigation measures)
- Noise due to construction machinery (low negative impact before mitigation and low negative impact with mitigation measures)
- Visual impact of construction of proposed serviced erven (medium negative impact before mitigation and low negative impact with mitigation measures)

OPERATIONAL PHASE- LAYOUT ALTERNATIVE 2

- Increase in storm water runoff due to hardening of surfaces which may lead to erosion of surrounding areas (medium negative impact before mitigation and low negative impact with mitigation measures);
- Groundwater pollution (medium negative impact before mitigation and low negative impact with mitigation measures);
- Spread of alien invasive vegetation associated with the soil disturbance caused by construction leading to habitat degradation (medium negative impact before mitigation and low negative impact with mitigation measures);
- Increase in cemetery space for the town of Ashton and surrounds (high positive significance);
- Increased traffic due to proposed cemetery expansion (medium negative impact before mitigation and low negative impact with mitigation measures)
- Noise due to cemetery expansion (low negative impact before mitigation and low negative impact with mitigation measures)
- Additional load on existing municipal services infrastructure such as electricity, water, sewage and waste handling (high negative impact before mitigation and medium negative impact with mitigation measures)
- Planning considerations in terms of potential future expansion of the municipal WWTW (low negative impact before and after mitigation measures)
- Visual impact of proposed cemetery development (medium negative impact before mitigation and low negative impact with mitigation measures)

DECOMMISSIONING AND CLOSURE PHASE- LAYOUT ALTERNATIVE 2

- The decommissioning of the developments is not anticipated in the near future. Impacts during this phase will however be similar to that of the construction phase. Mitigation and management measures will be related to the technology of the day and needs to be discussed at such time as decommissioning will occur. All structures must be removed and the area rehabilitated to the state as before construction had commenced (dependent upon the end land use agreement). Waste, where possible must be recycled. All concrete introduced must be removed off site to a licensed waste facility. Decommissioning of a cemetery with have high negative significance impact on cultural and historical aspects therefore is highly unlikely.

NO-GO/NO-DEVELOPMENT ALTERNATIVE

- No provision of additional cemetery space for the local community of Ashton and surrounds (high negative significance). The No-Development option will result in the local communities having to travel long distances to find available burial space in existing cemeteries elsewhere once the current cemeteries at Ashton have reached full capacity. Alternatively, some burials are taking place illegally (outside of formal cemeteries), which will increase once current local cemeteries reach full capacity if additional cemetery areas are not established. Leading to a high negative significance impact.

SECTION A: PROJECT INFORMATION

1. ACTIVITY LOCATION

Location of all proposed sites:	The proposed site is situated adjacent to the waste water treatment works and existing cemetery, west of the R60 road and Zolani residential area near Ashton, and south of Abattoir street.
Farm / Erf name(s) and number(s) (including Portions thereof) for each proposed site:	Farm RE/71/158
Property size(s) in m^2 for each proposed site:	71.46ha
Development footprint size(s) in m^2:	10ha
Surveyor General (SG) 21-digit code for each proposed site:	C05000000000015800071

2. PROJECT DESCRIPTION

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

~~YES~~	~~NO~~

Expansion of an existing cemetery on adjacent undeveloped land.

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

Proposed Project and Site Description:

Proposed Project and Site Description:

The project entails the expansion of the existing cemetery located on Erf RE/71/158 in Ashton.

The proposed expansion makes provision for:

- Approximately 10 000 grave sites.
- Parking area which includes a space for a bus to park.
- Entrance gate and diamond mesh boundary fencing – 1100m of 1.8m high.
- Internal gravel roads with a width of 3-5m.
- Appropriate landscaping including indigenous trees and other applicable indigenous vegetation for shade and screening where appropriate with cleared, unmade pathways in-between.
- Ablution facilities with a 200m long 160mm sewer pipeline and pump station; and 40m long 110mm water pipeline.
- Effluent detention pond to manage effluent overflow from the adjacent sewerage treatment works in order to prevent entrance to the site. The detention facility with an overflow to an existing stream will be constructed in the north eastern corner of the site.
- Subsoil – and cut off drains are to be constructed upstream and throughout the site to divert surface water and near surface water around the site and to eliminate the lateral groundwater movement through the site. These drains are to be of adequate depth to intercept near surface groundwater. Indigenous vegetation is also to be planted throughout the site to lower the water table which may occur from time to time. An stormwater detention pond for the management of stormwater from the cemetery site is to be constructed in the south western corner of the site.

The development will incorporate the existing access road of 15m wide and 146m long to the existing cemetery which will be paved.

Footprint:
The development footprint for the proposed development is estimated to be approximately ±6.7ha of the 70ha site as surveyed.

Site:

Noteworthy existing infrastructure adjacent to and on the site includes the 1.71ha Silo's cemetery and railway line to the south, the approximate 4.62ha waste water treatment plant to the east, and a small-scale cattle farm. A remnant portion of a natural drainage line now fed almost entirely by the sewage works and continuously overflowing cattle trough falls within the proposed layout area. This watercourse was found to fall within a Ecological Category F since its entire catchment has been diverted into stormwater canal and even the local catchment has been cut off by construction of elevated banks. Although the two water sources supply more water than would have naturally been available, resulting in the formation of artificial riparian and wetland habitat. Neither water source is sustainable however and the habitat will most likely be lost in future whether or not the development goes ahead. It is not possible to re-establish the historical flow from the catchment as the degree of catchment hardening would result in severe erosion within the watercourse and would not be sufficient to increase the PES beyond a category F. The remaining site vegetation is characterised as significantly transformed Breede Shale Renosterveld (Least Threatened)

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 10 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):

Listed Activity No(s):	Describe the relevant Basic Assessment Activity(ies) in writing as per Listing Notice 1 (GN No. R. 983)	Describe the portion of the development that relates to the applicable listed activity as per the project description.	Identify if the activity is development / development and operational / decommissioning / expansion / expansion and operational.
12	The development of- (x) buildings exceeding 100 square metres in size; (xii) infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs- (c) if no development setback exists, within 32 metres of a watercourse,	The proposed cemetery expansion of ±6.7ha falls within 32m of a watercourse.	Expansion

	measured from the edge of a watercourse;		
19	The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse	Construction as associated with the proposed ±6.7 ha cemetery expansion falls within a watercourse.	Expansion
27	The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, expect where such clearance of indigenous vegetation is required for – (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan	Development of ±6.7ha cemetery expansion on an area containing indigenous vegetation.	Expansion
28	Residential, mixed, retail, commercial, industrial or institutional development where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development: (ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare	Development of ±6.7ha cemetery expansion on an area being used for cattle grazing.	Expansion
44	The expansion of cemeteries by 2500m² or more.	Development of ±6.7ha cemetery expansion.	Expansion
48	The expansion of – (i) infrastructure or structures where the physical footprint is expanded by 100 square meter or more in size where such expansion occurs – (a) within a watercourse	Development of ±6.7ha cemetery expansion with associated infrastructure occurring on areas containing watercourses.	Expansion
Listed Activity No(s):	Describe the relevant Basic Assessment Activity(ies) in writing as per Listing Notice 3 (GN No. R. 985)	Describe the portion of the development that relates to the applicable listed activity as per the project description.	Identify if the activity is development / development and operational / decommissioning / expansion / expansion and operational.
4	The development of a road wider than 4 metres with a reserve less than 13.5 metres. i. Western Cape ii. Ares outside urban areas;	Development of internal roads of 3-5m wide associated with the proposed cemetery expansion within an area containing indigenous vegetation.	Expansion

	(aa) Areas containing indigenous vegetation;		
15	The transformation of land bigger than 1000 square metres in size, to residential, retail, commercial, industrial or institutional use, where, such land was zoned open space, conservation or hand an equivalent zoning, on or after 02 August 2010 <u>f. Western Cape</u> i. Outside urban areas	Development of ±6.7ha cemetery expansion outside and urban area on land zoned as Public Open Space 2.	Expansion
18	The widening of a road by more than 4 metres or the lengthening of a road by more than 1 kilometre i. Western Cape i. Areas zoned for use of public open space or equivalent zoning ii. All areas outside urban areas (aa) Areas containing indigenous vegetation	Development of internal roads associated with the proposed cemetery expansion to be connected with existing cemetery internal roads within an area containing indigenous vegetation	Expansion

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

Category A Listed Activity No(s):	Describe the relevant <u>Category A</u> 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~~
Ablution facilities		
Infrastructure (*e.g.,* roads, power and water supply/ storage) Provide brief description below:	YES	~~NO~~
Access and internal roads; power, water and sewage system supply and stormwater infrastructure.		
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	71.46	ha
(b) Size of the facility: Indicate the size of the facility where the development proposal is to be undertaken	NA	m^2
(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)	6.7ha	
(d) Size of the activity: Indicate the physical size (footprint) of the development proposal	6.7ha	
(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:

There is an existing gravel access road to be paved as part of the development.

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).

The site of ±70ha on RE/71/158 as surveyed is situated next to the existing cemetery on the eastern outskirts of Ashton. Significant land uses on the site and immediate surrounds are the existing cemetery, waste water treatment works, industrial erven, railway line along the southwestern border and cattle farming.

Approximately 90% of the study site vegetation used to be characterised as Breede Shale Renosterveld (Least Threatened) and less than 10% as Muscadel Riviere (Critically Endangered) and Breede Alluvium Renosterveld (Endangered) as according to Mucina and Rutherford 2006; updated 2012. The natural vegetation remaining on the site has the typical plant communities recorded in Breede Shale Renosterveld which is in a poor ecological state as a result of livestock over grazing and previous and ongoing developments. The small sections (less than 10%/7ha) of the site which falls within the vegetation areas delineated as critically endangered Muscadel Riviere (northwestern corner) and endangered Breede Alluvium Renosterveld (southern border) does not show any characteristics of these vegetation types and no plant species of conservation concern were recorded within these areas. The Muschadel Riviere area has also been isolated by existing industrial developments and the railway line, similarly the Breede Alluvium Renosterveld area has been isolated by the railway line not allowing feasible ecological connectivity between the site and

any adjacent natural habitats. The proposed development site as according to layout alternative 2 falls within the Breede Shale Renosterveld area, but its indigenous vegetation is significantly degraded with a very low indigenous species diversity remaining on site.

Five watercourses were identified and delineated including a recently excavated artificial drainage channel (A), a formal stormwater canal system (B), a remnant portion of a natural drainage line (C), now fed almost entirely by a sewage works and continuously overflowing cattle trough, a remnant portion of natural drainage line (D) that has been cut off from its catchment, partially infilled and no longer function as a drainage line, and one artificial wetland area (E) that is, in the opinion of the specialist, entirely unnatural. Watercourse D was found to no longer function as a watercourse and cannot in the opinion of the specialist be reinstated given the scale of the changes in the catchment and watercourse and is therefore, in the opinion of the specialist, no longer a watercourse. According to aerial imagery, the watercourse appeared during 2013 and is in the opinion of the specialist, likely the result of a burst pipe. Drainage line C, as delineated by the freshwater specialist, crosses both of the proposed development layouts.

The slope of the ground is predominantly to the south, with a near constant slope of approximately 1.7°. The soils on the proposed site are mostly medium dense rounded sand with some cobbles and boulders with minimal pedological development close to the surface, with very soft to soft weathered rock layer (phylite shale) underneath.

Also refer to specialists' assessments under Appendix G for further descriptions of the proposed development site

	Latitude (S): (deg.; min.; sec)			**Longitude (E):** (deg.; min.; sec.)		
Coordinates of all the proposed activities on the property or properties (sites): **Corner points of Layout Alternative 2**	33 °	50 '	17.05"	20 °	04'	42.39"
	33°	50 '	23.61"	20 °	04'	54.70"
	33°	50 '	29.07"	20 °	04'	44.93"
	33°	50 '	24.20"	20 °	04'	35.46"

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).

According to the freshwater specialist the watercourse (C) that crosses the site is extremely transformed. Drainage line (C) has been cut off from the majority of its catchment by construction of the R60 and of the stormwater system in the residential area to the northwest that enters drainage line (B) above, along with raised banks that prevent any input from the historical catchment. The drainage line is now supplied with water entirely from sewage works overflow and (further downstream) from a drinking trough for cattle that appears to overflow permanently. A substantial riparian zone is present and wetland vegetation and soils have also formed. Both wetland and riparian habitat are inconsistent with the typical nature of ephemeral drainage lines of this scale in this area and both habitats are confined to portions of the drainage line that receive large, regular artificial hydrological augmentation. Historical aerial photographs clearly indicate a lack of wetland or riparian vegetation within this drainage line. It is therefore the opinion of the specialist that the wetland and riparian habitat and conditions are entirely unnatural and would cease to exist should the WWTW cease and drinking trough cease to overflow, which in both cases must be implemented. I.e. WWTW effluent overflow must be stopped by municipality and necessary measures must be put in place to treat effluent water effectively before it is discharged into the environment, and drinking trough must be fixed to prevent further water wastage.

	Latitude (S): (deg.; min.; sec)			**Longitude (E):** (deg.; min.; sec)		
Coordinates of the boundary /perimeter of all proposed aquatic or ocean-based activities (sites) (if applicable): Corner points of Layout Alternative 2.	**33°**	**50'**	**23.68"**	**20°**	**04'**	**36.27"**
	33°	**50'**	**16.79"**	**20°**	**04'**	**42.47"**
	33°	**50'**	**23.23"**	**20°**	**04'**	**54.46"**
	33°	**50'**	**24.96"**	**20°**	**04'**	**52.60"**
	33°	**50'**	**28.28"**	**20°**	**04'**	**45.27"**

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:	**Latitude (S):** (deg.; min.; sec)			**Longitude (E):** (deg.; min.; sec)		
• 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.

RE/71/158 of ±70ha is located east of the town of Ashton in-between the railway line, the R60 road and Abattoir street. In terms of location in the landscape Ashton is located within the Southern Folded mountain range which is characterised by several open valley areas in-between the mountains. The valley within which Ashton falls is known as the Greater Breederiver Valley area.

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~~

(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~~	~~Dolerite~~	Other (describe)
Provide a description.						
Regionally the area is marked by soils of Jurassic age which are underlain by reddish conglomerate; thin lenses of mudstone and sandstone, Uitenhage Group, of the Enon Formation. Also refer to the geotechnical report under Appendix G.						

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.

Five watercourses were identified on the site and surrounds and delineated including a recently excavated artificial drainage channel (A), a formal stormwater canal system (B), a remnant portion of a natural drainage line (C), now fed almost entirely by a sewage works and continuously overflowing cattle trough, a remnant portion of natural drainage line (D) that has been cut off from its catchment, partially infilled and no longer function as a drainage line, and one artificial wetland area (E) that is, in the opinion of the specialist, entirely unnatural.

Watercourse D was found to no longer function as a watercourse and cannot in the opinion of the specialist be reinstated given the scale of the changes in the catchment and watercourse and is therefore, in the opinion of the specialist, no longer a watercourse. Watercourse E was also found to be unnatural given its conspicuous absence from aerial photographs from before 2012.

Only watercourse C falls within the proposed layouts and none of the other watercourses identified are likely to be impacted in any way by the proposed development. Watercourse C was found to fall within a Category F since its entire catchment has been diverted into stormwater canal B and even the local catchment has been cut off by construction of elevated banks. A buffer of 15m was determined by best practice methods to be appropriate for this watercourse in its present state.

The only water supply to watercourse C comes from WWTW overflow and a drinking trough that overflows continually. Although the two water sources supply more water than would have naturally been available, resulting in the formation of artificial riparian and wetland habitat. Neither water source is sustainable however and the habitat will most likely be lost whether or not the development goes ahead. It is not possible to re-establish the historical flow from the catchment as the degree of catchment hardening would result in severe erosion within the watercourse and would not be sufficient to increase the PES beyond a category F. The REC was therefore confined to Category F.

Also refer to Appendix G3: Freshwater Impact Assessment for further details of freshwater resources.

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	As reflected in the Western Cape Biodiversity Spatial Plan (WCBSP 2017), approximately 0.8ha of proposed development layout alternative 2 is mapped as Aquatic CBAs in the eastern corner next to the waste water treatment works. Category 1: CBA: Aquatic Category 2: CBA: Wetland Definition: Areas in a natural condition that are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure. 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. Most of the remainder of the site of ±6ha is mapped as Terrestrial Ecological Support Area. Feature: Water Recharge Category 1: ESA: Terrestrial Definition: Areas that are not essential for meeting biodiversity targets, but that play an important role in supporting the functioning of PAs or CBAs, and are often vital for delivering ecosystem services.			

	Objective: Maintain in a functional, near-natural state. Some habitat loss is acceptable, provided the underlying biodiversity objectives and ecological functioning are not compromised.
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)	See above

(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 (m²)**		**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%	m²	
Near Natural (includes areas with low to moderate level of alien invasive plants)	0%	m²	
Degraded (includes areas heavily invaded by alien plants)	90%	0m²	Although the site is not significantly invaded by alien tree species the site is dominated by creeping grass species associated with overgrazed land, other impacts such as surrounding cemetery, industrial erven, railway line, informal roads and footpaths; and the waste water treatment works have all lead to significant degradation and transformation of the site.
Transformed (includes cultivation, dams, urban, plantation, roads, *etc*.)	10%	0.7ha	

(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~~	NA
	~~Endangered~~	
	~~Vulnerable~~	NA
	Least Threatened	The terrestrial vegetation remaining on the proposed development site Layout Alternative 2 is characterised as Breede Shale Renosterveld (Least Threatened). The overall state of indigenous vegetation on these areas is significantly degraded, transformed and with limited diversity. No species of conservation concern were recorded on the site. The overall terrestrial botanical sensitivity of the site and surrounds is therefore rated as low.

Aquatic Ecosystems						
Wetland (including rivers, depressions, channelled and unchannelled 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 terrestrial vegetation remaining on the proposed development site Layout Alternative 2 is characterised as Breede Shale Renosterveld (Least Threatened). The overall state of indigenous vegetation on these areas is significantly degraded, transformed and with limited diversity. No species of conservation concern were recorded on the site. The overall terrestrial botanical sensitivity of the site and surrounds is therefore rated as low.

Only watercourse C falls within the proposed layouts and none of the other watercourses identified are likely to be impacted in any way by the proposed development. Watercourse C was found to fall within a Category F since its entire catchment has been diverted into stormwater canal B and even the local catchment has been cut off by construction of elevated banks. A buffer of 15m was determined by best practice methods to be appropriate for this watercourse in its present state.

The only water supply to watercourse C comes from WWTW overflow and a drinking trough that overflows continually. Although the two water sources supply more water than would have naturally been available, resulting in the formation of artificial riparian and wetland habitat. Neither water source is sustainable however and the habitat will most likely be lost whether or not the development goes ahead. It is not possible to re-establish the historical flow from the catchment as the degree of catchment hardening would result in severe erosion within the watercourse and would not be sufficient to increase the PES beyond a category F. The REC was therefore confined to Category F.

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):	Transformed undeveloped vacant land continuously used for livestock grazing.			

(a) Provide a description.

Although the site is not significantly invaded by alien tree species the site is dominated by creeping grass species associated with overgrazed land, other impacts such as surrounding cemetery, industrial erven, railway line, informal roads and footpaths; and the waste water treatment works have all lead to significant degradation and transformation of the site.

A natural drainage line (C) that falls within the propose development site has been cut off from the majority of its catchment by construction of the R60 and of the stormwater system in the residential area to the northwest that enters B above, along with raised banks that prevent any input from the historical catchment. The drainage line is now supplied with water entirely from sewage works overflow and (further downstream) from a drinking trough for cattle that appears to overflow permanently. A substantial riparian zone is present and wetland vegetation and soils have also formed. Both wetland and riparian habitat are inconsistent with the typical nature of

ephemeral drainage lines of this scale in this area and both habitats are confined to portions of the drainage line that receive large, regular artificial hydrological augmentation. Historical aerial photographs clearly indicate a lack of wetland or riparian vegetation within this drainage line. It is therefore the opinion of the specialist that the wetland and riparian habitat and conditions are entirely unnatural and would cease to exist should the WWTW cease and drinking trough cease to overflow.

Also refer to specialists' assessments under Appendix G for further descriptions of the proposed development site and surrounds.

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 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):	NA			

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

The site is immediately bordered by the municipal waste water treatment works to the east, existing cemetery and railway line to the southwest and undeveloped cattle grazing areas along the rest of the borders. Within a 500m radius of the proposed development site lies the R60 road and Zolani residential area to the east, agricultural lands to the south and west and industrial erven to the northwest.

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.*).

See attached under Appendix K a summary of Langeberg Municipality's current socio-economic status as derived from the latest municipal IDP.

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 000m² 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 000m² 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 the following record of decision was received – *You are hereby notified that, since there is no reason to believe that the proposed expansion of Silo's cemetery, will impact on heritage resources, no further actions under Section 38 of the National Heritage Resources Act (Act 25 of 1999) is required.* *However should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the execution of the activities above, all works must be stopped immediately and HWC must be notified without delay.*		
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, POLICIES, PLANS, GUIDELINES, SPATIAL TOOLS, MUNICIPAL DEVELOPMENT PLANNING FRAMEWORKS, AND INSTRUMENTS	**ADMINISTERING AUTHORITY and how it is relevant to this application**	**TYPE Permit/license/authorisation/comment / relevant consideration** (*e.g.* rezoning or consent use, building plan approval, Water Use License and/or General Authorisation, License in terms of the SAHRA and CARA, coastal discharge permit, *etc.*)	**DATE** (if already obtained)**:**
Western Cape Land Use Planning Act, 2014 ("LUPA")	Langeberg Municipality	Rezoning	NA
National Water Act, 1998 (Act No. 36 of 1998) [NWA] and relevant regulations	Breede Gouritz Catchment Management Agency	Water Use Application	Application to be submitted
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	Application to be submitted
National Heritage Resources Act 25 of 1999 [NHRA]	Heritage Western Cape South African Heritage Resource Agency	NID Submission of a Heritage Impact Assessment	Final Comment Received – No HIA to be conducted
National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) [NEMWA] and relevant regulations	Western Cape Department of Environmental Affairs and Development Planning	NA	NA
National Environmental Management: Biodiversity Act 10 of 2004 [NEMBA]	Western Cape Department of Environmental Affairs and Development Planning and Cape Nature	Comments to be obtained concerning expected biodiversity impacts	Comments still to be obtained
National Environmental Management: Air Quality Act, 39 Of 2004 [NEMAQA] and Relevant Regulations	Western Cape Department of Environmental Affairs and Development Planning	NA	NA

Conservation of Agricultural Resources Act, 43 Of 1983 [CARA]	National Department of Agriculture, forestry and Fisheries Western Cape Department of Agriculture	NA	NA
National Health Act, 61 of 2003 [NHA]	Department of Health	NA	NA
Constitution of the Republic of South Africa, 1996		General application to individual rights of all on and adjacent to the sites.	Public Participation Process to be conducted
Fencing Act, 31 of 1963		NA	NA
National Building Regulations and Building Standards Act 103 of 1977 [NBRBSA] and relevant regulations		NA	NA
National Veld and Forest Fire Act 101 of 1998 [NVFFA]		NA	NA
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	Comments to be obtained concerning expected agricultural impacts	Comments still to be obtained
Langeberg Municipality Spatial Development Framework	Langeberg Municipality	Proposed development already included in planned developments in local SDF	NA
Langeberg Service Delivery Implementation Plan	Langeberg Municipality	Proposed development already included in planned developments in local SDF	NA
Langeberg Municipality Integrated Development Plan 2018/19	Langeberg Municipality	Proposed development already included in planned developments in local SDF	NA

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.

LEGISLATION, POLICIES, PLANS, GUIDELINES, SPATIAL TOOLS, MUNICIPAL DEVELOPMENT PLANNING FRAMEWORKS, AND INSTRUMENTS	Describe how the proposed development complies with and responds to:
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	E-mail request for pre-liminary comments sent 11/04/2019	24/04/2019	Refer to Appendix F for a summary of comments received and EAP response.
DEA&DP: Development Management	Pre-application meeting held 23/03/2019	-	Refer to Appendix F for copy of minutes of meeting held.
DEA&DP: Planning	Still to be sent	-	
DEA&DP: Waste Management	Still to be sent	-	-
DEA&DP: Pollution and Chemicals Management	Still to be sent	-	-
Breede Gouritz Catchment Management Agency (on behalf of Department of Water and Sanitation)	E-mail request for pre-liminary comments sent 11/04/2019	13/05/2019	Refer to Appendix F for a summary of comments received and EAP response.

Heritage Western Cape	Notice of Intent to Develop submitted 29/05/2019	11/06/2019	Record of Decision states that, "…, *no further action under Section 38 of the National Heritage Resources Act (Act 25 of 1999) is required*
Cape Winelands District Municipality	Still to be sent	-	-
Department of Agriculture, Western Cape (Provincial)	Still to be sent	-	-
Langeberg Local Municipality	Still to be sent	-	-
Transnet Freight Rail Infrastructure	Still to be sent	-	-

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**).

Main issues highlighted by state departments thus far consulted for comments:

- Slope of site towards the Sarah's river – *this was assessed and taken into account in the freshwater impact assessment, refer to Appendix G.*
- Stormwater management measures to be included – *this was addressed in the engineer services report, refer to Appendix E.*
- What will happen to effluent currently being discharged from the WWTW into the environment on the proposed development site – *this was addressed in the engineer services report, refer to Appendix E.*
- Impacts on terrestrial and aquatic CBAs and ESAs mapped for the site and surrounds – *this was assessed in the freshwater and botanical impact assessments conducted, refer to Appendix G.*

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.

None as of yet. A copy of this report is still to be circulated.

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?	NO	-	Please explain
Portions of the property will have to be rezoned for the proposed cemetery extension.			
2. Will the development be in line with the following?			
(a) Provincial Spatial Development Framework ("**PSDF**").	YES	~~NO~~	Please explain
The proposed activity will result in the expansion of the existing cemetery area at Zolani-Ashton, thus providing in the needs of the surrounding communities. The Municipality is mandated in terms of the PSDF to provide and maintain cemetery infrastructure and premises. The activity is therefore in line with the objectives manifested in the PSDF.			
(b) Urban edge / edge of **built environment** for the area.	~~YES~~	NO	Please explain
Falls outside of the built environment, but adjacent to existing cemetery.			
(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 existing cemeteries serving the Langeberg Municipal Area are nearing capacity and there is an urgent need for additional burial space within the Langeberg region. Due to the important role that cemeteries play in a community, it is imperative that cemeteries should be located within an acceptable distance to the community it serves. The identification of land for cemetery sites has been identified as SDF proposal 33. The Langeberg Municipality SDF also identified that Robertson has a real shortage of cemetery space. The Langeberg Municipality IDP also identified that there are a shortage of cemetery space in all towns under Strategic Objective 2.			
(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 by the Department for the applicable 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 municipality identified the need and desirability of the activities as proposed at the specific site.			
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 proposed development site is ideally situated adjacent to existing cemetery on vacant transformed municipal land.			

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 existing cemeteries serving the Langeberg Municipal Area are nearing capacity and there is an urgent need for additional burial space within the Langeberg region. Due to the important role that cemeteries play in a community, it is imperative that cemeteries should be located within an acceptable distance to the community it serves. The identification of land for cemetery sites has been identified as SDF proposal 33. The Langeberg Municipality SDF also identified that Robertson has a real shortage of cemetery space. The Langeberg Municipality IDP also identified that there are a shortage of cemetery space in all towns under Strategic Objective 2.			
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
Refer to municipal serviced confirmation under Appendix E.			
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 existing cemeteries serving the Langeberg Municipal Area are nearing capacity and there is an urgent need for additional burial space within the Langeberg region. Due to the important role that cemeteries play in a community, it is imperative that cemeteries should be located within an acceptable distance to the community it serves. The identification of land for cemetery sites has been identified as SDF proposal 33. The Langeberg Municipality SDF also identified that Robertson has a real shortage of cemetery space. The Langeberg Municipality IDP also identified that there is a shortage of cemetery space in all towns under Strategic Objective 2. Also refer to engineer services report under Appendix E indicating that required services can be provided.			
8. Is this project part of a **national programme** to address an issue of national concern or importance?	YES	~~NO~~	~~Please explain~~
Cemetery space provision is of a national concern.			
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 proposed development site is ideally situated next to existing cemetery on transformed vacant municipal land with the capacity to expand in the future as well.			
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
The proposed development will not impact on sensitive natural features such as a drainage line, but the impacts thereof succumbs to a low negative significance. Refer to specialist impact assessments under Appendix G			
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
Construction of the proposed development will lead to temporary construction noise impacts and permanent visual impacts, but it is not expected that any of these impacts will be significant to such an extent that it is unacceptable as it will be in-line with the existing cemetery visual characteristics of the site.			
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~~
-			
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?			
Cumulative potential negative impacts relate to impact on natural resources such as indigenous vegetation areas and drainage lines. Cumulative potential positive impacts relate to provision of additional cemetery space for local communities. Potential cumulative impacts on the biodiversity and socio-economic environments will be mitigated by implementing the Environmental Management Programme. Refer to Section G and Appendix J of this report for the detailed impact assessment.			

14. Is the development the **best practicable environmental option** for this land/site?	YES	~~NO~~	Please explain
As per the findings of the botanical and freshwater assessments conducted as well as site alternative investigations the sensitive natural features remaining on the site have been transformed and degraded to such an extent that the proposed development will have an overall low negative ecological impact significance if mitigated. The location factors of the site in terms of connectivity value to existing services infrastructure and cemetery also favours the proposed development location. Also the potential for future expansion favours the current location alternative.			
15. What will the benefits be to society in general and to the local communities?			Please explain
Definite Positive Cumulative Impacts: • Temporary employment opportunities (construction) • Cemetery space provision			
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 involved in the planning and design 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 Section 23 were taken in consideration and used in the assessments, mitigations and recommendations throughout this report.

INTEGRATED ENVIRONMENTAL MANAGEMENT

23. General objectives

(1) The purpose of this Chapter is to promote the application of appropriate environmental management tools in order to ensure the integrated environmental management of activities.

(2) The general objective of integrated environmental management is to

(a) promote the integration of the principles of environmental management set out in section 2 into the making of all decisions which may have a significant effect on the environment;
Refer to point 18 below.

(b) identify, predict and evaluate the actual and potential impact on the environment, socioeconomic 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 section 2;
The potential impacts for both the construction and the operational phase have been identified and assessed in this report – this allows for the appropriate management and mitigation measures to be identified and implemented where and when necessary to prevent (and if prevention is not possible to mitigate) environmental degradation and promote sustainability.

(c) ensure that the effects of activities on the environment receive adequate consideration before actions are taken in connection with them;
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 proposed to be included as EA conditions and included in the EMP requirements.

(d) ensure adequate and appropriate opportunity for public participation in decisions that may affect the environment;
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.

(e) ensure the consideration of environmental attributes in management and decision-making which may have a significant effect on the environment; and

All involved in the planning and design 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 Section 2 were taken in consideration and used in the assessments, mitigations and recommendations throughout this report

(f) identify and employ the modes of environmental management best suited to ensuring that a particular activity is pursued in accordance with the principles of environmental management set out in section 2.
Refer to point 18 below.

(3) The Director-General must coordinate the activities of organs of state referred to in section 24(1) and assist them in giving effect to the objectives of this section and such assistance may include training, the publication of manuals and guidelines and the co-ordination of procedures.

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:

Location alternatives – Five location alternatives were assessed for the proposed cemetery expansion.

Location alternative 1 - RE/546; Erf 671 and Erf 672 total size 2.7ha:

Development Constraints for Location Alternative 1:
This is an existing cemetery site which has reached full capacity and cannot expand. Cemetery to be used for reburials and multi-internments.

Location alternative 2 - Erf 341: Erf 309 and Erf 342 total size 2.16ha:

Development Constraints for Location Alternative 2:

- This is an existing cemetery site of which at least 50% of the site has already been used. Does not take specialists recommendations into consideration i.e. southern watercourse ESA buffer area not incorporated into the layout.
- The site is located in between the foothills of a mountain and residential areas of Ashton therefore future expansion opportunities are limited.

Location alternative 3 - Erf 331 and Erf 1417 total size 1.5ha:

Development Constraints for Location Alternative 3:

- This cemetery has reached full capacity and cannot expand, because it is surrounded by residential and agricultural land. Cemetery to be used for reburials and multi-internments.

Location alternative 4 - Portion 17 of Farm 158 total size 18.49ha:

Development Constraints for Location Alternative 4:

- This property has been earmarked for future low income housing project and associated supporting land uses in the local SDF and IDP therefore cemetery expansion cannot be proposed on this site.

Location alternative 5 - Remaining extent of portion 71 of Farm 158 size 71.46ha:

Development Constraints for Location Alternative 5:

- Waste water treatment works, industrial erven and cattle farming on the property.
- Drainage lines/watercourses and potential wetlands on the property**.**
- Potential indigenous vegetation on the property.

Reasons why Location alternative 5 is preferred:

- *Extensive undeveloped area available for proposed and potential future cemetery development.*
- *Existing 1.3ha cemetery on site***.**
- *Mainly flat topography ideal for cemetery 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:

Activity alternatives- The expansion of cemetery area is the only reasonable and feasible activity alternatives assessed as determined by the need and desirability as identified in the local municipal investigations, which identified that the available space in existing cemetery areas within the Langeberg municipal areas are limited and additional suitable cemetery expansion areas must be identified and established.

(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:

Layout alternatives – Two layout alternatives have been assessed thus far.

Layout Alternative 1 – 10ha development footprint option:
- 7ha grave area
- 3ha park area

Development Constraints for Layout Alternative 1:
- *Does not take planning restrictions of the waste water treatment works into consideration. I.e. the cemetery layout is located adjacent to the waste water treatment works and encompasses the northern, southern and western borders of the waste water treatment works and will prevent the waste water treatment works from being able to expand in the future.*
- *Degraded drainage line along the northern boundary within proposed park area.*

Layout Alternative 2 – 6.7ha development footprint option:
- ±10 000 graves
- parking areas
- internal and access roads
- ablution facilities
- services infrastructure
- park area

Development Constraints for Layout Alternative 2:
- *Degraded drainage line crossing the site.*

Reasons why Layout Alternative 2 is preferred:
- *It takes planning restrictions into consideration and allows for the adjacent waste water treatment works to be able to expand in the future as and if required.*

(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:

Technology alternatives – The proposed development will address, inter alia, water, energy and resource demand management and efficiency measures to ensure that all devices and fittings are energy and water efficient, including, but not limited to the following:
- All toilets will have interruptible flush mechanisms, or the cistern will be supplied with a fitted weight to interrupt the flow.
- Dual flush toilet cisterns.
- All taps will include an aerator to reduce the flow of water to 6 litres / minute.
- Shower heads if required will have restrictor or aerators to reduce water flow to 10 litres / minute.
- Energy saving light bulbs such as CFL's and LED's will be installed instead of incandescent bulbs.
- Outdoor lighting will be restricted to a minimum.
- Rainwater will be harvested from roofs and taken to the reservoir.
- Adequate thermal insulation will be provided in roofs.
- Provision for installation of future solar geysers will be made.

(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 – No operational alternatives were considered as the proposed activity is for expansion of a cemetery to be maintained by the municipality. Once operational, the only activities that will be undertaken are burials and matters relating to maintenance and upkeep of the cemetery and associated infrastructure.

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

The No-Development Option- The No-Development option will result in the local communities having to travel long distances to find available burial space in existing cemeteries elsewhere once the current cemeteries at Ashton have reached full capacity. Alternatively, some burials are taking place illegally (outside of formal cemeteries), which will increase once current local cemeteries reach full capacity if additional cemetery areas are not established.

(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:

NA

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

Location alternatives – Five location alternatives were assessed for the proposed cemetery expansion.

Location alternative 1 - RE/546; Erf 671 and Erf 672 total size 2.7ha:

Development Constraints for Location Alternative 1:
This is an existing cemetery site which has reached full capacity and cannot expand. Cemetery to be used for reburials and multi-internments.

Location alternative 2 - Erf 341: Erf 309 and Erf 342 total size 2.16ha:

Development Constraints for Location Alternative 2:
- This is an existing cemetery site of which at least 50% of the site has already been used. Does not take specialists recommendations into consideration i.e. southern watercourse ESA buffer area not incorporated into the layout.
- The site is located in between the foothills of a mountain and residential areas of Ashton therefore future expansion opportunities are limited.

Location alternative 3 - Erf 331 and Erf 1417 total size 1.5ha:

Development Constraints for Location Alternative 3:
- This cemetery has reached full capacity and cannot expand, because it is surrounded by residential and agricultural land. Cemetery to be used for reburials and multi-internments.

Location alternative 4 - Portion 17 of Farm 158 total size 18.49ha:

Development Constraints for Location Alternative 4:
- This property has been earmarked for future low income housing project and associated supporting land uses in the local SDF and IDP therefore cemetery expansion cannot be proposed on this site.

Location alternative 5 - Remaining extent of portion 71 of Farm 158 size 71.46ha:

Development Constraints for Location Alternative 5:
- Waste water treatment works, industrial erven and cattle farming on the property.
- Drainage lines/watercourses and potential wetlands on the property**.**
- Potential indigenous vegetation on the property.

Reasons why Location alternative 5 is preferred:
- *Extensive undeveloped area available for proposed and potential future cemetery development.*
- *Existing 1.3ha cemetery on site***.**
- *Mainly flat topography ideal for cemetery development*.

Activity alternatives- The expansion of cemetery area is the only reasonable and feasible activity alternatives assessed as determined by the need and desirability as identified in the local municipal investigations, which identified that the available space in existing cemetery areas

within the Langeberg municipal areas are limited and additional suitable cemetery expansion areas must be identified and established.

Layout alternatives – Two layout alternatives have been assessed thus far.

Layout Alternative 1 – 10ha development footprint option:
- 7ha grave area
- 3ha park area

Development Constraints for Layout Alternative 1:
- *Does not take planning restrictions of the waste water treatment works into consideration. I.e. the cemetery layout is located adjacent to the waste water treatment works and encompasses the northern, southern and western borders of the waste water treatment works and will prevent the waste water treatment works from being able to expand in the future.*
- *Degraded drainage line along the northern boundary within proposed park area.*

Layout Alternative 2 – 6.7ha development footprint option:
- ±10 000 graves
- parking areas
- internal and access roads
- ablution facilities
- services infrastructure
- park area

Development Constraints for Layout Alternative 2:
- *Degraded drainage line crossing the site.*

Reasons why Layout Alternative 2 is preferred:
- *It takes planning restrictions into consideration and allows for the adjacent waste water treatment works to be able to expand in the future as and if required.*

Technology alternatives– The proposed development will address, inter alia, water, energy and resource demand management and efficiency measures to ensure that all devices and fittings are energy and water efficient, including, but not limited to the following:
- All toilets will have interruptible flush mechanisms, or the cistern will be supplied with a fitted weight to interrupt the flow.
- Dual flush toilet cisterns.
- All taps will include an aerator to reduce the flow of water to 6 litres / minute.
- Shower heads if required will have restrictor or aerators to reduce water flow to 10 litres / minute.
- Energy saving light bulbs such as CFL's and LED's will be installed instead of incandescent bulbs.
- Outdoor lighting will be restricted to a minimum.
- Rainwater will be harvested from roofs and taken to the reservoir.
- Adequate thermal insulation will be provided in roofs.
- Provision for installation of future solar geysers will be made.

Operational alternatives – No operational alternatives were considered as the proposed activity is for expansion of a cemetery to be maintained by the municipality. Once operational, the only activities that will be undertaken are burials and matters relating to maintenance and upkeep of the cemetery and associated infrastructure.

The No-Development Option- The No-Development option will result in the local communities having to travel long distances to find available burial space in existing cemeteries elsewhere once the current cemeteries at Ashton have reached full capacity. Alternatively, some burials are taking place illegally (outside of formal cemeteries), which will increase once current local cemeteries reach full capacity if additional cemetery areas are not established.

(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.

In terms of the current most preferred development alternative assessed layout alternative 2 is preferred as it takes planning considerations into account i.e. the potential need for the municipal waste water treatment works to expand further east.

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:

As per the Geotechnical Investigation conducted by SKCMasakhizwe Engineers:

8. Conclusions of geotechnical suitability of the site

8.1 Soil excavatability and workability
Excavations will be difficult by excavator due to the hardness of the underlying rock layers and the gravelly nature of the soils closer to the surface. A 20 tonne excavator (min.) is proposed. Once excavated, the soil will be suitable for use as backfilling of the graves, provided that large boulders and cobbles be removed prior to backfilling. Also see 3.1 of the report.

8.2 Grave stability
Suitable edge protection to the alluvium layers will be required after excavation to prevent the sides collapsing during the burial ceremony. Also see 3.2 of the report.

8.3 Site topography
The maximum natural slope of the site is approximately 2°. Water ponding on the site should not be problematic, as the slope is ideal for the use as cemetery. As seen in 3.4 of the report.

8.4 Site drainage
Surface water drainage must be observed to prevent ponding of water, but we do not foresee this to be required as the slope is in the ideal range. Surface water originating upstream of the site must be diverted around the site using maintained drains (see drawing W1920-03-TP) of new cut-off drains to be constructed. These daubs must be deep enough to penetrate the weathered rock layers to prevent near surface water from flowing through the site. Internal roads must be utilised to channel stormwater to suitable discharge points. These discharge points must be protected against scouring and erosion by providing stone masonry or other suitable erosion control measures. Also refer to 3.5 of the report.

8.5 Soil permeability and basal buffer area.
Occasional water logging of the near surface alluvium layers will be greatly reduced with the implementation of the proposed-on site storm water drains as well as the perimeter drains diverting surface water around the site. Both these measures will reduce the possibility of groundwater pollution. Also see 3.6 and 3.7 of the report.

8.6 Position in respect of domestic water sources and drainage features
Potable water is supplied to the town of Ashton via Municipal pipelines. The nearest registered borehole to the proposed site is unknown but is assumed to be further away than the min distance of 150m (for permeability of 1 x 10^{-7} cm/s). The closest drainage feature to the proposed site is the non-perennial stream (Sarahs River) approximately 280m south-west of the site. The river is further than the minimum recommended safe distance of 150m (for permeability of 1 x 10^{-7} cm/s), and as this stream is not flowing throughout the year, it is not perceived as problematic. Also refer to 3.8 of the report.

9 Recommendations

The following mitigation measures must be applied in order to reduce the risk of groundwater pollution:

9.1 Adequate surface drainage features must be installed on site to prevent ponding of water. These must include adequately aligned internal roads to allow free drainage off the burial areas onto the roads, as well as free drainage along the roads to suitable discharge points on the

boundary of the proposed site.

9.2 Cut-off drains must be installed upstream of the site, and on site as proposed (on the locality plan), to divert surface and near surface water around the proposed site to eliminate lateral groundwater movement through the site. These drains must be of sufficient depth to penetrate the weathered rock layers to intercept near surface water.

9.3 Indigenous vegetation must be planted to lower water table that may occur from time to time.

Refer to Appendix G2: Geotechnical Investigation March 2019

(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~~

As reflected in the Western Cape Biodiversity Spatial Plan (WCBSP 2017), approximately 0.8ha of proposed development layout alternative 2 is mapped as Aquatic CBAs in the eastern corner next to the waste water treatment works.
Category 1: CBA: Aquatic
Category 2: CBA: Wetland
Definition: Areas in a natural condition that are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure.
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.

Most of the remainder of the site of ±6ha is mapped as Terrestrial Ecological Support Area.
Feature: Water Recharge
Category 1: ESA: Terrestrial
Definition: Areas that are not essential for meeting biodiversity targets, but that play an important role in supporting the functioning of PAs or CBAs, and are often vital for delivering ecosystem services.
Objective: Maintain in a functional, near-natural state. Some habitat loss is acceptable, provided the underlying biodiversity objectives and ecological functioning are not compromised.

The two layout alternatives as assessed overlaps and is mainly mapped as terrestrial ESA with a very small section of layout alternative 1 mapped as terrestrial CBA along the western border, however the proposed development site is surrounded by developments which will in future expand and isolate the site even further from feasible ecological connectivity therefore if the proposed mitigation measures are implemented the significance rating of potential impacts on terrestrial features of the site and surrounds is rated as **low negative.**

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 terrestrial vegetation remaining on the proposed development site layout alternative 2 is characterised as Breede Shale Renosterveld (Least Threatened). The overall state of indigenous vegetation on these areas is significantly degraded, transformed and with limited diversity. No species of conservation concern were recorded on the site. The overall terrestrial botanical sensitivity of the site and surrounds is therefore rated as low.

If strict adherence is kept to the recommendations as set out in the botanical impact assessment report it is not expected that the proposed development will have a significant negative impact on any listed terrestrial species or sensitive terrestrial environments.

Five watercourses were identified and delineated on the overall 70ha property including a recently excavated artificial drainage channel (A), a formal stormwater canal system (B), a remnant portion of a natural drainage line (C), now fed almost entirely by a sewage works and continuously overflowing cattle trough, a remnant portion of natural drainage line (D) that has been cut off from

its catchment, partially infilled and no longer function as a drainage line, and one artificial wetland area (E) that is, in the opinion of the specialist, entirely unnatural.

Watercourse D was found to no longer function as a watercourse and cannot in the opinion of the specialist be reinstated given the scale of the changes in the catchment and watercourse and is therefore, in the opinion of the specialist, no longer a watercourse. According to aerial imagery, the watercourse appeared during 2013 and is in the opinion of the specialist, likely the result of a burst pipe. Only watercourses A, B and C were assessed further.

Watercourses B and C were therefore evaluated by best practice methods to determine current (predevelopment) Present Ecological State (PES). Watercourse C fell within the IHIA Category F, while watercourse B was found to fall within a category E.

The degree of transformation of the two watercourses and their catchments was such that neither can practically achieve a higher category than the present state and were therefore assigned an REC equal to their current PES. Application of the best practice method for determination of an appropriate minimum buffer found that a buffer of 15m would be appropriate for watercourses A, B, and C.

The potential impacts of the two proposed layouts was then assessed on the watercourses B and C. B was found to be too far from the proposed layouts to be impacted, while C falls within both layouts. The preferred layout includes Watercourse C within the proposed parkland, while the preferred layout proposes infilling and installation of graves over Watercourse C. This watercourse has however been cut off historically from its catchment in its entirety and would not exist if not for augmentation from the WWTW and an overflowing cattle trough. The overflowing cattle trough, presently fed by a hose from a municipal water main, falls within the proposed site for both layouts and will be shut down as part of the development. The WWTW augmentation will also cease after the sewage works is upgraded. Once the two artificial water sources no longer supply the watercourse, it will cease to exists. The riparian and wetland vegetation will most likely die off rapidly, and this area will become entirely terrestrial in nature.

The potential impact of leachate from graves on the Sarahsrivier and its floodplain wetlands downslope was also assessed. Given that the proposed sites for the two layouts do not produce runoff that enters the Sarahsrivier, that floodplain wetlands are usually supplied primarily by the river and not by groundwater or interflow, given that the railway line between the river and the proposed sites forms a substantial barrier to subsurface flow and given the phased installation of graves over several years, it is unlikely that much leachate will reach the Sarahsrivier over 400m away, if at all. The impact significance for this potential impact was therefore found to be Very Low (negative) regardless of the layout.

There is therefore no material difference between the two proposed layouts in terms of freshwater constraints and both layouts were found to be of Very Low (negative) impact for every impact assessed, with or without mitigation where mitigation has been provided. The provided mitigation measures will reduce impact however within the Very Low category, and it is therefore recommended that the proposed development be approved on condition that the proposed mitigation measures be implemented.

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
As per the findings of the botanical and freshwater impact assessments conducted no plant, animal or their associated habitat of conservation concern has been recorded on the site and none are expected to occur within the study site or surrounds in viable numbers that will be impacted upon by the proposed development.		
Describe the manner in which any other biological aspects will be impacted:		
NA		
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.
NA

(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?	R0	
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?	Unknown	
What is the expected value of the employment opportunities during the development phase?	Unknown	
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?	Unknown	
What is the expected current value of the employment opportunities during the first 10 years?	Unknown	
What percentage of this will accrue to previously disadvantaged individuals?	Unknown	
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 the following record of decision was received – *You are hereby notified that, since there is no reason to believe that the proposed expansion of Silo's cemetery, will impact on heritage resources, no further actions under Section 38 of the National Heritage Resources Act (Act 25 of 1999) is required.* *However should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the execution of the activities above, all works must be stopped immediately and HWC must be notified without delay.*

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?	Unknown
Waste is mainly expected to be produced during the construction phase. Types of "construction phase waste" may include: • Overburden material from land clearing including plant materials and sand. • Waste oils i.e. from construction machinery and vehicles. • Sewage from portable toilets. • General domestic waste i.e. food waste and packaging from construction workers. • Construction packing materials i.e. empty cement bags, plastic ties and wrapping etc. • Illegally dumped domestic waste as already present on proposed development site which will have to be removed before construction can commence. • Runoff waste water i.e. from cement mixing areas. There is no reasonable or feasible method to calculate the estimated quantities that will be produced for each of these waste types due to the amount of potential variables which exists i.e. amount of total staff to be employed, amount and type of construction materials to be used etc.	

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?	- m^3	
The engineer services report has taken into consideration the different types of waste to be produced by the proposed development during its operation and services availability. Expected types of waste to be produced during the operational phase are: • Sewage • Domestic/landfill waste Amounts to be produced will depend on the usage of the facilities by the public and cannot be calculated at this stage		

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?	NA m^3	
NA		
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?		
All non-hazardous and hazardous waste to be suitably and temporarily stored at the construction camp and disposed of at a licensed landfill and/or hazardous waste handling facility at least once a week. During operation all waste produced to be managed and disposed of via existing municipal waste services.		
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~~
Will the development proposal produce waste that will be treated and/or disposed of at another facility other than into a municipal waste stream?	Potentially – Yes (it is the applicant's prerogative to decide whether or not he/she wants to appoint a private waste handling company who might dispose of/treat the collected waste elsewhere outside of the municipal waste stream)	
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?	Unknown	
Describe the emissions in terms of type and concentration and how these will be avoided/managed/treated/mitigated:		
Potential construction vehicle emission to be produced during the construction phase. Amounts to be produced unknown – will depend on type, amount and condition of construction vehicles used.		

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:	NA	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.		
The activity potentially involves the infill/removal of material from a watercourse i.e drainage line and development within 100m from a watercourse/500m of a wetland. Thus triggering a listed activity in terms of section 21 (c) and (i) of the National Water Act. As such wat use authorisation is required to continue with the proposed activity. The draft basic assessment report is to be submitted to the Breede Gouritz Catchment Management Agency (commenting on behalf of the Department of Water and Sanitation) to indicate the way forward and need for a Water Use application.		

(d) Describe the measures that will be taken to reduce water demand, and measures to reuse or recycle water:
Implement water saving requirements during construction as per Circular C1 of 2018 - Water Crisis Response Policy Guidelines for the Western Cape attached as and addendum to the EMP. Implement technology alternatives to save water, energy etc as per engineer's services report.

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?

NA

5. ENERGY EFFICIENCY

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

The proposed development will address, inter alia, water, energy and resource demand management and efficiency measures to ensure that all devices and fittings are energy and water efficient, including, but not limited to the following:
• All toilets will have interruptible flush mechanisms, or the cistern will be supplied with a fitted weight to interrupt the flow.
• Dual flush toilet cisterns.
• All taps will include an aerator to reduce the flow of water to 6 litres / minute.
• Shower heads if required will have restrictor or aerators to reduce water flow to 10 litres / minute.
• Energy saving light bulbs such as CFL's and LED's will be installed instead of incandescent bulbs.
• Outdoor lighting will be restricted to a minimum.
• Rainwater will be harvested from roofs and taken to the reservoir.
• Adequate thermal insulation will be provided in roofs.
• Provision for installation of future solar geysers will be made.

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

Refer to (a) above.

6. TRANSPORT, TRAFFIC AND ACCESS

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

It is not expected that the proposed development will have a significant negative impact on current low traffic conditions of the site and surrounds. The proposed development will make use of the existing access road to the old cemetery.

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 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 impacts on ecological aspects. Limited knowledge about the potential services impacts.

(c) Please describe the underlying assumptions.

In undertaking the investigation and compiling this report, the following has 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, specialists reports, 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. has 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:	**LAYOUT ALTERNATIVE 1** **CONSTRUCTION PHASE- LAYOUT ALTERNATIVE 1** • Disturbance to subsurface geological layers (medium negative impact before mitigation and low negative impact with mitigation measures); • Soil erosion (medium negative impact before mitigation and low negative impact with mitigation measures); • Compaction of soil (medium negative impact before mitigation and low negative impact with mitigation measures); • Increase in and accumulation of storm water runoff (high negative impact before mitigation and low negative impact with mitigation measures); • Groundwater pollution (medium negative impact before mitigation and low negative impact with mitigation measures) • Loss of drainage line (C)and associated riparian habitat as identified by the freshwater specialist (medium negative impact before mitigation and low negative impact with mitigation measures); • Impact of proposed development aquatic NFEPAs and/or Critical Biodiversity Areas ("CBA') and Ecological Support Areas ("ESA") (high negative impact before mitigation and low negative impact with mitigation measures);

	• Impact of proposed activities on terrestrial indigenous vegetation and associated fauna and avifauna habitat (high negative impact before mitigation and low negative impact with mitigation measures); • Impact of proposed activities on terrestrial Critical Biodiversity and Ecological Support Areas (high negative impact before mitigation and low negative impact with mitigation measures); • Introduction of alien and weed plant species (medium negative impact before mitigation and low negative impact with mitigation measures) • Agricultural impacts (high negative impact before mitigation and low negative impact with mitigation measures) • Increased temporary construction jobs (medium positive impact) • Increased traffic due to the construction activities requiring various vehicles to come onto and leave the site. (medium negative impact before mitigation and low negative impact with mitigation measures) • Impact of construction workers on local community safety and security (medium negative impact before mitigation and low negative impact with mitigation measures) • Impact of litter or waste from the construction site on the surrounding communities (medium negative impact before mitigation and low negative impact with mitigation measures) • Dust and emissions pollution arising from ground clearing and other construction activities (medium negative impact before mitigation and low negative impact with mitigation measures) • The potential impact of the proposed development on archaeological, paleontological and heritage remains (high negative impact before mitigation and low negative impact with mitigation measures) • Noise due to construction machinery (low negative impact before mitigation and low negative impact with mitigation measures) • Visual impact of construction of proposed serviced erven (medium negative impact before mitigation and low negative impact with mitigation measures) **OPERATIONAL PHASE- LAYOUT ALTERNATIVE 1** • Increase in storm water runoff due to hardening of surfaces which may lead to erosion of surrounding areas (medium negative impact before mitigation and low negative impact with mitigation measures); • Groundwater pollution (medium negative impact before mitigation and low negative impact with mitigation measures); • Spread of alien invasive vegetation associated with the soil disturbance caused by construction leading to habitat degradation (medium negative impact before mitigation and low negative impact with mitigation measures); • Increase in cemetery space for the town of Ashton and surrounds (high positive significance); • Increased traffic due to proposed cemetery expansion (medium negative impact before mitigation and low negative impact with mitigation measures) • Noise due to cemetery expansion (low negative impact before mitigation and low negative impact with mitigation measures) • Additional load on existing municipal services infrastructure such as electricity, water, sewage and waste handling (high negative impact before mitigation and medium negative impact with mitigation measures)

	• Planning considerations in terms of potential future expansion of the municipal WWTW (high negative impact before and after mitigation measures) • Visual impact of proposed cemetery development (medium negative impact before mitigation and low negative impact with mitigation measures) **DECOMMISSIONING AND CLOSURE PHASE- LAYOUT ALTERNATIVE 1** • The decommissioning of the developments is not anticipated in the near future. Impacts during this phase will however be similar to that of the construction phase. Mitigation and management measures will be related to the technology of the day and needs to be discussed at such time as decommissioning will occur. All structures must be removed and the area rehabilitated to the state as before construction had commenced (dependent upon the end land use agreement). Waste, where possible must be recycled. All concrete introduced must be removed off site to a licensed waste facility. Decommissioning of a cemetery with have high negative significance impact on cultural and historical aspects therefore is highly unlikely.
Alternative 2:	**LAYOUT ALTERNATIVE 2** **CONSTRUCTION PHASE- LAYOUT ALTERNATIVE 2** • Disturbance to subsurface geological layers (medium negative impact before mitigation and low negative impact with mitigation measures); • Soil erosion (medium negative impact before mitigation and low negative impact with mitigation measures); • Compaction of soil (medium negative impact before mitigation and low negative impact with mitigation measures); • Increase in and accumulation of storm water runoff (high negative impact before mitigation and low negative impact with mitigation measures); • Groundwater pollution (medium negative impact before mitigation and low negative impact with mitigation measures) • Loss of drainage line (C)and associated riparian habitat as identified by the freshwater specialist (medium negative impact before mitigation and low negative impact with mitigation measures); • Impact of proposed development aquatic NFEPAs and/or Critical Biodiversity Areas ("CBA') and Ecological Support Areas ("ESA") (high negative impact before mitigation and low negative impact with mitigation measures); • Impact of proposed activities on terrestrial indigenous vegetation and associated fauna and avifauna habitat (high negative impact before mitigation and low negative impact with mitigation measures); • Impact of proposed activities on terrestrial Critical Biodiversity and Ecological Support Areas (high negative impact before mitigation and low negative impact with mitigation measures); • Introduction of alien and weed plant species (medium negative impact before mitigation and low negative impact with mitigation measures) • Agricultural impacts (high negative impact before mitigation and low negative impact with mitigation measures) • Increased temporary construction jobs (medium positive impact) • Increased traffic due to the construction activities requiring various vehicles to come onto and leave the site. (medium negative impact before mitigation and low negative impact with mitigation measures)

	• Impact of construction workers on local community safety and security (medium negative impact before mitigation and low negative impact with mitigation measures) • Impact of litter or waste from the construction site on the surrounding communities (medium negative impact before mitigation and low negative impact with mitigation measures) • Dust and emissions pollution arising from ground clearing and other construction activities (medium negative impact before mitigation and low negative impact with mitigation measures) • The potential impact of the proposed development on archaeological, paleontological and heritage remains (high negative impact before mitigation and low negative impact with mitigation measures) • Noise due to construction machinery (low negative impact before mitigation and low negative impact with mitigation measures) • Visual impact of construction of proposed serviced erven (medium negative impact before mitigation and low negative impact with mitigation measures) **OPERATIONAL PHASE- LAYOUT ALTERNATIVE 2** • Increase in storm water runoff due to hardening of surfaces which may lead to erosion of surrounding areas (medium negative impact before mitigation and low negative impact with mitigation measures); • Groundwater pollution (medium negative impact before mitigation and low negative impact with mitigation measures); • Spread of alien invasive vegetation associated with the soil disturbance caused by construction leading to habitat degradation (medium negative impact before mitigation and low negative impact with mitigation measures); • Increase in cemetery space for the town of Ashton and surrounds (high positive significance); • Increased traffic due to proposed cemetery expansion (medium negative impact before mitigation and low negative impact with mitigation measures) • Noise due to cemetery expansion (low negative impact before mitigation and low negative impact with mitigation measures) • Additional load on existing municipal services infrastructure such as electricity, water, sewage and waste handling (high negative impact before mitigation and medium negative impact with mitigation measures) • Planning considerations in terms of potential future expansion of the municipal WWTW (low negative impact before and after mitigation measures) • Visual impact of proposed cemetery development (medium negative impact before mitigation and low negative impact with mitigation measures) **DECOMMISSIONING AND CLOSURE PHASE- LAYOUT ALTERNATIVE 2** • The decommissioning of the developments is not anticipated in the near future. Impacts during this phase will however be similar to that of the construction phase. Mitigation and management measures will be related to the technology of the day and needs to be discussed at such time as decommissioning will occur. All structures must be removed and the area rehabilitated to the state as before construction had commenced (dependent upon the end land use agreement). Waste, where possible must be recycled. All concrete introduced must be removed off site to a

	licensed waste facility. Decommissioning of a cemetery with have high negative significance impact on cultural and historical aspects therefore is highly unlikely.
No-go Alternative:	**NO-GO/NO-DEVELOPMENT ALTERNATIVE** • No provision of additional cemetery space for the local community of Ashton and surrounds (high negative significance). The No-Development option will result in the local communities having to travel long distances to find available burial space in existing cemeteries elsewhere once the current cemeteries at Ashton have reached full capacity. Alternatively, some burials are taking place illegally (outside of formal cemeteries), which will increase once current local cemeteries reach full capacity if additional cemetery areas are not established. Leading to a high negative significance impact

(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).

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

Refer to Appendix J for Impact Assessment Tables.

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

The proposed development site on RE/71/158 was selected due to the following attributes:

- It is owned by the municipality.
- Adjacent to existing cemetery.
- Potential for future expansion.
- Services such as water provision and wastewater treatment works and infrastructure nearby.
- Existing access road.

(d) Outcome of the site selection matrix.

Refer to (c) above.

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.

Botanical Impact Assessment, April 2019, Eco Impact:

Impact Assessment

Two layout alternatives has been provided thus far. And potential impacts on terrestrial ecological features were assessed for Layout Alternative 1, Layout Alternative 2 and the No Development option.

Layout Alternative 1:

Layout Alternative 1	Terrestrial Botanical Impacts
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Nature of impact:	**Clearance of indigenous vegetation**
Consequence of impact or risk:	**Loss of indigenous vegetation and habitat leading to disruption in ecological processes**
Cumulative impact prior to mitigation:	**Displacement of fauna and avifauna inhabiting the site and surrounds. Erosion of the site and surrounds due to site clearance.**
Extent and duration of impact:	**Extent 1 (On site or within 100 m of the site) & Duration 5 (permanent – will not cease)**
Magnitude:	**6 (processes continuing but in a modified way)**
Probability of occurrence:	**5 (impact will occur regardless of any prevention measures)**
Significance rating of impact prior to mitigation	**(1+5+6) x 5 = 60 High Negative**
Degree to which the impact can be reversed:	**Completely reversible but decommissioning and rehabilitation is highly unlikely. Mitigation measures included can however reduce the impact on the ecological process outside the proposed cemetery expansion areas.**
Degree to which the impact may cause irreplaceable loss of resources:	**Resource will be partly lost**
Degree to which the impact can be avoided:	**Unavoidable**
Degree to which the impact can be mitigated:	**Partly mitigatable**
Proposed mitigation:	**The project implementation process should be subject to standard Environmental Management Programme (EMP) prescripts and conditions and only proceed under supervision of a competent and diligent Environmental Control Officer during the construction phase.** **Clearly demarcate proposed development area before site clearance commences and remain within demarcated development footprint area throughout construction and operational phases** **Landscaping of the site must be done with indigenous trees and vegetation under the supervision of a qualified botanical specialist/or landscaper familiar with indigenous vegetation of the areas.** **Storm water runoff from the site must be controlled in order to prevent erosion and leaching into the surrounding area.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Low Negative**

Layout Alternative 1	Terrestrial Botanical Impacts
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Nature of impact:	**Impacts on terrestrial Critical Biodiversity Areas and/or Ecological Support Areas**
Consequence of impact or risk:	**Loss of areas mapped as terrestrial CBA or ESA leading to disruption in ecological processes**
Cumulative impact prior to mitigation:	**Loss of undeveloped terrestrial habitat leading to**

	disruption and/or destruction of ecological processes.
Extent and duration of impact:	**Extent 1 (On site or within 100 m of the site) & Duration 5 (permanent – will not cease)**
Magnitude:	**6 (processes continuing but in a modified way)**
Probability of occurrence:	**5 (impact will occur regardless of any prevention measures)**
Significance rating of impact prior to mitigation	**(1+5+6) x 5 = 60 High Negative**
Degree to which the impact can be reversed:	**Completely reversible but decommissioning and rehabilitation is highly unlikely. Mitigation measures included can however reduce the impact on the ecological process outside the proposed cemetery expansion areas.**
Degree to which the impact may cause irreplaceable loss of resources:	**Resource will be partly lost**
Degree to which the impact can be avoided:	**Unavoidable**
Degree to which the impact can be mitigated:	**Partly mitigatable**
Proposed mitigation:	**The project implementation process should be subject to standard Environmental Management Programme (EMP) prescripts and conditions and only proceed under supervision of a competent and diligent Environmental Control Officer during the construction phase.** **Clearly demarcate proposed development area before site clearance commences and remain within demarcated development footprint area throughout construction and operational phases.** **Landscaping of the site must be done with indigenous trees and vegetation under the supervision of a qualified botanical specialist/or landscaper familiar with indigenous vegetation of the areas.** **Storm water runoff from the site must be controlled in order to prevent erosion and leaching into the surrounding area.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Low Negative**

Layout Alternative 2:

Layout Alternative 2	**Terrestrial Botanical Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Nature of impact:	**Clearance of indigenous vegetation**
Consequence of impact or risk:	**Loss of indigenous vegetation and habitat leading to disruption in ecological processes**
Cumulative impact prior to mitigation:	**Displacement of fauna and avifauna inhabiting the site and surrounds. Erosion of the site and surrounds due to site clearance.**
Extent and duration of impact:	**Extent 1 (On site or within 100 m of the site) & Duration 5 (permanent – will not cease)**
Magnitude:	**6 (processes continuing but in a modified way)**

Probability of occurrence:	**5 (impact will occur regardless of any prevention measures)**
Significance rating of impact prior to mitigation	**(1+5+6) x 5 = 60 High Negative**
Degree to which the impact can be reversed:	**Completely reversible but decommissioning and rehabilitation is highly unlikely. Mitigation measures included can however reduce the impact on the ecological process outside the proposed cemetery expansion areas.**
Degree to which the impact may cause irreplaceable loss of resources:	**Resource will be partly lost**
Degree to which the impact can be avoided:	**Unavoidable**
Degree to which the impact can be mitigated:	**Partly mitigatable**
Proposed mitigation:	**The project implementation process should be subject to standard Environmental Management Programme (EMP) prescripts and conditions and only proceed under supervision of a competent and diligent Environmental Control Officer during the construction phase.** **Clearly demarcate proposed development area before site clearance commences and remain within demarcated development footprint area throughout construction and operational phases** **Landscaping of the site must be done with indigenous trees and vegetation under the supervision of a qualified botanical specialist/or landscaper familiar with indigenous vegetation of the areas.** **Storm water runoff from the site must be controlled in order to prevent erosion and leaching into the surrounding area.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Low Negative**

Layout Alternative 2	**Terrestrial Botanical Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Nature of impact:	**Impacts on terrestrial Critical Biodiversity Areas and/or Ecological Support Areas**
Consequence of impact or risk:	**Loss of areas mapped as terrestrial CBA or ESA leading to disruption in ecological processes**
Cumulative impact prior to mitigation:	**Loss of undeveloped terrestrial habitat leading to disruption and/or destruction of ecological processes.**
Extent and duration of impact:	**Extent 1 (On site or within 100 m of the site) & Duration 5 (permanent – will not cease)**
Magnitude:	**6 (processes continuing but in a modified way)**
Probability of occurrence:	**5 (impact will occur regardless of any prevention measures)**
Significance rating of impact prior to mitigation	**(1+5+6) x 5 = 60 High Negative**
Degree to which the impact can be reversed:	**Completely reversible but decommissioning and rehabilitation is highly unlikely. Mitigation measures**

	included can however reduce the impact on the ecological process outside the proposed cemetery expansion areas.
Degree to which the impact may cause irreplaceable loss of resources:	**Resource will be partly lost**
Degree to which the impact can be avoided:	**Unavoidable**
Degree to which the impact can be mitigated:	**Partly mitigatable**
Proposed mitigation:	**The project implementation process should be subject to standard Environmental Management Programme (EMP) prescripts and conditions and only proceed under supervision of a competent and diligent Environmental Control Officer during the construction phase.** **Clearly demarcate proposed development area before site clearance commences and remain within demarcated development footprint area throughout construction and operational phases.** **Landscaping of the site must be done with indigenous trees and vegetation under the supervision of a qualified botanical specialist/or landscaper familiar with indigenous vegetation of the areas.** **Storm water runoff from the site must be controlled in order to prevent erosion and leaching into the surrounding area.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Low Negative**

No Development Alternative:

No Development Alternative	**Terrestrial Botanical Impacts**
PLANNING, DESIGN AND DEVELOPMENT PHASE	
Nature of impact:	**Site remain as is with ongoing environmental degradation due to pollution from effluent plant overflow and grazing from livestock**
Consequence of impact or risk:	**Environmental pollution and habitat degradation**
Cumulative impact prior to mitigation:	**Ongoing pollution and livestock grazing leading to disruption and/or destruction of ecological processes.**
Extent and duration of impact:	**Extent 2 (On site or within 100 m of the site) & Duration 5 (permanent – will not cease)**
Magnitude:	**6 (processes continuing but in a modified way)**
Probability of occurrence:	**5 (impact will occur regardless of any prevention measures)**
Significance rating of impact prior to mitigation	**(2+5+6) x 5 = 65 High Negative**
Degree to which the impact can be reversed:	**Completely reversible but rehabilitation of the site is highly unlikely, as funding for rehabilitation of the site is note available.**
Degree to which the impact may cause irreplaceable loss of resources:	**Resource will be partly lost**
Degree to which the impact can be	**Completely avoidable**

avoided:	
Degree to which the impact can be mitigated:	**Completely mitigatable**
Proposed mitigation:	**Wastewater treatment works overflow must be stopped and effluent must be treated to an acceptable level before discharging into the environment. Impacted area must be rehabilitated with local indigenous vegetation.**
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	**Low Negative**

Concluding Remarks and Further Recommendations

The small sections (less than 10%/7ha) of the overall site which falls within the vegetation areas delineated as critically endangered Muscadel Riviere (northwestern corner) and endangered Breede Alluvium Renosterveld (southern border) does not show any characteristics of these vegetation types and no plant species of conservation concern were recorded within these areas. The Muschadel Riviere area has also been isolated by existing industrial developments and the railway line, similarly the Breede Alluvium Renosterveld area has been isolated by the railway line not allowing feasible ecological connectivity between the site and any adjacent natural habitats. Most of the site is mapped as Breede Shale Renosterveld (Least Threatened). Due to the limited indigenous terrestrial vegetation diversity; low ecological connectivity; previous and ongoing impacts i.e. livestock overgrazing and developments and current significantly degraded and transformed state of the ±70ha site the overall terrestrial botanical sensitivity of the site is rated as low.

The terrestrial vegetation remaining on the proposed development site is characterised as Breede Shale Renosterveld (Least Threatened). The overall state of indigenous vegetation on these areas is significantly degraded, transformed and with limited diversity. No species of conservation concern were recorded on the site. The overall terrestrial botanical sensitivity of the site and surrounds is therefore rated as low.

The two layout alternatives as assessed overlaps and is mainly mapped as terrestrial ESA with a very small section of layout alternative 1 mapped as terrestrial CBA along the western border, however the proposed development site is surrounded by developments which will in future expand and isolate the site even further from feasible ecological connectivity therefore if the proposed mitigation measures are implemented the significance rating of potential impacts on terrestrial features of the site and surrounds is rated as **low negative.**

There are also areas on site and surrounding the wastewater treatment works identified as Aquatic Critical Biodiversity Areas, but freshwater features of the site has been assessed in a separate freshwater impact assessment.

If strict adherence is kept to the recommendations as set out in this report, as well as the Freshwater Ecology Assessment report and an EMP, the proposed development will not have a significant impact on any listed species or sensitive environments.

No significant breeding, roosting or habitat on the site will be impacted upon. Most species will move out of the area into similar adjacent habitats.

Recommended mitigation measures:

- The storm water runoff must be accommodated in designed and constructed storm water systems which must link into the downstream systems to prevent erosion.
- Existing access roads must be used.
- The project implementation process should be fully subject to regular and up to requisite standard Environmental Management Programme prescripts and conditions, inclusive of regular competent ECO supervision.

- Clearly demarcate proposed development area before site clearance commences and remain within demarcated development footprint area throughout construction and operational phases.
- Landscaping of the site must be done with indigenous trees and vegetation under the supervision of a qualified botanical specialist/or landscaper familiar with indigenous vegetation of the areas.

Eco Impact is of the opinion, and based on the survey and desk study done, that the cemetery expansion; if designed and implemented according to the recommendations will not impact significantly on the biodiversity, or adversely affect the ecological functioning of the area.

Proposed Extension of Cemetery On RE/71/158, Ashton, Report of Geotechnical Investigation, SKCMasakhizwe Engineers 2019:

8 Conclusions

8.1 Soil excavatability and workability
Excavations will be difficult by excavator due to the hardness of the underlying rock layers and the gravelly nature of the soils closer to the surface. A 20 tonne excavator (min.) is proposed. Once excavated, the soil will be suitable for use as backfilling of the graves, provided that large boulders and cobbles be removed prior to backfilling. Also see 3.1 of the report.

8.2 Grave stability
Suitable edge protection to the alluvium layers will be required after excavation to prevent the sides collapsing during the burial ceremony. Also see 3.2 of the report.

8.3 Site topography
The maximum natural slope of the site is approximately 2º. Water ponding on the site should not be problematic, as the slope is ideal for the use as cemetery. As seen in 3.4 of the report.

8.4 Site drainage
Surface water drainage must be observed to prevent ponding of water, but we do not foresee this to be required as the slope is in the ideal range. Surface water originating upstream of the site must be diverted around the site using maintained drains (see drawing W1920-03-TP) of new cut-off drains to be constructed. These daubs must be deep enough to penetrate the weathered rock layers to prevent near surface water from flowing through the site. Internal roads must be utilised to channel stormwater to suitable discharge points. These discharge points must be protected against scouring and erosion by providing stone masonry or other suitable erosion control measures. Also refer to 3.5 of the report.

8.5 Soil permeability and basal buffer area.
Occasional water logging of the near surface alluvium layers will be greatly reduced with the implementation of the proposed-on site storm water drains as well as the perimeter drains diverting surface water around the site. Both these measures will reduce the possibility of groundwater pollution. Also see 3.6 and 3.7 of the report.

8.6 Position in respect of domestic water sources and drainage features
Potable water is supplied to the town of Ashton via Municipal pipelines. The nearest registered borehole to the proposed site is unknown but is assumed to be further away than the min distance of 150m (for permeability of 1 x 10^{-7} cm/s). The closest drainage feature to the proposed site is the non-perennial stream (Sarahs River) approximately 280m south-west of the site. The river is further than the minimum recommended safe distance of 150m (for permeability of 1 x 10^{-7} cm/s), and as this stream is not flowing throughout the year, it is not perceived as problematic. Also refer to 3.8 of the report.

9 Recommendations

The following mitigation measures must be applied in order to reduce the risk of groundwater pollution:

9.1 Adequate surface drainage features must be installed on site to prevent ponding of water. These must include adequately aligned internal roads to allow free drainage off the burial areas onto the roads, as well as free drainage along the roads to suitable discharge points on the boundary of the proposed site.

9.2 Cut-off drains must be installed upstream of the site, and on site as proposed (on the locality plan), to divert surface and near surface water around the proposed site to eliminate lateral groundwater movement through the site. These drains must be of sufficient depth to penetrate the weathered rock layers to intercept near surface water.

9.3 Indigenous vegetation must be planted to lower water table that may occur from time to time.

Freshwater Assessment: Silo's Cemetery (Remaining Extent Erf 71 of 158), Ashton, Western Cape, December 2018, EnviroSwift

4.2 Direct Impacts

Advice is presently being sought from DWS as to whether any water use authorisation is required for the proposed development and it is the opinion of the specialist that no water use authorisation should be required. It is however a requirement of the WUL application process that potential impact on the four characteristics be determined and these have been addressed in case the WUL or GA process is in fact required.

- Impact on the flow regime;
- Impact on the water quality;
- Impact on biota – the animal and plant life of a particular region or habitat;
- Impact on wetland and riparian habitat.

These four potential direct impacts therefore formed the foundation of the impact assessment and no additional potential impacts were identified.

4.2.1 Impact 1 – Impact on the flow regime

4.2.1.1 Construction Phase

Clearing of vegetation for construction of the proposed development would likely increase runoff from the proposed development, but runoff presently percolates into the soil rapidly within this site and does not enter a watercourse. It is unlikely that the increased runoff from clearing will cause runoff to enter a watercourse and no impact is therefore likely on a watercourse.

Drainage Line C will lose its hydrological input from the sewage works and from the overflowing drinking trough, but neither of these is likely to be sustainable in any case, so the impact on the flow regime within this watercourse is equivalent to the 'no-go' scenario. The flow regulation function currently filled by Drainage Line C will be filled and improved on by the upgraded WWTW. The impact significance is therefore Very Low (negative) for both layouts, with and without mitigation.

Essential Mitigation Measures

- Clear and construct in summer when rainfall is minimal.

4.2.1.2 Operational Phase

The operational phase impact is similar to the construction phase impact in that hardened infrastructure increases runoff. All runoff will however be directed into a stormwater retention pond and not into any watercourse. The only potential impact is a reduction in groundwater or interflow recharge, but this is not likely to be significant. All impact significance ratings for both layouts and both construction and operational phases are Very Low (negative) for this impact.

Essential Mitigation Measures

- Direct all stormwater into the retention pond.
- Construct the retention pond from permeable materials such that maximum groundwater/interflow recharge still occurs.

4.2.2 Impact 2 – Impact on Water Quality

4.2.2.1 Construction Phase

Clearing for the construction phase would expose sediment for erosion which may increase sediment in the runoff from the site. Landscaping within the parkland area (Alternative Layout) may add nutrients to Drainage Line C. The impact is therefore limited by the fact that the watercourse is no longer natural and by the fact that the sewage works most likely provides a greater nutrient load than the vegetation can utilise, such that an increase in nutrients will not result in a further increase in the level eutrophication. The impact significance for the construction phase was therefore Very Low (negative) for both layouts.

Essential Mitigation Measures
• No mitigation is required.

4.2.2.2 Operational Phase

Routine use of compost and fertilizer in the landscaped area (Alternative Layout) and the presence of laterite roads and pathways (if used) would result in increased nutrient load (particularly phosphates and nitrates) in runoff, which may enter Drainage Line C. The intensity of the impact within Drainage Line C is limited by the fact that the watercourse is no longer natural and by the fact that the sewage works most likely provides a greater nutrient load than the vegetation can utilise, such that an increase in nutrients will not result in a further increase in the level eutrophication. The duration is also limited by the fact that the now artificial watercourse will cease to exist once the WWTW is upgraded and overflow is no longer necessary. Given the Preferred Layout, no water quality impact is likely on Drainage Line C as it will be infilled.

The presence of graves may increase the nutrient load within interflow and/or groundwater. This impact is however limited by the small volume of leachate that each grave can produce, by the phased input of graves and by the limited and indeed questionable hydrological connection between the proposed site and the Sarahsrivier previously discussed. The impact significance was determined to be of Very Low (negative) significance for both layouts.

Essential Mitigation Measures
• No mitigation required.

4.2.4 Impact 4 – Impact on Biota

4.2.4.1 Construction and Operational Phases

Limited wetland and riverine biota is likely to inhabit the watercourse, given the degraded, eutrophic nature thereof and impact thereon is likely to be extremely limited during both the construction and operational phases and is limited to incidental deaths. No mitigation is required. The impact significance is extremely low for both proposed layouts, although it is lower where the parkland around Drainage Line C is landscaped rather than developed.

4.3 'No Go/No Development' Scenario

The 'No Go' scenario would likely result in complete loss of Drainage Line C as soon as the WWTW and overflowing drinking troughs cease to supply water to the watercourse. The impact on groundwater and interflow would improve however given that the effluent currently released into Drainage Line C which soaks away into the ground would not be released after the WWTW upgrade. Overall the loss of artificial wetland was found to be in an Low (negative) impact significance category in isolation, but reduction of effluent input into groundwater reduced the overall impact significance to Very Low (negative),

4.4 Indirect Impacts

No indirect impacts were identified.

4.5 Cumulative Impacts

No cumulative impacts were identified

5. Conclusion and Recommendations

Five watercourses were identified and delineated including a recently excavated artificial drainage channel (A), a formal stormwater canal system (B), a remnant portion of a natural drainage line (C), now fed almost entirely by a sewage works and continuously overflowing cattle trough, a remnant portion of natural drainage line (D) that has been cut off from its catchment, partially infilled and no longer function as a drainage line, and one artificial wetland area (E) that is, in the opinion of the specialist, entirely unnatural.

Watercourse D was found to no longer function as a watercourse and cannot in the opinion of the specialist be reinstated given the scale of the changes in the catchment and watercourse and is therefore, in the opinion of the specialist, no longer a watercourse. According to aerial imagery, the watercourse appeared during 2013 and is in the opinion of the specialist, likely the result of a burst pipe. Only watercourses A, B and C were assessed further.

Watercourses B and C were therefore evaluated by best practice methods to determine current (predevelopment) Present Ecological State (PES). Watercourse C fell within the IHIA Category F, while watercourse B was found to fall within a category E.

The degree of transformation of the two watercourses and their catchments was such that neither can practically achieve a higher category than the present state and were therefore assigned an REC equal to their current PES. Application of the best practice method for determination of an appropriate minimum buffer found that a buffer of 15m would be appropriate for watercourses A, B, and C.

The potential impacts of the two proposed layouts was then assessed on the watercourses B and C. B was found to be too far from the proposed layouts to be impacted, while C falls within both layouts. The preferred layout includes Watercourse C within the proposed parkland, while the preferred layout proposes infilling and installation of graves over Watercourse C. This watercourse has however been cut off historically from its catchment in its entirety and would not exist if not for augmentation from the WWTW and an overflowing cattle trough. The overflowing cattle trough, presently fed by a hose from a municipal water main, falls within the proposed site for both layouts and will be shut down as part of the development. The WWTW augmentation will also cease after the sewage works is upgraded. Once the two artificial water sources no longer supply the watercourse, it will cease to exists. The riparian and wetland vegetation will most likely die off rapidly, and this area will become entirely terrestrial in nature.

The potential impact of leachate from graves on the Sarahsrivier and its floodplain wetlands downslope was also assessed. Given that the proposed sites for the two layouts do not produce runoff that enters the Sarahsrivier, that floodplain wetlands are usually supplied primarily by the river and not by groundwater or interflow, given that the railway line between the river and the proposed sites forms a substantial barrier to subsurface flow and given the phased installation of graves over several years, it is unlikely that much leachate will reach the Sarahsrivier over 400m away, if at all. The impact significance for this potential impact was therefore found to be Very Low (negative) regardless of the layout.

There is therefore no material difference between the two proposed layouts in terms of freshwater constraints and both layouts were found to be of Very Low (negative) impact for every impact assessed, with or without mitigation where mitigation has been provided. The provided mitigation measures will reduce impact however within the Very Low category, and it is therefore recommended that the proposed development be approved on condition that the proposed mitigation measures be implemented.

4. ENVIRONMENTAL IMPACT STATEMENT

Provide an environmental impact statement of the following:

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

LAYOUT ALTERNATIVE 1

CONSTRUCTION PHASE- LAYOUT ALTERNATIVE 1

- Disturbance to subsurface geological layers (medium negative impact before mitigation and low negative impact with mitigation measures);
- Soil erosion (medium negative impact before mitigation and low negative impact with mitigation measures);
- Compaction of soil (medium negative impact before mitigation and low negative impact with mitigation measures);
- Increase in and accumulation of storm water runoff (high negative impact before mitigation and low negative impact with mitigation measures);
- Groundwater pollution (medium negative impact before mitigation and low negative impact with mitigation measures)
- Loss of drainage line (C)and associated riparian habitat as identified by the freshwater specialist (medium negative impact before mitigation and low negative impact with mitigation measures);
- Impact of proposed development aquatic NFEPAs and/or Critical Biodiversity Areas ("CBA') and Ecological Support Areas ("ESA") (high negative impact before mitigation and low negative impact with mitigation measures);
- Impact of proposed activities on terrestrial indigenous vegetation and associated fauna and avifauna habitat (high negative impact before mitigation and low negative impact with mitigation measures);
- Impact of proposed activities on terrestrial Critical Biodiversity and Ecological Support Areas (high negative impact before mitigation and low negative impact with mitigation measures);
- Introduction of alien and weed plant species (medium negative impact before mitigation and low negative impact with mitigation measures)
- Agricultural impacts (high negative impact before mitigation and low negative impact with mitigation measures)
- Increased temporary construction jobs (medium positive impact)
- Increased traffic due to the construction activities requiring various vehicles to come onto and leave the site. (medium negative impact before mitigation and low negative impact with mitigation measures)
- Impact of construction workers on local community safety and security (medium negative impact before mitigation and low negative impact with mitigation measures)
- Impact of litter or waste from the construction site on the surrounding communities (medium negative impact before mitigation and low negative impact with mitigation measures)
- Dust and emissions pollution arising from ground clearing and other construction activities (medium negative impact before mitigation and low negative impact with mitigation measures)
- The potential impact of the proposed development on archaeological, paleontological and heritage remains (high negative impact before mitigation and low negative impact with mitigation measures)
- Noise due to construction machinery (low negative impact before mitigation and low negative impact with mitigation measures)
- Visual impact of construction of proposed serviced erven (medium negative impact before mitigation and low negative impact with mitigation measures)

OPERATIONAL PHASE- LAYOUT ALTERNATIVE 1

- Increase in storm water runoff due to hardening of surfaces which may lead to erosion of surrounding areas (medium negative impact before mitigation and low negative impact with mitigation measures);
- Groundwater pollution (medium negative impact before mitigation and low negative impact with mitigation measures);

- Spread of alien invasive vegetation associated with the soil disturbance caused by construction leading to habitat degradation (medium negative impact before mitigation and low negative impact with mitigation measures);
- Increase in cemetery space for the town of Ashton and surrounds (high positive significance);
- Increased traffic due to proposed cemetery expansion (medium negative impact before mitigation and low negative impact with mitigation measures)
- Noise due to cemetery expansion (low negative impact before mitigation and low negative impact with mitigation measures)
- Additional load on existing municipal services infrastructure such as electricity, water, sewage and waste handling (high negative impact before mitigation and medium negative impact with mitigation measures)
- Planning considerations in terms of potential future expansion of the municipal WWTW (high negative impact before and after mitigation measures)
- Visual impact of proposed cemetery development (medium negative impact before mitigation and low negative impact with mitigation measures)

DECOMMISSIONING AND CLOSURE PHASE- LAYOUT ALTERNATIVE 1

- The decommissioning of the developments is not anticipated in the near future. Impacts during this phase will however be similar to that of the construction phase. Mitigation and management measures will be related to the technology of the day and needs to be discussed at such time as decommissioning will occur. All structures must be removed and the area rehabilitated to the state as before construction had commenced (dependent upon the end land use agreement). Waste, where possible must be recycled. All concrete introduced must be removed off site to a licensed waste facility. Decommissioning of a cemetery with have high negative significance impact on cultural and historical aspects therefore is highly unlikely.

LAYOUT ALTERNATIVE 2

CONSTRUCTION PHASE- LAYOUT ALTERNATIVE 2

- Disturbance to subsurface geological layers (medium negative impact before mitigation and low negative impact with mitigation measures);
- Soil erosion (medium negative impact before mitigation and low negative impact with mitigation measures);
- Compaction of soil (medium negative impact before mitigation and low negative impact with mitigation measures);
- Increase in and accumulation of storm water runoff (high negative impact before mitigation and low negative impact with mitigation measures);
- Groundwater pollution (medium negative impact before mitigation and low negative impact with mitigation measures)
- Loss of drainage line (C)and associated riparian habitat as identified by the freshwater specialist (medium negative impact before mitigation and low negative impact with mitigation measures);
- Impact of proposed development aquatic NFEPAs and/or Critical Biodiversity Areas ("CBA') and Ecological Support Areas ("ESA") (high negative impact before mitigation and low negative impact with mitigation measures);
- Impact of proposed activities on terrestrial indigenous vegetation and associated fauna and avifauna habitat (high negative impact before mitigation and low negative impact with mitigation measures);
- Impact of proposed activities on terrestrial Critical Biodiversity and Ecological Support Areas (high negative impact before mitigation and low negative impact with mitigation measures);
- Introduction of alien and weed plant species (medium negative impact before mitigation and low negative impact with mitigation measures)

- Agricultural impacts (high negative impact before mitigation and low negative impact with mitigation measures)
- Increased temporary construction jobs (medium positive impact)
- Increased traffic due to the construction activities requiring various vehicles to come onto and leave the site. (medium negative impact before mitigation and low negative impact with mitigation measures)
- Impact of construction workers on local community safety and security (medium negative impact before mitigation and low negative impact with mitigation measures)
- Impact of litter or waste from the construction site on the surrounding communities (medium negative impact before mitigation and low negative impact with mitigation measures)
- Dust and emissions pollution arising from ground clearing and other construction activities (medium negative impact before mitigation and low negative impact with mitigation measures)
- The potential impact of the proposed development on archaeological, paleontological and heritage remains (high negative impact before mitigation and low negative impact with mitigation measures)
- Noise due to construction machinery (low negative impact before mitigation and low negative impact with mitigation measures)
- Visual impact of construction of proposed serviced erven (medium negative impact before mitigation and low negative impact with mitigation measures)

OPERATIONAL PHASE- LAYOUT ALTERNATIVE 2

- Increase in storm water runoff due to hardening of surfaces which may lead to erosion of surrounding areas (medium negative impact before mitigation and low negative impact with mitigation measures);
- Groundwater pollution (medium negative impact before mitigation and low negative impact with mitigation measures);
- Spread of alien invasive vegetation associated with the soil disturbance caused by construction leading to habitat degradation (medium negative impact before mitigation and low negative impact with mitigation measures);
- Increase in cemetery space for the town of Ashton and surrounds (high positive significance);
- Increased traffic due to proposed cemetery expansion (medium negative impact before mitigation and low negative impact with mitigation measures)
- Noise due to cemetery expansion (low negative impact before mitigation and low negative impact with mitigation measures)
- Additional load on existing municipal services infrastructure such as electricity, water, sewage and waste handling (high negative impact before mitigation and medium negative impact with mitigation measures)
- Planning considerations in terms of potential future expansion of the municipal WWTW (low negative impact before and after mitigation measures)
- Visual impact of proposed cemetery development (medium negative impact before mitigation and low negative impact with mitigation measures)

DECOMMISSIONING AND CLOSURE PHASE- LAYOUT ALTERNATIVE 2

- The decommissioning of the developments is not anticipated in the near future. Impacts during this phase will however be similar to that of the construction phase. Mitigation and management measures will be related to the technology of the day and needs to be discussed at such time as decommissioning will occur. All structures must be removed and the area rehabilitated to the state as before construction had commenced (dependent upon the end land use agreement). Waste, where possible must be recycled. All concrete introduced must be removed off site to a licensed waste facility. Decommissioning of a cemetery with have high negative significance impact on cultural and historical aspects therefore is highly unlikely.

NO-GO/NO-DEVELOPMENT ALTERNATIVE

No provision of additional cemetery space for the local community of Ashton and surrounds (high negative significance). The No-Development option will result in the local communities having to travel long distances to find available burial space in existing cemeteries elsewhere once the current cemeteries at Ashton have reached full capacity. Alternatively, some burials are taking place illegally (outside of formal cemeteries), which will increase once current local cemeteries reach full capacity if additional cemetery areas are not established. Leading to a high negative significance impact.

(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 under Appendix J 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.

The proposed activities may require a water use application for Section 21 (c) and (i) activities triggered under the National Water Act which will contain additional requirements to be adhered to during the implementation of the proposed activities. These requirements will only be known once the Water Use authorisation has been issued by the Breede Gouritz Catchment Management Agency.

(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 has 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		
This report is only a draft basic assessment report and comments must still be obtained from key departments and registered I&APs during the public participation process still to be conducted. Therefore the draft basic assessment report documentation is not sufficient to make a decision.		
(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.		
Project specific aspects and recommendations to be included as conditions of the authorisation will be included here during the final basic assessment report phase.		
(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.		
Will be addressed and included within the final basic assessment report		
(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 10 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 non-operational aspects is granted; and	Within 10 years of obtaining Environmental Authorisation	
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.**		Y
	Appendix E1:	**Engineer Services Report**	Y
	Appendix E2:	**Municipal Service Confirmation**	Y
	Appendix E3:	**Heritage Western Cape Notice of Intent to Develop**	Y
	Appendix E4:	**Heritage Wester Cape Record of Decision**	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)** **Appendix G1: Botanical Impact Assessment** **Appendix G2: Geotechnical Investigation** **Appendix G3: Freshwater Impact Assessment**		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.**		Y
Appendix K:	**Any Other (if applicable).** **AppendixK1: EAP CV** **Appendix K2: Langeberg Municipal Socio-Economic Status Extract from Municipal IDP**		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.